

014426

REPORT ON
UPPER WHITE CREEK
Ketza River Area, Y.T.

Submitted to British Yukon Exploration Company,
August 16, 1955.

by W.A. Dodgman

REPORT ON
UPPER WHITE CREEK
Ketza River area, Y.T.

1.

INTRODUCTION:

British Yukon Exploration's Kay Group of claims lies on the divide between White Creek, a tributary of the McConnell River, and the Upper West Fork of the Ketza river. The group can be reached (1) by horse trail from Ross Post on the Pelly River and thence up the Ketza, (2) by horse trail along upper Sheep Creek and then along Seagull Creek across the Grayling Lake divide to the McConnell and thence up White Creek, (3) by plane to Grayling Lake and then along the McConnell to White Creek, (4) from Bruce Lake via a good trail to Conwest's camp thence up either the West Fork or the Upper West Fork to the Kay Group, and (5) from a winter landing strip on the Upper McConnell river watershed thence over the divide to the Upper Ketza.

On May 11th, 1955, H. Verslucce, prospector, and I landed on the snow at the winter landing strip near the head of the north branch of McNeill River. The next day the beaver aircraft returned to carry out a supply drop in White Creek. During the next two weeks we moved most of the remainder of our supplies over the divide to the Ketza River. Then we crossed over to White Creek and recovered the sirdrop which was 100% successful.

Because of the late spring, much of the mountains and all of the valley bottoms were still deep in snow. We camped at the head of White Creek prospecting as much of the area as possible. Finally on June 17th we were able to put away our snowshoes. On June 22nd we received another

airdrop and on July 5th a note from Dr. Aho informing us these were supplies at Grayling Lake. We arrived at Grayling Lake on July 6th and the following day Curly Desrosiers arrived with his pack-string.

During the next two weeks Versluis and I accompanied Desrosiers' party and investigated a number of localities Desrosiers thought favourable; these however turned out to be pyrite-pyrrhotite bodies of no economic value. During this trip we covered part of the ridge north of Grayling Lake, *and* much of the area at the head of the forks of upper McConnell River on both the Ketzka and Seagull sides of the valley. We then moved to Desrosiers' camp on Seagull Lake. On the way over the summit a little disseminated galena was found. Further prospecting revealed interesting but uneconomic silver-lead mineralization. Later Desrosiers staked the Tyro Group of claims (40 claims) to cover this ground. (See report on this by Aho).

On the 25th of July Dr. Aho met us at Grayling Lake. From there we proceeded to White Creek where we sampled the best mineralization and staked two groups of claims: the Yak group of 3 claims to cover a mineralized zone between the Kay and the Oxo groups, and the Rain Group of ~~10~~ claims to cover mineralization discovered near Drop Creek.

In all 82 days were spent in the area but during the first month and a half prospecting was hampered by poor weather and deep snow. Two weeks were also spent prospecting with Curly Desrosiers in the McConnell-Seagull area.

STRATIGRAPHY:

WHITE CREEK SECTION

Section at Drop Creek

WEST

300'	Green phyllite Grey phyllite) with some thin beds) of purple phyllite
50'	Quartzite	- including some limestone-ribbon cherts.
50'	Shaly limestone (phyllitic)	- forms a gentle depression below the surrounding beds.
100'	Blue-grey limestone	
50'	Grey shaly limestone	
100-200'	Grey limestone	- weathers red-brown thus forming a very distinct outcrop pattern.
100-150'	Black phyllite	- in one place appears replaced or intruded by a plutonic-looking rock containing fluorite and magnetite.

Section at Drop Creek

EAST

?	Blue-grey limestone	
20-30'	Grey quartzite	
100-200'	Interbedded limestone, black phyllite, and shaly limestone	
100'	Shaly limestone	
100-200'	Black phyllitic slate	
10-20'	Silvery phyllite	
75-150'	Blue-grey limestone *	
?	Shaly limestone and phyllite	

* This blue-grey limestone appears in the section of Upper White Creek.

Section at Upper White Creek

	.NORTH	SOUTH
200-300'	Dolomitic limestone with crinoid (??) fossils.	?
	-- ? -- ? -- ? -- ? --	?
?	Oolitic limestone	?
?	Grey phyllitic shale	Quartzites

100-200'	Black phyllitic slate	
75-150'	Blue-grey limestone - in places highly fossiliferous - very competent bed - forms cliffs around edge of much of Upper White Creek	
?	Shaly limestone containing well preserved Archeocyathus fossils	
5-10'	Silvery phyllite	
20'	Black phyllitic slate - in some areas 15-25' of black shaly limestone occurs about here in the section.	
50'	Blue-grey limestone - appears to be a competent bed	
?	Interbedded grey phyllites - Limy phyllites, some thin limestone beds and some sandstones with limy cement.	

STRUCTURE:

The main structure in the area is a broad gentle anticline which strikes about N 80 W and is apparently continuous from near the head of White Creek to the west side of Seagull Creek, a distance of 18 miles. This structure may be cross-faulted as there is an apparent repetition of strata on the north side of the head of White Creek and on the hillside southwest of Drop Creek. The anticline plunges easterly since younger sediments (quartzites) occur in the axial region in this direction. It may plunge in the other direction also since similar quartzites appear on the ridge between Seagull Creek and McConnell River north of Grayling Lake.

A similar broad anticline was noted some 10 miles north of the White Creek anticline. This anticline appeared to run more nearly east-west than the White Creek anticline. Quartzites and phyllites occur near the axis of this anticline along the upper McConnell and Ketzka rivers. At the Seagull Creek end of the anticline limestones and dolomites are the dominant rock types.

A very thick white limestone formation outcrops about five miles to the south of the White Creek anticline and a similar limestone formation outcrops north of the other anticline. Carly Desrosiers reports the northern belt of limestone continues to the Canal Road to the northwest. The southern belt strikes into the batholith a few miles west of Grayling Lake. These limestone beds may be the same formation.

These structures strike westerly toward the Lapie Lakes where Kindle's map shows Yukon Group rocks. Unless there is a fault or unconformity here, the rocks exposed along the road may be much younger particularly as the anticlines appear to plunge towards the west.

A small tight syncline begins on the Kay Group at the head of White Creek. Dips on the limbs of this fold approach 70 degrees. It was noted only on the ridge at the head of White Creek and further work will be required to establish its relationship to the structure in the rest of the area.

The divide between White Creek and the upper tributaries of the Ketzka has many north-east trending breccia zones, some of which are mineralized with pyrite while others have a little lead and zinc.

MINERALIZATION:

Six zones of mineralization were found in dolomitic limestone along the ridge on the west edge of the Kay Group. All of these are either narrow or low in grade. Two of these zones are replacements of the upper part of the dolomite bed below a capping of black phyllite. The other four are narrow veins containing massive galena. These also appear to be capped by the black phyllite.

On claim Kay No.25, just east of the low pass between White Creek and the Ketzka, a zone of disseminated galena and sphalerite occurs in a silicified portion of

the dolomite. Nearby is a wide but barren quartz vein. On claim Key No.32 a similar zone is mineralized with reddish brown sphalerite, galena, and abundant barite. Neither of these zones is of great size, and both are of low grade -- less than 5% combined galena and sphalerite.

A brecciated zone strikes NE across the Yak Group and possibly across Key No.31. Along this zone float containing small amounts of galena was encountered, but no mineral was encountered in place. Nearby, on Key No.32, massive galena float was found. This came from a narrow vein in the dolomite cliff above. A sample (55-19) of the float assayed: 95.3 oz silver, 78.2 % lead.

A 12-inch stringer of galena and a thin vein containing grey copper were found in a 20-foot wide mineralized zone on Key No.25 claim. Samples of these (55-21) assaying 47.8 oz silver, tr. oz gold, 68.0 % lead, and (55-20) assaying 130.4 oz silver, tr. oz gold, 1.4 % copper were taken from the lead and copper zones respectively. This showing is the most promising yet found on the Key Group of claims.

Slightly west of the above showing, galena and sphalerite float occurs. The source of this was not found. The material seen in the talus indicates there is a vein of galena two or three inches wide somewhere above probably in the dolomite.

The most promising mineralization occurs in the massive ^{blue-grey} dolomitic limestone that forms cliffs rimming much

of upper White Creek. Float containing abundant galena, pyrite, pyrrhotite, chalcopyrite and in a few places sphalerite and grey copper was found below this bed. A few boulders of solid galena, pyrite, pyrrhotite and chalcopyrite were found just below the first fork of Cirque Creek. Assays from these, sample 55-16, returned 18.2 oz silver, tr. oz gold, and 23.9 % lead.

Silver material was found just south of the Drop area on Rain No.6 claim. Here boulders carrying galena, pyrite and siderite were traced for nearly half a mile east-west along the valley near the location lines of Rain No.6 and No.8. Specimens of this (55-13, 55-14) gave assays of 10.7 oz silver, 0.01 oz gold, 12.1 % lead and 9.8 oz silver, 0.04 oz gold, 15.1 % lead respectively. In one locality just west of the drop site, float containing abundant grey copper was found. Assays of this material (sample 55-15) gave 497.0 oz silver, tr. oz gold, and 3.8 % copper. The source of this very promising float is probably in the dolomitic limestone underlying the hillside above. Further work, particularly stripping or trenching, will be required to locate the source and to determine the worth of this deposit.

Between this occurrence and the float found in Cirque Creek some two miles southeast, the dolomitic limestone is strongly mineralized with iron carbonate, pyrite and pyrrhotite. A chip sample (55-23) from one zone, the rusty outcrop on Rain No.4 claim, assayed tr. oz in gold over a width of some 40-50 feet. Similar mineralization occurs

at three or four places along this dolomitic bed but no samples were taken. Between these zones there may be similar, probably narrower zones of mineralization; they are however obscured by overburden.

At the head of Cirque Creek the dolomitic limestone was again encountered. Here it was cut by quartz veins striking $80^{\circ}60$ E and dipping steeply ~~east~~. These veins ~~was~~ exposed in the creekbed, contained chalcopyrite. Assays of samples of this material collected from the creek (sample 55-17) ran tr. oz gold and 6.0 % copper. In this immediate area, at the head of the east fork of Cirque Creek, a large amount of mineralization was found including (a) disseminated chalcopyrite replacing dolomitic limestone, (b) float of pyrite and siderite containing considerable chalcopyrite, and (c) siderite with disseminated and massive pyrite, stringers of disseminated magnetite, and scattered chalcopyrite. Samples of the latter (55-18) assayed 0.02 oz gold.

Any structural controls or trends of these deposits were not established with certainty. They all seem to be closely related to the massive ^{blue grey} ~~dolomitic~~ limestone, either occurring in it or nearby. Numerous felsitic dykes are exposed in the bed of Cirque Creek where it has cut down into grey phyllites and black impure limestone. These dykes trend north of east and dip about 90° . Farther down the creek, just above the first fork, a similar dyke occurs. It strikes about $N 30^{\circ}E$, dips vertically, and has arsenopyrite, galena and pyrite mineralization along the

north contact with the country rock. This mineralization, although interesting, is too narrow to be economic.

The ridge on the northern side of White Creek appears to have little lead-zinc mineralization. A quartz vein strikes about N 60° W across the ridge directly north of Drop Creek. Float from a small creek near the east end of this quartz vein contains pyrite and chalcopyrite. A sample of this float taken for assay ran tr. oz gold. The material seen in place has much less sulfides than this float.

The rocks in the White Creek area are strongly mineralized. The predominant forms of mineralization are barren quartz-calcite veins and stringers, veins and bodies of massive iron carbonate, pyrite disseminations in quartzites, and barren quartz veins. The massive pyrite-pyrrhotite-galena mineralization found on the east side of White Creek looks promising.

ALTERATIONS AND INTRUSIONS:

A number of small masses of basic igneous rocks, probably intrusive, were found east of the Kay Group. These are apparently resistant rocks since they form ridges, on or near the B-30 claim and on the hill east of the Bear Group of claims. Intrusive rocks are also reported on the Kay Nos. 10, 12, 17 and 19 claims. An intrusive body of dioritic composition forms the highest peak on the ridge just west of Cirque Creek. This rock has suffered intense alteration, as have many of the intruded sediments. Farther southwest, on the ridge across Drop Creek, a very unusual

rock of basic composition outcrops. It contains lenses of serpentine and what appears to be anthophyllite asbestos.

A large body of ^{loose}ineous-looking rock replaces a bed of black slate on Rain #9 claim. This rock contains magnetite, potassic feldspars, radioactive ^(?)fluorite, and in places pyrite, jasper, and hornblende. This rock may be an ^tintrusive or a zone of extreme hydrothermal alteration.

Most of the strata in the White Creek area are considerably altered. In some places, particularly in the crest of the White Creek anticline and in the dolomite cliffs on the Yak #2, the metamorphism is much less intense. The metamorphism is much less evident in the competent limestones and quartzites than in the incompetent beds. These beds, originally shales, argillaceous limestones and argillaceous quartzites have been altered to phyllite and slate. In view of the length of time since these sediments were laid down in the lower Cambrian, the grade of metamorphism they have attained is remarkably low.

CONCLUSIONS AND RECOMMENDATIONS:

The late spring so retarded prospecting that only the ground north and west of the Kay Group was prospected. The east side is covered by the Oke and Sleco Groups but the ground to the south is open and should be prospected in the near future. Nothing of great importance was found on the Kay group but only the west ridge overlooking the head of White Creek has been prospected. The prospecting and geologic mapping of this group should be completed as soon

as possible and some trenching should be done on the showing on Kay #25 claim.

Mineralization uncovered in White Creek and east of the Rain Group looks very promising. The source of the richest float from this area, that found just below the first fork of Cirque Creek, has not been located. Further prospecting should be done in Cirque Creek in order to find the source of this rich float and to determine the extent of the copper mineralization at the head of the creek. The area of galena mineralization on Rain #6 and #8 claims should be carefully prospected. Trenching could then be done to obtain widths, assays and continuity.

The ridge north of White Creek appears to have very little mineralization on it. Small amounts of galena float were found along this ridge as were some quartz veins with minor pyrite and chalcopryrite but none of these appear to be important.

The White Creek region merits further prospecting. The mountain mass south of White Creek seems to be a very favourable area and should be carefully prospected.

Respectfully submitted,

W.A. Padgham
W.A. Padgham.