



Province of
British Columbia

Ministry of
Energy, Mines and
Petroleum Resources
GEOLOGICAL SURVEY BRANCH

MEMORANDUM

Suite 301, 865 Hornby Street, Vancouver, B.C. V6Z 2G3

Telephone: (604) 660-2708

Fax: (604) 660-2653

October 11, 1994

FILE: Red Mountain

*Red Mtn.
886933*

Dave Caywood/Hans Smit
Lac Minerals Ltd., P.O. Box 337
Stewart, B.C.
V0T 1W0

Dear Dave/Hans:

RE: **RED MOUNTAIN - 1994 "SUMMARY HIGHLIGHTS"**

Request your assistance for Annual "British Columbia Mineral Exploration Review 1994". My deadline for printing (first for NWMA, Nov. 30 - Dec. 3) is Oct 21st. Could you please fill in the blanks, indicating if the data is an estimate or proposed (total), and fax to me at 775-0313 at your earliest convenience.

- 1) '94 exp'n/develop. expenditures
 - a) general N/A
 - b) road/tramway construction N/A
 - Total = _____
- 2) Surface Drilling 63 holes; 22,742 metres.
- 3) Underground Drilling 66 holes; 16,390 metres.
- 4) Underground Development* 540 metres. *DECLINE AND DD STATIONS, HANGING WALL & AV ZONE*
 [brief comment - eg. crosscuts; drilling station for ? zones]
- 5) Portal/Decline advance: 12 metres.
- 6) Surface exploration: geological, geochemical, geophysical?
MAPPING, SOIL SAMPLING, TRENCHING, DOWN-HOLE GEOPHYSICS
- 7) Work Focus: Zones (AV, JW, 141); other areas? *AV / 141 / REST OF PROPERTY*
- 8) Resource update? N/A
- 9) Feasibility study/revision to MDAP - Nov '94? *NOV 94.*
- 10) Metallurgical studies - update?
N/A
- 11) Milling site - choices/preference
N/A
- 12) Proposed work to end of '94 season?
OFFICE - LOGGING / DATA / COMPILATION

Thanks very much for your assistance.

Yours sincerely,

Tom

Tom G. Schroeter, P. Eng.
Senior Regional Geologist
TGS:mch

→ Red Mt.

MINISTRY OF ENERGY MINES & PETROLEUM

**GEOLOGICAL SURVEY BRANCH
SUITE 301-865 HORNBY STREET
VANCOUVER, BRITISH COLUMBIA, V6Z 2G3
FAX: (604)-775-0313 Telephone: (604) 660-2708**

✓
VOS

Facsimile Cover Sheet

To: Dave Caywood / Hans Smith
Lac Minerals
Stewart

FAX NUMBER: 636-2122
Telephone: _____

From: Tom Schroeter, P. Eng

Senior Regional Geologist
Company: Geological Survey Branch
Vancouver, B.C.
Phone: (604) 660-2708
Fax: 604-775-0313

Date: Oct. 18/94 3pm

Comments: Red Mountain - 1994 "Summary Highlights"

Thanks very much - looking forward to
seeing your feasibility study/revision to MOA
Tom

Number of Pages: 1



Province of
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MEMORANDUM

GEOLOGICAL SURVEY BRANCH
#159 - 800 Hornby Street, Vancouver, B.C. V6Z 2C5

Telephone 660-2708
FAX 660-2653

November 19, 1990

File: **Red Mountain**

To: Bill McMillan
Manager, Mineral Deposits & Regional Mapping
Geological Survey Branch
Victoria

Re: Red Mountain Dating Samples

Bill - First of all, thank you very much for your prompt attention and scientific input regarding the Red Mountain project. We will send the samples directly to the lab with a covering note (copied to you).

I will contact the company (Bond Gold) to inquire about the possibility of shared costs. In any event, I will attempt to hold funds in my budget. This damn office move may impact negatively on my budget, even though I was previously assured 'not to worry'.

Thanks again, Bill.

Tom Schroeter, P.Eng.
Senior Regional Geologist

TS:JB



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MEMORANDUM

GEOLOGICAL SURVEY BRANCH
#159 - 800 Hornby Street, Vancouver, B.C. V6Z 2C5

Telephone 660-2708
FAX 660-2653

October 22, 1990

CONFIDENTIAL

To: Bill McMillan
Geological Survey Branch
Victoria

Subject: AGE DATING - Red Mountain Project

As you are aware, after several 'negotiations' with Bond Gold (Lac Minerals) concerning a visit to their Red Mountain project located 25 km east of Stewart, I managed a site visit for **one day** in late August this year. I have put together as comprehensive a file as I can which is currently in the **CONFIDENTIAL** category. Basically, I view this project as a potentially very significant new discovery. As such, it may have a major positive impact on future exploration in the Stewart area, in particular in the whole northerly trending belt from Alice Arm to the Iskut River. As such, I believe we, the Geological Survey Branch, should be proactive and follow up in whatever manner we can. To this end, at the time of my visit, I asked/invited Bond Gold to supply me with four (4) potential samples for **K-Ar dating** (three representing various intrusives, and one representing sericitic alteration associated with mineralization). Today, Bond supplied me with the four samples. I am well aware of the backlog of samples, time constraints, and costs involved. I am seeking advice/direction on where to proceed from here. Because these circumstances usually occur infrequently (i.e. not structured to project budgeting) I am somewhat unsure with the 'Priority' system you have developed in Victoria.

I am submitting six (6) samples for thin sectioning. Hopefully, as in the past, I can count on your assistance in examining and providing advice as to the suitability of samples.

I have discussed the matter of age dating with the Company. I believe if we can do the separations, I could get the Company to pay for the actual analyses. Would that be a possibility? The important thing to them is the **timing**.

Tom Schroeter, P.Eng.
Senior Regional Geologist

cc R. Smyth

TS:JB



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MEMORANDUM

GEOLOGICAL SURVEY BRANCH
#159 - 800 Hornby Street, Vancouver, B.C. V6Z 2C5

→ Red Mtn.

Telephone 660-2708
FAX 660-2653

October 22, 1990

CONFIDENTIAL

To: Bill McMillan
Geological Survey Branch
Victoria

Subject: AGE DATING - Red Mountain 'Project'

As you are aware, after several 'negotiations' with Bond Gold (Lac Minerals) concerning a visit to their Red Mountain project located 25 km east of Stewart, I managed a site visit for **one day** in late August this year. I have put together as comprehensive a file as I can which is currently in the **CONFIDENTIAL** category. Basically, I view this project as a potentially very significant new discovery. As such, it may have a major positive impact on future exploration in the Stewart area, in particular in the whole northerly trending belt from Alice Arm to the Iskut River. As such, I believe we, the Geological Survey Branch, should be proactive and follow up in whatever manner we can. To this end, at the time of my visit, I asked/invited Bond Gold to supply me with four (4) potential samples for **K-Ar dating** (three representing various intrusives, and one representing sericitic alteration associated with mineralization). Today, Bond supplied me with the four samples. I am well aware of the backlog of samples, time constraints, and costs involved. I am seeking advice/direction on where to proceed from here. Because these circumstances usually occur infrequently (i.e. not structured to project budgeting) I am somewhat unsure with the 'Priority' system you have developed in Victoria.

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Tom Schroeter, P.Eng.
Senior Regional Geologist

cc R. Smyth

TS:JB



NOVEMBER 21, 1990

TO: Mike Fournier
FROM: Rob Lane

RE: RED MOUNTAIN SAMPLES FOR AR/AR
DATING & SHIPMENT TO DALHOUSIE

Mike,
Here are the 'HOT ROCKS' for the trip to Dalhousie & the Ar/Ar treatment! As you know Bill McMillan reviewed thin sections. Two samples look like good candidates for argon-argon dating. They are:

TGS-BG-A04
TGS-BG-A06

Please submit them for analyses.

Two other samples may be suitable for Ar/Ar dating, but require appraisal by the laboratory staff first. If suitable they may be done at a later date. These two samples are:

TGS-BG-A05
TGS-BG-A02

Thank Mike.

Sincerely Rob L.



Province of
British Columbia

MEMORANDUM

TO:

Bill McMillan
BCGS
Victoria

FROM:

Tom Schroeter
BCGS
Vancouver

SUBJECT:

Age Dating - Red Mtn.

DATE:

Nov. 1990

FILE:

Age Dating

For Your Information

Please O.K. and Return

Please Discuss With Me

Per Your Request

For Your Signature

Please Process

Return With More Details

Investigate and Report

Please Answer

For Your File

Bill,
When I found out last month that there was a serious problem with the UBC lab, I started to look elsewhere. Here's some recent correspondence via Lindsay Bottomer.
Cheers,
Tom

REPLY:

PRIME EQUITIES INC.

11th Floor, Box 10, 808 W. Hastings Street, Vancouver, B.C., Canada, V6C 2X4
 Telephone: (604) 687-7463 Telecopier: (604) 687-2309 Telex: 04-508542

FAX ADDRESS FORM

LOG NO: NOV 09 1990 VAN 13

ACTION:

YBS

FILE NO: Age Dating

FROM FAX NUMBER: 604-687-2309

DATE: 9 NOV '90

TO: TOM SCHROETER

COMPANY: BCDM

TO FAX NUMBER: 660.2653

SENT BY: LINDSAY BOTTOMER

NUMBER OF PAGES SENT (INCLUDING THIS PAGE): 1

PROBLEM ?

CONTACT: Roswitha Davidson
 Prime Equities Inc.
 Phone: 604-687-7463

- Erica Becker

I HAVE FAXED AUSTRALIA RE ISOTOPE WORK,
 BUT NO RESPONSE AS YET. MY CONTACTS THERE
 ARE THRU CSIRO IN SYDNEY, SPECIFICALLY
 DR. GRAHAM CARR, DIVN. OF EXPLORATION GEOSCIENCE,
 51 DELHI ROAD, NORTH RYDE, NSW 2113

PHONE 011-612-887-8666

FAX 011-612-887-8909

I'LL BE AWAY 'TIL THURS NEXT WEEK - FEEL
 FREE TO CALL IN MY ABSENCE IF YOU WISH.

PRIME EQUITIES INC.

11th Floor, Box 10, 808 W. Hastings Street, Vancouver, B.C., Canada, V6C 2X4
Telephone: (604) 687-7463 Telecopier: (604) 687-2309 Telex: 04-508542

FAX ADDRESS FORM

NOV 15 1990

FROM FAX NUMBER: 604-687-2309

DATE: 15 NOVEMBER 1990

TO: TOM SCHROETER

COMPANY: BCDM

TO FAX NUMBER: 660.2653

SENT BY: LINDSAY BOTTONER

NUMBER OF PAGES SENT (INCLUDING THIS PAGE): 2

PROBLEM ?

CONTACT: Roswitha Davidson
Prime Equities Inc.
Phone: 604-687-7463

- Erica Becker

RESPONSE FROM CSIRO RE. AGE DATING
FOLLOWS.

RB

CSIRO

Institute of Minerals, Energy
and Construction
Deihi Road, North Ryde, NSW, Australia

PO Box 136, North Ryde, NSW, Australia 2113
Telephone (02) 887 8566
Telex AA25817
Facsimile 887 8909

Facsimile Transmission	Date: 13/11/90	Time: 1200 hrs
------------------------	----------------	----------------

To: Lindsay Bottomer	From: Graham Carr
Address: Prime Equities Inc.	CSIRO Division of Exploration Geoscience 02- Phone: 8878712
Fax No: 604-687-2309	No of Pages / This Page No /

Dear Lindsay,

In answer to your enquiry; Rb/Sr dating is available in these laboratories, and K/Ar will be available within the next 6 months.

Unfortunately due to demands on machine time, principally by university users, commercial Rb/Sr analyses cannot be undertaken for the time being.

However, I am sure both Rb/Sr & K/Ar will be available in 8-12 months time. If Tom Schroeter is still in the market for quick turn around analyses at that time, tell him to contact us like.

Cheers.

Graham



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Energy, Mines and
Petroleum Resources

MEMORANDUM

LOG NO: **NOV 19 1990** VAN 2

ACTION:

Mailing address: Parliament Buildings, Victoria, British Columbia V8V 1X4 Telephone: (604) 356-2818 Fax: (604) 356-8153

FILE NO: *Red Mtn.*

File: REDMTNAR.DOC
Diskette: 90-17
November 15, 1990.

To: Tom Schroeter
From: Bill McMillan
re: Red Mountain dating samples

Tom,

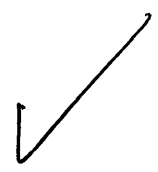
I reviewed the thin sections over the weekend; some look promising. We hope to be able to date 3 of them (using your budget!). The freeze is a problem, is the company willing to get one or two dated?

* Contact
Bond Gold

In order of your dating priority, here are some comments on the various samples.

" PRIORITY 1: sample A04 - Erin Stock, Au-Mo showing, hand specimen, medium to coarse grained quartz monzonite. Looks fresh in hand sample, but in thin section, there is some chlorite alteration of the biotite. Minerals noted are: biotite (5 to 50% chlorite alteration along cleavages); quartz (unstrained, coarse crystals); plagioclase (weakly sericitized along cleavages, some zoning -enhanced by alteration); interstitial K-felspar (lightly dusted with alteration, finely perthitic); accessory apatite and shene; opaque mineral (pyrite?).

CONCLUDE: a good candidate for argon-argon dating.



" PRIORITY 2: sample A06 - Red Mountain, drill core, plagioclase hornblende porphyry with phenocrysts to 8mm size, about 12%; matrix fine grained and dark gray. Hornblende looks fresh in hand specimen. In thin section, hornblende has dark olive green to tan pleochroism and patchy chlorite (+/- carbonate) alteration; locally exceeds 50% alteration). It has apatite inclusions and is locally twinned. Plagioclase phenocrysts are peppered with fine sericite. Carbonate-pyrite along fractures locally cuts and offsets or deforms hornblende crystals. One odd striped-looking grain consists of sericite, carbonate and opaques minerals; it was probably biotite originally.

CONCLUDE: a reasonably good bet for argon-argon dating.



" priority 3: sample A03 - Red Mountain, drill core, bleached gray sample with pyrite crystals in blebs and clumps, labelled hornblende porphyry. In thin section, phenocrysts are quartz and plagioclase; the groundmass is finely crystalline. Alteration is not as severe as it looked in hand specimen, averaging 15%. Alteration is to sericite and carbonate mainly. No evidence of mafic

minerals was seen in the thin section.

CONCLUDE: not usable: no mafics to work with and sericite alteration probably not pervasive enough to give results.

" PRIORITY 4: sample A05 - hand specimen, mafic plagioclase porphyry, possibly a satellitic intrusion of the Goldslide intrusion, matrix medium grained and looks chloritic in hand specimen. Hornblende in thin section is pleochroic from green to yellow-green, and patchily altered, mainly to carbonate. Plagioclase phenocrysts are 40% sericitized. The matrix is also sericitized but patchy areas that look brownish actually consist of very fine pale green chlorite. Some alteration patches have very fine, fibrous amphibole(?), possibly actinolite.

CONCLUSION: may work for argon-argon analysis, it is worth a try.

" PRIORITY 5: sample A02 - Goldslide intrusion, altered hornblende porphyry, hand sample, matrix finely granular, pyrite on fractures. Hornblende crystals are pleochroic, green to yellow, some may have original pyroxene cores. Quartz phenocrysts are embayed and rounded with granular overgrowths(?) at their borders. Apatite occurs as fairly large grains, some of which are inclusions in the hornblende. Sphene is also accessory. Alteration produced epidote, actinolite, possibly tourmaline. The epidote is markedly pleochroic in yellow near pyrite grains; actinolite occurs as needles; what seems to be tourmaline is pleochroic from tourquoise blue-purple to tan.

CONCLUSION: submit to lab for appraisal, may be usable for argon-argon dating.

" PRIORITY 6: sample A01 - Goldslide intrusion, altered pyroxene(?) porphyry, hand specimen, mafic phenocrysts 3 to 5mm, about 15%, matrix finely crystalline. Mafic minerals are pervasively and intensely altered to chlorite, carbonate and epidote; fibrous amphibole (actinolite?) formed locally. The matrix is now saussuritized plagioclase and chlorite. Veinlets that cut the sample contain quartz, epidote and carbonate.

CONCLUSION: not usable, alteration is too intense and none are K-bearing.

As you can see, Tom, three samples look usable, and one other might work.

We are presently processing a grant to Dalhousie University, where I hope to have the samples processed. The cost is \$400 per sample for argon-argon work. I hope we can put 2 or perhaps 3 through. How does your budget look?



Province of
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GEOLOGICAL SURVEY BRANCH

Parliament Buildings
Victoria
British Columbia
V8V 1X4
Telephone: (604) 356-2818
Fax: (604) 356-8153

*File
Age Dates*

*Bill/Tom's
Copy
Reynolds*

December 3, 1990

Dr. Peter Reynolds
Department of Geology
Life Sciences Centre
Dalhousie University
Halifax, Nova Scotia
B3H 4J1

Dear Dr. Reynolds:

Enclosed are the seven remaining samples to be dated using the Ar/Ar method. Thin sections of each are also enclosed. Eight samples were sent but only seven are to be run as per the instructions and lists by each geologist:

Tom Schroeter:	BG A04	Hornblende
	BG A06	Hornblende
	BG A05	\ Do only the one of these two Hornblende samples. If neither is suitable please let me know.
	BG A02	

Jim Logan:	90 JLO 4-6	Biotite
	90 JLO 13-10	Hornblende
	Thin Section not available for this. It will be sent at a later date.	

Don MacIntyre:	PDE 90 - 26	Biotite
	DMA 90 - 27	Biotite

Three samples were sent previously. Two for Chris Ash and one for Nick Massey. If you have any questions please call or send me a fax:

Telephone: (604) 356-2852
Facsimile: (604) 356-8153

Thank you.

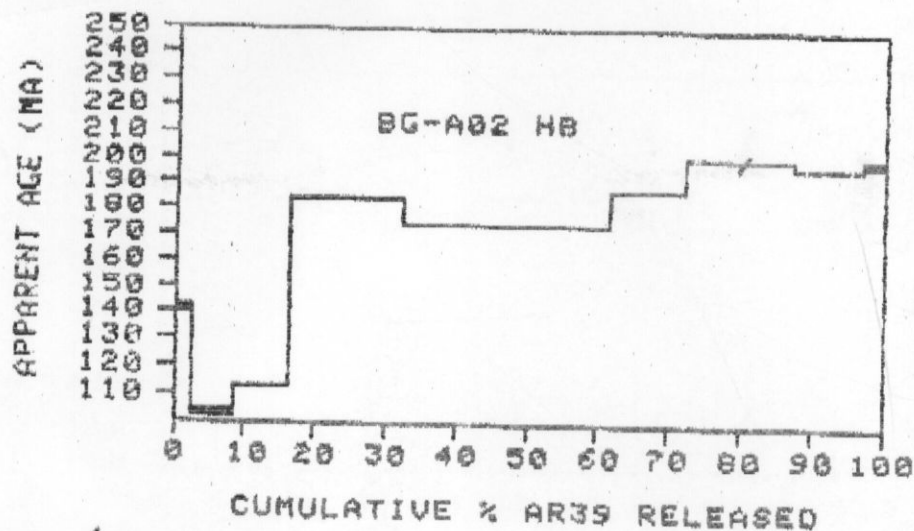
Sincerely yours,

Mike Fournier

Mike Fournier
B.C. Geological Survey

24200
1990 C/S stamps

SAMPLE: BG-A02 HB



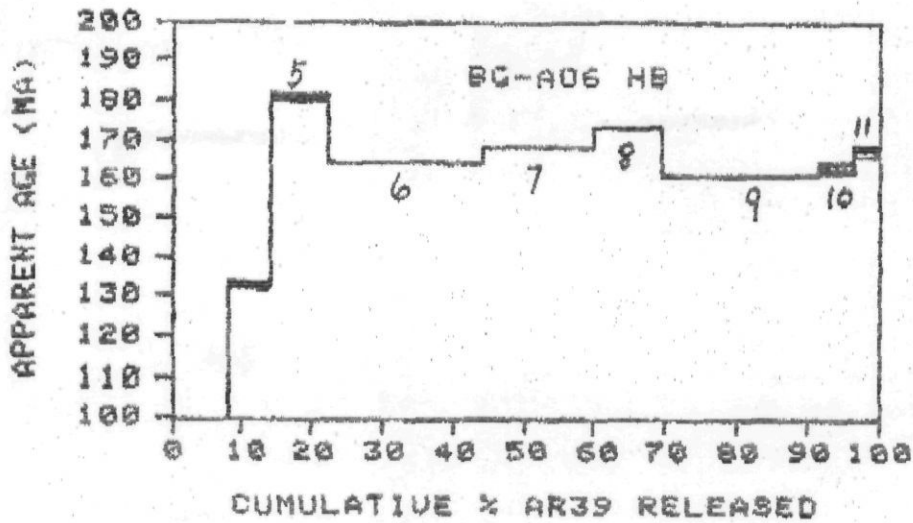
Looks like a 'Turner type'
diffusion less age profile

Original age ~ 200 ma (from concordant
last 4 steps)

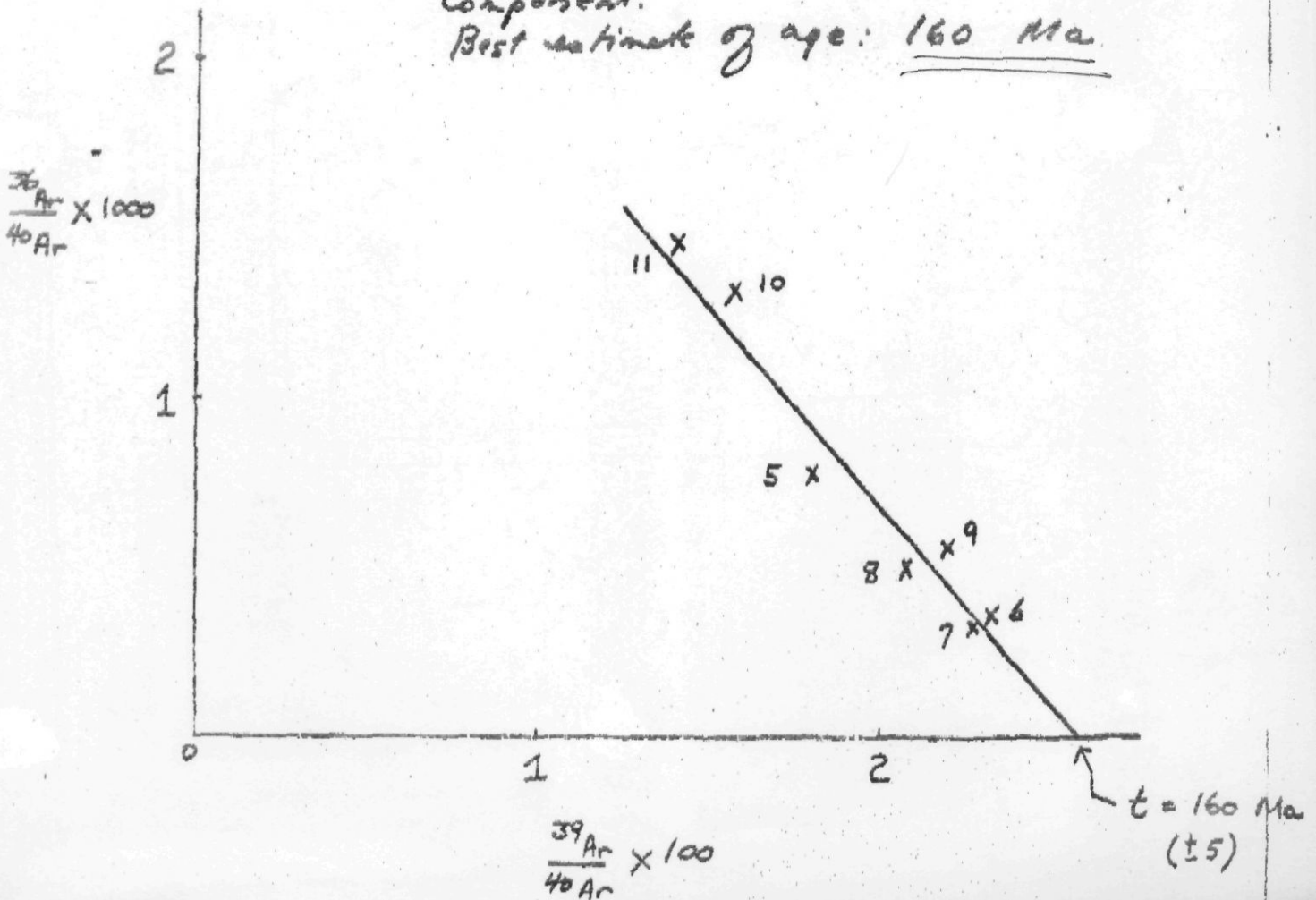
Sample subsequently disturbed (reheated to $< 500^{\circ}\text{C}$)
When? sometime during last 100 ma.

P.S. I hope A06 and A02 are not supposed to be the same!

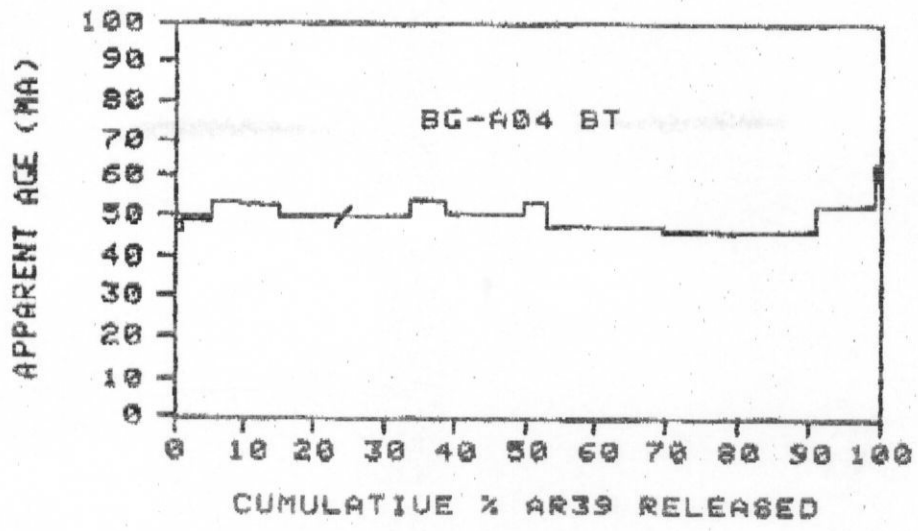
SAMPLE: BG-A06 HB



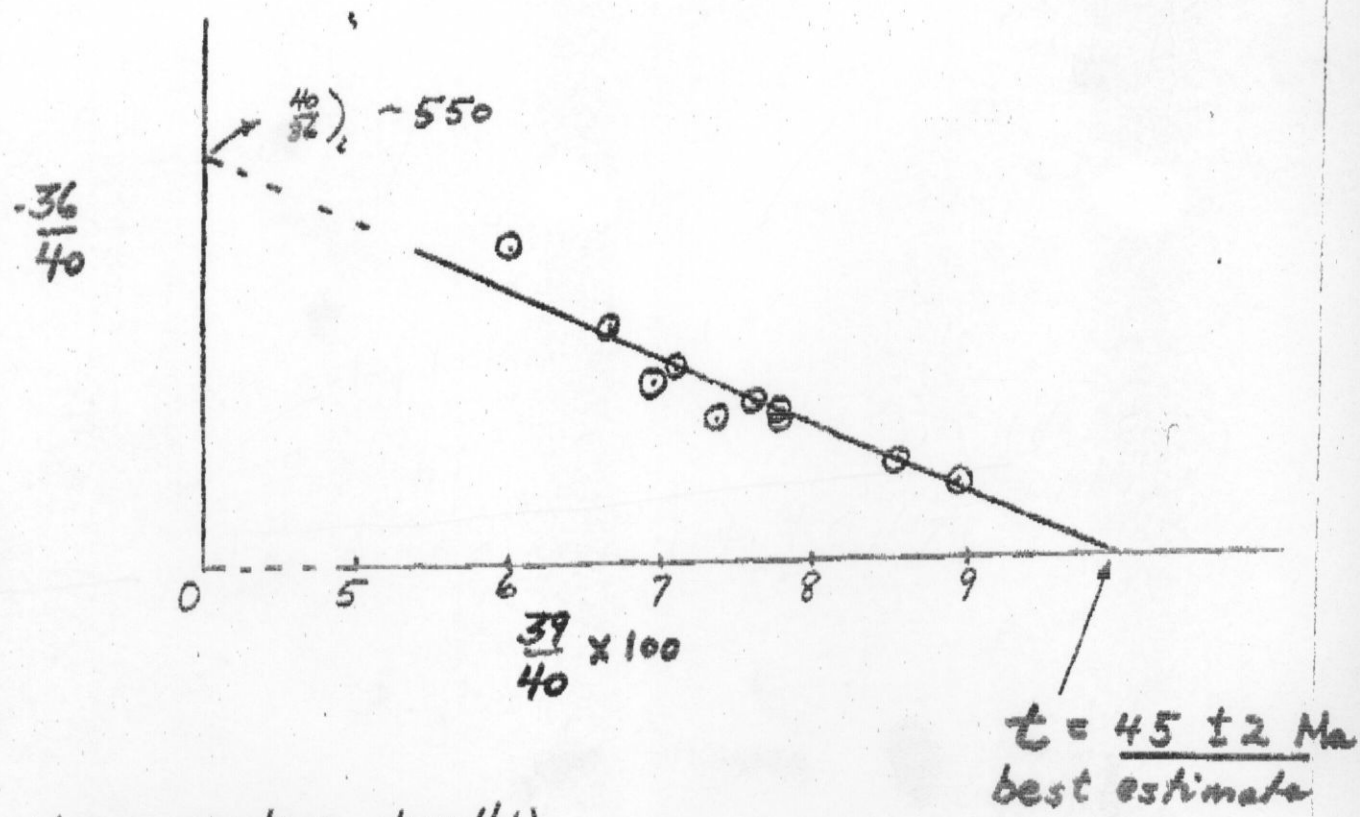
U-shaped spectra are somewhat characteristic of hornblendes with excess Ar.
 Isochron plot below 'removes' this excess component.
 Best estimate of age: 160 Ma



SAMPLE: BG-A04 BT



Note: biotite analyzed; no hornblende here



Note: age spectrum above (top) assumes non radiogenic argon is atmospheric in composition. 'Inverse' isochron plot below does not make this assumption. It appears that initial gas has somewhat higher $^{40}\text{Ar}/^{36}\text{Ar}$ ratio than atmospheric (~ 550).

On August 10th & 11th I visited Lac Minerals' exploration office and core logging facilities in Stewart. Geologists on site included Adrian Bray, Kate Bull, Tony Henrickson, and Bob Singh. The purpose of the 1992 program was twofold:

- (1) to complete regional mapping of their entire claim block; and,
- (2) to conduct step out drilling along the trend of the Marc and the North Zones.

Relogging of all previous core during the past winter by Adrian Bray and John Watkins has enabled them (Lac) to develop a model for mineralization which they are keeping close to their chests until their presentation at the CIM District Six meeting to be held in Campbell River in October. This year's drilling is planned to total 4000 metres which will bring the total amount of drilling on the property to over 24,000 metres. At the time of my visit, approximately 2500 metres had been drilled.

A new mineral inventory has been calculated by Lac at **1.8 million tonnes grading 10 g/t Au** (or about 575,000 ounces of contained gold) in both the **Marc and North** zones. This represents a doubling of previously announced reserves. This inventory is over a strike length of about 300 metres; the overall northwesterly trending strike length (i.e. Marc Zone to Rio Blanco Zone) could be as long as 1200 to 1400 metres. Airborne magnetic surveys clearly outline strong northwesterly trends with mineralization being associated with magnetic lows. Also, the MILES induced polarization (IP) survey is proving to be very successful (>5% sulphide content). Lac is also using downhole geophysics to trace mineralized zone(s) in favourable (stratabound) horizons.

Mineralization, consisting essentially of pyrrhotite, pyrite, chalcopyrite, sphalerite and gold tellurides, occurs in structural zones (eg. Marc and North with a NW strike, dips @ 45° SW and plunges 10° to 15° NW. Host rocks include waterlain tuffs and andesitic pyroclastics near the contact with the low-Ti Goldslide Intrusion of early Jurassic age (~200 Ma). Tourmaline is a fairly common accessory mineral, often showing a good correlation with mineralization. Axinite is also fairly common in the contact zone. Mineralization in the Marc Zone appears to be cut by dyke(s) of Goldslide Intrusion (i.e. slightly older - perhaps the host rocks are Stuhini, rather than Hazelton?). The regional mapping is not confirming the previously assumed Unuk River Fmn./Dilworth Fmn. stratigraphy. A preliminary mineral zoning appears to be emerging (although all ICP analyses will not be routinely dealt with until this winter):

- 1) brecciated and pyrrhotite-rich 'tops' underlain by pyrite-rich rocks
- 2) Zn-rich pods peripheral to main mineralization
- 3) Na-depletion peripheral to ore, and
- 4) apparent Cr-enrichment in the ore zone.

Obviously the careful relogging of core and reinterpretation of mineral styles on the Red Mountain property by Lac is providing some success and encouragement. [Reference - Expl'n in BC, 1991 - Schroeter, Lane, & Bray]

OG-Smithers June 93

Red Mountain

*Red Mountain (103P086) exploration is well underway, underground equipment was transported by helicopter and the decline was being collared on June 29-30. Lac has submitted a development prospectus. Road construction is being deferred until more confirmation drilling can be done. Three drills are in use (about 8,000 feet drilled to June 30) and a fourth is to be added soon, so that the road decision might be made by August. The purpose of the road is to access the lower tram station, hence the need to define production rate and mill location so that the tram can be sized accordingly. Much of the "reserves" in AV zone is geologically inferred from a few wide spaced holes. Early drill results of AV zone fill in holes are positive although few assays are in. The AV zone was intersected further southeast than previously known, indicating the zone is open in that direction as well as to the northwest. Lac's understanding of geology and ore controls continues to evolve. Structural consultant Tom Calom (Memorial University) is developing a model.

Premier

*Premier Mine (104B153) was visited on June 28. Underground mining continues to locate good grade ore and operate profitably. Three long exploration holes were completed to test the Sebakwe ore trend below and north of the Bush showing.

LAND USE

- * Prepared a report and rough maps on "Mineral Values in the Lower Stikine River Management area." The area is 15x125 km, parts of 104G/4,5,11,12,14, 104B/12,13.
- * Public meeting held in Stewart on revised Bear Pass PAS proposal. Poorly advertised and poorly attended.
- * Participated in PAS agency information meeting.

EXPLORATION AND MINESITE ACTIVITY

Huckleberry

- * Huckleberry (93E037)- 500 line km IP survey initiated. New Canamin have established a Smithers office with 3 employees. East Zone is now 31 million tonnes at 0.62% Cu, open to the east and west but limited to less than 200 meters wide by climbing topography of Huckleberry Mountain to the north and an east-west structure to the south. East Zone mineralization has a higher pyrite content than the non-acid generating "Main" zone. Definition drilling has recommenced at 60 meter spacing, exploration drilling will follow. New Canamin does not say much about results of Main Zone drilling but it is apparent the high grade core is only about 6 million tonnes of 0.7% Cu.
- * Ball Creek (104G042)- 700 meter drill program planned on this Cu-Au porphyry.
- * Hearne Hill (93M006)- trenching and drilling program planned.
- * Teepee (104M048) and Pavey (104M002) Option- Noranda exploration program depends on satisfactory reclamation of previous work by property owner. Liability for historic work is a growing concern for exploration.
- * Tulsequah (104K002)- Redfern is upset that they have been denied re-opening of the old access road.



Province of
British Columbia

Ministry of
Energy, Mines and
Petroleum Resources

MEMORANDUM

Smithers telephone: (804) 847-7383

MONTHLY REPORT - OCTOBER 1993

COPY

by

Paul Wojdak, NORTHWEST REGIONAL GEOLOGIST

HIGHLIGHTS

Red Mtn. * **RETRACTION:** Red Mountain project will not continue through the winter, as reported last month. Prime reason appears to be major reorganization of Lac Minerals corporate structure and coincident major downsizing of exploration and technical staff resulting in (temporary?) inability to arrive at important decisions. Craig Nelson, a key backer of the Red Mountain project, is no longer executive vice president of exploration.

Eskay Ck. * **Eskay feasibility study estimates capital costs of \$294 million for mine and plant construction, and production cost of \$108 per ounce of gold equivalent. In a significant new development Prime Resources disclosed it is assessing offers by smelters to treat ore direct from the minesite. This would reduce capital requirement by \$150-200 million and eliminate the Houston mill and autoclave facility. Benefits to British Columbia, including jobs would be greatly reduced. Government should take a pro-active approach to this possibility!**

* **New gold zone discovered at Golden Bear, 2 km north of the minesite, 4,000 ft winter drill program has begun. Also, an excellent drill intercept from the Grizzly Zone (formerly Bear South Deep).**

Red Mtn. * **Red Mountain ore system being recognized as analagous to gigantic Porgera gold deposit.**

FIELD ACTIVITIES

Harry Davis * **Mount Harry Davis (93L203) drill project of Teck Corp was examined with Jim Oliver and Greg Thompson on Oct 7. The property was brought to the drill-target stage 10 years ago by previous operators. With a drill contract of just \$10 per foot, Harry Davis is the third property Teck has optioned this season for a fast, low-cost drill test. At Mount Harry Davis subaerial rhyolite and dacite of the Telkwa Formation (Hazelton Group) contains sparse sphalerite and chalcopyrite in a breccia zone. Drilling indicates the breccia zone is structurally controlled rather than stratigraphic. The breccia zone may have potential for epithermal gold-silver mineralization.**

Allin (new) * **Allin (093L293) drill program by Equity Silver Mines was just underway on Oct 15 when I visited the property with Equity geologist Trevor Wall and prospector Gerry Klein. Allin adjoins the Equity mine property and the area of interest is just 5 km east of the Equity pit. Allin was explored in 1987 (Normine Resources; IP, soil geochem, 4 drill holes) based on the assumption that strata strike northerly, as at Equity. In 1992 Klein discovered ore grade mineralization in glacial till that is similar to Equity Silver. Careful examination of minimal outcrop by Klein and Wall on this drift covered property indicate that intense argillically altered (and pyritic)**

à la Equity ?!

Sept. Monthly of
(Wojdak)

Mesozoic lapilli tuffs strike easterly, not north. Equity has laid out a 4000 ft drill program based on this new interpretation.

Allin

The story of how Allin came to be optioned is unusual. Equity initially declined to option the claims from Klein. Placer Dome liked the property but could not option it because of a perimeter agreement with Equity Silver Mines. The two related corporations were unable to come to an agreement to defer the perimeter clause and finally Equity was "forced" to undertake an option and exploration program.

* **Telkwa Coal (93L152, 156)** property tour south of Telkwa River was completed on Oct 18 with Manalta geologist Angelo Ledda (see PJW Sept report for Telkwa North).

Silver
Butte

* **Silver Butte (SB, 104B150)** development raise from Silver Butte 810 level drift into the West Kansas zone was toured with Paul Lhotka on Oct 25. The project is a joint venture by Westmin Resources and Tenajon to assess production of ore for custom milling at Westmin's Premier mill. Milling of a 1100 tonne bulk sample from the 107 metre raise graded 3.35 g/t Au (minimum ore grade target suggested to be 5 g/t Au). Two slusher drifts were being driven in ore at the time of my visit, to supply a second bulk sample for test milling. Underground evaluation is necessary because detailed drilling was insufficient to determine geometry and continuity of high grade gold intercepts. Work to date indicates that visible gold occurs in randomly oriented 2 cm wide, 1-2 metre long veins and that location of these high grade veins within the zone is impossible to predict. Emphasis now is on evaluating bulk tonnage potential. Lhotka hopes to complete 6000 feet of underground drilling by mid-November. Ultimate potential of the bulk tonnage zone is 750,000 tonnes.

Red
Mtn.

* **Red Mountain (103P086)** could not be visited on Oct 26 due to 150 km winds at the mountaintop weather station. (Same weather system delivered 7.5 inches of rain in 22 hours with accompanying mild temperature melting one metre of snow. Bridge footing on Eskay access road was washed out in conditions that exceeded the 200 year flood.) Red Mountain staff have begun to interpret the tremendous volume of data accumulated in a short time span at Red Mountain (eg, 20,000 gold assays). Hans Smit and John Watkins reviewed plans and sections with Homestake geologist (Ron Britten, Dave Kuran) and Westmin staff (Paul Lhotka, Alf Randall, Rob Boyce) and myself. The emerging picture is outlined below:

Red Mountain gold deposits occur within structurally controlled zones of explosive brecciation and are spatially related to a small pipe-shaped offshoot (Hillside porphyry) at the top of the 200 Ma Goldslide hornblende porphyry stock. Country rocks are upper Hazelton Group massive tuff and well-bedded sediments. Goldslide stock hosts a weak chalcopyrite-moly-quartz stockwork with chlorite epidote alteration. In the gold zones, coarse-grained, semi-massive pyrite was deposited in structural openings (breccias, fractures) and is enveloped by sericite alteration. Gold correlates well with pyrite. A zinc halo averages 1000 ppm. Pyrrhotite rather than pyrite is prevalent at higher structural levels. Tourmaline and axinite occur at yet higher levels. The gold zones are compact, dimensions of the Marc Zone are 15-30 metres wide, 150 metre maximum dip length by 250 metres long. The Marc zone breccia occurs within or along the contact of the Hillside porphyry. The breccia includes abundant sedimentary clasts. In general, the high sulphidation ore zones are rooted from an extensive area of gold enrichment developed at the top of the Goldslide stock. Post-mineral quartz-hornblende porphyry, a late differentiate of the Goldslide stock cuts the Hillside porphyry but is weakly altered.

160 Ma?

***Babine Camp** staking rush carried out during heavy early winter snow. Staking crews from Booker Gold, Lucero Resources and Teck Corporation shared facilities at the same logging camp. The rush appears to be over but claims are still being recorded, 960 units so far in 93M/1 and 93M/8. Due to overstaking it will be take time to determine who owns what.

FIELD ACTIVITIES - Nil

EXPLORATION AND MINESITE ACTIVITY

GOLDEN BEAR
***Ursa (Golden Bear)** feasibility study is in progress but North American Metals presented its development proposal at a NWMDRC meeting to open-pit mine about 150,000 tonnes of Ursa high grade ore in 1996. It proposes to mill the ore in a modified wet grind CIL or CIP circuit at its mill facility on Bearskin (Muddy) Lake. Concurrently, 100,000-150,000 tonnes of Ursa low grade would be placed on the already permitted heap leach pad, along with 60,000 tonnes of stockpiled Kodiak A ore. In 1997 a new 500,000 tonne capacity heap leach pad would be constructed at a yet-to-be-determined site for the remainder of Kodiak A ore. The presently permitted pad is too small to handle all Kodiak and Ursa low grade ore. The roaster will not be required to handle Ursa high grade.

Another new zone is indicated from 1995 exploration at **Golden Bear**. The **Ridge** zone is 2-300 meters west of Kodiak A on the Ridge fault and extends the excellent potential for Carlin type deposits at Golden Bear. North American Metals estimates the **Grizzly** resource at Golden Bear to be 153,000 tonnes at 20.5 g/t Au, based on a 12 g/t cutoff. Revised estimates for other zones:

Ursa	209,000 tonnes	23.3 g/t Au
Kodiak A	542,600 tonnes	4.4 g/t Au

Red-Chris
*At its inaugural **Red Chris** Environmental Assessment meeting, American Bullion proposed a 50-70,000 tonne/day open pit mining operation. Reserves are approximately 250 million tonnes at 0.4% Cu and 0.3 g/t Au. The operation would require a 50-60 megawatt power line and up-graded dock facilities at Stewart to handle 1000 tpd of concentrate. At least four working groups of the EA were formed; ARD/ Tailings, Fisheries/ Wildlife, First Nations and Infrastructure. I will serve on the Infrastructure working group for Red Chris and Bronson Slope (issues: BC Hydro or alternative power, highway or rail traffic, port facilities).

*Exploration success at **Eskay Creek**. NEX zone discovered in hinge of Eskay anticline by drilling at right angles to exploration drilling on the northwest limb. Gold-silver massive sulphides with low Sb and Hg. Homestake/ Prime will significantly increase exploration in the Eskay area next year (2-3 drill program?).

***Corey** exploration completed, good results and optimism for a large program in 1996.

Red-Mtn.
*Exploration for a new zone down plunge from the Marc/ AV/ JW zones will be a prime target for Royal Oak at **Red Mountain**. Two intersections, 8.9 g/t Au over 8.0m and 6.5 g/t Au over 9.0 meters beyond the JW zone were obtained by Lac Minerals late in their program. **Royal Oak** seeks to replace aging, high cost gold producers (company average cost is \$340 per ounce) with new reserves at Kemess and Red Mountain and simultaneously reduce gold production cost to \$230 per ounce. The company would also graduate to rank with the one million ounce per year producers.

Wajdak, Nov. '95

*Cronin Mine (inactive) visited with Don MacIntyre as familiarization with Hazelton stratigraphy and Babine Recreation Area.

*Windy Craggy (Geddes Resources) with Mitch Mihalnyuk, Don MacIntyre, Jim McDougall and mineral potential Tatsenshini team.

*Polaris Taku (Suntac Minerals- Christian Marriott)- Au associated with arsenopyrite, quartz-carbonate veins and listwanite alteration of mafic volcanic rocks. To July 19, 11 holes completed (9500 feet), \$400,000 spent and additional \$300,000 raised. Current drilling is extending the C-vein system along strike in two directions, a particularly wide vein zone was cut in 92-C-18 where the C and AB veins intersect.

*Atlin placer gold operations visited with Resource Management personnel (Doug Flynn, Ray Heistad, Gene Mehr)- supplied copies of Vic Levson's Fieldwork article to interested placer miners and to the GA for distribution.

Red Mtn
*Red Mountain (Lac Minerals) with Vic Preto- Au associated with extensive pyritic zone adjacent high level Goldslide stock (early Jurassic? hornblende monzonite) intrusive into Unuk River(?) Formation. Differing geologic interpretations between core loggers and surface mappers as to geologic environment are being resolved by the two groups trading jobs for a week. The Marc (Main) Zone has been re-interpreted to strike NW and dip gently SW, thereby opening up untested ground that is easily tested by surface drilling. Hole 92-1 intersected 6 meters at 9 gm/tonne Au but the zone dips more steeply than anticipated. Hole 92-2 failed to intersect the parallel North Zone and 92-3 failed to hit the Main Zone. Six holes (2000 meters) are planned.

*SU (Tony L'Orsa)- VMS target in Hazelton volcanics near Smithers. Massive pyrite clasts and strong Zn soil geochem. One hole was drilled with no significant intersection.

OFFICE ACTIVITIES:

- *MLM completed Exploration Review 1991 article.
- *MLM has established Notice of Work database in dbase IV.
- *MLM reorganized office layout of property files, Minfile, Land Use files etc.
- *MLM installed new version of Quikmap (assisted by Don MacIntyre).
- *Mineral Market Update info supplied.
- *Health of Mineral Industry info supplied to TGS.

MEETINGS/ COURSES:

- *MLM and PJW attended Mine Reclamation Symposium in Smithers.
- *Fort St James field conference and mineral properties field trip attended by PJW.

Paul Wilton Report July 1992

***Bandit (104K 086)** is the prime target of Goden Bear regional exploration by Wheaton River Resources and was visited on Aug 16 with geologist Andrew Hamilton. Drilling in the Post zone (3 holes) and Ram Reef zone (2-3 holes) is directed at the steep, silicified fault contact between Stuhini volcanics and Paleozoic limy clastics and tuffs, a comparable setting to the Bear deposit. There is a strong soil anomaly (500+ ppb Au over 500 x 1000 m) and trench assays to 15 g/t Au over 2 m but the best drill intercept to date is in the order of 1 g/t over 10 meters. Geochem, VLF and IP are used to select drill targets.

***Eskay mine site** was toured on Aug 18 and Homestake's exploration at Eskay and Treaty Creek (optioned from Teuton Resources) were discussed with Ron Britten, Dave Kuran and Andrew Kaip. Construction contractors are expected to be done and off-site by mid-September. The main concern is completion of upgrading the road to haul truck status so that waste rock can be removed to Albino Lake. While excavating a rock quarry to be used for road construction a 0.4 meter sulphide bed about 150 meters stratigraphically above the contact mudstone was discovered and is now an exploration target. Recent underground development has provided new exposure of auriferous pyrite in the Pathfinder (footwall) zone but currently is not a follow-up target because grade is near mine cut-off. Six deep tests of the Eskay horizon are being drilled from surface north and east of the deposit on geological and geophysical targets. Drilling through major faults is tough.

***Red Mountain** was examined on Aug 19 with Hans Smit leading a group of 14 EMPR, MDRU and exploration geologists. Construction of the Bitter Creek road to the lower tram station and bench for the upper tram/lower portal were all under construction, as part of the advanced exploration program. Although not stated "officially" it is clear the project needs a new discovery or exploration break-through to augment the Marc and AV zones (which contain 800,000 oz, short of the 1,000,000 oz minimum target- CONFIDENTIAL!). The JW zone is narrow and grade is not high enough, GY geophysical target is primarily graphite and the 141 zone has not developed beyond the initial drill intercept of 3.8 g/t Au over 34 meters. Drilling continues with 2 rigs underground (30,000 ft to date in 1994) and 2 on surface with another about to start (approx 50,000 ft expected). Refinements to geological interpretation continue; mineralization is thought to be derived from an early intrusive phase (the term Hillside porphyry is now passe) and the main Goldslide stock, although related, is post-mineral. Thus the Marc zone is truncated by the stock and hopes are high for a new zone southeast of the stock, named the Marc Extension which is being explored by trenching and drilling. Lac is employing several prospectors and a geological team working closely with GSC regional mapper Charlie Greig, to explore their own ground and evaluate others.

***Westmin Resources** deep drilling northeast of the Premier deposit was discussed with Paul Lhotka on Aug 19 and core was examined. The target is intersection of the deposit's principal vein system with an early structural break that controlled volcanic stratigraphy. The third hole intersected intervals of centimeter-wide arsenopyrite veinlets that contain significant gold (eg 11 g/t over 1.6 m). Follow-up drilling is in progress.

***Exploration of numerous long-known vein showings on lower Bitter Creek (MM property)** by Prime Equities International Corp was reviewed with John Nicholson and Andris Kikauka on Aug 20. A small drill program is planned (6-7 holes).

Wade K. Aug. 1994

*Eskay Creek mine geologists confirm that the NEX zone contains important base metal values and is amenable to conventional milling. Prime Resources (Homestake) wants to improve utilization of the rich Eskay resource including reduction of the extremely high cut-off grade of 40 g/t Au! A \$1.8 million Eskay mine-site and area exploration program is planned.

Red Mountain
*Royal Oak will evaluate Red Mountain access from the Willoughby side of Cambria Icefield (instead of the Bitter Creek route) by a sonar survey of ice depth.

Fireside
*International Barytex will mine 20 000 tonnes of barite from the Fireside vein deposit, a past producer 100 km southeast of Watson Lake.

OFFICE ACTIVITIES

*Smithers Exploration Group lunch talks continue to be organized and are increasingly popular with 50 people attending "Heame Hill Discovery" on Jan 17, 25 people for "Huckleberry Mine Plan" on Feb 14 and 20-22 for "Dublin Gulch Intrusive Gold Deposit" on Feb 28.

*Filled numerous information requests resulting from Roundup contacts.

Snip
*Bronson Slope mine development application under EA process was reviewed and comments/ recommendations given to Regional Manager. Extension of the Iskut road to Snip emerged as the key issue with Environment at the EA meeting. The road link is essential for Bronson Slope, and to reduce cost at Snip allowing lower grade ore to be mined. The road extension was approved in principle in 1991 and the Snip J.V. (under Skyline's control) could simply make application for an S.U.P. under the Forestry Act to build the road and avoid MoE's aim to have it reconsidered under the the Bronson Slope application. If Prime Resources elects to take control of the Snip J.V. it may be in their best interest to link new reserves at Eskay Creek mine (that are amenable to conventional milling) with the Snip mill.

*Reviewed Northwest Regional business plan for 1996.

*Annual Exploration Summary distributed at Cordilleran Roundup.

*Participated on interview panel for Prince George Regional Geologist.

*Babs write-up completed for Exploration in B.C. Work continues on other reports.

*Prepared "Mineral Exploration in Northwest B.C. - Trends for 1996" for Rock Talk, KEG and Minerals North presentations.

*Enrolled in 5 session evening computer course.

*Presented/ discussed mining options to Bulkley district Socio-Economic Steering Committee on Feb 26.

Wojdak MR - Feb, '96

CLOWNE

reflect primary rock composition rather than alteration. Cataclastic texture indicates displacement but the direction is indeterminate. We were shown a feldspathic dike that is truncated by the H-1 structure. From trench assays, grades are 20-30 g/t Au over 2-3 m but tight drilling to 150-175 m below surface gives lower grades, typically 3-5 g/t Au and intercepts are difficult to correlate. Drilling has tested a 400 meter strike length.

*Martha Ellen drilling at **Big Missouri** was reviewed with Dave Pauliuk of Westmin Resources on Aug 27. The mineralized zone has been extended several hundred metres east by re-interpreting the zone to dip east instead of west, and to lie near the contact between andesite and Premier porphyry. About 8 holes are spaced 200 metres apart to outline extent of mineralization (best result so far, 7.7 g/t Au over 6 m) and additional drilling (next year?) seems probable.

***Red Mountain** exploration was reviewed with John Harrop and Steve Roebuck on Aug 28. The approach is drill every target that interested Lac Minerals. No new targets are being sought. The 300 metre underground extension has been completed. Drilling continues with six drills (3 at Rio Blanco on the JW extension, one on the Cambria zone, one at Hartley Gulch and one underground on JW). Approximately 16 000 m of drilling has been completed, primarily deep holes on the Marc-AV-JW plunge extension. These holes hit the altered pyritic zone with anomalous gold, but few significant intercepts have been achieved. The mineralized zone is now interpreted to plunge more steeply northwest of AV. Technical problems of deep holes and unpredictable deviation is resulting in less than anticipated production, about one-third of the proposed footage will not be completed. With the season getting late, hole wedging is being planned in an attempt to get more intersections. At Hartley Gulch, several holes have also been abandoned short of their target in broken ground. The Hartley Gulch drill is about to be relocated underground. Royal Oak's latest report to the EA committee states the Red Mountain resource as 1 921 680 tonnes at 9.8 g/t Au for a contained 600,000 ounces of gold, greatly reduced from the 950 000 - 1,000,000 ounces previously stated. The exploration target is indicated to be an additional 700 000 ounces.

EXPLORATION AND MINESITE ACTIVITY

***Premier Gold** underground drilling aimed at identifying sufficient reserves to reopen the mine has completed 8 000 metres with encouraging results. Budget was \$850,000. Drilling will re-commence with a second \$850,000 budget.

***Imperial Metals Corporation** will pay AEC West Ltd (formerly Conwest Exploration) \$4.4 million for its 55.4% of Regional Resources thereby gaining complete control of the **Midway** property. Imperial Metals estimates Midway mineable reserves at 1,377,000 tonnes of 317 g/t Ag, 5.8% Pb, 8.3% Zn (GC Aug. 26), somewhat less than published by Canamax in their 1986 Annual Report.

***Willoughby** underground drilling completed (20 holes, 1697 m) on the North and North North zones. Results are good on one section (about 13 g/t across 4 m) but flanking drill sections were generally less than 3 g/t Au over narrower widths. Surface drilling (1760 m) on the Wilby zone is in progress.

PWoj. Aug. '96 MR

File copy



Province of
British Columbia

Ministry of
Energy, Mines and
Petroleum Resources

MEMORANDUM

GEOLOGICAL SURVEY BRANCH

159-800 Hornby Street, Vancouver, B.C. V6Z 2C5

Telephone (604)660-2812

FAX (604)660-2653

June 18, 1990

To: Talis Kalnins
Mineral Inventory Unit
Geological Survey Branch
Victoria

Re: Recent Assessment Report - Red Mtn. (103P253)

I am planning a short project this summer at the Red Mountain area located east of Stewart. If necessary, I may need to look at/copy a **recent** assessment report which would have been filed in Dec. '89 or Jan. '90. Can you confirm by phone (660-2812) or fax (660-2653) that such a report is on file and that I will be able to copy it prior to August 1st for my use only in the field?

Tom Schroeter, P.Eng/
Senior Regional Geologist

TS:JB

copy to WRS for info



Province of
British Columbia

Ministry of
Energy, Mines and
Petroleum Resources

MEMORANDUM

GEOLOGICAL SURVEY BRANCH
#159 - 800 Hornby Street, Vancouver, B.C. V6Z 2C5

Telephone 660-2708
FAX 660-2653

October 22, 1990

CONFIDENTIAL

To: Bill McMillan
Geological Survey Branch
Victoria

Subject: **AGE DATING - Red Mountain 'Project'**

As you are aware, after several 'negotiations' with Bond Gold (Lac Minerals) concerning a visit to their Red Mountain project located 25 km east of Stewart, I managed a site visit for **one day** in late August this year. I have put together as comprehensive a file as I can which is currently in the **CONFIDENTIAL** category. Basically, I view this project as a potentially very significant new discovery. As such, it may have a major positive impact on future exploration in the Stewart area, in particular in the whole northerly trending belt from Alice Arm to the Iskut River. As such, I believe we, the Geological Survey Branch, should be proactive and follow up in whatever manner we can. To this end, at the time of my visit, I asked/invited Bond Gold to supply me with four (4) potential samples for **K-Ar dating** (three representing various intrusives, and one representing sericitic alteration associated with mineralization). Today, Bond supplied me with the four samples. I am well aware of the backlog of samples, time constraints, and costs involved. I am seeking advice/direction on where to proceed from here. Because these circumstances usually occur infrequently (i.e. not structured to project budgeting) I am somewhat unsure with the 'Priority' system you have developed in Victoria.

I ^{will be} submitting six (6) samples for thin sectioning. Hopefully, as in the past, I can count on your assistance in examining and providing advice as to the suitability of samples.

I have discussed the matter of age dating with the Company. I believe if we can do the separations, I could get the Company to pay for the actual analyses. Would that be a possibility? The important thing to them is the **timing**.

Tom Schroeter

Tom Schroeter, P.Eng.
Senior Regional Geologist

cc R. Smyth

TS:JB

For Info

LOG NO:	901128 T 6
ACTION:	<i>→ Tom</i>
FILE NO:	

Ron -

Thin sections reviewed.

LOG NO:	DEC 04 1990 VAN 034
ACTION:	
FILE NO:	30040-20/RLM

*3 samples look usable for Ar/Ar
sample sent (3 to be analyzed) on Nov. 26 to
designated Ar-Ar lab.*

Bill