IR 121-1 by H.G. Wilcox (1939?)

See also report by Roehm-1936- "Agnes Group" [?]

Peterson and Carlson Prospect, McLean Arm:

This property was formerly known as the Polson & Ickis group, and the Veta claim on Mallard Bay was included in the original group, which is mentioned in U. S. G. S. Bull. 662, p. 66.

Three claims and a mill site, which lie on the south side of McLean Arm near its head, are owned by Mr. Wallace Peterson, Axel Carlson and Wm. Short, all of whom are residents of Ketchikan. The assessment work has been performed for the year 1937-38.

The country rock on the claims is a diorite which has been intruded by a syenite dike that outcrops above the mineralized area. A dark basic dike which was formed subsequent to the orebodies has been followed for 150 feet by the main tunnel. The main mineralization occurs in veins which strike N. 20° to 40° E., but a silicified zone showing some mineralization which strikes N. 20° W. cuts across three veins. A surface trench 25 feet long has cut this zone at elevation 180 feet near the cabin. A 4-foot vein with a northeast strike shows in the cut. The main prospect tunnel was started on this silicified zone 550 feet NW. of the above mentioned cut at elevation 320 feet. The tunnel follows a NW. course for about 50 feet then follows a slip to the NE. for about 75 feet until it encounters the basic dike which strikes NW. then the dike is followed for about 130 feet. Another vein with a NE. strike is cut by the drift about 20 feet from the end. Some movement is shown on the wall of the dike, but the displacement of the veins is slight as they can be traced beyond the dike on the surface. The vein which is cut near the end of the drift has been exposed by a deep trench which is about 200 feet NE. from the tunnel. The width of the vein at this point is about 15 feet, but it includes a 5-foot horse. A vein which is composed of dark quartz and is about 6 feet wide is exposed in a cut in a creek 125 feet NW. of the deep cut at an elevation of 700 feet.

The principal minerals occurring in the veins are pyrite and chalcopyrite with low gold values. The gangue is principally quartz with some barite and hematite.

Ten samples were taken across vein exposures on the property and the gold values ranged from a trace to .08 ounces of gold per ton. Ten samples were taken by Axel Carlson under the writer's supervision and the same range in gold values were obtained. Copper assays have not been run, but the copper content appears to be around 1 per cent, which is too low to make a workable deposit with the gold values obtained.

There is a showing of some massive chalcopyrite on the property, but the vein was not seen as the cut was filled with debris. The owners intend doing some work on that showing next year.

Andrews Property - Kasaan Bay:

The mine which is owned by Mr. Andrews is about 2 miles southeast of the Kasaan cannery. The main tunnel is 500 feet above the bay and an ingenious areal tram connects the mine with a loading dock on Kasaan Bay. No ore has been shipped from the property for several years, but Mr. Andrews was doing some development work on the property this past summer.

The ore occurs in a contact deposit in limestone near a diorite dike. The ore that has been mined was taken from two connected lenses, 12 feet by 30 feet, and 12 feet by 18 feet. The ore extended over a vertical range of 30 feet from the surface down. A small showing of ore has been opened by drifts driven to the NW. from the opencut. About 500 feet of tunnel has been driven at 500 feet elevation and a raise connects the tunnel with the surface workings about 100 feet above. At elevation 580 feet a mineralized zone has been stripped for 20 feet. Two 10-foot samples assayed .02 and .06 oz. Au. per ton.

The Grandby Company was reported to have gotten 2% Cu. across this zone. Our samples have not been run for copper, 243, 244. A sample taken from the north end of the opencut assayed 7.54 oz. silver and a sample taken from some of the shipping ore left on the dock assayed .24 oz. gold and 1.36 oz. silver.

Chalcopyrite, pyrite and magnetite are the principal minerals and they occur in an epidote, limestone gouge.

Mr. Andrews estimated about $50,000 worth of ore had been shipped from the property. The Grandby Con. M. & S. Company had an option on the property at some time.

D. Nicolls (Scotty) has two claims adjoining the Andrews property on the west which shows similar mineralization.

Salt Chuck Mine:

The Salt Chuck Mine, formerly known as the Goodro, is located at the head of a "salt chuck" at the head of Kasaan Bay. The property is owned by the Alaska Gold and Metals Company, Lee Howard president and manager.

The ore, which carries values in gold, copper, silver and palladium, lies in large lenses on both sides of a gabbro-pyroxenite contact. The lenses persist to the 300-foot level and the size of the orebody and the values appear to be as good as at the surface.

? Bornite B.O.S.

The principal ore mineral is chalcopyrite and it occurs disseminated with minor chalcopyrite and chalcocite throughout the lenses. Some of the gold occurs free, but most of the values seem to be dependent on the copper content. An increase or decrease in copper is followed by a corresponding rise or fall of other mineral values. The palladium content is about 50 per cent higher in the pyroxenite than in the gabbro. The palladium content averages .0[illegible] oz. per ton with a 1% copper content in the gabbro and .075 oz. per ton in the pyroxenite.

The mine is worked from the 300 foot level which is about 90 feet in elevation. Some of the ore is mined by glory hole methods and some is mined in stopes. All of the ore is drawn through chutes on the 300 level and trammed to the mill by storage battery locomotive.

The mill is handling ~~35 to 60~~ tons of ore a day and working one shift. It is figured with a few changes 300 tons could be milled in 24 hours. The ore is recovered by flotation, K. & K. flotation machines being used. Power is supplied for the mine and mill by diesel engines.

There are sufficient buildings on the property to take care of a full crew for 24-hour operation. Supplies are brought from Ketchikan and landed at the mill dock at high tide, and concentrates are taken back on the return trip. Oil storage tanks with a 16,000 gal. capacity are located at the mill.

The mill ceased operations in 1926, and was bought by A. L. Howard and reconditioned for handling tailings in 1934. Fifty tons of dry concentrates were produced from about 11,000 tons of tailings of the following average composition:

Gold	.017	oz.	per	ton	
Silver	.06	"	"	"	
Palladium	.025	"	"	"	) Spectroscopic
~~Platinum~~	~~.025~~	~~"~~	~~"~~	~~"~~	~~) Assay by LeDoux & Co.~~ Tests showed
Copper	.22%				Palladium and Platinum

The concentrates had the following average analysis:

Gold	3.10	oz.	per	ton
Silver	7.5	"	"	"
Palladium	4.1	"	"	"
Platinum	.05	"	"	"
Copper	34.5%			

Recovery on the tailings added to the original recovery gives an overall recovery of about 90%.

With the present mill arrangement and the present capacity of 80 tons a day the following percentages are recovered:

Gold	80%
Palladium	80%
Copper	90%

The total metal content of all ore shipped and milled up to July, 1937 is estimated to have been as follows:

Gold	9,500 oz.
Silver	43,000 oz.
Palladium	21,000 oz.
~~Platinum~~	~~2,500 oz.~~
Copper	5,000,000 lbs.

Figures given on production, ore values, etc. are taken from a report by A. L. Howard. Additional information as to details of mining, milling, ore reserves, costs, etc. are contained in a report by A. L. Howard which is filed with this report.

Rush and Brown Mine:

The property is located on a "salt chuck" at the head of Kasaan Bay about 1 mile from tide water. It adjoins the Salt Chuck property on the east and the mine is about 6,000 feet from the Salt Chuck mill on a direct line. The property comprises 4 claims and 2 mill sites and is owned by the Alaska Gold and Metals Company which also owns the Salt Chuck Mine. A 42-inch gauge railroad formerly connected the mine with salt water. Six thousand feet of air line have been laid from the Salt Chuck mill to the Rush and Brown mine.

The property was first located by U. S. Rush and his partner about 1900 and ore was mined and shipped for several years. The last shipment was made in 1923. A mill was never built on the property, and shipping ore was obtained by hand sorting.

The Solar Development Company, a subsidiary of the Canadian Consolidated M. & S. Company, optioned both the Salt Chuck and Rush and Brown properties in 1929. They connected the Salt Chuck compressor with the Rush and Brown mine with 6,000 feet of pipe, unwatered and sampled the mine and started an adit to tap the ore about 280 feet below the outcrop. A survey showed a distance of 1460 feet from the portal to the orebody, but only 1300 feet had been driven when the option was dropped, probably on account of general market conditions.

Two types of ore deposits occur on this property - a contact deposit consisting principally of copper-bearing magnetite, and a shear-zone deposit carrying copper sulphides, mainly chalcopyrite. A sedimentary series, consisting of graywacke, principally, has been intruded by diorite and the contact minerals occur on or near the contact of these two formations. Some post mineral faulting has taken place, the greatest displacement so far encountered being 40 feet.

The shear zone deposits contain pyrite, pyrrhotite and magnetite, in addition to chalcopyrite, some quartz and calcite occur with the sulphides. Magnetite is the principal mineral in the contact deposit, the copper occurring as chalcopyrite and the ore is of a somewhat disseminated type. Gold, silver and copper are the metals of economic importance and the gold and silver values appear to vary with the copper content.

The following data with regard to the mine workings is quoted from a report on the property by A. L. Howard dated February 13, 1935:

"The first orebody discovered, the contact deposit, crops on a knoll about 400 ft. above sea level. It was opened by means of a shaft 200 ft. in depth, sunk alongside the orebody. When, later, the shear zone deposit was discovered, a drift from the shaft westward intersected the downward extension of the shear on the 200 ft. level. The drift is about 100 ft. in length.

"The shear zone was stoped to the surface and also sunk on from a point about 200 ft. southwesterly from where first encountered. The winze was sunk from the 200 ft. level to a point about 40 ft. below the 500 ft. level. Levels were opened from the winze in both directions along the shear at intervals of 50 ft. The dip is about 60 degrees to the southeast at the surface but the average is more nearly 45 degrees. The width varies from four to fourteen ft. and the strike is north 50 degrees east with a change to about due east noted at the northeast end of the 400 and 450 levels.

"Ore shoots vary in thickness from a few inches to seven ft. or more in this dimension. Thickness of massive ore however has probably not exceeded 4 ft.

"The two shear zones so far known are about 325 ft. apart horizontally and there is some evidence to indicate that they are parallel in strike but whether the dip is the same is not known. However an exploratory drift driven on the 200 ft. level along one of the cross fractures apparently crossed No. 3 shear zone as it has been called, at a point about 325 ft. horizontally from the productive shear. This drift was driven in a southerly direction making an angle of about 45 degrees with the strike of the shear zone. It's length is about 460 ft.

"Exclusive of this drift and the main projected adit the mine workings proper comprise approximately 3000 ft. of drifts and 500 ft. of winze and shaft. Sumps represent an additional footage, possibly 75 ft.

"The mine workings require only a limited amount of timbering which is confined mostly to occasional stulls. These together with pillars constitute all the support required."

The following is quoted from the above report regarding the shear zone deposit:

"Only one of the two known shears has been exploited. It has produced about 9,700 tons of shipping ore of the following average content and value per ton:

	Gross Value Per Ton	Net Value Per Ton
Gold 0.26 oz. @ $35	$9.10	
0.26 oz. @ $33		$8.58
Silver 1.60 oz. @ 64¢	1.03	
1.10 oz. @ 60¢		.66
Copper 10.5% 210# @ 9¢	18.90	
184# @ 6.5¢		11.96
TOTALS	$29.03	$21.20
Gross and Net Production from shear zone.	$281,300	$205,640"

The following is quoted from the above report regarding the contact deposit:

"Available data indicate that this orebody produced 38,000 tons of ore. The average content and value is as follows:

	Gross Value Per ton.	Net Value Per Ton.
Gold 0.06 oz. @ $35	$2.10	
.06 @ $33		$1.98
Silver 0.25 oz. @ 64¢	.16	
Copper 2.25% 45# @ 9¢	4.05	
38# @ 6.5¢		2.47
Gross Value	$6.31	Net 4.45

"The above ore was shipped on a higher copper market and considered today as a milling proposition is of doubtful value due to the present price of copper. A surface area of about 12,000 ft. is indicated here however and since mining costs in this zone would probably not exceed $1.50 per ton including development, this orebody may sometime be of value. Each increase of 1¢ per lb. in the price of copper is equivalent to an increase of 45¢ per ton of ore.."

The following is quoted from the above report regarding the dump:

"A dump containing about ~~15,000~~ 9,000 tons derived from sorting operations to raise the grade of ore shipped from the shear zone is estimated to average as follows:

Copper 1.75% Gold 0.06 oz. Silver 0.30 oz.

"It appears that the ore as mined had an average grade about as follows:

	Gross Value Per Ton	Net Value Per Ton
Copper 5.33% 106.6# @ 9¢	$9.60	
96# @ 6.8¢		$6.24
Gold 0.14 oz. @ $35	4.90	
.14 oz. @ 33		4.62
Silver 0.80 oz. @ 64.5¢	.51	
.60 oz. @ 60¢		.36
	$15.01	$11.22"

The following is quoted from Howard's report regarding the ore:

"Operations in the shear zone were confined to one ore shoot which has an average length of about 200 ft. It has been followed and was consistently productive to the 500 ft. level. A block of ore between the 500 and 520 ft. horizon which is the bottom of the winze sunk on this shoot is estimated to contain 1100 tons averaging over a 4 ft. width and a length of 80 ft.

Gold 0.22 oz. Silver 1.22 oz. Copper 7.2%

with a net value and a realized price of 8.5¢ per lb. for copper, of $17 per ton.

"On the opposite side of the winze, ore evidently extends for another 80 to 100 ft. The average value is the same, that is, $17 per ton net. It seems safe to figure 500 tons in this block.

"In and about the old stopes and pillars sampling indicates an additional tonnage of at least 1160 tons. The average values are the same as given above.

"Tonnages and average values are deduced from a study of the assay map of the mine workings made by the engineers of the Solar Development Co."

A grab sample of the reject of a dump sample taken by A. L. Howard assayed gold .10 oz., silver .38 oz. His assay showed gold .06 oz., silver 0.30 oz. 2%, Cu.

To determine what values were carried in the white iron, a massive piece taken from the dump was assayed. The assay gave gold 0.12 oz., silver nil. The gold content is only slightly higher than the value obtained from the general dump sample.

A sample taken from an outcrop of No. 3 vein at a point 200 feet above the old shaft assayed gold .36 oz., silver 2.20 oz. or a gold-silver value of $13.58.

The gold and silver values in the shear zone deposit appear to be sufficiently high to make this property workable even with a low copper price. As the Salt Chuck and Rush and Brown properties have common ownership the Salt Chuck mill could be used for treating Rush and Brown ore. An air line is laid from the mill to mine. A cableway approximately 6,000 feet long would be needed to transport ore from the mine to the mill. The Consolidated figures show that the main drift needs to be driven about 160 feet farther to intersect the orebody 280 feet below the outcrop. This tunnel when completed would serve as a drainage and haulage tunnel.

The management's plan for milling the dump, building a tram and completing the tunnel seems to be warranted.