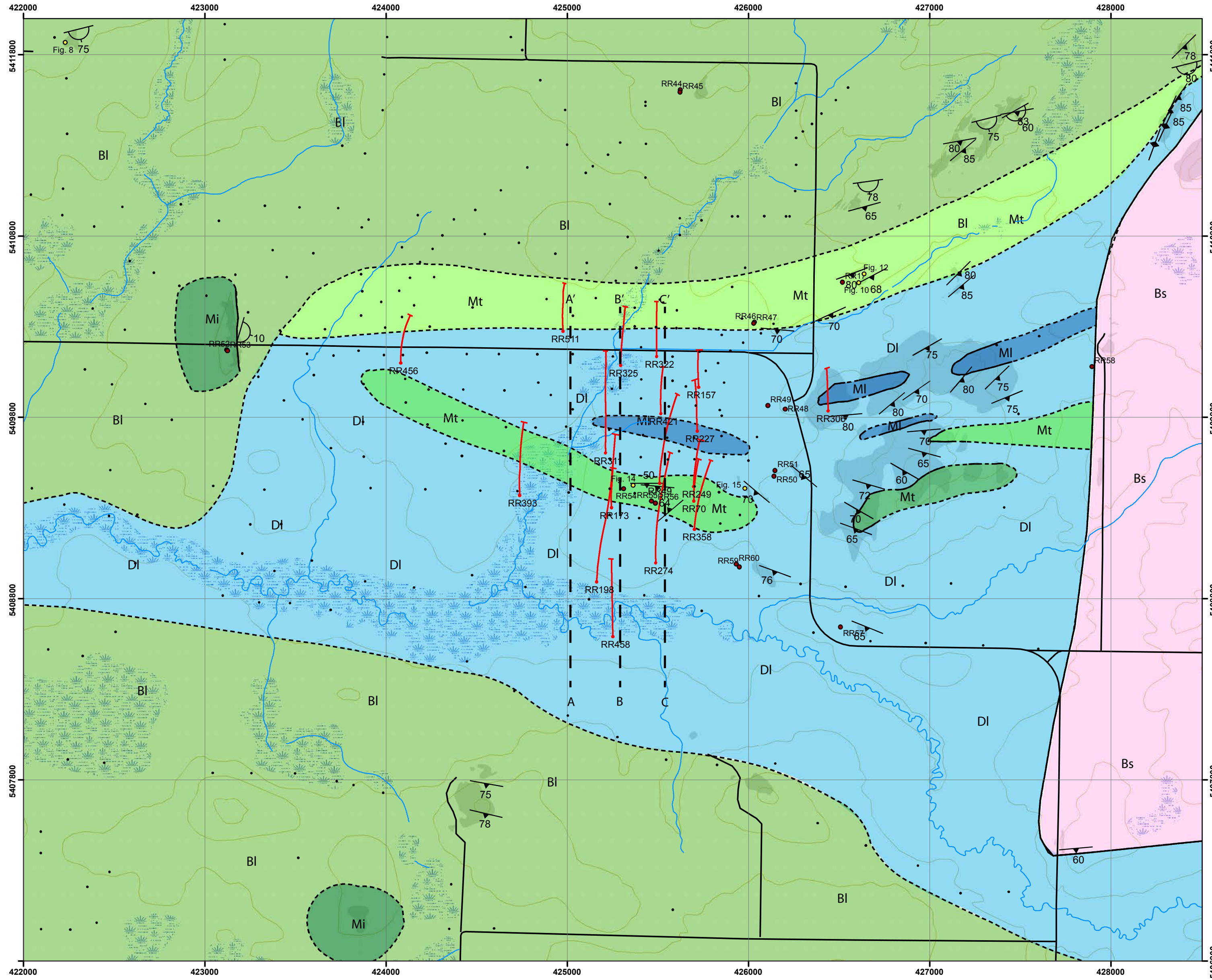


# Plate 1: Bedrock Geology Map of the Rainy River Gold Project Area, Northwest Ontario

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June 2011



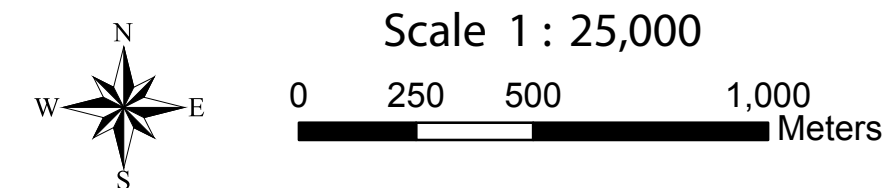
## Description of Map Units

- Proterozoic (?)**  
**Intrusive rocks**
- Mi** *Mafic intrusions* - Green, coarse grained gabbro made up of pyroxene, plagioclase, and amphibole with minor olivine, rocks are nonfoliated and relatively unaltered
  - Bs** *Black Hawk Stock* - Pink to grey, relatively unaltered and composed of medium- to coarse-grained subhedral quartz, euhedral orthoclase and plagioclase feldspar and subhedral hornblende
- Archean (~2.7 Ga)**  
**Volcanic and volcanoclastic rocks**
- PI** *Polymict lapilli tuffs* - Grey to tan, matrix-supported, subround to round lapilli clasts, most 0.5-2.5 cm in diameter, clasts are variably altered
  - MI** *Monomict lapilli tuffs* - Grey, composed of 1-3 cm monomict clasts, clasts are elongate with foliation, dominantly clast supported but can grade into matrix supported, clasts have identical composition to the associated coherent dacite units, matrix of ash-sized particles of dacite
  - DI** *Dacitic lava flows* - Grey, variably altered and deformed; zones of strong alteration/deformation can result in pseudo-tuffs or pseudo-breccias; degree of alteration can result in homogeneous to heterogeneous appearance, rare quartz, calcite or pyrite-filled amygdules, highly amygdaloidal units are likely flow tops, sparsely to strongly porphyritic, 0-20% quartz phenocrysts with rare 0-5% feldspar phenocrysts, very-fine to fine-grained groundmass of quartz, sericite with variable chlorite and carbonate, chunky to equigranular groundmass, rare spherulitic textures
  - Pr** *Peperites* - Grey to green, highly variable appearance in hand sample based on alteration, strongly brecciated varying from matrix to clast supported, quartz crystals mostly absent but up to 3% (0.2-1.5 mm), matrix is "chunky" to inequigranular composed of dominantly secondary minerals i.e. chlorite and carbonate, chlorite gives rock a mafic look in hand sample
  - DI** *Dacitic intrusions* - Grey, massive, porphyritic, 0-25% quartz phenocrysts (0.5-5 mm, subround-round), with variable 0-25% feldspar phenocrysts, very-fine to fine-grained groundmass of quartz, sericite with variable chlorite and carbonate
  - Mt** *Mafic tuffs* - Green to black, fine-grained, heterogeneous, made up of very fine- to fine-grained matrix material with rare mafic lapilli clasts, groundmass is dominated by chlorite, carbonate with some recrystallized quartz
  - BI** *Pillowed to massive basalt lava flows* - Green to black, fine-grained, aphyric to rare porphyritic (0-3% fine-grained augite), groundmass is strongly altered with chlorite, actinolite, epidote and carbonate, massive to pillowed flows, pillows typically bun-mattress shaped, 0.5-1.5 m in size

## Map Symbols

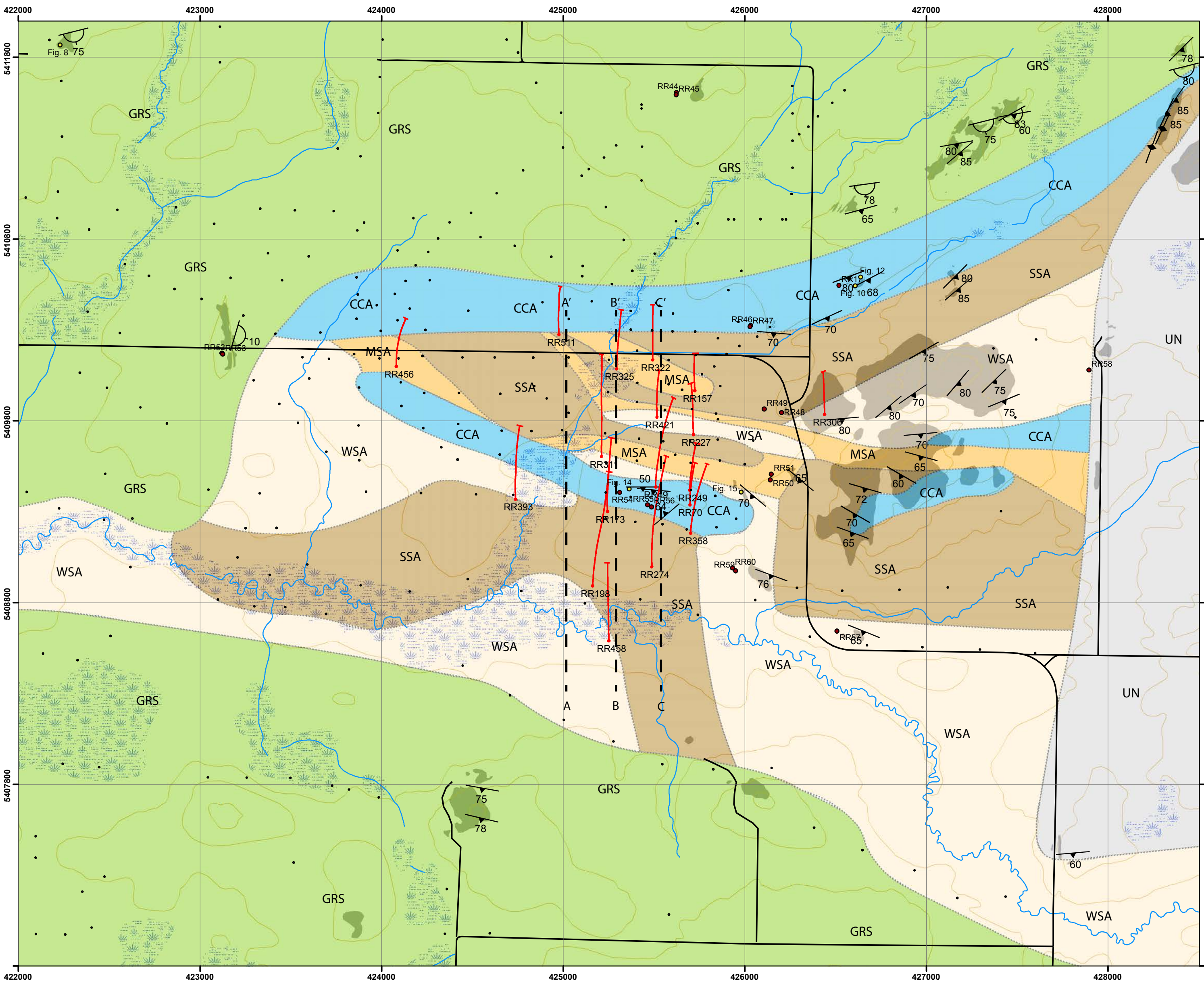
- Contacts**
- Inferred (from RC drilling, stratigraphy, geochem)
  - Outcrop Samples    ● Figure locations
  - RRRL and NRL RC Geochemical Samples
  - Roads
  - Drill trace
  - End of drill hole
  - Wetlands
  - Stearns
  - Section line trace
  - Drill collar and hole #
  - Outcrops
  - Foliation inclined
  - Foliation vertical
  - Pillow Trend
  - Topo line and elevation (masl)

Universal Transverse Mercator Grid, Zone 15  
North American Datum of 1983



# Plate 2: Bedrock Alteration Map of the Rainy River Gold Project Area, Northwest Ontario

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June 2011



## Description of Map Units

### Alteration assemblages

- WSA** *Weakly sericite altered (least altered)* - Buff white, composed predominately of a very fine-grained matrix of 40-60% microcrystalline quartz with 5-20% interstitial sericite, relict feldspars commonly are strongly replaced by sericite, 0-10% fine-grained needle- to lath- shaped chlorite with 5-15% carbonate and 5-8% pyrite
- MSA** *Moderately sericite altered* - Buff white to grey, distinguished from least altered rocks based on an increase in pseudo-clastic textures and abundant patchy sericite and chlorite, assemblage contains between 20-35% sericite, both interstitially in the microcrystalline matrix, as well as in veins parallel with foliation, pseudo- clastic textures are locally associated with increases of chlorite and carbonate
- SSA** *Strongly sericite altered/epidote-bearing* - Dark grey to bleached white, samples can be locally strongly silicified with a bleached appearance in drill core, assemblage consists of strongly sericitized domains that, coupled with polyphase deformation, result in the appearance of many pseudo-clastic textures, characterized by >35% sericite, remainder is quartz, chlorite, and carbonate. Because of similarities in hand sample and the size and rariety of epidote-bearing samples there are likely areas that contain 1-10% epidote group minerals.
- CCA** *Chlorite/carbonate alteration* - Pale to dark green, locally has pseudo-clastic textures due to the presence of 1-2 cm carbonate aggregates within a chloritic matrix, pervasive in the mafic tuff facies, made up of 25-50% grungy ankerite with 10-50% chlorite, sericite (5- 20%) locally occurs disseminated in the matrix as well as within veinlets that are parallel to chlorite veinlets, microcrystalline quartz matrix ranges from 5-20% of samples, pyrite (5-15%) occurs as cubic to fragmental in the chlorite carbonate groundmass
- GRS** *Greenschist* - Green, the assemblage is made up of actinolite (15-20%) is pervasive and very fine-grained within the groundmass, epidote (20-25%) occurs as tabular aggregates, lath-shaped chlorite (25-30%) and carbonate (10-15%) make up the remainder of the groundmass, minor pyrite (1%) is disseminated in the groundmass
- UN** *Unaltered* - Reserved to the late Black Hawk Stock that preserves little alteration or metamorphism

## Map Symbols

- Contacts**
- - - Inferred (from RC drilling, stratigraphy, geochem)
- Outcrop Samples      ● Figure locations
- RRRL and NRL RC Geochemical Samples
- Roads      — Steams
- Drill trace      - - - Section line trace
- End of drill hole      ● RR458 Drill collar and hole #
- Wetlands      ■ Outcrops
- ↗ 82 Foliation inclined      ↕ Foliation vertical
- ↖ 75 Pillow Trend      350 Topo line and elevation (masl)

Universal Transverse Mercator Grid, Zone 15  
North American Datum of 1983

