The Discovery of the Hunt Gold Zone: A Mobile Metal Ions Process (MMI) Success Story

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Geological Domains with Deformation Zones: Central Northern Manitoba
Hunt Transect Geology

Archean Amphibolite and Hornblende gneiss; minor tonalite-granodiorite

Ospwagon Group metabasalt and Granite to granodiorite orthogneiss
tonalitic gneiss and amphibolite and
unknown origin; includes granitic to

Cataclastic rocks and mylonites of
Greywacke and related gneisses
amphibolite
amphibolite garnet amphibolite

Proterozoic and/or Archean Metasedimentary Rocks
metagabbro
Assean Lake Property

Gold Occurrences
Zinc Deposit
Airborne EM anomaly
HUNT CLAIMS
TEX CLAIMS
HUNT
GOLD
ZONE

Assean Lake Deformation Zone

LINDAL BAY FAULT

110 Km to Thompson

Dunbrack Galena Is.

ASSEAN LAKE FAULT TRANSECT
Hunt Transect Overburden

- Active layer (cms - labrador tea, blueberry, grass, lichen)
- Peat (1 m maximum)
- Glaciolacustrine Clay (15 m)
- Sand, Gravel, Boulders (17 m)
- Barren Volcanic and Sedimentary Rock overlying Hunt Zone (25 m)
Hunt Gold Zone
Orientation Survey

1. Vertical profiling along one transect over the geophysical and geological targets
2. Samples collected every 10 cm (to 40-60 cm) through the overburden profile at 20 stations spaced 50 m apart
3. Organic material not mixed with inorganic soil; results interpreted separately
4. Analysis by MMI-A and –B; ICP-MS finish
5. Analytical data displayed as “response ratios” (RR)
Hunt Transect Zn (ppb)
MMI-A Vertical Profile
Hunt Transect Au (ppb)
MMI-B Vertical Profile
Hunt Gold Zone Orientation
Survey: Observations

1. Vertical profiling identified high-contrast residence sites at 10-30 cm below the “zero datum” for base and precious metals. The optimum sampling location is 10-20 cm.

2. The depth of the optimum sampling location in the soil profile occurs below the zero datum, which is the point at which soil formation is initiated in any particular landscape environment.

3. Distinctive Zn, Cu, Ag and Pd responses occur over “historic” ground EM conductors and associated structures, and these anomalies represent follow-up drill targets.
Hunt Transect

1. Sample Collection (N=22)
2. 50 m spacings
3. Silty clay B-Horizon
Manitoba-Hunt Transect
MMI Responses: Base Metals
Hunt Transect Interpretations

1. A base metal (MMI-A) anomaly comprising Zn, Cd and Cu was defined over a ground EM conductor.

2. A precious metal (MMI-B) anomaly comprising Au, Ag, Pd, Co and +/- Ni was defined adjacent to the base metal anomaly.

3. Both anomalies are offset from one another by 50 m.

4. Drill testing is warranted.
Exploration (DDH) Subsequent to Mobile Metal Ion (MMI) Process Surveys

1. 5.1% Zn, 1.6% Pb, 0.4% Cd, 28.8 g/t Ag over narrow widths (pelitic and diopside sediments)
2. 22.2 g/t Au and 190 g/t Ag (chert/ultramylonite)
Hunt Gold Zone Orientation
Survey #2 (MMI vs. Aqua-Regia)

1. Single transect (N=29 sites) over the Hunt Gold Zone

2. Sampling protocols: MMI and “Traditional B-Horizon” for AR

3. Data displayed as Response Ratios and Concentration
Conclusions: Orientation Survey #2

1. Strong partial acid digest (aqua-regia) reports higher concentrations of metals from the substrate, but lacks focus and contrast over the Hunt Gold Zone.

2. Spurious elevated analyses generated away from the Hunt Gold Zone.

3. The preferred extraction is MMI based on superior focus and contrast.
Hunt Gold Discovery

1. Hunt Zone intersected by 24 holes
2. Strike length 700 m
3. Drilled to a depth of 150 m (open)
4. Grades up to 9.37 g/t gold over 8.15 m in well-defined ore shoot
5. Typical of shear-hosted gold deposits in Precambrian terrains in Canada
6. 200,000 oz gold defined to date - and continuing
Conclusions

1. Orientation Program: dig a pit; vertical profiling to determine depth of sample collection and sediment type
2. Field notes at each station (depth, moisture, organic or inorganic material-%; discoloration/oxidation or eluviation and illuviation)
3. Consistency during the grid sampling
4. Interpret organic and different soil types separately before combining data
5. Assess responses in terms of both the pattern of variation as well as the magnitude of individual responses
6. MAINTAIN CONSISTENT SAMPLE DEPTH
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The MMI-Based Discovery of a Porphyry Cu-Mo Deposit Beneath 600' of Post Mineralization Cover, SW Montana, USA