CAPE SCOTT
NORTHERN TERRITORY

SHEET SD/52-7 INTERNATIONAL INDEX
1:250 000 GEOLOGICAL SERIES — EXPLANATORY NOTES

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COMPILED BY J. R. MENDEUM

AUSTRALIAN GOVERNMENT PUBLISHING SERVICE CANBERRA 1972
Published for the Minister for National Development
The Hon. Sir Reginald Swartz, K.B.E., E.D., M.P.,
By the Australian Government Publishing Service

Printed by The G.J.L Group (Printers) Pty. Ltd., Melbourne
Explanatory Notes on the Cape Scott Geological Sheet

Compiled by J. R. Mendum

The Cape Scott 1:250 000 Sheet area is centred on the mouth of the Daly River, 115 km south-southwest of Darwin in the Northern Territory of Australia. It lies between longitudes 129°E and 130°30'E and latitudes 13°S and 14°S. The western part of the Sheet area is covered by the Timor Sea.

The area is covered by vertical air-photographs at a scale of 1:30 000 flown in 1950 and at 1:85 000 flown in 1968. In 1953 the Division of National Mapping produced uncontrolled photo-mosaics of the Sheet area at a scale of 1:63 360. In 1960 large-scale topographic maps were produced for the northern part of the Sheet area and in 1962 the 1:250 000 topographic sheet was published by the Royal Australian Survey Corps.

Access to the southern part of Sheet area is by the Daly River/Port Keats Mission track and the track to Elizabeth Downs homestead, and to the northern part by several tracks to Labelle Downs homestead. The Daly River is an obstacle to any north-south communications, and access to the southern part is governed by the crossing at Daly River Police Station in the Pine Creek 1:250 000 Sheet area. Tracks generally are poorly formed and are passable only by 4-wheel-drive vehicles well into the dry season. The exception to this is the well formed gravel road linking Elizabeth Downs homestead to the Daly River Police Station. Vehicular movement within the area is restricted by the numerous swamps and lagoons.

The climate is monsoonal; annual rainfall is between 1 270 mm and 1 400 mm, almost entirely between October and April; only a few showers fall during the dry season. The temperature has an average annual maximum of around 36°C and an average annual minimum of about 20°C. Both temperature and humidity remain high throughout the year.

Vegetation consists mainly of perennial tussock grass on the plains, with abundant pandanus trees. The commonest grass species is wild rice (Oryza sativa var. jatua). Reeds are common in the more swampy areas. On the higher ground open eucalypt forest is predominant with an undergrowth of annual sorghum. In the mesas and foothills (Fig. 1 — Docherty Hills, Murrenja Hill), there is tall dense eucalypt forest. Pockets of rain-forest occur around springs, and large paperbarks are abundant along permanent watercourses and lagoons. Christian & Stewart (1953) and more recently Perry (1960) have studied the vegetation and soils of the area.

All the population of about 180 lives on Elizabeth Downs and Labelle Downs Stations; most are aboriginals. Cattle raising on the open range system is the only industry.

Geological Investigations

H. Y. L. Brown visited the area in 1905 and reported on two bores drilled for coal on the shores of Anson Bay near Cliff Head and Cape Ford (Brown, 1908). No further work was done until Noakes carried out a regional geological survey of
the Katherine-Darwin region (Noakes, 1949). This was followed by further
geological mapping in the 1950’s (Walpole et al., 1968). Dickins, Roberts, &
Vevers (1972) made a brief reconnaissance in 1965 of the Palaeozoic to Mesozoic
rocks.

The present geological investigations are part of the regional 1:250 000 mapping
programme of the Victoria River Basin.

Geophysical Investigations

Detailed seismic and gravity surveys in the southern part of the Sheet area
(Aquitaine, 1966) confirmed the presence of the Moyle River Fault and several
minor faults associated with it. They also enabled several stratigraphic horizons
to be traced across the fault.

A reconnaissance airborne scintillometer and magnetic intensity survey by BMR
in 1956 showed a cluster of radiometric anomalies 13 km west of Murrenja Hill
and strong magnetic anomalies in the extreme northeast (BMR Map G226-2). A
detailed airborne scintillometer survey was carried out by Planet Gold N.L. over
the southern part of the Sheet area in 1968. BMR included the southern part of the
Cape Scott Sheet area in the detailed magnetic intensity survey of the Bonaparte
Gulf in 1958 (Quilty, 1966). This shows minor anomalies over the basic intrusives
and a large anomaly northwest of Cape Ford.

In 1967 BMR carried out a regional helicopter gravity survey over the Sheet
area. The bouguer anomaly contours are shown in Figure 2 (Whitworth, 1970).

PHYSIOGRAPHY

Four physiographic units can be distinguished (Fig. 1).

The Coastal Plains make up most of the land area. They are soil and alluvial
plains with mangrove swamps, tidal mud flats, and low-relief sand dunes near the
coast. Much of the area consists of black-soil flood-plain. There are numerous
lagoons and inland swamps.

The Litchfield Plains are stony soil plains, underlain by granite and Archaean
metamorphics which crop out in low stony rises, the granite commonly forming
small rounded hills with associated large exfoliated boulders. The plains are not
seasonally flooded and do not have the wet vegetation cover (rice grass, pandanus,
paperbark) of the Coastal Plains. The dendritic drainage pattern is characteristic.

The Foothills are rough, and 60 to 120 m above sea level. They are an eroded
remnant of the rejuvenated Wave Hill Surface of Hays (1968), and have developed
on Precambrian, Permian, and rarely Lower Cretaceous sandstone, and to a minor
extent on schist and granite. The relief is controlled by block faulting, Murrenja
Hill being a horst between two major faults. Small outcrops of laterite occur within
the unit.
The Mesas consist of elevated remnants of the Wave Hill Surface with well-developed lateritic profiles developed on Cretaceous, Permian, and more rarely Precambrian sandstones. The mesas are commonly bounded by cliffs up to 24 m high.

The area shows evidence of post-Miocene warping since the laterite profile developed on the Permian and Cretaceous sediments varies considerably in elevation: from 107 m above sea level in the Barthelemey Hills to 226 m in the Docherty Hills, 48 km to the east.

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**Fig. 1. Physiographic subdivisions.**

**STRATIGRAPHY**

The stratigraphy is shown in Table 1.

*Archaean?*

The Hermit Creek Metamorphics are probably age equivalents of the Halls Creek Group in the East Kimberleys (Dow & Gemuts, 1969). Plagioclase-amphibolite intrudes the schist near Hermit Creek. Tremolite schist, which crops out abundantly in the Dilke Range, is commonly monomineralic, but some contains
<table>
<thead>
<tr>
<th>Era</th>
<th>Age Period</th>
<th>Rock Unit</th>
<th>Thickness (m)</th>
<th>Lithology</th>
<th>Stratigraphic Relationships</th>
<th>Topographic Expression</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAINOZOIC</td>
<td>Quaternary</td>
<td>Coastal Sand</td>
<td>Qs</td>
<td>Quartz sand</td>
<td>Superficial</td>
<td>Along coast and estuaries; tidal swamps. Heavily timbered in parts. Mud flats, mangrove swamps</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Alluvium</td>
<td>Qa</td>
<td>Dark grey silt, sand and gravel</td>
<td>Superficial</td>
<td>Along river channels. Flat coastal plains</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coastal Alluvium</td>
<td>Qc</td>
<td>Mud, silt, evaporites</td>
<td>Superficial</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Soil</td>
<td>Czs</td>
<td>Colluvium, sand, some black soil</td>
<td>Superficial</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Laterite</td>
<td>Czl</td>
<td>Laterite and ferruginous rubble, On older sediments siliceous in part</td>
<td>Superficial</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lower Cretaceous</td>
<td>Mullaman Beds</td>
<td>up to 30</td>
<td>Sandstone, feldspathic sandstone, siltstone, claystone</td>
<td>Overlies Permian with low angle unconformity</td>
<td>Steep scarp slopes and cliffs</td>
</tr>
<tr>
<td></td>
<td>Triassic</td>
<td></td>
<td>up to 4 100</td>
<td>Unknown</td>
<td>Slight angular discordance with</td>
<td>Subsurface, west of Moyle</td>
</tr>
<tr>
<td></td>
<td>Jurassic</td>
<td></td>
<td></td>
<td></td>
<td>Upper Permian and Cretaceous</td>
<td>River Fault</td>
</tr>
<tr>
<td></td>
<td>Permian</td>
<td></td>
<td></td>
<td>Friable feldspathic sandstone, siltstone, claystone</td>
<td>Markedly unconformable on all older units</td>
<td>Low hills and steep scarp in south</td>
</tr>
<tr>
<td></td>
<td>Middle</td>
<td></td>
<td></td>
<td>Flaggy sandstone with shale</td>
<td>Unconformable on Litchfield Complex as shown in bore north of Daly River</td>
<td>Low-relief soil-covered areas</td>
</tr>
<tr>
<td></td>
<td>Cambrian</td>
<td></td>
<td>up to 155</td>
<td>and limestone</td>
<td></td>
<td>holes at Darkies Hole (65752)</td>
</tr>
<tr>
<td>PROTEROZOIC</td>
<td>Carpentarian Moyle River Formation or Adelaidian Pfm</td>
<td>up to 5100</td>
<td>Medium blocky quartz sandstone. Some pebble bands Unconformable on Litchfield Complex and Archaean Rugged ridges and steep gorges. Surface peneplaned in parts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------</td>
<td>------------------------------------------------------</td>
<td>------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Basic Igneous Rocks Pdo</td>
<td></td>
<td>Diorite, gabbro, rare dolerite Intrudes Archaean. Rare dykes Low rounded hills in granite. One intrusion older than Moyle River Formation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Litchfield Complex Fgl</td>
<td></td>
<td>Granite, granodiorite, tonalite, and adamellite. Pegmatite and migmatis. Garnetiferous. Basic xenoliths abundant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Intrudes Archaean Isolated tors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARCHAEOAN</td>
<td>Hermit Creek Metamorphics Ah</td>
<td></td>
<td>Quartz-mica schist, phyllite, Metamorphosed near granite Rugged hills and low relief trencilite schist, amphibolite, andalusite, mica schist</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
remnant serpentine and olivine crystals. These rock types are probably metamorphosed ultrabasic to basic intrusive rocks, considered equivalent to the McIntosh Gabbro and Alice Downs Ultrabasics of Western Australia (Dow & Gemuts, 1969).

Carpentarian?

The Litchfield Complex is a large acid igneous intrusion which has migmatized parts of the adjacent Hermit Creek Metamorphics. The complex ranges from a leucocratic biotite granite to a melanocratic garnet granodiorite. Associated pegmatite has penetrated the Hermit Creek metamorphics and in places contains feldspar crystals 70 cm long; tourmaline and garnet are also abundant. The granite rocks of the complex commonly contain distinctive mineralogical bands in which quartz and biotite crystals are concentrated within steeply dipping zones about 5 cm wide. The Litchfield Complex has been dated by the Rb/Sr whole rock isochron method (Leggo in Walpole et al., 1968) at 1760 m.y., but part may be older, possibly Archaean.

The basic intrusive rocks consist of a partly amphibolitized gabbro-diorite suite somewhat hybridized with the Litchfield Complex. Pegmatite and aplite veins cut both the acid and basic rocks. The basic rocks consist commonly of amphiboles with less abundant feldspar altered to sericite. In the Murrena Hill area is an intrusion of gabbro and medium-grained dolerite. The western margin of this body is probably faulted, and it is unconformably overlain by the Moyle River Formation (Morgan et al., 1970).

Carpentarian or Adelaideon

The Moyle River Formation is a thick, monotonous sequence of sandstone with interbedded minor siltstone. In places pebbly conglomeratic sandstone occurs at the base and is thought to have been derived from the northwest. The formation has a maximum estimated thickness of 10 400 m immediately south of the Sheet area.

Palaeozoic

Noakes (1949) reported that auger-hole sampling in the Darkies Hole region (Grid ref. 637521) has proved the presence of thin-bedded sandstone, shale, and limestone beneath superficial deposits. The rocks are unfossiliferous, but on lithological and stratigraphic criteria they are regarded as part of the Middle Cambrian Tindall Limestone and Jinduckin Formation of the Daly River Group, which crop out extensively on the adjacent Pine Creek Sheet area (Walpole et al., 1968; Gatehouse, 1968).

The Permian sequence in the eastern part of the Sheet area has been described in detail by Dickins, Roberts, & Veevers (1972). Lower Permian sandstone crops out sparsely, but a large thickness has been recorded in the Cliff Head coal bore, where it lies directly on granite. In the Docherty Hills, the basal Permian is represented by poorly stratified diamicrites and, locally, by finely banded claystone and siltstone resembling varves. These deposits are probably of glacial origin, although positive evidence is lacking. The beds are overlain by sandstone and siltstone. About 76 m of Upper Permian marine sandstone, siltstone, and claystone are known to crop out in the Sheet area. The siltstone contains Rhizocorallium burrows.
Seismic work (Aquitaine, 1968) has shown that Permian sediments thicken west of the Moyle River Fault, as shown in section ABC on the map. The fault trends approximately north-south immediately seaward of the southern coastal margin (Fig. 2) and is thought to die out northwards. A seismic profile northwest from Cape Dombey (Grid ref. 577465) shows that the Permian sediments thicken from approximately 600 m east of the fault to 1400 m immediately west of the fault and up to an estimated maximum of 1980 m, 88 km northwest of Cape Dombey.

Mesozoic and Cainozoic

West of the concealed Moyle River Fault Triassic to Tertiary sediments are present beneath the Timor Sea. Seismic work by Australian Aquitaine Petroleum Pty Ltd (1968) has shown that these sediments, absent at the fault, thicken to about 1800 m, 88 km northwest of the fault. The sequence shown at the northwestern end of Section ABC is based on seismic correlation with the succession penetrated in the Petrel 1 petroleum exploration well drilled to the west of the Sheet area.

East of the Moyle River Fault the Permian sequence is overlain with slight angular unconformity by Cretaceous beds which consist of a 15 cm thick basalt pebbly sandstone with overlying sandy micaceous shale and about 46 m of silicified claystone. The Cretaceous sequence is best exposed in the Barthelemy Hills (Grid ref. 586464), where belemnites and radiolarians are present (Dickins et al., 1970). Noakes (1949) has also reported belemnites, including Dimitobelus sp., from Mount Greenwood (Grid ref. 616479).

In many places the uppermost part of the Mullaman Beds has been extensively lateritized, and the leached and pallid zones extend down to 30 m. Pisolithic laterite is common at the top.

STRUCTURE

The main structural elements are shown in Figure 2.

The Moyle River Fault separates a stable area, with a thin covering of Mesozoic and Palaeozoic sediments, to the east from the Bonaparte Gulf Basin containing thick Palaeozoic and Mesozoic sediments to the west.

The Archaean rocks show evidence of two distinct phases of folding, particularly in the Dilke Range.

The primary folding is characterized by an east-west foliation in other Sheet areas, but this structure was not noted in the Cape Scott Sheet area. Primary fold lineations were observed folded on the limbs of minor second-phase folds. Metamorphism associated with the folding was very minor.

The structures and effects of the primary folding are almost completely obscured by the secondary folding and metamorphism, which were part of the Pine Creek Orogeny. This event affected a wide zone in Northern Australia stretching from Halls Creek in the west to Oenpelli Mission and Katherine in the east. The folding is accompanied by a penetrative axial plane foliation striking between 010° and 045°. The grade of metamorphism is commonly upper greenschist facies, but locally reaches almandine-amphibolite facies.
Mineral banding, quartz aggregations, and biotite xenoliths, the latter up to 46 m in length, are common in the granitic rocks. Some xenoliths show their original fold structure and hence were derived from the Archaean rocks.

Fig. 2. Main structural elements and Bouguer anomaly contours.

The Moyle River Formation is moderately folded and faulted. Tom Turners Fault marks the eastern extent of the Moyle River Formation on this Sheet area. There have been repeated movements along the fault since its inception; for instance the Cretaceous sediments have a small downthrow to the east, whereas the Precambrian rocks are downthrown to the west.

GEOLOGICAL HISTORY

In the Archaean, quartz silts and clays, becoming coarser to the northwest, were deposited. In the late Archaean or early Lower Proterozoic the sediments were folded and probably faulted. Pyroxenite and peridotite sheets and isolated small gabbro bosses were intruded into them. These have been subsequently metamorphosed to tremolite schist and amphibolite respectively.
In the Lower Proterozoic the area was uplifted and eroded, the major part of the derived sediment being deposited in the Pine Creek Geosyncline, a northeast-trending trough which lay to the east of the Sheet area.

Widespread refolding of the Archaean rocks took place in the late Lower Proterozoic, succeeded by metamorphism to garnet grade; later retrogression led to an overall reduction to chlorite grade. In the early Carpentarian the Litchfield Complex was injected into the folded Archaean rocks, and migmatites were formed at the margins of the intrusion: the granite may have formed solely by granitization of the Archaean sediments. Associated basic rocks were also intruded at about this time. In the Murrenja Hill area parts of the granitic complex antedate the secondary folding and metamorphism.

Uplift followed the Pine Creek Orogeny until the late Carpentarian or early Adelaidean, when subsidence resulted in sands, minor conglomerates, and silts being deposited in a marine trough by northwesterly currents, to form the Moyle River Formation.

Moderate folding and faulting then accompanied uplift and there is no record of further sedimentation east of the Moyle River Fault until the Lower Permian.

It is probable that marine deposition took place intermittently throughout the Palaeozoic beneath the Timor Sea, west of the Moyle River Fault. Sedimentation is known to have taken place throughout the Mesozoic and into the Tertiary but disconformities within the sequence indicate that this was not continuous.

East of the Moyle River Fault, the Lower Permian gives evidence of cold, probable glacial, conditions. As it subsided, sandstone was deposited from the transgressive area. In the Upper Permian fossiliferous clays, silts and sands were laid down in a shallow sea in the coastal part of the Sheet area; then the area was uplifted again, and erosion continued until, in the Lower Cretaceous, a renewed transgression caused clays to be deposited.

In the Tertiary, an extensive cover of laterite developed on the uplifted peneplained Cretaceous to Archaean rocks. Late Tertiary warping has raised the laterite profile to its present levels.

ECONOMIC GEOLOGY

Lower Permian coal seams have been intersected in several bores in the Anson Bay area, and in the extreme southwestern part of the Sheet area (Geotechnics, 1968; Brown, 1908). The seams however, are thin, and of poor quality, and lie more than 170 m below the surface.

Water

Much of the area is swamp country with lagoons and is subject to seasonal flooding.

Table 2 shows details of the 19 bores which have been drilled for water in the Cape Scott Sheet area.
<table>
<thead>
<tr>
<th>Water Resources No.</th>
<th>Registration No.</th>
<th>Date Drilled</th>
<th>Pastoral Lease</th>
<th>Depth (m)</th>
<th>Yield (l/min)</th>
<th>Depth struck (m)</th>
<th>Standing water level (m)</th>
<th>Aquifer</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5452</td>
<td>1966</td>
<td>Tipperary</td>
<td>30</td>
<td>Not tested</td>
<td>7.6</td>
<td>3.6</td>
<td>Hermit Creek Metamorphics (?)</td>
<td>Salt water</td>
</tr>
<tr>
<td>2</td>
<td>5454</td>
<td>1966</td>
<td>Tipperary</td>
<td>18</td>
<td>37.9</td>
<td>8</td>
<td>3</td>
<td>Daly River Group</td>
<td>Good water</td>
</tr>
<tr>
<td>3</td>
<td>5453</td>
<td>1966</td>
<td>Tipperary</td>
<td>22</td>
<td>37.9</td>
<td>8.5</td>
<td>3.3</td>
<td>&quot;</td>
<td>Good water</td>
</tr>
<tr>
<td>4</td>
<td>5451</td>
<td>1966</td>
<td>Tipperary</td>
<td>23</td>
<td>30.3</td>
<td>9.4</td>
<td>3</td>
<td>&quot;</td>
<td>Good water</td>
</tr>
<tr>
<td>5</td>
<td>5920</td>
<td>1967</td>
<td>Tipperary</td>
<td>14.6</td>
<td>Nil</td>
<td>Nil</td>
<td>Litchfield granite</td>
<td>&quot;</td>
<td>Salt water</td>
</tr>
<tr>
<td>6</td>
<td>5918</td>
<td>1967</td>
<td>Tipperary</td>
<td>43</td>
<td>14.2</td>
<td>3</td>
<td>Alluvium</td>
<td>&quot;</td>
<td>Bore in fluvial mud</td>
</tr>
<tr>
<td>7</td>
<td>5899</td>
<td>1967</td>
<td>Tipperary</td>
<td>42</td>
<td>22.7</td>
<td>37.5</td>
<td>10.2</td>
<td>Daly River Group (?)</td>
<td>Good water</td>
</tr>
<tr>
<td>8</td>
<td>5900</td>
<td>1967</td>
<td>Tipperary</td>
<td>31.5</td>
<td>Nil</td>
<td>Nil</td>
<td>Alluvium</td>
<td>&quot;</td>
<td>Bore drilled to granite. Only small non-usable flow obtained</td>
</tr>
<tr>
<td>9</td>
<td>5901</td>
<td>1967</td>
<td>Tipperary</td>
<td>63</td>
<td>189</td>
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<td>Not known</td>
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<td>&quot;</td>
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<tr>
<td>10</td>
<td>5940</td>
<td>1967</td>
<td>Tipperary</td>
<td>45</td>
<td>Not tested</td>
<td>18.8</td>
<td>Alluvium</td>
<td>&quot;</td>
<td>Only small non-usable supply obtained</td>
</tr>
<tr>
<td>11</td>
<td>5892</td>
<td>1967</td>
<td>Tipperary</td>
<td>21</td>
<td>1515</td>
<td>20</td>
<td>Daly River Group (?)</td>
<td>&quot;</td>
<td>Good water</td>
</tr>
<tr>
<td>12</td>
<td>5941</td>
<td>1967</td>
<td>Tipperary</td>
<td>63</td>
<td>54.5</td>
<td>57</td>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
</tr>
<tr>
<td>13</td>
<td>6109</td>
<td>1967</td>
<td>Tipperary</td>
<td>18</td>
<td>Not tested</td>
<td>16.5</td>
<td>Alluvium</td>
<td>&quot;</td>
<td>&quot;</td>
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<tr>
<td>14</td>
<td>6110</td>
<td>1967</td>
<td>Tipperary</td>
<td>31.5</td>
<td>909</td>
<td>22</td>
<td>Alluvium and Litchfield granite</td>
<td>&quot;</td>
<td>No. 3 Bore</td>
</tr>
<tr>
<td>15</td>
<td>7217</td>
<td>1970</td>
<td>Labelle Downs</td>
<td>63</td>
<td>Nil</td>
<td>No known</td>
<td>Hermit Creek Metamorphics</td>
<td>&quot;</td>
<td>No. 6 Bore</td>
</tr>
<tr>
<td>16</td>
<td>7218</td>
<td>1970</td>
<td>&quot;</td>
<td>38</td>
<td>Nil</td>
<td>No known</td>
<td>Litchfield granite</td>
<td>&quot;</td>
<td>No. 7 Bore</td>
</tr>
<tr>
<td>17</td>
<td>7220</td>
<td>1970</td>
<td>&quot;</td>
<td>21</td>
<td>23-30</td>
<td>Not known</td>
<td>Litchfield Complex</td>
<td>&quot;</td>
<td>No. 8 Bore</td>
</tr>
<tr>
<td>18</td>
<td>7221</td>
<td>1970</td>
<td>&quot;</td>
<td>21</td>
<td>23-30</td>
<td>Not known</td>
<td>Granite of Litchfield granite</td>
<td>&quot;</td>
<td>Poor quality water</td>
</tr>
<tr>
<td>19</td>
<td>7222</td>
<td>1970</td>
<td>&quot;</td>
<td>31</td>
<td>23-30</td>
<td>Not known</td>
<td>Hermit Creek Metamorphics</td>
<td>&quot;</td>
<td>Poor quality water</td>
</tr>
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