82M/13E

WHEN REPLYING PLEASE REFER TO

FILE No. 005001

CK
82M-137 2249

THE GOVERNMENT OF
THE PROVINCE OF BRITISH COLUMBIA

DEPARTMENT OF MINES AND PETROLEUM RESOURCES

Fulton Field, R. R. #1
Kamloops, B. C.
September 30, 1974

Mr. N. C. Carter, P. Eng.
Senior Geologist
Mineral Resources Branch
Parliament Buildings
Victoria, B. C.

DEPT. OF MINES
AND PETROLEUM RESOURCES
Rec'd OCT 10 1974

NCC		

Dear Nick:

Re: Zinc/Lead
CK, Raft and Lake Claims
82 M/13E, 51°55', 119°35'
Kamloops, M. D.
Rio Tinto - D. B. Peterson

Please see the enclosed "to file" report dated June 21, 1974, as well as a letter to D. Peterson dated July 9, 1974.

Because of Trig Hoy's possible area interest, we had an informal chat with Dave Petersen on Tuesday, September 17, 1974, and spent the 18th at the showings. On September 19th I spent another full day on the claims but away from the showings.

One suite of rocks in the area is within a gneiss/schist complex, these units consisting of possibly quartz-biotite gneiss, quartz-feldspar-biotite gneiss, feldspathic quartzite, amphibolite, quartz-garnet-diopside beds, and, a tremolite-dolomite-marble unit. Pink garnet as rounded 2 to 3 mm usually well spaced grains is common to many of the units. The thickness of the units varies from 0.5 meters to 3 meters, lateral lithologic continuity being unknown because of the extensive overburden.

Within the schist/gneiss complex there are frequent light (Rx) coloured, usually coarse-grained albite?/quartz /biotite/clinozoisite(?)/ garnet/chlorite (in the main, after Hoy, 1974), showing coarse graphitic textures and some prenounced mineral alignment. Smaller bodies of this rock up to 0.3 meters generally have concordant relationships with the plane of gneissosity but larger pegmatites, have cross-cutting habits. The contact edges are sharp with no megascopically noticable chill marginal effect. Fragments of partially assimilated gneiss measuring 4 cms by 35 cms retain a similar attitude to the nearby gneisses. Pink

garnets as mentioned above, relatively fresh, are common in these light coloured dike rocks.

At one location, an altered lamprophyre dike cuts the pegmatite (and presumably the gneiss), again sharp walled but more irregularly contacted and averaging 20 cms in width (015° - vertical).

The metamorphic rocks on both sides of the stream valley strike N to NNW on the average and dip around 55° to the west. Local departures with radical changes are caused by "Z" type dragging with a 60 meter wave length or greater. Local dragging and ptygmatic folds are ubiquitous. Fracturing and shearing occur within the pegmatite bodies as well as the host rocks.

There has been more than one period of structural activity; the effect of the light coloured, fine to medium grained intrusive ROCKS to the immediate west is presently unknown except that there is considerable K-spar and sericite alteration and later sericite veining in an altered gneiss in one outcrop close to the intrusive. (GW 170).

Mineralization consisting of black to honey coloured usually coarse grained sphalerite, some galena with distorted cubes, pyrite and very occassional chalcopyrite fine blebs, are found in quartz/biotite gneiss and in a marble unit. Massive sphalerite associated with anhedral, vitreous quartz is also present; these masses measure up to 2 by 2 by 2 meters and would assay in excess of 10% Zn.

Massive sulphides with attendant gossan material is located in the original? discovery area. This gossan area measures 2 x 3 meters, and contains rotated blocks of sphalerite-rich quartz/biotite gneiss, clay gouge as well as other altered rock fragments. More than one of these areas exist on the side of a north facing hill; this is the material that didn't look in place during the June 1974 visit.

An explanation of the above is not readily apparent; we may be looking at the erroded edge of a north striking fault, dipping east near the dip of the present hill; this may also be a draping effect around the later intrusive but this is dubious; the gossan may be surface oxidization of remobilized, syngentic metallics, re-concentrated during a period of intense metamorphism.

At any rate, sphalerite with some galena is present intermittently through about 20 meters of stratigraphic thickness over a strike length of 120 meters. Within this area there are enriched gossan zones as well as larger, 2 x 2 x 2 meter blocks of sphalerite rich blocks which appear to be in place as described above.

In the mineralized area, the glacial overburden is relatively light (.25 meters) but the overburden can be up to 8 meters elsewhere. Mineralized float of good angularity is frequent in this particular valley and this is apparently how the prospector, Andy Horne, made this discovery during 1973. Some of the mineralized float measures up to 2x3 meters.

The pegs do not appear to be related to the later leucocratic mass to the west.

Little attention has been paid to reporting in detail on this showing, because of Trig Hoy's expressed interest and hopefully his 1975 follow-up. Please see enclosed plan 1:50,000.

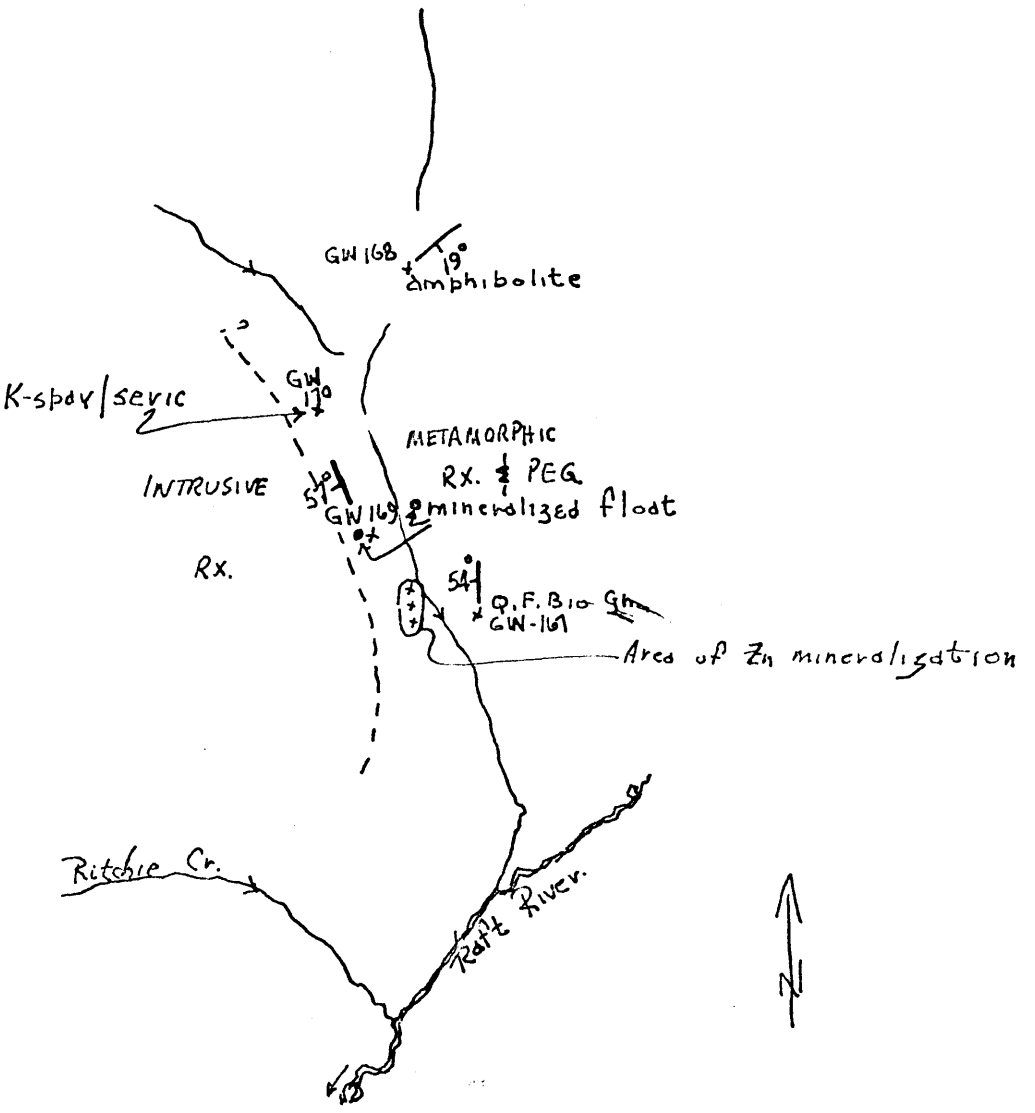
This Zn is considered very significant.

Best regards.

Yours truly,

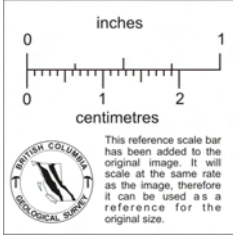
Gordon White, P. Eng.
District Geologist

/so
cc: Dr. Trig Hoy



Plan. - Rag Claim Area.
1:50,000 82M/13E.

Kamloops D.G.



THE GOVERNMENT OF
THE PROVINCE OF BRITISH COLUMBIA

WHEN REPLYING PLEASE REFER TO
FILE No.

DEPARTMENT OF MINES AND PETROLEUM RESOURCES

Fulton Field, R. R. #1
Kamloops, B. C.

July 9, 1974

Mr. D. B. Peterson
Rio Tinto Explorations
228 Bestwick
Kamloops, B. C.

Dear David:

Re: Raft River Area

We received three thin sections and one polished section back from Victoria and these along with, for the time being, a binocular and optical microscope are available if you wish access. Arrangements may be made by contacting me at the office or at my residence, 372-2107.

Without a reflecting attachment, the massive sulphides are a little difficult to decipher. Not much can be seen with the binocular either. However, the rock seems to be composed of 60% sulphides. The non-metallics are bluish-white with 1 mm aggregates of hard siliceous roundish grains. Occassional grains up to 4 mm approximate hexagonal basal sections. Most of the non-opaques is believed to be quartz.

Sphalerite, without any grain structure comprises about 55% of the rock and looks like groundmass. Interstitial to the non-opaques and sphalerite is pyrite. The pyrite is in fine veinlets with right angled short septa; as rimming around sphalerite or around non-opaque grains; as fine lattice like replacement of a dark unknown mineral; for lack of a better term, a skeletal texture. Interstitial and infilling is a light grey metallic and if pyrite is 4%, then 1% of the rock. This light grey metallic is randomly distributed in irregular average 0.5 mm blebs. Nowhere is the py, sphalerite or non-opaques seen to cut the grey mineral. It sure looks like chalcocite but seems to have about the same hardness as sphalerite (tetrahedrite?). There is a rough, 8 mm banding with alternate discontinuous quartz and continuous sulphides.

Thin section #154, CK1, 189', is predominately, unequigranular, unequidimensional orthoclase? and quartz, interlocking grains. Opaques are irregular, angular patches and rods. Other accessories--probably zircon in the quartz.

The above includes "islands" of plagioclase with albite twinning. The plagioclase is clouded with sericite and probably faintly by epidote.

Fine quartz veinlets cut both above.

Thin section, 155, CK1, 22', quartz and orthoclase? (optical negative). There is interstitial secondary silicates rimming the above. Carbonate occurs as coarse veins or patches at each end of slide.

Thin section 156, rock from road cut near stream. Orthoclase and quartz replacing a sodic plagioclase rock showing twinning and cloudy sericite alteration. Pseudomorphs of hornblende? although some of the ghosts are quite tabular. Prehinite and epidote are present amongst other minerals.

Very little time was spent on these rocks and the above should be judged accordingly.

Crystal balling a bit, an acidic melt seems to have replaced a sodic plagioclase hornblende, mica? rock. The creek rock is a less advanced stage of the replacement than nearer the wide white bodies near the showing. (This doesn't explain the sericite veins near the creek of course). The rocks seem genetically related to each other in thin section because of the plagioclase composition, the replacing material composition, and in both cases the crystal habit of each group of minerals.

Yours truly,

Gordon White, P. Eng.
District Geologist

GW/so

TO FILE ONLY (NOT CLOSELY EDITED)

June 21, 1974

Re: CK, RAFT AND LAKE CLAIMS
Principal Claims CK 1 - 60
82 M/13E 51° 55', 119° 35'
RIO TINTO EXPLORATIONS
D. B. Peterson in charge

Andy/Hope

On June 19, 1974 a visit was made to this property. Access is by logging road; Clearwater Logging Road No. 9 starts at mile 7½ off the main highway just east of Clearwater and follows the west side of Raft River. No. 9 branches into 9S at about mile 30 and the main showing is about 10 to 11 miles along this road. The showing is at an elevation of around 3700' on a steep north east facing bank of the next main creek after Richie Creek.

The topography is one of steep hills. The area is heavily wooded.

Soils consist of glacial rubble of varying roundness, angularity and size. Most of the material does not look foreign to the area. The interstital material is a light brown, sericite argillite composition. The average depth is reported to be five feet.

A brown till of about six inches average depth sits on the bedrock. It is slightly more consolidated but has a higher degree of sorting.

The host rock on the showing is a fine grained biotite-quartz gneiss carrying red garnets. The rocks in the area appear to be a metasediment group of former SS/mudstone series striking NW - SE and dipping 45° SW. Local crenulations and folding parallel to strike must exist. Faulting can be seen along road cuts. In the drill core of CK1 the angle to core length varies, with local wavy open crenulations.

This series of Pre Cambrian? metasediments have been intruded by 100' to 200' wide dikes? and masses of a white, white weathering feldspar-quartz mass. The feldspars show twinning and look like albite. A graphic relation may exist between the two minerals and in isolated incidences, the quartz appears to have crystallized later than the plagioclase. Rose garnets, subhedral to anhedral and from 2mm to 15 mm occur as infrequent, isolated, well spaced xls in this white intrusive.

The intrusive seems to have digested the metasediment. Relict gneissic bands are present in the intrusive material. Sericite is common.

About a quarter mile to the north of the showing area, there are outcrops of rock containing pink K-spar as phenocrystic 2 - 4mm grains in a chloritisized green matrix. The rock has been later cut by 1 to 2 mm white sericite veinlets of variable orientation and spacing, but as close as 1" apart.

The showing is found below the road and above the creek on a steep hill. A few trenches have revealed a coarse box-work, limonite, jarosite type of gossan under the till. The best trench has a showing about 10' x 5'. Massive sphalerite occurs associated with the quartz-biotite-garnet gneiss. The sphalerite is definitely banded in places and grab samples are reported to have assayed 14 percent zinc. Other metallics are pyrrhotite, pyrite and occassional galena although none was seen. Rose garnets of ½ to 1 mm was seen. Smithsonite was observed.

It wasn't readily apparent that the showing was in place. When struck by a hammer the rock gave a dull sound; this may have been from cavity-solutioning but the bothersome thing was that an assumed liniation to the gossan material conformed to the slope of the hill. If this rock has been glacially transported, it may not have come from far away.

There are other classic speroidal weathering boulders of massive sphalerite in the area. These massive sulphide boulders are up to 2' long diameter.

Geochemistry by Rio has shown a fan type dispersion of zinc values; the foci starts at the north across the creek and fans south. Values of zinc to 4000 ppm and 1000 ppm Pb are present. The highest values are in the area of the showings.

A diamond drill has been completed to 300' (Ax) and revealed very little economic mineral. There is a four inch band of sphalerite, chalcopyrite and pyrrhotite at about 186' in the core. The word "band" is used loosely. The metallics are present more as connecting wavy blebs than as disseminated sulphides.

Drilling is continuing and Rio are obligated to drill 1000 feet.

Rock from the main trench, from the core, and from the pink "porphyry" have been submitted for polished and thin section.

This is a most interesting form of mineralization with a fascinating geological setting. The K-spar/sericite alteration with the argillic alteration near the core. Rio should do a little more geology although they are very aware of the import of the setting.

This is written to file only on the specific request of Rio Tinto. Dave Peterson was very co-operative in showing all that was available to see.

This is one of the most interesting areas that I have seen for some time. Studies in glaciology should be carried out with emphasis on epicenters, lateral and terminal moraines, and flow direction. With later summer water-levels silting would be beneficial and above all more trenching to try to understand the known showing.

Gordon White
District Geologist

COPY

DEPT. OF MINES AND PETROLEUM RESOURCES
Rec'd MAY 29 1974

Form-Mineral Exploration 10-11

DEPARTMENT OF MINES AND PETROLEUM RESOURCES

INSPECTION AND ENGINEERING DIVISION

A. NOTICE OF WORK ON A MINERAL PROPERTY (Pursuant to Section 10, Mines Regulation Act)

Section A of this form to be completed prior to commencement of work and within one week of cessation of work and one copy to be sent to each of the following:

(1) Senior Reclamation Inspector, Victoria. (2) District Inspector of Mines.
(3) District Forester or Forest Ranger. (4) Regional Fish & Wildlife Office.
(See Reclamation Guidelines for Requirements, Information, Addresses, etc.)

Our File No. _____
Date _____ 19__

1. NAME OF PROPERTY: CK Property (CK, RAFT, LAKE claims)
Number of claims 152. Principal Claim Group CK 1-60

2. LOCATION: (a) Mining Division Kamloops (b) N.T.S. Map Sheet(e.g. 82N/9E) 82M13E
(c) Lat. 51° 55' Long. 119° 35'.
(d) Locality and access 20 air miles NE of Clearwater. Access by logging road along west side of Raft River.

3. OWNER: Name Rio Tinto Canadian Exploration Free Miner Certificate No. 125648
Address P.O. Box 49108, Vancouver BC City Victoria Prov. B.C.

4. OPERATOR: Name Same Free Miner Certificate No. _____
Address _____ City _____ Prov. _____

5. DURATION OF EXPLORATION WORK: From May 1974 to November 1974

6. DATE OF CESSATION OF WORK: Day _____ Month _____ 19__
(Report of closing only)

7. APPROXIMATE NUMBER OF MEN EMPLOYED: 8

8. EXPLORATION WORK: (Proposed) or ~~(Completed)~~
(a) Geophysical 42 line miles magnetometry (b) Geochemical 3,000 soil samples
(c) Line cutting (distance, width, method) nil, flagging only
(d) Drilling - No. of Sites 8 holes Total area 20,000 sq ft
(e) Road construction - Length 1½ miles Width 12 feet
(f) Underground exploration nil (type)
(g) Total area: Trenching nil sq.ft. Stripping nil sq.ft.
Test pitting nil sq.ft. Other nil sq.ft.
(h) Work by self or contractor Contractor.

NOTE; Owner is responsible for ensuring the Contractor complies with pertinent regulations (See Section 11, Mines Regulation Act.)

9. DATE FOREST SERVICE ADVISED BY OPERATOR: _____
(a) Name & Title of Forest Official _____
Address _____

10. Signature AB Petersen Title Geologist Date 27 May 1974
Print Name D B PETERSEN

NOTE: IF THERE IS LAND DISTURBANCE AND IT FALLS UNDER SUB-SECTION (18) OF SECTION 11 OF THE MINES REGULATION ACT - SECTION B OF THIS FORM IS TO BE COMPLETED.

Section 11 (18) Mines Regulation Act "Notwithstanding the provisions of this section, the Chief Inspector has and may exercise power and authority under this section in respect of all mines in the exploration stage where the employment of mechanical equipment is likely to disturb the surface of the land in clearing, stripping, trenching, or such other operations as the Chief Inspector may consider likely to cause significant disturbance of the surface of the land, and he may approve programmes for reclamation and conservation of the land surface and issue permits required under this section, subject to such terms and conditions as he may prescribe".

(This would apply to Subsections (d), (e), (f), (g), of 8).

visited June 19/74