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GEOLOGIC REPORT ON TEST DRILLING
by ISKUT SILVER MINES LTD

LITTLE BUFFALO RIVER AREA NWT

W. B. BRADY CONSULTING LTD



GEOLOGIC REPORT

ON

TEST DRILLING

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NORTHWEST TERRITORIES

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W. B. BRADY CONSULTING LTD

May 1969

INTRODUCTION

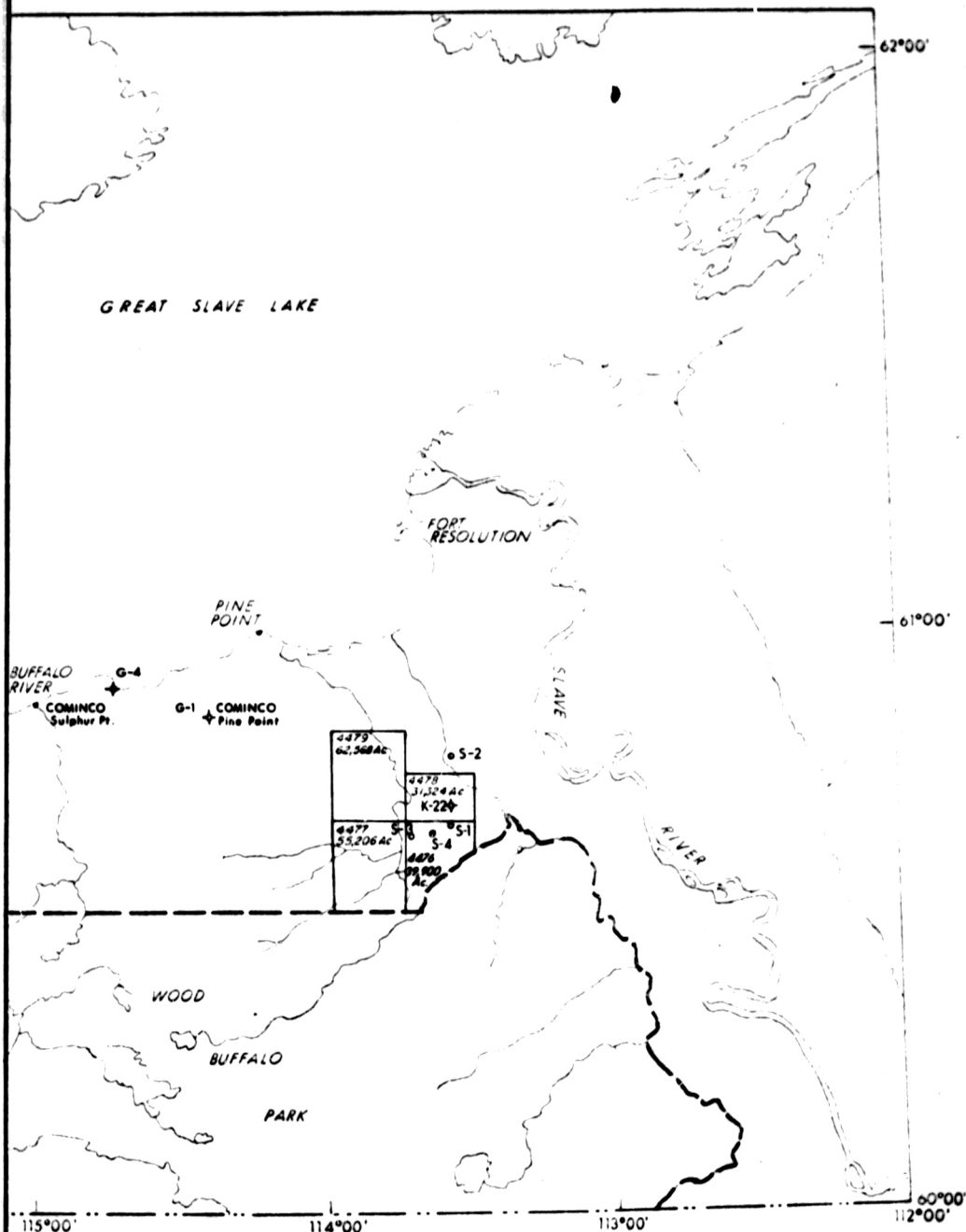
In 1968 Iskut Silver Mines Ltd. core-drilled 5 test holes on their four oil and gas exploration permit areas which lie north of Wood Buffalo Park and southeast of Pine Point in Northwest Territories. Their locations are shown on the accompanying map, Fig.-1. Iskut Little Buffalo K-22 was the deepest test hole, reaching granite at 712 feet and ending at 736 feet depth. Structure tests 1 to 4 ranged in depth from 214 to 299 feet. This report deals with the stratigraphy and structure revealed by the test holes.

Closest previously drilled wells are the Cominco Pine Point Test G-1, 35 miles to the northwest and Cominco Sulphur Point Test G-4, 45 miles northwest. The published log of Test Hole G-1 (Douglas, 1959, p.40, and Belyea and Norris, 1962, Fig 3) is reproduced herewith for comparison with these logs. Some newer correlations are added by the writer, shown at the suggestion of Dr. Belyea.

STRATIGRAPHY

Precambrian System

Little Buffalo K-22 penetrated 24 feet of granite. The feldspar of the granite has been practically allweathered to dark reddish-grey, red, and white kaolin, leaving the quartz and



LAND MAP
PINE POINT AREA, N.W.T.

SCALE: 1" = 16 MILES

ferromagnesian minerals "floating" in the kaolin. It is inferred from this deep chemical weathering that the Precambrian erosional surface is relatively low in this area, not having been exposed to active break-up and particle transportation shortly previous to sedimentation.

Devonian System

All strata from the top of granite up to the base of the glacial drift are of Devonian age. Formerly it was thought that the succession of thin units of basal sandstone, shale, dolomite-marl, dolomite, and anhydrite might be of Middle Ordovician or earlier age (Belyea and Norris, 1962, p.3), but Dr. Belyea now considers that these are the equivalent, at the edge of the basin, of the thick succession of evaporites and accompanying argillaceous beds in the Lower Elk Point Basin as described by Sherwin (1962). Her correlations are shown here.

Old Fort Island Formation

Above the granite is the Old Fort Island sandstone, 25 feet thick. The lower 16 feet consist of friable, medium grained, white to yellow quartz sand. The grains are well rounded and sorted and with very little cementing silica, the porosity is high, being on the order of 25%. The upper 9 feet consist of thin-bedded, light green, tan and mottled, very fine to medium grained sandstone interbedded with green siltstone and shale. The sandstone consists of medium sorted, well

rounded, very fine to medium quartz with more or less interstitial silt and clay, cemented with silica dolomite, and calcite. These strata have no porosity. No hydrocarbons were detected.

It would appear that Cominco G-1 penetrated the upper greenish cemented portion of the Old Fort Island sandstone and not Precambrian quartzite as was previously recorded (Douglas, 1959).

Lotsberg Formation

The Lotsberg Formation consists mostly of brown and maroon dolomite marl with salt casts that suggest lateral equivalence to the thick Lotsberg Salt of the Lower Elk Point Basin to the south. In addition, there are beds of white, pink, light grey and light brown anhydrite and light brown, microcrystalline "primary" dolomite that are seen to persist from K-22 to Cominco G-1. The basal beds are sandy. The thickness of the Lotsberg in K-22 is 79 feet.

Ernestina Lake Formation

The Ernestina Lake Formation is principally a light brown dolomite but a white, grey, cream, and brown anhydrite is included in the upper part. The dolomite was evidently originally a pelletal limestone with brachiopods, corals, and other fossil fragments. Now it is chalky and highly porous but the permeability is low. Fossils appear as molds. In the Ernestina Lake in Alberta Welleria and Welleriopsis ostracods identify these beds as of early Devonian age. Ostracods were not noted in the K-22 core.

No indications of hydrocarbons were noted. The thickness of the Member is 43 feet.

Cold Lake Formation

The Cold Lake Formation is a brownish-red, dolomitic and anhydritic shale. Some shale shows brecciation, which is interpreted as having been caused by solution of formerly interbedded salt. The Cold Lake is a salt deposit in the Lower Elk Point Basin. Its thickness here is 39 feet.

Ashern Formation

The Ashern Formation consists of 20 feet of red shale with interbeds and nodules of red, argillaceous anhydrite.

Chinchaga Formation

The Chinchaga Formation consists almost entirely of brown, cream, white, and grey, microcrystalline anhydrite. There are scattered brown, shaly zones and, like all anhydrites, of Western Canada, some small content of disseminated dolomite. Interlaminated cream, microcrystalline dolomite occurs at the top of the formation and argillaceous, grey dolomite at the bottom. A few beds of anhydrite are pelletoidal and a few zones show brecciation and contorted laminae. The Chinchaga is 267 feet thick in K-22.

Pine Point Formation

Belyea and Norris (1962, p.6) divide the Pine Point Formation south of Great Slave Lake into five members which grade or inter-tongue into one another, as follows:

5. Buffalo River Shale Member
4. Brown Limestone Member
3. Bituminous Shale and Limestone Member
2. Fine-grained Dolomite Member
1. Limestone Member

In the log of the Cominco G-1 well the Limestone Member and Fine-grained Dolomite Member, only, are present, whereas in the log of Cominco G-4, to the west, the Fine-grained Dolomite Member extends downward to exclude the Limestone Member, and the Bituminous Shale and Limestone Member and Buffalo River Shale Member come into the section at the expense of the upper part of the Fine-grained Dolomite Member. Thus, facies changes of the Pine Point Formation within short distances are illustrated. All the test holes of Iskut Silver Mines drilled the Pine Point Formation, and they are located in such a limited area that no great facies variations are revealed.

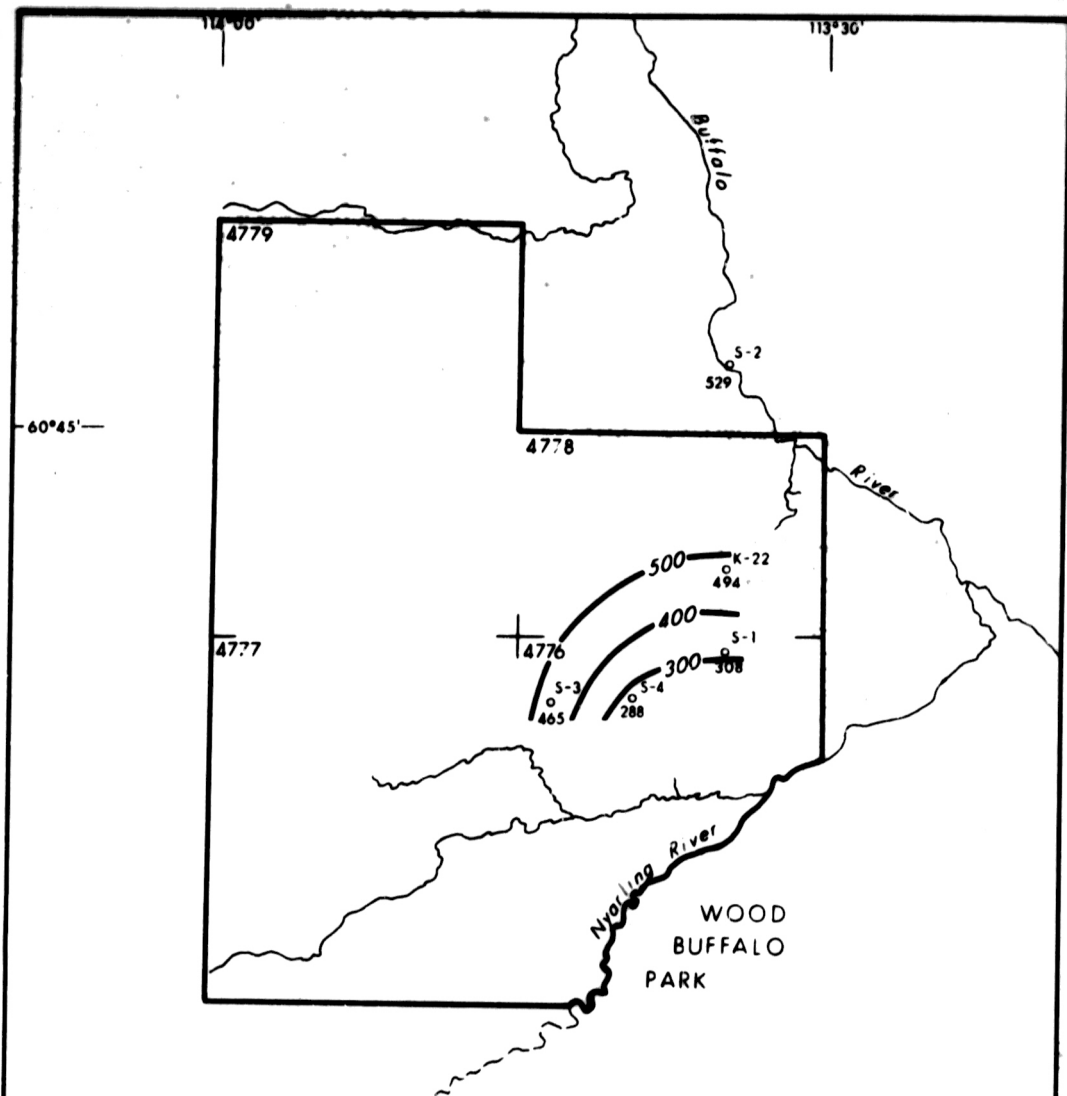
The Lonely Bay Member was penetrated at the base of the Pine Point by Test Holes 2, 3, and K-22. It consists of 11 to 19 feet of cream to brown dolomite with some interbedded light brown limestone. The dolomite in the upper few feet is light brown,

microcrystalline, and argillaceous, similar to the overlying limestone. Below this the dolomite is darker, of higher purity, micro- to finely crystalline, and shows 2 to 10% (estimated) intercrystalline and vug porosity. The vugs appear to have had their origin, in part at least, as fossil fragments. Interbedded limestone in K-22 is more or less dolomitic, fossiliferous, and chalky, whereas in Test Hole 2 it is obviously of pelletoidal character and has been recrystallized, with intercrystalline and vug porosity estimated at 15%. There is no limestone in Test Hole 3. At the base there are 2 to 3 feet of chalky, light brown dolomite having high porosity and low permeability. The Lonely Bay Member is being observed closely elsewhere in the Northwest Territories in the hope that it can be found thicker, more porous and productive. A slight oil show was noted at 280 feet in Test Hole 3.

The Limestone Member in the lower Pine Point varies in thickness in the Iskut wells between 121 and 135 feet. It is light to medium brown, microgranular, argillaceous, and commonly contains up to 30% of fossil debris, mostly crinoids and brachiopods but also gastropods, corals, and a trace of ostracods. Spores and other dark brown plant fragments are common, the spores averaging about 0.12 mm. in diameter. Tissue-thin brown, argillaceous streaks occur in aggregates that show up as wedges or swirls across the core, in places surrounding nodules of limestone. A few beds at the top of the Limestone Member are dolomitized.

An "E-Shale Marker", recorded in the two Cominco test holes, was encountered in all of the Iskut tests, occurring immediately above the Limestone Member. It ranges in thickness from 18 feet in No. 1 to 30 feet in No. 3. It consists mostly of grey, calcareous shale but has some buff to brown, thin dolomite beds in the upper part. Scattered brachiopods, crinoid ossicles, and fossil fragments occur in the dolomite and upper shale beds but are rare in the lower shale.

The Fine-grained Dolomite Member occupies all the portion of the Pine Point above the E-Shale Marker in the Iskut test holes. It consists of light brown, microcrystalline to very fine, and some fine, dolomite of fairly high purity, though there are some slightly argillaceous zones. Amphipora are common, and there are some Stachiodes, rare massive Stromatopora, and scattered brachiopods, gastropods, and crinoid ossicles. Vug, pin-point, intercrystalline, and some chalky porosities range in estimates up to 20%. Porosities are variable in a single section and from location to location, as may be seen by comparing the logs of Test Holes 1 and 4. No oil shows were noted. Because of structure and the irregular surface of the bedrock, thicknesses vary from 0 in Test Hole 3 to 202 feet in Test Hole 4. It is noted that the Fine-grained dolomite facies in Cominco G-4 extends down to include about 75 feet of strata below the E-Shale Marker, thus showing that dolomitization of the Pine Point is irregular elsewhere.



GEOLOGICAL STRUCTURE OF
BASE OF E-SHALE MARKER
ISKUT SILVER MINES LTD.

PERMITS 4776, 4777, 4778, 4779

NORTHWEST TERRITORIES

ELEVATIONS ABOVE SEA LEVEL

CONTOUR INTERVAL: 100'
SCALE: 1" = 4 MILES (Approx.)

W.B. BRADY CONSULTING LTD.

APRIL, 1969

Structure

A geologic structure map is shown as Figure 2. Contours are based on elevations above sea level of the base of the E-Shale Marker, assuming that the ground surface in all test holes is 600 feet above sea level. Local differences in ground surface elevation probably would not greatly affect the pattern of the structure shown. The map shows a southward dip of about 65 feet per mile from K-22 to S-1, but north of K-22 the dip decreases to only about 5 feet per mile. In fact, an anticlinal structure could reasonably be drawn in an east-west direction north of K-22. Between S-3 and S-4 the structure has veered around to an eastward dip of about 100 feet per mile.

L. E. Workman
L. E. Workman, P. Geol.

April 24, 1969

References

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- Douglas, R. J. W., 1959, "Great Slave and Trout River Map-Areas, Northwest Territories", Geol. Sur. Canada, Paper 58-11.
- Sherwin, D. F., (1962), "Lower Elk Point Section in East-Central Alberta", Jour. Alberta Soc. Petrol. Geol., Vol. 10, No. 4, pp. 185-191.

Iskut Little Buffalo #K-22
61° 41' 45" North, 113° 34' 55" West
Northwest Territories

	FW	Thk.	41.0
<u>DEVONIAN SYSTEM</u>			
Pine Point Formation			
Dolomite Member			
1. Dol., tan, v.f., com. dk. brn. organic fl., vugs com., scat. Crin., vugs pt. filled wi. wh. cal., a high-spired Gast., slgt. slty., arg., tr. v.f. sd., por. 10%, (C-1, Sd.-tr., Cl-1, Slt.-Tr., D-8), Styl.	?	6.0	47.0
Same, por. 4%, Cl-Tr., C-Tr., Styl., D-C.	?	1.5	48.5
2. Same, in more vugs and less cal. cement, (C-Tr.), por. 15%, Strom. (?) @ 49.0', (Cl-1, Slt.-Tr., D-9), Styl.	?	7.5	56.0
3. Same, por. with larger and more numerous vugs having very little cal. 7%, few Styl.	?	7.0	63.0
4. Dol., gy., micxl., arg., wavy v. arg. Str., few small vugs, diam. pyr., Cl-2, P., Por. 2%, D-8, few Crin.-T., brn. organic fl.	?	6.5	70.5
5. Dol., tan, micxl., rare vugs, few cal. Sp., por. 1%, Cal.-Tr., tr. crin. ossicle, arg. l, D-9.	?	pyr. p. 6.5	76.0
Dol., tan, v.f., arg., scat. dk. brn. organic fl., Cl-3.	?	1.0	77.0
6. Dol., gy., v. arg., v.f., Cl-4, few Crin.-Tr.	?	0.6	77.6
Dol. marl, gy., cht. size, few Crin. & Brac.	? 1	1.9	79.5
Dol. marl, gy., num. Crin. gr.-2, brn. org. fl.	? 2	0.7	80.2
Dol., brn., micxl. to fn., scat. Crin.-Tr., tr. sp. wh. cal., arg., Cl-3, D-7, dk. brn. org. fl.	? 0	2.8	83.0
E-Shale Marker			
Sh., gy., calc.; calc. marl., gy., dk. brn. organic fl., scat. Crin.-Tr.	0	0.8	83.8
Marlstone, gy., boudinage, scat. Crin.-Tr.	0	0.7	84.5

7. Same, trace brac., dism. pyr.	0	2.0	86.5
Sh., calc., gy., tr. Brac. frag.	0	6.0	92.5
8. Same.	0	3.0	95.5
Sh., v. calc. to marl., gy., scat. thin brach. and crin. frag.	1	3.2	98.7
Marlstone, gy., crin. frag. boudinage.	1	0.3	99.0
9. Same, few brac. frag., dk. gy. splotchy areas @ 104'.	1	7.0	106.0
Limestone Member			
10. Ls., lt. brn., micxl., Crin. & other fos. frag. com., dk. brn. organic fl., Bioclastic 3, arg.-2, tr. coral, scat. brac.	3	7.0	113.0
Ls., lt. brn., mic.-gran., common crin. and brac. frag., nodular bdg. w/ arg. lenses between nod., dk. brn. org. flk., arg. 2, tr. vug @ 114.6'.	3	4.0	117.0
11. Dol., brn., micxl. to f., wh. crin., brac. and other fos. frag. (3), tr. coral at 115', por. 5% vug, D-C, arg.-1.	?	2.5	119.5
12. Same ls., tr. Cor., 2% vug por. @ 125.5-126.5'.	3	7.0	126.5
13. Ls., lt. brn., mic.-gran., num. Crin. (3), arg. (2), some lenticular more arg. zones, brac., dk. brn. org. flk., tr. corals.	3	7.0	133.5
14. Same.	3	7.0	140.5
15. Same.	3	7.5	148.0
16. Same.	3	7.0	155.0
17. Same but less arg. with fewer more arg. zones, Coral @ 158.0'.	3	6.8	161.8
18. Same, gast. @ 165.0'.	3	7.0	168.8
19. Same, more arg. zones com.	3	6.2	175.0
20. Same.	3	7.0	182.0
21. Same.	3	8.0	190.0
22. Same.	3	4.0	194.0

22. (Continued)

22.	22.	2.0	196.0
23.	23.	7.0	203.0
24.	24.	2.0	205.0
25.	25.	2.7	212.7
26.	26.	7.5	225.5
27.	27.	0.3	225.8
Lonely Bay Member			
		1.5	227.3
		4.2	231.5
		1.5	233.0
28.	28.	1.2	234.2
		1.5	235.7
		2.3	240.0
29.	29.	0.2	240.2

29. Continued.

Chinchaga Formation

Anhy.

Dol., bf., crm., micxl., intlam. and cut vertically by anhy., wh., prim.	A-3	0	5.1	245.3
Anhy., crm., bf., intlam. in dol., bf., crm., both lent., some cut by wh. anhy. as above.	50%	0	2.2	247.5
30. Dol., crm., bf., micxl., intlam. and vein anhy. wh., micxl.	25%	0	0.7	248.2
Intlam., cloudy, and intermixed anhy. and dol., micxl., lt. gy., lt. brn., crm., with vertical to horizontal wh. anhy. vn.	50%	0	4.3	252.5
Same, intbd. sh., gy., smo.	50%	0	0.1	252.6
Intlam. cloudy, and lent. dol., and anhy., bf. to brn., micxl.	30%	0	2.4	255.0
31. Anhy., brn., lenses and clouds of lighter brn. to crm., micxl., slgt. dolc.	95%	0	4.0	259.0
Anhy., banded, brn., wi. lenticular and band crm., micxl., bands and lenses 0.01 to 0.5 in thickness, tr. vert. frac.	95%	0	3.0	262.0
32. Same.	95%	0	7.0	269.0
33. Same, vert. vein shows, wh. centre with brn. surrounding anhy. extending laterally to replace or transform crm. bands and lenses to brn. banding to 1 inch in thickness.	95%	0	7.0	276.0
34. Same.	95%	0	8.5	284.5
35. Same, some gn-gy. arg. zones.	95%	0	7.5	292.0
36. Same, no arg. zones, wh. to brn. thin vert. anhy. vn.	95%	0	6.0	298.0
37. Same.	95%	0	7.0	305.0
38. Same.	95%	0	6.5	311.5
Dol., gy., arg., pel., anhy. lends.	20%	0	1.0	312.5

39.	Dol., bf., micxl., num. stringers of anhy., wh. to lt. gy., micxl.	40%	0	0.4	312.9
	Anhy., brn., bf. to crm., banded 0.01 to 0.1, micxl.	95%	0	7.1	320.0
40.	Same.	95%	0	2.5	322.5
	Same, some gy. and gy.-brn., arg. zones.	80%	0	5.0	327.5
41.	Anhy., brn., micxl., cloudy effect, slgt. dolc.	95%	0	0.6	328.1
	Anhy., banded brn. & wh. to gy., bands 0.1 to 0.01 ft., micxl., slgt. dolc.	95%	0	5.7	333.8
	Dol., lt. brn., micxl., pel., -0.1 ft.; sh., gy., dolc., 0.1 ft.; dol., brn., micxl., int lens. anhy., brn. - 0.2 ft.	20%	2	0.4	334.2
	Anhy., brn., lt. gy., banded.	95%	0	0.8	335.0
42	Anhy., brn., lt. gy., crm. banded, micxl., slgt. dolc., vert. wh. vn. with brn. border of altered brn. to crm. anhy., slgt. dolc.	95%	0	7.0	342.0
43.	Same.	95%	0	1.4	43.4
	Anhy., gy., dull, dolc., arg.	70%	0	0.3	43.7
	Anhy., brn., crm., banded.	95%	0	1.8	45.5
	Anhy., olive-gy., cloudy, more or less arg.	80%	0	0.8	46.3
	Anhy., bf., lt. & m. gy., wh., banded to gradational.	95%	0	2.7	56.0
44.	Anhy., brn., olive-gy., lt. gy., banded 0.01 to 0.02, 0.1 sh. @ 359.8', few wh. vn. micxl.	95%	0	7.0	56.0
45.	Same, sineresis cracks run from bed to bed, filled with brn. translucent anhy.	95%	0	6.0	362.0
	Anhy., gy., shy., pel., arg., lt. gy. pel. and nod.	70%	0	1.0	363.0
46.	Anhy., gy., arg., micxl.	60%	0	0.3	363.3
	Anhy., gy., some brn., micxl., lam. to lent., some cracks as above.	95%	0	6.3	69.6

46.	Continued.				
	Anhy., lt. gy. to gy., dns., abnt. cracks filled brn. translucent anhy., 0.01 sh. in middle.	100%	0	0.9	70.5
47.	Anhy., gy., lent., micxl.	95%	0	1.1	71.6
	Sh., gy., dolc.	--	0	0.2	71.8
	Anhy., gy., micxl., more or less argil. to shy., lent. to nod.	80%	0	2.3	74.1
	Anhy., lt. to m. brn., dns., micxl., sineresis cracks wi. anhy. com., v. mot.	100%	0	3.9	378.0
	Same, v. mot. to banded, normal fault 80° @ 379.5' having at least 4" drop, probably much more.	100%		2.8	80.8
	Sh., gn.-gy., dolc., anhy. nod. grdg. down to anhy., arg.	50%		1.0	81.8
	Anhy., gn.-gy., lt. gy., brn., micxl., banded to nodular.	95%		4.3	85.5
49.	Same, basal contact sharp at 45°, dip 5°.	95%		5.1	90.6
	Anhy., lt. to m. brn., micxl., contorted lam. from 45° to 90°, tr. gy. sh. at peak of cut section, trace of broken anhy. below contact lower down.	95%		2.4	93.0
50.	Anhy., lt. to m. gy., micxl., upper 0.6 banded 45°, lower 0.3 banded 15°.			0.6	93.6
	Anhy., gy., lt. & m. brn., micxl., less distinctly banded than above 390.6', num. wh. anhy. veins, broad banding 2 to 6".	95%		4.4	98.0
	Anhy., gn.-gy., mot., arg. and shy., granl. appear., some lam.	75%		1.4	399.4
	Sh., gy., thin lenses of anhy.	20%		0.6	400.0
51.	Same, wh. anhy. fill in vert. frac. and large irregular areas.	30%		1.5	1.5
	Anhy., bf., micxl., split into leaves and lenses wi. secondary anhy., wh., few pel. and intraclasts of anhy. and bf. dol.	95%		0.4	1.9

51. Continued.

Anhy., brn., crm. patches, former banded character altered by vert. frac. filled in wh. anhy. which fades out into brn. even in cream portions.	70%	1.0	7.2
52. Anhy., bf. brn., gy., pt. shy. to grey, irregular banding, thin zones to 0.4 of brec. anhy. and gy. sh., wh. anhy. vn.	70%	3.0	10.2
Anhy., gr. to bf., micxl., wh. lam. in pt., pt. arg.	80%	2.8	13.0
Anhy., m. to lt. brn.-gy. to wh., banded, micxl.	95%	0.5	13.5
53. Same, but dk. brn. to wh. banded, micxl.	95%	0.9	14.4
Anhy., brn.-gy., varied shades. lenticular to banded, distinct disturbed basal 0.3 with 60° dip and basal clay and anhy. gr. and pebs., sharp contact.	95%	1.9	16.3
Anhy., gy.-bf., micxl., arg., num. wh. crs. intraclasts.	95%	0.5	16.8
Anhy., gy.-bf., micxl., cloudy type of deposit, with basal breccia of 0.01 and sharp contact.	93%	0.7	17.5
Anhy., brn., bf., wh. banded.	95%	2.5	20.0
54. Anhy., olive-brn., crm., banded, bands broken by vertical brn. stringers, 0.3 shy. zone @ 424.0'.	90%	8.0	28.0
55. Same, shy. zone at 429-429.8'.	90%	5.5	33.5
Breccia of argil. olive-gy. anhy. w. gy. sh. cover at angle of 75° at top and 45° at bottom.	70%	0.5	34.0
Anhy., cloudy gy., arg., micxl. with num. relict translucent grains some of which are oriented vertically, a vertical patch on side of core with fractures along sides appears to be portion of breccia above.	80%	0.5	34.5
56. Anhy., gy., argil., some of brecc. above down to 0.2 from top, brec. zones at 45° in mid and bottom, basal contact sharp.	80%	2.7	37.2

56. Continued.

Anhy., olive-gy., gy.-brn., bf., crm., dimly banded to nodular, dip 5°.	95%	4.8	42.0
57. Anhy., lt. to m. brn.-gy., bf., micxl., sharp ang. break at 442.3', dips 5° to 10°.	95%	7.0	49.0
58. Same.	95%	0.5	49.5
Anhy., shy., gy., brec. of similar anhy. and sh. ptgs., basal contact sharp.	60%	0.9	50.4
Anhy., gy., bf., wh., lam. to lenticular, wh. is micxl. to v.f., remainder micxl.	95%	6.1	56.5
59. Same, minor shaly and lenticular contorted zone at 459.5' to 460.5'.	93%	7.5	64.0
60. Anhy., gy., crm., lt. gy., wh., micxl., wh. to v.f., thin shy. zone at 467'.	94%	4.0	68.0
61. Anhy., lt. gy., lt. brn., micxl., abundant secondary stringers, micxl. to v.f., lenticular, with wh. stringers between, contorted with accompanying gy. cl. lenses @ 472-473', 0.1 brec. @ 474.5', shy. & brec. @ 469-469.6'.	85%	5.0	73.0
Anhy., as above, not shy.	95%	2.5	75.5
62. Same.	95%	6.5	82.0
63. Same.	95%	0.2	82.2
Anhy., arg., gy., micxl., and sh., gy., dolc.	50%	0.2	82.4
Anhy., lt. gy., lt. brn., num. thin stringers wh. anhy., micxl./v.f.	95%	3.0	86.5
Sh., gy., dolc., grdg. to dol., arg., large areas wh. secondary anhy. containing remnants of dol., gy., v. arg., 50% dol., 40% cl.	A-10	3.0	89.5
Anhy., lt. & m. gy., mot., micxl., num. wh. replacement lenses, containing remnants of argil. dol., gy., micxl., D-2, arg.-1	A-4 30%	0.5	90.0

64.	Dol., marlstone, gy., partly brec. in wh. xtl. anhy. and pulverized dol. between fragments, pt. non-brecc., pt. interlenticular with anhy., gy., and wh., D-4, arg.-3, Anhy.			
64.	Same.		0.2	90.2
	Anhy., gy. & wh. mot., wh. may be secondary horizontal vein deposit.		1.3	91.5
	Dol., marlst., gy., brec., matrix is pulverized dol., arg., wh. to clear anhy. vn. and separating frags.		2.5	94.0
	Anhy., gy., dolc., arg., grdg. to dol. marlst.		0.4	94.4
	Dol., marlstone, gy., lenses and lam. of anhy., gy., arg., grading to anhy., cl. 20%, Dol. 40%.	30%	2.6	97.0
65.	Anhy., gy., tan, abnt. wh. stringers, micxl., arg.	90%	2.3	99.3
	Dolc., marly sh., gy.		1.4	500.7
	Anhy., gy., tan, abnt. wh. stringers, micxl., arg.	80%	2.1	2.8
	Dol., marl, brec., gy., clear anhy. in cracks.		1.7	4.5
66.	Same.		0.4	4.9
	Anhy., gy., cloudy, argil., dolc., marly str., grading to sh., dolc., anhy., at base dip 35°.		1.7	6.6
Ashern Formation				
	Sh., gn.-gy., red str., dol., small nodules and lenses of anhy. Dol.-10	30%	1.0	7.6
	Anhy., wh., lt. gy., wispy, shaly streaks, gn.-gy.	70%	0.4	8.0
	Sh., mot. red and gn.-gy., num. small nodules of anhy., wh., some areas of broken brec. sh., solc.	30%	0.9	8.9
	Anhy., arg., red, gy., arg., shy., some wh. mottling, dip 45°.	60%	2.1	11.0

67.	Anhy., gy., wh. stringers and sp., arg., shy., some pink areas.	60%	4.8	15.8
	Sh., gy.-gn. and some red zones, anhy. and some nodules, dolc.-7, 0.3 anhy., shy. at base.	40%	2.2	18.0
68.	Sh., as above, but 50% red, anhydrite nodules, some wh. anhy. veins.	30%	2.1	20.1
	Anhy., brn.-red and lt. gy.-gn., arg., some wh. str.	70%	3.9	24.0
	Same, lt. gy.-gn. anhy.	70%	2.0	26.0
69.	Same.	70%	0.6	26.6
Cold Lake Formation				
	Sh., or mudstone, anhy., dolc., brn.-red, gn.-gy. areas, decreas. anhy. downward, brecciated in basal. (D-1).	20%	6.4	33.0
70.	Same, breccia. (D-1).	10%	7.0	40.0
71.	Same. (D-1).	10%	7.5	47.5
72.	Same, but alt. brn.-red with scat. gn.-gy. frags. and lt. gy. anhy. frags.	5%	7.5	55.0
73.	Same. (D-1).	Tr.	7.5	62.5
74.	Same, 0.1 gy., soft, powdery sh. @ base. (D-1).	Tr.	2.6	65.1
Ernestina Lake Formation				
	Anhy., brn. to wh. mot. and lam., micxl., 0.5 gn.-gy., argil. zone at 566.0', num. wh. stringers similar to upper part Chinchaga.	95%	4.9	70.0
75.	Same.	95%	2.0	72.0
	Anhy., lt. gy. & wh., the wh. being separated into abnt. small (crs.) nodules by trans- lucent lt. gy. stringers.	95%	1.5	73.5
	Anhy., crm. to wh., lam., pt. contorted, v.f. granular app. dolc. (D-1).	90%	4.0	77.5

76.	Same. (D-1).	90%	2.2	79.7
	Anhy., lt. brn., micxl. to v.f., dns., slight. dolc.	95%	2.0	81.7
	Dol., lt. brn., micxl., earthy, por. 20%, lam., pel. at least in part, arg. (D-9).	--	3.3	85.0
77.	Same, small brac., tr. coral, poor core recovery, arg. (D-9).	--	19.0	604.0
78.	Dol., lt. brn. to gy., micxl., firm, molds of fos. frag., wuggy, por. 12%; anhy., gy., v.f., sac.; dol., bf., gy. spec., micxl., vug, poor core recovery.	M-4	3.0	607.0
	Dol., brn., micxl. to f., poor core recovery.		1.1	08.1
Lotsberg Formation				
	Anhy., lt. brn., v.f. xtl., sac., translucent, wh. on core surf., containing remnants dol., brn., crpxl., arg.	M-7	2.7	610.8
	Anhy., lt. brn., sac., wh. on core surf., v.f., tr. lt. brn. dol., lam. remnants.	M-C	3.2	614.0
	Same, lt. brn. dol., lam. remnants in lower 1.5'.	M-9	2.5	616.5
	Sh., gy. to gn.-gy., dolc., containing clear gyp xtl. inclusions, pt. v.f. sdy. to silty., lumpy frag., scat. wh. anhy., m. to c. gr.		2.5	19.0
80.	Sh., gn.-gy., dolc. (1), m. to c. lenticular texture, scat. wh. anhy. m. to crs. gr., mot. red, uneven basal contact.		0.1	19.1
	Dol., marl., yl.-brn., num. wh. salty gyp veins cutting at 15° to 45°.	A-1	5.9	25.0
81.	Same.			
82.	Same.			
83.	Same.			
84.	Same.			
85.	Same.		25.0	50.0

86.	Same.		3.0
	Anhy., wh. to pk., micxl., cloudy, salt molds 20%, pk. argil. inclusions (1) 15%, poor recovery (1,3).	65%	2.0
87.	Anhy., lt. gy., wh. on surf. of core, little bf. mot., micxl., dns.	100%	4.1
	Dol., tan, micxl., anhy. band, primary (90%), few d. gy., arg. ptg.	10%	0.9
88.	Same, no anhy. 100%, dk. gy. ptg. increase downward.		3.7
	Dol., marl., maroon with gn.-gy. spots, occas. pk. to wh. anhy. lens.	5%	1.3
89.	Same, anhy. bands to 0.4'.	20%	5.0
90.	Same.	20%	5.0
91.	Same, horiz. veins, salty, wh. gypsum cutting, tr. anhy. bands, 2% gyp.	Tr.	5.0
92.	Same, salt vn. in middle of 0.01 and 0.02 gyp. vn., 4% gyp. vn.	--	5.0
93.	Same, silty, grdg. to sltst. @ base.		2.5
Old Fort Island Formation			
	Sltst., gy.-gn. and red mot., arg., dolc., sdy., salty gyp veins 2%, sd. 1, dol. 2, arg. 2, slt. 5.		2.5
94.	Same, dol. 2, arg. 1, slt. 5, sd. 2.		0.4
	Ss., gy.-gn., tan, v.f./m., well rdd. qtz., m. sort., stly. dolc., in more or less gn., arg. 0.5 beds, crs. to sh. at basal 0.01 with lenticular inclusions of underlying dolc. incl., sd. 6, slt. 1, dol. 1, arg. 2.		3.9
	Sh., gn., marly (dol.), with lt. gy. to pk. marl (dol.) lenses, dol. 3, cl. 7.		0.7
95.	Same.		0.2

95. Continued.

Sltst., gn., sdy., dol., arg., dol. 2, slt. 5, sd. 2, cl. 1, grdg. down to sandstone, v. silty and arg., gn.	0.4	95.6
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Ss., lt. gn., arg. dol., f./m., m. sort., well rdd., sd. 6, dol. 1, cl. 2, slt. 1, qtz.	0.2	95.8
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Ss., calc., f./m., well rdd., lt. gn., yl., red spots, m. sorted, non-porous, FW-8, C-1, qtz.	0.5	96.3
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Ss., yl., m., well rdd., well sort., fri., por. 30%, qtz., poor recovery, FW-C.	11.7	708.0
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96. Same.	1.6	09.6
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Same, but slgt. cem. in silica 25%, 2-cm. rdd. qtz. peb. in bot. 0.1'.	3.4	712.0
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Precambrian System

Kaolin, wh., with abundant residual quartz from wea. of granite,	0.5	712.5
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Same, mot. with red clay.	0.5	713.0
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97. Same.	2.3	715.3
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Kaolin as above, some pk. feldspar, and abundant dk. gy. cl. and ferromagnesian minerals, total effect dk. reddish-gy., wh. spec.	2.7	718.0
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98. Same, but less ferromag. minerals, total effect red and wh. spec., sl. lt. crm. and red 6, qtz. 3, dk. cl. and ferro. 1.	5.0	724.0
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99. Same, poor recovery.	12.0	736.0
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L. E. Workman - January 10, 1969

Iskut Silver Structure Test #S-1

	<u>FW</u>	<u>Thk.</u>	<u>Depth</u>
			85.0
1. Glacial boulder.		1.3	86.3
<u>DEVONIAN SYSTEM</u>			
Pine Point Formation			
Fine-grained Dolomite Member			
Dol., lt. brn., v.f./micxl., arg. (2), brn., thin arg. ptg., intxl. and earthy por. 10%.		1.2	87.5
Dol., tan, v.f./micxl., intxl., earthy, pp. por. 15%, permeability low.		2.5	90.0
2. Same.		1.0	91.0
Dol., tan, v.f./micxl., vug, intxl. & earthy por. 15%, brn. org. fl., few brn. wavy arg. zones (tr.).		4.0	95.0
3. Same.		4.0	99.0
Dol., tan, micxl./v.f., chk., earthy por. 10%, perm. low.		1.0	100.0
4. Dol., tan, micxl./v.f., num. small vugs, pp. intxl., earthy por. 20%.		5.0	105.0
5. Same.		0.3	105.3
Dol., tan, micxl./v.f., num. vugs, earthy and intxl. por. 22%, very irreg. bedding, contacts @ 5 to 30°, tr. arg. str.		4.7	110.0
6. Same, por. 25%, no arg. str.		6.0	116.0
7. Dol., tan, micxl., earthy & vug por., few uneven dk. brn. bitum. cl. ptgs., por. 12%, perm. low.		5.0	121.0
8. Same, (poor recovery).		5.0	126.0

8. Continued.

Dol., lt. brn., v.f., num. Amph. (2), and tabulate Strom (2), organic, pp. and vug por. 12%, (poor recovery, 1.5').	3.0	129.0
9. Same, (recovery 3.5').	8.0	137.0
Dol., lt. brn., tan, micxl./v.f., scat. small Amph. (1), some arg. banding (1), vug por. 5%.	3.0	140.0
10. Same, (recovery 1.2').	2.5	142.5
Dol., tan, micxl./v.f., num. vug, pp. and areas of intxl. por. 15%, (rec. 3.8').	4.5	147.0
11. Same, (rec. 5'), prob. areas of intxl. por. represent Strom. (?).	7.0	154.0
12. Same, some paper-thin brn., arg. ptgs. (rec. 5'), (arg.-1).	6.2	160.0
13. Same, but shy. ptg. rare.	5.0	165.0
14. Same, scat. small Amph. (1), (rec. 4').	8.0	173.0
Dol., tan, micxl./v.f., somewhat less chalky than above, pp. por. 5%, scat. Amph., small (1).	1.0	174.0
15. Same, but num. vugs formed from Strom. (2), to 3/4-inch diam., vug & pp. por. 10%, Amph. (1), rec. 4'), apparent dip 30 - 45°.	7.0	181.0
Dol., lt. brn., micxl./v.f., dns., few sm. Amph. (1), formerly v.f. cal.-aren., scat. dk. gy. sp. former grains, brn. organic fl., pp. por. 1%.	1.0	182.0
16. Dol., lt. brn., micxl./v.f., pt. chky., scat. vug up to 1 1/4" in cal. partial fill, (poor recovery - 4'), vug & pp. por. 5%.	11.0	193.0
17. Same, (rec. 5'), vug, intxl. and pp. por. 10%, vugs and intxl. areas prob. Strom.	7.0	200.0
18. Same, (rec. 5'), some v. uneven brn. cl. ptg., por. 10%.	6.0	206.0
19. Same.	1.0	207.0
Dol., lt. brn., micxl., brn. org. fl., round areas to 1", avg. 1/2" of calc. (C-1), prob. replac. Strom., vug & pp. por. 7%, not chky.	4.3	211.7

19. Continued.

Dol., lt. brn., micxl., few cal. sp., pp. por. 2%, not chky., v. irreg. ptg. @ 45°.	1.3	213.0
20. Same.	1.0	214.0
Dol., lt. brn., v.f., areas of intxl. por., Strom. (1), Brac. (2), Amph. (1), vug and intxl. por. 10%, scat. cal. sp. (0.4).	5.0	219.0
21. Same.	1.0	220.0
Dol., lt. brn., micxl./v.f., some sm. Amph. (1), (rec. 2'), (1% por.).	3.0	223.0
Dol., lt. brn., pt. gy. tint, micxl./v.f., scat. vugs (3% por.), (rec. 2').	4.0	227.0
22. Dol., lt. brn., v.f., a few lrg. (1") vugs w/ cal. part cmt., otherwise dns., vug por. 2%, (rec. 3').	7.0	234.0
Dol., lt. brn., v.f., num. vugs with cal. xl. in pt. (C-1), por. 10%, (rec. 2').	2.0	236.0
23. Same, core much broken and worm, vug por. 20%.	8.0	244.0
Same, but core intact, vug por. 20%, some gy. mot.	2.0	246.0
24. Same, por. 15%, (rec. 3').	6.6	252.6
Dol., bf.-gy., micxl., arg. (1), few small vug, por. 2%, (rec. 1'), tr. slt.	1.4	254.0
25. Dol., gy., micxl./v.f., rare vug, por. 0%, arg. (3), (rec. 5'), slgt. slty.	12.0	266.0
26. Same, (rec. 3').	5.0	271.0
Same, but v. arg. (4), (rec. 1').	1.0	272.0
E-Shale Marker		
Sh., gy., dolc. (3), weak, (rec. 1').	3.0	275.0
27. Dol., brn., v.f./m., dns., large (1½") cal.-filled vug at top, (rec. 2'), (D-9), pyrc., arg. (1).	2.0	277.0
Sh., gy., calc., fairly firm, (rec. 3').	3.0	280.0
28. Sh., gy., calc., fairly firm, (rec. 5').	5.0	285.0

- | | | |
|--|-----|-------|
| 29. Same, some boudinage mat., dip 30 - 45°, but variable (rec. 5'), appar. dip 45 - 60°. | 5.0 | 290.0 |
| 30. Same, (rec. 2.4') but v. calc. (2) w/ num. small fos. frag. including crin. (1), biocl. (1). | 2.4 | 292.4 |

Limestone Member

- | | | |
|--|-----|-------|
| L.s., lt./m. brn., micxl., arg. (3), fos. frag. (1), nodular, Crin. (1), Brac., irregular and various steep dips to 75°, large (to 1/2") intraclasts, brn., paper-thin, shy. stringers, (rec. 2.7'). | 6.6 | 299.0 |
|--|-----|-------|

L. E. Workman - April 9, 1969

Iskut Silver Structure Test #2

FW 67.0

DEVONIAN SYSTEM

Pine Point Formation E-Shale Marker

1. Sh., gy., fairly firm, calc., Crin., Scolecodonts, Brac., calc., wi. nodules of mrlst., gy., (rec. 4').	2	5.0	71.0
Limestone Member			
Ls., brn., micgr., Crin. (1), dk. brn. rsns. org. fl., v. arg. (4), spores.	1	1.0	72.0
2. Same, Crin. (1), pt. nod. due to surrounding str., more argil. mat. (3).	1	5.0	77.0
3. Same, Crin. (1), Gast., Brac. (2), few small vugs, por. 1%.	2	5.0	82.0
4. Same, but increasingly fos., Crin. (1), Brac. (2), frags. and gr. (1), arg. (2).	4	2.3	84.3
Dol., brn., micxl./f., dk. brn. organic fl., Crin. and fos. frag., Gast., bioc. (2), arg. (2), por. 2%.	? 2	2.7	87.0
5. Same, scat. vug up to $\frac{1}{2}$ " diam., por. 2%.	? 2	2.7	89.7
Ls., brn. mot., micxl./v.f., dolc. in top (tr.), Crin. (1), Brac. (1), v.f. fos. gr. (1), arg. (2) content variable with dk. brn. str. surrounding some nodular ls., (5), scat. vug, por. 2%, brn. org. fl.	3	2.3	92.0
6. Same, Crin. (1), Brac. (1), tr. Gast., fos. gr. (1), vert. frac. wi. cal. cem. (Tr.).	3	5.0	97.0
7. Same, tr. dol., tr. Gast., no vert. frac., tr. vug wi. cal. fill.	3	5.0	102.0
8. Same, Crin. (2), Brac. (tr.), fos. gr. (1).	3	4.0	106.0
9. Same.	3	4.0	111.0

10.	Same, scat. to frequent Gast. and brac.,	3	5.0	116.0
11.	Same, spores, gast. rare.	3	5.0	121.0
12.	Same, Sp.	3	6.0	127.0
13.	Same.	3	5.0	132.0
14.	Same.	3	5.0	137.0
15.	Same, increased Brac. in some zones, Gast.	3	5.0	142.0
16.	Same.	3	5.0	147.0
17.	Same.	3	5.0	152.0
18.	Same.	3	6.0	158.0
19.	Same.	3	5.0	163.0
20.	Same, Sp.	3	6.0	169.0
21.	Same, lt./m. brn.	3	4.0	173.0
22.	Is., lt. brn., micxl., some gy., fos. gr., nodular areas in arg. stringers surrounding nodules, arg. (1), fos. gr. (1), ls. Crin. (1).	3	6.0	179.0
23.	Same.	3	3.8	182.8
	Is., lt. brn., micxl. and f. arg. (1), num. f. fos. frag. (3), some in gy. tint, pp. and org. por., Cor. (1), Crin. (1), por. 5%, slty. (1).	5	1.2	184.0
24.	Same.	5	1.0	185.0
	Same, but FW-4, Brac. 1, fos. frag. 3, micxl. basic, arg. (1) content variable, some nodular, ls. surrounded by arg. ls., a few small vugs, pp. 2%	4	4.0	189.0
25.	Same, bulbous Strom. and colonial coral with vug at top (Tr.), brn. arg. ptgs. and zones, fos. frags. (3), dk. brn. org. fl.	3	4.0	193.0
26.	Same, por. 2%.	3	2.6	195.6
	Dol., lt. brn. and gy.-brn. mot., D-9, arg. (1).	?	2.4	198.0

28. Same.	?	0.7	198.7
Dol., gy. & brn. mot., v.f., vug & intxl. por. 5%.	?	2.3	201.0
Ls., lt. brn., micxl., f. pel. originally small vug por. in horizontal planes, intxl. por. 15% por., rexl. (R-C).	? C	3.0	204.0
28. Same, brn., arg. p'tg. (1), (R-9), vert. frac.	?	0.5	204.5
Dol., banded lt. to dk. brn., arg. (3), micxl., calc. (2), few vertical frac. vugs, (D-5), por. 2%.	?	0.5	205.0
Dol., yl., micxl., chky., slgt. arg. (1), good earthy por. (25%?).	?	2.0	207.0
Chinchaga Formation			
Anhy., cream, wh., micxl., dolc. (1), wavy lam. and lent.	0	2.0	209.0
29. Same, crm. to lt. brn. & wh.	0	5.0	214.0

L. E. Workman - April 10, 1969

Iskut Silver Structure Test #S-3

			71.0'
1. Granite boulders.	0.2	71.2	

DEVONIAN SYSTEM

Pine Point Formation

Fine-grained Dolomite Member

Dol., lt. brn.-gy., micxl./v.f., com. vugs w. partial fill of cal. xl. (C-1), broken core, D-7, vug por. 8%, some gy. mot. w. pyr. dsm., slty. (1), arg. (1), brn. organic fl.	?	2.8	74.0
2. Same, traces cal. only, por. 5%, (rec. 5'), D-8.	?	7.0	81.0
3. Same, tr. cal., core much broken, D-8.	?	6.0	87.0
4. Same.	?	0.5	87.5
Dol., brn.-gy., micxl./v.f., arg. (1), gy. sh. ptg., slty. (1), D-8, (not por.), dk. brn. org. fl.	?	4.5	92.0
5. Same, few vn. & sp. cal.	?	5.0	97.0
6. Same.	?	6.0	103.0
7. Same, scat. crin. (F).	?	0.5	103.5
Dol. marl., brn.-gy., dk. gy. pyr. mot. (arg.-5), brn. org. fl., spores, Crin. (Tr.).	?	1.2	104.7

E-Shale Marker

Sh., gy., calc., Crin. (1), fairly firm, (C1-7), Brac. @ base (Tr.).	1	1.0	105.7
Dol., brn., micxl./v.f., com. wh. Crin. (1), dsm. pyr. (Tr.), dk. brn. org. fl., arg. (2).	?	2.3	108.0
8. Same.	?	2.3	110.3
Sh., gy., calc., Crin. @ top (Tr.), dk. brn. org. fl., fairly firm,	0	2.7	113.0
9. Sh., gy., calc., fairly weak, tr. small Ost., dsm. pyr. (Tr.)	0	4.0	117.0

10.	Same, (rec. 5').	0	5.0	124.0
11.	Same.	0	5.0	129.0
12.	Same.	0	1.4	130.4
	Same, but grdg. to nodular marly areas, dk. brn. org. fl. com., few sm. brac.	0	3.6	134.0
13.	Same.	0	0.8	134.8
Limestone Member				
	Dol., gy., mot., micxl./v.f., arg. (1), scat. Crin. (1).	?	0.5	135.3
	Dol., brn., micxl./m., Crin. (1), wh. dol. sp., vn. & brac. repl. (tr.), (rec. 3.6').	?	5.7	141.0
14.	Ls., lt. brn., micgr., arg. (2), Crin. (2), Brac. (1), abnt. Spore, dk. brn. org. fl., dolc. (3), pt. nodular with brn. argil. ls. surrounding nods, (rec. 5').	3	7.0	149.0
15.	Dol., brn. mot., micxl./v.f., dk. brn. org. fl., Sp., vag por. 3%.	?	4.0	153.0
	Ls., lt. brn., micgr., nodules surrounded by brn., arg., dolc. ls. to dol., bracs. (1), Crin. (2), D-3, arg. (1), Spores, dk. brn. org. fl.	3	1.0	154.0
16.	Same, Gast. (1), Brac. (1), Crin. (1), Spore, fos. frags., intel. @ 159.0', no dol., arg. (2), surrounding nods., (rec. 5').	3	8.0	162.0
17.	Ls., lt. brn., micxl., Crin. (2), Brac. (1), other fos. frag., pt. high purity with slight arg. content having Sp. and dk. brn. org. frag., part nodular with surrounding arg. (2), brn. ls. containing many com. and more or less Brac. Spores.	3	6.0	168.0
18.	Same, scat. Gast. 1" diam., (rec. 5').	3	7.0	175.0
19.	Same.	3	5.0	180.0
20.	Same, but no ls. nod., arg. (2), Crin. (1), Brac. (1), brn.	2	5.0	185.0
21.	Same.	2	5.0	190.0

22. Same.	2	5.0	195.0
23. Same, great circle (2" vert., $\frac{1}{2}$ " thk. of crs. Spic. 0.5 mm. thk., composed of wh. cal., many with cross shaped hollow tubes.	2	6.0	201.0
24. Ls., as above, brn., micxl., crin. scat. (1), brac. scat. (1), scat. gy. rdd. intclast., few Gast. (Tr.), arg. (2) in str. and zones, some nodular, dk. brn. org. fl.	2	6.0	207.0
25. Same, (rec. 5').	2	7.0	212.0
26. Same, varying to lt. brn.	2	6.0	218.0
27. Same, lt. brn. Sp.	2	8.0	226.0
28. Same, (rec. 5').	2	11.0	237.0
29. Same, but tan ls. beds and nods with brn. arg. streaks, crin. (1), brac. (1), dk. brn. org. fl., arg. (2), (rec. 5').	2	8.0	245.0
30. Ls., crm., micxl., few arg. str. (1), few ls. nod. in arg. ls., few crin., gast. and brac., (biocl. 1).	1	6.0	251.0
31. Same, very uneven (0.3') surf. with interpenetrating calcarenite as below.	3	0.3	251.3
Cal.-aren., crm., f./m., many rdd. gr. leached to form pores, scat. gy. gr., por. $\frac{4}{8}$, rounded intclast. to 1" diam. (cgl.).	5	0.3	251.6
Ls., crm., micxl., num. lrg. crin. (3), few dk. brn. org. fl., no por.	3	0.5	252.1
Ls., tan, f./m., cal., aren., rdd. gr. and molds, may be rex. to micxl., wh. cal. cem. spots (C-1), 2 prominent corals in top 0.5' (as at 190' in Test Hole #2), also at base, por. $\frac{4}{8}$, (rec. 2'), org. and leached por.	5	3.9	256.0
Ls., tan, micxl., Crin. and other fos. frag. (4), few leached pores (por. $\frac{1}{8}$), some arg. str. (1), scat. gy. grains, some nodular ls., dk. brn. org. fl.	4	1.0	257.0
32. Same, (rec. 5').	3	9.0	268.0

33. Same, tan to lt. brn.	2	2.0	270.0
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Lonely Bay Member

Dol., lt. brn., micxl., arg. (2), calc. (1), swirl bdd., scat. dk. gy. small areas and a few wh. dol. areas.	?	1.0	271.0
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Same, broken core, some thin beds ls. as above (1), (rec. 1.6').		3.0	274.0
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34. Dol., lt. brn., v.f./f., few sm. vugs to m. intxl. por. 2 to 10%.		1.0	275.0
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"No core".		3.0	278.0
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Same, broken core, por. 15%.		0.6	278.6
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Dol., tan, v.f., lam. show orig. to be cal.-aren., dip 10°, intxl. por. 15% in lam., slgt. show in lam.		1.4	280.0
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Dol., lt. brn., micxl., pp./vugs 3%, sp. wh. dol., vug fill, (rec. 0.7').		3.0	283.0
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Dol., crm./bf., micxl. (almost crpxl.), chky., earthy & pp. por. 20% (?), perm. low, dip 15°, (rec. 2'), arg. (1).		6.0	289.0
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Chinchaga Formation

Anhy., wh., dull chky. app., micxl.		1.0	290.0
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L. E. Workman - April 11, 1969

DEVONIAN SYSTEM

Pine Point Formation

Fine-grained Dolomite Member

1.	Dol., tan, micxl., vug, pp. and earthy por. 5%, perma. low, (rec. 2.5).	?	15.0	105.0
	Dol., tan, micxl./v.f., vug & intxl. por. 15%, vugs may be from Amph. (1), some vugs lined wi. xln. cal., (rec. 2.0), C-1, 20% bioclas.	?	2.0	107.0
2.	Same, prob. part of fos. = <u>Stachiodes</u> (1), Amph. (1) tr. tabulate Strom., (rec. 4'), por. vug, intxl. and pp. 10%.	?	10.0	117.0
3.	Dol., tan, v.f./f., no tab Strom, por. high intxl. vug: 20%, (rec. 2'), Cal. tr.	?	3.0	120.0
	Dol., tan, v.f./f. intxl. and vug por. 8%, one lrg. cal. sp. (C-Tr.), (rec. 2').	?	4.0	124.0
4.	Same, (rec. 1').	?	2.0	126.0
	Dol., lt. brn., micxl., arg. (1), former fos. gr., (rec. 0.6').	?	1.0	127.0
	Dol., lt. gy.-tan, v.f./f., intxl. and vug por. 12%, (rec. 2').	?	4.0	131.0
5.	Same, num. dk. brn. uneven paper-thin arg. ptg. (1), por. 15%.	?	2.5	133.5
	Dol., lt. gy.-tan, v.f./f. intxl. & vug por. 11%.	?	2.5	136.0
6.	Same, micxl. @ 137-138' and 140-141', (rec. 5'), por. 5/15%.	?	12.0	148.0
7.	Dol., lt. gy.-tan, v.f./f., vug, pp. por. 6%, (rec. 5'), cal. in vugs (tr.).	?	12.0	160.0
8.	Dol., lt. gy.-tan, micxl., dk. brn. org. fl., vug por. 3%, cal. sp. (C-1), (rec. 2').	?	4.0	164.0
	Dol., lt. brn., micxl., num. repl. of Stachioid (?) by cal. (2), vug por. 3%, (rec. 1.6').	? 2	2.5	166.5

8. Continued.

Dol., lt. bf.-gy., micxl., few pp. por. 1%, (rec. 0.7')	?	2.5	169.0
9. Dol., lt. brn./tan, micxl./v.f., scat. dk. brn. org. fl., relict Stach. and Amph. (1), sm. vug por. 5% in about 1/5 of core distance, (rec. 4.0').	?	6.0	175.0
10. Dol., lt. brn., v.f., scat. dk. brn. org. fl., few Stach. & Amph. (1), pp. por. 2%, (rec. 5.0'), tr. Gast.	?	7.0	182.0
11. Same, pp. & vug por. 1%, (rec. 4.0'), relict fos. rare.	?	6.0	188.0
12. Same, (rec. 4.0').	?	6.5	194.5
Same, num. relict Amph. & Stach. (3), rec. 1.0').	?	1.5	196.0
13. Dol., lt. brn., v.f., num. vug possibly relict Strom. (1), and Cor. (recognized), cal. in vugs, tr. arg. str. in dip 45°, vug & pp. por. 10%, (rec. 5').	?	10.0	206.0
14. Dol., lt. brn., v.f., tr. arg. str. in dip 30°, other appar. dip 45°, few cal. sp. and few fos. (tr.), dk. brn. org. fl.	?	5.0	211.0
15. Dol., lt. brn., v.f./f., scat. pp. & vug 2%, a dk. arg. pt. shows dip 10°, various higher dips suggested, (rec. 4.0'), dk. brn. org. fl.	?	11.0	222.0
16. Dol., lt. brn., v.f., few vugs and pp., much broken core, pp. & vug 2%, tr. cal. (rec. 4'), dk. brn. org. fl.	?	6.0	228.0
Dol., lt. brn., micxl., num. relict Stachiodes (?), (3) with wh. cal. cem. (C-3), few vugs 4%, dk. brn. org. fl. com. (rec. 1.0').	?	2.0	230.0
17. Same, Stach. and Amph. com. (3), (rec. 5'), por. 5%, tr. Gast.	?	5.0	235.0
18. Dol., lt. brn., micxl./v.f., dk. brn. org. fl., relict bioclas. frag. (1), Ca - 0.4, sm. vug por. 3%, (rec. 5').	?	7.0	242.0
19. Same, fos. none, frac. vugs 1%.	?	5.0	247.0
20. Same, (rec. 5').	?	6.0	253.0
21. Dol., lt. brn., v.f., brn. org. fl., num. large (to 1 1/2") vug with part cem. of cal. xl., por. 20%, C-1, some vugs orig. in short frac., but mostly irreg. areas.	?	4.0	257.0

22.	Same, por. 17%, C-1, (rec. 2.6'), tr. crin. @ bottom.	?	3.0	260.0
	Same, but scat. vugs, por. 5%, (rec. 2.0'), few dk. gy. pyrc. areas (P).	?	4.0	264.0
23.	Dol., lt. brn., scat. gy. pyrc. areas, micxl./v.f., vug por. some in frac. lines 2% (P).	?	7.0	271.0
24.	Same, (rec. 0.5').	?	2.0	273.0
	Dol., lt. brn., micxl./v.f., gy., pyrc. areas, num. vugs to 1", por. 12%, tr. cal. (P).	?	2.0	275.0
	Dol., mot. bf./gy., micxl., dsm. micxl. pyr., arg. (1) (P).	? 0	2.0	277.0
25.	Same, but more arg. (2), (rec. 2.5').	? 0	6.0	283.0
	Dol., gy., micxl., arg. (4), (rec. 2.5').	? 0	3.0	287.0
26.	Dol., lt. brn., f., tr. sp. wh. dol. followed by cal., arg. (1).	? 0	2.5	289.5
	Dol., lt. brn.-gy./gy., gy. spot, pyr. arg. (4).	? 0	2.5	292.0

E-Shale Marker

	Sh., calc. (3), gy. mot., fairly fm., Crin. (2).	3	1.5	293.5
	Dol., brn., v.f., Crin. (1), sl. arg. (1).	? 1	0.3	294.0
27.	Same, num. crin. (2), Gast. (tr.), Brac. (tr.).	? 3	1.1	295.1
	Dol., brn.-gy., micxl./v.f., arg. (2), tr. Crin.	? 1	0.9	296.0
	Sh., calc. (3), gy., fairly firm.	0	3.0	299.0
28.	Same.	0	5.0	304.0
29.	Same, dk. brn. organic fl. scat.	0	4.0	308.0
	Ls., gy., micxl., arg., nodular, grdg. to sh., as above, Ls. (5), Sh. (5), Brac., tr. Crin. (1).	1	1.0	309.0
30.	Sh. (6), gy., calc. containing ls. nod., micxl., gy., arg. (3), dolc. (1).		2.5	311.5

Limestone Member

	Dol., brn., micxl., some med. xl., arg. (2), Brac.-Crin. (2), Spore.		2.5	314.0
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31. Same, nod., with arg. zones between nods., vug por. 2%, (rec. 2').	3.0	317.0
Ls., brn., mic.-gr., arg. (3), nod. with swirls of v. arg. brn. ls. around nods. at angles up to 60°, Brac. (1), Crin. (1), dk. brn. org. fl., (rec. 3'). Spores com.	4.0	321.0
32. Dol., brn., micxl./m., Brac. (1), Crin. (1), dk. organic fl., Spores com. (0.12 mm. diam.), arg. (3).	1.0	322.0
Ls., brn., mic.-gr., nod., swirls of arg. ls., Brac. (1), Crin. (1), Spores, (rec. 4'), intclast.	9.0	331.0
33. Same, 2" sponge @ bot., Crin. (2), Brac. (tr.), fos. frag. (1), (rec. 5').	9.0	340.0
34. Same, Crin. (2), Brac. (1), Spore, org. fl., (rec. 5').	7.0	347.0
35. Same, Crin. (1), Brac. few, tr. Cast., org. fl., arg. (3), Spore, (rec. 5').	7.0	354.0

L. E. Workman - April 16, 1969

WELL LOCATION WELL NAME	WELL NAME	Irbut Silver Structure Test #8-4
	LOCATION	4600' South 94 degrees West of Irbut Little Buffalo E-88
	COORDINATES	
	ELEVATION — GROUND	approx 555 ft KELLY BUSHING
	CONTRACTOR	Canadian Longyear Limited
	OPERATOR	Irbut Silver Mines T.D. 554'
	SUPERVISION — GEOLOGIST	R. Workman
	ENGINEER	
	PARTICIPANTS	
	SPUDDED	COMPLETED
CASING — SURFACE		
PRODUCTION		
LOGS RUN		
W.B. Brady Consulting Ltd.		

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
AGE	GROUP / FORMATION / MEMBER	DEPTH OR FOOTAGE	SHOWS	TYPE POROSITY	PERCENTAGE POROSITY	LITHOLOGY	GRAIN OR CRYSTAL SIZE	DIAGENESIS	FRAMEWORK (change from last log)	MATRIX	CEMENT	ROCK BUILDERS	DESCRIPTION	BEDDING	WEATHERING	
DEVONIAN SYSTEM	UPPER ELK POINT SUB GROUP FINE POINT FORMATION 15 MB. E-S. 100' THIN GRAINED BURGESS EBBES	0' 100' 200' 300' 400'											STRUCTURE TEST #4 IRBUT SILVER MINES LTD. L. E. Workman, April 15, 1969			
													Dol., tan, mic., gp. & earthy por., low perm. Dol., tan, mic., v.f. v. cal., fos. frag. Stach., Strom.			
													Dol., tan, v.f./f., pt. arg. Dol., lt. arg. tan, paper-thin arg. pts. Dol., lt. arg. tan/lt. brn., v.f./f.			
													Dol., lt. arg. tan, mic., dol., lt. brn., mm. Stach. (?) dol., lt. br. arg. Dol., lt. brn., v.f., Stach. & Amph. Fos. rare.			
													Same, mm. Stach. & Amph.; dol., lt. brn., v.f., Cor., mm. v. arg. Dol., lt. brn., v.f./f., pt. arg., varying dip to 49°.			
													Dol., lt. brn., mic., mm. relic. Stach. & Amph. Dol., lt. brn., mic., v.f., bioclast. frag. Dol., lt. brn., v.f., mm. arg. v. arg. Dol., lt. brn., scat. dg. pyre. areas. mic. to v.f.			
													Dol., br., lt. brn., gy., mic., f., arg. Sh., gy., calc., fairly firm; dol., brn., mic. to v.f., fos.			
													Sh., gy., calc., fairly firm; same v.l. ls. nod. Intbd. dol., brn., mic., s., spore.; & ls., brn., nod., arg. sp. ls., brn., mic., arg., nod., Brac., Crin., Sp., dk. brn. org. fl.			

WELL LOCATION
WELL NAME

WELL NAME 100 FT LITTLE BUFFALO H-20
LOCATION 60° 41' 45" North 113° 34' 33" West Northwest Territory
COORDINATES _____
ELEVATION — GROUND 322 ft. KELLY RUSHING
CONTRACTOR Canadian Longyear Limited
OPERATOR John Silver Mine T.D. T.M.
SUPERVISION — GEOLOGIST P. Volman
ENGINEER _____
PARTICIPANTS _____
SPUDED January 19, 1968 COMPLETED January 22, 1968
CASING — SURFACE 3 1/8" 6.60' 81'
PRODUCTION _____
LOGS RUN _____

W.B. Brady Consulting Ltd.

AGE		GROUP / FORMATION / MEMBER		DEPTH OR FOOTAGE		SHOWS		TYPE POROSITY		PERCENTAGE POROSITY		LITHOLOGY		GRAIN OR CRYSTAL SIZE		IMAGINIS		MATRIX		CEMENT		ROCK BUILDERS		DESCRIPTION		BEDDING		WEATHERING					
UPPER ELK POINT SUBGROUP		PINE POINT FORMATION		LIMESTONE MEMBER		CHINCHAGA FORMATION		ASHERN		LOTBERG		LOTBERG		LOTBERG		LOTBERG		LOTBERG		LOTBERG		LOTBERG		LOTBERG		LOTBERG		LOTBERG					
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987		988		989		990		991		992		993		994		995		996		997		998		999		1000		1001		1002		1003	
1004		1005		1006		1007		1008		1009		1010		1011		1012		1013		1014		1015		1016		1017		1018		1019		1020	
1021		1022		1023		1024		1025		1026		1027		1028		1029		1030		1031		1032		1033		1034		1035		1036		1037	
1038		1039		1040		1041		1042		1043		1044		1045		1046		1047		1048		1049		1050		1051		1052		1053		1054	
1055		1056		1057		1058		1059		1060		1061		1062		1063		1064		1065		1066		1067		1068		1069		1070		1071	
1072		1073																															

