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MASTER REPORT  
GEOLOGICAL SURVEY BRANCH - MINERAL RESOURCES DIVISION  
MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES

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REPORT: RGEN0100

MINFILE NUMBER: 082FSW110 NATIONAL MINERAL INVENTORY: 082F4 Mo1

NAME(S): COXEY, RED MOUNTAIN, COXEY (L.1221),  
NEVADA (L.966)

STATUS: Past Producer Open Pit MINING DIVISION: Trail Creek  
NTS MAP: 082F04W UTM ZONE: 11  
LATITUDE: 49 05 23 NORTHING: 5437550  
LONGITUDE: 117 49 36 EASTING: 439650  
ELEVATION: 1379 Metres  
LOCATION ACCURACY: Within 500M  
COMMENTS: Open Pit A, located 2.5 kilometres northwest of Rossland on the west side of Red Mountain.

COMMODITIES: Molybdenum Copper Tungsten Gold

MINERALS  
SIGNIFICANT: Molybdenite Pyrrhotite Chalcopyrite Arsenopyrite Scheelite  
Pyrite Magnetite  
ASSOCIATED: Silica Quartz Calcite  
ALTERATION: Garnet Epidote Silica  
ALTERATION TYPE: Silicific'n Skarn  
MINERALIZATION AGE: Unknown

DEPOSIT  
CHARACTER: Breccia Vein Disseminated  
CLASSIFICATION: Hydrothermal Epigenetic Porphyry Skarn  
TYPE: W skarn Porphyry Mo  
W skarn Porphyry W  
SHAPE: Irregular  
MODIFIER: Faulted

HOST ROCK  
DOMINANT HOST ROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Undefined Group	Mount Roberts	
Jurassic			Trail Pluton
Lower Jurassic			Nelson Intrusions

LITHOLOGY: Breccia  
Hornfels  
Hornfels Siltstone  
Quartz Diorite Breccia  
Quartz Diorite  
Granodiorite  
Andesite  
Lamprophyre Dike

HOST ROCK COMMENTS: The Trail pluton is part of the Nelson Intrusions.

GEOLOGICAL SETTING  
TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Selkirk Mountains  
TERRANE: Slide Mountain Quesnel  
METAMORPHIC TYPE: Contact RELATIONSHIP: Syn-mineralization GRADE: Hornfels  
Post-mineralization

INVENTORY

ORE ZONE: COXEY AND NEVADA CLAIMS

CATEGORY: Indicated YEAR: 1982  
QUANTITY: 244917 Tonnes  
COMMODITY GRADE  
Molybdenum 0.2200 Per cent

COMMENTS: Drill indicated in upper B and C zones. Actual grade is 0.37 per cent MoS2. Conversion used to MoS2 to Mo is 1.6681.  
REFERENCE: Filing Statement 139/82, David Minerals Limited.

CAPSULE GEOLOGY

The Coxey mine is underlain by the Pennsylvanian and possibly Permian Mount Roberts Formation siltstone, hornfelsed siltstone, hornfels and a breccia complex. The siltstone is rusty, sooty and massive or thinly bedded with minor disseminated pyrrhotite and pyrite. The hornfels and hornfelsic siltstones are thinly laminated, massive cherty rocks, which locally contain brown garnet and epidote. The succession is thought to have been thrust over augite porphyry of the underlying Rossland sill of the Elise Formation (Rossland Group) prior to the intrusion of the Middle to Late Jurassic Trail pluton (Nelson Intrusions). The siltstone is intruded by lenticular masses of andesite, irregular bodies of quartz diorite and quartz diorite breccia, and late steeply dipping dykes which trend north-

CAPSULE GEOLOGY

ward. The quartz diorite is assumed to be part of the Trail pluton. Steeply dipping faults, trending 160 degrees, offset the orebodies. One such fault separates the A from the B orebodies, another passes between the A and upper A orebodies, and yet another passes between the A and E orebodies. From the offset of the orebodies the faults are assumed to be downthrown on the west. The Headwall fault, between the A and upper A orebodies, is followed by a lamprophyre dyke which is locally sheared along the fault. The quartz diorite breccia is also offset 45 to 50 metres to the right along this fault. Potassium-argon dating of biotite from the Headwall lamprophyre dyke gave an age of 49.0 plus or minus 1.6 million years (Bulletin 74).

The molybdenum mineralization occurs essentially within the Mount Roberts Formation breccia complex. The hornfels and hornfelsic siltstone comprises a breccia with angular blocks ranging up to 30 metres across. The matrix between the blocks is comprised of fine silicates, quartz, calcite, garnet or scheelite. Molybdenite, usually without other sulphides, occurs in randomly oriented fractures in all types of hornfels breccia and in the quartz diorite breccia. Commonly, it lies along the margins of breccia blocks and locally is concentrated at junctions between the blocks. Rarely, these junctions also contain drusy quartz, scheelite, hornblende or epidote. Pyrrhotite, chalcopyrite and pyrite are disseminated in the hornfels and also occur in fractures and as massive lenses between breccia fragments. The sulphide distribution seems independent of the distribution of molybdenite. Arsenopyrite is a predominant mineral with molybdenite and chalcopyrite in the Coxey-Novelty vein (082FSW107). Microscopic magnetite rims the arsenopyrite grains.

Between 1966 to 1972, 1,035,509 tonnes of ore was mined from the open pits and produced 1,748,871 kilograms of molybdenum. In 1982, the indicated reserves for the orebodies on the Coxey and Nevada claims was calculated to be 244,917 tonnes of 0.22 per cent molybdenite. Actual grade is 0.37 per cent MoS<sub>2</sub> (Filing Statement 139/82, David Minerals Limited). Conversion used of MoS<sub>2</sub> to Mo is 1.6681. Some of this material is reported to carry gold but estimates of the average grade cannot be made from the data available.

Scheelite occurring as medium to coarse grains, is scattered throughout the breccia complex. Rarely, it forms spectacular clusters of grains between fragments. Its occurrence is erratic and company records indicate the highest grades were found in the E and F orebodies on the Mountain View claim (082FSW140), where the grade was about 0.10 per cent W<sub>03</sub> (tungsten trioxide).

The characteristics of the molybdenite and scheelite mineralization and its association with the Middle to Late Jurassic Trail pluton, especially its upper and western margins, point to its classification as a porphyry-type deposit (Bulletin 74).

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MINFILE NUMBER: <u>082FSW110</u>		NAME: <u>COXEY</u>		STATUS: Past Producer	
<u>Production Year</u>	<u>Tonnes Mined</u>	<u>Tonnes Milled</u>	<u>Commodity</u>	<u>Grams Recovered</u>	<u>Kilograms Recovered</u>
1972		1	Molybdenum		137,253
1971	191,715		Molybdenum		260,801
1970	212,051		Molybdenum		256,076
1969	201,542		Molybdenum		381,965
1968	196,396		Molybdenum		165,485
1967	159,711		Molybdenum		307,905
1966	74,094		Molybdenum		239,386

SUMMARY TOTALS: 082FSW110

NAME: COXEY

	<u>Metric</u>	<u>Imperial</u>
Mined:	1,035,509 tonnes	1,141,453 tons
Milled:	1 tonnes	1 tons
Recovery: Molybdenum:	1,748,871 kilograms	3,855,599 pounds

Comments: 1972: From stockpile amount unknown