

May 17, 1991

825520

I. Pirie

D. Heberlein, A. Davidson

C. Clayton

Joe Dandy Property Exam

Joe Dandy Property
Oliver Area
Osoyoos Mining Division
NTS 82E/4E

49°10' Lat. 119°37' Long.

Owner: Leo Reichert - 499-2580, Box 514 Keremeos

Target: Mesothermal Vein (Fairview Type)
Skarn mineralization

Recommendation: Decline. Although this property presents some immediate drill targets the potential for a pitable ore body is limited. Furthermore, if an open pitable ore body were discovered it is likely that opposition to development would be encountered from various governmental levels as the property is in direct line of sight from the Oliver golf course and the town of Oliver. The Oliver sewage treatment pond is located on the property at the portal entrance to the Joe Dandy mine.

Current Status: The property consists of the Atlas (L.664, 20.59 ha), Belmont Fr (L.837, 4.45 ha), Comstock (L.729, 20.90 ha), Joe Dandy (L.447, 8.34 ha), Gilpin Fr (L.838, 2.97 ha), Rob Roy (L.447, 8.34 ha), St. John (L.803, 20.9 ha), Joe Dandy #1, #2, #3, #4 (1 unit each), Joe Dandy #200 (12 units), Tinhorn 83 (9 units), Dominion (L.1595, 20.9 ha), Powis (L.946, 20.84 ha). Prior to this year the ground position also included the Fairview (15 units), Morning Star (9 units), Tin Horn 300 (10 units), Tin Horn 400 (10 units). These claims were allowed to lapse this year, however the land is currently open and could be restaked. Recent assessment reports filed on the property were prepared by R. Faulkner of Fairbank Engineering Ltd for Yuriko Resources Corp. These were filed January and April of 1990. The property borders on Minnova's

Richter property (Rich 11 claims) to the east near Tin Horn Creek.

Geology: The property is located within the Intermontane Tectonic Belt in Quesnellia Terrane on the western flank of the Okanogan River Valley. The valley represents a major tectono-stratigraphic break separating high-grade metamorphic rocks of the Okanogan metamorphic complex in the east from low grade metasediments and metavolcanics in the west. Property geology consists of post-Devonian to pre-Cretaceous Kobau Group. These are highly deformed, low grade metamorphic quartzites, phyllites, schists, greenstones, and marbles. Property rocks are intruded by Oliver granite (155 Ma) and Fairview granodiorite (111 Ma).

Mineralization/Alteration: Gold mineralization is associated with quartz veining within both the metasediments/volcanics and the intrusives. A wedge of Kobau Group rocks between the Oliver granite and Fairview granodiorite generally hosts these veins (Fairview Camp) which tend to be concordant with northwest striking, northwest dipping regional foliation and parallel to the contact with the granodiorite. Vein selvages are commonly sericitic. Tourmaline veins are common within the quartz veins. Ankerite is common within the veins and along fracture surfaces. Semi-massive sphalerite, and chalcopyrite were seen in one vein. Disseminated pyrite and arsenopyrite are common. Footwall of one vein appeared to be a saussuritized intrusive. Carbonate alteration is common locally, and it is noted the formation of calcrete on exposed surfaces in the Tin Horn area was common. Travertine was reported in the floor of one adit in the Tin Horn area. The common blue colour of the quartz veining suggests the presence of fine grained rutile or tourmaline inclusions.

Previous Work and History: The claims are located within the Fairview Mining Camp which has been explored and worked intermittently since 1882. During 1898 and 1942 the Tinhorn veins produced 274 tonnes (302 tons) of ore producing 1400 gm of Au (45 oz Au) and 467 gm Ag (15 oz Ag) (BCEMPR MinDep Files). The average grade was 5.11 gm per tonne Au (0.015 oz per ton Au) and 1.70 gm

per tonne Ag (0.05 oz per ton Ag).

A total of 137 tonnes (9151 tons) yielding 2643 gm Au (84 oz Au), 3763 gm Ag (120 oz Ag), 93 kg Pb (205 lb Pb) and 174 kg Zn (383 lb Zn) was produced from the Smuggler veins. Average grades were 19.29 gm per tonne Au (0.56 oz per ton Au), 27.47 gm per tonne Ag (0.79 oz per ton Ag), less than 0.1% Pb and 0.13% Zn.

No production is recorded from the Joe Dandy vein despite approximately 610 metres of tunnelling on two levels and 2 shafts.

VLF-EM and magnetometer surveys on the Fairview and Morning Star claims in 1983 indicated a number of conductors and geological contacts.

In 1984 Lawrence Mining Corporation completed a program of soil sampling over the Tinhorn, Smuggler, and Joe Dandy workings identifying Au anomalies up to 3 000 ppb in soils. No follow-up work was done.

In 1987 a program of prospecting, underground and surface rock sampling, soil sampling, geological mapping, magnetometer surveys and limited Crone Shootback EM and IP surveys was completed over the Tinhorn, Smuggler, and Joe Dandy veins.

A limited program of line cutting, soil sampling, and geological mapping was undertaken by Fairbank Engineering in 1989 and 1990 over the Tinhorn, Smuggler, and Joe Dandy areas. The purpose of the mapping was to delineate the contact between the Fairview granodiorite and Kobau rocks. This was done in the area of the Joe Dandy 200 claim and the Powis and Dominion reverted Crown Grants. The contact was not sufficiently delineated as only 15% of the surface area is exposed.

Soil sampling in the Tinhorn and Smuggler grid areas was aimed at tracing extensions of the Tinhorn and Smuggler vein systems.

Results gave scattered point highs for Au and insignificant distributions of values for Ag, As, and Sb.

Summary and Recommendations: The Joe Dandy property covers the old Tinhorn, Smuggler, and Joe Dandy workings. These workings follow 1-2 m wide blue mesothermal quartz veins within Kobau Group metasediments and metavolcanics. The property is located in the Fairview Mining Camp area just south of the Fairview and Stemwinder mines within the wedge of Kobau Group between the Oliver granite and Fairview granodiorite. Gold mineralization occurs within the blue vitreous quartz veins, as well as within Fe stained white quartz veins containing associated tourmaline veining. Other economic mineralization within the white quartz veins consists of sphalerite and chalcopyrite.

Very low tonnages have been produced from this property in the past. Recent soil geochemistry failed to delineate any extensions of the Tinhorn or Smuggler vein systems. I.P., however, suggests the Smuggler vein system may continue to the west for another 200 to 300 metres.

Despite significant precious and base metal values returned from samples taken during the property examination, the submittal should be declined for the following reasons. The primary target in this area is Fairview type mesothermal veins. During the exam indications of larger tonnage, bulk minable targets were sought. However, no large scale hydrothermal alteration zones were seen, nor was any evidence of skarn alteration. Vein alteration did not extend into the wallrock.

A point in favour of acquisition would be to increase Minnova's land package in this area as these claims adjoin the Richter property. Given the success of the Richter property thus far it is not likely Minnova would wish to do this.

If a bulk minable deposit was discovered on the property several problems would likely be encountered in the development stage. To begin with the property is located in direct view of the Oliver golf course, as well as being visible from the town of Oliver itself. Two or three private homes are located on or near the property. Furthermore, the sewage treatment pond for the town of Oliver is located on the Joe Dandy property just below (within 200 metres) the access drift to the Joe Dandy workings. Leo Reichert and K. George were paid \$50000 for the use of this land for the sewage pond. Relocation problems for the pond would undoubtedly arise.

SAMPLE DESCRIPTIONS

- BCS11077 -sample taken from Tinhorn Claim, Tinhorn middle workings; vitreous massive blue quartz vein exposed in opening of stope; sample actually taken from waste dump area as shaft and stope are inaccessible; fine grained disseminated pyrite, sphalerite in trace amounts; 2 metres in width, subvertical, E-W striking; rusty staining, some sericite, ankerite.
- BCS11078 -Tinhorn Claim, taken from flooded adit on way up road to upper workings; E-W striking adit with massive blue grey vitreous quartz vein in quartzite, dipping south 48°; weathered surfaces have calcrete.
- BCS11079 -Tinhorn Claim upper showing; massive white quartz vein 3-5 metres in width, exposed 5 metres striking roughly E-W; highly fractured, minor ankerite along fractures; pock marked texture possibly weathered feldspar crystals.
- BCS11080 -Tinhorn Claim upper showing; wallrock of previous quartz vein; green, medium grained, moderately calcareous intrusive; epidote, chlorite, possibly garnet; trace fine grained disseminated pyrite.
- BCS11081 -Tinhorn Claim upper workings; taken from E-W trending adit; 1 metre wide massive vitreous blue quartz vein; 60° southerly dip; minor Fe staining; calcrete on weathered surface.
- BCS11082 -Tinhorn Claim; overgrown waste dump below what may have been the old Tinhorn mine; massive white quartz vein material.
- BCS11083 -Powis Showing; small trench/working in area where old raise daylights; area of cross cutting quartz veins; strong Fe staining; up to 5% fine grained to medium grained pyrite, arsenopyrite, sphalerite; quartz veins also include smaller (<2 cm) tourmaline veins.
- BCS11084 -Powis Showing; quartz vein at back; weakly fractured with some voids with Fe staining along walls of cavities; chlorite/sericite along fractures; minor malachite staining; trace tourmaline; trace to 1% pyrite, arsenopyrite, sphalerite.
- BCS11085 -Powis Showing; quartz-chlorite-muscovite schist; calcareous, trace fine grained garnet; host rock to BCS11084 and BCS11083; pyritic.

SAMPLE DESCRIPTIONS

- BCS11086 -roughly 500 metres N-W of Powis Showing; massive quartz vein; locally vuggy; tourmaline veining; exposed 1-2 metres width by 20 metres in length; 25% semi-massive sphalerite, 5% chalcopyrite, 5% pyrite; Fe staining along fracture surfaces; FW greenstone, HW possibly hornfels.
- BCS11087 -roughly 30 to 50 metres north of BCS11086; small pod of rose coloured quartz (10cmx10cm) in silicified Kobau meta-sediments; ankeritic in places; possible trace rutile.



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Assay Certificate

1V-0424-RA2

Company: MINNOVA INC.
 Project: BRENDA BEN 558
 Attn: C. CLAYTON/IAN FIRIE/D. HEBERLOIN

Date: MAY-17-91
 Copy 1. MINNOVA INC., VANCOUVER, B.C.
 2. MINNOVA INC., GREENWOOD, B.C.

We hereby certify the following Assay of 10 ROCK samples submitted MAY-11-91 by C. CLAYTON.

Sample Number	AU g/tonne	AU oz/ton
BCS11077	1.00	.029
BCS11082	1.20	.035
BCS11083	1.40	.041
BCS11084	3.08	.148

Certified by _____

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Company: MINNOVA INC.
Project: BRENDA GEN 559
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[Handwritten Signature]

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