

AB (Fe, Pb, Zn)

The **AB** property lies in the Backbone Ranges of the Mackenzie Mountains in the western Northwest Territories. Exploration work in this area first began in the 1970's but was very sporadic after 1980 due to falling metal prices and the remoteness of the area. Carbonate hosted Zn-Pb deposits are found in this region including the AB-Main Zone showing covered by the AB claim.



The AB claim has been under development by Eagle Plains Resources Ltd. since it was acquired in 2005. During the 2008 exploration program, 8 days were spent on the claim by a 2 person crew, as well as contractors from helicopter and exploration companies. Environmental consultants were also employed during the program. The exploration program was based out of the Border Lake camp

which was supplied by float equipped fixed wing aircraft from Norman Wells, NWT.

Soil sampling conducted in the vicinity of mineralized showings returned zones anomalous in zinc and iron. The results show a large zinc and iron anomaly around the AB-Main Zone and east of the Bak Zone a smaller, open zinc anomaly with a small iron anomaly to the north. Channel sampling was conducted on the AB-Main showing which returned promising zinc values. The 5 m long channel sample returned an average value of 8.34 % zinc, including 2 m of over 10 % zinc.

Total expenditures from the 2008 exploration program covering the AB claim was \$41,413.45.

Introduction

The Mackenzie Mountain region, west of Norman Wells, has been explored for zinc, lead, silver, copper and diamonds by both junior and major companies since the early 1970's. The majority of known base metal mineral showings were discovered during the 1970 period when helicopters and silt geochemistry were first used in regional exploration. In the late 1970's, numerous mafic diatremes found in the district were explored for their diamond potential.

The remoteness of the area and low metal prices led to a period of inactivity in the late 1970's until 1999 when Eagle Plains Resources Ltd. staked claims in the area of the historic Gayna River Zn-Pb deposit. In 2005 Eagle Plains staked the AB claim to cover the historic AB-Main Zone showing.

Work by Eagle Plains in 2008 on the AB claim focused on soil geochemistry to follow up detailed silt geochemistry and a prior IP geophysics survey, and channel sampling of the AB-Main showing in order to get a representative sample of the size and grade of the showing.

Location and Access

The AB-Main claim, under exploration by Eagle Plains Resources Ltd. in 2008, lies in the northern Mackenzie Mountains near the Northwest Territories-Yukon border. The claim lies 260 km west of Norman Wells in the Arctic Red River drainage basin.

Access into the area is principally by air from Norman Wells which is the best logistical centre for the project. An all weather jet airport, barge access along the Mackenzie River, stores and air charter companies are all found at Norman Wells. Border lake is suitable for float planes, but a helicopter is required to transport exploration crews to the property.

History

1974-1977 Welcome North Mines Limited organizes Arctic Red Joint Venture regional exploration program.

1974 – Arctic Red Joint Venture discovers Zn-Pb mineralization at the AB-Main showing and competes 866 feet of diamond drilling on the showing. One hole intersects 100 feet of disseminated sphalerite mineralization including 10 feet of 12 % zinc.

1976 – Arctic Red Joint Venture completes a detailed mapping, prospecting and geochemistry program on the AB-Main Zone and the AB-C Zone is discovered. 10 trenches are blasted to explore the extent of mineralization and results suggest that the lower high grade bed extends at least 225 feet horizontally with an average grade of 10%.

1977 – Arctic Red Joint Venture completes 6 diamond drill holes totalling 1562 feet drilled at the AB-C Zone. All facies of the Sekwi dolostone are found to be mineralized to some extent. Most significant mineralization is found in holes AB 77-3a and AB 77-4

2005 – Eagle Plains Resources Ltd acquires prospecting permit covering the historic DAB and AB-C showings in addition to staking AB claim. A limited field program is conducted to verify target types and area potential.

2006 – Eagle Plains Resources Ltd obtains all the original sample material collected by Rio Tinto during their RGS sampling program in the Mackenzie Mountains in the 1970's. Rio Tinto samples are analyzed by ICP for 32 element suite. A helicopter supported field program with a 6 person crew is conducted to prospect areas of anomalous silt geochemistry and examine old showings, spending several days in the AB area.

2007 – Eagle Plains Resources Ltd conducts a helicopter supported field program with a 15 person crew to follow-up RGS silt anomalies and to map and prospect areas of favourable geology. Regional silt sampling following up prospective lithologies is conducted in the AB area in addition to a 7 day, two person camp at the AB-C Zone.

2008 – Eagle Plains Resources Ltd conducts a helicopter supported field program with up to a 25 person crew. 8 days with a crew of 2 are spent on the AB claim soil sampling to follow up silt geochemistry and rock sampling to evaluate the AB-Main showing potential.

Geology

Regional Geology

The AB project is located near the northern margin of the northern Mackenzie Mountains, and covers carbonate hosted Zn-Pb-Fe mineralization. The property lies in a fold and thrust belt and is situated 25 km to the rear (SW) of the front scarp of the Plateau Thrust.

The lithologies dominating the region are thick-bedded limestone and dolomite beds belonging to the Cambrian Franklin Mountain and Sekwi Formations which overlie similar lithologies in the Proterozoic to Cambrian Backbone Ranges Formation. The older Backbone Ranges Formation differs from the younger units only in its higher quartzose sandstone to quartzite content, and fossils. An unconformity separates the Ordovician-Silurian limestone, dolomite and black shale of the Road River Group (CDR) from the older, underlying carbonate strata.

Normal and reverse faults have been identified within the Proterozoic sequences in the district and are believed to have formed during the Racklan Orogeny. These faults have roughly north-south and east-west strikes with some showing displacement up to 300 m. Some minor folding occurred during the Helikian as indicated by small scale folds truncated by the Franklin Mountain

unconformity. After the deposition of the Cambrian through to Devonian strata a second period of faulting took place, likely part of the Laramide Orogeny. The strike for the faults is easterly to northwesterly. The present day structural grain of the region is dominated by Laramide folds.

Property Geology

A large fault of unknown orientation runs approximately east-west through the centre of the claim. The fault juxtaposes basinal sediments of the Cambrian Road River Formation against Cambrian platform carbonates of the Sekwi and Franklin Mountain Formations.

A second fault of unknown orientation truncates the carbonate rocks near the southern boundary of the claim with the Backbone Ranges Formation. A north-south trending fault likely exists at the eastern boundary of the claim to bring the Franklin Mountain Formation in contact with the platform carbonates occupying the centre of the claim.

Mineralization on the claim is located adjacent to the northern most fault on the claim. Surface expression of the mineralization occurs primarily as a float train of high-grade disseminated to massive sphalerite and pyrite with occasional galena hosted in dark re-crystallized dolomitic rocks of the Sekwi Formation. Disseminated pyrite occurs distally from the main showing although its paragenetic relationship to mineralization has not been determined. A second showing occurs in the south-west corner

2008 Exploration Program

The focus of the 2008 geochemical sampling program was to follow up on stream silt geochemistry, to further define the mineralized areas on the property and to channel sample the AB-Main showing location. Two multielement anomalous zones were discovered including one open anomaly.

Two soil grids were completed: the AB-Main Zone over the main showing area and the BAK Zone in the south-west corner of the permit.

Geochemistry

The soil grid established around the AB-Main showing extended down the valley on either side of the creek. This grid was conducted to test anomalies returned from a prior IP survey and to delineate the extent of the showing area. An anomalous zone of zinc was returned immediately around the zone of mineralized float that covers the showing, encompassed by a slightly larger iron anomaly. Anomalous zinc values range from 728 ppm to 11870 ppm while anomalous iron values range from 3.68 % to 22.68 %. The anomaly is located in the Sekwi Formation and dies off rapidly before the lithology changes across the fault into Franklin Mountain Formation. No anomalous values were returned for lead.

A second grid, established in the south-west corner of the permit near the Bak Zone showing, also returned a weak zinc anomaly with a small iron anomaly. The anomaly is in the Sekwi Formation and lies open to the south-west. Five channel samples were taken from the AB-Main showing to obtain representative zinc and lead values for the showing. The entire thickness of the exposed showing was sampled. In total, 5 consecutive metres were sampled which returned an average grade of 8.34 % zinc and trace lead. The highest grade samples occurred at the west end of the channel sample where the outcrop once again disappears under the overburden.

Conclusions

The geochemical results indicate that both structure and stratigraphy are very important mineralization controls at the AB Property. The AB-Main Zone showing occurs close to potentially deep structures that could plumb great depths. These deep structures could be scavenging metals from a vast area and concentrating them in receptive units closer to the surface.

Mineralization also appears to be controlled by lithology, as all showings and highly anomalous areas are located within the Sekwi stratigraphy. It is unknown whether this is due to beneficial

ground preparation or redox conditions, but nearby showings such as the AB-C and Bak Zones are also located in the Sekwi Formation.

Channel sampling of the AB-Main showing returned promising zinc values. The western-most channel samples returned the highest zinc values, but further channel sampling to the west would have required more significant trenching than time permitted. While soil samples to the west of the showing contain few anomalous values, it is possible that the creek running past the showing is obscuring the results. The AB-Main showing covers a large area with potential for the showing to extend further to the west.

Recommendations

Recommendations for the AB Claim focus on the follow up of the 2008 soil anomalies. Trenching of the soil anomaly around the AB-Main showing to expose more bedrock is recommended in order to complete further channel sampling and gain a better understanding of the size and quality of the showing prior to a diamond drill program. Trenching should also be completed to the east of the 2008 channel samples to better constrain the size and grade of the showing.

Geologic mapping and prospecting is recommended to follow up the soil anomaly from the south-west corner of the claim. Trenching of zones of mineralized float in the area is recommended to attempt to locate the bedrock source of the mineralization. Channel sampling of outcrop in the Bak Zone is recommended to assess whether the showing is worthy of being included in a diamond drill program.