Extracted from an email sent 26 February 2017 in response to an email request from Mineral Resources Tasmania for some technical information regarding modelling work conducted for Stellar in 2014.

The work done by PGN Geoscience over the Stonehenge area was never subjected to a report (saving on cost).
I can however answer a few questions and in particular:

- gravity and/or magnetic data sets used: aeromag available from MRT. The data were provided by Stellar Resources to me. Assumption was the source of the magnetic anomalies were a combination of shallow ultramafics (UM) and a deeper granite (longer wavelength)
- nature of any regional/residual separation or similar processes applied: the inversions were done with VPMG embedded in gocad. There is no need to do a regional/residual separation with this software. However, the scope of work was to try and identify deeper sources (granitoid) and shallower sources (assumed to be ultra-mafic) and the data inverted contained different wavelength. Some inversions were done on the TMI data (the full frequency content) to identify the shallower sources (no depth penalty applied etc...) and some were done on the TMI with a low pass filter of 1km (TMI_LP1km, looking for deeper sources - assumed to be a granitoid).

- details of modelling and/or inversion procedure used, including initial model geometry, resolution and inversion parameters: the inversions were carried out with VPMG assuming homogeneous cover and basement (either granitoids when inverting TMI_LP1km or Ultramafics when inverting TMI). The magnetic susceptibility (MS) contrast was not constrained as no MS were available. The cover was assumed to have a MS of 0 while the "basement" (either UM or GRA) had varying MS values over multiple inversions. We were looking for the best "geologically reasonable" basement geometry. The best results for depth to GRA were done with a MS of 0.3 for the GRA inverting TMI_LP1km and MS of 0.02 for UM inverting TMI. These values are not absolute values. The RMS misfit were: 20.43nT for the inversion of TMI to search for the top of UM and 16.17nT for the inversion of TMI_LP1kmto search for the top of GRA. No constraints on the MS distribution (large number of models run with varying contrast). Only constraints provided by some drill holes, constraining the "basements" (either GRA or UM) to be deeper than bottom of hole.
- quality measures e.g. misfit between final model signature and observed data: the models are geophysically acceptable but were subjectively filtered by Tom Whiting and I. The results presented and reported I imagine are our best guess at the best models representing the shape of the UM and GRA tops. In total 58 inversions were run. Some inversions were not acceptable geophysically (too high a misfit). Some inversions included a magnetic cover as well. Again, the reported models are geologically and subjectively picked out of the geophysically consistent models.

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