

Well History Report

Chevron SOBC WM Whitefish YT J-70

April 30, 1973

  
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Project Manager

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SECTION I

Summary of Well Data

(a) Well Name and Number

Chevron SOBC WM Whitefish YT J-70

(b) Permittee, Licensee or Lessee

Western Minerals Ltd.

(c) Name of Operator

Chevron Standard Limited  
400 Fifth Avenue S.W.  
Calgary, Alberta  
T2P 0L7

(d) Location

Unit J, Section 70, Grid  $67^{\circ} 10' N$ ,  $137^{\circ} 15' W$ .

(e) Coordinates

Latitude  $67^{\circ} 09' 32'' N$ , Longitude  $137^{\circ} 26' 44'' W$ .

(f) Permit or Lease Number

Permit No. 2727

(g) Drilling Contractor

G. P. Drilling Ltd., Rotary Rig #15 (National 55)

(h) Drilling Authority

Drilling authority 646 issued January 11, 1973

(i) Classification

Wildcat

(j) Elevations

Ground elevation 1070' KB GRD. 15.50' KB Elev. 1085'

(k) Spudded

Spudded in 1330 hours January 17, 1973.

(l) Completed Drilling

Completed drilling at 1115 hours April 4, 1973

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

T.D. 6980' P.B.T.D. Surface

(n) Well Status

Dry and permanently abandoned.

(o) Rig Release Date

Rig released at 1800 hours April 10, 1973

(p) Hole Sizes to Total Depth

30" conductor hole from G.L. to 35' G.L.  
24" conductor hole from 35' G.L. to 60' G.L.  
17½" surface hole from 75' KB to 914' KB  
8-3/4" main hole from 914' KB to 6980' KB

(q) Casing

19" O.D. conductor pipe set at 75' KB  
13-3/8" K-55, 54.5# casing set at 908 KB

(r) Engineers

G. G. Moench, A. A. Anderson, H. Herring, L. F. Grumbly

Geologist

O. Gietz

SECTION II

Geological Summary

(a) Formation Tops

<u>Formation</u>	<u>Depth</u>	<u>Elevation</u>
		K. B. 1087'
Spuds in Eagle Plain Formation	-	
Blackie Sandstone	2866'	-1779'
Upper Albian Shale	3380'	-2293'
Middle Albian Unconformity	4720'	-3633'
Basal Cretaceous (-Barremian)		
Siltstone Unit	5142'	-4055'
Hauterivian Siltstone/Sandstone Unit	6472'	-5385'
Total Depth 6980'		

(b) Cored Intervals

<u>Core No.</u>	<u>Interval</u>	<u>Formation</u>	<u>Recovery</u>
1	6714'-6721'	Hauterivian Siltstone/ Sandstone Unit	6.5'

(c) Core Description

Core #1 6714'-6720.5' Cut 7' Rec. 6.5'

Coring Times

6714' - 8 6 6 7 11 10 16

6714'-6720.5' (Description Core #1)

Core #1

Sandstone - light brown-grey, very fine to fine-grained. Subangular, well sorted quartz grains, traces of glauconite, in slightly argillaceous, slightly calcareous matrix.

Few black shale partings and thin beds. Slight cross-bedding, swash and rill marks. Sand appears tight, with dead intergranular oil staining, slow cut and fluorescence in chloroethene, odor of hydrocarbons on fresh fracture surface. Spotty dark brown oil bleeding in lower two feet of core. Trace of oil bleeding from 45° fracture.

6720.5'-6721' Core not recovered.

(d) Sample Descriptions

Surface casing set at 914 KB. Samples start at 1170 to 1180 interval. Lithology from 914 to 1170 appears to be a type of clay - when washed, little or no residue remained.

- 1170-1180 Shale, grey, micromicaceous, soft, noncalcareous. Much light grey, soft clay shale. Traces of silty laminae and streaks.
- 1180-1190 Shale, grey, micromicaceous, noncalcareous, soft. Minor silty shale, silty streaks.
- 1190-1200 Shale, light brown, red and brown, blocky, noncalcareous, soft, micromicaceous in part. Much grey shale, as above.
- 1200-1260 Shale, grey, soft, silty in part, micromicaceous, sub-fissile, noncalcareous.
- 1260-1300 Shale, as above. Minor grey, micaceous siltstone. Trace of pyrite. Trace of chert pebbles.
- 1300-1330 Shale, as above; minor grey, micaceous siltstone. Trace of grey calcite limestone, trace of chert.
- 1330-1370 Shale, grey, soft, noncalcareous, micromicaceous. Minor grey, micaceous siltstone streaks. Trace of plant remains in grey, soft shale. Trace of grey limestone, silty, grading to calcareous, micaceous siltstone.
- 1370-1380 Shale, grey, soft, noncalcareous. Siltstone, as beds and laminae, grey, micromicaceous, argillaceous. Traces of grey, calcite limestone.
- 1380-1430 Shale, grey, soft, noncalcareous. Trace of silty streaks. Trace of grey limestone.
- 1430-1550 Siltstone, grey, S & P, argillaceous, slightly calcareous, soft, blocky. Much grey shale, as above, trace of light grey waxy shale. Trace of chert pebbles.
- 1550-1580 Siltstone, grey, S & P, argillaceous, slightly calcareous. Trace of carbonized plant remains. Minor dark grey and grey shale. Trace of pale grey medium grained quartz sandstone - intergranular porosity, no cut or fluorescence. Trace of chert pebbles, limestone, trace of light grey waxy shale.
- 1580-1600 Siltstone, as above. Minor interbedded grey micromicaceous shale, blocky to sub-fissile, noncalcareous. Trace of dark brown shale, grey waxy shale. Trace of grey limestone, chert pebbles.

- 1600-1680 Siltstone, grey, S & P, argillaceous, grading to very silty shale, faintly calcareous. Minor grey and brown-grey shale. Trace of limestone and chert, as above. Traces of pale grey waxy and bentonitic shale. Trace of bitumen?
- 1680-1700 Siltstone, as above. Interbedded grey, blocky to sub-fissile, noncalcareous shale, as above. Trace of chert pebbles, grey calcitic limestone, light grey bentonitic shale.
- 1700-1730 Siltstone, grey, S & P, slightly calcareous, argillaceous. Minor grey shale, as above. Trace of chert pebbles, trace of limestone, traces of light grey and greenish-grey waxy shale.
- 1730-1760 Siltstone, as above. Shale, grey, sub-fissile to blocky, non-calcareous. Trace of Inoceramus sp? Trace of chert pebbles, limestone. Trace of pale grey bentonitic shale. Trace of grey, S & P, medium grained sandstone.
- 1760-1850 Siltstone, grey, S & P, argillaceous, slightly calcareous. Minor interbedded shale, as above. Trace of limestone and chert, as above. Trace of bitumen.
- 1850-1900 Siltstone, grey, S & P, slightly calcareous, argillaceous. Minor grey and dark grey sub-fissile shale. Trace of pyrite, chert pebbles, increase in pale grey, green-grey bentonitic shale. Trace calcitic limestone. Trace Inoceramus fragments.
- 1900-1940 Siltstone, as above, grading in part to fine-grained S & P sandstone. Trace of shale, chert, pyrite, limestone fragments. Inoceramus fragments.
- 1940-1950 Sandstone, grey, S & P, slightly calcareous, grading to siltstone, as above. Trace of pyrite, trace of bitumen, chert fragments, grey and pale grey limestone.
- 1950-1980 Siltstone, grey, S & P, argillaceous, slightly calcareous, grading in part to fine-grained sandstone. Minor interbedded grey, sub-fissile shale. Trace of pale grey and green-grey bentonitic shale. Trace of chert, limestone fragments, pyrite.
- 1980-1990 Siltstone and shale, as above. Minor light brown, brown and grey-brown shale.
- 1990-2000 Sandstone, grey, S & P, slightly calcareous, fine-grained, argillaceous. Much interbedded siltstone and grey, sub-fissile shale. Trace of chert, limestone fragments. Trace of bitumen. Trace of pale grey and pale green bentonitic shale.



- 2000-2030 Siltstone, grey, S & P, faintly calcareous, argillaceous. Much interbedded grey shale and silty shale, noncalcareous, blocky to sub-fissile. Trace of *Inoceramus*? Plant remains. Trace of chert pebbles, pyrite, limestone.
- 2030-2040 Sandstone, grey, S & P, calcareous, fine-grained, trace of rare glauconite. Much siltstone and shale, as above. Traces of chert pebbles, pyrite, trace of limestone.
- 2040-2060 Siltstone, grey, S & P, argillaceous, slightly calcareous. Much shale, grey, sub-fissile, noncalcareous, silty in part. Trace of brown and grey chert pebbles, trace of pyrite. Trace of calcitic limestone.
- 2060-2070 Shale, grey, sub-fissile to blocky, noncalcareous. Much grey, S & P, siltstone, slightly calcareous, as above. Trace of grey and brown chert. Trace of pyritized worm borings. Trace of *Inoceramus* fragments.
- 2070-2090 Shale, as above. Siltstone, as above, grading to fine-grained grey, S & P, calcareous sandstone. Traces of chert, as above. Trace of pyrite, trace of calcitic limestone.
- 2090-2130 Interbedded shale, siltstone, as above. Traces of light grey, S & P, medium to coarse grained quartz - chert sandstone, slightly calcareous. Trace of pyrite, chert. Trace of *Inoceramus*. Trace of calcitic limestone fragments.
- 2130-2170 Siltstone, grey, S & P, grading to fine sandstone, faintly to noncalcareous. Interbedded grey, sub-fissile to fissile shale and silty shale. Much ironstone. Trace of pyrite, chert.
- 2170-2220 Sandstone, grey, S & P, slightly calcareous, argillaceous, grading in part to grey, S & P argillaceous siltstone. Much interbedded grey silty shale and dark grey shale. Traces of ironstone. Trace of chert pebbles, pyrite. Trace of carbonized plant remains.
- 2220-2260 Siltstone, grey, S & P, faintly calcareous, grading to very fine-grained sandstone; argillaceous. Minor interbedded grey, sub-fissile, noncalcareous shale. Trace of light grey, brown and grey chert, trace of ironstone. Trace of pyrite, calcite. Trace of *Inoceramus*.
- 2260-2270 Sandstone, grey, S & P, slightly to noncalcareous, grading to grey, S & P siltstone. Interbedded grey silty shale and dark grey shale. Trace of pyrite, trace of chert.

- 2270-2310 Shale, grey, sub-fissile, noncalcareous. Minor siltstone, as above. Trace of pyrite, trace of chert. Trace of calcitic limestone.
- 2310-2320 Siltstone, grey, S & P, argillaceous, noncalcareous to very faintly calcareous. Much grey, sub-fissile, noncalcareous shale. Trace Inoceramus fragments.
- 2320-2330 Shale, grey, sub-fissile to blocky, noncalcareous, silty in part. Minor siltstone, as above.
- 2330-2360 Siltstone, grey, S & P, grading in part to fine-grained sandstone, noncalcareous to faintly calcareous. Much shale, as above. Trace of chert.
- 2360-2380 Sandstone, grey, S & P, grading in part to siltstone; fine-grained, noncalcareous, argillaceous. Much interbedded grey and dark grey, sub-fissile, micaceous, noncalcareous shale. Trace of pyrite. Trace of chert grains.
- 2380-2410 Sandstone, fine-grained, grey, S & P, calcareous, argillaceous. Trace of coarser chert grains. Minor grey, sub-fissile, noncalcareous shale. Traces of chert grains.
- 2410-2440 Sandstone, as above. Minor grey shale, as above. Much chert grains and fragments. Trace of pyrite.
- 2440-2490 Shale, grey, sub-fissile, noncalcareous, much silty shale. Minor interbedded grey sandstone, as above. Trace of chert, pyrite.
- 2490-2520 Sandstone, fine-grained, grey, S & P, calcareous. Subangular quartz, grey and black chert grains, fair f. sorting, argillaceous matrix. Much interbedded grey, sub-fissile, noncalcareous shale. Trace of pyrite, chert. Trace of bentonitic shale.
- 2520-2580 Shale, grey, blocky, noncalcareous, silty in part. Minor interbedded sandstone, as above. Trace of well-rounded grey and green-grey chert pebbles. Trace of pyrite.
- 2580-2610 Shale, blocky to sub-fissile, grey and dark grey, noncalcareous, few silty streaks, micromicaceous.
- 2610-2620 Shale, grey, blocky to sub-fissile, noncalcareous. Minor brown silty shale. Interbedded siltstone and fine sandstone, noncalcareous, micromicaceous. Trace of chert and pyrite.
- 2620-2700 Shale, grey, sub-fissile, noncalcareous, micromicaceous. Minor grey siltstone, argillaceous, S & P, noncalcareous. Trace of grey and amber chert, pyrite.

- 2700-2720 Shale, grey, sub-fissile, noncalcareous, micromicaceous, silty streaks. Minor sandstone, grey, S & P, micaceous, interbedded with shale. Trace of chert and pyrite.
- 2720-2740 Interbedded shale and sandstone, as above. Increase in chert - grey, brown-grey and rusty red. Trace of pyrite.
- 2740-2750 Shale, grey and dark grey, sub-fissile, noncalcareous, micromicaceous. Trace of grey S & P siltstone, fine sandstone. Trace of brown, grey and rusty red chert.
- 2750-2760 Sandstone, light grey, S & P, trace calcareous to noncalcareous, fine-grained quartz - chert sand. Trace micaceous. Trace of plant remains, carbonaceous partings. Much dark grey, micromicaceous shale, noncalcareous.
- 2760-2790 Sandstone, very fine-grained, grading to silt, grey, finely S & P, noncalcareous, argillaceous. Trace of carbon flecks.
- 2790-2820 Sandstone, grey, argillaceous, noncalcareous, fine-grained. Much grey, sub-fissile shale.
- 2820-2840 Sandstone, fine-grained, light grey, S & P, calc. and grey, argillaceous. Much grey sub-fissile, noncalcareous shale.
- 2840-2860 Shale, grey and dark grey, sub-fissile to fissile, noncalcareous. Minor sandstone, as above. Trace of pyrite, bitumen?
- 2860-2880 Sandstone, fine to medium grained, grey, S & P. Much light grey, S & P, medium to coarse quartz - chert sandstone, very calcareous. Much grey shale, as above.
- 2880-2900 Sandstone, medium grained, grey, S & P, slightly to noncalcareous, argillaceous. Subangular quartz and chert grains in an argillaceous matrix. Much grey and dark grey shale, fissile to sub-fissile. Traces coaly fragments.
- 2900-2910 Sandstone, medium grained, grey, S & P, noncalcareous. Subangular quartz, grey and black chert grains in argillaceous matrix. Trace of carbonized plant remains. Trace of pyrite; much ironstone. Much dark grey, fissile, noncalcareous shale.
- 2910-2920 Sandstone and shale, as above. Much coal.
- 2920-2930 Sandstone, light grey, S & P, fine to medium grained, fairly well sorted. Subangular to subrounded quartz and chert grains, noncalcareous kaolinitic matrix, black shale flecks and carbonized plant remains, coal fragments. Trace Inoceramus. Trace of intergranular porosity. No stain, methane gas kick on detector.

- 2930-2940 Sandstone, as above. Inoceramus fragments. Much shale, grey and dark grey, sub-fissile, noncalcareous, silty in part. Carbonaceous partings, coal fragments.
- 2940-2960 Shale, grey, sub-fissile, noncalcareous, silty in part. Traces of pale grey bentonite. Much sandstone, as above.
- 2960-2970 Shale, grey and dark grey, sub-fissile, noncalcareous, traces of plant remains. Coal.
- 2970-2980 N.S.
- 2980-2990 Sandstone, grey, S & P, fine to medium grained, noncalcareous, kaolinitic, argillaceous. Much dark grey, sub-fissile to to fissile shale, as above.
- 2990-3010 Sandstone, grey, fine-grained to medium grained, very argillaceous, noncalcareous, interbedded with, and grading to, argillaceous grey siltstone; much grey sub-fissile to silty shale. Trace of pyrite.
- 3010-3020 Shale, grey, sub-fissile to fissile, noncalcareous. Minor grey, argillaceous, fine-grained sandstone.
- 3020-3030 Sandstone, grey, S & P, fine-grained, noncalcareous, argillaceous. Minor grey, sub-fissile, noncalcareous shale. Traces of coal, trace of chert.
- 3030-3050 Sandstone, fine to medium grained, grey, S & P, noncalcareous, argillaceous, trace of glauconite. Inoceramus inclusions in the sandstone-chert "grit." Trace of porosity - no stain. Moderate gas kick on recorder.
- 3050-3070 Sandstone, as above, subangular, fair sorted chert and quartz grains, siliceous, kaolinitic matrix, trace of mica, glauconite, trace of bitumen. Much grey, sub-fissile, noncalcareous shale. Trace of ironstone.
- 3070-3090 Shale, grey and dark grey, sub-fissile, noncalcareous. Much fine-grained grey sandstone, as above.
- 3090-3120 Sandstone, grey, S & P, fine to medium grained, noncalcareous, kaolinitic. Subangular quartz, chert and black chert grains, rare glauconite, fair sorting, in a siliceous kaolinitic matrix. Minor grey, sub-fissile shale, as above.
- 3120-3130 Shale, grey and dark grey, sub-fissile, noncalcareous. Sandstone, grey, S & P, fine-grained, slightly calcareous.

- 3130-3150 Shale, dark grey, sub-fissile, micromicaceous, noncalcareous. Trace of pyrite, ironstone.
- 3150-3160 Shale, as above. Minor grey, S & P, fine-grained sandstone, noncalcareous.
- 3160-3210 Sandstone, grey, S & P, fine to medium grained, argillaceous, noncalcareous. Much shale, as above. Trace of Inoceramus.
- 3210-3220 Shale, grey and dark grey, sub-fissile, noncalcareous. Minor sandstone, as above.
- 3220-3240 Sandstone, medium grained, grey, S & P, noncalcareous. Sub-angular to subround quartz and chert grains in kaolinitic, siliceous matrix. Rare glauconite.
- 3240-3250 Shale, grey and dark grey, blocky to sub-fissile, micromicaceous, noncalcareous. Minor grey, S & P, fine to medium grained sandstone.
- 3250-3260 Sandstone, fine-grained, grey, S & P, noncalcareous, trace glauconite. Fair sorting of quartz and chert grains, sub-angular, kaolinitic, siliceous matrix.
- 3260-3270 Sandstone, as above. Trace of coarse streaks. Shale, grey and dark grey, micaceous, fissile, noncalcareous.
- 3270-3290 Sandstone, fine-grained, grey, S & P, noncalcareous, trace of glauconite. Well sorted, subangular quartz and chert grains, siliceous, kaolinitic matrix.
- 3290-3320 Shale, grey, fissile, micaceous, noncalcareous, few silty streaks. Interbedded grey, S & P, noncalcareous sandstone.
- 3320-3350 Shale, grey, fissile, noncalcareous, and grey, silty, blocky. Minor interbedded grey, S & P, fine-grained argillaceous, noncalcareous sandstone.
- 3350-3360 Shale, as above. Much fine-grained, grey, S & P sandstone, calcareous in part, trace glauconitic.
- 3360-3380 Sandstone, fine-grained, grey, S & P, noncalcareous. Fair sorting, subangular quartz and chert grains, siliceous, kaolinitic matrix, trace of glauconite. Minor shale, as above.
- 3380-3400 Shale, grey, noncalcareous, sub-fissile to blocky. Trace of plant remains. Much sandstone, as above.
- 3400-3410 Shale, grey, noncalcareous, sub-fissile to blocky, micromicaceous. Few silty streaks.

- 3410-3460 Shale, grey and dark grey, blocky to sub-fissile, micromicaceous, noncalcareous. Minor interbedded grey, S & P, fine-grained kaolinitic sandstone, calcareous in part.
- 3460-3560 Shale, grey and dark grey, sub-fissile to blocky, noncalcareous, micromicaceous.
- 3560-3580 Shale, as above. Much grey, finely S & P, argillaceous siltstone, noncalcareous, grading to very fine-grained sandstone.
- 3580-3620 Sandstone, fine-grained, grey, S & P, noncalcareous. Fair to well sorted, subangular quartz, chert grains, trace glauconite, in a siliceous, kaolinitic matrix. Much shale, as above. Trace of ironstone.
- 3620-3650 Shale, grey and dark grey, micromicaceous, noncalcareous, fissile. Minor sandstone, as above.
- 3650-3820 Shale, dark grey, fissile, micromicaceous, noncalcareous. Trace of sandy and silty streaks. Trace of fracture veining.
- 3820-3840 Shale, dark grey, sub-fissile to fissile, noncalcareous, micromicaceous. Scattered silty laminae. Interbedded grey, fine-grained S & P sandstone, argillaceous, noncalcareous. Trace of carbonized plant remains.
- 3840-3930 Shale, grey and dark grey, fissile to sub-fissile, noncalcareous, micromicaceous. Traces of brown-grey, blocky, silty streaks. Trace of pyrite. Trace of lamination. Trace of carbonized plant remains.
- 3930-3940 N.S.
- 3940-3980 Shale, dark grey, fissile to sub-fissile, micromicaceous in part, noncalcareous. Trace of grey silt streaks, traces of brown-grey silty shale. Trace of chert fragments. Trace of pyrite, trace of pale grey bentonite.
- 3980-4020 Shale, dark grey, sub-fissile to blocky, silty, noncalcareous. Traces of grey, very fine sandy streaks. Trace of pyrite, minor grey, argillaceous siltstone. Trace of coaly laminae, trace of chert.
- 4020-4030 Shale, grey, silty, and dark grey, smooth, splintery, micromicaceous in part, noncalcareous.
- 4030-4090 Shale, as above, 70%. Sandstone, grey, fine-grained, argillaceous, noncalcareous to trace calcareous. Trace of pyrite, plant remains.

- 4090-4110 Shale, dark grey, fissile, noncalcareous, micromicaceous. Trace of sandstone, as above. Traces of chert pebbles and fragments, pyrite.
- 4110-4140 Shale, dark grey, fissile, micromicaceous, noncalcareous. Much grey-brown, blocky, silty shale. Minor sandstone, fine-grained, grey, S & P, noncalcareous, argillaceous.
- 4140-4260 Shale, dark grey, micromicaceous, noncalcareous, fissile. Trace of pyrite, plant remains.
- 4260-4570 Shale, dark grey, blocky, noncalcareous, trace micromicaceous. Much dark grey fissile shale.
- 4570-4580 Shale, as above. Trace of grey, fine-grained sandstone, noncalcareous.
- 4580-4590 Shale, dark grey and black, fissile, smooth, noncalcareous. Dark grey shale is micromicaceous. Trace of ironstone.
- 4590-4920 Shale, grey finely micromicaceous, and dark grey, smooth; fissile to sub-fissile. Trace of silty streaks.
- 4920-4950 Shale, dark grey, sub-fissile to fissile, noncalcareous. Much dark medium grey silty textured, blocky shale. Trace of pyrite and ironstone.
- 4950-4990 Shale, dark grey and black, noncalcareous, dark grey, micromicaceous shale. Trace of grey sandstone stringers, trace of silty shale. Trace of ironstone, pyrite. Grey, very fine sandstone streaks are argillaceous, slightly calcareous, finely laminated in part, grading to argillaceous grey siltstone.
- 4990-5150 Shale, dark grey and black, fissile to sub-fissile, noncalcareous, micromicaceous in part. Trace of ironstone, pyrite. Slickensided in part.
- 5150-5160 Shale, dark grey, fissile to sub-fissile, noncalcareous. Traces of grey and dark grey calcareous shale and argillaceous limestone.
- 5160-5170 Shale, grey and dark grey, sub-fissile and fissile, noncalcareous. Trace of silty streaks. Trace of ironstone, pyrite, chert fragments.
- 5170-5180 Shale, grey and dark grey, sub-fissile to fissile, noncalcareous. Traces of silty shale and silty streaks. Trace of glauconite. Minor grey, glauconitic, argillaceous siltstone, faintly calcareous.

- 5180-5270 Shale, grey, silty, noncalcareous, blocky, grading in part to very argillaceous lighter grey siltstone, faintly calcareous to noncalcareous, trace of glauconite. Much dark grey fissile, noncalcareous shale. Trace of brown and grey argillaceous limestone.
- 5270-5290 Siltstone, light grey, argillaceous, glauconitic, faintly calcareous. Few shale partings. Minor shale, as above, silty shale.
- 5290-5360 Siltstone, grey, argillaceous, noncalcareous, grading to dark grey shale and silty shale.
- 5360-5400 Shale, dark grey, fissile, noncalcareous. Trace of silty streaks.
- 5400-5430 Siltstone, pale grey, glauconitic, calcareous, argillaceous. Interbedded dark grey, micromicaceous, fissile, noncalcareous shale.
- 5430-5470 Siltstone, pale grey, glauconitic, calcareous, as above, grading to very fine-grained quartz sandstone. Interbedded grey, argillaceous siltstone, silty shale, and dark grey shale.
- 5490-5510 Siltstone, grey glauconitic, calcareous, quartzose. Traces of dark grey silty shale, minor interbedded dark grey shale. Trace of grey and brown limestone.
- 5510-5540 Interbedded pale grey siltstone, minor dark grey shale, as above. Traces of sandy streaks, very fine-grained, grading into pale grey siltstone.
- 5540-5560 Siltstone, pale grey, quartzose, vitreous, slightly glauconitic, slightly calcareous, micromicaceous in part. Minor dark grey and dark brown shale, micromicaceous. Trace of brown, calcareous, argillaceous silt.
- 5560-5570 Siltstone, pale grey, glauconitic, as above, grading to minor pale grey, glauconitic, slightly calcareous, very fine-grained sandstone. Minor dark grey shale and silty shale.
- 5570-5590 Siltstone, pale grey, vitreous, faintly calcareous, glauconitic. Minor interbedded grey and dark grey shale, traces of brown and dark brown, silty, calcareous shale, micromicaceous.
- 5590-5620 Shale, dark grey, sub-fissile, noncalcareous. 50% siltstone, pale grey, slightly calcareous, grading in part to very fine sandstone, trace glauconitic.



- 5620-5650 Shale, dark grey, micromicaceous in part, much grey, silty shale, noncalcareous. Much grey, argillaceous siltstone, noncalcareous.
- 5650-5720 Siltstone, grey, argillaceous, micromicaceous, noncalcareous. Trace of shale partings and lamination. Minor interbedded dark grey sub-fissile, noncalcareous shale.
- 5720-5780 Siltstone, pale grey, slightly calcareous, vitreous, trace glauconitic, grading to grey, argillaceous siltstone. Interbedded dark grey micaceous, noncalcareous fissile shale.
- 5780-5820 Shale, dark grey, fissile, smooth, noncalcareous, grading to and interbedded with dark brown silty blocky shale. Interbedded pale grey and grey siltstone, trace glauconitic, calcareous in part; argillaceous partings.
- 5820-5900 Shale, dark grey, blocky, silty to sub-fissile smooth, micaceous, noncalcareous. Pale grey silty streaks, argillaceous partings and laminae, calcareous in part.
- 5900-5930 Shale, dark grey and black, fissile, micromicaceous, noncalcareous. Much pale grey and grey siltstone, calcareous in part, laminated.
- 5930-5960 Shale, dark grey, sub-fissile to fissile, micromicaceous, noncalcareous. Few silty streaks. Minor pale grey, slightly calcareous silt, laminated.
- 5960-6070 Shale, black, fissile to sub-fissile, micromicaceous in part, noncalcareous. Trace of pale grey laminated silt, slightly calcareous.
- 6070-6290 Shale, dark grey and black, fissile, noncalcareous, micaceous. Trace of silty streaks, slightly calcareous. Pyrite.
- 6290-6470 Shale, dark grey and black, fissile, noncalcareous, micaceous in part. Traces to minor laminated grey silt, blocky, in black shale. Minor pyrite, ironstone. Trace of dark brown-grey argillaceous limestone.
- 6470-6500 Shale, dark grey and black, micromicaceous in part, noncalcareous, fissile. Much dark brown-grey argillaceous siltstone and silty shale, noncalcareous, trace glauconitic.
- 6500-6530 Shale, dark grey and black, blocky to sub-fissile, noncalcareous. Much dark brown silty, blocky shale, trace of glauconite.
- 6530-6540 Siltstone, dark brown-grey, argillaceous, noncalcareous, much interbedded dark grey and black shale, fissile, noncalcareous. Minor grey, argillaceous, glauconitic silt.

- 6540-6610 Siltstone, grey, argillaceous, noncalcareous, trace glauconitic, grading in part to grey, S & P, fine-grained sandstone. Minor dark grey sub-fissile, micaceous shale. Test of siltstone shows fair fluorescence and cut.
- 6610-6630 Shale, dark grey and black, sub-fissile, noncalcareous. Scattered grey silty laminae.
- 6630-6640 Shale, black, fissile, micromicaceous, noncalcareous. Scattered grey, argillaceous silty streaks.
- 6640-6690 Siltstone, brown, argillaceous, trace glauconitic, faintly calcareous, grading in part to very fine sandstone. Minor shale as above. Trace of ironstone, pyrite, chert grains. Slow cut and fluorescence in chloroform.
- 6690-6712 Shale, dark grey, sub-fissile, noncalcareous, minor micaceous, fissile shale. Much brown siltstone, as above, trace of very fine-grained sandstone. Trace of ironstone, trace of brown limestone.
- 6712-6714 Sandstone, pale grey and pale brown, fine grained fairly well sorted subangular quartz grains, siliceous matrix. Trace glauconitic. Trace of intergranular porosity, cut and fluorescence.
- Core #1 6714-6721 Rec. 6.5 ft.
- 6721-6730 Sandstone, very fine-grained, brown, dead oil stained, grading to silty sandstone. Few very pale grey streaks. Trace glauconite, slightly calcareous. Much dark grey blocky to sub-fissile shale - cavings in part.
- 6730-6740 Sandstone, very fine-grained, grading to siltstone, brown, slightly calcareous. Few streaks of very pale grey siltstone and very fine-grained sandstone. Trace of glauconite. Much dark grey and black shale, blocky to sub-fissile - cavings? Brown oil stained, faint fluorescence, cut in  $CCl_4$ .
- 6740-6750 Shale, dark grey, blocky to sub-fissile, noncalcareous, micromicaceous. Few silty laminae. Minor (30%) brown, very fine-grained sandstone, as above.
- 6750-6760 Shale, dark grey, sub-fissile, noncalcareous, micromicaceous. Few grey silt laminae.
- 6760-6770 Sandstone, fine to medium grained, light grey, vitreous. Subangular, well sorted quartz grains, traces glauconite, in a slightly calcareous, siliceous matrix. Friable. Fair intergranular porosity, some staining, fair to good cut and fluorescence. Trace of kaolin. Few coarse quartz grains. Much dark grey shale, as above.

- 6770-6810 Sandstone, fine to medium grained, light grey, vitreous, friable. Few coarse grains. Subangular well sorted quartz grains, trace of glauconite and kaolin, in a poorly cemented siliceous, slightly calcareous matrix. Good intergranular porosity, light stain showing fluorescence and cut in  $\text{CCl}_4$ .
- 6810-6820 Sandstone, medium grained, light grey, vitreous, well sorted, subangular quartz grains. Trace of glauconite, kaolin. Much secondary silica as crystal faces on quartz grains. Trace of coarse quartz and chert grains. Friable. Good intergranular porosity, fluorescence and cut.
- 6820-6830 Sandstone, as above - porosity, cut, fluorescence, as above. Much black, micromicaceous, noncalcareous fissile shale. Trace of pyrite, trace of bitumen fragments.
- 6830-6850 Sandstone, medium grained, light grey, vitreous. Well sorted, subangular quartz grains, well developed secondary crystal faces, noncalcareous, trace of glauconite, kaolin. Good intergranular porosity, cut and fluorescence.
- 6850-6880 Shale, dark grey, blocky, noncalcareous, silty in part. Trace of interbedded grey, argillaceous siltstone. Much sandstone, as above. Trace of soft, lignitic shale, plant remains.
- 6880-6920 Sandstone, medium grained, light grey and light brown-grey, slightly argillaceous, quartzose. Well sorted, subangular quartz grains, secondary silica cement, crystal faces. Trace of glauconite. Trace of intergranular argillaceous material and bitumen. Good intergranular porosity, slow cut and fluorescence. Much dark grey shale, as above - cavings.
- 6920-6930 Sandstone, medium grained, brown, vitreous, some intergranular argillaceous material, trace of kaolin, trace of glauconite. Well sorted, subangular quartz grains, siliceous cement, faintly calcareous. Fair intergranular porosity, cut and fluorescence.
- 6930-6950 Sandstone, fine-grained, light brown, vitreous, noncalcareous. Trace of glauconite, kaolin, intergranular argillaceous material, trace of bitumen. Subangular, well sorted quartz grains, siliceous cement. Poor intergranular porosity, cut and fluorescence. Much dark grey, micromicaceous, fissile to blocky, silty shale.
- 6950-6960 Shale, dark grey, noncalcareous. Blocky micromicaceous. Minor silty shale, traces of grey silt laminae. Trace of pyrite. Much cavings. Sample follows reaming to bottom after trip for bit.

6960-6980 Shale, dark grey, noncalcareous, micromicaceous in part.  
Black, silty streaks. Trace of grey siltstone laminae.  
Trace of brown sandy shale.

T.D. 6980

(e) Paleontological Determinations

0-6715 No determinations

6715-6721 In Hauterivian

6740-6925 ?Valanginian to Hauterivian

SECTION III

Engineering Summary

(a) Report of Drillstem Tests

DST #1      6738'-6812' Dual Bottom Hole

Zone:          Johnson Creek

Times:        Pre-Flow 5 mins., initial shut-in 60 mins. Valve open  
60 mins., final shut-in 120 mins.

Recovery:    Good air blow on V.O. remaining steady throughout. Recovered  
250 feet drilling mud and 453 feet mud cut water.

Pressures:   IHP - 3588                      FSIP - 3248  
                  ISIP - 3248                      FHP - 3569  
                  IFP - 201                         BHT - 132<sup>0</sup>F.  
                  FFP - 380

Remarks:    Test satisfactory

DST #2      6995'-6990' Dual Bottom Hole

Zone:          Johnson Creek

Remarks:    Misrun. Could not get to bottom.

DST #3      6885'-6990' Dual Bottom Hole

Zone:          Johnson Creek

Times:        Pre-Flow 8 mins., initial shut-in 45 mins., valve open 120  
mins., final shut-in 90 mins.

Recovery:    Fair air blow on V.O. Gas to surface after 90 mins. T.S.I.M.  
recovered 450' of drilling mud, 5700' of brackish water  
slightly gas cut.

Pressures:   IHP - 3655                      FSIP - 3170  
                  ISIP - 3150                      FHP - 3588  
                  IFP - 1347                         BHT - 136<sup>0</sup>F.  
                  FFP - 2762

Remarks:    Test satisfactory.

(e) Deviation Record

70 - 1	2070 - 3/4	3789 - 3	5455 - 3-1/4
100 - 3/4	2173 - 1	3851 - 4	5525 - 2-3/4
140 - 1/2	2236 - 1	3882 - 4	5580 - 3
175 - 1/8	2385 - 1/8	3914 - 3	5645 - 2-1/2
205 - 1	2300 - 1/2	3949 - 3	5763 - 2-1/2
232 - 1/4	2490 - 1-1/2	3977 - 3-1/2	5841 - 2-3/4
293 - 0	2550 - 1-1/2	4009 - 2-3/4	5900 - 2-3/4
353 - 1/4	2610 - 1	4040 - 1-1/2	5960 - 2-3/4
415 - 1/2	2670 - 1	4095 - 2-1/4	6084 - 2-3/4
446 - 1/4	2770 - 1-3/4	4160 - 2	6021 - 2-3/4
507 - 1/4	2800 - 1-1/4	4198 - 2	6163 - 3
567 - 1/4	2860 - 1-1/4	4261 - 2	6215 - 3-1/2
629 - 3/8	2932 - 1-1/4	4315 - 2	6256 - 3
692 - 1/4	2983 - 1-1/2	4380 - 2-1/4	6319 - 3
755 - 1/8	3059 - 7/8	4450 - 2-1/4	6382 - 3
818 - 1/2	3121 - 1-1/4	4514 - 2-3/4	6477 - 3
882 - 1/4	3143 - 1-1/2	4570 - 2-1/2	6541 - 2-3/4
914 - 1/4	3216 - 1-1/2	4630 - 2-3/4	6604 - 3
950 - 3/4	3282 - 1-3/4	4734 - 2-7/8	6667 - 3
1027 - 3/4	3345 - 2	4790 - 3	6714 - 3
1100 - 1/2	3366 - 1-3/4	4863 - 2-3/4	6745 - 2-3/4
1630 - 1/4	3440 - 1-1/2	4950 - 2-3/4	6770 - 2-3/4
1725 - 1	3503 - 2	5015 - 1-7/8	6812 - 2-1/4
1783 - 3/4	3565 - 2-1/8	5052 - 1-7/9	6873 - 3
1857 - 1	3693 - 3	5110 - 1-1/2	6900 - 3
1920 - 7/8	3726 - 3	5164 - 1-7/8	6970 - 3
1983 - 1-1/2	3757 - 2-3/4	5243 - 1	6980 - 3 T.D.
2000 - 1-1/4			

(f) Abandonment Plugs

Plug #1 (6980'-6700') 165 Sax Type I cement  
Plug #2 (5900'-5700') 120 Sax Type I cement  
Plug #3 (3000'-2800') 144 Sax Type I cement + 3% CaCl<sub>2</sub>  
Plug #4 ( 950'-850') 100 Sax Type I cement + 3% CaCl<sub>2</sub>  
Surface Plug 5 Sax Type I cement.

(g) Lost Circulation Zones

Lost circulation at 6721' while coring in 6-3/16" rat hole. Lost approximately 150 Bbls. mud. Mud started to flow back after pulling out of the rat hole. Mixed a total of 35 sax of sawdust and 320 sax of Wt. Material to stabilize the hole.

(h) Report of Blowouts

No blowouts on this well.

SECTION IV

Logs

The following Dresser Atlas logs were run on April 5 - 6, 1973:

BHC Acoustilog/GR/Caliper (6974' - 10')  
Dual Induction Focused Log (6975' - 908')  
Minilog Caliper (6977' - 908') (6979' - 908')

25 Sidewall Cores were shot and 20 were recovered as follows:

6925	6885	6850
6920	6880	6755
6915	6875	6745
6905	6870	6740
6900	6865	6735
6895	6860	6730
6890	6855	



SECTION V

Analysis

(a) Core Analysis

Core analysis enclosed in back folder.

(b) Water Analysis

Water analysis enclosed in back folder.

(c) Gas Analysis

Gas analysis enclosed in back folder.

(d) Oil Analysis

No oil analysis.

**CHEMICAL & GEOLOGICAL LABORATORIES LTD.**

WATER ANALYSIS

Lab No. C73-6378

Received: April 11, 1973 Reported: April 13, 1973  
 Operator: CHEVRON STANDARD LIMITED  
 Elev.: K.B. 1087' Grd. Zone/Formation:  
 Method of Production: D.S.T. #3

Well: Location: Chevron SOBC WM Whitefish YT-J70  
 Field or Area: Whitefish R  
 Sample Interval: 6885' - 6980'  
 Sampled from: Tool Top  
 Sampled by: Johnston Testers Date: April 8, 1973

**OTHER PERTINENT DATA**

Recovered: 5790' water.

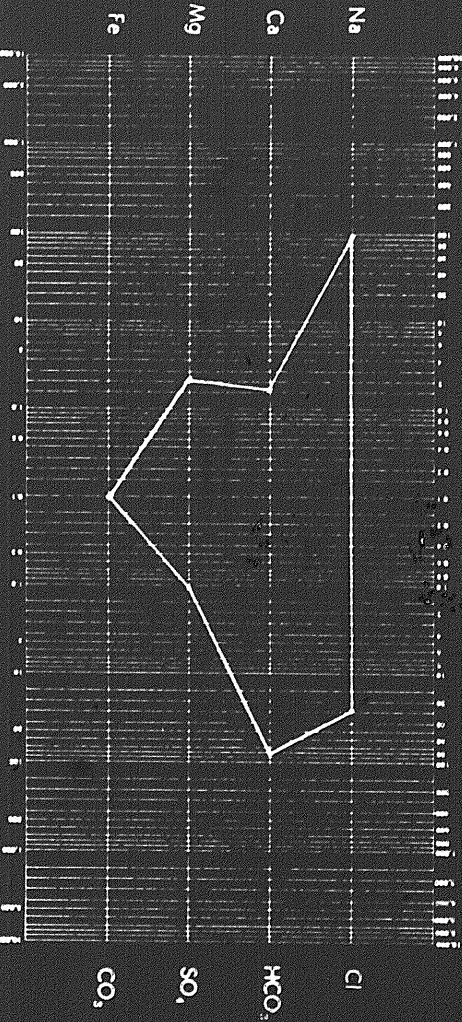
(Signed)

Meq/L	Na & K	Ca	Mg	SO <sub>4</sub>	Cl	CO <sub>2</sub>	HCO <sub>3</sub>
2253	32	27		54	1000	---	4420
98.00	1.60	2.22		1.12	28.20	---	72.49
48.12	0.79	1.09		0.55	13.85	---	35.60

Total Solids Mg/L: By Evaporation 5584 Fe Present Specific Gravity 1.010 @60°F Observed pH 7.9 @77°F  
 Calculated 7786 After Ignition 4024 H<sub>2</sub>S Nil Refractive Index 1.3342 @25°C Resistivity 1.19 ohm meters @68 °F  
 Pattern Unit Meq/L Organic matter - Present

**Remarks and Conclusions**

Analysis determined on a clear colorless filtrate recovered from water containing a trace of sediment and a trace of hydrocarbon.



Received: April 13, 1973 Reported: April 16, 1973 Well Location: Chevron SOBC WM Whitefish YT J-70  
 Operator: CHEVRON STANDARD LIMITED Field or Area: Whitefish R  
 Elev.: K.B. 1087' Gvd 1070' Zone/Formation: Lower Cretaceous Sample Interval: 6740' - 6812'  
 Method of Production: D.S.T. #1 Sampled from: Bottom Sampled by: Johnston Tester Date: March 31, 1973  
 OTHER PERTINENT DATA

Recovered: 743' 250' mud, 493' mud cut water.

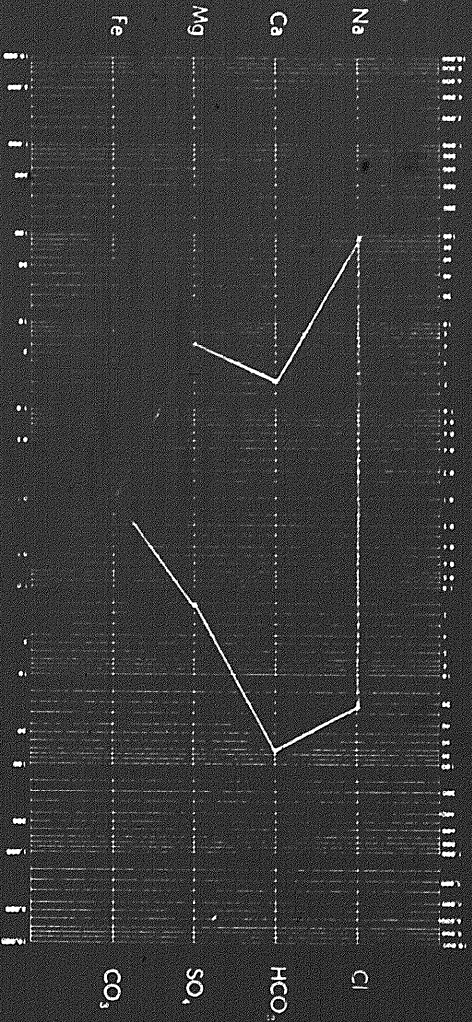
(Signed) *D. M. H. L.* /cc.

Meq. %	Na & K /L	Ca	Mg	SO <sub>4</sub>	Cl	CO <sub>2</sub>	HCO <sub>3</sub>
91.83	2111	40	75	79	900	---	4450
2.00							
6.17							
45.92		1.00	3.09	0.82	12.69	---	36.49

Total Solids Mg/L: 7655  
 By Evaporation: 5524  
 After Ignition: 3408  
 Fe Present Specific Gravity: 1.007  
 H<sub>2</sub>S Nil  
 Refractive Index: 1.3341  
 @ 60°F  
 Observed pH: 7.8  
 @ 72°F  
 Resistivity: 1.25 ohm meters @ 68°F  
 Organic matter - Present

Remarks and Conclusions

Analysis determined on a clear colorless filtrate recovered from water containing approximately 20% sediment.



CHEMICAL & GEOLOGICAL LABORATORIES LTD.

Edmonton Fort St. John Calgary

GAS ANALYSIS REPORT: Lab. No E73-3900

Received: Apr. 11, 1973 Reported: Apr. 11, 1973

Well: Chevron SOIC Whiterish YF-1-70

Operator: CHEVRON STANDARD LIMITED

Field or Area: Wildcat

Location:

Elev.: K.B.

Grid:

Zone and Formation:

Sample Interval: 6885' - 6920'

Well production at sampling time: Oil

bpd; Gas

MCFD; Water

bpd

Sampled from:

Sampled by:

Date: Apr. 11, 1973

Pressure: (a) at point of sampling

psig (b) Gas Bomb pressure

psig

Temperature: (a) at point of sampling

F (b) Separator

F

Pressures: Reservoir

Tubing

Casing

Separator

OTHER PERTINENT DATA Sampled at 11:30 A.M. Container #1023.

COMPOSITION	% by Volume	G.P.M. in Imp. Gal at 60°F. & 14.65 PSIA	G.P.M. (Calculated)	(Signed) SPECIFIC GRAVITY			
				Calculated	by Weight	CRITICALS - Calculated	
Helium	0.05	Pentanes -	0.021	Calculated		0.576	
Hydrogen sulfide	0.	at 12 lbs.	0.024	by Weight		.570	
Carbon dioxide	0.15	at 15 lbs.	0.025	CRITICALS - Calculated			
Nitrogen	1.95	at 22 lbs.	0.030	Pc		670.1	
Methane	95.83	at 26 lbs.	0.034	Tc		345.4	
Ethane	1.72	VAPOR PRESSURE (Calc. at 100°F. Pentanes -)				6.32	
Propane	0.14	0.032	H <sub>2</sub> S	Grains per 100 cu ft at 60°F. & 14.65 psia		0.	
Isobutane	0.09	0.024	GROSS B.T.U. (Calc. at 60°F. & 14.65 psia) dry			1004.9	
N-butane	0.01	0.003		(sat)		987.3	
Isopentane	0.01	0.003		Acid Gas Free dry		1006.4	
N-pentane	TRCE	0.	DEW POINT (Calc. psi)		950	1050	1200
Hexanes	0.02	0.007	FAH.		-27	-30	-34
Heptanes	0.02	0.007	Mol. Wt.: Total Gas		16.679	Heptanes -	102.083
Octanes	0.01	0.004	Received at 3 pair. Prior to analysis sample was heated to 100°F.				
Nonanes	0.	0.					
Decanes	0.	0.					
TOTAL	100.00	0.080					

CORE LABORATORIES - CANADA LTD.

COMPANY CHEVRON STANDARD LIMITED  
 WELL CHEVRON SOBC WM WHITEFISH YR J-70  
 FIELD WIDDICAT, WHITEFISH RIVER, YUKON TERRITORY  
 LOCATION 67 09' 32.00 North Lat.  
 137 26' 44.00 West Long.

FORMATION DRILLING FLUID WATER BASE MUD  
 ANALYSIS ELEVATION  
 REMARKS ANALYSIS CONVENTIONAL SMALL PLUG

PAGE 1 OF 1  
 FILE 7004-3198  
 DATE REPORT APR. 12, 1973  
 ANALYSTS BK

47 - APERTURE SIZE, IN TO  
 48 - PERCENTAGE OPEN TO  
 49 - PERCENTAGE OPEN TO  
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 100 - PERCENTAGE OPEN TO

SAMPLE NUMBER	INTERVAL REPRESENTED, FEET		HORIZ. PERM TO AIR MILLIDARCS	PERMEABILITY FEET	POROSITY PER CENT	POROSITY FEET	RESIDUAL SATURATIONS PER CENT PORE SPACE		VISUAL EXAMINATION
	DEPTH	THICK					OIL	TOTAL WATER	

CORED INTERVAL 6714' - 6721'  
 CORE NO. 1 6714' - 6721' (Rec. 6.5') (2 boxes)

1	6714.0-6714.7	0.7	0.09	0.06	4.5	3.15	-	-	FS.
2	6714.7-6715.2	0.5	0.17	0.09	5.1	2.55	-	-	FS
3	6715.2-6715.6	0.4	-0.01	-	4.9	1.96	-	-	FS. limy
4	6715.6-6716.2	0.6	0.09	0.05	4.5	2.70	-	-	FS. limy
5	6716.2-6717.1	0.9	-0.01	-	4.6	4.14	-	-	FS. limy
6	6717.1-6717.9	0.8	-0.01	-	4.5	3.60	-	-	FS. limy
7	6717.9-6718.6	0.7	-0.01	-	4.1	2.87	-	-	FS
8	6718.6-6719.3	0.7	0.09	0.06	4.1	2.87	-	-	FS. limy
9	6719.3-6720.1	0.8	-0.01	-	4.7	3.76	-	-	FS. limy
10	6720.1-6720.5	0.4	-0.01	-	4.8	1.92	-	-	FS. limy
-	6720.5-6721.0	0.5	-	-	-	-	-	-	lost core

SECTION VI

Completion Summary

(a) Tubing Record

No tubing run.

(b) Perforation Record

No perforations.

(c) Cementation Record

Abandonment Plug #1 (6980'-6700')

Cemented with 165 sax construction cement. Cement in place at 0615 hours April 9, 1973. No feel on plug #1.

Abandonment Plug #2 (5900'-5700')

Cemented with 120 sax construction cement. Cement in place at 0730 hours April 9, 1973. Felt plug #2 at 5660' at 1545 hours, April 9, 1973.

Abandonment Plug #3 (3000'-2800')

Cemented with 144 sax construction cement plus 3% CaCl<sub>2</sub>. Cement in place at 1730 hours April 9, 1973. Felt Plug #3 at 2750' at 0115 hours April 10, 1973.

Abandonment Plug #4 (950' - 850')

Cemented with 100 sax construction cement plus 3% CaCl<sub>2</sub>. Cement in place at 0220 hours April 10, 1973. Felt plug #4 at 820' at 1030 hours April 10, 1973.

(d) Acidization and Fracturing Records

No acidizing or fracturing operations.

(e) Back Pressure and Production Tests

No back pressure or production tests.

CHEVRON STANDARD LIMITED  
BIT RECORD

WELL NAME WHITEFISH YT J-10 CONTRACTOR GP DRILLING RIG No. 15 PUMP No. 1 6-700  
 SPUD DATE \_\_\_\_\_ RIG RELEASED \_\_\_\_\_ DRILLING DAYS \_\_\_\_\_ PUMP No. 2 6-700

BIT No	MAKE	SIZE	TYPE	DEPTH		FOOTAGE	TIME	DRG RATE	NOZZLE SIZES	JET VEL	WEIGHT M#	RPM	No. 1 PUMP		No. 2 PUMP		PUMP PSI	HHP AT BIT	DP ANN	DC ANN	MUD			DEVI	
				FROM	TO								LINER	SPM	LINER	SPM					WT	VIS	T		B
1	HW	1 7/8	OCC-1	60	216	156	13 3/4		OPEN		5	160													
2	HW	"	CSC-21E	496	230	266	12 1/2		3/16		10	160		64				725							
3	"	"	OCC-3	496	758	312	14		3/15		10	160						425							
4	"	"	"	758	914	156	20 3/4				10	160						450							
5	SEC	8 3/4	S-44	D14	2000	1086	30		3/10		10/15	120		54				1700							
6	HW	"	X16	E000	E7E6	7E6	10 3/4				15	115		52				1700							
7	HW	"	X16	E2E6	E3E3	E5E1	18 3/4		1/2 3/16		15	120		64				1550							
8	SEC	"	S-88	E9E3	E3E3	E5E0	20				25	56						1950							
9	SEC	"	S-88	E3E3	E3E0	E4E7	60 1/2				25	56		66				1550							
10	SEC	"	S-88	E3E0	E3E4	E4E5	37		3/11		12	56						1400							
11	R	"	S-16	E3E4	E1E5	E1E8	21				15	120		60				1100							
12	SEC	"	S-88	E1E3	E1E7	E1E4	58 1/4				20	56		68				1425							
13	SEC	"	DSS	E1E7	E5E6	E5E5	22				20	100						1450							
14	SEC	"	S-86	E5E6	E5E7	E3E9	40 1/2				25	62						1400							
15	R	"	STAG	E5E7	E5E9	E2E5	24				15	120		58				1300							
16	R	"	"	E5E4	E7E2	E1E2	13 3/4				15	120		50				1400							
17	SEC	"	S-88	E5E2	E5E1	E5E2	27 1/4				18	58		50				1500							
18	HW	"	XDY	E9E5	E0E4	E6E4	25				22	80/30		58				1500							
19	SM	"	4J5	E6E4	E4E3	E2E9	54 1/2				18	60						1300							
20	SM	"	4J5	E4E3	E6E0	E0E1	42				"	60						1300							
21	HW	"	XDY	E6E0	E7E4	E4E4	17 3/4				22	60		60				1350							
22	WEST	6 3/16	Q	E7E4	E7E2	E7E2	1				7	60		50				1100							
23	HW	8 3/4	WDR	E7E1	E7E1	E7E1	7				Build	Build		W/T											