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EL 2608, EL 2609, EL 2610, EL 2611 AND EL 2614

BRAEMAR, REDCLIFFE, BLANCHETOWN, PALMER AND ORATAN ROCK AREAS (PART OF PADTHAWAY PROJECT)

FINAL ANNUAL TECHNICAL REPORT FOR THE PERIOD 16/6/99 TO 24/11/2000

Submitted by

Normandy Gold Exploration Pty Ltd
2001

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FINAL REPORT ON EXPLORATION ACTIVITIES FOR

EXPLORATION LICENCES 2608, 2609, 2610, 2611 and 2614

PADTHAWAY PROJECT

FOR THE PERIOD 16/06/1999 TO 24/11/2000

OLARY 1:250,000 SHEET SI-54-02
BURRA 1:250,000 SHEET SI-54-05
CHOWILLA 1:250,000 SHEET SI-54-06
ADELAIDE 1:250,000 SHEET SI-54-09
RENMARK 1:250,000 SHEET SI-54-10

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Commodities: Gold, Copper

Author: AT Price

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Report No. 27950

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Title: Final Report on Exploration Activities for Exploration Licences 2608, 2609, 2610, 2611 and 2614, Padthaway Project for the period 16/06/1999 to 24/11/2000.

Author: AT Price

Date: January 2001

LOCATION MAP

ABSTRACT

Exploration Licences 2608, 2609, 2610, 2611 and 2614 formed part of Normandy Gold Exploration's Padthaway Project in South Australia.

The tenements were granted to Normandy Gold Exploration on the 16 June 1999.

The area is considered prospective for iron oxide associated and porphyry/skarn copper/gold systems related to fractionated high level Cambrian to Ordovician intrusives. The area extends along the eastern side of the Mt Lofty Ranges and is almost entirely covered by Tertiary Murray Basin sediments.

Exploration during the reporting period has included a comprehensive open file investigation of previous exploration, a geological/structural interpretation, target selection and aircore and diamond drill testing of targets.

Drilling during the first year of tenure has tested a number of magnetic targets interpreted as magmatic related, hydrothermal magnetite bearing alteration/mineralisation systems and fractionated intrusive centres with associated porphyry/skarn mineralisation. Drilling intersected a variety of lithologies including mafic volcanics and volcaniclastics (Truro Volcanic equivalents), a range of intrusives from norites to granites, and some metasediments. No indicators of large alteration/mineralisation systems have been intersected.

No further exploration was recommended and the tenements were relinquished on 24/11/2000.

1. INTRODUCTION

Exploration Licences 2608, 2609, 2610, 2611 and 2614 formed part of Normandy Gold Exploration's Padthaway Project.

The tenements are considered prospective for iron oxide and porphyry/skarn associated copper/gold systems related to high level intrusions. Exploration is targeting a poorly exposed belt of Cambro-Ordovician mafic and felsic intrusives along the eastern side of the Mt Lofty Ranges and southeast into the Padthaway Ridge area. Gold and copper mineralisation is present regionally at the Kanmantoo Mine and other smaller workings in the Mt Lofty Ranges.

2. LOCATION, ACCESS AND PHYSIOGRAPHY

The licences are located in a 300km long, north-south belt stretching from Mannum in the south to Manna Hill in the north (refer to Fig 1). A good network of sealed and unsealed roads provides access within the tenements.

Land tenure consists mainly of Freehold, Pastoral and Perpetual Pastoral Lease properties. The area is flat to slightly undulating. Most of the area has been cleared for agricultural purposes with lesser patches of mallee dominated vegetation.

3. NATIVE TITLE AND HERITAGE ISSUES

There is currently one Native Title Claim over the licence areas as shown in Figure 1 and detailed below:

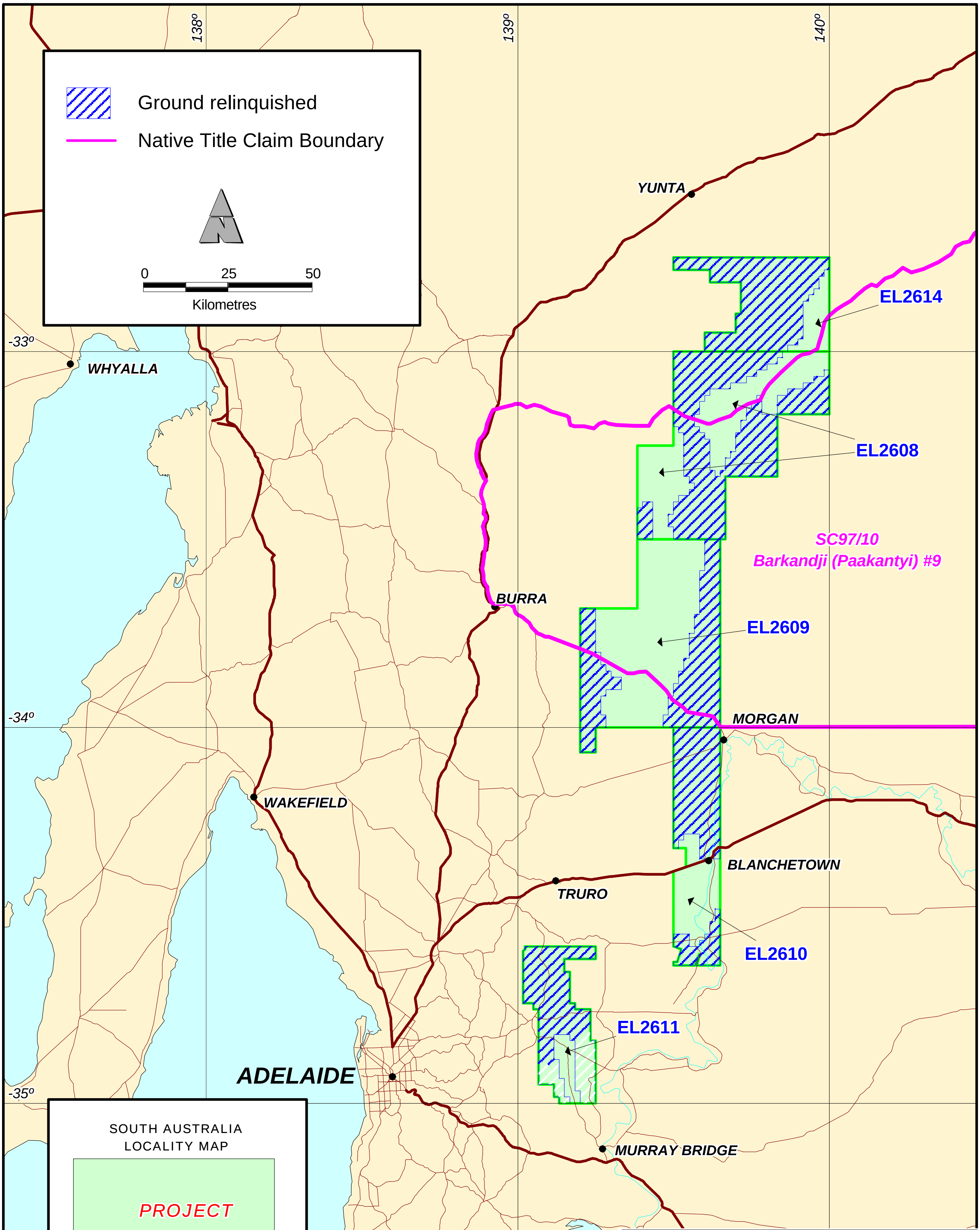
> Barkandji (Paakantyi)#9 NT Claim - SC97/10
>
> This claim covers the northern part of the project area. The claim was lodged with the National Native Title Tribunal on 5/12/1997. The application was found to not comply with s.190A on 17/06/1999, which removed the claimant's "right to negotiate".

Normandy lodged a Form 27 Notice covering all the tenements in this report in December 1999. No responses were received within the two-month notification period and a "summary determination" was gained from the Environment, Resources and Development Court authorising entry to the land for the purpose of carrying out exploration activities.

4. TENURE

Exploration Licences 2608, 2609, 2610, 2611 and 2614 were granted to Normandy Gold Exploration Pty Ltd on the 16 June 1999 for a period of one year. Following partial relinquishments, the tenements were renewed for a further one-year period on the 16 June 2000 as shown on the table below.

EL No.	EL Name	Renewal Period	Old area (km^2)	New area (km^2)
EL 2608	Braemar	16/06/2000 – 15/06/2001	2025	833
EL 2609	Redcliffe	16/06/2000 – 15/06/2001	2001	1211
EL 2610	Blanchetown	16/06/2000 – 15/06/2001	939	328
EL 2611	Palmer	16/06/2000 – 15/06/2001	696	93
EL 2614	Oratan Rock	16/06/2000 – 15/06/2001	914	161
		TOTAL	**6575**	**2626**



NORMANDY EXPLORATION PTY LTD

Project: PADTHAWAY RIDGE

Title: EL's 2608, 2609, 2610, 2611 and 2614 LOCATION PLAN

Author: A.PRICE	Date: 05/02/2001	Scale: 1 : 1,500,000
Drawn: A.BONNER	Office: ADELAIDE	Revised: Date:
Dwg No: 72700T03.WOR		Proj: LAT/LONG Datum: AGD66

X:\Aust\Sa\Projects\Padthaway_Ridge\CAD\MapInfo\72700t03

The licences were relinquished on 24/11/2000.

5. REGIONAL AND LOCAL GEOLOGY

Introduction

Work published by groups from the South Australian and Victorian Geological Surveys and the University of Adelaide in recent years discusses the origin and deformational history of NeoProterozoic and Palaeozoic rocks in the Adelaide Fold-Thrust Belt, including the areas extending under the Murray Basin into Victoria. Presented here is a summary of some of the more recent work.

Adelaidean sediments are widespread extending for considerable distances around the edge of the Gawler Craton. Cambrian sediments such as the Normanville and Kanmantoo Groups were largely restricted to the Stansbury Basin, the western extent of which is shown in Figure 2. The Adelaide Fold-Thrust Belt was formed during the Mid to Late Cambrian Delamerian Orogeny. The regional transpressive deformation event produced large-scale folding, thrusting and localised syn to late tectonic granitoid intrusion. Figure 3 summarizes the tectonostratigraphy of the area.

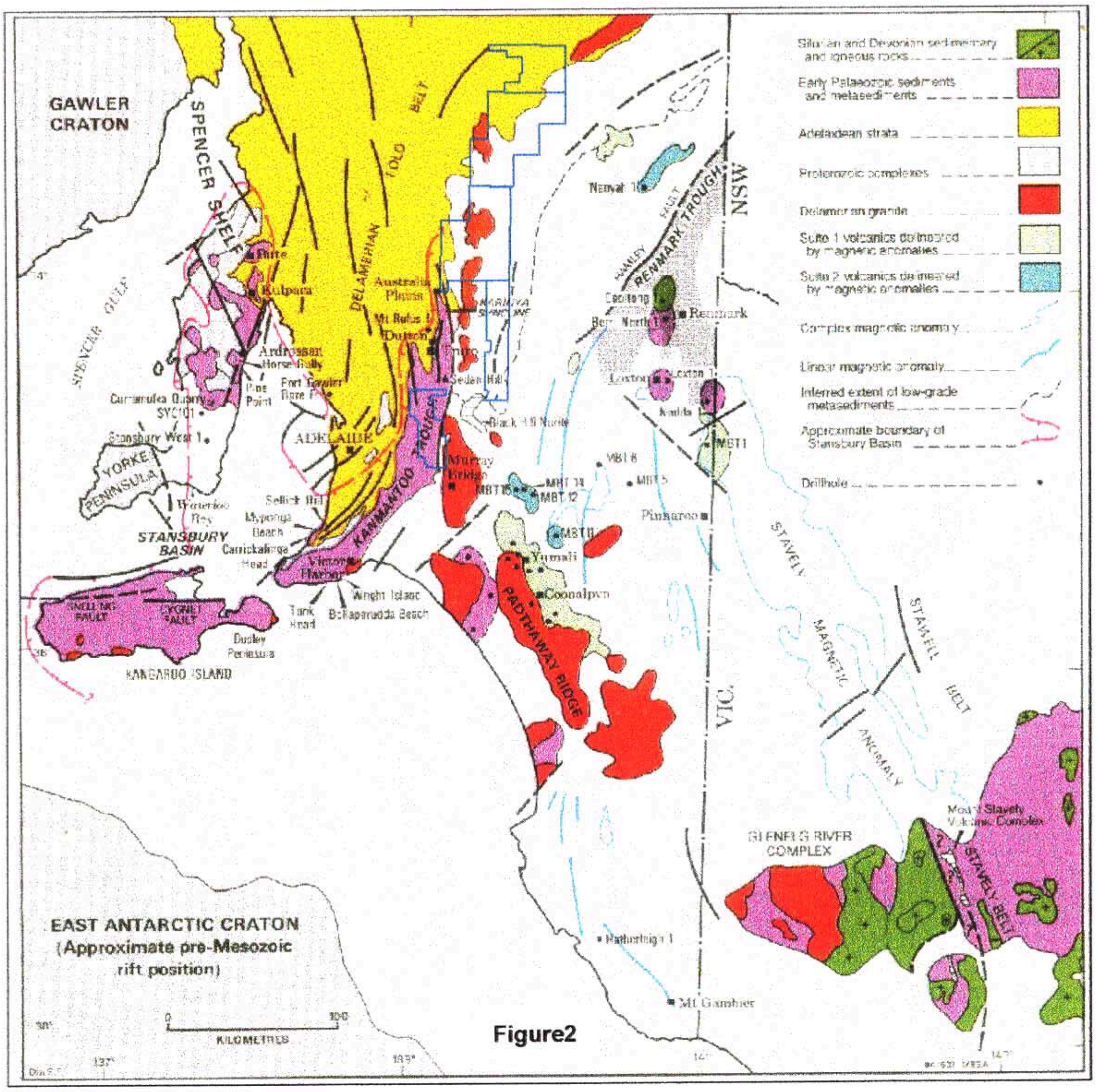
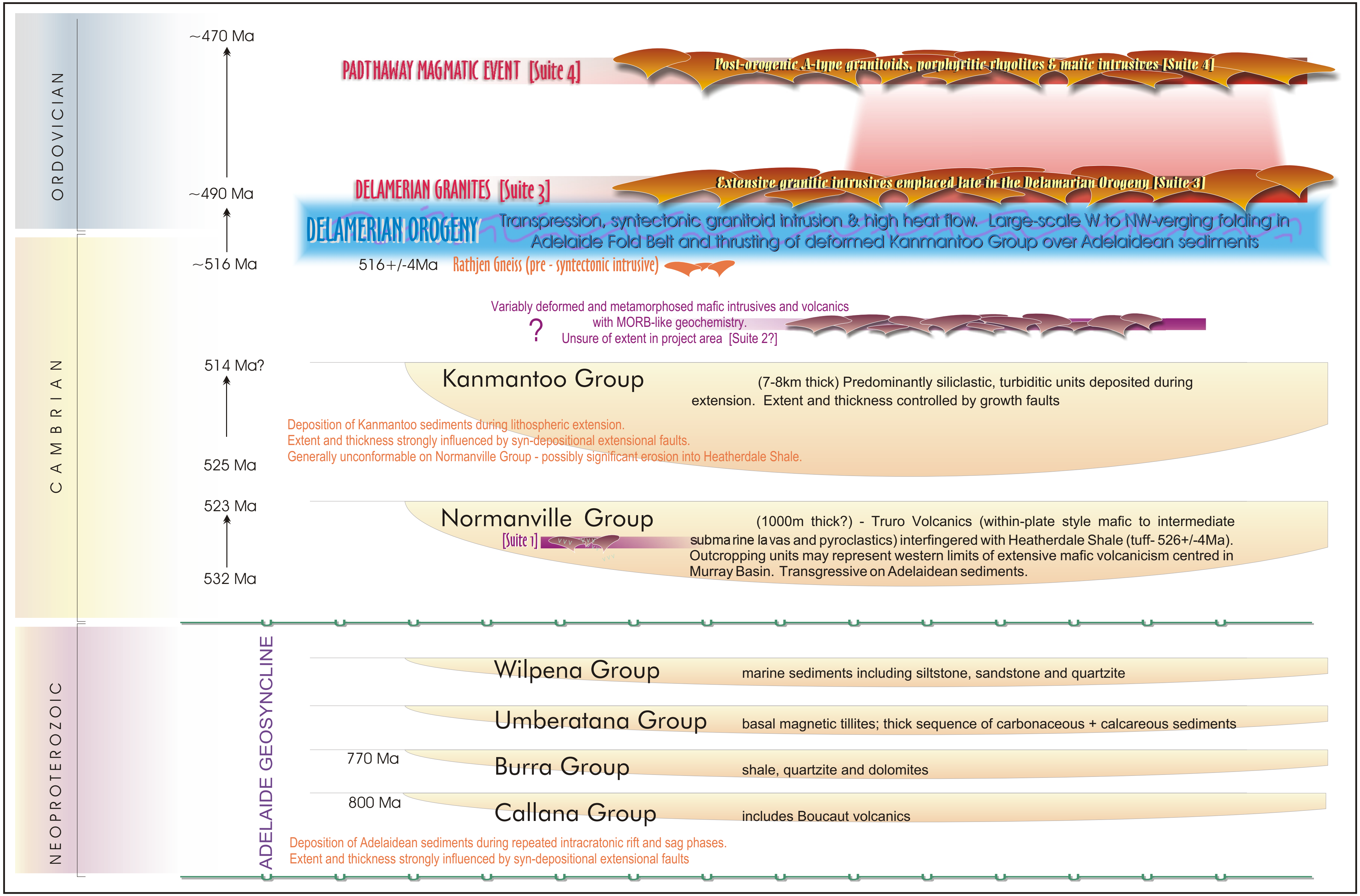


Figure2

Padthaway region Tectonostratigraphy

Figure 3



Sedimentary Successions

NeoProterozoic Groups

The Adelaide Geosyncline comprises a thick sequence of NeoProterozoic sediments and minor volcanics deposited during repeated intracratonic rift and sag phases (Flöttman and James, 1997; Preiss, 1993). The thickness of the Adelaidean sediments is approximately 200m on Kangaroo Island in the south, increasing to about 5km thick on the Fleurieu Peninsula and up to 10km thick in the Nackara Arc in the north. The extent of the Adelaidean sediments and volcanics under the Murray Basin is unknown.

The four main Adelaidean subgroups are summarised in Table 6.1 (pg. 173) of Preiss (1993). The older Callanna Group and Burra Groups are largely confined to the early Adelaidean rift basins and comprise varying sedimentary interlayers including carbonate-dominated sequences. Mafic and intermediate volcanics are restricted to the Lower Callanna Group and outcrop in the northwest of the Murray Basin to the east of Normandy's tenements.

An extensive period of Sturtian glaciation followed deposition of the Burra Group - glacial sediments at the base of the Umberatana Group mark this regional unconformity. The tillites are often magnetic, incorporating granitic and gneissic clasts and dropstones.

A series of strongly magnetic units to the northwest of the project area reflect a thicker succession of diamictite interbedded with orthoquartzite deposited in a fault-controlled depocentre known as the Baratta Trough. In this area the diamictites were overlain by lenticular, ironstone facies sediments. Extensive marine transgression followed the melting of the major icesheets and thick sequences of carbonaceous and calcareous sediments that form the Umberatana Group were deposited, included transgression onto the surrounding Stuart Shelf and Curnamona Craton.

The Wilpena Group comprises the youngest Adelaidean sediments preserved. This Group records two major transgressive-regressive cycles; the first reflects a sea-level rise associated with the melting of major icesheets and the second is associated with renewed tectonic disturbance. The group comprises predominantly marine sediments, including sandstone, siltstone, shale, dolomite.

Early Cambrian Normanville Group

Transgressive across the Adelaidean sediments in the Stansbury Basin are Early Cambrian platformal sediments and intercalated tuffs belonging to the carbonate-dominated Normanville Group. These were deposited during ongoing extension. Basal arkoses of the Mount Terrible Formation discordantly overlie the Lower Wilpena Group west of the Padthaway Project area, grading up through limestone with interbedded sandstone, including the Fork Tree Limestone. Widespread marine transgression followed, depositing over 300m of pyritic shale and siltstone of the Heatherdale Shale. A thin tuff horizon in the Heatherdale Shale has been dated at 526 ± 4Ma (U-Pb age from zircons), but deposition of the Normanville Group may extend from approximately 532Ma to 523Ma. The Normanville Group includes the Truro Volcanics, which comprises over 300m of vesicular and amygdaloidal andesite, trachyte and metabasalt having within-plate rift affinity (Rankin et al., 1991). The relationship of the volcanics with particular sedimentary units is unknown, as many of the contacts appear faulted, with possible erosion into the underlying sedimentary sequences.

A recent paper by Burtt et al. (2000) describes a new group of felsic to mafic volcanics near Mannum named the Teal Flat and Marne River Volcanics. U-Pb zircon dating (521±4Ma) and whole rock geochemistry has correlated these with the Truro Volcanics.

A hole (MBT-1) was drilled by SADME in 1990 near Peebinga to try and intersect the northwestern extension of the Mt Stavely Belt interpreted from the aeromagnetic data under the Murray Basin. The drillhole intersected basalt, tuff, limestone that is lithologically indistinguishable from the Fork Tree Limestone, and black pyritic shale similar to the Heatherdale Shale (Rankin et al., 1991b). The basalts drilled show within-plate affinities and thus are thought to be correlatives of the Early Cambrian Truro Volcanics. Rankin et al. (1991) classified these basalts and the Truro volcanics as Suite 1 mafic rocks (discussed further below).

The total thickness of the Normanville Group is inferred to be approximately 1000m from field observations. However it has been postulated following drilling such as MBT-1 that it may extend significantly eastwards with unknown thickness. Rankin et al. (1991) propose that the Early Cambrian mafic volcanism was areally significant and may be been centered in the Murray Basin. The outcropping Truro Volcanics near Dutton and Truro thus may represent the western limit of submarine basaltic flows. The Truro Volcanics have also been correlated to the upper Mount Wright Volcanics in western New South Wales.

Mid Cambrian Kanmantoo Group

Overlying the Normanville Group in the Stansbury Basin are the Mid-Cambrian sediments of the Kanmantoo Group. These are predominantly siliciclastic, turbiditic rocks deposited during lithospheric extension that followed the extrusion of the Truro Volcanics. Relative uplift on the margin of the Gawler Craton and rapid subsidence along a hinge zone extending northeast from Kangaroo Island resulted in the creation of fault blocks and structural depressions (as shown in Figure 13 of Flöttmann and James, 1997). The nature of the contact with the Normanville Group varies from being locally conformable in the northeast, through to unconformable or disconformable in the south. For example, Gravestock (1993) reports that the Heatherdale Shale passes conformably up into the shallow marine clastic rocks of the Carrickalinga Head Formation of the Lower Kanmantoo Group. However, other workers have proposed that up to 300m of the Heatherdale Shale was removed by erosion (Jago et al, 1994a *in* Gravestock, 1993), and the Carrickalinga Head Formation locally contains reworked shale clasts.

A maximum thickness of over 8km of Kanmantoo Group sediments is interpreted adjacent to growth faults (Flöttman et al, 1994). The greatest thickness of Kanmantoo sediments is to the southeast of the deepest Adelaidean basin and it appears that the Kanmantoo basin probably cut obliquely across the southern end of the Adelaidean basin. Sedimentation is restricted to between 526 ± 4Ma (age of tuff in the underlying Heatherdale Shale) and the intrusion of the granitic precursor of the Rathjen Gneiss at 514 ± 5Ma – a maximum of 20Ma, but possibly less than 10Ma. Therefore sedimentation of the Kanmantoo Group was extremely rapid and must have been accompanied by high rates of subsidence.

Recent detrital-zircon provenance studies conclude that the Kanmantoo Group sediments were not sourced from the Gawler Craton or NeoProterozoic rocks of the Adelaide Geosyncline. Work by Haines et al. (1996, in Haines and Flöttman, 1998) on turbiditic sole marks suggests a southerly source area.

Mid Cambrian volcanics?

Drilling in the Murray Basin also intersected calc-alkaline dolerite and basalt and variably deformed metabasic rocks with primitive MORB-like geochemical affinities. Rankin et al. (1991) classified these as Suite 2 mafics of Late Cambrian age (discussed below), and they are correlated with dolerite and amphibolite dykes that intrude the Kanmantoo Group in the eastern Mount Lofty Ranges. Fleming and White (1984 *in* Jenkins & Sandiford, 1992) suggest that these locally abundant, pre-metamorphic dolerite dykes may reflect essentially syn-depositional mafic magmatism. Rankin et al. (1991) also propose that these were intruded or extruded during maximum crustal extension in the Stansbury Basin just prior to the Delamerian Orogeny, as depicted in Figure 3. Therefore these may represent the last rocks deposited in the Adelaide Geosyncline.

Regional Deformation

Extension and subsidence in the Padthaway Project area has been continual since the Proterozoic and has resulted in the deposition of a succession of NeoProterozoic, Palaeozoic and Tertiary sediments. Deposition of the Adelaidean sediments was accompanied and strongly influenced by syndepositional extensional faults. Ongoing extension into the Cambrian resulted in the deposition of the Normanville and Kanmantoo Groups. The localisation of these sediments was also fault-controlled, probably involving some of the older faults. Significant fault scarps in the Tertiary are implied by the sudden increase of cover to the east of the Adelaide Hills.
Even within the Normandy tenements, the depth of cover varies rapidly from outcropping Adelaidean and Cambrian rocks through to in excess of 200m of sediments. Many of the earlier extensional faults would have been buried by subsequent sedimentation.

Several periods of compressional deformation are also known. The current distribution of rocks mapped and interpreted from the aeromagnetic data in the Padthaway Project area largely reflects the compressional Delamerian Orogeny in the mid-late Cambrian. The Delamerian Orogeny marks the onset of contractional deformation during the Palaeozoic along the proto-Pacific margin of Gondwana and appears to be driven by accretion of outboard volcanic arcs during westward subduction of the Stawell Terrane (Flöttman et al., 1994; Flöttman and James, 1997). The orogeny involved crustal thickening, magmatism and high-temperature, low-pressure metamorphism. Turner et al., (1996) summarise that the syntectonic granites provided a significant proportion of the heat responsible for the metamorphism.

The shortening deformed and inverted both the NeoProterozoic Adelaidean and Cambrian Kanmantoo sedimentary basins and probably reactivated Adelaidean and Cambrian extensional faults, as shown in Figure 4. The Adelaide Fold-Thrust Belt was formed during this regional orogenic event, which was accompanied and followed by significant comagmatic magmatic events.

The influence of the compressional Delamerian Orogeny is very distinct in the aeromagnetic data. Much of the stratigraphy has been folded into elongate structures parallel to the thrust front, and linear package of magnetic stratigraphy under the Murray Basin are interpreted as NeoProterozoic and/or Palaeozoic rocks deformed during the Delamerian Orogeny. Intrusive activity was also associated with this major orogenic event.

The Fleurieu and Nackara Arcs are considered to have formed as a coherent and synchronously developed fold and thrust belt, despite having different structural patterns (Marshak and Flöttman, 1996). This is in contrast to earlier workers such as Preiss (1995) who invoked several generations of Delamerian folding to describe the observed interference patterns. The bends within the Adelaide Fold-Thrust Belt that result in the distinctive "S-shape" reflect structural control imposed by variations in the pre-deformation basins and geometry of the surrounding craton (Marshak and Flöttman, 1996).

Marshak and Flöttman, 1996 propose that the Delamerian deformation in the Nackara Arc, where the Adelaidean sediments were thickest, produced detachment folds and/or fault-propagation folds formed above an evaporite-hosted decollement. Figure 4 shows this as well as backthrusting along the Murray Basin margin of the Nackara Arc, which emplaced Adelaidean strata southeastwards up the limb of a subsequently eroded or subsided ramp anticline. This suggests that some of the Adelaide Fold-Thrust belt once lay to the southeast of the Nackara Arc.

This is discussed further below with regards to the interpretation of the aeromagnetic data. Shortening across the Nackara Arc is only estimated to be in the order of 10-15%.

Further to the south in the Fleurieu Arc, Marshak and Flöttman (1996) estimate that shortening due to folding and faulting is about 50%, far greater than in the Nackara Arc region. PalaeoProterozoic basement gneisses are exposed to the west, as shown in Figure 8c from Marshak and Flöttman (1996). The juxtaposition of younger Kanmantoo Group on the older basement along the Williamstown-Meadows fault, which displays reverse sense of shear, implies that this was originally a major normal fault at the western edge of the Kanmantoo Basin, which was then inverted during the Delamerian Orogeny.

Constraints on Timing of Delamerian Orogeny

A recent paper by Haines and Flöttman (1998) proposes that considerable thicknesses of Cambrian sedimentary rocks were deposited in a foreland setting during the early phases of the Delamerian Orogeny. Examples given include the successions in the Stansbury Basin on the Yorke Peninsula and the Arrowie Basin. From the age of these sediments the Delamerian is considered to have begun at approximately 522Ma. Further information on the Cambrian sedimentation associated with the Delamerian Orogeny is provided in Haines and Flöttman (1998).

Intrusive relationships in the Summerfield Granodiorite, east of the Rathjen Gneiss, provide timing of the cessation of the Delamerian Orogeny. The Summerfield Granodiorite is the youngest deformed granite known and is dated at 486±6Ma. It is crosscut by a diorite dated at 487±2Ma, which is the oldest post-tectonic intrusive currently known.
The waning of convergent deformation was associated with the emplacement of a bimodal post (-late?) kinematic magmatic event, which is discussed in more detail later in this report. This suite includes the gabbros/norites at Black Hill and the A-type rhyolites and intrusives along the Padthaway Ridge. The association of intrusive and extrusive equivalents indicates that the postkinematic rocks were emplaced at very shallow crustal levels (Turner et al., 1996). This suggests that exhumation must have occurred very rapidly after the cessation of the Delamerian Orogeny. Removal of about 12-15km of sediments is indicated by the metamorphic grades now seen at the surface in the Fleurieu Arc. Turner et al, (1996) suggest that there was a causative link between the cessation of the convergent deformation and the emplacement of shallow-crustal extrusives and intrusives.

The Black Hill norite has been dated at 487±5Ma which is after the peak of the Delamerian Orogeny. However there is clear evidence of shearing at Black Hill in the quarry and in recent drillholes. Burtt et al. (2000) suggest that the arcuate shear zone (Teal Flat Shear Zone) which wraps around the eastern edge of the intrusive formed either late in the Delamerian Orogeny or may represent a separate deformational event. These shear zones continue to the north towards the Anabama/Redan area and swing around to the southeast through the Padthaway region.

Further evidence for a late to post Delamerian event is provided by the deformed and metamorphosed Windsong Volcanics in the southeast which are dated at 493±7Ma.

Some of the Padthaway Ridge intrusives clearly crosscut these late shears which can be used to define a minimum age for the Delamerian Orogeny.

Therefore the maximum and minimum ages for the Delamerian Orogeny is constrained between 522Ma and approximately 480Ma. However it is considered that the deformation front associated with the orogenic event would have migrated laterally, and hence temporally, and thus the commencement and cessation of deformation at a given locality would vary within these age constraints.

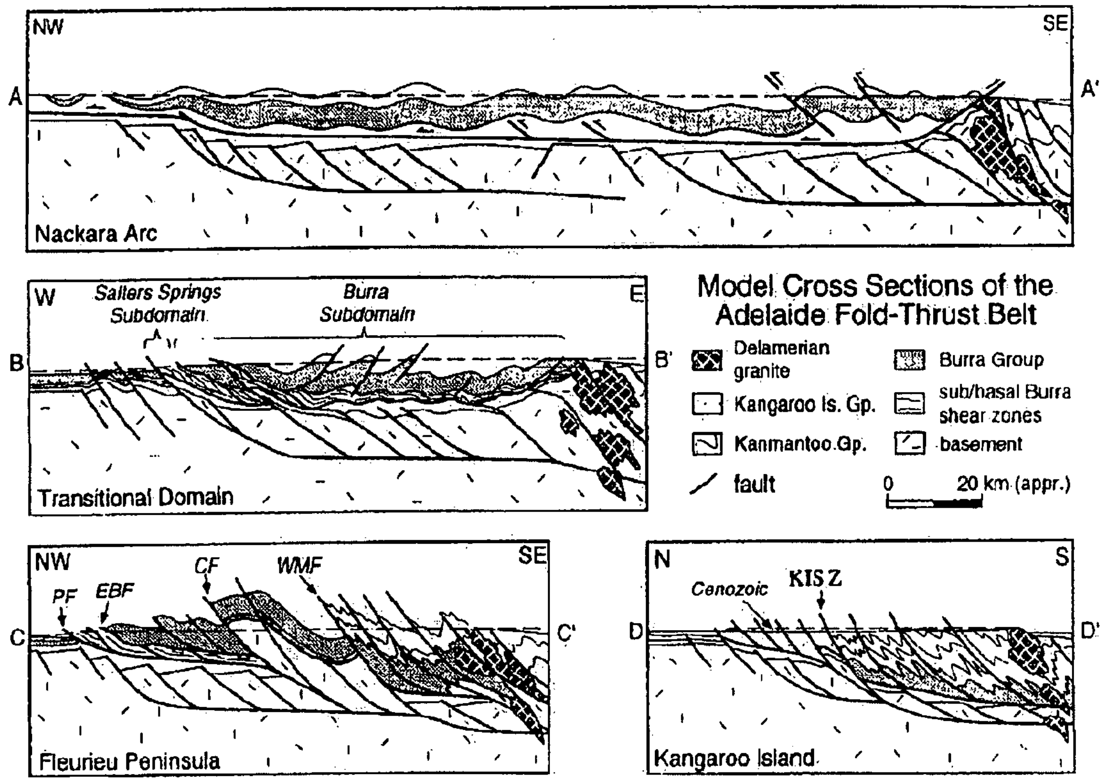


Figure 4
Structural cross-sections across Adelaide Fold-Belt (Figure 8 from Marshak and Flottman, 1996). Unpatterned areas below the Burra are the Callana Group and equivalents. WMF = Williamstown-Meadows Fault.
A: Extensional faults in basement control the deposition of Adelaidean sediments. NW-directed compression during the Delamarian Orogeny causes folding and some NW-vergent thrusting. Back thrusting is also inferred on the SE end of section, near the Murray Basin, against the basement high where Boucaut volcanics and Delamarian granites are exposed. The section suggest continuation of the Adelaidean sediments and volcanics under the Murray Basin.
C: The section is dominated by NW-directed thrusting involving Adelaidean and Cambrian sediments, as well as basement. Approximately 50% shortening during the Delamarian Orogeny is accommodated by the folding and thrusting. Note inversion of older extensional structures and structural control on late-Delamarian felsic intrusives. SE-dipping shear zones extend to basement and probably represent extensional faults active in either or both the Adelaidean and Cambrian rift

Uplift beginning in the Eocene exposed the Adelaide Fold-Thrust belt and the modern topography in the Mt Lofty Ranges and Adelaide Hills reflects reactivation of the fold belt during the late Tertiary.

Intrusive bodies

Rankin et al. (1991b) recognised 3 major mafic/bimodal igneous suites from drillholes into Early Palaeozoic basement underlying younger sediments of the Murray Basin. Syntectonic intrusives have also been recognised (for example, the Rathjen Gneiss) and thus four possible magmatic suites have been defined here.

SUITE 1: Early *Cambrian, within-plate style basalts, consistent with continental rifting and graben development.*
This suite includes the Truro/Marne River/Teal Flat volcanics and those Early Cambrian volcanics interbedded with metasedimentary rocks that were intersected in the drillhole (MBT1) targeted at the northwestern termination of the Stavely Belt along the western margin of the Tasman Fold Belt system. The Truro Volcanics have also been correlated to the upper Mount Wright Volcanics in western New South Wales.

The outcropping Truro/Marne River/Teal Flat volcanics are generally thin localised occurrences and thus are generally only reflected by narrow magnetic features. However, Suite 1 volcanics are thought to have been extruded during the onset of Early Cambrian rifting and Rankin et al., (1991) propose that the mafic volcanics were areally significant and may have been centred in the Murray Basin. Therefore thicker sequences are postulated under the Murray Basin and these would presumably create a more significant magnetic signature.

SUITE 2: variably deformed and metamorphosed mafics with MORB-like geochemistry.
Metadolerite and metabasalt has been drilled which is considered to be analogous to Middle-Late Cambrian dykes intruding metasediments in the Adelaide Fold Belt, and possibly to metabasalts in the Glenelg River Complex in West Victoria. Rankin et al (1991) suggest that these intruded as part of the Mid-Late Cambrian extension event that accompanied deposition of deeper-water Kanmantoo Group sediments. Therefore this suite is inferred to have intruded just prior to the commencement of the Delamerian Orogeny. The extent of these mafic rocks is unclear, as they have only been intersected in a few drillholes.

SUITE 3: Extensive syn- to late-tectonic granitic intrusives associated with the Delamerian Orogeny.
The oldest felsic intrusive known in the Adelaide Fold-Thrust Belt is the magnetic Rathjen Gneiss that intrudes the Kanmantoo sediments. Analysis of zircons (Foden et al., 1999) reveals a complex growth history: igneous crystallisation is interpreted to be 514 ± 5Ma, with high-U overgrowths on the zircons yielding ages of 503 ±7 Ma. Foden et al. (1999) interpret the Rathjen Gneiss to be pre- or early syntectonic with its emplacement possibly marking the beginning of the Delamerian Orogeny. The granite shows affiliations with within-plate or anorogenic granites. The age of emplacement also provides a constraint on the cessation of the Kanmantoo Group sedimentation and suggests that deposition, burial and heating of the Kanmantoo sediments was restricted to a maximum of 20Ma, but possibly less than 10Ma.

Felsic intrusives intruding the Kanmantoo Group are interpreted as intruding late in the Delamerian Orogeny. They intrude already deformed sediments but appear relatively undeformed.

Numerous felsic intrusives have been interpreted from the aeromagnetic data underlying the Murray Basin. Most of these are elongate, weakly to nonmagnetic bodies and are aligned parallel to the main structural corridors generated during the Delamerian Orogeny. They generally do not cut the major Delamerian thrusts. Therefore it is interpreted that these intruded late in the deformation and so have been classified as Suite 3 intrusives of late- to post-Delamerian age. It is possible that some of these may be Ordovician in age.

SUITE 4: Ordovician, post-orogenic A-type granitoids, porphyritic rhyolite and mafic-ultramafic intrusive complexes exposed in the Padthaway Ridge and Black Hill areas.
This post-Delamerian magmatic event was bimodal as represented by the association of unmetamorphosed intrusives around Black Hill, together with A-type granites and rhyolites in the Padthaway Ridge area. On a smaller scale the exposed Mannum Granite shows clear evidence of mafic and felsic mixing (Turner and Foden, 1996). Work by Turner et al., (1992) concluded that the Padthaway Ridge A-type granites and volcanics crystallised from highly fractionated, high-temperature magmas. They suggested that the granites and volcanics were derived by fractionation from contemporaneous tholeiitic magmas similar to those at Black Hill or Coonalpyn.

The coeval felsic volcanics and intrusives of the Padthaway Magmatic Suite are often quite evident in the aeromagnetic data, as they crosscut or overlie the deformed, generally linear older rocks. Most of the post-orogenic granitoids are strongly magnetic.

A series of relatively small (generally <10km diameter), subcircular, magnetic intrusives are evident within the Murray Basin. These cut the Delamerian structures so are clearly post-tectonic. It is uncertain whether these are related to the Ordovician Padthaway Magmatic Suite.

6. PREVIOUS EXPLORATION

Previous exploration within the tenements has been widespread and varied. Commodities sought have included mineral sands, brown coal, uranium, diamonds, gold, PGEs and base metals in sequences ranging from Adelaidean to Quaternary in age. The extensive Tertiary and younger cover has restricted any effective basement (Palaeozoic) exploration to drilling.

The more significant previous exploration within the tenements include the following:

Company	Commodity	Years	Comments
BHP	BM, coal, diam, HM	1978-80	Rotary+air
CRA	BM, coal, diam	1976-83	Mud, RC, DDH
Dampier Mining	BM, coal	1978-80	Rotary, DDH
Mines Admin.	U	1970-79	rotary
Peregrine Res.	HM	1989	RC
Placer	Cu, Au, BM	1988-95	RC, rotary
PIRSA/SADME	BM, Au, coal, PGE, strat	most years	Most drill types
MIM	BM, Au	1995-98	no drilling

Note: BM = base metals, HM = heavy mineral sands, diam = diamonds, PGE = platinum group elements, strat = stratigraphic hole.

7. CURRENT EXPLORATION

Exploration on the tenement has included a comprehensive investigation of previous exploration, a geological/structural interpretation, land access procedures, diamond and aircore drill testing and rehabilitation of drill sites.

7.1 Previous Exploration Compilation

Most of the useful drilling data was entered into an Access database including data extracted from the PIRSA open file database and more recent data not yet included in the PIRSA database. New fields were generated including depth of cover, summary basement lithologies and basement geochemistry. The data was used to generate DTB contours, highlight areas of anomalous geochemistry and to assist in the geological/structural interpretation of the compiled aeromagnetic data.

7.2 Geological/structural Interpretation and Target selection

High-resolution aeromagnetic data is available over much of the area of interest. The coverage includes a range of private company and government surveys with varying line spacing and data quality. These have been merged with the more regional aeromagnetic data to create coverage of the entire area of interest.

The aeromagnetic data has been used to directly define target areas and to produce a solid geology interpretation.

The interpretation of the aeromagnetic data was undertaken in several stages:

- Initial overview of main magnetic domains and structural boundaries
- Identification of magnetic features of interest and prioritising of drilling targets
- Subdivision of packages of magnetic rocks
- Interpretation of probable rock type, age and other information of each package
- Classification of the nature of structures.

Most of the drill targets selected are discrete magnetic highs in the vicinity of the Delamerian granites.

Several other anomalous responses are larger and more diffuse. In some of the target areas, it is still possible to trace stratigraphy through the area of interest. This suggests that the diffuse magnetic signature may represent alteration involving the destruction of magnetite, rather than an intrusive.

Other features highlighted include linear magnetic anomalies (increase or decrease in intensity) along Delamerian structures. These may reflect alteration due to fluid movement or possibly small intrusives. Those that are positioned within possible dilational bends on the structures have been assigned higher priorities.

7.3 Land Access

Digital land tenure data was purchased from the Department for Environment Heritage and Aboriginal Affairs. This data was used to identify the relevant land parcels, landowners and the land tenure type in the drill target areas. As some areas are covered by Native Title Claims, identifying the land tenure type was critical. The relevant landowners were contacted initially by phone and then by mail or in person. Compensation agreements were signed with all affected landowners.

All proposed drill sites were checked against the register of recorded and registered sites by officers of the Division of State Aboriginal Affairs (DOSAA).

The relevant local Aboriginal heritage groups (provided by DOSAA) were contacted by registered mail to inform them of our proposed activities and to seek their advice on site clearances over proposed drill sites.

7.4 Drilling Program

During the report period a total of 5 diamond tailed holes for 959.3m and 22 aircore holes for 2697m were completed. All holes were drilled vertically. The drilling was completed in two separate programs commencing in August 1999 and finishing in late June 2000. The first drilling program included holes PADD022 + PADD023 on EL 2609. Budd Drilling undertook the first program using a UDR 600 multipurpose rig. The second program on ELs 2608 and 2609 included holes PAAC005 to PAAC027 and PADD034 to PADD036 and was completed by Coughlan Drilling using a UDR600 rig.

Most diamond holes were precollared using rotary mud although open hole percussion was attempted in the first program to penetrate hard limestone layers in a few holes. On reaching hard basement, all holes were cased off HQ and NQ cored 14 to 37m into basement. Cover depth ranged from 47m to 161m with some holes ending in cover. The thickness of weathered basement varied from 0m to 55m. Aircore holes were drilled to blade refusal.

All weathered bedrock material recovered during precollaring and aircore drilling was composite sampled at varying intervals (generally 4m). Selected core intervals were cut with half core samples submitted for analysis.

All samples were submitted to Amdel Laboratories for gold and multielement analysis as detailed below (ppm detection limits in brackets):

Au (1ppb) - method AA9 (aqua regia digest)

Ag(1), Ba(5), Co(2), Cu(2), Fe(100), K(10), Mn(5), Ni(2), Pb(5), P(5), V(2), Zn(2)

– method IC3E (ICPOES)

As (0.5), Bi (0.1), Cd (0.1), Ce (0.5), La (0.05), Mo (0.1), Sb (0.5), U (0.02)

– method IC3M (ICPMS)

All results are included in Appendix 2.

A generalised cover stratigraphy is summarised below:

- Undifferentiated sands (locally calcareous), clays (locally plastic) and minor gravel, – Quaternary probable Parilla Sand and Blanchetown Clay.
- Limestone to sandy limestone and clay, very hard in places, water bearing – unconfined acquifer - Mannum Limestone (Murray Group)
- Green marly clays - Ettrick Formation (Murray Group)
- Dark brown to black lignitic clay and sand, locally water bearing – confined acquifer - Renmark Group

A discussion of targets tested and results is presented below (refer to drillhole location Plan 1 and cross section Plans 2-11):

- Target 2609 03 - moderately magnetic zone on perimeter of subcircular intrusives ~ associated phase of felsic/intermediate intrusives or magnetite-alteration – tested by PADD022. Drilling intersected altered gabbro intruded by quartz monzonite. No anomalous results.

- Target 2609 04 - diffuse, weak magnetic signature evident in 1VD ~ possible alteration associated with intrusive – tested by PADD023. Drilling intersected biotite granite intruding metasediments including spotted metapelites. No anomalous results.

- Target 2608 02 – NW trending magnetic high along margin of the Bendigo intrusive complex - tested by PAAC006-019, and 025-026. Drilling intersected gabbros and lesser monzonite and granite, and chloritic and calc silicate altered metasediments under 50-100m of Tertiary cover. Minor anomalous results from PAAC018, 103-105m, 600ppm Cu and 25.1% Fe in chloritic metasediments with fine magnetite and PAAC019, 103-107m, 12ppb Au and 160ppm Co in saprolitic clay after metasediments near the cover/basement interface.

- Target 2608 01 – discrete magnetic high - tested by PADD034 – intersected deeply weathered fine-grained chloritic metasediments under 142m of cover. The hole was abandoned at 217m due to hole collapse before the magnetic anomaly was reached. No anomalous results.

- Target 2608 03 – magnetic low (interpreted alteration on margin of mafic intrusive) – tested by PAAC020-024. Drilling intersected gabbro and metasediments with the magnetic low interpreted to be caused by metasediments combined with deeper cover. Good quantities of slightly brackish water were encountered in basal cover sands in hole PAAC023. No anomalous results.

- Target 2609 07 – curvilinear magnetic high – tested by PAAC027. Hole terminated at 147m in cover. No samples taken

- Target 2609_05 - curvilinear magnetic high – tested by PADD035 – intersected carbonate and epidote altered mafic volcanics. Minor late stage quartz + magnetite + minor chalcopyrite veinlets (1-10mm) appear to be restricted to a fine-grained possible intrusive. There is local minor pyrite and chalcopyrite mineralisation associated with the carbonate alteration. Probable Marne River/Teal Flat Volcanic equivalent. Minor anomalous results included 167-168m, 18ppb Au and 850ppm Cu.

- Target 2609_02 – discrete magnetic high on edge of mafic intrusive - possible hydrothermal magnetite – tested by PADD036 – intersected relatively unaltered medium grained gabbro with minor quartz + tourmaline + carbonate veins. No anomalous results.

Discussion

Drilling during the report period has tested a number of magnetic targets interpreted as magmatic related, hydrothermal magnetite bearing alteration/mineralisation systems and fractionated intrusive centres with associated porphyry/skarn mineralisation. Drilling intersected a variety of lithologies including mafic volcanics and volcaniclastics (Truro Volcanic equivalents), a range of intrusives from gabbros to granites, and some metasediments. No indicators of large alteration/mineralisation systems have been intersected.

Collar, assay and coded lithology details are included in Appendices 1 to 3 respectively. Pontifex and Associates prepared and described a number of thin section samples from a range of holes. These are presented in Appendix 4.

Rehabilitation

All holes have been plugged at least 400mm below surface with concrete plugs. All diamond sumps have been backfilled. All aircore sample piles have been raked flat. All rubbish was removed from drill sites.

8. CONCLUSIONS AND RECOMMENDATIONS

Reconnaissance drilling during the report period tested a number of magnetic targets. No indicators of large alteration systems related to the target iron oxide or porphyry/skarn associated Cu/Au mineralisation have been intersected. Due to the results to date and re-allocation of exploration funds, no further work was recommended and the tenements were relinquished on 24/11/2000.

9. EXPENDITURE

Expenditure for the report period totalled $340,817 as detailed on the following Table 1.

Table 1

Detailed Expenditure for ELs 2608, 2609, 2610, 2611 and 2614 for the period 16/06/1999 to 24/11/2000

		EL2608	EL2609	EL2610	EL2611	EL2614
	Employee Costs					
511020	Staff Training	50	50	50	50	
520060	Entertainment - deductible			85	35	
800001	Salaries and Wages	29,537	43,703	15,044	11,955	5,274
	Sub total	**29,587**	**43,753**	**15,179**	**12,040**	**5,274**
	Operating Costs					
520680	Stationery & Supplies	103	219	163	163	14
520630	Printing	23	23			
520600	Couriers, Bulk Mail & Postage		19			
520635	Publications & subscriptions	104	118	20	104	
520920	Travel & Accommodation - Local	515	1,875	281	182	233
550999	Consumables - General & Direct Purchase	944	3,300			
510000	Accommodation & Messing	79	79			
520085	Maintenance	107	322			
520605	Equipment (<$500)	72	374	72	72	
512000	First Aid / Safety	176	186	65	65	65
520685	Telephone, Telex, Fax	440	1,061			
520086	Maintenance -Vehicles	1,892	7,347	762	426	133
552000	Fuel - Distillate	385	328			
562015	Vehicle Registration	248	248			
839003	Regional Office Allocation	7,181	9,121	4,002	2,910	1,033
839001	Salaries and Wages Allocation	1,138	1,043			
839000	Fixed Asset Usage	4,518	6,950	3,311	2,618	1,168
514010	Contract - Drafting	241	34	175	34	168
561020	IT Infrastructure Hardware	332	498	276	276	
561010	IT Application - Software	870	970	770	803	485
	Sub total	**19,368**	**34,115**	**9,897**	**7,653**	**3,299**
	Tenement Costs					
521000	Land Compensation		976			
560040	Tenement Fees & Rentals	9,802	10,844	4,448	2,914	3,832
521001	TLO - Compensation Payments	824	1,333			
	Sub total	**10,626**	**13,153**	**4,448**	**2,914**	**3,832**
	Laboratory Costs					
560055	Assays - General	1,906	921			
560060	Assays - Diamond Drill	390	757			
560065	Assays - Aircore	594	594			
	Sub total	**2,890**	**2,272**	**0**	**0**	**0**
	Drilling					
514020	Contract - Diamond Drilling		38,912			
514025	Contract - Drilling Aircore	44,705				
560010	Drill Site Preparation	723	2,822			
560011	Drill Site Rehabilitation	498	188			
	Sub total	**45,926**	**41,922**	**0**	**0**	**0**
	Specialist Services					
561005	IT Data Acquisition	775	685	685	375	
560075	Geophysics - general			8,825		
513000	Consultants - General	7,003	3,609			
513030	Consultants - Petrology		499	499		
513050	Consultants - Information Technology	2,157	2,710	2,393	1,765	689
	Sub total	**9,935**	**7,503**	**12,402**	**2,140**	**689**
	TOTAL	**$118,332**	**$142,718**	**$41,926**	**$24,747**	**$13,094**

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BIBLIOGRAPHIC DATA SHEET

REPORT NUMBER	27950
REPORT TITLE	Final Report on Exploration Licences 2608, 2609, 2610, 2611 and 2614, Padthaway Project for the period 16/06/1999 to 24/11/2000.
PROJECT NAME	Padthaway Project
TENEMENT NUMBERS	2608, 2609, 2610, 2611 and 2614
OWNER/JV PARTNERS	Normandy Gold Exploration Pty Ltd
COMMODITIES	Gold, Copper
TECTONIC UNIT	Murray Basin, Kanmantoo Trough, Padthaway Ridge
STRATIGRAPHIC UNITS	
1:250,000 MAP SHEET	OLARY 1:250,000 SHEET SI-54-02 BURRA 1:250,000 SHEET SI-54-05 CHOWILLA 1:250,000 SHEET SI-54-06 ADELAIDE 1:250,000 SHEET SI-54-09 RENMARK 1:250,000 SHEET SI-54-10
1:100,000 MAP SHEETS	too many to list
KEYWORDS	Exploration review Geophysics Structural Interpretation Diamond drilling Aircore Drilling Rehabilitation

APPENDIX 1

Appendix 1 - Drill hole collars

185007

Hole_ID	Amg_E	Amg_N	Completion Date	Cover Depth	Drill_Type	Final Depth	Precollar Depth	RLRegional	Tenement	Comment
PAAC006	359634	6310058	20000524	48	AC	119		155	2608	
PAAC007	359700	6310123	20000524	48	AC	90		155	2608	
PAAC008	359779	6310184	20000525	47	AC	111		155	2608	
PAAC009	359853	6310244	20000525	66	AC	131		155	2608	
PAAC010	359927	6310315	20000526	69	AC	123		155	2608	
PAAC011	360006	6310380	20000526	72	AC	110		155	2608	
PAAC012	360076	6310445	20000527	69	AC	99		155	2608	
PAAC013	360873	6309215	20000527	107	AC	143		155	2608	
PAAC014	360955	6309270	20000528	110	AC	126		155	2608	
PAAC015	361041	6309325	20000528	103	AC	115		155	2608	
PAAC016	361127	6309375	20000529	104	AC	120		155	2608	
PAAC017	361197	6309418	20000530	100	AC	100		155	2608	abandoned in hard sandstone (Cainozoic)
PAAC018	361255	6309502	20000531	98	AC	112		155	2608	
PAAC019	361310	6309586	20000531	103	AC	117		155	2608	
PAAC020	354980	6308538	20000620	124.5	AC	125		148	2608	
PAAC021	355143	6308353	20000620	127	AC	137		148	2608	
PAAC022	355302	6308161	20000622	126	AC	144		148	2608	
PAAC023	355458	6307976	20000622	131+	AC	131		148	2608	Abandoned due to rod blocking, sand and water
PAAC024	355637	6307778	20000622	128	AC	140		148	2608	
PAAC025	361365	6309674	20000623	102	AC	126		155	2608	
PAAC026	361428	6309754	20000623	86	AC	134		155	2608	
PAAC027	364752	6273220	20000624	144+	AC	144		110	2609	terminated at 144m in cover
PADD022	356580	6241990	199911??	161.8	DD	198.4	161.8	115	2609	
PADD023	355990	6247960	199911??	116	DD	183.4	168.2	105	2609	
PADD034	356349	6296323	20000609	142	DD	217	197.5	145	2608	air core precollar to 197m
PADD035	359520	6255533	20000614	120	DD	186	163.2	95	2609	
PADD036	347030	6254893	20000617	154	DD	174.5	160.8	137	2609	
	NB - AGD 66 Zone 54				AC = Aircore hole					
					DD = Diamond hole					

APPENDIX 2

Appendix 2 - Drill hole Assays

HOLE_ID	Sample_	FROM	TO	Data_type	Drill_type	COMMENT	Au_ppb	Au Dp1	Ag_ppm	Ba_ppm	Co_ppm	Cu_ppm	Fe_ppm	K_ppm	Mn_ppm	Ni_ppm	Pb_ppm	P_ppm	V_ppm	Zn_ppm	As_ppm	Bi_ppm	Cd_ppm	Ce_ppm	La_ppm	Mo_ppm	Sb_ppm	U_ppm
PAAC006	1023434	48	53	INT	AC		3		<1	115	<2	92	60100	2700	60	37	<5	230	290	32	3.5	0.1	<0.1	34.5	48	1.3	<0.5	9.5
PAAC006	1023435	53	58	INT	AC		2	<1	1	145	7	73	81100	4400	115	41	<5	290	220	24	1	<0.1	<0.1	30.5	56	0.7	<0.5	6.5
PAAC006	1023436	58	63	INT	AC		3	2	<1	125	5	90	82100	3200	145	30	10	310	145	27	<0.5	<0.1	<0.1	30.5	42.5	0.2	<0.5	4.7
PAAC006	1023437	63	67	INT	AC		3		<1	470	3	91	82000	4550	200	52	10	850	160	39	<0.5	<0.1	<0.1	165	145	0.1	<0.5	4.9
PAAC006	1023438	67	72	INT	AC		3		<1	850	7	125	124000	1450	370	49	10	1450	270	55	<0.5	<0.1	<0.1	380	210	0.1	<0.5	7
PAAC006	1023439	72	77	INT	AC		3		<1	430	4	130	110000	440	300	49	15	1250	240	57	<0.5	<0.1	<0.1	280	140	<0.1	<0.5	9
PAAC006	1023440	77	82	INT	AC		<1		<1	480	3	140	94400	1500	330	53	10	1150	165	53	<0.5	<0.1	<0.1	290	165	<0.1	<0.5	7
PAAC006	1023441	82	87	INT	AC		2		<1	280	5	110	95900	750	360	69	<5	850	195	64	<0.5	<0.1	<0.1	125	135	1	<0.5	7
PAAC006	1023442	87	92	INT	AC		<1		<1	310	9	94	109000	3200	450	63	10	1000	130	60	<0.5	<0.1	<0.1	145	135	0.4	<0.5	9
PAAC006	1023443	92	97	INT	AC		1		<1	490	6	125	108000	2400	480	54	10	1150	120	53	<0.5	<0.1	<0.1	140	200	0.5	<0.5	10.5
PAAC006	1023444	97	102	INT	AC		2		<1	300	7	180	102000	1600	420	82	10	1000	145	72	<0.5	<0.1	<0.1	110	125	0.5	<0.5	14
PAAC006	1023445	102	107	INT	AC		9		<1	380	7	210	102000	4300	380	76	5	1450	150	67	<0.5	<0.1	<0.1	135	360	0.1	<0.5	24.5
PAAC006	1023446	107	112	INT	AC		2		<1	440	64	105	80500	11000	900	87	10	700	130	63	0.5	<0.1	<0.1	160	175	0.9	<0.5	21
PAAC006	1023447	112	116	INT	AC		<1		<1	450	47	90	59900	18200	600	67	<5	490	155	79	<0.5	<0.1	<0.1	310	140	0.5	<0.5	12
PAAC006	1023448	116	119	INT	AC		<1		<1	1100	190	170	55500	17300	2350	390	5	1250	115	290	<0.5	<0.1	0.2	480	135	0.5	<0.5	6
PAAC007	1023458			DUP	AC	duplicate of 1023457	<1		<1	290	4	145	95200	6750	370	37	15	1150	200	53	1.5	0.1	0.1	270	150	0.2	<0.5	12
PAAC007	1023449	48	53	INT	AC		<1		<1	220	2	83	49100	2950	70	50	20	300	210	34	0.5	<0.1	<0.1	64	130	1.2	<0.5	7.5
PAAC007	1023450	53	58	INT	AC		1		<1	180	4	110	84400	2200	240	54	15	470	200	53	<0.5	<0.1	<0.1	63	145	<0.1	<0.5	4.4
PAAC007	1023451	58	63	INT	AC		2		<1	300	6	86	85600	5000	230	43	10	650	165	46	<0.5	<0.1	<0.1	115	145	<0.1	<0.5	4.4
PAAC007	1023452	63	68	INT	AC		1	2	<1	440	3	84	81900	2250	250	105	15	1000	220	80	<0.5	<0.1	<0.1	210	170	1	<0.5	4.3
PAAC007	1023453	68	73	INT	AC		<1		<1	550	<2	87	79100	2400	340	32	10	800	170	41	<0.5	<0.1	<0.1	140	130	<0.1	<0.5	4.5
PAAC007	1023454	73	78	INT	AC		4		<1	500	3	71	76800	3100	330	20	10	750	150	33	0.5	0.2	<0.1	135	115	0.3	<0.5	3.8
PAAC007	1023455	78	83	INT	AC		4		<1	390	6	115	87700	7850	250	31	10	1000	200	55	1	<0.1	<0.1	175	175	0.2	<0.5	7
PAAC007	1023456	83	87	INT	AC		<1	<1	<1	330	3	155	90800	4100	280	45	15	1350	210	63	2.5	0.2	0.1	370	230	0.3	<0.5	10.5
PAAC007	1023457	87	90	INT	AC		<1		<1	280	4	135	90700	7100	380	36	10	1150	200	50	2	0.1	0.1	290	165	0.2	<0.5	11.5
PAAC008	1023472			STD	AC	Standard NX19	620	640	18	200	18	6200	23500	80300	30	5	315	85	4	6700	96	12.5	16	15	19.5	460	35.5	0.74
PAAC008	1023459	54	57	INT	AC		<1		<1	400	<2	52	29600	3450	45	33	5	290	160	34	2	0.1	0.1	51	125	0.5	<0.5	8
PAAC008	1023460	57	60	INT	AC		1		<1	230	<2	42	89000	7200	80	12	15	280	170	16	2	0.1	0.1	35	81	0.5	<0.5	5
PAAC008	1023461	60	65	INT	AC		1	<1	<1	150	3	67	102000	3300	290	20	10	450	160	20	1	<0.1	0.1	48	100	0.3	<0.5	6
PAAC008	1023462	65	70	INT	AC		<1		1	350	5	96	106000	5300	310	22	10	700	185	32	1	<0.1	0.1	64	145	0.4	<0.5	4.9
PAAC008	1023463	70	75	INT	AC		1		<1	420	4	92	100000	3300	280	24	5	500	145	31	1	<0.1	0.1	29	105	1	<0.5	5.5
PAAC008	1023464	75	80	INT	AC		<1		<1	270	3	160	94600	5600	200	49	15	650	95	50	2	0.2	0.1	34	82	0.2	<0.5	6.5
PAAC008	1023465	80	85	INT	AC		<1		<1	600	4	120	75700	6400	220	50	10	470	87	43	1	0.1	0.1	22	41.5	0.3	<0.5	6.5
PAAC008	1023466	85	90	INT	AC		<1		<1	700	14	175	81400	13500	330	230	5	750	96	270	1	<0.1	0.1	140	210	0.1	<0.5	7
PAAC008	1023467	90	95	INT	AC		<1		1	650	16	97	55500	16000	110	220	5	900	125	210	1.5	<0.1	<0.1	500	500	0.4	<0.5	10.5
PAAC008	1023468	95	100	INT	AC		<1		<1	500	26	71	48700	14600	105	170	10	800	130	150	0.5	<0.1	<0.1	125	96	0.4	<0.5	8
PAAC008	1023469	100	105	INT	AC		<1		<1	600	35	43	53300	17300	175	220	10	1750	130	170	0.5	<0.1	<0.1	69	75	0.4	<0.5	5.5
PAAC008	1023470	105	110	INT	AC		<1		<1	600	39	25	50900	16400	800	90	5	1550	120	65	0.5	<0.1	0.1	61	68	0.4	<0.5	4.3
PAAC008	1023471	110	111	INT	AC		<1	<1	<1	550	30	14	43500	14900	500	69	<5	1450	110	45	0.5	<0.1	<0.1	49	57	0.6	<0.5	2.8
PAAC009	1023473	63	65	INT	AC		3		<1	350	6	53	68000	4900	85	23	15	190	170	32	1.5	0.5	0.1	27	86	0.3	<0.5	4.8
PAAC009	1023474	65	70	INT	AC		<1		<1	115	<2	58	215000	5350	150	15	<5	185	135	17	1	0.2	0.1	33.5	79	0.5	<0.5	4
PAAC009	1023475	70	75	INT	AC		2		<1	175	2	71	180000	2650	330	22	10	390	135	18	1	0.1	<0.1	57	135	0.3	<0.5	4.6
PAAC009	1023476	75	80	INT	AC		1	<1	<1	500	5	77	88200	10900	240	17	15	650	130	31	1	0.1	<0.1	76	220	0.3	<0.5	4
PAAC009	1023477	80	85	INT	AC		<1		<1	190	2	36	74200	8200	230	28	10	350	125	26	1	<0.1	<0.1	37.5	88	0.3	<0.5	4.2
PAAC009	1023478	85	90	INT	AC		1		1	180	3	45	68900	2500	260	39	15	410	115	40	0.5	<0.1	<0.1	51	86	0.5	<0.5	5
PAAC009	1023479	90	95	INT	AC		2		<1	350	5	38	61300	13900	230	24	15	490	120	33	1	<0.1	<0.1	71	110	0.3	<0.5	7.5
PAAC009	1023480	95	100	INT	AC		<1		<1	320	4	62	58500	11700	270	31	20	600	110	36	1	<0.1	<0.1	98	115	0.5	<0.5	8.5
PAAC009	1023481	100	105	INT	AC		<1		<1	380	11	87	71100	7400	470	40	10	800	145	44	0.5	<0.1	<0.1	140	130	0.4	<0.5	10
PAAC009	1023482	105	110	INT	AC		<1		<1	270	9	75	69700	4300	550	46	10	650	140	47	1	<0.1	<0.1	100	105	0.4	<0.5	10
PAAC009	1023483	110	115	INT	AC		<1		<1	650	95	100	91500	7300	3250	76	15	900	145	120	1	<0.1	0.2	380	135	0.4	<0.5	10
PAAC009	1023484	115	120	INT	AC		<1		<1	1300	79	98	74400	18900	2200	115	5	1200	145	185	1	<0.1	0.2	430	145	0.4	<0.5	6
PAAC009	1023485	120	125	INT	AC		1		<1	650	31	46	57300	20000	550	76	10	1600	110	105	0.5	<0.1	0.1	80	88	0.5	<0.5	4.4
PAAC009	1023486	125	130	INT	AC		<1		<1	550	27	40	47200	22400	700	47	<5	1400	96	62	0.5	<0.1	<0.1	60	65	0.7	<0.5	3.1
PAAC009	1023487	130	131	INT	AC		<1		<1	550	22	36	47900	19100	700	33	5	1650	96	45	1	<0.1	<0.1	62	68	1.1	<0.5	3.3
PAAC010	1023499			DUP	AC	Duplicate of 1023498	1		<1	480	32	27	46600	21100	380	88	<5	800	91	145	1	<0.1	0.1	110	130	0.6	<0.5	6.5
PAAC010	1023488	69	75	INT	AC		1		1	185	6	81	83400	4350	85	38	5	270	450	40	6.5	0.2	<0.1	33.5	60	1.5	<0.5	6
PAAC010	1023489	75	80	INT	AC		<1		<1	125	<2	26	50200	8550	95	12	5	100	100	17	1.5	<0.1	<0.1	11.5	44.5	0.2	<0.5	7.5
PAAC010	1023490	80	85	INT	AC		<1		<1	290	4	62	56300	10900	135	18	5	340	175	21	1	<0.1	<0.1	33.5	145	0.2	<0.5	7.5
PAAC010	1023491	85	90	INT	AC		<1		<1	155	4	54	62600	3850	220	36	10	370	145	33	0.5	<0.1	<0.1	46.5	100	0.3	<0.5	7.5
PAAC010	1023492	90	95	INT	AC		<1		<1	140	3	61	62000	4550	220	53	5	460	140	35	1.5	<0.1	<0.1	77	125	0.3	<0.5	10.5
PAAC010	1023493	95	100	INT	AC		<1		<1	160	3	56	57300	4600	250	71	15	550	135	37	1	0.2	<0.1	105	155	0.8	<0.5	11.5
PAAC010	1023494	100	105	INT	AC		<1		<1	110	5	54	53500	6450	340	58	15	350	125	30	1	0.1	<0.1	115	76	0.4	<0.5	13.5
PAAC010	1023495	105	110	INT	AC		<1		<1	430	8	78	58500	6950	700	50	20	550	115	47	1.5	<0.1	<0.1	500	145	0.4	<0.5	12.5

HOLE_ID	Sample_	FROM	TO	Data_type	Drill_type	COMMENT	Au_ppb	Au Dp1	Ag_ppm	Ba_ppm	Co_ppm	Cu_ppm	Fe_ppm	K_ppm	Mn_ppm	Ni_ppm	Pb_ppm	P_ppm	V_ppm	Zn_ppm	As_ppm	Bi_ppm	Cd_ppm	Ce_ppm	La_ppm	Mo_ppm	Sb_ppm	U_ppm
PAAC010	1023496	110	115	INT	AC		1	<1	<1	950	32	60	71500	19800	550	105	10	500	105	145	1	<0.1	<0.1	370	220	0.9	<0.5	5
PAAC010	1023497	115	120	INT	AC		2		<1	650	23	25	35500	21400	220	85	10	290	73	175	1	<0.1	0.2	115	160	1.1	<0.5	8
PAAC010	1023498	120	123	INT	AC		<1		<1	440	24	26	39300	21100	240	87	<5	650	89	140	1	<0.1	0.1	96	115	0.7	<0.5	6.5
PAAC011	1023500	72	75	INT	AC		<1		<1	85	3	45	34000	3000	30	25	5	140	130	20	2	0.2	<0.1	20	49	0.6	<0.5	5.5
PAAC011	1023501	75	80	INT	AC		<1		<1	55	<2	91	44100	1700	40	22	<5	120	130	22	3.5	0.3	0.1	17	41.5	1.1	<0.5	7.5
PAAC011	1023502	80	84	INT	AC		<1		<1	90	<2	81	59400	4150	70	19	5	120	145	14	4	0.3	<0.1	10	25	3	<0.5	6.5
PAAC011	1023503	84	90	INT	AC		<1		<1	120	3	41	39900	6900	115	16	5	110	115	19	1.5	0.1	<0.1	5	4.5	1.2	<0.5	8.5
PAAC011	1023504	90	94	INT	AC		<1		<1	110	4	40	29700	7900	100	14	<5	110	84	18	0.5	<0.1	<0.1	11	8.5	1.7	<0.5	7.5
PAAC011	1023505	94	99	INT	AC		<1		<1	120	5	37	31300	6350	90	14	10	170	86	18	0.5	<0.1	<0.1	31.5	77	1.4	<0.5	10
PAAC011	1023506	99	102	INT	AC		1		<1	90	3	47	12600	4600	35	22	10	190	44	35	1	<0.1	<0.1	71	155	2.5	<0.5	10
PAAC011	1023507	102	105	INT	AC		<1		<1	185	15	115	52900	5950	120	44	15	160	66	50	1	<0.1	0.2	35.5	67	1	<0.5	8.5
PAAC011	1023508	105	109	INT	AC		<1		<1	370	5	63	18600	17000	45	23	10	320	44	36	0.5	<0.1	<0.1	83	165	1.8	<0.5	2.2
PAAC011	1023509	109	110	INT	AC		<1		<1	185	3	34	4650	11000	15	12	10	65	20	17	<0.5	<0.1	<0.1	30.5	30.5	2.6	<0.5	1.95
PAAC012	1023510	69	75	INT	AC		<1		<1	25	9	210	6700	1550	15	13	5	45	25	19	4	<0.1	2.7	3.5	6	2.3	<0.5	18
PAAC012	1023511	75	80	INT	AC		<1	1	<1	25	29	14	5350	1400	10	23	<5	40	19	60	2.5	<0.1	0.6	5	5.5	1.7	<0.5	15
PAAC012	1023512	80	85	INT	AC		<1		<1	20	16	12	5450	1400	15	16	<5	30	20	260	0.5	<0.1	3.9	3	3	2.2	<0.5	7
PAAC012	1023513	85	90	INT	AC		<1		<1	15	6	17	4350	1350	10	9	5	55	13	74	<0.5	<0.1	0.3	8	3	1.8	<0.5	5.5
PAAC012	1023514	90	95	INT	AC		<1		<1	15	12	15	4850	1800	15	15	<5	50	15	33	<0.5	<0.1	<0.1	25	7	2.1	<0.5	5.5
PAAC012	1023515	95	99	INT	AC		<1		<1	15	7	35	4750	1200	15	13	5	65	14	175	<0.5	<0.1	<0.1	30	4.5	2.4	<0.5	6
PAAC013	1023516	107	110	INT	AC		3	2	<1	350	12	130	70700	1400	150	34	10	550	135	39	5.5	<0.1	0.1	61	135	1.6	<0.5	6.5
PAAC013	1023517	110	115	INT	AC		1		<1	270	7	55	48700	1700	145	21	15	310	87	29	2	<0.1	0.1	67	78	1.8	<0.5	6.5
PAAC013	1023518	115	120	INT	AC		<1		<1	240	18	68	46100	3950	210	29	15	310	92	39	2.5	<0.1	<0.1	105	105	1.4	<0.5	6
PAAC013	1023519	120	125	INT	AC		<1	<1	<1	500	38	79	36000	16200	290	33	10	290	74	63	1.5	<0.1	<0.1	105	145	1.4	<0.5	3.7
PAAC013	1023520	125	130	INT	AC		<1		<1	450	23	57	35800	15800	240	31	10	450	71	54	2.5	0.1	<0.1	65	81	1.9	<0.5	2.9
PAAC013	1023521	130	135	INT	AC		<1		<1	390	11	29	23400	11700	140	17	<5	400	51	22	3	<0.1	<0.1	46.5	51	3.1	<0.5	2.6
PAAC013	1023522	135	140	INT	AC		<1		<1	600	12	47	29400	16900	200	15	5	850	56	29	1.5	<0.1	<0.1	52	57	1.3	<0.5	3.5
PAAC013	1023523	140	143	INT	AC		<1		<1	650	8	40	31300	19800	250	15	10	700	52	30	0.5	<0.1	<0.1	51	56	1.2	<0.5	1.65
PAAC014	1023526			STD	AC	BLANK	<1		<1	35	3	2	3350	1050	30	7	<5	35	18	6	1.5	<0.1	<0.1	22.5	22	3.9	<0.5	0.7
PAAC014	1023524	110	115	INT	AC		<1		<1	550	13	47	53400	5800	220	43	15	220	125	36	4.5	<0.1	<0.1	45	40.5	1.7	<0.5	4.1
PAAC014	1023525	115	118	INT	AC		1		<1	480	13	40	35000	14300	110	26	10	220	92	32	3	<0.1	<0.1	105	125	1.8	<0.5	4
PAAC014	1023527	118	123	INT	AC		1		<1	400	14	30	31700	11400	96	24	<5	500	78	21	3	<0.1	<0.1	75	82	1.9	<0.5	3.5
PAAC014	1023528	123	126	INT	AC		<1		<1	360	10	25	23900	10800	105	19	5	550	62	15	2	0.1	<0.1	55	56	2.8	<0.5	3.5
PAAC015	1023529	103	108	INT	AC		1		<1	210	48	100	75400	6800	110	65	5	550	150	72	12.5	<0.1	<0.1	96	105	1.9	<0.5	5.5
PAAC015	1023530	108	113	INT	AC		<1	<1	<1	160	8	10	17200	5300	105	20	<5	440	38	14	2	<0.1	<0.1	32.5	24.5	0.6	<0.5	0.91
PAAC015	1023531	113	114	INT	AC		3		<1	90	12	95	37500	4000	65	35	<5	1300	110	18	1.5	<0.1	<0.1	56	47.5	0.4	<0.5	2.3
PAAC015	1023532	114	115	INT	AC		1		<1	135	8	25	17600	4900	80	28	<5	750	56	15	1.5	<0.1	<0.1	49.5	39.5	0.7	<0.5	1.2
PAAC016	1023533	104	106	INT	AC		3		<1	1850	19	430	58400	25100	185	43	<5	950	165	46	12	0.3	<0.1	140	200	2	<0.5	6.5
PAAC016	1023534	106	111	INT	AC		6		<1	800	32	600	141000	20700	270	63	10	500	260	80	7.5	0.4	<0.1	91	105	1.5	<0.5	3.9
PAAC016	1023535	111	113	INT	AC		<1		<1	240	9	105	42800	7850	145	25	10	145	125	41	5.5	0.4	<0.1	40	54	1.3	0.5	3.3
PAAC016	1023536	113	116	INT	AC		2	3	2	240	53	440	64900	7750	165	52	15	480	57	150	9	0.3	<0.1	71	72	0.8	<0.5	2.5
PAAC016	1023537	116	118	INT	AC		3		2	270	34	310	39700	5750	470	30	10	390	110	84	8	0.3	0.1	74	58	1.5	<0.5	2.3
PAAC016	1023538	118	120	INT	AC		3		1	1100	20	105	30500	6900	700	18	20	400	45	75	6	0.2	0.1	59	36.5	0.8	<0.5	1.5
PAAC018	1023539	98	101	INT	AC		3		<1	800	69	160	89900	18000	500	71	10	1000	120	120	19.5	0.3	<0.1	96	59	1.3	<0.5	3.7
PAAC018	1023540	101	103	INT	AC		2	2	<1	750	46	360	180000	15400	1150	40	10	1150	130	115	16	0.3	<0.1	160	140	0.9	0.5	3.9
PAAC018	1023541	103	105	INT	AC		2		<1	1250	70	600	251000	11000	850	27	10	1250	180	110	16.5	0.2	<0.1	280	250	0.8	0.5	3.7
PAAC018	1023542	105	109	INT	AC		2		1	1950	39	175	72800	27000	360	30	20	900	84	125	9	0.3	<0.1	130	89	0.8	<0.5	4
PAAC018	1023543	109	112	INT	AC		2		<1	700	29	155	93300	23300	410	25	10	650	110	74	7.5	0.2	<0.1	96	71	0.9	<0.5	3.2
PAAC019	1023544	103	107	INT	AC		12	14	1	2000	160	55	98700	2900	950	135	15	1000	135	120	39	0.9	<0.1	77	44	1.8	<0.5	4
PAAC019	1023545	107	110	INT	AC		5		1	1900	76	48	61100	2650	600	56	15	850	120	99	12.5	0.8	<0.1	64	37.5	1.2	<0.5	2.5
PAAC019	1023546	110	112	INT	AC		3		1	330	54	95	29900	2700	280	45	10	650	94	120	12.5	0.5	<0.1	62	39	0.6	<0.5	2.5
PAAC019	1023547	112	115	INT	AC		4		1	370	28	39	34700	5500	310	28	15	500	85	120	10	0.5	<0.1	73	45.5	1.1	<0.5	2.4
PAAC019	1023548	115	117	INT	AC		9		2	500	16	73	25700	5050	420	21	15	550	86	78	7	0.5	0.1	61	36.5	0.3	<0.5	2.3
PAAC020	1023561	124.5	125	INT	AC	small sample of core	<1		<1	550	23	70	40500	15900	700	58	15	1100	140	28	1	<0.1	<0.1	79	49	1.3	<0.5	9
PAAC021	1023562	127	132	INT	AC		1		<1	155	35	39	44200	13500	145	60	10	550	82	21	3.5	<0.1	<0.1	83	48	0.7	<0.5	12
PAAC021	1023563	132	137	INT	AC		<1		<1	115	19	19	48400	9450	270	42	15	550	81	18	1	<0.1	<0.1	65	42	0.7	<0.5	6
PAAC022	1023564	131	136	INT	AC		3		<1	95	39	130	60000	7900	115	78	10	600	165	110	3.5	<0.1	0.2	69	40.5	1.2	<0.5	12
PAAC022	1023565	136	140	INT	AC		3		<1	80	27	65	65300	9450	200	42	10	650	145	27	2.5	<0.1	<0.1	49	30	1.5	<0.5	3.7
PAAC022	1023566	140	142	INT	AC		<1		<1	45	26	31	53800	4750	240	57	15	550	73	11	2.5	<0.1	<0.1	33.5	21.5	0.4	<0.5	1.9
PAAC022	1023567	142	144	INT	AC		<1		<1	40	26	69	57400	3350	600	47	15	650	135	11	2	<0.1	<0.1	60	39	0.6	<0.5	1.25
PAAC024	1023568	128	131	INT	AC		5		2	30	17	170	18000	2150	25	51	<5	125	300	59	6.5	0.1	<0.1	24.5	6.5	1.1	<0.5	31.5
PAAC024	1023569	131	133	INT	AC		2		1	15	7	260	44200	1200	45	49	5	350	400	24	3.5	0.3	<0.1	32.5	4.5	1	<0.5	10
PAAC024	1023570	133	135	INT	AC		4		1	55	90	600	101000	5150	700	155	10	310	175	60	4	0.4	<0.1	160	210	0.5	<0.5	4.6
PAAC024	1023571	135	138	INT	AC		5		<1	50	52	380	64900	5900	390	57	15	220	110	21	2.5	0.1	<0.1	72	42	0.7	<0.5	1.85
PAAC024	1023572	138	140	INT	AC		4		<1	40	76	210	192000	4150	7300	57	20	550	79	9	5	<0.1	<0.1	38.5	23	0.7	<0.5	1.95
PAAC025	1023579			DUP	AC	duplicate of 1023573	<1		<1	140	10	58	40900	4600	85	37	10	360	105	22	11.5	0.2	<0.1	320	37.5	1	<0.5	3.6
PAAC025	1023573	102	105	INT	AC		<1		<1	210	11	73	52100	7750	125	43	10	400	135	26	16	0.3	<0.1	260	38	1.4	0.5	4.2
PAAC025	1023574	105	110	INT	AC		<1		<1	300	18	83	53000	7350	1200	88	75	430	105	68	9	0.3	<0.1	100	125	1.1	<0.5	4.9

HOLE_ID	Sample_	FROM	TO	Data_type	Drill_type	COMMENT	Au_ppb	Au Dp1	Ag_ppm	Ba_ppm	Co_ppm	Cu_ppm	Fe_ppm	K_ppm	Mn_ppm	Ni_ppm	Pb_ppm	P_ppm	V_ppm	Zn_ppm	As_ppm	Bi_ppm	Cd_ppm	Ce_ppm	La_ppm	Mo_ppm	Sb_ppm	U_ppm
PAAC025	1023575	110	115	INT	AC		1	2	<1	180	45	125	56900	1400	4150	110	55	550	100	105	6.5	0.4	0.2	61	210	1.2	<0.5	6.5
PAAC025	1023576	115	120	INT	AC		4	4	<1	60	17	50	28400	2350	3250	50	45	230	43	82	6	0.1	0.1	38.5	74	0.9	<0.5	2.9
PAAC025	1023577	120	124	INT	AC		<1		<1	120	15	53	32000	49400	1950	70	35	1000	65	130	8	0.2	0.2	58	51	0.9	<0.5	5
PAAC025	1023578	124	126	INT	AC		<1		<1	230	17	95	30700	77600	900	48	25	850	110	77	14	0.3	0.2	64	39.5	0.5	<0.5	3.2
PAAC026	1023580	85	90	INT	AC		3	2	<1	145	6	43	79200	4300	230	34	10	410	210	11	14.5	0.5	<0.1	84	41	1.4	0.5	3.6
PAAC026	1023581	90	94	INT	AC		<1		<1	125	16	45	50800	15900	310	38	20	175	105	32	6	<0.1	<0.1	63	21.5	0.9	<0.5	2.5
PAAC026	1023582	94	100	INT	AC		<1		1	280	16	64	44000	23200	330	45	15	170	100	63	5	<0.1	<0.1	105	93	0.5	<0.5	3.4
PAAC026	1023583	100	105	INT	AC		<1		1	430	19	48	36500	26500	200	45	20	120	105	34	3.5	<0.1	<0.1	91	57	0.6	0.5	3
PAAC026	1023584	105	110	INT	AC		<1		<1	160	22	41	39800	26100	210	46	20	550	95	21	7.5	<0.1	<0.1	82	45	0.4	<0.5	2.4
PAAC026	1023585	110	115	INT	AC		<1		<1	175	22	33	43000	26200	320	49	25	750	98	64	3	0.1	<0.1	80	47	0.6	0.5	2
PAAC026	1023586	115	120	INT	AC		<1		<1	240	19	24	40900	26600	300	48	40	750	100	63	2.5	<0.1	<0.1	64	40	0.4	0.5	2
PAAC026	1023587	120	125	INT	AC		<1		<1	190	24	24	43900	25900	360	48	30	850	95	47	1.5	<0.1	<0.1	74	41	0.4	<0.5	1.35
PAAC026	1023588	125	130	INT	AC		<1		<1	250	25	26	45000	25400	450	43	30	800	105	69	1.5	<0.1	<0.1	81	45	0.4	<0.5	1.55
PAAC026	1023589	130	134	INT	AC		<1		<1	270	22	26	43200	28500	480	45	20	800	120	28	11	<0.1	<0.1	64	37	1	0.5	3.2
PADD022	1023153	154	158	INT	MUD		-1		0.3	105	3.1	11	11900		75	13	4.5	10	52	36.5	7	0.1	0.1			2.1	-0.5	1.15
PADD022	1023154	158	161.8	INT	MUD		3		0.3	90	2.5	9	9800		65	9	5	-5	45	35	6.5	0.1	0.1			0.6	-0.5	1.1
PADD022	1024602	161.8	163	INT	DD		-1		-1	70	20	36	13100		400	9	-5	330	9	145	2.5	0.2	-0.1			1.5	-0.5	1.15
PADD022	1024603	163	164.1	INT	DD		-1		-1	80	31	37	23600		130	15	5	550	17	195	1.5	0.1	-0.1			1.1	-0.5	1.95
PADD022	1024604	164.1	165	INT	DD		-1		-1	165	28	37	24400		175	16	-5	850	12	260	1.5	0.1	-0.1			0.2	-0.5	1.4
PADD022	1024605	165	166	INT	DD		-1		-1	90	21	48	20300		1050	11	5	550	21	145	1.5	0.2	0.2			0.9	-0.5	1.8
PADD022	1024606	166	167	INT	DD		-1		-1	105	23	18	17100		550	9	-5	180	8	145	0.5	-0.1	0.2			0.2	-0.5	1.45
PADD022	1024607	167	167.7	INT	DD		1		-1	130	38	99	29200		650	17	15	160	13	200	-0.5	0.1	0.1			1.2	-0.5	1.7
PADD022	1024608	167.7	168.9	INT	DD		-1		-1	2800	28	450	70500		900	22	25	115	29	79	2	0.2	0.3			0.8	0.5	1.25
PADD022	1024609	168.9	170	INT	DD		-1		-1	150	37	94	29900		900	17	50	700	25	88	-0.5	0.2	0.2			0.5	-0.5	1.35
PADD022	1024610	173	174.1	INT	DD		-1		-1	380	28	20	37200		1000	17	40	260	12	85	0.5	0.1	0.1			0.6	-0.5	1.65
PADD022	1024611	174.1	174.7	INT	DD		-1		-1	120	69	6	28900		1700	53	60	190	21	98	1.5	-0.1	0.4			1.9	-0.5	2
PADD022	1024612	184	185	INT	DD		-1		-1	175	19	70	31300		470	12	40	850	74	17	0.5	0.1	-0.1			0.5	-0.5	2.8
PADD022	1024613	185	186	INT	DD		-1		-1	130	22	52	41100		800	14	75	650	63	31	-0.5	-0.1	-0.1			0.3	-0.5	0.77
PADD022	1024614	186	187	INT	DD		-1		-1	175	19	66	36600		750	15	50	750	71	23	0.5	0.1	-0.1			0.2	-0.5	1.6
PADD022	1024615	187	187.5	INT	DD		-1		-1	230	20	99	29400		390	22	15	950	74	19	1	-0.1	-0.1			0.5	-0.5	3.7
PADD022	1024616	187.5	188.5	INT	DD		-1		-1	250	17	50	25100		550	16	20	800	81	13	5	0.1	-0.1			0.4	-0.5	4.9
PADD022	1024617	190.4	191.3	INT	DD		-1		-1	80	12	9	32600		850	6	85	600	44	46	1.5	-0.1	0.3			0.8	-0.5	1.65
PADD022	1024618	197	198	INT	DD		-1		-1	1700	4	4	20000		220	2	-5	480	38	15	-0.5	-0.1	-0.1			0.6	-0.5	1.6
PADD023	1023156	106	110	INT	MUD		-1		0.3	135	14	10	39900		390	40	10.5	430	155	75	48	0.2	0.1			1.7	0.5	1.65
PADD023	1023157	110	114	INT	MUD		-1		0.3	110	25	10	76400		1800	54	13.5	2650	250	105	120	0.3	0.2			3.9	1	2.9
PADD023	1023158	114	118	INT	MUD		-1		0.4	95	18	61	61800		1500	48	12	2050	190	120	77	0.3	0.2			4.2	1	2.4
PADD023	1023159	118	124	INT	MUD		2		0.7	65	6.5	46	62100		500	23	15	650	170	115	35	0.6	0.1			2.7	0.5	2.5
PADD023	1023160	124	128	INT	MUD		-1		0.9	20	1.8	25	39600		120	28	2.5	150	195	96	33	0.4	0.1			1.1	0.5	2.3
PADD023	1023161	128	132	INT	MUD		-1		0.9	50	2.1	27	23400		115	47	4	145	170	87	10.5	0.4	-0.1			1.2	-0.5	2.8
PADD023	1023162	132	136	INT	MUD		-1		1	35	1.5	28	10900		60	29	3	100	180	94	6	0.3	-0.1			0.6	-0.5	3.1
PADD023	1023163	136	140	INT	MUD		1		1	50	1.7	38	19200		100	24	5	130	175	100	8	0.2	-0.1			1.4	-0.5	3.9
PADD023	1023164	140	144	INT	MUD		-1		0.9	100	1.8	44	23100		125	18	5.5	145	160	99	8	0.4	-0.1			0.7	-0.5	3.5
PADD023	1023165	144	148	INT	MUD		1		0.9	130	12	93	16400		100	46	5	190	165	95	8	0.4	0.3			1.5	-0.5	3.3
PADD023	1023166	148	152	INT	MUD		2		0.8	230	19	68	27600		290	66	4	140	155	145	9.5	0.4	0.1			1.3	-0.5	2.3
PADD023	1023167	152	156	INT	MUD		-1		1	370	22.5	61	43100		490	76	4.5	120	155	200	22	0.5	0.1			1.4	-0.5	2.8
PADD023	1023168	156	160	INT	MUD		-1		0.8	450	21	63	49800		550	64	5	135	145	190	11.5	0.5	-0.1			1	0.5	2.5
PADD023	1023169	160	164	INT	MUD		-1		1	370	19	62	54000		600	57	4.5	360	160	180	16.5	0.5	0.1			1.5	0.5	2.5
PADD023	1023170	164	166	INT	MUD		-1		0.8	480	20.5	55	56100		650	53	12	550	130	150	9.5	0.4	0.2			0.9	-0.5	2.2
PADD023	1024620	168.2	169	INT	DD		-1		-1	1350	6	15	12000		155	6	10	230	18	16	1	0.2	-0.1			3.2	-0.5	1.75
PADD023	1024621	169	170.2	INT	DD		-1		-1	1550	11	12	15900		270	19	10	330	38	27	1.5	0.1	-0.1			3.2	-0.5	2.9
PADD023	1024622	170.2	173	INT	DD		3		2	850	41	89	19100		190	49	30	360	50	210	4.5	0.5	0.4			7.5	-0.5	5.5
PADD023	1024623	173	174	INT	DD		2		-1	1500	14	10	37400		950	17	10	490	56	64	2.5	1.5	-0.1			3.1	-0.5	4.8
PADD023	1024624	174	175	INT	DD		-1		-1	1100	32	82	26300		550	45	15	480	49	96	2.5	0.4	0.1			2.7	-0.5	3.5
PADD023	1024625	175	176	INT	DD		-1		-1	750	16	66	34400		1000	26	20	310	46	27	9	0.2	-0.1			0.5	-0.5	1.55
PADD023	1024626	176.7	177.5	INT	DD		-1		-1	1900	23	29	39300		1000	25	20	550	58	170	6.5	0.4	0.5			2.2	-0.5	2.9
PADD023	1024627	178.8	180.3	INT	DD		-1		-1	1200	12	2	35500		800	21	25	800	83	86	17	0.1	0.2			1.3	-0.5	2.7
PADD023	1024628	180.3	181.3	INT	DD		-1		-1	950	14	-2	32900		800	26	45	900	89	41	6	-0.1	0.1			3	-0.5	2.3
PADD034	1023549	143	147	INT	AC		3		<1	125	14	145	44300	9550	270	27	10	400	120	65	16	0.8	<0.1	64	62	2.8	1	4.6
PADD034	1023550	147	157	INT	MUD		3		2	70	21	195	67600	9800	250	38	<5	750	300	70	22	1.4	<0.1	61	105	2.6	1	7.5
PADD034	1023551	157	167	INT	MUD		3		1	100	22	155	58300	5750	410	41	10	600	210	58	17	0.9	<0.1	54	74	4.2	1	6
PADD034	1023552	167	177	INT	MUD		1		<1	50	26	135	38600	2500	750	32	<5	370	155	38	7.5	0.4	<0.1	140	77	2.9	<0.5	4.6
PADD034	1023553	177	187	INT	MUD		3		<1	80	37	145	60300	1850	1250	48	<5	410	220	38	7	0.6	<0.1	100	51	4.2	<0.5	4.9
PADD034	1023554	187	197	INT	MUD		1		1	20	23	135	30200	1200	420	33	<5	270	135	49	11	0.4	<0.1	105	70	3	<0.5	5
PADD034	1023590	197.5	197.9	INT	DD		2	--	<1	25	9	63	19900	900	160	34	<5	105	55	18	3	0.8	<0.1	21	12.5	2.5	<0.5	1.2
PADD034	1023591	197.9	199	INT	DD		<1	--	<1	30	32	260	38100	2100	250	90	160	400	220	310	7	0.6	0.6	170	115	4.7	2	6
PADD034	1023592	199	200.5	INT	DD		<1	<1	<1	10	13	270	26400	1100	135	22	<5	165	175	49	2.5	0.2	<0.1	150	73	1.4	<0.5	5
PADD034	1023593	200.5	202.2	INT	DD		3	--	<1	10	14	140	34500	750	270	40	<5	270	145	71	2	0.2	<0.1	91	80	3	<0.5	4.2

HOLE_ID	Sample_	FROM	TO	Data_type	Drill_type	COMMENT	Au_ppb	Au Dp1	Ag_ppm	Ba_ppm	Co_ppm	Cu_ppm	Fe_ppm	K_ppm	Mn_ppm	Ni_ppm	Pb_ppm	P_ppm	V_ppm	Zn_ppm	As_ppm	Bi_ppm	Cd_ppm	Ce_ppm	La_ppm	Mo_ppm	Sb_ppm	U_ppm
PADD034	1023594	202.2	203.5	INT	DD		3	–	<1	10	12	105	35000	650	270	37	<5	260	155	42	2	0.2	<0.1	115	72	1.8	<0.5	4.2
PADD034	1023595	203.5	205	INT	DD		<1	–	<1	10	14	61	37900	600	500	31	<5	240	150	65	2.5	0.1	<0.1	105	54	1.8	<0.5	4.4
PADD034	1023596	205	206.4	INT	DD		2	–	<1	15	14	46	32200	2750	240	29	<5	210	150	79	2	0.1	<0.1	81	40	2.5	<0.5	4.7
PADD034	1023597	206.4	207.7	INT	DD		1	–	<1	10	11	130	22200	3900	25	32	<5	125	110	64	1.5	<0.1	<0.1	87	51	1.6	<0.5	3
PADD034	1023598	207.7	208.7	INT	DD		<1	–	<1	25	9	220	13800	9700	25	47	<5	75	93	81	0.5	<0.1	<0.1	93	52	1.3	<0.5	3.4
PADD034	1023599	208.7	210	INT	DD		<1	–	<1	55	15	42	26300	20400	30	95	<5	80	86	59	0.5	<0.1	<0.1	95	59	1.1	<0.5	2.5
PADD034	1023600	210	211.2	INT	DD		<1	–	<1	35	28	50	22900	14100	220	160	<5	550	81	80	<0.5	<0.1	<0.1	89	62	0.8	<0.5	3.5
PADD034	1024646	211.2	212.5	INT	DD		2	–	<1	65	32	22	22900	17600	4000	120	<5	2600	77	58	1	0.1	<0.1	50	38.5	1.7	<0.5	3.4
PADD034	1024647	212.5	213.8	INT	DD		2	–	<1	25	5	18	18200	4250	330	17	<5	550	60	16	1.5	<0.1	<0.1	11.5	6	2	<0.5	0.68
PADD034	1024648	213.8	215.5	INT	DD		<1	–	<1	65	9	38	15700	22400	330	36	15	410	93	26	<0.5	<0.1	<0.1	64	39	0.8	<0.5	2.9
PADD034	1024649	215.5	217	INT	DD		<1	–	<1	20	8	9	16000	11000	700	23	15	330	54	15	1	<0.1	<0.1	43.5	26	0.5	<0.5	1.6
PADD035	1023555	120	130	INT	MUD		<1		2	20	10	145	133000	1800	750	18	<5	280	410	65	17.5	0.2	<0.1	23.5	10.5	1.8	<0.5	1.65
PADD035	1023556	130	140	INT	MUD		<1	2	2	10	20	370	179000	750	500	94	20	390	550	34	6.5	0.1	<0.1	17.5	4.5	3.3	<0.5	1.95
PADD035	1023557	140	150	INT	MUD		<1		<1	10	15	210	149000	1550	750	110	10	240	410	29	4	<0.1	<0.1	39	6.5	1.6	<0.5	3.1
PADD035	1023558	150	160	INT	MUD		4		<1	35	70	200	146000	1050	400	210	<5	360	460	77	2.5	<0.1	<0.1	99	72	1.2	<0.5	1.75
PADD035	1023559	160	163	INT	MUD		3		<1	50	105	230	108000	3200	800	115	10	800	330	28	4	<0.1	<0.1	31.5	20.5	0.9	0.5	0.73
PADD035	1024650	163	164	INT	DD		<1	–	<1	10	50	100	83200	800	1750	59	<5	600	300	34	1.5	<0.1	<0.1	24.5	13	0.9	0.5	0.56
PADD035	1024651	164	165	INT	DD		<1	–	<1	15	51	61	85700	1200	1000	54	5	550	270	51	1	<0.1	<0.1	24	13	0.5	<0.5	0.3
PADD035	1024652	165	166	INT	DD		<1	–	<1	20	51	72	83600	850	950	56	<5	550	280	48	1	<0.1	<0.1	22	12	0.6	<0.5	0.3
PADD035	1024653	166	167	INT	DD		5	8	<1	35	66	78	116000	2000	750	68	<5	1550	420	37	1.5	<0.1	<0.1	52	28	0.8	<0.5	0.74
PADD035	1024654	167	168	INT	DD		18	18	<1	10	61	850	105000	550	700	66	<5	1600	430	30	1	<0.1	<0.1	49	26	0.8	<0.5	0.73
PADD035	1024655	168	169	INT	DD		2	–	<1	10	41	125	77600	1150	750	87	5	850	320	27	3.5	0.2	<0.1	29.5	16.5	0.9	<0.5	0.89
PADD035	1024656	169	170	INT	DD		1	–	<1	10	43	130	76300	800	750	99	<5	550	280	37	1.5	<0.1	<0.1	21.5	13.5	0.7	<0.5	0.84
PADD035	1024657	170	171	INT	DD		2	1	<1	10	38	140	70900	700	800	81	<5	460	270	30	1	<0.1	<0.1	21.5	12.5	0.5	<0.5	0.92
PADD035	1024658	171	172	INT	DD		<1	<1	<1	10	43	130	76800	850	750	98	<5	480	280	35	1	<0.1	<0.1	20.5	11.5	0.6	<0.5	0.47
PADD035	1024659	172	173	INT	DD		1	–	<1	20	37	185	60900	1700	700	87	10	500	300	20	0.5	<0.1	<0.1	23	14	0.6	<0.5	1.25
PADD035	1024660	173	174	INT	DD		<1	–	<1	20	26	42	61700	4550	1050	93	5	450	280	19	1.5	<0.1	<0.1	20.5	12	0.5	<0.5	0.66
PADD035	1024661	174	175	INT	DD		1	–	<1	10	46	89	83300	550	850	105	<5	470	290	44	1	<0.1	<0.1	18.5	9	0.4	<0.5	0.22
PADD035	1024662	175	176	INT	DD		3	–	<1	10	45	125	82600	600	900	95	<5	460	290	43	1	<0.1	<0.1	16.5	9	0.9	<0.5	0.21
PADD035	1024663	176	177	INT	DD		3	–	<1	15	48	70	84000	1700	1000	96	<5	480	300	45	1.5	<0.1	<0.1	19.5	9.5	0.6	1	0.25
PADD035	1024664	177	178	INT	DD		2	–	<1	10	38	125	79100	380	900	62	<5	350	270	39	1	<0.1	<0.1	16.5	8.5	0.7	<0.5	0.23
PADD035	1024665	178	179	INT	DD		<1	–	<1	10	33	36	67000	550	800	76	10	460	270	33	1	<0.1	<0.1	17.5	9.5	0.4	<0.5	0.27
PADD035	1024666	179	180	INT	DD		2	–	<1	10	47	185	84100	1100	950	89	<5	500	280	49	1	<0.1	<0.1	18	9.5	0.8	<0.5	0.19
PADD035	1024667	180	181	INT	DD		4	–	<1	10	50	41	84100	550	1050	93	5	490	290	55	1	<0.1	<0.1	18	9	0.6	<0.5	0.19
PADD035	1024668	181	182	INT	DD		5	–	<1	10	51	75	86800	450	1100	94	<5	490	300	57	1	<0.1	<0.1	17.5	9	1.1	<0.5	0.19
PADD035	1024669	182	183	INT	DD		4	–	<1	5	48	36	80300	410	1000	90	<5	470	280	54	1	<0.1	<0.1	17.5	8.5	0.7	<0.5	0.2
PADD035	1024670	183	184	INT	DD		<1	–	<1	15	48	370	85300	850	950	88	<5	460	280	51	1	<0.1	<0.1	15.5	8.5	0.5	<0.5	0.18
PADD035	1024671	184	185	INT	DD		<1	–	<1	15	46	330	78100	550	950	87	<5	470	280	53	0.5	<0.1	<0.1	18	9.5	0.7	<0.5	0.24
PADD035	1024672	185	186	INT	DD		<1	–	<1	15	27	95	43400	900	650	64	5	600	250	24	0.5	<0.1	<0.1	32.5	20	0.4	<0.5	0.74
PADD036	1023560	154	160	INT	MUD		<1		<1	75	48	35	98100	4050	1300	43	15	180	310	54	2	<0.1	<0.1	22	13.5	0.8	<0.5	0.58
PADD036	1024673	161	162	INT	DD		1	<1	<1	95	44	31	76200	3450	1050	36	<5	180	300	83	0.5	<0.1	<0.1	18.5	11.5	0.9	<0.5	0.43
PADD036	1024674	162	163	INT	DD		<1	–	<1	165	43	31	77900	3950	1000	39	5	160	300	85	0.5	<0.1	<0.1	17.5	11	0.5	<0.5	0.47
PADD036	1024675	163	164	INT	DD		<1	–	<1	85	42	32	77000	3700	1100	43	<5	170	300	69	1	<0.1	<0.1	18	10.5	0.3	<0.5	0.38
PADD036	1024676	164	165	INT	DD		<1	–	<1	200	44	34	77600	4700	950	46	5	175	310	61	1.5	<0.1	<0.1	19	11	1.4	<0.5	0.69
PADD036	1024677	165	166	INT	DD		<1	–	<1	130	45	28	80300	4950	950	43	10	185	310	73	1	<0.1	<0.1	19.5	12	0.6	<0.5	0.73
PADD036	1024678	166	167	INT	DD		<1	–	<1	110	43	29	77800	5500	850	38	<5	170	300	64	1.5	<0.1	<0.1	18.5	11.5	1.1	<0.5	0.8
PADD036	1024679	167	168	INT	DD		<1	–	<1	115	42	45	76700	8200	700	39	<5	180	320	58	1.5	<0.1	<0.1	18	11.5	0.7	<0.5	0.94
PADD036	1024680	168	169	INT	DD		<1	–	<1	105	41	40	73000	6900	750	38	5	170	300	54	1	0.2	<0.1	18.5	11	1.3	<0.5	1.05
PADD036	1024681	169	170	INT	DD		<1	–	<1	110	43	30	74500	4950	800	34	10	145	310	67	1	0.1	<0.1	19	11	0.6	<0.5	0.75
PADD036	1024682	170	171.5	INT	DD		<1	–	<1	110	42	36	76700	6000	800	36	10	130	310	60	1	0.1	<0.1	18.5	11.5	1	<0.5	0.75
PADD036	1024683	171.5	172.5	INT	DD		<1	–	<1	95	39	72	72500	11100	500	47	5	130	300	34	1.5	0.4	<0.1	17.5	12	0.6	<0.5	4.3
PADD036	1024684	172.5	173.5	INT	DD		2	–	<1	100	39	55	75900	7800	700	41	<5	125	310	53	1.5	0.2	<0.1	19.5	12	1	<0.5	1.35
PADD036	1024685	173.5	174.5	INT	DD		1	–	<1	105	39	38	74100	5100	750	40	10	145	300	65	1	0.1	<0.1	18.5	11	0.6	<0.5	0.63
					DD = diamond core sample																							
					MUD = mud precollar sample																							
					AC = aircore sample																							

APPENDIX 3

Hole ID	Data Type	From Depth	To Depth	Drilling T	Colour Code	Weathering	Regolith P	Lith1	Desc11	Desc12	Desc13	Desc14	AltType11	AltType12	AltType13	AltType14	AltQual11	AltQual12	AltQual13	AltInt11	AltInt12	AltInt13	AltInt14	Min Min11	Min Min12	Min Min13	Min_Sty11	Min_Sty12	Min_Sty13	Min Amou11	Min Amou12	Min Amou13	Lith2	Lith3	Comment
PAAC006	INT	0	1	AC	CR		DTU	CLCR																									CLY		
PAAC006	INT	1	3	AC	BROR		DTU	SND																									CLY		mnr clct
PAAC006	INT	3	6	AC	ORBR		DTU	CLY	HD																								SND		hd ptly sil-calc sandy clay
PAAC006	INT	6	13	AC	ORBR		DTU	SLT																									CLCR		silt-vf snd+mnr clct bands
PAAC006	INT	13	18	AC	ORBR		DTU	CLY																											ptly sil
PAAC006	INT	18	21	AC	LORBR		DTU	SND	FG																										
PAAC006	INT	21	22	AC	ORBR		DTU	SND																									GVL		pebs to 20mm
PAAC006	INT	22	25	AC	BRLRE		DTU	SND	CLY																										
PAAC006	INT	25	33	AC	CRLBR		DTU	SND	CLY																										sl damp
PAAC006	INT	33	41	AC	CRLGY		DTU	CLY	PUGY																										water inject 36-58m
PAAC006	INT	41	45	AC	LGYPI		DTU	CLY	PUGY																										
PAAC006	INT	45	48	AC	GYLGY		DTU	CLY	PUGY																										
PAAC006	INT	48	58	AC	LGYRE	HW	RSU	SPLT	MO																										prob upper mottled sap
PAAC006	INT	58	67	AC	CRREGR	HW	RSU	SPLT	MO																										mottled zone mafic sap
PAAC006	INT	67	73	AC	BRPI	HW	RSL	SPLT																											
PAAC006	INT	73	77	AC	DPIBR	HW	RSL	SPLT	FER	MAF																									mafic sap
PAAC006	INT	77	87	AC	LBR	HW	RSL	SPLT	MAF																										mafic sap
PAAC006	INT	87	102	AC	BROLPI	HW	RSL	SPLT	MAF																										mafic sap
PAAC006	INT	102	105	AC	OLBR	HW	RSL	SPLT	MAF																										mafic sap
PAAC006	INT	105	112	AC	BROR	HW	RSL	SPLT	MAF																										mafic sap
PAAC006	INT	112	116	AC	OLGY	MW	RSL	SPLT	MAF																										mafic sap
PAAC006	INT	116	119	AC	LGRGY	SW	RSR	GAB	MG	CLT																									mod weath med gr gabbro,chl=weath/alt?
PAAC007	INT	0	2	AC	CR		DTU	CLCR																									CLY		pisolitic
PAAC007	INT	2	6	AC	ORBR		DTU	CLY	CEM																										ptly cem cly
PAAC007	INT	6	12	AC	ORBR		DTU	SLT																											
PAAC007	INT	12	13	AC	ORBR		DTU	CLY																									GVL		
PAAC007	INT	13	15	AC	ORBR		DTU	SLT	FG																								SND		
PAAC007	INT	15	22	AC	ORBR		DTU	SLT																									CLY		mnr ptly cem cly
PAAC007	INT	22	26	AC	LBROR		DTU	SND																											
PAAC007	INT	26	32	AC	LBRPI		DTU	SND	CLY																										water inject 26-49m
PAAC007	INT	32	42	AC	LGYOR		DTU	CLY	PUGY																										
PAAC007	INT	42	48	AC	LGYCR		DTU	CLY	PUGY																										
PAAC007	INT	48	53	AC	CRRE	HW	RSU	SPLT																											mottled-pallid zone
PAAC007	INT	53	63	AC	BRRE	HW	RSL	SPLT																											mafic sap
PAAC007	INT	63	79	AC	PIBR	HW	RSL	SPLT																											mafic sap
PAAC007	INT	79	83	AC	BRPI	HW	RSL	SPLT																											mafic sap
PAAC007	INT	83	90	AC	OLBR	HW	RSL	SPLT																											mafic sap
PAAC008	INT	0	3	AC	REBR		DTU	CLCR																									CLY		
PAAC008	INT	3	6	AC	REBR		DTU	CLY	HD																										
PAAC008	INT	6	10	AC	REBR		DTU	SND																									CLY		
PAAC008	INT	10	12	AC	REBR		DTU	SND	FG																								SLCT		
PAAC008	INT	12	15	AC	ORBR		DTU	CLY																									GVL		
PAAC008	INT	15	24	AC	LORBR		DTU	CLY																									SLT		
PAAC008	INT	24	26	AC	LBN		DTU	SLT	FG																								SND		
PAAC008	INT	26	34	AC	LBNPI		DTU	SLT																									CLY		injecting water26 - 58 m
PAAC008	INT	34	36	AC	LGYOR		DTU	CLY																											
PAAC008	INT	36	46	AC	LGY		DTU	CLY	PUGY																										
PAAC008	INT	46	53	AC	GY		DTU	CLY	PUGY																										
PAAC008	INT	53	57	AC	LGY		DTU	CLY	PUGY																										
PAAC008	INT	57	58	AC	CERE	HW	RSU	SPLT	MO																										
PAAC008	INT	58	62	AC	WHRE	HW	RSU	SPLT	MO																										
PAAC008	INT	62	82	AC	DRE	MW	RSL	SPLT																											
PAAC008	INT	82	85	AC	DRE	MW	RSL	SPLT																											Recognising mica minerals and texture
PAAC008	INT	85	87	AC	DGR	SW	RSL	SPLT																											
PAAC008	INT	87	103	AC	LGR	SW	RSR	SPRK	ITV																								MIRK		relict xline texture and biotite
PAAC008	INT	103	110	AC	LGYGN	SW	RSR	MIRK																									SPRK		
PAAC008	INT	110	111	AC	LGY	SW	RBR	MIRK	CG																								DRT		
PAAC009	INT	0	2	AC	LREBR		DTU	CLY																											
PAAC009	INT	2	4	AC	LREBR		DTU	CLCR																									CLY		
PAAC009	INT	4	7	AC	LORBR		DTU	CLY	HD																										
PAAC009	INT	7	9	AC	LORBR		DTU	CLY																									GVL		
PAAC009	INT	9	15	AC	LORBR		DTU	SND	FG																								CLY		
PAAC009	INT	15	24	AC	LORBR		DTU	CLY	HD																										
PAAC009	INT	24	25	AC	REBN		DTU	CLY																									SND		
PAAC009	INT	25	27	AC	LGY		DTU	SND	FG																										Injecting water 28 -
PAAC009	INT	27	35	AC	LGYWH		DTU	SND																											
PAAC009	INT	35	38	AC	LGYRE		DTU	CLY	PUGY																										
PAAC009	INT	38	64	AC	LGY		DTU	CLY																											
PAAC009	INT	64	66	AC	LGYOR		DTU	CLY																											
PAAC009	INT	66	92	AC	DREBR		RSU	SPLT																											66m top of basement
PAAC009	INT	92	98	AC	ORBR		RSU	SPLT																											boitite bearing
PAAC009	INT	98	114	AC	GNBR		RSL	SPLT																											coarse diorite
PAAC009	INT	114	130	AC	LGY		RSR	SPRK																									MIRK		
PAAC009	INT	130	131	AC	LGY		RBR	DRT	CG																										
PAAC010	INT	0	4	AC	ORBR		DTU	CLY																									CLCR		
PAAC010	INT	4	6	AC	ORBR		DTU	CLY																									GVL		
PAAC010	INT	6	15	AC	ORBR		DTU	CLY																											
PAAC010	INT	15	16	AC	ORBR		DTU	GVL																									CLY		
PAAC010	INT	16	20	AC	ORBR		DTU	CLY																									SLCT		silcrete layers
PAAC010	INT	20	25	AC	LORBR		DTU	SND	FG																								CLY		water injected at 26m.
PAAC010	INT	25	38	AC	LBR		DTU	SND	FG																								CLY		
PAAC010	INT	38	43	AC	LGYPU		DTU	CLY	PUGY																										
PAAC010	INT	43	45	AC	LGYYE		DTU	CLY	PUGY																										
PAAC010	INT	45	63	AC	LGY		DTU	CLY	PUGY																										
PAAC010	INT	63	65	AC	LYE		DTU	CLY	PUGY																										
PAAC010	INT	65	69	AC	GYPU		DTU	CLY	PUGY																										
PAAC010	INT	69	70	AC	WHGR	HW	RSU	SPLT																											wthd bsmnt
PAAC010	INT	70	75	AC	LGRYE	HW	RSU	SPLT																											
PAAC010	INT	75	90	AC	LRE	HW	RSU	SPLT																											
PAAC010	INT	90	105	AC	REPU	HW	RSU	SPLT																											
PAAC010	INT	105	110	AC	GR	MW	RSL	SPLT																											
PAAC010	INT	110	115	AC	GRGY	SW	RSL	SPLT																									MIRK		
PAAC010	INT	115	118	AC	GYGR	SW	RSR	DRT																											
PAAC010	INT	118	120	AC	WH	FR	RBR	FIRK																									VEIN		
PAAC010	INT	120	123	AC	GRGY	SW	RBR	DRT	BT																										
PAAC011	INT	0	2	AC	RE		DTU	CLCR																									CLY		
PAAC011	INT	2	12	AC	LRE		DTU	SND																									CLY		
PAAC011	INT	12	17	AC	LRE		DTU	SND																									GVL		
PAAC011	INT	17	24	AC	LBR		DTU	SND																									CLY		
PAAC011	INT	24	34	AC	LGY		DTU	SND																									CLY		
PAAC011	INT	34	42	AC	LGY		DTU	CLY																											injecting water 23 - 52
PAAC011	INT	42	72	AC	GYRE		DTU	CLY																											
PAAC011	INT	72	74	AC	WH	HW	RSU	SPLT																											wthd bsmnt
PAAC011	INT	74	76	AC	WHRE	HW	RSU	SPLT																											
PAAC011	INT	76	77	AC	WH	HW	RSU	SPLT																											
PAAC011	INT	77	78	AC	RE	HW	RSU	SPLT																											
PAAC011	INT	78	80	AC	WHRE	HW	RSU	SPLT																											
PAAC011	INT	80	81	AC	RE	HW	RSU	SPLT																											
PAAC011	INT	81	84	AC	WHRE	HW	RSU	SPLT																											
PAAC011	INT	84	94	AC	REWH	MW	RSU	SPLT																											recognisable texture
PAAC011	INT	94	98	AC	LRE	HW	RSU	SPLT																									FIRK		
PAAC011	INT	98	103	AC	WH	MW	RSU	SPLT																									FIRK		
PAAC011	INT	103	105	AC	LGY	MW	RSL	SPLT																											
PAAC011	INT	105	109	AC	LGYGR	MW	RSL	SPLT																											
PAAC011	INT	109	110	AC	LGYWH	FR	RBR	GRT																											fine monzogr
PAAC012	INT	0	4	AC	REBR		DTU	CLY																									CLCR		
PAAC012	INT	4	18	AC	REBR		DTU	CLY																											
PAAC012	INT	18	24	AC	LORBR		DTU	SND	FG																										
PAAC012	INT	24	37	AC	LGYWH		DTU	SND																									CLY		injecting water 24 - 69m
PAAC012	INT	37	59	AC	GY		DTU	CLY	PUGY																										
PAAC012	INT	59	69	AC	LGYBR		DTU	CLY	PUGY																										
PAAC012	INT	69	77	AC	WHLGY	MW	RSU	SPLT																									FIRK		wthd bsmnt
PAAC012	INT	77	99	AC	WHLGY	MW	RSL	SPLT																									FIRK		rods jamming
PAAC013	INT	0	4	AC	REBR		DTU	CLY																									CLCR		
PAAC013	INT	4	17	AC	REBR		DTU	SND																									CLY		with thin calcrete/silcrete layers
PAAC013	INT	17	26	AC	LYEBR		DTU	SND																									CLY		
PAAC013	INT	26	35	AC	LGY		DTU	SND																									CLY		23 - 62 water injected
PAAC013	INT	35	36	AC	LGY		DTU	CLY																											
PAAC013	INT	36	38	AC	LGY		DTU	SND																									CLY		
PAAC013	INT	38	50	AC	LGYWH		DTU	CLY	PUGY																										
PAAC013	INT	50	55	AC	GY		DTU	CLY	PUGY																										
PAAC013	INT	55	62	AC	LGY		DTU	CLY	PUGY																										
PAAC013	INT	62	70	AC	LGYWH	HW	DTU	GRIT																									CLY		
PAAC013	INT	70	75	AC	PUGY	HW	DTU	CLY	PUGY																										
PAAC013	INT	75	82	AC	LGYWH	HW	DTU	GRIT																									SND		
PAAC013	INT	82	85	AC	GYLBR	HW	DTU	CLY																											
PAAC013	INT	85	89	AC	LGY		DTU	CLY	IBD																								GRIT		84 - water injected
PAAC013	INT	89	96	AC	LGYBR	HW	DTU	CLY																											
PAAC013	INT	96	105	AC	YEBR	HW	DTU	CLY																											blew inner at 103m
PAAC013	INT	105	107	AC	WHGY		DTU	GVL																											qtz rich gravel, water bearing
PAAC013	INT	107	109	AC	REBR	MW	RSL	SPLT																											weath b/ment with wthd mica
PAAC013	INT	109	117	AC	WHRE	MW	RSL	SPLT	BT																										
PAAC013	INT	117	120	AC	WHBK	MW	RSL	SPLT																											
PAAC013	INT	120	128	AC	WHBK	MW	RSR	SPRK																									MIRK		wthd plag & biotite
PAAC013	INT	128	131	AC	GR	MW	RSR	SPRK	FG																										no cse biotite
PAAC013	INT	131	133	AC	GY	SW	RSL	SPLT																									GRT		quartz rich
PAAC013	INT	133	135	AC	DGR	SW	RSR	SPRK	BT																										
PAAC013	INT	135	136	AC	GY	SW	RSL	SPLT																									GRT		
PAAC013	INT	136	138	AC	DGR	SW	RSR	SPRK	BT																										
PAAC013	INT	138	143	AC	GYGR	FR	RBR	DRT	BT																										cse diorite
PAAC014	INT	0	6	AC	LREBR		DTU	CLCR																									SND		
PAAC014	INT	6	9	AC	LORBR		DTU	SND																									CLCR		
PAAC014	INT	9	20	AC	LORBR		DTU	SND																									CLCR		interlayered calcrtet & sand
PAAC014	INT	20	36	AC	LORBR		DTU	SND																									CLY		22 - water injected
PAAC014	INT	36	48	AC	LGY		DTU	CLY	PUGY																										
PAAC014	INT	48	53	AC	GY		DTU	CLY																											
PAAC014	INT	53	69	AC	LGY		DTU	CLY																											
PAAC014	INT	69	74	AC	PUGY		DTU	CLY																											
PAAC014	INT	74	78	AC	GYPU		DTU	CLY																											
PAAC014	INT	78	83	AC	LGY		DTU	CLY																											
PAAC014	INT	83	90	AC	LGYYE		DTU	CLY																											
PAAC014	INT	90	96	AC	GYRE		DTU	CLY																											
PAAC014	INT	96	100	AC	OVYE		DTU	CLY																											
PAAC014	INT	100	104	AC	LGYYE		DTU	CLY																											
PAAC014	INT	104	110	AC	WHGY		DTU	GVL																											
PAAC014	INT	110	112	AC	OVYE	MW	RSL	SPLT																											wthd bsmnt with biotite
PAAC014	INT	112	118	AC	WHBR	MW	RSR	SPRK																									MIRK		
PAAC014	INT	118	126	AC	GRBK	SW	RBR	MIRK	BT	CG																							DRT		cse diorite
PAAC015	INT	0	4	AC	LRE		DTU	CLCR																									SND		
PAAC015	INT	4	12	AC	LOR		DTU	CLCR																									SND		
PAAC015	INT	12	15	AC	LOR		DTU	SND																									CLY		
PAAC015	INT	15	18	AC	LOR		DTU	SND																											
PAAC015	INT	18	21	AC	LORRE		DTU	CLY																									SND		
PAAC015	INT	21	26	AC	LOR		DTU	SND																											
PAAC015	INT	26	35	AC	LPI		DTU	SND																											
PAAC015	INT	35	46	AC	LGY		DTU	SND																									CLY		water injected 24 -
PAAC015	INT	46	52	AC	GY		DTU	CLY	PUGY																										
PAAC015	INT	52	54	AC	WH		DTU	CLY																											
PAAC015	INT	54	62	AC	LGY		DTU	CLY																											
PAAC015	INT	62	66	AC	LYEGY		DTU	CLY																											
PAAC015	INT	66	73	AC	PU		DTU	CLY																											
PAAC015	INT	73	85	AC	WH		DTU	CLY																											
PAAC015	INT	85	99	AC	BRRE		DTU	CLY																											
PAAC015	INT	99	103	AC	WHLGY		DTU	GVL																									SND		
PAAC015	INT	103	104	AC	OLGR	MW	RSL	SPLT																									MIRK		wthd basement,wthd biotite
PAAC015	INT	104	108	AC	GR	MW	RSR	MIRK	BT																								SPRK		
PAAC015	INT	108	113	AC	GRGY	SW	RSR	MIRK																									DRT		
PAAC015	INT	113	114	AC	DGR	SW	RBR	MIRK	CLT																										
PAAC015	INT	114	115	AC	LGYGR	SW	RBR	MZD																											plag & kspar chlorite
PAAC016	INT	0	5	AC	REBR		DTU	CLCR																									CLY		
PAAC016	INT	5	13	AC	ORBR		DTU	CLCR																									SND		
PAAC016	INT	13	17	AC	YEBR		DTU	SND																											
PAAC016	INT	17	18	AC	YEBR		DTU	SND																									GVL		
PAAC016	INT	18	22	AC	YEBR		DTU	SND																											
PAAC016	INT	22	35	AC	LGYPI		DTU	SND	FG																								CLY		water injected 22 -
PAAC016	INT	35	40	AC	LGYWH		DTU	CLY	PUGY																										
PAAC016	INT	40	48	AC	LGY		DTU	CLY	PUGY																										
PAAC016	INT	48	51	AC	GY		DTU	CLY	PUGY																										
PAAC016	INT	51	66	AC	LGYWH		DTU	CLY	PUGY																										
PAAC016	INT	66	68	AC	GYPU		DTU	CLY	PUGY																										
PAAC016	INT	68	72	AC	PURE		DTU	CLY	PUGY																										
PAAC016	INT	72	82	AC	LGYWH		DTU	CLY	PUGY																										
PAAC016	INT	82	90	AC	REPI		DTU	CLY	PUGY																										
PAAC016	INT	90	98	AC	OLBR		DTU	CLY																											with fine quartz sand
PAAC016	INT	98	103	AC	LGY		DTU	SND																									CLY		
PAAC016	INT	103	104	AC	LGY		DTU	GVL																									SND		
PAAC016	INT	104	106	AC	DGRGY	HW	RSR	SPRK																											
PAAC016	INT	106	111	AC	DGRBK	MW	RSR	SPRK	LA																										manganiferous
PAAC016	INT	111	113	AC	PIDGY	MW	RSR	SPRK																											
PAAC016	INT	113	114	AC	LGR	SW	RSR	SPRK																											fine grained & laminated
PAAC016	INT	114	116	AC	DGR	SW	RBR	METS	CLT																										
PAAC016	INT	116	120	AC	GRWH	FR	RBR	METS	LA				CLT	CA			PER	FC		STG	MOD														calcite chlorite minor epidote
PAAC017	INT	0	4	AC	REBR		DTU	CLCR																									SND		
PAAC017	INT	4	18	AC	LORBR		DTU	SND	IBD																								CLCR		
PAAC017	INT	18	32	AC	LORBR		DTU	SND																									CLY		with hard bars
PAAC017	INT	32	34	AC	LGYWH		DTU	SDST																									CLY		
PAAC017	INT	34	44	AC	LGY		DTU	CLY	PUGY																										hard band at 38 m
PAAC017	INT	44	50	AC	GY		DTU	CLY	PUGY																										
PAAC017	INT	50	66	AC	LGYWH		DTU	CLY	PUGY																										
PAAC017	INT	66	73	AC	REPU		DTU	CLY	PUGY																										
PAAC017	INT	73	76	AC	LBRGY		DTU	CLY	PUGY																										
PAAC017	INT	76	88	AC	LBRPI		DTU	CLY	PUGY																										
PAAC017	INT	88	97	AC	LYEGY		DTU	CLY	HD																										
PAAC017	INT	97	100	AC	LGY		DTU	SDST	HD																								SLCT		abandoned due to silcrete
PAAC018	INT	0	4	AC	LREBR		DTU	CLCR																									SND		
PAAC018	INT	4	14	AC	LORBR		DTU	SND	IBD																								CLCR		fine sand
PAAC018	INT	14	23	AC	LORBR		DTU	CLCR	IBD																								SND		very hard
PAAC018	INT	23	27	AC	LGYWH		DTU	SND																											
PAAC018	INT	27	34	AC	LGY		DTU	SND	IBD																								CLY		
PAAC018	INT	34	46	AC	LGY		DTU	CLY	PUGY																										
PAAC018	INT	46	49	AC	GY		DTU	CLY	PUGY																										
PAAC018	INT	49	66	AC	LGY		DTU	CLY	PUGY																										
PAAC018	INT	66	71	AC	PU		DTU	CLY																											
PAAC018	INT	71	74	AC	LBR		DTU	CLY																											
PAAC018	INT	74	83	AC	LYEGY		DTU	CLY																											
PAAC018	INT	83	90	AC	PI		DTU	CLY																											
PAAC018	INT	90	94	AC	LBRYE		DTU	CLY																									SND		
PAAC018	INT	94	98	AC	LGY		DTU	GVL																											
PAAC018	INT	98	103	AC	DGR	SW	RSR	SPRK																											wthd bsmnt, chloritic & finely layered & magnetite
PAAC018	INT	103	105	AC	DGY	SW	RSR	SPRK																											fine magnetite/martite xls
PAAC018	INT	105	111	AC	DGYGR	SW	RBR	CSRK					CLT	CA			PER	FC		STG	MOD												MBL		
PAAC018	INT	111	112	AC	GYGR	FR	RBR	CSRK	LA				CLT	CA			PER	FC		STG	MOD												MBL		magnetic
PAAC019	INT	0	2	AC	LREBR		DTU	CLCR																									SND		
PAAC019	INT	2	9	AC	LORBR		DTU	SND																									CLCR		
PAAC019	INT	9	11	AC	LREBR		DTU	CLY																									SND		
PAAC019	INT	11	22	AC	LBR		DTU	SND	IBD																								CLCR		
PAAC019	INT	22	25	AC	LREBR		DTU	SND																									CLY		
PAAC019	INT	25	32	AC	LGY		DTU	SND																									CLY		
PAAC019	INT	32	33	AC	LGY		DTU	SDST																									CLY		
PAAC019	INT	33	36	AC	LGY		DTU	CLY	PUGY																										
PAAC019	INT	36	46	AC	GY		DTU	CLY	PUGY																										
PAAC019	INT	46	66	AC	LGY		DTU	CLY	PUGY																										
PAAC019	INT	66	71	AC	PU		DTU	CLY																											
PAAC019	INT	71	86	AC	LGY		DTU	CLY																											
PAAC019	INT	86	99	AC	LBRRE		DTU	CLY																											
PAAC019	INT	99	103	AC	LGY		DTU	GVL																											
PAAC019	INT	103	107	AC	GR	MW	RSR	SPRK																											wthd bsmnt
PAAC019	INT	107	110	AC	GYGR	SW	RSR	SPRK	FG																								SLST		laminated siltstone
PAAC019	INT	110	112	AC	LBRWH	MW	RSL	SPLT																											
PAAC019	INT	112	116	AC	GYGR	SW	RBR	PHYL					CLT				PER			STG													LMST		trails of fine sulphide in sed laminations
PAAC019	INT	116	117	AC	WHGR	SW	RBR	METS					CLT	TA			PER	PER		STG	STG												CSRK		c/sil /skarn altered prob carb rich metased
PAAC020	INT	0	2	AC	REBR		DTU	GVL	LTH																								CLCR		
PAAC020	INT	2	6	AC	ORBR		DTU	CLCR	FG	CLY																							SND		
PAAC020	INT	6	8	AC	LORBR		DTU	SND	FG	SI																							GVL		
PAAC020	INT	8	10	AC	LORBR		DTU	GVL																											
PAAC020	INT	10	19	AC	LORBR		DTU	SND	FG																										
PAAC020	INT	19	24	AC	RE		DTU	SND																											
PAAC020	INT	24	25	AC	RE		DTU	CLY																											
PAAC020	INT	25	33	AC	PI		DTU	SND	FG																										
PAAC020	INT	33	35	AC	LPIGY		DTU	SND																									CLY		
PAAC020	INT	35	43	AC	LGYWH		DTU	CLY	PUGY																										
PAAC020	INT	43	51	AC	LGY		DTU	CLY	PUGY																										
PAAC020	INT	51	54	AC	WH		DTU	CLY																											
PAAC020	INT	54	59	AC	GY		DTU	CLY																											
PAAC020	INT	59	61	AC	DGY		DTU	CLY																											
PAAC020	INT	61	73	AC	LGYWH		DTU	CLY																											
PAAC020	INT	73	80	AC	GYPU		DTU	CLY																											
PAAC020	INT	80	82	AC	LGY		DTU	CLY																											
PAAC020	INT	82	86	AC	DGY		DTU	CLY																											
PAAC020	INT	86	91	AC	LGY		DTU	CLY																											
PAAC020	INT	91	96	AC	LOLGR		DTU	CLY																											
PAAC020	INT	96	100	AC	LGYYE		DTU	CLY																											
PAAC020	INT	100	112	AC	RELGY		DTU	CLY																											
PAAC020	INT	112	115	AC	OLYE		DTU	CLY																											
PAAC020	INT	115	120	AC	LBR		DTU	CLY																											
PAAC020	INT	120	124.5	AC	WH		DTU	SND																											WATER
PAAC020	INT	124.5	125	AC	GRGY	FR	RBR	GAB	CG																										same gabbro as in traverse 1 & 2
PAAC021	INT	0	7	AC	REBR		DTU	SND	CEM																								GVL		
PAAC021	INT	7	11	AC	REBR		DTU	SND	FG																										
PAAC021	INT	11	19	AC	ORBR		DTU	SND	FG																										
PAAC021	INT	19	30	AC	RE		DTU	SND	FG																										
PAAC021	INT	30	36	AC	LPIWH		DTU	SND	FG																								CLY		
PAAC021	INT	36	40	AC	ORBR		DTU	SND	FG																										
PAAC021	INT	40	42	AC	LGYWH		DTU	SND	FG																										
PAAC021	INT	42	44	AC	LYEBR		DTU	CLY																									SND		
PAAC021	INT	44	51	AC	GY		DTU	CLY																											
PAAC021	INT	51	63	AC	LGY		DTU	CLY																											
PAAC021	INT	63	66	AC	GY		DTU	CLY																											
PAAC021	INT	66	70	AC	BR		DTU	CLY																											
PAAC021	INT	70	80	AC	GY		DTU	CLY																											
PAAC021	INT	80	82	AC	GYPU		DTU	CLY																											
PAAC021	INT	82	88	AC	LGY		DTU	CLY																											
PAAC021	INT	88	92	AC	GYPU		DTU	CLY																											
PAAC021	INT	92	103	AC	LGY		DTU	CLY																											
PAAC021	INT	103	116	AC	OLYE		DTU	CLY																											
PAAC021	INT	116	117	AC	WH		DTU	CLY																											
PAAC021	INT	117	126	AC	WH		DTU	SND	FG																										
PAAC021	INT	126	127	AC	WH		DTU	CNGL																									SND		
PAAC021	INT	127	133	AC	GYGR	FR	RSR	PHYL																											
PAAC021	INT	133	137	AC	DGR	FR	RBR	PHYL	FG	BT																									biotite rich phyllite, compositional layering
PAAC022	INT	0	5	AC	LREBR		DTU	CLCR	SAN	GP																							GVL		
PAAC022	INT	5	8	AC	REBR		DTU	SND																									CLY		
PAAC022	INT	8	10	AC	ORBR		DTU	SND	FG																										
PAAC022	INT	10	11	AC	LBR		DTU	GVL																									SND		
PAAC022	INT	11	20	AC	LBR		DTU	SND	FG																										
PAAC022	INT	20	30	AC	RE		DTU	SND	FG																										
PAAC022	INT	30	44	AC	LYE		DTU	SND	FG																										
PAAC022	INT	44	46	AC	OLYE		DTU	CLY	FG																								SND		
PAAC022	INT	46	54	AC	GY		DTU	CLY	FG																								SND		
PAAC022	INT	54	60	AC	DGY		DTU	CLY	PUGY																										
PAAC022	INT	60	69	AC	LGYPI		DTU	CLY																											
PAAC022	INT	69	70	AC	LGY		DTU	SND																									CLY		
PAAC022	INT	70	74	AC	LGYPI		DTU	CLY																											
PAAC022	INT	74	81	AC	PUGY		DTU	CLY																											
PAAC022	INT	81	90	AC	LGYOL		DTU	CLY	FG																								SND		
PAAC022	INT	90	103	AC	LGYYE		DTU	CLY																											
PAAC022	INT	103	120	AC	YEOL		DTU	CLY																											
PAAC022	INT	120	123	AC	WH		DTU	SND																											
PAAC022	INT	123	127	AC	WH		DTU	SND	CG																										
PAAC022	INT	127	131	AC	WH		DTU	GVL																									SND		quartz pebbles
PAAC022	INT	131	136	AC	DGR	FR	RSR	SLST	CLT																								PHYL		
PAAC022	INT	136	144	AC	DGR	FR	RBR	PHYL																											fine biotite & primary compositional layering, interlayered slate

Hole ID	Data Type	From Depth	To Depth	Drilling T	Colour Code	Weathering	Regolith P	Lith1	Desc11	Desc12	Desc13	Desc14	AltType11	AltType12	AltType13	AltType14	AltQual11	AltQual12	AltQual13	AltInt11	AltInt12	AltInt13	AltInt14	Min Min11	Min Min12	Min Min13	Min_Sty11	Min_Sty12	Min_Sty13	Min Amou11	Min Amou12	Min Amou13	Lith2	Lith3	Comment
PAAC023	INT	0	5	AC	LBR		DTU	CLCR	SAN																								GVL		
PAAC023	INT	5	7	AC	LYE		DTU	CLCR																									CLY		
PAAC023	INT	7	11	AC	LYEWH		DTU	CLCR																									CLY		
PAAC023	INT	11	16	AC	REBR		DTU	CLY	FG																								SND		
PAAC023	INT	16	18	AC	REBR		DTU	GVL																									SLCT		
PAAC023	INT	18	29	AC	REBR		DTU	CLY																											
PAAC023	INT	29	43	AC	LREBR		DTU	SND	FG																										
PAAC023	INT	43	51	AC	LYE		DTU	SND	FG																										
PAAC023	INT	51	59	AC	LGY		DTU	CLY	PUGY																										
PAAC023	INT	59	63	AC	WH		DTU	CLY	PUGY																										
PAAC023	INT	63	82	AC	REGY		DTU	CLY	PUGY																										
PAAC023	INT	82	85	AC	LGYYE		DTU	CLY	MO																										
PAAC023	INT	85	91	AC	LOLYE		DTU	CLY																											
PAAC023	INT	91	102	AC	LGYWH		DTU	CLY																											
PAAC023	INT	102	108	AC	LYEWH		DTU	CLY																											
PAAC023	INT	108	112	AC	LYERE		DTU	CLY	MO																										
PAAC023	INT	112	118	AC	LOLYE		DTU	CLY																											
PAAC023	INT	118	121	AC	LYEWH		DTU	CLY																											
PAAC023	INT	121	128	AC	WH		DTU	SND																											
PAAC023	INT	128	131	AC	WH		DTU	SND																											water, abandoned due to persistent rod blockages
PAAC024	INT	0	4	AC	LREBR		DTU	GVL	GP																								CLCR		sandy
PAAC024	INT	4	9	AC	LORBR		DTU	SND	FG																										
PAAC024	INT	9	11	AC	LORBR		DTU	GVL																									SND		
PAAC024	INT	11	14	AC	LORBR		DTU	SND	FG																										
PAAC024	INT	14	17	AC	LREBR		DTU	SLCT	FG																								SND		
PAAC024	INT	17	41	AC	REBR		DTU	SND	FG																										
PAAC024	INT	41	42	AC	LOLYE		DTU	CLY	FG																								SND		
PAAC024	INT	42	46	AC	OLYE		DTU	CLY	FG																										
PAAC024	INT	46	61	AC	GY		DTU	CLY																											
PAAC024	INT	61	65	AC	LGYPU		DTU	CLY																											
PAAC024	INT	65	68	AC	GYBR		DTU	CLY																											
PAAC024	INT	68	72	AC	WH		DTU	CLY																											
PAAC024	INT	72	80	AC	GY		DTU	CLY																											
PAAC024	INT	80	81	AC	REBR		DTU	CLY																											
PAAC024	INT	81	82	AC	DGY		DTU	CLY																											
PAAC024	INT	82	95	AC	LGYWH		DTU	CLY																											
PAAC024	INT	95	98	AC	LYEWH		DTU	CLY	MO																										
PAAC024	INT	98	100	AC	LGYRE		DTU	CLY																											
PAAC024	INT	100	105	AC	LOLYE		DTU	CLY																											
PAAC024	INT	105	114	AC	LGYRE		DTU	CLY	MO																										
PAAC024	INT	114	118	AC	LGYWH		DTU	CLY																											
PAAC024	INT	118	120	AC	LGYWH		DTU	SND	FG																										water
PAAC024	INT	120	126	AC	WH		DTU	SND	FG	CG																									
PAAC024	INT	126	128	AC	WH		DTU	GVL																											large pebbles of quartz
PAAC024	INT	128	131	AC	LGYGR	HW	RSL	SPLT																											relict textures
PAAC024	INT	131	133	AC	OLYE	SW	RSR	SLST	CLT																										
PAAC024	INT	133	135	AC	GYYE	SW	RBR	SLST	CLT																										
PAAC024	INT	135	140	AC	GYGR	FR	RBR	SDST	CLT															PY	APY		DS	DS		1	1		SLST		layered, l grey sdst with coarse pyrite
PAAC025	INT	0	1	AC	LBR		DTU	CLCR																									SND		
PAAC025	INT	1	5	AC	REBR		DTU	SND																									GVL		
PAAC025	INT	5	11	AC	LORBR		DTU	SND																									SLCT		
PAAC025	INT	11	12	AC	PUBR		DTU	GVL																											
PAAC025	INT	12	20	AC	REBR		DTU	SND	FG																								SLCT		
PAAC025	INT	20	26	AC	REBR		DTU	SND	FG																										
PAAC025	INT	26	34	AC	WHPI		DTU	SND																									CLY		
PAAC025	INT	34	50	AC	WH		DTU	CLY																											
PAAC025	INT	50	51	AC	LYEWH		DTU	CLY																											
PAAC025	INT	51	70	AC	LGYWH		DTU	CLY																											
PAAC025	INT	70	73	AC	REBR		DTU	CLY																											
PAAC025	INT	73	78	AC	LBRGY		DTU	CLY																											
PAAC025	INT	78	83	AC	LGYGR		DTU	CLY																											
PAAC025	INT	83	87	AC	LGY		DTU	CLY																											
PAAC025	INT	87	96	AC	RE		DTU	CLY																											
PAAC025	INT	96	101	AC	OLGR		DTU	CLY																											rare sand layers
PAAC025	INT	101	102	AC	LOLYE		DTU	GVL																											basal gravel
PAAC025	INT	102	106	AC	RE	MW	RSR	SPRK																											weathered claystone interlayered with sandstone
PAAC025	INT	106	114	AC	OLGR	MW	RSR	SPRK																											
PAAC025	INT	114	122	AC	LYEBR	MW	RBR	METS																											
PAAC025	INT	122	124	AC	LBR	SW	RBR	METS																											
PAAC025	INT	124	126	AC	GYGR	SW	RBR	METS	HFL				SI							MOD															interbedded siltstone, claystone and sandstone,sil/hornfelsed appearance
PAAC026	INT	0	2	AC	LBRWH		DTU	CLCR																									SND		
PAAC026	INT	2	4	AC	REBR		DTU	SND																									GVL		
PAAC026	INT	4	10	AC	LREBR		DTU	SND																									SLCT		
PAAC026	INT	10	13	AC	LYE		DTU	SND																											
PAAC026	INT	13	15	AC	REBR		DTU	GVL																									SND		
PAAC026	INT	15	18	AC	LORBR		DTU	SND	FG																										
PAAC026	INT	18	21	AC	LBR		DTU	CLY																									SND		
PAAC026	INT	21	22	AC	LYEWH		DTU	SND																											
PAAC026	INT	22	23	AC	RE		DTU	SND																									CLY		
PAAC026	INT	23	27	AC	LPI		DTU	SND																											
PAAC026	INT	27	33	AC	WH		DTU	SND																											
PAAC026	INT	33	40	AC	WH		DTU	CLY																											
PAAC026	INT	40	41	AC	PI		DTU	CLY																											
PAAC026	INT	41	44	AC	WH		DTU	CLY																											
PAAC026	INT	44	46	AC	GY		DTU	CLY																											
PAAC026	INT	46	48	AC	WH		DTU	CLY																											
PAAC026	INT	48	53	AC	LGYWH		DTU	CLY																											
PAAC026	INT	53	56	AC	LGY		DTU	CLY																											
PAAC026	INT	56	59	AC	LGY		DTU	CLY																											
PAAC026	INT	59	66	AC	LGYYQ		DTU	CLY																											
PAAC026	INT	66	71	AC	LBR		DTU	CLY																											
PAAC026	INT	71	74	AC	LGY		DTU	CLY																											
PAAC026	INT	74	78	AC	REYE		DTU	CLY	MO																										
PAAC026	INT	78	85	AC	WHRE		DTU	CLY																											
PAAC026	INT	85	90	AC	RE	HW	RSR	SLST																									SPRK		top of wthd basement difficult to pick
PAAC026	INT	90	120	AC	GR	MW	RBR	SLST	CLT																								CLY		
PAAC026	INT	120	134	AC	DGR	SW	RBR	HFL	BT	FG																							SLST		biotite hornfels after siltstone
PAAC027	INT	0	2	AC	LBR		DTU	CLY																									CLCR		
PAAC027	INT	2	6	AC	REBR		DTU	SND																									CLY		
PAAC027	INT	6	19	AC	LBR		DTU	SND																									CLY		
PAAC027	INT	19	24	AC	LORBR		DTU	SND	CLY																										
PAAC027	INT	24	30	AC	LREBR		DTU	CLY																											
PAAC027	INT	30	35	AC	LOLBR		DTU	CLY																									LMST		
PAAC027	INT	35	44	AC	LYEBR		DTU	SND																									CLY		
PAAC027	INT	44	46	AC	YE		DTU	CLY																									SND		
PAAC027	INT	46	106	AC	GY		DTU	CLY	FSS																								LMST		marine clay
PAAC027	INT	106	138	AC	DGRGY		DTU	CLY	FSS																								LMST		
PAAC027	INT	138	140	AC	WH		DTU	SND																											
PAAC027	INT	140	144	AC	WH		DTU	CLY																									SND		EOH no more drill rods
PADD022	INT	0	20		REBR		DTU	CLY																											Dry clays
PADD022	INT	20	37		LYE		DTU	SND																											Fgn-mgn sands, becoming more well sorted
PADD022	INT	37	68		GYGR		DTU	CLY																											
PADD022	INT	68	106		GYGR		DTU	CLY																									SND		
PADD022	INT	106	120		DGY		DTU	CLY																											
PADD022	INT	120	130		BR		DTU	SND																									CLY		Shelly sands + mnr clay component
PADD022	INT	130	161.8		LGY		DTU	SND																											End of precollar
PADD022	INT	161.8	163.5		WH	SW	RSR	MZD	MG	MAS			KA							STG															Weathered/kaolinised ?felsic diorite
PADD022	INT	163.5	164.1		GR	HW	RSL	SPLT																											Mjr weathering - only clay remaining (also core loss)
PADD022	INT	164.1	167.7		LGRWH	MW	RBR	MZD	FG	BLK			KA							STG															Strong-mod weathered felsic - intermed intrusive
PADD022	INT	167.7	168.9		BR	HW	RSR	MTS					GO	CA						STG	WE			PY						TR			GRSN		Strongly leached interval, with massive goethite replacement. ?chalcocite. magnetic. major core loss
PADD022	INT	168.9	170.4		LGR	MW	RBR	MIRK	FG				CLT							STG															Fgn intrusive rock, ?of mafic origin
PADD022	INT	170.4	171.4		WH	MW	RBR	FIRK	FG				KA							STG													APL		?Aplite dyke
PADD022	INT	171.4	174.1		LGRWH	HW	RSR	IIRK																											Str weath undiff ?intermed intrusive
PADD022	INT	174.1	174.7		GRBL	MW	RBR	BX					CA							STG															Str weath & carb altd bx rock. Probable mafic precursor
PADD022	INT	174.7	175.5		LGRWH	HW	RSR	MIRK					KA							STG													IIRK		
PADD022	INT	175.5	176.9		WH	SW	RBR	IIRK	FG																										Bleached white ?felsic-intermed intrusive
PADD022	INT	176.9	180.2		LGRWH	MW	RBR	IIRK	FG	MG			KF							WE													MIRK		Weath intrusive rock of some type!
PADD022	INT	180.2	182.3		GR	HW	RSR	DLT																											
PADD022	INT	182.3	184.7		GRWH	SW	RBR	GAB	MG				CA							STG															Wk - mod weath dolerite, X-cut by carb vns + xstal vugs to 1cm wide
PADD022	INT	184.7	186.4		GR	MW	RBR	GAB	FG				CA							MOD															
PADD022	INT	186.4	187.3		LGR	MW	RBR	GAB					CA	CLT						MOD	MOD														
PADD022	INT	187.3	189		LGYGR	SW	RBR	GAB					CA							STG															Vuggy cavities of calcite to 1cm
PADD022	INT	189	190.4		LGYWH	SW	RBR	GAB					CA							WE															
PADD022	INT	190.4	191.3		LGYGR	HW	RBR	ALT	MAF	BX			BI	CLT	ALB					MOD	MOD	MOD													Heavily altd (cal,chl,weath) possible meta-mafic-u/mafic(petrology)
PADD022	INT	191.3	192.5		LPIGY	MW	RBR	IIRK	FG																								FIRK		Fgn felsic intrusive - ?qtz content
PADD022	INT	192.5	194.3		GYGR	SW	RBR	IIRK	FG																								MIRK		
PADD022	INT	194.3	198.4		PIGY	FR	RBR	MZT	CG																										K-felsp, plag, qtz, bt composition. Trace py
PADD023	INT	0	6		YEBR		DTU	CLY																									GVL		
PADD023	INT	6	16		REBR		DTU	CLY																									GVL		
PADD023	INT	16	24		GRBR		DTU	CLY																											
PADD023	INT	24	32		YE		DTU	CLY																									SND		
PADD023	INT	32	56		DGY		DTU	CLY																									SND		Fgn sand
PADD023	INT	56	80		GY		DTU	CLY																									SND		
PADD023	INT	80	84		LGY		DTU	SND																									CLY		
PADD023	INT	84	102		GY		DTU	CLY																											
PADD023	INT	102	110		DGY		DTU	CLY																											
PADD023	INT	110	116		DGY		DTU	CLY																											
PADD023	INT	116	120		GY	HW	RSU	SPLT																											
PADD023	INT	120	148		YEWH	HW	RSU	SPLT																											
PADD023	INT	148	166		GYWH	HW	RSL	SPLT																											
PADD023	INT	166	168.2			HW	RSL	NSR																											
PADD023	INT	168.2	169.1		GYWH	FR	RBR	GRD	CG																										Tonalitic granite. Plag-qtz-feldsp-bt composition
PADD023	INT	169.1	169.5		LBR	MW	RBR	GRD																									METS		Raft of metasediments
PADD023	INT	169.5	170.2		GYWH	FR	RBR	GRD																											
PADD023	INT	170.2	173		LBR	HW	RSR	METS																											Broken metaseds - major core loss
PADD023	INT	173	175		LBRWH	MW	RSR	METS	FG																										Fgn sandy metased
PADD023	INT	175	176.4		GYBR	FR	RBR	METS	FG	FOM														CCP						TR					Fgn metased , foliated with trace ccp
PADD023	INT	176.4	177.5		LBR	MW	RBR	METS	MG																										Weakly porous sandy metased
PADD023	INT	177.5	179.7		DGY	FR	RBR	METS	FG	FOM																									Foliated metased
PADD023	INT	179.7	180.3		LBR	MW	RBR	METS	MG																										
PADD023	INT	180.3	183.4		GYBR	FR	RBR	METS	FG	FOM																									metased . Banded,SPOTTED
PADD034	INT	0	6	DD	REBR		DTU	GVL	LTH																										
PADD034	INT	6	31	DD	LBR		DTU	SND	FG																								CLY		
PADD034	INT	31	35	DD	LBR		DTU	SDST	HD																								SLCT		hammer
PADD034	INT	35	43	DD	LREBR		DTU	CLY	PUGY																										
PADD034	INT	43	47	DD	LBR		DTU	CLY	PUGY																										
PADD034	INT	47	60	DD	YE		DTU	LMST	FSS																								CLY		marine lmst with limonitic clay
PADD034	INT	60	85	DD	BK		DTU	CLY	IBD																								SND		
PADD034	INT	86	103	DD	BK		DTU	CLY																											
PADD034	INT	103	109	DD	GY		DTU	CLY																											
PADD034	INT	109	138	DD	LGY		DTU	CLY																											
PADD034	INT	138	142	DD	LGYPI		DTU	CLY																											
PADD034	INT	142	147	DD	LGYYE	MW	RSL	SPLT																											
PADD034	INT	147	197.5	DD	OLGR	MW	RSL	SPLT																									SND		
PADD034	INT	197.5	197.9	DD	LYEBR	MW	RSR	SPRK	BED																								SDST		wthd interbedded sndt and clyst CORE STARTS
PADD034	INT	197.9	205.8	DD	OLGR	MW	RSR	MDST																											thin interbeds of sandstone
PADD034	INT	205.8	207.2	DD	WHBR	SW	RSR	MDST																											
PADD034	INT	207.2	207.3	DD	WH	SW	RSR	CNGL	LTH																										
PADD034	INT	207.3	207.9	DD	WHRE	SW	RSR	MDST																											impure claystone
PADD034	INT	207.9	210.4	DD	LGYWH	SW	RBR	MDST																									SDST		mudstone clasts and water expulsion features
PADD034	INT	210.4	212.5	DD	WH	SW	RBR	SDST	FEL																										
PADD034	INT	212.5	212.9	DD	LYEBR	SW	RBR	SDST																											
PADD034	INT	212.9	213.4	DD	YEBR	SW	RBR	MDST																									CLY		
PADD034	INT	213.4	215.2	DD	LGYWH	SW	RBR	SDST	CALC																								MDST		calcareous
PADD034	INT	215.2	216.8	DD	WH	SW	RBR	MDST	BX																										calcareous
PADD034	INT	216.8	217	DD	WH	SW	RBR	CNGL	LTH																								SDST		calcareous
PADD035	INT	0	4	DD	REBR		DTU	CLY																									CLCR		
PADD035	INT	4	16	DD	REBR		DTU	CLY																											
PADD035	INT	16	43	DD	LREBR		DTU	CLY																											
PADD035	INT	43	45	DD	WHYE		DTU	CLY																											
PADD035	INT	45	46	DD	WHYE		DTU	CLY																											
PADD035	INT	46	48	DD	LGYYE		DTU	LMST	FSS																								CLY		HQ core 46 - 48m
PADD035	INT	48	50	DD	WHYE		DTU	CLY																									LMST		
PADD035	INT	50	76	DD	GY		DTU	CLY																											
PADD035	INT	76	114	DD	LGY		DTU	CLY																											
PADD035	INT	114	120	DD	DGY		DTU	CLY																											
PADD035	INT	120	130	DD	LYE	HW	RSL	SPLT																											wthd basement
PADD035	INT	130	140	DD	OLGR	HW	RSL	SPLT																											
PADD035	INT	140	156	DD	REBR	HW	RSL	SPLT																											
PADD035	INT	156	163.2	DD	LGYGR	MW	RSL	SPLT																									MIRK		NQ Core 163.5 to EOH
PADD035	INT	163.2	163.5	DD	LGYGR	FR	RBR	BLT					CA				VN			STG															
PADD035	INT	163.5	164	DD	GYGR	FR	RBR	BLT	PHE				CA				VN			MOD													MTUF		
PADD035	INT	164	165	DD	GYGR	FR	RBR	BLT	PHE																								MTUF		
PADD035	INT	165	165.5	DD	GYGR	FR	RBR	BLT	BX				CA	MGN			VN	VN		STG	STG			PY			BL			1			MTUF		mag lined calc vein
PADD035	INT	165.5	165.8	DD	GYGR	FR	RBR	BLT	PHE	LA																							MTUF		
PADD035	INT	165.8	166.8	DD	GYGR	FR	RBR	BLT	BX				SE	CA	MGN		VN	VN	VN	MOD	STG	STG											MTUF		mag lined calc vein
PADD035	INT	166.8	168.2	DD	GYGR	FR	RBR	VC	FG	LA	AMY		CA							MOD				PY			DS			1					
PADD035	INT	168.2	168.8	DD	GYGR	FR	RBR	BLT	MG				CA																				MTUF		felted texture
PADD035	INT	168.8	168.9	DD	LBRGR	FR	RBR	BLT					CA				PER			STG															
PADD035	INT	168.9	169.8	DD	GYGR	FR	RBR	BLT	MG	PHE																							MTUF		
PADD035	INT	169.8	169.9	DD	LBRGR	FR	RBR	BLT					CA	MGN			PER	PER		STG	STG														
PADD035	INT	169.9	170.5	DD	GYGR	FR	RBR	BLT	MG	PHE			SE	CA			PER	RE		MOD	MOD												MTUF		selective low intensity phylic alteration
PADD035	INT	170.5	170.7	DD	GYGR	FR	RBR	BLT	MG	PHE	LA		CA				FF			MOD													MTUF		calc in micrifractures & amygdales
PADD035	INT	170.7	171	DD	LBRGR	FR	RBR	CVN					CA				PER			STG													BLT		
PADD035	INT	171	172	DD	GYGR	FR	RBR	BLT	MG	PHE	LA																						MTUF		
PADD035	INT	172	173.7	DD	LGYGR	FR	RBR	CVN					CA	MGN			PER	PER		STG	STG			PY	GN		DS	VX		1	1		MTUF		
PADD035	INT	173.7	174.9	DD	GYGR	FR	RBR	BLT	MG	PHE																							MTUF		
PADD035	INT	174.9	175	DD	GYGR	FR	RBR	BLT	MG	PHE			CA	MGN			FC	FC		STG	STG			PY			BL			1			MTUF		
PADD035	INT	175	176.1	DD	GYGR	FR	RBR	BLT	MG	PHE																							MTUF		
PADD035	INT	176.1	176.2	DD	GYGR	FR	RBR	CVN	MG	PHE			CA	MGN	SE		FC	PER	PER	STG	STG	STG											MTUF		pervasive sericite
PADD035	INT	176.2	177	DD	GYGR	FR	RBR	BLT	FG	PHE			SE				PER			MOD													MTUF		
PADD035	INT	177	177.1	DD	WHBK	FR	RBR	CVN					CA	MGN			FC	FC		STG	STG												MTUF		
PADD035	INT	177.1	177.2	DD	GYGR	FR	RBR	BLT	FG	PHE			SE				PER			MOD													MTUF		
PADD035	INT	177.2	178	DD	GYGR	FR	RBR	BLT	MG	PHE			SE				PER			MOD													MTUF		
PADD035	INT	178	178.7	DD	GYWH	FR	RBR	CVN	MG	PHE			CA	SE	MGN		FC	PER	PER	STG	STG	STG											BLT		
PADD035	INT	178.7	179.1	DD	LGYGR	FR	RBR	BLT	MG				SE				PER			MOD													MTUF		
PADD035	INT	179.1	179.5	DD	GRGY	FR	RBR	BLT	FG	PHE																							MTUF		coarse phenocrysts
PADD035	INT	179.5	183	DD	GRGY	FR	RBR	BLT	FG	PHE																							MTUF		finer phenocrysts
PADD035	INT	183	183.2	DD	GRGY	FR	RBR	CVN	FG	PHE			CA	MGN			FC	FC		STG	STG												MTUF		
PADD035	INT	183.2	184.8	DD	GRGY	FR	RBR	BLT	FG	PHE																							MTUF		
PADD035	INT	184.8	185	DD	GYWH	FR	RBR	CVN	FG	PHE			CA	MGN			FC	FC		STG	STG												MTUF		
PADD035	INT	185	185.2	DD	GYGR	FR	RBR	BLT	FG	PHE																							MTUF		
PADD035	INT	185.2	186	DD	GYWH	FR	RBR	CVN	FG	PHE			CA	MGN	SE		FC	FC	PER	STG	STG	STG											MTUF		non-mag calcite vein flanked by magnetic recryst
PADD036	INT	0	2	DD	REBR		DTU	CLY																									CLCR		
PADD036	INT	2	8	DD	REBR		DTU	CLY																											
PADD036	INT	8	22	DD	LORWH		DTU	CLY																											
PADD036	INT	22	38	DD	ORBR		DTU	CLY																											
PADD036	INT	38	48	DD	LOLBR		DTU	CLY																											
PADD036	INT	48	50	DD	WHLBR		DTU	CLY																											
PADD036	INT	50	52	DD	LREBR		DTU	CLY																											
PADD036	INT	52	54	DD	WHYE		DTU	CLY	SAN																								LMST		
PADD036	INT	54	56	DD	WH		DTU	SND																									CLY		
PADD036	INT	56	62	DD	LYE		DTU	SND																									CLY		
PADD036	INT	62	72	DD	GY		DTU	CLY																											rare fossils
PADD036	INT	72	104	DD	GY		DTU	CLY	FSS																										thin sandy interbeds and fine heavy mineral grains
PADD036	INT	104	106	DD	GYBK		DTU	CLY	SAN																										
PADD036	INT	106	114	DD	LGYPU		DTU	CLY																									SND		sandy interbeds
PADD036	INT	114	121	DD	WH		DTU	CLY																											121m coring
PADD036	INT	121	128	DD	LGY		DTU	SND																									CLY		
PADD036	INT	128	140	DD	LORBR		DTU	CLY																											
PADD036	INT	140	146	DD	LORBR		DTU	CLY																									SND		
PADD036	INT	146	148	DD	WH		DTU	GVL																											
PADD036	INT	148	154	DD	LORBR		DTU	SND																									CLY		
PADD036	INT	154	160.8	DD	GYGR	MW	RSL	SPLT																									MIRK		160 end of rotary hole
PADD036	INT	160.8	164.5	DD	DGYGR	SW	RBR	GAB	MG	CG																									
PADD036	INT	164.5	167.4	DD	GY	FR	RBR	GAB	MG	CG																									
PADD036	INT	167.4	167.7	DD	GYYE	FR	RBR	GAB					SE	CA			PER	PER		MOD	MOD			PY	CCP		DS	BL		1	1				selective sericite greening of plag & pervasive calcite
PADD036	INT	167.7	168.1	DD	GY	FR	RBR	GAB																											
PADD036	INT	168.1	168.2	DD	LGYWH	FR	RBR	CVN					CA	SE			PER	PER		STG	STG			TOUR	CAL	QZ	VX	VX	VX	5	10	10	GAB		
PADD036	INT	168.2	168.7	DD	GY	FR	RBR	GAB																											
PADD036	INT	168.7	171	DD	DGY	FR	RBR	GAB																											
PADD036	INT	171	171.9	DD	GYYE	FR	RBR	GAB					SE	CA			PER	PER		MOD	STG			PY			DS			1					selective sericite greening of plag & pervasive calcite
PADD036	INT	171.9	172.1	DD	LGYWH	FR	RBR	CVN					CA				PER			STG				TOUR	CAL	QZ	VX	VX	VX	5	10	10	GAB		
PADD036	INT	172.1	173.5	DD	GYYE	FR	RBR	GAB					SE	CA			PER	PER		MOD	MOD														
PADD036	INT	173.5	174.3	DD	GY	FR	RBR	GAB																											
PADD036	INT	174.3	174.5	DD	GYGR	FR	RBR	GAB					SE	CA			PER	PER		MOD	MOD			PY			DS			1					lime green coloured clay after plag

Normandy Logging Codes

Colour Codes

Code	Description	Code	Description	Code	Description
BK	Black	KH	Khaki	MBL	Moderate blue
BL	Blue	LBL	Light blue	OV	Olive
BLGR	Blue green	LBLGR	Light blue green	OR	Orange
BR	Brown	LBLGY	Light blue grey	ORPI	Orange Pink
CR	Cream	LBR	Light brown	PI	Pink
DBR	Dark brown	LBRGY	Light brown grey	PIGY	Pink grey
DGR	Dark green	LGR	Light green	PU	Purple
DGRYE	Dark green yellow	LGRGY	Light green grey	RE	Red
DRE	Dark red	LGRYE	Light green yellow	REBR	Red brown
GR	Green	LGY	Light grey	REOR	Red orange
GRBR	Green brown	LOV	Light Olive	WH	White
GRYE	Green yellow	LOR	Light orange	YE	Yellow
GY	Grey	LPI	Light pink	YEGR	Yellow green
GYBL	Grey blue	LPU	Light purple	YEGY	Yellow grey
GYGR	Grey green	LRE	Light red	YEOR	Yellow orange
GYYE	Grey yellow	LYEBR	Light yellow brown		

Weathering Codes

Code	Description
FR	Fresh rock
HW	Highly weathered
MW	Moderately weathered
OX	Oxidised
POX	Partially Oxidised
SW	Slightly weathered
TWEA	Totally weathered
VHW	Very highly weathered
WEA	Weathered

Regolith Profile Codes

Code	description	Code	description
CBLT	Basalt Cover	RLP	Pisolitic laterite zone over complete in situ profile
RCA	Calcrete /Calcification Overprint on Relict Profile	DPS	Platform Sedimentary Cover
DCA	Calcrete /Calcification Overprint on Transported Overburden	RFE	Relict Ferruginous Material of uncertain origin
DCY	Clay zone within transported overburden	RSL	Relict insitu Lower Saprolite zone
DLA	Ferricrete developed on transported overburden	RSR	Relict insitu Saprock zone
DFE	Ferruginisation Overprint on Transported Overburden	RSU	Relict insitu Upper (bleached) Saprolite
DGY	Gypsification Overprint on Transported Overburden	RSI	Silcrete / Silicification Overprint on Relict Profile
DHP	Hardpanisation Overprint on Transported Overburden	DSI	Silcrete / Silicification Overprint on Transported Overburden
RBR	Insitu bedrock	DLD	Siliceous duricrust developed on transported overburden
DLG	Lag on Transported Overburden	RLD	Siliceous duricrust over complete in situ profile
RLA	Lateritic duricrust over complete in situ profile	DSO	Soil developed on transported overburden
RLM	Lateritic mottled zone (bedrock textures apparent in mottles)	ESO	Soil zone developed on bedrock in erosional regime.
DLM	Mottling Overprint on Transported Overburden	RSO	Soil zone on relict profile
DLN	Nodular laterite on transported overburden	RUC	Ultramafic cap rock zone
RLN	Nodular laterite zone over complete in situ profile	UNC	Uncertain Regolith Zone
XLA	Non relict Ferruginous Material of uncertain origin	RLG	Unconsolidated lag material on residual land surface
DPG	Permian Glacial Cover	DTU	Undifferentiated Transported overburden
DLP	Pisolitic laterite on transported overburden		

Lithology Codes

Code	Description
AARN	Arkosic Arenite
ABL	Alkali Basalt
ADK	Adakite
AEOL	Aeolian Sand
AFG	Alkali Feldspar Granite
AFR	Alkali Feldspar Rhyolite
AFS	Alkali Feldspar Syenite
AFT	Alkali Feldspar Trachyte
AGB	Analcime gabbro = teschenite
AGL	Agglomerate
AGLT	Argillite
AGWK	Arkosic Greywacke
AIRK	Alkali Intrusive
ALB	Albitite
ALO	Alnoite
ALT	Altered Rock
ALUV	Alluvium
AMBR	Amber
AMP	Amphibolite
AMSC	Amphibole Schist
ANA	Analcimite
ANL	Andesite Latite
ANS	Anorthosite
ANT	Andesite
ANTH	Anthracite
APL	Aplite
ARKS	Arkose
ARNT	Arenite
ASH	Ash (<2mm)
ATCS	Amphibole-Talc-Chlorite Schist
AUGN	Augen gneiss
BAD	Basaltic Andesite
BDST	Boundstone
BHRK	Beach rock
BIF	Banded Iron Formation
BIOC	Biocarbonate
BIOM	Biomicrite
BIOS	Biosparite
BISC	Biotite Schist
BIT	Bitumen
BKQZ	Buck Quartz
BLD	Boulder
BLSH	Black Shale
BLT	Basalt
BMT	Benmoreite
BNBD	Bone bed
BON	Boninite
BSN	Basanite
BTA	Basaltic trachyandesite
BTH	Bomb, block tephra >64mm
BX	Breccia
CALR	Calc-arenite
CALU	Calcilutite
CASC	Chlorite Amphibole Schist
CAV	Cavity
CBIF	Carbonate Iron formation
CBL	Cobbles
CBRK	Carbonate Rock
CBT	Carbonatite
CCT	Calciocarbonatite
CGB	Clinopyroxene Gabbro
CHAR	Charnockite
CHLK	Chalk
CHRT	Chert
CHSE	Chlorite Sericite Altered Rock
CHT	Chromitite
CLAS	Clast
CLBX	Clast supported Breccia
CLCR	Calcrete
CLSC	Chlorite Schist
CLST	Claystone
CLY	Clay, mud
CMP	Camptonite
CNGL	Conglomerate
COAL	Coal
COLV	Colluvium
COM	Comendite
CORL	Coral
CPN	Clinopyroxene norite
CPT	Clinopyroxenite
CQNA	Coquina
CQSC	Chlorite Quartz Schist
CRNL	Carnieule
CSPY	Clay - Silica - pyrite altered rock
CSRK	Calc-Silicate Rock
CVN	Carbonate Vein

Code	Description
CYSA	Clayey Sand
DAC	Dacite
DLAR	Dolarenite
DLST	Dolomite/Dolostone
DLT	Dolerite
DMCT	Diamictite
DRT	Diorite
DSLT	Dolomitic Siltstone
DST	Dust
DTMT	Diatomite
DUN	Dunite
DUR	Duricrust
DYKE	Undifferentiated Dyke Rock
EGL	Eclogite
EVPT	Evaporite
FAN	Foid-bearing anorthosite
FAT	Foid-bearing alkali feldspar trachyte
FBG	Foid-bearing gabbro
FBM	Foid-bearing monzonite
FBT	Foid-bearing basalt
FCT	Ferrocarbonatite
FDI	Foid-diorite
FDL	Foidolite
FDR	Foid-bearing diorite
FDT	Foidite
FECY	Ferruginous Clay altered rock
FFS	Foid-bearing alkali feldspar syenite
FGB	Foid Gabbro
FGLT	Fanglomerate
FGS	Fergusite
FGWK	Feldspathic Greywacke
FIRK	Felsic Intrusive
FLNT	Flint
FLT	Foid-bearing latite
FLTZ	Fault Shear Zone
FLVA	Felsic Lava
FMB	Foid Monzogabbro
FMD	Foid-bearing monzodiorite
FMG	Foid-bearing monzogabbro
FMS	Foid-bearing monzosyenite
FMZ	Foid Monzodiorite
FNT	Fenite
FOS	Fossil
FPY	Feldspar Porphyry
FRCT	Ferricrete
FRK	Felsic Rock
FSN	Foid Syenite
FSY	Foid-bearing syenite
FTR	Foid-bearing trachyte
FVOL	Felsic Volcanic
GAB	Gabbro
GBN	Gabbronorite
GFL	Granofels
GLAS	Glass
GNS	Gneiss
GNST	Grainstone
GO	Gossan
GOUG	Gouge
GPCT	Gypcrete
GPST	Grapestone
GR	Granitoid
GRBX	Granite Breccia
GRD	Granodiorite
GRIT	Grit
GRN	Granulite
GRNS	Grains
GRP	Granophyre
GRSN	Greisen
GRT	Granite
GRU	Grus
GSD	Greensand
GSQ	Gossanous Quartz
GST	Greenstone
GUN	Guano
GVL	Gravel
GVS	Gravelly Sand
GYST	Geyserite
GYT	Gyttja
GYWK	Greywacke
HARD	Hardpan
HBT	Hornblendite
HDG	Hornblende gabbro
HFL	Hornfels
HPD	Hornblende Peridotite
HPX	Hornblende Pyroxenite
HWT	Hawaiite

Code	Description
HYA	Hyaloclastite
HYBX	Hyaloclastite Breccia
HZB	Harzburgite
IGM	Ignimbrite
IIRK	Intermediate Intrusive
IJL	Ijolite
ILVA	Intermediate Lava
IRFM	Iron Formation
IRK	Intermediate Rock
IRST	Ironstone
IVOL	Intermediate Volcanic
JASP	Jasper
JSPD	Jasperoid
JSPL	Jaspilite
KBL	Kimberlite
KOMB	Komatiitic Basalt
KTT	Komatiite
KZT	Kersantite
LAC	Lacustrine sediments
LACY	Lacustrine Clay
LAG	Lag
LARN	Lithic Arenite
LATT	Laterite
LAVA	Lava
LBG	Limburgite
LCTT	Leucitite
LGWK	Lithic Greywacke
LHZ	Lherzolite
LIG	Lignite
LITF	Lithic Tuff
LMST	Limestone
LOM	Loam
LOS	Loess
LPL	Lapilli (2-64mm)
LPR	Lamproite
LPST	Lapillistone
LPY	Lamprophyre
LTT	Latite
LTUF	Lapilli tuff
MARL	Marl
MBL	Marble
MCH	Meimechite
MCQ	Monchiquite
MCRT	Micrite
MCT	Magnesiocarbonatite
MDST	Mudstone
METB	Metabasalt
METF	Metafelsic
METM	Metamorphosed Mafic
METS	Metasediment
METU	Metamorposed Ultramafic
MGBS	High-Mg Basalt
MGST	Magnesite Rock
MIG	Migmatite
MIRK	Mafic Intrusive
MLG	Melteigite
MLL	Melilitolite
MLT	Melilitite
MLVA	Mafic Lava
MNRK	Manganese rock
MNTT	Minette
MOTZ	Mottled Zone
MPD	Melilite-bearing peridotite
MPT	Melilite-bearing pyroxenite
MQZ	Massive Quartz
MRK	Mafic Rock
MSCH	Mafic Schist
MSI	Massive Silica
MSK	Miaskite
MSS	Missourite
MSU	Massive sulphide
MSYN	Monzosyenite
MTBX	Matrix supported Breccia
MTIF	Magnetite Iron Formation
MTRK	Magnetite rock
MTS	Metasomatite
MTUF	Mafic Tuff
MTX	Matrix
MUD	Mud
MUG	Mugearite
MUV	Melilite-bearing ultramafic volcanic
MVOL	Mafic Volcanic
MYL	Mylonite
MZB	Monzogabbro
MZD	Monzodiorite
MZG	Monzogranite

Lithology Codes continued

Code	Description
MZT	Monzonite
NFOS	Nanofossil
NGB	Nepheline gabbro = theralite
NLL	Nephelinolite
NMD	Nepheline monzodiorite = essexite
NMG	Nepheline monzogabbro = essexite
NODL	Nodular Laterite
NPH	Nephelinite
NRT	Norite
NSR	No sample return
NSY	Nepheline syenite
NVLT	Novaculite
OBS	Obsidian
OCP	Olivine clinopyroxenite
ODT	Opx diorite = norite
OFG	Opx alkali feldspar granite
OFS	Opx alkali feldspar syenite
OGD	Opx granodiorite = opdalite
OGN	Olivine Gabbronorite
OGT	Opx granite = charnockite
OHP	Olivine hornblende pyroxenite
OHT	Olivine hornblendite
OMD	Opx monzodiorite = jotunite
OML	Olivine melilitolite
OMT	Olivine melilitite
OMZ	Opx monzonite = mangerite
OOP	Olivine orthopyroxenite
OOZ	Ooze
OPH	Olivine Pyroxene Hornblendite
OPHL	Ophiolite
OPT	Orthopyroxenite
OPX	Olivine Pyroxenite
ORE	Ore
OST	Opx syenite
OTT	Opx tonalite = enderbite
OWT	Olivine websterite
OXIF	Oxide Iron Formation
PBL	Pebbles
PBS	Phonolitic basanite
PBT	Picrobasalt
PCBX	Pyroclastic Breccia
PCLN	Porcellanite
PCT	Picrite
PEAT	Peat
PEG	Pegmatite
PELT	Pelite
PEP	Peperite
PER	Peridotite
PFD	Phonolitic foidite
PGN	Pyroxene hornblende gabbronorite
PHD	Plagioclase-bearing hornblendite
PHG	Pyroxene hornblende gabbro
PHP	Pyroxene hornblende peridotite
PHSP	Phosphorite
PHT	Pyroxene hornblendite
PHY	Porphyry
PHYL	Phyllite
PIST	Pisolitic Ironstone
PKR	Peralkaline rhyolite
PKST	Packstone
PLDZ	Pallid Zone
PLZ	Polzenite
PMBX	Pumice Breccia
PML	Pyroxene melilitolite
PNT	Phonolite
POM	Pyroxene olivine melilitolite
PPD	Pyroxene peridotite
PPX	Plagioclase-bearing pyroxenite
PRX	Pyroxenite
PSAM	Psammopelite
PSMT	Psammite
PTB	Potassic trachybasalt
PTR	Phonolitic tephrite
PTT	Pantellerite
PUM	Plagioclase bearing Ultramafic
QAL	Quartz Andesite Latite
QAN	Quartz Andesite
QARN	Quartz Arenite
QAS	Quartz alkali feldspar syenite
QAT	Quartz alkali feldspar trachyte
QBFS	Quartz Biotite Feldspar Schist
QBMS	Quartz Biotite Muscovite Schist
QBSC	Quartz-Biotite Schist
QBX	Quartz breccia
QCSC	Quartz Chlorite Schist
QFPY	Quartz feldspar porphyry

Code	Description
QFRK	Quartz-Feldspar rock
QFSC	Quartz-Feldspar-Sericite Schist
QGB	Quartz gabbro
QGWK	Quartz Wacke
QHBX	Quartz Hematite Breccia
QMD	Quartz monzodiorite
QMG	Quartz monzogabbro
QMRK	Quartz-Magnetite Rock
QMSC	Quartz-Muscovite Schist
QSCV	Quartz phyrric schistose volcanic
QSSC	Quartz Sericite Schist
QTE	Quartzolite
QTY	Quartz trachyte
QTZ	Quartz
QZA	Quartz anorthosite
QZD	Quartz Diorite
QZFS	Quartz Feldspar Alteration
QZG	Quartz-rich granitoid
QZL	Quartz latite
QZM	Quartz Monzonite
QZMI	Quartz Mica Alteration
QZPY	Quartz porphyry
QZS	Quartz syenite
QZT	Quartzite
QZVN	Quartz Vein
RDLT	Radiolarite
RHD	Rhyodacite
RHY	Rhyolite
ROCK	Rock
SACY	Sandy Clay
SAGV	Sandy Gravel
SALT	Sericite Quartz Altered Rock
SAN	Sannaite
SARK	Subarkose
SCHT	Schist
SCRE	Transported scree
SCSC	Sericite-Quartz-Chlorite Schist
SCY	Silty Clay
SDBX	Sedimentary Breccia
SDST	Sandstone
SDT	Sodalitite
SECY	Sericite - Clay altered rock
SED	Unclassified Sediment
SEPY	Sericite - Pyrite altered rock
SHK	Shonkinite
SHLE	Shale
SHT	Shoshonite
SI	Silica Altered Rock
SIAA	Silica-rich Advanced Argillic Altered Rock
SIAL	Silica - Alunite altered rock
SICY	Silica - clay Altered Rock
SINT	Sinter
SIPP	Silica - Pyrophyllite altered rock
SIPY	Silica - pyrite altered rock
SISE	Silica - Sericite altered rock
SKN	Skarn
SLA	Slate
SLAR	Sublith Arenite
SLCT	Silcrete
SLST	Siltstone
SLT	Silt
SMD	Sodalite monzodiorite
SND	Sand
SOIL	Soil
SPA	Silica - Pyrophyllite - Alunite altered rock
SPGT	Sparagmite
SPIL	Spilite
SPLT	Saprolite
SPPY	Silica - Pyrophyllite - Pyrite altered rock
SPRK	Saprock
SPT	Spessartite
SQSC	Sericite +/- Quartz Schist
SRP	Serpentinite
SSPY	Silica - Sericite - Pyrite altered rock
SSY	Sodalite syenite
SUIF	Sulphide Iron Formation
SURK	Sulphide-rich material
SYG	Syenogranite
SYN	Syenite
TAS	Talc Amphibole Schist
TASC	Talc Amphibole Chlorite Schist
TBDT	Turbidite
TBL	Tholeiitic Basalt
TCAS	Talc Chlorite Amphibole Schist
TCBS	Talc carbonate schist
TCLS	Talc chlorite schist

Code	Description
TCNG	Tuffaceous Conglomerate
TCSC	Talc Schist
TDJ	Trondhjemite
TFBX	Tuff Breccia
TFD	Tephritic foidite
TFT	Tuffite
TGWK	Tuffaceous Greywacke
TLL	Till
TLLD	Tilloid
TLLT	Tillite
TMST	Tuffaceous Mudstone
TNL	Tonalite
TORB	Torbanite
TOUR	Tourmalinite
TPH	Tephra
TPL	Tephritic phonolite
TPT	Tephrite
TRC	Trachyte
TRVN	Travertine
TSDS	Tuffaceous Sandstone
TSHL	Tuffaceous Shale
TSST	Tuffaceous Siltstone
TTL	Troctolite
TUF	Tuff
TYA	Trachyandesite
TYB	Trachybasalt
TYD	Trachydacite
UMRK	Ultramafic Rock
UMSC	Ultramafic Schist
URT	Urtite
UVOL	Ultramafic Volcanic
VBX	Volcanic Breccia
VC	Volcaniclastic Rock
VCNG	Volcanic Conglomerate
VEBX	Vein Breccia
VEIN	Unclassified Vein
VGT	Vogesite
VSI	Vuggy Silica altered rock
VTUF	Vitric Tuff
WAK	Wacke
WD	Wood
WEB	Websterite
WHL	Wehrlite
WRK	Weathered rock
XTUF	Crystal Tuff

Descriptor Codes

Code	Description	Code	Description	Code	Description	Code	Description
ABND	Abundant	COL	Colloform	GNS	Gneissic	NOR	Noritic
ABX	Auto Brecciated	COM	Common	GPT	Graphitic	OUT	Outcrop
ACI	Acicular	CON	Conchoidal Fracture	GRAN	Granitic	OCE	Ocelli
ADC	Adcumulate	COP	Copper oxide/carbonate minerals	GRC	Graphic	OCL	Orthocumulate
AE	Albite-epidote hornfels	COPR	Coprolite	GRNP	Granophyric	ON	Oncolitic
AEOL	Aeolian	COV	Convoluted	GRNU	Granulite grade	OO	Oolitic
AGAL	Algal	CP	Compact	GS	Greenschist facies	OPH	Ophitic
AGG	Agglomerate	CR	Crenulated	GSN	Gossanous	OPN	Open Framework
AL	Aluminous	CRH	Crushed	GTY	Gritty	OPQ	Opaque Minerals
ALKA	Alkaline	CRK	Crackled	GV	Gravelly	OPS	Opaline Silica
AM	Amorphous	CRN	Crystalline	HARD	Hard,abundant,competent chips	ORB	Orbicular
AMPG	Amphibolite grade	CRT	Carbonate Replacement Textures	HB	Hornblende hornfels	ORG	Organic
AMY	Amygdaloidal	CRU	Crustiform	HD	Hard	ORT	Ortho
ANA	Anastamosing	CRX	Crystal	HET	Heterolithic	OVN	Other Veins
ANG	Angular	CRY	Crystal casts	HGR	High-grade	PSO	Poorly sorted
APH	Aphanitic	CRZ	Crush zone	HK	High-K	PALE	Pale
APHY	Aphyric	CS	Coarse sand (0.5-1mm)	HM	Hematitic	PAR	Para
APL	Aplitic	CSIL	Calc silicate	HMG	High-Mg	PB	Pebble
ARE	Arenaceous	CSR	Sub rounded Clasts	HO	Horizontal stratification	PBX	Pseudobrecciated
ARK	Arkosic	CT	Contorted	HON	Honeycomb	PBY	Pebbly
ARM	Armoured mud balls	CTB	Brecciated Contact	HPL	Horizontal parallel laminae	PCR	Picro
ASHF	Ashfall	CTC	Chilled Margin	HX	Hummocky cross bedding	PE	Peloidal
ASM	Asymmetrical ripple marks	CTF	Flow Banded Margin	HYB	Hybrid	PEG	Pegmatitic
BA	Banded	CTG	Gradational Contact	IBD	Interbedded	PEL	Pelitic
BAS	Basic	CTL	Lower Contact	GNS	Gneissic	PELL	Pellets
BE	Birdseye	CTP	Sharp Contact	GPT	Graphitic	PERA	Peralkaline
BED	Bedded	CTS	Sheared Contact	GRAN	Granitic	PHC	Phosphatic
BIBD	Bidirectional Bedding	CTT	Transitional Contact	GRC	Graphic	PHE	Phenocrysts
BIO	Bioturbated	CTU	Upper Contact	GRNP	Granophyric	PIL	Pillowed
BLBD	Blanket bedding	CTZ	Contact zone	GRNU	Granulite grade	PIPE	Pipe
BLD	Bladed	CUMM	Cumulate	GS	Greenschist facies	PIT	Pitted
BLE	Bleached	CVN	Carbonate Veined	GSN	Gossanous	PLF	Pumice Lenticle Foliation
BLK	Blocky	CX	Cryptoexplosive	GTY	Gritty	PLH	High-level pluton
BLTC	Basaltic	CXL	Cryptocrystalline	GV	Gravelly	PLL	Low-level pluton
BM	Fine blocks + bombs; 32-256mm	CYC	Cyclic	HARD	Hard,abundant,competent chips	PLU	Pluton
BO	Boulder; >256mm	DC	Dessication Cracks	HB	Hornblende hornfels	PLY	Polymictic
BOMB	Coarse blocks + bombs; >256mm	DEF	Deformed	HD	Hard	POB	Porphyroblastic
BOT	Botryoidal	DIA	Diapiric	HET	Heterolithic	POD	Poddy
BOU	Boudinaged	DK	Dark	HGR	High-grade	POIK	Poikilitic
BOX	Boxworked	DMT	Dolomitic	HK	High-K	POOR	Poorly formed (anhedral)
BP	Ball-and-pillow	DMX	Dacite matrix	HM	Hematitic	POR	Porphyritic
BRK	Broken	DRS	Drusy	HMG	High-Mg	PORS	Porous
BSCH	Blueschist facies	DS	Drill Spoil	HO	Horizontal stratification	POWD	Powdery
BTM	Bituminous	DSD	Drainage Sediment	HON	Honeycomb	PP	Prenhite-pumpellyite
BX	Brecciated	DV	Devitrified	HPL	Horizontal parallel laminae	PPH	Pyroxene Phenocrysts
BXC	Collapse Breccia	DY	Dyke Rock	HX	Hummocky cross bedding	PRI	Prismatic
BXD	Pebble Dyke Breccia	EAR	Earthy	HYB	Hybrid	PS	Pseudomorph
BXF	Tectonic Fault Breccia	EC	Eclogite Grade	IBD	Interbedded	PSC	Psammitic
BXG	Gas Stream Breccia	EPC	Epiclastic	GNS	Gneissic	PTCH	Patchy, patches
BXH	Hydrothermal Breccia	EQ	Even grained (equigranular)	GPT	Graphitic	PUGY	Puggy
BXI	Intrusive Breccia	EU	Eutaxitic	GRAN	Granitic	PUM	Pumiceous
BXM	Milled Breccia	EXV	Extrusive	GRC	Graphic	PYC	Pyroclastic
BXP	Pyroclastic Breccia	FG	Fine grained,<1mm	GRNP	Granophyric	QBX	Quartz-matrix breccia
BXR	Shatter Breccia	FA	Faulted	GRNU	Granulite grade	QE	Quartz Eye
BXS	Subvolcanic Breccia	FASH	Fine ash; 1/16mm	GS	Greenschist facies	QF	Quartzo-feldspathic
BXV	Vent Breccia	FB	Flow Banded	GSN	Gossanous	QFG	Quartz Fragments
CG	Coarse grained; 5mm	FBN	Fine Banded	GTY	Gritty	QGU	Quartz matrix/gangue
CALC	Calcareous	FBX	Fine Brecciated	GV	Gravelly	QI	Quartz-intermediate
CALK	Calc alkaline	FD	Folded	HARD	Hard,abundant,competent chips	QMG	Multi-generation quartz veins
CAM	Calcareous Matrix/Gangue	FEL	Feldspathic	HB	Hornblende hornfels	QP	Quartz-poor
CAP	Caprock	FER	Ferruginous	HD	Hard	QPB	Quartz pebble
CAR	Carbonaceous	FGV	Fine gravel (2-6mm)	HET	Heterolithic	QPH	Quartz Phenocrysts
CASH	Coarse ash; 1/16mm	FI	Fissile	HGR	High-grade	QR	Quartz-rich
CAT	Cataclastic	FIA	Fiamme	HK	High-K	QSM	Quartz Pseudomorphs
CB	Cobble (64-256mm)	FLA	Flaser	HM	Hematitic	QVN	Quartz Veined
CBD	Cross Bedded	FLAG	Flaggy	HMG	High-Mg	QX	Quartz Crystal
CBN	Coarse Banded	FLO	Float	HO	Horizontal stratification	RAD	Radiating
CBX	Coarse Brecciated	FLS	Felsic	HON	Honeycomb	RDL	Radiolarian
CCO	Clast-concavity orientation	FM	Microfossils	HPL	Horizontal parallel laminae	REP	Replacement textures
CEM	Cemented	FMX	Ferruginous matrix	HX	Hummocky cross bedding	RES	Residual
CGV	Coarse gravel (20-60mm)	FO	Foliated	HYB	Hybrid	REW	Reworked
CGC	Conglomeratic	FOI	Feldspathoidal	IBD	Interbedded	RG	Reverse Bedded
CHB	Churned bedding	FOID	Foid-bearing	GNS	Gneissic	RHYC	Rhyolitic
CHEM	Chemical	FOLI	Intensley Foliated	GPT	Graphitic	RICH	Rich
CHL	Chalcedonic	FOM	Moderately Foliated	GRAN	Granitic	RIP	Ripple Marks
CHY	Cherty	FOS	Strongly Foliated	GRC	Graphic	RL	Rythmically layered
CIC	Cone in cone	FOW	Weakly Foliated	GRNP	Granophyric	RMX	Rockflour Matrix
CLA	Angular Clasts	FP	Plant fossils	GRNU	Granulite grade	RO	Rounded
CLAC	Clastic	FPH	Feldspar phenocrysts	GS	Greenschist facies	RR	Rare
CLBL	Clay balls	FRC	Fractured	GSN	Gossanous	RSNS	Resinous
CLC	Calcic	FRG	Fragmental	GTY	Gritty	RTRO	Retrograde
CLE	Cleaved	FRI	Friable	GV	Gravelly	RX	Recrystallised
CLN	Collenia	FS	Fine sand	HARD	Hard,abundant,competent chips	RXL	Ripple cross bedding
CLR	Rounded Clasts	FSS	Fossiliferous	HB	Hornblende hornfels	SUB	Subcrop
CLS	Closed Framework	FST	Flame Structures	HD	Hard	SA	Sub angular
CLSS	Clast supported	FT	Trace fossils	HET	Heterolithic	SAC	Saccharoidal
CLST	Clasts	FV	Fossil Vertebrates	HGR	High-grade	SAN	Sandy (0.062-2mm)
CLV	Cleavage	GBD	Graded Bedded	HK	High-K	SAR	Subaerial
CLY	Clay-rich	GEO	Geopetal	HM	Hematitic	SBX	Sedimentary Breccia
CM	Cement	GL	Granular	HMG	High-Mg	SC	Scree
CMB	Comb Textured	GLS	Glassy	HO	Horizontal stratification	SCF	Silica Flooding
CNS	Consolidated	GM	Groundmass	HON	Honeycomb	SCHS	Schistose
COC	Concretionary	GMX	Granular Matrix	HPL	Horizontal parallel laminae	SDC	Sodic

Descriptor Codes continued

Code	Description	Code	Description	Code	Description	Code	Description
SED	Sedimentary derived	SPK	Speckled	TROC	Troctolitic	VND	Veined
SER	Seriate	SPN	Spongy	TS	Trench Spoil	VOL	Volcanic
SGY	Sugary	SPT	Spotted	USO	Unsorted	VP	Very poorly sorted
SH	Sheared	SPX	Spinifex	UB	Ultrabasic	VTK	Very thick bedded
SHL	Shlieren	SR	Sub rounded	UM	Ultramafic	VTN	Very thin bedded
SHS	Strongly Sheared	SSD	Soft Sediment Slumps	UN	Unconsolidated	VU	Vuggy
SHW	Weakly Sheared	STM	Silty matrix	UND	Undifferentiated	VW	Very well sorted
SILI	Siliceous	STO	Stone	UNW	Unwelded	WSO	Well sorted
SILL	Sill	STRO	Stromatolitic	UO	Unknown Occurrence	WAX	Waxy
SKN	Skarn/calc silcate minerals	STV	Stockwork Veining	VA	Very angular	WB	Wavy Bedding
SL	Slickensided	STY	Stylolites	VAR	Variolitic	WEL	Welded
SLT	Silty	SUL	Sulphidic	VC	Very coarse grained	WF	Well formed
SLY	Slaty	TCY	Trachytic	VCC	Volcaniclastic	WR	Well rounded
SM	Submarine	TEN	Tension Gashes	VCOL	Varicoloured	XC	Xenocrystic
SMK	Smoky	TFC	Tuffaceous	VCS	Very coarse sand	XE	Xenolithic
SMX	Silica matrix	THL	Tholeiitic	VE	Vesicular	XL	Cross-laminated
SOFT	Soft,semi friable chips	TK	Thick bedded	VER	Vergence	ZCR	Zoned Crystals
SOP	Subophitic	TM	Termite Mound	VERM	Vermicular	ZEF	Zeolite Facies
SPA	Sparry	TN	Thinly Bedded	VF	Very fine grained		
SPCR	Specular	TPI	Tephri	VFS	Very fine sand		
SPH	Spherulitic	TRN	Translucent	VI	Vitric		

Alteration Type Codes

Code	Description	Code	Description	Code	Description	Code	Description
AA	Advanced Argillic alteration	EPI	Secondary epidote	PALG	Palagonitised	SIPY	SilicaPyrite Alteration
AD	Adularia alteration	FE	Iron alteration	PHYL	Phyllic alteration	SISE	Silica Sericite Alteration
AH	Anhydrite alteration	FECY	Ironclay alteration	POT	Potassic alteration	SPN	Sphene alteration
ALB	Albitic alteration	FEL	White feldspar alteration	PR	Propyllitic alteration	SRPT	Serpentinite alteration/serpentinised
ALT	Altered (undefined)	FU	Fuchsite alteration	PYP	Pyrophyllite alteration	SU	Saussurite alteration
AMP	Secondary Amphibole	GNT	Garnet alteration	PYR	Pyritic alteration	TA	Talc alteration
AR	Argillic alteration	GO	Goethite alteration	QZ	Quartz alt	TR	Tourmaline alteration
BI	Secondary biotite	GRSN	Greisenization	QZCB	Quartz-carbonate alteration	UL	Unaltered
BISI	Secondary biotite - Silica	HMA	Hematite Alteration	QZFS	Quartz-Feldspar Mixture	VSI	Vuggy Silica
CA	Carbonate alteration	IAR	Intermediate Argillic Alteration	RRA	Red rock alteration	ZEL	Zeolitic Alteration
CHSE	Chlorite Sericite Alteration	JA	Jarositic alteration	SE	Sericitic alteration		
CHSP	Chlorite - Sericite - Pyrite Alteration	JSP	Jaspilitic / Jasperoid alteration	SECH	Sericite - Chlorite Alteration		
CSIL	Calc silicate alteration	KA	Kaolinitic alteration	SEPY	Sericite Pyrite (Quartz) Alteration		
CLT	Chloritic alteration	KF	Secondary K-feldspar	SI	Silica alteration/silicified		
CPX	Clinopyroxene alt	LCH	Leaching	SIAA	Silica-rich Advanced Argillic Alteration		
CY	Clay Alteration	MGN	Magnetite alteration	SICHT	Silica - Chlorite Alteration		
DIOP	Diopside alteration	MM	Montmorillonite alteration	SICY	Silica Clay Alteration		

Alteration qualifier and Mineralisation style Codes

Code	Description	Code	Description	Code	Description	Code	Description
AG	Aggregates	FC	Fracture Controlled Alteration	OVER	Overprinting	SY	Stylolitic
BD	Bedded	FF	Fracture Filling/Coatings	PER	Pervasive Alteration	VC	Concordant Vein
BL	Blebs	FL	Flakes	RE	Replacement	VF	Vug filling
BN	Banded	INC	Increasing Alteration	RM	Remobilised	VN	Vein
BO	Boxworked	LA	Layered	RO	Rosettes	VS	Alteration Selvage to Veins
BX	Brecciated	MA	Massive	SK	Stockwork	VS	Selvage to Veins
CR	Clast replacement	MF	Matrix filling	SP	Speck	VX	Crosscutting Vein
DEC	Decreasing Alteration	MJ	Major Alteration	SR	Sinter		
DS	Disseminated	MN	Minor Alteration	ST	Stringer		
EA	Earthy	NE	Needles	SX	Skarn		

Alteration Intensity Codes

Code	Description
STG	Strong
MOD	Moderate
T	Trace
WE	Weak
VARY	Variable
I	Intense
MJR	Major
MNR	Minor

Mineral Codes

Code	Description	Code	Description	Code	Description	Code	Description
ACT	Actinolite	DSP	Diaspore	MNT	Montmorillonite	ST	Staurolite
AB	Albite	DIOP	Diopside	MS	Muscovite	STB	Stibnite
ALM	Almandine Garnet	DOL	Dolomite	NTN	Nontronite	SULP	Sulphide
ALSI	Aluminosilicate	ENG	Enargite	OL	Olivine	TLC	Talc
ALU	Alunite	EP	Epidote	OPL	Opal	TNR	Tenorite
AMPH	Amphibole	XP	Ex Pyrite	OPX	Orthopyroxene	TTH	Tetrahedrite-Tenantite
AND	Andalusite	FELD	Feldspar	ASOX	Oxidised Arsenopyrite	TIT	Titanite
ANH	Anhydrite	FL	Fluorite	CUOX	Oxidised Copper Minerals	TOZ	Topaz
ANK	Ankerite	GHN	Gahnite	PBOX	Oxidised Lead Minerals	TOUR	Tourmaline
ATH	Anthophyllite	GN	Galena	PYOX	Oxidised Pyrite	TE	Tremolite
AP	Apatite	GNT	Garnet	ZNOX	Oxidised Zinc Minerals	URN	Uraninite
APY	Arsenopyrite	GBS	Gibbsite	PN	Pentlandite	UROX	Uranium Oxide Mineral
AZ	Azurite	GLT	Glauconite	PHL	Phlogobite	VES	Vesuvianite
BRT	Barite	GT	Goethite	PCIL	Picro-ilmenite	VIO	Violarite
BRL	Beryl	AU	Gold	PL	Plagioclase	WO	Wollastonite
BT	Biotite	GR	Graphite	PBJ	Plumbojarosite	ZNW	Zinwaldite
BN	Bornite	GRU	Grunerite	PRH	Prehnite	ZRN	Zircon
CAL	Calcite	GP	Gypsum	PY	Pyrite		
CARB	Carbonate	HL	Halite	PYL	Pyrolusite		
CST	Cassiterite	HEM	Hematite	PRL	Pyrophyllite		
CER	Cerrusite	HBL	Hornblende	PYRX	Pyroxene		
CLC	Chalcedony	ILL	Illite	PO	Pyrrhotite		
CC	Chalcocite	ILM	Ilmenite	QZ	Quartz		
CCP	Chalcopyrite	FEOX	Iron Oxide	QZCB	Quartz-carbonate mixture		
CL	Chlorite	JAR	Jarosite	QZFS	Quartz-feldspar mixture		
CLD	Chloritoid	KFS	K-Feldspar	RDS	Rhodochrosite		
CHDI	Chrome Diopside	KLN	Kaolinite	ROS	Roscolite		
FCH	Chromian Muscovite	KY	Kyanite	RT	Rutile		
CHR	Chromite	LPD	Lepidolite	SCH	Scheelite		
CHS	Chrysocolla	LCX	Leucoxene	SCR	Scorodite		
CLAY	Clay	LMN	Limonite	SERC	Sericite		
CPX	Clinopyroxene	MGHM	Maghemite	SERP	Serpentine		
CLB	Columbite-Tantalite	MGS	Magnesite	SD	Siderite		
CU	Copper	MGT	Magnetite	SIL	Sillimanite		
CRD	Cordierite	MAL	Malachite	AG	Silver		
COR	Corundum	MNOX	Manganese Oxides	SMEC	Smectite		
CV	Covellite	MICA	Mica	SMN	Smithsonite		
CUM	Cummingtonite	MLL	Millerite	SP	Sphalerite		
CUP	Cuprite	MOL	Molybdenite	SPN	Spinel		
DVD	Davidite	MNZ	Monazite	STN	Stannite		

APPENDIX 4

Pontifex & Associates Pty. Ltd.

MINERALOGY - PETROLOGY • SECTION PREPARATION

MINERALOGICAL REPORT No. 7997
by Alan C. Purvis, PhD

July 31, 2000

TO :	Mr Andrew Price Normandy Exploration 27 Greenhill Road WAYVILLE SA 5034
YOUR REFERENCE :	Order No. NXA19697
MATERIAL :	Drill Core Samples
IDENTIFICATION :	PADD012 to 024
WORK REQUESTED :	Section preparation, petrographic/mineragraphic description and report with comments and interpretations as specified and to include photomicrographs.
SAMPLES & SECTIONS :	Returned to you with this report.
DIGITAL COPY :	Enclosed with hard copy of this report.

PONTIFEX & ASSOCIATES PTY. LTD.

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SUMMARY COMMENTS

Twenty-one core samples from an area between Mannum and Morgan are described in this report, using twenty normal thin sections and three polished thin sections. Two of the core-segment submitted for sectioning were made into two thin sections each, due to heterogeneity within the core-segment. A list of samples, with brief notes made at the core shed by Alan Purvis, and notes as supplied by Andrew Price, is given below. Thirty five photomicrographs are integrated with the individual descriptions.

A total of four samples of the 21 submitted are from holes PADD022 and PADD023 within EL2609, as detailed below:

***PADD022*: Brecciated material with blue mineral (tourmaline or vivianite?) passing into granitoid.**

1024904	PADD022, 190.8m	Brecciated zone with biotite-chlorite alteration and albite (bleaching)
1024905	PADD022, 197.7m	Quartz monzonite or granite

***PADD023*: Granitoid passing into metasediment with porphyroblasts and albitised zones.**

1024906	PADD023, 169.9m	Granodiorite
1024907	PADD023, 181.3m	Spotted metasediments (cordierite-andalusite)

LITHOLOGICAL GROUPS

This suite of samples represents a wide range of geological units, including:

1. Possible Kanmantoo Group metasediments (PADD018, 023);
2.
3. A highly altered, brecciated ultramafic hornfels (PADD022);
4.
5.
6. Possibly 'A'-type quartz monzonite, quartz syenite and granite (PADD015, 022, 023);
7.

These groups are discussed as follows.

Possible Kanmantoo Group metasediments

Two samples are metamorphosed calc-silicate-rich metasediments.

The second calc-silicate metasediment sample (PADD023, 181.3m) is a well-bedded metasediment that is very poor in quartz, with layers alternately rich in feldspars ± biotite, and in largely poikiloblastic tremolite and/or clinopyroxene (diopside). Both plagioclase and K-spar are present in a very fine-grained micromosaic, with one layer rich in K-spar. The other layers have plagioclase dominant over K-spar, however. Sphene and apatite occur as accessories.

Ultramafic hornfels (altered and silicified)

A brecciated ultramafic hornfels occurs in PADD022 at 190.2m. This has domains of microcrystalline clinopyroxene-carbonate hornfels and a strongly silicified hornfels that may have contained microcrystalline olivine as well as poikiloblastic tremolite. Interstitial areas rich in dark green, possibly Ni-rich septechlorite are abundant and are consistent with a former ultramafic rock. It is not clear whether this is part of one of the layered masses of the Black Hill suite or of separate origin.

Possible 'A'-type granitoids

Possible 'A' type granitoids occur in PADD015, PADD022 and PADD023. That in PADD022 is in contact with the ultramafic hornfels referred to above, whereas that in PADD023 passes down-hole into the layered calc-silicate (Kanmantoo Group) listed above. The sample from PADD015 is a hornblende quartz syenite with abundant sphene as well as apatite and zircon. That in PADD022 is a hornblende-biotite quartz monzonite, also with abundant sphene and zircon, possibly related to the biotite granite in PADD023, which has less abundant accessories, including relatively rare zircon. These are apparently hot, dry granitoids and have magnetite-rich zones that are probably magnetic highs.

1024904
PADD022, 190.8m

Breccia with fragments of microcrystalline clinopyroxene-carbonate hornfels and silicified possibly ultramafic hornfels with quartz after mesh-textured serpentine, tremolite and lamellae of opaque oxide, separated by masses of possibly nickel-rich septechlorite: cut by quartz veins and carbonate veins.

Field Note: *Brecciated zone with biotite/chlorite alteration + albite/bleaching.*

In hand-specimen there are pale massive domains and fragments and areas of dark blue-green mineral(s), all on a centimetre-scale. In thin section it can be seen that:

- One of the pale areas is a micromosaic of clinopyroxene grains with minor to abundant carbonate and rare chlorite. Very minor to rare tremolite also occurs locally in this aggregate, but the overall appearance is that of a fine-grained calc-silicate hornfels or metamorphosed ultramafic.
- Another, larger area is dominated by microcrystalline to microsparry quartz, locally with limonite and clays, in a texture similar that of mesh-textured serpentine. This area also contains abundant poikiloblastic tremolite grains to 2mm in diameter and lamellae of opaque oxide as seen in serpentinites. The texture suggests an altered ultramafic hornfels. There are also lenticular veins of sparry quartz, some of which contain rare barite and carbonate, that may have formed under broadly epithermal conditions.
- A large lens of decussate, essentially inclusion-free tremolite is present, with minor quartz and opaque oxide.
- The dark areas are dominated by a dark green phyllosilicate similar to a 7Å-chlorite that occurs in ultramafic rocks and usually has several wt-% Ni. The clay is inequigranular and occurs as flakes from 0.2 to 4mm long, elongate partly at a high angle to the cleavage, partly parallel to the cleavage. Tremolite, clinopyroxene, clays and quartz also occur in these areas.

There are also veins of sparry to spherulitic quartz and carbonate veins.

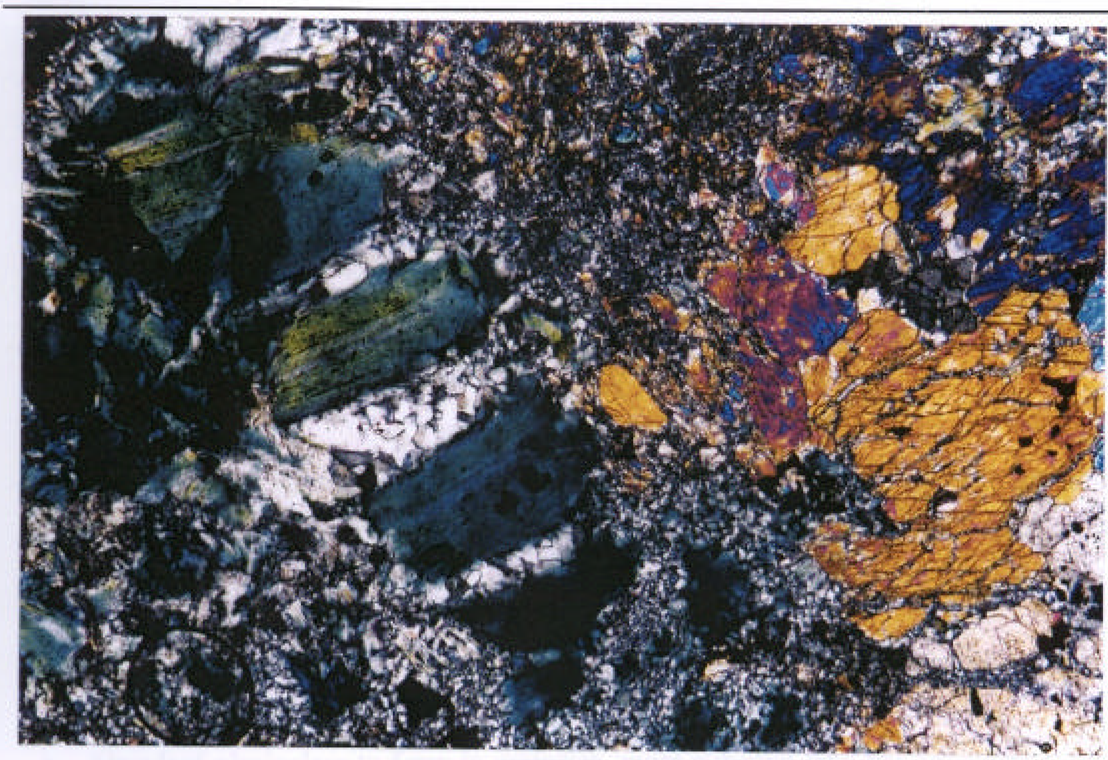

Fig 32 **1024904** 0.45 mm

TS. Xnic. A patch of (coloured) tremolite is shown on the right-hand side of this photo, with quartz and clays, and a patch of green, probably Ni-rich septechlorite is shown on the left-hand side, with secondary quartz.

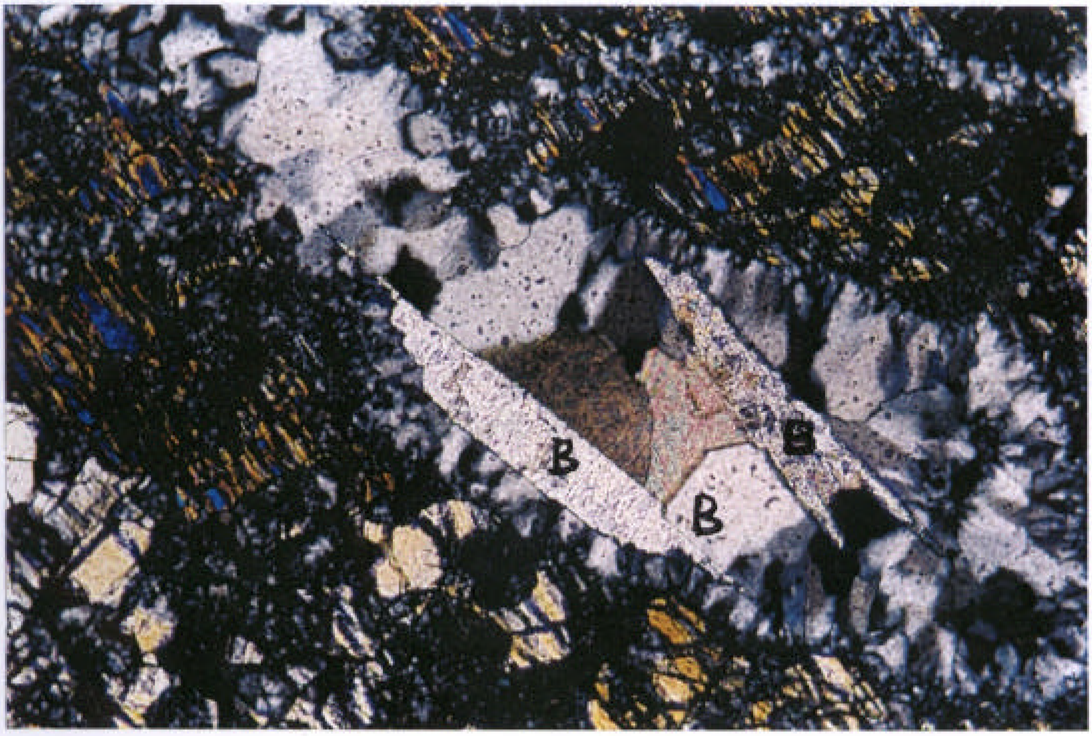

Fig 33 **1024904** 0.18 mm

TS. Xnic. A quartz vein cutting silicified tremolite-olivine (?) hornfels. Prismatic crystals of barite (B) and of carbonate occur in the quartz vein, which may be of epithermal origin.

1024905 **Massive biotite-hornblende quartz monzonite with abundant sphene, opaque oxide and zircon: post-Delamerian?**
PADD022, 197.7m

Field Note: *Quartz monzonite or granite.*

This is a medium to coarse-grained granitoid with pink probable K-spar and less abundant white plagioclase as well as minor disseminated dark minerals and minor quartz. In thin section it has:

• Abundant orthoclase to 6mm in grainsize, usually perthitic, with rare small inclusions of plagioclase.	40%
• Abundant plagioclase to 5mm in grainsize, more euhedral than the orthoclase, with small inclusions of quartz and biotite.	30-35%
• Relatively minor late magmatic quartz in patches to 10mm long, with individual grains mostly from 1 to 4mm long.	15%
• Decussate biotite from 0.5 to 3mm in grainsize, usually in aggregates with sphene and opaque oxide, rarely altered to chlorite.	5%
• Unusually abundant sphene, to 1.5mm in grainsize.	3%
• Rare pale green hornblende, to 1mm in grainsize.	3%
• Disseminated opaque oxide, with accessory apatite and zircon crystals to 0.25mm long. Some of the opaque oxide has rims of sphene and there is rare altered possible allanite.	1-2%

The visually estimated mineralogy indicates a quartz monzonite, probably a post-Delamerian granitoid. The altered ultramafic hornfels is probably in the aureole of this intrusion.

1024906
PADD023, 169.9m

Biotite granite (syenogranite) with rare zircon, possibly related to the quartz monzonite in the previous sample.

Field Note: *Granodiorite.*

This seems to be a more leucocratic granitoid, compared with the previous sample, with feldspars aligned at a high angle to the core axis and more abundant quartz. In thin section it has:

- Abundant perthitic orthoclase to 6mm long, weakly aligned in a flow-foliation, with inclusions of plagioclase and intergranular possibly exsolved plagioclase partly granular in habit. — 55%
- Relatively minor plagioclase, to 4mm in grainsize, locally altered to sericite, rarely with leached zones. Some of the finer-grained plagioclase may have been exsolved from orthoclase, and some has optically continuous overgrowths of apparently exsolved albite, derived from adjacent orthoclase. — 20%
- Interstitial quartz, to 4mm in grainsize, is more abundant than in the previous sample. — 20%
- Biotite occurs as flakes 0.2 to 4mm long. The larger flakes are weakly aligned in the flow foliation. Alteration to chlorite is rare. — 4%
- Opaque oxide, sphene, clouded apatite and zircon crystals to 0.15mm long occur bur are rare. — Tr

This seems to be a quartz-poor granite (syenogranite) or quartz syenite, but may be related to the quartz monzonite in the previous sample.

1024907
PADD023, 181.3m

Layered metasediment with K-spar and plagioclase-rich layers, also biotite and tremolite-clinopyroxene-rich layers, with disseminated sphene and apatite.

Field Note: *Spotted metapelite with possible cordierite or andalusite.*

This sample has a millimetre to centimetre scale compositional layering with biotite-rich lamellae and pale lamellae, some of which contain pale spots as referred to in your notes. The offcut was stained with HF and sodium cobaltinitrite followed by barium chloride-azorubin SF staining. This staining revealed a centimetre-thick layer with K-spar > plagioclase, as well as abundant plagioclase in the other layers, as well as minor (5-15%) K-spar, but only very minor (<5%) quartz.

In thin section there are layers with 5-15% decussate fine-grained biotite in a micromosaic of plagioclase and/or K-spar, with very minor quartz, and layers with 5-55% poikiloblastic tremolite and/or clinopyroxene, also with plagioclase ± K-spar ± quartz. The micromosaic is mostly from 0.05 to 0.2mm in grainsize.

The K-spar-rich layer is mostly biotite-rich but a clinopyroxene-rich layer occurs adjacent to it. Rarely, there is tremolite that is prismatic rather than poikiloblastic, but all of the clinopyroxene in poikiloblastic and rich in small inclusions. There are also rare layers with single crystal quartz grains to 0.5mm in diameter, sparsely disseminated through a more feldspathic host. Disseminated microcrystalline sphene is common and there are rounded apatite grains about 0.05mm in diameter.

This seems to represent a metamorphosed feldspathic-calcareous sediment, possibly a sandstone if the disseminated quartz has retained its original grainsize.

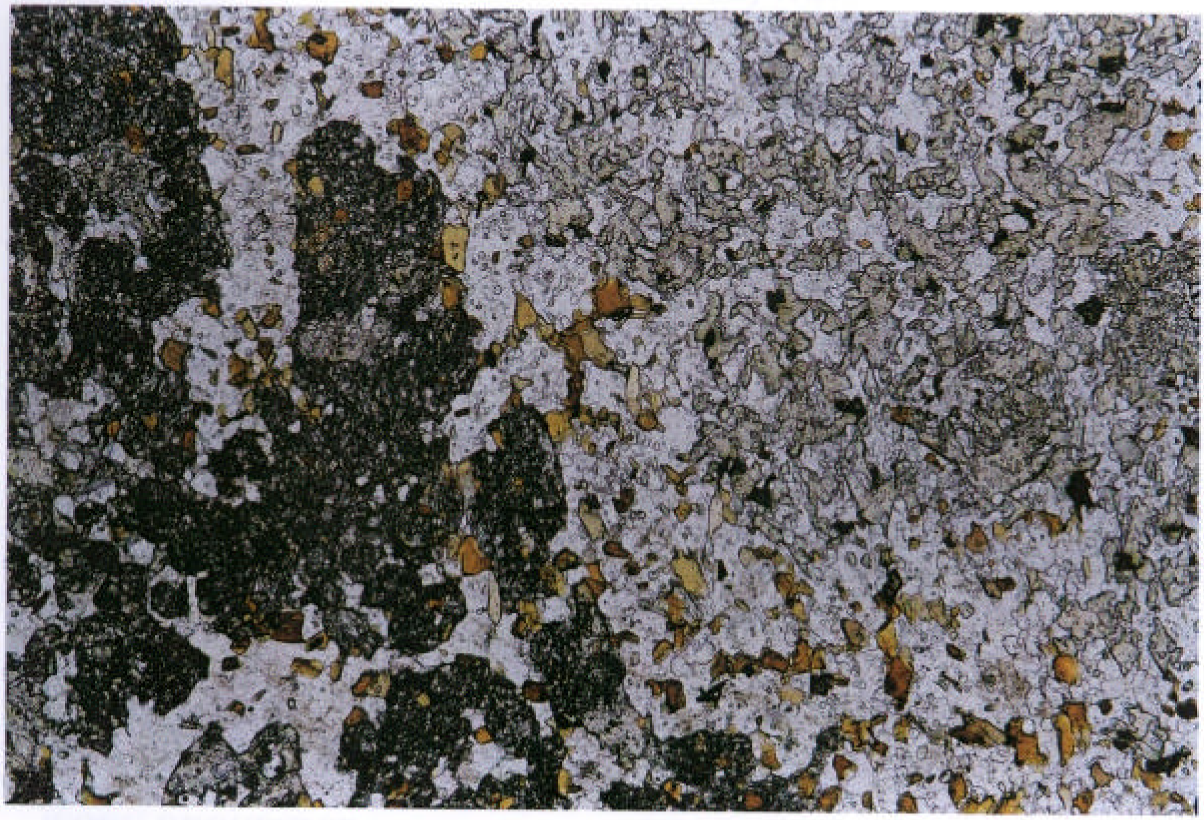

Fig 34 **1024907** **0.18 mm**

TS. PPL. Banded metasediment with layers of pale amphibole-feldspar (right-hand side), darker biotite-feldspar and clinopyroxene-feldspar-biotite (left-hand side).

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FINAL REPORT ON EXPLORATION ACTIVITIES FOR

EXPLORATION LICENCES 2608, 2609, 2610, 2611 and 2614

PADTHAWAY PROJECT

FOR THE PERIOD 16/06/1999 TO 24/11/2000

OLARY 1:250,000 SHEET SI-54-02
BURRA 1:250,000 SHEET SI-54-05
CHOWILLA 1:250,000 SHEET SI-54-06
ADELAIDE 1:250,000 SHEET SI-54-09
RENMARK 1:250,000 SHEET SI-54-10

PRIMARY INDUSTRIES & RESOURCES SA
19 FEB 2001
MINERAL RESOURCES

VOLUME 2 OF 2

Commodities: Gold, Copper

Author: AT Price

Date: January 2001

Accepted by: Andy Price

Distribution:
- ■ Department of Primary Industries and Resources
- □ Normandy Gold Exploration Pty Ltd - Adelaide

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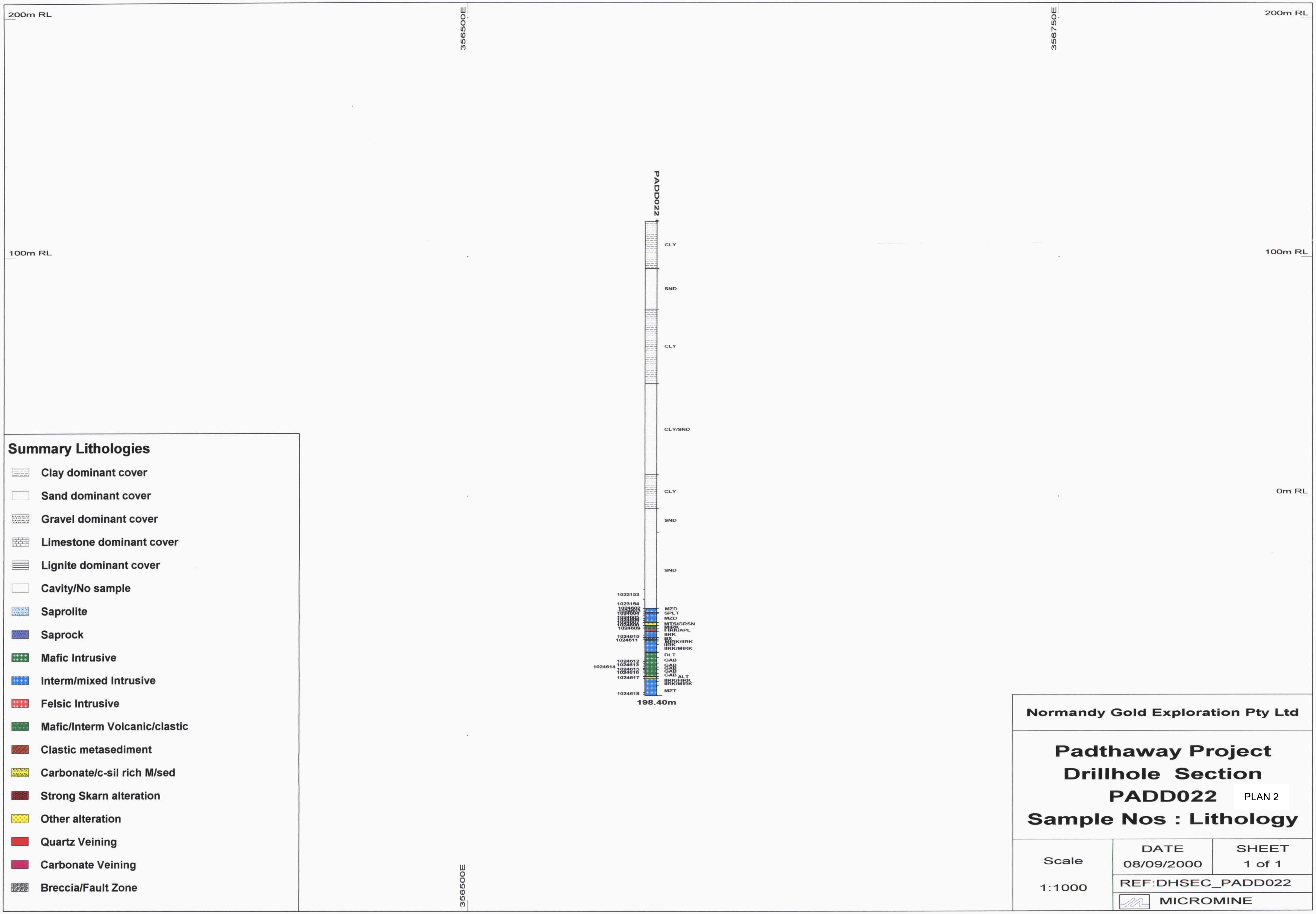
Report No. 27950

PIRSA
R2001/00109
02211689

340000 mE
350000 mE
360000 mE
370000 mE
380000 mE
6310000 mN
6300000 mN
6290000 mN
6280000 mN
6270000 mN
6260000 mN
6250000 mN
AC Traverse 2
AC Traverse 3
AC Traverse 4
EL2608
PADD034
PAAC027
EL2609
PADD036
PADD035
PADD023
PADD022
Normandy Exploration
Padthaway Project
ELs 2608 + 2609
Drillholes on AMAG
PLAN 1
Date:8/9/2000
Author: ATP
Office: Adelaide
Drawing:
Scale: 1:100000
Projection: AMG Zone 54 (AGD 66)
0
2.5
5
kilometres



Summary Lithologies

- Clay dominant cover
- Sand dominant cover
- Gravel dominant cover
- Limestone dominant cover
- Lignite dominant cover
- Cavity/No sample
- Saprolite
- Saprock
- Mafic Intrusive
- Interm/mixed Intrusive
- Felsic Intrusive
- Mafic/Interm Volcanic/clastic
- Clastic metasediment
- Carbonate/c-sil rich M/sed
- Strong Skarn alteration
- Other alteration
- Quartz Veining
- Carbonate Veining
- Breccia/Fault Zone

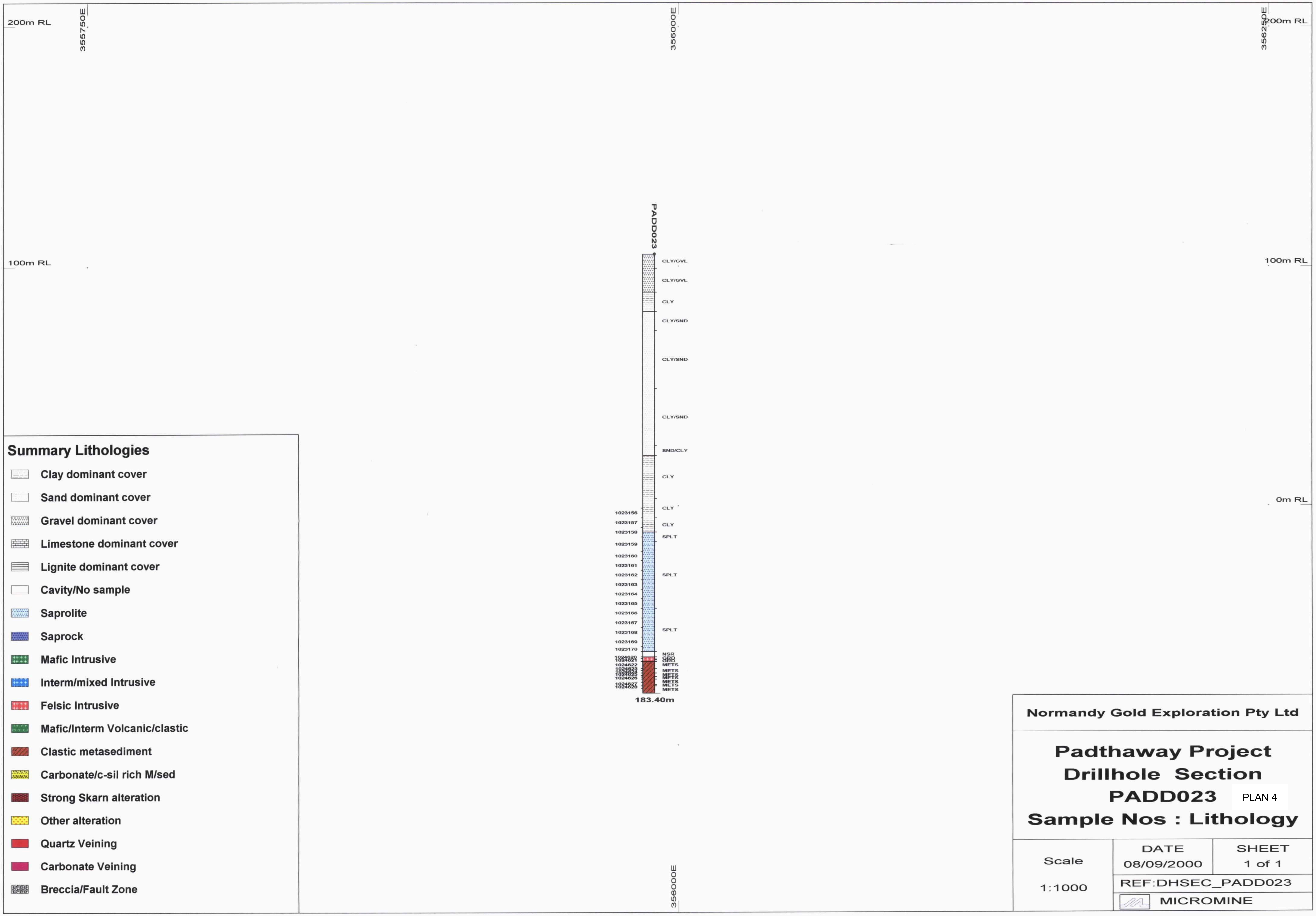
Normandy Gold Exploration Pty Ltd

Padthaway Project
Drillhole Section
PADD022

PLAN 2

Sample Nos : Lithology

Scale	DATE	SHEET
	08/09/2000	1 of 1
1:1000	REF:DHSEC_PADD022	
	MICROMINE	



Summary Lithologies

- Clay dominant cover
- Sand dominant cover
- Gravel dominant cover
- Limestone dominant cover
- Lignite dominant cover
- Cavity/No sample
- Saprolite
- Saprock
- Mafic Intrusive
- Interm/mixed Intrusive
- Felsic Intrusive
- Mafic/Interm Volcanic/clastic
- Clastic metasediment
- Carbonate/c-sil rich M/sed
- Strong Skarn alteration
- Other alteration
- Quartz Veining
- Carbonate Veining
- Breccia/Fault Zone

Normandy Gold Exploration Pty Ltd

Padthaway Project
Drillhole Section
PADD023
PLAN 4
Sample Nos : Lithology

Scale	DATE	SHEET
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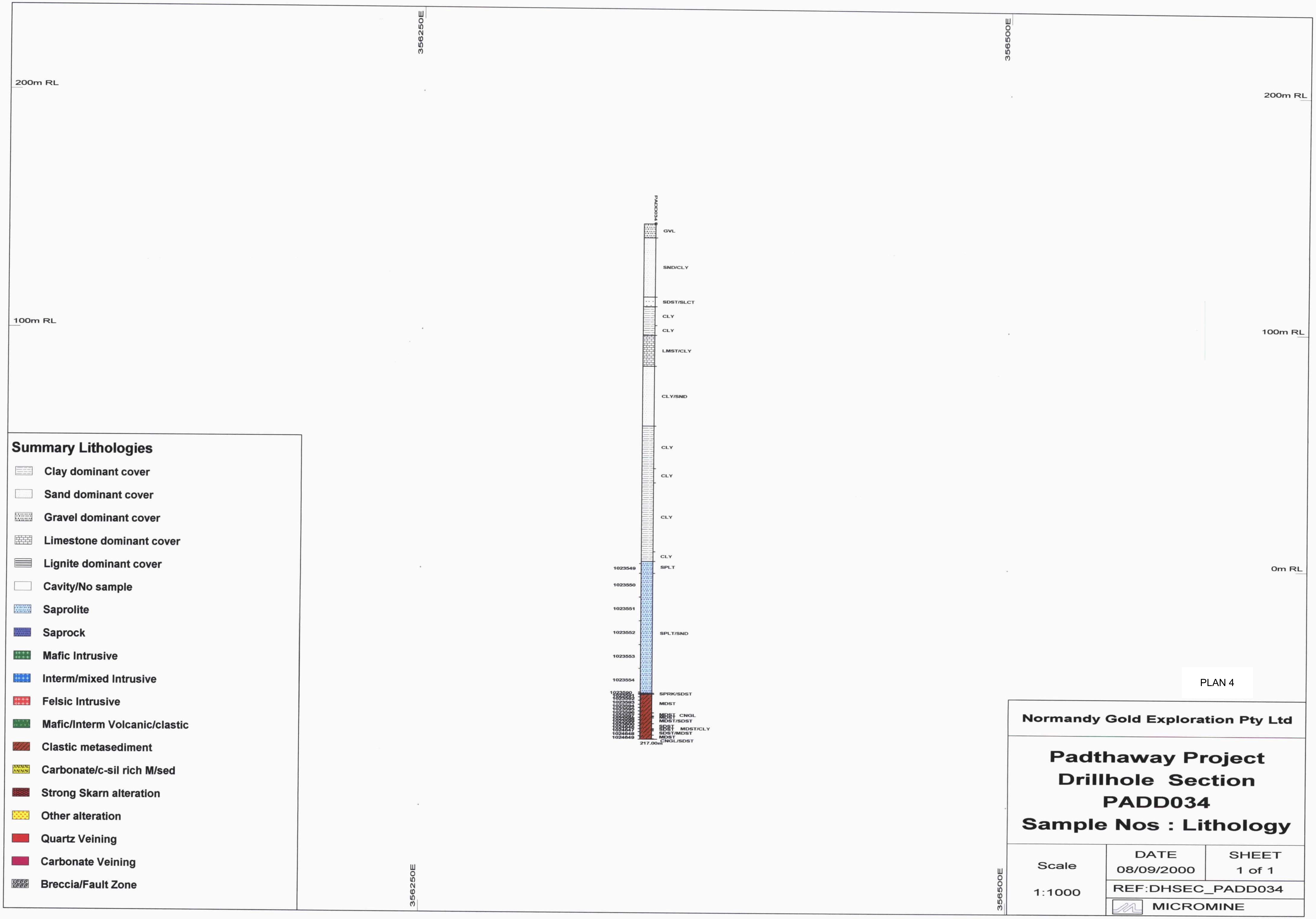
	REF:DHSEC_PADD023	
	MICROMINE	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356500E
200m RL
200m RL
100m RL
100m RL
0m RL
PADD034
GVL
SND/CLY
SDST/SLCT
CLY
CLY
LMST/CLY
CLY/SND
CLY
CLY
CLY
CLY
SPLT
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1023552
SPLT/SND
1023553
1023554
1023590
SPRK/SDST
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MDST
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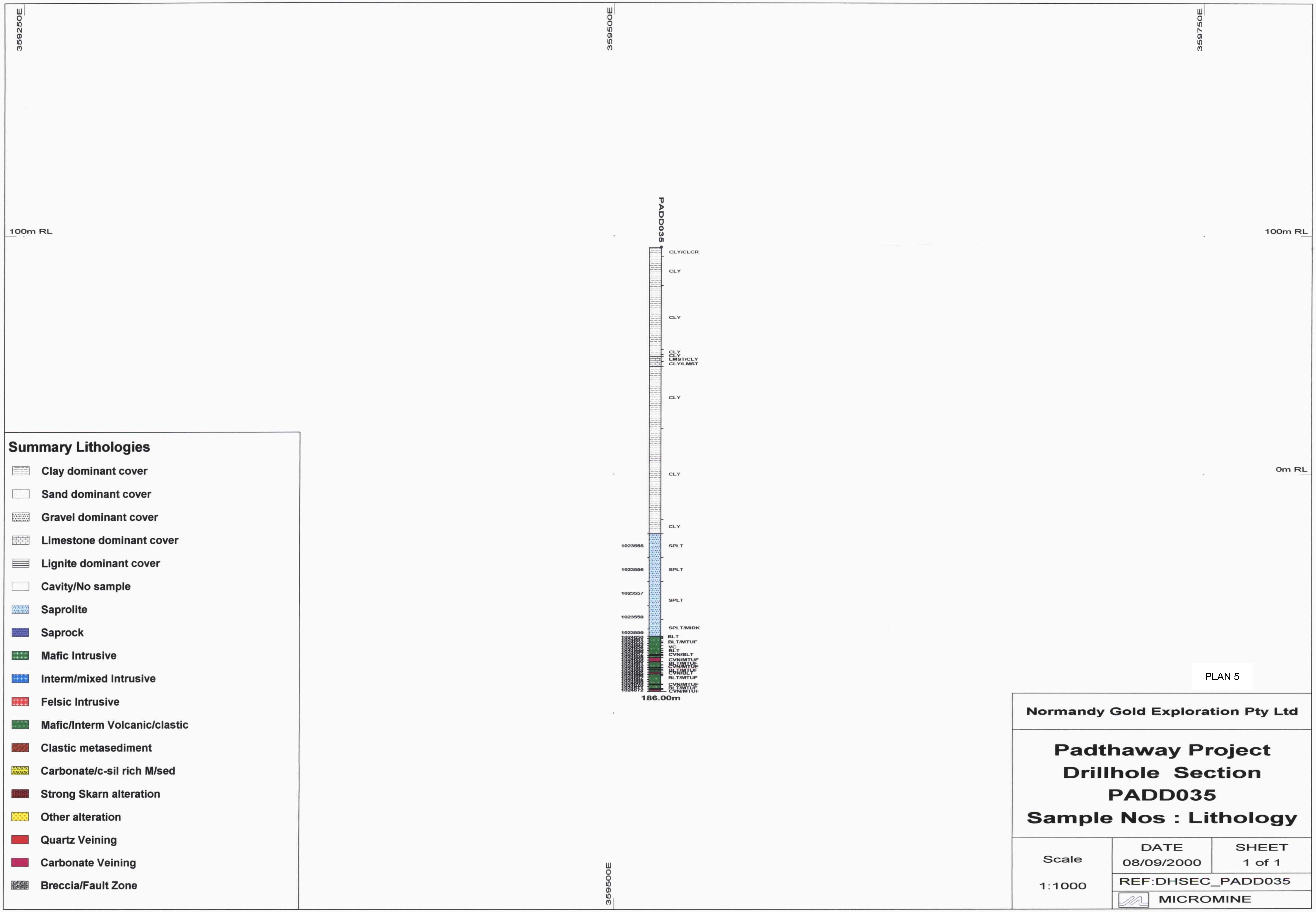
1023595
1023596
MDST CNGL
MDST
MDST/SDST
1023600
SDST
SDST MDST/CLY
1024647
1024648
SDST/MDST
1024649
MDST
CNGL/SDST
217.00m
Summary Lithologies
Clay dominant cover
Sand dominant cover
Gravel dominant cover
Limestone dominant cover
Lignite dominant cover
Cavity/No sample
Saprolite
Saprock
Mafic Intrusive
Interm/mixed Intrusive
Felsic Intrusive
Mafic/Interm Volcanic/clastic
Clastic metasediment
Carbonate/c-sil rich M/sed
Strong Skarn alteration
Other alteration
Quartz Veining
Carbonate Veining
Breccia/Fault Zone
356250E
356500E
PLAN 4
Normandy Gold Exploration Pty Ltd
Padthaway Project
Drillhole Section
PADD034
Sample Nos : Lithology
Scale
1:1000
DATE
08/09/2000
SHEET
1 of 1
REF:DHSEC_PADD034
MICROMINE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359500E
359750E
PADD035
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100m RL
0m RL
CLY/CLCR
CLY
CLY
CLY
CLY
LMST/CLY
CLY/LMST
CLY
CLY
CLY
1023555
SPLT
1023556
SPLT
1023557
SPLT
1023558
SPLT/MIRK
1023559
BLT
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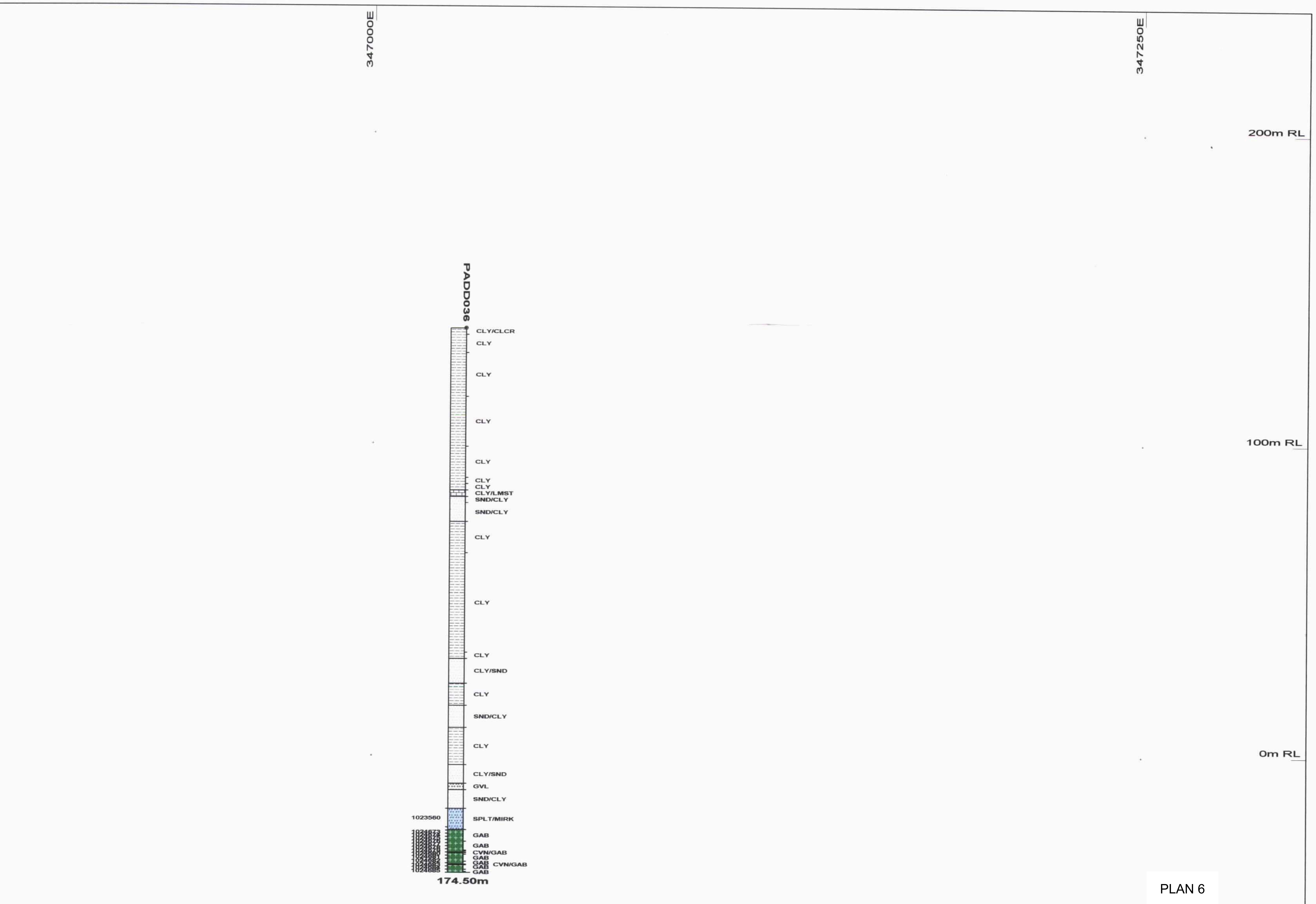
CVN/MTUF
BLT/MTUF
BLT/MTUF
CVN/MTUF
BLT/MTUF
CVN/MTUF
186.00m
Summary Lithologies
Clay dominant cover
Sand dominant cover
Gravel dominant cover
Limestone dominant cover
Lignite dominant cover
Cavity/No sample
Saprolite
Saprock
Mafic Intrusive
Interm/mixed Intrusive
Felsic Intrusive
Mafic/Interm Volcanic/clastic
Clastic metasediment
Carbonate/c-sil rich M/sed
Strong Skarn alteration
Other alteration
Quartz Veining
Carbonate Veining
Breccia/Fault Zone
359500E
PLAN 5
Normandy Gold Exploration Pty Ltd
Padthaway Project
Drillhole Section
PADD035
Sample Nos : Lithology
Scale
1:1000
DATE
08/09/2000
SHEET
1 of 1
REF:DHSEC_PADD035
MICROMINE



Summary Lithologies

- Clay dominant cover
- Sand dominant cover
- Gravel dominant cover
- Limestone dominant cover
- Lignite dominant cover
- Cavity/No sample
- Saprolite
- Saprock
- Mafic Intrusive
- Interm/mixed Intrusive
- Felsic Intrusive
- Mafic/Interm Volcanic/clastic
- Clastic metasediment
- Carbonate/c-sil rich M/sed
- Strong Skarn alteration
- Other alteration
- Quartz Veining
- Carbonate Veining
- Breccia/Fault Zone

PLAN 6

Normandy Gold Exploration Pty Ltd		
Padthaway Project Drillhole Section PADD036 Sample Nos : Lithology		
Scale	DATE 08/09/2000	SHEET 1 of 1
1:1000	REF:DHSEC_PADD036	
	MICROMINE	

PLAN 7

Summary Lithologies

- Clay dominant cover
- Sand dominant cover
- Gravel dominant cover
- Limestone dominant cover
- Lignite dominant cover
- Cavity/No sample
- Saprolite
- Saprock
- Mafic Intrusive
- Interm/mixed Intrusive
- Felsic Intrusive
- Mafic/Interm Volcanic/clastic
- Clastic metasediment
- Carbonate/c-sil rich M/sed
- Strong Skarn alteration
- Other alteration
- Quartz Veining
- Carbonate Veining
- Breccia/Fault Zone

Normandy Gold Exploration Pty Ltd

Padthaway Project
Drillhole Plan + Section
AC Traverse 2 Looking NW
Sample Nos : Lithology

Scale	DATE	SHEET
1:1000	08/09/2000	1 of 1
	REF:DHSEC_AC_TRAV2	
	MICROMINE	

Summary Lithologies

Clay dominant cover	Saprolite	Strong Skarn alteration
Sand dominant cover	Saprock	Other alteration
Gravel dominant cover	Mafic Intrusive	Quartz Veining
Limestone dominant cover	Interm/mixed Intrusive	Carbonate Veining
Lignite dominant cover	Felsic Intrusive	Breccia/Fault Zone
Cavity/No sample	Mafic/Interm Volcanic/clastic	
	Clastic metasediment	
	Carbonate/c-sil rich M/sed	

PLAN 8

Normandy Gold Exploration Pty Ltd

Padthaway Project
Drillhole Plan + Section
AC Traverse 3 Looking NW
Sample Nos : Lithology

Scale	DATE	SHEET
	08/09/2000	1 of 1
1:1000	REF:DHSEC_AC_TRAV3	
	MICROMINE	

Summary Lithologies

Clay dominant cover	Saprolite	Strong Skarn alteration
Sand dominant cover	Saprock	Other alteration
Gravel dominant cover	Mafic Intrusive	Quartz Veining
Limestone dominant cover	Interm/mixed Intrusive	Carbonate Veining
Lignite dominant cover	Felsic Intrusive	Breccia/Fault Zone
Cavity/No sample	Mafic/Interm Volcanic/clastic	
	Clastic metasediment	
	Carbonate/c-sil rich M/sed	

PLAN 9

Normandy Gold Exploration Pty Ltd

Padthaway Project
Drillhole Plan + Section
AC Traverse 4 Looking NE
Sample Nos : Lithology

Scale	DATE	SHEET
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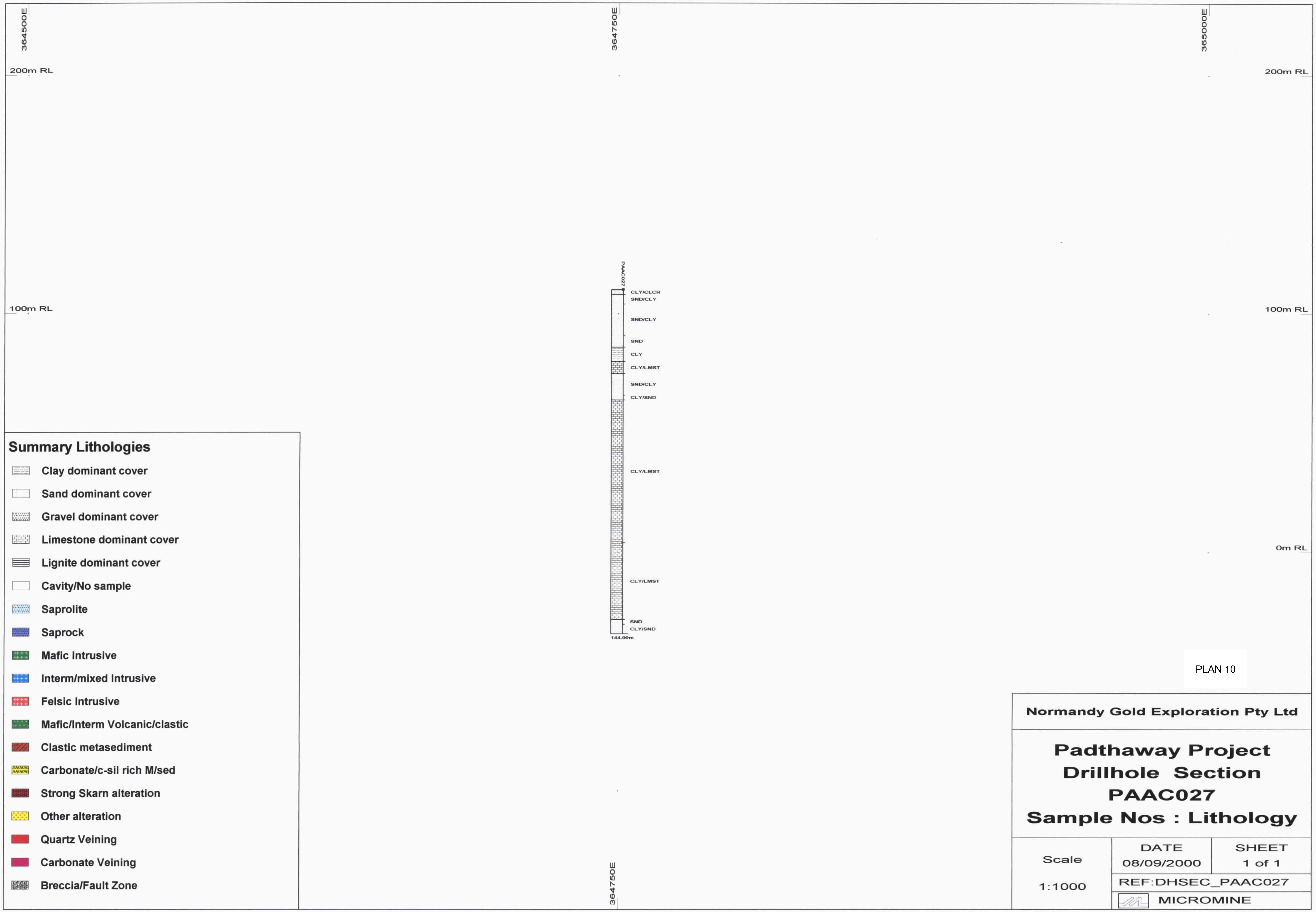
1:1000	REF:DHSEC_AC_TRAV4	
	MICROMINE	



Summary Lithologies

- Clay dominant cover
- Sand dominant cover
- Gravel dominant cover
- Limestone dominant cover
- Lignite dominant cover
- Cavity/No sample
- Saprolite
- Saprock
- Mafic Intrusive
- Interm/mixed Intrusive
- Felsic Intrusive
- Mafic/Interm Volcanic/clastic
- Clastic metasediment
- Carbonate/c-sil rich M/sed
- Strong Skarn alteration
- Other alteration
- Quartz Veining
- Carbonate Veining
- Breccia/Fault Zone

PLAN 10

Normandy Gold Exploration Pty Ltd

Padthaway Project
Drillhole Section
PAAC027
Sample Nos : Lithology

Scale	DATE	SHEET
	08/09/2000	1 of 1
1:1000	REF:DHSEC_PAAC027	
	MICROMINE	