MEMORANDUM

To David Wallace; Steve Beresford

From Todd McGilvray

Date 7 March 2012

Subject **RAYNE JV WORK PROGRAM**

Dave and Steve,

The recently completed RYN001 drillhole as part of the Stellar Resources JV yielded the following results:

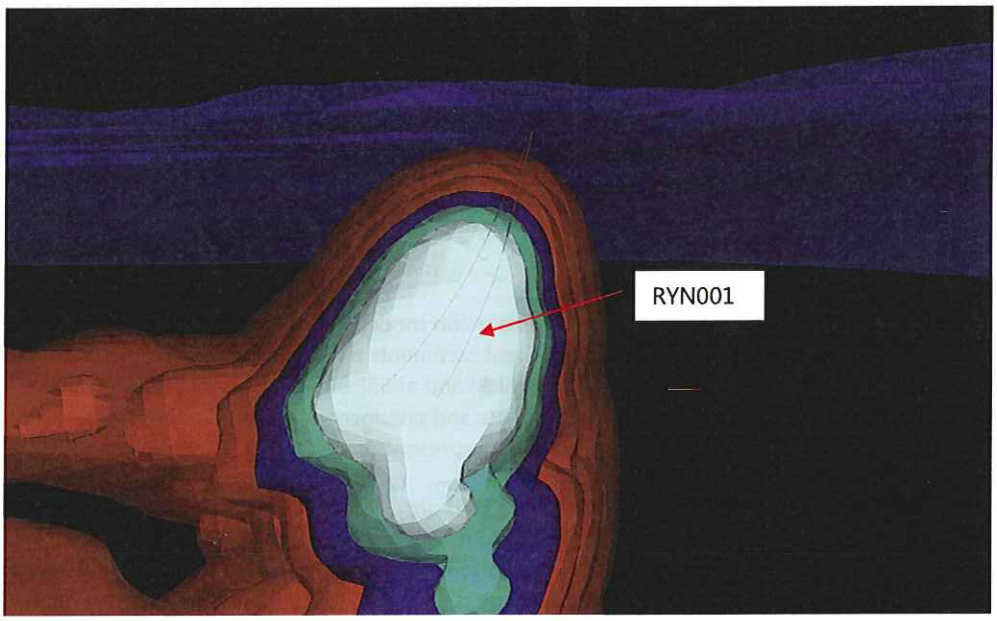

Figure 1: TMI inversion model anomaly with magnetic susceptibility shells

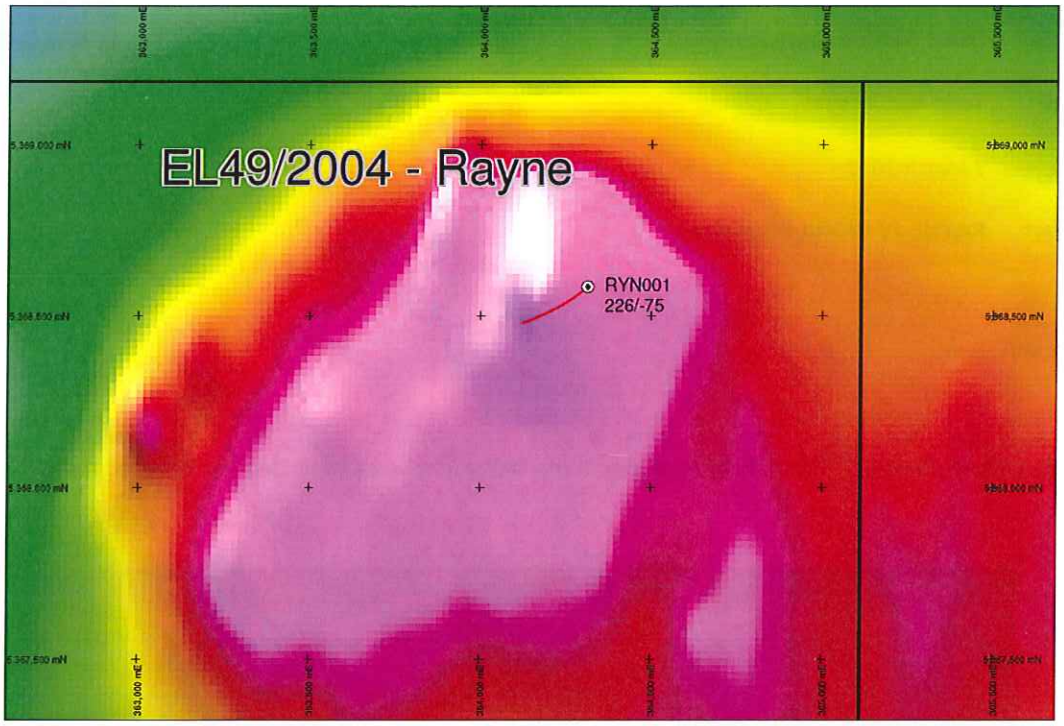

Figure 2: TMI heat map with drill trace RYN001.

Drilling adequately intersected the main body of the inversion modelled TMI data (**Figures 1 & 2**). Drilling progressed through peritidal to supratidal Crimson Creek sediments downhole generally dipping to the east at 50°. Gabbro dykes were intersected at 447.3m (1.5m thick) and at 595.9m (6.6m thick), as fine grained magnetite-phyric dykes with quenched margins. Contacts and phenocrysts (blebs) hosted very fine grained pyrrhotite and pyrite with no indication of nickel sulphides present.

Figures 3 to 5 illustrate the intersected dykes were High Fe tholeiitic gabbros however this was probably biased by the magnetite phenocrysts. The presence of crystalline magnetite would normally indicate the magma was oxidised and hence, calc-alkaline, however the known gabbros in the Crimson Creek Formation at this location have been determined as tholeiitic series basalts/gabbros.

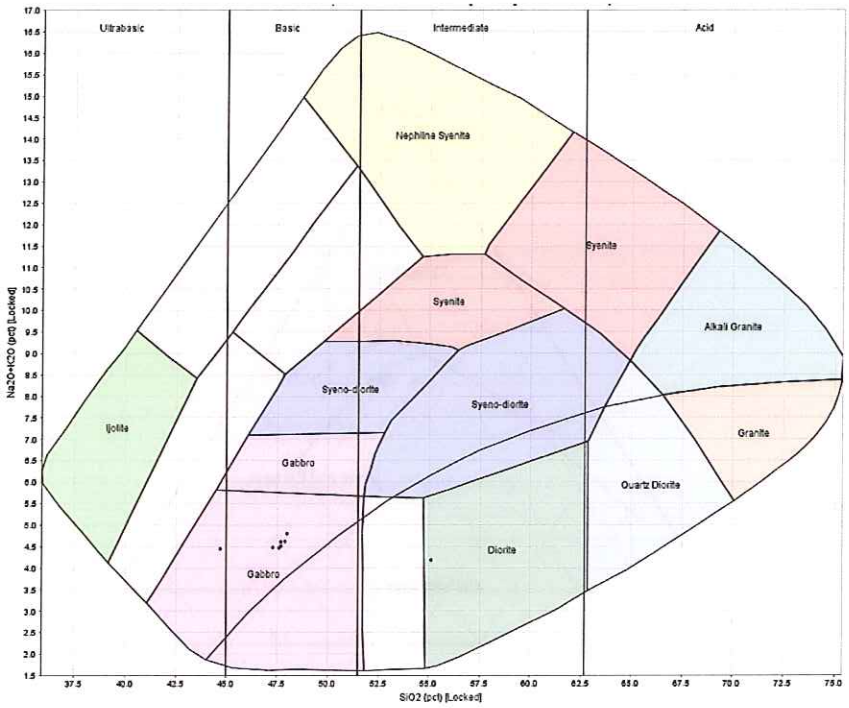

Figure 3: Rayne igneous compositions plotted on TAS plutonic diagram using total alkali vs. silica (*from* Wilson 1989 *in* Rollinson 1993).

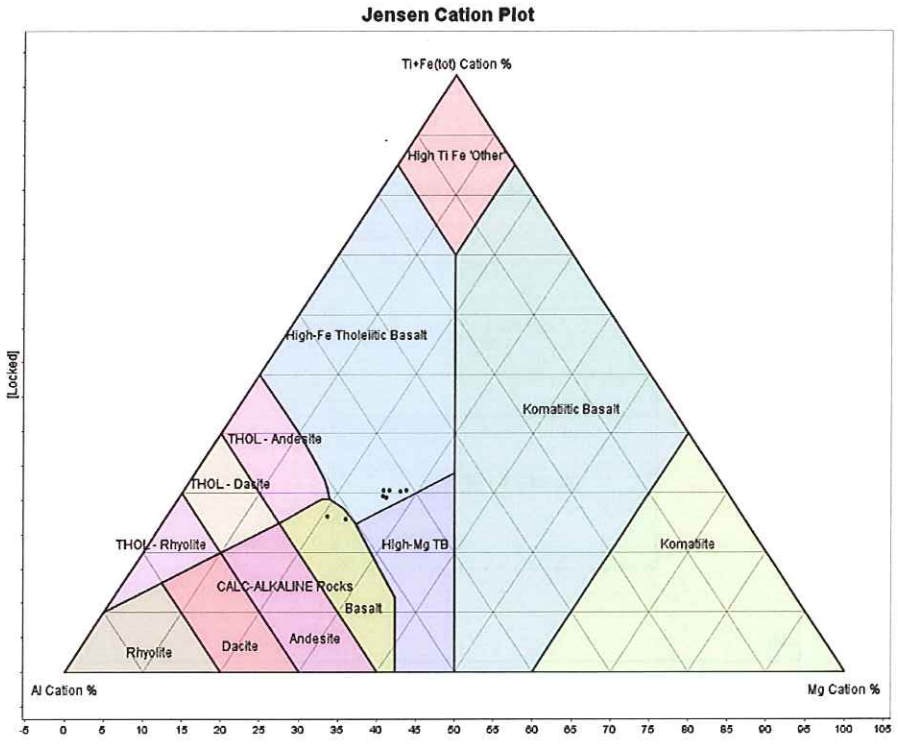

Figure 4: Rayne igneous compositions plotted on Jenson Cation Plot

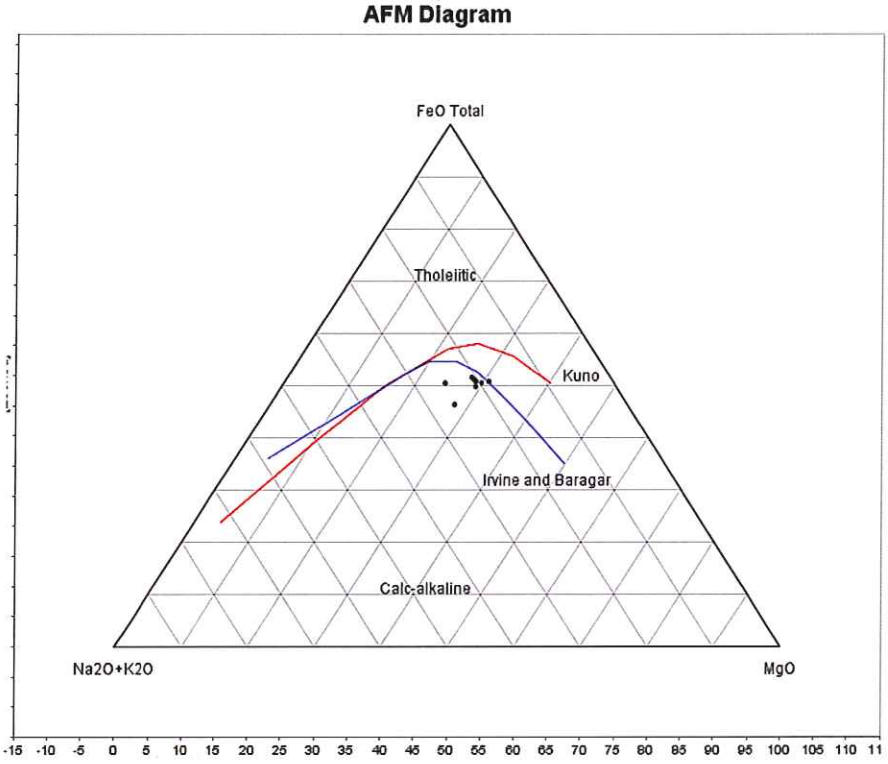

Figure 5: Rayne igneous compositions plotted on an AFM Ternary Diagram

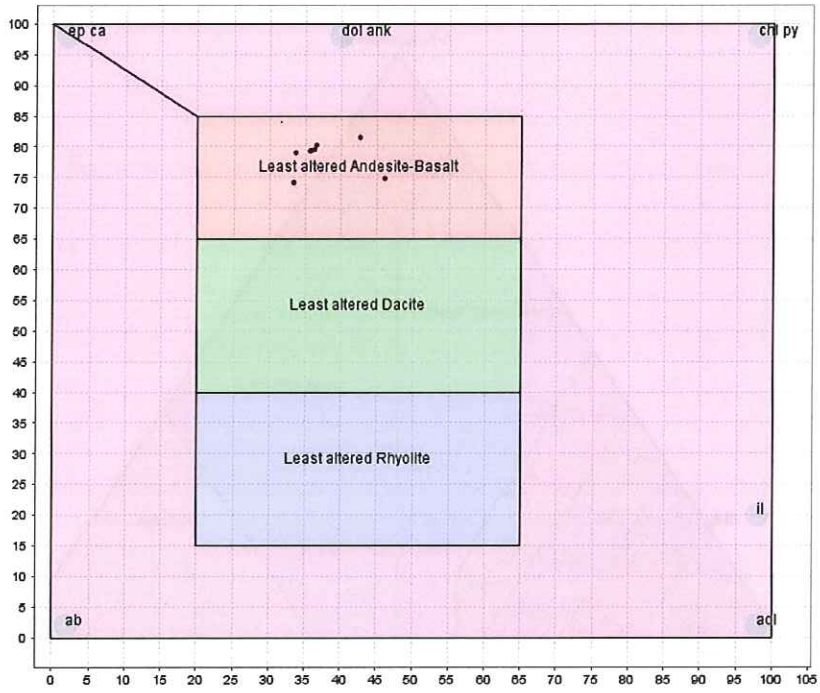

Figure 6: Rayne igneous compositions plotted on an Alteration Box Plot (CCPI vs. AI).

Comparison with Melba Flats Gabbro

Wholerock assay of samples from the unmineralised Gabbro from DDH MF95 are compared to the Gabbro samples from RYN001 below:

Note: MF95 was chosen for comparison due to the gabbro being fertile and unmineralised at this location.

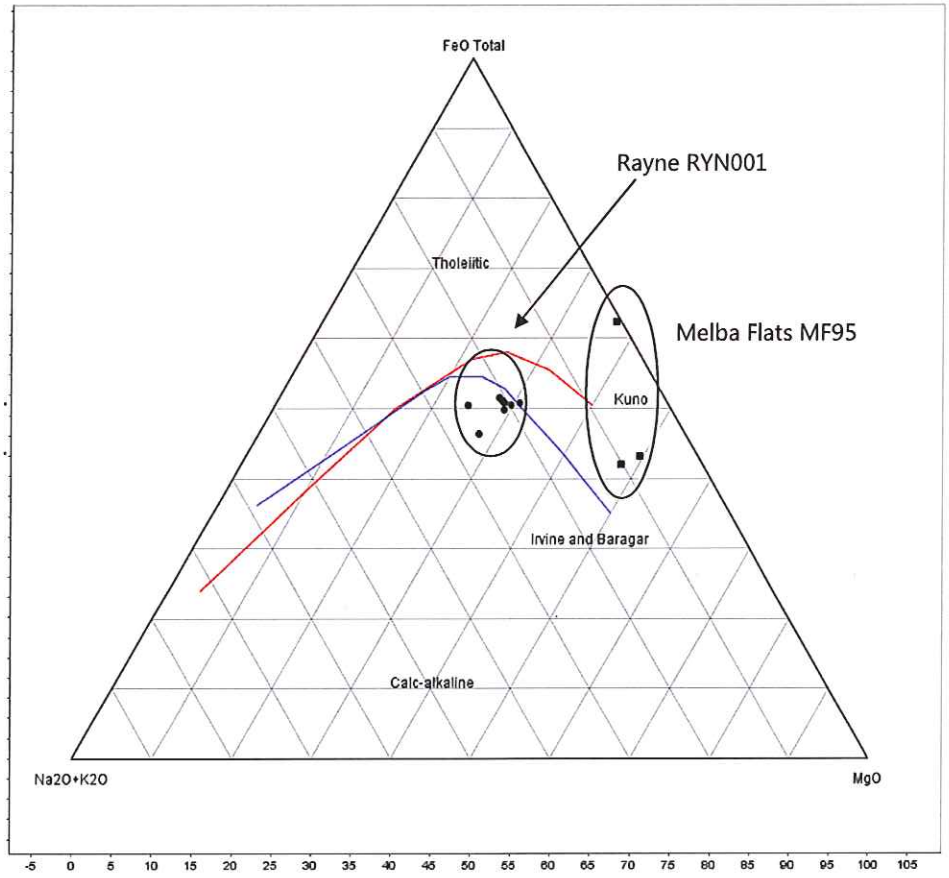

Figure 7: Rayne and Melba Flats igneous compositions plotted on an AFM Ternary Diagram

Melba Flats Gabbros are less evolved tholeiitic magmas than Rayne Gabbros due to lesser removal of MgO% content from crystallisation of pyroxene/olivine. Both Gabbros plot on the tholeiitic magma series curves indicating both gabbros are reduced but are probably related to two different intrusive events.

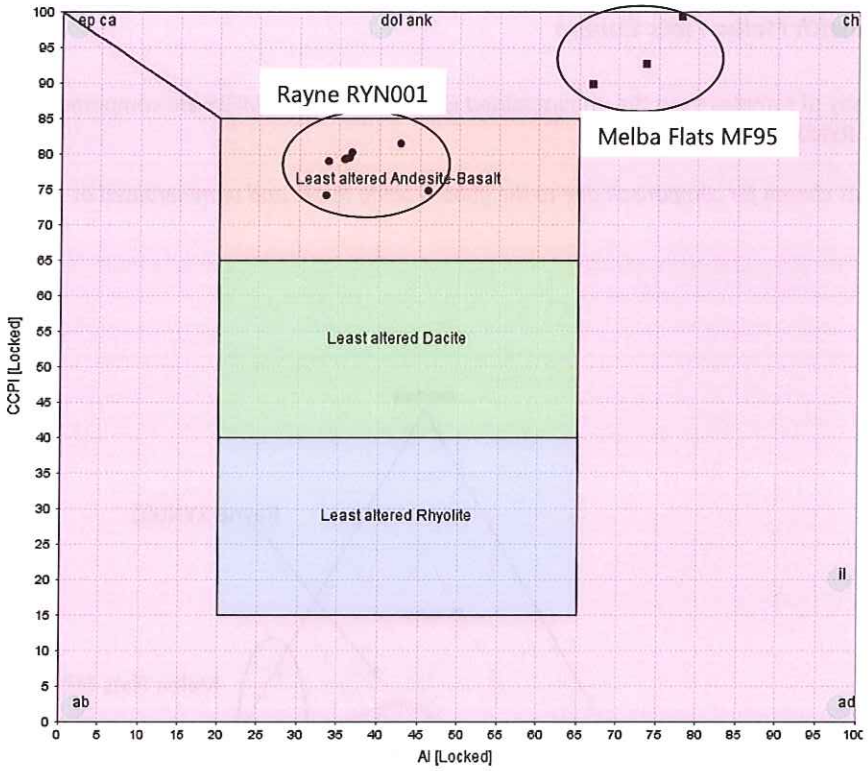

Figure 8: Rayne igneous compositions plotted on an Alteration Box Plot (CCPI vs. AI).

There is a clear differentiation between the least altered samples from Rayne to the more chlorite altered samples from Melba Flats. Drillcore observations confirm the difference in intensity of alteration however the Melba Flats MF95 drillcore is similarly unmineralised.

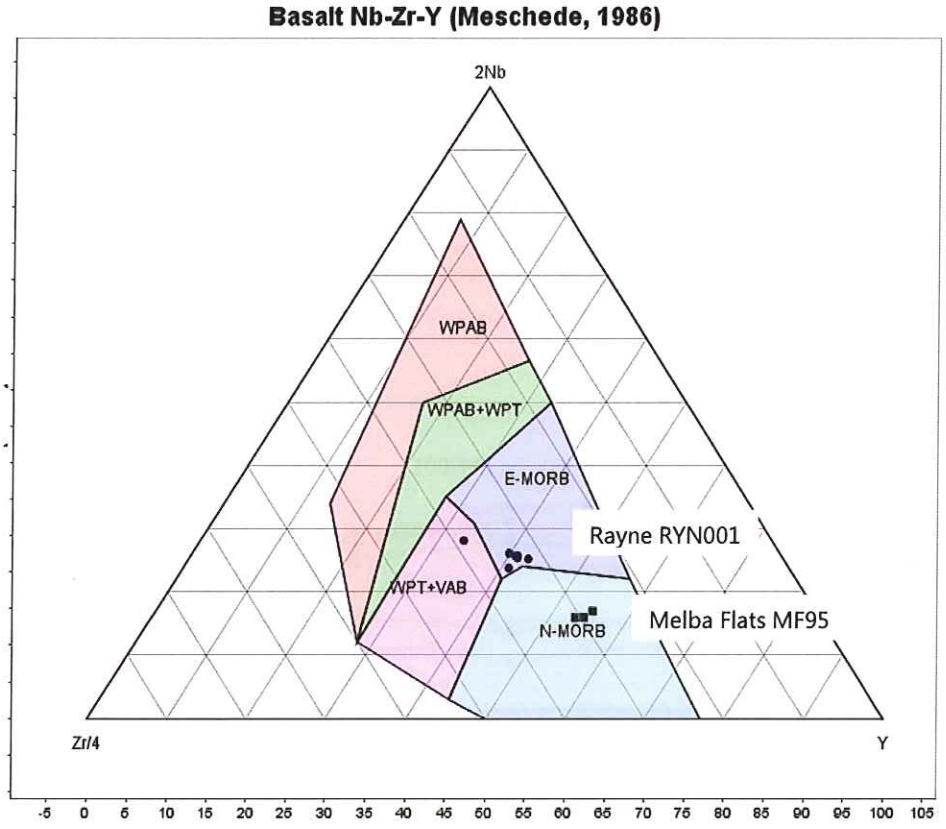

Figure 9: RYN001 and MF95 samples plotted on the Basalt classification Nb-Zr-Y ternary diagram produced by Meschede 1986.

There is a clear distinction between Rayne samples (circles) positioned as E-MORB compositions, and Melba Flats samples (squares) positioned as N-MORB compositions. The difference is possibly related to the voracity of the intrusive events, where the Rayne Gabbro was emplaced over a longer period where a higher degree of fractionation occurred and the LILE's were allowed to accumulate during crystallisation. Under this interpretation the Melba Flats Gabbro would have been intruded and crystallised rapidly which produced a more normal composition of MORB with lesser fractionation.

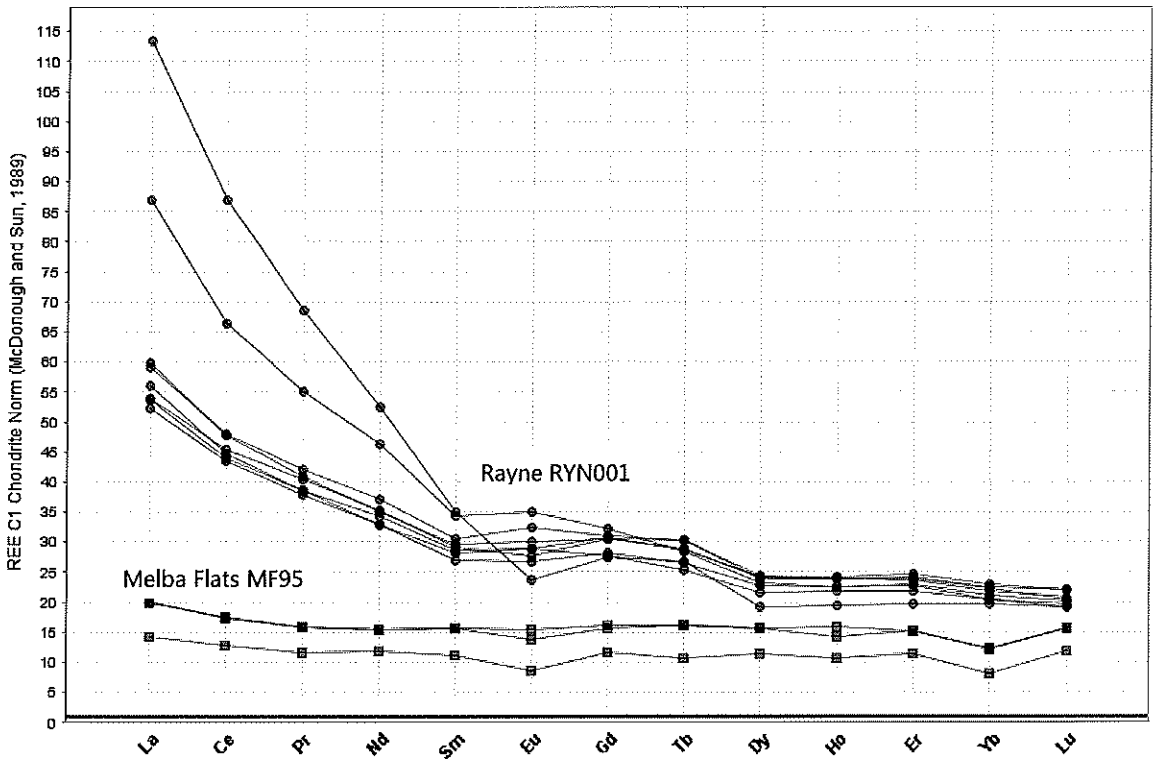

Figure 10: REE C1 Chondrite Normalised Spider Plot with Gabbro samples from RYN001 and MF95

As discussed below Figure 9, the clear differentiation between the Rayne and Melba Flats compositions can be seen here in Figure 10. The MF95 Gabbro has a normal MORB composition whereas the Rayne Gabbro is LREE and MREE enriched, and to a lesser degree HREE enriched.