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COMPLETION REPORT ON GEOPHYSICAL SURVEY CONDUCTED BY ZONGE ENGINEERING ON BEHALF OF ARCADIA RESOURCES WITHIN EXPLORATION LICENCE 65/2004 SITUATED IN NE TASMANIA, JANUARY, 2008.

19 February 2008

1. INTRODUCTION

Exploration Licence 65/2004, the Derby Deep Leads Tin Project, is located in the north-east of Tasmania, roughly centred on the township of Derby, located approximately 110km NE by road from the City of Launceston (Figure 1). The Exploration Licence covers an area with significant past production of alluvial tin in Tertiary Leads. The area is well serviced with roads, towns, water, electricity and a local work force. Most of the area is covered by private farming lands.

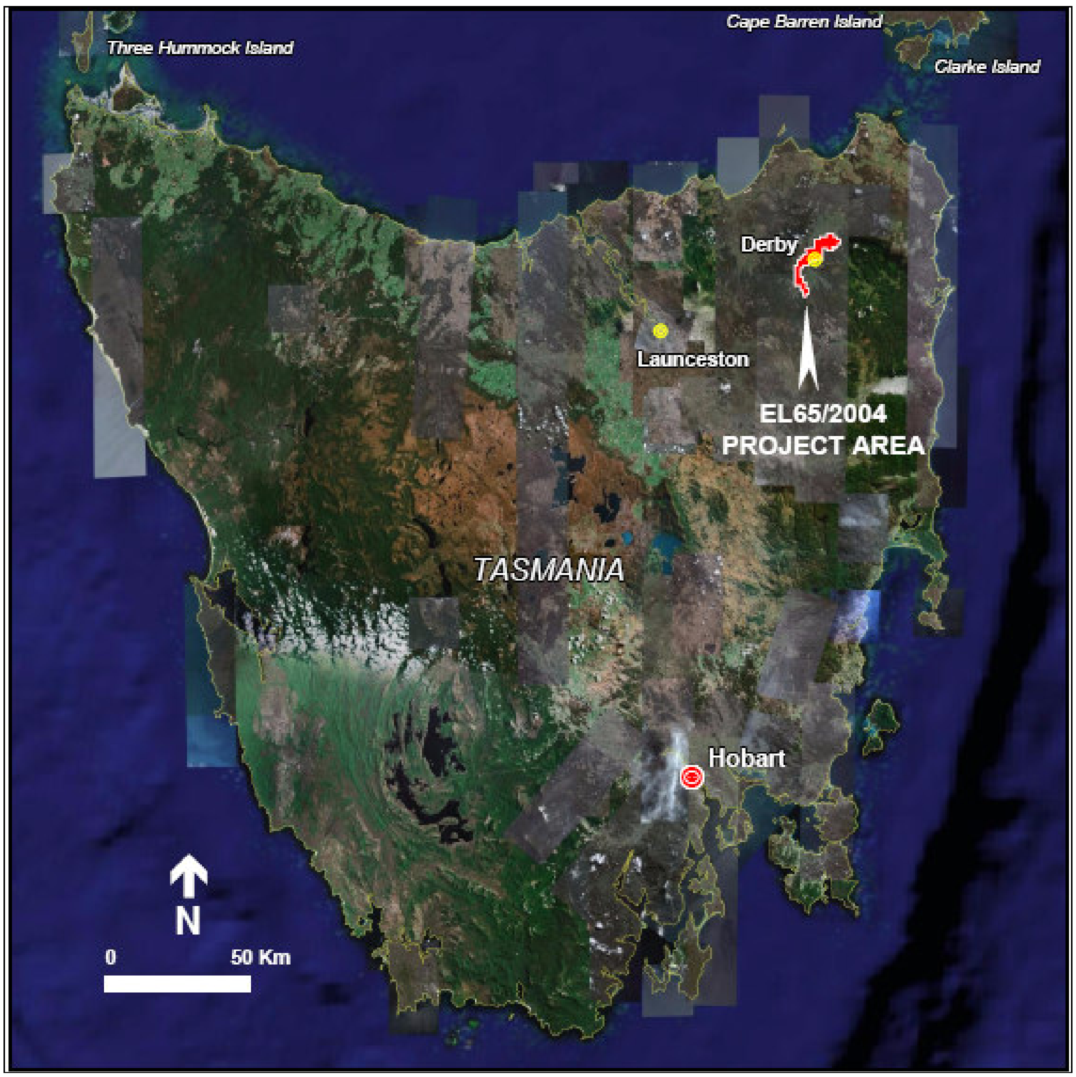

Figure 1 – Map of Tasmania showing tenement location (adapted from Google Earth Imagery)

2. BACKGROUND

Tin was reportedly discovered in North Eastern Tasmania in 1872 by a Mr. Benjamin Brooks near Mount Maurice, however this was soon dwarfed by the more famous discoveries made by George Renison Bell at several locations in the Boobyalla River catchment in 1874.

The tin, which occurs as cassiterite in basal gravel in deep leads in the Tertiary sediments stretching from near Branxholm to Ringarooma Bay, was derived from erosion of the tin-rich alkali-feldspar granites of Mt Paris and other smaller bodies in the Blue Tier Batholith.

The main mines were the Briseis, Pioneer, Endurance, Valley and Arba. Mining also occurred in the Tertiary sediments west of St Helens. Recorded production until the early 1960s was about 41 660 tonnes of metallic tin (TCR 64-381). Most of the mining was by hydraulic sluicing but some dredges were used including the Dorset dredge which operated from 1944 to 1971.

More recently Van Dieman Mines has assessed resources from Pioneer northwards, and mining of Scotia and Endurance is imminent. Van Dieman Mines, whom hold tenements covering the old Pioneer, Scotia, Central Ringarooma and Great Northern Plains project areas immediately north of this tenement, recently had an independent technical review of their resources.

Askins and Stewart (2007) sought to re-interpret the history of drainages, palaeochannels and leads by attempting to reconstruct the history with the aid of modern DEM and Landsat imagery not available to previous workers and thoroughly reviewing past literature(Figure 2). The interpreted position and history of drainages is very important to define and rank alluvial exploration targets.

The DEM images gave good overviews of the dominant fracture pattern controlling the drainages. Drainages coming from the granite hills of the Mt Paris Batholith, sourcing the alluvial cassiterite, have a pronounced WNW trend. When projected under the basalt these trends give a better fix on where to expect the course of leads than were used in the past.

Their interpretation has similarities and important differences to some past reconstructions. The overall pattern of drainages is similar to that proposed by Nye in 1925. This pattern of drainages has several leads draining west from the Batholith towards an ancestral Ringarooma River beneath the dominant basalt terrain (younger Miocene basalt). So there was postulated a major Ringarooma Lead.

Askins and Stewart's interpretation requires that the drainage system from the Tenement exited to the coast via Boobyalla and that the major drainage through the Pioneer lead trends WSW into the Tenement, not WNW. They suggested an initial 10 high priority target area within the tenement wherein they recommended that exploration activities should commence.

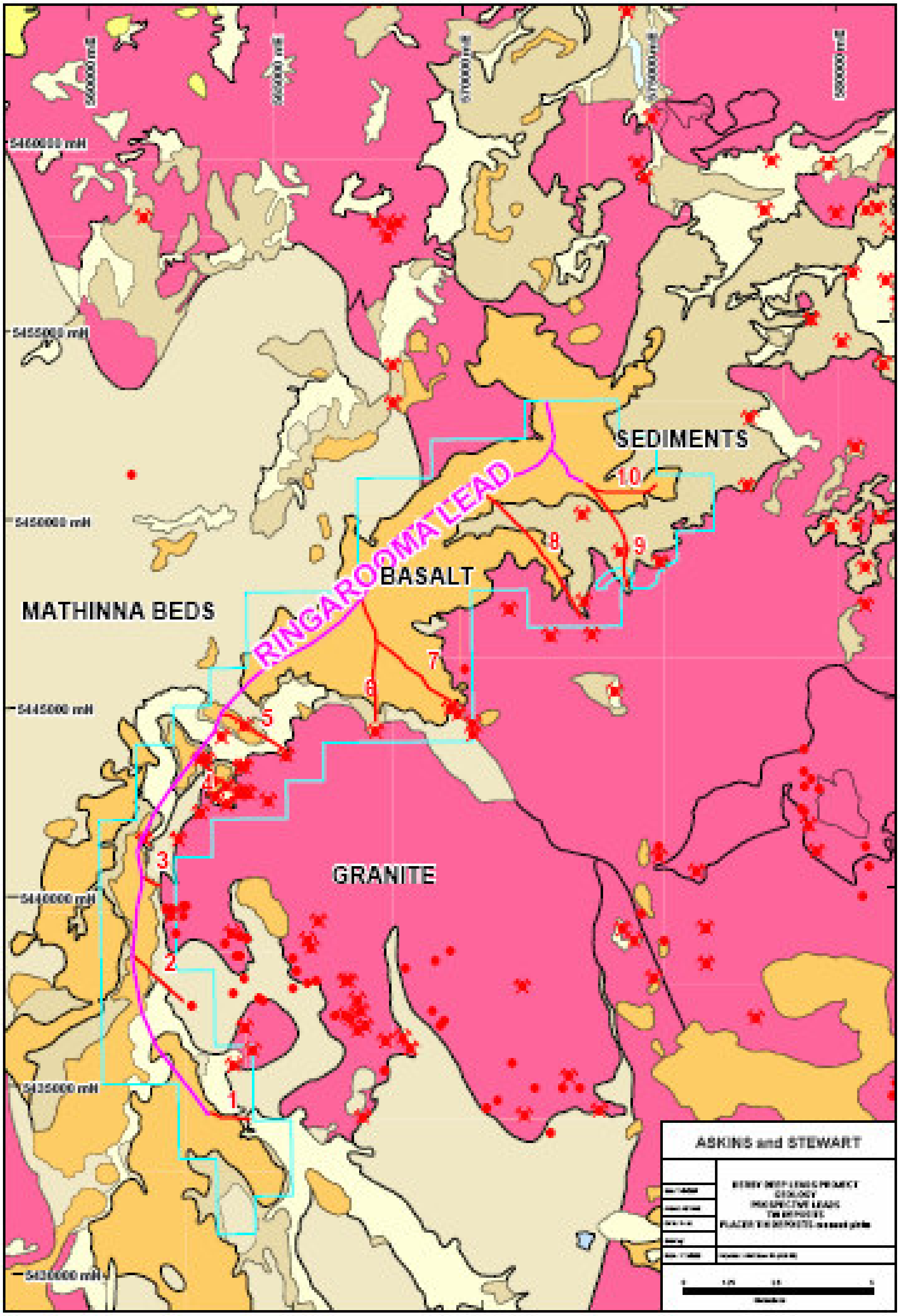

Figure 2 – Interpreted Lead positions (10 proposed target areas) with main local geology (Askins & Stewart, 2007).

3. OBJECTIVES

The author reviewed the 10 target areas recommended by Askins and Stewart by field checking their locations via GPS in late 2007 and considered their viability as potential palaeochannel sites. The author more or less agreed with the priority list of 10 target areas and suggested that at least half should by tested in the first instance by a geophysical ground survey.

The author has previously used Resistivity and Ground Magnetics successfully in the delineation of palaeochannels under similar type cover and depths in Northern Queensland. Almost universally, these palaeochannels will carry water and hence be highly conducive in nature, especially when compared against the cover material.

In trialling the geophysical methods on a number of selected target areas, an assessment could made as to the suitability of such methods for this project area. Should the geophysics prove useful, then the method(s) can be applied to other target areas in the project area such as the palaeochannel(s) of the Ringarooma River.

A survey involving Zonge Engineering was tentatively planned for January 2008 and was commenced on the 14^{th} of January and completed by January 25^{th}. The two methods to be trialled were IP/Resistivity and Ground EM (NanoTEM).

4. TARGETS AREAS

Before work commenced on the ground in the tenement area, a number of activities first needed to be addressed. These included;

- Informing the landholders by written notice of intentions to access land ahead of next stage of exploration activity.
- Sending the work programme for approval to MRT in Hobart.
- Organising a contractor to complete the survey.
- Arrange suitable accommodation and logistics.
- Employ casual labour to aid the contractors in the survey process.
- Personal contact with landholders immediately prior to start of survey.
- Ground checking of most appropriate target areas.
- Marking out the ends of each survey line.

Five target areas were finally selected for the survey out of the ten possible targets suggested by Askins and Stewart. These were nominally referred to as Areas 4, 5, 7. 9 and 10 and were selected due to their relative ease of access and topographical suitability for the conditions required by the methods employed. Figures 3 to 7 shows the location of Target Area 4, Target Area 5, Target Area 7, Target Area 9 and Target Area 10 respectively.

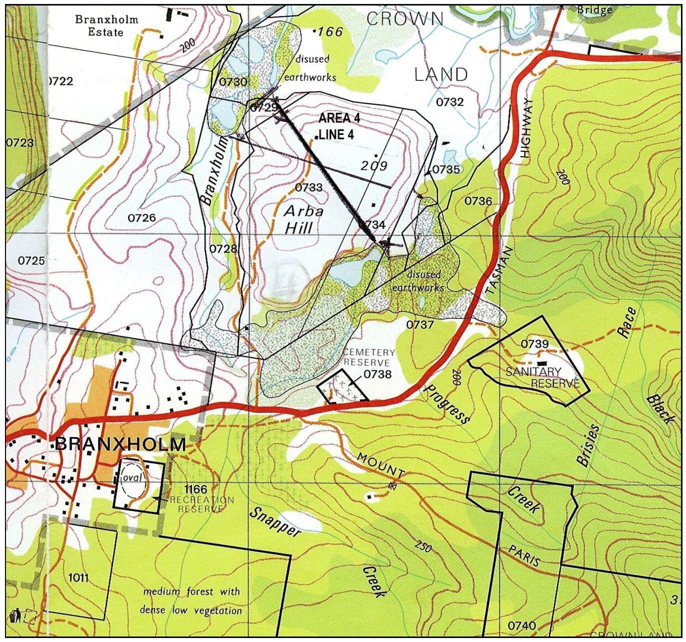

Figure 3 - Target Area 4 – Arba Hill between Branxholm and Derby **(Scale = large squares are 1 km by 1km, Tasmap Lands Dept. 1:25 000 Derby Sheet)**

Target Area 4 was selected due to the presence of significant old workings immediately South East and North West of Arba Hill. The hill is significant topographical high comprising Tertiary Basalts that have more than likely flooded into the old Ringarooma River and associated flood plains (river flats). Due to the indurated nature of the basalts, the surrounding sediments have eroded away at a much higher rate, resulting in a now topographic inversion that has the area covering the palaeochannel as higher in elevation than its surroundings.

Assuming that the old river channel ran from South West to North East (as inferred by the old workings), a line was executed in a South East to North West orientation across Arba Hill in an attempt to confirm the existence of a palaeochannel underneath. Arba Hill is currently a heavily vegetated area composed mostly of rows of planted gum trees at various stages of development. Care was taken to navigate through the rows with minimum disturbance.

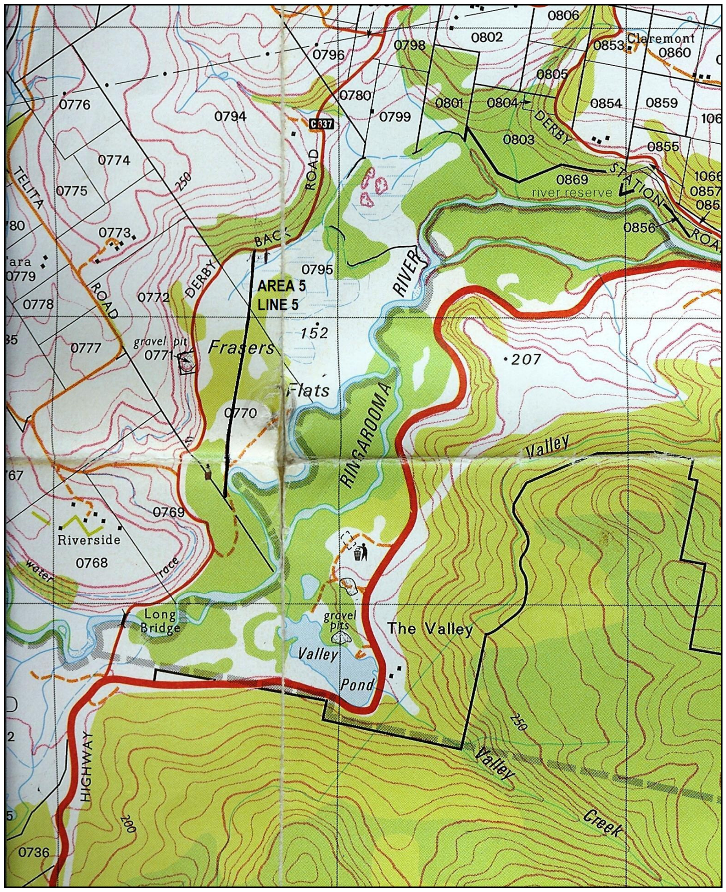

Figure 4 - Target Area 5– Fraser's Flats along the present day river plain, between Branxholm and Derby **(Scale = large squares are 1 km by 1km, Tasmap Lands Dept. 1:25 000 Derby Sheet)**

The Fraser's Flats area occurs along the present day flood plains of the Ringarooma River and was selected on the assumption that the palaeochannel may exist along the elevated present day river flats. A line was done oriented just east of north in order to explore the possibility of intersecting an old channel assumed to be oriented approximately east – west at this location.

Due to the presence of crops in some of the paddocks in the area, the line was corrected in several places and hence had minor changes in overall direction.

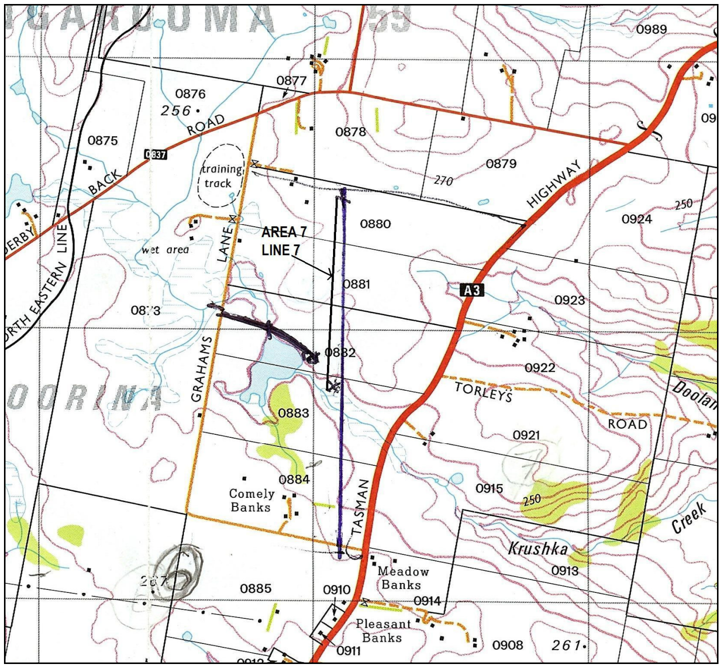

Figure 5 - Target Area 7– Situated on Comely Banks along the Tasman Highway between Derby and Herrick
(Scale = large squares are 1 km by 1km, Tasmap Lands Dept. 1:25 000 Derby Sheet)

At Area 7 on Comely Banks, it was assumed that the Ringarooma River palaeochannel at this location was oriented approximately east – west and perhaps buried under up to 60 metres of cover. This survey site was mostly open, cleared pasture which made the actual survey easier to facilitate than the other sites completed. The only impediment here was the number of fences, most electric, that had to be negotiated.

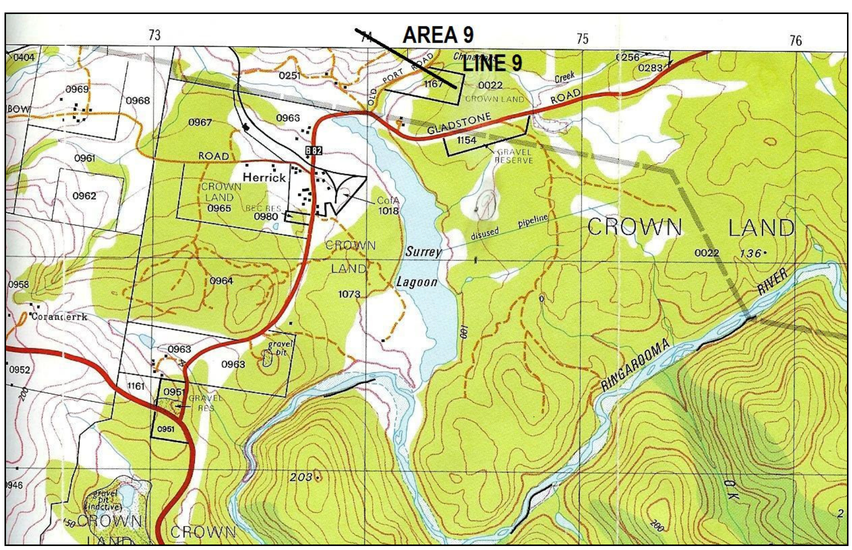

Figure 6 - Target Area 9– Situated the Tasman Highway to the north of Herrick
(Scale = large squares are 1 km by 1km, Tasmap Lands Dept. 1:25 000 Derby Sheet)

Area 9 was mostly on Crown Land near the intersection of the Tasman Highway and the Old Port Road, a few kilometres North East of Herrick. The area was mostly dense vegetation comprised of thick undergrowth with numerous tall timbered trees.

Old Chinese alluvial diggings could be found in some of the more dense undergrowth near Chinaman's Creek. It was assumed that the old river ran through this area in a roughly South West to North East orientation and the survey line was oriented accordingly at right angles to this direction.

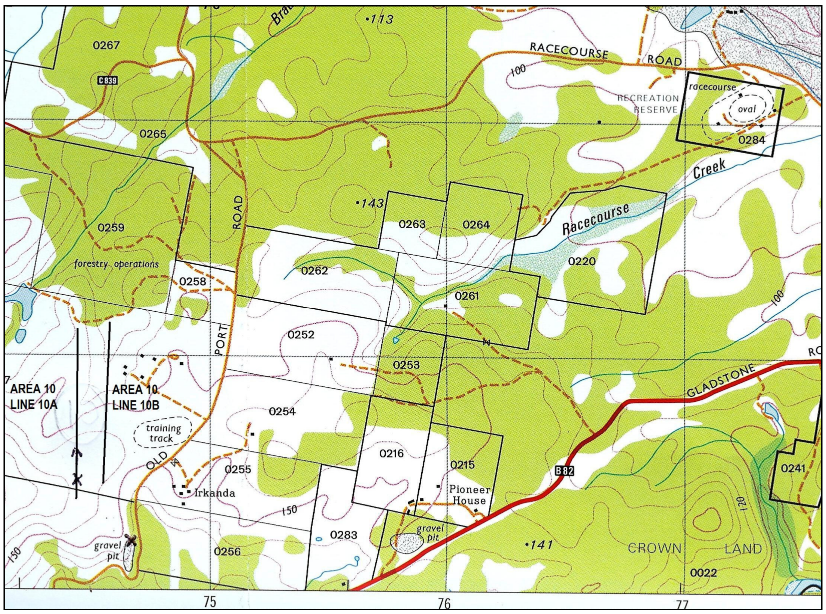

Figure 7 - Target Area 10– Two lines west of the Old Port Road, north of Herrick
(Scale = large squares are 1 km by 1km, Tasmap Lands Dept. 1:25 000 Pioneer Sheet)

In Area 10, it was assumed that the palaeochannel was oriented here roughly parallel to the modern day drainage shown by Racecourse Creek, i.e. East - North – East. Two lines were trialled, both in a northerly direction and roughly parallel some 300 metres apart. The area was mostly cleared pasture with occasional patches of tall timber.

5. SURVEY RESULTS

Of the two methods trialled, it was decided after the first few days that the IP/Resistivity method was unsuitable and henceforth only the NanoTEM was used. The reasons for discontinuing the use of the IP/Resistivity method was mainly due to the high number of fences that crossed each survey line, some of which were electrified and needed turning on and off with the landholder's permission, as well as areas of dense undergrowth which made the progress significantly slower.

The results for each survey line have been supplied by Zonge Engineering as both images of contoured sections (PNG files) as well as profile pseudo sections of line date (PDF files). Notwithstanding this consideration, an interpretation of the results for each line can be done using the PNG image files.

As the PDF files consist of heavily reduced data, the PNG files, which have coloured contoured data, were used for interpretation of results. The author has drafted on the surface profile for each line and, where significant, has also interpreted the basement profile. Only lines 7 and 9 could not be interpreted as differentiating between surface cover material and basement.

For lines 4, 5, 10a and 10b, an interpretation could be made by the contrast in resistivity between higher resistive units (blue – green colours ranging from 50 to 500 Ohm – metres and lower resistive units (yellow – red colours < 50 Ohm – metres).

The assumption used here was that the cover material, be it either weathered Tertiary basalt or unconsolidated/transported detritus, would be more resistive than the basement lithologies that were more than likely below the water table. Furthermore, any palaeochannels encountered would be expected to carry water and therefore be less resistive than any material immediately above it.

Figure 8 to 13 at the end of this report show the profiles / interpretations for each line.

6. CONCLUSIONS AND RECOMMENDATIONS

Based on the results from the NanoTEM data, especially for lines 5, 10a and 10b, it appears that the method has credibility in differentiating relative resistivity between sub surface strata. Line 4 showed us that the method is feasible down to around 80 metres depth, beyond which another method would be preferred.

The author therefore recommends that the method be trialled over the remaining target areas as outlined by Stewart and Askins. This would involve possibly another half a dozen lines and would take about the same period of time to complete, therefore costing about the same as the initial survey.

Furthermore, Areas 4, 5 and 10 probably warrant some strategically planned RC drillholes in order to not only confirm the survey results but also to obtain some geochemical samples from the interpreted palaeochannels. At this stage, no more than four holes per line would suffice, making around 16 holes necessary for a total of less than 1200 metres of RC drilling required.

M. F. [signature]

Matthew Francis Stephens

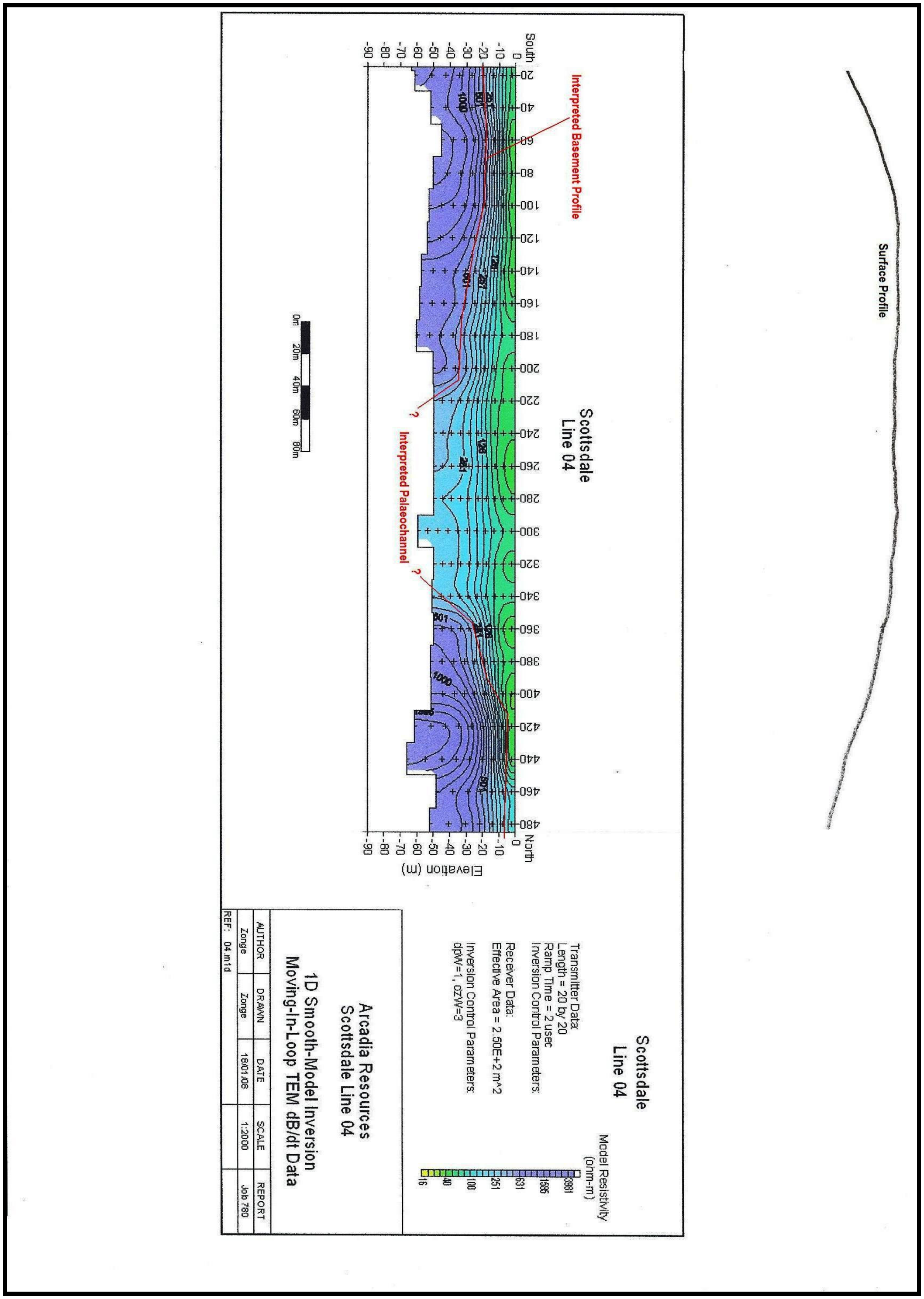

FIGURE 8 - Profile of Line 4 Moving in Loop TEM dB/dt contoured data

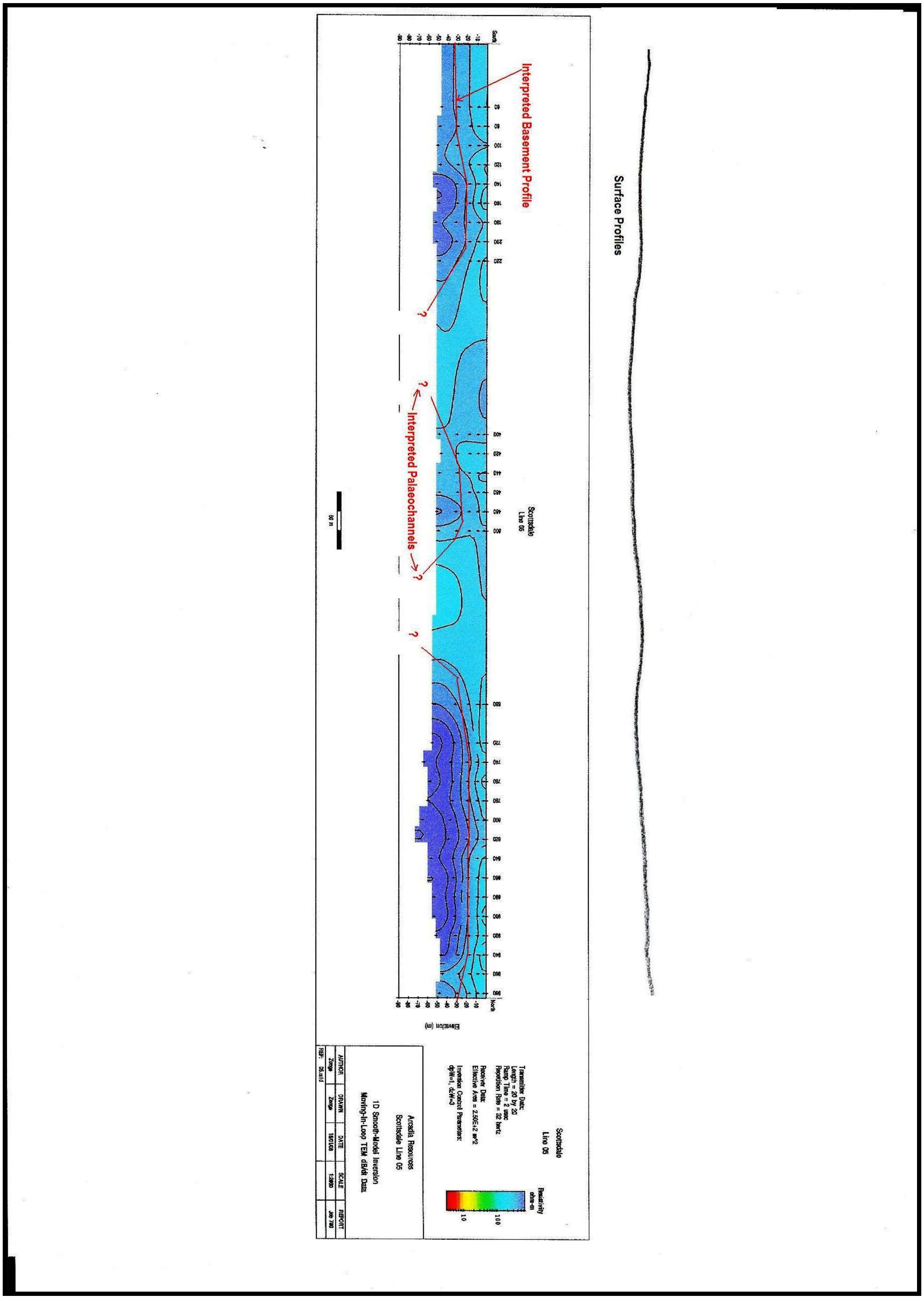

FIGURE 9 - Profile of Line 5 Moving in Loop TEM dB/dt contoured data

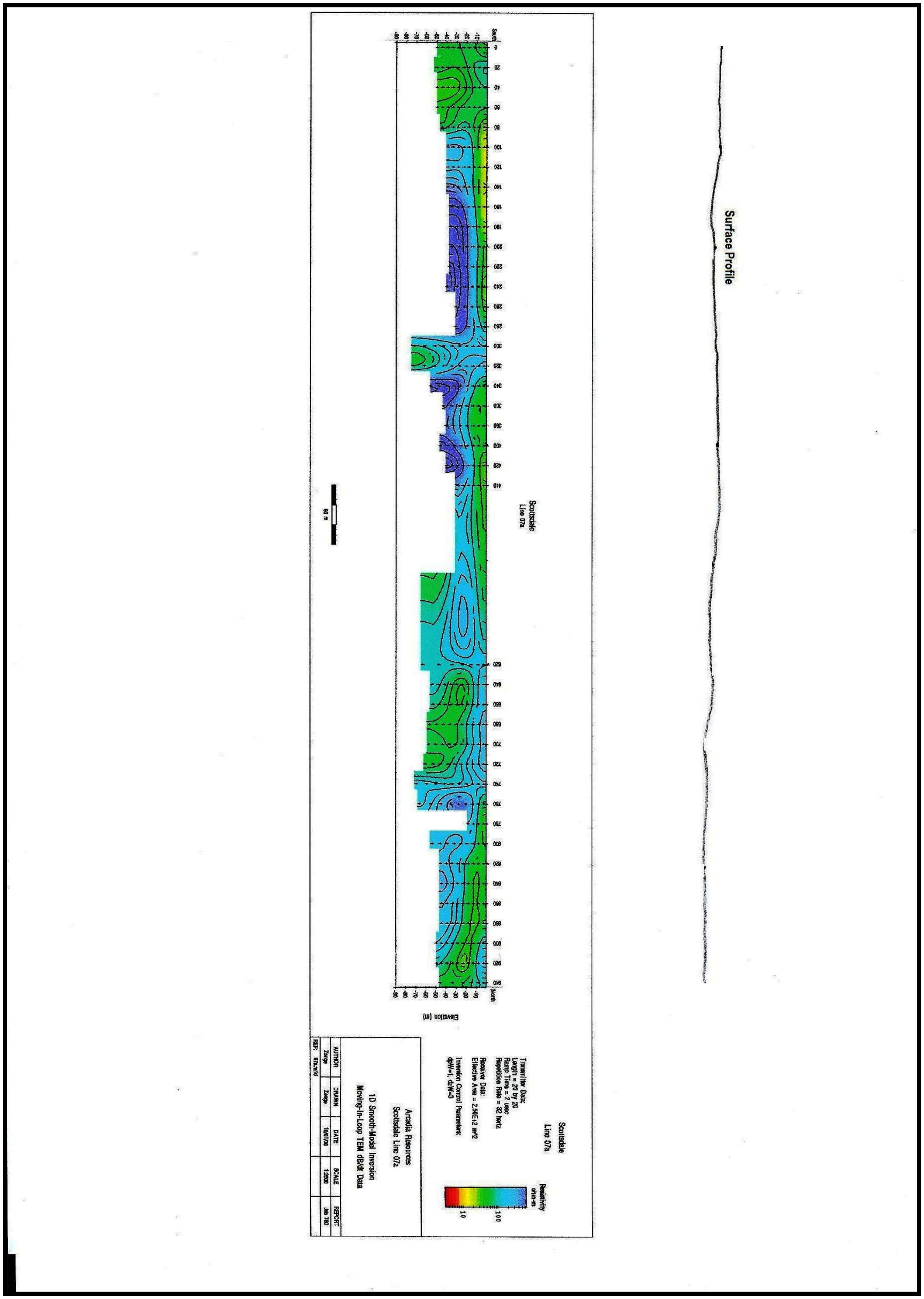

FIGURE 10 - Profile of Line 7 Moving in Loop TEM dB/dt contoured data

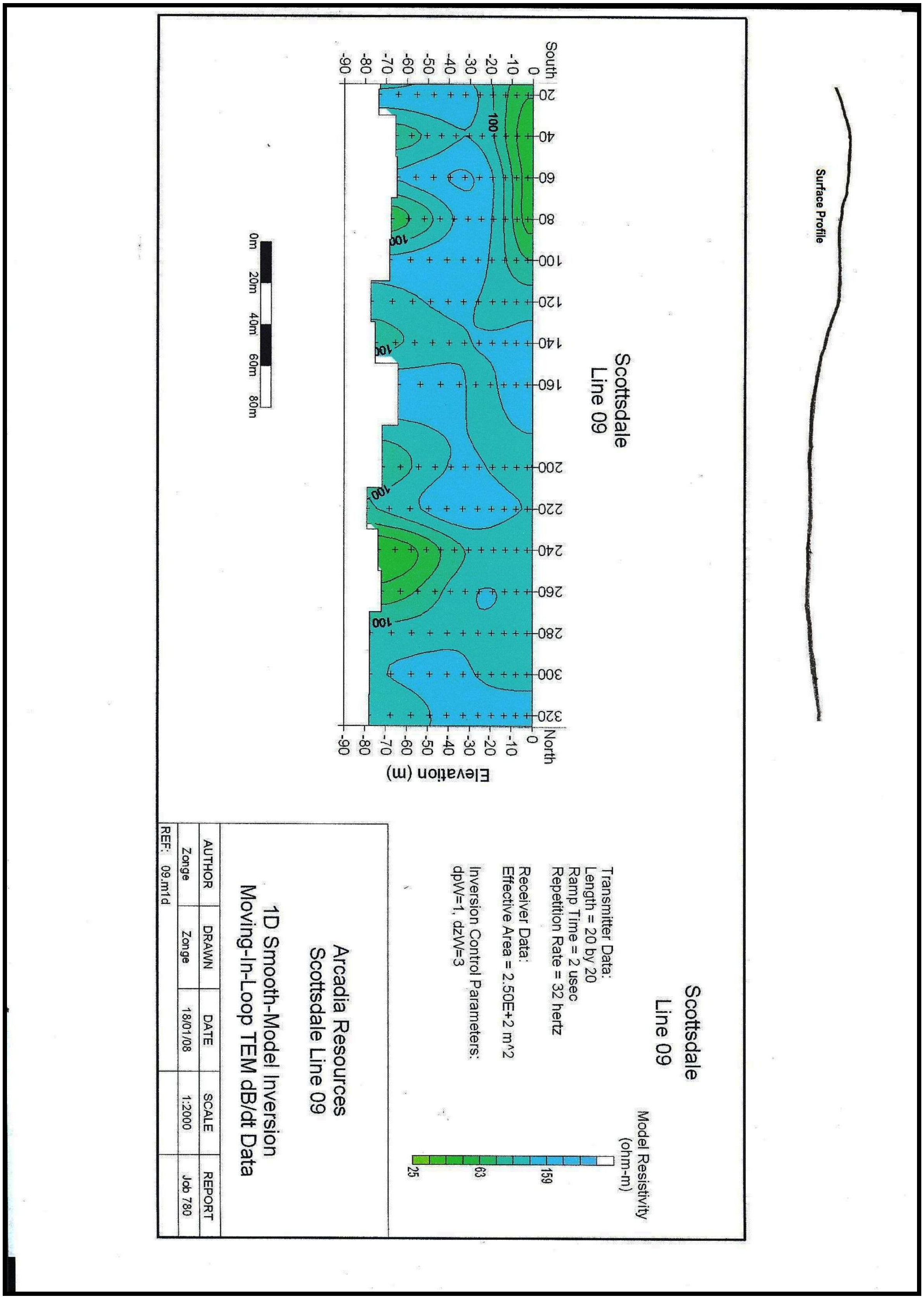

FIGURE 11 - Profile of Line 9 Moving in Loop TEM dB/dt contoured data

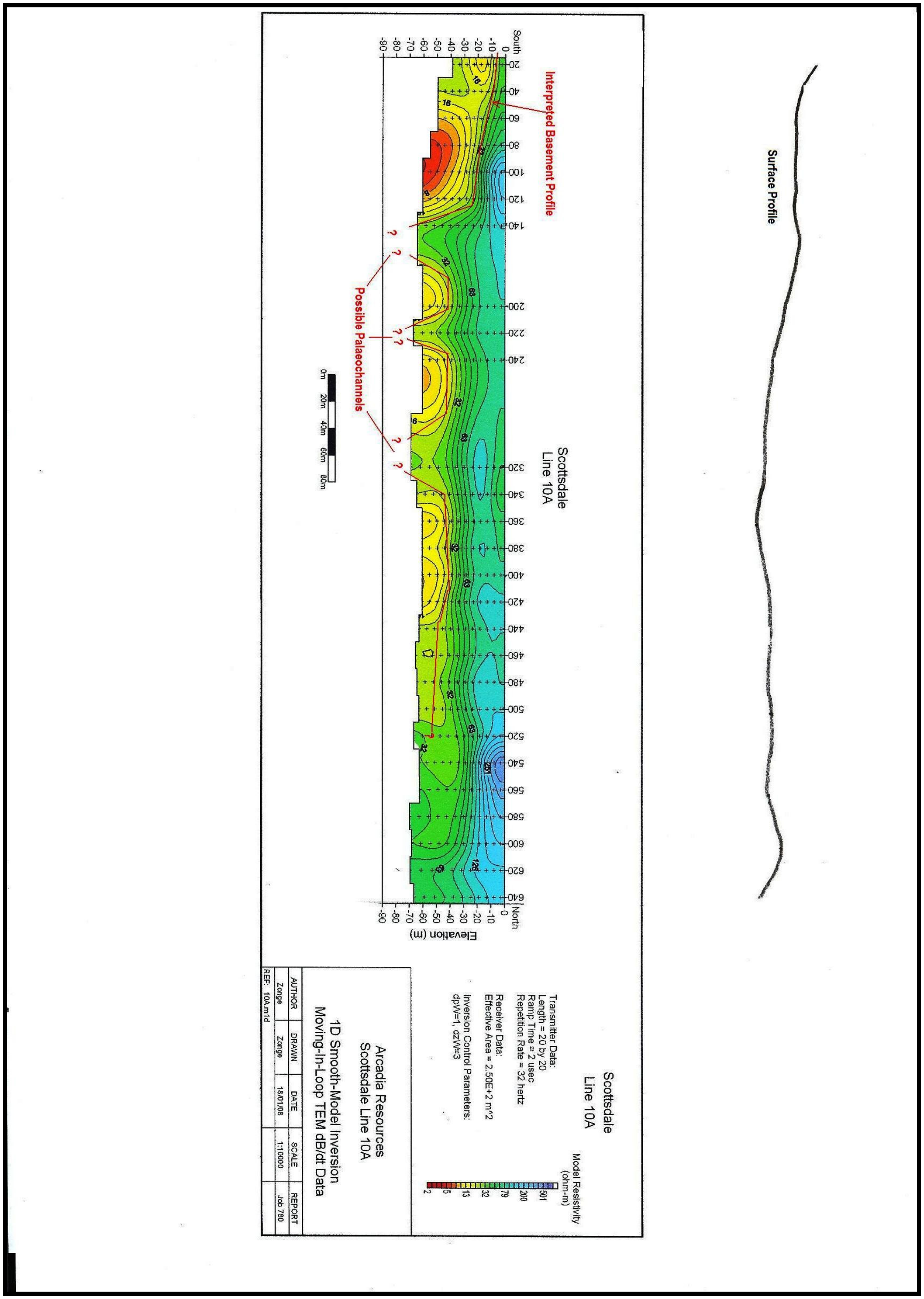

FIGURE 12 - Profile of Line 10a Moving in Loop TEM dB/dt contoured data

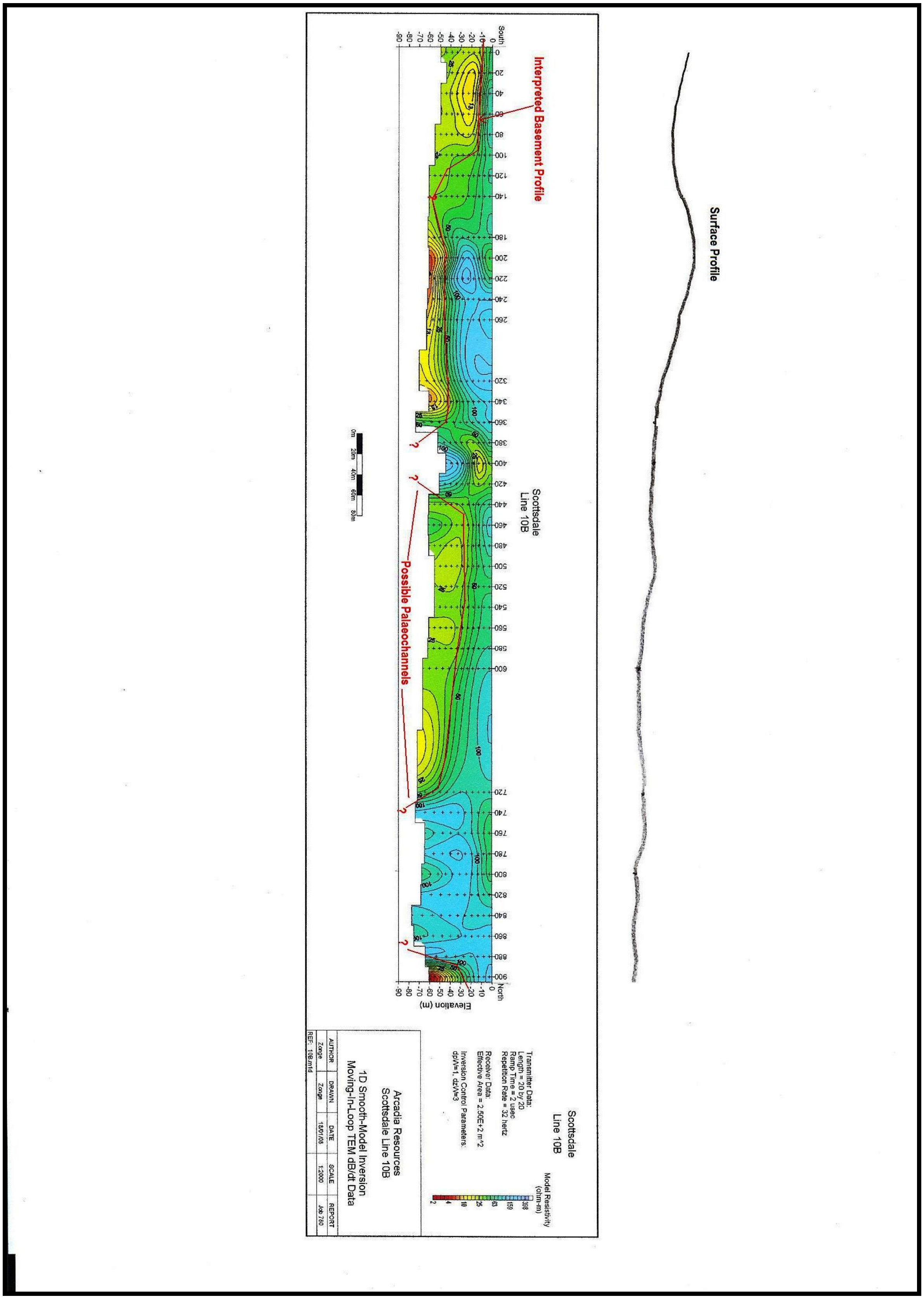

FIGURE 13 - Profile of Line 10b Moving in Loop TEM dB/dt contoured data