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Department of Sustainability and Environment

Victorian Aquifer Framework

Updates for Seamless Mapping of Aquifer Surfaces

May 2012

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1. Background to the Victorian Aquifer Framework

1.1 The development of the original framework

The Victorian Aquifer Framework (VAF) provides a common understanding and allows for a consistent approach to the definition of aquifers and aquitards throughout Victoria. It is critical to the continual improvement of the sustainable management of groundwater resources.

The original documentation of the framework is provided in SKM (2009a and 2009b).

The VAF was developed in two parts as described below and shown in Figure 1.

- Southern Victorian Framework – developed as part of the Southern Victorian Hydrogeological Mapping project for Southern Rural Water (SKM and GHD, 2009)
- Northern Victorian Framework – developed for the Department of Sustainability and Environment (SKM, 2009a), which applies to north of the Great Divide or the Murray Basin 'half' of the State of Victoria.

The two component frameworks were added together to form a Victorian Aquifer Framework (SKM, 2009a and SKM, 2009b and 2011). The VAF has subsequently been amended throughout the course of the current Development of State Wide 3D Aquifer Surfaces project being completed by GHD & AWE for DSE. Figure 1 also presents the general basin boundaries used throughout the 3D Surfaces project.

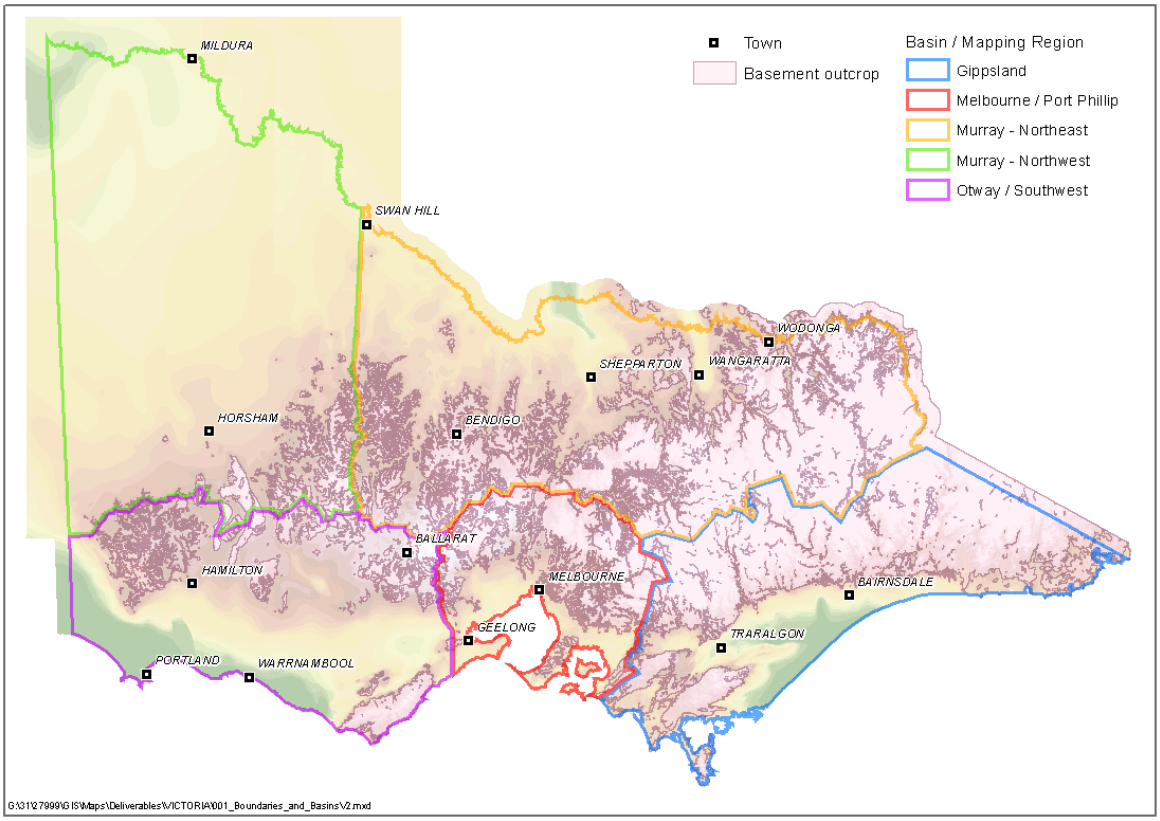


Figure 1: VAF Southern and Northern Divide and 3D Surfaces Basin Boundaries

1.2 Structure of the VAF

The VAF uses a three tiered approach that defines aquifers and aquitards on the basis of their constituent geological components. The definitions of the three tiers are provided below.

1.2.1 Geological Units (GU):

These are the fundamental rock units (typically groups, formations and their constituent members) that have been identified and named in geological investigations across the state, including regional mapping and basin studies programs.

Geological units have been described in the geological literature and on published geological and hydrogeological maps. Details of the lithology and stratigraphic and structural relationships of most of the GUs in the VAF are provided in the various editions of the Geology of Victoria (Douglas and Ferguson (1976 and 1987) and Birch, (2003)). Detailed references to original definitions and descriptions are also available in the Australian Stratigraphic Nomenclature Code (Geoscience Australia) which provides the currency of the name of each GU.

The stratigraphy that defines the GUs is based on relative geological age and stratigraphic relationships. It is a time based system. In applying the GU approach to defining aquifers and aquitards, the inter-leaving of zones of different geological units needs to be recognised (e.g. in the Murray Basin at the margins of the Duddo Limestone (GU 10110) and adjacent clays of the Ettrick Marl (GU 10156) and Geera Clay (GU 10143)), as this generates a contrast of lithology and therefore aquifer characteristics at the same levels of the geological profile.

Each GU is assigned a sequential 5 digit number starting with 10000. The original VAF numbered GUs in order from youngest (GU 10000) to oldest (GU 10688) however with the addition of subsequent GUs to the framework of varying ages the numbering system now simply represents a unique GU code.

1.2.2 Hydrogeological Unit (HGU):

HGUs comprise one or more geological units of similar lithology and/or provenance in similar geographic areas and are therefore likely to have similar hydrogeological characteristics and behaviour.

As noted above, because of the interleaving of zones of different geological units, the same GU can be present at several levels of the geological profile at any location. HGUs have greatest value in a nomenclature and management scheme where they are mappable and contiguous. Thus in defining the HGUs in such cases, the lateral and vertical relationships of adjacent HGUs need to be taken in to account. As a result, and in order to allow mappable and contiguous aquifers, some geological units comprise a number of *informally* defined subunits that have been identified as separate HGUs.

HGUs are identified in local areas and named according to the constituent geological units. They may be equivalent in age to a number of other HGUs within a basin or across basin boundaries.

Each HGU has a 4 digit number starting with 1000, and as per the GUs, this code simply represents a unique HGU identifier.

1.2.3 Aquifer (AQ):

An “Aquifer” as applied in the VAF (SKM 2009a) comprises a collection of HGUs which, where saturated, comprise one broad hydrogeological group.

An “Aquifer” may comprise individual (hydrogeological) units displaying a range of aquifer properties, but collectively it is a regionally contiguous mappable unit that behaves as one aquifer or aquitard (e.g. a single regional potentiometric surface can be traced across the unit). The “Aquifers” defined have a state-wide extent however the HGUs that make up the “Aquifer” are not necessarily hydraulically connected and not necessarily saturated.

The aquifers have a unique 3 digit number starting with 100 and fifteen (15) have been named in the VAF as presented in Table 1. The use of the terms “Aquifer” or “Aquitard” in the names presented identifies whether the units predominantly act as an aquifer or aquitard, however this does not imply that the unit will always act as such.

Figure 2 presents an example of the way in which the three-tier framework functions.

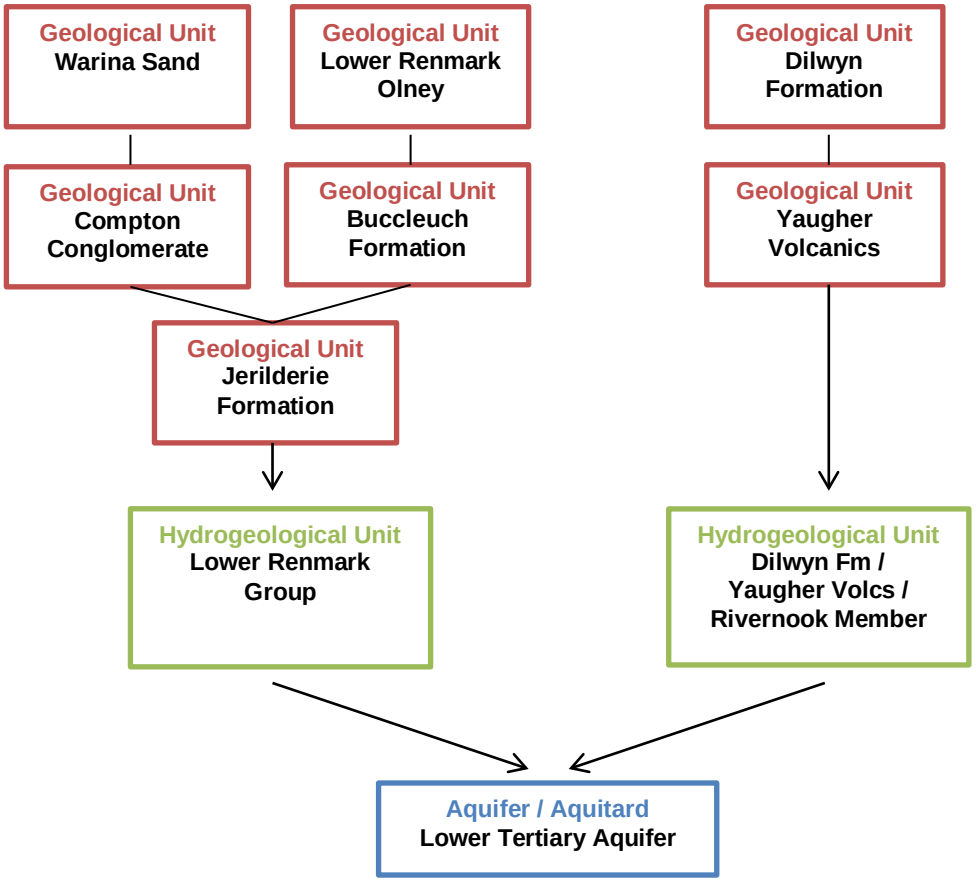


Figure 2: VAF structure example

The updated VAF is provided as Appendix A. This contains full details of all the GUs, HGUs and Aquifer/Aquitards. The 'top-tier' of the aquifer / aquitard structure is also summarised in Table 1, presents the general layering of the age-based framework. This layering structure/order generally holds true (provided the aquifer/aquitard is present in a given area) however there are genuine instances where a 'lower' layer will overlie an 'upper' layer. For instance the LTB will overlie the LTA in some instances.

Table 1 VAF Aquifer / Aquitard Layering

Aquifer Name	Aquifer Code	
Quaternary Aquifer	**QA**	**100**
Upper Tertiary / Quaternary Basalts	**UTB**	**101**
Upper Tertiary / Quaternary Aquifer	**UTQA**	**102**
Upper Tertiary / Quaternary Aquitard	**UTQD**	**103**
Upper Tertiary Aquifer (marine)	**UTAM**	**104**
Upper Tertiary Aquifer (fluvial)	**UTAF**	**105**
Upper Tertiary Aquitard	**UTD**	**106**
Upper Mid-Tertiary Aquifer	**UMTA**	**107**
Upper Mid-Tertiary Aquitard	**UMTD**	**108**
Lower Mid-Tertiary Aquifer	**LMTA**	**109**
(Lower) Tertiary Basalts*	LTB*	112
Lower Mid-Tertiary Aquitard	**LMTD**	**110**
Lower Tertiary Basalts*	**LTB***	**112**
Lower Tertiary Aquifer	**LTA**	**111**
Lower Tertiary Basalts*	**LTB***	**112**
Cretaceous and Permian Sediments	**CPS**	**113**
Cretaceous and Palaeozoic Bedrock (basement)	**BSE**	**114**

*Note: the LTB units are of varying age as explained in later sections, hence the multiple entries in this table

1.3 Use of the Aquifer Framework

The Victorian Aquifer Framework has been reviewed and amended in this project as a result of the findings of DSE's State Wide 3D Aquifer Surface Development project (GHD & AWE, 2012). The update enhances the application of the VAF model to provide three dimensional aquifer and aquitard layers to assist DSE define Groundwater Management Units based on the understanding of groundwater flow systems. In particular it will feed into the management of the State's groundwater resources through the groundwater Securing Allocation Future Entitlement (SAFE) project.

1.4 Purpose of this report

The aim of this report is to detail the changes made to the VAF as was required to develop contiguous mappable aquifer and aquitard layers in DSE's State Wide 3D Aquifer Surface Development project (GHD & AWE, 2012). The report provides clarification of the sequencing of a number of HGUs and the improvements based on mapping the layers and generating contiguous and laterally connected units.

As the VAF is primarily based on the geological setting and time based definition of layers, the report also provides an indication of the geological and stratigraphic framework relationships of GUs, HGUs and Aquifers that has not previously been collated.

1.5 Philosophy of the VAF changes

The VAF builds on the large amount of detailed analysis of aquifer layers and groundwater flow systems that has been carried out historically in Victoria.

The discussion in this report aims to reinforce the geological / stratigraphic basis for the definition of the units and provide an aid to future users of the mapping products by clearly outlining the basis for layer definition in local areas. This will also assist in improving the repeatability / reproducibility of the VAF (and mapping) for future work.

The VAF in this report identifies a number of geological and hydrostratigraphic units that are best reassigned to different aquifers, or appear to be in need of subdivision so that the mapping of inter-fingering units can be undertaken efficiently within single 'Aquifers'.

Where an addition or change to the framework has been proposed, it has been the result of careful consideration of the stratigraphic relationships, including a detailed review of relevant literature and/or available bore data to validate the proposed change. There is therefore a substantial degree of documentation of the logic behind this to provide consistency in the nomenclature for future groundwater analyses.

2. Geological basis for Updates to the VAF

The hydrogeology of the State has been well described in Leonard (2003) and it is not the aim to repeat that in this document. However as the VAF has a foundation that is stratigraphic and the aquifers are assigned an age-based nomenclature, it is considered important to relate the various aquifers as named in the VAF to the geological context in which they occur.

The VAF has age-based categories that reflect the geology of the State and can be considered primarily in terms of basement rocks and basin deposited, 'unconsolidated' sediments. Specifically:

- The basement rocks comprise:
  - The Lower Palaeozoic basement rocks that form the highlands and the crystalline basement; and,
  - Mesozoic rocks of the Otway and Gippsland basins both outcropping and subsurface.
- The basin sediments, which comprise the major aquifers in the State, are the Tertiary and Quaternary age marine and non-marine sediments of the Gippsland, Otway, Port Phillip and Murray Basins.

These categories are discussed in more detail in the following section to provide additional context to the development of the VAF as well as the amendments made during the course of the 3D mapping project.

The fully updated VAF is presented in Appendix A, with additions or changes to the VAF during the course of the 3D Aquifer Surfaces project being highlighted purple. These changes are described in the context of each area in further detail in the sections below.

2.1 Basement Rocks (BSE)

The basement rocks or bedrock occurring in outcrop and subsurface throughout Victoria typically function as fractured rock aquifers. They have variable hydraulic characteristics depending on degree and depth of weathering, fracture intensity and interconnection of the discontinuities in the rock mass.

Although regionally extensive, the bedrock aquifers are not considered significant in terms of regional groundwater flow as they are generally of low permeability. In outcrop they are typically unconfined.

In some areas surrounding the major sedimentary basins, the bedrock aquifers are overlain by varying thicknesses of Tertiary and Quaternary age basalt, alluvial sediments and residual materials such as laterites and silcretes.

The basement strata in the VAF that comprise Aquifer 114 (BSE) have generally been named according to their stratigraphic name on published geological maps and in Geological Survey reports. Individual formations have been ascribed separate Geological Unit codes in the VAF and they are in general grouped according to age and lithology. However, the geological units comprise only five HGUs (1124-1128) with the main discriminating factor being rock type and origin (sedimentary, igneous or metamorphic).

The HGUs are briefly described below in terms of the structural features of constituent GUs that may have significance in terms of groundwater occurrence and flow system. All of the lithological and detailed structural analyses of the BSE rocks are described in Birch (2003). No amendments were made to the BSE units of the VAF as part of this project.

2.1.1 HGU 1124

This HGU comprises undifferentiated basement rocks.

2.1.2 HGU 1125

Covers a range of sedimentary deposits occupying different structural settings thus displaying different groundwater features.

- The majority of GUs in this group are Lower Palaeozoic, mostly steeply dipping sedimentary units (mudstone, sandstone and conglomerate) although there are also some interbedded acid volcanics. The sequences are dominated by sandstone and mudstone sequences which are cyclical deposits of mostly Ordovician and Silurian aged marine sedimentary rocks. This variable lithology of the sedimentary rocks results in varied hydraulic conductivity, with mudstone being the least effective aquifer;
- Hard sandstone of localised occurrence that is a very impermeable, cemented rock which forms well known features in the landscape including the Grampians and Cathedral Ranges;
- Late Devonian – Delatite and Avon River Groups that are largely horizontally bedded sedimentary (mudstone, sandstone and conglomerate) and acid volcanic formations, often with blocky geological structure;
- Lower Cretaceous – sandstones, mudstones and minor conglomerate black coals in the southern part of the State that outcrop in the Otway and Strzelecki Ranges and the Barrabool Hills;
- Some indurated Lower Palaeozoic (mostly Lower Devonian and some Silurian) limestones (such as the Buchan caves limestone with obvious Karst features); and,
- Very minor Triassic sedimentary deposits (at the Council Trench in the Bacchus Marsh area and minor volcanics in western Victoria).

2.1.3 HGU 1126

These comprise the Lower Palaeozoic volcanic rocks (mostly rhyolite and rhyodacite) that, because of their hardness, form elevated areas.

The volcanic rocks in this HGU are steeply dipping and localised zones of greenstone occur in relatively narrow zones.

Examples include the Snowy River Volcanics, Tolmie Group, Avon subgroup, Violet Town Volcanics and the Acheron Volcanics.

2.1.4 HGU 1127

This HGU covers the Lower Palaeozoic regional metamorphic complexes – gneiss, schist and some associated contact metamorphic rocks comprising hornfels that occur around granites.

The aquifer properties vary according to structural characteristics. They typically function as fractured rock aquifers however in some areas, especially where gneisses occur, there may be residual granitic soils that may be localised porous media type aquifers or there may be unweathered areas that may be the source of springs.

The HGU also includes zones of fault rock that are large enough to be mapped as separate units. These are not commonly mapped at large scale but smaller fault zones transmit significant flows.

2.1.5 HGU 1128

Granitic rocks that are often hard, impermeable and more resistant to weathering than surrounding rocks and can comprise major upland areas such as the Strathbogie Ranges and Harcourt Granite in central Victoria.

The blocky structure of the granites allows for the development of deep vertical fractures that may comprise the source of springs. Some have weathered horizons that form local sandy clay and clayey sand aquifers.

2.2 Permian and Late Cretaceous sediments (CPS)

The CPS units defined in the VAF occur almost entirely subsurface. There are ten different HGUs for the CPS. The following describes some of the stratigraphic and structural considerations related to these HGUs. No changes in the VAF were made in relation to the CPS layer during this project.

2.2.1 HGU 1114

This HGU comprises Undifferentiated Cretaceous and Permian age sediments and is a ‘catch-all’ for strata that are not part of the Tertiary basin sequences but yet may be differentiated from materials comprising BSE.

While not currently included in the VAF, in the offshore parts of the Gippsland Basin there are Late Cretaceous strata (such as the Golden Beach Formation) that are lithlogically and stratigraphically distinct from the overlying Tertiary Latrobe Group, and are important hydraulic units offshore. These formations are described in some detail in the Geology of Victoria.

2.2.2 HGU 1115

Monash Formation which is the SA/NSW Early Cretaceous sequence of transgressive non-marine to near-shore marine to a minor regressive sequence of cemented sandstone, mudstone, coal and conglomerates to fossiliferous siltstone and claystone then a claystone and siltstone that overlies the Palaeozoic Basement in the Murray Basin near the SA / Vic border.

2.2.3 HGU 1116

Early Cretaceous Millewa Group within the Victorian portion of the Murray basin comprising fluvial and lacustrine sandstones to interbedded siltstone and mudstone as described in Duddy (2003). Lateral equivalent of the South Australian Monash Formation (HGU 1115).

2.2.4 HGU 1117

Pro-glacial to post-glacial sediments of shale, siltstone, sandstone and occasionally conglomeratic and carbonaceous of the Urana Formation.

The diamictic nature of the sediments contained in HGUs 1115-1117 suggests low transmissivity characteristics, and the depth of these sequences would suggest limited recharge or inflow. Limited

information is at hand to better determine the expected range of groundwater salinity outside of brackish to saline.

2.2.5 HGU 1118

These appear to be the Permian units mapped by Holdgate in the Ovens Graben (extending north from Victoria into the Oaklands Basin, NSW) and in the Numurkah area. The distribution is clearly shown in the Birch (2003) (pp.196, Fig 7.1).

A limitation of the existing groundwater stratigraphic database with respect to these units is that it does not include some of the key stratigraphic bores that otherwise are useful in defining the stratigraphy. Future updates of the stratigraphic database should aim to capture the key stratigraphic bore data, even if the original purpose of the borehole was not groundwater related.

2.2.6 HGUs 1119-1123

These HGUs are the Otway Basin units of Late Cretaceous age.

2.3 Tertiary basin deposits

These deposits comprise the main regional aquifers which were deposited in the main sedimentary basins - the Murray, Otway, Port Phillip and Gippsland (refer Figure 1).

The sedimentary sequences in these basins comprise the deposits laid down within large scale non-marine and marine environments that have led to a variety of sedimentary deposits and thus aquifer types. Many of these sedimentary sequences have been studied in detail using both outcrop and subsurface information. The approach in the VAF is to identify the similarities in the aquifer types across the State as they relate to periods of non-marine deposition with periods of marine incursion.

The VAF, as developed for DSE, is a relatively uniform “layer cake” system for the Tertiary basin aquifers and aquitards. While this overall structure can allow a relatively consistent nomenclature to be applied across the State, in detail, the inter-layering of aquifers and aquitards complicates the mapping of the contiguous units and hydrogeological aquifer systems.

The approach taken in this update of the VAF has been brought about by the requirement to map the aquifer layers as contiguous units. It builds on the substantial knowledge of the stratigraphy that controls the distribution and extent of the aquifers and aquitards. The stratigraphic definitions established over the years provides the basis for establishing and mapping the layers. It is considered essential to honour the geological sequence to enable future users an understanding of which Geological Units are incorporated into the various HGUs and Aquifers.

This allows for the layers to be reproduced and updated in the future based on clear definitions that are consistent with stakeholder understanding of the key groundwater management issues in the State.

As the Aquifers are referred to on a time basis within the VAF (e.g. Layer 111 is the Lower Tertiary aquifer) the relationship of the layers to geological time has been documented. The purpose of this is for readers and users of the VAF to be clear on aquifer continuity and in terms of likely physical and spatial relationship to one another.

The discussion below aims to provide some indication of the geological status of a number of the key aquifers. Aquifers are laid out in the basic geological sequences that are derived from the stratigraphic descriptions provided in key geological references.

Of note is that there are a number of aquifers named as particular time based layers that transgress the age implied by the aquifer nomenclature. For example the Renmark Group within the so-called Lower Tertiary Aquifer (LTA - 111) is, in a number of areas, much younger than Lower Tertiary, ranging to be as young as Middle Tertiary. This causes some issues in any mapping of these layers particularly where there is inter-fingering and where younger strata underlying strata that have been provided with ages on the basis of lithology only and not including age data and structure.

2.3.1 Murray Basin

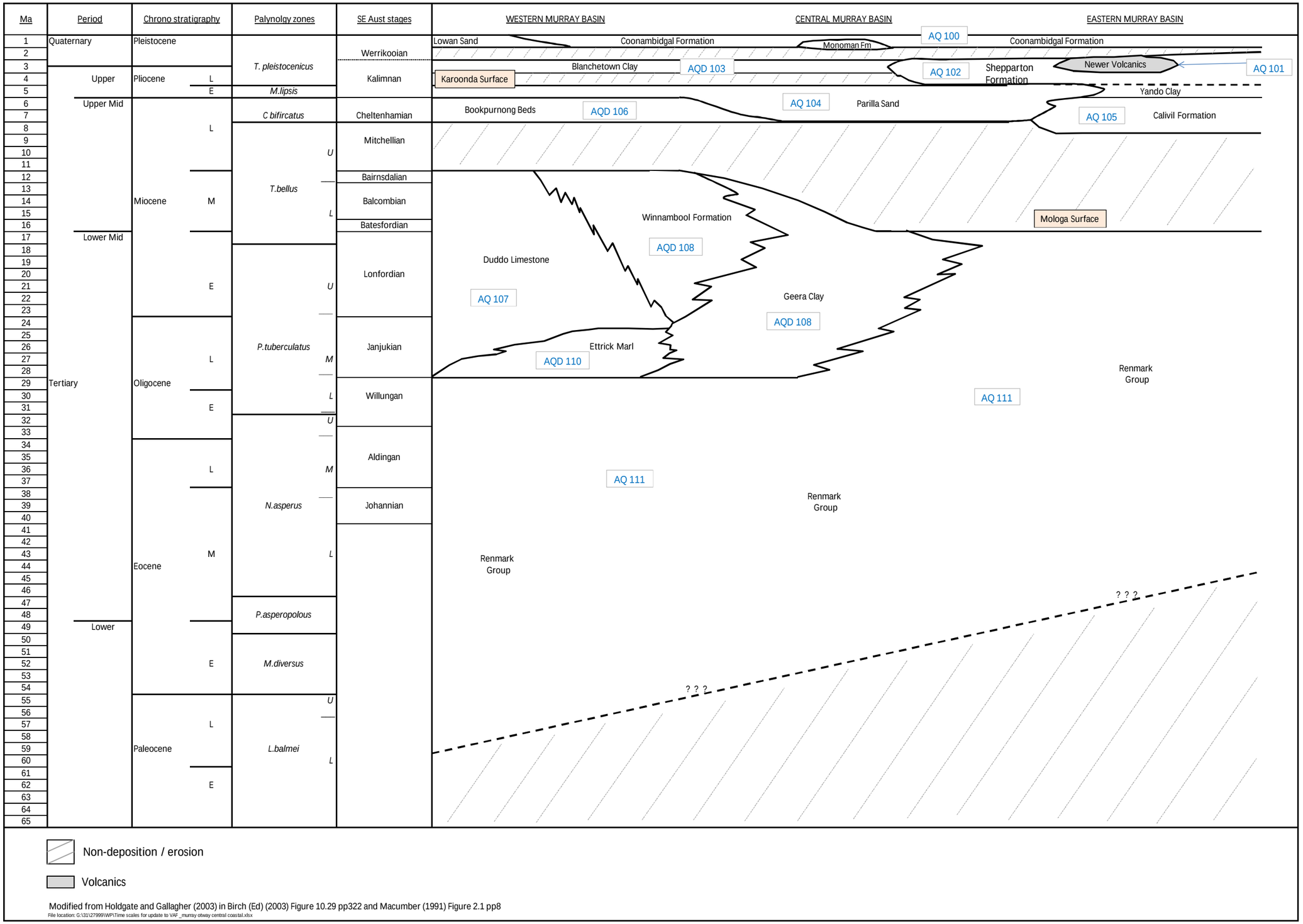
The relationships of the different major aquifer layers in the Murray Basin are subject to significant lateral changes in sedimentary conditions and have conflicting names for the same geological units across state borders into NSW and South Australia.

The stratigraphy of the western parts are well described in Brown & Stephenson (1991) and Drexel & Preiss (1995) and in the central and eastern parts by Macumber (1969, 1991) and also more recently by Holdgate & Gallagher (2003). There are some contradictions between the interpretations however the defined layers are relatively consistent layer systems. The relationships adopted for the Murray Basin are displayed in Figure 3, and the corresponding VAF aquifer code is also presented.

Figure 3 also shows the age ranges of the various formations that are represented in the region. The important points to note that affect the VAF are:

- The Renmark Group is not solely Lower Tertiary in age but continues up into the early Miocene (as does the LTA in Gippsland). It is also noted that Holdgate & Gallagher (2003) suggests that spore pollen ages obtained from carbonaceous sediments in the Eastern Murray Basin are from the Calivil Formation which would make the Calivil Formation perhaps Oligocene to Miocene in age. This definition has not been adopted here and these strata are considered more likely to be equivalent to the upper part of the Renmark Group;
- The Calivil Formation is assigned to the Late Tertiary consistent with Macumber (1969) thus comprising the UTAF as in previous versions of the VAF. It has been included in the Wunghnu group in some studies thus is Late Tertiary in age (e.g. Vandenberg *et al* (2004) in the Ovens Graben);
- The White Hills Gravel comprise part of the LTA based on interpretations of geomorphic setting White Hills Gravel rather than included in the UTAF. Areas mapped as White Hills Gravel on the geology maps are hill cappings that have an inferred Lower Tertiary age; and
- The facies changes at the marine margin resulted in the Duddo Limestone wrapped around and partly interleaving with the Ettrick marl, Geera Clay and Winnambool Formations. To allow the layers to be contiguous and demonstrate the lateral equivalence new GUs and HGUs were generated. The approach taken was to account for the inter-fingering of the Duddo Limestone (UMTA - 107) with the surrounding aquitard layers of the Ettrick Marl, Geera Clay and Winnambool Formation (refer Figure 4 and Table 2).

Figure 3
STRATIGRAPHIC CORRELATION OF THE MURRAY BASIN INCLUDING CORRESPONDING VAF AQUIFER CODES



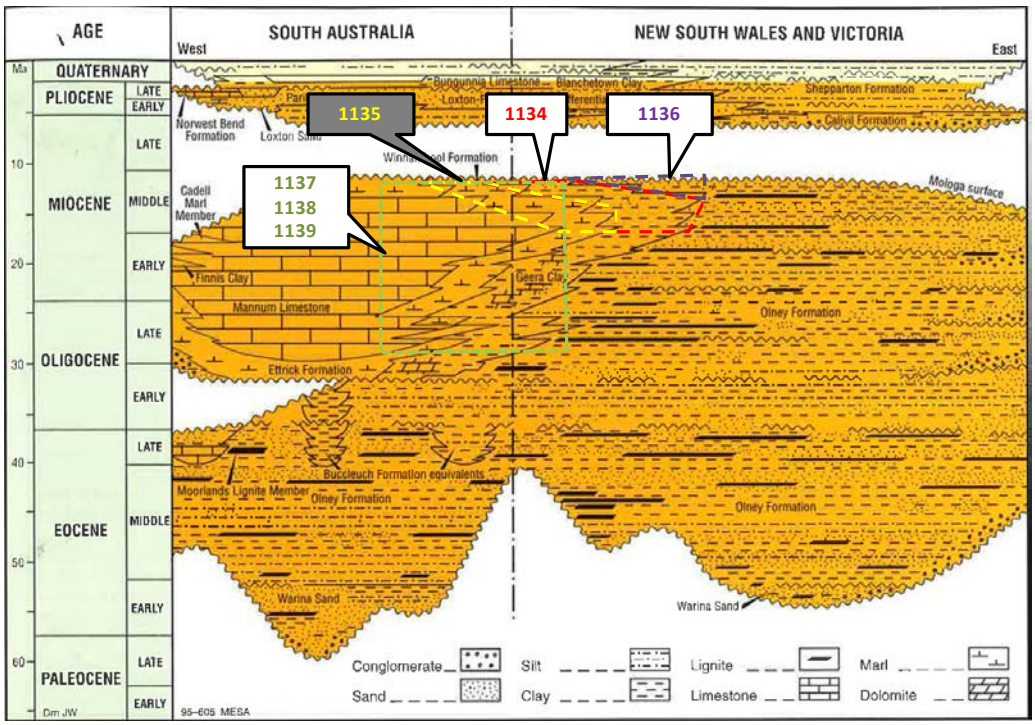
Modified from Holdgate and Gallagher (2003) in Birch (Ed) (2003) Figure 10.29 pp322 and Macumber (1991) Figure 2.1 pp8

File location: G:\31\27999\WP\Time scales for update to VAF _murray otway central coastal.xlsx

Table 2 Summary of additional HGUs in Western Murray Basin

HGU CODE	HGU NAME (and GU)	Aquifer CODE	Rationale for addition of HGU
1134	Geera Clay (younger)	UTD / 106	To replicate the 'regression' period of deposition of Geera Clay Formation that overlies the Upper Mid-Tertiary Aquifer units.
1135	Winnambool Fm (younger)	UTD / 106	To replicate the 'regression' period of deposition of Winnambool Formation that overlies the Upper Mid-Tertiary Aquifer units.
1136	Renmark Group (younger aquitard)	UTD / 106	To replicate the 'regression' period of deposition of Remark Group geologic formation that overly the Upper Mid-Tertiary Aquitard units. This HGU was used where the lithology was described as aquitard–type material. Note: would have created a HGU to align with VAF UTAM 104 where more permeable materials were described.
1137	Winnambool Fm (interleaving)	UMTA / 107	To allocate sequence of alternating high and low permeable sediments into the Upper Mid-Tertiary Aquifer based on great proportion of sediment being described as permeable.
1138	Undifferentiated Upper Mid-Tertiary Aquifer (interleaving - younger)	UTD / 106	To allocate sequence of alternating high and low permeable sediments into the Upper Mid-Tertiary Aquitard based on great proportion of sediment being described as low permeability. This HGU was nominated where the sequence of interleaving units was closer to UTD 106 than UMTD 108
1139	Undifferentiated Upper Mid-Tertiary Aquifer (interleaving - older)	UMTD / 108	To allocate sequence of alternating high and low permeable sediments into the Upper Mid-Tertiary Aquitard based on great proportion of sediment being described as low permeability. This HGU was nominated where the sequence of interleaving units was closer to UMTD 108 than UTD 106
1140	Monoman Fm / Channel Sands	QA / 100	This important unit along the Murray River has been previously included in the Coonambidgal Formation but as it is a significant aquifer whereas the overlying Coonambidgal is much finer grained, it is differentiated in the VAF.

The nominated formation name (where identified) were retained in the title of the HGU to preserve the interpretation from the Lithological/Stratigraphic logs.



Modified from Drexel JF and Preiss WV 1995. The Geology of South Australia. Vol 2 The Phanerozoic. SA Geol Surv Bul 54. Pg 159

Figure 4: Layer relationship between inter-fingering areas, NW Victoria

2.3.2 Otway and Port Phillip basins

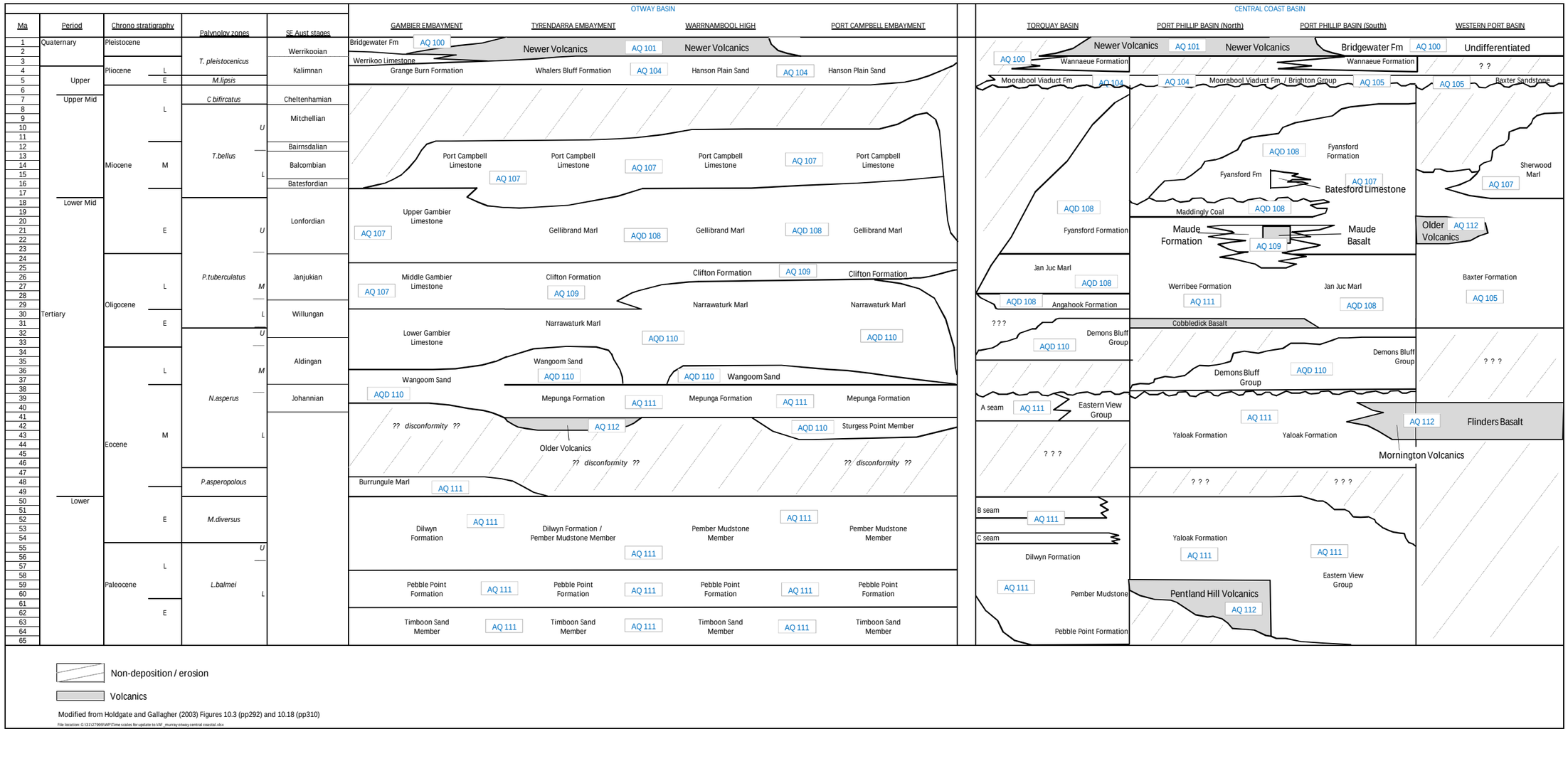
The HGUs for the Otway and Port Phillip Basins have been based on the approach applied by SKM and GHD, (2009) for the Southern Rural Water mapping project. However there have been several key amendments as noted below:

- The Maddingley Coal Seam which occurs at the upper level of the Werribee Formation and has previously been included the LTA, is actually an aquitard and has now been included in the UMTD layer;
- The Maude Formation was split from SRW layer A500 and placed into the LMTA to be consistent with the VAF and a new GU was created for the Maude Basalt (same HGU as existing Maude Formation). This was done to reflect the distinction between this unit and the aquitards of the Fyansford Formation, Jan Juc formation, and Newport Silt;
- The components of the QA aquifer has been modified to exclude GU codes 10043 and 10044 which are typically very localised eruption centres and stony rise basalt flows. These are part of the Newer Volcanics that occur across much of western Victoria and the scoria cones and other features that are able to be identified are typically linked to basalt flows and lava fields that comprise part of the UTB aquifer (101).
  On this basis it is considered that separation is not warranted and could lead to the confusion of Scoria cones, which are identified on geological maps, and Stony Rises, which often comprise isolated low salinity zones because of their high permeability and relatively high recharge;

- The Upper Newer Volcanics and Lower Newer Volcanics have been removed as separate HGUs due to their limited differentiation and lack of use throughout the database;
- The Whalers Bluff HGU has been moved from UMTA to UTAM based on stratigraphic relationships and its equivalence to the Hanson Plain Sand, Moorabool Viaduct Formation etc.;
- The undefined “Phase 2 Basalts” HGU typically refers to “Older Volcanic” units and therefore moved from LMTD to LTB; and
- While not altered in the framework it is noted that the Gambier Limestone – Upper, Middle and Lower as described in South Australia and far western Victoria are likely to be equivalents of the Gellibrand Marl (UMTD), Clifton Formation (LMTA) and Narrawaturk Marl (LMTD) respectively. The existing nomenclature (Upper and Mid in UMTA and the omission of Lower Gambier from the VAF) has been maintained for consistency with previous resource analysis work, although the point is raised here for future consideration.

The stratigraphic relationships for the main units across the Otway and Port Phillip basins are presented in Figure 5 and demonstrate the rationale behind the amendments outlined above.

Figure 5
STRATIGRAPHIC CORRELATION OF THE OTWAY, TORQUAY, PORT PHILLIP AND WESTERN PORT BASINS INCLUDING CORRESPONDING VAF AQUIFER CODES



Modified from Holdgate and Gallagher (2003) Figures 10.3 (pp292) and 10.18 (pp310)

File location: G:\31\27999\WP\Time scales for update to VAF_murray otway central coastal .xlsx

2.3.3 Gippsland Basin

The geology and aquifer stratigraphy that is the basis for the VAF in the Gippsland basin have been described in the SRW mapping report (SKM and GHD 2009). In this review further subdivisions have been implemented to more accurately present the aquifers and aquitards that impact groundwater management in the basin.

A key element of the update is that thick brown coal seams and associated fine grained sediments have been differentiated as aquitards where they are able to be isolated from interbedded aquifer units. The key aquifer and aquitard units are displayed in Figure 6. To note this figure does not display all units in the Gippsland Basin, rather the key relationships that demonstrate the changes to the VAF.

The updated HGUs and refined interpretations are:

- The upper units of the Latrobe Valley sequence, the Yallourn and Hazelwood Formations, comprise mostly coals and clay sediments and act as aquitards therefore have been moved from the UMTA as in the original VAF and incorporated into the overlying UTD.
- The Morwell Formation is the only unit of the Latrobe Valley Group (coal measure sequence) that remains in the UMTA (Layer 107). As in previous versions of the VAF the Balook Formation is also included in the UMTA.
- The Gippsland Limestone remains in the UMTD as previously defined although it is to be recognised that the UMTA and UMTD are time equivalent units.
- The UTD mapped in the area to the east of the onshore Gippsland Basin also now includes the Sale Group / Jemmy's Point Formation HGU to conform with the stratigraphic relationships of the GUs.
- There is complexity in the current nomenclature in the deeper parts of the onshore Gippsland basin, particularly in the Latrobe Valley, as in reality the basal aquifer comprises HGUs that cut across the layers. The complication occurs where the Traralgon Formation / Latrobe Group occurs (Loy Yang and to the east, i.e. Layer 111, LTA) and where there is a relatively extensive unit the M2C / Seaspray Sand between it and the coal seam and aquifer sequence of the Morwell Formation in the Latrobe Valley (layer 107), the Balook Formation (layer 107) or the Gippsland Limestone (Layer 108) further east. Two new HGUs and associated GUs were therefore added to maintain consistency with previously generated surfaces for the SRW layers. The continuity of the layers (both vertically and laterally) is maintained by naming those parts of the M2C / Seaspray Sand where it is not the basal regional aquifer as a separate HGU. Figure 6 shows the layer and HGU concept for this project and the pale green and purple bold lines show the consistency with the tops of the previously mapped SRW layers.
- The Haunted Hill Formation has been reclassified as an aquifer and therefore moved from the UTQD to the UTQA layer.
- A new GU (10702) has been added to represent the Lindenow Gravel in the QA aquifer so as to distinguish the importance of this unit;

- The existing Morwell Formation GU has been split from a single unit to nine (9) new GUs under the existing Morwell Formation HGU code to represent the aquifers and coal measures that comprise this formation;
- It is also important to recognise that the Older Volcanics in the Gippsland Basin are extensive and cover a wide range of ages, so they remain in the LTB where mappable and contiguous.

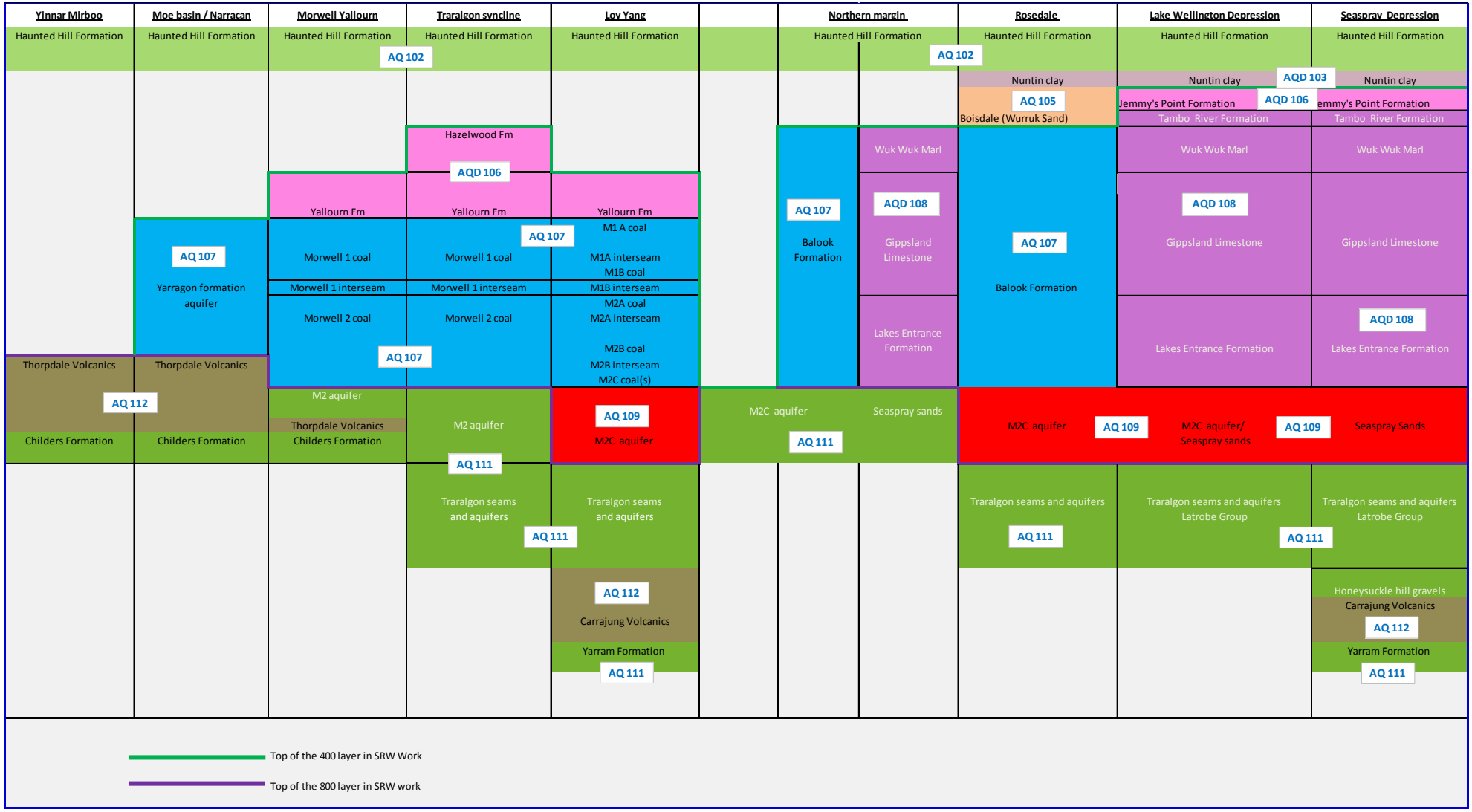


Figure 6: Key Aquifer and Aquitard stratigraphic relationships of the Gippsland Basin

2.3.4 State-wide changes

Further key changes to the VAF that have state-wide implications are:

- The shallow surficial aquifer comprising layer QA-100 includes recent alluvial sedimentary deposits along drainage systems and includes the Coonambidgal Formation. Definition is very indistinct across most of the State, and is defined largely by geological and geomorphic mapping. The exception is the well defined Monoman Formation that occurs along the Murray River in the northwest of the State as noted in Section 2.3.1.
- The Upper Tertiary aquifers (104-UTAM and 105-UTAF) occur across the State and comprise numerous geological units of both marine and non-marine origin. Often they form hill cappings and are disconnected from the major basin sequences. The distinction between the GUs and HGUs comprising these aquifers is often poorly defined, and there may be considerable overlap particularly in the southern parts of the State.
  Separation of UTAM from UTAF is in some places arbitrary, and even though they possess sequential aquifer numbers the two aquifers often merge into each other. A number of the units (e.g. the Brighton Group in the Melbourne area) comprise both non-marine and marine formations even though it has been included in the UTAF. The distinction in the Murray Basin is more readily identified, particularly the extensive Parilla Sand.
- Thick brown coal seams and associated fine grained sediments have been differentiated as aquitards in the Port Philip and Gippsland Basins in locations where they are isolated from interbedded aquifer units. These aquitard units have been assigned separate HGUs and moved from the LTA aquifer to comprise layers 106 or 108. The changes are noted in the discussions above on individual basins.
- The Lower Tertiary basalt aquifer includes the “Older Volcanics” of varying ages. They are locally developed and do not comprise a contiguous layer across the State, and often are referred to by their geographic occurrence. Detailed listing and descriptions are provided in the *Geology of Victoria* (Birch, (ed.) 2003).

  The Older Volcanic units tend to be clustered around major age categories: -

  – Approx. 20- 22 my, e.g. Thorpdale Volcanics, Maude Basalt, Pintadeen Basalt;
  – Approx. 35 my e.g. Aberfeldy Province Volcanics, Mornington Volcanics, Yaugher Volcanics
  – Approx. 55 my e.g. Carrajung Volcanics
  – Approx. 65 my e.g. Ballan Graben Basalts

In some cases the basalts are able to be mapped as individual zones whereas elsewhere it has been necessary to include them within other layers, most commonly the LTA (Layer 111) and also within other units (e.g. the Maude Basalt that is included in layer 109 (LMTA). The other point to note is that because of their varying age, different Older Volcanic flows may occur below the 111-LTA, above the 111-LTA, and even above the 110-LMTD, depending on where these various units are present.

3. References

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Appendix A

Victorian Aquifer Framework

Department of Sustainability and Environment

VICTORIAN AQUIFER FRAMEWORK V10 - Last Modified March 2012

GEOLOGICAL UNITS									HYDROGEOLOGICAL UNITS		AQUIFER		
1:250K_Geol_Code	OLDMAPSYMB	UNIT_NAME	PARENTS	UNIT_DESC	UNIT_LITH	AGEYOUNG	AGEOLD	GU_Code	HGU_code	HGU_Name	Aquif_code	Aquifer Letter	Aquif_Name
No_1:250K_geol_code		Undifferentiated Quaternary Sediments						10000	1000	Undifferentiated Quaternary Aquifer	100	QA	Quaternary Aquifer
No_1:250K_geol_code		Simpson Sand		Sedimentary (Non-Marine)	Aeolian sand of inland dune fields	Quaternary (Holocene)	Quaternary (Pleistocene)	10001	1001	Various Aeolian Deposits	100	QA	Quaternary Aquifer
Qd2		Unnamed dune deposits		Sedimentary (Non-Marine (Aeolian))	Aeolian: dune deposits: sand, clay, calcareous sand	Quaternary (Pleistocene)	Quaternary (Pleistocene)	10002	1001	Various Aeolian Deposits	100	QA	Quaternary Aquifer
Qdi	Qrd,Qd,Qo	Unnamed inland dune deposits		Sedimentary (Non-Marine (Aeolian))	Aeolian: source-bordering dune deposits: sand, silt, clay	Quaternary (Pleistocene)	Quaternary (Pleistocene)	10003	1001	Various Aeolian Deposits	100	QA	Quaternary Aquifer
Ql	Qu	Unnamed lunette deposits		Sedimentary (Non-Marine (Aeolian))	Aeolian: lunette deposits: sand, silt, clay	Quaternary (Holocene)	Quaternary (Pleistocene)	10004	1001	Various Aeolian Deposits	100	QA	Quaternary Aquifer
Qxo	Ql	Lowan Sand		Sedimentary (Non-Marine (Aeolian))	Aeolian: dune sand, fine to medium grained	Quaternary (Pleistocene)	Quaternary (Pleistocene)	10005	1001	Various Aeolian Deposits	100	QA	Quaternary Aquifer
Qxr	Qpb,CQBR	Bridgewater Formation		Sedimentary (Non-Marine (Aeolian))	Aeolian: dune deposits; calcarenite	Quaternary (Pleistocene)	Quaternary (Pleistocene)	10006	1001	Various Aeolian Deposits	100	QA	Quaternary Aquifer
Qxw	Qw	Woorinen Formation		Sedimentary (Non-Marine (Aeolian))	Aeolian: dune sand, calcareous, clayey, palaeosols	Quaternary (Pleistocene)	Quaternary (Pleistocene)	10007	1001	Various Aeolian Deposits	100	QA	Quaternary Aquifer
Qxy	Qy	Yamba Formation		Sedimentary (Non-Marine (Aeolian))	Aeolianites and evaporites: fine-grained gypsum	Quaternary (Holocene)	Quaternary (Pleistocene)	10008	1001	Various Aeolian Deposits	100	QA	Quaternary Aquifer
No_1:250K_geol_code		Semaphore Sand Member (of the St Kilda Formation)						10009	1001	Various Aeolian Deposits	100	QA	Quaternary Aquifer
No_1:250K_geol_code		Bunyip Sand						10010	1001	Various Aeolian Deposits	100	QA	Quaternary Aquifer
No_1:250K_geol_code		Molineaux - Lowan Sands (NSW) or Molineaux Sand (SA VIC)						10011	1001	Various Aeolian Deposits	100	QA	Quaternary Aquifer
No_1:250K_geol_code		Bakara Calcrete, Ripon Calcrete and Loveday Soul (Qca)						10012	1001	Various Aeolian Deposits	100	QA	Quaternary Aquifer
No_1:250K_geol_code		Malanganee Sand			Unconsolidated grey to white, fine-grained siliceous sand	Quaternary (Holocene)	Neogene (Pliocene)	10013	1002	Various fluvial/lacustrine/alluvial/colluvial sediments	100	QA	Quaternary Aquifer
No_1:250K_geol_code		Wannaeue Formation		Sedimentary (Marine)		Pleistocene (Late)	Pliocene (Early)	10014	1002	Various fluvial/lacustrine/alluvial/colluvial sediments	100	QA	Quaternary Aquifer
Na1		Unnamed incised alluvium		Sedimentary (Non-Marine (Alluvial))	Fluvial: post-Newer Volcanic hillwash: gravel, sand, silt	Quaternary (Pleistocene)	Neogene (Miocene)	10015	1002	Various fluvial/lacustrine/alluvial/colluvial sediments	100	QA	Quaternary Aquifer
Nc1	Qrc,Qpc,Tpc	Unnamed incised colluvium		Sedimentary (Non-Marine (Alluvial, Colluvial))	Fluvial: "gully" alluvium, colluvium: gravel, sand, silt	Quaternary (Pleistocene)	Neogene (Pliocene)	10017	1002	Various fluvial/lacustrine/alluvial/colluvial sediments	100	QA	Quaternary Aquifer
-Pa	Pe,Te	Unnamed alluvium		Sedimentary (Non-Marine (Alluvial))	Fluvial: gravel, sand	Palaeogene (Eocene)	Palaeogene (Eocene)	10018	1002	Various fluvial/lacustrine/alluvial/colluvial sediments	100	QA	Quaternary Aquifer
Qa1	Qra,Qa,Qrt,Qc	Unnamed alluvium		Sedimentary (Non-Marine (Alluvial))	Fluvial: alluvium, gravel, sand, silt	Quaternary (Holocene)	Quaternary (Holocene)	10020	1002	Various fluvial/lacustrine/alluvial/colluvial sediments	100	QA	Quaternary Aquifer
Qa2	Qpa	Unnamed alluvium		Sedimentary (Non-Marine (Alluvial))	Fluvial: gravel, sand, silt	Quaternary (Pleistocene)	Quaternary (Pleistocene)	10021	1002	Various fluvial/lacustrine/alluvial/colluvial sediments	100	QA	Quaternary Aquifer
Qa3		Unnamed		Sedimentary (Non-Marine (Alluvial))	Fluvial: gravel, sand, silt	Quaternary (Pleistocene)	Quaternary (Pleistocene)	10022	1002	Various fluvial/lacustrine/alluvial/colluvial sediments	100	QA	Quaternary Aquifer
Qa4		Unnamed		Sedimentary (Non-Marine (Alluvial))	Fluvial: gravel, sand, silt	Quaternary (Pleistocene)	Quaternary (Pleistocene)	10023	1002	Various fluvial/lacustrine/alluvial/colluvial sediments	100	QA	Quaternary Aquifer
Qa5		Unnamed		Sedimentary (Non-Marine (Alluvial))	Fluvial: gravel, sand, silt	Quaternary (Pleistocene)	Quaternary (Pleistocene)	10024	1002	Various fluvial/lacustrine/alluvial/colluvial sediments	100	QA	Quaternary Aquifer
Qa6		Unnamed		Sedimentary (Non-Marine (Alluvial))	Fluvial: gravel, sand, silt	Quaternary (Pleistocene)	Quaternary (Pleistocene)	10025	1002	Various fluvial/lacustrine/alluvial/colluvial sediments	100	QA	Quaternary Aquifer
Qa7	Qp5,Qpa5	Unnamed		Sedimentary (Non-Marine (Alluvial))	Fluvial: gravel, sand, silt	Quaternary (Pleistocene)	Quaternary (Pleistocene)	10026	1002	Various fluvial/lacustrine/alluvial/colluvial sediments	100	QA	Quaternary Aquifer
Qc1	Qrc,Qpc,Qc	Unnamed colluvium		Sedimentary (Non-Marine (Colluvial))	Fluvial: "gully" alluvium, colluvium: gravel, sand, silt	Quaternary (Holocene)	Quaternary (Holocene)	10027	1002	Various fluvial/lacustrine/alluvial/colluvial sediments	100	QA	Quaternary Aquifer
Qc2	Qx	Unnamed scree deposits		Sedimentary (Non-Marine (Colluvial))	Scree deposits	Quaternary (Pleistocene)	Quaternary (Pleistocene)	10028	1002	Various fluvial/lacustrine/alluvial/colluvial sediments	100	QA	Quaternary Aquifer
Qdl1	Qrd,Qdl	Unnamed coastal dune deposits		Sedimentary (Marine, Non-Marine (Coastal))	Aeolian and littoral: coastal and inland dunes: dune sand, some swamp deposits, beach sand	Quaternary (Holocene)	Quaternary (Holocene)	10029	1002	Various fluvial/lacustrine/alluvial/colluvial sediments	100	QA	Quaternary Aquifer
Qm1	Qrm,Qm	Unnamed swamp and lake deposits		Sedimentary (Non-Marine (Paludal))	Paludal: lagoon and swamp deposits: silt, clay	Quaternary (Holocene)	Quaternary (Holocene)	10030	1002	Various fluvial/lacustrine/alluvial/colluvial sediments	100	QA	Quaternary Aquifer
Qyc		Coode Island Silt		Sedimentary (Estuarine (Lagoonal))	Paludal: lagoon deposits: black silt, clay	Quaternary (Pleistocene)	Quaternary (Pleistocene)	10031	1002	Various fluvial/lacustrine/alluvial/colluvial sediments	100	QA	Quaternary Aquifer
Qra, Qa, Qrt, Qc		Lindenow Gravel		Sedimentary (Non-Marine (Alluvial))	Fluvial: gravel, sand, silt	Quaternary (Holocene)	Quaternary (Holocene)	10702	1002	Various fluvial/lacustrine/alluvial/colluvial sediments	100	QA	Quaternary Aquifer
No_1:250K_geol_code		Jarrahmond Formation		Sedimentary (Estuarine)	Silt and silty sand			10033	1002	Various fluvial/lacustrine/alluvial/colluvial sediments	100	QA	Quaternary Aquifer
No_1:250K_geol_code		Curlip Gravel		Sedimentary (Non-Marine (Alluvial))	Gravel, sand, and some silt and clay			10032	1002	Various fluvial/lacustrine/alluvial/colluvial sediments	100	QA	Quaternary Aquifer
No_1:250K_geol_code		Coomandook Formation						10034	1002	Various fluvial/lacustrine/alluvial/colluvial sediments	100	QA	Quaternary Aquifer
No_1:250K_geol_code		Pooraka Formation						10035	1002	Various fluvial/lacustrine/alluvial/colluvial sediments	100	QA	Quaternary Aquifer
No_1:250K_geol_code		Padthaway Formation						10036	1002	Various fluvial/lacustrine/alluvial/colluvial sediments	100	QA	Quaternary Aquifer
No_1:250K_geol_code		Tyrell beds						10037	1002	Various fluvial/lacustrine/alluvial/colluvial sediments	100	QA	Quaternary Aquifer
No_1:250K_geol_code		Coonambidgal Formation						10038	1002	Various fluvial/lacustrine/alluvial/colluvial sediments	100	QA	Quaternary Aquifer
No_1:250K_geol_code		St Kilda Formation (including Semaphore Sands)						10040	1002	Various fluvial/lacustrine/alluvial/colluvial sediments	100	QA	Quaternary Aquifer
Qxl		Lara Limestone		Sedimentary (Non-Marine (Lacustrine))	Lacustrine: limestone, minor sand	Quaternary (Pleistocene)	Quaternary (Pleistocene)	10041	1003	Quaternary sandy limestone, calcarenite and shell deposits	100	QA	Quaternary Aquifer
Qc3		Unnamed slump deposits		Sedimentary (Non-Marine (Colluvial))	Landslide deposits: clay, clayey silt, rubble; poorly sorted and unconsolidated	Quaternary (Holocene)	Quaternary (Holocene)	10042	1004	Quaternary scree	100	QA	Quaternary Aquifer
No_1:250K_geol_code		Monoman Formation / Channel sand		Sedimentary (Non-Marine (Alluvial))		Quaternary (Holocene)		10039	1140	Monoman Formation / Channel sand	100	QA	Quaternary Aquifer
No_1:250K_geol_code		Undifferentiated Quaternary Basalt						10045	1005	Undifferentiated Quaternary Basalt	101	UTB	Upper Tertiary/Quaternary Basalt
Qnp		Unnamed phreatomagmatic deposits		Igneous (Extrusive)	Tuff rings: pyroclastic base surge and fall deposits consisting of ash, lapilli, scoria, volcanic bombs and calcareous lithic fragments; well-bedded, well sorted, moderately consolidated	Quaternary (Holocene)	Quaternary (Holocene)	10043	1133	Quaternary stony rises, tuffs	101	UTB	Upper Tertiary/Quaternary Basalt
Qnt		Unnamed trachyte		Igneous (Extrusive)	Extrusive: alkaline series: trachyte, mugearite, hawaiite, benmoreite	Quaternary (Holocene)	Neogene (Pliocene)	10044	1133	Unnamed Quaternary trachyte	101	UTB	Upper Tertiary/Quaternary Basalt
Qn	Qvn,CXNV,Qv,Qvn1, Qvn2	Newer Volcanic Group		Igneous (Extrusive)	Extrusive: tholeiitic to alkaline basalts, minor scoria and ash	Quaternary (Pleistocene)	Neogene (Miocene)	10046	1005	Undifferentiated Quaternary Basalt	101	UTB	Upper Tertiary/Quaternary Basalt
Qno1	Qvn2	Unnamed sheetflow basalt	Newer Volcanic Group	Igneous (Extrusive)	Extrusive: tholeiitic to alkaline basalts, minor scoria and ash	Quaternary (Pleistocene)	Neogene (Miocene)	10047	1005	Undifferentiated Quaternary Basalt	101	UTB	Upper Tertiary/Quaternary Basalt
Qno2	Qvh,Qvh1,Qvh2,Qvh 3	Unnamed stony rises	Newer Volcanic Group	Igneous (Extrusive)	Extrusive: stony rises	Quaternary (Pleistocene)	Neogene (Miocene)	10048	1005	Undifferentiated Quaternary Basalt	101	UTB	Upper Tertiary/Quaternary Basalt

Department of Sustainability and Environment

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GEOLOGICAL UNITS									HYDROGEOLOGICAL UNITS		AQUIFER		
1:250K_Geol_Code	OLDMAPSYMB	UNIT_NAME	PARENTS	UNIT_DESC	UNIT_LITH	AGEYOUNG	AGEOLD	GU_Code	HGU_code	HGU_Name	Aquif_code	Aquifer Letter	Aquif_Name
Qno3	Qvh	Unnamed valley-filling basalt	Newer Volcanic Group	Igneous (Extrusive)	Extrusive: valley-filling basalts	Quaternary (Pleistocene)	Neogene (Miocene)	10049	1005	Undifferentiated Quaternary Basalt	101	UTB	Upper Tertiary/Quaternary Basalt
Qns	Qvs,Qvs1	Unnamed scoria deposits	Newer Volcanic Group	Igneous (Extrusive)	Extrusive: scoria	Neogene (Pliocene)	Quaternary (Holocene)	10050	1005	Undifferentiated Quaternary Basalt	101	UTB	Upper Tertiary/Quaternary Basalt
Nws	Qa,Qs,CMSH	Shepparton Formation	Wunghnu Group	Sedimentary (Non-Marine (Alluvial))	Fluvial: silt, sand, minor gravel	Quaternary (Pleistocene)	Quaternary (Pleistocene)	10053	1008	Undifferentiated Upper Tertiary/ Quaternary Aquifer	102	UTQA	Upper Tertiary/Quaternary Aquifer
No_1:250K_geol_code		Undifferentiated Upper Shepparton Formation						10054	1009	Upper Shepparton Formation	102	UTQA	Upper Tertiary/Quaternary Aquifer
No_1:250K_geol_code		U Shepp: Kialla Member of Shepparton Formation						10055	1009	Upper Shepparton Formation	102	UTQA	Upper Tertiary/Quaternary Aquifer
No_1:250K_geol_code		U Shepp: Katandra Member of Shepparton Formation						10056	1009	Upper Shepparton Formation	102	UTQA	Upper Tertiary/Quaternary Aquifer
No_1:250K_geol_code		U Shepp: Quiamong Member of Shepparton Formation						10057	1009	Upper Shepparton Formation	102	UTQA	Upper Tertiary/Quaternary Aquifer
No_1:250K_geol_code		U Shepp: Widgelli Pedoderm of Shepparton Formation						10058	1009	Upper Shepparton Formation	102	UTQA	Upper Tertiary/Quaternary Aquifer
No_1:250K_geol_code		U Shepp: Mayrung Member of Shepparton Formation						10059	1009	Upper Shepparton Formation	102	UTQA	Upper Tertiary/Quaternary Aquifer
No_1:250K_geol_code		Undifferentiated Lower Shepparton Formation						10060	1010	Lower Shepparton Formation	102	UTQA	Upper Tertiary/Quaternary Aquifer
No_1:250K_geol_code		L Shepp: Kialla Member of Shepparton Formation						10061	1010	Lower Shepparton Formation	102	UTQA	Upper Tertiary/Quaternary Aquifer
No_1:250K_geol_code		L Shepp: Katandra Member of Shepparton Formation						10062	1010	Lower Shepparton Formation	102	UTQA	Upper Tertiary/Quaternary Aquifer
No_1:250K_geol_code		L Shepp: Quiamong Member of Shepparton Formation						10063	1010	Lower Shepparton Formation	102	UTQA	Upper Tertiary/Quaternary Aquifer
No_1:250K_geol_code		L Shepp: Widgelli Pedoderm of Shepparton Formation						10064	1010	Lower Shepparton Formation	102	UTQA	Upper Tertiary/Quaternary Aquifer
No_1:250K_geol_code		L Shepp: Mayrung Member of Shepparton Formation						10065	1010	Lower Shepparton Formation	102	UTQA	Upper Tertiary/Quaternary Aquifer
No_1:250K_geol_code		Cowra Formation (NSW)						10066	1011	Cowra Formation (NSW)	102	UTQA	Upper Tertiary/Quaternary Aquifer
No_1:250K_geol_code		Narrabri Formation (NSW)						10067	1012	Narrabri Formation (NSW)	102	UTQA	Upper Tertiary/Quaternary Aquifer
Nxh	Nph,Tph,CXHH	Haunted Hill Gravel		Sedimentary (Non-Marine (Alluvial))	Fluvial: sand, silt, gravel, ferruginous sand	Neogene (Pliocene)	Neogene (Miocene)	10072	1015	Haunted Hill Formation	102	UTQA	Upper Tertiary/Quaternary Aquifer
No_1:250K_geol_code		Eagle Point Sand						10073	1016	Eagle Point Sand	102	UTQA	Upper Tertiary/Quaternary Aquifer
No_1:250K_geol_code		Undifferentiated Upper Tertiary/Quaternary Aquitard						10068	1013	Undifferentiated Upper Tertiary/Quaternary Aquitard	103	UTQD	Upper Tertiary/Quaternary Aquitard
Qxb	Qb,Qn	Undifferentiated Blanchetown Clay		Sedimentary (Non-Marine (Fluvial))	Fluvial: clayey sand, sandstone, sand	Quaternary (Pleistocene)	Quaternary (Pleistocene)	10069	1014	Blanchetown Clay	103	UTQD	Upper Tertiary/Quaternary Aquitard
No_1:250K_geol_code		Irymple Member						10070	1014	Blanchetown Clay	103	UTQD	Upper Tertiary/Quaternary Aquitard
No_1:250K_geol_code		Bungunnia Limestone Member						10071	1014	Blanchetown Clay	103	UTQD	Upper Tertiary/Quaternary Aquitard
No_1:250K_geol_code		Boisdale Formation (Nuntin Clay)						10074	1017	*Boisdale Formation (Nuntin Clay)*	103	UTQD	Upper Tertiary/Quaternary Aquitard
No_1:250K_geol_code		Undifferentiated Upper Tertiary Aquifer (marine)						10075	1018	Undifferentiated Upper Tertiary Aquifer (marine)	104	UTAM	Upper Tertiary Aquifer (marine)
Nxp	Npp,Np,Tmk,Tpp,CQPA,Tpl,Tps,Tp,Tp	Undifferentiated Parilla Sand		Sedimentary (Marine)	Sand, silt	Neogene (Pliocene)	Neogene (Miocene)	10076	1019	Loxton Parilla Sand	104	UTAM	Upper Tertiary Aquifer (marine)
No_1:250K_geol_code		Kerang Sand Member of the Loxton-Parilla Sand						10077	1019	Loxton Parilla Sand	104	UTAM	Upper Tertiary Aquifer (marine)
No_1:250K_geol_code		Tragowel Member of the Loxton-Parilla Sand						10078	1019	Loxton Parilla Sand	104	UTAM	Upper Tertiary Aquifer (marine)
No_1:250K_geol_code		Wandella Sandstone Member of the Loxton-Parilla Sand						10079	1019	Loxton Parilla Sand	104	UTAM	Upper Tertiary Aquifer (marine)
No_1:250K_geol_code		Upper Loxton Sands (SA)						10080	1019	Loxton Parilla Sand	104	UTAM	Upper Tertiary Aquifer (marine)
No_1:250K_geol_code		Lower Loxton Sands (SA)						10081	1019	Loxton Parilla Sand	104	UTAM	Upper Tertiary Aquifer (marine)
No_1:250K_geol_code		Moorna Formation						10082	1020	Moorna Formation	104	UTAM	Upper Tertiary Aquifer (marine)
No_1:250K_geol_code		Northwest Bend Formation (SA)						10083	1021	Northwest Bend Formation (SA)	104	UTAM	Upper Tertiary Aquifer (marine)

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GEOLOGICAL UNITS									HYDROGEOLOGICAL UNITS		AQUIFER		
1:250K_Geol_Code	OLDMAPSYMB	UNIT_NAME	PARENTS	UNIT_DESC	UNIT_LITH	AGEYOUNG	AGEOLD	GU_Code	HGU_code	HGU_Name	Aquif_code	Aquifer Letter	Aquif_Name
No_1:250K_geol_code		Chowilla Sand						10084	1022	Chowilla Sand	104	UTAM	Upper Tertiary Aquifer (marine)
No_1:250K_geol_code		Maretimo Member				Quaternary	Quaternary	10116	1049	Whalers Bluff Formation	104	UTAM	Upper Tertiary Aquifer (marine)
No_1:250K_geol_code		Werrikoo Member				Quaternary	Quaternary	10117	1049	Whalers Bluff Formation	104	UTAM	Upper Tertiary Aquifer (marine)
Nxa	Qph,CQWB,Qxh	Whalers Bluff Formation		Sedimentary (Marine, Non-Marine (Coastal))	Coastal: sandy limestone, calcarenite, shell beds, marl	Quaternary (Pleistocene)	Quaternary (Pleistocene)	10118	1049	Whalers Bluff Formation	104	UTAM	Upper Tertiary Aquifer (marine)
Nbh		Hanson Plain Sand		Sedimentary (Non-Marine)	Fluvial and minor shallow marine deposits: quartz sand, clayey sand, gravel, minor calcareous clay and limonite pisolites; surface may be lateritised	Neogene (Pliocene)	Neogene (Pliocene)	10092	1030	Hanson Plain Sand	104	UTAM	Upper Tertiary Aquifer (marine)
Nxd	Npd,Tpd,CXDS	Dorodong Sand		Sedimentary (Marine)	Marine: sand, sandstone, silt, cross-bedded, laterite	Neogene (Pliocene)	Neogene (Miocene)	10093	1031	Dorodong Sand	104	UTAM	Upper Tertiary Aquifer (marine)
Nxg	Npg,Tpg	Grange Burn Formation		Sedimentary (Marine)	Marine: shell beds, sandy limestone, calcareous sand	Neogene (Pliocene)	Neogene (Miocene)	10094	1032	Grange Burn Formation	104	UTAM	Upper Tertiary Aquifer (marine)
Nbm		Moorabool Viaduct Sand		Sedimentary (Marine)	Gravel, sand, silt	Neogene (Pliocene)	Neogene (Miocene)	10096	1034	Moorabool Viaduct Formation	104	UTAM	Upper Tertiary Aquifer (marine)
No_1:250K_geol_code		Undifferentiated Upper Tertiary Aquifer						10085	1023	Undifferentiated Upper Tertiary Aquifer (fluvial)	105	UTAF	Upper Tertiary Aquifer (fluvial)
Nwc	Nma,Tma,Nma	Calivil Formation	Wunghnu Group	Sedimentary (Non-Marine (Alluvial))	Fluvial: deep lead river deposits; gravel, sand, silt, clay	Cainozoic (Neogene)	Cainozoic (Neogene)	10086	1024	*Calivil Formation*	105	UTAF	Upper Tertiary Aquifer (fluvial)
No_1:250K_geol_code		Gunnedah Formation (NSW)						10087	1025	Gunnedah Formation (NSW)	105	UTAF	Upper Tertiary Aquifer (fluvial)
No_1:250K_geol_code		Lachlan Formation (NSW)						10088	1026	Lachlan Formation (NSW)	105	UTAF	Upper Tertiary Aquifer (fluvial)
No_1:250K_geol_code		Rufus Formation (NSW)						10089	1027	Rufus Formation (NSW)	105	UTAF	Upper Tertiary Aquifer (fluvial)
Czf	Czd,Czd/Npp,Tpl,Npl	Unnamed duricrust		Sedimentary (Non-Marine)	Deflational: laterite	Neogene (Pliocene)	Neogene (Miocene)	10090	1028	Unnamed duricrust	105	UTAF	Upper Tertiary Aquifer (fluvial)
No_1:250K_geol_code		Cubbaroo Gravels (NSW)						10091	1029	Cubbaroo Gravels (NSW)	105	UTAF	Upper Tertiary Aquifer (fluvial)
Nb		Brighton Group		Sedimentary (Non-Marine (Alluvial))	Fluvial: gravel, sand, silt	Neogene (Pliocene)	Neogene (Miocene)	10095	1033	Brighton Group	105	UTAF	Upper Tertiary Aquifer (fluvial)
Nxx		Baxter Sandstone		Sedimentary (Non-Marine (Fluvial))	Fluvial: sandstone, conglomerate, siltstone, ironstone	Neogene (Miocene)	Neogene (Pliocene)	10097	1035	Baxter Sandstone	105	UTAF	Upper Tertiary Aquifer (fluvial)
No_1:250K_geol_code		Boisdale Formation (Wurruk Sand)						10098	1036	*Boisdale Formation (Wurruk Sand)*	105	UTAF	Upper Tertiary Aquifer (fluvial)
Na2	Tp,Tp,Np	Unnamed		Sedimentary (Non-Marine (Alluvial))	Fluvial: gravel, sand, silt	Neogene (Pliocene)	Neogene (Miocene)	10016	1082	Unnamed Tertiary Sands, Gravels and Clays	105	UTAF	Upper Tertiary Aquifer (fluvial)
Na	Nm,Tp,Tm,Tp,Qar,Qpa	Unnamed incised alluvium		Sedimentary (Non-Marine (fluvial deposits))	Gravel	Neogene (Miocene)		10163	1082	Unnamed Tertiary Sands, Gravels and Clays	105	UTAF	Upper Tertiary Aquifer (fluvial)
Na10		Unnamed incised alluvium		Sedimentary (Non-Marine (Alluvial))	Fluvial: gravel	Neogene (Miocene)	Neogene (Miocene)	10164	1082	Unnamed Tertiary Sands, Gravels and Clays	105	UTAF	Upper Tertiary Aquifer (fluvial)
No_1:250K_geol_code		Undifferentiated Upper Tertiary Aquitard						10099	1037	Undifferentiated Upper Tertiary Aquitard	106	UTD	Upper Tertiary Aquitard
No_1:250K_geol_code		Bookpurnong Formation						10100	1038	Bookpurnong Formation	106	UTD	Upper Tertiary Aquitard
No_1:250K_geol_code		Lower Loxton Clays (SA)						10101	1039	Lower Loxton Clays	106	UTD	Upper Tertiary Aquitard
No_1:250K_geol_code		Hazelwood Formation		Sedimentary (Non-marine)				10126	1056	Hazelwood Formation	106	UTD	Upper Tertiary Aquitard
No_1:250K_geol_code		Yallourn Formation		Sedimentary (Non-marine)		Miocene	Miocene	10128	1058	Yallourn Formation	106	UTD	Upper Tertiary Aquitard
No_1:250K_geol_code		Jemmys Point Formation				Pliocene	Pliocene	10131	1061	Sale Group / Jemmys Point Formation	106	UTD	Upper Tertiary Aquitard
Nl	Nm-p,Tm-p	Sale Group (undifferentiated)		Sedimentary (Marine)	Marine, non-marine, gravel, sand	Neogene (Pliocene)	Neogene (Miocene)	10132	1061	Sale Group / Jemmys Point Formation	106	UTD	Upper Tertiary Aquitard
		Geera Clay (younger)						10704	1134	Geera Clay (younger)	106	UTD	Upper Tertiary Aquitard
		Winnambool Formation (younger)			Platform/lagoonal deposits	Miocene (Early)	Oligocene (Late)	10705	1135	Winnambool Formation (younger)	106	UTD	Upper Tertiary Aquitard
		Renmark Group (younger aquitard)						10706	1136	Renmark Group (younger aquitard)	106	UTD	Upper Tertiary Aquitard
		Undiff. Upper Mid-Tertiary Aquifer (interleaving - younger)						10707	1138	Undiff. Upper Mid-Tertiary Aquifer (interleaving - younger)	106	UTD	Upper Tertiary Aquitard
No_1:250K_geol_code		Undifferentiated Upper Mid Tertiary Aquifer						10102	1040	Undifferentiated Upper Mid Tertiary Aquifer	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Middle Gambier Limestone						10103	1041	Gambier Limestone	107	UMTA	Upper Mid-Tertiary Aquifer
Nhc		Upper Gambier Limestone		Sedimentary (Marine)	Shallow marine and minor beach and near shore deposits: calcarenite, generally medium to coarse grained fragments of bryozoans, molluscs and echinoids, minor quartz and limonite sand; moderately bedded, alternating poorly and well-cemented beds	Miocene (Berdigalian)	Oligocene (Chattian)	10104	1041	Gambier Limestone	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Finniss Clay (SA)						10105	1042	Finniss Clay (SA)	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Morgan Limestone						10106	1043	Morgan Limestone	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Cadell Marl						10107	1043	Morgan Limestone	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Glenforslan Formation (SA)						10108	1044	Glenforslan Formation (SA)	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Pata Limestone (SA)						10109	1045	Pata Limestone (SA)	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Duddo Limestone						10110	1046	*Duddo Limestone*	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Mannum Formation (SA)						10111	1047	Mannum Formation (SA)	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Bochara Limestone Member						10112	1048	Heytesbury Group / Portland Limestone / Heywood Marl / Bochara Limestone	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Heywood Marl		Sedimentary (Marine)		Oligocene	Oligocene	10113	1048	Heytesbury Group / Portland Limestone / Heywood Marl / Bochara Limestone	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Portland Limestone		Sedimentary (Marine)		Oligocene	Oligocene	10114	1048	Heytesbury Group / Portland Limestone / Heywood Marl / Bochara Limestone	107	UMTA	Upper Mid-Tertiary Aquifer
Nh	Tmg,CMH,Nmn	Heytesbury Group		Sedimentary (Marine)	Marine: calcarenite, marl, silt	Neogene (Miocene)	Neogene (Miocene)	10115	1048	Heytesbury Group / Portland Limestone / Heywood Marl / Bochara Limestone	107	UMTA	Upper Mid-Tertiary Aquifer

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GEOLOGICAL UNITS									HYDROGEOLOGICAL UNITS		AQUIFER		
1:250K_Geol_Code	OLDMAPSYMB	UNIT_NAME	PARENTS	UNIT_DESC	UNIT_LITH	AGEYOUNG	AGEOLD	GU_Code	HGU_code	HGU_Name	Aquif_code	Aquifer Letter	Aquif_Name
Nhp		Port Campbell Limestone		Sedimentary (Marine)	Continental shelf deposit: calcarenite, minor calcilutite, generally fine-grained; bryozoan, mollusc, echinoid and brachiopod fragments, minor coarse-grained calcarenite, quartz sand and clayey silt; weakly cemented, moderately bedded	Miocene (Messinian)	Miocene (Langhian)	10119	1050	Port Campbell Limestone	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Batesford Limestone						10120	1051	*Batesford Limestone*	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Murray Group / Glenelg Group						10121	1052	Murray Group / Glenelg Group / Nelson Formation	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Nelson Formation						10122	1052	Murray Group / Glenelg Group / Nelson Formation	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Cobia Subgroup / Gurnard Formation / Turrum Formation		Sedimentary (Marine)		Oligocene	Eocene	10123	1053	Cobia Subgroup / Gurnard Formation / Turrum Formation	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Sherwood Formation						10125	1055	Sherwood Formation	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Yallock Formation						10689	1129	Yallock Formation	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Yarragon Formation				Miocene	Miocene	10127	1057	Yarragon Formation	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Morwell Formation M1A Coal		Sedimentary (Non-marine)	Coals and ligneous clays	Miocene	Miocene	10691	1059	Morwell Formation / Morwell seams	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Morwell Formation M1A Aquifer (interseam)		Sedimentary (Non-marine)		Miocene	Miocene	10692	1059	Morwell Formation / Morwell seams	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Morwell Formation M1B Coal		Sedimentary (Non-marine)	Coals and ligneous clays	Miocene	Miocene	10693	1059	Morwell Formation / Morwell seams	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Morwell Formation M1B Aquifer (interseam)		Sedimentary (Non-marine)		Miocene	Miocene	10694	1059	Morwell Formation / Morwell seams	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Morwell Formation M2A Coal		Sedimentary (Non-marine)	Coals and ligneous clays	Oligocene	Oligocene	10695	1059	Morwell Formation / Morwell seams	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Morwell Formation M2A Aquifer (interseam)		Sedimentary (Non-marine)		Oligocene	Oligocene	10696	1059	Morwell Formation / Morwell seams	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Morwell Formation M2B Coal		Sedimentary (Non-marine)	Coals and ligneous clays	Oligocene	Oligocene	10697	1059	Morwell Formation / Morwell seams	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Morwell Formation M2B Aquifer (interseam)		Sedimentary (Non-marine)		Oligocene	Oligocene	10698	1059	Morwell Formation / Morwell seams	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Morwell Formation M2C Coal		Sedimentary (Non-marine)	Coals and ligneous clays	Oligocene	Oligocene	10699	1059	Morwell Formation / Morwell seams	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Balook Formation						10130	1060	Balook Formation	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Alberton Coal Seam						10141	1064	Alberton Formation / Alberton Coal Seams	107	UMTA	Upper Mid-Tertiary Aquifer
		Winnambool Formation (interleaving)			Platform/lagoonal deposits	Miocene (Early)	Oligocene (Late)	10708	1137	Winnambool Formation (interleaving)	107	UMTA	Upper Mid-Tertiary Aquifer
No_1:250K_geol_code		Undifferentiated Mid Tertiary Aquitard						10142	1065	Undifferentiated Upper Mid Tertiary Aquitard	108	UMTD	Upper Mid-Tertiary Aquitard
No_1:250K_geol_code		Geera Clay						10143	1066	*Geera Clay*	108	UMTD	Upper Mid-Tertiary Aquitard
No_1:250K_geol_code		Winnambool Formation			Platform/lagoonal deposits	Miocene (Early)	Oligocene (Late)	10144	1067	Winnambool Formation	108	UMTD	Upper Mid-Tertiary Aquitard
Nhg		Gellibrand Marl		Sedimentary (Marine)	Continental shelf deposit: calcareous silty clay and clayey silt, minor fine to coarse grained shelly calcarenite beds, abundant bryozoans and molluscs, common echinoids, brachiopods, corals, crabs and shark teeth, locally abundant glauconite pellets	Miocene (Serravallian)	Oligocene (Chattian)	10145	1068	Gellibrand Marl	108	UMTD	Upper Mid-Tertiary Aquitard
Nhn		Newport Silt		Sedimentary (Marine)	Marine: glauconitic silt, marl, minor limestone	Neogene (Miocene)	Neogene (Miocene)	10146	1069	Newport Silt	108	UMTD	Upper Mid-Tertiary Aquitard
-Pxj		Jan Juc Formation						10149	1072	Torquay Group	108	UMTD	Upper Mid-Tertiary Aquitard
No_1:250K_geol_code		Point Addis Limestone						10150	1072	Torquay Group	108	UMTD	Upper Mid-Tertiary Aquitard
No_1:250K_geol_code		Puebla Clay						10151	1072	Torquay Group	108	UMTD	Upper Mid-Tertiary Aquitard
No_1:250K_geol_code		Zeally Limestone						10152	1072	Torquay Group	108	UMTD	Upper Mid-Tertiary Aquitard
No_1:250K_geol_code		Fyansford Formation						10124	1054	Fyansford Formation	108	UMTD	Upper Mid-Tertiary Aquitard
No_1:250K_geol_code		Maddingley Coal Seam				Oligocene	Early Miocene	10194	1132	Maddingley Coal Seam	108	UMTD	Upper Mid-Tertiary Aquitard
No_1:250K_geol_code		Giffard Sandstone Member						10133	1062	Seaspray Group /Tambo River Formation / Giffard Sandstone Member	108	UMTD	Upper Mid-Tertiary Aquitard
No_1:250K_geol_code		Seaspray Group						10134	1062	Seaspray Group /Tambo River Formation / Giffard Sandstone Member	108	UMTD	Upper Mid-Tertiary Aquitard
No_1:250K_geol_code		Tambo River Formation				Miocene (middle)	Miocene (middle)	10135	1062	Seaspray Group /Tambo River Formation / Giffard Sandstone Member	108	UMTD	Upper Mid-Tertiary Aquitard
Nsg		Gippsland Limestone		Sedimentary (Marine)	Marine: calcarenite, marl	Neogene (Miocene)	Neogene (Miocene)	10136	1063	Gippsland Limestone/Lakes Entrance Formation	108	UMTD	Upper Mid-Tertiary Aquitard
No_1:250K_geol_code		Lakes Entrance Formation				Miocene (middle)	Eocene (Late)	10137	1063	Gippsland Limestone/Lakes Entrance Formation	108	UMTD	Upper Mid-Tertiary Aquitard
No_1:250K_geol_code		Lake Wellington Formation						10138	1063	Gippsland Limestone/Lakes Entrance Formation	108	UMTD	Upper Mid-Tertiary Aquitard
No_1:250K_geol_code		Wuk Wuk Marl						10139	1063	Gippsland Limestone/Lakes Entrance Formation	108	UMTD	Upper Mid-Tertiary Aquitard
No_1:250K_geol_code		Bairnsdale Limestone						10140	1063	Gippsland Limestone/Lakes Entrance Formation	108	UMTD	Upper Mid-Tertiary Aquitard
		Undiff. Upper Mid-Tertiary Aquifer (interleaving - older)						10709	1139	Undiff. Upper Mid-Tertiary Aquifer (interleaving - older)	108	UMTD	Upper Mid-Tertiary Aquitard
No_1:250K_geol_code		Undifferentiated Lower Mid Tertiary Aquifer						10153	1073	Undifferentiated Lower Mid Tertiary Aquifer	109	LMTA	Lower Mid-Tertiary Aquifer

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GEOLOGICAL UNITS									HYDROGEOLOGICAL UNITS		AQUIFER		
1:250K_Geol_Code	OLDMAPSYMB	UNIT_NAME	PARENTS	UNIT_DESC	UNIT_LITH	AGEYOUNG	AGEOLD	GU_Code	HGU_code	HGU_Name	Aquif_code	Aquifer Letter	Aquif_Name
No_1:250K_geol_code		Clifton Formation						10154	1074	Clifton Formation	109	LMTA	Lower Mid-Tertiary Aquifer
-Pxm		Maude Formation		Sedimentary (Marine)	Marine: limestone, calcareous sandstone, intercalcated basalt			10147	1070	Maude Formation	109	LMTA	Lower Mid-Tertiary Aquifer
Nxi, Nv		Maude Basalt		Igneous (Extrusive)	Extrusive: olivine tholeiites			10690	1070	Maude Formation	109	LMTA	Lower Mid-Tertiary Aquifer
No_1:250K_geol_code		Morwell Fm M2C aquifer (interseam)		Sedimentary (Non-marine)		Oligocene	Oligocene	10700	1141	M2C Aquifer / Seaspray sand	109	LMTA	Lower Mid-Tertiary Aquifer
No_1:250K_geol_code		Seaspray Sand		Sedimentary (Non-marine)		Oligocene	Oligocene	10703	1141	M2C Aquifer / Seaspray sand	109	LMTA	Lower Mid-Tertiary Aquifer
No_1:250K_geol_code		Undifferentiated Lower Mid Tertiary Aquitard						10155	1075	Undifferentiated Lower Mid Tertiary Aquitard	110	LMTD	Lower Mid-Tertiary Aquitard
No_1:250K_geol_code		Ettrick Formation						10156	1076	Ettrick Formation	110	LMTD	Lower Mid-Tertiary Aquitard
No_1:250K_geol_code		Yanac Member						10157	1076	Ettrick Formation	110	LMTD	Lower Mid-Tertiary Aquitard
No_1:250K_geol_code		Boga Silt						10158	1077	Boga Silt	110	LMTD	Lower Mid-Tertiary Aquitard
No_1:250K_geol_code		Nirranda Group						10159	1078	Nirranda Group	110	LMTD	Lower Mid-Tertiary Aquitard
No_1:250K_geol_code		Wangoom Sand				Eocene (Bartonian)	Late Eocene	10160	1079	Wangoom Sand	110	LMTD	Lower Mid-Tertiary Aquitard
-Pnn		Narrawaturk Marl		Sedimentary (Marine)	Open marine (below storm wave base) deposits: calcareous mudstone, minor thin calcarenite beds; locally carbonaceous and burrowed, locally abundant glauconite pellets and polished quartz sand, foraminifers, bryozoans, brachiopods and molluscs	Oligocene (Rupelian)	Eocene (Bartonian)	10161	1080	Narrawaturk Marl	110	LMTD	Lower Mid-Tertiary Aquitard
No_1:250K_geol_code		Sturgess Point Member						10165	1083	Sturgess Point Member	110	LMTD	Lower Mid-Tertiary Aquitard
No_1:250K_geol_code		Upper Mepunga Formation						10166	1084	Upper Mepunga Formation	110	LMTD	Lower Mid-Tertiary Aquitard
No_1:250K_geol_code		Anglesea Formation				Eocene (Late)	Eocene (Late)	10167	1085	Demons Bluff Group / Anglesea Formation	110	LMTD	Lower Mid-Tertiary Aquitard
-Pnd		Demons Bluff Group		Sedimentary (Marine)	Marine: silt, fine sand, clay, carbonaceous, pyritic, burrowed	Palaeogene (Eocene)	Palaeogene (Eocene)	10168	1085	Demons Bluff Group / Anglesea Formation	110	LMTD	Lower Mid-Tertiary Aquitard
No_1:250K_geol_code		Flounder Formation				Late Eocene	Early Eocene	10169	1086	Flounder Formation	110	LMTD	Lower Mid-Tertiary Aquitard
No_1:250K_geol_code		Undifferentiated Lower Tertiary Aquifer						10170	1087	Undifferentiated Lower Tertiary Aquifer	111	LTA	Lower Tertiary Aquifer
No_1:250K_geol_code		Upper Renmark Olney						10171	1088	Upper Renmark Group	111	LTA	Lower Tertiary Aquifer
No_1:250K_geol_code		Upper Renmark Moorlands Lignite Member						10172	1088	Upper Renmark Group	111	LTA	Lower Tertiary Aquifer
No_1:250K_geol_code		Middle Renmark Olney						10173	1089	Middle Renmark Group	111	LTA	Lower Tertiary Aquifer
No_1:250K_geol_code		Moorlands Lignite Member						10174	1089	Middle Renmark Group	111	LTA	Lower Tertiary Aquifer
No_1:250K_geol_code		Warina Sand				Paleocene (Late)	Eocene (Early)	10175	1090	Lower Renmark Group	111	LTA	Lower Tertiary Aquifer
No_1:250K_geol_code		Lower Renmark Olney						10176	1090	Lower Renmark Group	111	LTA	Lower Tertiary Aquifer
No_1:250K_geol_code		Compton Conglomerate						10177	1090	Lower Renmark Group	111	LTA	Lower Tertiary Aquifer
No_1:250K_geol_code		Buccleuch Formation						10178	1090	Lower Renmark Group	111	LTA	Lower Tertiary Aquifer
No_1:250K_geol_code		Jerilderie Formation						10179	1090	Lower Renmark Group	111	LTA	Lower Tertiary Aquifer
No_1:250K_geol_code		Dartmoor Formation				Eocene (early)	Palaeocene (Late)	10180	1091	Wangerrip Group / Dartmoor Fm / Knight Gp	111	LTA	Lower Tertiary Aquifer
-Pw	Paw,Tab,CPW	Wangerrip Group / Knight Group		Sedimentary (Marine, Non-Marine)	Marine, fluvial: sandstone, minor conglomerate	Palaeogene (Palaeocene)	Palaeogene (Palaeocene)	10181	1091	Wangerrip Group / Dartmoor Fm / Knight Gp	111	LTA	Lower Tertiary Aquifer
-Pa		Unnamed alluvium		Sedimentary (Non-Marine (Alluvial))	Fluvial: gravel, sand	Palaeogene (Eocene)	Palaeogene (Eocene)	10182	1092	Unnamed alluvium	111	LTA	Lower Tertiary Aquifer
No_1:250K_geol_code		Yaugher Volcanics				Oligocene	Eocene	10183	1093	Dilwyn Formation / Yaugher Volcanics / Rivernook Member	111	LTA	Lower Tertiary Aquifer
-Pwd		Dilwyn Formation		Sedimentary (Marine)	Shallow marine, coastal barrier and back beach lagoonal deposits: sandy clay, silt; carbonaceous, burrowed, often laminated, cross-bedded, interbedded with quartz sand, clayey sand and minor coarse sand and gravel; massive to moderately bedded	Eocene (Lutetian)	Eocene (Lutetian)	10184	1093	Dilwyn Formation / Yaugher Volcanics / Rivernook Member	111	LTA	Lower Tertiary Aquifer
No_1:250K_geol_code		Burrungule Member				Palaeocene (Ypresian)		10185	1094	Burrungule Member	111	LTA	Lower Tertiary Aquifer
-Pwdp		Pember Mudstone Member		Sedimentary (Marine)	Shallow marine (below and close to storm wave base) deposits: silty clay, clayey silt, fine quartz sand; carbonaceous, micaceous, pyritic, burrowed, with abundant arenaceous foraminifers, minor calcareous foraminifers and shelly fossils	Eocene (Lutetian)	Palaeocene (Thanetian)	10186	1095	Pember Mudstone	111	LTA	Lower Tertiary Aquifer
-Pwe		Eastern View Formation		Sedimentary (Non-Marine (Alluvial))	Fluvial: gravel, sand, clay, brown coal	Palaeogene (Palaeocene)	Palaeogene (Palaeocene)	10187	1096	Eastern View Formation	111	LTA	Lower Tertiary Aquifer
-Pwp		Pebble Point Formation / Bahgallah Formation		Sedimentary (Marine)	Near shore, shallow marine deposits: quartz sand, minor clay; micaceous, fine-grained, friable, generally massive; minor planar cross-bedding; minor gravel, minor volcanic and metamorphic lithic cobbles and pebbles	Palaeocene (Ypresian)	Late Cretaceous (Maastrichtian)	10188	1097	Pebble Point Formation	111	LTA	Lower Tertiary Aquifer
-Pwpm		Moomowroong Sand Member		Sedimentary (Marine)	Marginal marine and beach deposits: quartz sand, minor clay; micaceous, fine-grained, friable, generally massive; minor planar cross-bedding; minor gravel	Palaeocene (Ypresian)	Late Cretaceous (Maastrichtian)	10189	1098	Moomowroong Sand Member	111	LTA	Lower Tertiary Aquifer
-Pwpw		Wiridjil Gravel Member		Sedimentary (Non-Marine)	Fluvial braided stream deposits: quartz gravel, sand, minor pebble layers and clay clasts; carbonaceous, friable, minor volcanic and metamorphic lithic cobbles and pebbles; large-scale trough cross-bedding	Palaeocene (Ypresian)	Late Cretaceous (Maastrichtian)	10190	1099	Wiridjil Gravel Member	111	LTA	Lower Tertiary Aquifer
No_1:250K_geol_code		Brucknell Member			Dark brown, carbonaceous clayey silt to silty clay, often burrowed; richly fossiliferous in places	Early Oligocene	Late Eocene	10191	1100	Mepunga Formation (lower) / Brucknell Member	111	LTA	Lower Tertiary Aquifer
-Pnm		Mepunga Formation (lower)		Sedimentary (Marine, Non-Marine)	Barrier island, beach and near shore, estuarine and lagoonal deposits: quartz sand, medium to coarse grained, iron-stained, minor detrital limonite, with gastropod and mollusc fragments. foraminifers; unconsolidated, locally cemented with calcite, in	Oligocene (Rupelian)	Eocene (Bartonian)	10192	1100	Mepunga Formation (lower) / Brucknell Member	111	LTA	Lower Tertiary Aquifer
No_1:250K_geol_code		Timboon Sand / Curdies Formation						10193	1101	Timboon Sand	111	LTA	Lower Tertiary Aquifer
-Pxe		Werribee Formation		Sedimentary (Non-Marine (Alluvial))	Fluvial: sand, sandy and silty clay, carbonaceous, pyritic in part	Palaeogene (Eocene)	Palaeogene (Eocene)	10195	1102	Werribee Formation	111	LTA	Lower Tertiary Aquifer
No_1:250K_geol_code		Yaloak Formation						10196	1103	Yaloak Formation	111	LTA	Lower Tertiary Aquifer
No_1:250K_geol_code		M2 (basal aquifer)		Sedimentary (Non-Marine)		Oligocene	Oligocene	10701	1142	M2 / M2C Aquifer (basal aquifer)	111	LTA	Lower Tertiary Aquifer
No_1:250K_geol_code		M2C (basal aquifer)		Sedimentary (Non-Marine)		Oligocene	Oligocene	10702	1142	M2 / M2C Aquifer (basal aquifer)	111	LTA	Lower Tertiary Aquifer

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GEOLOGICAL UNITS									HYDROGEOLOGICAL UNITS		AQUIFER		
1:250K_Geol_Code	OLDMAPSYMB	UNIT_NAME	PARENTS	UNIT_DESC	UNIT_LITH	AGEYOUNG	AGEOLD	GU_Code	HGU_Code	HGU_Name	Aquif_code	Aquifer Letter	Aquif_Name
No_1:250K_geol_code		Latrobe Group (Upper, Middle and Lower)						10197	1104	Latrobe Group (Upper, Middle and Lower)	111	LTA	Lower Tertiary Aquifer
No_1:250K_geol_code		Traralgon Formation						10198	1104	Latrobe Group (Upper, Middle and Lower)	111	LTA	Lower Tertiary Aquifer
No_1:250K_geol_code		Yarram Formation						10200	1105	Yarram Formation	111	LTA	Lower Tertiary Aquifer
No_1:250K_geol_code		Honeysuckle Gravels						10201	1106	Honeysuckle Gravels	111	LTA	Lower Tertiary Aquifer
-Pxc		Childers Formation		Sedimentary (Non-Marine (Alluvial))	Fluvial: sand, clay, gravel, conglomerate	Palaeogene (Oligocene)	Palaeogene (Palaeocene)	10202	1107	Childers Formation	111	LTA	Lower Tertiary Aquifer
No_1:250K_geol_code		Burong Formation / Traralgon Seam				Eocene (Middle)	Oligocene (Early)	10203	1108	Burong Formation / Traralgon Seam	111	LTA	Lower Tertiary Aquifer
-Pxh	Ppw,Tlw,Plw	White Hills Gravel		Sedimentary (Non-Marine (Alluvial))	Fluvial: river deposits, colluvium; vein quartz gravel, sand, silt, clay	Cainozoic (Palaeogene)	Cainozoic (Palaeogene)	10019	1071	White Hills Gravels	111	LTA	Lower Tertiary Aquifer
No_1:250K_geol_code		Undifferentiated Lower Tertiary Basalts						10204	1109	Undifferentiated Lower Tertiary Basalts	112	LTB	Lower Tertiary Basalts
Nxi		Pintadeen Basalt (phase 2)						10148	1081	Phase 2 Basalts	112	LTB	Lower Tertiary Basalts
Nv		Undifferentiated basalt (phase 2)		Igneous (Extrusive)	Extrusive: olivine tholeiites	Neogene (Miocene)	Neogene (Miocene)	10162	1081	Phase 2 Basalts	112	LTB	Lower Tertiary Basalts
-Po	Pvo,Po,CEOV	Older Volcanic Group (Phase 1)		Igneous (Extrusive)	Extrusive: tholeiitic and minor alkaline basalts	Palaeogene (Oligocene)	Palaeogene (Eocene)	10205	1110	Older Volcanic Group *(Phase 1)*	112	LTB	Lower Tertiary Basalts
No_1:250K_geol_code		Mornington Volcanics						10206	1111	Mornington Volcanics	112	LTB	Lower Tertiary Basalts
No_1:250K_geol_code		Thorpdale Volcanics						10207	1112	Thorpdale Volcanics	112	LTB	Lower Tertiary Basalts
No_1:250K_geol_code		Carrajung Volcanics				Eocene	Palaeocene	10208	1113	Carrajung Volcanics	112	LTB	Lower Tertiary Basalts
No_1:250K_geol_code		Undifferentiated Cretaceous and Permian Sediments						10209	1114	Undifferentiated Cretaceous and Permian Sediments	113	CPS	Cretaceous and Permian Sediments
No_1:250K_geol_code		Pyab Member, Monash Formation						10210	1115	Monash Formation	113	CPS	Cretaceous and Permian Sediments
No_1:250K_geol_code		Merreti Member, Monash Formation						10211	1115	Monash Formation	113	CPS	Cretaceous and Permian Sediments
No_1:250K_geol_code		Coombool Member, Monash Formation						10212	1115	Monash Formation	113	CPS	Cretaceous and Permian Sediments
No_1:250K_geol_code		Taparoo Sandstone of Millewa Group						10213	1116	Millewa Group	113	CPS	Cretaceous and Permian Sediments
No_1:250K_geol_code		Morkalla Formation of Millewa Group						10214	1116	Millewa Group	113	CPS	Cretaceous and Permian Sediments
No_1:250K_geol_code		Urana Formation						10215	1117	Urana Formation	113	CPS	Cretaceous and Permian Sediments
No_1:250K_geol_code		Coorabin Coal Measures						10216	1118	Undifferentiated Permian Sediments	113	CPS	Cretaceous and Permian Sediments
No_1:250K_geol_code		Lane's Shaft Coal Member						10217	1118	Undifferentiated Permian Sediments	113	CPS	Cretaceous and Permian Sediments
No_1:250K_geol_code		Narrow Plain Formation						10218	1118	Undifferentiated Permian Sediments	113	CPS	Cretaceous and Permian Sediments
No_1:250K_geol_code		Loughmore Formation						10219	1118	Undifferentiated Permian Sediments	113	CPS	Cretaceous and Permian Sediments
No_1:250K_geol_code		Coreen Creek Coal Member						10220	1118	Undifferentiated Permian Sediments	113	CPS	Cretaceous and Permian Sediments
No_1:250K_geol_code		Nowrie Creek Formation						10221	1118	Undifferentiated Permian Sediments	113	CPS	Cretaceous and Permian Sediments
Kup		Paaratte Formation				Cretaceous (Early Cretaceous)	Cretaceous (Early Cretaceous)	10222	1119	Paaratte Formation	113	CPS	Cretaceous and Permian Sediments
No_1:250K_geol_code		Belfast Mudstone		Sedimentary (Non-Marine)		Cretaceous (Late Cretaceous)	Cretaceous (Late Cretaceous)	10223	1120	Belfast Mudstone	113	CPS	Cretaceous and Permian Sediments
No_1:250K_geol_code		Flaxman Formation		Sedimentary (Non-Marine)		Cretaceous (Late Cretaceous)	Cretaceous (Late Cretaceous)	10224	1121	Flaxman Formation	113	CPS	Cretaceous and Permian Sediments
No_1:250K_geol_code		Nullawarre Greensand				Cretaceous (Early Cretaceous)	Cretaceous (Early Cretaceous)	10225	1122	Nullawarre Greensand	113	CPS	Cretaceous and Permian Sediments
No_1:250K_geol_code		Waarre Formation		Sedimentary (Non-Marine)		Cretaceous (Late Cretaceous)	Cretaceous (Late Cretaceous)	10226	1123	Waarre Formation	113	CPS	Cretaceous and Permian Sediments
No_1:250K_geol_code		Undifferentiated Mesozoic and Palaeozoic Bedrock						10227	1124	Undifferentiated Mesozoic and Palaeozoic Bedrock	114	BSE	Mesozoic and Palaeozoic Bedrock
-Ca	Cs	St Arnaud Group		Sedimentary (Marine)	Marine: sandstone, siltstone, biotite schist	Palaeozoic (Cambrian)	Palaeozoic (Cambrian)	10228	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
-Chl	Ehl	Lazy Bar Andesite	Heathcote Volcanic Group	Sedimentary (Marine)	Marine: andesite, volcanic sedimentary rocks	Palaeozoic (Cambrian)	Palaeozoic (Cambrian)	10229	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
-Chm	Chw,Ehw,Cv	Mount William Metabasalt	Heathcote Volcanic Group	Sedimentary (Marine)	Extrusive, intrusive: basalt, andesite, boninite, rhyolite, gabbro, lithic sandstone, chert, shale, breccia	Palaeozoic (Cambrian)	Palaeozoic (Cambrian)	10230	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
-Chs	Ehs	Sheoak Gully Boninite	Heathcote Volcanic Group	Sedimentary (Marine)	Marine: boninite, volcanic sedimentary rocks	Palaeozoic (Cambrian)	Palaeozoic (Cambrian)	10231	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
-Cm	Cm,Cg	Moralana Supergroup		Sedimentary (Marine)	Marine: sandstone, siltstone	Palaeozoic (Cambrian)	Palaeozoic (Cambrian)	10232	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
-Cng	Unk20,Cgl,Cgs,C6	Glenthompson Sandstone	Nargoon Group	Sedimentary (Marine)	Marine: sandstone, siltstone, shale	Palaeozoic (Cambrian)	Palaeozoic (Cambrian)	10233	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
-Ctg	Cus	Garvey Gully Formation	Thiele Igneous Complex	Sedimentary (Marine)	Marine: chert, volcaniclastic sandstone, mudstone, limestone	Palaeozoic (Cambrian)	Palaeozoic (Cambrian)	10234	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
-Cx	Cus	Undifferentiated Cambrian sedimentary rocks		Sedimentary (Marine)	Marine: chert, volcaniclastic sandstone, mudstone, limestone	Palaeozoic (Cambrian)	Palaeozoic (Cambrian)	10235	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
-Cxg	Cug,Eug	Goldie Chert		Sedimentary (Marine)	Marine: chert, siliceous siltstone	Palaeozoic (Cambrian)		10236	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
-Cxk	Cmm,Cmk,Emk	Knowsley East Shale		Sedimentary (Marine)	Marine: shale, siltstone, chert, conglomerate, volcanic sandstone	Cambrian (Late Cambrian)	Cambrian (Middle Cambrian)	10237	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Cxo	Plu,Cu	Boorhaman Conglomerate		Sedimentary (Marine, Non-Marine)	Fluvioglacial, glaciomarine: tillite, diamictite, sandstone, mudstone, conglomerate	Carboniferous (Late Carboniferous)	Carboniferous (Late Carboniferous)	10238	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dad	Dd,Dl	Delatite Group	Avon Supergroup	Sedimentary, Igneous (Non-Marine, Extrusive)	Extrusive: rhyolite ignimbrite, minor andesite lava & volcaniclastics; Fluvial: red siltstone, minor sandstone, occasional conglomerate\n	Devonian (Late Devonian)	Devonian (Late Devonian)	10239	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dadm	Dam,Dum,Ddm	Moroka Glen Formation	Delatite Group (Avon Supergroup)	Sedimentary (Non-Marine (Alluvial))	Fluvial: sandstone, conglomerate	Devonian (Late Devonian)	Devonian (Late Devonian)	10240	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Damk	Dmt,Dak,Clt,Clk	Mount Kent Conglomerate	Avon Supergroup	Sedimentary (Non-Marine (Alluvial))	Fluvial: cobble conglomerate, pebbly sandstone, cross bedded sandstone	Devonian (Late Devonian)	Devonian (Late Devonian)	10241	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dams	Dmd,Das,Cl,Cls	Snowy Plains Formation	Mansfield Group (Avon Supergroup)	Sedimentary (Non-Marine (Alluvial))	Fluvial: red mudstone, micaceous sandstone, minor breccia, conglomerate	Devonian (Late Devonian)	Devonian (Late Devonian)	10242	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock

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GEOLOGICAL UNITS									HYDROGEOLOGICAL UNITS		AQUIFER		
1:250K_Geol_Code	OLDMAPSYMB	UNIT_NAME	PARENTS	UNIT_DESC	UNIT_LITH	AGEYOUNG	AGEOLD	GU_Code	HGU_code	HGU_Name	Aquif_code	Aquifer Letter	Aquif_Name
Dbb	Dla,PDBC	Buchan Caves Limestone	Buchan Group	Sedimentary (Marine)	Marine: limestone, dolomite, well-bedded dark grey recrystallized	Devonian (Early Devonian)	Devonian (Early Devonian)	10243	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dbm		Murrindal Limestone		Sedimentary (Marine)	Marine: massive limestone, pale grey, recrystallized	Devonian (Early Devonian)	Devonian (Early Devonian)	10244	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dbt		Taravale Marlstone		Sedimentary (Marine)	Marine: marlstone, dark grey-green, nodular limestone	Devonian (Early Devonian)	Devonian (Early Devonian)	10245	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dc	Damk,Dk,Dmk	Cathedral Group		Sedimentary (Non-Marine (Alluvial))	Fluvial: sandstone, conglomerate, red sandstone, siltstone	Devonian (Middle Devonian)	Devonian (Middle Devonian)	10246	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Ddd	Dvdd,Dldd,Dldc	Dart River Volcanic Breccia	Dartella Volcanic Group	Sedimentary (Non-Marine)	Fluvial, lacustrine?: black siltstone, volcanogenic sandstone, slate breccia	Devonian (Early Devonian)	Devonian (Early Devonian)	10247	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Deo		Boulder Flat Limestone		Sedimentary (Marine)	Marine: limestone, massive dark grey recrystallized to stylobrecciated, black shale	Devonian (Early Devonian)	Devonian (Early Devonian)	10248	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Deu		Bungywarr Formation		Sedimentary (Marine)	Marine: sandstone, volcanogenic polymictite, minor rhyolite lava	Devonian (Early Devonian)	Devonian (Early Devonian)	10249	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dh		White Monkey Volcanic Group		Sedimentary, Igneous (Non-Marine, Extrusive)	Extrusive, fluvial: felsic ignimbrite, minor conglomerate, sandstone	Devonian (Early Devonian)	Devonian (Early Devonian)	10250	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dn		Walhalla Group / undifferentiated Walhalla Group		Sedimentary (Marine)	Marine: undiff'd: sandstone, mudstone, minor conglomerate	Devonian (Early Devonian)	Devonian (Early Devonian)	10251	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dnm	Dwam,Dlwm,Dwm,Dnl	Montys Hut Formation	Walhalla Group	Sedimentary (Marine)	Marine: thin-bedded sandstone, siltstone	Devonian (Early Devonian)	Devonian (Early Devonian)	10252	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dnn	Dwan,Dlwn,Dwn	Norton Gully Sandstone	Walhalla Group	Sedimentary (Marine)	Marine: sandstone, thick to thin bedded, siltstone, minor conglomerate, limestone lenses	Devonian (Early Devonian)	Devonian (Early Devonian)	10253	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dq		Merimbula Group / undifferentiated Merimbula Group		Sedimentary (Marine, Non-Marine)	Fluvial; marine: sandstone, conglomerate, siltstone, quartzite, shale	Devonian (Late Devonian)	Devonian (Late Devonian)	10254	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dsb		Timbarra Subgroup		Sedimentary (Non-Marine)	Extrusive, fluvial, marine: ignimbrite, lava, conglomerate, sandstone, polymictite	Devonian (Early Devonian)	Devonian (Early Devonian)	10255	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dsc		Wombargo Subgroup		Sedimentary, Igneous (Non-Marine, Extrusive)	Extrusive, fluvial: conglomerate, sandstone, felsic ignimbrite	Devonian (Early Devonian)	Devonian (Early Devonian)	10256	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dsd		White Monkey Subgroup		Sedimentary, Igneous(Non-Marine, Extrusive())	Extrusive, fluvial: felsic ignimbrite, minor conglomerate, sandstone	Lower Devonian		10257	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dse		Marroo Subgroup		Sedimentary, Igneous (Non-Marine, Extrusive)	Extrusive, fluvial: felsic ignimbrite, minor conglomerate, sandstone	Devonian (Early Devonian)	Devonian (Early Devonian)	10258	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dsf		Berrmarr Subgroup		Sedimentary, Igneous (Non-Marine, Extrusive)	Extrusive, fluvial: felsic ignimbrite, megabreccia, minor rhyolite lava	Devonian (Early Devonian)	Devonian (Early Devonian)	10259	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dsj		Trendale Formation		Sedimentary, Igneous (Non-Marine, Extrusive)	Extrusive, fluvial: ignimbrite, ashstone, sandstone, mudstone	Devonian (Early Devonian)	Devonian (Early Devonian)	10260	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dsk		Little River Subgroup		Sedimentary, Igneous (Non-Marine, Extrusive)	Extrusive, fluvial: felsic ignimbrite, felsic to mafic lava, ashstone, conglomerate, sandstone, mudstone, chert	Devonian (Early Devonian)	Devonian (Early Devonian)	10261	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dsn		Ninnie Subgroup		Sedimentary, Igneous (Non-Marine, Extrusive)	Extrusive, ignimbrite, sandstone, conglomerate	Devonian (Early Devonian)	Devonian (Early Devonian)	10262	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dsv		Devils Den Conglomerate		Sedimentary (Non-Marine (Alluvial))	Fluvial: conglomerate, sandstone, minor mudstone	Devonian (Early Devonian)	Devonian (Early Devonian)	10263	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dwt		Tabberabbera Formation		Sedimentary (Marine)	Marine: siltstone, sandstone, minor limestone	Devonian (Early Devonian)	Devonian (Early Devonian)	10264	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dww		Wild Horse Formation		Sedimentary (Non-Marine)	Transgressive: conglomerate, pebbly sandstone, quartzite	Devonian (Early Devonian)	Devonian (Early Devonian)	10265	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dx	Dl,Dxe	Undifferentiated Devonian sedimentary rocks		Sedimentary	Fluvial: conglomerate, sandstone, mudstone	Devonian (Late Devonian)	Devonian (Late Devonian)	10266	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dxc		Combyingbar Formation		Sedimentary (Non-Marine (Alluvial))	Fluvial: conglomerate, sandstone, mudstone	Devonian (Late Devonian)	Devonian (Late Devonian)	10267	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dxh	Dlh	Humevale Siltstone		Sedimentary (Marine)	Marine: siltstone, minor sandstone	Devonian (Early Devonian)	Devonian (Early Devonian)	10268	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dxl		Liptrap Formation		Sedimentary (Marine)	Marine: sandstone, siltstone, minor conglomerate	Devonian (Early Devonian)	Devonian (Early Devonian)	10269	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dxmc	Dlmc	Cornella Member	Mount Ida Formation	Sedimentary (Marine)	Marine: turbidite deposits; siltstone, thin bedded sandstone	Devonian (Early Devonian)	Devonian (Early Devonian)	10270	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dxmd	Dlmd	Dealba Member	Mount Ida Formation	Sedimentary (Marine)	Marine: thin to thick bedded quartz sandstone, minor conglomerate	Devonian (Early Devonian)	Devonian (Early Devonian)	10271	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dxms	Dlms	Stoddart Member	Mount Ida Formation	Sedimentary (Marine)	Marine: thin bedded mudstone, shale, sandstone, conglomerate	Devonian (Early Devonian)	Devonian (Early Devonian)	10272	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dxp	Dlp,Dlpu	Puckapunyal Formation		Sedimentary (Marine)	Marine: turbidite deposits; siltstone, thin bedded sandstone	Silurian (Pridoli)	Silurian (Pridoli)	10273	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dxr	Dlf	Waranga Formation		Sedimentary (Marine)	Marine: siltstone, minor sandstone	Devonian (Early Devonian)	Devonian (Early Devonian)	10274	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dxw		Waratah Limestone		Sedimentary (Marine)	Marine: limestone, massive mid-grey recrystallized	Devonian (Early Devonian)	Devonian (Early Devonian)	10275	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Koe	Kle,Klm,Kl,MCEV,KL	Eumeralla Formation	Otway Group	Sedimentary (Non-Marine)	Fluvial: lithic sandstone, siltstone, minor conglomerate, coal	Cretaceous (Early Cretaceous)	Cretaceous (Early Cretaceous)	10305	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Ksw		Wonthaggi Formation		Sedimentary (Non-Marine (Alluvial))	Fluvial: lithic sandstone, siltstone, minor conglomerate, coal	Cretaceous (Early Cretaceous)	Cretaceous (Early Cretaceous)	10306	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
No_1:250K_geol_code		Casterton Beds				Jurassic	Cretaceous (Early Cretaceous)	10307	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
No_1:250K_geol_code		Crayfish Subgroup				Cretaceous (Early Cretaceous)	Cretaceous (Early Cretaceous)	10308	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
No_1:250K_geol_code		Geltwood Beach Formation			Volcanogenic Sandstones	Cretaceous (Early Cretaceous)	Cretaceous (Early Cretaceous)	10309	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
No_1:250K_geol_code		Heathfield Sandstone Member				Cretaceous (Early Cretaceous)	Cretaceous (Early Cretaceous)	10310	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
No_1:250K_geol_code		Laira Formation				Cretaceous (Early Cretaceous)	Cretaceous (Early Cretaceous)	10311	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
No_1:250K_geol_code		Otway Group / Merino Group				Jurassic	Cretaceous (Early Cretaceous)	10312	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
No_1:250K_geol_code		Pretty Hill Formation			Volcanogenic Sandstones	Cretaceous (Early Cretaceous)	Cretaceous (Early Cretaceous)	10313	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
No_1:250K_geol_code		Sherbrook Group		Sedimentary (Non-Marine)		Cretaceous (Late Cretaceous)	Cretaceous (Late Cretaceous)	10314	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock

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GEOLOGICAL UNITS									HYDROGEOLOGICAL UNITS		AQUIFER		
1:250K_Geol_Code	OLDMAPSYMB	UNIT_NAME	PARENTS	UNIT_DESC	UNIT_LITH	AGEYOUNG	AGEOLD	GU_Code	HGU_code	HGU_Name	Aquif_code	Aquifer Letter	Aquif_Name
No_1:250K_geol_code		Skull Creek Member				Cretaceous (Campanian)	Cretaceous (Campanian)	10315	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
No_1:250K_geol_code		Strzelecki Group		Sedimentary (Non-Marine)	Interbedded non-marine greywackes, mudstones, sandstones, conglomerates, minor coals and volcanics.	Cretaceous (Albian)	Cretaceous (Berremian)	10316	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
No_1:250K_geol_code		Windermere Formation		Sedimentary (Non-Marine (Alluvial))	Fluvial, braided stream deposits: volcanolithic sandstone, siltstone, mudstone, with feldspar and quartz grains, fine to medium grained	Cretaceous (Early Cretaceous)	Cretaceous (Early Cretaceous)	10317	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
TRxc		Council Trench Formation		Sedimentary (Non-Marine (Alluvial))	Fluvial: conglomerate, sandstone, siltstone	Mesozoic (Triassic)	Mesozoic (Triassic)	10318	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Oah		Howqua Chert / Howqua Shale		Sedimentary (Marine)	Marine: black shale, siliceous shale, mafic sandstone	Ordovician (Early Ordovician)	Ordovician (Early Ordovician)	10319	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Oap	Oap,Oa,Oli,Op	Pinnak Sandstone	Adaminaby Group	Sedimentary (Marine)	Marine: sandstone, thick to thin bedded, siltstone, minor chert	Ordovician (Early Ordovician)	Ordovician (Early Ordovician)	10320	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Ob	Oub	Bendoc Group / undifferentiated Bendoc Group		Sedimentary (Marine)	Marine: black shale, cherty shale, stripy thin-bedded sandstone and siltstone, laminated siltstone	Ordovician (Late Ordovician)	Ordovician (Middle Ordovician)	10321	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Oc	Ol	Castlemaine Group		Sedimentary (Marine)	Marine: sandstone, siltstone, shale, chert	Ordovician (Early Ordovician)	Ordovician (Early Ordovician)	10322	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Ocb	Olb	Castlemaine Group - Bendigonian	Castlemaine Group	Sedimentary (Marine)	Sandstone, siltstone, shale, chert; Bendigonian	Early Ordovician (Bendigonian)	Early Ordovician (Bendigonian)	10323	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Occ	Olc	Castlemaine Group - Castlemainian	Castlemaine Group	Sedimentary (Marine)	Marine: sandstone, siltstone, shale, chert; Castlemainian	Middle Ordovician (Castlemainian)		10324	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Ocd	Olm,Ola	Castlemaine Group - Darriwilian	Castlemaine Group	Sedimentary (Marine)	Marine: sandstone, siltstone, shale, chert. Darriwilian	Middle Ordovician (Darriwilian)	Middle Ordovician (Darriwilian)	10325	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Och	Olh	Castlemaine Group - Chewtonian	Castlemaine Group	Sedimentary (Marine)	Marine: sandstone, siltstone, shale, chert; Chewtonian	Early Ordovician (Chewtonian)		10326	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Ochc	Ola	Castlemaine Group		Sedimentary (Marine)	Marine: Sandstone, siltstone, shale, chert, Castlemainian + Chewtonian	Middle Ordovician (Castlemainian)	Early Ordovician (Chewtonian)	10327	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Ocl	Oll	Castlemaine Group - Lancefieldian	Castlemaine Group	Sedimentary (Marine)	Sandstone, siltstone, shale, chert; Lancefieldian	Early Ordovician (Lancefieldian/Warendia	Early Ordovician (Lancefieldian/Warendia	10328	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Ocr		Romsey Subgroup		Sedimentary (Marine)	Marine: sandstone, thick bedded, siltstone, shale, chert	Early Ordovician (Bendigonian)	Early Ordovician (Lancefieldian/Warendia	10329	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Ocy	Oly	Castlemaine Group - Yapeenian	Castlemaine Group	Sedimentary (Marine)	Marine: sandstone, siltstone, shale, chert; Yapeenian	Middle Ordovician (Yapeenian)	Middle Ordovician (Yapeenian)	10330	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Ok	Ovk	Kiandra Group		Sedimentary, Igneous (Marine, Extrusive)	Marine: basalt lava, agglomerate, sandstone, chert	Ordovician (Early Ordovician)	Ordovician (Early Ordovician)	10331	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Okb	Ouu	Blueys Creek Formation	Kiandra Group	Sedimentary (Marine)	Marine: chert, volcaniclastic sandstone	Ordovician (Late Ordovician)	Ordovician (Late Ordovician)	10332	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Osb		Bolinda Shale		Sedimentary (Marine)	Marine: black shale, thin bedded sandstone, calcareous siltstone	Ordovician (Late Ordovician)	Ordovician (Late Ordovician)	10333	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Osr		Riddell Sandstone		Sedimentary (Marine)	Marine: sandstone, thin to thick bedded, shale, mudstone, minor conglomerate	Ordovician (Late Ordovician)	Ordovician (Late Ordovician)	10334	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Ox	Ou,O-S,O/S	Undifferentiated Ordovician sedimentary rocks		Sedimentary (Marine)	Marine: sandstone, mudstone, quartzite	Ordovician (Late Ordovician)	Ordovician (Late Ordovician)	10335	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Oxd		Digger Island Limestone		Sedimentary (Marine)	Marine: limestone, calcareous siltstone	Ordovician (Early Ordovician)	Ordovician (Early Ordovician)	10336	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Oxe	Oue	Mount Easton Shale		Sedimentary (Marine)	Marine: black shale, minor sandstone	Ordovician (Late Ordovician)	Ordovician (Late Ordovician)	10337	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Pxb	P,P,Pxw,Pw	Bacchus Marsh Formation		Sedimentary (Non-Marine (fluvioglacial deposits))	Fluvioglacial, glaciomarine: tillite, diamictite, sandstone, mudstone, conglomerate	Palaeozoic (Permian)	Palaeozoic (Permian)	10338	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sc	Oc	Cobbannah Group		Sedimentary (Marine)	Marine sandstone, mudstone	Silurian (Wenlock)	Silurian (Llandovery)	10339	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sec	Seq,Suq	Cowombat Siltstone	Enano Group	Sedimentary (Marine)	Marine: siltstone, laminated, minor sandstone, limestone lenses	Silurian (Pridoli)	Silurian (Ludlow)	10340	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Seg	Seg1-5,Sug	Gibsons Folly Formation	Enano Group	Sedimentary, Igneous (Marine, Intrusive, Extrusive)	Marine, extrusive, intrusive: siltstone, andesite	Silurian (Pridoli)	Silurian (Ludlow)	10341	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Set	Svt,Smvt	Thorkidaan Volcanics	Enano Group	Sedimentary, Igneous (Marine, Extrusive)	Marine, extrusive: felsic ignimbrite, porphyry, minor sediments	Silurian (Wenlock)	Silurian (Llandovery)	10342	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sj	SDj	Jordan River Group		Sedimentary (Marine)	Marine: undiff'd sandstone, mudstone	Devonian (Early Devonian)	Devonian (Early Devonian)	10343	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sjb	SDjb	Bullung Siltstone	Jordan River Group	Sedimentary (Marine)	Marine: massive to banded siltstone, minor sandstone	Silurian (Wenlock)	Silurian (Llandovery)	10344	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sjd	SDjd	Donnellys Creek Siltstone	Jordan River Group	Sedimentary (Marine)	Marine: siltstone, finely banded	Silurian (Wenlock)	Silurian (Llandovery)	10345	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sje	SDje	Eildon Sandstone	Jordan River Group	Sedimentary (Marine)	Marine: sandstone, thick to thin bedded, fine grained, siltstone	Devonian (Early Devonian)	Devonian (Early Devonian)	10346	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sji	Sjg,SDjg	Wilson Creek Shale	Jordan River Group	Sedimentary (Marine)	Marine: black shale, black siltstone	Devonian (Early Devonian)	Devonian (Early Devonian)	10347	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
SjI	SDjI	Lazarini Siltstone	Jordan River Group	Sedimentary (Marine)	Marine: siltstone, bioturbated and banded, minor thin quartz sandstone	Silurian (Wenlock)	Silurian (Llandovery)	10348	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sjm	SDjm,PSMS	McAdam Sandstone	Jordan River Group	Sedimentary (Marine)	Marine: sandstone, thick to thin bedded, siltstone, shale	Silurian (Wenlock)	Silurian (Llandovery)	10349	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sjn	SDjn	Murderers Hill Siltstone	Jordan River Group	Sedimentary (Marine)	Marine: siltstone, banded, minor thin-bedded fine sandstone Marine: quartz- and lithic sandstone, siltstone, black shale	Silurian (Wenlock)	Silurian (Llandovery)	10350	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sjo	SDjo	Boola Formation	Jordan River Group	Sedimentary (Marine)	Marine: siltstone, lithic sandstone, conglomerate, limestone lenses	Devonian (Early Devonian)	Devonian (Early Devonian)	10351	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sjr	SDjr	Serpentine Creek Sandstone	Jordan River Group	Sedimentary (Marine)	Marine: sandstone, thick to thin bedded, siltstone, shale	Silurian (Wenlock)	Silurian (Llandovery)	10352	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sjs	SDjs	Sinclair Valley Sandstone	Jordan River Group	Sedimentary (Marine)	Marine: sandstone, thick to thin bedded, siltstone, shale	Silurian (Pridoli)	Silurian (Ludlow)	10353	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sju	SDju	Wurutwun Formation	Jordan River Group	Sedimentary (Marine)	Marine: siltstone, lithic sandstone, conglomerate, limestone lenses, black shale	Devonian (Early Devonian)	Devonian (Early Devonian)	10354	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sjw	SDjw	Whitelaw Siltstone	Jordan River Group	Sedimentary (Marine)	Marine: siltstone, finely banded, minor sandstone	Silurian (Pridoli)	Silurian (Ludlow)	10355	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sk	SDr,Sr,PCGZ,Sr	Grampians Group		Sedimentary	Marine, Fluvial: sandstone, minor conglomerate, siltstone	Palaeozoic (Silurian)	Palaeozoic (Silurian)	10356	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock

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GEOLOGICAL UNITS									HYDROGEOLOGICAL UNITS		AQUIFER		
1:250K_Geol_Code	OLDMAPSYMB	UNIT_NAME	PARENTS	UNIT_DESC	UNIT_LITH	AGEYOUNG	AGEOLD	GU_Code	HGU_code	HGU_Name	Aquif_code	Aquifer Letter	Aquif_Name
Sm		Murrindindi Supergroup		Sedimentary (Marine)	Marine: mudstone, sandstone	Palaeozoic (Devonian)	Palaeozoic (Silurian)	10357	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
St	Dut,Dt	Mount Tambo Group		Sedimentary, Igneous (Marine, Non-Marine, Extrusive)	Fluvial, marine, extrusive: conglomerate, sandstone, mudstone, ignimbrite	Devonian (Early Devonian)	Devonian (Early Devonian)	10358	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sw	Suw,Suw	Wombat Creek Group		Sedimentary (Marine)	Marine: conglomerate, sandstone, siltstone, limestone	Silurian (Pridoli)	Silurian (Ludlow)	10359	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sx		Undifferentiated Silurian Sedimentary Rocks / undifferentiated Palaeozoic (Silurian)		Sedimentary (Marine)	Marine: volcanics, mudstone, sandstone	Palaeozoic (Devonian)	Palaeozoic (Silurian)	10360	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sxa	Sla	Andersons Creek Formation		Sedimentary (Marine)	Marine: sandstone, thick to thin bedded, siltstone, minor conglomerate	Silurian (Wenlock)	Silurian (Llandovery)	10361	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sxb	Sub	Broadford Formation		Sedimentary (Marine)	Marine: thin to thick bedded siltstone, sandstone, conglomerate	Silurian (Pridoli)	Silurian (Ludlow)	10362	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sxc	Slc,Slc	Costerfield Siltstone		Sedimentary (Marine)	Marine: thin bedded siltstone, minor sandstone	Silurian (Llandovery)	Silurian (Llandovery)	10363	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sxd		Deep Creek Siltstone		Sedimentary (Marine)	Marine: siltstone, thin-bedded, minor sandstone, conglomerate	Silurian (Wenlock)	Silurian (Llandovery)	10364	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sx-Dx	SDl,Sm	Undifferentiated Silurian-Devonian Rocks		Sedimentary (Marine)	Marine: undifferentiated sandstone, mudstone	Devonian (Early Devonian)	Devonian (Early Devonian)	10365	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sxg	Sud	Dargile Formation		Sedimentary (Marine)	Marine: siltstone, thin-bedded sandstone	Silurian (Pridoli)	Silurian (Ludlow)	10366	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sxi	Sui	McIvor Sandstone		Sedimentary (Marine)	Marine: sandstone, mudstone, thick to thin bedded	Silurian (Pridoli)	Silurian (Ludlow)	10367	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sxih	Suih	Hylands Member	McIvor Sandstone	Sedimentary (Marine)	Marine: turbidite deposits; siltstone, thin bedded sandstone	Silurian (Pridoli)	Silurian (Ludlow)	10368	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sxk		Kilmore Siltstone		Sedimentary (Marine)	Marine: siltstone, sandstone, thin bedded	Silurian (Pridoli)	Silurian (Ludlow)	10369	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sxm	Sum	Melbourne Formation		Sedimentary (Marine)	Marine: sandstone, mudstone, medium to thin bedded	Silurian (Pridoli)	Silurian (Ludlow)	10370	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sxn		Sardine Conglomerate		Sedimentary (Marine)	Marine: conglomerate, sandstone, limestone	Silurian (Pridoli)	Silurian (Ludlow)	10371	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sxr		Kerrie Conglomerate		Sedimentary (Non-Marine)	Fluvial, lacustrine: conglomerate, massive, sandstone, siltstone	Palaeozoic (Devonian)	Palaeozoic (Silurian)	10372	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sxs		Springfield Sandstone		Sedimentary (Marine)	Marine: sandstone, thick to thin bedded, siltstone, conglomerate	Silurian (Wenlock)	Silurian (Llandovery)	10373	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sxt	Smvm,Smv,Svm,MMV,Sm	Mitta Mitta Rhyolite		Sedimentary, Igneous (Marine, Intrusive, Extrusive)	Marine, extrusive, igneous: rhyolite lava ash	Silurian (Wenlock)	Silurian (Llandovery)	10374	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sxw	Slp	Wapentake Formation		Sedimentary (Marine)	Marine: sandstone, thick to thin bedded, siltstone, conglomerate	Silurian (Wenlock)	Silurian (Llandovery)	10375	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sy		Yalmy Group / undifferentiated Yalmy Group		Sedimentary (Marine)	Marine: sandstone, thick to thin bedded, siltstone	Silurian (Wenlock)	Silurian (Llandovery)	10376	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sys		Seldom Seen Formation		Sedimentary (Marine)	Marine: chert conglomerate, minor sandstone	Silurian (Wenlock)	Silurian (Llandovery)	10377	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Syt	Slw	Towanga Sandstone	Yalmy Group	Sedimentary (Marine)	Marine: sandstone, thick to thin bedded, siltstone, minor conglomerate	Silurian (Wenlock)	Silurian (Llandovery)	10378	1125	Undifferentiated Sedimentary Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
-Cxv	Cv	Unnamed Cambrian 'greenstone'		Igneous (Extrusive, Intrusive)	Extrusive, intrusive: basalt, andesite, boninite, rhyolite, gabbro, lithic sandstone, chert, shale, breccia	Palaeozoic (Cambrian)	Palaeozoic (Cambrian)	10379	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dab		Unnamed basalt	Avon Supergroup	Igneous (Extrusive)	Extrusive: basalt	Devonian (Late Devonian)	Devonian (Late Devonian)	10380	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Daw	Dvw,Duw	Wellington Volcanic Group	Avon Supergroup	Igneous (Extrusive)	Extrusive: rhyolite and rhyodacite ignimbrite	Devonian (Late Devonian)	Devonian (Late Devonian)	10381	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Ddm	Dvdm,Dldm	Murtagh Creek Ignimbrite	Dartella Volcanic Group	Igneous (Extrusive)	Extrusive, fluvial: felsic ignimbrite, agglomerate, minor siltstone	Devonian (Early Devonian)	Devonian (Early Devonian)	10382	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dds	Dvds,Dlds,Dvds	Sheevers Spur Rhyodacite	Dartella Volcanic Group	Igneous (Extrusive)	Extrusive: felsic ignimbrite, minor andesite	Devonian (Early Devonian)	Devonian (Early Devonian)	10383	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Di1	Dvv1	Unnamed	Violet Town Volcanic Group	Igneous (Extrusive)	Extrusive: rhyolite ignimbrite	Devonian (Late Devonian)	Devonian (Late Devonian)	10384	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Di2	Dvv2	Unnamed	Violet Town Volcanic Group	Igneous (Extrusive)	Extrusive: rhyodacite ignimbrite	Devonian (Late Devonian)	Devonian (Late Devonian)	10385	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Di3		Unnamed		Igneous (Extrusive)	Extrusive: hornblende dacite (Mt Martha)	Devonian (Late Devonian)	Devonian (Late Devonian)	10386	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Djc		Coldstream Rhyolite		Igneous (Extrusive)	Extrusive: rhyolite lava, coherent flow-banded to autobrecciated	Devonian (Late Devonian)	Devonian (Late Devonian)	10387	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dje		Mount Evelyn Rhyodacite		Igneous (Extrusive)	Extrusive: rhyolite to rhyodacite ignimbrite, welded	Devonian (Late Devonian)	Devonian (Late Devonian)	10388	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Djf		Ferny Creek Rhyodacite		Igneous (Extrusive)	Extrusive: biotite-hypersthene rhyodacite ignimbrite, recrystallized	Devonian (Late Devonian)	Devonian (Late Devonian)	10389	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Djk		Kalorama Rhyodacite		Igneous (Extrusive)	Extrusive and lacustrine: garnet-bearing rhyodacite ignimbrite, recrystallized; siltstone	Devonian (Late Devonian)	Devonian (Late Devonian)	10390	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dl		Mount Elizabeth Caldera Complex / undifferentiated Mt Elizabeth Caldera Complex		Igneous (Extrusive)	Extrusive, ignimbrite	Devonian (Early Devonian)	Devonian (Early Devonian)	10391	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dmh		Hesket Ignimbrite		Igneous (Extrusive)	Extrusive: rhyolite ignimbrite, welded	Devonian (Late Devonian)	Devonian (Late Devonian)	10392	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dmw		Willimigongong Ignimbrite		Igneous (Extrusive)	Extrusive: biotite-hypersthene rhyodacite ignimbrite, recrystallized	Devonian (Late Devonian)	Devonian (Late Devonian)	10393	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dr	Dvr,Dlvr,Dvrp,Dvra,Dvr	Rocklands Volcanic Group		Igneous (Extrusive)	Extrusive: rhyolite lava, flow banded, ignimbrite	Devonian (Early Devonian)	Devonian (Early Devonian)	10394	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Ds	Ds,Dls,PDSR	Snowy River Volcanic Group		Igneous (Extrusive)	undifferentiated volcanics, sediments, intrusives	Devonian (Early Devonian)	Devonian (Early Devonian)	10395	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dsg		Mount Dawson Subgroup		Igneous (Extrusive)	Extrusive, fluvial: felsic ignimbrite, mostly densely welded	Devonian (Early Devonian)	Devonian (Early Devonian)	10396	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dsh		Tulloch Ard Ignimbrite		Igneous (Extrusive)	Extrusive: felsic ignimbrite, mostly densely welded	Devonian (Early Devonian)	Devonian (Early Devonian)	10397	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dso		Tara Range Subgroup		Igneous (Extrusive)	Extrusive, ignimbrite, main flow deposits	Devonian (Early Devonian)	Devonian (Early Devonian)	10398	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dsz		Unnamed rhyolite lava		Igneous (Extrusive, Intrusive)	Extrusive, intrusive: rhyolite lava, flow-banded to autobrecciated	Devonian (Early Devonian)	Devonian (Early Devonian)	10399	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock

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GEOLOGICAL UNITS									HYDROGEOLOGICAL UNITS		AQUIFER		
1:250K_Geol_Code	OLDMAPSYMB	UNIT_NAME	PARENTS	UNIT_DESC	UNIT_LITH	AGEYOUNG	AGEOLD	GU_Code	HGU_code	HGU_Name	Aquif_code	Aquifer Letter	Aquif_Name
Dth	Dvth,Dvt1b	Hollands Creek Rhyodacite	Mount Tambo Group	Igneous (Extrusive)	Extrusive: rhyolite to rhyodacite ignimbrite, welded	Devonian (Late Devonian)	Devonian (Late Devonian)	10400	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dtr	Dvtr,Dvt2	Ryans Creek Rhyolite	Tolmie Igneous Complex	Igneous (Extrusive)	Extrusive: rhyolite ignimbrite, welded to recrystallized	Devonian (Late Devonian)	Devonian (Late Devonian)	10401	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dtt	Dvtt,Dvt3	Toombullup Ignimbrite	Tolmie Igneous Complex	Igneous (Extrusive)	Extrusive: rhyolite and rhyodacite ignimbrite, welded	Devonian (Late Devonian)	Devonian (Late Devonian)	10402	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dxv	Dlv	Unnamed		Sedimentary, Igneous (Non-Marine, Extrusive)	Extrusive/fluvial: rhyolitic ignimbrite, lava, quartzite	Devonian (Early Devonian)	Devonian (Early Devonian)	10403	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dyad	Dvad,Dvc5	Donna Buang Rhyodacite	Acheron Subgroup (Marysville Group)	Igneous (Extrusive)	Extrusive: biotite-hypersthene rhyodacite ignimbrite, recrystallized	Devonian (Late Devonian)	Devonian (Late Devonian)	10404	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dyay	Dvay,Dvc4	Ythan Creek Rhyodacite	Acheron Subgroup (Marysville Group)	Igneous (Extrusive)	Extrusive: rhyolite to rhyodacite ignimbrite, recrystallized	Devonian (Late Devonian)	Devonian (Late Devonian)	10405	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dycl	Dvcl,Dvc3	Lake Mountain Rhyodacite	Cerberean Subgroup (Marysville Group)	Igneous (Extrusive)	Extrusive: rhyolite to rhyodacite ignimbrite, recrystallized	Devonian (Late Devonian)	Devonian (Late Devonian)	10406	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dycr	Dvcr,Dvc2	Rubicon Rhyolite	Cerberean Subgroup (Marysville Group)	Igneous (Extrusive)	Extrusive: rhyolite ignimbrite, recrystallized	Devonian (Late Devonian)	Devonian (Late Devonian)	10407	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dyt	Dvt,Dvc1	Taggerty Subgroup	Marysville Group	Igneous (Extrusive)	Extrusive, fluvial: felsic ignimbrites, basalt and andesite lavas, conglomerate, sandstone	Devonian (Late Devonian)	Devonian (Late Devonian)	10408	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Jc	Jt,Jvc	Coleraine Volcanic Group		Igneous (Extrusive, Intrusive)	Intrusive: sanidine-bearing trachyte lava	Mesozoic (Jurassic)	Mesozoic (Jurassic)	10409	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Jxk	Jvb	Kangaroo Gully Volcanic Breccia		Igneous	Pyroclastic (?) deposits: conglomerate with clasts of monchiquite and clasts of Ordovician and Permian sedimentary rocks	Mesozoic (Jurassic)	Mesozoic (Jurassic)	10410	1126	Undifferentiated Extrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
-Cmg	Cm,Cg,Cm,Cg,GRC	Glenelg River Metamorphic Complex		Metamorphic	Metamorphic: biotite schist, staurolite schist	Palaeozoic (Cambrian)	Palaeozoic (Cambrian)	10411	1127	Undifferentiated Metamorphic Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dz		Unnamed Devonian Fault Rocks		Fault	fault rock, cataclasite	Devonian (Early Devonian)	Devonian (Early Devonian)	10412	1127	Undifferentiated Metamorphic Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
H	Duh,Dmh	unnamed hornfels		Metamorphic (Contact)	Metamorphic: hornfels	Devonian (Late Devonian)	Devonian (Middle Devonian)	10413	1127	Undifferentiated Metamorphic Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sog	G175,Sog,OSn,G175,Oapg	Omeo Metamorphic Complex gneiss	Omeo Metamorphic	Metamorphic (Regional)	Metamorphic: gneiss	Ordovician (Early Ordovician)	Ordovician (Early Ordovician)	10414	1127	Undifferentiated Metamorphic Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sos	Sos,OSs	Omeo Metamorphic Complex schist	Omeo Metamorphic Complex	Metamorphic (Regional)	Metamorphic: schist, spotted schist, phyllite	Ordovician (Early Ordovician)	Ordovician (Early Ordovician)	10415	1127	Undifferentiated Metamorphic Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Su		Kuark Metamorphic Complex		Metamorphic (Regional)	Metamorphic: biotite schist, spotted schist, phyllite, spotted slate	Ordovician (Early Ordovician)	Ordovician (Early Ordovician)	10416	1127	Undifferentiated Metamorphic Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Sz	Sy	Fault Rock / undifferentiated Silurian (Llandovery)		Fault	mylonite, fault rock	Silurian (Wenlock)	Silurian (Llandovery)	10417	1127	Undifferentiated Metamorphic Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
F	Dud,Dyke3,FELSIC_DYK	Unnamed felsic dyke		Igneous (Intrusive)	Intrusive: felsic dykes	Devonian (Late Devonian)	Devonian (Late Devonian)	10276	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G193	G193	Woolshed Valley Granite		Igneous (Intrusive (Granite I-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10277	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G194	G194	Morilla Granite		Igneous (Intrusive (Granite I-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10278	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G195	G195	Beechworth Granite		Igneous (Intrusive (Granite I-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10279	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G196	G196	Golden Ball Granite		Igneous (Intrusive (Granite I-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10280	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G197	G197	Byawatha Granite		Igneous (Intrusive (Granite I-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10281	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G198	G198,G198	Everton Granodiorite		Igneous (Intrusive (Granite I-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10282	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G199	G199,G199	Murmungee Granodiorite		Igneous (Intrusive (Granite I-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10283	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G200		Lurg Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Late Devonian)	Devonian (Late Devonian)	10284	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G201		Kelly Gap Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Late Devonian)	Devonian (Late Devonian)	10285	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G202		Glenrowan Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Late Devonian)	Devonian (Late Devonian)	10286	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G203		Warby Springs Granite		Igneous (Intrusive (Granite S-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10287	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G204		Taminick Gap Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Late Devonian)	Devonian (Late Devonian)	10288	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G205		Mount Bruno Granite		Igneous (Intrusive (Granite I-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10289	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G206		Killawarra Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Late Devonian)	Devonian (Late Devonian)	10290	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G207		Almonds Granite		Igneous (Intrusive (Granite I-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10291	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G208		Youarang Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Late Devonian)	Devonian (Late Devonian)	10292	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G209	G209,G209	Camview Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Late Devonian)	Devonian (Late Devonian)	10293	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G210		Bungeet West Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Late Devonian)	Devonian (Late Devonian)	10294	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G211		Chesney Vale Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Late Devonian)	Devonian (Late Devonian)	10295	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock

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GEOLOGICAL UNITS									HYDROGEOLOGICAL UNITS		AQUIFER		
1:250K_Geol_Code	OLDMAPSYMB	UNIT_NAME	PARENTS	UNIT_DESC	UNIT_LITH	AGEYOUNG	AGEOLD	GU_Code	HGU_code	HGU_Name	Aquif_code	Aquifer Letter	Aquif_Name
G215		Swanpool Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Late Devonian)	Devonian (Late Devonian)	10296	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G216	G216	Barjarg Granite		Igneous (Intrusive (Granite S-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10297	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G286		Commissioners Flat Granodiorite		Igneous (Intrusive (Granite Unassigned))		Devonian (Late Devonian)	Devonian (Late Devonian)	10298	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G288		Mount Black Granite		Igneous (Intrusive (Granite S-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10299	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G289		Crosbie Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Late Devonian)	Devonian (Late Devonian)	10300	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G290	G294,G294	Harcourt Granodiorite	Harcourt Suite	Igneous (Intrusive (I-type intrusion))		Devonian (Late Devonian)	Devonian (Late Devonian)	10301	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G293		Baringhup Granodiorite	Harcourt Suite	Igneous (Intrusive (I-type intrusion))		Devonian (Late Devonian)	Devonian (Late Devonian)	10302	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G295	G295	Pyramid Hill Granite		Igneous (Intrusive (Granite S-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10303	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G296		Erindale Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Late Devonian)	Devonian (Late Devonian)	10304	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dg	Dlg,Dug,Dmg,Dlt,Dgd	Undifferentiated Devonian granite		Igneous (Intrusive)		Palaeozoic (Devonian)	Palaeozoic (Devonian)	10418	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dp	Dp,Dlp,Dq	Unnamed ring dyke		Igneous (Intrusive)	Intrusive: granite/granodiorite porphyry	Devonian (Early Devonian)	Devonian (Early Devonian)	10419	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Dsy		Unnamed porphyry dykes		Igneous (Intrusive)	Intrusive: porphyry dykes: quartz-feldspar (-hornblende) porphyry	Devonian (Early Devonian)	Devonian (Early Devonian)	10420	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G1		Gabo Island Granite		Igneous (Intrusive (Granite Unassigned))	Intrusive: biotite-amphibole granite, medium to fine grained, pink	Devonian (Early Devonian)	Devonian (Early Devonian)	10421	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G10		Skerries Granite / Skerries		Igneous (Intrusive (Granite Unassigned))	Intrusive:	Silurian (Wenlock)	Silurian (Llandovery)	10422	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G101	G101	Koetong Granite		Igneous (Intrusive (Granite S-type))	Two-mica cordierite granite: bluish grey, coarse grained biotite muscovite granite; mostly equigranular but centre is porphyritic and parts of margins are fine grained; locally abundant enclaves; S-type; nonmagnetic	Silurian (Pridoli)	Silurian (Wenlock)	10423	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G102		Thologolong Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Early Devonian)	Devonian (Early Devonian)	10424	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G103	G103	Granya Granite		Igneous (Intrusive (Granite Unassigned))		Silurian (Wenlock)	Silurian (Llandovery)	10425	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G105	G105	Adjie Granodiorite		Igneous (Intrusive (Granite I-type))		Silurian (Wenlock)	Silurian (Llandovery)	10426	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G106	G106	Charlestown Creek Tonalite	Bingo Munjie Suite	Igneous (Intrusive (Granite I-type))	Hornblende-biotite-(pyroxene) quartz diorite: I-type, evenly medium-grained, dark bluish to greenish grey	Devonian (Early Devonian)	Devonian (Early Devonian)	10427	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G108	G108,G108	Eustace Creek Granodiorite		Igneous (Intrusive (Granite I-type))		Silurian (Wenlock)	Silurian (Llandovery)	10428	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G11		Everard Granite / Everard Adamellite		Igneous (Intrusive (Granite I-type))	Intrusive: biotite adamellite	Silurian (Wenlock)	Silurian (Llandovery)	10429	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G110	G110	Banimboola Quartz Monzodiorite	Boggy Plain Supersuite	Igneous (Intrusive (Granite I-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10430	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G111	G111	Mount Wills Granite		Igneous (Intrusive (Granite S-type))		Silurian (Wenlock)	Silurian (Llandovery)	10431	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G113		Post Office Granite	Bingo Munjie Suite (Boggy Plain Supersuite)	Igneous (Intrusive (Granite I-type))	Granite, mainly granite soil; I-type, may be felsic phase of G81	Silurian (Wenlock)	Silurian (Llandovery)	10432	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G1137		Rileys Creek Granodiorite		Igneous(Intrusive(I-type))	Intrusive:	Lower Silurian		10433	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G114		Anglers Rest Granite		Igneous(Intrusive(I-type))	Intrusive: leucocratic granite, medium grained, pink	Lower Devonian		10434	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G114		Anglers Rest Granite	Boggy Plain Supersuite	Igneous (Intrusive (Granite I-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10435	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G115	G115	Taylor Crossing Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Early Devonian)	Devonian (Early Devonian)	10436	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G116		Lower Tableland Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Early Devonian)	Devonian (Early Devonian)	10437	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G117		Connleys Track Granodiorite / Sam Hill		Igneous (Intrusive (Granite Unassigned))	Intrusive:	Silurian (Wenlock)	Silurian (Llandovery)	10438	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G12		Tonghi Granodiorite		Igneous (Intrusive (Granite I-type))	Intrusive: hornblende-biotite granodiorite, coarse grained leucocratic	Silurian (Wenlock)	Silurian (Llandovery)	10439	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G120		Marengo Granodiorite		Igneous (Intrusive (Granite I-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10440	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G121		Bindi Granodiorite		Igneous (Intrusive (Granite S-type))	Intrusive: medium to coarse grained, pale grey, granite-granodiorite with cordierite, muscovite	Silurian (Wenlock)	Silurian (Llandovery)	10441	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G122		Forlorn Hope Granite	Bullenbalong Suite	Igneous (Intrusive (Granite S-type))		Silurian (Wenlock)	Silurian (Llandovery)	10442	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G123		Mount Nugong Tonalite / Mount Nugong		Igneous (Intrusive (Granite I-type))	Intrusive:	Silurian (Wenlock)	Silurian (Llandovery)	10443	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G125		Nunniong Granodiorite		Igneous (Intrusive (Granite S-type))	Intrusive: biotite-cordierite granodiorite, fine to medium grained, grey	Silurian (Wenlock)	Silurian (Llandovery)	10444	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G126		Mount Elizabeth Granodiorite / Mt Elizabeth Granodiorite		Igneous (Intrusive (Granite I-type))	Intrusive	Devonian (Early Devonian)	Devonian (Early Devonian)	10445	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G127		Mellick Munjie Granodiorite		Igneous (Intrusive (Granite S-type))	Intrusive: biotite-cordierite granodiorite, pale grey, coarse-medium grained	Silurian (Wenlock)	Silurian (Llandovery)	10446	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G128		Reedy Flat Tonalite / Eumana (Reedy Flat) Granite		Igneous (Intrusive (Granite I-type))	Intrusive: biotite-hornblende tonalite/quartz diorite, coarse grained, pale grey	Devonian (Early Devonian)	Devonian (Early Devonian)	10447	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G129		Kenny Creek Diorite		Igneous (Intrusive (Granite I-type))	Intrusive	Silurian (Wenlock)	Silurian (Llandovery)	10448	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G13		Tamboon Granite / Tamboon Adamellite		Igneous (Intrusive (Granite I-type))	Intrusive: biotite adamellite	Silurian (Wenlock)	Silurian (Llandovery)	10449	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock

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GEOLOGICAL UNITS									HYDROGEOLOGICAL UNITS		AQUIFER		
1:250K_Geol_Code	OLDMAPSYMB	UNIT_NAME	PARENTS	UNIT_DESC	UNIT_LITH	AGEYOUNG	AGEOLD	GU_Code	HGU_code	HGU_Name	Aquif_code	Aquifer Letter	Aquif_Name
G130		Colquhoun Granite		Igneous (Intrusive (Granite I-type))	Intrusive:	Devonian (Early Devonian)	Devonian (Early Devonian)	10450	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G131		Sarsfield Granite / Sarsfield Granite (Clifton Creek)		Igneous (Intrusive (Granite S-type))	Intrusive: biotite-muscovite leucogranite, fine to medium grained, cream-white	Devonian (Late Devonian)	Devonian (Late Devonian)	10451	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G132		Mount Taylor Granite / Mount Taylor Granite Porphyry		Igneous (Intrusive (Granite S-type))	Intrusive: cordierite-garnet granite porphyry, coarsely K-feldspar phyric, mid-grey	Devonian (Late Devonian)	Devonian (Late Devonian)	10452	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G133		Saint Patricks Creek Granite		Igneous (Intrusive (Granite I-type))	Intrusive:	Devonian (Early Devonian)	Devonian (Early Devonian)	10453	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G134		Tambo Crossing Tonalite		Igneous (Intrusive (Granite I-type))	Intrusive:	Devonian (Early Devonian)	Devonian (Early Devonian)	10454	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G135		Connors Creek Tonalite / Ensay Tonalite		Igneous (Intrusive (Granite I-type))	Intrusive: hornblende quartz-diorite, medium grained, strongly foliated	Silurian (Wenlock)	Silurian (Llandovery)	10455	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G136		Old Sheep Station Granodiorite / Angora (Old Sheep Station)		Igneous (Intrusive (Granite I-type))	Intrusive:	Silurian (Wenlock)	Silurian (Llandovery)	10456	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G137		Rileys Creek Granodiorite		Igneous (Intrusive (Granite I-type))		Silurian (Wenlock)	Silurian (Llandovery)	10457	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G138		Pheasant Creek Granite / Pheasant Creek		Igneous (Intrusive (Granite I-type))	Intrusive:	Silurian (Wenlock)	Silurian (Llandovery)	10458	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G139		Mount Baldhead Granite / Mount Baldhead		Igneous (Intrusive (Granite I-type))	Intrusive:	Silurian (Wenlock)	Silurian (Llandovery)	10459	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G14		Burglar Gap Granite		Igneous (Intrusive (Granite I-type))	Intrusive: biotite adamellite	Silurian (Wenlock)	Silurian (Llandovery)	10460	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G140		Dargo Granodiorite / Dargo		Igneous (Intrusive (Granite I-type))	Intrusive:	Palaeozoic (Devonian)	Palaeozoic (Silurian)	10461	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G141		Mount Blomford Granite / Mount Blomford		Igneous (Intrusive (Granite S-type))	Intrusive:	Palaeozoic (Devonian)	Palaeozoic (Silurian)	10462	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G142		Castleburn Granite / Castleburn		Igneous (Intrusive (Granite I-type))	Intrusive:	Palaeozoic (Devonian)	Palaeozoic (Silurian)	10463	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G143		Mungobabba Tonalite / Tongio Gap		Igneous (Intrusive (Granite I-type))	Intrusive:	Silurian (Wenlock)	Silurian (Llandovery)	10464	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G148		Halletts Road Tonalite	Polar Star Suite	Igneous (Intrusive (Granite I-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10465	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G15		Noorinbee Granodiorite		Igneous (Intrusive (Granite I-type))	Intrusive: biotite granodiorite	Silurian (Wenlock)	Silurian (Llandovery)	10466	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G151	G151,G151	East Kiewa Granodiorite		Igneous (Intrusive (Granite I-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10467	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G152		Big Hill Quartz Diorite		Igneous (Intrusive (Granite I-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10468	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G153		Niggerheads Granodiorite		Igneous (Intrusive (Granite I-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10469	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G154	G154	Pretty Valley Granodiorite		Igneous (Intrusive (Granite I-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10470	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G155		Rocky Valley Granodiorite		Igneous (Intrusive (Granite I-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10471	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G156	G156	Timms Spur Leucogranite		Igneous (Intrusive)		Palaeozoic (Silurian)		10472	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G158	G158	Mount Selwyn Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Early Devonian)	Devonian (Early Devonian)	10473	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G159	G159	Barry Mountains Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Early Devonian)	Devonian (Early Devonian)	10474	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G16		Drummer Granodiorite		Igneous (Intrusive (Granite I-type))	Intrusive: hornblende granodiorite	Silurian (Wenlock)	Silurian (Llandovery)	10475	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G160	G160	Mount Angus Granodiorite		Igneous (Intrusive (Granite I-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10476	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G161	G161	Mount Buffalo Granite		Igneous (Intrusive (Granite I-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10477	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G162	G162,G162,Dge	Mount Emu Granodiorite		Igneous (Intrusive (Granite I-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10478	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G168		Bundara Tonalite		Igneous (Intrusive)		Devonian (Early Devonian)		10479	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G17		Derndang Granite		Igneous (Intrusive (Granite I-type))	Intrusive	Silurian (Wenlock)	Silurian (Llandovery)	10480	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G172	G172	Yabba Granite		Igneous (Intrusive (Granite S-type))		Silurian (Wenlock)	Silurian (Llandovery)	10481	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G173	G173	Lockhart Granite		Igneous (Intrusive (Granite S-type))		Silurian (Wenlock)	Silurian (Llandovery)	10482	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G176		Baranduda Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Early Devonian)	Devonian (Early Devonian)	10483	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G177	G177,G177	Yackandandah Granite		Igneous (Intrusive (Granite I-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10484	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G18		Yoke Up Creek Granite		Igneous (Intrusive (Granite Unassigned))	Intrusive: biotite (hornblende) granodiorite	Silurian (Wenlock)	Silurian (Llandovery)	10485	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G180	G180	Kergunyah Granite		Igneous (Intrusive (Granite S-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10486	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G182	G182,G182,G182	Barnawatha Gneissic Granodiorite		Igneous (Intrusive (Granite S-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10487	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G183	G183	Mount Stanley Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Early Devonian)	Devonian (Early Devonian)	10488	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G184		Mount Stirling Granodiorite		Igneous (Intrusive (Granite Unassigned))		Devonian (Middle Devonian)	Devonian (Middle Devonian)	10489	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G185		Bindaree Diorite		Igneous (Intrusive (Granite Unassigned))	Intrusive: diorite, gabbro, medium grained, dark green-grey	Devonian (Middle Devonian)	Devonian (Middle Devonian)	10490	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G186		Mirimbah Granodiorite		Igneous(Intrusive((Unassigned)))	Intrusive: hornblende granodiorite, medium to coarse grained	Middle Devonian		10491	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G19		Nungatta Granodiorite		Igneous (Intrusive (Granite I-type))	Intrusive	Silurian (Wenlock)	Silurian (Llandovery)	10492	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock

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GEOLOGICAL UNITS									HYDROGEOLOGICAL UNITS		AQUIFER		
1:250K_Geol_Code	OLDMAPSYMB	UNIT_NAME	PARENTS	UNIT_DESC	UNIT_LITH	AGEYOUNG	AGEOLD	GU_Code	HGU_code	HGU_Name	Aquif_code	Aquifer Letter	Aquif_Name
G192		Shippen Gully Porphyry		Igneous (Intrusive)	Quartz-feldspar porphyry, strongly porphyritic, phenocrysts of quartz, plagioclase, perthitic orthoclase, biotite and garnet in a fine-grained granoblastic groundmass of quartz, plagioclase and orthoclase, occasional cordierite. Nonmagnetic, S-type.	Palaeozoic (Devonian)	Palaeozoic (Devonian)	10493	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G2		Howe Range Granite		Igneous (Intrusive (Granite Unassigned))	Intrusive: biotite-amphibole adamellite, medium to fine grained	Devonian (Early Devonian)	Devonian (Early Devonian)	10494	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G20		Loomat Granite		Igneous (Intrusive (Granite I-type))	Intrusive: biotite adamellite	Silurian (Wenlock)	Silurian (Llandovery)	10495	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G21		Beehive Granite		Igneous (Intrusive (Granite I-type))	Intrusive: leucocratic adamellite, pinkish	Silurian (Wenlock)	Silurian (Llandovery)	10496	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G217	G217,G217	Strathbogie Granodiorite		Igneous(Intrusive(S-type))	Intrusive: biotite granite, coarse grained porphyritic, with cordierite	Upper Devonian		10497	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G22		Buldah Gap Granodiorite		Igneous (Intrusive (Granite I-type))	Intrusive: hornblende Granodiorite, mottled grey	Silurian (Wenlock)	Silurian (Llandovery)	10498	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G221		Mount Disappointment Granodiorite		Igneous (Intrusive (Granite I-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10499	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G222		Glenvale Granodiorite		Igneous (Intrusive (Granite Unassigned))		Devonian (Late Devonian)	Devonian (Late Devonian)	10500	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G223		Black Range Granodiorite		Igneous (Intrusive (Granite Unassigned))	Intrusive: biotite granodiorite, generally porphyritic	Devonian (Late Devonian)	Devonian (Late Devonian)	10501	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G225		Keppel Creek Granodiorite		Igneous (Intrusive (Granite Unassigned))	Intrusive: microgranodiorite, medium to fine grained saccharoidal, porphyritic	Devonian (Late Devonian)	Devonian (Late Devonian)	10502	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G226	G226	Toole-Be-Wong Granodiorite		Igneous (Intrusive (Granite S-type))	Intrusive:	Devonian (Late Devonian)	Devonian (Late Devonian)	10503	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G227	G227	Mount Stinton Granodiorite		Igneous (Intrusive (Granite Unassigned))	Intrusive: biotite granodiorite, medium grained subequigranular	Devonian (Late Devonian)	Devonian (Late Devonian)	10504	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G23	G235	Fiddlers Green Granodiorite		Igneous (Intrusive (Granite Unassigned))	Biotite-minor hornblende granite	Devonian (Early Devonian)	Devonian (Early Devonian)	10505	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G235		Warburton Granodiorite		Igneous (Intrusive (Granite S-type))	Intrusive: biotite granodiorite, fine grained equigranular, medium grey	Devonian (Late Devonian)	Devonian (Late Devonian)	10506	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G236	G236	Baw Baw Granodiorite		Igneous (Intrusive (Granite I-type))	Intrusive: biotite-hornblende granodiorite, medium grained, bluish grey	Devonian (Late Devonian)	Devonian (Late Devonian)	10507	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G237		Tanjil Granodiorite		Igneous (Intrusive (Granite I-type))	Intrusive:	Devonian (Late Devonian)	Devonian (Late Devonian)	10508	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G238	G238	Toorongo Granodiorite		Igneous (Intrusive (Granite I-type))	Intrusive: biotite-hornblende granodiorite, medium grained, bluish grey	Devonian (Late Devonian)	Devonian (Late Devonian)	10509	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G239	G239	Tynong Granite		Igneous (Intrusive (Granite I-type))	Intrusive: biotite granite, medium grained, porphyritic, pale grey	Devonian (Late Devonian)	Devonian (Late Devonian)	10510	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G24		Weeragua Granodiorite		Igneous (Intrusive (Granite I-type))	Intrusive: hornblende granodiorite, medium grained, slightly porphritic	Silurian (Wenlock)	Silurian (Llandovery)	10511	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G240		Silvan Granodiorite		Igneous (Intrusive (Granite I-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10512	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G241	G241	Lysterfield Granodiorite		Igneous (Intrusive (Granite I-type))	Intrusive: biotite-hornblende granodiorite, medium grained grey	Devonian (Late Devonian)	Devonian (Late Devonian)	10513	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G25		Cann Mountain Granodiorite / Cann Mountain Granite		Igneous (Intrusive (Granite I-type))	Intrusive:	Silurian (Wenlock)	Silurian (Llandovery)	10514	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G251		Cliffy Island		Igneous(Intrusive(S-type))	Intrusive:	Middle Devonian		10515	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G252		Kanowna Island		Igneous (Intrusive (Granite S-type))	Intrusive:	Devonian (Middle Devonian)	Devonian (Middle Devonian)	10516	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G253		Glennie Granite / Glennie Adamellite		Igneous (Intrusive (Granite S-type))	Intrusive: cordierite-biotite adamellite, coarse grained subequigranular	Devonian (Middle Devonian)	Devonian (Middle Devonian)	10517	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G254		Yanakie Granite / Yanakie		Igneous (Intrusive (Granite S-type))	Intrusive:	Devonian (Middle Devonian)	Devonian (Middle Devonian)	10518	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G255		Mount Norgate Granite / Mount Norgate		Igneous (Intrusive (Granite Unassigned))	Intrusive:	Devonian (Middle Devonian)	Devonian (Middle Devonian)	10519	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G256		Lilly Pilly Granite / Lilly Pilly		Igneous (Intrusive (Granite S-type))	Intrusive:	Devonian (Middle Devonian)	Devonian (Middle Devonian)	10520	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G257		Mount Singapore Granite / Mount Singapore Adamellite		Igneous (Intrusive (Granite S-type))	Intrusive: cordierite-biotite adamellite, medium to coarse grained, creamy grey	Devonian (Middle Devonian)	Devonian (Middle Devonian)	10521	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G258		Sealers Cove Granite / Sealers Cove Adamellite		Igneous (Intrusive (Granite S-type))	Intrusive: cordierite-biotite adamellite, fine grained to porphyritic	Devonian (Middle Devonian)	Devonian (Middle Devonian)	10522	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G259		Vereker Granite		Igneous (Intrusive (Granite S-type))	Intrusive: leucocratic granite, medium to coarse grained with garnet and cordierite	Devonian (Middle Devonian)	Devonian (Middle Devonian)	10523	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G26		Blue Gum Tonalite		Igneous (Intrusive (Granite I-type))	Intrusive: hornblende tonalite, medium to coarse grained, hornblende phyric	Silurian (Wenlock)	Silurian (Llandovery)	10524	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G260		Wilsons Promontory Granite		Igneous (Intrusive (Granite S-type))	Intrusive: biotite granite, coarse grained porphyritic, with some garnet	Devonian (Middle Devonian)	Devonian (Middle Devonian)	10525	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G261		Woolamai Granite		Igneous (Intrusive (Granite I-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10526	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G262		Dromana Granite		Igneous (Intrusive (Granite I-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10527	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G263		Mount Martha Granodiorite		Igneous (Intrusive (Granite I-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10528	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G264		Mount Eliza Granodiorite		Igneous (Intrusive (Granite I-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10529	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G27		Ino Creek Granodiorite / Ino Creek Granite		Igneous (Intrusive (Granite I-type))	Intrusive	Silurian (Wenlock)	Silurian (Llandovery)	10530	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G275		Morang Granodiorite		Igneous (Intrusive (Granite I-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10531	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G276		Bulla Granodiorite		Igneous (Intrusive (Granite S-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10532	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G277		You Yangs Granite		Igneous (Intrusive (Granite I-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10533	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock

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GEOLOGICAL UNITS									HYDROGEOLOGICAL UNITS		AQUIFER		
1:250K_Geol_Code	OLDMAPSYMB	UNIT_NAME	PARENTS	UNIT_DESC	UNIT_LITH	AGEYOUNG	AGEOLD	GU_Code	HGU_Code	HGU_Name	Aquif_code	Aquifer Letter	Aquif_Name
G278		Dog Rocks Granite		Igneous (Intrusive (Granite I-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10534	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G279		Ingliston Granite		Igneous (Intrusive (Granite I-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10535	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G28		Tumberluck Diorite		Igneous(Intrusive(I-type))	Intrusive: hornblende diorite, coarse to medium grained, dark green-grey, foliated	Lower Silurian		10536	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G280		Mount Egerton Granodiorite		Igneous (Intrusive (Granite I-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10537	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G282		Barringo Granodiorite		Igneous (Intrusive (Granite I-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10538	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G283		Pyalong Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Late Devonian)	Devonian (Late Devonian)	10539	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G284		Baynton Granodiorite		Igneous (Intrusive (Granite I-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10540	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G285		Beauvallet Granodiorite		Igneous (Intrusive (Granite I-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10541	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G29		Sandpatch Point Granite / Sandpatch Point		Igneous (Intrusive (Granite Unassigned))	Intrusive:	Silurian (Wenlock)	Silurian (Llandovery)	10542	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G297		Colbinabbin Diorite		Igneous (Intrusive)	Diorite: highly-magnetic, fine- to medium-grained, subophitic growths of plagioclase and augite.	Palaeozoic (Cambrian)		10543	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G30		O'Mearas Granite / O'Meara's		Igneous (Intrusive (Granite Unassigned))	Intrusive:	Silurian (Wenlock)	Silurian (Llandovery)	10544	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G305		Illoura Granodiorite		Igneous (Intrusive (Granite I-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10545	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G306		Wallinduc Granodiorite		Igneous (Intrusive (Granite I-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10546	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G307		Tiac Granite		Igneous (Intrusive (Granite I-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10547	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G308		Mount Bute Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Early Devonian)	Devonian (Early Devonian)	10548	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G309		Warrawidgee Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Early Devonian)	Devonian (Early Devonian)	10549	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G31		Maramingo Granite		Igneous(Intrusive(I-type))	Intrusive:	Lower Silurian		10550	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G310		Chepstowe Granodiorite		Igneous (Intrusive (Granite Unassigned))		Devonian (Early Devonian)	Devonian (Early Devonian)	10551	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G312		Ercildoun Granite		Igneous (Intrusive (Granite I-type))		Devonian (Late Devonian)	Devonian (Late Devonian)	10552	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G321		Lake Boga Granite		Igneous (Intrusive)	Intrusive: two-mica granite; medium to coarse grained; porphyritic	Devonian (Early Devonian)	Devonian (Early Devonian)	10553	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G33		Bee Tree Granodiorite		Igneous (Intrusive (Granite S-type))	Intrusive: two-mica granodiorite, medium to fine grained, dark grey	Silurian (Wenlock)	Silurian (Llandovery)	10554	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G332	G332	Wycheproof Granite	Glenloth Suite	Igneous (Intrusive (unassigned intrusion))		Devonian (Early Devonian)	Devonian (Early Devonian)	10555	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G333	G333	Hemleys Granite	Glenloth Suite	Igneous (Intrusive (I-type intrusion))		Devonian (Early Devonian)	Devonian (Early Devonian)	10556	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G334		Jeffcott Granite	Glenloth Suite	Igneous (Intrusive (unassigned intrusion))		Devonian (Early Devonian)	Devonian (Early Devonian)	10557	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G335		Teddywaddy Granite	Glenloth Suite	Igneous (Intrusive (I-type intrusion))		Devonian (Early Devonian)	Devonian (Early Devonian)	10558	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G336	G336	Buckrabanyule Granite		Igneous (Intrusive (S-type intrusion))		Devonian (Early Devonian)	Devonian (Early Devonian)	10559	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G337	G337	Mount Egbert Granite		Igneous (Intrusive (S-type intrusion))		Devonian (Early Devonian)	Devonian (Early Devonian)	10560	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G34		Goonmirk Rocks Granodiorite		Igneous (Intrusive (Granite I-type))	Intrusive: mostly hornblende granodiorite, medium grained, moderately foliated	Devonian (Early Devonian)	Devonian (Early Devonian)	10561	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G341	G341,G341,Unk5	Cochranes Creek Granodiorite		Igneous (Intrusive (unassigned intrusion))		Devonian (Early Devonian)	Devonian (Early Devonian)	10562	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G345	G345,G343,G343,G346,G346	Wedderburn Granodiorite	Mount Cole Suite	Igneous (Intrusive (I-type intrusion))		Devonian (Early Devonian)	Devonian (Early Devonian)	10563	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G347	G347	Kooyoora Granite		Igneous (Intrusive (I-type intrusion))		Devonian (Early Devonian)	Devonian (Early Devonian)	10564	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G349	G349,G349	Rheola Gabbro		Igneous (Intrusive (unassigned intrusion))		Devonian (Early Devonian)	Devonian (Early Devonian)	10565	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G35		Tommy Roundhead Granodiorite		Igneous (Intrusive (Granite S-type))	Intrusive: two-mica granodiorite and biotite tonalite, variably foliated	Silurian (Wenlock)	Silurian (Llandovery)	10566	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G350	G350	Moliagul Granite		Igneous (Intrusive (I-type intrusion))		Devonian (Early Devonian)	Devonian (Early Devonian)	10567	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G351	G351,G348,G352,G352	Tarnagulla Granite		Igneous (Intrusive (unassigned intrusion))		Devonian (Early Devonian)	Devonian (Early Devonian)	10568	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G353		Bealiba Granodiorite		Igneous (Intrusive (I-type intrusion))		Devonian (Early Devonian)	Devonian (Early Devonian)	10569	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G354	G354,G354,G342,G354m	Natte Yallock Granite	Mount Cole Suite	Igneous (Intrusive)		Devonian (Early Devonian)	Devonian (Early Devonian)	10570	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G355	G355,G355m	Dalgenon Granite	Mount Cole Suite	Igneous (Intrusive (I-type intrusion))		Devonian (Early Devonian)	Devonian (Early Devonian)	10571	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G356	G356,G356n	Carapooee Granodiorite	Mount Cole Suite	Igneous (Intrusive (I-type intrusion))		Devonian (Early Devonian)	Devonian (Early Devonian)	10572	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G357	G357,G357n	Kooreh Granite	Mount Cole Suite	Igneous (Intrusive (unassigned intrusion))		Devonian (Early Devonian)	Devonian (Early Devonian)	10573	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G358	G358,G358m	Berrimal Granite	Coonooer Suite	Igneous (Intrusive (unassigned intrusion))		Devonian (Early Devonian)	Devonian (Early Devonian)	10574	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G359		Coonooer Granite	Coonooer Suite	Igneous (Intrusive (S-type intrusion))		Devonian (Early Devonian)	Devonian (Early Devonian)	10575	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G36		Kanuka Granodiorite		Igneous (Intrusive (Granite I-type))	Intrusive: biotite granodiorite and adamellite, foliated to strongly rodded	Silurian (Wenlock)	Silurian (Llandovery)	10576	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock

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GEOLOGICAL UNITS									HYDROGEOLOGICAL UNITS		AQUIFER		
1:250K_Geol_Code	OLDMAPSYMB	UNIT_NAME	PARENTS	UNIT_DESC	UNIT_LITH	AGEYOUNG	AGEOLD	GU_Code	HGU_Code	HGU_Name	Aquif_code	Aquifer Letter	Aquif_Name
G361		Richmond Granite	Coonooer Suite	Igneous (Intrusive (I-type intrusion))		Devonian (Early Devonian)	Devonian (Early Devonian)	10577	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G362	G362,G362	Yeungroon Granite	Coonooer Suite	Igneous (Intrusive (S-type intrusion))		Devonian (Early Devonian)	Devonian (Early Devonian)	10578	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G363		Wychitella Granite	Mount Cole Suite	Igneous (Intrusive (I-type intrusion))		Devonian (Early Devonian)	Devonian (Early Devonian)	10579	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G365		Tailor Creek Tonalite		Igneous (Intrusive (Granite I-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10580	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G367		Powncebys Tonalite		Igneous (Intrusive (Granite I-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10581	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G368		Ben Major Granite		Igneous (Intrusive (Granite I-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10582	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G37		Ellery Granite / Ellery Adamellite		Igneous (Intrusive (Granite A-type))	Intrusive: biotite-amphibole adamellite, coarse to medium porphyritic	Devonian (Early Devonian)	Devonian (Early Devonian)	10583	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G370		Lexton Granodiorite		Igneous (Intrusive (Granite I-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10584	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G371		Mount Lonarch Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Early Devonian)	Devonian (Early Devonian)	10585	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G372		Glenlogie Granodiorite		Igneous (Intrusive (Granite I-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10586	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G374		Ben Nevis Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Early Devonian)	Devonian (Early Devonian)	10587	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G375		Eversley Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Early Devonian)	Devonian (Early Devonian)	10588	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G376		Langi Ghiran Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Early Devonian)	Devonian (Early Devonian)	10589	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G377		Buangor Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Early Devonian)	Devonian (Early Devonian)	10590	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G378		Mount Cole Granite		Igneous (Intrusive (Granite I-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10591	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G379		Stawell Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Early Devonian)	Devonian (Early Devonian)	10592	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G38		Arte Gabbro / Arte Gabbro Complex		Igneous (Intrusive (Granite I-type))	Intrusive: two-pyroxene norite, fine to medium, layered, dark grey to green-black	Silurian (Wenlock)	Silurian (Llandovery)	10593	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G380		Ararat Granodiorite		Igneous (Intrusive (Granite Unassigned))		Devonian (Middle Devonian)	Devonian (Middle Devonian)	10594	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G381		Burrumbeep Granodiorite		Igneous (Intrusive (Granite Unassigned))		Devonian (Middle Devonian)	Devonian (Middle Devonian)	10595	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G383		Dunneworthy Granodiorite		Igneous (Intrusive (Granite Unassigned))		Devonian (Early Devonian)	Devonian (Early Devonian)	10596	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G384		Hickman Creek Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Early Devonian)	Devonian (Early Devonian)	10597	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G385		Ballyrogan Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Early Devonian)	Devonian (Early Devonian)	10598	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G39		Murrungowar Granodiorite / Murrungowar Adamellite		Igneous (Intrusive (Granite A-type))	Intrusive: biotite adamellite, coarse grained, foliated, S-C foliated	Silurian (Wenlock)	Silurian (Llandovery)	10599	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G395		Bushy Creek Granodiorite		Igneous (Intrusive (Granite I-type))		Palaeozoic (Cambrian)	Palaeozoic (Cambrian)	10600	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G396		Mafeking Granodiorite		Igneous (Intrusive (Granite I-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10601	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G397	G397	Epacris Hills Granite	Mafeking Suite	Igneous (Intrusive (Granite I-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10602	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G398		Mackenzie River Granodiorite		Igneous (Intrusive (Granite I-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10603	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G399	G399,G399,G400,G401	Victoria Valley Granite	Victoria Valley Batholith	Igneous (Intrusive (Granite A-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10604	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G4		Xmas		Igneous(Intrusive(I-type))	Intrusive:	Lower Silurian		10605	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G40		Enfield Granite		Igneous (Intrusive (Granite I-type))		Silurian (Wenlock)		10606	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G407	G407,Og407	Harrow Granodiorite		Igneous (Intrusive (Granite S-type))		Palaeozoic (Ordovician)	Palaeozoic (Ordovician)	10607	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G408	G408,G408	Nangkita Granite		Igneous (Intrusive (Granite Unassigned))		Palaeozoic (Ordovician)	Palaeozoic (Ordovician)	10608	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G409		Hassalls Creek Granodiorite		Igneous (Intrusive (Granite I-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10609	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G41		Tarlton Granite		Igneous (Intrusive (Granite I-type))	Intrusive: biotite tonalite, coarse grained, sheared	Palaeozoic (Devonian)	Palaeozoic (Silurian)	10610	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G42		Cape Conran Granite		Igneous (Intrusive (Granite I-type))	Intrusive: two-mica granite, coarse grained	Palaeozoic (Devonian)	Palaeozoic (Silurian)	10611	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G420	G420	Konong Wootong Granodiorite		Igneous (Intrusive (Granite I-type))		Devonian (Early Devonian)	Devonian (Early Devonian)	10612	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G421	G421	Wando Tonalite		Igneous (Intrusive (Granite I-type))		Palaeozoic (Ordovician)	Palaeozoic (Ordovician)	10613	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G422	G422,G422,G422	St Elmo Granodiorite		Igneous (Intrusive (Granite I-type))		Palaeozoic (Ordovician)	Palaeozoic (Ordovician)	10614	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G423	G423	Ferres Creek Tonalite		Igneous (Intrusive (Granite Unassigned))		Palaeozoic (Ordovician)	Palaeozoic (Ordovician)	10615	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G424	G424,G424	Dergholm Granite		Igneous (Intrusive (Granite A-type))		Palaeozoic (Ordovician)	Palaeozoic (Ordovician)	10616	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G43		Mount Raymond Granite		Igneous (Intrusive (Granite A-type))	Intrusive: riebeckite adamellite/granite, sheared, blue	Devonian (Early Devonian)	Devonian (Early Devonian)	10617	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G44		Orbost Tonalite / Orbost Trondhjemite		Igneous (Intrusive (Granite I-type))	Intrusive:	Palaeozoic (Devonian)	Palaeozoic (Silurian)	10618	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G45		Jarrahmond Granite / Jarrahmond Granodiorite		Igneous (Intrusive (Granite I-type))	Intrusive:	Palaeozoic (Devonian)	Palaeozoic (Silurian)	10619	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock

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GEOLOGICAL UNITS									HYDROGEOLOGICAL UNITS		AQUIFER		
1:250K_Geol_Code	OLDMAPSYMB	UNIT_NAME	PARENTS	UNIT_DESC	UNIT_LITH	AGEYOUNG	AGEOLD	GU_Code	HGU_code	HGU_Name	Aquif_code	Aquifer Letter	Aquif_Name
G46		Broken Leg Granite / Broken Leg Granodiorite		Igneous (Intrusive (Granite I-type))	Intrusive:	Palaeozoic (Devonian)	Palaeozoic (Silurian)	10620	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G47		Feltis Farm Tonalite		Igneous (Intrusive (Granite I-type))	Intrusive: hornblende tonalite, medium grained to hornblende-phyric	Palaeozoic (Devonian)	Palaeozoic (Silurian)	10621	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G48		Dysentery Tonalite		Igneous (Intrusive (Granite I-type))	Intrusive:	Palaeozoic (Devonian)	Palaeozoic (Silurian)	10622	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G49		Brodribb Granodiorite		Igneous (Intrusive (Granite I-type))	Intrusive: biotite granodiorite, medium grained, greyish blue	Silurian (Wenlock)	Silurian (Llandovery)	10623	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G5		Croajingalong Granite / Croajingalong		Igneous (Intrusive (Granite I-type))	Intrusive:	Silurian (Ludlow)	Silurian (Wenlock)	10624	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G50		Goongerah Granodiorite		Igneous (Intrusive (Granite I-type))	Intrusive: hornblende-biotite granodiorite, medium grained, bluish grey	Silurian (Wenlock)	Silurian (Llandovery)	10625	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G501		Yarak Granite		Igneous (Intrusive (Granite I-type))		Palaeozoic (Devonian)	Palaeozoic (Silurian)	10626	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G502		Watchmaker Granodiorite		Igneous (Intrusive (Granite I-type))		Palaeozoic (Devonian)	Palaeozoic (Silurian)	10627	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G505		Scrubby Flat Gabbro		Igneous (Intrusive (Granite Unassigned))		Silurian (Wenlock)	Silurian (Llandovery)	10628	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G506		Mount Jack Granite		Igneous (Intrusive (Granite S-type))		Silurian (Wenlock)	Silurian (Llandovery)	10629	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G507		Kent Road Granodiorite		Igneous (Intrusive (Granite S-type))		Silurian (Wenlock)	Silurian (Llandovery)	10630	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G508		Ocean View Granite		Igneous (Intrusive (Granite S-type))		Silurian (Wenlock)	Silurian (Llandovery)	10631	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G509		Rocky Jack Granite		Igneous (Intrusive (Granite I-type))		Silurian (Wenlock)	Silurian (Llandovery)	10632	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G51		Jungle Creek Granodiorite		Igneous (Intrusive (Granite I-type))	Intrusive: biotite granodiorite, coarse grained, pale to greenish grey	Silurian (Wenlock)	Silurian (Llandovery)	10633	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G512		Cooney Ridge Granodiorite		Igneous (Intrusive (Granite I-type))		Silurian (Wenlock)	Silurian (Llandovery)	10634	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G513		Case Granite		Igneous (Intrusive (Granite I-type))	Intrusive:	Devonian (Middle Devonian)	Devonian (Middle Devonian)	10635	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G514		Mollys Plain Granite		Igneous (Intrusive (Granite I-type))	Intrusive:	Devonian (Middle Devonian)	Devonian (Middle Devonian)	10636	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G52		Bonang Granodiorite		Igneous (Intrusive (Granite I-type))	Intrusive:	Silurian (Wenlock)	Silurian (Llandovery)	10637	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G53		Woollybutt Quartz Monzodiorite		Igneous (Intrusive (Granite I-type))	Intrusive: actinolitic quartz monzodiorite, porphyritic, dark green	Palaeozoic (Devonian)	Palaeozoic (Silurian)	10638	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G530		Whitegum Tonalite		Igneous (Intrusive)	Biotite-minor hornblende tonalite	Devonian (Early Devonian)	Devonian (Early Devonian)	10639	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G54		Iona Tonalite		Igneous (Intrusive (Granite I-type))	Intrusive:	Silurian (Wenlock)	Silurian (Llandovery)	10640	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G549		Cobungra Granite / Mount Livingstone		Igneous (Intrusive (Granite S-type))	Intrusive:	Silurian (Wenlock)	Silurian (Llandovery)	10641	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G55		Eleven Bob Granodiorite		Igneous (Intrusive (Granite I-type))	Intrusive:	Palaeozoic (Devonian)	Palaeozoic (Silurian)	10642	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G554		Beloka Gap Granite		Igneous (Intrusive (Granite Unassigned))		Mesozoic (Triassic)		10643	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G56		Double Bull Granodiorite		Igneous (Intrusive (Granite I-type))	Intrusive:	Palaeozoic (Devonian)	Palaeozoic (Silurian)	10644	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G57		Bete Bolong Granodiorite		Igneous (Intrusive (Granite I-type))		Palaeozoic (Devonian)	Palaeozoic (Silurian)	10645	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G58		Towzer Creek Granite		Igneous (Intrusive (Granite S-type))	Intrusive:	Palaeozoic (Devonian)	Palaeozoic (Silurian)	10646	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G59		Postman Spur Granodiorite		Igneous (Intrusive (Granite S-type))	Intrusive: biotite-cordierite granodiorite, medium grained, abundant inclusions	Silurian (Wenlock)	Silurian (Llandovery)	10647	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G6		Wangarabell Granodiorite		Igneous (Intrusive (Granite I-type))	Intrusive: leucocratic hornblende granodiorite medium to coarse grained	Silurian (Wenlock)	Silurian (Llandovery)	10648	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G60		Rodger River Granodiorite		Igneous (Intrusive (Granite I-type))	Intrusive: biotite-augite granodiorite, slightly K-feldspar phyric	Palaeozoic (Devonian)	Palaeozoic (Silurian)	10649	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G61		Waratah Flat Granite		Igneous (Intrusive (Granite Unassigned))	Intrusive: two-feldspar hornblende granite, fine grained, porphyritic	Palaeozoic (Devonian)	Palaeozoic (Silurian)	10650	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G62		Bull Run Gap Granite		Igneous (Intrusive (Granite S-type))	Intrusive: felsic biotite adamellite, medium grained	Silurian (Wenlock)	Silurian (Llandovery)	10651	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G65		Mount McLeod Tonalite		Igneous (Intrusive (Granite I-type))	Intrusive: hornblende tonalite, medium grained, green-grey	Palaeozoic (Devonian)	Palaeozoic (Silurian)	10652	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G66		Campbells Knob Granodiorite		Igneous (Intrusive (Granite I-type))	Intrusive:	Silurian (Wenlock)	Silurian (Llandovery)	10653	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G67		Cabanandra Granodiorite		Igneous (Intrusive (Granite S-type))	Intrusive: biotite granodiorite, medium grained, quartz pyhric	Silurian (Wenlock)	Silurian (Llandovery)	10654	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G69		Hobbs Adamellite		Igneous(Intrusive(I-type))	Intrusive: biotite-hornblende adamellite, fine to medium grained	Lower Silurian		10655	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G7		Genoa Peak Granite		Igneous (Intrusive (Granite I-type))	Intrusive:	Silurian (Wenlock)	Silurian (Llandovery)	10656	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G70		Dellicknora Granite / Dellicknora Adamellite		Igneous (Intrusive (Granite S-type))	Intrusive: biotite-cordierite adamellite, medium grained, quartz pyhric	Silurian (Wenlock)	Silurian (Llandovery)	10657	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G71		Amboyne Granodiorite		Igneous (Intrusive (Granite S-type))	Intrusive: biotite-cordierite granodiorite, medium grained, abundant inclusions	Silurian (Wenlock)	Silurian (Llandovery)	10658	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G74		Suggan Buggan Granodiorite		Igneous (Intrusive (Granite S-type))	Intrusive: biotite-cordierite granodiorite, coarse grained, quartz phyric	Silurian (Wenlock)	Silurian (Llandovery)	10659	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G76		Chilpin Granodiorite		Igneous (Intrusive (Granite S-type))	Intrusive: biotite granodiorite, very fine to medium grained	Silurian (Wenlock)	Silurian (Llandovery)	10660	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G77		Barrabilly Granite / Barrabilly Granodiorite		Igneous (Intrusive (Granite Unassigned))	Intrusive: biotite-cordierite adamellite, fine to medium grained, dark grey	Silurian (Wenlock)	Silurian (Llandovery)	10661	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G78		Staggs Creek		Igneous(Intrusive((Unassigned)))	Intrusive:	Lower Silurian		10662	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock

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GEOLOGICAL UNITS									HYDROGEOLOGICAL UNITS		AQUIFER		
1:250K_Geol_Code	OLDMAPSYMB	UNIT_NAME	PARENTS	UNIT_DESC	UNIT_LITH	AGEYOUNG	AGEOLD	GU_Code	HGU_code	HGU_Name	Aquif_code	Aquifer Letter	Aquif_Name
G8		Betka Granodiorite		Igneous (Intrusive (Granite I-type))	Intrusive:	Silurian (Wenlock)	Silurian (Llandovery)	10663	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G83		Penderlea Granite		Igneous (Intrusive)	Granitic intrusive of uncertain composition: S-type?; weathered granite and granitic soil	Silurian (Wenlock)	Silurian (Wenlock)	10664	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G84		Wattle Grove Granite		Igneous (Intrusive (Granite Unassigned))	Muscovite granite: S-type; foliated, medium-grained, grey; margins rich in metasedimentary enclaves	Silurian (Wenlock)	Silurian (Wenlock)	10665	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G85		Mac Creek Granodiorite		Igneous (Intrusive)	Muscovite granite: S-type; foliated, medium-grained, grey; margins rich in metasedimentary enclaves	Silurian (Wenlock)	Silurian (Wenlock)	10666	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G86	G86,G86,G86	Greggs Granodiorite		Igneous (Intrusive (Granite S-type))		Silurian (Wenlock)	Silurian (Llandovery)	10667	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G87	G87,G87	Buckwong Granodiorite		Igneous (Intrusive (Granite S-type))		Silurian (Wenlock)	Silurian (Llandovery)	10668	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G88	G88	Butchers Block Granite		Igneous (Intrusive (Granite Unassigned))		Silurian (Wenlock)	Silurian (Llandovery)	10669	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G89	G89	Tom Groggin Granite		Igneous (Intrusive (Granite S-type))		Silurian (Wenlock)	Silurian (Llandovery)	10670	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G9		Wingan Granite		Igneous (Intrusive (Granite I-type))	Intrusive:	Silurian (Wenlock)	Silurian (Llandovery)	10671	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G90	G90,G90,G90,G90,G90	Boebuck Granodiorite	Boggy Plain Supersuite	Igneous (Intrusive (Granite I-type))		Silurian (Wenlock)	Silurian (Llandovery)	10672	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G91		Bunroy Hut Granite		Igneous (Intrusive (Granite I-type))		Silurian (Wenlock)	Silurian (Llandovery)	10673	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G92		Corryong Granite		Igneous (Intrusive (Granite S-type))		Silurian (Wenlock)	Silurian (Llandovery)	10674	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G94		Nariel Granite		Igneous (Intrusive (Granite S-type))		Silurian (Wenlock)	Silurian (Llandovery)	10675	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G95	G95	Wabba Granite		Igneous (Intrusive (Granite S-type))		Silurian (Wenlock)	Silurian (Llandovery)	10676	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic
G96	G96,G96	Burrungabugge Granodiorite		Igneous (Intrusive (Granite I-type))	Hornblende granodiorite: dark green, medium grained; epidote alteration common; I-type; highly magnetic	Devonian (Early Devonian)	Devonian (Early Devonian)	10677	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G98		Mount Mittamatite Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Early Devonian)	Devonian (Early Devonian)	10678	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G99	G99,G99	Pine Mountain Granite		Igneous (Intrusive (Granite Unassigned))		Devonian (Early Devonian)	Devonian (Early Devonian)	10679	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic
Sg		Undifferentiated Silurian granite		Igneous (Intrusive)		Palaeozoic (Silurian)	Palaeozoic (Silurian)	10680	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
TRI	Unk32	Mount Leinster Igneous Complex		Igneous (Extrusive, Intrusive)	Intrusive: granite porphyry, syenites, syenite porphyry	Mesozoic (Triassic)	Mesozoic (Triassic)	10681	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
Unk32		undifferentiated Mount Leinster Igneous Complex		Igneous(Intrusive())	Intrusive: granite porphyry	Triassic		10682	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G218		Trawool Granite		Igneous (Intrusive (Granite S-type))	Intrusive	Devonian (Late Devonian)	Devonian (Late Devonian)	10683	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G219		King Parrot Creek Granodiorite		Igneous (Intrusive (Granite S-type))	Intrusive	Devonian (Late Devonian)	Devonian (Late Devonian)	10684	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G220	G220	Flowerdale Granodiorite		Igneous (Intrusive (Granite Unassigned))	Intrusive	Devonian (Late Devonian)	Devonian (Late Devonian)	10685	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G287	G287	Glenaroua Microgranite		Igneous (Intrusive (Granite S-type))	Intrusive	Devonian (Late Devonian)	Devonian (Late Devonian)	10686	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G315	G315	Tullaroop Granodiorite	Harcourt Suite	Igneous (Intrusive (Granite I-type))	Intrusive	Devonian (Late Devonian)	Devonian (Late Devonian)	10687	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock
G373	Dlg373	Elmhurst Granite	Mount Cole Suite	Igneous (Intrusive (Granite Unassigned))	Intrusive	Devonian (Early Devonian)	Devonian (Early Devonian)	10688	1128	Undifferentiated Intrusive Basement Rocks	114	BSE	Mesozoic and Palaeozoic Bedrock

GHD

180 Lonsdale Street
Melbourne, Victoria 3000
T: (03) 8687 8000 F: (03) 8687 8111 E: melmail@ghd.com.au

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