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# Lake Disappointment

# Hydrogeological Assessment of the Impact of Brine Extraction

for

Reward Minerals Limited

March, 2017

**Superintendents**

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# 1 INTRODUCTION

Reward Minerals (RWD) plan to extract in the order of 2000 L/s (63 GL per year) of potash brine from Lake Disappointment located in the Sandy Desert east of Newman (Figure 1). Brine extraction is planned predominantly using trenches, with supplementation from bores. This report presents the hydrogeological conceptualisation of the lake and the parameters of a numerical model generated to assess potential impacts of brine extraction on the surrounding environment.

In 2007 Global Groundwater undertook an exploration drilling program on the Lake using a "Geoprobe" rig with shallow depth capability and presented the results of test trenches and core drilling (Nixon, 2007). That report presented a hydraulic conceptualisation and parameters to inform the resource assessment. Since 2007 RWD have expanded their exploration so that the data set now consists of 16 deep diamond core holes, 22 reverse circulation (RC) bores, several test production bores and 10 test trenches on the lake surface (Figure 2). Recent drilling results and testing data are presented in this report (Appendix A) and have resulted in an improved hydrogeological conceptualisation.

# 2 SETTING

In keeping with the previous report (Nixon, 2007), definitions for the various forms of evaporite minerals mentioned in this report are according to the Geological Survey of Western Australia (Jones, 1994). Strata presented by Nixon (2007), have also been reinterpreted based on recent drilling including deeper diamond core holes. In particular LDD1507 has been logged in detail and this is presented in Appendix B.

The genesis of the modern geological sequence was described by Heese (2009) who states:

> "The topography and extensive palaeo-drainage network of the western half of the (Australian) continent date to the late Mesozoic to Early Cenozoic (Tertiary). It is thought that this relict landscape was the product of advancing aridity through the Neogene leading to loss of effective fluvial transport. Subsequent evolution towards an arid landscape saw the development of saline groundwater windows, playas and aeolian landforms by at least 1 million years ago (Fujioka et al. 2009). Because of this trend to aridity and reduction of sediment supply, most of the dunefields today receive little or no new supplies of sand from fluvial sources but rework old coastal, fluvial and lacustrine sediments from relict shorelines, terrestrial basin deposits, piedmonts and valley floors.

The repeated expansion of arid conditions in glacial stages of the Quaternary glacial cycles has left dunefields extending from the most arid parts of the continent into the semi-arid zone and isolated patches in presently humid areas. Growing geochronological evidence points to dune formation beginning in the mid-Pleistocene and accelerating as the climate has become increasingly arid in subsequent glacial cycles.

As geological times presented in this document are from differing sources they are summarised and correlated in Table 1.

Table 1 Geological Time Descriptions.

| **Era** | **Period** | | **Epoch** | **Commenced years ago** |
|---|---|---|---|---|
| Cenozoic | Neogene | Quaternary | Holocene | 8000 |
| | | | Pleistocene | 1.8 million |
| | | Tertiary | Pliocene | 5.3 million |
| | | | Miocene | 23.8 million |
| | Palaeogene | | Oligocene | 33.7 million |
| | | | Eocene | 55.5 million |
| | | | Paleocene | 65 million |
| Mesozoic | Cretaceous | | Upper | 100.5 million |
| | | | Lower | 145 million |
| Geological periods not presented due to no identified strata | | | | |
| Neo Proterozoic | | | | 1,000 million (up to 541 million) |

## 2.1 GEOLOGY

The Gunanya 1:100,000 Geological Series Sheet (Bagas, 1998), the Blanche-Cronin 1:100,000 Geological Series Sheet (Bagas, 1999) and the Gunanya 1:250,000 Geological Series Sheet (Williams and Williams, 1980) indicate the following geological units occur in association with Lake Disappointment:

***Quaternary and Tertiary***

These deposits are comprised of; Lacustrine deposits within the lake; Kopi (flour gypsum) deposits present as stabilised dunes along the western margin the lake; Reworked aeolian deposits, also present along the western side of the lake; Aeolian deposits, present as flat to undulating sandplains and seif (longitudinal) dunes formed extensively adjacent to lake and as

discontinuous “islands” of shallow relief within the extent of Lake Disappointment; and calcrete deposits outside the lake.

For the purposes of this report the most relevant quaternary and tertiary sequences are those within and adjacent to the Lake. These are the Upper Lakebed Sequence, which are truncated by Aeolian Deposits and the underlying Lower Lakebed Sequence. A plan and cross sections of the Upper Lakebed Sequence is presented in Enclosure 1 (A1 map).

Upper Lakebed Sequence (Qh)

The playa lake surface typically comprises a thin crust (usually less than 5 cm in thickness) of evaporite mineral deposits (halite and gypsum). This layer is underlain by an interbedded sequence comprising two distinct forms:

- Reworked gypsiferous sand deposits (Qhs) comprising loose to very loose, orange, brown, green, fine to coarse grained silty to clayey sands and sandy to clayey gravels. The gypsum is present predominantly in seed (gypsarenite) form, the often rounded nature of which is considered indicative of aeolian reworking and accumulation. Crystalline gypsum (selenite) is also present.

- Lacustrine deposits (Qhl) comprising soft to firm, orange, brown, green, low to high plasticity clays to sandy clays, sandy silts and loose clayey sands with variable decomposed organic material content and minor gypsum in both crystalline and seed form as well as localised cellular form.

Interbedded gypsiferous sand materials (Qhs) are evident throughout the lake ranging up to 1.35 m in thickness (Nixon, 2007). The Qhs is truncated or underlain by cohesive lacustrine deposits (Qhl). The upper sequence forms a near continuous horizon of variable thickness across the lake and encompasses the significant development of “heaved earth” throughout the southeast portion of the lake. Together the Qhs and Qhl units are termed Qh or the upper lakebed sequence.

Aeolian Deposits (Qpe)

Both fringing and underlying the upper lakebed sequence locally throughout the extent of Lake Disappointment is a series of discontinuous aeolian deposits (Qpe) comprising orange, brown, fine to medium grained silty to clayey sands composed primarily of quartz with variable crystalline gypsum. These are described by Heese (2009) as dunes forming after the mid-Pleistocene Epoch and predate the Qhs units.

Lower Lakebed Sequence (Q/Tpl)

The upper lakebed sequence (Qhs) and aeolian deposits (Qpe) are underlain by an older more consolidated alluvial/lacustrine sequence (Q/Tpl) consisting of orange, red, brown, firm to stiff, medium to high plasticity sandy clays and clays with minor lenses and thin horizons of clayey to silty sands. This unit was named (Qpl) by Nixon (2007), but correlation with core from LDD1507 indicates that these sequences may be Tertiary in age and/or include weathered basement, which typically contains pale green clays. Gypsum, present in crystalline form and as localised cellular aggregates is present within Q/Tpl units. The interpreted base of the lower lake bed sequence is between 8 and 36 m bgl based on the diamond drilling carried out in 2015 (Appendix A).

Calcrete (Czk)

Extensive tracts of calcrete comprising massive, nodular and cavernous sandy limestone of Tertiary age are mapped by the Geological Survey (Williams and Williams, 1980) adjacent to Lake Disappointment where they formed as palaeo-drainage valley infill deposits. Secondary silicification of these deposits locally results in incomplete replacement by a vuggy, opaline silica caprock. Quaternary aeolian deposits often overlie the calcrete deposits. Calcrete deposits have not been identified within the lake.

***Neoproterozoic***

The superficial sequence is unconformably underlain by the Neoproterozoic Tarcunyah Group (Officer Basin), which comprises an interbedded sequence of sandstone, siltstone and shale deposited around 800 Ma. The upper Tarcunyah group consists of an unassigned sequence of sandstone (PUss), interbedded with siltstone and shales (PUs), which are collectively "PUsx". These are underlain by Gununya Sandstone (PUu), which outcrops 15 km north of the lake where the upper units have been eroded.

Bedrock Sequence - Weathered Bedrock (PUw)

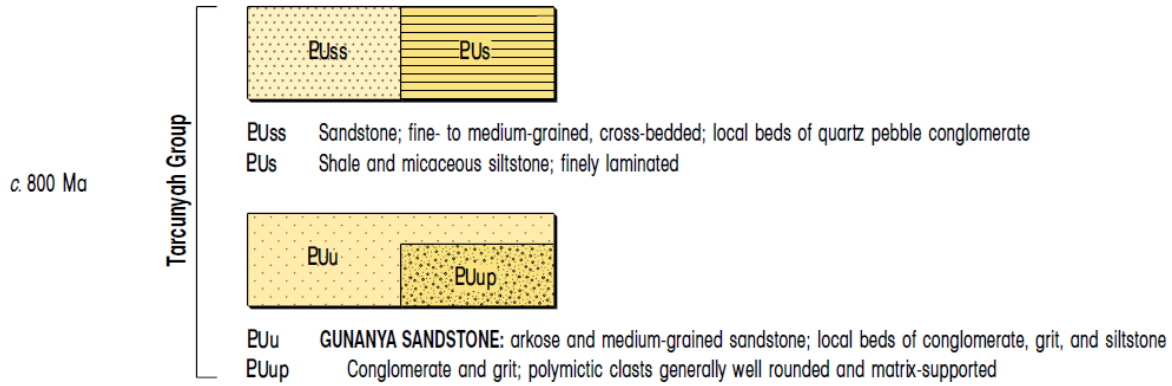
Weathered bedrock occurs on the top of the bedrock sequence nominally between approximately 10 and 110 mbgl based on LDD1507. Weathering within the sandstone units can form unconsolidated sandy deposits, which are interpreted to be both structurally and stratigraphically controlled. These unconsolidated sands have relatively high porosity and are interpreted to be prevalent where folding locates the sandstone units within the weathering zone. The sandstone units occur from approximately 60 to 90 mbgl in LDD1507. It is believed that where folding results in these being deeper they will be consolidated, with lower porosity as evidenced where they outcrop adjacent to the lake.

Bedrock Sequence (PUsx) – Unassigned Units

Unassigned consolidated bedrock units outcrop immediately to the east and the south west of Lake Disappointment. The depth to consolidated bedrock is variable beneath the lake and recent drilling has penetrated these materials to depths of 156 mbgl.

The basal part of this sequence comprises massive medium to coarse grained, cross-bedded sandstone with local beds of quartz pebble conglomerate. The sandstone commonly contains clay and is interbedded with minor amounts of granular conglomerate containing intraformational mudstone clasts. The sequence fines upward through a 100 m interval to interbedded flaggy siltstone, shale and minor amounts of thin fine grained micaceous sandstone.

Sandstone units within the unassigned PUsx are termed PUss and shale and siltsone PUs in the Gunanya 1:100 000 Geology sheet GSWA and Figure 3.




Units of the Tarcunyah Group after Gunanya 1:100 000 Geology sheet GSWA (Bagas, 1998)

Regional Structure

The major structural alignments are a number of west-northwesterly trending open folds formed throughout the Tarcunyah Group during the Paterson Orogeny (550 Ma). Mapped structure is presented over regional aeromagnetic data (GSWA, 2016) in Figure 3 to highlight potential basement structure beneath the lake. Folding results in interwoven west-northwesterly elongated and dipping sandstone PUss and siltstone PUs occurring beneath the lower lakebed sequence. The interwoven nature of sandstones and siltstones is evident on outcropping bedrock adjacent to the lake (Bagas, 1998 and Williams & Williams, 1980). It is interpreted that weathering within the sandstone units results in dipping unconsolidated and porous sandy sequences being connected to modern lake sediments (Q/Tpl) then plunging beneath weathered clayey strata derived from weathered siltstone and shale.

## 2.2 CLIMATE

The area is arid. Average annual rainfall is approximately 200 mm (Nixon, 2007 and Beard, 2005), with a recent estimate by Knight Piésold (2016) indicating 367 mm. Annual evaporation is in excess of 4000 mm. Most rainfall is from isolated local thunderstorms associated with low pressure systems as well as the passage of tropical cyclones and depressions or from the extension of the late summer-autumn rainfall regime of the Murchison region to the south. Prevailing winds are from the east and southeast.

## 2.3 HYDROGRAPHY

Lake Disappointment is part of a paleo-drainage system consisting of lakes and creeks, within the Sandy Desert Basin Surface Water Allocation Area (SWAA), which drains north to the coastline between the Pardoo and Shamrock Pastoral leases. The catchment of Lake Disappointment was mapped by Beard (2005) and this area was used by Knight Piésold (2016) for flood monitoring. Figure 4 presents the SWAA and the lake's catchment.

This interpretation is consistent with water flow direction arrows detailed on a map presented by Geoscience Australia (2011).

# 3 HYDROGEOLOGICAL CONCEPTUALISATION

## 3.1 GENERAL

Water enters the lake sediments from: surface water runoff, rainfall and groundwater discharge. Water is lost from the lake by evaporation. To provide context to the numerical groundwater model, the hydrologic system is also approximated below using first principles.

## 3.2 SURFACE WATER

Surface water is calculated to be intermittently the largest input to the lake and this is supported by the form of the lake, which displays large deltas in association with the creeks. Knight Piésold (2016) estimated that after Cyclone Rusty 271 644 407 $m^3$ (271 GL) entered the lake by streamflow after approximately 256 mm of rainfall, which equates to approximately 2.1% runoff from the 50 654 $km^2$ catchment. Knight Piésold indicate that lower intensity rainfall produces less runoff and a 5% ARI event generates a peak flow of 13 GL over 30 hrs. Surface water inputs to the lake are highly variable.

## 3.3 RAINFALL

In addition to surface water runoff there is direct input from rainfall. The lake is approximately 40 km north to south and 30 km east to west with a calculated area of approximately 1178 $km^2$ based on Geoscience Australian 1:250 000 topographic data. As indicated above annual rainfall estimates range between 200 and 367 mm and are also highly variable and localised. A weather station has been ordered to collect site specific data. Direct inputs from 200 mm of rainfall are 236 GL annually. Recharge from rainfall to the salty surface is unknown, but likely very high due to the osmotic effect and as observed during field programs. The osmotic effect is the tendency of water to pass through a semipermeable membrane (the lake surface) into a solution where the concentration is higher, thus equalizing the concentrations (i.e. the salty sediments take up rainwater across an osmotic gradient).

## 3.4 EVAPORATION

Pan evaporation in the area is twenty times greater than rainfall at potentially 4712 GL and this is the mechanism for brine concentration. Recent monthly monitoring data (Appendix C) show that the groundwater levels across the lake are shallow (less than 0.5 mbgl). During dry periods the levels remain relatively steady but following a rainfall event can respond quickly and rise 0.2 to 0.3m (Appendix C). The stability of the groundwater levels indicates that the depth to which evaporation can remove water from the lake is relatively shallow and likely extinguished at less than 1 mgbl.

## 3.5 GROUNDWATER

***Hydrogeology***

The sediments have been divided into the following Hydrostratigraphic units:

- Upper lake bed unit – Groundwater in Qh. The unit is frequently highly permeable with permeability dominated by secondary interconnected porosity of thin gypsum beds.
- Aeolian sand unit - Groundwater in Qpe. An aquifer, when saturated, groundwater is held within primary porosity. Occurs as isolated sections within the upper lake bed sequence and surrounding the lake.
- Lower lake bed unit – Groundwater in the Q/Tpl. – Mostly low permeability clay with rare thin disconnected zones of gypsum with development of secondary porosity.
- Weathered basement rock unit – Groundwater in the PUw. Mostly clays and silts with some permeable sand sections where structure aligns sandstone units, within the weathering profile.

- Basement rock unit – Groundwater in the PUsx. Generally low permeability and regarded as the aquifer base.

***Hydraulic Parameters***

Hydraulic parameters from previous reports and recent testing are presented in Table 2. RWD have undertaken trench testing at 10 locations, with the longest being for 11.34 days in T11, which is used to calibrate the model (Appendix D) data presented in this report. Importantly there is a large range and discrepancy between hydraulic conductivity in the upper lake bed (Qh) derived from laboratory analysis compared to test pumping. It is evident from trench testing that groundwater flow in the upper bed sequence is dominated by secondary porosity (Plate 1). Laboratory analysis methods have likely provided data on the primary porosity component of the strata, which is significantly lower based on primary particle size.

Table 2 Summary of Hydraulic Parameters

| Unit | Depths (m) | | Storage | | Conductivity (K) | Model Zone |
|---|---|---|---|---|---|---|
| | From | To | Sy | ss | (m/d) | (zone colour) |
| Aeolian sand (Qpe) | +10 | 2 | 15 | | [!] 1 to 5 (2) | 1 |
| Upper lake bed (Qh) | 0 | 2 | 15 | | *0.11, [$]10 to 360, (250) | 2 |
| Lower lake bed (Q/Tpl) | 2 | 10 | 13 | $1.3 \times 10^{-16}$ | *0.06 (0.06) | 3 |
| Sandy weathered basement (PUw after PUss) | 10 | 90 | 12 | $1.3 \times 10^{-16}$ | *0.02 to [%]2 (2) | 4 |
| Other weathered basement (PUw after PUs) | 90 | 150 | 1 | $1.3 \times 10^{-16}$ | *0.005 (0.005) | 5 |
| Basement rock (PUsx) | 240 | 180 | 1 | $1.3 \times 10^{-16}$ | [!]0.001 to 1 (0.005) | 5 |

Notes

* Estimated from laboratory analysis of core (Skidmore, 2017)

[!] Estimated from text book (Kruseman, & de Ridder, 1991) values of similar strata.

[$] Estimated from Trench Testing (Xin Du & Lawrence, 2016)

[%] Estimated from test pumping LDBH1603 (Skidmore, 2017)

( ) Used in model

Model vertical hydraulic conductivities ($K_z$) are 10% of horizontal ($K_x$ & $K_y$).

***Groundwater Inflow***

The Darcy equation (Q=KiA) can be used to estimate groundwater inflow (Q):.

- Based on a saturated sequence that is 150 m thick and a lakebed perimeter of 140 km, the cross sectional area (A) available for groundwater through-flow into the lake is 21 000 000 $m^2$.
- Groundwater levels form a subdued reflection of the ground surface contours, which nominally fall 20 m over 5 km towards the lake giving a hydraulic gradient (i) of around 0.004.
- Hydraulic conductivities (K) of the strata are variable (Table 2), but using the average of 0.57 m/day (adjusted for thickness and based on sandy weathered basement being 50% of the weathered basement sequence).

Using these parameters calculated inflow to the lake from groundwater (Q) is 17.5 GL/yr.

### 3.6 HYDROLOGIC SYSTEM OVERVIEW

This first principal hydrogeological conceptualisation indicates that recharge into the lake sequence is dominated by direct rainfall and surface water runoff rather than groundwater inflow. This recharge is then offset by the evaporation which concentrates the salts. The relationship between recharge and evaporation is one that exists in a form of equilibrium as evidenced by the consistent water levels below the surface (Appendix C).

## 4 BRINE ABSTRACTION

### 4.1 TRENCHES

Testing has been undertaken to derive bulk inflow and to measure the area of significant groundwater drawdown surrounding trenches. During brine abstraction testing for up to 11.3 days the area of significant (10 cm) groundwater drawdown laterally from a 2 m deep trench is limited to around 100 m. Hydraulic parameters calculated during these tests and calibrated to the early time outputs of the model have been used to simulate long term drawdown following brine extraction from the trenches.

Based on trench inflow testing and the requirement to access significant groundwater storage, it is likely the project will require in the order of 300 km of trenches up to 3 m deep. Similar calculations on trench inflow have been undertaken by Agrimin based on Lake Mackay, which is 600 km east of Lake Disappointment near the Northern Territory border. Agrimin in their ASX Release dated 6th April 2016 stated an abstraction of “2,150 litres per second (L/s) based on a 250 km trench design with an average 5.5m depth”.

### 4.2 BORES

Bores are being considered but they will likely contribute the smaller portion of 2000 L/s of brine extraction. There is currently little data on potential bore yields or aquifer hydraulic parameters at depth. However, average bore yields of less than 10 L/s are expected and on this basis the 2000 L/s brine requirement would require more than 200 bores. However a bore on the northern boundary of the Lake (LDRC1463) has reputed airlift yield of 25 L/s.

Test pumping of bore LDBH 1603 located on the Lake (Figure 2)shows a typically confined response after 17 hours of pumping at 3 L/s (Appendix D). The flow during the test was restricted by pump size, but test pumping analysis indicates that this bore could likely sustain around 10 L/s. This bore has similar strata to LDD 1414 (Appendix A) and the confined response correlates with a sandy aquifer beneath a clayey weathering profile, which forms a barrier to downward movement of groundwater and so is consistent with its geology. Therefore, where brine extraction occurs from bores within confined aquifers the impact on shallow groundwater will be absent. Additional testing and monitoring is required to confirm that this confined response continues during long term pumping.

It is interpreted that where a bores intersect a weathered sandstone sequence, comprising unconsolidated sand, there is the potential for a significant aquifer at depths of up to 100 mbgl. These aquifers are confined by overlying weathered clays with likely connection with the low permeability lower lakebed sequence up dip. A detailed log of LDDH 1507 is presented in Appendix B and describes this weathered bedrock sequence.

## 5 GROUNDWATER MODEL

### 5.1 DESIGN

The numerical groundwater model was generated in Visual Modflex 4.0 (2016). The extent of the model encompasses an area extending at least 20 km from the edge of the lake. The model extent is 450,000 to 510,000 mE (GDA94 zone 51), 7375,000 to 7445,000 mN (Figure 2). The boundaries of the model are of variable head with hydraulic conductivities of the adjacent cells. The model layout including boundary conditions and parameter zones are presented in Appendix E including cross sections of the layers. Layer boundaries in Appendix E are presented as relative to the Australian Height Datum (AHD). The lake surface in the model is set at 330 m AHD.

The model is a 4-layer system including:

1. the upper lakebed sequence from 0 to 2 m bgl (330 to 328 m AHD),
2. the lower lakebed sequence from 2 to 10 m bgl, (328 to 320 m AHD)
3. weathered basement from 10 to 90 bgl (320 to 240 m AHD) and
4. basement layer from 90 to 150 m bgl (240 to 180 m AHD).

The top of layer 1 is defined by surface elevations as presented in Figure 4. Within layer 1 the upper lakebed sequence has been broken into two zones; one for the Qh and; another for Qpe, which occurs as islands and surrounds the lake extending to the model boundaries. In layer 2 the lower bed sequence (Q/Tpl) is continuous beneath the lake, with Qpe characteristics extending to the model boundary. Layer 3 uses PUw-Pus characteristics in zones beneath the lake where sandier sequences have been identified in diamond drill holes (Figure 3) and lower permeability PUw-Puss parameters elsewhere. The base layer is continuous across the entire model, using bedrock parameters. Details are provided in Appendix E. Hydraulic parameters for each layer and zone are presented in Table 2.

Initial heads were applied across the model at 0.2 m below the lake bed surface (329.8 m AHD).

Trenches are modelled using the drain function with waterlevel in the trenches set at 1.9 mbgl (328.1 m AHD), which represents the anticipated lowest water level achievable during brine extraction. Pumping in bore LDBH 1603 was modelled at 10 L/s, screened only in Layer 3. The Kz of layer 2 was 0.006 m/day to simulate a semiconfined, rather than a fully confined aquifer to indicate the potential impact of pumping under a leaky aquitard scenario.

The model was run in a transient state for 10 years (3650 days) with no recharge to highlight the maximum potential impact of abstraction. This represents a period of no rain or inflow for 10 years, which is highly unlikely, but serves to simulate that worst case scenario.

## 5.2 RESULTS

The primary calibration of the model was against test pumping results from trenches, which are restricted to parameters in layer 1. When running calibration scenarios, layers 2, 3 and 4 were held constant retaining the parameters derived from previous work presented in Table 2. Transmission of water between the layers of the model is controlled by the vertical hydraulic conductivity (Kz), which were set at 10% of horizontal K values in Table 2). As a result of the Kz values used there was significant movement between layers so the head impacts are consistent across all layers (Appendix E).

Scenarios were run with hydraulic conductivities (K) in Zone 2 within layer 1 (Qh) of the model set at 5, 100 and 250 m/day. The outcome of these scenarios was then compared with the test pumping analysis from trench PT11, which is the longest test conducted on the lake. Pumping from PT11 was simulated in the model using the well package after generating cell dimensions to match the test trench and also enable sufficient granularity to suit the monitoring bores.

The scenario that used a K of 5 m/day for Qh removed orders of magnitude less brine through the drain package (trenches) than is required by the project. This K value was tested as it approximates the values derived from laboratory testing, which relate to the primary porosity of this sequence. This highlights the influence of secondary porosity, hosted by gypsum layers, on water movement within the upper lakebed sequence into the trenches. Hydraulic conductivities of this order also vary significantly from the hydraulic parameters derived from test pumping of PT11 (Appendix D).

The next scenario was run with a K of 100 m/day, which removed brine from the trenches in the order of the project requirement but did not provide a good calibration with test pumping of PT11 (Appendix E).

Scenarios using a further range of K values were run, with the best calibration against the PT11 analysis being achieved with a K of 250 m/day (Appendix E).

To simulate the greatest potential impact (worst case scenario) the transient simulation was run for 10 years without recharge with all water being sourced from storage within the model. This scenario represents a period of 10 years without significant rain or surface water inflow on, or into the lake, which based on recent observed weather patterns is considered highly unlikely. Impacts after 1 year of extraction without recharge are also presented in Appendix E representing an average year.

The maximum width that groundwater impacts extend from a trench is consistent across the model. After 1 year, drawdown of more than 0.3 m extends around 500 m from the trench. After 10 years this reaches around 1.7 Km (Figure 5). Brine abstracted from the trenches also significantly decreases over the 10 year period as the Qh aquifer thins.

Total drawdown at the end of the 10 year period from the trench design presented by Knight Piesold (2016) is presented in Figure 5, which indicates an impact of less than 0.3 m outside the confines of the lake under the worst case scenario modelled.

# 6 CONCLUSIONS

The purpose of this model is to assess potential impacts of brine extraction on the water levels within the lake and at the lake margins. The change in lake water levels are dominated by parameters applied to layer 1, which contains the abstraction trenches and the only unsaturated area with potential vegetative growth.

The following conclusions can be drawn from the development of the conceptual and numerical models:

- Although groundwater inflow contributes in the order of 17 GL to the lake annually (25% of the project abstraction), water inputs to the lake are dominated by surface water inflow and rainfall recharge, which on average exceed abstraction by an order of magnitude.
- The waterlevel in the lake is relatively stable with fluctuations in the order of half a metre indicating a quasi-equilibrium between inputs and evaporation at this depth.
- The model simulates an environment with no recharge over a period of 10 years, which is highly unlikely given recent rainfall and as such represents a worst case scenario. This scenario results in a change in water levels (drawdown) at the lake margins of between 10 cm and 30 cm, based on the trench design presented This impact extends approximately 3.8 km from the nearest trench. Drawdown of between 30 and 70 cm extends approximately 1.7 km from the nearest trench. Restoration of water levels occurs after surface water inflow or significant rainfall, which based on recent weather is annually.
- The distance of drawdown from the trench increases with time between recharge events. Under recent weather conditions the extent of drawdown between rainfall recharge is significantly less and one year after a significant recharge event, drawdown of between 10 cm and 30 cm extends approximately 1 km from the nearest trench.
- Pumping from bores in the weathered basement shows a confined response to pumping indicating poor connection with the upper lake bed sequence. Modelling based on a leaky aquitard show the response to pumping in the upper lakebed sequence after one year is around 50 cm at a radius of 500 m from the bore.

## 6.1 IMPACT MITIGATION

Model results, which are supported by testing in the trenches, indicate that drawdown increases with time between recharge events, but even after 10 years without rainfall recharge this is restricted to 70 cm at a distance of 1.7 km from the nearest trench. The impact on fringe

vegetation, if any, of brine level changes is unknown, but natural changes in the order of 50 cm have been noted. The level of impact at the lake edge can be regulated by increasing the distance that the trenches are active from the lake edge to meet a prescribed brine level threshold.

Pumping from bores creates a pressure drop in the confined layer. The impact of this pumping will be insignificant on the water levels in the upper lakebed sequence including the fringing dunes (Qpe), subject to this confined response continuing with extended time. To test the impact of the unconfined response ceasing a leaky aquitard was modelled, which indicated minor impacts in the upper lakebed sequence. The impact of pumping from bores on areas outside the lake can be managed by their location and regulating flow rates.

A management plan should be developed for the management of water levels around the lake including the islands with trigger levels based on a negative response from fringing vegetation. Areas on the south eastern side of the lake where there is no modelled impact could be used as controls. The management response could include reduction in bore pumping rates and or placing bunds to shut off abstraction from trenches at prescribed distances from the edge.

Importantly the length and layout of trenches will vary throughout the development and will be subject to seasonal recharge.

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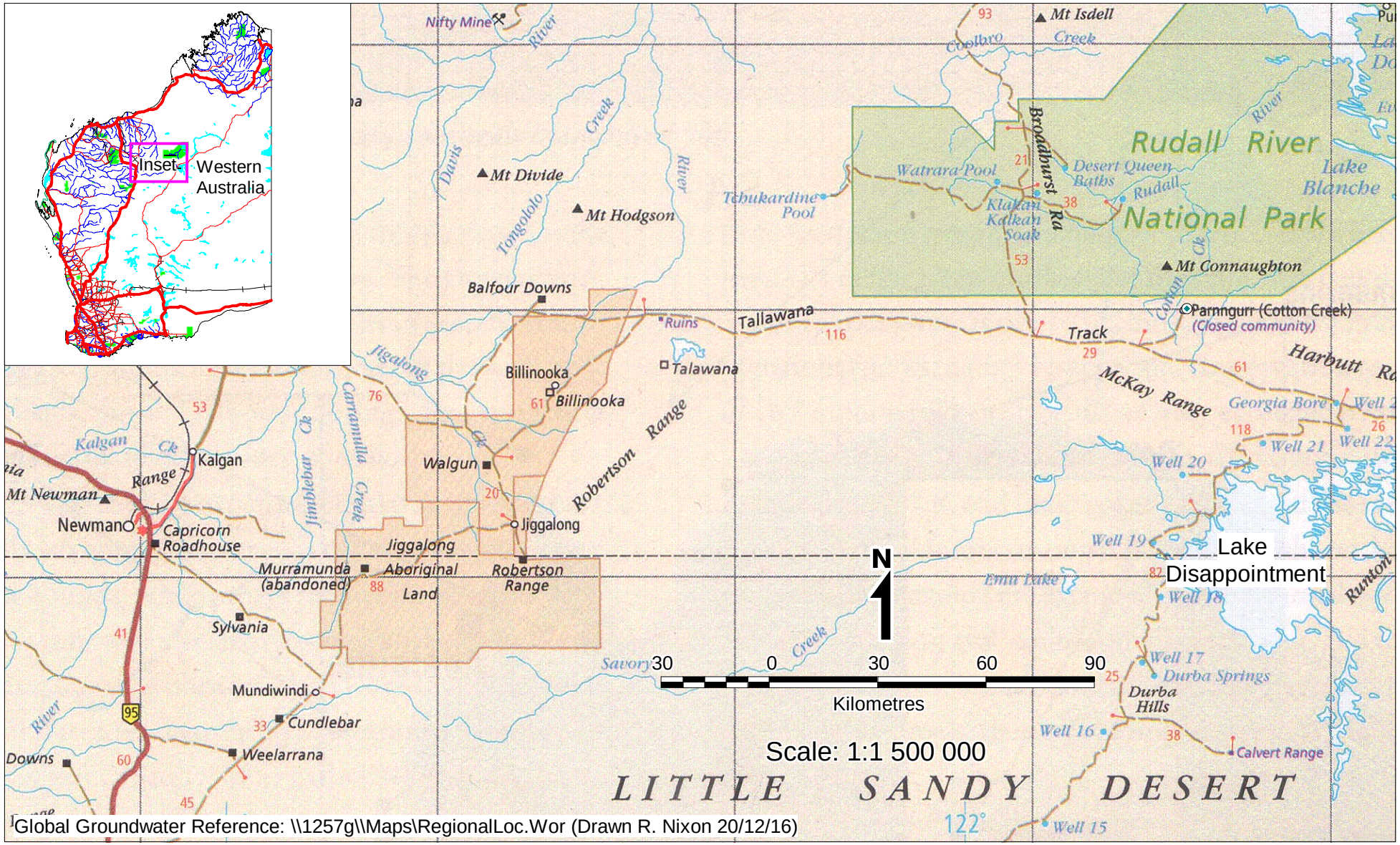



Global Groundwater Reference: \\1257g\\Maps\RegionalLoc.Wor (Drawn R. Nixon 20/12/16)

Figure 1. Regional Location

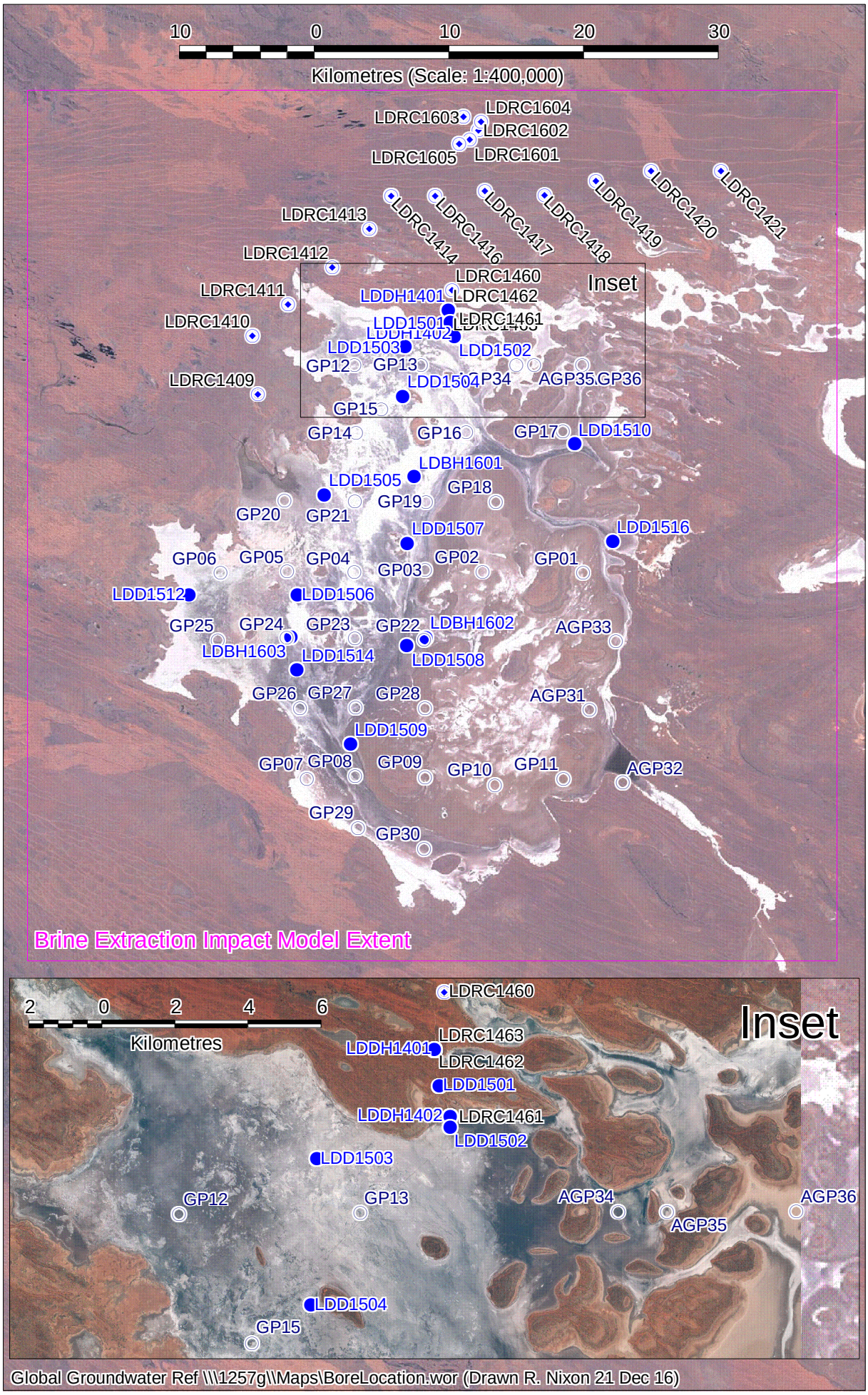



Figure 2. Lake Disappointment Bore Locations

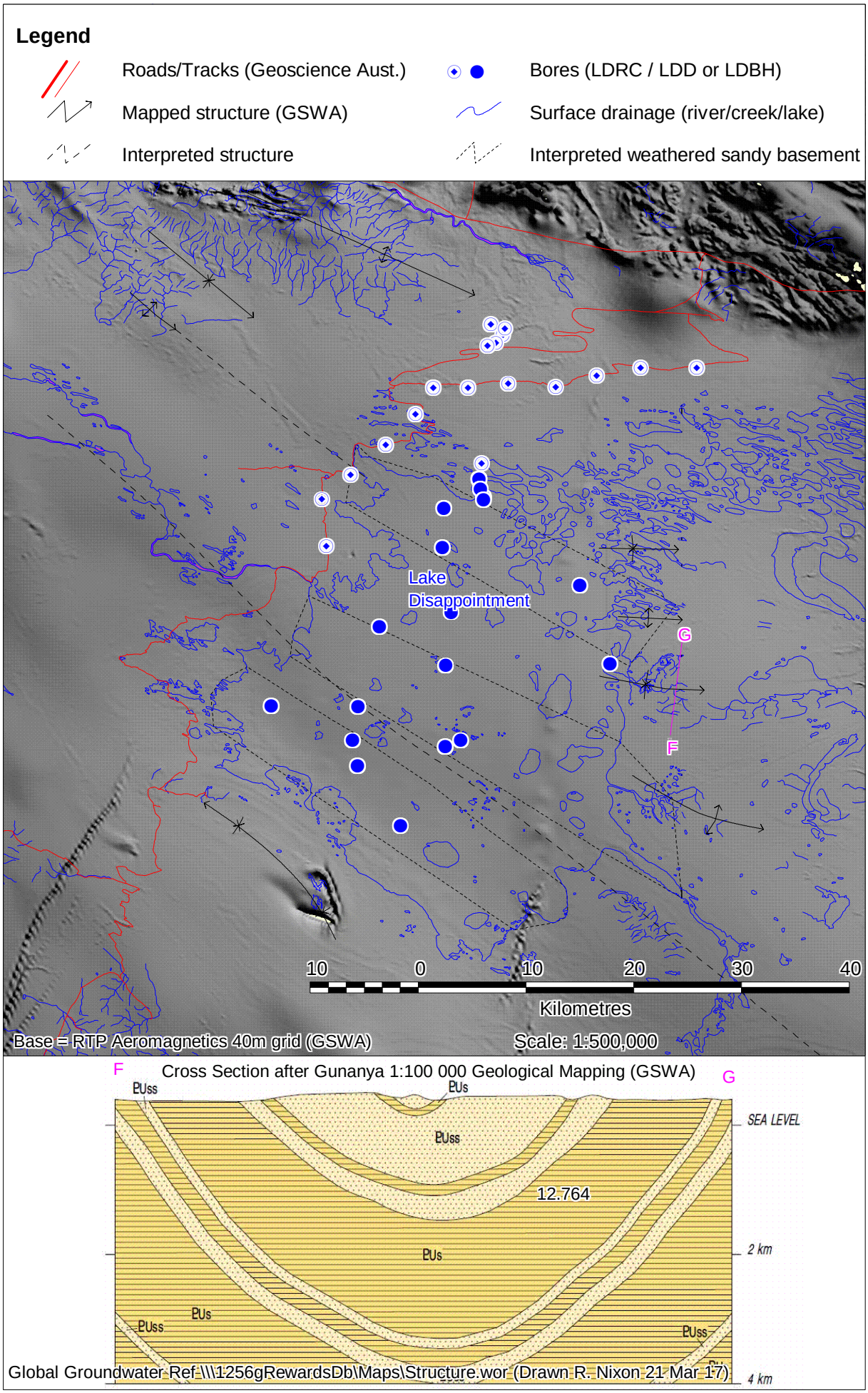



Figure 3. Basement Structure - Lake Disappointment

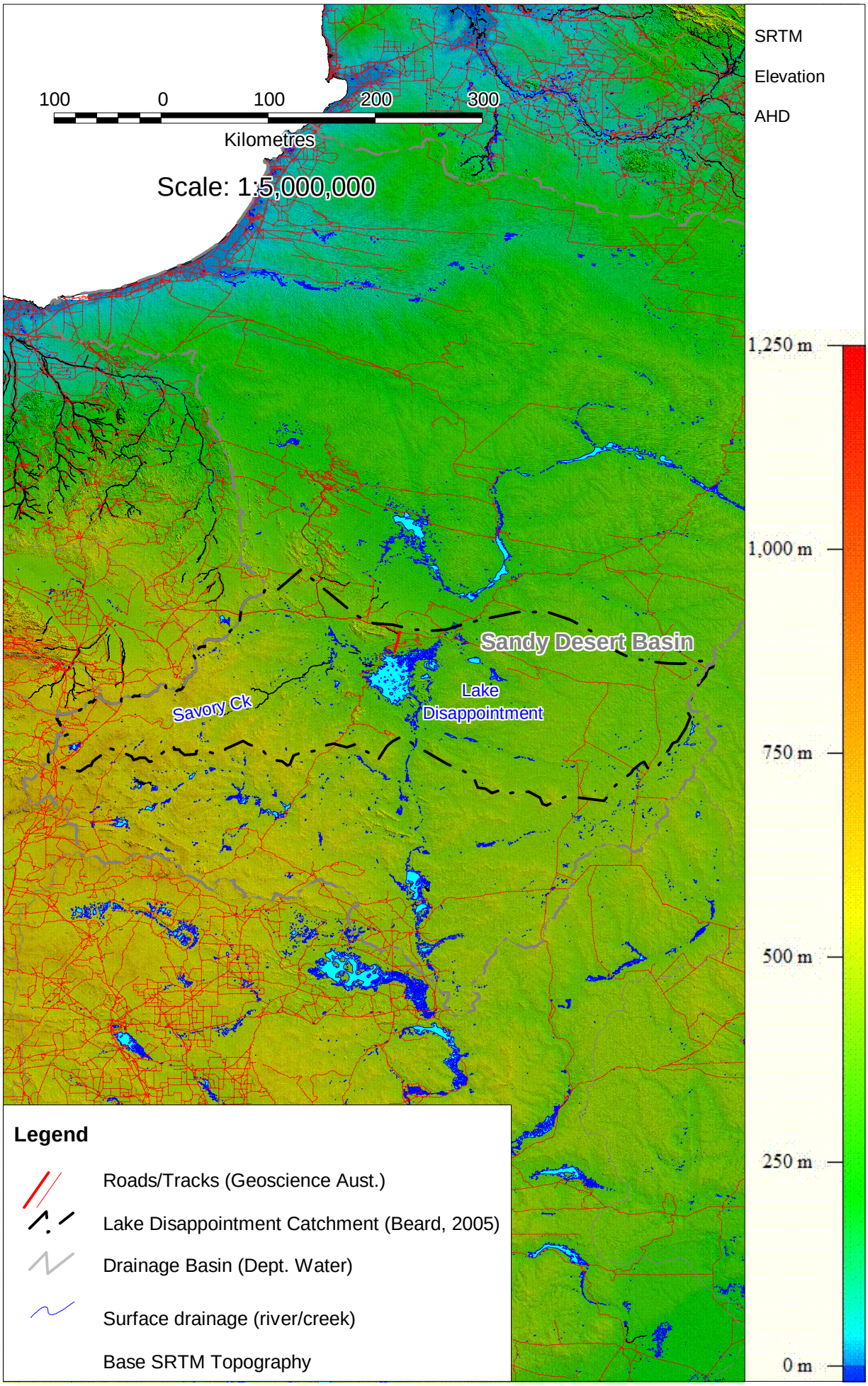
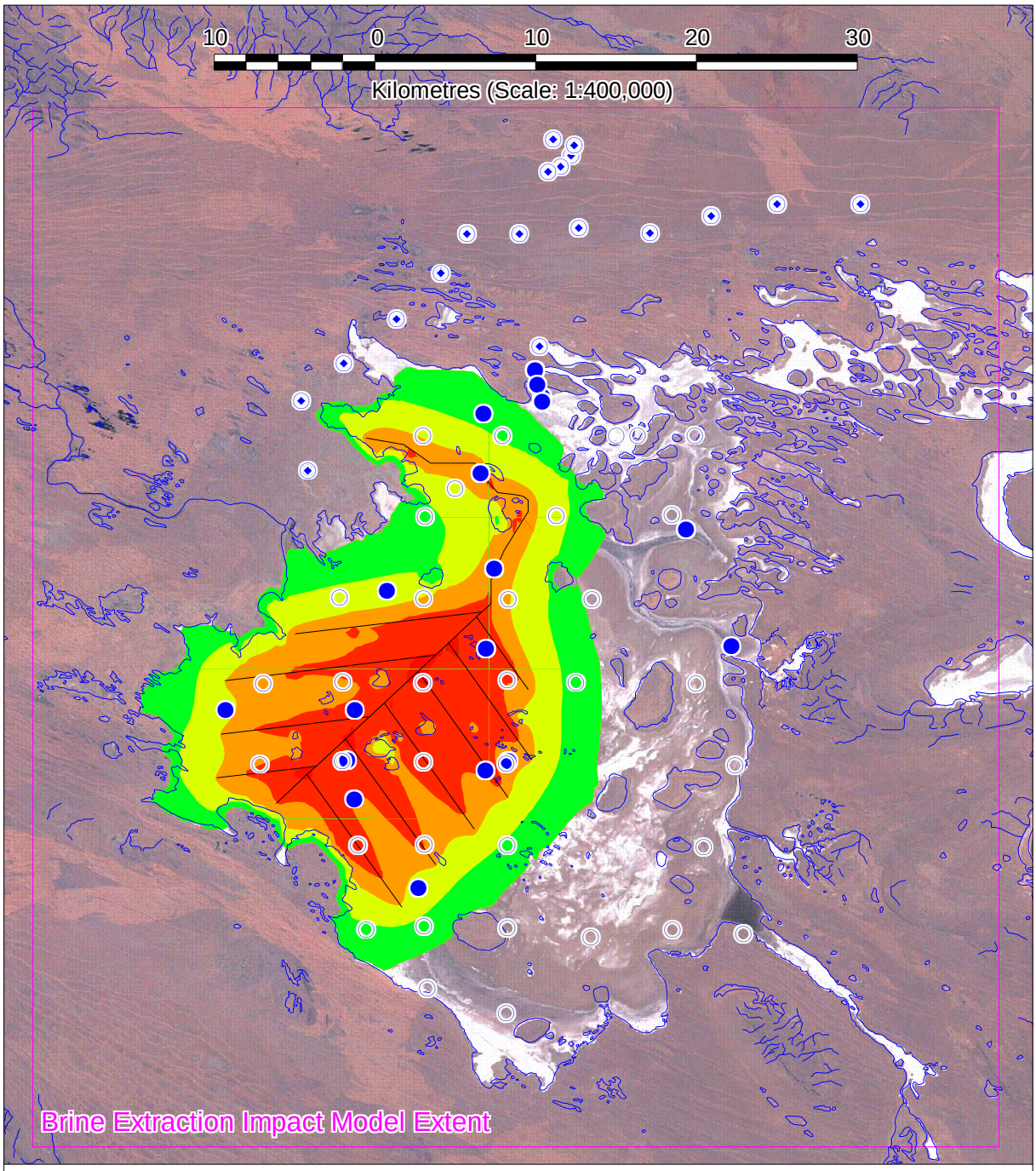



Figure 4. Hydrography - Lake Disappointment




**Legend**

- Roads/Tracks (Geoscience Aust.)
- Bores (LDRC / LDD or LDBH)
- Surface drainage (river/creek/lake)
- Trench

**Impact (waterlevel change)**

- 0.1 to 0.3m drawdown (329.7 to 329.5mAHD)
- 0.3 to 0.7m drawdown (329.5 to 329.1mAHD)
- 0.7 to 1.1m drawdown (329.1 to 328.7mAHD)
- 1.1 to 1.7m drawdown (328.7 to 328.1 mAHD)

* initial head 329.8mAHD
base of drain 328.1mAHD

Global Groundwater Ref \\\1257g\\Maps\Model3650DaysK250.WOR (Drawn R. Nixon 15 Mar 17)

Figure 5. Model Output - 10 years No Recharge

Plate 1 Secondary Porosity Gypsiferous Sand (Qhs)

# Appendix A

Drilling Data

| Hole ID | Drilling Method | Easting, Zone 51 | Northing | RL (mAHD) | Stickup (m) | Drilled Depth (as per logs) (m) | Diameter (mm) | Casing Diameter (mm) | Casing Type | Blank Casing (m) | | Slotted Casing (m) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Top | Bottom | Top | Bottom (+ end cap) |
| **GP01** | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) | 491135 | 7406417 | 329.9 | 0.30 | 4.00 | 55 | 20 | Class 12 uPCV | -0.30 | 1.37 | 1.37 | 2.26 |
| **GP02** | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) | 483694 | 7406478 | 329.6 | 0.49 | 5.00 | 55 | 20 | Class 12 uPCV | -0.49 | 0.05 | 0.05 | 1.00 |
| **GP03** | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) | 479431 | 7406620 | 330.7 | 0.43 | 2.85 | 55 | 20 | Class 12 uPCV | -0.43 | 1.06 | 1.06 | 2.03 |
| **GP04** | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) | 474148 | 7406413 | 330.2 | 0.42 | 3.94 | 55 | 20 | Class 12 uPCV | -0.42 | 0.94 | 0.94 | 1.90 |
| **GP05** | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) | 469186 | 7406505 | 329.7 | 0.36 | 6.00 | 55 | 20 | Class 12 uPCV | -0.36 | 1.00 | 1.00 | 1.98 |
| **GP06** | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) | 464236 | 7406358 | 330.6 | 0.34 | 4.23 | 55 | 20 | Class 12 uPCV | -0.34 | 1.03 | 1.03 | 2.02 |
| **GP07** | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) | 470683 | 7389823 | 329.3 | 0.34 | 6.00 | 55 | 20 | Class 12 uPCV | -0.34 | 1.23 | 1.23 | 2.04 |
| **GP08** | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) | 474264 | 7390056 | 330.6 | 0.35 | 2.70 | 55 | 20 | Class 12 uPCV | -0.35 | 1.04 | 1.04 | 2.05 |
| **GP09** | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) | 479448 | 7389909 | 330.6 | 1.03 | 2.70 | 55 | 20 | Class 12 uPCV | -1.03 | 0.36 | 0.36 | 1.34 |
| **GP10** | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) | 484638 | 7389332 | 330.1 | 0.30 | 3.40 | 55 | 20 | Class 12 uPCV | -0.30 | 1.19 | 1.19 | 2.10 |

| Hole ID | Drilling Method | Easting, Zone 51 | Northing | RL (mAHD) | Stickup (m) | Drilled Depth (as per logs) (m) | Diameter (mm) | Casing Diameter (mm) | Casing Type | Blank Casing (m) | | Slotted Casing (m) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Top | Bottom | Top | Bottom (+ end cap) |
| **GP11** | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) | 489688 | 7389786 | 329.7 | 0.32 | 5.00 | 55 | 20 | Class 12 uPCV | -0.32 | 0.91 | 0.91 | 1.92 |
| **GP12** | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) | 474130 | 7423068 | 331 | 0.35 | 3.90 | 55 | 20 | Class 12 uPCV | -0.35 | 1.01 | 1.01 | 2.00 |
| **GP13** | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) | 479090 | 7423105 | 330.6 | 0.19 | 3.90 | 55 | 20 | Class 12 uPCV | -0.19 | 1.18 | 1.18 | 2.18 |
| **GP14** | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) | 474262 | 7417632 | 330.8 | 0.79 | 3.70 | 55 | 20 | Class 12 uPCV | -0.79 | 0.54 | 0.54 | 1.53 |
| **GP15** | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) | 476126 | 7419559 | 330.6 | 0.47 | 3.45 | 55 | 20 | Class 12 uPCV | -0.47 | 0.88 | 0.88 | 2.17 |
| **GP16** | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) | 482461 | 7417678 | 330.7 | 0.51 | 3.10 | 55 | 20 | Class 12 uPCV | -0.51 | 0.88 | 0.88 | 2.16 |
| **GP17** | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) | 489639 | 7417766 | 329.8 | 0.36 | 5.77 | 55 | 20 | Class 12 uPCV | -0.36 | 0.96 | 0.96 | 2.26 |
| **GP18** | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) | 484680 | 7412110 | 327.3 | 0.35 | 10.00 | 55 | 20 | Class 12 uPCV | -0.35 | 0.89 | 0.89 | 2.12 |
| **GP19** | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) | 479474 | 7412101 | 330.7 | 0.47 | 1.87 | 55 | 20 | Class 12 uPCV | -0.47 | 0.82 | 0.82 | 1.80 |
| **GP20** | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) | 468945 | 7412193 | 331.6 | 2.74 | 0.59 | 55 | 20 | Class 12 uPCV | -0.59 | 0.82 | 0.82 | 1.91 |
| **GP21** | Push Tube (hand auger) | 474178 | 7412117 | 331.45 | 0.80 | 0.24 | 42 | 20 | Class 12 uPCV | -0.74 | -0.24 | -0.24 | 0.61 |

| Hole ID | Drilling Method | Easting, Zone 51 | Northing | RL (mAHD) | Stickup (m) | Drilled Depth (as per logs) (m) | Diameter (mm) | Casing Diameter (mm) | Casing Type | Blank Casing (m) | | Slotted Casing (m) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Top | Bottom | Top | Bottom (+ end cap) |
| **GP22** | Push Tube (hand auger) | 479361 | 7401012 | 330.15 | 0.60 | 0.95 | 42 | 20 | Class 12 uPCV | -0.60 | 0.00 | 0.00 | 0.92 |
| **GP23** | Push Tube (hand auger) | 474211 | 7401111 | 331.3 | 0.55 | 0.92 | 42 | 20 | Class 12 uPCV | -0.55 | -0.03 | -0.03 | 0.90 |
| **GP24** | Push Tube (hand auger) | 469161 | 7401120 | 329.3 | 0.51 | 0.95 | 42 | 20 | Class 12 uPCV | -0.51 | 0.05 | 0.05 | 0.97 |
| **GP25** | Push Tube (hand auger) | 464043 | 7400929 | 331.45 | 0.49 | 0.95 | 42 | 20 | Class 12 uPCV | -0.49 | 0.06 | 0.06 | 1.01 |
| **GP26** | Push Tube (hand auger) | 470142 | 7395465 | 329.1 | 0.78 | 0.72 | 42 | 20 | Class 12 uPCV | -0.78 | -0.24 | -0.24 | 0.68 |
| **GP27** | Push Tube (hand auger) | 474278 | 7395531 | 329.6 | 0.66 | 0.83 | 42 | 20 | Class 12 uPCV | -0.66 | -0.16 | -0.16 | 0.75 |
| **GP28** | Push Tube (hand auger) | 479420 | 7395491 | 330.4 | 0.60 | 0.81 | 42 | 20 | Class 12 uPCV | -0.60 | -0.07 | -0.07 | 0.83 |
| **GP29** | Push Tube (hand auger) | 474464 | 7385866 | 331.6 | 1.04 | 0.47 | 42 | 20 | Class 12 uPCV | -1.04 | -0.41 | -0.41 | 0.52 |
| **GP30** | Push Tube (hand auger) | 479382 | 7384180 | 331.2 | 1.05 | 0.50 | 42 | 20 | Class 12 uPCV | -1.05 | -0.40 | -0.40 | 0.52 |
| **AGP31** | | 491627 | 7395377 | 331.5 | | 1.00 | | | | | | | |
| **AGP32** | | 494090 | 7389548 | 331.5 | | 1.00 | | | | | | | |
| **AGP33** | | 493589 | 7400909 | 331.5 | | 1.00 | | | | | | | |
| **AGP34** | | 486167 | 7423125 | 331.5 | | 1.00 | | | | | | | |
| **AGP35** | | 487505 | 7423125 | 331.5 | | 1.00 | | | | | | | |
| **AGP36** | | 491056 | 7423125 | 331.5 | | 1.00 | | | | | | | |

Notes

Artesian (18/12/2006)

Groundwater at ground surface (18/12/2006)

This log version is a summary log; please refer to (Global Groundwater, 2007) bore logs for greater detail.

Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007).

Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

| Hole ID | Aperture (mm) | Gravel Pack Size (mm) | Well Development | Geology data available? | Status | Type | Purpose | Access | Comments |
|---|---|---|---|---|---|---|---|---|---|
| **GP01** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **GP02** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **GP03** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **GP04** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **GP05** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **GP06** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **GP07** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **GP08** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **GP09** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **GP10** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |

| Hole ID | Aperture (mm) | Gravel Pack Size (mm) | Well Development | Geology data available? | Status | Type | Purpose | Access | Comments |
|---|---|---|---|---|---|---|---|---|---|
| **GP11** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **GP12** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **GP13** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **GP14** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **GP15** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **GP16** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **GP17** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **GP18** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **GP19** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **GP20** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **GP21** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |

| Hole ID | Aperture (mm) | Gravel Pack Size (mm) | Well Development | Geology data available? | Status | Type | Purpose | Access | Comments |
|---|---|---|---|---|---|---|---|---|---|
| **GP22** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **GP23** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **GP24** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **GP25** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **GP26** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **GP27** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **GP28** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **GP29** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **GP30** | 0.5 | Backfill of hole through partial collapse of bore | None | Y | | Monitoring Bore | Exploration/research | Helicopter | Drilling was conducted to refusal or to the limit of rods |
| **AGP31** | | | None | N | | Monitoring Bore | Exploration/research | | All data sourced from CoxsRocks Pty Ltd 2008 report |
| **AGP32** | | | None | N | | Monitoring Bore | Exploration/research | | All data sourced from CoxsRocks Pty Ltd 2008 report |
| **AGP33** | | | None | N | | Monitoring Bore | Exploration/research | | All data sourced from CoxsRocks Pty Ltd 2008 report |
| **AGP34** | | | None | N | | Monitoring Bore | Exploration/research | | All data sourced from CoxsRocks Pty Ltd 2008 report |
| **AGP35** | | | None | N | | Monitoring Bore | Exploration/research | | All data sourced from CoxsRocks Pty Ltd 2008 report |
| **AGP36** | | | None | N | | Monitoring Bore | Exploration/research | | All data sourced from CoxsRocks Pty Ltd 2008 report |

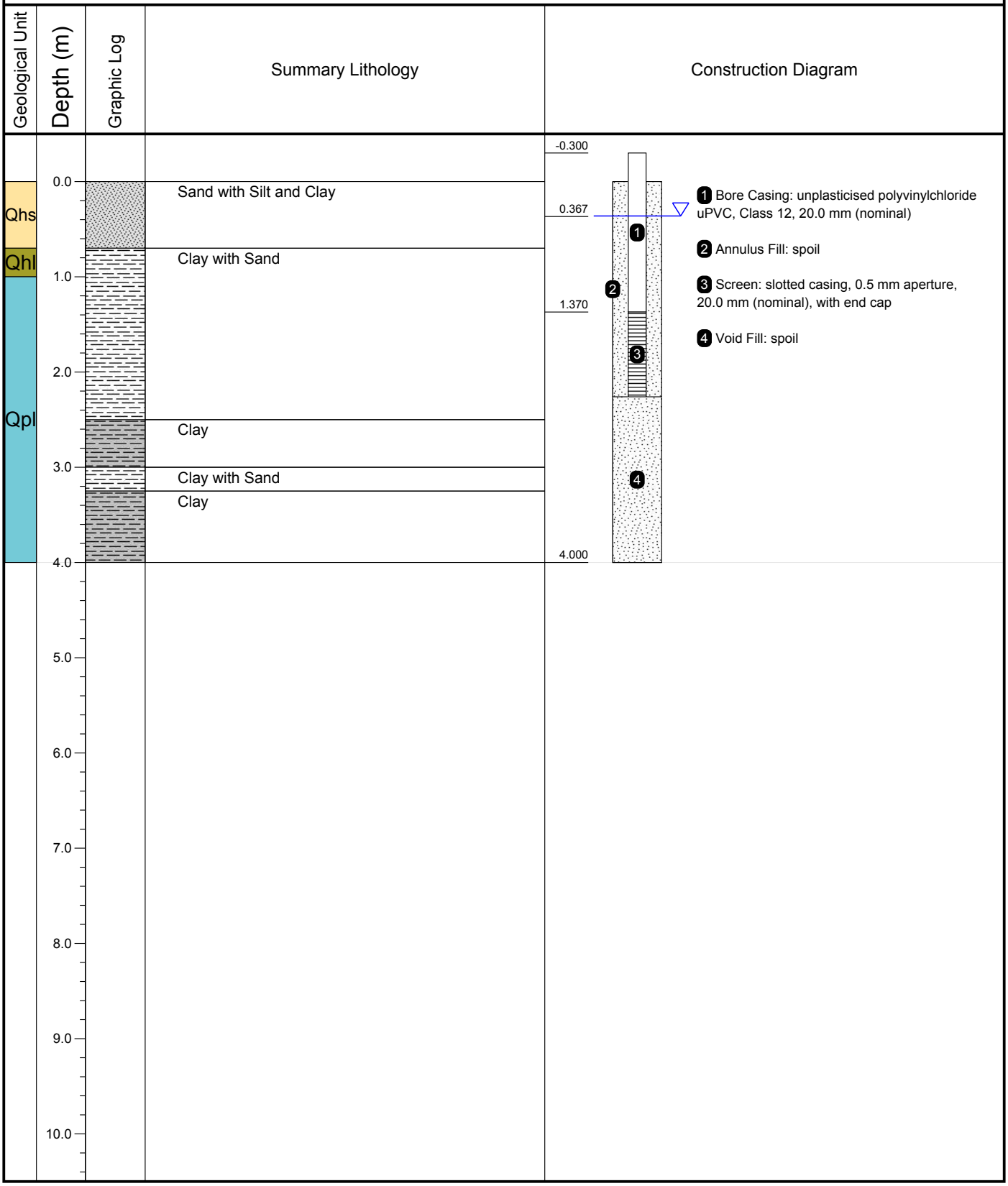
Notes

# Reward Minerals Ltd - Composite Log

Bore ID: GP01

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 12-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 12-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | EarthTEC Drilling |
| Database ID: | 73339 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Driven Core | Northing: | 7406417.000 m | Surface RL: | 329.900 m |
| Bore Diameter: | 55 mm | Easting: | 491135.000 m | Scheme: | GDA94 (Z51) |



# BORE NAME: GP01

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73339 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | 0.367 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7406417.000 m |
| East: | 491135.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 329.900 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006).

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 12-Dec-2006 |
| Completed: | 12-Dec-2006 |
| Drilled Depth: | 4.0 |
| Drilling Company: | EarthTEC Drilling |
| Drilling Rig: | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 4.0 | Driven core (55 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.300) - 1.370 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| 1.370 - 2.260 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 2.3 | Annulus fill, ID-OD: 20 mm to 55 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 2.3 - 4.0 | Void fill, OD: 55 mm, spoil. Backfill of hole through partial collapse of bore. |

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 0.7 | Sand with Silt and Clay | Upper Lake Bed Sequence |
| 0.7 - 1.0 | Clay with Sand | Upper Lake Bed Sequence |
| 1.0 - 2.5 | Clay with Sand | Lower Lake Bed Sequence |
| 2.5 - 3.0 | Clay | Lower Lake Bed Sequence |
| 3.0 - 3.3 | Clay with Sand | Lower Lake Bed Sequence |
| 3.3 - 4.0 | Clay | Lower Lake Bed Sequence |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 0.7 **Sand (with Silt and Clay)**: Orange-brown, fine sand - coarse sand, gypsum, subangular to rounded seed gypsum, trace clay.

0.7 - 1.0 **Clay (with Sand)**: Red-brown, gypsum-quartz, high plasticity clay, fine to medium grained seed gypsum sand, trace quartz sand.

1.0 - 2.5 **Clay (with Sand)**: Orange-brown, fine sand - medium sand, rounded, quartz-gypsum, medium-high plasticity, angular-subangular crystalline gypsum. **Sand**: Trace, dark green. **Sand**: Trace, black, heavy mineral sand from 2 m. **Clay (with Sand)**: Variable hard/soft layers approx.100 mm thick from 2 m.

2.5 - 3.0 **Clay**: Orange-brown, quartz, high plasticity, with fine grained rounded quartz sand. **Sand**: Trace, black, heavy mineral sand.

3.0 - 3.3 **Clay (with Sand)**: Orange-brown, fine sand - medium sand, quartz, high plasticity.

**Depth (m bgl)**

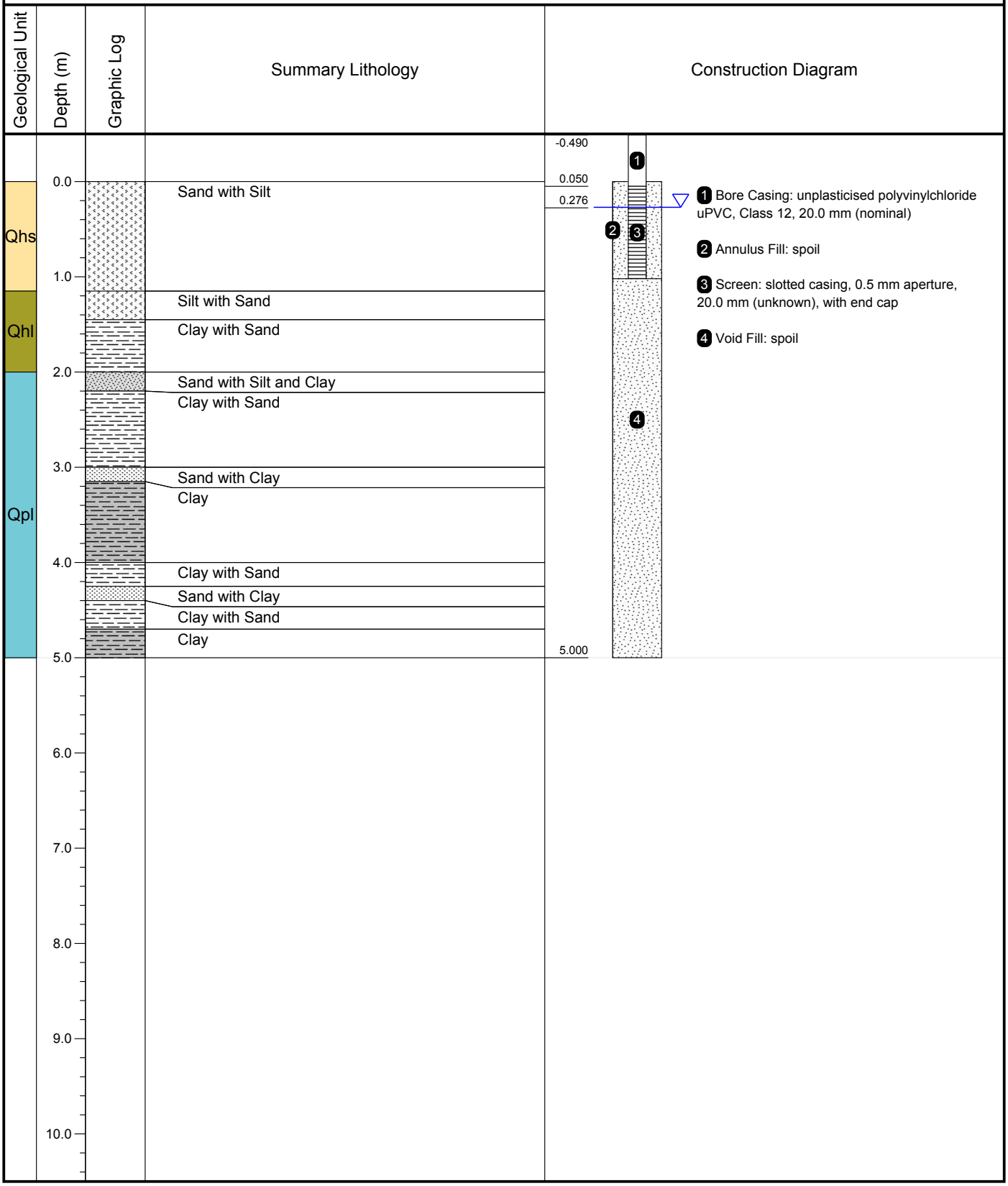
3.3 - 4.0 **Clay**: Orange-brown, high plasticity, with green and black subrounded heavy mineral sand.

# Reward Minerals Ltd - Composite Log

Bore ID: GP02

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 12-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 12-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | EarthTEC Drilling |
| Database ID: | 73340 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Driven Core | Northing: | 7406478.000 m | Surface RL: | 329.600 m |
| Bore Diameter: | 55 mm | Easting: | 483694.000 m | Scheme: | GDA94 (Z51) |



# BORE NAME: GP02

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73340 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | 0.276 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7406478.000 m |
| East: | 483694.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 329.600 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 12-Dec-2006 |
| Completed: | 12-Dec-2006 |
| Drilled Depth: | 5.0 |
| Drilling Company: | EarthTEC Drilling |
| Drilling Rig: | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 5.0 | Driven core (55 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.490) - 0.050 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| 0.050 - 1.020 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm, joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 1.0 | Annulus fill, ID-OD: 20 mm to 55 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 5.0 | Void fill, OD: 55 mm, spoil. Backfill of hole through partial collapse of bore. |

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 1.2 | Sand with Silt | Upper Lake Bed Sequence |
| 1.2 - 1.5 | Silt with Sand | Upper Lake Bed Sequence |
| 1.5 - 2.0 | Clay with Sand | Upper Lake Bed Sequence |
| 2.0 - 2.2 | Sand with Silt and Clay | Lower Lake Bed Sequence |
| 2.2 - 3.0 | Clay with Sand | Lower Lake Bed Sequence |
| 3.0 - 3.2 | Sand with Clay | Lower Lake Bed Sequence |
| 3.2 - 4.0 | Clay | Lower Lake Bed Sequence |
| 4.0 - 4.3 | Clay with Sand | Lower Lake Bed Sequence |
| 4.3 - 4.4 | Sand with Clay | Lower Lake Bed Sequence |
| 4.4 - 4.7 | Clay with Sand | Lower Lake Bed Sequence |
| 4.7 - 5.0 | Clay | Lower Lake Bed Sequence |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 1.2 **Sand (with Silt)**: Dominant, dark orange-brown, gypsum, fine to coarse grained seed gypsum sand, fine to medium from 1.0 m. **Sand**: Trace, black, fine sand, trace black, heavy mineral sand. **Sand (with Silt)**: Gypsum, hard crust on surface with halite in depressions, 8 cm gypsum crystals.

1.2 - 1.5 **Silt (with Sand)**: Orange-brown, gypsum, medium to high plasticity, fine to medium grained seed gypsum sand.

**Depth (m bgl)**

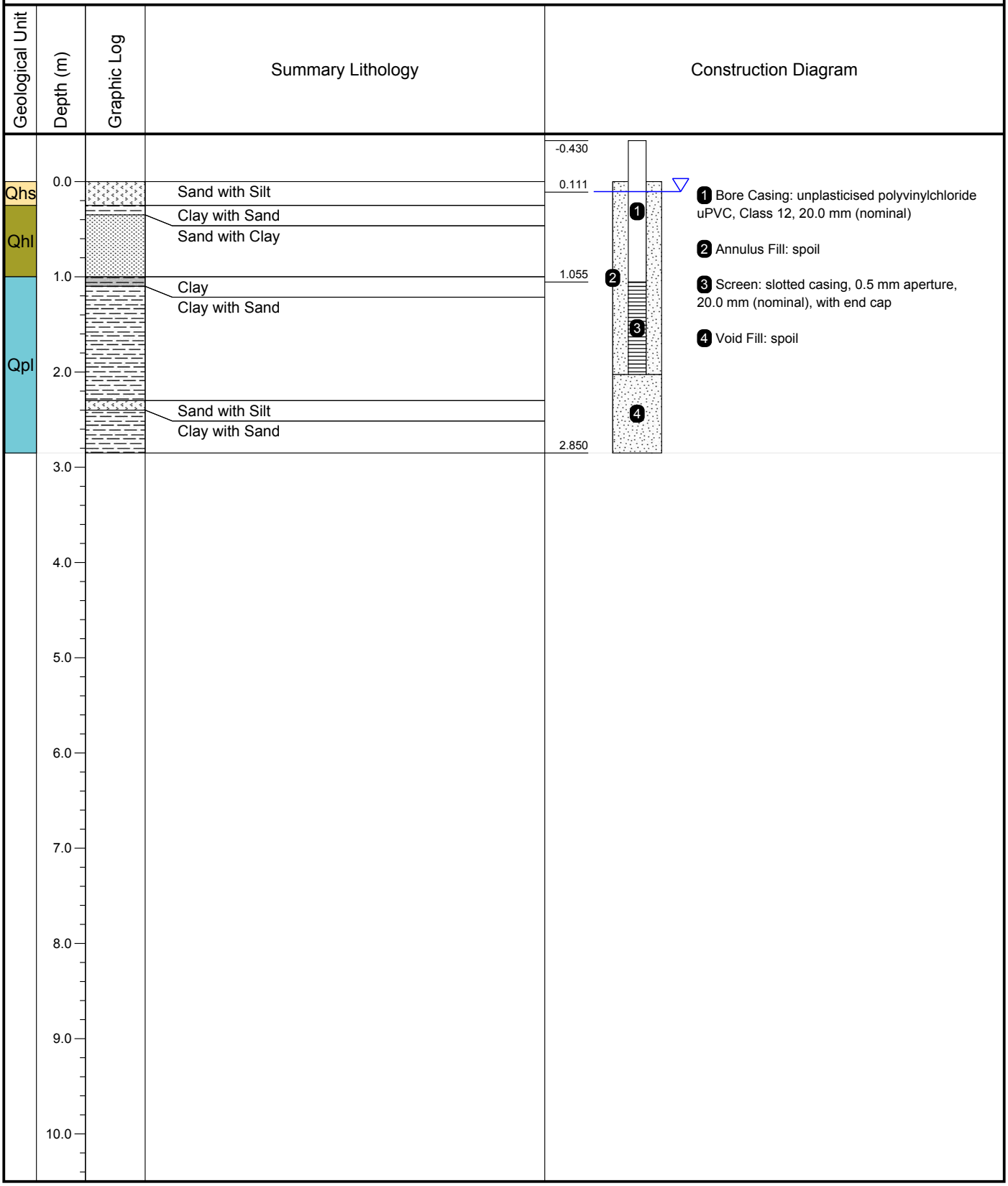
| | |
|---|---|
| 1.5 - 2.0 | **Clay (with Sand)**: Dominant, pale orange-brown, fine sand - medium sand, sub-rounded to rounded, quartz-gypsum, high plasticity, crystalline gypsum sand. **Sand**: Trace, black-red, fine sand - medium sand, heavy mineral sand. |
| 2.0 - 2.1 | **Sand (with Silt)**: Fine sand - coarse sand, gypsum, sand is in reference to gypsum. |
| 2.1 - 2.2 | **Sand (with Clay)**: Orange-brown, fine sand. |
| 2.2 - 3.0 | **Clay (with Sand)**: Orange-brown, fine sand - medium sand, quartz-gypsum, high plasticity, also some pale orange, crystalline gypsum sand. **Gypsum (with Clay and Silt)**: Crystalline gypsum sand lenses. |
| 3.0 - 3.2 | **Sand (with Clay)**: Gypsum, fine to course grained gypsum. |
| 3.2 - 4.0 | **Clay**: Orange-brown, fine sand - medium sand, sub-rounded to rounded, quartz, high plasticity, trace fine grained heavy mineral sand. |
| 4.0 - 4.3 | **Clay (with Sand)**: Orange-brown, fine sand - medium sand, quartz-gypsum, medium to high plasticity, crystalline gypsum sand . |
| 4.3 - 4.4 | **Sand (with Clay)**: Fine sand - coarse sand, gypsum. |
| 4.4 - 4.7 | **Clay (with Sand)**: Pale orange-brown, medium to high plasticity. |
| 4.7 - 5.0 | **Clay**: Orange-brown, fine sand - medium sand, quartz, high plasticity, trace heavy mineral sand. |

# Reward Minerals Ltd - Composite Log

Bore ID: GP03

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 12-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 12-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | EarthTEC Drilling |
| Database ID: | 73341 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Driven Core | Northing: | 7406620.000 m | Surface RL: | 330.700 m |
| Bore Diameter: | 55 mm | Easting: | 479431.000 m | Scheme: | GDA94 (Z51) |



# BORE NAME: GP03

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73341 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | 0.111 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7406620.000 m |
| East: | 479431.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 330.700 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 12-Dec-2006 |
| Completed: | 12-Dec-2006 |
| Drilled Depth: | 2.8 |
| Drilling Company: | EarthTEC Drilling |
| Drilling Rig: | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 2.9 | Driven core (55 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.430) - 1.055 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| 1.055 - 2.025 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 2.0 | Annulus fill, ID-OD: 20 mm to 55 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 2.0 - 2.9 | Void fill, OD: 55 mm, spoil. Backfill of hole through partial collapse of bore. |

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 0.3 | Sand with Silt | Upper Lake Bed Sequence |
| 0.3 - 0.4 | Clay with Sand | Upper Lake Bed Sequence |
| 0.4 - 1.0 | Sand with Clay | Upper Lake Bed Sequence |
| 1.0 - 1.1 | Clay | Lower Lake Bed Sequence |
| 1.1 - 1.5 | Clay with Sand | Lower Lake Bed Sequence |
| 1.5 - 2.3 | Clay with Sand | Lower Lake Bed Sequence |
| 2.3 - 2.4 | Sand with Silt | Lower Lake Bed Sequence |
| 2.4 - 2.9 | Clay with Sand | Lower Lake Bed Sequence |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 0.3 **Sand (with Silt)**: Green-brown, gypsum, fine to course grained seed gypsum. Gypsum crystals to 12 mm, to 1.1 m .

0.3 - 0.4 **Clay (with Sand)**: Green-brown, high plasticity.

0.4 - 1.0 **Sand (with Clay)**: Orange-brown, fine sand - medium sand, sub-angular to sub-rounded, quartz-gypsum, rounded to subangular seed gypsum.

1.0 - 1.1 **Clay**: Orange-brown, high plasticity, with sand.

1.1 - 1.5 **Clay (with Sand)**: Orange-brown, fine sand - medium sand, sub-rounded to rounded, quartz-gypsum-carbonate, medium-high plasticity, also pale orange, crystalline gypsum, trace carbonate.

**Depth (m bgl)**

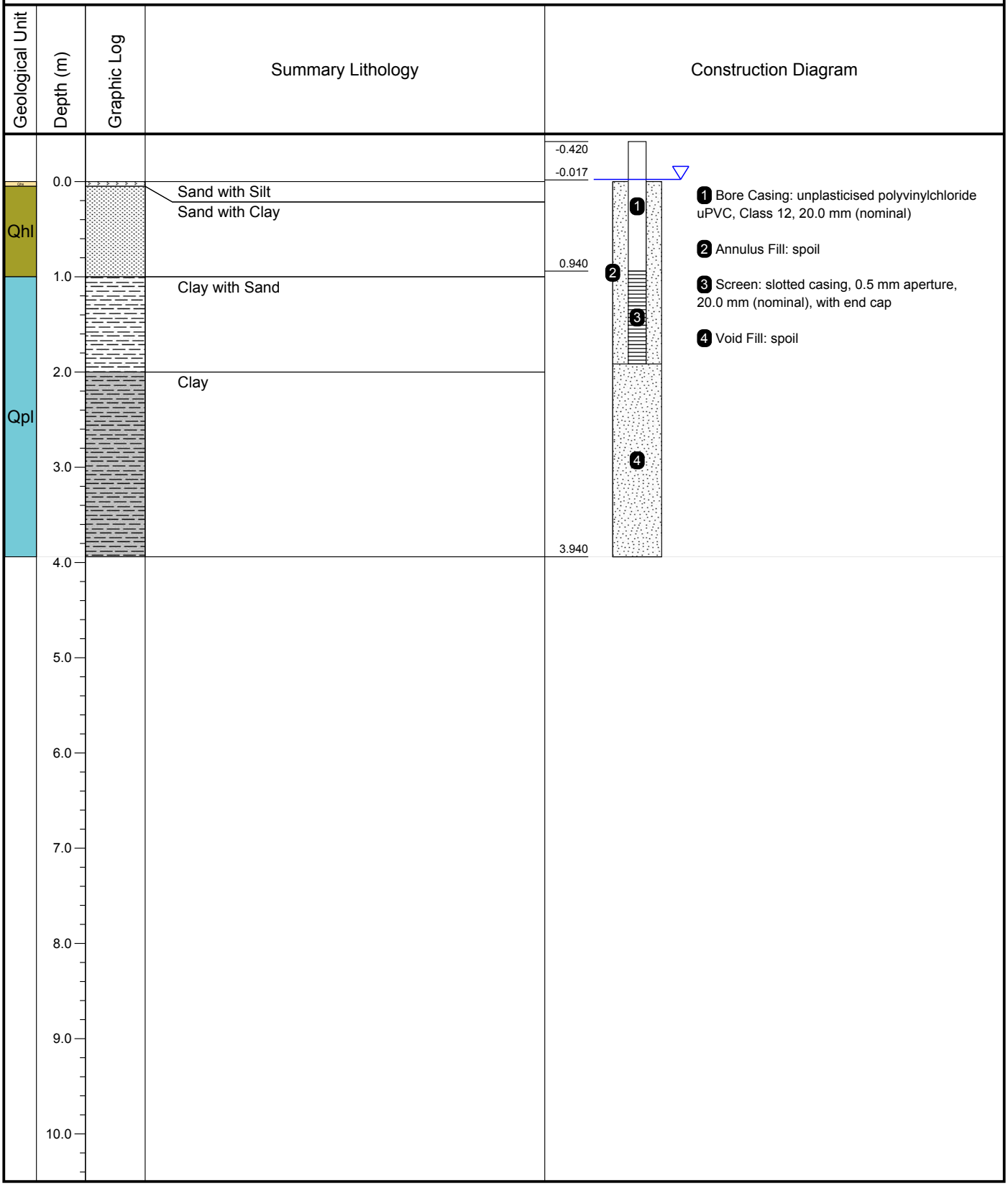
| | |
|---|---|
| 1.5 - 1.7 | **Clay**: Orange-brown, fine sand - medium sand, sub-angular to sub-rounded, quartz, high plasticity. |
| 1.7 - 2.0 | **Clay (with Sand)**: Orange-brown, medium to high plasticity. |
| 2.0 - 2.3 | **Clay**: Orange-brown, fine sand, sub-rounded to sub-angular, quartz-gypsum, high plasticity, trace crystalline gypsum. |
| 2.3 - 2.4 | **Sand (with Silt)**: Pale orange, gypsum, fine - course grained gypsum. |
| 2.4 - 2.9 | **Clay (with Sand)**: Orange-brown, gypsum, medium to high plasticity. **Clay (with Sand)**: Gypsum, fine-course grained crystalline gypsum, localised cellular gypsum aggregations. |

# Reward Minerals Ltd - Composite Log

Bore ID: GP04

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 13-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 13-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | EarthTEC Drilling |
| Database ID: | 73342 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Driven Core | Northing: | 7406413.000 m | Surface RL: | 330.200 m |
| Bore Diameter: | 55 mm | Easting: | 474148.000 m | Scheme: | GDA94 (Z51) |



# BORE NAME: GP04

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73342 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | -0.017 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7406413.000 m |
| East: | 474148.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 330.200 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 13-Dec-2006 |
| Completed: | 13-Dec-2006 |
| Drilled Depth: | 3.9 |
| Drilling Company: | EarthTEC Drilling |
| Drilling Rig: | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 3.9 | Driven core (55 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.420) - 0.940 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| 0.940 - 1.915 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 1.9 | Annulus fill, ID-OD: 20 mm to 55 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 1.9 - 3.9 | Void fill, OD: 55 mm, spoil. Backfill of hole through partial collapse of bore. |

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 0.1 | Sand with Silt | Upper Lake Bed Sequence |
| 0.1 - 1.0 | Sand with Clay | Upper Lake Bed Sequence |
| 1.0 - 2.0 | Clay with Sand | Lower Lake Bed Sequence |
| 2.0 - 3.9 | Clay | Lower Lake Bed Sequence |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 0.1 **Sand (with Silt)**: Pale green, gypsum, fine to coarse grained gypsum. Thin halite crust with organic material to 0.02m.

0.1 - 0.3 **Sand (with Clay)**: Green-brown, fine sand - medium sand, quartz-gypsum.

0.3 - 1.0 **Sand (with Clay)**: Dominant, orange-brown, fine sand - medium sand, sub-rounded to rounded, quartz-gypsum, with fine-coarse grained crystalline gypsum and fine-medium grained seed gypsum. **Sand (with Clay)**: Trace, black heavy mineral sand.

1.0 - 2.0 **Clay (with Sand)**: Dominant, orange-brown, fine sand - medium sand, sub-rounded, quartz-gypsum, high plasticity, fine-course grained crystalline gypsum. **Clay (with Sand)**: Trace, black heavy mineral sand.

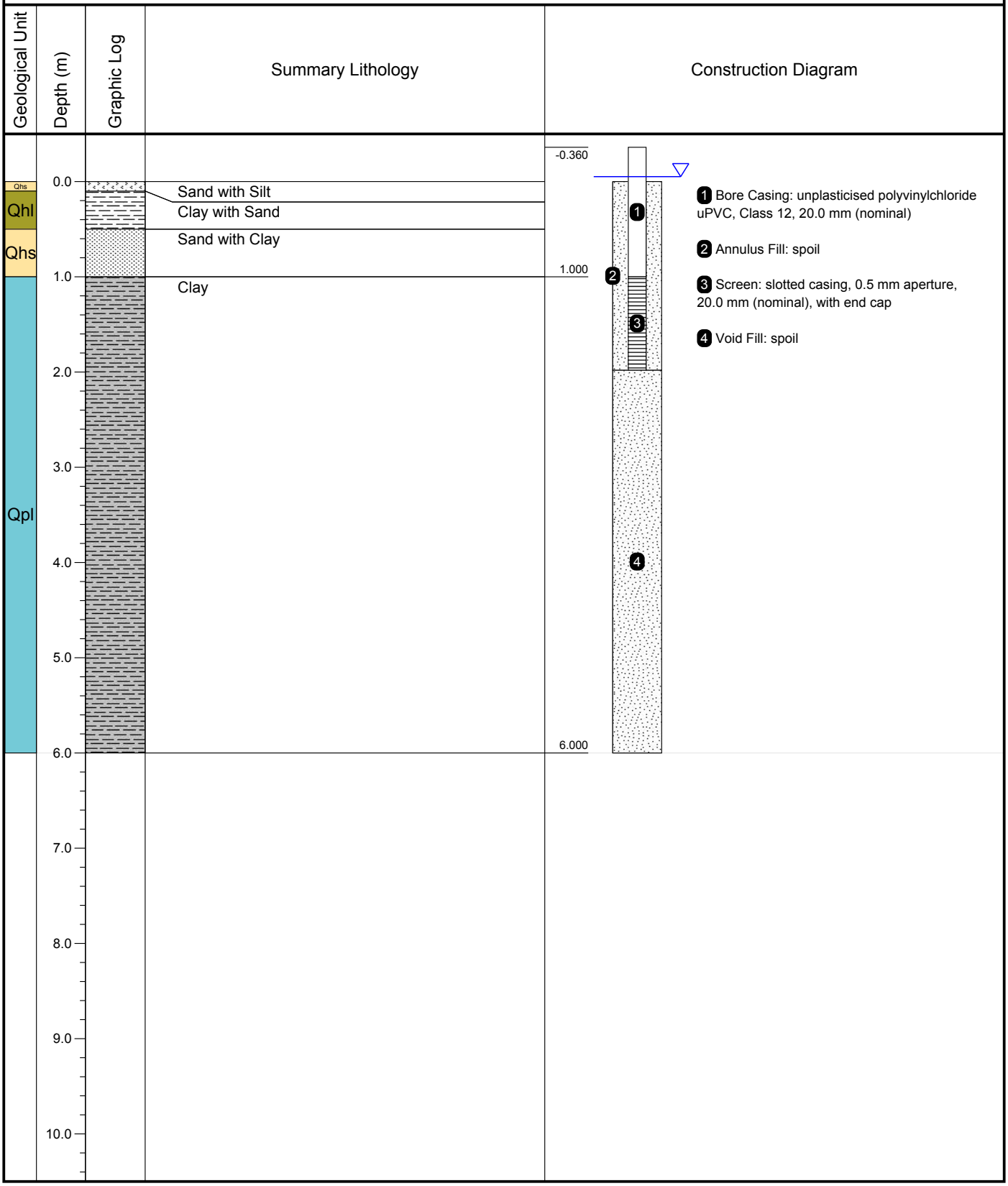
2.0 - 3.9 **Clay**: Dominant, orange-brown, fine sand, rounded to sub-rounded, quartz, high plasticity. **Clay**: Trace, fine grained crystalline gypsum, with localised cellular gypsum aggregations. **Clay**: Trace, fine grained black heavy mineral sand.

# Reward Minerals Ltd - Composite Log

Bore ID: GP05

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 13-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 13-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | EarthTEC Drilling |
| Database ID: | 73343 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Driven Core | Northing: | 7406505.000 m | Surface RL: | 329.700 m |
| Bore Diameter: | 55 mm | Easting: | 469186.000 m | Scheme: | GDA94 (Z51) |



# BORE NAME: GP05

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73343 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | -0.046 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7406505.000 m |
| East: | 469186.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 329.700 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 13-Dec-2006 |
| Completed: | 13-Dec-2006 |
| Drilled Depth: | 6.0 |
| Drilling Company: | EarthTEC Drilling |
| Drilling Rig: | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 6.0 | Driven core (55 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.360) - 1.000 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| 1.000 - 1.980 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 2.0 | Annulus fill, ID-OD: 20 mm to 55 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 2.0 - 6.0 | Void fill, OD: 55 mm, spoil. Backfill of hole through partial collapse of bore. |

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 0.1 | Sand with Silt | Upper Lake Bed Sequence |
| 0.1 - 0.5 | Clay with Sand | Upper Lake Bed Sequence |
| 0.5 - 1.0 | Sand with Clay | Upper Lake Bed Sequence |
| 1.0 - 6.0 | Clay | Lower Lake Bed Sequence |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 0.1 **Sand (with Silt)**: Green-brown, gypsum, fine-medium grained gypsum. **Sand (with Silt)**: Gypsum, White halite crust to 0.08 m with gypsum crystals to 3 cm to 0.9 m.

0.1 - 0.5 **Clay (with Sand)**: Green-brown, fine sand - medium sand, sub-rounded to rounded, quartz-gypsum, medium to high plasticity, seed gypsum sand.

0.5 - 1.0 **Sand (with Clay)**: Orange-red-brown, fine sand - coarse sand, rounded to sub-rounded, quartz-gypsum, seed gypsum.

1.0 - 4.6 **Clay**: Orange-brown, fine sand - medium sand, sub-rounded to rounded, quartz-gypsum, high plasticity, trace crystalline gypsum sand, trace black heavy mineral sand. **Clay**: 2 m: as above, red brown with crystalline gypsum to 1.5 cm. **Clay**: 2.7 m: as above but orange, red, brown. **Clay**: 3 - 3.6 m: as above but with trace black clay. **Clay**: 3.6 m: as above but pale green, with fibrous crystalline gypsum to 0.5 cm. **Clay**: 4 m: as above but red, brown. 4.1 m: pale green. **Clay**: 4.43 m: as above but red, brown.

4.6 - 5.0 **Clay**: Dominant, pale green-red, with fine to medium grained fibrous crystalline gypsum. **Sand**: Trace, black-red, fine sand - medium sand, rounded, ferruginous sand.

**Depth (m bgl)**

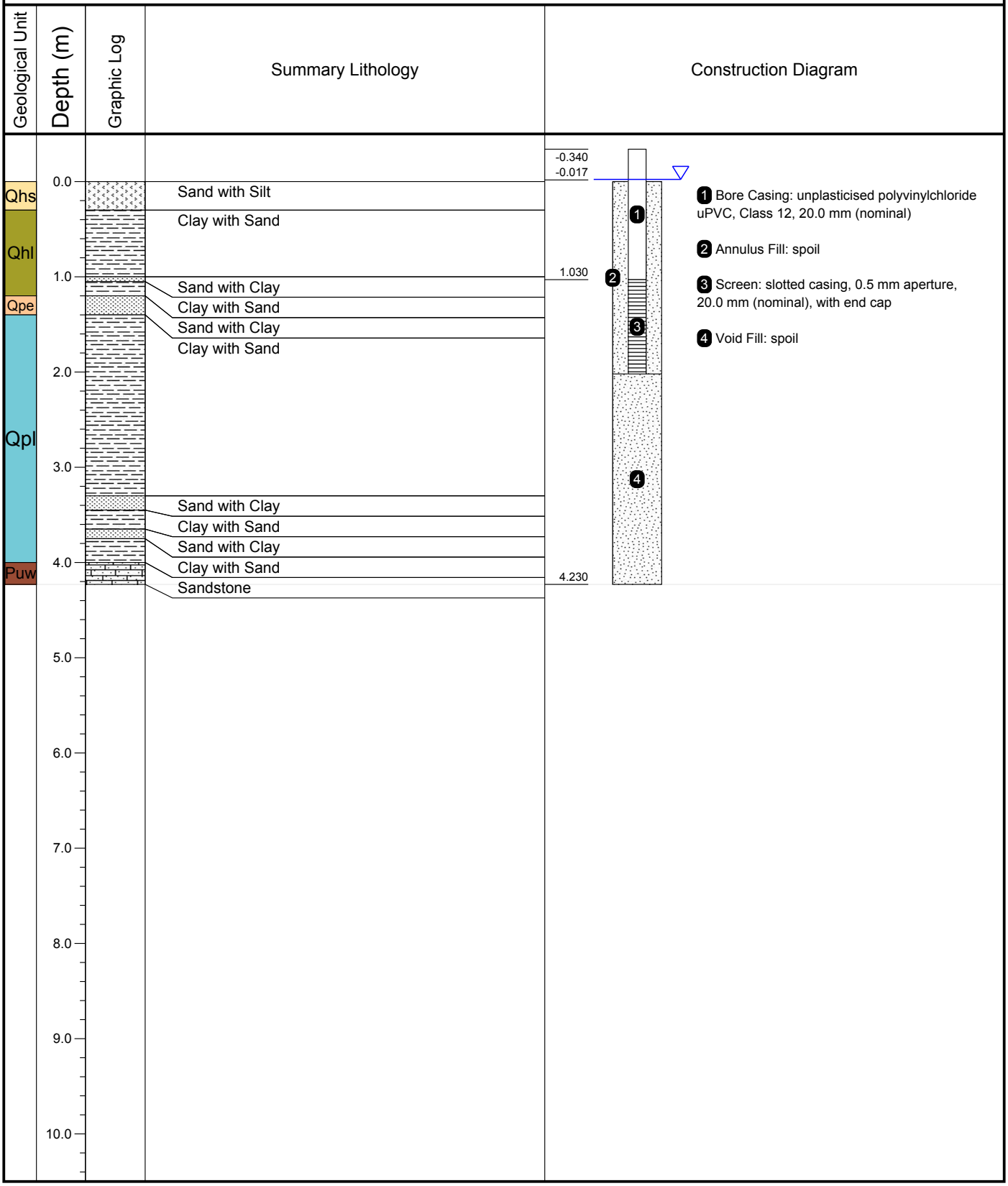
| | |
|---|---|
| 5.0 - 5.3 | **Clay**: Pale orange-green, fine sand - medium sand, gypsum, medium to high plasticity, crystalline gypsum sand. |
| 5.3 - 6.0 | **Clay**: Pale green, fine sand, mostly medium sand, medium to high plasticity, crystalline gypsum sand. |

# Reward Minerals Ltd - Composite Log

Bore ID: GP06

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 13-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 13-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | EarthTEC Drilling |
| Database ID: | 73345 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Driven Core | Northing: | 7406358.000 m | Surface RL: | 330.600 m |
| Bore Diameter: | 55 mm | Easting: | 464236.000 m | Scheme: | GDA94 (Z51) |



# BORE NAME: GP06

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73345 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | -0.017 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7406358.000 m |
| East: | 464236.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 330.600 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 13-Dec-2006 |
| Completed: | 13-Dec-2006 |
| Drilled Depth: | 4.2 |
| Drilling Company: | EarthTEC Drilling |
| Drilling Rig: | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 4.2 | Driven core (55 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.340) - 1.030 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| 1.030 - 2.020 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 2.0 | Annulus fill, ID-OD: 20 mm to 55 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 2.0 - 4.2 | Void fill, OD: 55 mm, spoil. Backfill of hole through partial collapse of bore. |

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 0.3 | Sand with Silt | Upper Lake Bed Sequence |
| 0.3 - 1.0 | Clay with Sand | Upper Lake Bed Sequence |
| 1.0 - 1.1 | Sand with Clay | Upper Lake Bed Sequence |
| 1.1 - 1.2 | Clay with Sand | Upper Lake Bed Sequence |
| 1.2 - 1.4 | Sand with Clay | Aeolian Deposit |
| 1.4 - 3.3 | Clay with Sand | Lower Lake Bed Sequence |
| 3.3 - 3.5 | Sand with Clay | Lower Lake Bed Sequence |
| 3.5 - 3.7 | Clay with Sand | Lower Lake Bed Sequence |
| 3.7 - 3.8 | Sand with Clay | Lower Lake Bed Sequence |
| 3.8 - 4.0 | Clay with Sand | Lower Lake Bed Sequence |
| 4.0 - 4.2 | Sandstone | Weathered Basement |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 0.3 **Sand (with Silt and Clay)**: Pale orange-brown, fine sand - medium sand, quartz-gypsum, coarse grained seed gypsum, crystalline gypsum, trace clay. **Sand (with Silt and Clay)**: With black organic and white halite deposits to 0.02 m.

**Depth (m bgl)**

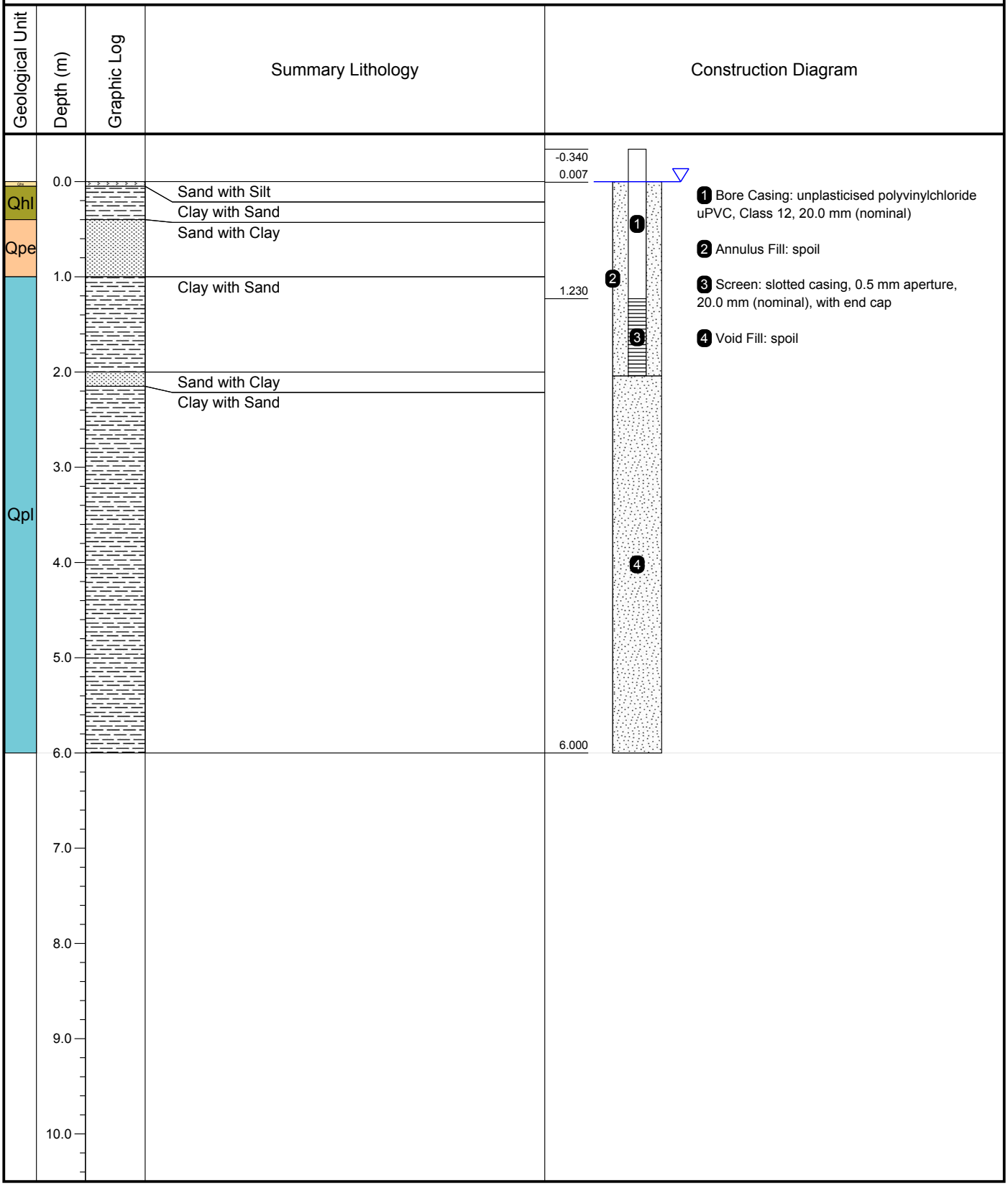
| | |
|---|---|
| 0.3 - 0.7 | **Clay (with Sand)**: Green, fine sand, quartz-gypsum, high plasticity, fine grained seed gypsum sand, trace back heavy mineral sand. |
| 0.7 - 1.0 | **Clay (with Sand)**: Orange-brown, quartz-gypsum, medium to high plasticity, . |
| 1.0 - 1.1 | **Sand (with Clay)**: Orange-brown, fine sand - medium sand. |
| 1.1 - 1.2 | **Clay (with Sand)**: Orange-brown, high plasticity. |
| 1.2 - 1.4 | **Sand (with Clay)**: Orange-brown, fine sand - medium sand, rounded, quartz-gypsum, seed gypsum. |
| 1.4 - 3.0 | **Clay (with Sand)**: Red-brown, fine sand - medium sand, sub-rounded to rounded, quartz, high plasticity, trace black heavy mineral sand. **Clay (with Sand)**: Orange, red, brown from 2.0 m. |
| 3.0 - 3.3 | **Clay (with Sand)**: Orange-brown, medium to high plasticity. |
| 3.3 - 3.5 | **Sand (with Clay)**: Orange-brown, medium sand - coarse sand, gypsum. |
| 3.5 - 3.7 | **Clay (with Sand)**: Orange-brown, medium to high plasticity. |
| 3.7 - 3.8 | **Sand (with Clay)**: Orange-brown, fine sand - coarse sand. |
| 3.8 - 4.0 | **Clay (with Sand)**: Orange-brown-grey, medium to high plasticity. |
| 4.0 - 4.2 | **Sandstone**: Orange-brown-green, fine sand - coarse sand, quartz-gypsum, extremely weathered rock, crystalline gypsum. |

# Reward Minerals Ltd - Composite Log

Bore ID: GP07

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 13-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 14-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | EarthTEC Drilling |
| Database ID: | 73346 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Driven Core | Northing: | 7389823.000 m | Surface RL: | 329.300 m |
| Bore Diameter: | 55 mm | Easting: | 470683.000 m | Scheme: | GDA94 (Z51) |



# BORE NAME: GP07

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73346 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | 0.007 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7389823.000 m |
| East: | 470683.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 329.300 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 13-Dec-2006 |
| Completed: | 14-Dec-2006 |
| Drilled Depth: | 6.0 |
| Drilling Company: | EarthTEC Drilling |
| Drilling Rig: | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 6.0 | Driven core (55 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.340) - 1.230 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| 1.230 - 2.040 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 2.0 | Annulus fill, ID-OD: 20 mm to 55 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 2.0 - 6.0 | Void fill, OD: 55 mm, spoil. Backfill of hole through partial collapse of bore. |

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 0.1 | Sand with Silt | Upper Lake Bed Sequence |
| 0.1 - 0.4 | Clay with Sand | Upper Lake Bed Sequence |
| 0.4 - 1.0 | Sand with Clay | Aeolian Deposit |
| 1.0 - 2.0 | Clay with Sand | Lower Lake Bed Sequence |
| 2.0 - 2.2 | Sand with Clay | Lower Lake Bed Sequence |
| 2.2 - 6.0 | Clay with Sand | Lower Lake Bed Sequence |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 0.1 **Sand (with Silt)**: Green, fine sand - coarse sand, gypsum, Thin halite crust at surface.

0.1 - 0.4 **Clay (with Sand)**: Pale green-brown, fine sand - medium sand, sub-rounded to rounded, quartz-gypsum, medium to high plasticity, seed gypsum sand, trace red, black heavy mineral sand.

0.4 - 1.0 **Sand (with Clay)**: Orange-brown, fine sand - medium gravel, sub-rounded to rounded, quartz-gypsum, seed gypsum.

1.0 - 2.0 **Clay (with Sand)**: Orange-brown, fine sand - medium sand, sub-rounded to rounded, quartz-gypsum, medium-high plasticity, crystalline gypsum sand, trace black heavy mineral sand.

2.0 - 2.2 **Sand (with Clay)**: Orange-brown, fine sand - medium sand.

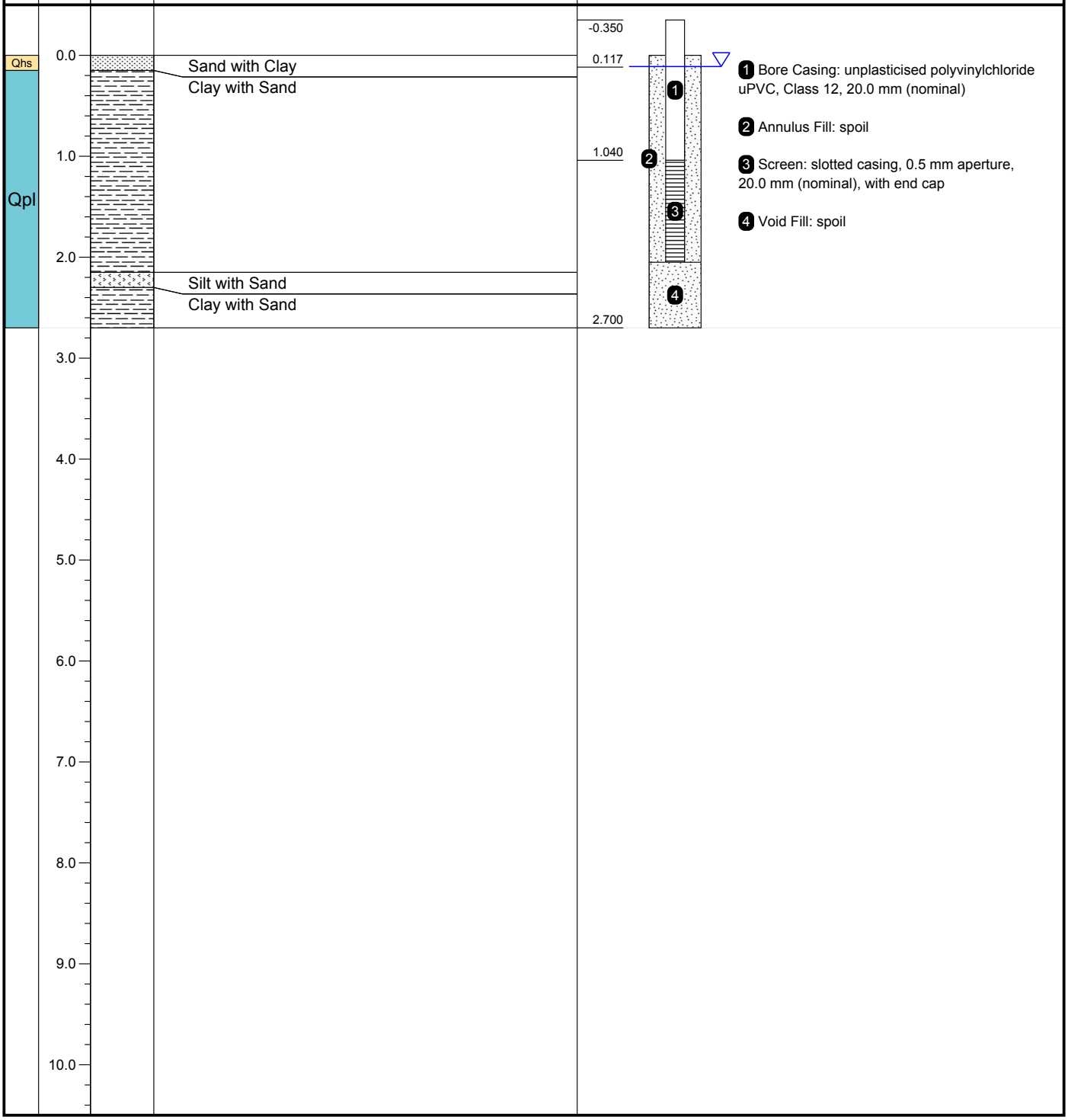
2.2 - 6.0 **Clay (with Sand)**: Orange-brown, fine sand - medium sand, sub-rounded to rounded, quartz-gypsum, high plasticity, trace crystalline gypsum sand, trace black heavy mineral sand.

# Reward Minerals Ltd - Composite Log

Bore ID: GP08

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 14-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 14-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | EarthTEC Drilling |
| Database ID: | 73347 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Driven Core | Northing: | 7390056.000 m | Surface RL: | 330.600 m |
| Bore Diameter: | 55 mm | Easting: | 474264.000 m | Scheme: | GDA94 (Z51) |



# BORE NAME: GP08

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73347 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | 0.117 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7390056.000 m |
| East: | 474264.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 330.600 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 14-Dec-2006 |
| Completed: | 14-Dec-2006 |
| Drilled Depth: | 2.7 |
| Drilling Company: | EarthTEC Drilling |
| Drilling Rig: | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 2.7 | Driven core (55 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.350) - 1.040 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| 1.040 - 2.050 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 2.1 | Annulus fill, ID-OD: 20 mm to 55 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 2.1 - 2.7 | Void fill, OD: 55 mm, spoil. |

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 0.2 | Sand with Clay | Upper Lake Bed Sequence |
| 0.2 - 2.2 | Clay with Sand | Lower Lake Bed Sequence |
| 2.2 - 2.3 | Silt with Sand | Lower Lake Bed Sequence |
| 2.3 - 2.7 | Clay with Sand | Lower Lake Bed Sequence |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 0.2 **Sand (with Clay)**: Orange-brown, fine sand - coarse sand, gypsum, with fine-coarse grained gypsum sand, dark brown-black organic material to 0.05m. **Sand (with Clay)**: Minor halite crust at surface.

0.2 - 1.0 **Clay (with Sand)**: Orange-brown, fine sand - medium sand, sub-rounded to rounded, quartz-gypsum, high plasticity, fine to coarse grained crystalline gypsum sand. **Clay (with Sand)**: Trace fine grained heavy mineral sand.

1.0 - 1.2 **Clay (with Sand)**: Red-brown, fine sand, quartz, high plasticity, trace black heavy mineral sand.

1.2 - 1.3 **Clay (with Sand)**: Fine sand - coarse sand, gypsum.

1.3 - 2.2 **Clay (with Sand)**: Pale orange-brown, fine sand - medium sand, sub-rounded to rounded, quartz-gypsum, medium-high plasticity, crystalline gypsum, minor cellular gypsum aggregations. **Clay (with Sand)**: Trace black heavy mineral sand.

2.2 - 2.3 **Silt (with Sand)**: Pale orange, medium to high plasticity, laminated.

**Depth (m bgl)**

| | |
|---|---|
| 2.3 - 2.7 | **Clay (with Sand)**: Pale orange-red, fine sand - medium sand, gypsum, medium to high plasticity, crystalline gypsum sand. **Clay (with Sand)**: 2.53 - 2.56 m: pale orange, grey sandy silt layer. **Clay (with Sand)**: Refusal on extremely/highly weathered sandstone. |

# Reward Minerals Ltd - Composite Log

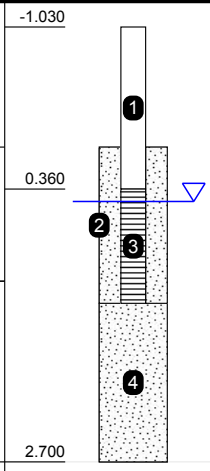
Bore ID: GP09

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 14-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 14-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | EarthTEC Drilling |
| Database ID: | 73348 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Driven Core | Northing: | 7389909.000 m | Surface RL: | 330.600 m |
| Bore Diameter: | 55 mm | Easting: | 479448.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology |
|---|---|---|---|
| Qhs | 0.0 – 1.0 | | Sand with Silt |
| Qpl | 1.0 – 2.0 | | Clay with Sand |
| | 2.0 – 11.0 | | |

Construction Diagram




1. Bore Casing: unplasticised polyvinylchloride uPVC, Class 12, 20.0 mm (nominal)
2. Annulus Fill: spoil
3. Screen: slotted casing, 0.5 mm aperture, 20.0 mm (nominal), with end cap
4. Void Fill: spoil

# BORE NAME: GP09

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73348 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | 0.473 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7389909.000 m |
| East: | 479448.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 330.600 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 14-Dec-2006 |
| Completed: | 14-Dec-2006 |
| Drilled Depth: | 2.7 |
| Drilling Company: | EarthTEC Drilling |
| Drilling Rig: | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 2.7 | Driven core (55 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (1.030) - 0.360 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| 0.360 - 1.340 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 1.3 | Annulus fill, ID-OD: 20 mm to 55 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 1.3 - 2.7 | Void fill, OD: 55 mm, spoil. Backfill of hole through partial collapse of bore. |

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 1.2 | Sand with Silt | Upper Lake Bed Sequence |
| 1.2 - 2.7 | Clay with Sand | Lower Lake Bed Sequence |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 1.2 **Sand (with Silt)**: Pale orange-brown, fine sand - coarse sand, gypsum, seed and crystalline gypsum. Undulating heaved earth at surface. **Sand (with Silt)**: From 0.5 m pale green and green.

1.2 - 1.4 **Clay (with Sand)**: Pale orange-red-brown, fine sand - medium sand, quartz-gypsum, high plasticity, fine to coarse grained crystalline gypsum sand.

1.4 - 1.8 **Clay (with Sand)**: Red-grey-brown, fine sand, sub-rounded to rounded, quartz, high plasticity, trace black fine grained heavy mineral sand.

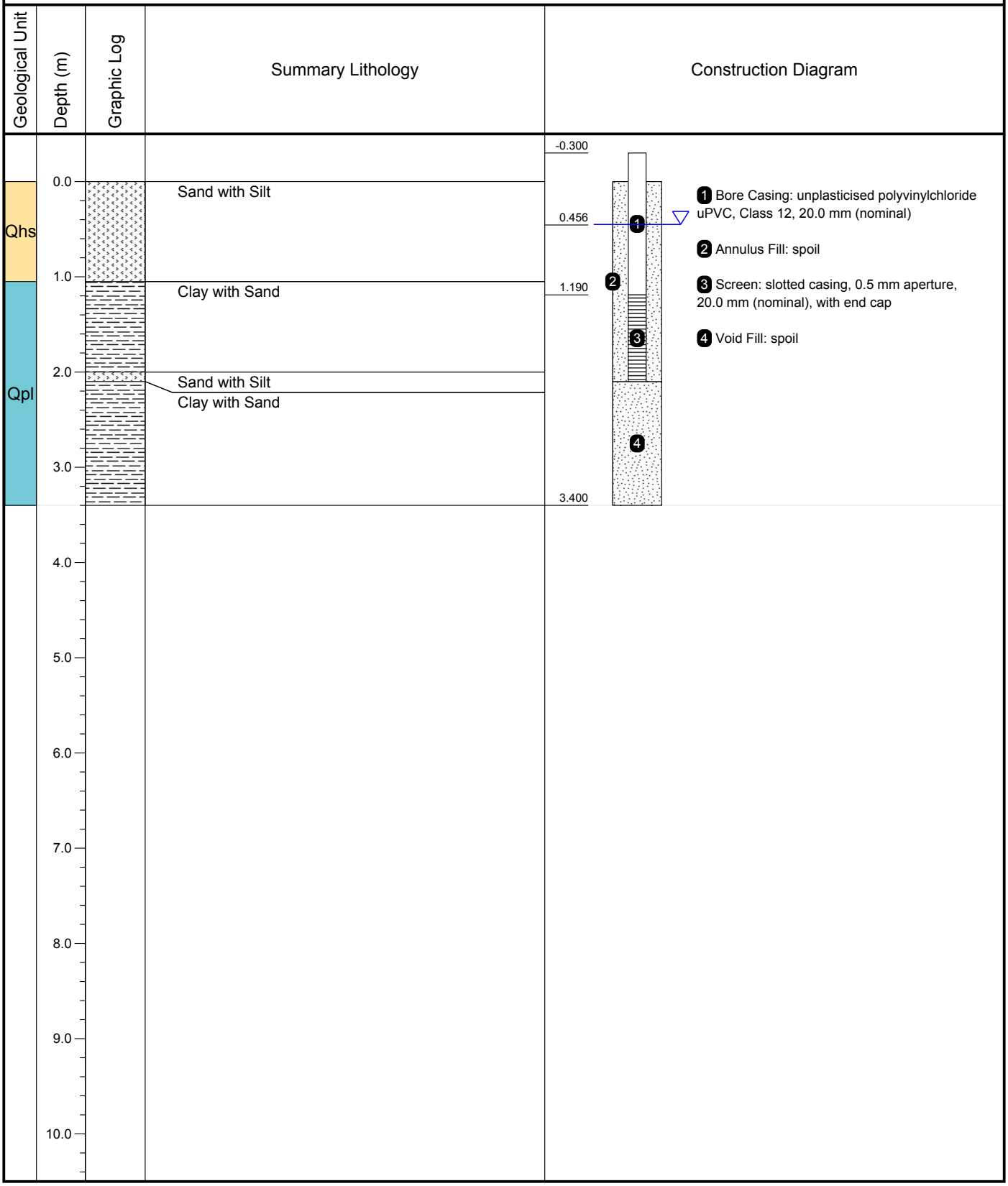
1.8 - 2.7 **Clay (with Sand)**: Dominant, pale orange, fine sand - medium sand, quartz-gypsum, medium to high plasticity, trace fine grained black, red heavy mineral sand. **Clay (with Sand)**: Minor, red-brown, gypsum, from 2.0 to 2.1 m: with fine to coarse grained crystalline gypsum sand . **Clay (with Sand)**: Trace, pale orange-brown, gypsum, from 2.1m: trace fine to coarse grained crystalline gypsum sand . **Clay (with Sand)**: Refusal on extremely/highly weathered sandstone.

# Reward Minerals Ltd - Composite Log

Bore ID: GP10

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 14-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 14-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | EarthTEC Drilling |
| Database ID: | 73349 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Driven Core | Northing: | 7389332.000 m | Surface RL: | 330.100 m |
| Bore Diameter: | 55 mm | Easting: | 484638.000 m | Scheme: | GDA94 (Z51) |



# BORE NAME: GP10

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73349 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | 0.456 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7389332.000 m |
| East: | 484638.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 330.100 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 14-Dec-2006 |
| Completed: | 14-Dec-2006 |
| Drilled Depth: | 3.4 |
| Drilling Company: | EarthTEC Drilling |
| Drilling Rig: | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 3.4 | Driven core (55 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.300) - 1.190 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| 1.190 - 2.100 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 2.1 | Annulus fill, ID-OD: 20 mm to 55 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 2.1 - 3.4 | Void fill, OD: 55 mm, spoil. Backfill of hole through partial collapse of bore. |

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 1.1 | Sand with Silt | Upper Lake Bed Sequence |
| 1.1 - 2.0 | Clay with Sand | Lower Lake Bed Sequence |
| 2.0 - 2.1 | Sand with Silt | Lower Lake Bed Sequence |
| 2.1 - 3.4 | Clay with Sand | Lower Lake Bed Sequence |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 1.1 **Sand (with Silt)**: Orange-brown, fine sand - coarse sand, gypsum, seed and crystalline gypsum. Fine-medium grained from 0.25 m. **Sand (with Silt)**: From 0.42 m: fine to coarse grained. **Sand (with Silt)**: From 0.54 m: green and brown. **Sand (with Silt)**: Undulating heaved earth at surface.

1.1 - 2.0 **Clay (with Sand)**: Orange-brown-grey, fine sand - medium sand, sub-rounded to rounded, quartz-gypsum, high plasticity, crystalline gypsum sand, trace red, black heavy mineral sand.

2.0 - 2.1 **Sand (with Silt)**: Pale orange-yellow-brown, fine sand - medium sand, quartz-gypsum.

2.1 - 2.5 **Clay (with Sand)**: Dominant, fine sand - medium sand, rounded to sub-rounded, quartz-gypsum, high plasticity. **Clay (with Sand)**: Minor cellular gypsum aggregations, trace crystalline gypsum sand. **Clay (with Sand)**: Trace, black, heavy mineral sand.

2.5 - 3.0 **Clay (with Sand)**: Pale orange-brown, fine sand, quartz-gypsum, medium to high plasticity. **Clay (with Sand)**: Crystalline gypsum sand, with fine grained cellular gypsum aggregations .

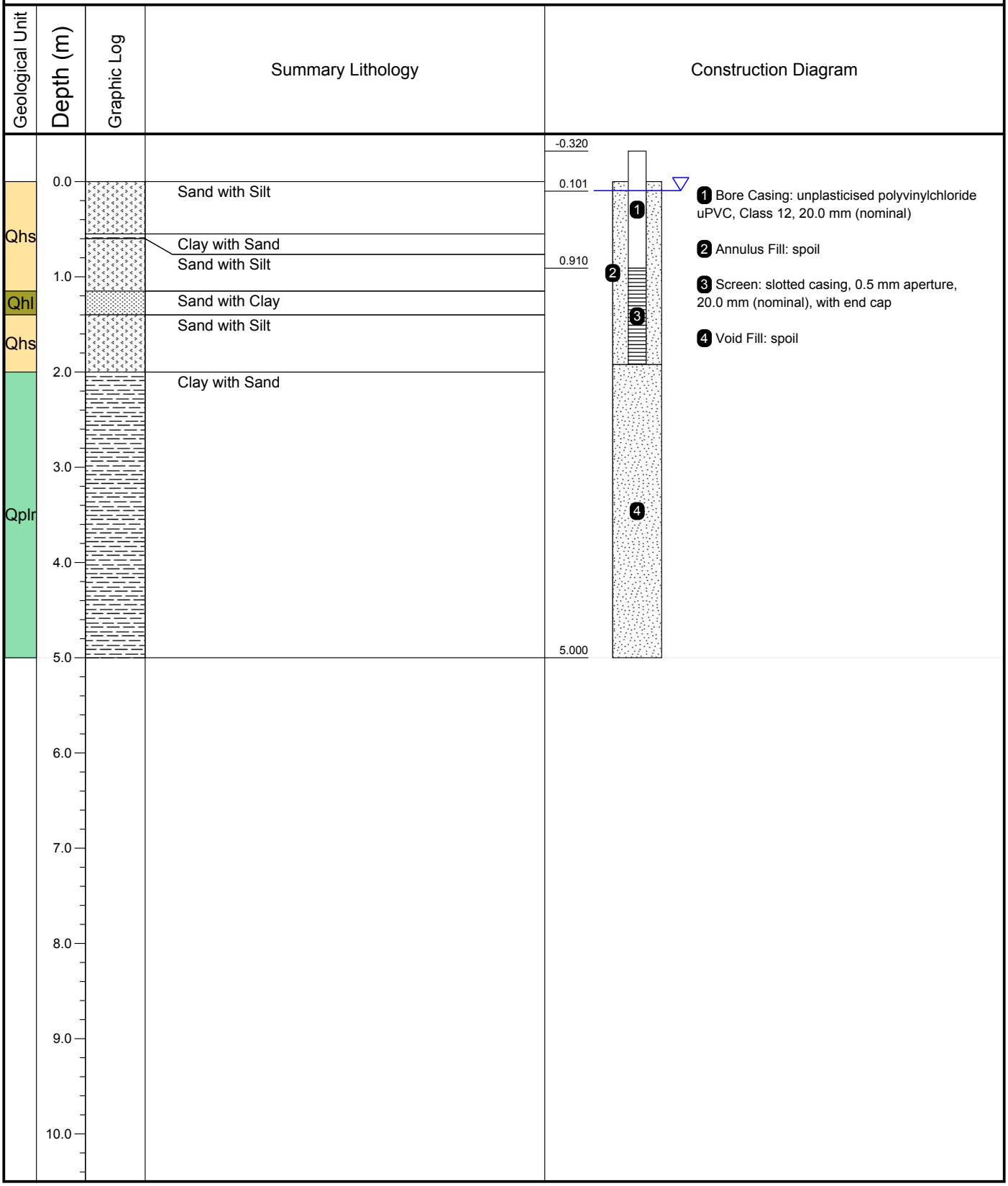
3.0 - 3.4 **Clay (with Sand)**: Pale orange-brown-grey, fine sand, quartz-gypsum, high plasticity, crystalline gypsum sand. **Clay (with Sand)**: Refusal on extremely/highly weathered sandstone.

# Reward Minerals Ltd - Composite Log

Bore ID: GP11

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 15-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 15-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | EarthTEC Drilling |
| Database ID: | 73350 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Driven Core | Northing: | 7389786.000 m | Surface RL: | 329.700 m |
| Bore Diameter: | 55 mm | Easting: | 489688.000 m | Scheme: | GDA94 (Z51) |



# BORE NAME: GP11

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73350 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | 0.101 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7389786.000 m |
| East: | 489688.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 329.700 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 15-Dec-2006 |
| Completed: | 15-Dec-2006 |
| Drilled Depth: | 5.0 |
| Drilling Company: | EarthTEC Drilling |
| Drilling Rig: | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 5.0 | Driven core (55 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.320) - 0.910 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| 0.910 - 1.920 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 1.9 | Annulus fill, ID-OD: 20 mm to 55 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 1.9 - 5.0 | Void fill, OD: 55 mm, spoil. Backfill of hole through partial collapse of bore. |

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 0.6 | Sand with Silt | Upper Lake Bed Sequence |
| 0.6 - 0.6 | Clay with Sand | Upper Lake Bed Sequence |
| 0.6 - 1.2 | Sand with Silt | Upper Lake Bed Sequence |
| 1.2 - 1.4 | Sand with Clay | Upper Lake Bed Sequence |
| 1.4 - 2.0 | Sand with Silt | Upper Lake Bed Sequence |
| 2.0 - 5.0 | Clay with Sand | Lower Lake Bed Sequence |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 0.6 **Sand (with Silt)**: Orange-brown, fine sand - coarse sand, gypsum, seed and crystalline gypsum. **Sand (with Silt)**: From 0.26 m: fine to medium grained . **Sand (with Silt)**: From 0.35 m: fine to coarse grained . **Sand (with Silt)**: From 0.44 m: green, brown . **Sand (with Silt)**: Hard undulating halite/gypsum to 0.05 m depth.

0.6 - 0.6 **Clay (with Sand)**: Green, medium to high plasticity.

0.6 - 1.2 **Sand (with Silt)**: Pale green, fine sand - coarse sand, gypsum, seed and crystalline gypsum, trace black heavy mineral sand. **Sand (with Silt)**: From 1.0 m: orange, brown .

1.2 - 1.4 **Sand (with Clay)**: Grey-green, fine sand - medium sand, gypsum, with coarse grained gypsum sand.

1.4 - 2.0 **Sand (with Silt)**: Orange-brown, fine sand - coarse sand, gypsum-quartz, seed and crystalline gypsum.

**Depth (m bgl)**

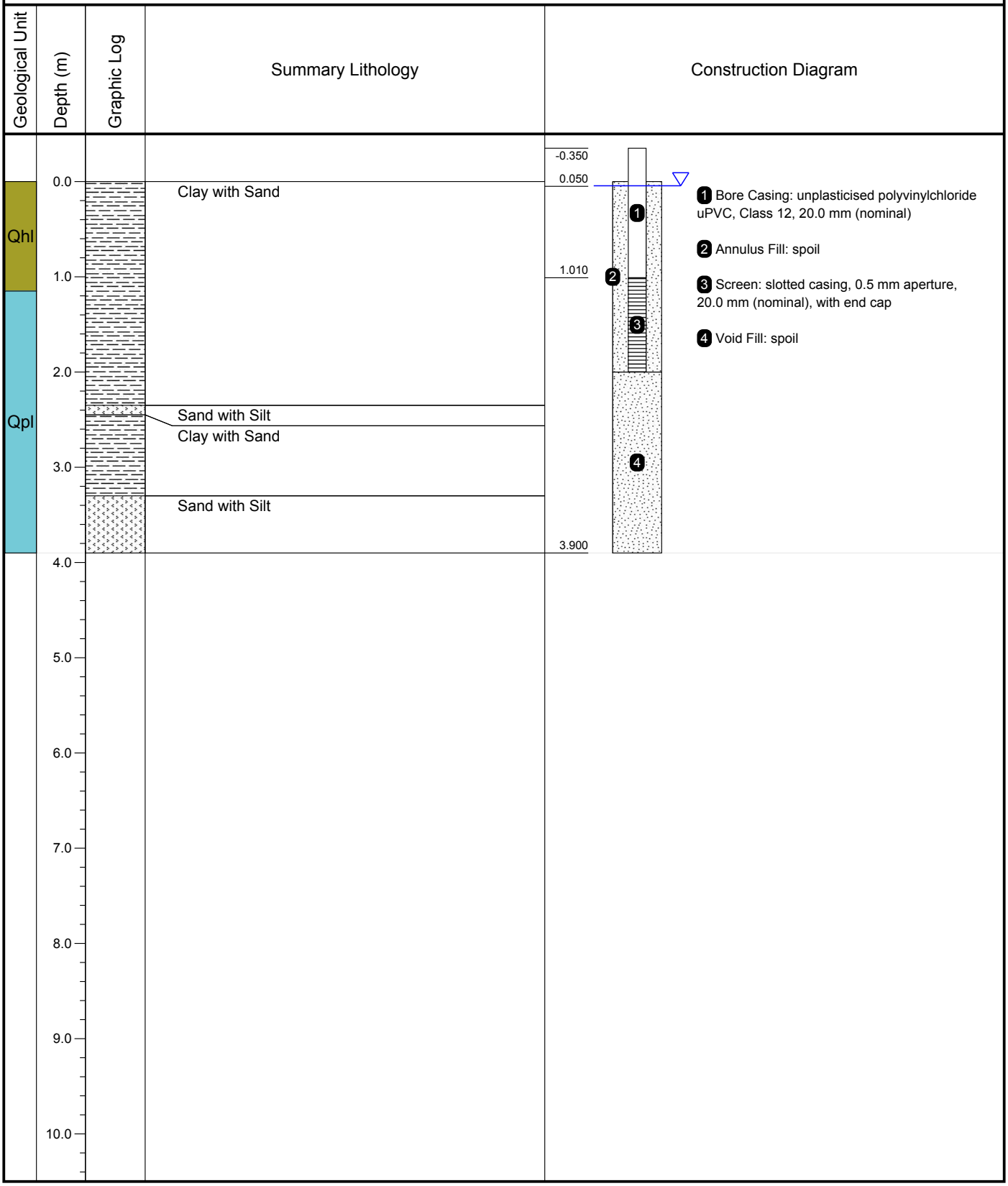
| | |
|---|---|
| 2.0 - 2.3 | **Clay (with Sand)**: Pale green-orange-brown, fine sand, quartz-gypsum, high plasticity, crystalline gypsum sand. |
| 2.3 - 5.0 | **Clay (with Sand)**: Pale green, fine sand, sub-rounded to rounded, quartz, medium to high plasticity, with fine to medium grained crystalline gypsum sand. **Clay (with Sand)**: Trace black heavy mineral sand. **Clay (with Sand)**: Trace organic material (tree root) to 2.77 m. **Clay (with Sand)**: Refusal on extremely/highly weathered sandstone. |

# Reward Minerals Ltd - Composite Log

Bore ID: GP12

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 15-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 15-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | EarthTEC Drilling |
| Database ID: | 73351 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Driven Core | Northing: | 7423068.000 m | Surface RL: | 331.000 m |
| Bore Diameter: | 55 mm | Easting: | 474130.000 m | Scheme: | GDA94 (Z51) |



# BORE NAME: GP12

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73351 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | 0.050 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7423068.000 m |
| East: | 474130.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 331.000 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 15-Dec-2006 |
| Completed: | 15-Dec-2006 |
| Drilled Depth: | 3.9 |
| Drilling Company: | EarthTEC Drilling |
| Drilling Rig: | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 3.9 | Driven core (55 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.350) - 1.010 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| 1.010 - 2.000 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 2.0 | Annulus fill, ID-OD: 20 mm to 55 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 2.0 - 3.9 | Void fill, OD: 55 mm, spoil. Backfill of hole through partial collapse of bore. |

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 1.2 | Clay with Sand | Upper Lake Bed Sequence |
| 1.2 - 2.4 | Clay with Sand | Lower Lake Bed Sequence |
| 2.4 - 2.5 | Sand with Silt | Lower Lake Bed Sequence |
| 2.5 - 3.3 | Clay with Sand | Lower Lake Bed Sequence |
| 3.3 - 3.9 | Sand with Silt | Lower Lake Bed Sequence |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 0.3 **Clay (with Sand)**: Dominant, green, fine sand - medium sand, rounded, quartz-gypsum, medium plasticity, with organic material, seed gypsum sand. **Sand**: Trace, red-black, heavy mineral sand. **Clay (with Sand)**: Halite crust (5mm) underlain by dark br spongy clay with high organics to 0.1m.

0.3 - 1.2 **Clay (with Sand)**: Dominant, red-orange-brown, fine sand - medium sand, rounded to sub-rounded, quartz-gypsum, high plasticity, with fine to coarse grained crystalline gypsum sand. **Sand**: Trace, black, heavy mineral sand.

1.2 - 2.1 **Clay (with Sand)**: Red-brown, fine sand, rounded to sub-rounded, quartz-gypsum, high plasticity, crystalline gypsum sand, trace black heavy mineral sand.

2.1 - 2.4 **Clay (with Sand)**: Pale orange-red-brown, fine sand, gypsum, high plasticity, laminated, with medium grained gypsum sand.

2.4 - 2.5 **Sand (with Silt)**: Orange-brown, fine sand - coarse sand, gypsum.

2.5 - 2.6 **Clay (with Sand)**: Brown, fine sand - medium sand, high plasticity.

**Depth (m bgl)**

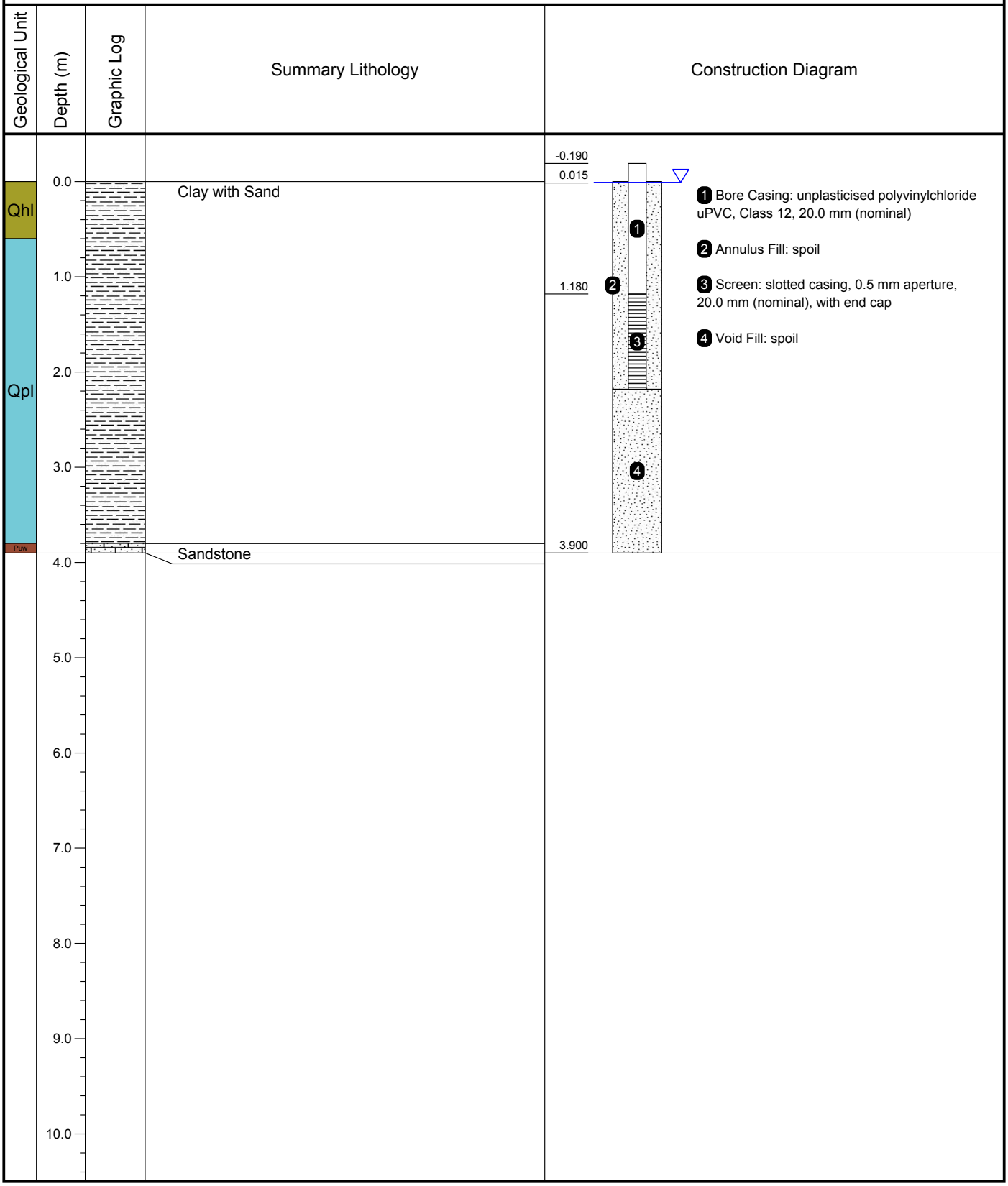
| | |
|---|---|
| 2.6 - 3.3 | **Clay (with Sand)**: Pale orange-brown, fine sand - coarse sand, gypsum-quartz, high plasticity, crystalline gypsum sand & gravel, fine grained quartz. |
| 3.3 - 3.9 | **Sand (with Silt)**: Orange-brown, fine sand - medium sand, gypsum-quartz, crystalline gypsum/quartz sand. **Sand (with Silt)**: Refusal on highly weathered sandstone. |

# Reward Minerals Ltd - Composite Log

Bore ID: GP13

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 15-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 15-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | EarthTEC Drilling |
| Database ID: | 73352 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Driven Core | Northing: | 7423105.000 m | Surface RL: | 330.600 m |
| Bore Diameter: | 55 mm | Easting: | 479090.000 m | Scheme: | GDA94 (Z51) |



# BORE NAME: GP13

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73352 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | 0.015 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7423105.000 m |
| East: | 479090.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 330.600 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 15-Dec-2006 |
| Completed: | 15-Dec-2006 |
| Drilled Depth: | 3.9 |
| Drilling Company: | EarthTEC Drilling |
| Drilling Rig: | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 3.9 | Driven core (55 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.190) - 1.180 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| 1.180 - 2.180 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 2.2 | Annulus fill, ID-OD: 20 mm to 55 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 2.2 - 3.9 | Void fill, OD: 55 mm, spoil. Backfill of hole through partial collapse of bore. |

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 0.6 | Clay with Sand | Upper Lake Bed Sequence |
| 0.6 - 3.8 | Clay with Sand | Lower Lake Bed Sequence |
| 3.8 - 3.9 | Sandstone | Weathered Basement |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 0.1 **Clay (with Sand)**: Green, high plasticity, with organic material. **Clay (with Sand)**: Thin halite crust at surface underlain by dark brown spongy organic clay.

0.1 - 0.6 **Clay (with Sand)**: Dominant, green, fine sand - coarse sand, sub-rounded to rounded, quartz-gypsum, medium to high plasticity, with organic material, seed gypsum sand. **Sand**: Trace, black, heavy mineral sand.

0.6 - 3.2 **Clay (with Sand)**: Dominant, red-brown, fine sand, quartz-gypsum, medium to high plasticity, fine to medium grained crystalline gypsum sand. **Sand**: Trace, black, heavy mineral sand. **Clay (with Sand)**: From 1.0 m: orange, brown, fine grained sand. **Clay (with Sand)**: From 1.27 m: pale green, red, brown mottled. **Clay (with Sand)**: From 1.32 m: orange, brown. **Clay (with Sand)**: Red-brown-orange-white, from 2.0-2.05 m: salt crystals to 0.5 cm across . **Clay (with Sand)**: Red-orange-brown, from 2.05 m: trace gypsum crystals to 0.3 cm across .

3.2 - 3.3 **Clay (with Sand)**: Pale orange-brown, medium plasticity.

3.3 - 3.7 **Clay (with Sand)**: Orange-brown, high plasticity.

3.7 - 3.8 **Clay (with Sand)**: Pale orange-brown, medium plasticity.

**Depth (m bgl)**

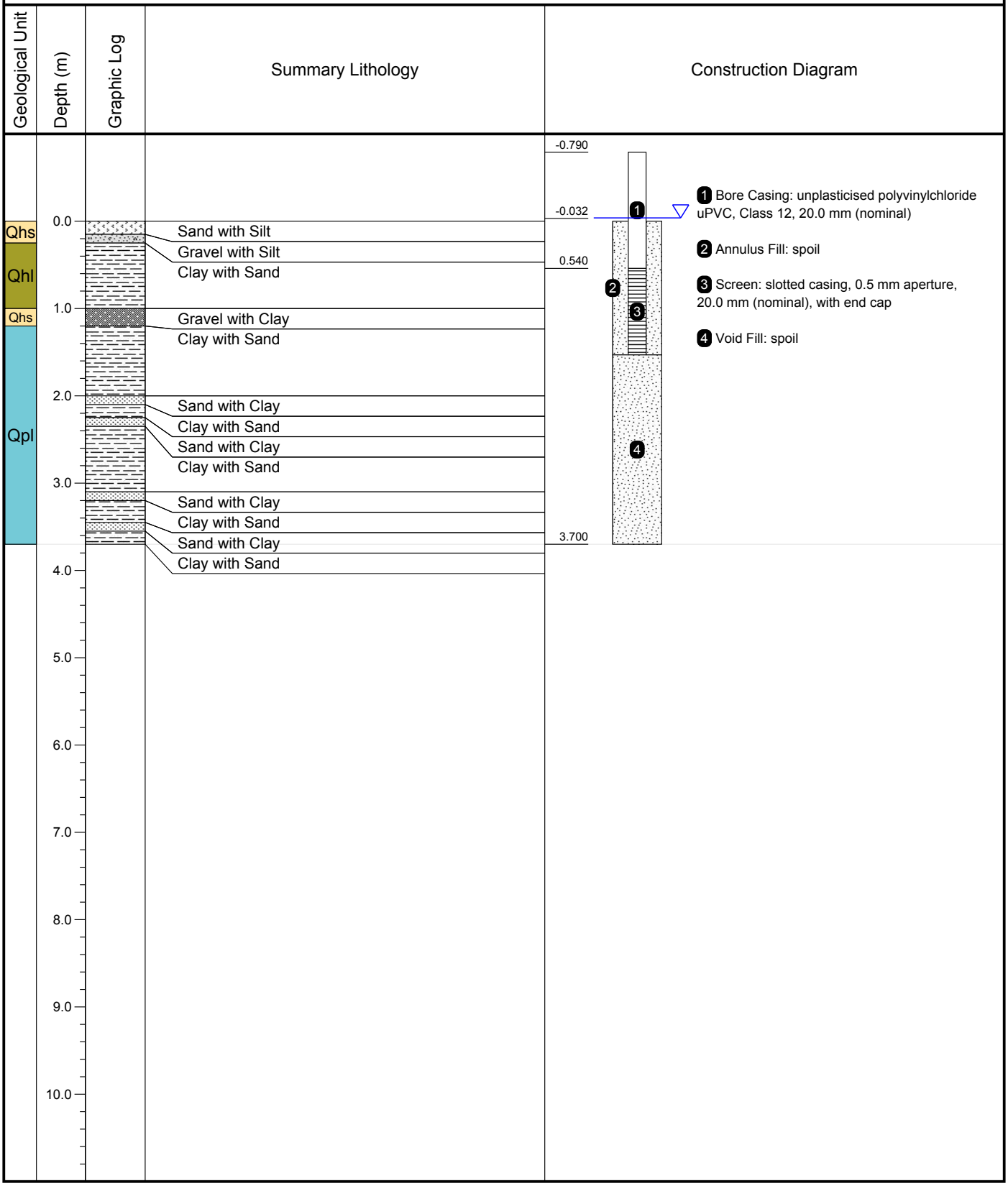
3.8 - 3.9 **Sandstone**: Pale orange, fine sand - coarse sand, quartz-gypsum, (refusal).

# Reward Minerals Ltd - Composite Log

Bore ID: GP14

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 15-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 15-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | EarthTEC Drilling |
| Database ID: | 73353 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Driven Core | Northing: | 7417632.000 m | Surface RL: | 330.800 m |
| Bore Diameter: | 55 mm | Easting: | 474262.000 m | Scheme: | GDA94 (Z51) |



# BORE NAME: GP14

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73353 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | -0.032 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7417632.000 m |
| East: | 474262.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 330.800 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 15-Dec-2006 |
| Completed: | 15-Dec-2006 |
| Drilled Depth: | 3.7 |
| Drilling Company: | EarthTEC Drilling |
| Drilling Rig: | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 3.7 | Driven core (55 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.790) - 0.540 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| 0.540 - 1.530 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 1.5 | Annulus fill, ID-OD: 20 mm to 55 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 1.5 - 3.7 | Void fill, OD: 55 mm, spoil. Backfill of hole through partial collapse of bore. |

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 0.2 | Sand with Silt | Upper Lake Bed Sequence |
| 0.2 - 0.3 | Gravel with Silt | Upper Lake Bed Sequence |
| 0.3 - 1.0 | Clay with Sand | Upper Lake Bed Sequence |
| 1.0 - 1.2 | Gravel with Clay | Upper Lake Bed Sequence |
| 1.2 - 2.0 | Clay with Sand | Lower Lake Bed Sequence |
| 2.0 - 2.1 | Sand with Clay | Lower Lake Bed Sequence |
| 2.1 - 2.3 | Clay with Sand | Lower Lake Bed Sequence |
| 2.3 - 2.4 | Sand with Clay | Lower Lake Bed Sequence |
| 2.4 - 3.1 | Clay with Sand | Lower Lake Bed Sequence |
| 3.1 - 3.2 | Sand with Clay | Lower Lake Bed Sequence |
| 3.2 - 3.5 | Clay with Sand | Lower Lake Bed Sequence |
| 3.5 - 3.6 | Sand with Clay | Lower Lake Bed Sequence |
| 3.6 - 3.7 | Clay with Sand | Lower Lake Bed Sequence |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 0.2 **Sand (with Silt)**: Green-brown, fine sand - coarse sand, gypsum. **Clay**: Black-brown, halite, halite crust at surface underlain by clay with organic material to 0.04 m depth.

**Depth (m bgl)**

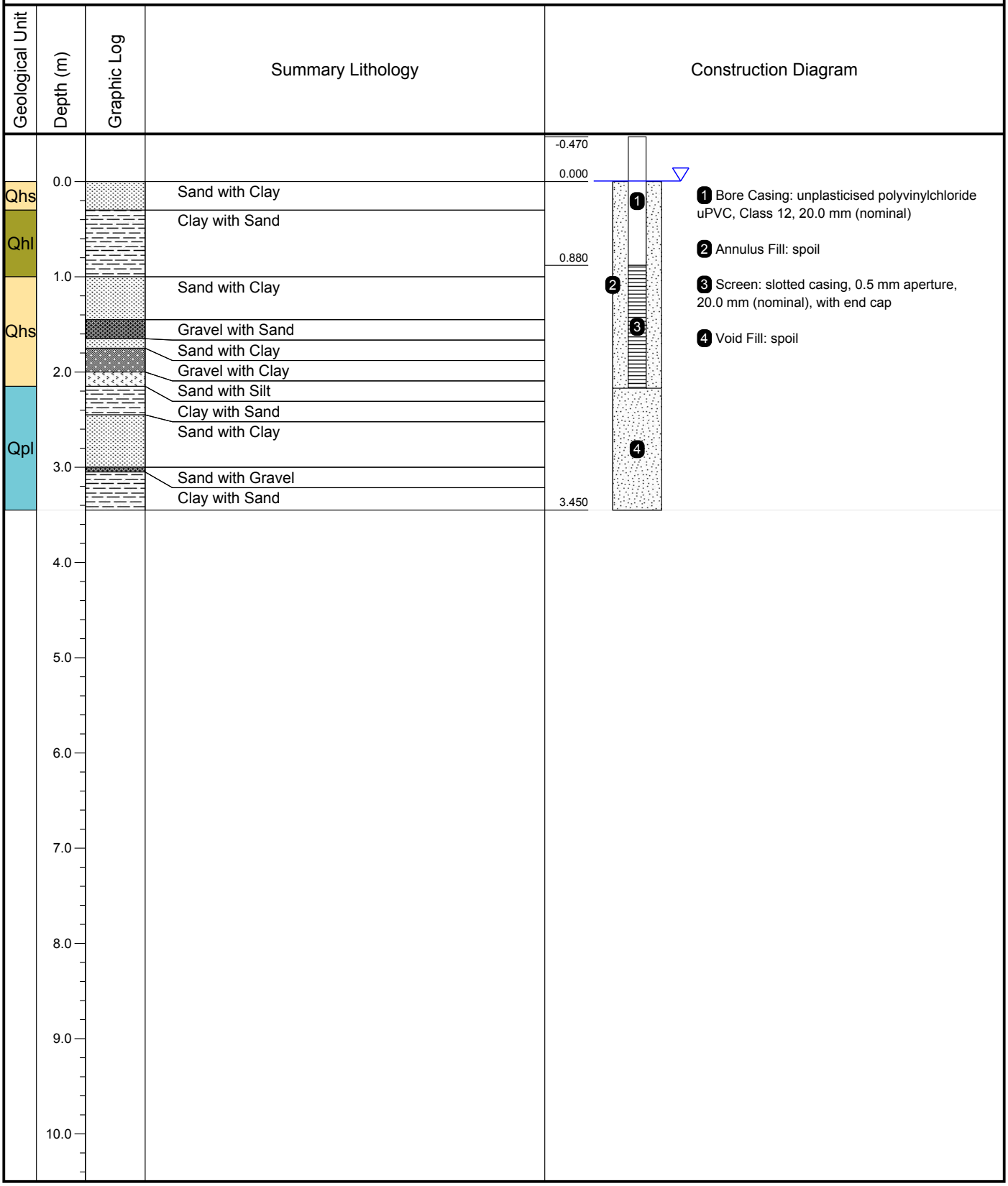
| | |
|---|---|
| 0.2 - 0.3 | **Gravel (with Silt and Sand)**: Green-brown, gypsum, gypsum to 2 cm. |
| 0.3 - 1.0 | **Clay (with Sand)**: Orange-brown, fine sand - medium sand, sub-rounded to rounded, quartz-gypsum, medium-high plasticity, seed gypsum, with fine-coarse grained crystalline gypsum. |
| 1.0 - 1.2 | **Gravel (with Clay)**: Pale orange-grey, fine sand - coarse sand, gypsum. |
| 1.2 - 2.0 | **Clay (with Sand)**: Orange-brown, fine sand - medium sand, sub-rounded to rounded, quartz-gypsum, high plasticity, crystalline gypsum. |
| 2.0 - 2.1 | **Sand (with Clay)**: Brown, fine sand - coarse sand, gypsum. |
| 2.1 - 2.3 | **Clay (with Sand)**: Orange-brown, fine sand - medium sand, high plasticity. |
| 2.3 - 2.4 | **Sand (with Clay)**: Orange-brown-grey, fine sand - coarse sand. |
| 2.4 - 3.1 | **Clay (with Sand)**: Red-brown, fine sand - medium sand, sub-rounded to rounded, quartz-gypsum, high plasticity, crystalline gypsum sand. |
| 3.1 - 3.2 | **Sand (with Clay)**: Fine sand - medium sand, gypsum. |
| 3.2 - 3.5 | **Clay (with Sand)**: Orange-brown, fine sand - coarse sand, gypsum, high plasticity. |
| 3.5 - 3.6 | **Sand (with Clay and Gravel)**: Fine sand - coarse sand, gypsum. |
| 3.6 - 3.7 | **Clay (with Sand)**: Red-brown, fine sand - medium sand, gypsum, medium to high plasticity. **Clay (with Sand)**: Refusal on highly weathered sandstone. |

# Reward Minerals Ltd - Composite Log

Bore ID: GP15

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 15-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 16-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | EarthTEC Drilling |
| Database ID: | 73354 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Driven Core | Northing: | 7419559.000 m | Surface RL: | 330.600 m |
| Bore Diameter: | 55 mm | Easting: | 476126.000 m | Scheme: | GDA94 (Z51) |



# BORE NAME: GP15

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73354 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | 0.000 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7419559.000 m |
| East: | 476126.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 330.600 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 15-Dec-2006 |
| Completed: | 16-Dec-2006 |
| Drilled Depth: | 3.4 |
| Drilling Company: | EarthTEC Drilling |
| Drilling Rig: | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 3.5 | Driven core (55 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.470) - 0.880 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| 0.880 - 2.170 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 2.2 | Annulus fill, ID-OD: 20 mm to 55 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 2.2 - 3.5 | Void fill, OD: 55 mm, spoil. Backfill of hole through partial collapse of bore. |

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 0.3 | Sand with Clay | Upper Lake Bed Sequence |
| 0.3 - 1.0 | Clay with Sand | Upper Lake Bed Sequence |
| 1.0 - 1.5 | Sand with Clay | Upper Lake Bed Sequence |
| 1.5 - 1.7 | Gravel with Sand | Upper Lake Bed Sequence |
| 1.7 - 1.8 | Sand with Clay | Upper Lake Bed Sequence |
| 1.8 - 2.0 | Gravel with Clay | Upper Lake Bed Sequence |
| 2.0 - 2.2 | Sand with Silt | Upper Lake Bed Sequence |
| 2.2 - 2.5 | Clay with Sand | Lower Lake Bed Sequence |
| 2.5 - 3.0 | Sand with Clay | Lower Lake Bed Sequence |
| 3.0 - 3.1 | Sand with Gravel | Lower Lake Bed Sequence |
| 3.1 - 3.5 | Clay with Sand | Lower Lake Bed Sequence |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 0.3 **Sand (with Clay)**: Green-brown, fine sand - medium sand, gypsum-quartz, seed and crystalline gypsum. **Sand (with Clay)**: From 0.2 m: orange, brown. **Clay**: Black-brown, thin halite crust at surface underlain by spongy clay.

**Depth (m bgl)**

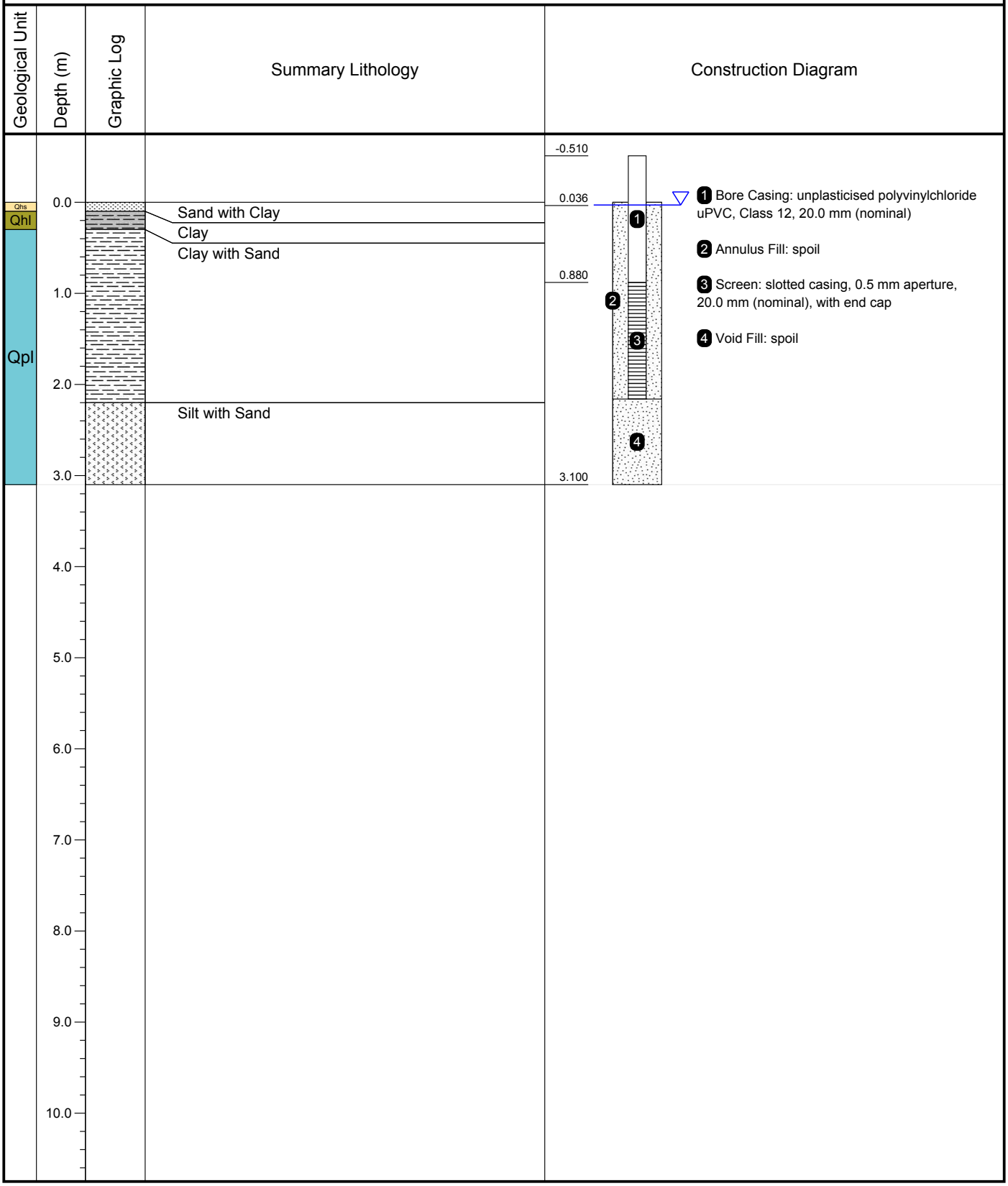
| | |
|---|---|
| 0.3 - 1.0 | **Clay (with Sand)**: Orange-brown, fine sand - medium sand, quartz-gypsum, high plasticity, crystalline gypsum, trace black heavy mineral sand. |
| 1.0 - 1.5 | **Sand (with Clay)**: Orange-brown, fine sand - coarse sand, crystalline gypsum. |
| 1.5 - 1.7 | **Gravel (with Sand and Clay)**: Orange-brown-grey, fine sand - coarse sand, gypsum, crystalline gypsum. |
| 1.7 - 1.8 | **Sand (with Clay)**: Red-brown, fine sand - coarse sand, gypsum. |
| 1.8 - 2.0 | **Gravel (with Clay)**: Red-brown, medium gravel, gypsum, gravel comprises crystalline gypsum to 1.2 cm . |
| 2.0 - 2.2 | **Sand (with Silt)**: Orange-brown, fine sand - coarse sand, gypsum. |
| 2.2 - 2.5 | **Clay (with Sand)**: Pale orange-brown, medium to high plasticity. |
| 2.5 - 3.0 | **Sand (with Clay)**: Pale orange-yellow-brown, fine sand - coarse sand, gypsum-quartz, seed and crystalline gypsum, subrounded to rounded quartz. |
| 3.0 - 3.1 | **Sand (with Gravel)**: Brown, fine sand - coarse sand, gypsum. |
| 3.1 - 3.5 | **Clay (with Sand)**: Pale orange-brown, medium to high plasticity, trace gypsum gravel. **Clay (with Sand)**: Refusal on highly weathered sandstone. |

# Reward Minerals Ltd - Composite Log

Bore ID: GP16

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 16-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 16-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | EarthTEC Drilling |
| Database ID: | 73355 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Driven Core | Northing: | 7417678.000 m | Surface RL: | 330.700 m |
| Bore Diameter: | 55 mm | Easting: | 482461.000 m | Scheme: | GDA94 (Z51) |



# BORE NAME: GP16

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73355 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | 0.036 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7417678.000 m |
| East: | 482461.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 330.700 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 16-Dec-2006 |
| Completed: | 16-Dec-2006 |
| Drilled Depth: | 3.1 |
| Drilling Company: | EarthTEC Drilling |
| Drilling Rig: | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 3.1 | Driven core (55 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.510) - 0.880 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| 0.880 - 2.160 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 2.2 | Annulus fill, ID-OD: 20 mm to 55 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 2.2 - 3.1 | Void fill, OD: 55 mm, spoil. Backfill of hole through partial collapse of bore. |

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 0.1 | Sand with Clay | Upper Lake Bed Sequence |
| 0.1 - 0.3 | Clay | Upper Lake Bed Sequence |
| 0.3 - 2.2 | Clay with Sand | Lower Lake Bed Sequence |
| 2.2 - 3.1 | Silt with Sand | Lower Lake Bed Sequence |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 0.1 **Sand (with Clay)**: Green, fine sand - coarse sand, gypsum. **Clay**: Black-brown, thin halite crust at surface underlain by spongy clay with organic material.

0.1 - 0.3 **Clay**: Green, high plasticity, with organic material.

0.3 - 2.1 **Clay (with Sand)**: Dominant, red-orange-brown, fine sand - medium sand, sub-rounded to rounded, quartz-gypsum, high plasticity, crystalline gypsum sand . **Sand**: Trace, black, fine sand - medium sand, heavy mineral sand. **Clay**: Orange-brown, from 1.0 m: medium to high plasticity. **Clay**: Red-green-orange, from 2.0 m .

2.1 - 2.2 **Clay (with Sand)**: Pale orange-brown, medium plasticity.

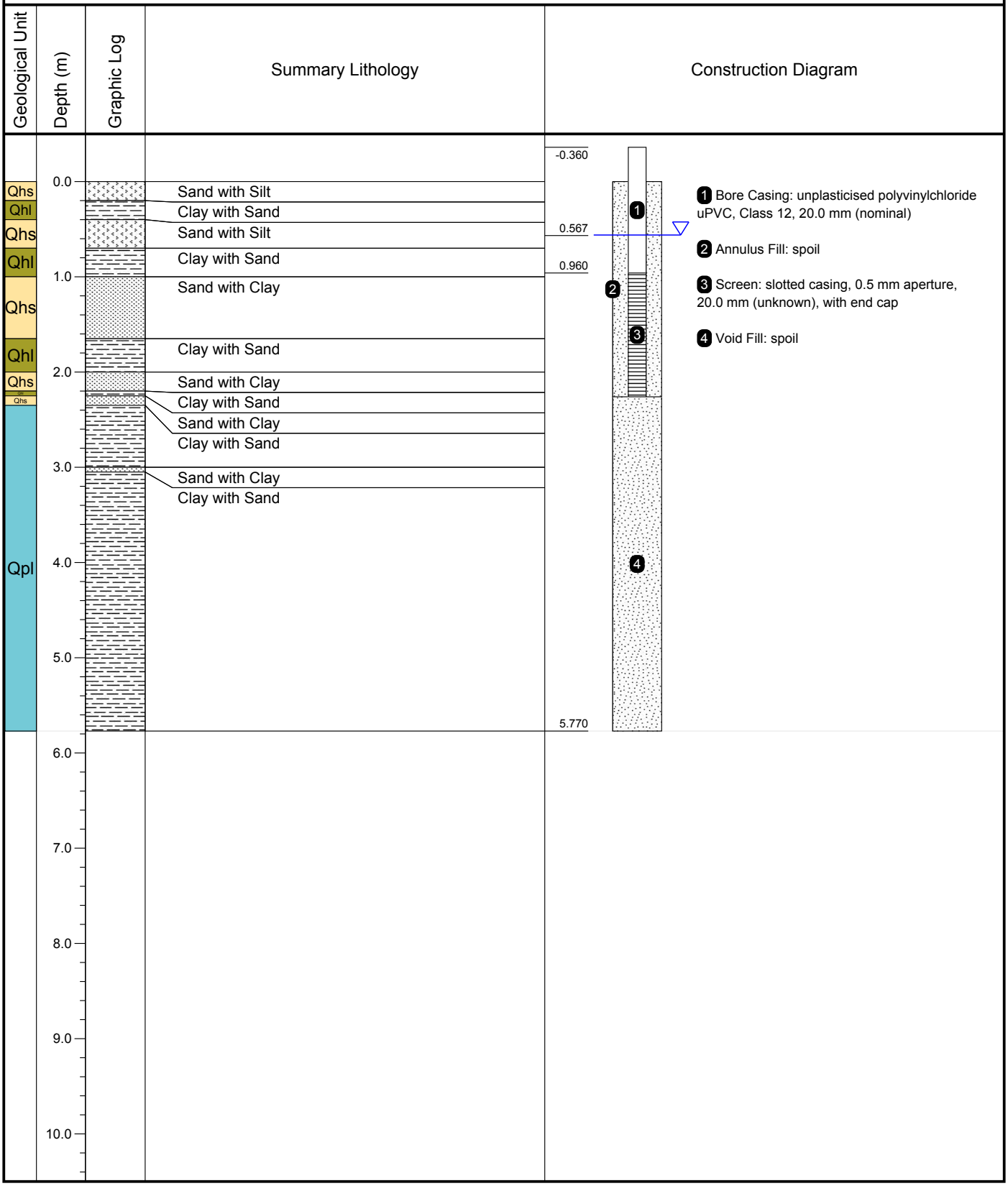
2.2 - 3.1 **Silt (with Sand)**: Pale orange, fine sand - coarse sand, gypsum, medium to high plasticity, crystalline gypsum sand. **Silt (with Sand)**: Refusal.

# Reward Minerals Ltd - Composite Log

Bore ID: GP17

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 16-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 16-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | EarthTEC Drilling |
| Database ID: | 73356 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Driven Core | Northing: | 7417766.000 m | Surface RL: | 329.800 m |
| Bore Diameter: | 55 mm | Easting: | 489639.000 m | Scheme: | GDA94 (Z51) |



# BORE NAME: GP17

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73356 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | 0.567 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7417766.000 m |
| East: | 489639.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 329.800 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 16-Dec-2006 |
| Completed: | 16-Dec-2006 |
| Drilled Depth: | 5.8 |
| Drilling Company: | EarthTEC Drilling |
| Drilling Rig: | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 5.8 | Driven core (55 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.360) - 0.960 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| 0.960 - 2.260 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm, joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 2.3 | Annulus fill, ID-OD: 20 mm to 55 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 2.3 - 5.8 | Void fill, OD: 55 mm, spoil. Backfill of hole through partial collapse of bore. |

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 0.2 | Sand with Silt | Upper Lake Bed Sequence |
| 0.2 - 0.4 | Clay with Sand | Upper Lake Bed Sequence |
| 0.4 - 0.7 | Sand with Silt | Upper Lake Bed Sequence |
| 0.7 - 1.0 | Clay with Sand | Upper Lake Bed Sequence |
| 1.0 - 1.7 | Sand with Clay | Upper Lake Bed Sequence |
| 1.7 - 2.0 | Clay with Sand | Upper Lake Bed Sequence |
| 2.0 - 2.2 | Sand with Clay | Upper Lake Bed Sequence |
| 2.2 - 2.3 | Clay with Sand | Upper Lake Bed Sequence |
| 2.3 - 2.4 | Sand with Clay | Upper Lake Bed Sequence |
| 2.4 - 3.0 | Clay with Sand | Lower Lake Bed Sequence |
| 3.0 - 3.1 | Sand with Clay | Lower Lake Bed Sequence |
| 3.1 - 5.8 | Clay with Sand | Lower Lake Bed Sequence |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 0.2 **Sand (with Silt and Clay)**: Green-brown, fine sand - coarse sand, gypsum, seed and crystalline gypsum, trace clay. **Sand (with Silt and Clay)**: Very hard heaved earth to 0.08 m depth, underlain by running gypsiferous layer.

**Depth (m bgl)**

| | |
|---|---|
| 0.2 - 0.4 | **Clay (with Sand)**: Green, fine sand - medium sand, gypsum, medium to high plasticity, with organic material. |
| 0.4 - 0.7 | **Sand (with Silt)**: Pale orange, fine sand - coarse sand, gypsum-quartz, seed and crystalline gypsum, trace black heavy mineral sand. |
| 0.7 - 1.0 | **Clay (with Sand)**: Orange-brown, fine sand - medium sand, medium to high plasticity. |
| 1.0 - 1.5 | **Sand (with Clay)**: Orange-brown, fine sand - coarse sand, gypsum-quartz, crystalline gypsum. |
| 1.5 - 2.0 | **Clay (with Sand)**: Orange-brown, medium to high plasticity. |
| 2.0 - 2.2 | **Sand (with Clay)**: Orange-brown, fine sand - coarse sand, gypsum-quartz, crystalline gypsum. |
| 2.2 - 2.3 | **Clay (with Sand)**: Orange-brown, medium to high plasticity . |
| 2.3 - 2.4 | **Sand (with Clay)**: Orange, fine sand - coarse sand, gypsum. |
| 2.4 - 3.0 | **Clay (with Sand)**: Dominant, red-orange-brown, fine sand - medium sand, rounded to sub-rounded, quartz-gypsum, high plasticity, fine to coarse grained crystalline gypsum sand. **Sand**: Trace, black, heavy mineral sand. |
| 3.0 - 3.1 | **Sand (with Clay)**: Orange-brown, fine sand - coarse sand. |
| 3.1 - 5.3 | **Clay (with Sand)**: Dominant, red-orange-brown, fine sand - medium sand, rounded to sub-rounded, quartz, high plasticity, with fine to coarse grained crystalline gypsum sand. **Sand**: Trace, black, heavy mineral sand. **Clay (with Sand)**: From 4.0 m: laminated. |
| 5.3 - 5.8 | **Clay (with Sand)**: Red-orange-brown, fine sand - medium sand, rounded to sub-rounded, quartz-gypsum, medium to high plasticity, laminated, crystalline gypsum sand. **Clay (with Sand)**: Hole collapsing, abandoned. |

# Reward Minerals Ltd - Composite Log

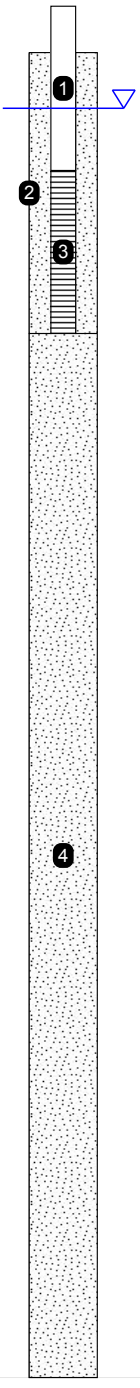
Bore ID: GP18

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 16-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 17-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | EarthTEC Drilling |
| Database ID: | 73357 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Driven Core | Northing: | 7412110.000 m | Surface RL: | 327.300 m |
| Bore Diameter: | 55 mm | Easting: | 484680.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Summary Lithology |
|---|---|---|
| Qhs | 0.0 | Sand with Silt and Clay |
| Qhs | 1.0 | |
| Qhl | | Clay with Sand |
| Qhs | 2.0 | Sand with Silt |
| | | Clay with Sand |
| | | Sand with Clay |
| Qpl | 3.0 | Clay with Sand |
| | 4.0 | |
| | 5.0 | Sand with Silt and Clay |
| | | Clay with Sand |
| | 6.0 | |
| | 7.0 | |
| | 8.0 | Sand with Clay |
| | | Clay with Sand |
| | 9.0 | |
| | 10.0 | |

Construction Diagram




1. Bore Casing: unplasticised polyvinylchloride uPVC, Class 12, 20.0 mm (nominal)
2. Annulus Fill: spoil
3. Screen: slotted casing, 0.5 mm aperture, 20.0 mm (nominal), with end cap
4. Void Fill: spoil

# BORE NAME: GP18

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73357 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | 0.426 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7412110.000 m |
| East: | 484680.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 327.300 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 16-Dec-2006 |
| Completed: | 17-Dec-2006 |
| Drilled Depth: | 10.0 |
| Drilling Company: | EarthTEC Drilling |
| Drilling Rig: | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 10.0 | Driven core (55 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.350) - 0.890 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| 0.890 - 2.120 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 2.1 | Annulus fill, ID-OD: 20 mm to 55 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 2.1 - 10.0 | Void fill, OD: 55 mm, spoil. Backfill of hole through partial collapse of bore. |

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 1.4 | Sand with Silt and Clay | Upper Lake Bed Sequence |
| 1.4 - 2.0 | Clay with Sand | Upper Lake Bed Sequence |
| 2.0 - 2.2 | Sand with Silt | Upper Lake Bed Sequence |
| 2.2 - 2.6 | Clay with Sand | Lower Lake Bed Sequence |
| 2.6 - 2.7 | Sand with Clay | Lower Lake Bed Sequence |
| 2.7 - 5.0 | Clay with Sand | Lower Lake Bed Sequence |
| 5.0 - 5.3 | Sand with Silt and Clay | Lower Lake Bed Sequence |
| 5.3 - 8.0 | Clay with Sand | Lower Lake Bed Sequence |
| 8.0 - 8.6 | Sand with Clay | Lower Lake Bed Sequence |
| 8.6 - 10.0 | Clay with Sand | Lower Lake Bed Sequence |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 1.0 **Sand (with Silt)**: Dominant, pale orange-brown, fine sand - coarse sand, gypsum-quartz, seed and crystalline gypsum, subrounded to rounded quartz. **Sand**: Trace, black, heavy mineral sand. **Sand (with Silt)**: Green-brown, from 0.5 - 0.6 m . **Sand (with Silt)**: Hard heaved earth surface to 0.05 m depth underlain by running gypsiferous sand.

1.0 - 1.4 **Sand (with Clay)**: Orange-brown, fine sand - coarse sand, gypsum-quartz.

**Depth (m bgl)**

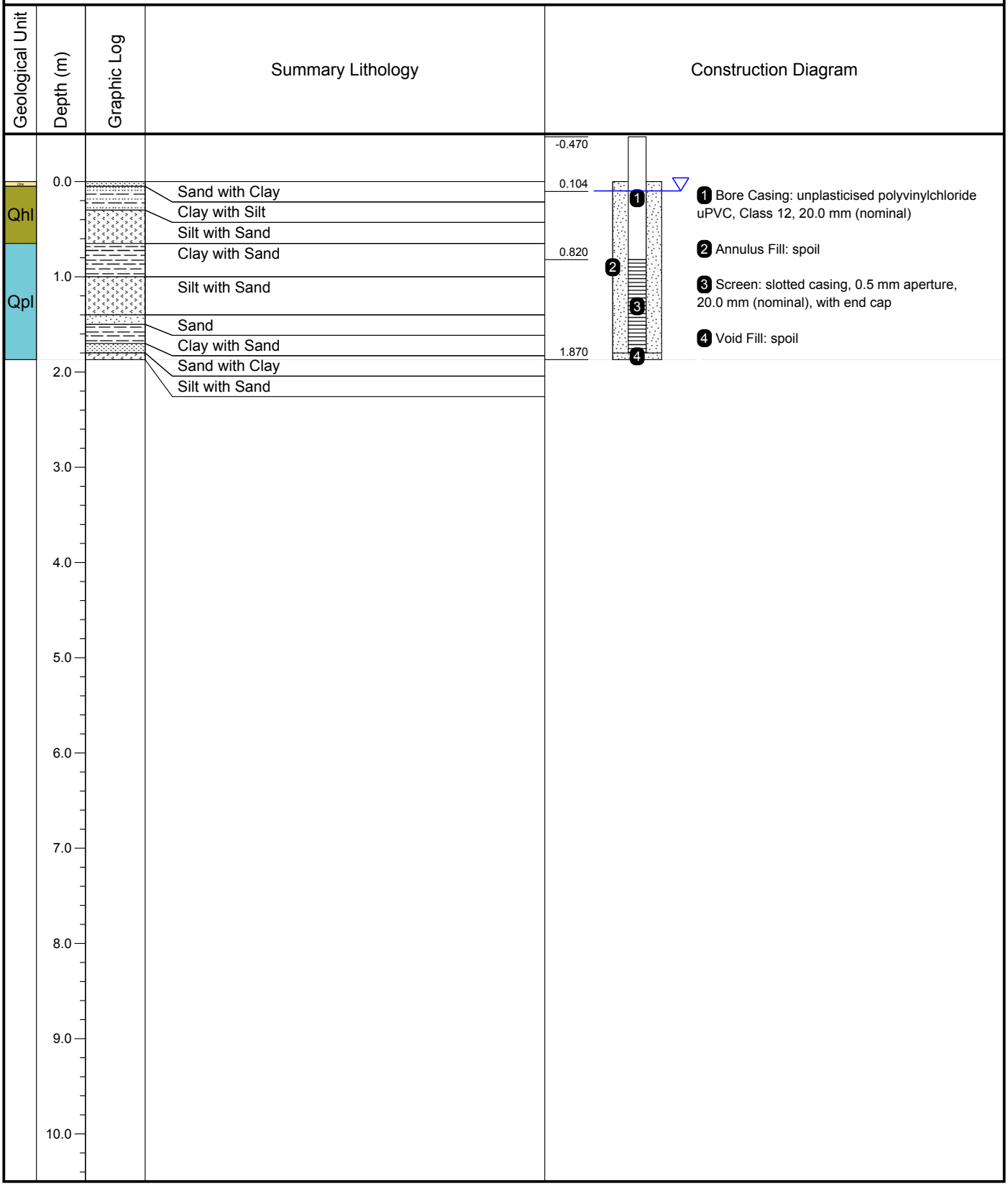
| | |
|---|---|
| 1.4 - 2.0 | **Clay (with Sand)**: Dominant, red-orange-brown, fine sand - medium sand, rounded to sub-rounded, quartz-gypsum, medium to high plasticity, crystalline gypsum sand. **Sand**: Trace, red-black, heavy mineral sand. |
| 2.0 - 2.2 | **Sand (with Silt)**: Pale orange-brown, fine sand - coarse sand, gypsum-quartz. |
| 2.2 - 2.6 | **Clay (with Sand)**: Orange-red-brown, high plasticity. |
| 2.6 - 2.7 | **Sand (with Clay)**: Orange, fine sand - coarse sand, gypsum. |
| 2.7 - 5.0 | **Clay (with Sand)**: Dominant, orange-brown, fine sand - medium sand, gypsum-quartz, medium-high plasticity, crystalline gypsum, fine subrounded-rounded quartz. **Sand**: Trace, black, heavy mineral sand. **Clay (with Sand)**: Red-orange-brown, from 3.0 m. **Clay (with Sand)**: Orange-brown, from 4.0 m. |
| 5.0 - 5.2 | **Sand (with Silt)**: Orange-brown, fine sand - coarse sand, gypsum. |
| 5.2 - 5.3 | **Sand (with Clay)**: Fine sand - medium sand. |
| 5.3 - 6.0 | **Clay (with Sand)**: Orange-brown, fine sand - medium sand, high plasticty. |
| 6.0 - 6.2 | **Clay (with Sand)**: Orange-brown, fine sand - coarse sand, gypsum, medium to high plasticity, crystalline gypsum. |
| 6.2 - 7.0 | **Clay (with Sand)**: Orange-brown, fine sand - medium sand, gypsum-quartz, high plasticity, crystalline gypsum. |
| 7.0 - 8.0 | **Clay (with Sand)**: Pale orange-brown, fine sand - medium sand, gypsum, medium-high plasticity, crystalline gypsum, with cellular gypsum aggregations. |
| 8.0 - 8.6 | **Sand (with Clay)**: Orange-brown, fine sand - medium sand, quartz-gypsum. |
| 8.6 - 9.0 | **Clay (with Sand)**: Orange-brown, high plasticity. |
| 9.0 - 9.2 | **Clay (with Sand)**: Orange-brown, fine sand - medium sand, medium to high plasticity. |
| 9.2 - 9.4 | **Clay (with Sand)**: Orange-brown, high plasticity. |
| 9.4 - 9.4 | **Clay (with Sand)**: Orange-brown, medium to high plasticity. |
| 9.4 - 10.0 | **Clay (with Sand)**: Pale orange-brown, fine sand - medium sand, rounded to sub-rounded, quartz-gypsum, high plasticity, crystalline gypsum. |

# Reward Minerals Ltd - Composite Log

Bore ID: GP19

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 17-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 17-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | EarthTEC Drilling |
| Database ID: | 73358 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Driven Core | Northing: | 7412101.000 m | Surface RL: | 330.700 m |
| Bore Diameter: | 55 mm | Easting: | 479474.000 m | Scheme: | GDA94 (Z51) |



# BORE NAME: GP19

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73358 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | 0.104 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7412101.000 m |
| East: | 479474.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 330.700 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 17-Dec-2006 |
| Completed: | 17-Dec-2006 |
| Drilled Depth: | 1.9 |
| Drilling Company: | EarthTEC Drilling |
| Drilling Rig: | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 1.9 | Driven core (55 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.470) - 0.820 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| 0.820 - 1.800 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 1.8 | Annulus fill, ID-OD: 20 mm to 55 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 1.8 - 1.9 | Void fill, OD: 55 mm, spoil. Backfill of hole through partial collapse of bore. |

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 0.1 | Sand with Clay | Upper Lake Bed Sequence |
| 0.1 - 0.3 | Clay with Silt | Upper Lake Bed Sequence |
| 0.3 - 0.7 | Silt with Sand | Upper Lake Bed Sequence |
| 0.7 - 1.0 | Clay with Sand | Lower Lake Bed Sequence |
| 1.0 - 1.4 | Silt with Sand | Lower Lake Bed Sequence |
| 1.4 - 1.5 | Sand | Lower Lake Bed Sequence |
| 1.5 - 1.7 | Clay with Sand | Lower Lake Bed Sequence |
| 1.7 - 1.8 | Sand with Clay | Lower Lake Bed Sequence |
| 1.8 - 1.9 | Silt with Sand | Lower Lake Bed Sequence |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 0.1 **Sand (with Clay)**: Pale green, fine sand - coarse sand, gypsum, black, brown clay with organic material to 0.04 m depth.

0.1 - 0.3 **Clay (with Sand)**: Green-brown, fine sand - medium sand, quartz, medium to high plasticity, with organic material.

0.3 - 0.7 **Silt (with Sand)**: Orange-brown, fine sand - medium sand, rounded to sub-rounded, quartz-gypsum, medium plasticity, crystalline gypsum, trace black heavy mineral sand.

0.7 - 1.0 **Clay (with Sand)**: Orange-brown, fine sand - medium sand, gypsum, medium to high plasticity.

**Depth (m bgl)**

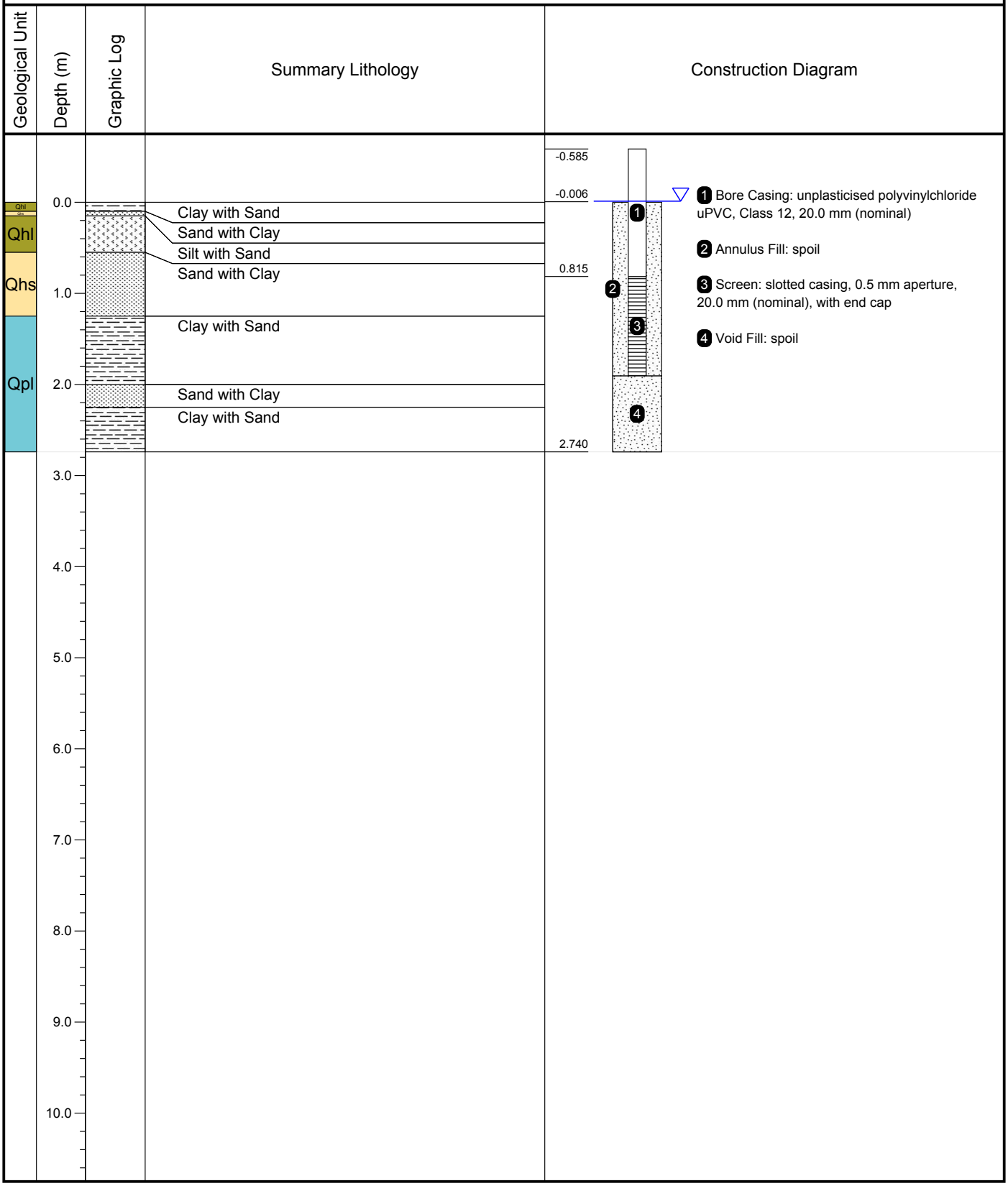
| | |
|---|---|
| 1.0 - 1.4 | **Silt (with Sand)**: Pale orange-brown, fine sand - medium sand, rounded to sub-rounded, quartz-gypsum, medium plasticity, crystalline gypsum with cellular gypsum sand. |
| 1.4 - 1.5 | **Sand**: Pale orange-grey, fine sand - coarse sand, gypsum. |
| 1.5 - 1.7 | **Clay (with Sand)**: Orange-brown, fine sand, quartz-gypsum, medium to high plasticity, crystalline gypsum sand. |
| 1.7 - 1.8 | **Sand (with Clay)**: Fine sand - coarse sand, gypsum. |
| 1.8 - 1.9 | **Silt (with Sand)**: Pale orange-brown, fine sand - coarse sand, gypsum. **Silt (with Sand)**: Refusal. |

# Reward Minerals Ltd - Composite Log

Bore ID: GP20

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 17-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 17-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | EarthTEC Drilling |
| Database ID: | 73359 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Driven Core | Northing: | 7412193.000 m | Surface RL: | 331.600 m |
| Bore Diameter: | 55 mm | Easting: | 468945.000 m | Scheme: | GDA94 (Z51) |



# BORE NAME: GP20

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73359 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | -0.006 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7412193.000 m |
| East: | 468945.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 331.600 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 17-Dec-2006 |
| Completed: | 17-Dec-2006 |
| Drilled Depth: | 2.7 |
| Drilling Company: | EarthTEC Drilling |
| Drilling Rig: | Geoprobe 540MT - Direct Push (dual tube Macro-Core closed piston sampling) |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 2.7 | Driven core (55 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.585) - 0.815 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| 0.815 - 1.905 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 1.9 | Annulus fill, ID-OD: 20 mm to 55 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 1.9 - 2.7 | Void fill, OD: 55 mm, spoil. Backfill of hole through partial collapse of bore. |

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 0.1 | Clay with Sand | Upper Lake Bed Sequence |
| 0.1 - 0.2 | Sand with Clay | Upper Lake Bed Sequence |
| 0.2 - 0.6 | Silt with Sand | Upper Lake Bed Sequence |
| 0.6 - 1.3 | Sand with Clay | Upper Lake Bed Sequence |
| 1.3 - 2.0 | Clay with Sand | Lower Lake Bed Sequence |
| 2.0 - 2.3 | Sand with Clay | Lower Lake Bed Sequence |
| 2.3 - 2.7 | Clay with Sand | Lower Lake Bed Sequence |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 0.1 **Clay (with Sand)**: Green-brown, trace gypsum gravel.

0.1 - 0.2 **Sand (with Clay)**: Green, fine sand - coarse sand, gypsum.

0.2 - 0.6 **Silt (with Sand)**: Orange-brown, fine sand - medium sand, rounded to sub-rounded, quartz-gypsum, low plasticity, seed and crystalline gypsum sand.

0.6 - 1.3 **Sand (with Clay)**: Orange-brown, fine sand - coarse sand, gypsum-quartz, seed and crystalline gypsum, fine grained subrounded to rounded quartz. **Sand (with Clay)**: Trace gypsum gravel. **Sand (with Clay)**: From 1.0 m: red, orange, brown, grey, with gypsum gravel .

1.3 - 2.0 **Clay (with Sand)**: Dominant, red-orange-brown, fine sand - coarse sand, gypsum-quartz, medium-high plasticity, crystalline gypsum, fine-medium grained quartz sand. **Sand**: Trace, black, heavy mineral sand.

**Depth (m bgl)**

| | |
|---|---|
| 2.0 - 2.3 | **Sand (with Clay)**: Red-orange-brown-grey, fine sand - coarse sand, gypsum, crystalline gypsum. |
| 2.3 - 2.7 | **Clay (with Sand)**: Pale orange-brown-red, fine sand - medium sand, gypsum-quartz, medium to high plasticity, crystalline gypsum, trace cellular gypsum. **Clay (with Sand)**: Refusal. |

# Reward Minerals Ltd - Composite Log

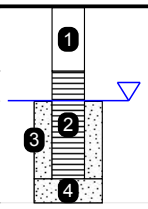
Bore ID: GP21

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 17-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 17-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | Global Groundwater |
| Database ID: | 73360 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Manually Excavated | Northing: | 7412117.000 m | Surface RL: | 331.450 m |
| Bore Diameter: | 42 mm | Easting: | 474178.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology |
|---|---|---|---|
| Qhl | 0.0 | | Clay with Sand |
| | | | Silt with Sand |
| Qpl | | | Clay with Sand |
| | 1.0 | | |
| | 2.0 | | |
| | 3.0 | | |
| | 4.0 | | |
| | 5.0 | | |
| | 6.0 | | |
| | 7.0 | | |
| | 8.0 | | |
| | 9.0 | | |
| | 10.0 | | |

Construction Diagram




1 Bore Casing: unplasticised polyvinylchloride uPVC, Class 12, 20.0 mm (nominal)

2 Screen: slotted casing, 0.5 mm aperture, 20.0 mm (nominal), with end cap

3 Annulus Fill: spoil

4 Void Fill: spoil

# BORE NAME: GP21

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73360 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | 0.000 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7412117.000 m |
| East: | 474178.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 331.450 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 17-Dec-2006 |
| Completed: | 17-Dec-2006 |
| Drilled Depth: | 0.8 |
| Drilling Company: | Global Groundwater |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 0.8 | Hand drill (42 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.740) - (0.240) | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| (0.240) - 0.610 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 0.6 | Annulus fill, ID-OD: 20 mm to 42 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.6 - 0.8 | Void fill, OD: 42 mm, spoil. Backfill of hole through partial collapse of bore. |

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 0.4 | Clay with Sand | Upper Lake Bed Sequence |
| 0.4 - 0.6 | Silt with Sand | Upper Lake Bed Sequence |
| 0.6 - 0.8 | Clay with Sand | Lower Lake Bed Sequence |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 0.4 **Clay (with Sand)**: Green, fine sand - medium sand, gypsum, medium to high plasticity, seed and crystalline gypsum.

0.4 - 0.6 **Silt (with Sand)**: Orange-brown, fine sand - medium sand, gypsum, high plasticity, seed and crystalline gypsum.

0.6 - 0.8 **Clay (with Sand)**: Orange-brown, fine sand - medium sand, gypsum-quartz, high plasticity, crystalline gypsum. **Clay (with Sand)**: Refusal.

# Reward Minerals Ltd - Composite Log

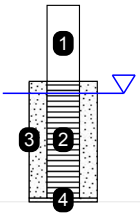
Bore ID: GP22

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 17-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 17-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | Global Groundwater |
| Database ID: | 73372 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Hand Drill | Northing: | 7401012.000 m | Surface RL: | 330.150 m |
| Bore Diameter: | 42 mm | Easting: | 479361.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology |
|---|---|---|---|
| Qhs | 0.0 | | Sand with Clay |
| Qhl | | | Clay with Sand |
| | 1.0 | | |
| | 2.0 | | |
| | 3.0 | | |
| | 4.0 | | |
| | 5.0 | | |
| | 6.0 | | |
| | 7.0 | | |
| | 8.0 | | |
| | 9.0 | | |
| | 10.0 | | |

Construction Diagram




1 Bore Casing: unplasticised polyvinylchloride uPVC, Class 12, 20.0 mm (nominal)

2 Screen: slotted casing, 0.5 mm aperture, 20.0 mm (nominal), with end cap

3 Annulus Fill: spoil

4 Void Fill: spoil

# BORE NAME: GP22

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73372 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | 0.100 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7401012.000 m |
| East: | 479361.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 330.150 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 17-Dec-2006 |
| Completed: | 17-Dec-2006 |
| Drilled Depth: | 1.0 |
| Drilling Company: | Global Groundwater |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 1.0 | Hand drill (42 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.600) - 0.000 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| 0.000 - 0.920 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 0.9 | Annulus fill, ID-OD: 20 mm to 42 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.9 - 1.0 | Void fill, OD: 42 mm, spoil. Backfill of hole through partial collapse of bore. |

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 0.3 | Sand with Clay | Upper Lake Bed Sequence |
| 0.3 - 1.0 | Clay with Sand | Upper Lake Bed Sequence |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 0.3 **Sand (with Clay)**: Pale green, fine sand - coarse sand, gypsum, seed and crystalline gypsum.

0.3 - 1.0 **Clay (with Sand)**: Pale orange-brown, fine sand - medium sand, gypsum, medium to high plasticity.
**Clay (with Sand)**: Refusal.

# Reward Minerals Ltd - Composite Log

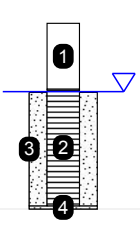
Bore ID: GP23

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 17-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 17-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | Global Groundwater |
| Database ID: | 73373 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Hand Drill | Northing: | 7401111.000 m | Surface RL: | 331.300 m |
| Bore Diameter: | 42 mm | Easting: | 474211.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology |
|---|---|---|---|
| Qhs | 0.0 | | Clay with Sand |
| Qpe | | | Sand with Clay |
| | | | Clay with Sand |
| | | | Sand with Silt |
| | 1.0 | | |
| | 2.0 | | |
| | 3.0 | | |
| | 4.0 | | |
| | 5.0 | | |
| | 6.0 | | |
| | 7.0 | | |
| | 8.0 | | |
| | 9.0 | | |
| | 10.0 | | |

Construction Diagram




1 Bore Casing: unplasticised polyvinylchloride uPVC, Class 12, 20.0 mm (nominal)

2 Screen: slotted casing, 0.5 mm aperture, 20.0 mm (nominal), with end cap

3 Annulus Fill: spoil

4 Void Fill: spoil

# BORE NAME: GP23

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73373 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | 0.000 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7401111.000 m |
| East: | 474211.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 331.300 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 17-Dec-2006 |
| Completed: | 17-Dec-2006 |
| Drilled Depth: | 0.9 |
| Drilling Company: | Global Groundwater |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 0.9 | Hand drill (42 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.545) - (0.025) | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| (0.025) - 0.895 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 0.9 | Annulus fill, ID-OD: 20 mm to 42 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.9 - 0.9 | Void fill, OD: 42 mm, spoil. Backfill of hole through partial collapse of bore. |

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 0.1 | Clay with Sand | Upper Lake Bed Sequence |
| 0.1 - 0.2 | Sand with Clay | Upper Lake Bed Sequence |
| 0.2 - 0.4 | Clay with Sand | Aeolian Deposit |
| 0.4 - 0.9 | Sand with Silt | Aeolian Deposit |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 0.1 **Clay (with Sand)**: Green, quartz-gypsum, medium plasticity.

0.1 - 0.2 **Sand (with Clay)**: Green-brown, fine sand - coarse sand, gypsum.

0.2 - 0.4 **Clay (with Sand)**: Green, medium to high plasticity.

0.4 - 0.9 **Sand (with Silt)**: Orange-brown, fine sand - medium sand, quartz-gypsum, seed gypsum, trace black heavy mineral sand. **Sand (with Silt)**: Refusal.

# Reward Minerals Ltd - Composite Log

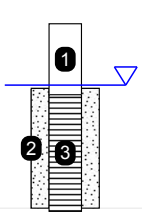
Bore ID: GP24

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 17-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 17-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | Global Groundwater |
| Database ID: | 73374 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Hand Drill | Northing: | 7401120.000 m | Surface RL: | 329.300 m |
| Bore Diameter: | 42 mm | Easting: | 469161.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology |
|---|---|---|---|
| Qhl | 0.0 | | Clay with Sand |
| Qhs | 1.0 | | Sand with Clay |
| | 2.0 | | |
| | 3.0 | | |
| | 4.0 | | |
| | 5.0 | | |
| | 6.0 | | |
| | 7.0 | | |
| | 8.0 | | |
| | 9.0 | | |
| | 10.0 | | |

Construction Diagram




1 Bore Casing: unplasticised polyvinylchloride uPVC, Class 12, 20.0 mm (nominal)

2 Annulus Fill: spoil

3 Screen: slotted casing, 0.5 mm aperture, 20.0 mm (nominal), with end cap

# BORE NAME: GP24

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73374 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | -0.020 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7401120.000 m |
| East: | 469161.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 329.300 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 17-Dec-2006 |
| Completed: | 17-Dec-2006 |
| Drilled Depth: | 0.9 |
| Drilling Company: | Global Groundwater |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 0.9 | Hand drill (42 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.510) - 0.050 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| 0.050 - 0.970 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 0.9 | Annulus fill, ID-OD: 20 mm to 42 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 0.5 | Clay with Sand | Upper Lake Bed Sequence |
| 0.5 - 0.9 | Sand with Clay | Upper Lake Bed Sequence |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 0.5 **Clay (with Sand)**: Dominant, green-brown, fine sand - medium sand, quartz-gypsum, medium to high plasticity, fine to course crystalline and seed gypsum . **Sand**: Trace, black, heavy mineral sand.

0.5 - 0.9 **Sand (with Clay)**: Green-brown, fine sand - coarse sand, gypsum-quartz, seed and crystalline gypsum, fine to medium grained quartz. **Sand (with Clay)**: Refusal.

# Reward Minerals Ltd - Composite Log

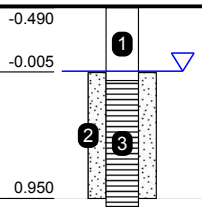
Bore ID: GP25

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 17-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 17-Dec-2006 |
| LOCATION: | Lake Diisappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | Global Groundwater |
| Database ID: | 73375 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Hand Drill | Northing: | 7400929.000 m | Surface RL: | 331.450 m |
| Bore Diameter: | 42 mm | Easting: | 464043.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology |
|---|---|---|---|
| Qhl | 0.0 | | Clay with Sand |
| Qhs | 1.0 | | Sand with Clay |
| | 2.0 | | |
| | 3.0 | | |
| | 4.0 | | |
| | 5.0 | | |
| | 6.0 | | |
| | 7.0 | | |
| | 8.0 | | |
| | 9.0 | | |
| | 10.0 | | |

## Construction Diagram




1 Bore Casing: unplasticised polyvinylchloride uPVC, Class 12, 20.0 mm (nominal)

2 Annulus Fill: spoil

3 Screen: slotted casing, 0.5 mm aperture, 20.0 mm (nominal), with end cap

# BORE NAME: GP25

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73375 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | -0.005 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7400929.000 m |
| East: | 464043.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 331.450 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 17-Dec-2006 |
| Completed: | 17-Dec-2006 |
| Drilled Depth: | 1.0 |
| Drilling Company: | Global Groundwater |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 1.0 | Hand drill (42 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.490) - 0.060 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| 0.060 - 1.010 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 1.0 | Annulus fill, ID-OD: 20 mm to 42 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 0.7 | Clay with Sand | Upper Lake Bed Sequence |
| 0.7 - 1.0 | Sand with Clay | Upper Lake Bed Sequence |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 0.7 **Clay (with Sand)**: Green, fine sand - coarse sand, gypsum-quartz, medium plasticity, fine to medium grained quartz.

0.7 - 1.0 **Sand (with Clay)**: Green, fine sand - coarse sand, gypsum.

# Reward Minerals Ltd - Composite Log

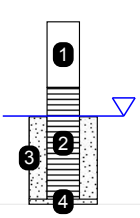
Bore ID: GP26

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 17-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 17-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | Global Groundwater |
| Database ID: | 73376 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Hand Drill | Northing: | 7395465.000 m | Surface RL: | 329.100 m |
| Bore Diameter: | 42 mm | Easting: | 470142.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology |
|---|---|---|---|
| Qhl | 0.0 | | Sand with Silt |
| Qpe | | | Clay with Sand |
| | | | Sand with Clay |
| | 1.0 | | |
| | 2.0 | | |
| | 3.0 | | |
| | 4.0 | | |
| | 5.0 | | |
| | 6.0 | | |
| | 7.0 | | |
| | 8.0 | | |
| | 9.0 | | |
| | 10.0 | | |

Construction Diagram




1. Bore Casing: unplasticised polyvinylchloride uPVC, Class 12, 20.0 mm (nominal)
2. Screen: slotted casing, 0.5 mm aperture, 20.0 mm (nominal), with end cap
3. Annulus Fill: spoil
4. Void Fill: spoil

# BORE NAME: GP26

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73376 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | 0.000 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7395465.000 m |
| East: | 470142.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 329.100 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006). Note the slotted casing sits above ground surface by 0.242 m

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 17-Dec-2006 |
| Completed: | 17-Dec-2006 |
| Drilled Depth: | 0.7 |
| Drilling Company: | Global Groundwater |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 0.7 | Hand drill (42 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.782) - (0.242) | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| (0.242) - 0.678 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 0.7 | Annulus fill, ID-OD: 20 mm to 42 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.7 - 0.7 | Void fill, OD: 42 mm, spoil. Backfill of hole through partial collapse of bore. |

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 0.1 | Sand with Silt | Upper Lake Bed Sequence |
| 0.1 - 0.3 | Clay with Sand | Upper Lake Bed Sequence |
| 0.3 - 0.7 | Sand with Clay | Aeolian Deposit |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 0.1 **Sand (with Silt)**: Green, fine sand - coarse sand, gypsum.

0.1 - 0.3 **Clay (with Sand)**: Green-brown, high plasticity, with organic matter.

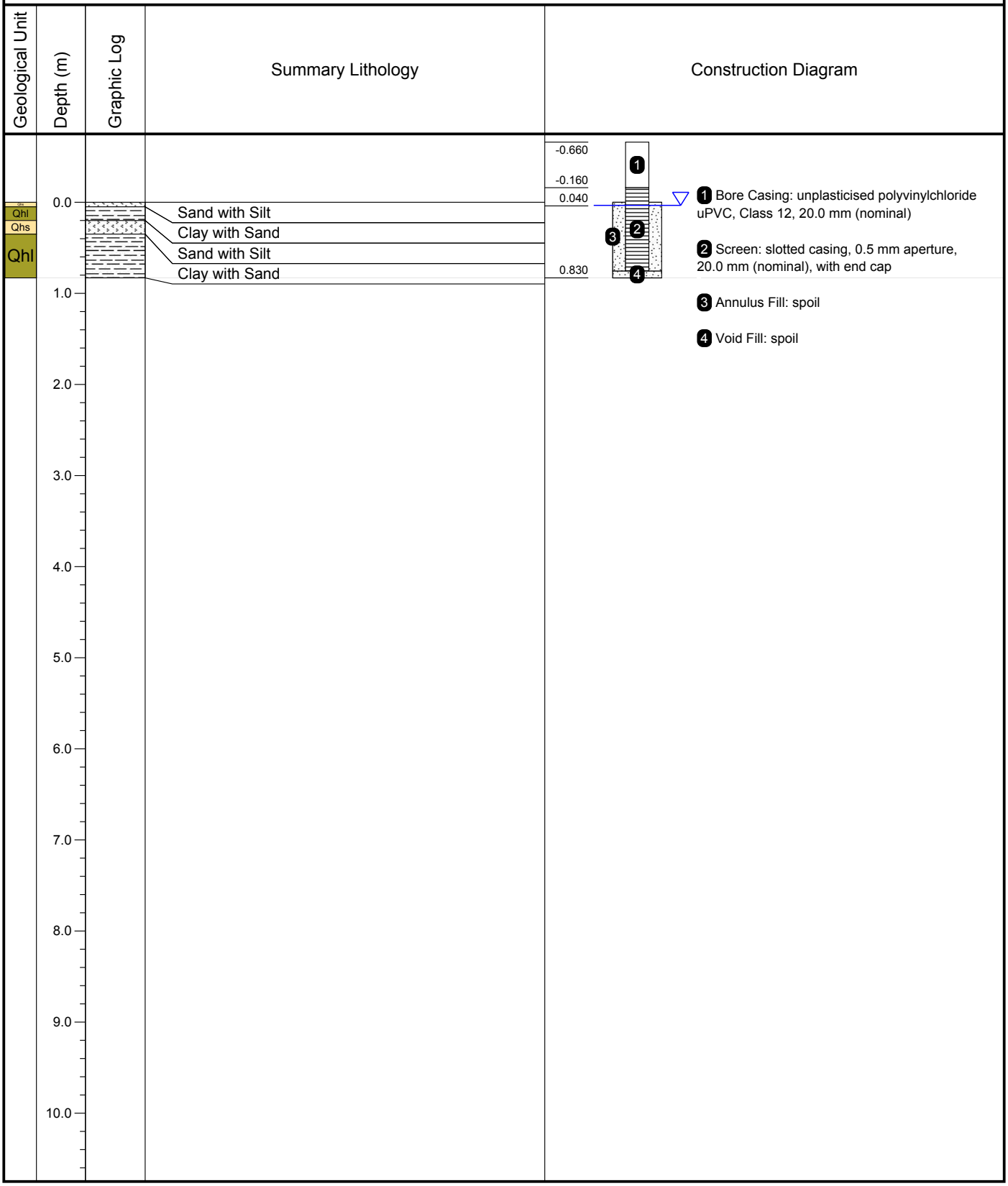
0.3 - 0.7 **Sand (with Clay)**: Fine sand, mostly medium sand, quartz-gypsum, seed gypsum, trace black heavy mineral sand. **Sand (with Clay)**: Refusal.

# Reward Minerals Ltd - Composite Log

Bore ID: GP27

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 17-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 17-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | Global Groundwater |
| Database ID: | 73377 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Hand Drill | Northing: | 7395531.000 m | Surface RL: | 329.600 m |
| Bore Diameter: | 42 mm | Easting: | 474278.000 m | Scheme: | GDA94 (Z51) |



# BORE NAME: GP27

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73377 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | 0.040 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7395531.000 m |
| East: | 474278.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 329.600 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 17-Dec-2006 |
| Completed: | 17-Dec-2006 |
| Drilled Depth: | 0.8 |
| Drilling Company: | Global Groundwater |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 0.8 | Hand drill (42 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.660) - (0.160) | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| (0.160) - 0.754 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 0.8 | Annulus fill, ID-OD: 20 mm to 42 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.8 - 0.8 | Void fill, OD: 42 mm, spoil. Backfill of hole through partial collapse of bore. |

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 0.1 | Sand with Silt | Upper Lake Bed Sequence |
| 0.1 - 0.2 | Clay with Sand | Upper Lake Bed Sequence |
| 0.2 - 0.4 | Sand with Silt | Upper Lake Bed Sequence |
| 0.4 - 0.8 | Clay with Sand | Upper Lake Bed Sequence |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 0.1 **Sand (with Silt)**: Green, fine sand - coarse sand, gypsum.

0.1 - 0.2 **Clay (with Sand)**: Green, fine sand - coarse sand, gypsum, medium plasticity.

0.2 - 0.4 **Sand (with Silt)**: Pale orange, fine sand - medium sand, quartz-gypsum.

0.4 - 0.8 **Clay (with Sand)**: Orange-brown, fine sand - coarse sand, gypsum, medium to high plasticity, laminated. Refusal.

# Reward Minerals Ltd - Composite Log

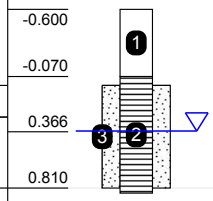
Bore ID: GP28

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 17-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 17-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | Global Groundwater |
| Database ID: | 73378 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Hand Drill | Northing: | 7395491.000 m | Surface RL: | 330.400 m |
| Bore Diameter: | 42 mm | Easting: | 479420.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology |
|---|---|---|---|
| Qhs | 0.0 | | Sand with Silt |
| Qhl | | | Clay with Sand |
| | 1.0 | | |
| | 2.0 | | |
| | 3.0 | | |
| | 4.0 | | |
| | 5.0 | | |
| | 6.0 | | |
| | 7.0 | | |
| | 8.0 | | |
| | 9.0 | | |
| | 10.0 | | |

Construction Diagram




1 Bore Casing: unplasticised polyvinylchloride uPVC, Class 12, 20.0 mm (nominal)

2 Screen: slotted casing, 0.5 mm aperture, 20.0 mm (nominal), with end cap

3 Annulus Fill: spoil

# BORE NAME: GP28

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73378 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | 0.366 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7395491.000 m |
| East: | 479420.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 330.400 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 17-Dec-2006 |
| Completed: | 17-Dec-2006 |
| Drilled Depth: | 0.8 |
| Drilling Company: | Global Groundwater |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 0.8 | Hand drill (42 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.600) - (0.070) | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| (0.070) - 0.850 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 0.8 | Annulus fill, ID-OD: 20 mm to 42 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 0.3 | Sand with Silt | Upper Lake Bed Sequence |
| 0.3 - 0.8 | Clay with Sand | Upper Lake Bed Sequence |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 0.2 **Sand**: Orange-brown, fine sand - coarse sand, gypsum, with silt, white halite deposits at surface to 0.05 m depth.

0.2 - 0.3 **Sand (with Silt)**: Green, fine sand - coarse sand, gypsum.

0.3 - 0.4 **Clay (with Sand)**: Green, medium to high plasticity .

0.4 - 0.8 **Clay (with Sand)**: Red-brown, medium to high plasticity. **Clay (with Sand)**: Refusal.

# Reward Minerals Ltd - Composite Log

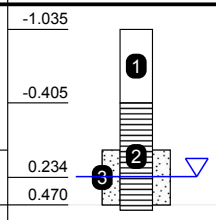
Bore ID: GP29

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 17-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 17-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | Global Groundwater |
| Database ID: | 73379 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Hand Drill | Northing: | 7385866.000 m | Surface RL: | 331.600 m |
| Bore Diameter: | 42 mm | Easting: | 474464.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology |
|---|---|---|---|
| Qhs | 0.0 | | Sand with Silt |
| | 1.0 | | |
| | 2.0 | | |
| | 3.0 | | |
| | 4.0 | | |
| | 5.0 | | |
| | 6.0 | | |
| | 7.0 | | |
| | 8.0 | | |
| | 9.0 | | |
| | 10.0 | | |
| | 11.0 | | |

Construction Diagram




1 Bore Casing: unplasticised polyvinylchloride uPVC, Class 12, 20.0 mm (nominal)

2 Screen: slotted casing, 0.5 mm aperture, 20.0 mm (nominal), with end cap

3 Annulus Fill: spoil

# BORE NAME: GP29

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73379 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | 0.234 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7385866.000 m |
| East: | 474464.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 331.600 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 17-Dec-2006 |
| Completed: | 17-Dec-2006 |
| Drilled Depth: | 0.5 |
| Drilling Company: | Global Groundwater |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 0.5 | Hand drill (42 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (1.035) - (0.405) | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| (0.405) - 0.515 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 0.5 | Annulus fill, ID-OD: 20 mm to 42 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 0.5 | Sand with Silt | Upper Lake Bed Sequence |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 0.5 **Sand (with Silt)**: Pale orange-brown, fine sand - coarse sand, gypsum, seed gypsum, becomes coarse between 0.2 and 0.23 m. Refusal.

# Reward Minerals Ltd - Composite Log

Bore ID: GP30

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 17-Dec-2006 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 17-Dec-2006 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | K Bamblett |
| SITE: | Not recorded. | DRILLING COMPANY: | Global Groundwater |
| Database ID: | 73380 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Hand Drill | Northing: | 7384180.000 m | Surface RL: | 331.200 m |
| Bore Diameter: | 42 mm | Easting: | 479382.000 m | Scheme: | GDA94 (Z51) |

Geological Unit | Depth (m) | Graphic Log | Summary Lithology | Construction Diagram

Qhl

0.0 — Sand

Clay with Sand

0.500

1.0

2.0

3.0

4.0

5.0

6.0

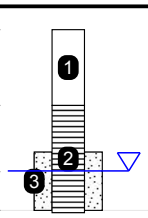
7.0

8.0

9.0

10.0

11.0




1 Bore Casing: unplasticised polyvinylchloride uPVC, Class 12, 20.0 mm (nominal)

2 Screen: slotted casing, 0.5 mm aperture, 20.0 mm (nominal), with end cap

3 Annulus Fill: spoil

# BORE NAME: GP30

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73380 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | 0.168 m at 18-Dec-2006 |

## LOCATION

| | |
|---|---|
| North: | 7384180.000 m |
| East: | 479382.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 331.200 m (+/-0.050 m) |

## SUMMARY COMMENTS

This is a summary log; please refer to Global Groundwater's Lake Disappointment Bore Completion and Test Pumping Report (September, 2007) bore logs for greater detail. Elevation (assumed from ground) from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd, 2008); superseding elevations in Lake Disappointment Bore Completion and Test Pumping Report (Global Groundwater, 2007). Casing diameter and class sourced from Proposed Water Level Monitoring Piezometer Construction (EARTHtec Drilling Services, 2006)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 17-Dec-2006 |
| Completed: | 17-Dec-2006 |
| Drilled Depth: | 0.5 |
| Drilling Company: | Global Groundwater |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 0.5 | Hand drill (42 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (1.050) - (0.400) | Casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | None. |
| (0.400) - 0.520 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 20 mm (nominal), joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 0.5 | Annulus fill, ID-OD: 20 mm to 42 mm, spoil. Backfill of hole through partial collapse of bore. |

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 0.1 | Sand | Upper Lake Bed Sequence |
| 0.1 - 0.5 | Clay with Sand | Upper Lake Bed Sequence |

## LITHOLOGICAL DESCRIPTIONS

Logged by: K Bamblett

**Depth (m bgl)**

0.0 - 0.1 **Sand**: Green-brown, fine sand - coarse sand, gypsum.

0.1 - 0.2 **Clay (with Sand)**: Green-brown, fine sand - coarse sand, gypsum, low plasticity .

0.2 - 0.5 **Clay (with Sand)**: Orange-brown, fine sand - coarse sand, gypsum-quartz, medium plasticity, seed and crystalline gypsum, more green with depth.

# Reward Minerals Ltd - Composite Log

Bore ID: AGP31

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | Not recorded. |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | Not recorded. |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | Not recorded. |
| Database ID: | 73381 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Not recorded. | Northing: | 7395377.000 m | Surface RL: | 331.500 m |
| Bore Diameter: | Not recorded. | Easting: | 491627.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology | Construction Diagram |
|---|---|---|---|---|
| None recorded | 0.0<br>1.0<br>2.0<br>3.0<br>4.0<br>5.0<br>6.0<br>7.0<br>8.0<br>9.0<br>10.0 | | None recorded. | None recorded. |

# BORE NAME: AGP31

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73381 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | Not measured |

## LOCATION

| | |
|---|---|
| North: | 7395377.000 m |
| East: | 491627.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 331.500 m (+/-0.050 m) |

## SUMMARY COMMENTS

All data sourced from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd 2008) . Elevation assumed from ground. Depth: 1 m

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | Not specified. |
| Completed: | Not specified. |
| Drilled Depth: | |
| Drilling Company: | Not specified. |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

No drilling methods recorded.

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

No casing or slots/screens recorded.

### Annulus Fill

No fill recorded.

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

No samples recorded.

## LITHOLOGICAL DESCRIPTIONS

No samples recorded.

# Reward Minerals Ltd - Composite Log

Bore ID: AGP32

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | Not recorded. |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | Not recorded. |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | Not recorded. |
| Database ID: | 73382 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Not recorded. | Northing: | 7389548.000 m | Surface RL: | 331.500 m |
| Bore Diameter: | Not recorded. | Easting: | 494090.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology | Construction Diagram |
|---|---|---|---|---|
| None recorded | 0.0<br>1.0<br>2.0<br>3.0<br>4.0<br>5.0<br>6.0<br>7.0<br>8.0<br>9.0<br>10.0 | | None recorded. | None recorded. |

# BORE NAME: AGP32

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73382 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Indeterminate |
| Purpose: | Exploration/research |
| Water level: | Not measured |

## LOCATION

| | |
|---|---|
| North: | 7389548.000 m |
| East: | 494090.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 331.500 m (+/-0.050 m) |

## SUMMARY COMMENTS

All data sourced from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd 2008) . Elevation assumed from ground. Depth: 1 m

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | Not specified. |
| Completed: | Not specified. |
| Drilled Depth: | |
| Drilling Company: | Not specified. |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

No drilling methods recorded.

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

No casing or slots/screens recorded.

### Annulus Fill

No fill recorded.

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

No samples recorded.

## LITHOLOGICAL DESCRIPTIONS

No samples recorded.

# Reward Minerals Ltd - Composite Log

Bore ID: AGP33

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | Not recorded. |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | Not recorded. |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | Not recorded. |
| Database ID: | 73383 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Not recorded. | Northing: | 7400909.000 m | Surface RL: | 331.500 m |
| Bore Diameter: | Not recorded. | Easting: | 493589.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology | Construction Diagram |
|---|---|---|---|---|
| None recorded | 0.0<br>1.0<br>2.0<br>3.0<br>4.0<br>5.0<br>6.0<br>7.0<br>8.0<br>9.0<br>10.0 | | None recorded. | None recorded. |

# BORE NAME: AGP33

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73383 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Indeterminate |
| Purpose: | Exploration/research |
| Water level: | Not measured |

## LOCATION

| | |
|---|---|
| North: | 7400909.000 m |
| East: | 493589.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 331.500 m (+/-0.050 m) |

## SUMMARY COMMENTS

All data sourced from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd 2008) . Elevation assumed from ground. Depth: 1m

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | Not specified. |
| Completed: | Not specified. |
| Drilled Depth: | |
| Drilling Company: | Not specified. |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

No drilling methods recorded.

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

No casing or slots/screens recorded.

### Annulus Fill

No fill recorded.

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

No samples recorded.

## LITHOLOGICAL DESCRIPTIONS

No samples recorded.

# Reward Minerals Ltd - Composite Log

Bore ID: AGP34

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | Not recorded. |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | Not recorded. |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | Not recorded. |
| Database ID: | 73384 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Not recorded. | Northing: | 7423125.000 m | Surface RL: | 331.500 m |
| Bore Diameter: | Not recorded. | Easting: | 486167.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology | Construction Diagram |
|---|---|---|---|---|
| None recorded | 0.0<br>1.0<br>2.0<br>3.0<br>4.0<br>5.0<br>6.0<br>7.0<br>8.0<br>9.0<br>10.0 | | None recorded. | None recorded. |

# BORE NAME: AGP34

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73384 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Indeterminate |
| Purpose: | Exploration/research |
| Water level: | Not measured |

## LOCATION

| | |
|---|---|
| North: | 7423125.000 m |
| East: | 486167.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 331.500 m (+/-0.050 m) |

## SUMMARY COMMENTS

All data sourced from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd 2008) . Elevation assumed from ground. Depth: 1m

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | Not specified. |
| Completed: | Not specified. |
| Drilled Depth: | |
| Drilling Company: | Not specified. |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

No drilling methods recorded.

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

No casing or slots/screens recorded.

### Annulus Fill

No fill recorded.

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

No samples recorded.

## LITHOLOGICAL DESCRIPTIONS

No samples recorded.

# Reward Minerals Ltd - Composite Log

Bore ID: AGP35

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | Not recorded. |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | Not recorded. |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | Not recorded. |
| Database ID: | 73385 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Not recorded. | Northing: | 7423125.000 m | Surface RL: | 331.500 m |
| Bore Diameter: | Not recorded. | Easting: | 487505.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology | Construction Diagram |
|---|---|---|---|---|
| None recorded | 0.0<br>1.0<br>2.0<br>3.0<br>4.0<br>5.0<br>6.0<br>7.0<br>8.0<br>9.0<br>10.0 | | None recorded. | None recorded. |

# BORE NAME: AGP35

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73385 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Indeterminate |
| Purpose: | Exploration/research |
| Water level: | Not measured |

## LOCATION

| | |
|---|---|
| North: | 7423125.000 m |
| East: | 487505.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 331.500 m (+/-0.050 m) |

## SUMMARY COMMENTS

All data sourced from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd 2008) . Elevation assumed from ground. Depth: 1m

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | Not specified. |
| Completed: | Not specified. |
| Drilled Depth: | |
| Drilling Company: | Not specified. |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

No drilling methods recorded.

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

No casing or slots/screens recorded.

### Annulus Fill

No fill recorded.

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

No samples recorded.

## LITHOLOGICAL DESCRIPTIONS

No samples recorded.

# Reward Minerals Ltd - Composite Log

Bore ID: AGP36

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | Not recorded. |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | Not recorded. |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | Not recorded. |
| Database ID: | 73386 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Not recorded. | Northing: | 7423125.000 m | Surface RL: | 331.500 m |
| Bore Diameter: | Not recorded. | Easting: | 491056.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology | Construction Diagram |
|---|---|---|---|---|
| None recorded | 0.0<br>1.0<br>2.0<br>3.0<br>4.0<br>5.0<br>6.0<br>7.0<br>8.0<br>9.0<br>10.0 | | None recorded. | None recorded. |

# BORE NAME: AGP36

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73386 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Indeterminate |
| Purpose: | Exploration/research |
| Water level: | Not measured |

## LOCATION

| | |
|---|---|
| North: | 7423125.000 m |
| East: | 491056.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | GPS |
| Directions: | None specified. |
| Elevation: | 331.500 m (+/-0.050 m) |

## SUMMARY COMMENTS

All data sourced from Lake Disappointment Potassium Sulphate (K2SO4) Resource Report (CoxsRocks Pty Ltd 2008) . Elevation assumed from ground. Depth: 1m

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | Not specified. |
| Completed: | Not specified. |
| Drilled Depth: | |
| Drilling Company: | Not specified. |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

No drilling methods recorded.

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

No casing or slots/screens recorded.

### Annulus Fill

No fill recorded.

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

No samples recorded.

## LITHOLOGICAL DESCRIPTIONS

No samples recorded.

| Hole ID | Drilling Method | Easting, Zone 51 | Northing | RL (ground) (mAHD) | Stickup (m) | Drilled Depth (m) | Diameter (mm) | Ream Diameter (mm) | Ream To (m) | Casing Diameter (mm) |
|---|---|---|---|---|---|---|---|---|---|---|
| **LDRC1409** | RC Rotary Air/Percussion | 466980.00 | 7420740.00 | - | - | 101 | 100 | - | - | 50? |
| **LDRC1410** | RC Rotary Air/Percussion | 466560.00 | 7425440.00 | - | - | 101 | 100 | - | - | - |
| **LDRC1411** | RC Rotary Air/Percussion | 469200.00 | 7427950.00 | - | - | 102 | 100 | - | - | - |
| **LDRC1412** | RC Rotary Air/Percussion | 472470.00 | 7430930.00 | - | - | 102 | 100 | - | - | - |
| **LDRC1413** | RC Rotary Air/Percussion | 475240.00 | 7434030.00 | - | - | 78 | 100 | - | - | - |
| **LDRC1414** | RC Rotary Air/Percussion | 476870.00 | 7436710.00 | - | - | 102 | 100 | - | - | - |
| **LDRC1416** | RC Rotary Air/Percussion | 480130.00 | 7436730.00 | - | - | 101 | 100 | - | - | - |
| **LDRC1417** | RC Rotary Air/Percussion | 483840.00 | 7437110.00 | - | - | 114 | 100 | - | - | - |
| **LDRC1418** | RC Rotary Air/Percussion | 488270.00 | 7436780.00 | - | - | 94 | 100 | - | - | - |
| **LDRC1419** | RC Rotary Air/Percussion | 492080.00 | 7437930.00 | - | - | 95 | 100 | - | - | - |
| **LDRC1420** | RC Rotary Air/Percussion | 496190.00 | 7438730.00 | - | - | 125 | 100 | - | - | - |
| **LDRC1421** | RC Rotary Air/Percussion | 501400.00 | 7438720.00 | - | - | 125 | 100 | - | - | - |
| **LDRC1459** | | | | | | | | | | |
| **LDRC1460** | RC Rotary Air/Percussion | 481400.00 | 7429100.00 | - | - | 102 | 100 | - | - | - |
| **LDRC1461** | RC Rotary Air/Percussion | 481560.00 | 7425711.00 | - | - | 132 | 100 | - | - | - |
| **LDRC1462** | Rotary Blade/Percussion | 481132.00 | 7427547.00 | - | - | 156 | 108 | - | - | 50 |
| **LDRC1463** | Conventional 650/350 PSI Reverse Circulation (blade and hammer) | 481130.00 | 7427520.00 | - | - | 120 | 100 | 225.00 | 120.00 | 150 |
| **LDRC1601** | Rotary Air/Percussion | 482684.70 | 7441245.00 | 354.430 | 0.590 | 120 | 114 | 292 | 120 | 200 |
| **LDRC1602** | Rotary Air/Percussion | 483335.19 | 7441999.43 | 354.460 | 0.620 | 100 | 114 | 292 | 100 | 200 |
| ***LDRC1603*** | *Rotary Air/Percussion* | *482211.00* | *7443076.00* | - | - | *138* | 127 | - | - | - |
| **LDRC1604** | Rotary Air/Percussion | 483561.20 | 7442676.39 | 352.190 | 0.480 | 130 | 127 | - | - | 50 |
| **LDRC1605** | Rotary Air/Percussion | 481924.68 | 7440927.37 | 353.520 | 0.345 | 132 | 127 | - | - | 50 |

**Notes**

Aquifer test data available
Missing/assumed data

| Hole ID | Casing Type | Blank Casing (m) | | Slotted Casing (m) | | Aperture (mm) | Gravel Pack Size (mm) | Flow Rate (L/s) | Completion |
|---|---|---|---|---|---|---|---|---|---|
| | | Top | Bottom | Top | Bottom | | | | |
| **LDRC1409** | uPVC | - | - | - | - | 0.5? | 1.5 - 3? | - | Concrete seal and cap? |
| **LDRC1410** | - | - | - | - | - | - | - | - | - |
| **LDRC1411** | - | - | - | - | - | - | - | - | - |
| **LDRC1412** | - | - | - | - | - | - | - | - | - |
| **LDRC1413** | - | - | - | - | - | - | - | - | - |
| **LDRC1414** | - | - | - | - | - | - | - | - | - |
| **LDRC1416** | - | - | - | - | - | - | - | - | - |
| **LDRC1417** | - | - | - | - | - | - | - | - | - |
| **LDRC1418** | - | - | - | - | - | - | - | - | - |
| **LDRC1419** | - | - | - | - | - | - | - | - | - |
| **LDRC1420** | - | - | - | - | - | - | - | - | - |
| **LDRC1421** | - | - | - | - | - | - | - | - | - |
| **LDRC1459** | | - | - | - | - | | | | |
| **LDRC1460** | - | - | - | - | - | - | - | 5.0 | - |
| **LDRC1461** | - | - | - | - | - | - | - | 5.0 | - |
| **LDRC1462** | uPVC | - | - | 0.00 | 46.00 | 0.5 | 1.5-3 | 8.0 | - |
| **LDRC1463** | uPVC | - | - | 0.00 | 120.00 | 1.0 | - | 25.0 | - |
| **LDRC1601** | uPVC Class 12 | 0 | 6 | 6 | 12 | 1.0 | >1.5 & >5 | 4.1 | Cement seal to natural ground surface, concrete plinth, and cap |
| | | 12 | 24 | 24 | 108 | | | | |
| | | 108 | 120 | | | | | | |
| **LDRC1602** | uPVC Class 12 | 0 | 27 | 27 | 93 | 1.0 | >1.5 & >5 | 18.0 | Cement seal to natural ground surface, concrete plinth, and cap |
| | | 93 | 99 | | | | | | |
| ***LDRC1603*** | - | - | - | - | - | - | - | *1.8* | - |
| **LDRC1604** | uPVC Class 12 | 0 | 6 | 6 | 18 | 0.5 | 1.5-3 | 2.3 | - |
| **LDRC1605** | uPVC Class 12 | 0 | 6 | 6 | 18 | 0.5 | 1.5-3 | 2.0 | - |

**Notes**

| Hole ID | Well Development | Geology Data Avail.? | Status | Type | Tenements | Purpose |
|---|---|---|---|---|---|---|
| **LDRC1409** | Flushed with clean water and airlift 8 hrs? | N | Functional? | Monitoring Bore | ELs45/3285, 45/3286 and L45/302 (registered under Holocene Pty Ltd (Reward Minerals Ltd) | Investigate Palaeovalley system - prelim reconnaissance work |
| **LDRC1410** | - | N | - | Monitoring Bore | ELs45/3285, 45/3286 and L45/302 (registered under Holocene Pty Ltd (Reward Minerals Ltd) | Investigate Palaeovalley system - prelim reconnaissance work |
| **LDRC1411** | - | N | - | Monitoring Bore | ELs45/3285, 45/3286 and L45/302 (registered under Holocene Pty Ltd (Reward Minerals Ltd) | Investigate Palaeovalley system - prelim reconnaissance work |
| **LDRC1412** | - | N | - | Monitoring Bore | ELs45/3285, 45/3286 and L45/302 (registered under Holocene Pty Ltd (Reward Minerals Ltd) | Investigate Palaeovalley system - prelim reconnaissance work |
| **LDRC1413** | - | N | - | Monitoring Bore | ELs45/3285, 45/3286 and L45/302 (registered under Holocene Pty Ltd (Reward Minerals Ltd) | Investigate Palaeovalley system - prelim reconnaissance work |
| **LDRC1414** | - | N | - | Monitoring Bore | ELs45/3285, 45/3286 and L45/302 (registered under Holocene Pty Ltd (Reward Minerals Ltd) | Investigate Palaeovalley system - prelim reconnaissance work |
| **LDRC1416** | - | N | - | Monitoring Bore | ELs45/3285, 45/3286 and L45/302 (registered under Holocene Pty Ltd (Reward Minerals Ltd) | Investigate Palaeovalley system - prelim reconnaissance work |
| **LDRC1417** | - | N | - | Monitoring Bore | ELs45/3285, 45/3286 and L45/302 (registered under Holocene Pty Ltd (Reward Minerals Ltd) | Investigate Palaeovalley system - prelim reconnaissance work |
| **LDRC1418** | - | N | - | Monitoring Bore | ELs45/3285, 45/3286 and L45/302 (registered under Holocene Pty Ltd (Reward Minerals Ltd) | Investigate Palaeovalley system - prelim reconnaissance work |
| **LDRC1419** | - | N | - | Monitoring Bore | ELs45/3285, 45/3286 and L45/302 (registered under Holocene Pty Ltd (Reward Minerals Ltd) | Investigate Palaeovalley system - prelim reconnaissance work |
| **LDRC1420** | - | N | - | Monitoring Bore | ELs45/3285, 45/3286 and L45/302 (registered under Holocene Pty Ltd (Reward Minerals Ltd) | Investigate Palaeovalley system - prelim reconnaissance work |
| **LDRC1421** | - | N | - | Monitoring Bore | ELs45/3285, 45/3286 and L45/302 (registered under Holocene Pty Ltd (Reward Minerals Ltd) | Investigate Palaeovalley system - prelim reconnaissance work |
| **LDRC1459** | | N | | Monitoring Bore | - | - |
| **LDRC1460** | - | N | - | Monitoring Bore | ELs45/3285, 45/3286 and L45/302 (registered under Holocene Pty Ltd (Reward Minerals Ltd) | Investigate Palaeovalley system - prelim reconnaissance work |
| **LDRC1461** | - | N | - | Monitoring Bore | ELs45/3285 and L45/302 (registered under Holocene Pty Ltd (Reward Minerals Ltd) | Investigate Palaeovalley system - prelim reconnaissance work (last two holes of a 15 hole program after two failed) |
| **LDRC1462** | - | N | - | Monitoring Bore | ELs45/3285 and L45/302 (registered under Holocene Pty Ltd (Reward Minerals Ltd) | Investigate Palaeovalley system - prelim reconnaissance work (last two holes of a 15 hole program after two failed) |
| **LDRC1463** | - | N | - | Monitoring Bore | EL45/2801 | - |
| **LDRC1601** | Airlift 96m @ 4.1l/s for 4 hours | Y | Functional | Production Bore | - | - |
| **LDRC1602** | Airlift 96m @ 18l/s for 4 hours | Y | Functional | Production Bore | - | - |
| ***LDRC1603*** | - | *N* | *Not Functional* | *NA* | - | - |
| **LDRC1604** | - | Y | - | Monitoring Bore | - | - |
| **LDRC1605** | - | Y | - | Monitoring Bore | - | - |

**Notes**

| Hole ID | Access | Comments |
|---|---|---|
| **LDRC1409** | Via Canning Stock Route | Drilled as a sighter hole north of Lake Disappointment, drilled on ~4km spacings. Basement not reached due to drilling difficulties. |
| **LDRC1410** | Via Canning Stock Route | Drilled as a sighter hole north of Lake Disappointment, drilled on ~4km spacings. Basement not reached due to drilling difficulties. |
| **LDRC1411** | Via Canning Stock Route | Drilled as a sighter hole north of Lake Disappointment, drilled on ~4km spacings |
| **LDRC1412** | Via Canning Stock Route | Drilled as a sighter hole north of Lake Disappointment, drilled on ~4km spacings |
| **LDRC1413** | Via Canning Stock Route | Drilled as a sighter hole north of Lake Disappointment, drilled on ~4km spacings |
| **LDRC1414** | Via Canning Stock Route | Drilled as a sighter hole north of Lake Disappointment, drilled on ~4km spacings |
| **LDRC1416** | Via Canning Stock Route | Drilled as a sighter hole north of Lake Disappointment, drilled on ~4km spacings |
| **LDRC1417** | Via Canning Stock Route | Drilled as a sighter hole north of Lake Disappointment, drilled on ~4km spacings |
| **LDRC1418** | Via Canning Stock Route | Drilled as a sighter hole north of Lake Disappointment, drilled on ~4km spacings |
| **LDRC1419** | Via Canning Stock Route | Drilled as a sighter hole north of Lake Disappointment, drilled on ~4km spacings. Basement not reached due to drilling difficulties. |
| **LDRC1420** | Via Canning Stock Route | Drilled as a sighter hole north of Lake Disappointment, drilled on ~4km spacings |
| **LDRC1421** | Via Canning Stock Route | Drilled as a sighter hole north of Lake Disappointment, drilled on ~4km spacings |
| **LDRC1459** | - | Failed? Collapsed due to high flow rates? See April 2014 ASX reports |
| **LDRC1460** | Via Canning Stock Route | Drilled as a sighter hole north of Lake Disappointment, drilled on ~4km spacings |
| **LDRC1461** | Via Wiljabu Track | LDDH1402 was drilled to twin this |
| **LDRC1462** | Via Wiljabu Track | LDDH1401 was drilled to twin this |
| **LDRC1463** | - | During airlifting, air and water discharged from LDDH1401 (~35 m away). Pump testing done in 2014 (as per ASX report 13 Oct 2014) but we have no data. >4L/s CRT. |
| **LDRC1601** | - | - |
| **LDRC1602** | - | - |
| ***LDRC1603*** | - | *Abandoned.Why? Backfilled with what?* |
| **LDRC1604** | - | - |
| **LDRC1605** | - | - |

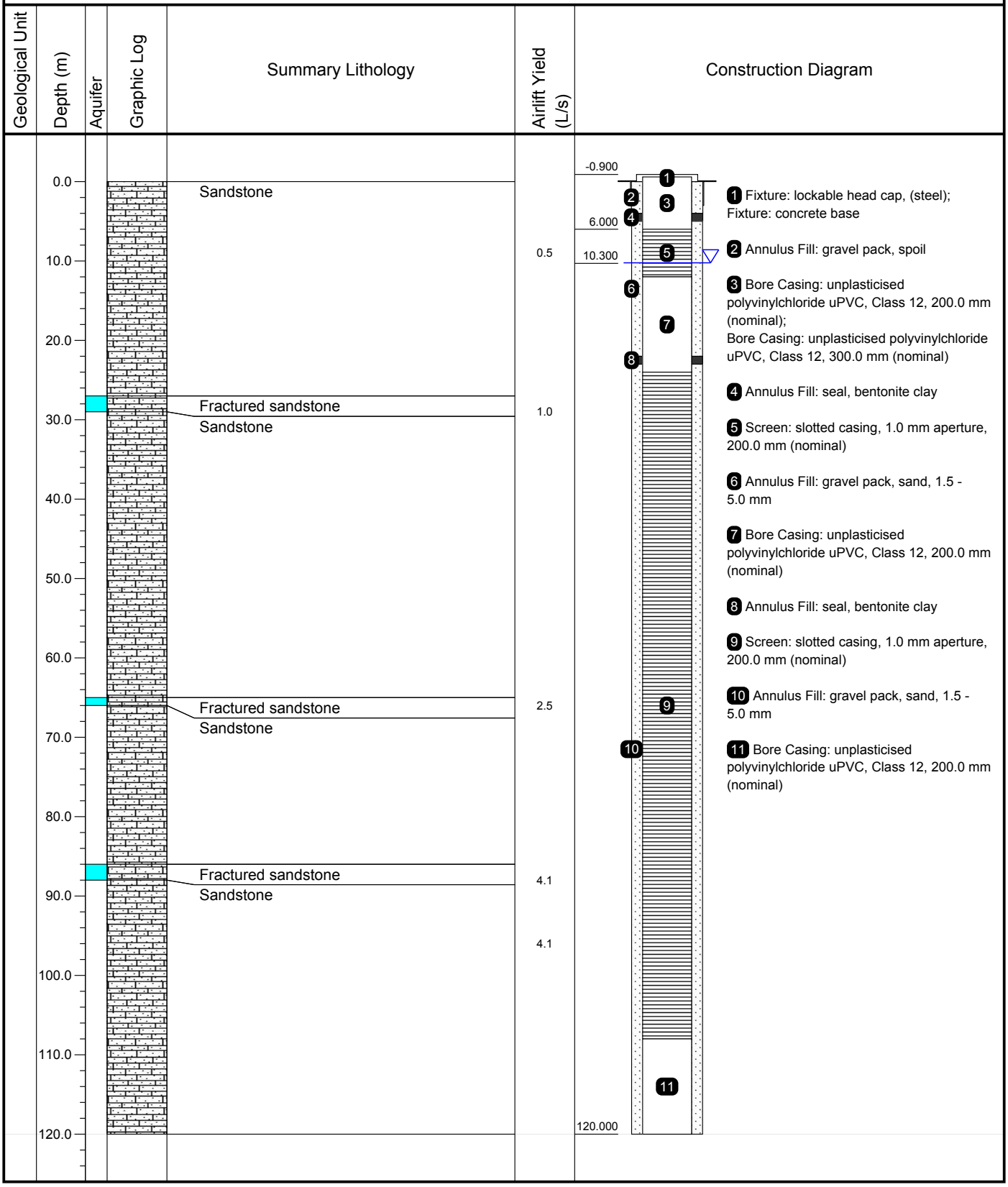
**Notes**

# Reward Minerals Ltd - Composite Log

Bore ID: LDRC1601

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 12-Mar-2016 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 12-Mar-2016 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | NDRC Drilling Pty Ltd |
| Database ID: | 73315 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Rotary Hammer | Northing: | 7441245.000 m | Surface RL: | 354.430 m |
| Bore Diameter: | 292 mm | Easting: | 482684.700 m | Scheme: | GDA94 (Z51) |



# BORE NAME: LDRC1601

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73315 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Mining |
| Water level: | 10.300 m at 12-Mar-2016 |

## LOCATION

| | |
|---|---|
| North: | 7441245.000 m |
| East: | 482684.700 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | Differential GPS (+/-0.040 m) |
| Directions: | None specified. |
| Elevation: | 354.430 m (+/-0.040 m) |

## SUMMARY COMMENTS

Bore collars were reamed to 355mm; fitted with 300mm DIA UPVC Solid Casing; grouted and cemented in place to natural surface. Pilot hole was reamed to 290mm DIA and 200mm DIA UPVC solid casings and screens (1mm slot) were installed as required. Filter/washed gravels(> 5mmDIA) packs were installed to an average 3m above the screen. A bentonite seal was installed above the gravel pack and, where required, the bore annulus was backfilled using clean drilling cuttings. A concrete plinth and 250mm DIA 0.90m height steel riser with lockable cap were then installed to protect integrity of the bores. Drilling method; Rotary Air/Percussion.

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 12-Mar-2016 |
| Completed: | 12-Mar-2016 |
| Drilled Depth: | 120.0 |
| Drilling Company: | NDRC Drilling Pty Ltd |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 120.0 | Reverse circulation hammer (200 mm) | Air |

## CONSTRUCTION

### Fixtures

| Depth (m bgl) | Construction |
|---|---|
| (0.900) - 0.000 | Lockable head cap, steel, circle, 250 mm (nominal). |
| (0.100) - 0.000 | Concrete base, concrete, square, 500 mm (nominal). |

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.590) - 6.000 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 200 mm (nominal), wall thickness 11.1 mm, joins: unknown. | None. |
| 0.000 - 3.000 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 300 mm (nominal), wall thickness 11.1 mm, joins: unknown. Surface casing. | None. |
| 6.000 - 12.000 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 200 mm (nominal), wall thickness 11.1 mm, joins: unknown. | 1 mm aperture. |
| 12.000 - 24.000 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 200 mm (nominal), wall thickness 11.1 mm, joins: unknown. | None. |
| 24.000 - 108.000 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 200 mm (nominal), wall thickness 11.1 mm, joins: unknown. | 1 mm aperture. |
| 108.000 - 120.000 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 200 mm (nominal), wall thickness 11.1 mm, joins: unknown. | None. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 4.0 | Gravel pack, ID-OD: 200 mm to 292 mm, spoil. |
| 4.0 - 5.0 | Seal, ID-OD: 200 mm to 292 mm, bentonite clay. |
| 5.0 - 22.0 | Gravel pack (1.5 mm to 5.0 mm), ID-OD: 200 mm to 290 mm, sand. Grain size estimate. |
| 22.0 - 23.0 | Seal, ID-OD: 200 mm to 290 mm, bentonite clay. |
| 23.0 - 120.0 | Gravel pack (1.5 mm to 5.0 mm), ID-OD: 200 mm to 290 mm, sand. Grain size estimate. |

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

Key: x - unspecified method

| Date | Depth (m bgl) | Drill Rate (m/min) | Airlift Yield (L/s) | EC (uS/cm) | pH | Comment |
|---|---|---|---|---|---|---|
| 12-Mar | 9.0 - 9.0 | - | $0.50^{x}$ | - | - | |
| 12-Mar | 29.0 - 29.0 | - | $1.00^{x}$ | - | - | |

| Date | Depth (m bgl) | Drill Rate (m/min) | Airlift Yield (L/s) | EC (uS/cm) | pH | Comment |
|---|---|---|---|---|---|---|
| 12-Mar | 66.0 - 66.0 | - | 2.50[x] | - | - | |
| 12-Mar | 88.0 - 88.0 | - | 4.10[x] | - | - | Sample: No increase in water flow whilst drilling below. |
| 12-Mar | 96.0 - 96.0 | - | 4.10[x] | - | - | Sample: No increase in water flow whilst drilling. |

## PARAMETERS MEASURED DURING DEVELOPMENT

| Date | Time | Airlift Yield (L/s) | EC (uS/cm) | pH | Sediment | Water | Sediment |
|---|---|---|---|---|---|---|---|
| *12-Mar to 12-Mar: backwashing. Airlift 96m @ 4.1L/s for 4 hours.* | | | | | | | |

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 27.0 | Sandstone | |
| 27.0 - 29.0 | Fractured sandstone | |
| 29.0 - 65.0 | Sandstone | |
| 65.0 - 66.0 | Fractured sandstone | |
| 66.0 - 86.0 | Sandstone | |
| 86.0 - 88.0 | Fractured sandstone | |
| 88.0 - 120.0 | Sandstone | |

## LITHOLOGICAL DESCRIPTIONS

Logged by:

**Depth (m bgl)**

0.0 - 1.0 **Unknown**: Topsoil (lithology not specified by logger). Comment: Dry

1.0 - 2.0 **Sandstone**: Extremely weathered rock.

2.0 - 3.0 **Sandstone**: Fresh rock.

3.0 - 5.0 **Sandstone**: Slightly weathered rock.

5.0 - 13.0 **Sandstone**: Fresh rock, with thin bands of weathering.

13.0 - 27.0 **Sandstone**: Fine sand - coarse sand, fresh rock. Comment: Dry

27.0 - 29.0 **Sandstone**: Fresh rock, Fractured.

29.0 - 65.0 **Sandstone**: Fine sand - coarse sand, fresh rock, with weathered bands.

65.0 - 66.0 **Sandstone**: Fresh rock, fractured.

66.0 - 86.0 **Sandstone**: Fine sand - coarse sand, fresh rock.

86.0 - 88.0 **Sandstone**: Fresh rock, fractured.

88.0 - 105.0 **Sandstone**: Fine sand - coarse sand, fresh rock.

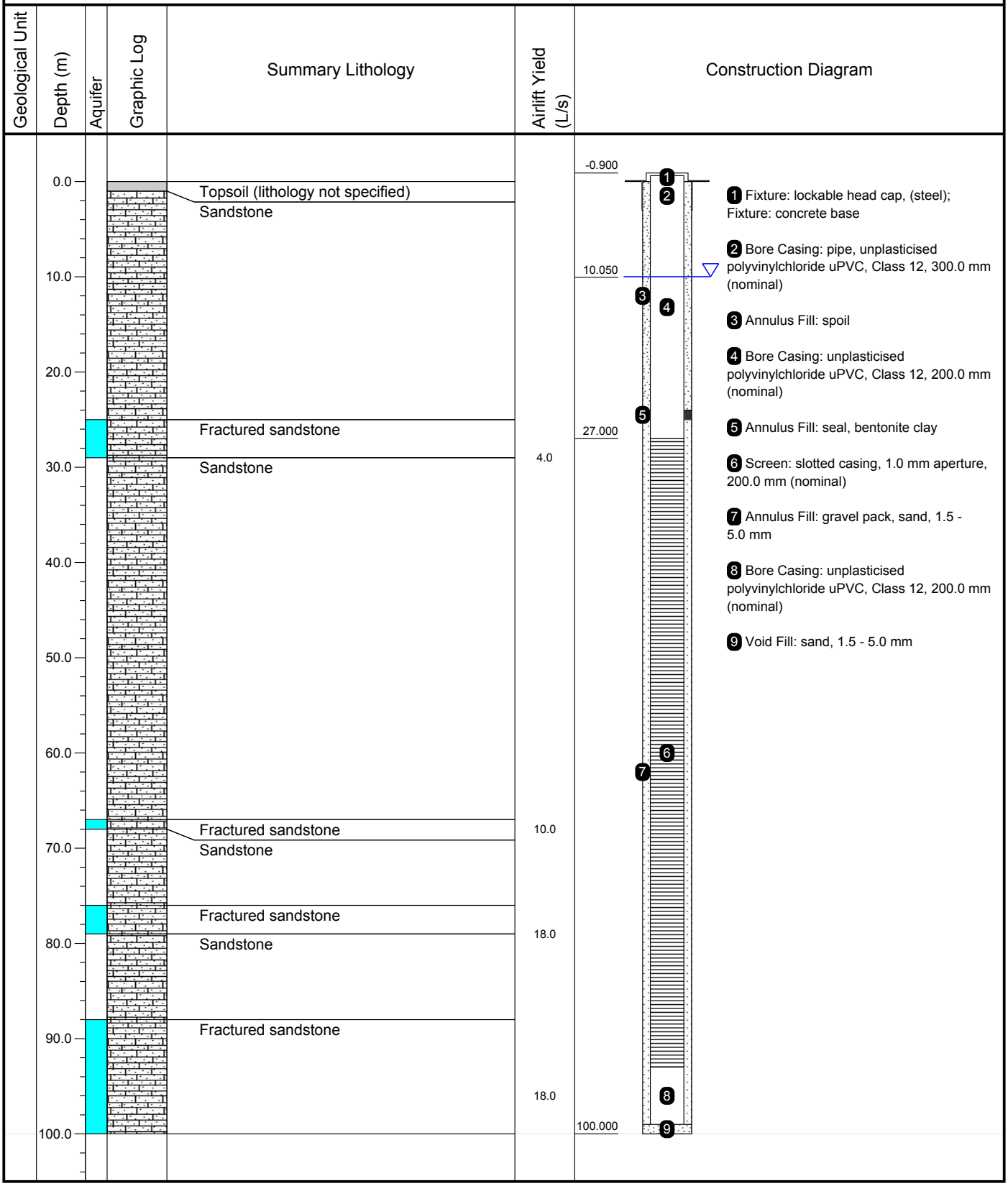
105.0 - 120.0 **Sandstone**: Fresh rock, Fresh to weathered with depth.

# Reward Minerals Ltd - Composite Log

Bore ID: LDRC1602

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 27-Mar-2016 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | 27-Mar-2016 |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | NDRC Drilling Pty Ltd |
| Database ID: | 73316 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Rotary Hammer | Northing: | 7441999.430 m | Surface RL: | 354.460 m |
| Bore Diameter: | 292 mm | Easting: | 483335.190 m | Scheme: | GDA94 (Z51) |



# BORE NAME: LDRC1602

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73316 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Mining |
| Water level: | 10.050 m at 27-Mar-2016 |

## LOCATION

| | |
|---|---|
| North: | 7441999.430 m |
| East: | 483335.190 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | Differential GPS (+/-0.050 m) |
| Directions: | None specified. |
| Elevation: | 354.460 m (+/-0.050 m) |

## SUMMARY COMMENTS

Bore collars were reamed to 355mm; fitted with 300mm DIA UPVC Solid Casing; grouted and cemented in place to natural surface. Pilot hole was reamed to 290mm DIA and 200mm DIA UPVC solid casings and screens (1mm slott) were installed as required. Filter/washed gravels(> 5mmDIA) packs were installed to an average 3m above the screen. A bentonite seal was installed above the gravel pack and, where required, the bore annulus was backfilled using clean drilling cuttings. A concrete plinth and 250mm DIA 0.90m height steel riser with lockable cap were then installed to protect integrity of the bores. Drilling method; Rotary Air/Percussion.

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 27-Mar-2016 |
| Completed: | 27-Mar-2016 |
| Drilled Depth: | 100.0 |
| Drilling Company: | NDRC Drilling Pty Ltd |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 100.0 | Reverse circulation hammer (292 mm) | Air |

## CONSTRUCTION

### Fixtures

| Depth (m bgl) | Construction |
|---|---|
| (0.900) - 0.000 | Lockable head cap, steel, circle, 250 mm (nominal). |
| (0.100) - 0.000 | Concrete base, concrete, square, 500 mm (nominal). |

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.620) - 27.000 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 200 mm (nominal), wall thickness 11.1 mm, joins: unknown. | None. |
| 0.000 - 3.000 | Pipe, unplasticised polyvinylchloride uPVC, Class 12, 300 mm (nominal), wall thickness 11.1 mm, joins: unknown. Surface casing. | None. |
| 27.000 - 93.000 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 200 mm (nominal), wall thickness 11.1 mm, joins: unknown. | 1 mm aperture. |
| 93.000 - 99.000 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 200 mm (nominal), wall thickness 11.1 mm, joins: unknown. | None. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 24.0 | Annulus fill, ID-OD: 200 mm to 292 mm, spoil. |
| 24.0 - 25.0 | Seal, ID-OD: 200 mm to 292 mm, bentonite clay. |
| 25.0 - 99.0 | Gravel pack (1.5 mm to 5.0 mm), ID-OD: 200 mm to 292 mm, sand. Gravel pack size estimate. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 99.0 - 100.0 | Void fill (1.5 mm to 5.0 mm), OD: 292 mm, sand. Gravel size estimated. |

## PARAMETERS MEASURED DURING DRILLING

Key: x - unspecified method

| Date | Depth (m bgl) | Drill Rate (m/min) | Airlift Yield (L/s) | EC (uS/cm) | pH | Comment |
|---|---|---|---|---|---|---|
| 27-Mar | 29.0 - 29.0 | - | 4.00[x] | - | - | |
| 27-Mar | 68.0 - 68.0 | - | 10.00[x] | - | - | Sample: Water flow increasing with depth beyond this point. |
| 27-Mar | 79.0 - 79.0 | - | 18.00[x] | - | - | |
| 27-Mar | 96.0 - 96.0 | - | 18.00[x] | - | - | |

## PARAMETERS MEASURED DURING DEVELOPMENT

| Date | Time | Airlift Yield (L/s) | EC (uS/cm) | pH | Sediment | Water | Sediment |
|---|---|---|---|---|---|---|---|
| *27-Mar to 27-Mar: backwashing. Airlift 96m @ 18L/s for 4 hours.* | | | | | | | |

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 1.0 | Topsoil (lithology not specified) | |
| 1.0 - 25.0 | Sandstone | |
| 25.0 - 29.0 | Fractured sandstone | |
| 29.0 - 67.0 | Sandstone | |
| 67.0 - 68.0 | Fractured sandstone | |
| 68.0 - 76.0 | Sandstone | |
| 76.0 - 79.0 | Fractured sandstone | |
| 79.0 - 88.0 | Sandstone | |
| 88.0 - 100.0 | Fractured sandstone | |

## LITHOLOGICAL DESCRIPTIONS

Logged by:

**Depth (m bgl)**

0.0 - 1.0 **Unknown**: Topsoil (lithology not specified by logger). Comment: Dry

1.0 - 2.0 **Sandstone**: Extremely weathered rock.

2.0 - 3.0 **Sandstone**: Fresh rock.

3.0 - 10.0 **Sandstone**: Mostly fine sand, fresh rock, fresh to slightly weathered.

10.0 - 25.0 **Sandstone**: Fresh rock, with thin beds of weathering, <0.25m. Comment: Dry

25.0 - 29.0 **Sandstone**: Fresh rock, fractured. Comment: Moist

29.0 - 67.0 **Sandstone**: Fine sand - coarse sand, fresh rock, with small bands of weathering 33 - 66 m. Comment: Dry

67.0 - 68.0 **Sandstone**: Fresh rock, fractured.

68.0 - 76.0 **Sandstone**: Fine sand - coarse sand, fresh rock.

76.0 - 79.0 **Sandstone**: Fresh rock, fractured.

79.0 - 88.0 **Sandstone**: Mostly fine sand, fresh rock.

88.0 - 100.0 **Sandstone**: Slightly weathered rock, fractured.

# Reward Minerals Ltd - Composite Log

Bore ID: LDRC1603

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | Mar-2016 |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | Not recorded. |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | Not recorded. |
| Database ID: | 73319 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Rotary Hammer | Northing: | 7443076.000 m | Surface RL: | Not recorded |
| Bore Diameter: | 127 mm | Easting: | 482211.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology | Airlift Yield (L/s) | Construction Diagram |
|---|---|---|---|---|---|
| None recorded | 0.0, 10.0, 20.0, 30.0, 40.0, 50.0, 60.0, 70.0, 80.0, 90.0, 100.0, 110.0, 120.0, 130.0, 140.0 | | None recorded. | 1.8 | 138.000 |

# BORE NAME: LDRC1603

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73319 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Abandoned |
| Purpose: | Monitoring |
| Water level: | Not measured |

## LOCATION

| | |
|---|---|
| North: | 7443076.000 m |
| East: | 482211.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | Unknown |
| Directions: | None specified. |
| Elevation: | Not measured. |

## SUMMARY COMMENTS

Abandoned

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | Mar-2016 |
| Completed: | Not specified. |
| Drilled Depth: | 138.0 |
| Drilling Company: | Not specified. |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 138.0 | Reverse circulation hammer (127 mm) | Air |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

No casing or slots/screens recorded.

### Annulus Fill

No fill recorded.

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

Key: x - unspecified method

| Date | Depth (m bgl) | Drill Rate (m/min) | Airlift Yield (L/s) | EC (uS/cm) | pH | Comment |
|---|---|---|---|---|---|---|
| Mar | 0.0 - 138.0 | - | 1.80[x] | - | - | |

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

No samples recorded.

## LITHOLOGICAL DESCRIPTIONS

No samples recorded.

# Reward Minerals Ltd - Composite Log

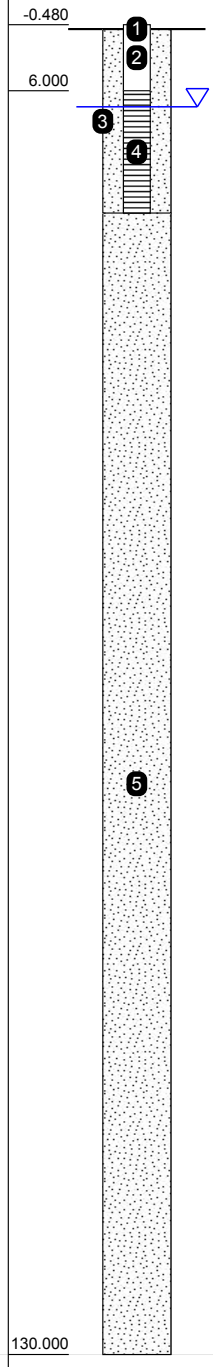
Bore ID: LDRC1604

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 31-Mar-2016 (estimate) |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | Not recorded. |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | Not recorded. |
| Database ID: | 73317 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Rotary Hammer | Northing: | 7442676.390 m | Surface RL: | 352.190 m |
| Bore Diameter: | 127 mm | Easting: | 483561.200 m | Scheme: | GDA94 (Z51) |

| Depth (m) | Summary Lithology | Airlift Yield (L/s) |
|---|---|---|
| 0.0 | Sand | |
| | Silcrete with Sand | |
| | Fractured sandstone, Quartzite | |
| 10.0 | | |
| | Fractured sandstone, Quartzite, Ironstone | |
| | Sandstone with Quartzite and Ironstone | 0.3 |
| 20.0 | | 0.3 |
| | Siltstone with Quartzite | 0.5 |
| 30.0 | | |
| | Sandstone | 1.0 |
| 40.0 | Siltstone with Quartzite | 1.0 |
| | | |
| 50.0 | | |
| | Sandstone with Quartzite and Ironstone | 2.0 |
| 60.0 | | |
| 70.0 | | |
| 80.0 | | |
| | Fractured sandstone, Quartzite, Ironstone | 1.9 |
| 90.0 | | |
| 100.0 | | 1.9 |
| | Siltstone with Quartzite | 2.3 |
| | Sandstone with Quartzite and Ironstone | |
| 110.0 | | |
| 120.0 | | |
| 130.0 | | 2.3 |

Construction Diagram




1. Fixture: concrete base
2. Bore Casing: unplasticised polyvinylchloride uPVC, Class 12, 50.0 mm (nominal)
3. Annulus Fill: sand, 1.5 - 3.0 mm
4. Screen: slotted casing, 0.5 mm aperture, 50.0 mm (nominal), with end cap
5. Void Fill: sand, 1.5 - 3.0 mm

# BORE NAME: LDRC1604

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73317 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Monitoring |
| Water level: | 7.650 m at 31-Mar-2016 (estimate) |

## LOCATION

| | |
|---|---|
| North: | 7442676.390 m |
| East: | 483561.200 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | Differential GPS (+/-0.047 m) |
| Directions: | None specified. |
| Elevation: | 352.190 m (+/-0.047 m) |

## SUMMARY COMMENTS

Date of drilling unknown. Fresh water during drilling and airlift from fracture zones. Development: 4 V notch readings taken over 2.5 hrs at 130 m, measuring ~2.5 L/s (78 mm). Flow didn't change over time.

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 31-Mar-2016 (estimate) |
| Completed: | Not specified. |
| Drilled Depth: | 130.0 |
| Drilling Company: | Not specified. |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 130.0 | Reverse circulation hammer (127 mm) | Air |

## CONSTRUCTION

### Fixtures

| Depth (m bgl) | Construction |
|---|---|
| (0.100) - 0.000 | Concrete base, concrete, square, 500 mm (nominal). Data estimated. |

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| (0.480) - 6.000 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 50 mm (nominal), wall thickness 11.1 mm, joins: glue. Casing details estimated. | None. |
| 6.000 - 18.000 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 50 mm (nominal), wall thickness 11.1 mm, joins: glue. Casing details estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 18.0 | Annulus fill (1.5 mm to 3.0 mm), ID-OD: 50 mm to 127 mm, sand. Gravel pack data estimated. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 18.0 - 130.0 | Void fill (1.5 mm to 3.0 mm), OD: 127 mm, sand. Gravel pack and depth estimated. |

## PARAMETERS MEASURED DURING DRILLING

Key: * - estimated, x - unspecified method

| Date | Depth (m bgl) | Drill Rate (m/min) | Airlift Yield (L/s) | EC (uS/cm) | pH | Comment |
|---|---|---|---|---|---|---|
| 31-Mar* | 14.0 - 18.0 | - | 0.25[x] | - | - | |
| 31-Mar | 18.0 - 23.0 | - | 0.25[x] | - | - | |
| 31-Mar | 23.0 - 27.0 | - | 0.50[x] | - | - | |
| 31-Mar | 27.0 - 39.0 | - | 1.00[x] | - | - | |
| 31-Mar | 39.0 - 40.0 | - | 1.00[x] | - | - | |
| 31-Mar | 40.0 - 54.0 | - | 2.00[x] | - | - | |
| 31-Mar | 54.0 - 88.0 | - | 1.90[x] | - | - | |
| 31-Mar | 88.0 - 101.0 | - | 1.90[x] | - | - | |
| 31-Mar | 101.0 - 102.0 | - | 2.30[x] | - | - | |
| 31-Mar | 102.0 - 130.0 | - | 2.30[x] | - | - | |

## PARAMETERS MEASURED DURING DEVELOPMENT

Key: na - not available, * - estimated

| Date | Time | Airlift Yield (L/s) | EC (uS/cm) | pH | Sediment | Water | Sediment |
|---|---|---|---|---|---|---|---|
| *31-Mar 08:00* to 31-Mar 10:30*: backwashing. Data estimated. .* | | | | | | | |

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 1.0 | Sand | |

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 1.0 - 2.0 | Silcrete with Sand | |
| 2.0 - 14.0 | Fractured sandstone, Quartzite | |
| 14.0 - 18.0 | Fractured sandstone, Quartzite, Ironstone | |
| 18.0 - 27.0 | Sandstone with Quartzite and Ironstone | |
| 27.0 - 39.0 | Siltstone with Quartzite | |
| 39.0 - 40.0 | Sandstone | |
| 40.0 - 54.0 | Siltstone with Quartzite | |
| 54.0 - 88.0 | Sandstone with Quartzite and Ironstone | |
| 88.0 - 101.0 | Fractured sandstone, Quartzite, Ironstone | |
| 101.0 - 102.0 | Siltstone with Quartzite | |
| 102.0 - 130.0 | Sandstone with Quartzite and Ironstone | |

## LITHOLOGICAL DESCRIPTIONS

Logged by:

**Depth (m bgl)**

0.0 - 1.0 **Sand**: Alluvial.

1.0 - 2.0 **Silcrete (with Sand)**: Mostly fine sand.

2.0 - 8.0 **Sandstone (with Quartzite)**: Mostly fine sand, fractured, weak, oxidised.

8.0 - 14.0 **Sandstone (with Quartzite)**: Fractured, 40 - 100% quartz.

14.0 - 18.0 **Sandstone (with Quartzite and Ironstone)**: Mostly fine sand, fractured, with limonite (ironstone).

18.0 - 23.0 **Sandstone (with Quartzite and Ironstone)**: Mostly fine sand, rounded, with limonite (ironstone).

23.0 - 27.0 **Sandstone (with Quartzite and Ironstone)**: Mostly coarse sand, with minor limonite (ironstone).

27.0 - 39.0 **Siltstone (with Quartzite)**: Mostly fine silt, laminated ferrug siltstone, minor quartz.

39.0 - 40.0 **Sandstone**: Fine sand - medium sand, fresh rock, with muscovite.

40.0 - 54.0 **Siltstone (with Quartzite)**: Mostly fine sand, laminated ferrug siltstone, minor quartz.

54.0 - 88.0 **Sandstone (with Quartzite and Ironstone)**: Mostly fine sand, with muscovite, minor quartz, minor limonite.

88.0 - 101.0 **Sandstone (with Quartzite and Ironstone)**: Fine sand - medium sand, fractured, 2 - 60 % quartz, minor limonite.

101.0 - 102.0 **Siltstone (with Quartzite)**: Mostly fine silt, laminated ferrug siltstone, minor quartz.

102.0 - 130.0 **Sandstone (with Quartzite and Ironstone)**: Mostly fine sand, minor quartz and limonite.

# Reward Minerals Ltd - Composite Log

Bore ID: LDRC1605

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 31-Mar-2016 (estimate) |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | Not recorded. |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | Not recorded. |
| Database ID: | 73318 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Rotary Hammer | Northing: | 7440927.370 m | Surface RL: | 353.520 m |
| Bore Diameter: | 127 mm | Easting: | 481924.680 m | Scheme: | GDA94 (Z51) |

| Depth (m) | Summary Lithology | Airlift Yield (L/s) |
|---|---|---|
| 0.0 | Fractured sandstone, Quartzite | |
| | Sandstone with Ironstone | |
| | Siltstone | |
| 10.0 | Sandstone with Quartzite and Ironstone | |
| | Fracture of quartzite | |
| | Sandstone with Quartzite and Ironstone | |
| | Siltstone with Ironstone | |
| 20.0 | Sandstone | |
| | Siltstone | |
| | Sandstone with Quartzite and Ironstone | |
| 30.0 | Siltstone | |
| | Sandstone with Quartzite | 0.3 |
| | Fractured sandstone, Quartzite | 0.3 |
| | Siltstone | |
| 40.0 | Sandstone with Ironstone and Quartzite | 0.3 |
| | | 0.3 |
| | Siltstone with Quartzite and Ironstone | 0.3 |
| 50.0 | Sandstone with Ironstone and Quartzite | |
| | Siltstone with Ironstone | 0.3 |
| | Sandstone with Ironstone and Quartzite | 0.3 |
| | Siltstone with Ironstone | 0.3 |
| 60.0 | Sandstone with Ironstone and Quartzite | |
| | | 0.3 |
| 70.0 | Fracture | 0.5 |
| | Sandstone with Ironstone and Quartzite | |
| | Siltstone | 0.5 |
| 80.0 | | |
| 90.0 | | |
| | Sandstone with Quartzite and Ironstone | 0.5 |
| 100.0 | Siltstone with Ironstone | 1.0 |
| | | 2.0 |
| | Sandstone with Quartzite and Ironstone | |
| 110.0 | | |
| 120.0 | | |
| 130.0 | | 2.0 |

Construction Diagram

-0.100

6.000

9.550

132.000

1. Fixture: concrete base
2. Bore Casing: unplasticised polyvinylchloride uPVC, Class 12, 50.0 mm (nominal)
3. Annulus Fill: sand, 1.5 - 3.0 mm
4. Screen: slotted casing, 0.5 mm aperture, 50.0 mm (nominal), with end cap
5. Void Fill: sand, 1.5 - 3.0 mm

# BORE NAME: LDRC1605

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73318 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Monitoring |
| Water level: | 9.550 m at 31-Mar-2016 (estimate) |

## LOCATION

| | |
|---|---|
| North: | 7440927.370 m |
| East: | 481924.680 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | Differential GPS (+/-0.038 m) |
| Directions: | None specified. |
| Elevation: | 353.520 m (+/-0.038 m) |

## SUMMARY COMMENTS

Date of drilling estimated. Fresh water during drilling and airlift from fracture zones. Development: 4 V notch readings measured over 2.5 hrs at 132 m, each reading 1.8 L/s (72mm).

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 31-Mar-2016 (estimate) |
| Completed: | Not specified. |
| Drilled Depth: | 132.0 |
| Drilling Company: | Not specified. |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 132.0 | Reverse circulation hammer (127 mm) | Air |

## CONSTRUCTION

### Fixtures

| Depth (m bgl) | Construction |
|---|---|
| (0.100) - 0.000 | Concrete base, concrete, square, 500 mm (nominal). |

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| 0.345 - 6.000 | Casing, unplasticised polyvinylchloride uPVC, Class 12, 50 mm (nominal), wall thickness 11.1 mm, joins: glue. Data estimated. | None. |
| 6.000 - 18.000 | Slotted casing, unplasticised polyvinylchloride uPVC, Class 12, 50 mm (nominal), wall thickness 11.1 mm, joins: glue. Data estimated. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 18.0 | Annulus fill (1.5 mm to 3.0 mm), ID-OD: 50 mm to 127 mm, sand. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 18.0 - 132.0 | Void fill (1.5 mm to 3.0 mm), OD: 127 mm, sand. Data estimated. |

## PARAMETERS MEASURED DURING DRILLING

Key: * - estimated, x - unspecified method

| Date | Depth (m bgl) | Drill Rate (m/min) | Airlift Yield (L/s) | EC (uS/cm) | pH | Comment |
|---|---|---|---|---|---|---|
| 31-Mar* | 31.0 - 32.0 | - | 0.25[x] | - | - | |
| 31-Mar | 32.0 - 38.0 | - | 0.25[x] | - | - | |
| 31-Mar | 38.0 - 42.0 | - | 0.25[x] | - | - | |
| 31-Mar | 42.0 - 47.0 | - | 0.25[x] | - | - | |
| 31-Mar | 47.0 - 49.0 | - | 0.25[x] | - | - | |
| 31-Mar | 49.0 - 54.0 | - | 0.25[x] | - | - | |
| 31-Mar | 54.0 - 55.0 | - | 0.25[x] | - | - | |
| 31-Mar | 55.0 - 56.0 | - | 0.25[x] | - | - | |
| 31-Mar | 56.0 - 57.0 | - | 0.25[x] | - | - | |
| 31-Mar | 57.0 - 68.0 | - | 0.25[x] | - | - | |
| 31-Mar | 68.0 - 69.0 | - | 0.50[x] | - | - | |
| 31-Mar | 69.0 - 77.0 | - | 0.50[x] | - | - | |
| 31-Mar | 77.0 - 97.0 | - | 0.50[x] | - | - | |
| 31-Mar | 97.0 - 99.0 | - | 1.00[x] | - | - | |
| 31-Mar | 99.0 - 105.0 | - | 2.00[x] | - | - | |
| 31-Mar | 105.0 - 132.0 | - | 2.00[x] | - | - | |

## PARAMETERS MEASURED DURING DEVELOPMENT

Key: na - not available, * - estimated

| Date | Time | Airlift Yield (L/s) | EC (uS/cm) | pH | Sediment | Water | Sediment |
|---|---|---|---|---|---|---|---|
| *31-Mar 08:00* to 31-Mar 10:30*: backwashing. Data estimated.* | | | | | | | |

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 4.0 | Fractured sandstone, Quartzite | |
| 4.0 - 7.0 | Sandstone with Ironstone | |
| 7.0 - 9.0 | Siltstone | |
| 9.0 - 10.0 | Sandstone with Quartzite and Ironstone | |
| 10.0 - 12.0 | Fracture of quartzite | |
| 12.0 - 13.0 | Sandstone with Quartzite and Ironstone | |
| 13.0 - 15.0 | Siltstone with Ironstone | |
| 15.0 - 16.0 | Sandstone | |
| 16.0 - 17.0 | Siltstone | |
| 17.0 - 24.0 | Sandstone with Quartzite and Ironstone | |
| 24.0 - 26.0 | Siltstone | |
| 26.0 - 29.0 | Sandstone with Quartzite | |
| 29.0 - 31.0 | Fractured sandstone, Quartzite | |
| 31.0 - 32.0 | Siltstone | |
| 32.0 - 47.0 | Sandstone with Ironstone and Quartzite | |
| 47.0 - 49.0 | Siltstone with Quartzite and Ironstone | |
| 49.0 - 54.0 | Sandstone with Ironstone and Quartzite | |
| 54.0 - 55.0 | Siltstone with Ironstone | |
| 55.0 - 56.0 | Sandstone with Ironstone and Quartzite | |
| 56.0 - 57.0 | Siltstone with Ironstone | |
| 57.0 - 68.0 | Sandstone with Ironstone and Quartzite | |
| 68.0 - 69.0 | Fracture | |
| 69.0 - 77.0 | Sandstone with Ironstone and Quartzite | |
| 77.0 - 97.0 | Siltstone | |
| 97.0 - 99.0 | Sandstone with Quartzite and Ironstone | |
| 99.0 - 105.0 | Siltstone with Ironstone | |
| 105.0 - 132.0 | Sandstone with Quartzite and Ironstone | |

## LITHOLOGICAL DESCRIPTIONS

Logged by:

**Depth (m bgl)**

0.0 - 4.0 **Sandstone (with Quartzite)**: Mostly medium sand, fractured, oxidised.

4.0 - 7.0 **Sandstone (with Ironstone)**: Mostly medium sand, minor limonite (ironstone).

**Depth (m bgl)**

| | |
|---|---|
| 7.0 - 9.0 | **Siltstone**: Mostly fine silt, laminated ferrug siltstone, muscovite. |
| 9.0 - 10.0 | **Sandstone (with Quartzite and Ironstone)**: Mostly medium sand, with limonite (ironstone). |
| 10.0 - 12.0 | **Quartzite**: Fractured/PC, quartz rounded pebbles. Comment: Lithology not clear |
| 12.0 - 13.0 | **Sandstone (with Quartzite and Ironstone)**: Medium sand - coarse sand. |
| 13.0 - 15.0 | **Siltstone (with Ironstone)**: Mostly fine silt, laminated ferrug siltstone, minor muscovite, limonite (ironstone). |
| 15.0 - 16.0 | **Sandstone**: Mostly medium sand, fresh rock. |
| 16.0 - 17.0 | **Siltstone**: Mostly fine silt, laminated ferrug . |
| 17.0 - 24.0 | **Sandstone (with Quartzite and Ironstone)**: Mostly medium sand, minor limonite (ironstone) and muscovite. |
| 24.0 - 26.0 | **Siltstone**: Mostly fine silt, laminated ferrug. |
| 26.0 - 29.0 | **Sandstone (with Quartzite)**: Mostly medium sand. |
| 29.0 - 31.0 | **Sandstone (with Quartzite)**: Mostly medium sand, fractured. |
| 31.0 - 32.0 | **Siltstone**: Mostly fine silt, laminated ferrug. |
| 32.0 - 38.0 | **Sandstone (with Ironstone and Quartzite)**: Mostly medium sand, limonite (ironstone), 2 - 10 % quartz. |
| 38.0 - 42.0 | **Sandstone (with Ironstone and Quartzite)**: Mostly medium sand, limonite (ironstone), 80 - 95 % quartz, weak chlorite. |
| 42.0 - 47.0 | **Sandstone (with Ironstone and Quartzite)**: Mostly medium sand. |
| 47.0 - 49.0 | **Siltstone (with Quartzite and Ironstone)**: Mostly fine silt, laminated ferrug siltstone, minor quartz and limonite (ironstone). |
| 49.0 - 54.0 | **Sandstone (with Ironstone and Quartzite)**: Mostly medium sand, limonite (ironstone), minor quartz. |
| 54.0 - 55.0 | **Siltstone (with Ironstone)**: Mostly fine silt, laminated ferrug siltstone, minor limonite (ironstone). |
| 55.0 - 56.0 | **Sandstone (with Ironstone and Quartzite)**: Mostly medium sand, limonite (ironstone). |
| 56.0 - 57.0 | **Siltstone (with Ironstone)**: Mostly fine silt, laminated ferrug siltstone, minor limonite (ironstone). |
| 57.0 - 68.0 | **Sandstone (with Ironstone and Quartzite)**: Mostly medium sand, limonite (ironstone). |
| 68.0 - 69.0 | **Sandstone**: Fracture bearing water. |
| 69.0 - 77.0 | **Sandstone (with Ironstone and Quartzite)**: Mostly medium sand, limonite (ironstone). |
| 77.0 - 97.0 | **Siltstone**: Mostly fine silt, laminated ferrug siltstone, minor muscovite. |
| 97.0 - 99.0 | **Sandstone (with Quartzite and Ironstone)**: Fine sand - medium sand, minor muscovite and limonite (ironstone). |
| 99.0 - 105.0 | **Siltstone (with Ironstone)**: Mostly fine silt, laminated ferrug siltstone, minor muscovite and limonite (ironstone). |
| 105.0 - 132.0 | **Sandstone (with Quartzite and Ironstone)**: Fine sand - medium sand, minor limonite (ironstone). |

# Reward Minerals Ltd - Composite Log

Bore ID: LDRC1409

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 01-Jan-2014 (estimate) |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | Not recorded. |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | Not recorded. |
| Database ID: | 73323 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Rotary | Northing: | 7420740.000 m | Surface RL: | Not recorded |
| Bore Diameter: | 100 mm | Easting: | 466980.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology | Airlift Yield (L/s) | Construction Diagram |
|---|---|---|---|---|---|
| None recorded | 0.0, 10.0, 20.0, 30.0, 40.0, 50.0, 60.0, 70.0, 80.0, 90.0, 100.0 | | None recorded. | None recorded. | 101.000 |

# BORE NAME: LDRC1409

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73323 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Indeterminate |
| Purpose: | Exploration/research |
| Water level: | Not measured |

## LOCATION

| | |
|---|---|
| North: | 7420740.000 m |
| East: | 466980.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | Unknown |
| Directions: | Via Canning Stock Route |
| Elevation: | Not measured. |

## SUMMARY COMMENTS

Limited details available. Purpose: Investigate Palaeovalley system - prelim reconnaissance work. Drilled as a sighter hole north of Lake Disappointment, drilled on ~4 km spacings. Basement not reached due to drilling difficulties.

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 01-Jan-2014 (estimate) |
| Completed: | Not specified. |
| Drilled Depth: | 101.0 |
| Drilling Company: | Not specified. |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 101.0 | Reverse circulation (100 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

No casing or slots/screens recorded.

### Annulus Fill

No fill recorded.

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

No samples recorded.

## LITHOLOGICAL DESCRIPTIONS

No samples recorded.

# Reward Minerals Ltd - Composite Log

Bore ID: LDRC1410

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 01-Jan-2014 (estimate) |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | Not recorded. |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | Not recorded. |
| Database ID: | 73324 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Rotary | Northing: | 7425440.000 m | Surface RL: | Not recorded |
| Bore Diameter: | 100 mm | Easting: | 466560.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology | Airlift Yield (L/s) | Construction Diagram |
|---|---|---|---|---|---|
| None recorded | 0.0<br>10.0<br>20.0<br>30.0<br>40.0<br>50.0<br>60.0<br>70.0<br>80.0<br>90.0<br>100.0 | | None recorded. | None recorded. | 101.000 |

# BORE NAME: LDRC1410

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73324 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Exploration/research |
| Water level: | Not measured |

## LOCATION

| | |
|---|---|
| North: | 7425440.000 m |
| East: | 466560.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | Unknown |
| Directions: | Via Canning Stock Route |
| Elevation: | Not measured. |

## SUMMARY COMMENTS

Limited details available. Purpose: Investigate Palaeovalley system - prelim reconnaissance work. Drilled as a sighter hole north of Lake Disappointment, drilled on ~4 km spacings. Basement not reached due to drilling difficulties.

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 01-Jan-2014 (estimate) |
| Completed: | Not specified. |
| Drilled Depth: | 101.0 |
| Drilling Company: | Not specified. |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 101.0 | Reverse circulation (100 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

No casing or slots/screens recorded.

### Annulus Fill

No fill recorded.

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

No samples recorded.

## LITHOLOGICAL DESCRIPTIONS

No samples recorded.

# Reward Minerals Ltd - Composite Log

Bore ID: LDRC1411

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 01-Jan-2014 (estimate) |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | Not recorded. |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | Not recorded. |
| Database ID: | 73325 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Rotary | Northing: | 7427950.000 m | Surface RL: | Not recorded |
| Bore Diameter: | 100 mm | Easting: | 469200.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology | Airlift Yield (L/s) | Construction Diagram |
|---|---|---|---|---|---|
| None recorded | 0.0, 10.0, 20.0, 30.0, 40.0, 50.0, 60.0, 70.0, 80.0, 90.0, 100.0 | | None recorded. | None recorded. | 102.000 |

# BORE NAME: LDRC1411

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73325 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Indeterminate |
| Purpose: | Exploration/research |
| Water level: | Not measured |

## LOCATION

| | |
|---|---|
| North: | 7427950.000 m |
| East: | 469200.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | Unknown |
| Directions: | Via Canning Stock Route |
| Elevation: | Not measured. |

## SUMMARY COMMENTS

Limited details available. Drilled as a sighter hole north of Lake Disappointment, drilled on ~4km spacings. Purpose: Investigate Palaeovalley system - prelim reconnaissance work.

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 01-Jan-2014 (estimate) |
| Completed: | Not specified. |
| Drilled Depth: | 102.0 |
| Drilling Company: | Not specified. |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 102.0 | Reverse circulation (100 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

No casing or slots/screens recorded.

### Annulus Fill

No fill recorded.

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

No samples recorded.

## LITHOLOGICAL DESCRIPTIONS

No samples recorded.

# Reward Minerals Ltd - Composite Log

Bore ID: LDRC1412

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 01-Jan-2014 (estimate) |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | Not recorded. |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | Not recorded. |
| Database ID: | 73326 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Rotary | Northing: | 7430930.000 m | Surface RL: | Not recorded |
| Bore Diameter: | 100 mm | Easting: | 472470.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology | Airlift Yield (L/s) | Construction Diagram |
|---|---|---|---|---|---|
| None recorded | 0.0, 10.0, 20.0, 30.0, 40.0, 50.0, 60.0, 70.0, 80.0, 90.0, 100.0 | | None recorded. | None recorded. | 102.000 |

# BORE NAME: LDRC1412

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73326 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Indeterminate |
| Purpose: | Exploration/research |
| Water level: | Not measured |

## LOCATION

| | |
|---|---|
| North: | 7430930.000 m |
| East: | 472470.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | Unknown |
| Directions: | Via Canning Stock Route |
| Elevation: | Not measured. |

## SUMMARY COMMENTS

Limited details available. Drilled as a sighter hole north of Lake Disappointment, drilled on ~4km spacings. Purpose: Investigate Palaeovalley system - prelim reconnaissance work.

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 01-Jan-2014 (estimate) |
| Completed: | Not specified. |
| Drilled Depth: | 102.0 |
| Drilling Company: | Not specified. |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 102.0 | Reverse circulation (100 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

No casing or slots/screens recorded.

### Annulus Fill

No fill recorded.

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

No samples recorded.

## LITHOLOGICAL DESCRIPTIONS

No samples recorded.

# Reward Minerals Ltd - Composite Log

Bore ID: LDRC1413

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 01-Jan-2014 (estimate) |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | Not recorded. |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | Not recorded. |
| Database ID: | 73327 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Rotary | Northing: | 7434030.000 m | Surface RL: | Not recorded |
| Bore Diameter: | 100 mm | Easting: | 475240.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology | Airlift Yield (L/s) | Construction Diagram |
|---|---|---|---|---|---|
| None recorded | 0.0 – 80.0 | | None recorded. | None recorded. | 78.000 |

# BORE NAME: LDRC1413

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73327 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Indeterminate |
| Purpose: | Exploration/research |
| Water level: | Not measured |

## LOCATION

| | |
|---|---|
| North: | 7434030.000 m |
| East: | 475240.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | Unknown |
| Directions: | Via Canning Stock Route |
| Elevation: | Not measured. |

## SUMMARY COMMENTS

Limited details available. Drilled as a sighter hole north of Lake Disappointment, drilled on ~4km spacings. Purpose: Investigate Palaeovalley system - prelim reconnaissance work.

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 01-Jan-2014 (estimate) |
| Completed: | Not specified. |
| Drilled Depth: | 78.0 |
| Drilling Company: | Not specified. |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 78.0 | Reverse circulation (100 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

No casing or slots/screens recorded.

### Annulus Fill

No fill recorded.

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

No samples recorded.

## LITHOLOGICAL DESCRIPTIONS

No samples recorded.

# Reward Minerals Ltd - Composite Log

Bore ID: LDRC1414

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 01-Jan-2014 (estimate) |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | Not recorded. |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | Not recorded. |
| Database ID: | 73328 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Rotary | Northing: | 7436710.000 m | Surface RL: | Not recorded |
| Bore Diameter: | 100 mm | Easting: | 476870.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology | Airlift Yield (L/s) | Construction Diagram |
|---|---|---|---|---|---|
| None recorded | 0.0 – 10.0 – 20.0 – 30.0 – 40.0 – 50.0 – 60.0 – 70.0 – 80.0 – 90.0 – 100.0 | | None recorded. | None recorded. | 102.000 |

# BORE NAME: LDRC1414

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73328 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Indeterminate |
| Purpose: | Exploration/research |
| Water level: | Not measured |

## LOCATION

| | |
|---|---|
| North: | 7436710.000 m |
| East: | 476870.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | Unknown |
| Directions: | Via Canning Stock Route |
| Elevation: | Not measured. |

## SUMMARY COMMENTS

Limited details available. Drilled as a sighter hole north of Lake Disappointment, drilled on ~4km spacings. Purpose: Investigate Palaeovalley system - prelim reconnaissance work.

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 01-Jan-2014 (estimate) |
| Completed: | Not specified. |
| Drilled Depth: | 102.0 |
| Drilling Company: | Not specified. |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 102.0 | Reverse circulation (100 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

No casing or slots/screens recorded.

### Annulus Fill

No fill recorded.

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

No samples recorded.

## LITHOLOGICAL DESCRIPTIONS

No samples recorded.

# Reward Minerals Ltd - Composite Log

Bore ID: LDRC1416

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 01-Jan-2014 (estimate) |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | Not recorded. |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | Not recorded. |
| Database ID: | 73329 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Rotary | Northing: | 7436730.000 m | Surface RL: | Not recorded |
| Bore Diameter: | 100 mm | Easting: | 480130.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology | Airlift Yield (L/s) | Construction Diagram |
|---|---|---|---|---|---|
| None recorded | 0.0, 10.0, 20.0, 30.0, 40.0, 50.0, 60.0, 70.0, 80.0, 90.0, 100.0 | | None recorded. | None recorded. | 101.000 |

# BORE NAME: LDRC1416

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73329 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Indeterminate |
| Purpose: | Exploration/research |
| Water level: | Not measured |

## LOCATION

| | |
|---|---|
| North: | 7436730.000 m |
| East: | 480130.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | Unknown |
| Directions: | Via Canning Stock Route |
| Elevation: | Not measured. |

## SUMMARY COMMENTS

Limited details available. Drilled as a sighter hole north of Lake Disappointment, drilled on ~4km spacings. Purpose: Investigate Palaeovalley system - prelim reconnaissance work.

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 01-Jan-2014 (estimate) |
| Completed: | Not specified. |
| Drilled Depth: | 101.0 |
| Drilling Company: | Not specified. |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 101.0 | Reverse circulation (100 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

No casing or slots/screens recorded.

### Annulus Fill

No fill recorded.

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

No samples recorded.

## LITHOLOGICAL DESCRIPTIONS

No samples recorded.

# Reward Minerals Ltd - Composite Log

Bore ID: LDRC1417

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 01-Jan-2014 (estimate) |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | Not recorded. |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | Not recorded. |
| Database ID: | 73330 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Rotary | Northing: | 7437110.000 m | Surface RL: | Not recorded |
| Bore Diameter: | 100 mm | Easting: | 483840.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology | Airlift Yield (L/s) | Construction Diagram |
|---|---|---|---|---|---|
| None recorded | 0.0, 10.0, 20.0, 30.0, 40.0, 50.0, 60.0, 70.0, 80.0, 90.0, 100.0, 110.0 | | None recorded. | None recorded. | 114.000 |

# BORE NAME: LDRC1417

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73330 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Indeterminate |
| Purpose: | Exploration/research |
| Water level: | Not measured |

## LOCATION

| | |
|---|---|
| North: | 7437110.000 m |
| East: | 483840.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | Unknown |
| Directions: | Via Canning Stock Route |
| Elevation: | Not measured. |

## SUMMARY COMMENTS

Limited details available. Drilled as a sighter hole north of Lake Disappointment, drilled on ~4km spacings. Purpose: Investigate Palaeovalley system - prelim reconnaissance work.

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 01-Jan-2014 (estimate) |
| Completed: | Not specified. |
| Drilled Depth: | 114.0 |
| Drilling Company: | Not specified. |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 114.0 | Reverse circulation (100 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

No casing or slots/screens recorded.

### Annulus Fill

No fill recorded.

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

No samples recorded.

## LITHOLOGICAL DESCRIPTIONS

No samples recorded.

# Reward Minerals Ltd - Composite Log

Bore ID: LDRC1418

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 01-Jan-2014 (estimate) |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | Not recorded. |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | Not recorded. |
| Database ID: | 73331 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Rotary | Northing: | 7436780.000 m | Surface RL: | Not recorded |
| Bore Diameter: | 100 mm | Easting: | 488270.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology | Airlift Yield (L/s) | Construction Diagram |
|---|---|---|---|---|---|
| None recorded | 0.0<br>10.0<br>20.0<br>30.0<br>40.0<br>50.0<br>60.0<br>70.0<br>80.0<br>90.0 | | None recorded. | None recorded. | 94.000 |

# BORE NAME: LDRC1418

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73331 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Indeterminate |
| Purpose: | Exploration/research |
| Water level: | Not measured |

## LOCATION

| | |
|---|---|
| North: | 7436780.000 m |
| East: | 488270.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | Unknown |
| Directions: | Via Canning Stock Route |
| Elevation: | Not measured. |

## SUMMARY COMMENTS

Limited details available. Drilled as a sighter hole north of Lake Disappointment, drilled on ~4km spacings. Purpose: Investigate Palaeovalley system - prelim reconnaissance work.

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 01-Jan-2014 (estimate) |
| Completed: | Not specified. |
| Drilled Depth: | 94.0 |
| Drilling Company: | Not specified. |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 94.0 | Reverse circulation (100 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

No casing or slots/screens recorded.

### Annulus Fill

No fill recorded.

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

No samples recorded.

## LITHOLOGICAL DESCRIPTIONS

No samples recorded.

# Reward Minerals Ltd - Composite Log

Bore ID: LDRC1419

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 01-Jan-2014 (estimate) |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | Not recorded. |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | Not recorded. |
| Database ID: | 73332 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Rotary | Northing: | 7437930.000 m | Surface RL: | Not recorded |
| Bore Diameter: | 100 mm | Easting: | 492080.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology | Airlift Yield (L/s) | Construction Diagram |
|---|---|---|---|---|---|
| None recorded | 0.0<br>10.0<br>20.0<br>30.0<br>40.0<br>50.0<br>60.0<br>70.0<br>80.0<br>90.0 | | None recorded. | None recorded. | 95.000 |

# BORE NAME: LDRC1419

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73332 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Indeterminate |
| Purpose: | Exploration/research |
| Water level: | Not measured |

## LOCATION

| | |
|---|---|
| North: | 7437930.000 m |
| East: | 492080.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | Unknown |
| Directions: | Via Canning Stock Route |
| Elevation: | Not measured. |

## SUMMARY COMMENTS

Limited information available. Drilled as a sighter hole north of Lake Disappointment, drilled on ~4km spacings. Basement not reached due to drilling difficulties. Purpose: Investigate Palaeovalley system - prelim reconnaissance work

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 01-Jan-2014 (estimate) |
| Completed: | Not specified. |
| Drilled Depth: | 95.0 |
| Drilling Company: | Not specified. |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 95.0 | Reverse circulation (100 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

No casing or slots/screens recorded.

### Annulus Fill

No fill recorded.

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

No samples recorded.

## LITHOLOGICAL DESCRIPTIONS

No samples recorded.

# Reward Minerals Ltd - Composite Log

Bore ID: LDRC1420

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 01-Jan-2014 (estimate) |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | Not recorded. |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | Not recorded. |
| Database ID: | 73333 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Rotary | Northing: | 7438730.000 m | Surface RL: | Not recorded |
| Bore Diameter: | 100 mm | Easting: | 496190.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology | Airlift Yield (L/s) | Construction Diagram |
|---|---|---|---|---|---|
| None recorded | 0.0<br>10.0<br>20.0<br>30.0<br>40.0<br>50.0<br>60.0<br>70.0<br>80.0<br>90.0<br>100.0<br>110.0<br>120.0<br>130.0 | | None recorded. | None recorded. | 125.000 |

# BORE NAME: LDRC1420

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73333 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Indeterminate |
| Purpose: | Exploration/research |
| Water level: | Not measured |

## LOCATION

| | |
|---|---|
| North: | 7438730.000 m |
| East: | 496190.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | Unknown |
| Directions: | Via Canning Stock Route |
| Elevation: | Not measured. |

## SUMMARY COMMENTS

Limited data available. Drilled as a sighter hole north of Lake Disappointment, drilled on ~4km spacings. Purpose: Investigate Palaeovalley system - prelim reconnaissance work.

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 01-Jan-2014 (estimate) |
| Completed: | Not specified. |
| Drilled Depth: | 125.0 |
| Drilling Company: | Not specified. |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 125.0 | Reverse circulation (100 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

No casing or slots/screens recorded.

### Annulus Fill

No fill recorded.

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

No samples recorded.

## LITHOLOGICAL DESCRIPTIONS

No samples recorded.

# Reward Minerals Ltd - Composite Log

Bore ID: LDRC1421

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 01-Jan-2014 (estimate) |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | Not recorded. |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | Not recorded. |
| Database ID: | 73334 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Rotary | Northing: | 7438720.000 m | Surface RL: | Not recorded |
| Bore Diameter: | 100 mm | Easting: | 501400.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology | Airlift Yield (L/s) | Construction Diagram |
|---|---|---|---|---|---|
| None recorded | 0.0, 10.0, 20.0, 30.0, 40.0, 50.0, 60.0, 70.0, 80.0, 90.0, 100.0, 110.0, 120.0, 130.0 | | None recorded. | None recorded. | 125.000 |

# BORE NAME: LDRC1421

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73334 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Indeterminate |
| Purpose: | Exploration/research |
| Water level: | Not measured |

## LOCATION

| | |
|---|---|
| North: | 7438720.000 m |
| East: | 501400.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | Unknown |
| Directions: | Via Canning Stock Route |
| Elevation: | Not measured. |

## SUMMARY COMMENTS

Limited data available. Drilled as a sighter hole north of Lake Disappointment, drilled on ~4km spacings. Purpose: Investigate Palaeovalley system - prelim reconnaissance work.

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 01-Jan-2014 (estimate) |
| Completed: | Not specified. |
| Drilled Depth: | 125.0 |
| Drilling Company: | Not specified. |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 125.0 | Reverse circulation (100 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

No casing or slots/screens recorded.

### Annulus Fill

No fill recorded.

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

No samples recorded.

## LITHOLOGICAL DESCRIPTIONS

No samples recorded.

# Reward Minerals Ltd - Composite Log

Bore ID: LDRC1459

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | Not recorded. |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | Not recorded. |
| LOCATION: | Not recorded. | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | Not recorded. |
| Database ID: | 73335 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Not recorded. | Latitude: | Not recorded. | Surface RL: | Not recorded |
| Bore Diameter: | Not recorded. | Longitude: | Not recorded. | Scheme: | Not recorded. |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology | Airlift Yield (L/s) | Construction Diagram |
|---|---|---|---|---|---|
| None recorded | 0.0<br>1.0<br>2.0<br>3.0<br>4.0<br>5.0<br>6.0<br>7.0<br>8.0<br>9.0<br>10.0 | | None recorded. | None recorded. | None recorded. |

# BORE NAME: LDRC1459

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73335 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Abandoned |
| Purpose: | Exploration/research |
| Water level: | Not measured |

## LOCATION

| | |
|---|---|
| Latitude: | |
| Longitude | |
| Coordinate System: | |
| Method: | Not specified. |
| Directions: | None specified. |
| Elevation: | Not measured. |

## SUMMARY COMMENTS

No data available. Estimation: Failed; potentially collapsed due to high flow rates (see Reward Minerals Ltd April 2014 ASX reports).

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | Not specified. |
| Completed: | Not specified. |
| Drilled Depth: | |
| Drilling Company: | Not specified. |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

No drilling methods recorded.

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

No casing or slots/screens recorded.

### Annulus Fill

No fill recorded.

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

No samples recorded.

## LITHOLOGICAL DESCRIPTIONS

No samples recorded.

# Reward Minerals Ltd - Composite Log

Bore ID: LDRC1460

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 01-Jan-2014 (estimate) |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | Not recorded. |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | Not recorded. |
| Database ID: | 73336 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Reverse Circulation Hammer | Northing: | 7429100.000 m | Surface RL: | Not recorded |
| Bore Diameter: | 100 mm | Easting: | 481400.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology | Airlift Yield (L/s) | Construction Diagram |
|---|---|---|---|---|---|
| None recorded | 0.0, 10.0, 20.0, 30.0, 40.0, 50.0, 60.0, 70.0, 80.0, 90.0, 100.0 | | None recorded. | None recorded. | 102.000 |

# BORE NAME: LDRC1460

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73336 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Indeterminate |
| Purpose: | Exploration/research |
| Water level: | Not measured |

## LOCATION

| | |
|---|---|
| North: | 7429100.000 m |
| East: | 481400.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | Unknown |
| Directions: | Via Canning Stock Route |
| Elevation: | Not measured. |

## SUMMARY COMMENTS

Limited data available. Drilled as a sighter hole north of Lake Disappointment, drilled on ~4km spacings. Purpose: Investigate Palaeovalley system - prelim reconnaissance work.

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 01-Jan-2014 (estimate) |
| Completed: | Not specified. |
| Drilled Depth: | 102.0 |
| Drilling Company: | Not specified. |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 102.0 | Reverse circulation (100 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

No casing or slots/screens recorded.

### Annulus Fill

No fill recorded.

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

No samples recorded.

## LITHOLOGICAL DESCRIPTIONS

No samples recorded.

# Reward Minerals Ltd - Composite Log

Bore ID: LDRC1461

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 01-Jan-2014 (estimate) |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | Not recorded. |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | Not recorded. |
| Database ID: | 73337 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Reverse Circulation | Northing: | 7425711.000 m | Surface RL: | Not recorded |
| Bore Diameter: | 100 mm | Easting: | 481560.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology | Airlift Yield (L/s) | Construction Diagram |
|---|---|---|---|---|---|
| None recorded | 0.0, 10.0, 20.0, 30.0, 40.0, 50.0, 60.0, 70.0, 80.0, 90.0, 100.0, 110.0, 120.0, 130.0 | | None recorded. | None recorded. | 132.000 |

# BORE NAME: LDRC1461

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73337 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Indeterminate |
| Purpose: | Exploration/research |
| Water level: | Not measured |

## LOCATION

| | |
|---|---|
| North: | 7425711.000 m |
| East: | 481560.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | Unknown |
| Directions: | Via Wiljabu Track |
| Elevation: | Not measured. |

## SUMMARY COMMENTS

LDDH1402 was drilled to twin this hole. Limited data available. Purpose: Investigate Palaeovalley system - prelim reconnaissance work (part of a 15 hole program starting from LDRC1409)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 01-Jan-2014 (estimate) |
| Completed: | Not specified. |
| Drilled Depth: | 132.0 |
| Drilling Company: | Not specified. |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 132.0 | Reverse circulation (100 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

No casing or slots/screens recorded.

### Annulus Fill

No fill recorded.

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

No samples recorded.

## LITHOLOGICAL DESCRIPTIONS

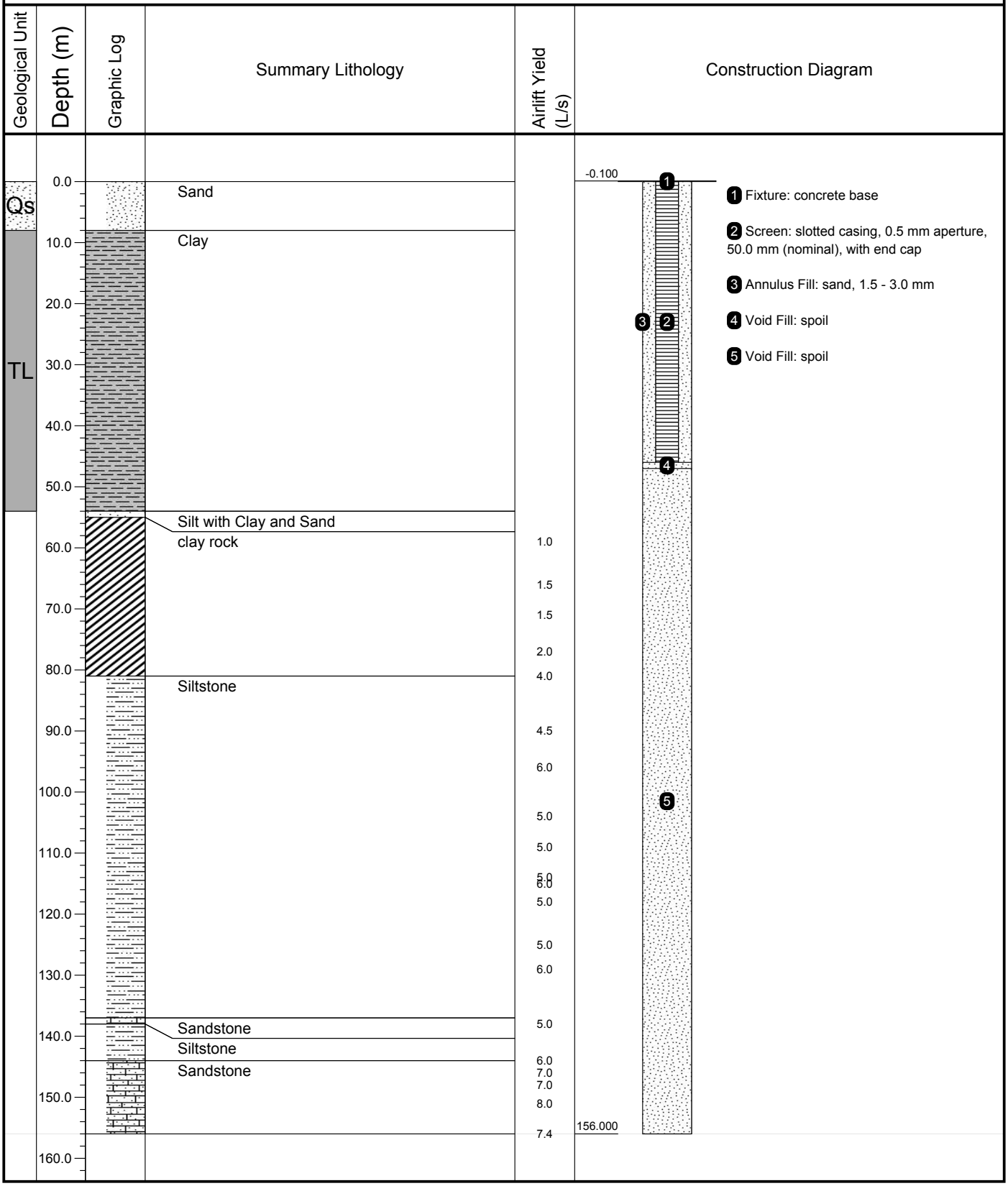
No samples recorded.

# Reward Minerals Ltd - Composite Log

Bore ID: LDRC1462

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | Not recorded. |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | Not recorded. |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | Not recorded. |
| Database ID: | 73320 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Not recorded. | Northing: | 7427547.000 m | Surface RL: | Not recorded |
| Bore Diameter: | Not recorded. | Easting: | 481132.000 m | Scheme: | GDA94 (Z51) |



# BORE NAME: LDRC1462

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73320 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Functional |
| Purpose: | Monitoring |
| Water level: | Not measured |

## LOCATION

| | |
|---|---|
| North: | 7427547.000 m |
| East: | 481132.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | Unknown |
| Directions: | Via Wiljabu Track |
| Elevation: | Not measured. |

## SUMMARY COMMENTS

Was initially incorrectly called LDRC1460 and corrected soon after. LDDH1401 was drilled to twin this hole. Geologist listed as 'Dot'. Drill Company personnel: Jason, Nigel, Dean (driller). Purpose: Investigate Palaeovalley system - prelim reconnaissance work (part of a 15 hole program starting from LDRC1409). Drilling parameters; V notch readings: 28-29 m:

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | Not specified. |
| Completed: | Not specified. |
| Drilled Depth: | 156.0 |
| Drilling Company: | Not specified. |
| Drilling Rig: | Not specified. |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 79.0 | Rotary blade (108 mm) | Air |
| 79.0 - 156.0 | Reverse circulation hammer (108 mm) | Air |

## CONSTRUCTION

### Fixtures

| Depth (m bgl) | Construction |
|---|---|
| (0.100) - 0.000 | Concrete base, concrete, square, 500 mm (nominal). All anecdotal data and estimation. |

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| 0.000 - 46.000 | Slotted casing, unplasticised polyvinylchloride uPVC, 50 mm (nominal), wall thickness 11.1 mm, joins: glue. Casing details estimated. Use of blank casing unknown. | 0.5 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 46.0 | Annulus fill (1.5 mm to 3.0 mm), ID-OD: 50 mm to 108 mm, sand. All anecdotal data and estimations. |

### Void Fill

| Depth (m bgl) | Construction |
|---|---|
| 46.0 - 47.0 | Void fill, OD: 108 mm, spoil. Blocked at 46 m (collapse) . |
| 47.0 - 156.0 | Void fill, OD: 108 mm, spoil. Unknown extent of collapse/open void. |

## PARAMETERS MEASURED DURING DRILLING

Key: x - unspecified method, y - 90 deg v-notch weir

| Date | Depth (m bgl) | Drill Rate (m/min) | Airlift Yield (L/s) | EC (uS/cm) | pH | Comment |
|---|---|---|---|---|---|---|
| 08-Apr | 58.0 - 59.0 | - | 1.00[x] | - | - | |
| 08-Apr | 65.0 - 66.0 | - | 1.50[x] | - | - | |
| 08-Apr | 70.0 - 71.0 | - | 1.50[x] | - | - | |
| 08-Apr | 76.0 - 77.0 | - | 2.00[x] | - | - | |
| 08-Apr | 80.0 - 81.0 | - | 4.00[x] | - | - | |
| 08-Apr | 89.0 - 90.0 | - | 4.50[x] | - | - | |
| 08-Apr | 95.0 - 96.0 | - | 6.00[x] | - | - | |
| 08-Apr | 103.0 - 104.0 | - | 5.00[x] | - | - | |
| 08-Apr | 108.0 - 109.0 | - | 5.00[x] | - | - | |
| 08-Apr | 113.0 - 114.0 | - | 5.00[x] | - | - | |
| 08-Apr | 114.0 - 115.0 | - | 6.00[x] | - | - | |
| 08-Apr | 117.0 - 118.0 | - | 5.00[x] | - | - | |
| 08-Apr | 124.0 - 125.0 | - | 5.00[x] | - | - | |
| 08-Apr | 128.0 - 129.0 | - | 6.00[x] | - | - | |
| 08-Apr | 137.0 - 138.0 | - | 5.00[x] | - | - | |

| Date | Depth (m bgl) | Drill Rate (m/min) | Airlift Yield (L/s) | EC (uS/cm) | pH | Comment |
|---|---|---|---|---|---|---|
| 08-Apr | 143.0 - 144.0 | - | 6.00[x] | - | - | |
| 08-Apr | 145.0 - 146.0 | - | 7.00[x] | - | - | |
| 08-Apr | 147.0 - 148.0 | - | 7.00[x] | - | - | |
| 08-Apr | 150.0 - 151.0 | - | 8.00[x] | - | - | |
| 08-Apr | 151.0 - 156.0 | - | 7.43[y] | - | - | Sample: Depth estimated. |

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

| Depth (m bgl) | Geology | Stratigraphic Unit |
|---|---|---|
| 0.0 - 8.0 | Sand | |
| 8.0 - 54.0 | Clay | |
| 54.0 - 55.0 | Silt with Clay and Sand | |
| 55.0 - 81.0 | clay rock | Permian |
| 81.0 - 137.0 | Siltstone | Proterozoic |
| 137.0 - 138.0 | Sandstone | Proterozoic |
| 138.0 - 144.0 | Siltstone | Proterozoic |
| 144.0 - 156.0 | Sandstone | Proterozoic |

## LITHOLOGICAL DESCRIPTIONS

Logged by:

**Depth (m bgl)**

0.0 - 8.0 **Sand**: Brown, (edge of dune).

8.0 - 18.0 **Clay**: Brown, gooey. H20 injected.

18.0 - 23.0 **Clay**: Brown, increase in plasticity, thick, gooey mud. No flow.

23.0 - 25.0 **Clay**: Pale cream-brown, gooey.

25.0 - 47.0 **Clay**: Brown, gooey.

47.0 - 53.0 **Clay**: Buff-brown, gooey, massive, minor clay chips.

53.0 - 56.0 **Silt (with Clay and Sand)**: Brown, gritty chips/mud.

56.0 - 77.0 **Claystone**: Brown, Permian rock/clay, gritty massive chips, cream-brown 72 - 22m.

77.0 - 81.0 **Sand (with Gravel and Clay)**: Brown, poorly sorted.

81.0 - 101.0 **Siltstone**: Khaki-grey, siliceous, gritty. Alternates between the two colours.

101.0 - 107.0 **Siltstone**: Dark grey, very fine silt, pyrite, laminated, very fine grained trace pyrite.

107.0 - 110.0 **Siltstone**: Grey, pyrite, lacks mineralised structures, disseminated pyrite.

110.0 - 113.0 **Siltstone**: Grey, concoidal break, highly silicified.

113.0 - 137.0 **Siltstone**: Grey, pyrite, silicified bands, concoidal break.

137.0 - 138.0 **Sandstone**: Grey, sandstone chips.

138.0 - 144.0 **Siltstone**: Grey-khaki, pyrite, Concoidal break, silicified bands, grey to 139m.

144.0 - 156.0 **Sandstone**: Grey, mostly fine sand, vuggy at 149 m. Grey-dark grey. Estimated sandstone, lithology not specified.

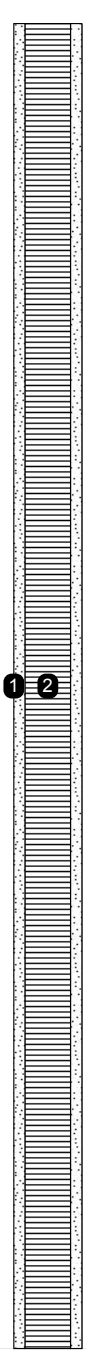
# Reward Minerals Ltd - Composite Log

Bore ID: LDRC1463

| | | | |
|---|---|---|---|
| CLIENT: | Reward Minerals Ltd | DATE COMMENCED: | 01-Jan-2014 (estimate) |
| PROJECT: | Lake Disappointment Drilling | DATE COMPLETED: | Not recorded. |
| LOCATION: | Lake Disappointment | HYDROGEOLOGIST: | Not recorded. |
| SITE: | Not recorded. | DRILLING COMPANY: | Not recorded. |
| Database ID: | 73338 | Tag ID: | Not tagged. |

| | | | | | |
|---|---|---|---|---|---|
| Drilling Method: | Not recorded. | Northing: | 7427520.000 m | Surface RL: | Not recorded |
| Bore Diameter: | 225 mm | Easting: | 481130.000 m | Scheme: | GDA94 (Z51) |

| Geological Unit | Depth (m) | Graphic Log | Summary Lithology | Airlift Yield (L/s) | Construction Diagram |
|---|---|---|---|---|---|
| None recorded | 0.0 – 120.0 | | None recorded. | None recorded. | 0.000 … 120.000 |




1 Annulus Fill: rock

2 Screen: slotted casing, 1.0 mm aperture, 150.0 mm (nominal), with end cap

# BORE NAME: LDRC1463

Note: All depths in this report are in metres below ground level (bgl). Negative depths (in brackets) indicate above ground level.

## BORE DETAILS

| | |
|---|---|
| Database ID: | 73338 |
| Tag ID: | Not tagged |
| Owner: | Reward Minerals Ltd |
| Status: | Unknown |
| Purpose: | Exploration/research |
| Water level: | Not measured |

## LOCATION

| | |
|---|---|
| North: | 7427520.000 m |
| East: | 481130.000 m |
| Coordinate System: | GDA94 (Z51) |
| Method: | Unknown |
| Directions: | None specified. |
| Elevation: | Not measured. |

## SUMMARY COMMENTS

Majority of data sourced from Reward Minerals Ltd 2014 ASX reports. Flow rate during development reached ~25 L/s. During airlift, air and water discharged from LDDH1401 (~35 m away). Drilling: Conventional 650/350 PSI Reverse Circulation (blade and hammer)

## DRILLING DETAILS

| | |
|---|---|
| Commenced: | 01-Jan-2014 (estimate) |
| Completed: | Not specified. |
| Drilled Depth: | 120.0 |
| Drilling Company: | Not specified. |
| Drilling Rig: | Conventional 650/350 PSI Reverse Circulation (blade and hammer) |
| Drilling Rods: | Not specified. |
| Drilling Collar: | Not specified. |
| Compressor: | Not specified. |

### Drillers

No drillers recorded.

### Drilling Methods

| Depth (m bgl) | Equipment (outside diameter) | Medium |
|---|---|---|
| 0.0 - 120.0 | Reverse circulation (225 mm) | |

## CONSTRUCTION

### Fixtures

No fixtures recorded.

### Bore Casing and Slots/Screens

| Depth (m bgl) | Construction | Slots/Screens |
|---|---|---|
| 0.000 - 120.000 | Slotted casing, unplasticised polyvinylchloride uPVC, 150 mm (nominal), joins: unknown. Data estimated from 2014 Reward Minerals Ltd ASX reports. | 1 mm aperture. |

### Annulus Fill

| Depth (m bgl) | Construction |
|---|---|
| 0.0 - 120.0 | Annulus fill, ID-OD: 150 mm to 225 mm, rock. Data estimated from Reward Minerals Ltd 2014 ASX reports. |

### Void Fill

No fill recorded.

## PARAMETERS MEASURED DURING DRILLING

No samples recorded.

## PARAMETERS MEASURED DURING DEVELOPMENT

No samples recorded.

## INTERPRETED SUMMARY LOG

No samples recorded.

## LITHOLOGICAL DESCRIPTIONS

No samples recorded.

| Hole ID | Drilling Method | Easting, Zone 51 | Northing | RL (ground) (mAHD) | Stickup (m) | Collar width (mm) | Drilled Depth (m) | Diameter (mm) | Ream Diameter (mm) | Ream To (m) | Casing Diameter (mm) | Casing Type | Blank Casing (m) | | Slotted Casing (m) | | Aperture (mm) | Gravel Pack Size (mm) | Flow Rate (L/s) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | Top | Bottom | Top | Bottom | | | |
| **LDDH1401** | Diamond, Heliportable diesel drive rig | 481128 | 7427555 | | | | 123.6 | 75 | | | 50 | uPVC | | | 0 | 123.6 | 0.5 | 1.5-3 | |
| **LDDH1402** | Diamond, Heliportable diesel drive rig | 481564 | 7425722 | | | | 121.0 | 75 | | | | | | | | | | | |
| **LDD1501** | | 481263 | 7426547 | | | | 130.9 | 96 | | | | | | | | | | | |
| **LDD1502** | | 481565 | 7425422 | | | | 85.9 | | | | | | | | | | | | |
| **LDD1503** | | 477902 | 7424577 | | | | 135.5 | | | | | | | | | | | | |
| **LDD1504** | | 477743 | 7420598 | | | | 110.0 | | | | | | | | | | | | |
| **LDD1505** | | 471903 | 7412645 | | | | 119.0 | | | | | | | | | | | | |
| **LDD1506** | | 469922 | 7404587 | | | | 39.5 | | | | | | | | | | | | |
| **LDD1507** | | 478079 | 7408745 | | | | 128.0 | | | | | | | | | | | | |
| **LDD1508** | | 478056 | 7400534 | | | | 126.5 | | | | | | | | | | | | |
| **LDD1509** | | 473920 | 7392593 | | | | 116.0 | | | | | | | | | | | | |
| **LDD1510** | | 490520 | 7416773 | | 0.08 | | 122.0 | 152 | | | | | | | | | | | |
| **LDD1512** | | 461903 | 7404603 | | | | 144.5 | | | | | | | | | | | | |
| **LDD1514** | | 469903 | 7398591 | | | | 99.5 | | | | | | | | | | | | |
| **LDD1516** | | 493356 | 7408920 | | | | 113.0 | | | | | | | | | | | | |
| **LDBH1601** | | 478589 | 7414131 | | | | 81? | | | | | | | | | | | | |
| **LDBH1602** | | 479490 | 7401184 | | | | 84? | | | | | | | | | | | | |
| **LDBH1603** | ? | 469452 | 7401199 | | | | ? | | | | | | | | | | | | |
| **LDBH1604** | ? | ? | ? | | | 305 | ? | | | | 203 | uPVC | | | | 90 | | | |

**Notes**

Aquifer test data available

| Hole ID | Completion | Well Development | Geology data available? | Alias | Type | Status | Tenement | Comments |
|---|---|---|---|---|---|---|---|---|
| **LDDH1401** | | | Y | LDD1401 | Monitoring Bore | | EL45/2801 | Drilled to twin LDRC1462. During airlifting of LDRC1463, air and water discharged from LDDH1401 (~35 m away). |
| **LDDH1402** | | | Y | LDD1402 | Monitoring Bore | | EL45/2801 | Drilled to twin LDRC1461 |
| **LDD1501** | | | Y | | Monitoring Bore | | | |
| **LDD1502** | | | Y | | Monitoring Bore | | | |
| **LDD1503** | | | Y | | Monitoring Bore | | | |
| **LDD1504** | | | Y | | Monitoring Bore | | | |
| **LDD1505** | | | Y | | Monitoring Bore | | | |
| **LDD1506** | | | Y | | Monitoring Bore | | | |
| **LDD1507** | | | Y | | Monitoring Bore | | | |
| **LDD1508** | | | Y | | Monitoring Bore | | | |
| **LDD1509** | | | Y | | Monitoring Bore | | | |
| **LDD1510** | | | Y | | Monitoring Bore | Functional | | Last accessed 23/09/2016 |
| **LDD1512** | | | Y | | Monitoring Bore | | | |
| **LDD1514** | | | Y | | Monitoring Bore | | | |
| **LDD1516** | | | Y | | Monitoring Bore | | | |
| **LDBH1601** | | | N | | Monitoring Bore | | | |
| **LDBH1602** | | | N | | Monitoring Bore | | | |
| LDBH1603 | | | N | | Production Bore | | | |
| LDBH1604 | | | N | | Production Bore | | | There is no geological log for this bore, however it is adjacent to LDDH1512.<br>LDBH 1604-casing depth- 90 meters-8" PVC<br>• 12 " collar<br>• Drilled through rock, sands and clays.<br>• 6 tonnes of gravel pack<br>• Flushed hole before casing off, then set up rig over collar and casing, ran in 84 meters off rods and flushed inside casing. Water coming out clean. Pictures taken .<br>• Got sump/ trench water samples<br>• Samples taken @ start of flushing inside casing then @ 10 o'clock then @ 12 o'clock<br>• No discolouration at all whilst flushing inside of casing @ 84 meters<br>• Flushed for 4 hours @ 50psi<br>• Commenced drilling LDBH 1604 on 7/11/16<br>Finished hole completely on 19/11/16 |

**Notes**

# Appendix B

Detailed Log LDD1507

Based on information contained in the original borehole log for Bore LDD 1507 (as received from Reward Minerals) and the assessment of (selected) representative samples viewed as part of this study the following material types and stratigraphic sequence is interpreted for this site, representative photographs of the various materials are attached.

| Depth (m) | Geological Symbol | Stratigraphy | Material Types |
|---|---|---|---|
| 0.0-2.0 | Qhl | Upper Lakebed Sequence | Sandy Clay, orange brown with fine to coarse grained crystalline gypsum sand, uncemented. |
| 2.0-6.5 | Qpl | Lower Lakebed Sequence | Clay, red, brown, pale orange with fine grained crystalline gypsum sand, with interbedded fine to coarse grained subangular to angular gypsum sand (kopi gypsum) horizons, uncemented. |
| 6.5-9.7 | Qpl | Lower Lakebed Sequence | Sandstone, pale orange to white, Mwk-Mo silica and gypsum cemented gypsum & quartz sand, very fine to very coarse grained (<0.06 to 1.8mm) sub-rounded to sub-angular (detrital) gypsum sand & angular (crystalline) gypsum sand, very fine to coarse grained (<0.06 to 0.6mm) sub-rounded to rounded quartz sand, trace proportions of very coarse silt and very fine grained subrounded to rounded black heavy mineral sand. |
| 9.7-13.5 | Puw | Weathered Basement Mottled Zone | Clay, pale green, grey, pale orange, with 5-10% very fine to medium grained (<0.06 to 0.27mm) crystalline gypsum sand, with 5% very coarse silt to very fine sand (<0.05 to 0.1mm) comprising subrounded to well rounded brown ironstone, black heavy mineral and minor green lithic fragments. Localised crystalline gypsum veining. |
| 13.5-14.0 | Puw | Weathered Basement Mottled Zone (calcareous) | Sandy Clay, orange to pale green, calcareous, with 5% very fine to very coarse (0.1 to 1.5mm) crystalline gypsum sand, trace very coarse silt and very fine grained subrounded to rounded black heavy mineral sand. |

| | | | |
|---|---|---|---|
| 14.0-29.0 | Puw | Weathered Basement Mottled Zone (oxidised) | Clay, grey, pale green, with red, orange ferruginous alteration, trace very fine grained to coarse grained crystalline gypsum sand, trace coarse silt and very fine grained heavy mineral sand. Minor interbedded sandstone, grey, very fine to coarse quartz sand, Mwk silica cemented. |
| 26.6-29.0 | Puw | Weathered Basement Mottled Zone (oxidised, calcareous) | Weakly calcareous from 26.6m with minor carbonate veining from 27.7m. |
| 29.0-34.6 | Puw | Weathered Basement Mottled Zone (oxidised) | Clay, pale green, grey, to red, orange, brown with very fine to coarse grained crystalline gypsum sand and gravel, with coarse silt and very fine grained black heavy mineral sand. |
| 34.6-34.7 | Puw | Weathered Basement Mottled Zone (calcareous) | Calcrete, white, moderately carbonate cemented. |
| 34.7-43.75 | Puw | Weathered Basement Mottled Zone (oxidised) | Clay, grey, minor red, orange with very fine to coarse grained crystalline gypsum sand and minor crystalline gypsum gravel (<0.06 to 2.1mm). |
| 39.5-43.75 | Puw | Weathered Basement Mottled Zone | Clay, grey, minor red, pale orange with very fine to coarse grained crystalline gypsum sand. |
| 43.75-59.0 | Puw | Weathered Basement | Clay, grey, dark grey, black, minor green. XW claystone with relict crystalline gypsum infilled joints. |
| 59.0-65.0 | Puw | Weathered Basement | Siltstone, XW-HW, grey, Mwk-Mo siliceous cemented, sandy with 20% very fine to fine grained (<0.06 to 0.2mm) subrounded to rounded quartz sand and minor heavy mineral sand, clayey matrix. With very fine to fine grained crystalline gypsum sand and localised gypsum veining. |
| 65.0-66.1 | Puw | Weathered Basement | Sandstone, HW-MW, pale grey, pale brown, grey, very fine to medium grained subrounded quartz, Mwk-Mo siliceous cemented, clayey matrix with fine grained crystalline gypsum sand. |

| | | | |
|---|---|---|---|
| 66.1-70.7 | Puw | Weathered Basement | Sand and Sandstone, HW, pale brown, grey, Vwk siliceous cemented to uncemented very fine to fine grained (<0.06-0.2mm) subrounded to rounded quartz sand, with very fine to fine grained crystalline gypsum sand, minor very fine grained rounded black heavy mineral sand. Slight increase in grain size with depth to 0.3mm. |
| 70.7-71.0 | Puw | Weathered Basement | Clay, dark grey, XW claystone. |
| 71.0-72.0 | Puw | Weathered Basement | Sand and Sandstone, fine to medium grained subrounded to rounded quartz sand, minor fine grained rounded black heavy mineral sand, variably Mwk-Mo siliceous cemented HW sandstone and uncemented sand. |
| 72.0-78.5 | Puw | Weathered Basement | Sand and Sandstone, fine to medium grained subrounded to rounded quartz sand, with argillaceous clayey matrix, minor fine grained rounded black heavy mineral sand, variably Wk siliceous cemented HW argillaceous sandstone and uncemented clayey sand. |
| 81.5-90.5 | Puw | Weathered Basement | Siltstone with interbedded claystone, MW-HW, grey, dark grey, Mwk-Mo siliceous cemented, sandy with 15-20% very fine to fine grained (<0.06 to 0.2mm) subrounded to rounded quartz sand and minor heavy mineral sand, clayey matrix, with narrow interbedded fine laminae comprising silt and clay sized particles (fissile in places). With very fine to fine grained crystalline gypsum sand. Bedding at 30° dip. |
| 90.5-91.0 | Puw | Weathered Basement | Sand and Sandstone, grey, fine to medium grained subrounded to rounded quartz sand, minor fine grained rounded black heavy mineral sand, variably Mo-We siliceous cemented MW-HW sandstone and uncemented sand. |
| 91.0-109.65 | Puw | Weathered Basement | 91.0-102.4m: Siltstone, MW-HW, grey, dark grey, Mwk-Mo siliceous cemented, sandy with 15% very fine to fine grained (<0.06 to 0.1mm) |

| | | | |
|---|---|---|---|
| | | | subrounded to rounded quartz sand and minor green mica & black heavy mineral sand, silty to clayey matrix, laminated. With interbedded sandstone, MW-HW, dark grey, argillaceous, very fine to fine grained (<0.06 to 0.15mm) subrounded to rounded quartz and minor heavy mineral sand, silty matrix. With narrow crystalline gypsum veining. |
| 109.65-118.5 | Pu | Basement | Siltstone, MW-SW, dark grey, Mo siliceous cemented, sandy with 10-15% very fine to fine grained (<0.06 to 0.1mm) subrounded to rounded quartz sand, subangular green to black mica (disseminated and as thin laminae) & black heavy mineral sand, silty to clayey matrix, laminated to finely bedded. Bedding dips at 25 to 30°. |
| 118.5-128.0 | Pu | Basement | Siltstone, SW, grey to black, Mo siliceous cemented, variably sandy with up to 15% very fine to fine grained (<0.06 to 0.15mm) subrounded to rounded quartz sand, subangular green to black mica (disseminated and as thin laminae) & black heavy mineral sand, silty to clayey matrix, laminated to finely bedded. Bedding dips at 25 to 30°. |

Terms used to describe weathering of the material types encountered include:

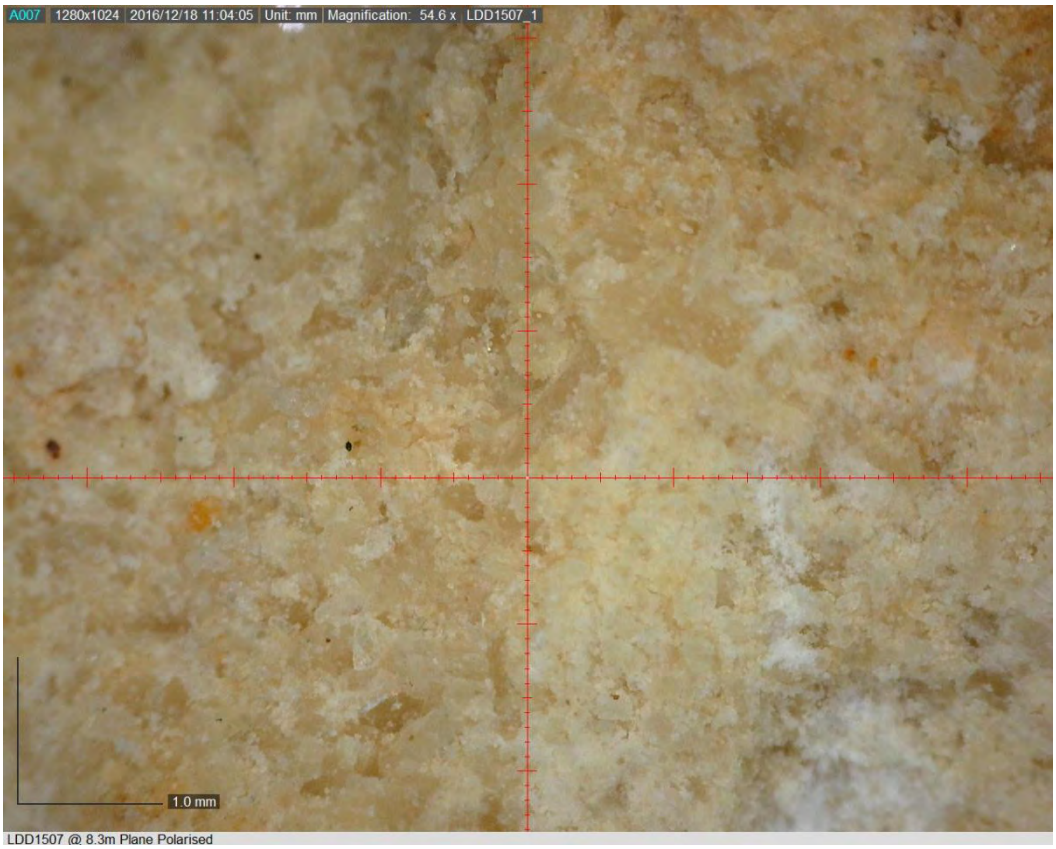
| Term | Symbol | Index Test |
|---|---|---|
| Residual Soil | RS | Soil derived from the weathering of rock, the mass structure and substance fabric are no longer evident, there is a large change in volume but the soil has not been significantly transported. |
| Extremely Weathered | XW | Material is weathered to such an extent that it has "soil" properties i.e. it either disintegrates or can be remoulded in water. Original fabric still evident. |
| Highly Weathered | HW | Rock is weathered to such an extent that it shows considerable change in appearance and loss in strength. Material is still a rock but of relatively low strength. |
| Moderately Weathered | MW | Rock is weathered to such an extent that it shows a visible change in appearance with significant loss in strength. |
| Slightly Weathered | SW | Rock is slightly discoloured but shows little or no change of strength from fresh rock. |
| Fresh | FR | Rock shows no sign of decomposition or staining. |

Terms used to describe cementation of the material types encountered include:

| Term | Symbol | Index Test |
|---|---|---|
| Uncemented | Uc | Clean grains, exhibiting soil properties. |
| Very Weakly Cemented | Vwk | Marginal soil-rock strengths, collapsing feel under light finger pressure, cement seen on some washed grains. |
| Weakly Cemented | Wk | Collapsing feel under light finger pressure, breaks down to individual grains or with some grains cemented together, cement seen on many washed grains. |
| Moderately Weakly Cemented | Mwk | Cement on nearly all grains, breaks downs to lumps and some individual grains under finger pressure, can crush to individual grains under knife blade. |
| Moderately Cemented | Mo | Cement on nearly all grains, can break fragments off by hand, can crush to small lumps under knife blade. |
| Well Cemented | We | Cement on all grains, cannot break fragments off by hand, dull sound under hammer. |
| Very Well Cemented | Vwe | Most primary pores filled with cement, requires firm blow with hammer to break off fragments, rings under hammer. |

Sample Photographs

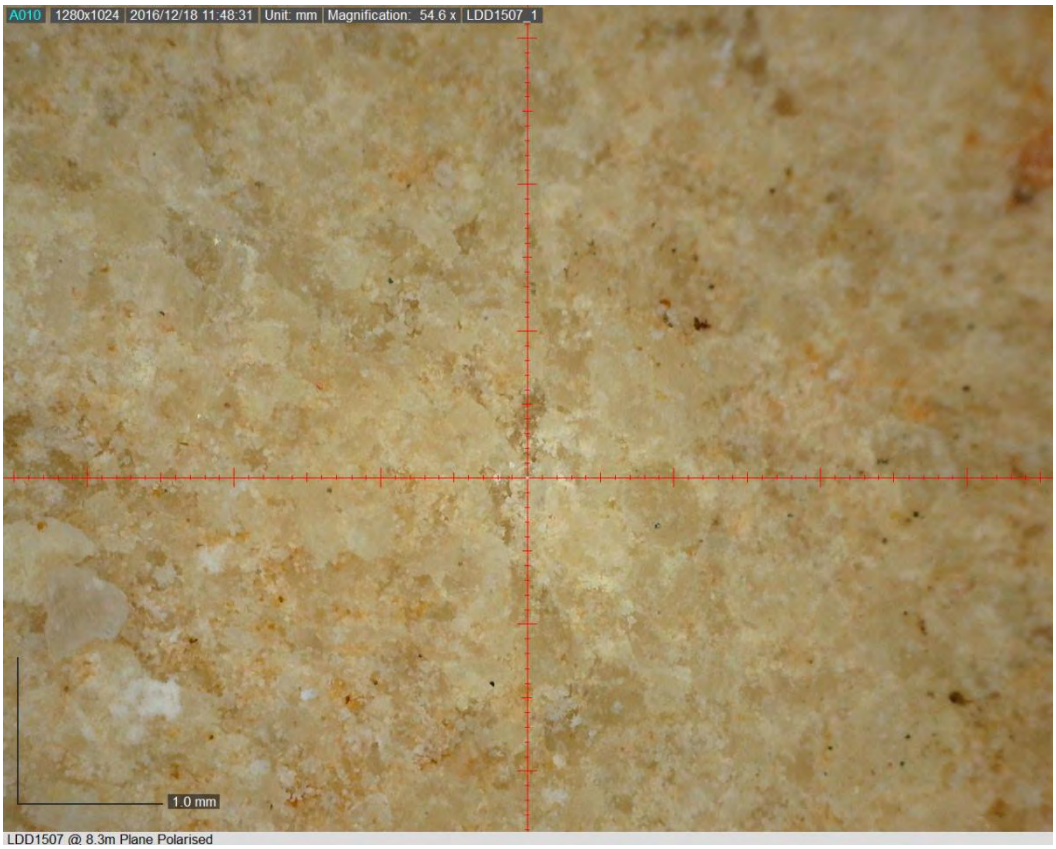
## LDD1507 @ 8.3m Depth



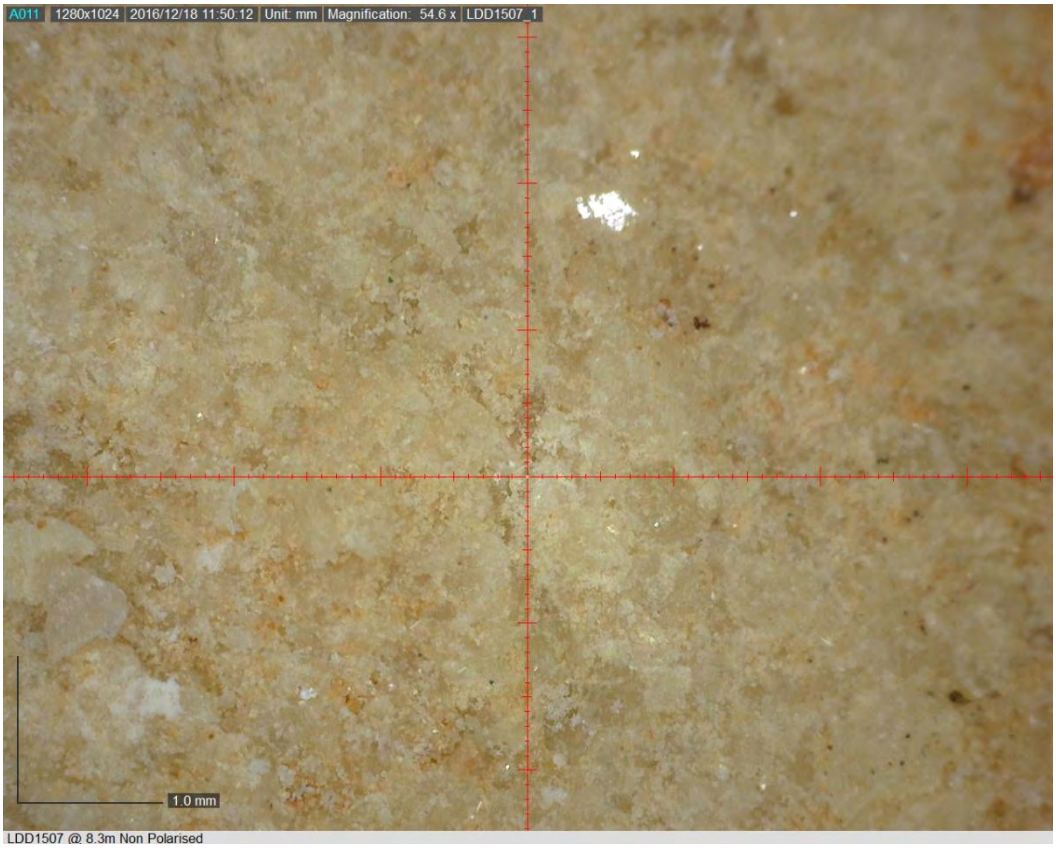
LDD1507 @ 8.3m Plane Polarised

LDD1507 @ 8.3m Non Polarised

## LDD1507 @ 8.3m Depth

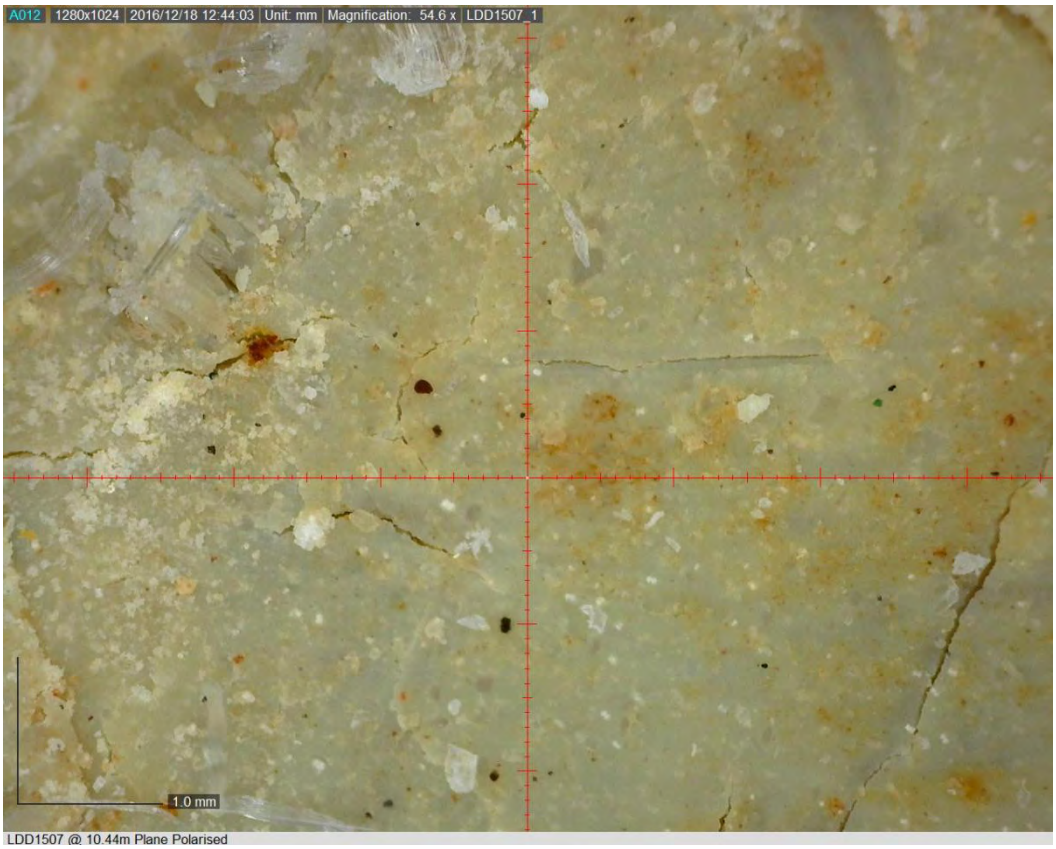


LDD1507 @ 8.3m Plane Polarised

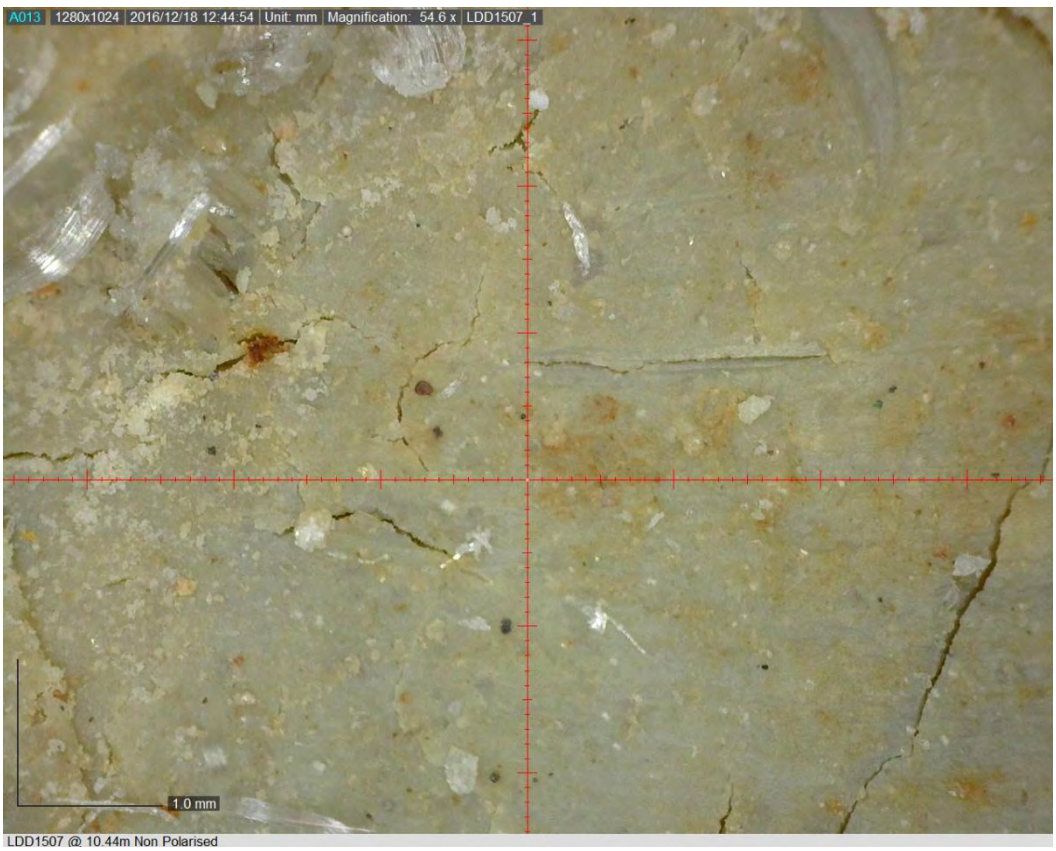


LDD1507 @ 8.3m Non Polarised

## LDD1507 @ 10.44m Depth

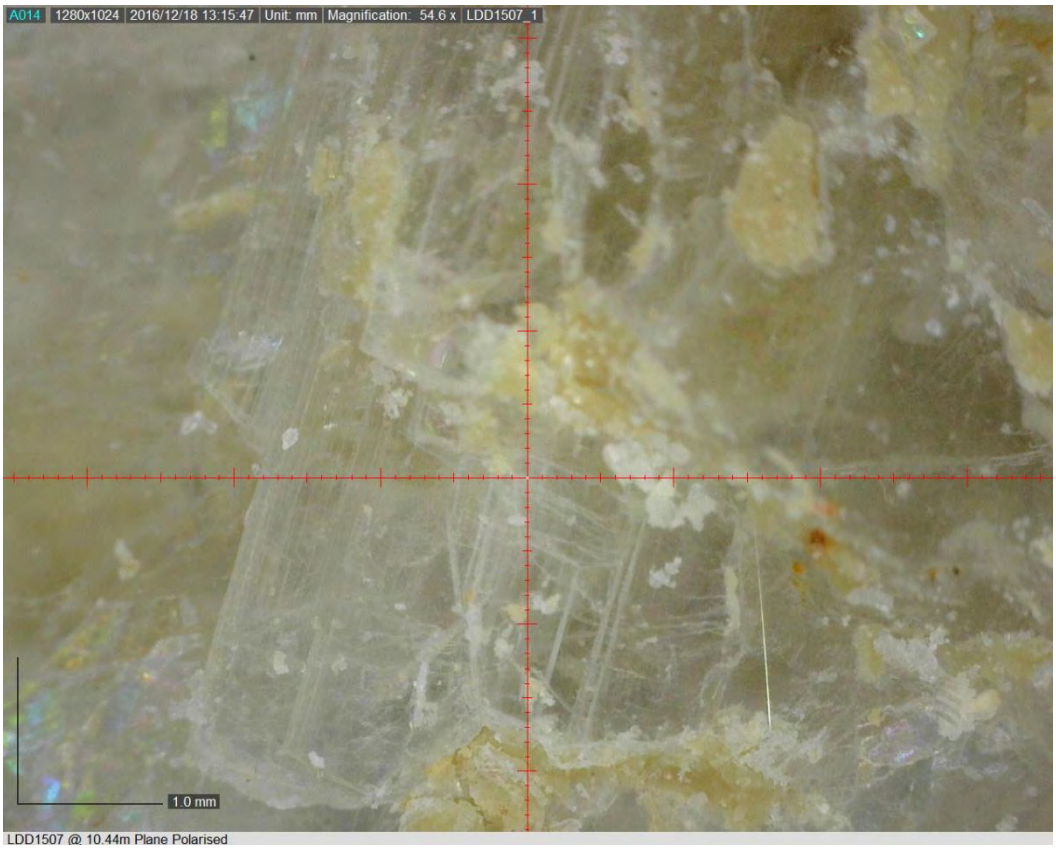


LDD1507 @ 10.44m Plane Polarised



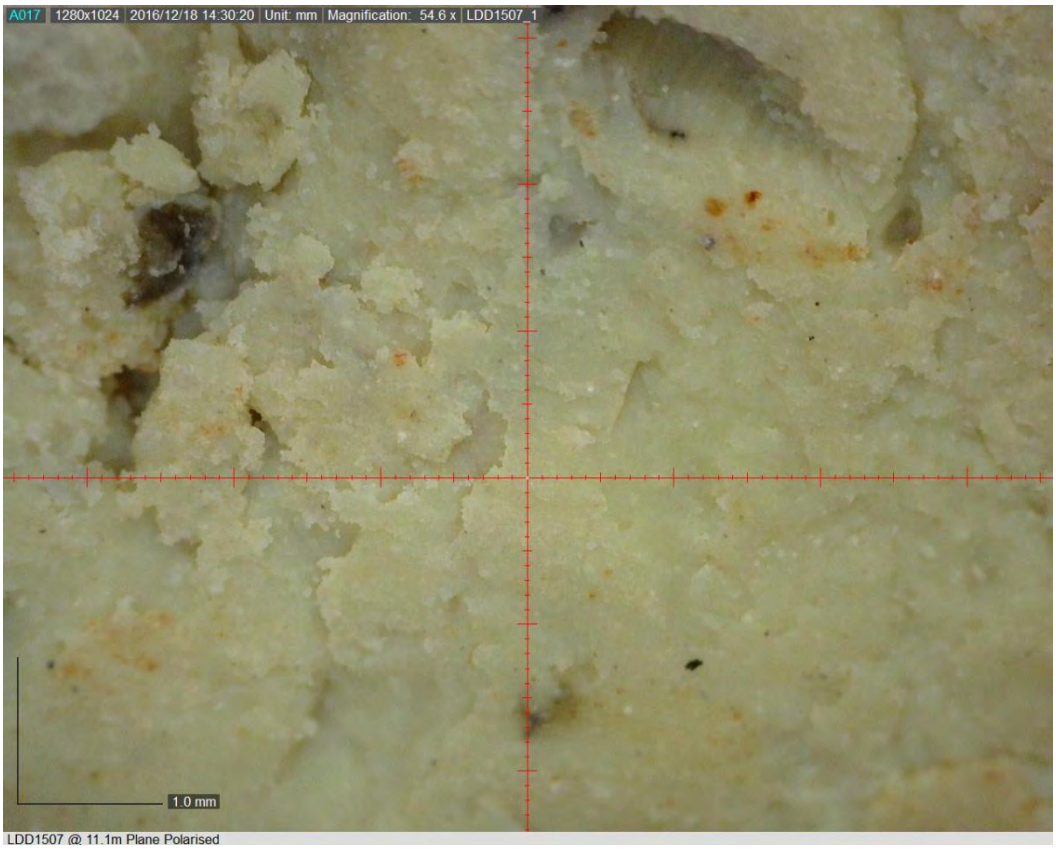
LDD1507 @ 10.44m Non Polarised

## LDD1507 @ 10.44m Depth

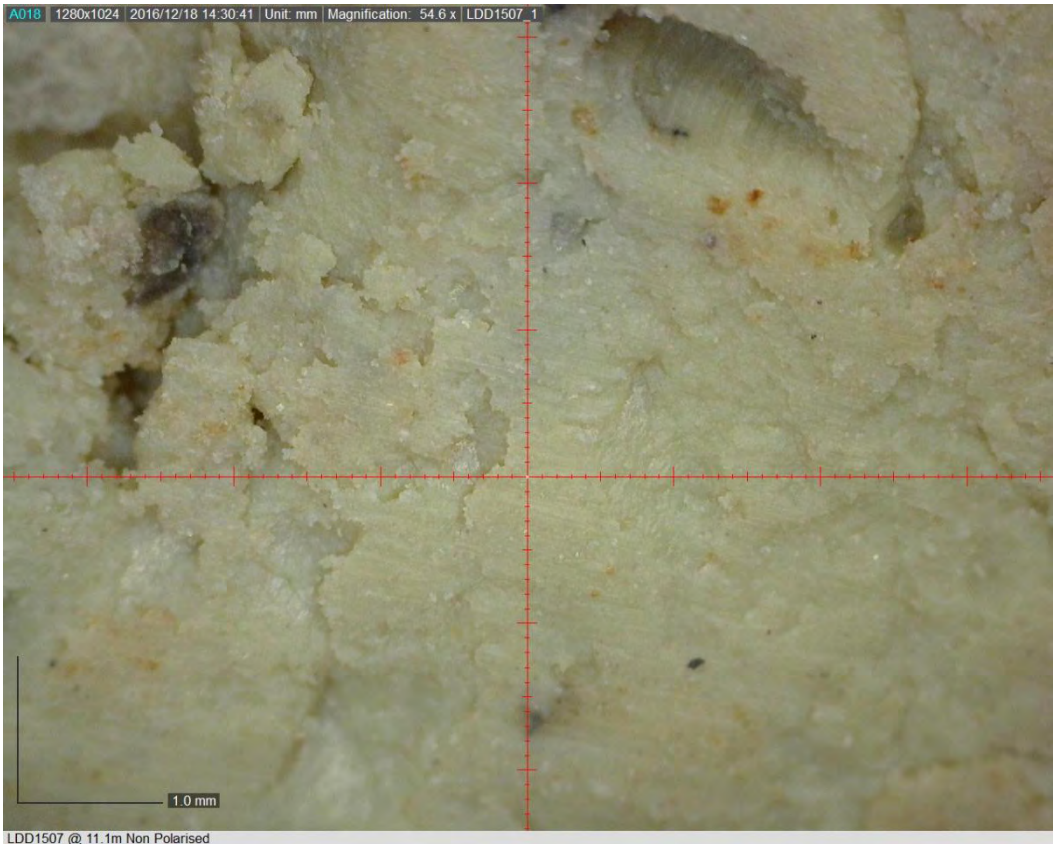


LDD1507 @ 10.44m Plane Polarised

## LDD1507 @ 10.44m Depth

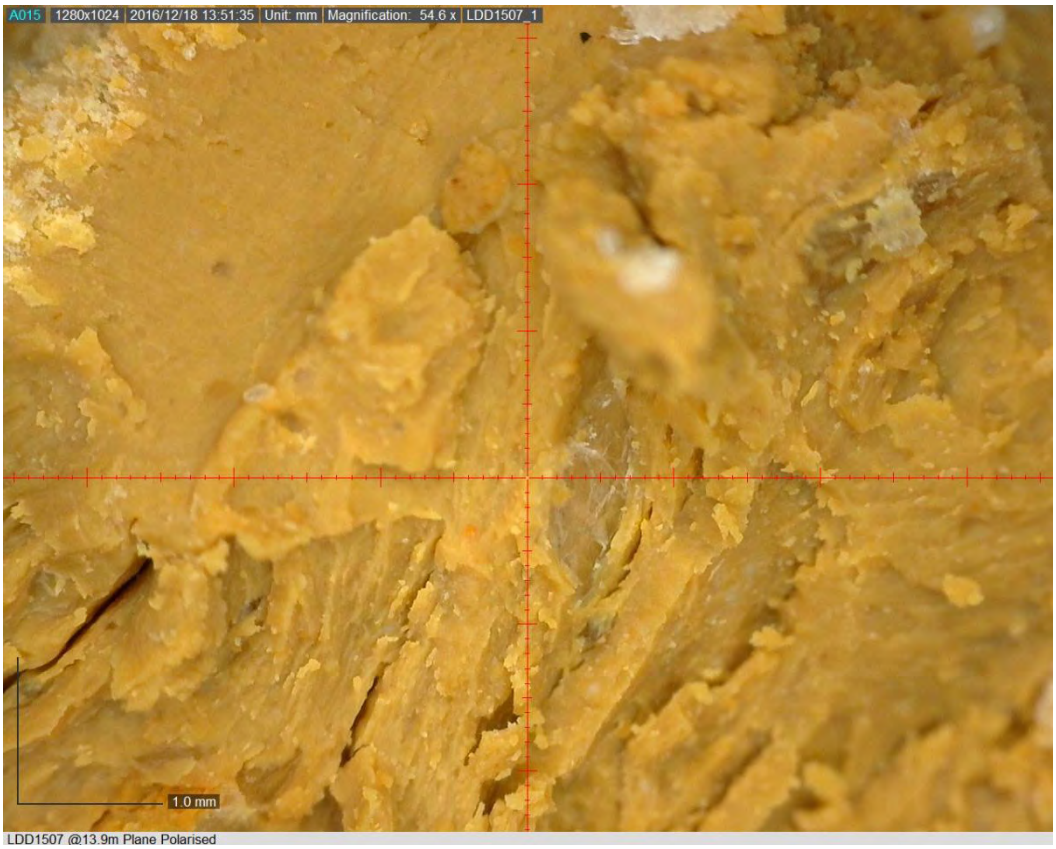


LDD1507 @ 11.1m Plane Polarised

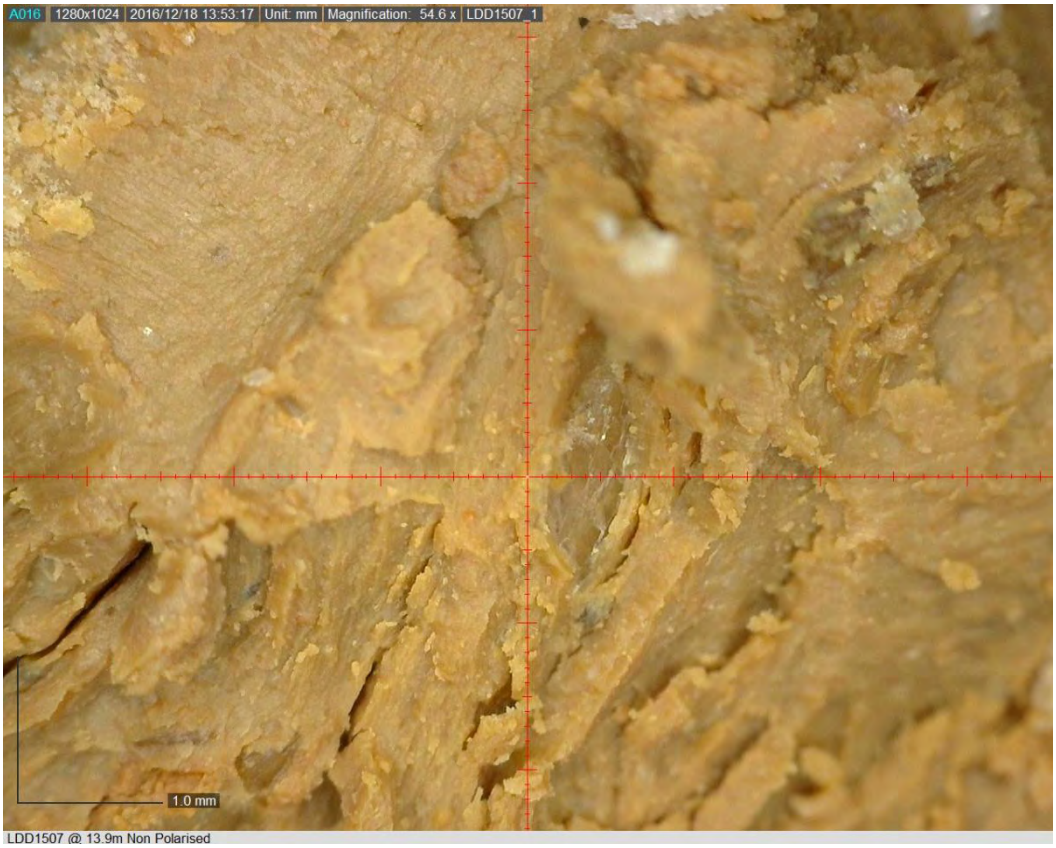


LDD1507 @ 11.1m Non Polarised

## LDD1507 @ 13.9m Depth

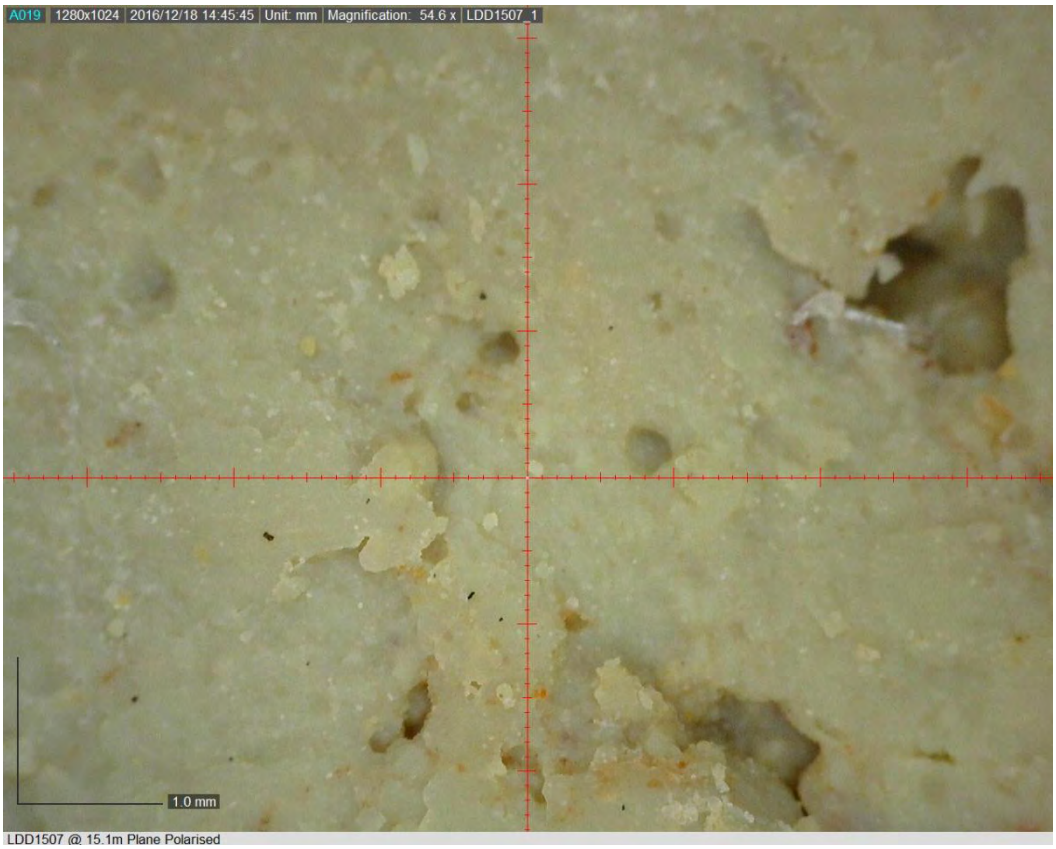


LDD1507 @13.9m Plane Polarised

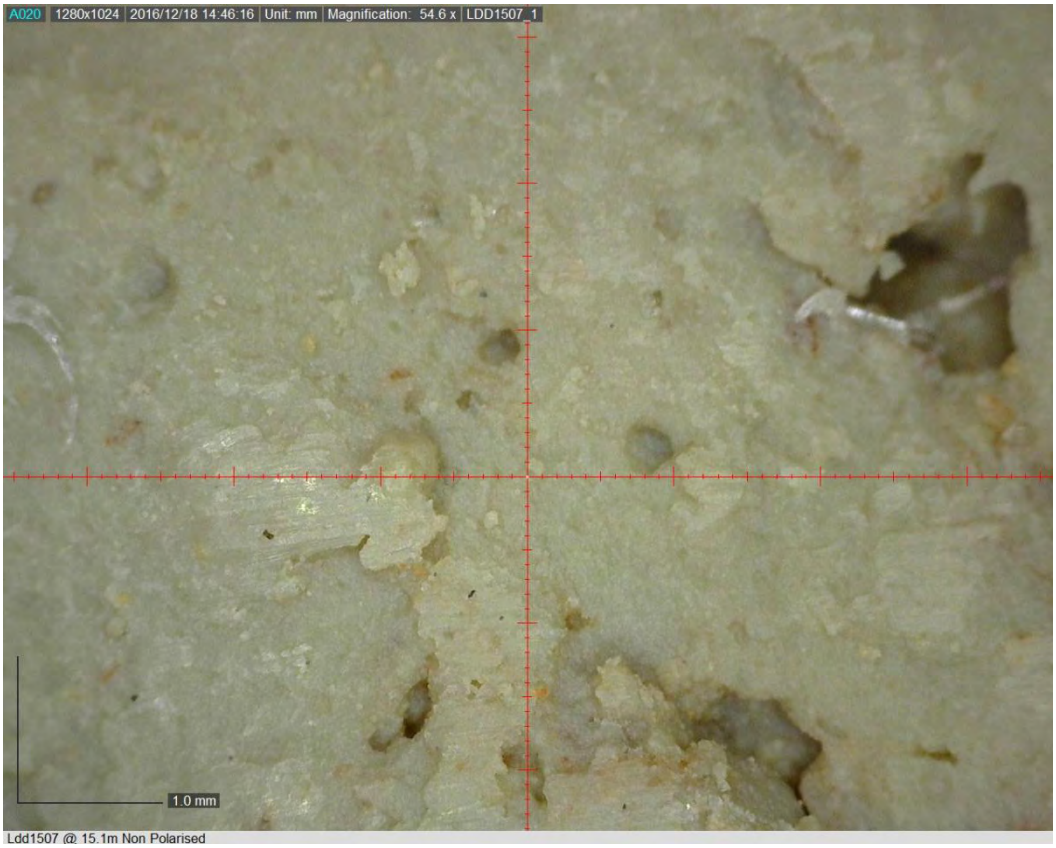


LDD1507 @ 13.9m Non Polarised

## LDD1507 @ 15.1m Depth

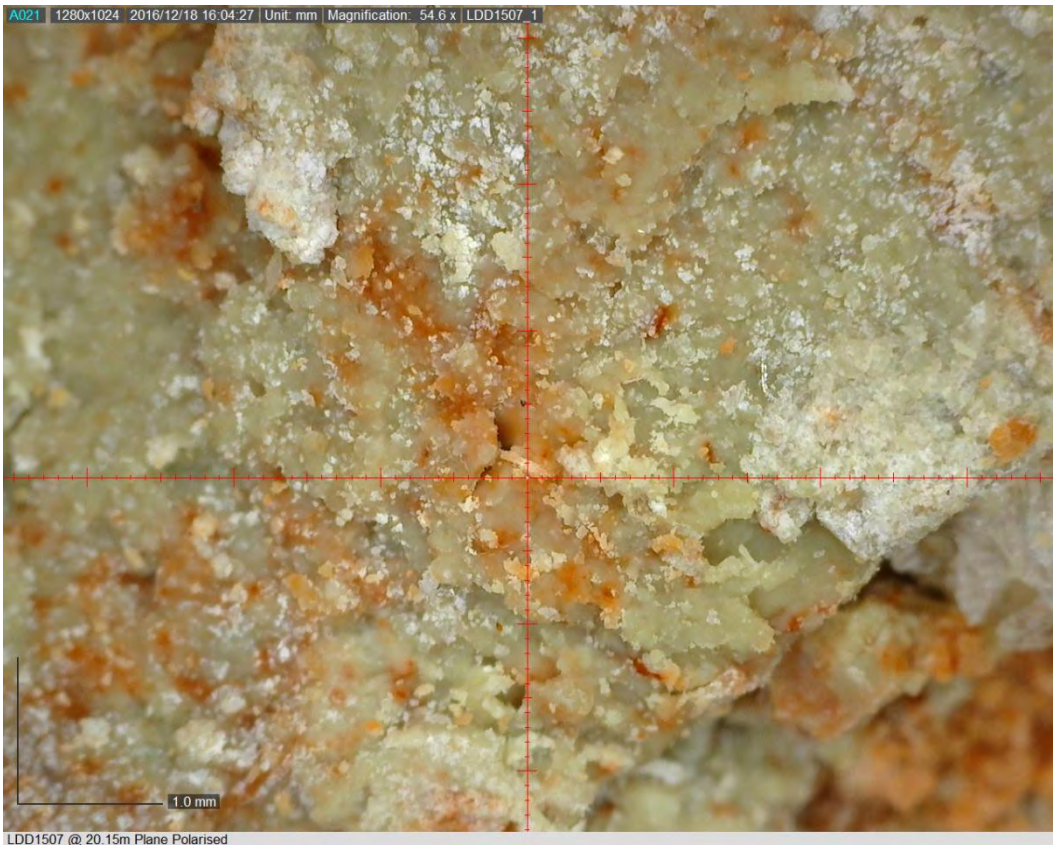


LDD1507 @ 15.1m Plane Polarised

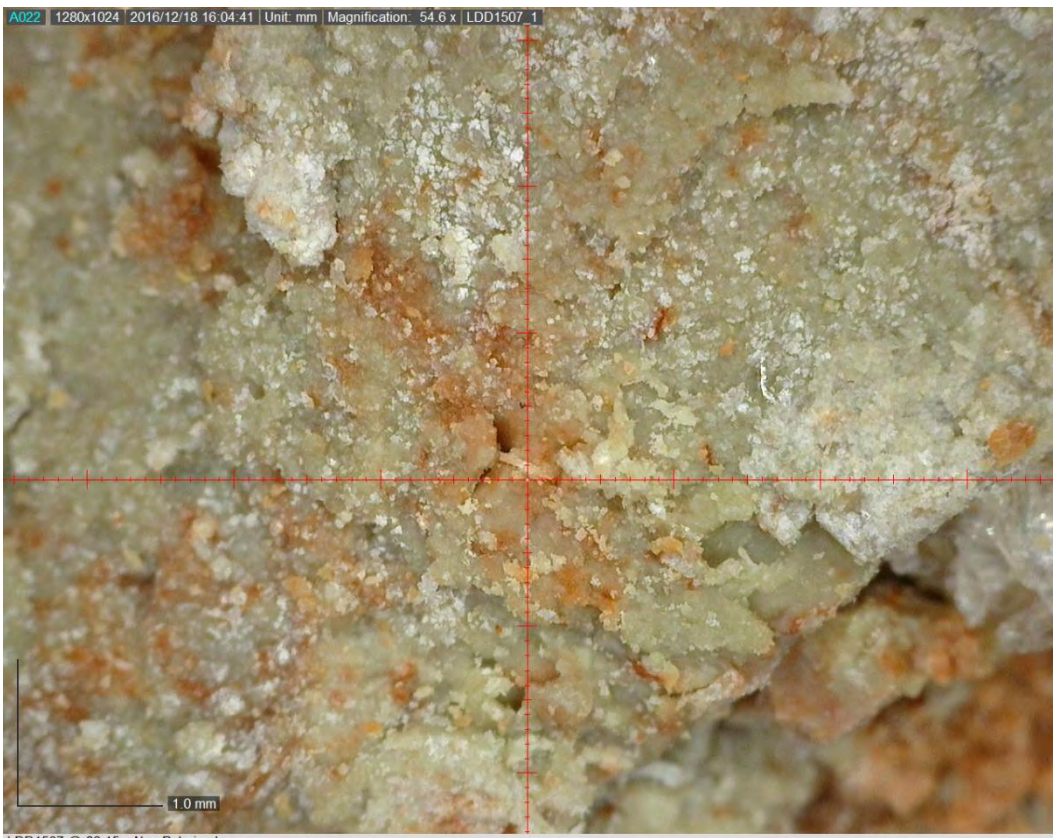


Ldd1507 @ 15.1m Non Polarised

## LDD1507 @ 20.15m Depth

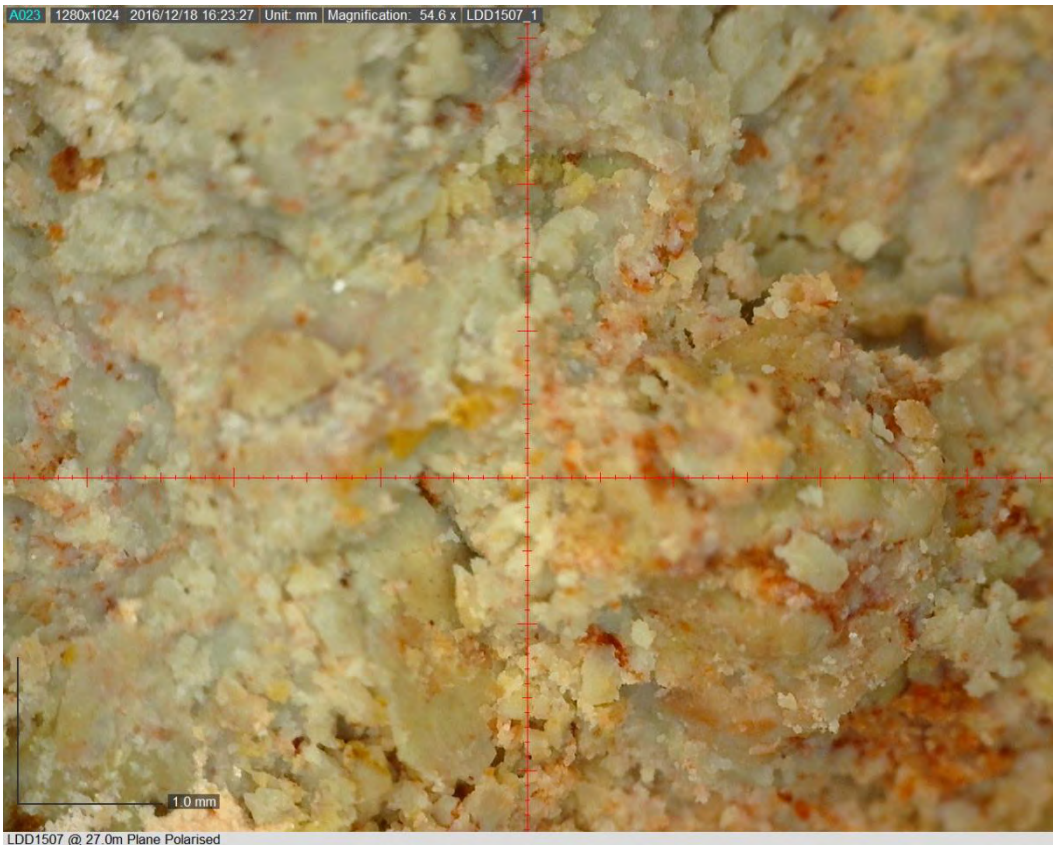


LDD1507 @ 20.15m Plane Polarised

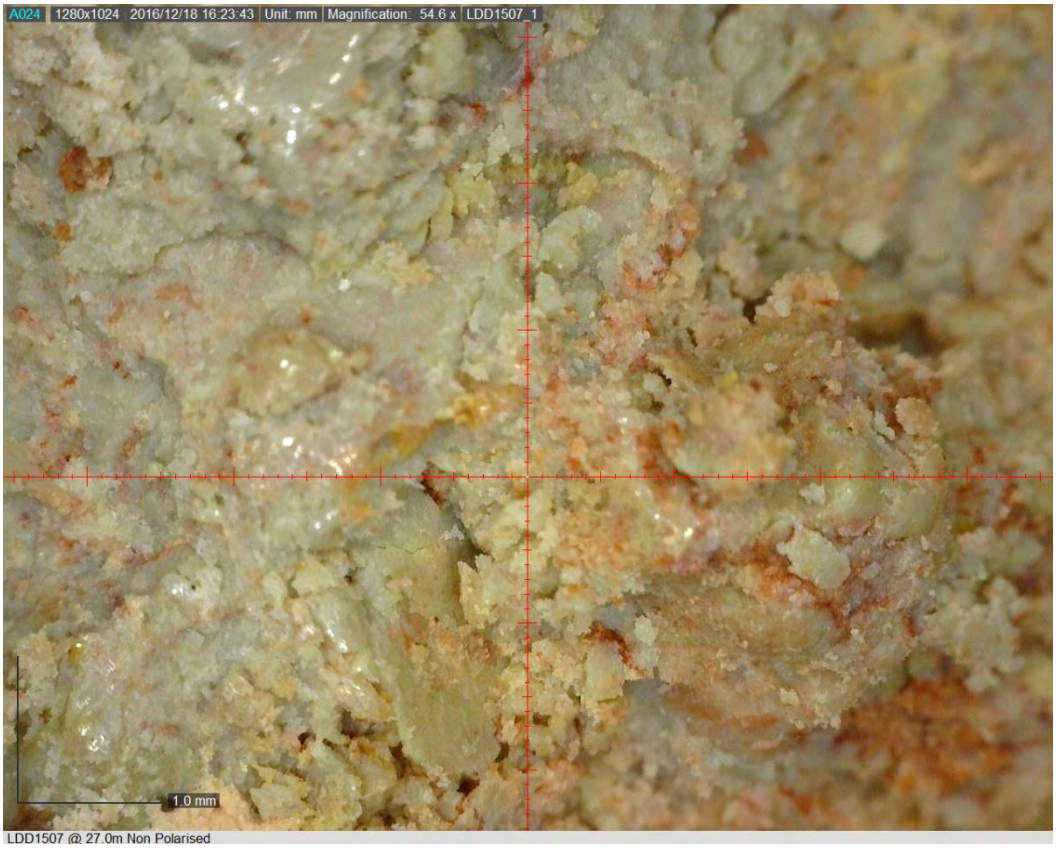


LDD1507 @ 20.15m Non Polarised

## LDD1507 @ 27.0m Depth

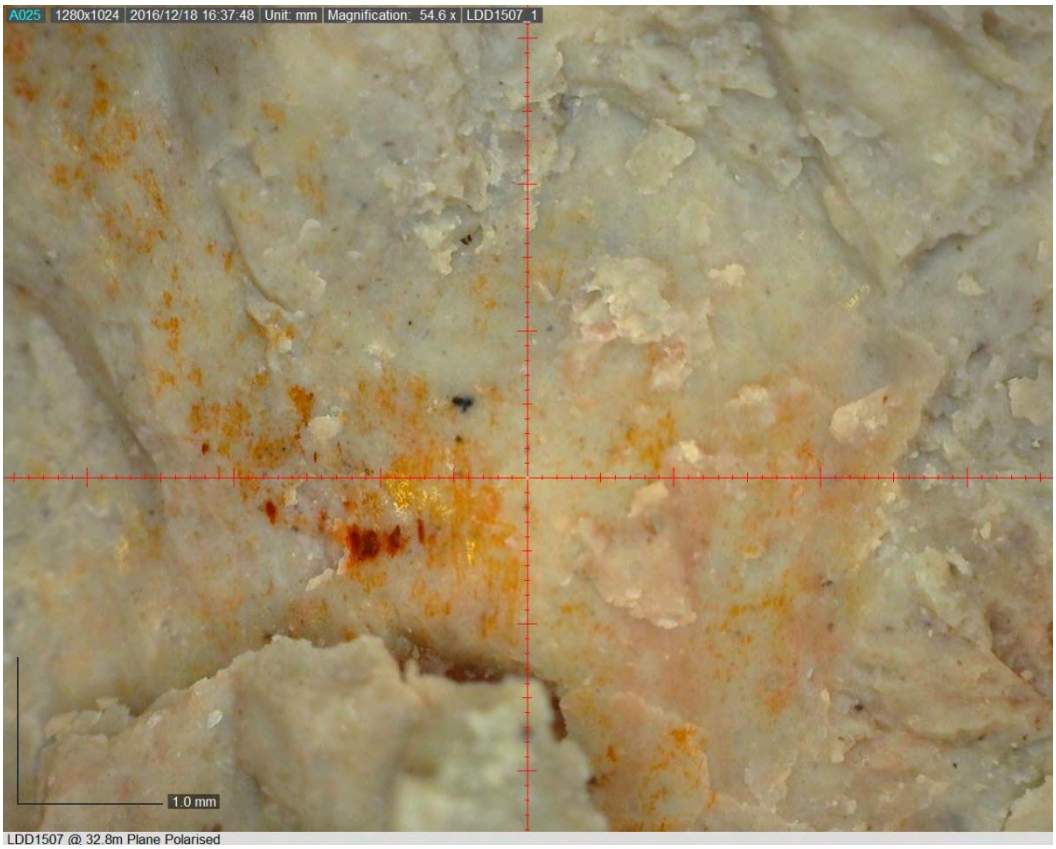


LDD1507 @ 27.0m Plane Polarised

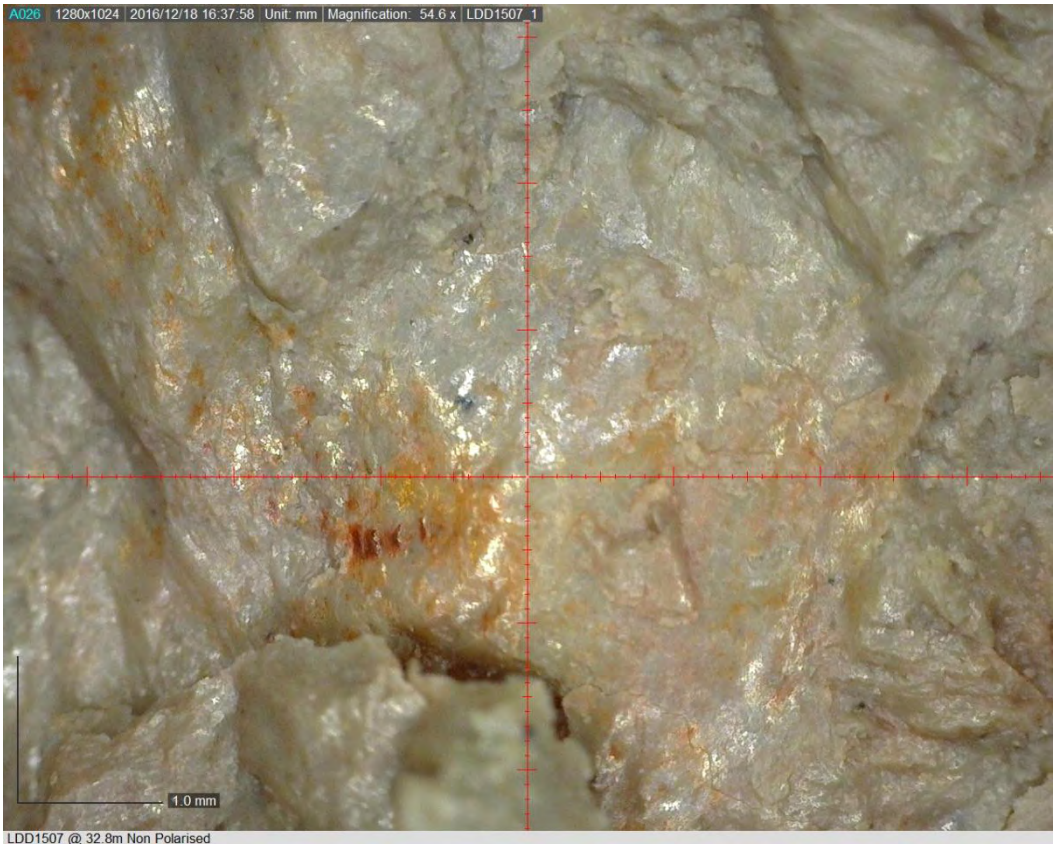


LDD1507 @ 27.0m Non Polarised

## LDD1507 @ 32.8m Depth

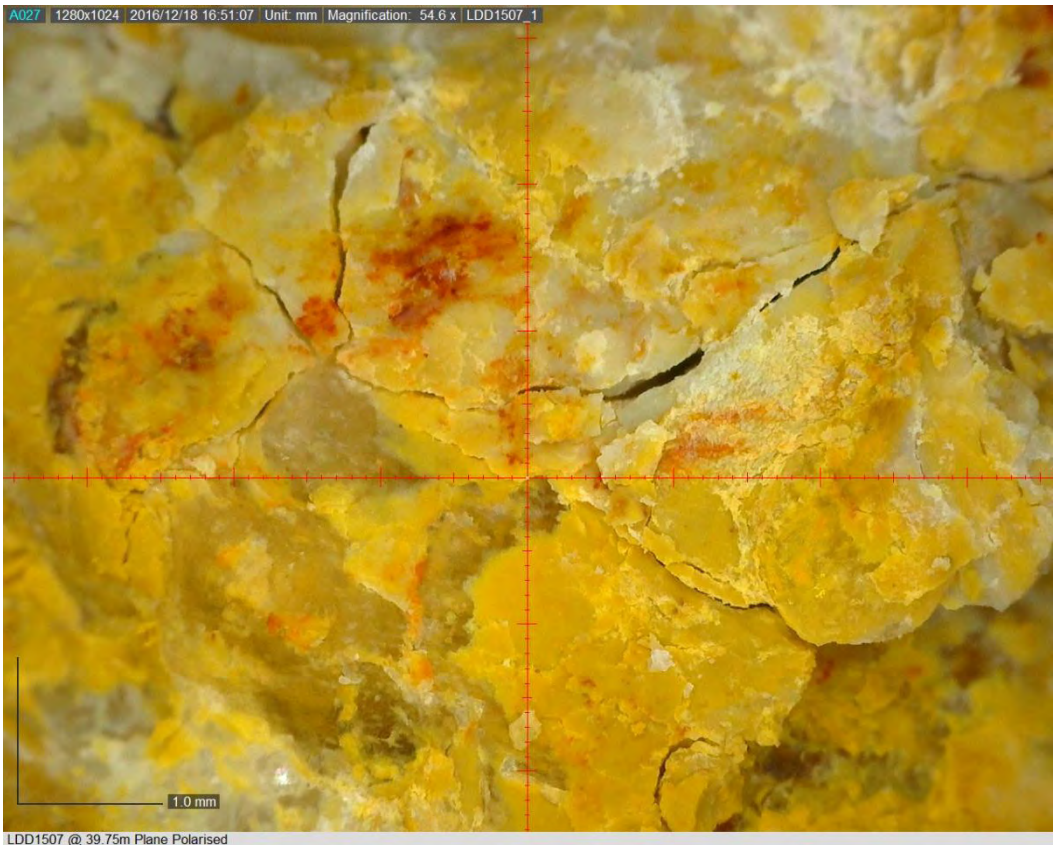


LDD1507 @ 32.8m Plane Polarised

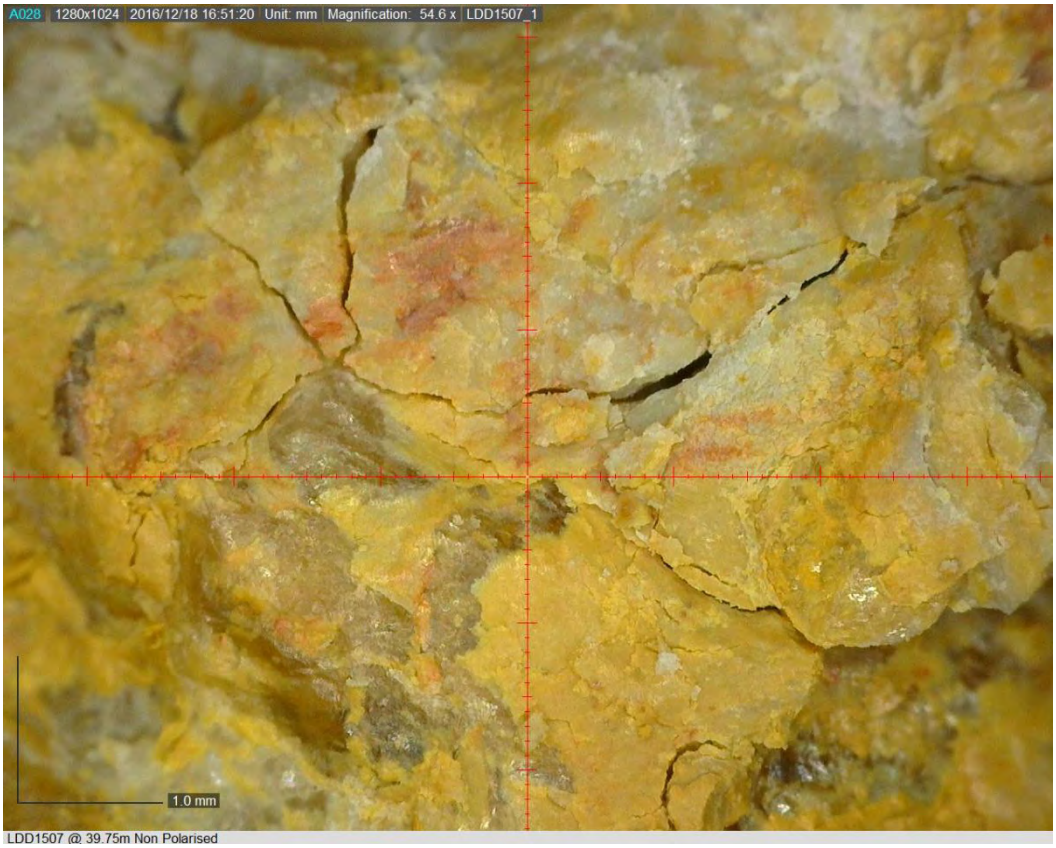


LDD1507 @ 32.8m Non Polarised

## LDD1507 @ 39.75m Depth

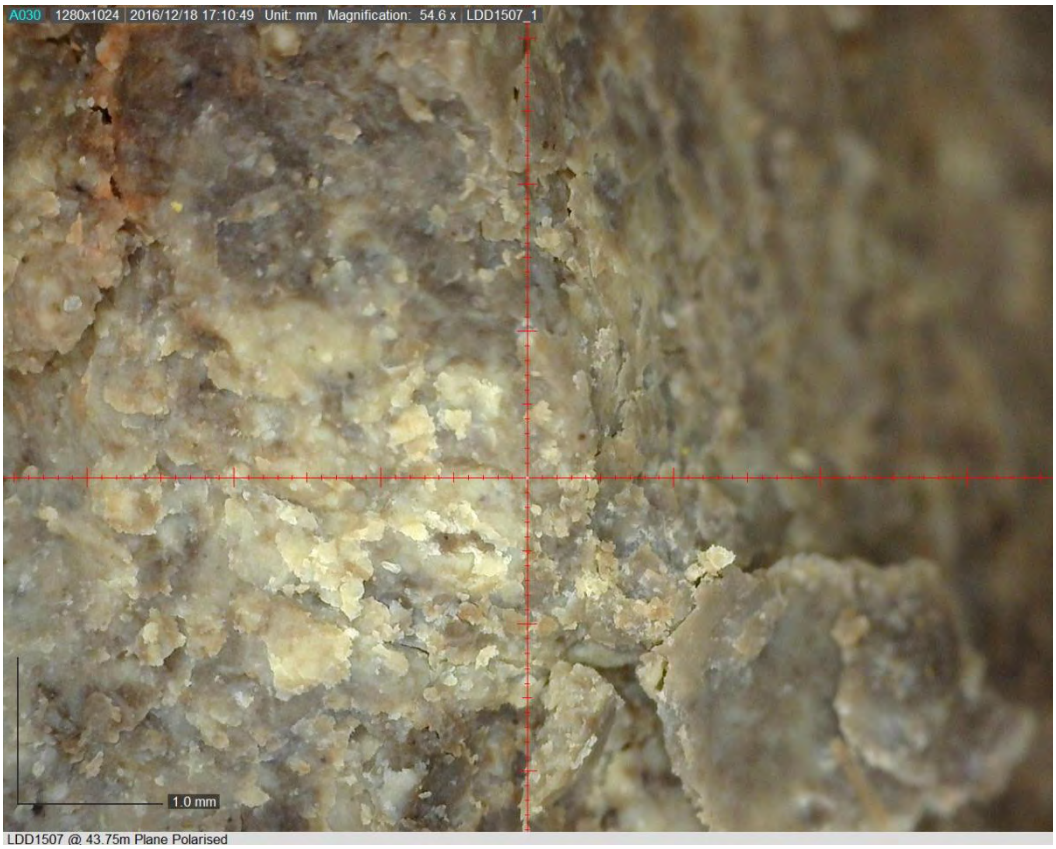


LDD1507 @ 39.75m Plane Polarised

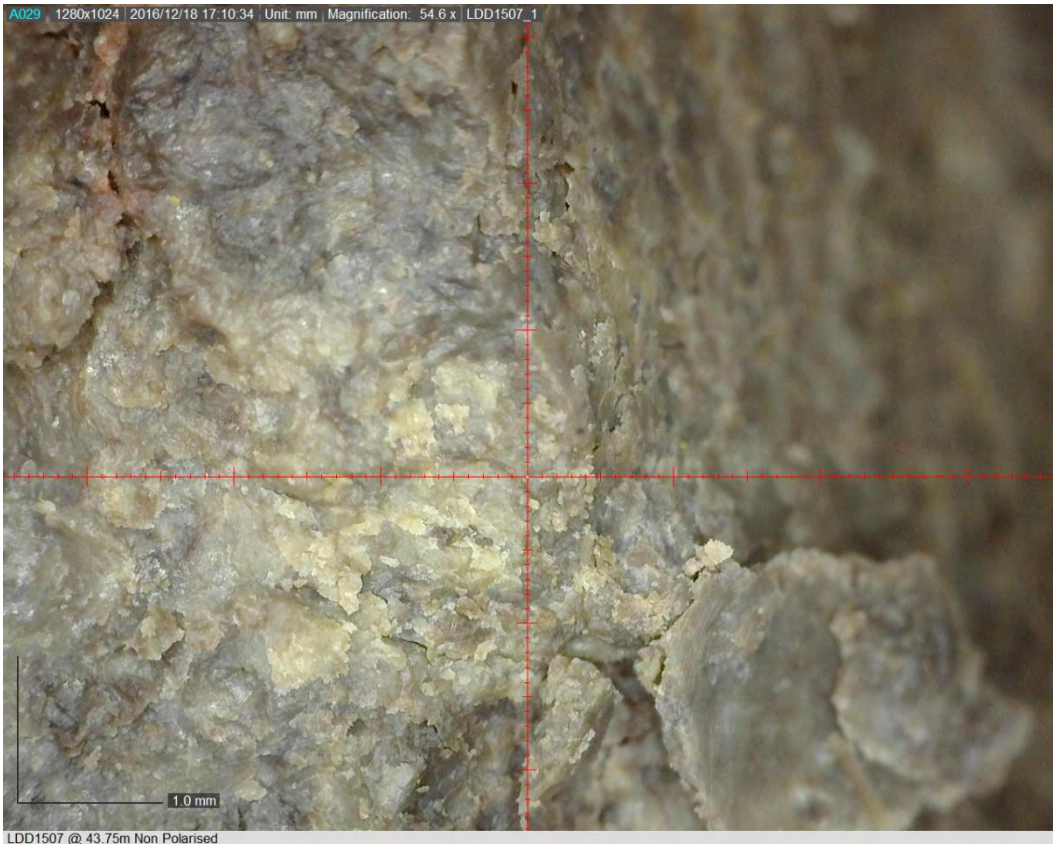


LDD1507 @ 39.75m Non Polarised

## LDD1507 @ 43.75m Depth

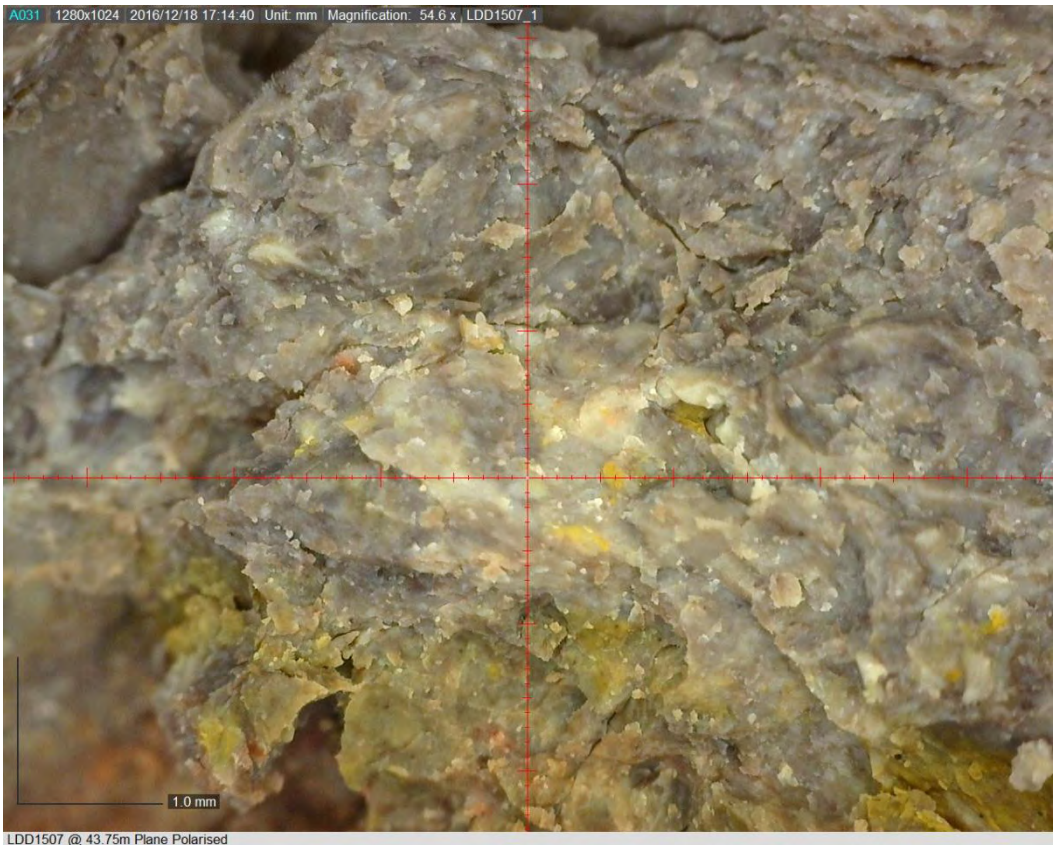


LDD1507 @ 43.75m Plane Polarised

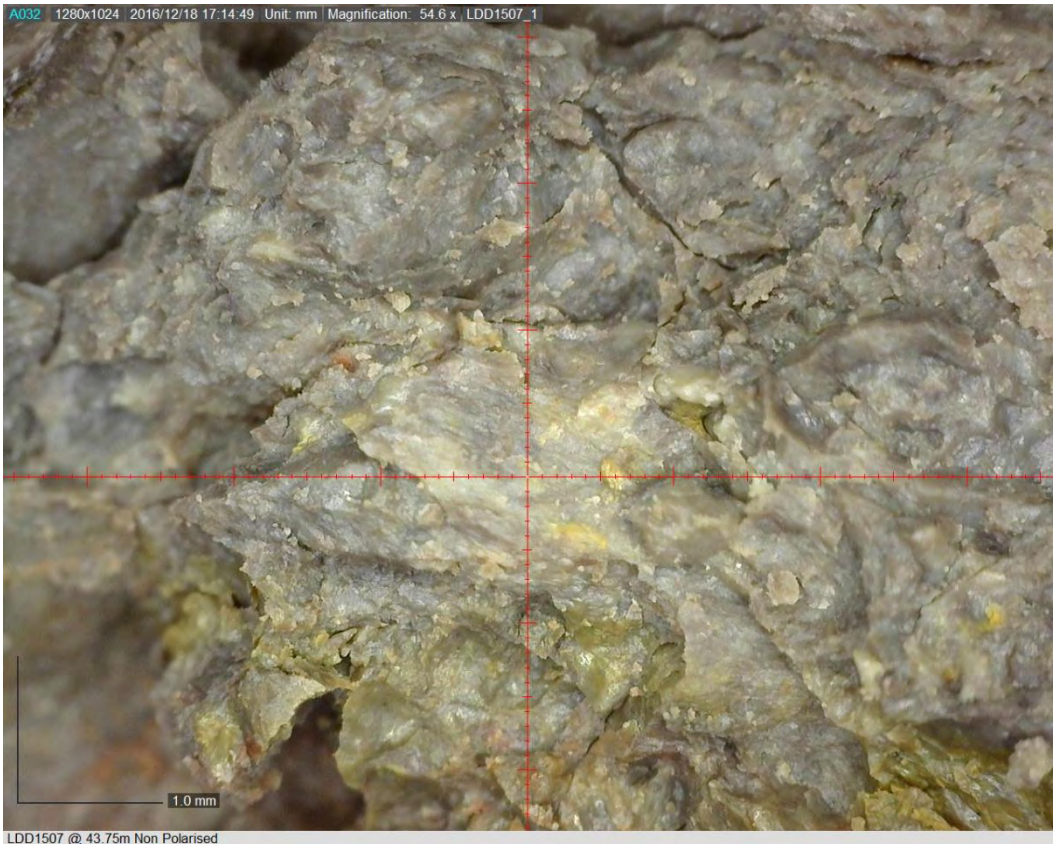


LDD1507 @ 43.75m Non Polarised

## LDD1507 @ 43.75m Depth

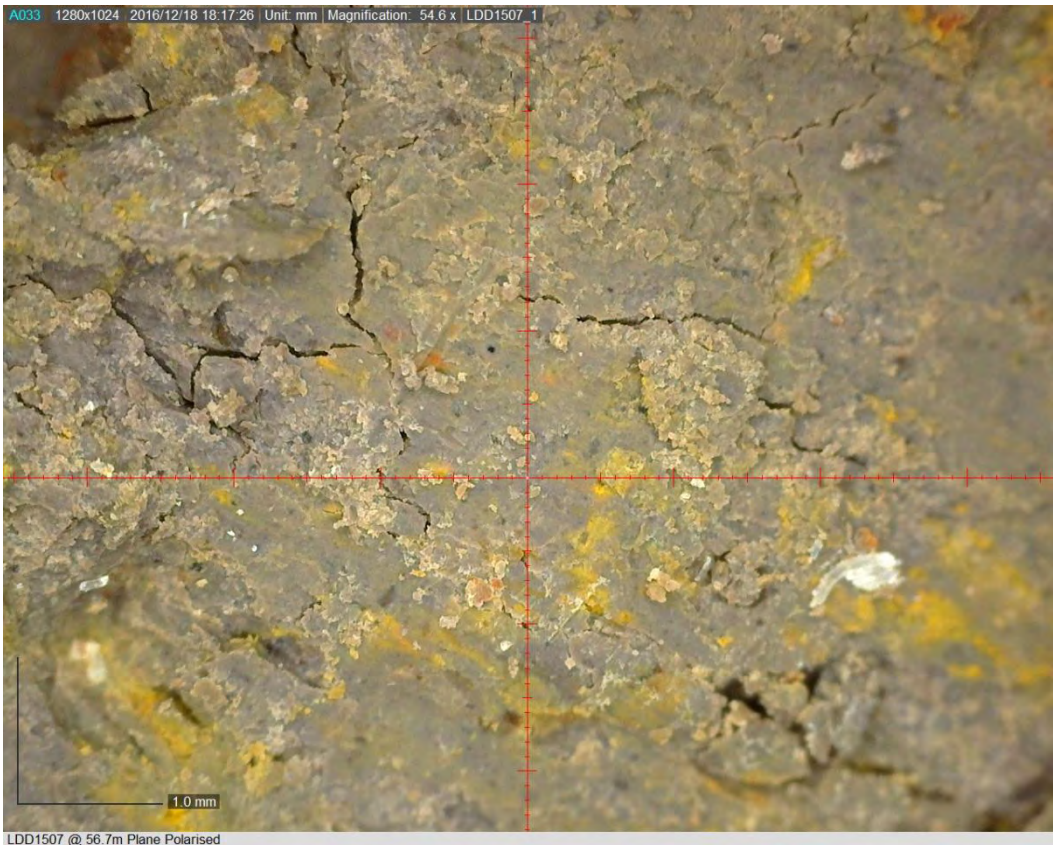


LDD1507 @ 43.75m Plane Polarised

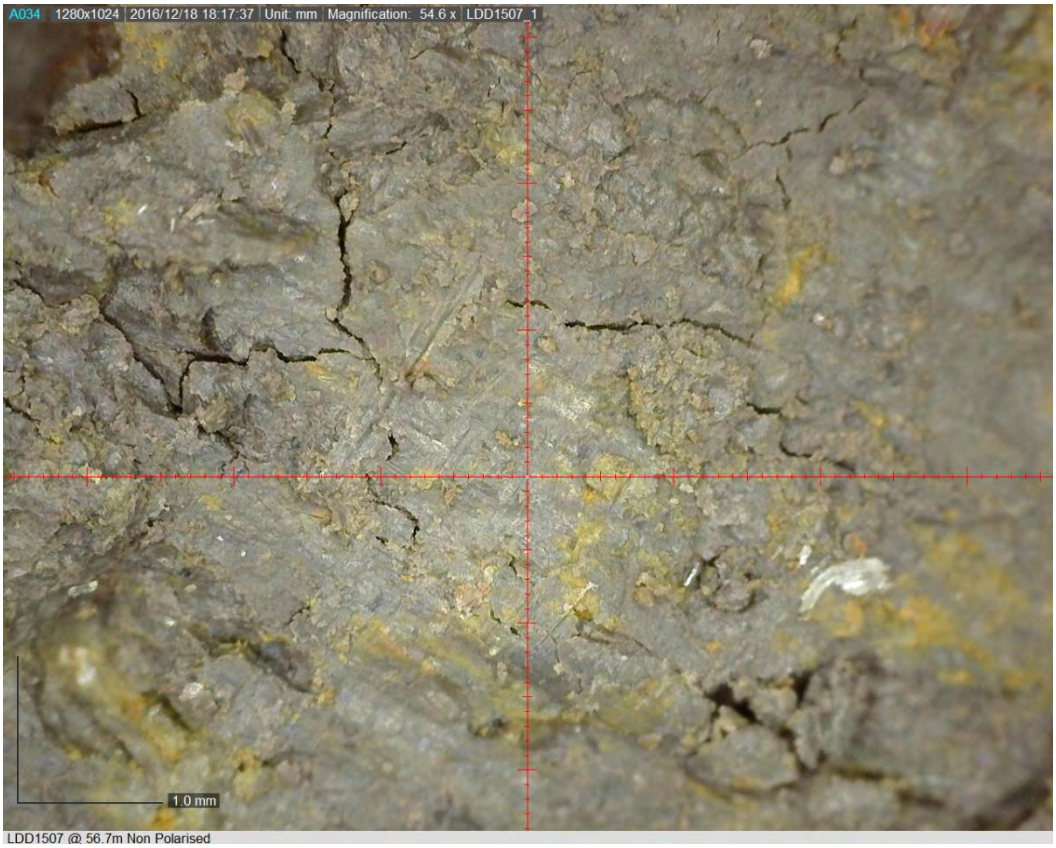


LDD1507 @ 43.75m Non Polarised

## LDD1507 @ 56.7m Depth

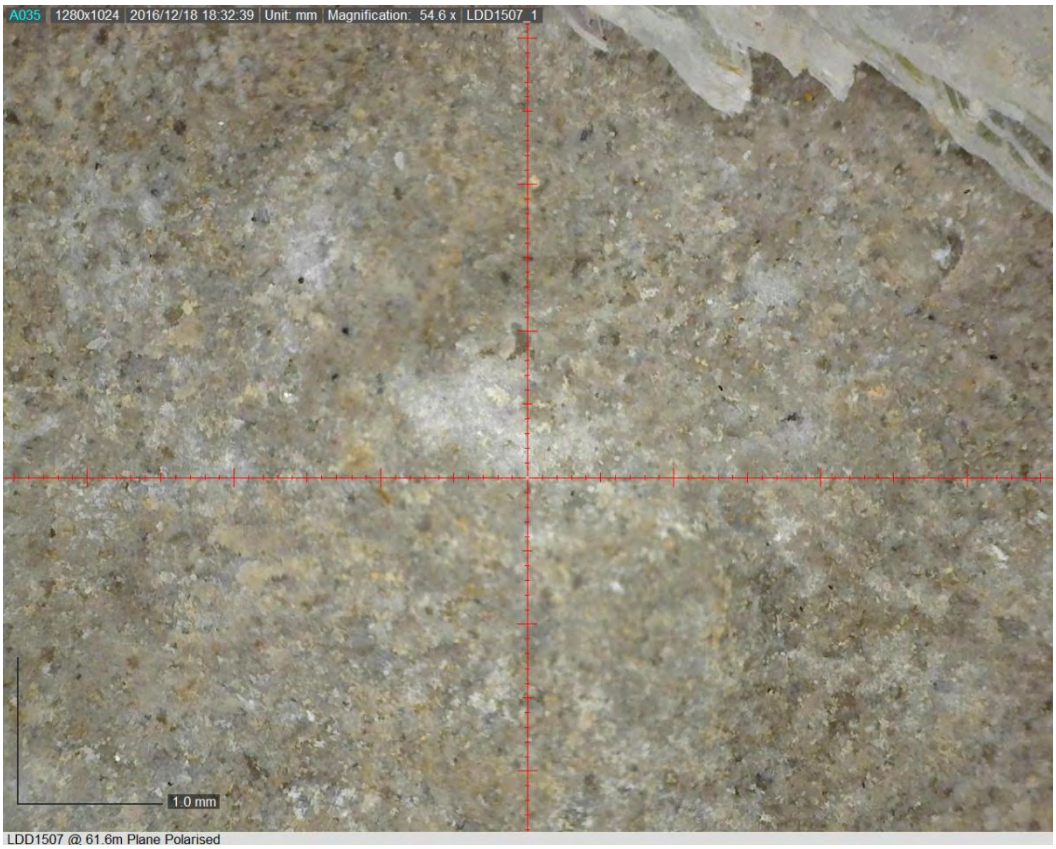


LDD1507 @ 56.7m Plane Polarised



LDD1507 @ 56.7m Non Polarised

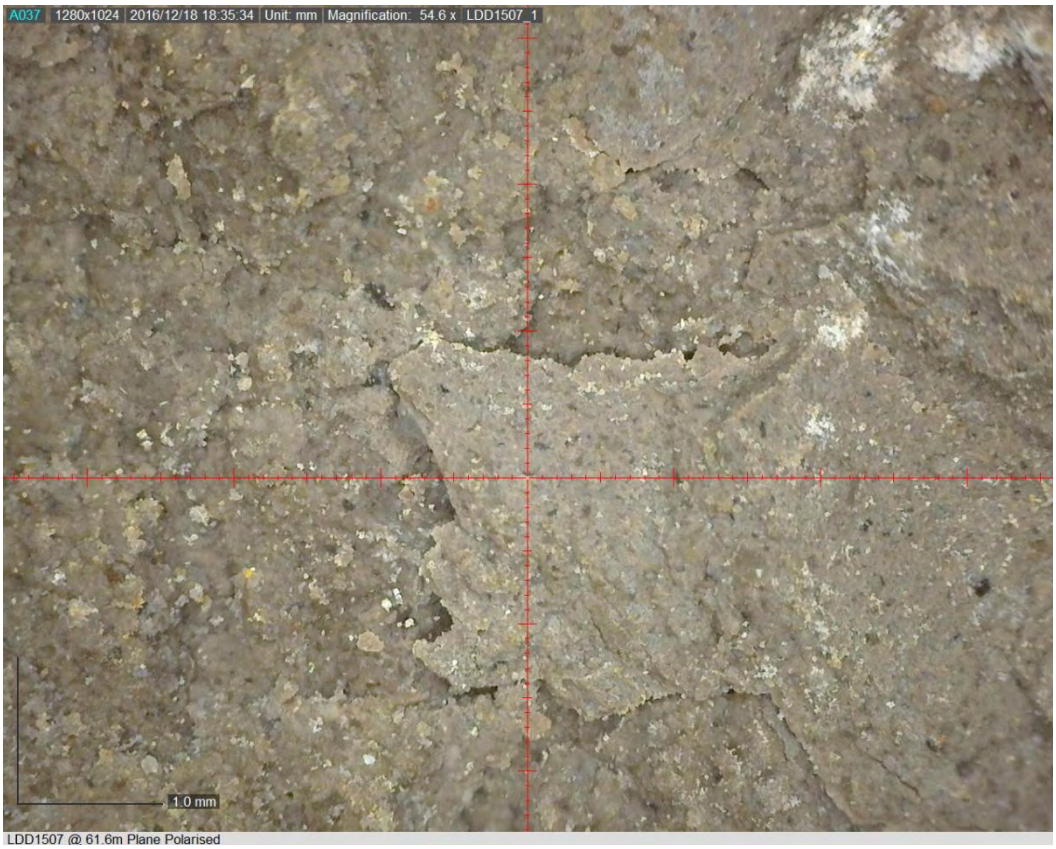
## LDD1507 @ 61.6m Depth



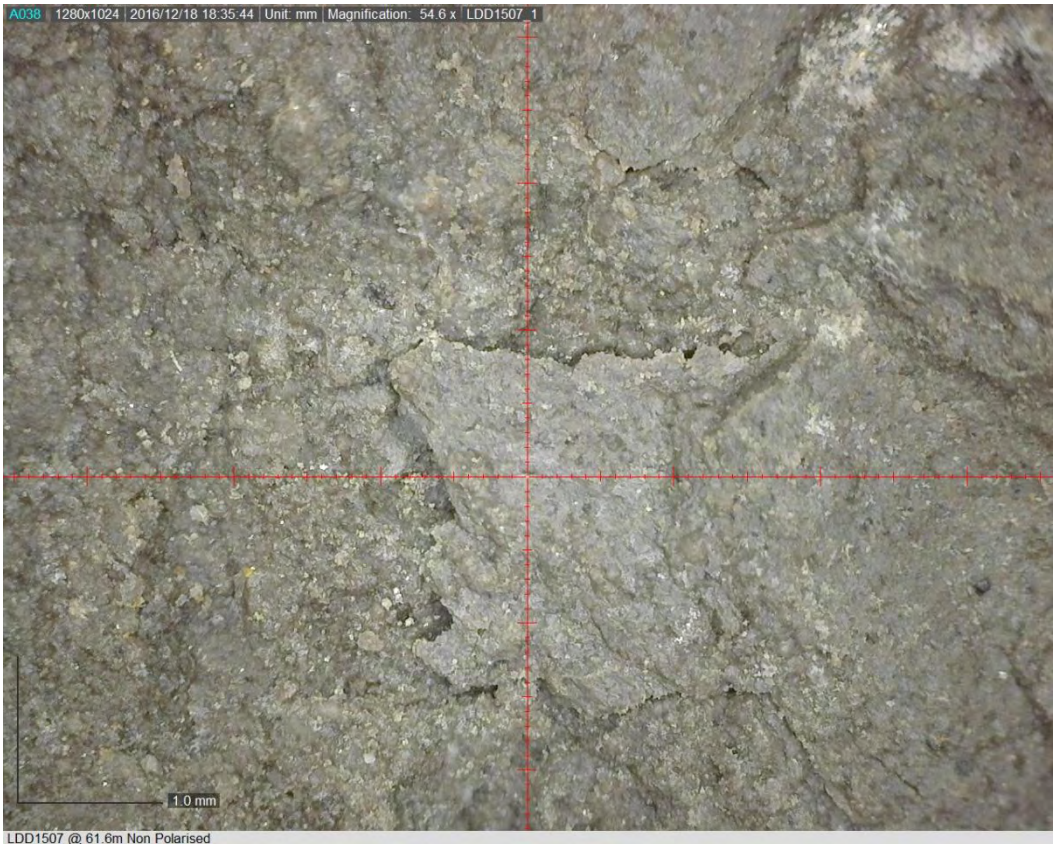
LDD1507 @ 61.6m Plane Polarised

LDD1507 @ 61.6m Non Polarised

## LDD1507 @ 61.6m Depth

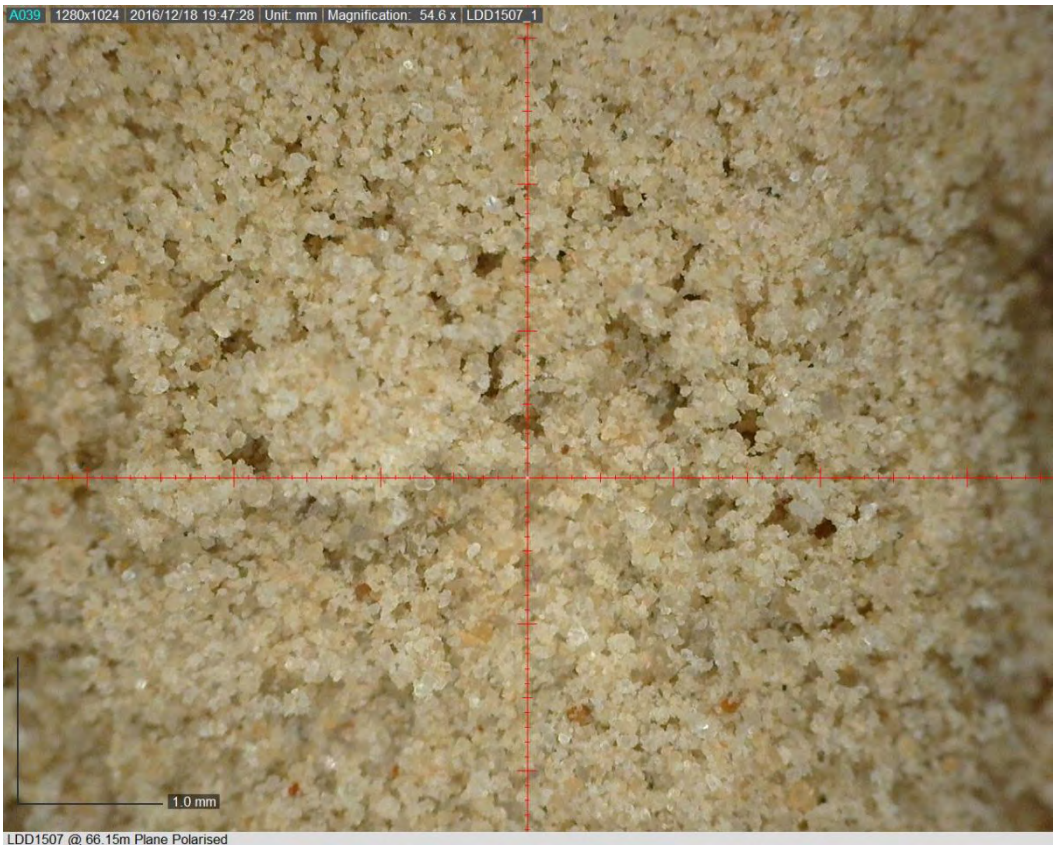


LDD1507 @ 61.6m Plane Polarised

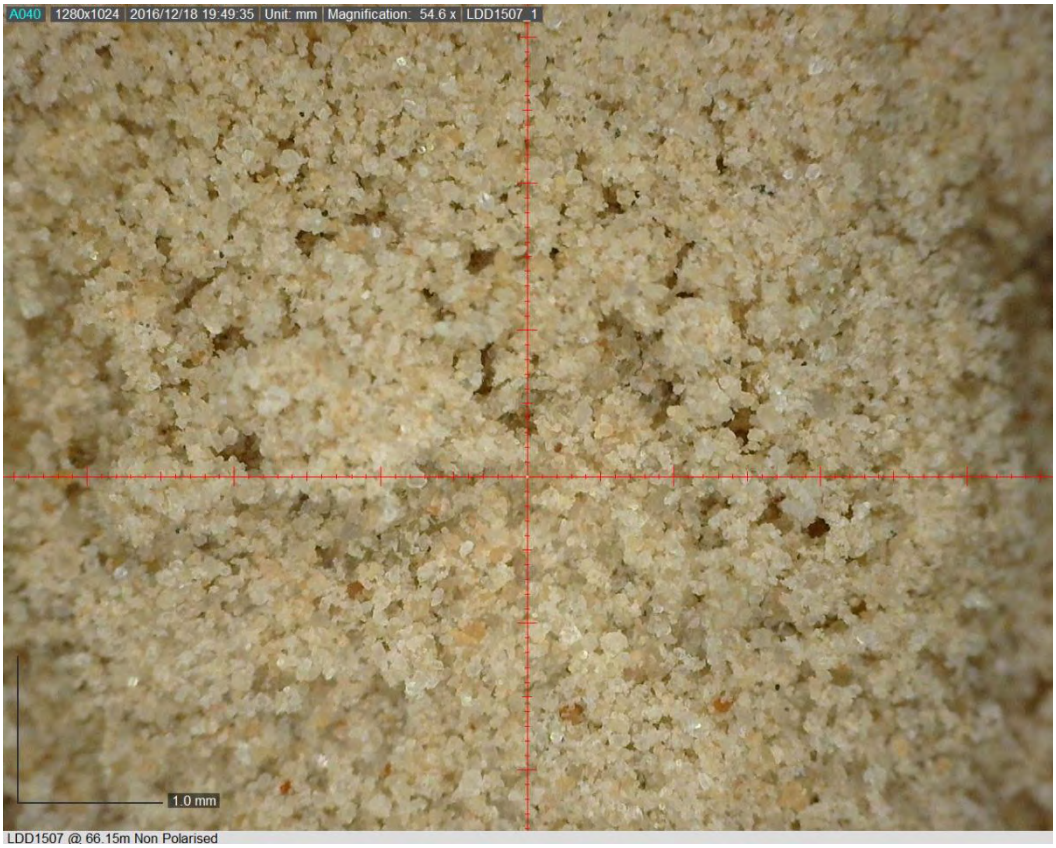


LDD1507 @ 61.6m Non Polarised

## LDD1507 @ 66.15m Depth

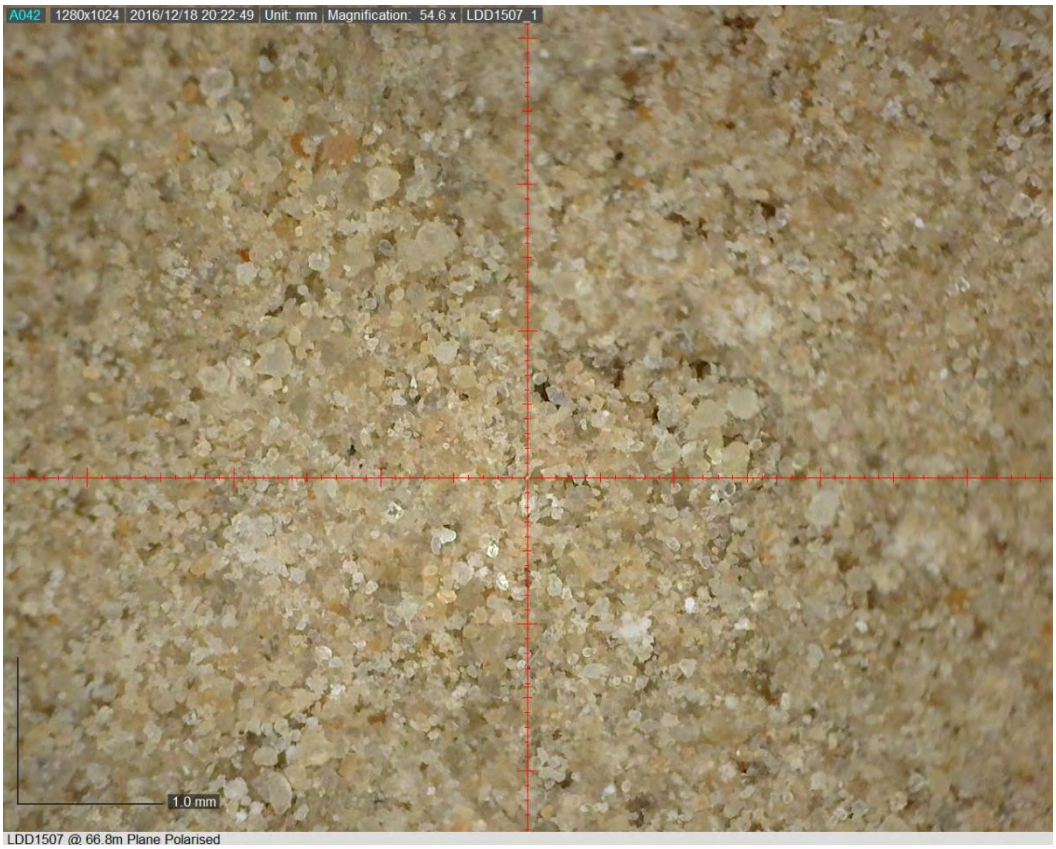


LDD1507 @ 66.15m Plane Polarised

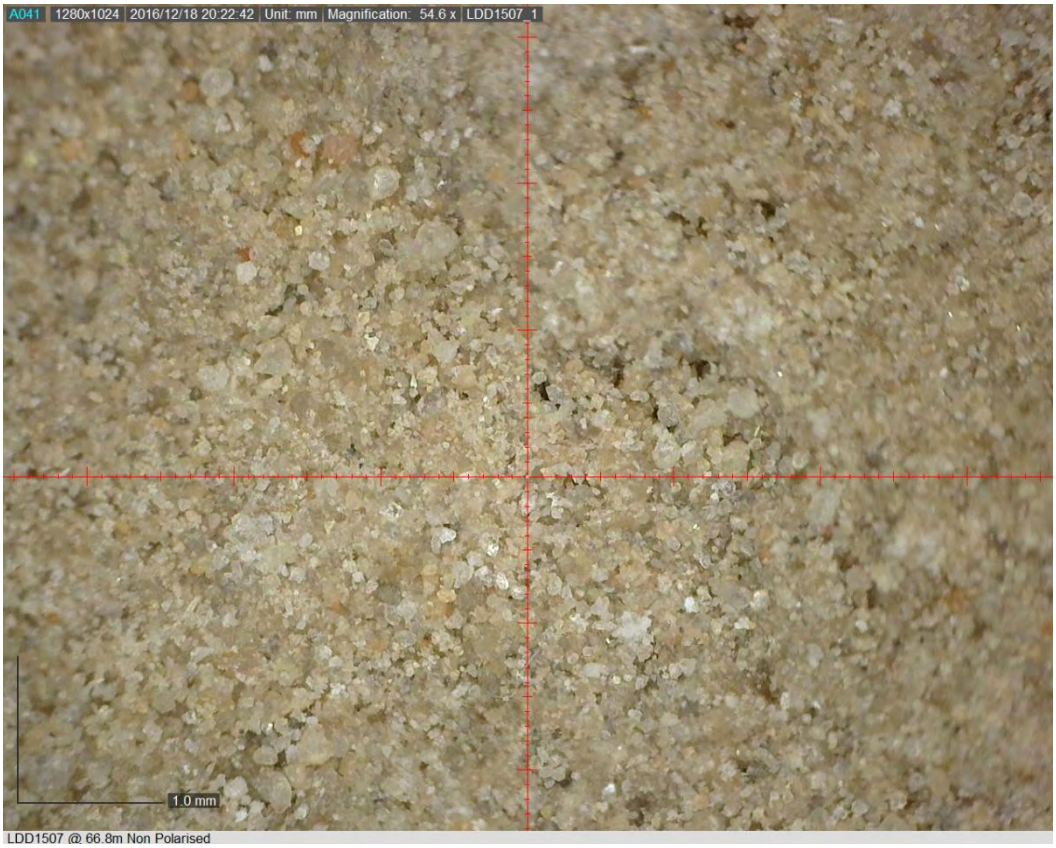


LDD1507 @ 66.15m Non Polarised

## LDD1507 @ 66.8m Depth

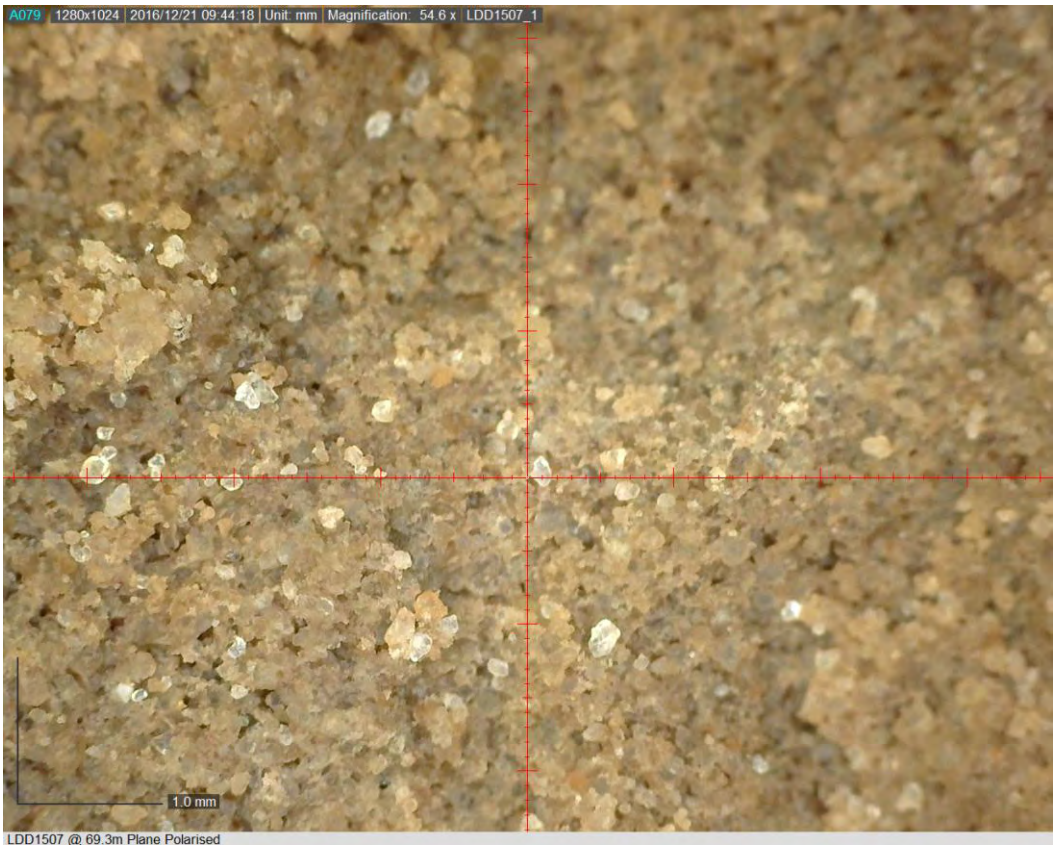


LDD1507 @ 66.8m Plane Polarised

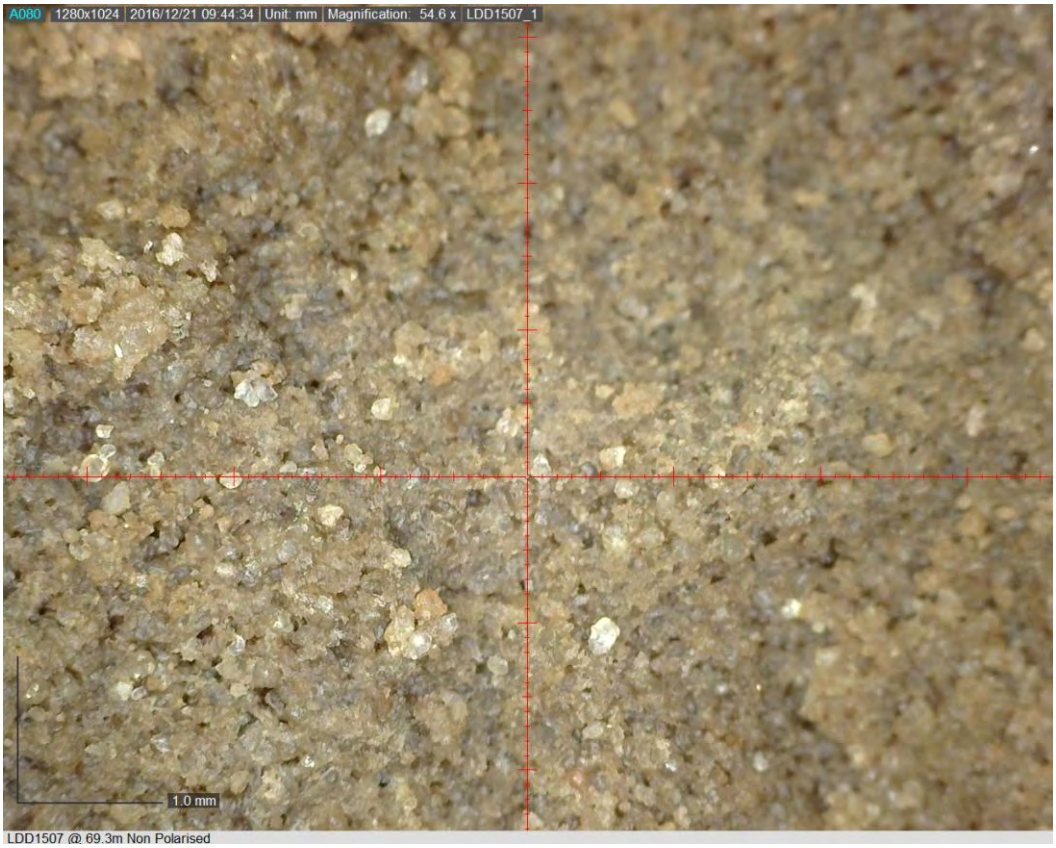


LDD1507 @ 66.8m Non Polarised

## LDD1507 @ 69.3m Depth



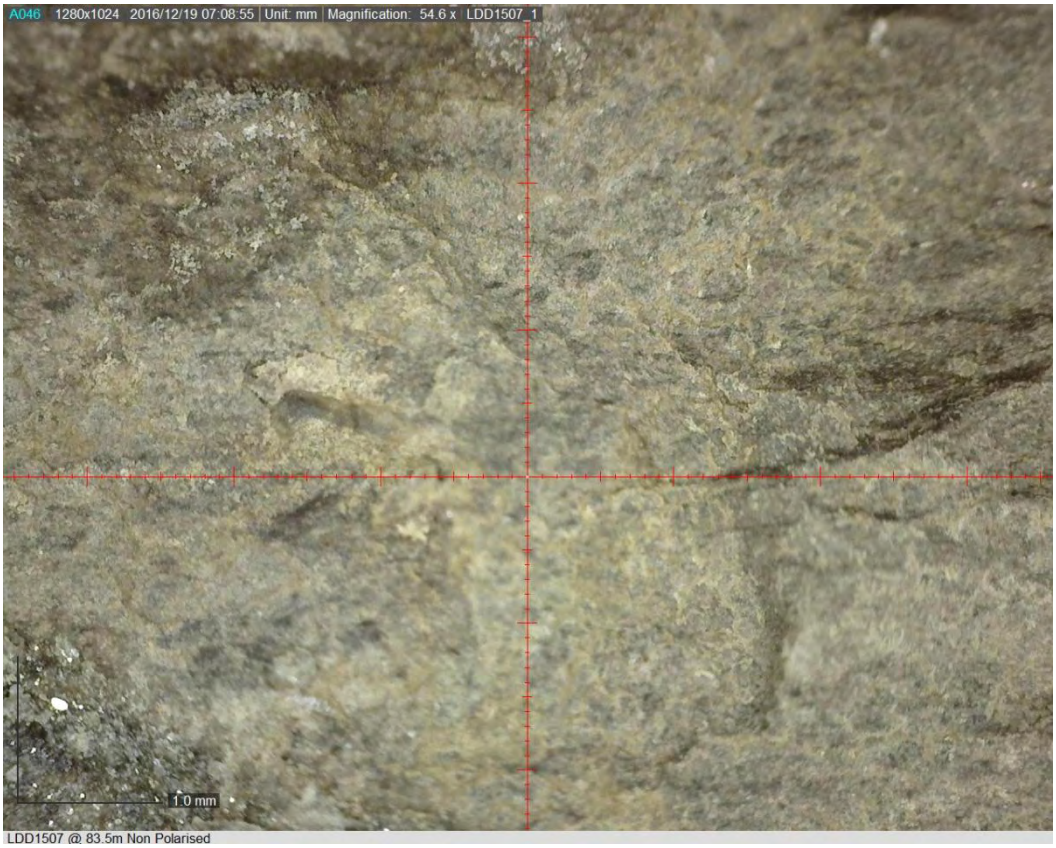
LDD1507 @ 69.3m Plane Polarised



LDD1507 @ 69.3m Non Polarised

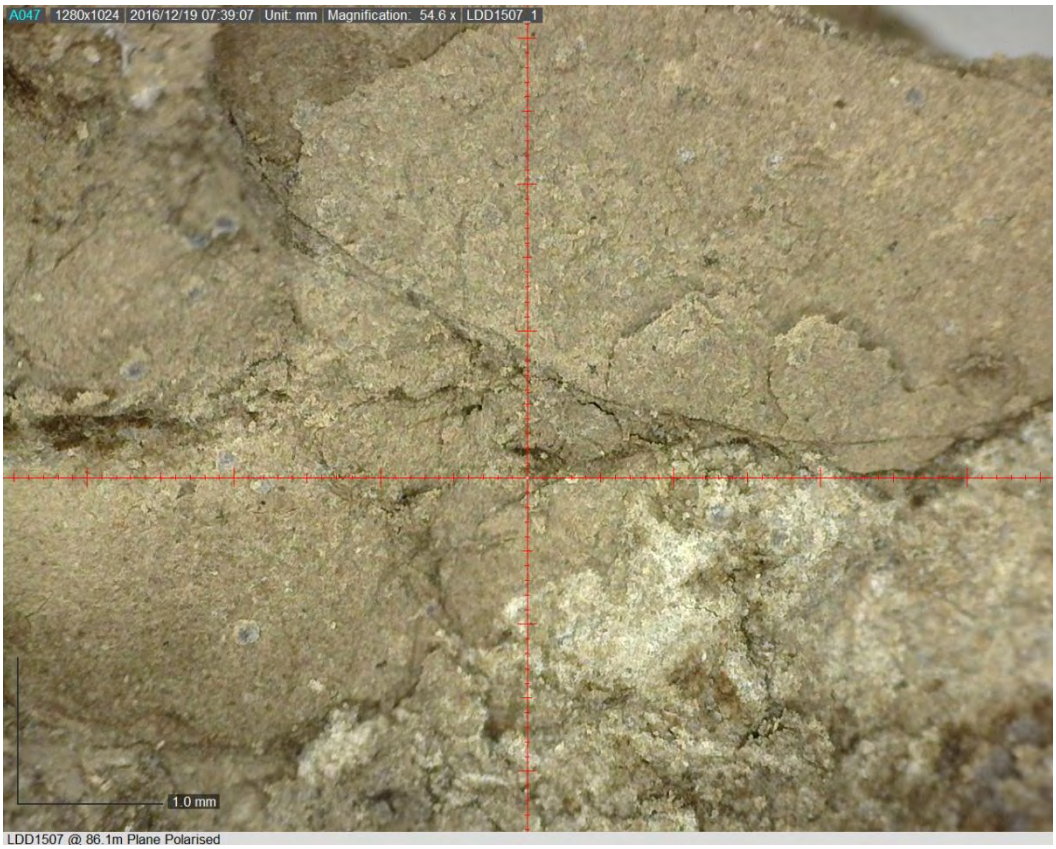
## LDD1507 @ 83.5m Depth

LDD1507 @ 83.5m Plane Polarised

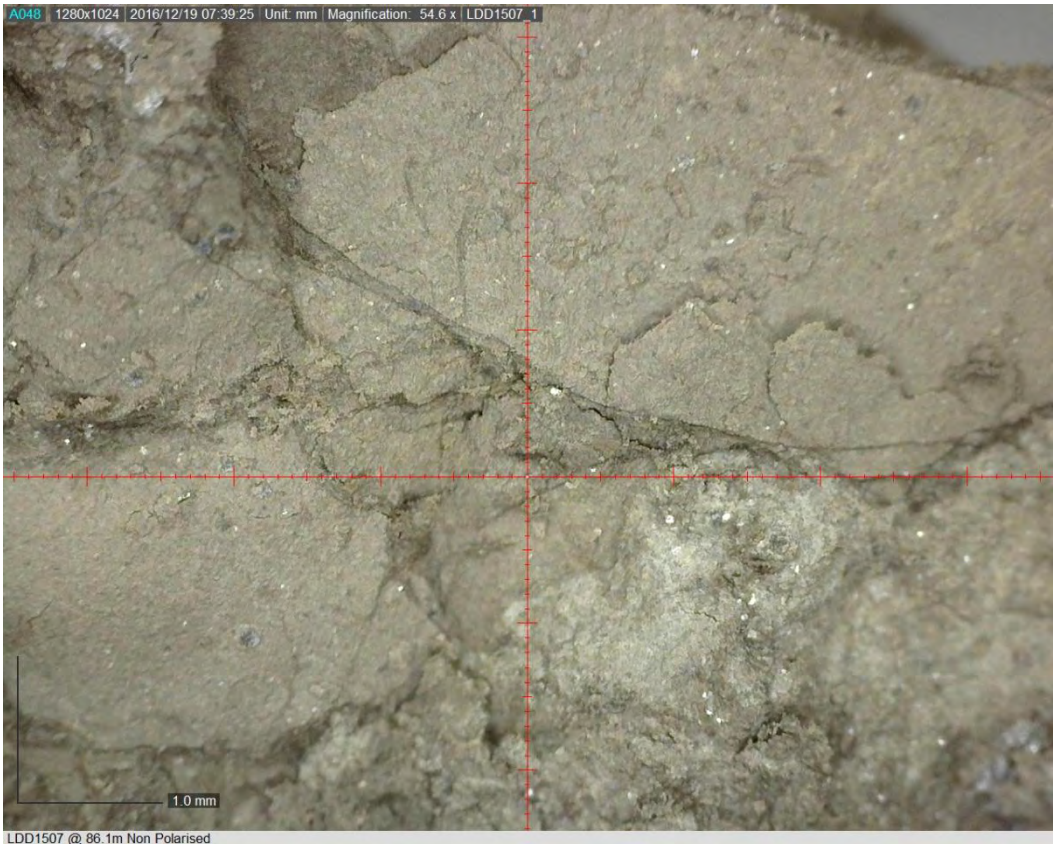


LDD1507 @ 83.5m Non Polarised

## LDD1507 @ 86.1m Depth

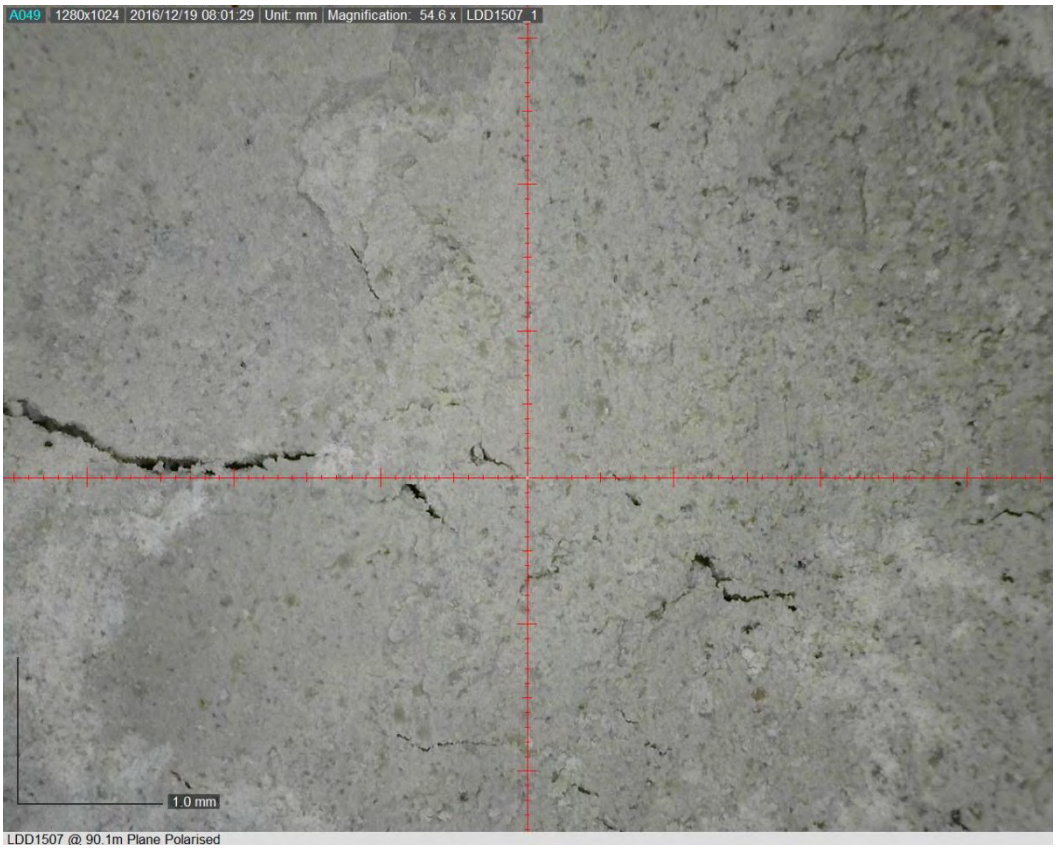


LDD1507 @ 86.1m Plane Polarised

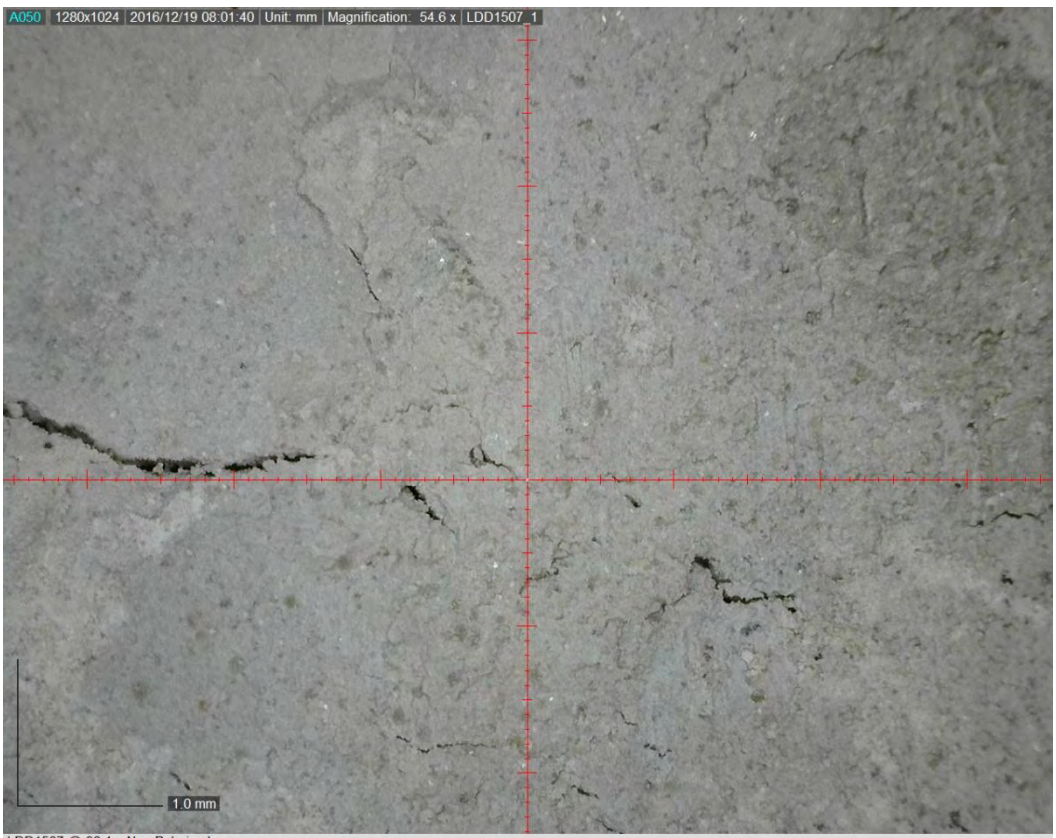


LDD1507 @ 86.1m Non Polarised

## LDD1507 @ 90.1m Depth

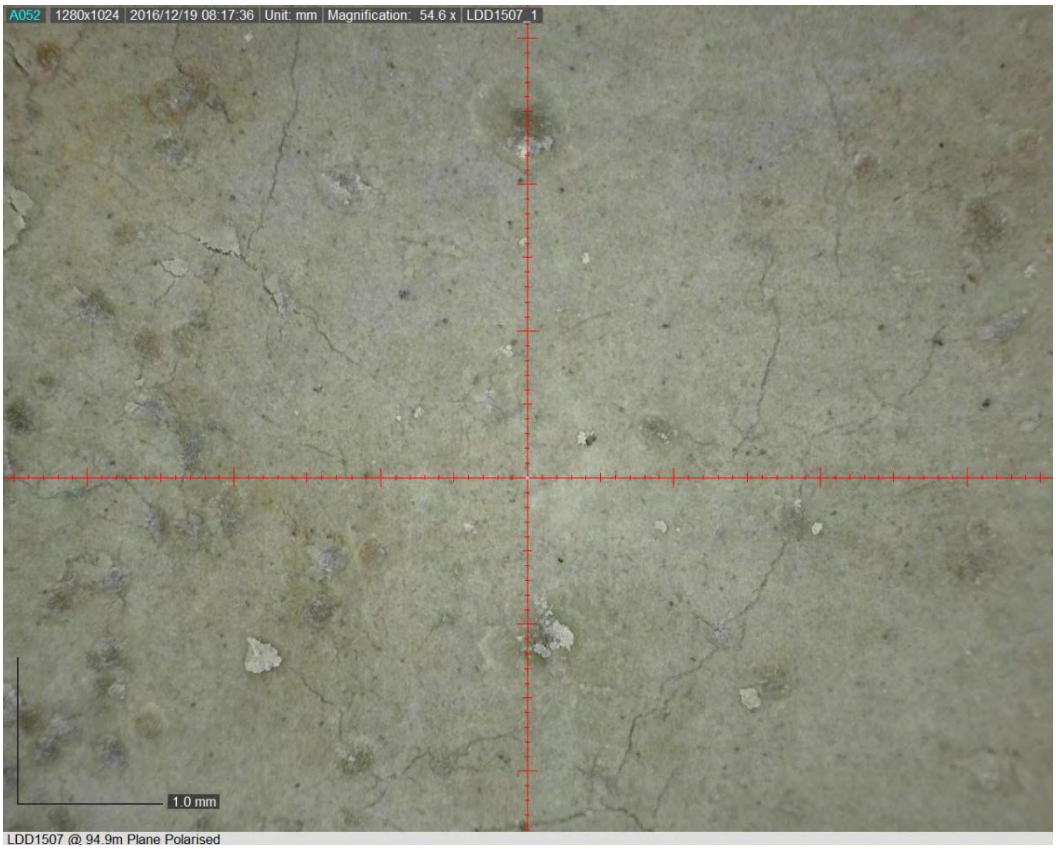


LDD1507 @ 90.1m Plane Polarised

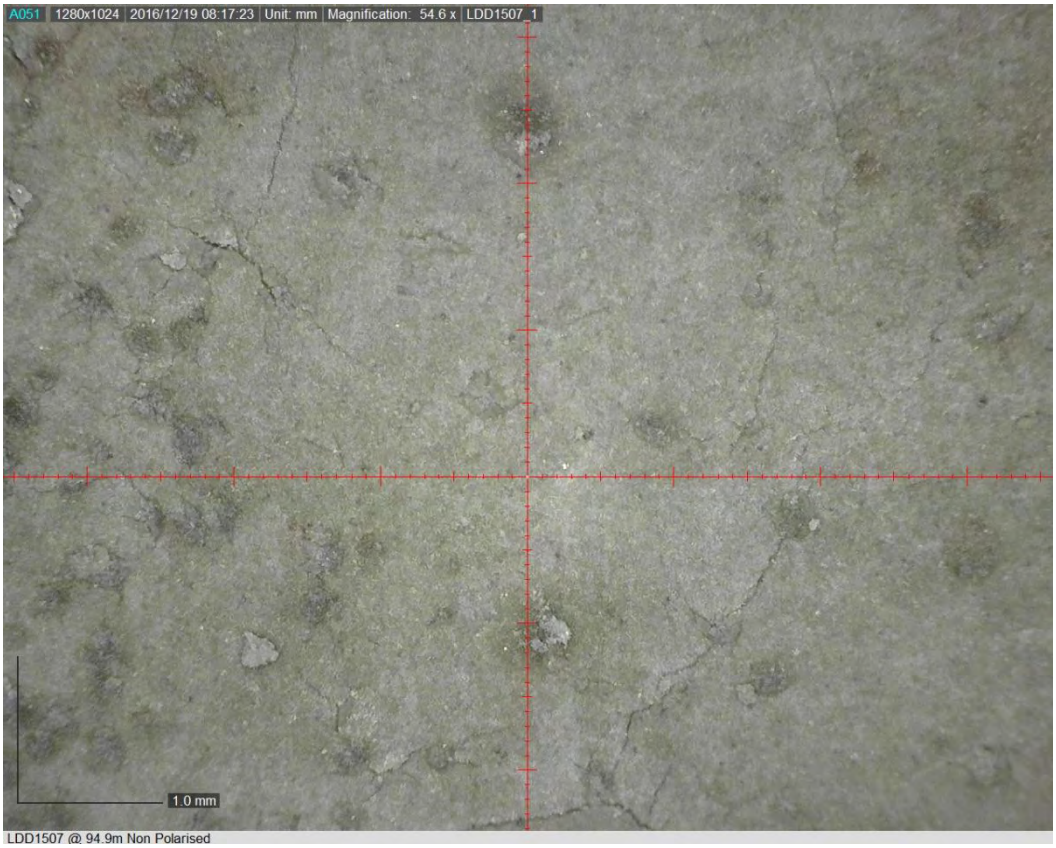


LDD1507 @ 90.1m Non Polarised

## LDD1507 @ 94.9m Depth

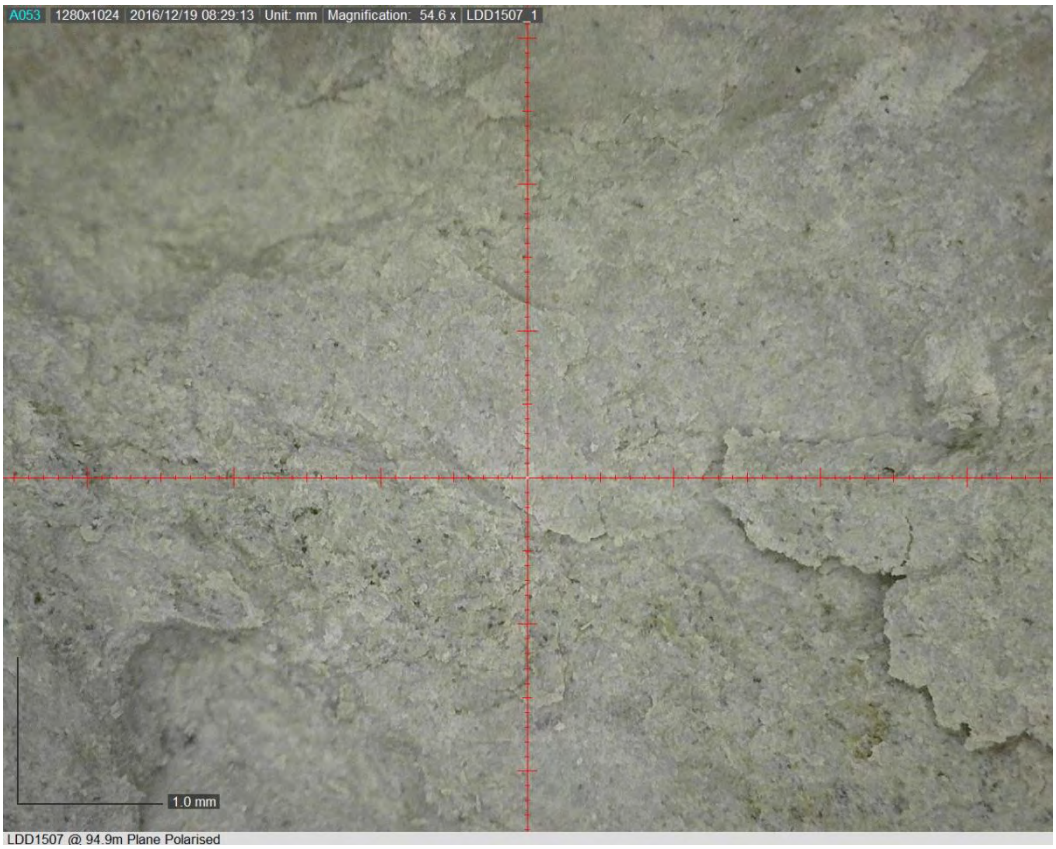


LDD1507 @ 94.9m Plane Polarised



LDD1507 @ 94.9m Non Polarised

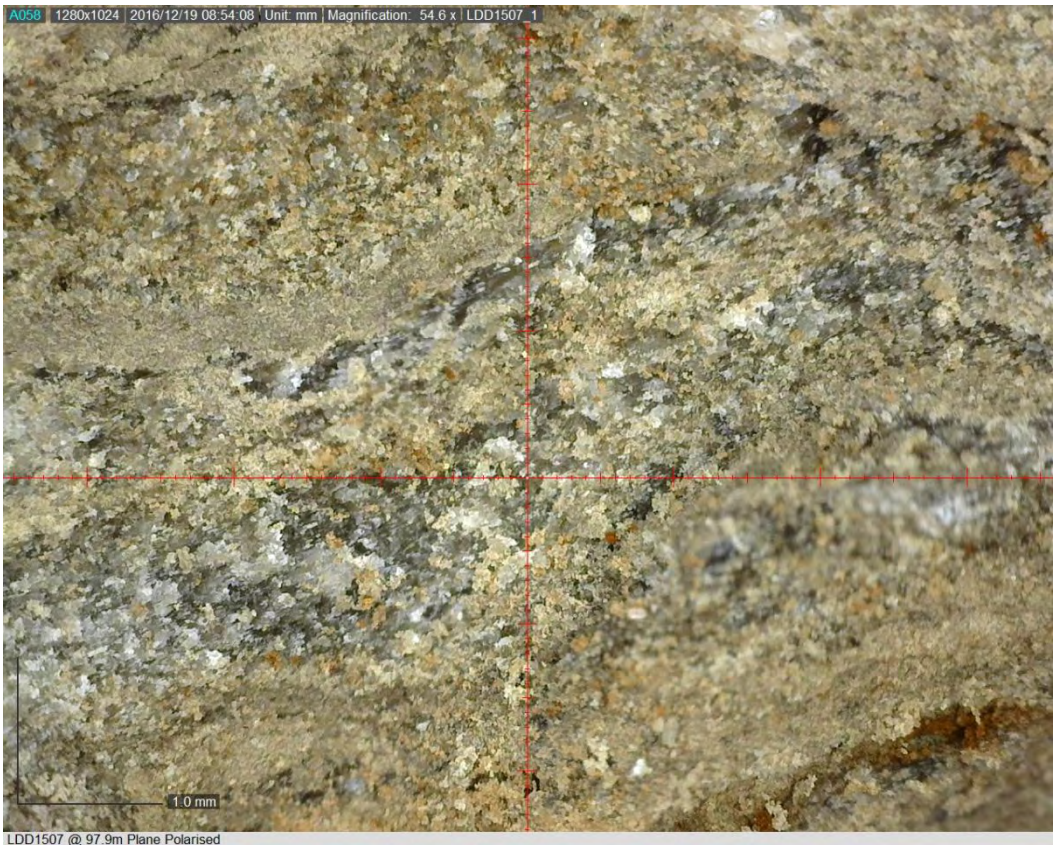
## LDD1507 @ 94.9m Depth



LDD1507 @ 94.9m Plane Polarised

LDD1507 @ 94.9m Non Polarised

## LDD1507 @ 97.9m Depth

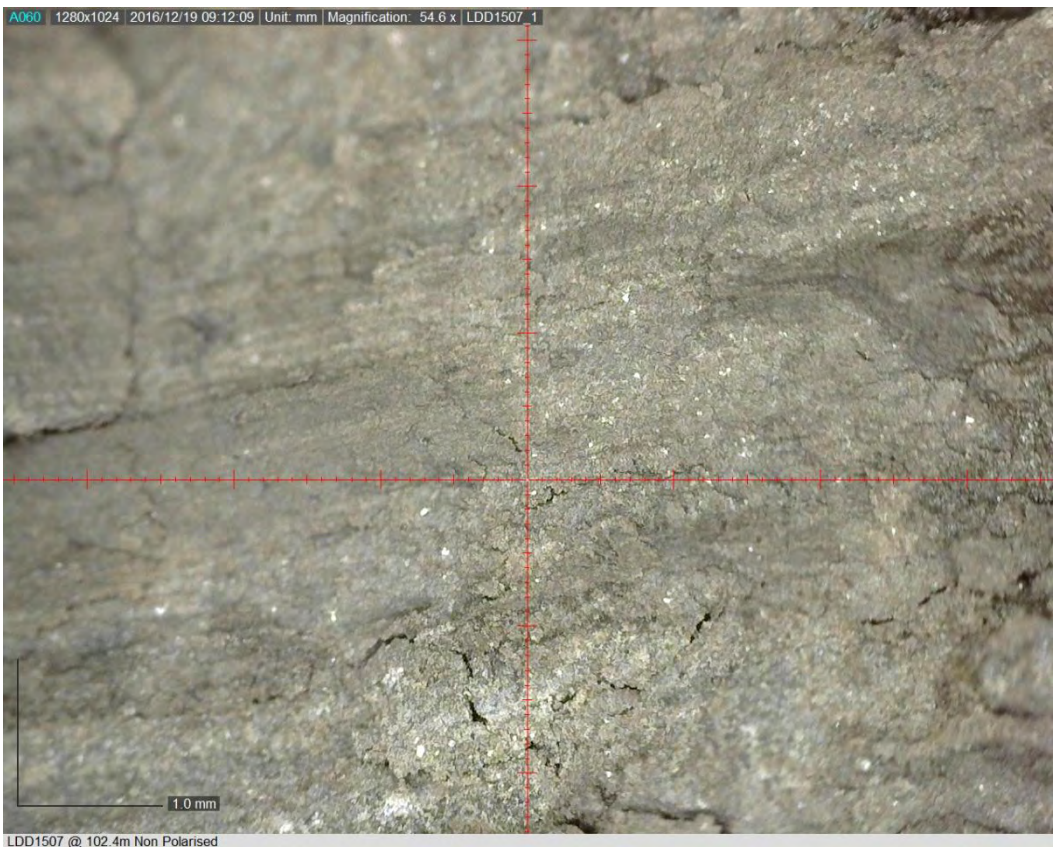


LDD1507 @ 97.9m Plane Polarised

LDD1507 @ 97.9m Non Polarised

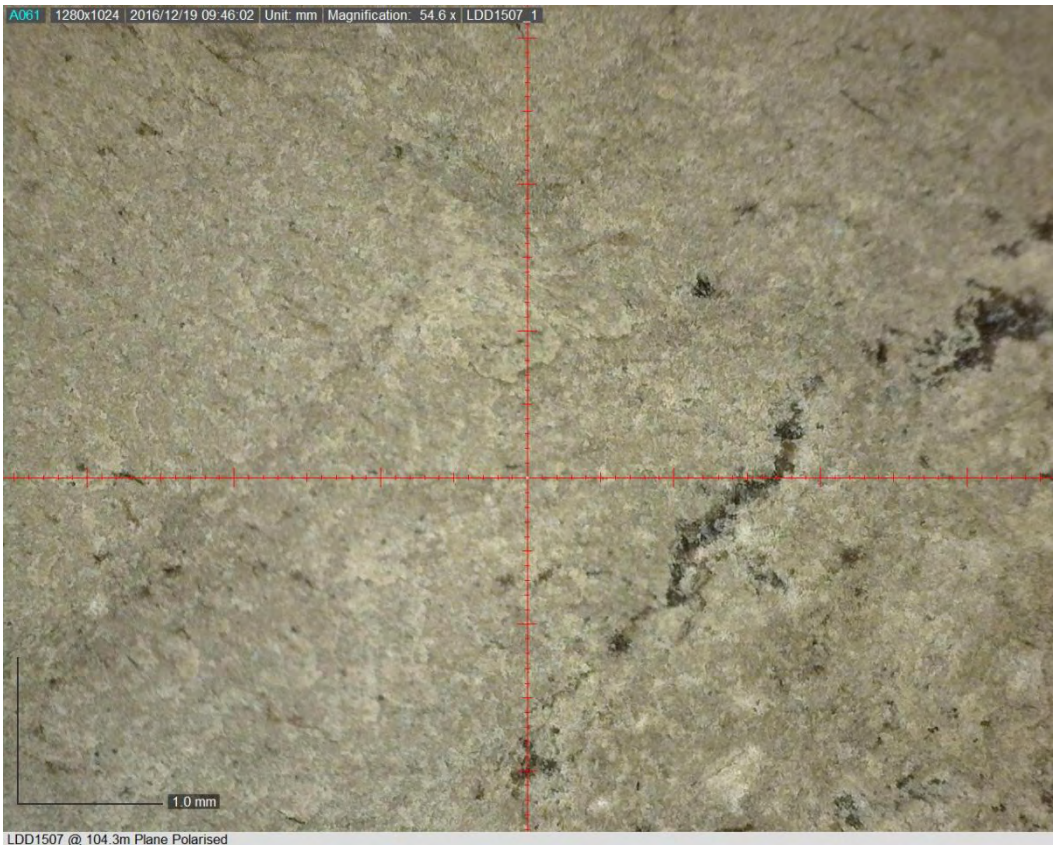
## LDD1507 @ 102.4m Depth

LDD1507 @ 102.4m Plane Polarised

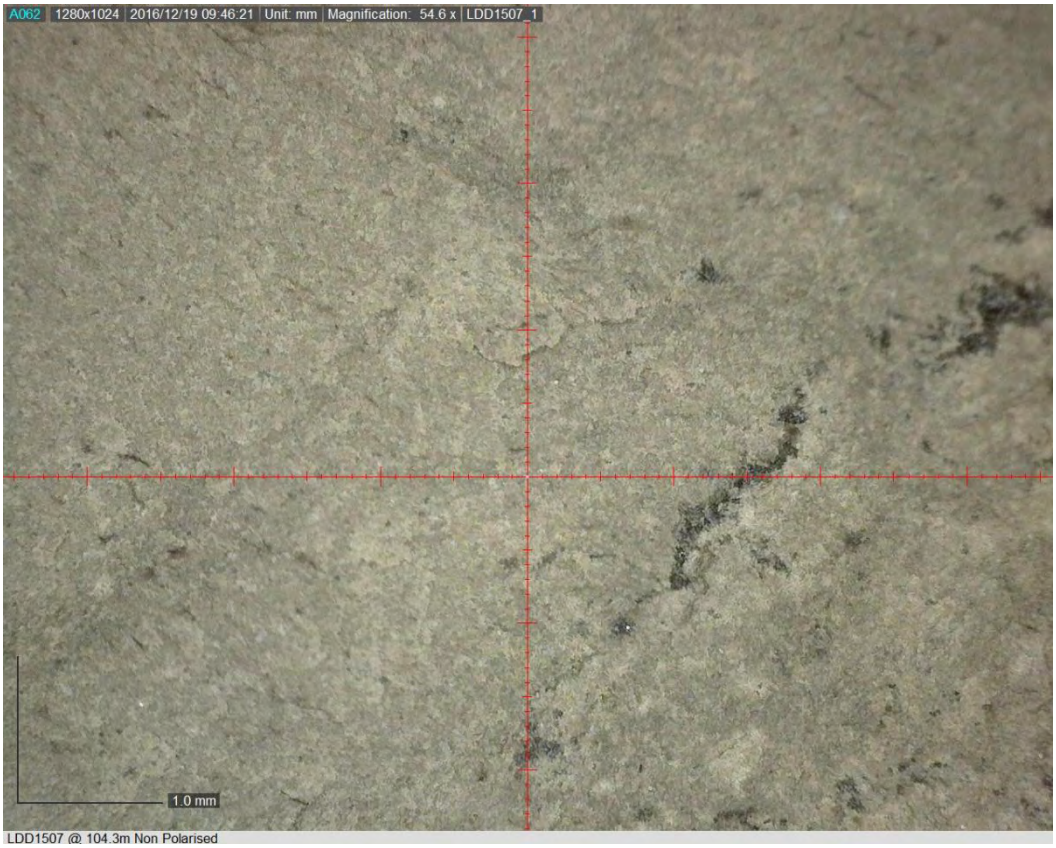


LDD1507 @ 102.4m Non Polarised

## LDD1507 @ 104.3m Depth



LDD1507 @ 104.3m Plane Polarised



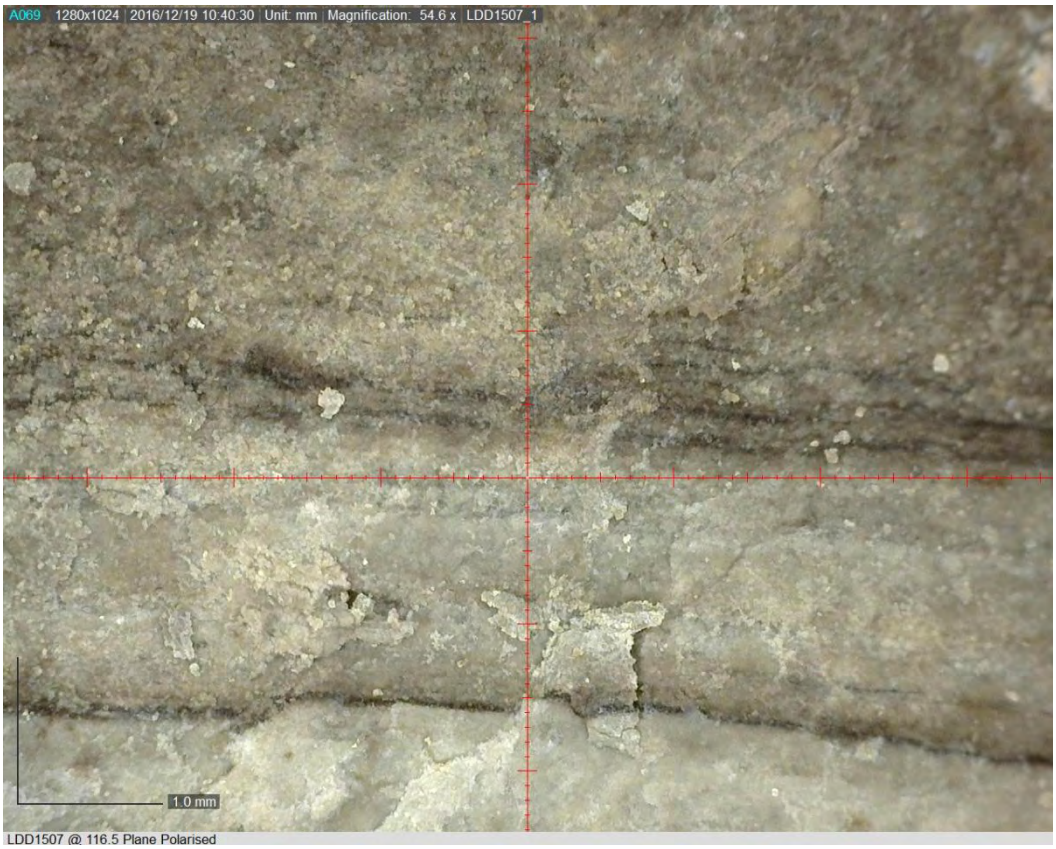
LDD1507 @ 104.3m Non Polarised

## LDD1507 @ 109.65m Depth

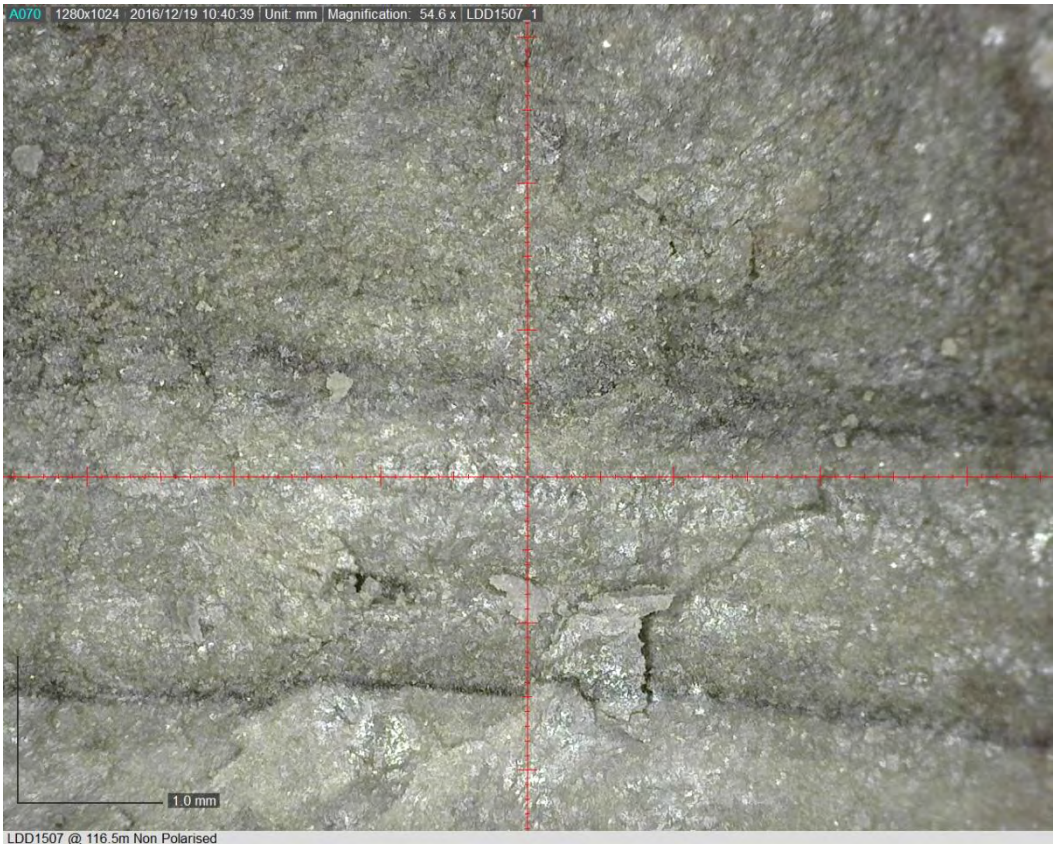
LDD1507 @ 109.65m Plane Polarised

LDD1507 @ 109.65m Non Polarised

## LDD1507 @ 116.5m Depth

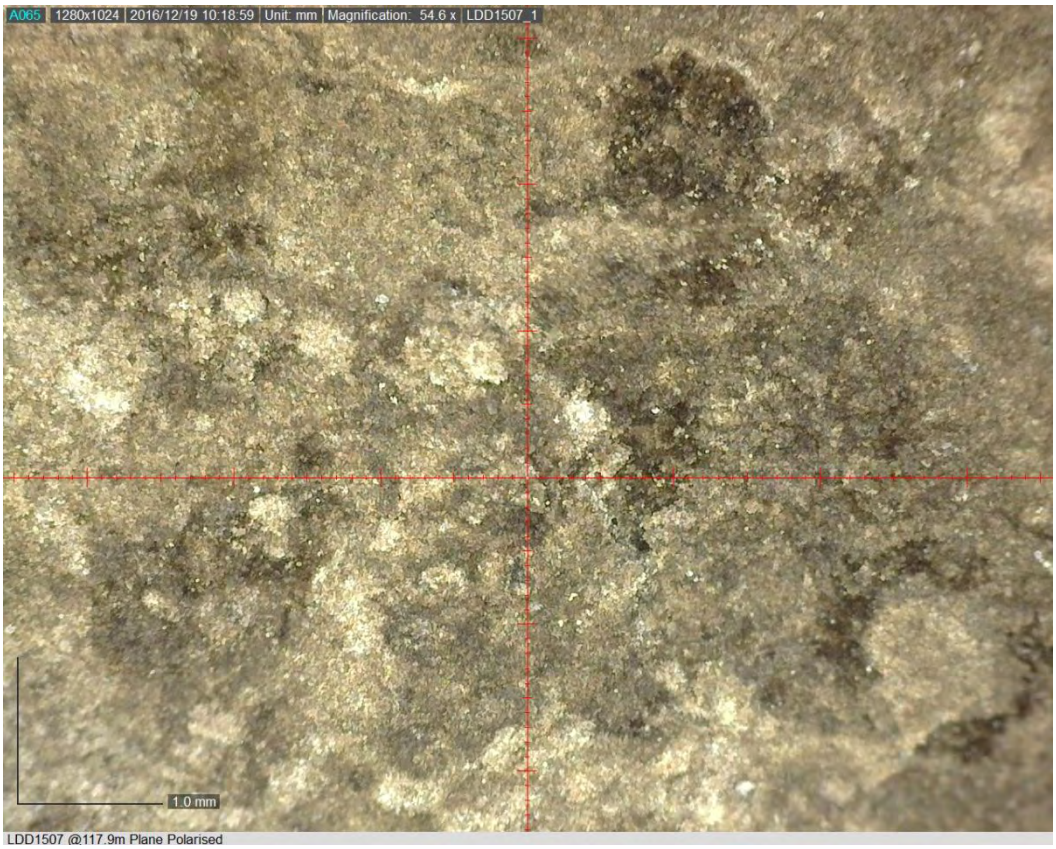


LDD1507 @ 116.5 Plane Polarised

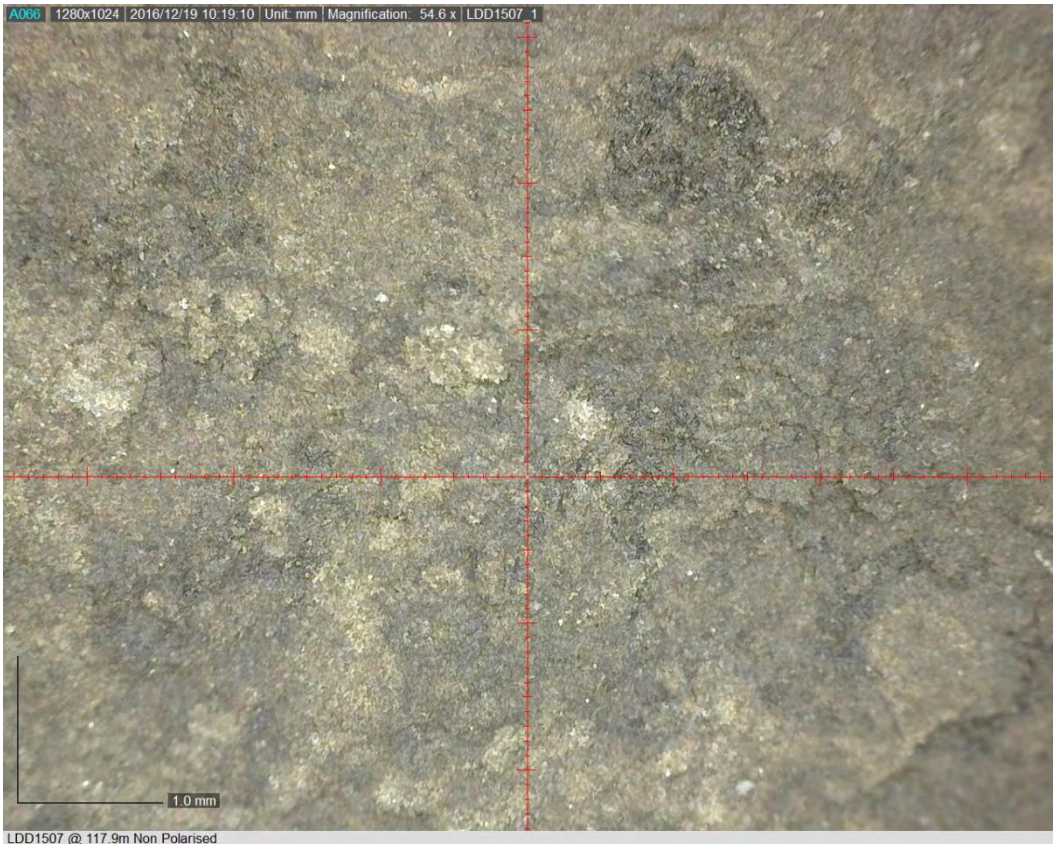


LDD1507 @ 116.5m Non Polarised

## LDD1507 @ 117.9m Depth

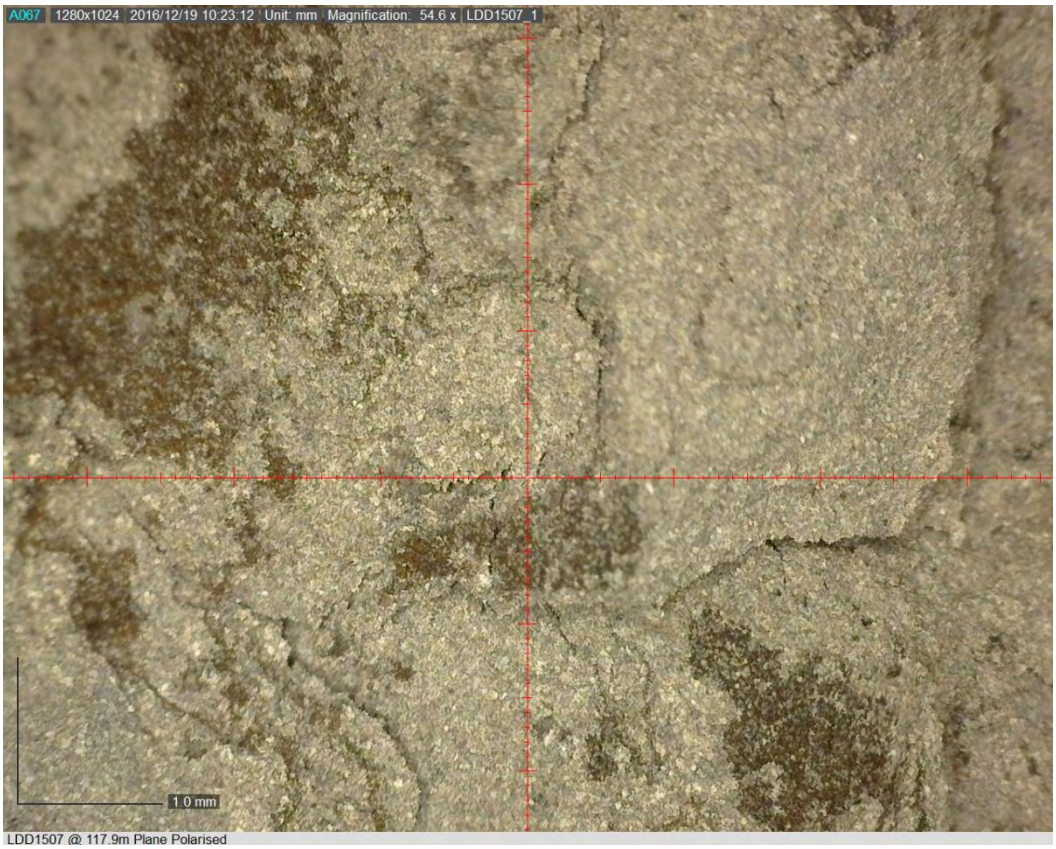


LDD1507 @117.9m Plane Polarised



LDD1507 @ 117.9m Non Polarised

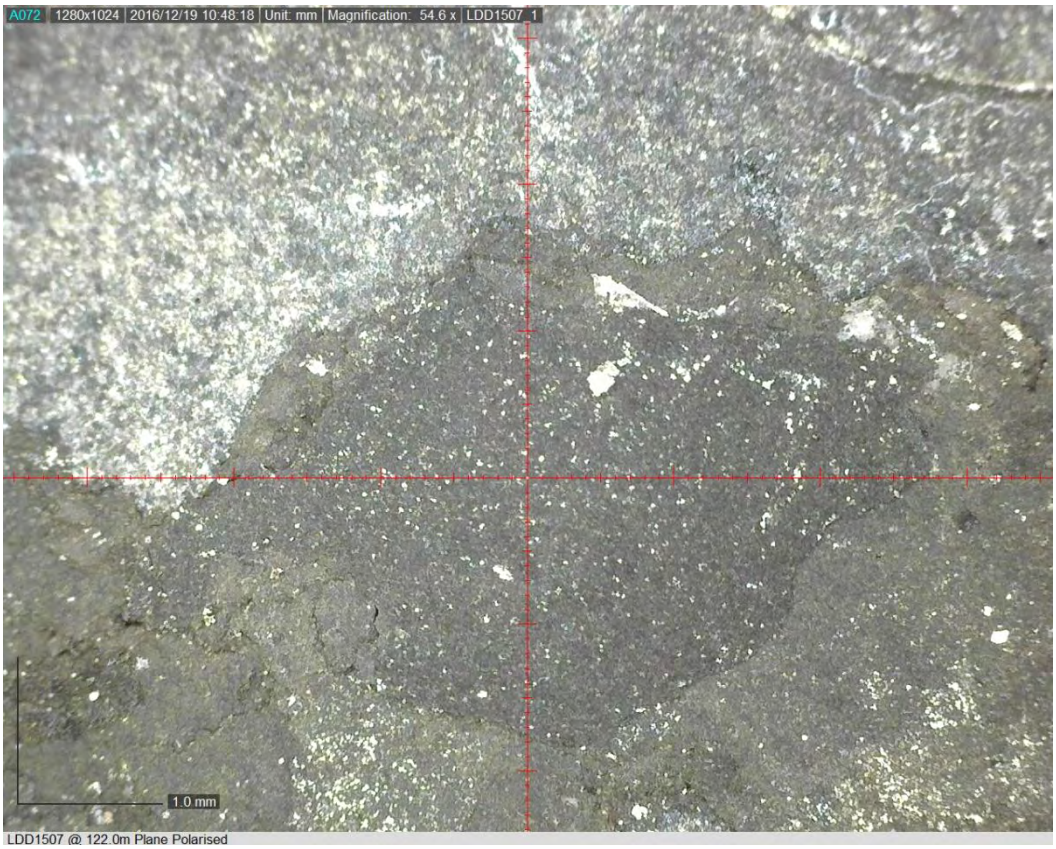
## LDD1507 @ 117.9m Depth



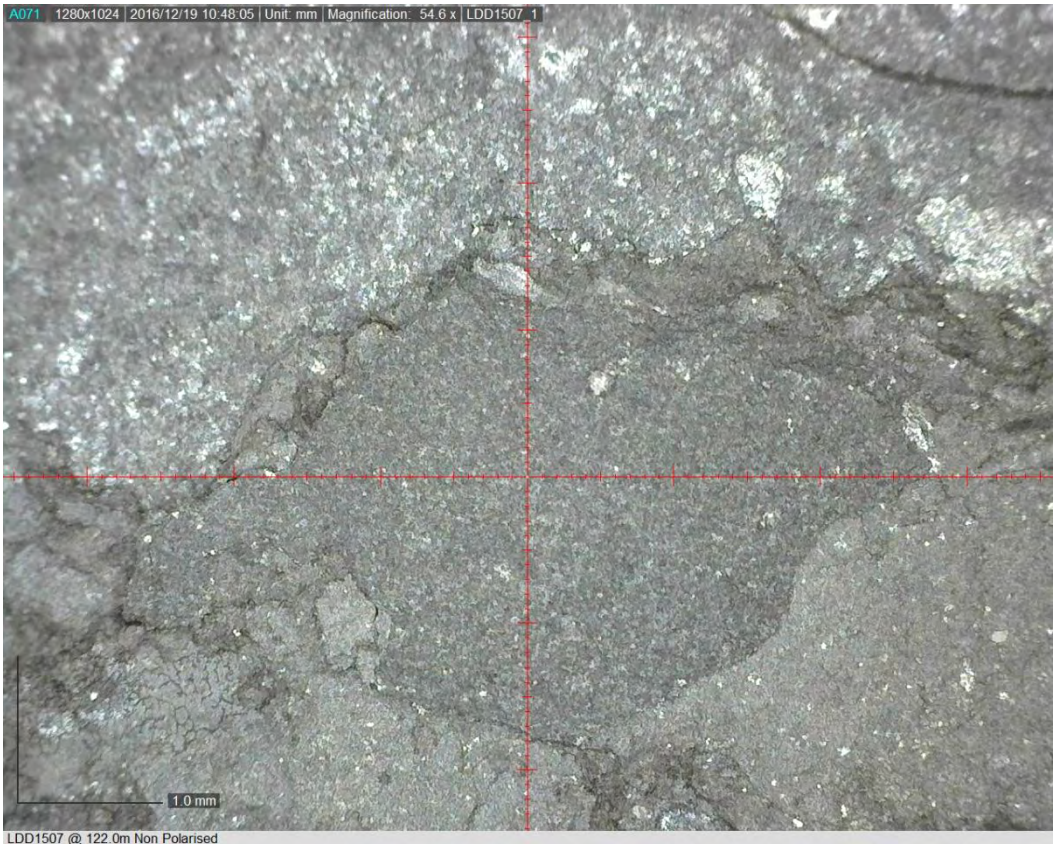
LDD1507 @ 117.9m Plane Polarised

LDD1507 @ 117.9m Non Polarised

## LDD1507 @ 122.0m Depth

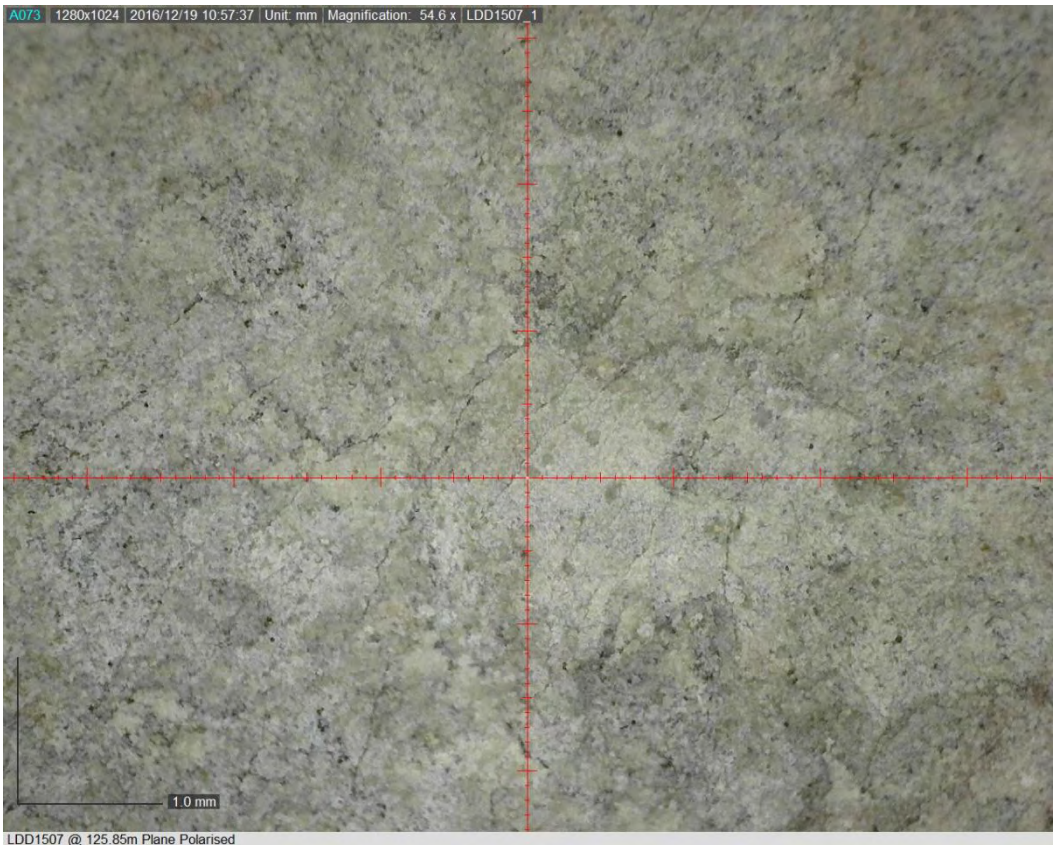


LDD1507 @ 122.0m Plane Polarised

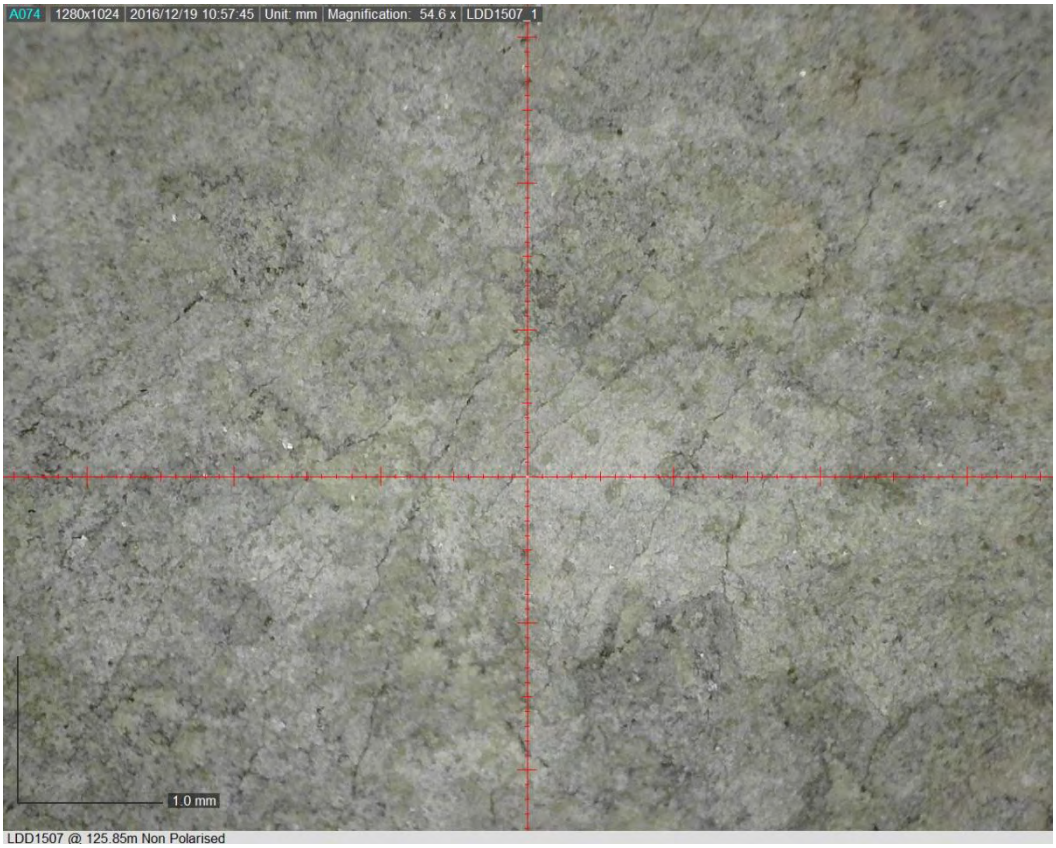


LDD1507 @ 122.0m Non Polarised

## LDD1507 @ 122.0m Depth



LDD1507 @ 125.85m Plane Polarised

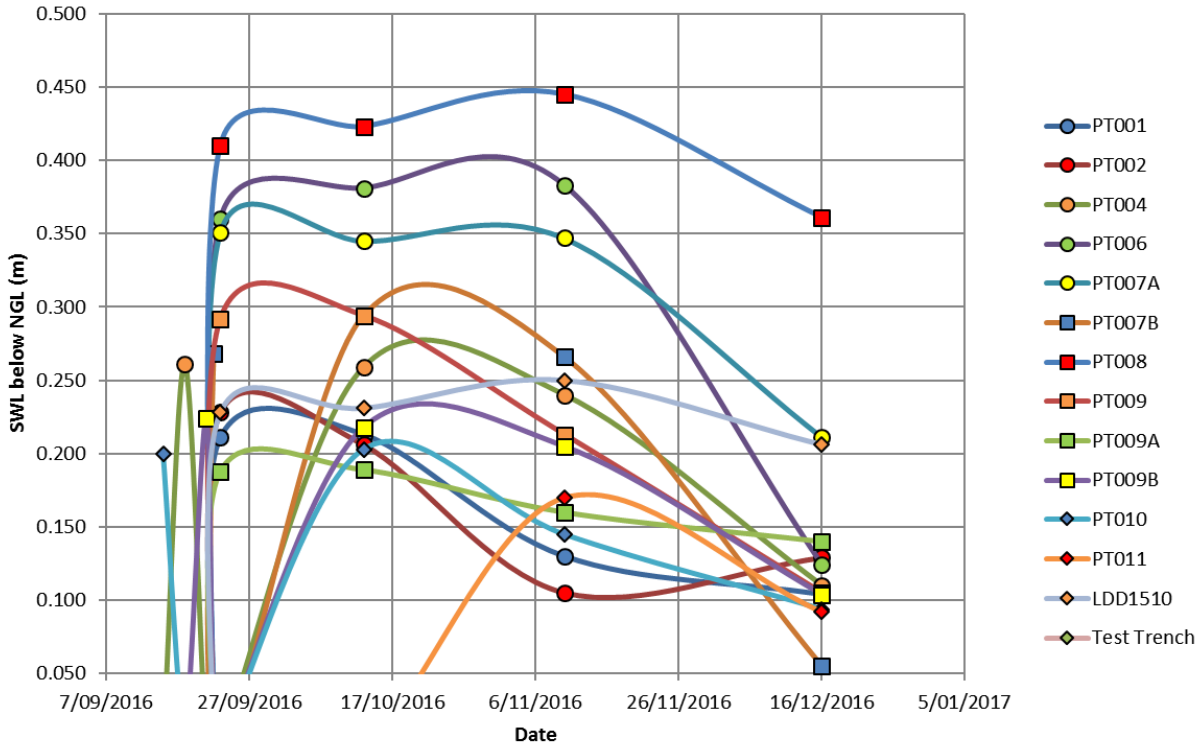


LDD1507 @ 125.85m Non Polarised

# Appendix C

## Monthly Monitoring of Lake Waterlevels

Depth to groundwater beneath the lake



Appendix **D**

Test Pumping Data

# Reward

## Constant Rate Test - Data Sheet

| | | | | | |
|---|---|---|---|---|---|
| Test Start: | 15-Dec-16 09:09 | | | Test End: | 15-Dec-16 09:09 |
| Job No.: | 1257g | Quicklogs Bore ID: | 73389 | Pumped Bore: | LDBH1603 |
| Client.: | Reward | | | Tagged depth (m bTOC): | 65 |
| Contractor: | Global Groundwater | | | Supervisor: | JL Percival |

| | | | | | |
|---|---|---|---|---|---|
| SWL (mbMP): | 1.070 | | | Pump Inlet (mbmp): | 60.0 |
| MP (maTOC): | 1.060 | | | Available Drawdown (m): | 58.9 |
| TOC (magl): | 0.000 | | | Discharge Dist. & Direction: | 250m NW |
| SWL (mbgl): | 0.010 | | | Bore Internal Diameter (mm): | 228 |
| Pump Used: | Grundfow SP14A | Flow (L/s): | 3.00 | Flow ($m^3$/day): | 259 |
| Flow device: | Volume estimation | | | | |
| | | | | Number of other Bores Monitored: | 0 |

SWL = Static water level mbMP = Metres below measuring point mbgl = Metres below ground level
MP = Measuring point magl = Metres above ground level ToC= Top of Casing (Bore)

| Reading Taken Date | (Hr:Min:Sec) | Elapsed Time (Min) | Water Level (m) | Drawdown (m) | Corrected Drawdown (m) | Comments |
|---|---|---|---|---|---|---|
| 15-Dec-16 | 09:09:30 | 0.5 | 2.620 | 1.550 | 1.550 | |
| 15-Dec-16 | 09:10:00 | 1.0 | 3.520 | 2.450 | 2.450 | |
| 15-Dec-16 | 09:11:00 | 2.0 | 4.550 | 3.480 | 3.480 | |
| 15-Dec-16 | 09:12:00 | 3.0 | 4.850 | 3.780 | 3.780 | |
| 15-Dec-16 | 09:13:00 | 4.0 | 5.250 | 4.180 | 4.180 | |
| 15-Dec-16 | 09:14:00 | 5.0 | 5.600 | 4.530 | 4.530 | |
| 15-Dec-16 | 09:15:00 | 6.0 | 5.990 | 4.920 | 4.920 | |
| 15-Dec-16 | 09:16:00 | 7.0 | 6.330 | 5.260 | 5.260 | |
| 15-Dec-16 | 09:17:00 | 8.0 | 6.590 | 5.520 | 5.520 | |
| 15-Dec-16 | 09:18:00 | 9.0 | 7.030 | 5.960 | 5.960 | |
| 15-Dec-16 | 09:19:00 | 10.0 | 7.290 | 6.220 | 6.220 | |
| 15-Dec-16 | 09:21:00 | 12.0 | 7.770 | 6.700 | 6.700 | |
| 15-Dec-16 | 09:23:00 | 14.0 | 8.080 | 7.010 | 7.010 | |
| 15-Dec-16 | 09:25:00 | 16.0 | 8.300 | 7.230 | 7.230 | |
| 15-Dec-16 | 09:27:00 | 18.0 | 8.500 | 7.430 | 7.430 | |
| 15-Dec-16 | 09:29:00 | 20.0 | 8.640 | 7.570 | 7.570 | |
| 15-Dec-16 | 09:31:00 | 22.0 | 8.760 | 7.690 | 7.690 | |
| 15-Dec-16 | 09:33:00 | 24.0 | 8.880 | 7.810 | 7.810 | |
| 15-Dec-16 | 09:35:00 | 26.0 | 8.950 | 7.880 | 7.880 | |
| 15-Dec-16 | 09:37:00 | 28.0 | 9.030 | 7.960 | 7.960 | |
| 15-Dec-16 | 09:39:00 | 30.0 | 9.100 | 8.030 | 8.030 | |
| 15-Dec-16 | 09:44:00 | 35.0 | 9.220 | 8.150 | 8.150 | |
| 15-Dec-16 | 09:49:00 | 40.0 | 9.340 | 8.270 | 8.270 | |
| 15-Dec-16 | 09:54:00 | 45.0 | 9.390 | 8.320 | 8.320 | |
| 15-Dec-16 | 09:59:00 | 50.0 | 9.450 | 8.380 | 8.380 | |
| 15-Dec-16 | 10:04:00 | 55.0 | 9.500 | 8.430 | 8.430 | |
| 15-Dec-16 | 10:09:00 | 60.0 | 9.540 | 8.470 | 8.470 | |
| 15-Dec-16 | 10:24:00 | 75.0 | 9.630 | 8.560 | 8.560 | |
| 15-Dec-16 | 10:39:00 | 90.0 | 9.690 | 8.620 | 8.620 | |
| 15-Dec-16 | 10:54:00 | 105.0 | 9.750 | 8.680 | 8.680 | |
| 15-Dec-16 | 11:09:00 | 120.0 | 9.770 | 8.700 | 8.700 | |
| 15-Dec-16 | 11:39:00 | 150.0 | 9.840 | 8.770 | 8.770 | |
| 15-Dec-16 | 12:09:00 | 180.0 | 9.830 | 8.760 | 8.760 | |
| 15-Dec-16 | 12:39:00 | 210.0 | 9.840 | 8.770 | 8.770 | |
| 15-Dec-16 | 13:09:00 | 240.0 | 9.850 | 8.780 | 8.780 | |
| 15-Dec-16 | 13:39:00 | 270.0 | 9.860 | 8.790 | 8.790 | |

# Reward

## Constant Rate Test - Data Sheet

| | | | | | |
|---|---|---|---|---|---|
| Test Start: | 15-Dec-16 09:09 | | | Test End: | 15-Dec-16 09:09 |
| Job No.: | 1257g | Quicklogs Bore ID: | 73389 | Pumped Bore: | LDBH1603 |
| Client.: | Reward | | | Tagged depth (m bTOC): | 65 |
| Contractor: | Global Groundwater | | | Supervisor: | JL Percival |

| | | | | | |
|---|---|---|---|---|---|
| SWL (mbMP): | 1.070 | | | Pump Inlet (mbmp): | 60.0 |
| MP (maTOC): | 1.060 | | | Available Drawdown (m): | 58.9 |
| TOC (magl): | 0.000 | | | Discharge Dist. & Direction: | 250m NW |
| SWL (mbgl): | 0.010 | | | Bore Internal Diameter (mm): | 228 |
| Pump Used: | Grundfow SP14A | Flow (L/s): | 3.00 | Flow ($m^3$/day): | 259 |
| Flow device: | Volume estimation | | | | |
| | | | | Number of other Bores Monitored: | 0 |

SWL = Static water level  mbMP = Metres below measuring point  mbgl = Metres below ground level
MP = Measuring point  magl = Metres above ground level  ToC= Top of Casing (Bore)

| Reading Taken Date | (Hr:Min:Sec) | Elapsed Time (Min) | Water Level (m) | Drawdown (m) | Corrected Drawdown (m) | Comments |
|---|---|---|---|---|---|---|
| 15-Dec-16 | 14:09:00 | 300.0 | 9.880 | 8.810 | 8.810 | |
| 15-Dec-16 | 14:39:00 | 330.0 | 9.910 | 8.840 | 8.840 | |
| 15-Dec-16 | 15:09:00 | 360.0 | 9.920 | 8.850 | 8.850 | |
| 15-Dec-16 | 15:39:00 | 390.0 | 9.920 | 8.850 | 8.850 | |
| | | | | | | |
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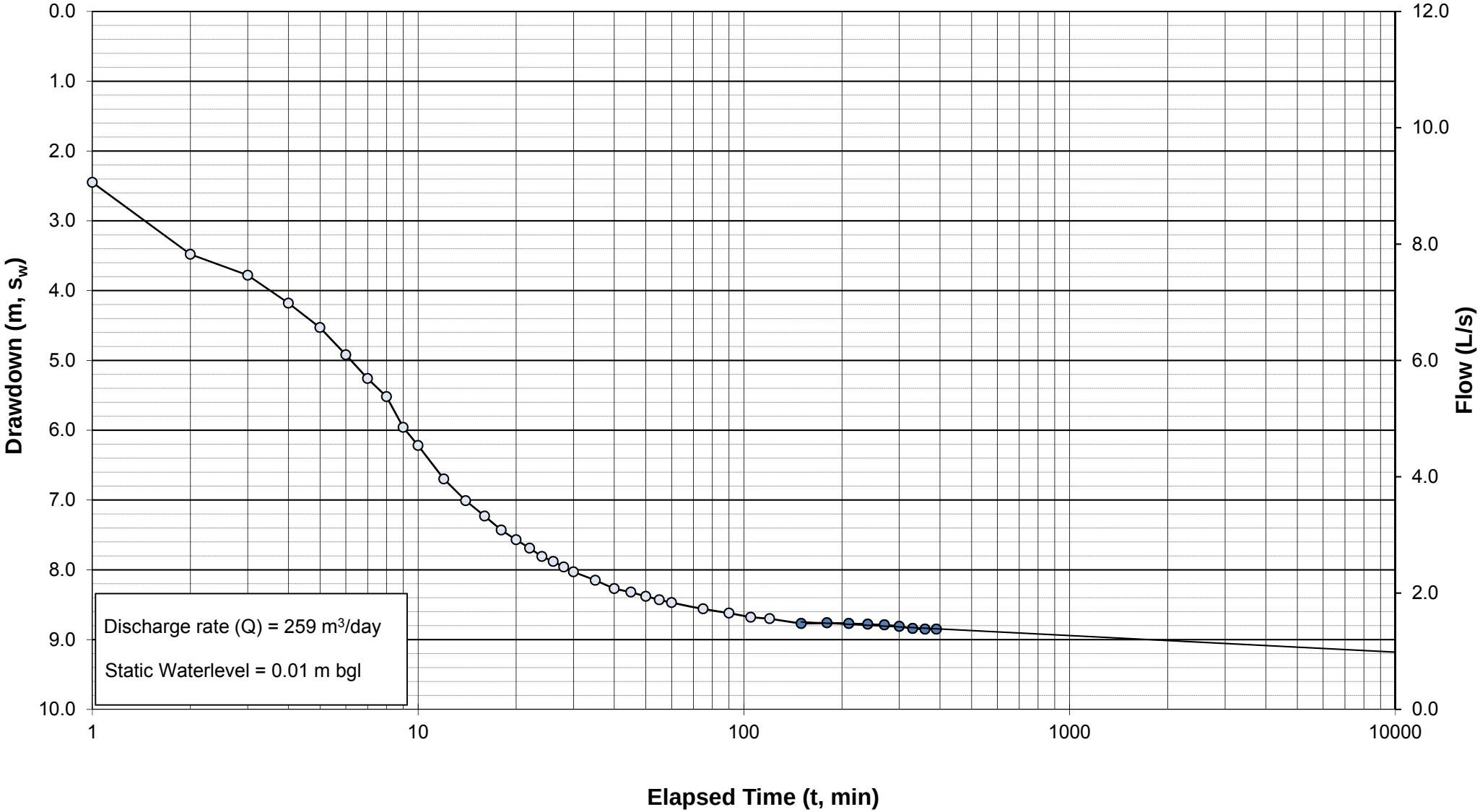
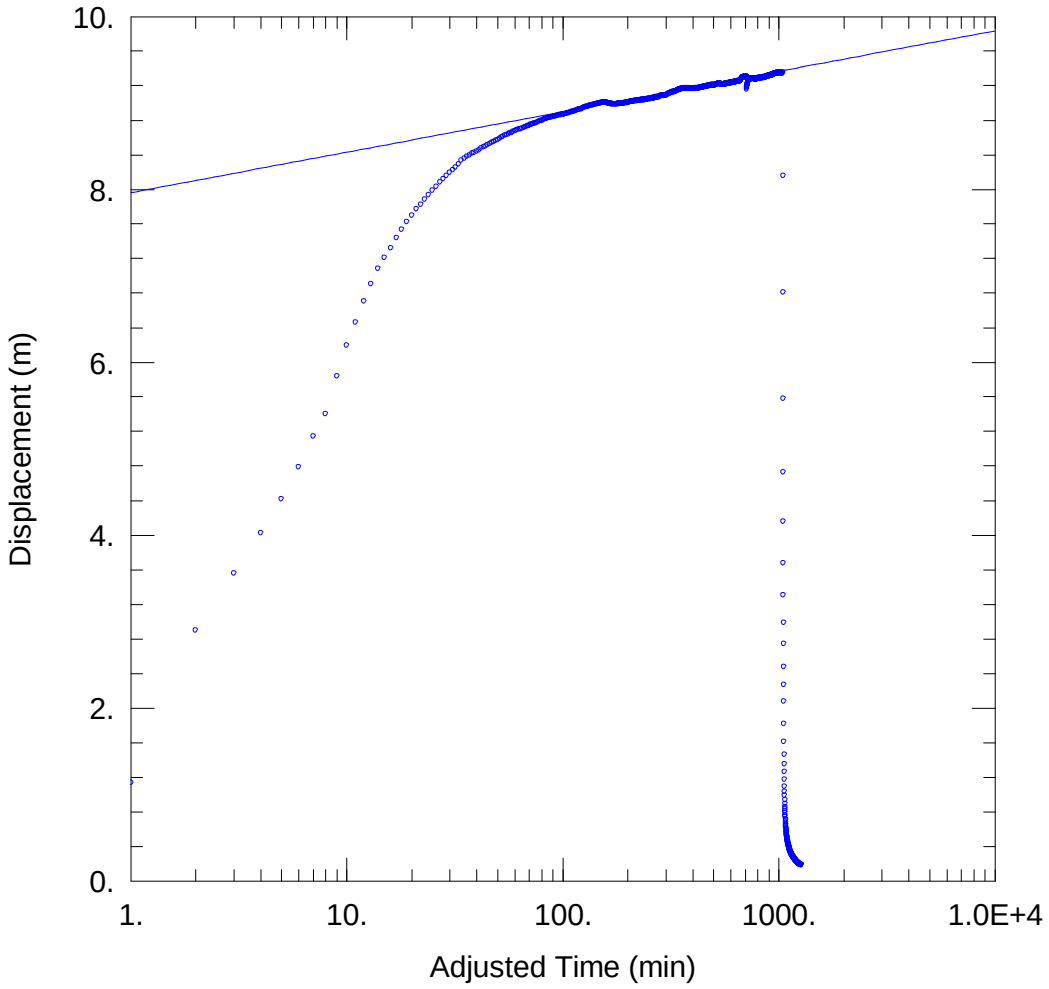
# Constant Rate Test - Production Bore LDBH1603






## LDBH1603 CONSTANT RATE TEST

Data Set: C:\...\LDBH1603ConstantrateTest2016.aqt
Date: 03/21/17 Time: 11:51:30

## PROJECT INFORMATION

Company: Global Groundwater
Client: Reward Minerals
Project: 1256g
Location: Lake Disappointment
Test Well: LDBH1603
Test Date: 16 December, 2016

## AQUIFER DATA

Saturated Thickness: 48.6 m Anisotropy Ratio (Kz/Kr): 0.1

## WELL DATA

Pumping Wells

| Well Name | X (m) | Y (m) |
|---|---|---|
| LDBH1603 | 469348 | 7401120 |

Observation Wells

| Well Name | X (m) | Y (m) |
|---|---|---|
| ◦ LDBH1603 | 469348 | 7401120 |

## SOLUTION

Aquifer Model: Confined Solution Method: Cooper-Jacob

T = 91.35 $m^2$/day S = 1.262E-16

| Dataset: CRT | | Trench ID: PT011 | Trench LxWxH: 100mL x 6mW x 2mD |
|---|---|---|---|
| Prospect: | | East: | North: |

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## TRENCH PUMPING SPREADSHEET

| | | | Pump Flow Checks | | | | | | | | Raw Brine Level from top of PVC Pipe | | | | | | | | Actual Brine Level below Natural Surface Level (NSL) | | | | | | | | Dipper Code : H = Heron (bagged unit), I - ITMSoil (bare end) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | Time | Elapsed Time (mins) | Bucket Chk (litres) | Bucket Chk (sec) | Bucket Flow (l/sec) | Flow Meter (litres) | Flow Meter (sec) | F/Meter Flow (l/sec) | Flow Meter Totaliser ($m^3$) | F/Meter Volume ($m^3$) | Obs Bore 1 (m) | Obs Bore 2 (m) | Obs Bore 3 (m) | Obs Bore 4 (m) | Obs Bore 5 (m) | Obs Bore 6 (m) | Obs Bore 7 (m) | Obs Bore 8 (m) | Obs Bore 1 (m) | Obs Bore 2 (m) | Obs Bore 3 (m) | Obs Bore 4 (m) | Obs Bore 5 (m) | Obs Bore 6 (m) | Obs Bore 7 (m) | Obs Bore 8 (m) | Dipper Used 1-5 | Dipper Used 6-8 | Comments |
| | | | Nom 20 | | | Nom 100 | | | | | | | | | | | | | 0.560 | 0.280 | 0.250 | 0.220 | 0.250 | 0.150 | 0.220 | 0.230 | H | I | Top of PVC to NSL ('Stick-up') |
| 9/11/2016 | 7:10 | 0 | 20 | 7.0 & 8.4 | 5.2 | Too unreliable (erratic, high or siezed). Suitable for hypersaline brines ?? | | | | | 0.760 | 0.450 | 0.424 | 0.378 | 0.435 | 0.340 | 0.410 | 0.418 | 0.200 | 0.170 | 0.174 | 0.158 | 0.185 | 0.190 | 0.190 | 0.188 | H | I | Twin pumps being used so that each is running at lower speed and thus slowly using fuel in its tank. Single pump running fast may run out of fuel overnight. Flow meters erratic, or seized, unreliable - may not be suited to hypersaline duty - scaling. |
| 9/11/2016 | 7:25 | 15 | | | | | | | | | 0.760 | | | | 0.440 | 0.350 | | | 0.200 | | | | 0.190 | 0.200 | | | H | I | |
| 9/11/2016 | 7:35 | 25 | | | | | | | | | 0.762 | | 0.432 | | 0.438 | 0.350 | | | 0.202 | | 0.182 | | 0.188 | 0.200 | | | H | I | |
| 9/11/2016 | 7:45 | 35 | | | | | | | | | 0.773 | 0.460 | 0.435 | 0.388 | 0.441 | 0.350 | | | 0.213 | 0.180 | 0.185 | 0.168 | 0.191 | 0.200 | | | H | I | |
| 9/11/2016 | 7:55 | 45 | | | | | | | | | 0.766 | 0.464 | 0.438 | 0.390 | 0.441 | 0.355 | 0.415 | | 0.206 | 0.184 | 0.188 | 0.170 | 0.191 | 0.205 | 0.195 | | H | I | |
| 9/11/2016 | 8:05 | 55 | | | | | | | | | 0.769 | 0.466 | 0.442 | 0.392 | 0.443 | 0.355 | 0.415 | | 0.209 | 0.186 | 0.192 | 0.172 | 0.193 | 0.205 | 0.195 | | H | I | |
| 9/11/2016 | 8:15 | 65 | | | | | | | | | 0.773 | 0.469 | 0.445 | 0.393 | 0.444 | 0.355 | 0.415 | | 0.213 | 0.189 | 0.195 | 0.173 | 0.194 | 0.205 | 0.195 | | H | I | |
| 9/11/2016 | 8:25 | 75 | | | | | | | | | 0.781 | 0.474 | 0.449 | 0.396 | 0.446 | 0.355 | 0.415 | | 0.221 | 0.194 | 0.199 | 0.176 | 0.196 | 0.205 | 0.195 | | H | I | |
| 9/11/2016 | 8:35 | 85 | | | | | | | | | 0.793 | 0.475 | 0.456 | 0.396 | 0.448 | 0.355 | 0.415 | 0.420 | 0.233 | 0.195 | 0.206 | 0.176 | 0.198 | 0.205 | 0.195 | 0.190 | H | I | |
| 9/11/2016 | 8:45 | 95 | | | | | | | | | 0.792 | 0.481 | 0.459 | 0.398 | 0.453 | 0.357 | 0.425 | | 0.232 | 0.201 | 0.209 | 0.178 | 0.203 | 0.207 | 0.205 | | H | I | |
| 9/11/2016 | 8:55 | 105 | | | | | | | | | 0.795 | 0.480 | 0.460 | 0.399 | 0.457 | 0.357 | 0.418 | | 0.235 | 0.200 | 0.210 | 0.179 | 0.207 | 0.207 | 0.198 | | H | I | |
| 9/11/2016 | 9:05 | 115 | | | | | | | | | 0.797 | 0.482 | 0.464 | 0.400 | 0.459 | 0.357 | 0.418 | 0.420 | 0.237 | 0.202 | 0.214 | 0.180 | 0.209 | 0.207 | 0.198 | 0.190 | H | I | |
| 9/11/2016 | 9:15 | 125 | | | | | | | | | 0.798 | 0.485 | 0.465 | 0.402 | 0.459 | 0.363 | 0.418 | | 0.238 | 0.205 | 0.215 | 0.182 | 0.209 | 0.213 | 0.198 | | H | I | |
| 9/11/2016 | 9:25 | 135 | | | | | | | | | 0.800 | 0.486 | 0.467 | 0.403 | 0.458 | 0.368 | 0.425 | | 0.240 | 0.206 | 0.217 | 0.183 | 0.208 | 0.218 | 0.205 | | H | I | |
| 9/11/2016 | 9:45 | 155 | | | | | | | | | 0.805 | 0.490 | 0.474 | 0.405 | 0.472 | 0.368 | 0.425 | 0.420 | 0.245 | 0.210 | 0.224 | 0.185 | 0.222 | 0.218 | 0.205 | 0.190 | H | I | |
| 9/11/2016 | 10:05 | 175 | | | | | | | | | 0.816 | 0.494 | 0.476 | 0.408 | 0.468 | 0.370 | 0.423 | | 0.256 | 0.214 | 0.226 | 0.188 | 0.218 | 0.220 | 0.203 | | H | I | |
| 9/11/2016 | 10:25 | 195 | | | | | | | | | 0.819 | 0.497 | 0.480 | 0.409 | 0.470 | 0.380 | 0.423 | | 0.259 | 0.217 | 0.230 | 0.189 | 0.220 | 0.230 | 0.203 | | H | I | |
| 9/11/2016 | 11:30 | 260 | | | | | | | | | 0.824 | 0.500 | 0.486 | 0.412 | 0.473 | 0.380 | 0.425 | | 0.264 | 0.220 | 0.236 | 0.192 | 0.223 | 0.230 | 0.205 | | H | I | Both pumps off briefly to clear severe coarse crystal blockages in NRV screens and to unseize NRVs. Coarse crystals either on floor of trench or raining down due to recharge flow. Stable after first cleaning. |
| 9/11/2016 | 11:50 | 280 | | | | | | | | | 0.824 | 0.504 | 0.490 | 0.414 | 0.472 | 0.383 | 0.425 | | 0.264 | 0.224 | 0.240 | 0.194 | 0.222 | 0.233 | 0.205 | | H | I | |
| 9/11/2016 | 12:10 | 300 | | | | | | | | | 0.825 | 0.507 | 0.494 | 0.415 | 0.474 | 0.383 | 0.425 | 0.422 | 0.265 | 0.227 | 0.244 | 0.195 | 0.224 | 0.233 | 0.205 | 0.192 | H | I | |
| 9/11/2016 | 12:30 | 320 | | | | | | | | | 0.833 | 0.510 | 0.500 | 0.416 | 0.475 | 0.384 | 0.427 | | 0.273 | 0.230 | 0.250 | 0.196 | 0.225 | 0.234 | 0.207 | | H | I | |
| 9/11/2016 | 13:00 | 350 | | | | | | | | | 0.839 | 0.515 | 0.506 | 0.419 | 0.483 | 0.390 | 0.430 | 0.422 | 0.279 | 0.235 | 0.256 | 0.199 | 0.233 | 0.240 | 0.210 | 0.192 | H | I | |
| 9/11/2016 | 13:30 | 380 | | | | | | | | | 0.847 | 0.519 | 0.512 | 0.423 | 0.485 | 0.395 | 0.432 | | 0.287 | 0.239 | 0.262 | 0.203 | 0.235 | 0.245 | 0.212 | | H | I | |
| 9/11/2016 | 14:00 | 410 | | | | | | | | | 0.862 | 0.525 | 0.523 | 0.429 | 0.496 | 0.398 | 0.430 | 0.424 | 0.302 | 0.245 | 0.273 | 0.209 | 0.246 | 0.248 | 0.210 | 0.194 | H | I | |
| 9/11/2016 | 14:30 | 440 | | | | | | | | | 0.864 | 0.529 | 0.524 | 0.429 | 0.494 | 0.400 | 0.435 | | 0.304 | 0.249 | 0.274 | 0.209 | 0.244 | 0.250 | 0.215 | | H | I | |
| 9/11/2016 | 15:00 | 470 | | | | | | | | | 0.866 | 0.534 | 0.532 | 0.432 | 0.498 | 0.405 | 0.435 | 0.427 | 0.306 | 0.254 | 0.282 | 0.212 | 0.248 | 0.255 | 0.215 | 0.197 | H | I | |
| 9/11/2016 | 15:30 | 500 | | | | | | | | | 0.874 | 0.538 | 0.539 | 0.434 | 0.501 | 0.408 | 0.438 | | 0.314 | 0.258 | 0.289 | 0.214 | 0.251 | 0.258 | 0.218 | | H | I | |
| 9/11/2016 | 16:00 | 530 | | | | | | | | | 0.875 | 0.542 | 0.542 | 0.437 | 0.510 | 0.411 | 0.440 | 0.431 | 0.315 | 0.262 | 0.292 | 0.217 | 0.260 | 0.261 | 0.220 | 0.201 | H | I | |
| 10/11/2016 | 7:10 | 1440 | | | | | | | | | 0.932 | 0.599 | 0.597 | 0.501 | 0.574 | 0.475 | 0.506 | 0.498 | 0.372 | 0.319 | 0.347 | 0.281 | 0.324 | 0.325 | 0.286 | 0.268 | H | I | As anticipated, Pump 1 was not running on arrival, it had stalled just before pickup time previous day (restarted) and had been running very poorly (smokey also). New pump had been organised, swapped out quickly. |
| 10/11/2016 | 8:35 | 1525 | 20 | 8.9 & 8.0 | 4.7 | | | | | | 0.940 | 0.608 | 0.609 | 0.509 | 0.583 | 0.483 | 0.513 | 0.500 | 0.380 | 0.328 | 0.359 | 0.289 | 0.333 | 0.333 | 0.293 | 0.270 | H | I | Both pumps running fine. |
| 10/11/2016 | 16:30 | 2000 | | | | | | | | | 1.032 | 0.683 | 0.704 | 0.565 | 0.643 | 0.560 | 0.558 | 0.543 | 0.472 | 0.403 | 0.454 | 0.345 | 0.393 | 0.410 | 0.338 | 0.313 | H | I | Both pumps running fine. |
| 11/11/2016 | 6:55 | 2865 | | | | | | | | | 1.090 | 0.738 | 0.768 | 0.624 | 0.713 | 0.628 | 0.622 | 0.603 | 0.530 | 0.458 | 0.518 | 0.404 | 0.463 | 0.478 | 0.402 | 0.373 | H | I | Both pumps running fine. Trench brine level now just below main trench lip rather than higher on 'shallows'. All MBs dropped 50-70mm overnight. |
| 11/11/2016 | 15:15 | 3365 | | | | | | | | | 1.109 | 0.754 | 0.789 | 0.646 | 0.733 | 0.650 | 0.643 | 0.622 | 0.549 | 0.474 | 0.539 | 0.426 | 0.483 | 0.500 | 0.423 | 0.392 | H | I | Unbelievably, we arrived to find Pump 2 now leaking fairly badly. Layflat pressure still very good. Appears to be a crack in housing, spray pattern is away from major worry items. Due to site circumstances (time of day and oil leak / chopper), will have to swap out tomorrow. Fuel use quite low so running out of fuel probably less of an issue. |
| 12/11/2016 | 9:30 | 4460 | | | | | | | | | 1.113 | 0.773 | 0.818 | 0.673 | 0.758 | 0.681 | 0.666 | 0.648 | 0.553 | 0.493 | 0.568 | 0.453 | 0.508 | 0.531 | 0.446 | 0.418 | H | I | Pump 2 leak about the same, both pumps running, both layflats good. Patched over hole as best we could with rags and tape. We estimate leakage rate visually at 0.25 to 0.5 L/sec. Normal chopper has oil leak, replacement being flown in this arvo. |
| 12/11/2016 | 16:15 | 4865 | | | | | | | | | | 0.785 | 0.825 | 0.681 | 0.769 | 0.686 | 0.674 | 0.657 | | 0.505 | 0.575 | 0.461 | 0.519 | 0.536 | 0.454 | 0.427 | H | I | Pump 2 leak about the same, again both pumps running and both layflats good. Leakage rate visually still around 0.25 to 0.5 L/sec. Can't replace pump as replacement chopper has no lifting capability (WTF). |
| 13/11/2016 | 6:10 | 5700 | | | | | | | | | 1.059 | 0.718 | 0.726 | 0.633 | 0.700 | 0.621 | 0.643 | 0.639 | 0.499 | 0.438 | 0.476 | 0.413 | 0.450 | 0.471 | 0.423 | 0.409 | H | I | Arrived to find Pump 2 DEAD. Attempts to restart futile, plenty of fuel and motor spins over but just coughs smoke. Still can't replace pump. Normal chopper 'due' back on site noon, will replace pump as quickly as possible and resume test at around 4.7 L/sec. MBs and trench have all recharged somewhat due to lower pump flow (est 4.7 down to 2.2 L/sec). Hope resuming and am / pm checks OK togive useful results. |
| 13/11/2016 | 12:50 | 6100 | | | | | | | | | 1.044 | 0.701 | 0.708 | 0.617 | 0.684 | 0.602 | 0.634 | 0.630 | 0.484 | 0.421 | 0.458 | 0.397 | 0.434 | 0.452 | 0.414 | 0.400 | H | I | Waiting on replacement 2nd pump. |

| Dataset: CRT | | Trench ID: PT011 | Trench LxWxH: 100mL x 6mW x 2mD |
|---|---|---|---|
| Prospect: | | East: | North: |

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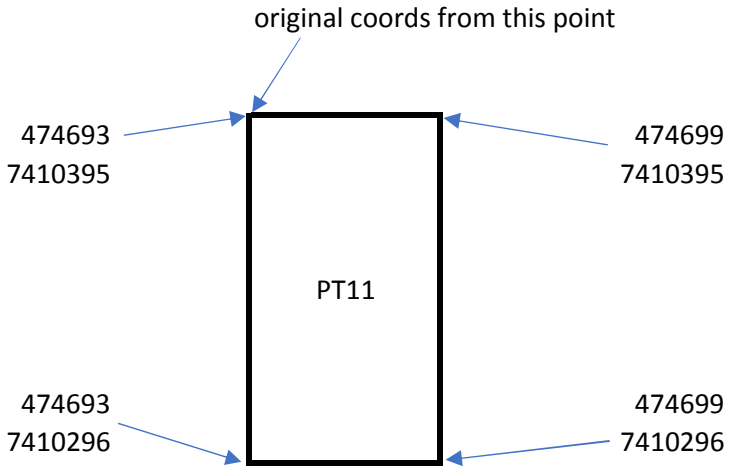
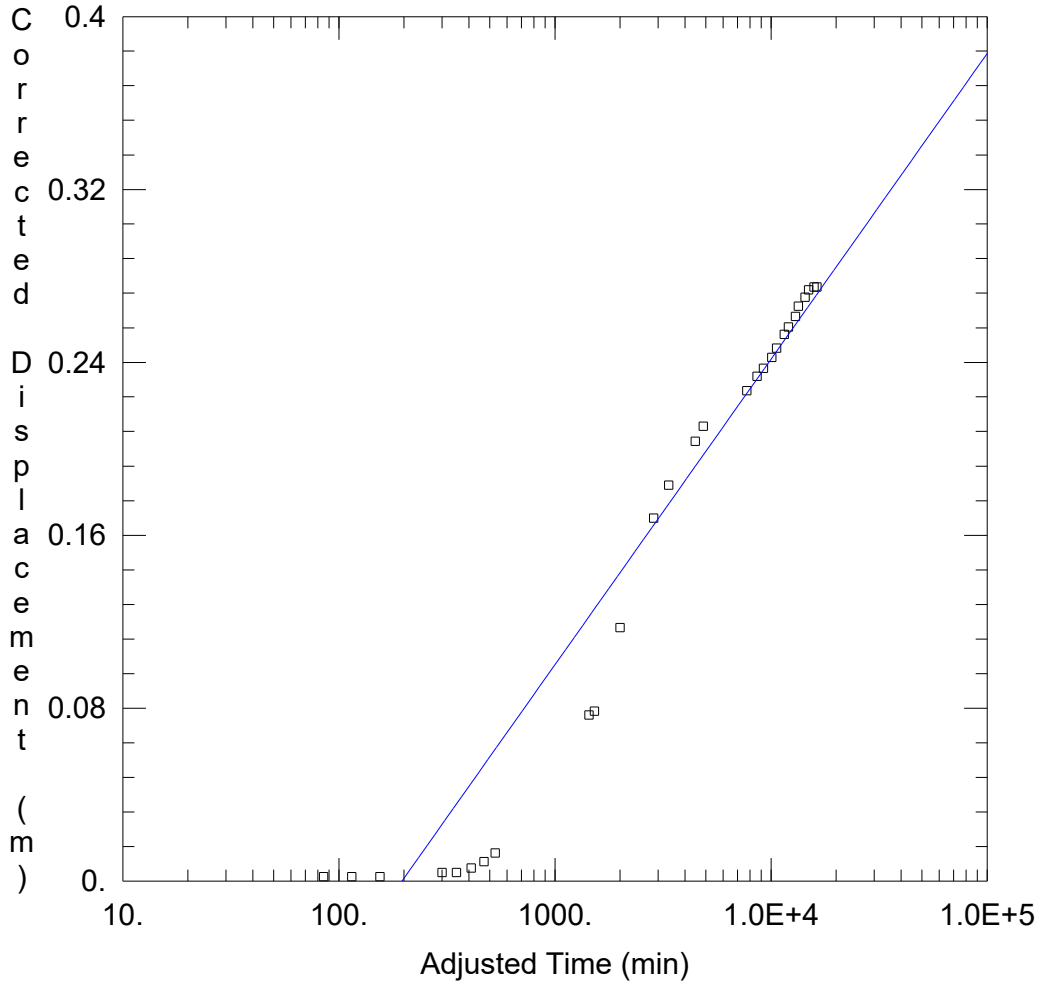
## TRENCH PUMPING SPREADSHEET

| | | | Pump Flow Checks | | | | | | | | Raw Brine Level from top of PVC Pipe | | | | | | | | Actual Brine Level below Natural Surface Level (NSL) | | | | | | | | Dipper Code : H = Heron (bagged unit), I - ITMSoil (bare end) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | Time | Elapsed Time (mins) | Bucket Chk (litres) | Bucket Chk (sec) | Bucket Flow (l/sec) | Flow Meter (litres) | Flow Meter (sec) | F/Meter Flow (l/sec) | Flow Meter Totaliser ($m^3$) | F/Meter Volume ($m^3$) | Obs Bore 1 (m) | Obs Bore 2 (m) | Obs Bore 3 (m) | Obs Bore 4 (m) | Obs Bore 5 (m) | Obs Bore 6 (m) | Obs Bore 7 (m) | Obs Bore 8 (m) | Obs Bore 1 (m) | Obs Bore 2 (m) | Obs Bore 3 (m) | Obs Bore 4 (m) | Obs Bore 5 (m) | Obs Bore 6 (m) | Obs Bore 7 (m) | Obs Bore 8 (m) | Dipper Used 1-5 | Dipper Used 6-8 | Comments |
| 13/11/2016 | 14:00 | 6170 | 20 | 8.5 & 11.0 | 4.2 | | | | | | 1.045 | 0.705 | 0.711 | 0.618 | 0.687 | 0.605 | 0.634 | 0.630 | 0.485 | 0.425 | 0.461 | 0.398 | 0.437 | 0.455 | 0.414 | 0.400 | H | I | At 13:20, replacement pump started in Pump 2 position, back to 2 x pumps now. Flow adjusted aiming for low tomid 4's L/sec. Actual number = 4.2 L/sec. Monitored until just before 1600 hrs - all running well. |
| 13/11/2016 | 14:30 | 6200 | | | | | | | | | 1.045 | 0.710 | 0.723 | 0.618 | 0.693 | 0.607 | 0.630 | 0.629 | 0.485 | 0.430 | 0.473 | 0.398 | 0.443 | 0.457 | 0.410 | 0.399 | H | I | |
| 13/11/2016 | 15:00 | 6230 | | | | | | | | | 1.046 | 0.714 | 0.727 | 0.623 | 0.693 | 0.612 | 0.632 | 0.625 | 0.486 | 0.434 | 0.477 | 0.403 | 0.443 | 0.462 | 0.412 | 0.395 | H | I | |
| 13/11/2016 | 15:30 | 6260 | | | | | | | | | 1.058 | 0.719 | 0.734 | 0.622 | 0.699 | 0.615 | 0.635 | 0.629 | 0.498 | 0.439 | 0.484 | 0.402 | 0.449 | 0.465 | 0.415 | 0.399 | H | I | Both pumps running well, all good. |
| 14/11/2016 | 6:50 | 7180 | | | | | | | | | 1.128 | 0.788 | 0.809 | 0.683 | 0.768 | 0.682 | 0.679 | 0.668 | 0.568 | 0.508 | 0.559 | 0.463 | 0.518 | 0.532 | 0.459 | 0.438 | H | I | Both pumps running well, all good. |
| 14/11/2016 | 16:10 | 7740 | | | | | | | | | 1.135 | 0.796 | 0.822 | 0.689 | 0.773 | 0.696 | 0.690 | 0.679 | 0.575 | 0.516 | 0.572 | 0.469 | 0.523 | 0.546 | 0.470 | 0.449 | H | I | Both pumps running well, all good. Trench level quite stable at top of main trench channel. |
| 15/11/2016 | 6:45 | 8615 | | | | | | | | | 1.135 | 0.809 | 0.839 | 0.699 | 0.786 | 0.705 | 0.700 | 0.688 | 0.575 | 0.529 | 0.589 | 0.479 | 0.536 | 0.555 | 0.480 | 0.458 | H | I | Both pumps running well, all good. Trench level quite stable at top of main trench channel. |
| 15/11/2016 | 17:05 | 9235 | | | | | | | | | 1.135 | 0.818 | 0.850 | 0.707 | 0.791 | 0.710 | 0.705 | 0.693 | 0.575 | 0.538 | 0.600 | 0.487 | 0.541 | 0.560 | 0.485 | 0.463 | H | I | |
| 16/11/2016 | 7:00 | 10070 | | | | | | | | | 1.135 | 0.825 | 0.858 | 0.716 | 0.798 | 0.720 | 0.713 | 0.700 | 0.575 | 0.545 | 0.608 | 0.496 | 0.548 | 0.570 | 0.493 | 0.470 | H | I | |
| 16/11/2016 | 16:10 | 10620 | 20 | 7.0 & 8.4 | 5.2 | | | | | | 1.150 | 0.829 | 0.864 | 0.719 | 0.804 | 0.727 | 0.718 | 0.706 | 0.590 | 0.549 | 0.614 | 0.499 | 0.554 | 0.577 | 0.498 | 0.476 | H | I | |
| 17/11/2016 | 6:55 | 11505 | | | | | | | | | 1.150 | 0.839 | 0.863 | 0.726 | 0.801 | 0.731 | 0.725 | 0.715 | 0.590 | 0.559 | 0.613 | 0.506 | 0.551 | 0.581 | 0.505 | 0.485 | I | I | Due to the need for dippers at both LDBH1603 and Trench 11 on 17/11/16, the two person twin dipper arrangement used to date had to become ITM only. Even though the dippers are physically similar and should read the same, dipping a test BH showed a 24mm variation against the Heron. Reason / logic = unknown. Correction applied BH 1-5. |
| 17/11/2016 | 15:45 | 12035 | | | | | | | | | 1.150 | 0.841 | 0.867 | 0.731 | 0.806 | 0.737 | 0.730 | 0.720 | 0.590 | 0.561 | 0.617 | 0.511 | 0.556 | 0.587 | 0.510 | 0.490 | I | I | Ditto. |
| 18/11/2016 | 7:15 | 12965 | | | | | | | | | 1.150 | 0.852 | 0.886 | 0.745 | 0.825 | 0.745 | 0.738 | 0.727 | 0.590 | 0.572 | 0.636 | 0.525 | 0.575 | 0.595 | 0.518 | 0.497 | H | I | Back to twin dipper / twin operator monitoring today. |
| 18/11/2016 | 14:00 | 13370 | | | | | | | | | 1.150 | 0.856 | 0.889 | 0.749 | 0.829 | 0.752 | 0.744 | 0.734 | 0.590 | 0.576 | 0.639 | 0.529 | 0.579 | 0.602 | 0.524 | 0.504 | H | I | Back to twin dipper / twin operator monitoring today. |
| 19/11/2016 | 7:15 | 14405 | | | | | | | | | 1.150 | 0.866 | 0.900 | 0.758 | 0.840 | 0.761 | 0.751 | 0.740 | 0.590 | 0.586 | 0.650 | 0.538 | 0.590 | 0.611 | 0.531 | 0.510 | H | I | |
| 19/11/2016 | 15:40 | 14910 | | | | | | | | | 1.150 | 0.868 | 0.902 | 0.762 | 0.844 | 0.765 | 0.755 | 0.745 | 0.590 | 0.588 | 0.652 | 0.542 | 0.594 | 0.615 | 0.535 | 0.515 | H | I | |
| 20/11/2016 | 7:00 | 15830 | | | | | | | | | 1.150 | 0.869 | 0.906 | 0.764 | 0.846 | 0.769 | 0.758 | 0.747 | 0.590 | 0.589 | 0.656 | 0.544 | 0.596 | 0.619 | 0.538 | 0.517 | H | I | |
| 20/11/2016 | 15:25 | 16335 | 20 | 8.6 & 11.2 | 4.1 | | | | | | 1.150 | 0.872 | 0.907 | 0.765 | 0.847 | 0.772 | 0.762 | 0.747 | 0.590 | 0.592 | 0.657 | 0.545 | 0.597 | 0.622 | 0.542 | 0.517 | H | I | |

| Bore ID | stick up | depth | casing | geology | east | north |
|---|---|---|---|---|---|---|
| PT11 MB1 | 0.56 | 1.5 | slotted 50mm | Qh | 474684.6 | 7410316.5 |
| PT11 MB2 | 0.28 | 1.5 | slotted 50mm | Qh | 474675.2 | 7410316.5 |
| PT11 MB3 | 0.25 | 1.5 | slotted 50mm | Qh | 474680.2 | 7410338 |
| PT11 MB4 | 0.22 | 1.5 | slotted 50mm | Qh | 474675.4 | 7410359.6 |
| PT11 MB5 | 0.25 | 1.5 | slotted 50mm | Qh | 474684.4 | 7410359.6 |
| PT11 MB6 | 0.15 | 1.5 | slotted 50mm | Qh | 474713.1 | 7410336.7 |
| PT11 MB7 | 0.22 | 1.5 | slotted 50mm | Qh | 474721.4 | 7410336.7 |
| PT11 MB8 | 0.23 | 1.5 | slotted 50mm | Qh | 474729.1 | 7410336.7 |

ULS upper lakebed sequence






## WELL TEST ANALYSIS

Data Set: C:\...\PT11_MB8.aqt
Date: 03/14/17 Time: 11:41:28

## PROJECT INFORMATION

Company: Reward Minerals
Client: Reward Minerals
Project: Lake Disappointment
Location: Lake Disappointment
Test Well: PT 11

## AQUIFER DATA

Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 1.

## WELL DATA

Pumping Wells

| Well Name | X (m) | Y (m) |
|---|---|---|
| PT11 | 474693 | 7410395 |

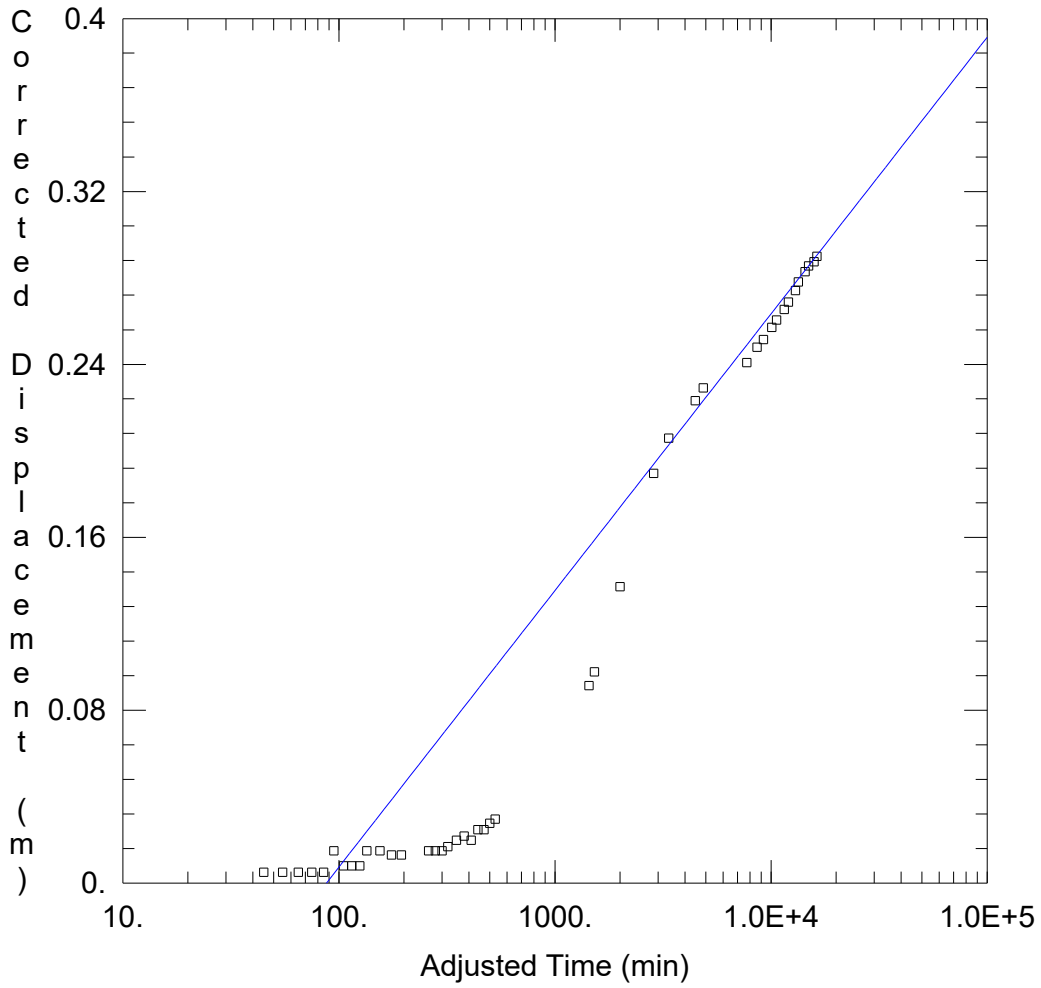
Observation Wells

| Well Name | X (m) | Y (m) |
|---|---|---|
| MB8 | 474729.1 | 7410336.7 |

## SOLUTION

Aquifer Model: Unconfined Solution Method: Cooper-Jacob

T = 335.9 $m^2$/day S = 0.02183




## WELL TEST ANALYSIS

Data Set: C:\...\PT11_MB7.aqt
Date: 03/14/17 Time: 11:40:44

## PROJECT INFORMATION

Company: Reward Minerals
Client: Reward Minerals
Project: Lake Disappointment
Location: Lake Disappointment
Test Well: PT 11

## AQUIFER DATA

Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 1.

## WELL DATA

Pumping Wells

| Well Name | X (m) | Y (m) |
|---|---|---|
| PT11 | 474693 | 7410395 |

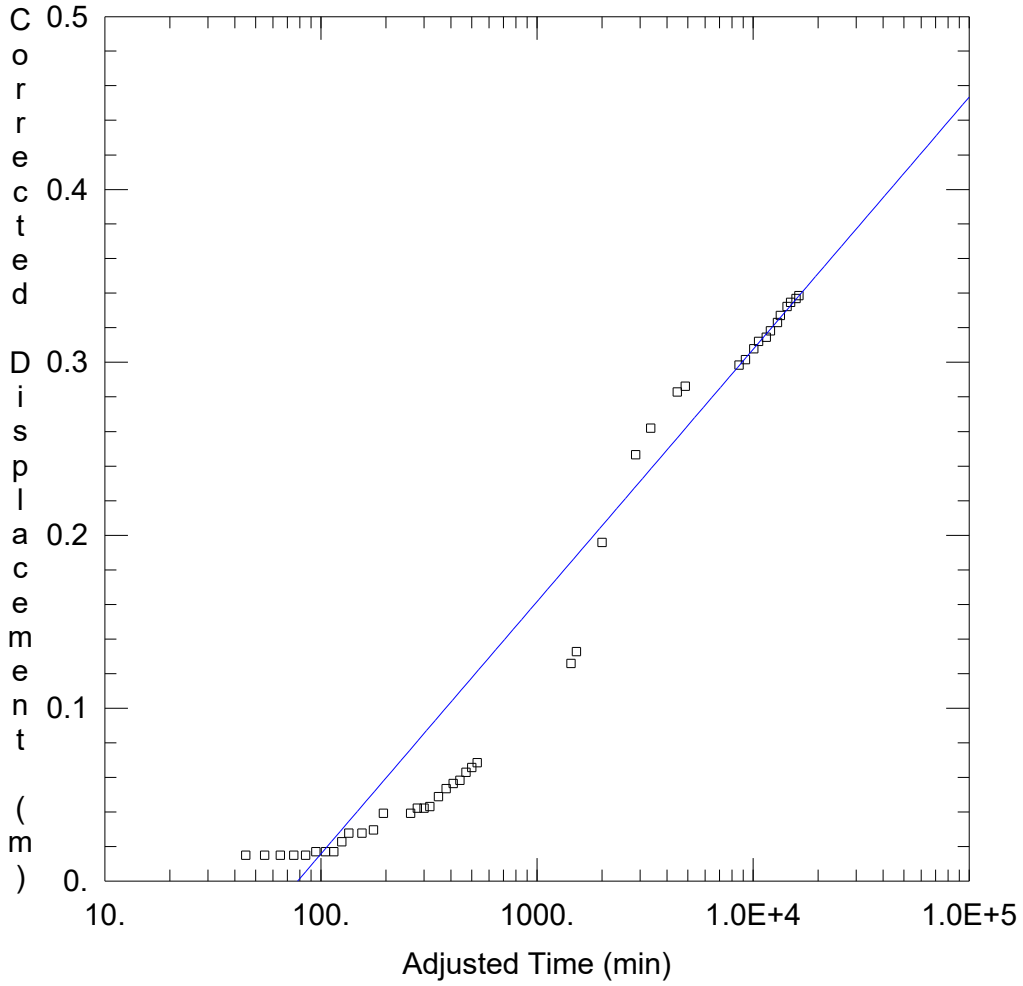
Observation Wells

| Well Name | X (m) | Y (m) |
|---|---|---|
| MB7 | 474721.4 | 7410336.7 |

## SOLUTION

Aquifer Model: Unconfined Solution Method: Cooper-Jacob

T = 371. $m^2$/day S = 0.01206




## WELL TEST ANALYSIS

Data Set: C:\...\PT11_MB6.aqt
Date: 03/14/17 Time: 11:40:08

## PROJECT INFORMATION

Company: Reward Minerals
Client: Reward Minerals
Project: Lake Disappointment
Location: Lake Disappointment
Test Well: PT 11

## AQUIFER DATA

Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 1.

## WELL DATA

Pumping Wells

| Well Name | X (m) | Y (m) |
|---|---|---|
| PT11 | 474693 | 7410395 |

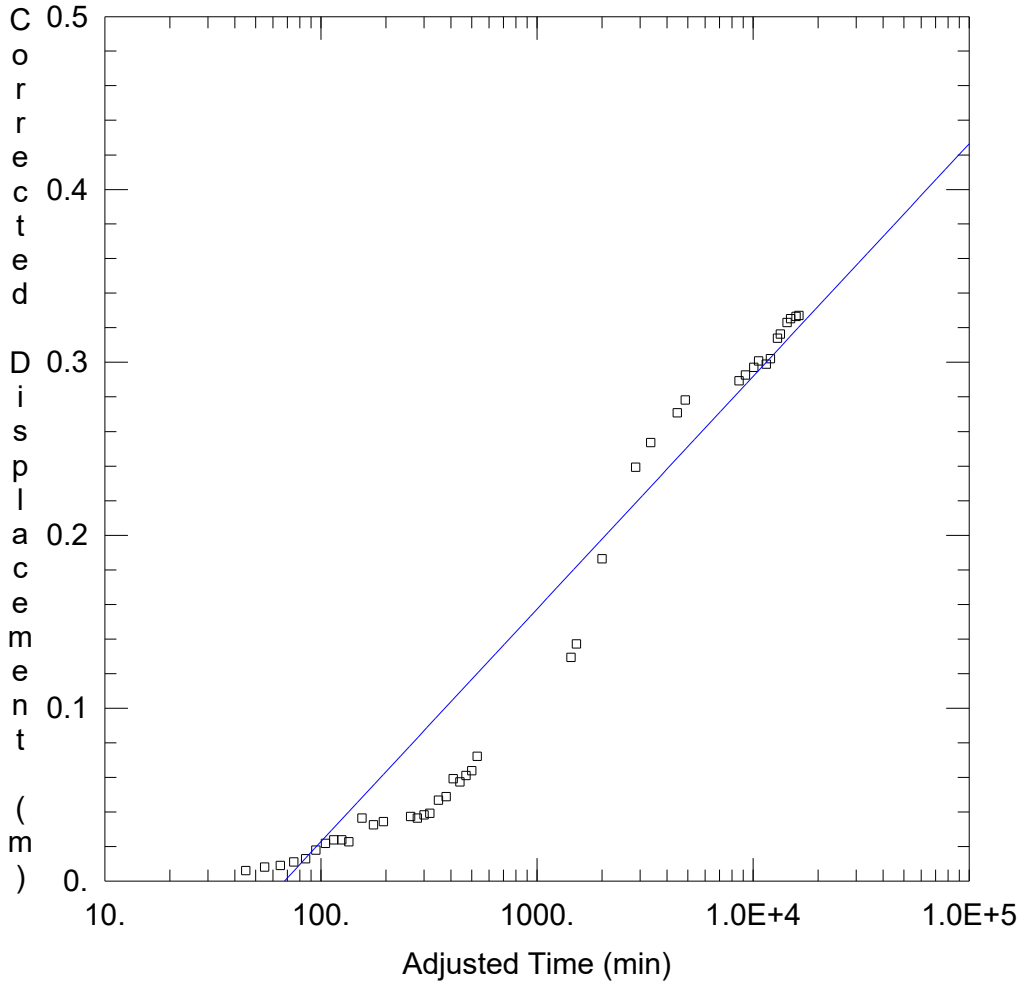
Observation Wells

| Well Name | X (m) | Y (m) |
|---|---|---|
| MB6 | 474713.1 | 7410336.7 |

## SOLUTION

Aquifer Model: Unconfined Solution Method: Cooper-Jacob

T = 325.5 $m^2$/day S = 0.01043




## WELL TEST ANALYSIS

Data Set: C:\...\PT11_MB5.aqt
Date: 03/14/17 Time: 11:39:37

## PROJECT INFORMATION

Company: Reward Minerals
Client: Reward Minerals
Project: Lake Disappointment
Location: Lake Disappointment
Test Well: PT 11

## AQUIFER DATA

Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 1.

## WELL DATA

Pumping Wells

| Well Name | X (m) | Y (m) |
|---|---|---|
| PT11 | 474693 | 7410395 |

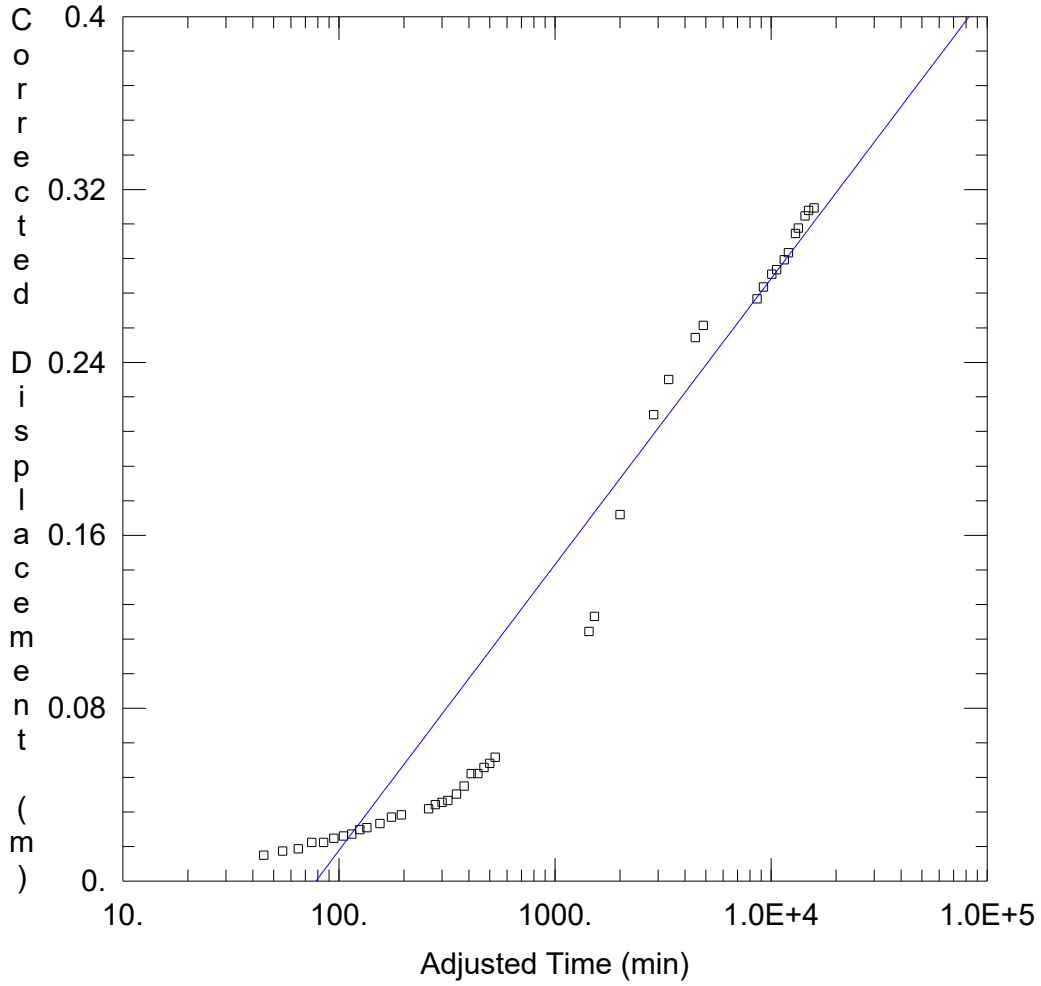
Observation Wells

| Well Name | X (m) | Y (m) |
|---|---|---|
| MB5 | 474684.4 | 7410359.6 |

## SOLUTION

Aquifer Model: Unconfined Solution Method: Cooper-Jacob

T = 352.9 $m^2$/day S = 0.02814




## WELL TEST ANALYSIS

Data Set: C:\...\PT11_MB4.aqt
Date: 03/14/17 Time: 11:39:09

## PROJECT INFORMATION

Company: Reward Minerals
Client: Reward Minerals
Project: Lake Disappointment
Location: Lake Disappointment
Test Well: PT 11

## AQUIFER DATA

Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 1.

## WELL DATA

Pumping Wells

| Well Name | X (m) | Y (m) |
|---|---|---|
| PT11 | 474693 | 7410395 |

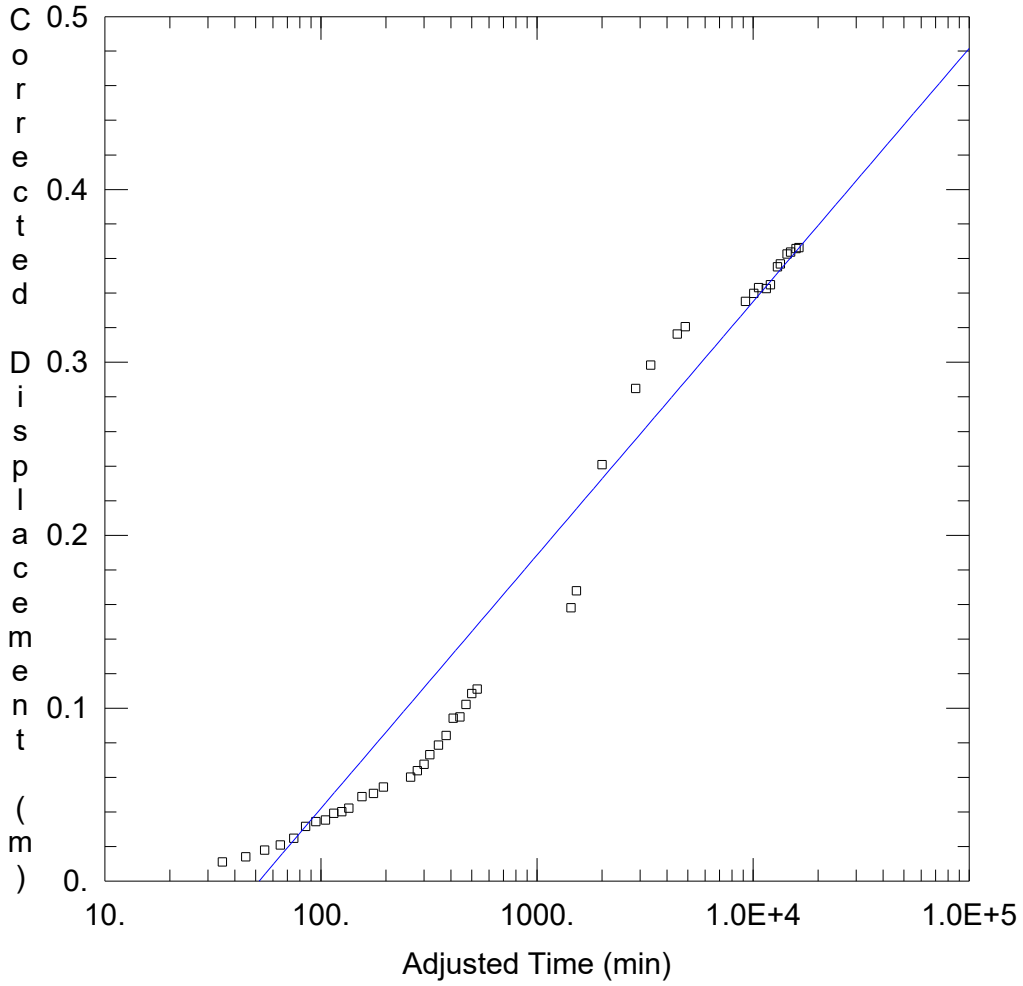
Observation Wells

| Well Name | X (m) | Y (m) |
|---|---|---|
| MB4 | 474675.4 | 7410359.6 |

## SOLUTION

Aquifer Model: Unconfined Solution Method: Cooper-Jacob

T = 359. $m^2$/day S = 0.02803




## WELL TEST ANALYSIS

Data Set: C:\...\PT11_MB3.aqt
Date: 03/14/17 Time: 11:37:46

## PROJECT INFORMATION

Company: Reward Minerals
Client: Reward Minerals
Project: Lake Disappointment
Location: Lake Disappointment
Test Well: PT 11

## AQUIFER DATA

Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 1.

## WELL DATA

Pumping Wells

| Well Name | X (m) | Y (m) |
|---|---|---|
| MB3 | 474693 | 7410395 |

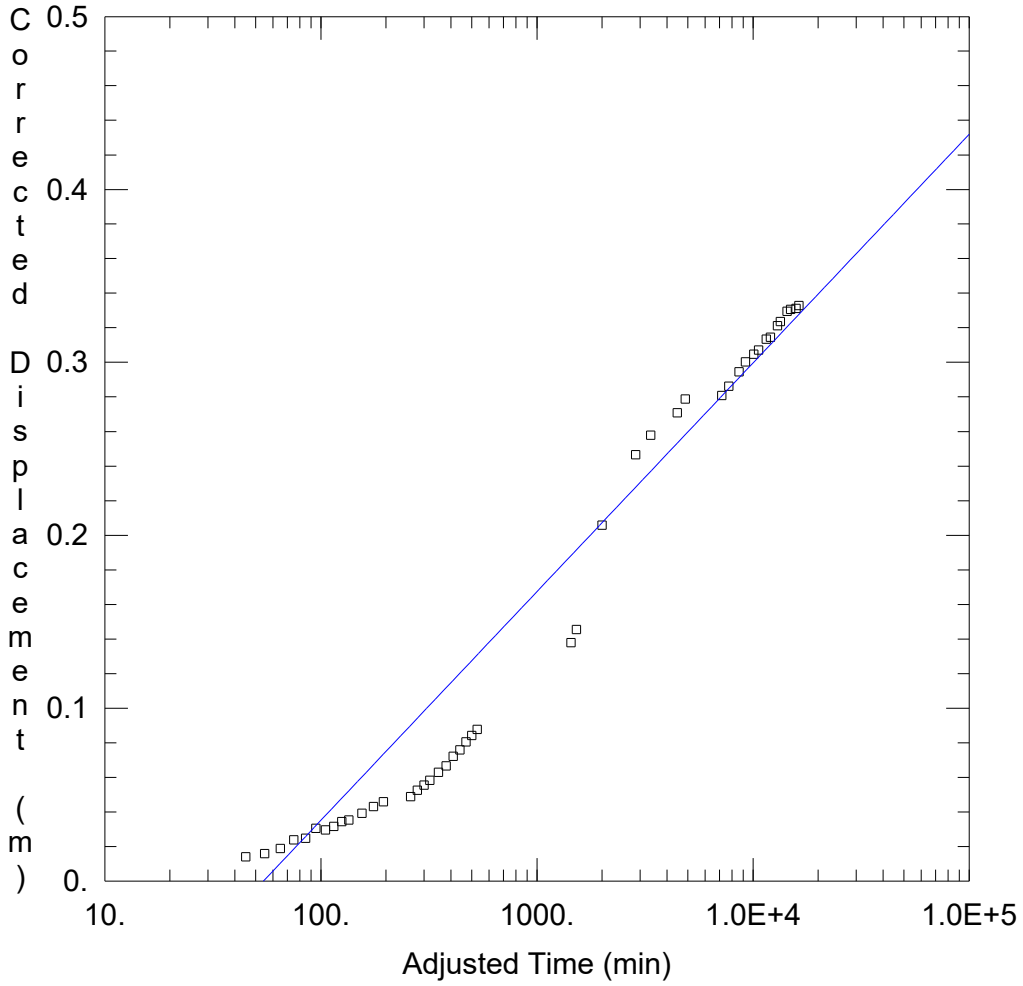
Observation Wells

| Well Name | X (m) | Y (m) |
|---|---|---|
| MB2 | 474680.2 | 7410338 |

## SOLUTION

Aquifer Model: Unconfined Solution Method: Cooper-Jacob

T = 324.1 $m^2$/day S = 0.007672




## WELL TEST ANALYSIS

Data Set: C:\...\PT11_MB2.aqt
Date: 03/14/17 Time: 11:48:14

## PROJECT INFORMATION

Company: Reward Minerals
Client: Reward Minerals
Project: Lake Disappointment
Location: Lake Disappointment
Test Well: PT 11

## AQUIFER DATA

Saturated Thickness: 1. m Anisotropy Ratio (Kz/Kr): 1.

## WELL DATA

Pumping Wells

| Well Name | X (m) | Y (m) |
|---|---|---|
| PT11 | 474693 | 7410395 |

Observation Wells

| Well Name | X (m) | Y (m) |
|---|---|---|
| MB2 | 474675.2 | 7410316.5 |

## SOLUTION

Aquifer Model: Unconfined Solution Method: Cooper-Jacob

T = 359. $m^2$/day S = 0.004692

Appendix **E**

Model Parameters and Results

Summary of Model.

1) Hydraulic Parameters

| Unit | Depths (m AHD) | | Storage | | Conductivity (Kx, Ky, *Kz*) | Model Zone (zone colour) |
|---|---|---|---|---|---|---|
| | From | To | Sy | ss | (m/d) | |
| Aeolian sand (Qpe) | 340 | 328 | 15 | | 2, *0.2* | 1 |
| Upper lake bed (Qhs) | 330 | 328 | 15 | | 250, *25* | 2 |
| Lower lake bed (Q/Tpl) | 328 | 320 | 13 | $1.3 \times 10^{-16}$ | 0.06, *.006* | 3 |
| Sandy weathered basement (PUw after PUss) | 320 | 240 | 12 | $1.3 \times 10^{-16}$ | 2, *0.2* | 4 |
| Other weathered basement (PUw after PUs) | 320 | 240 | 1 | $1.3 \times 10^{-16}$ | 0.005, *0.0005* | 5 |
| Basement rock (PUsx) | 240 | 180 | 1 | $1.3 \times 10^{-16}$ | 0.005, *0.0005* | 5 |

2) Model design

Model start date: 01/01/2018, 12:00

**Grid**

Coordinate system = WGS84 Zone 51

Length unit = m

Hydraulic Conductivity unit = m/d

Time unit = day

Pumping unit = $m^3/d$

Recharge unit = mm/yr

**Columns**

Min X = 450000m

Max X = 510000m

Total of 120 columns, uniform grid spacing 500m.

**Rows**

Min Y = 7375000 m

Max Y = 7445000 m

Total of 140 rows with cell width 500m

**Layers**

Number of Layers = 4

Top Layer 1: GroundMin330mAHD

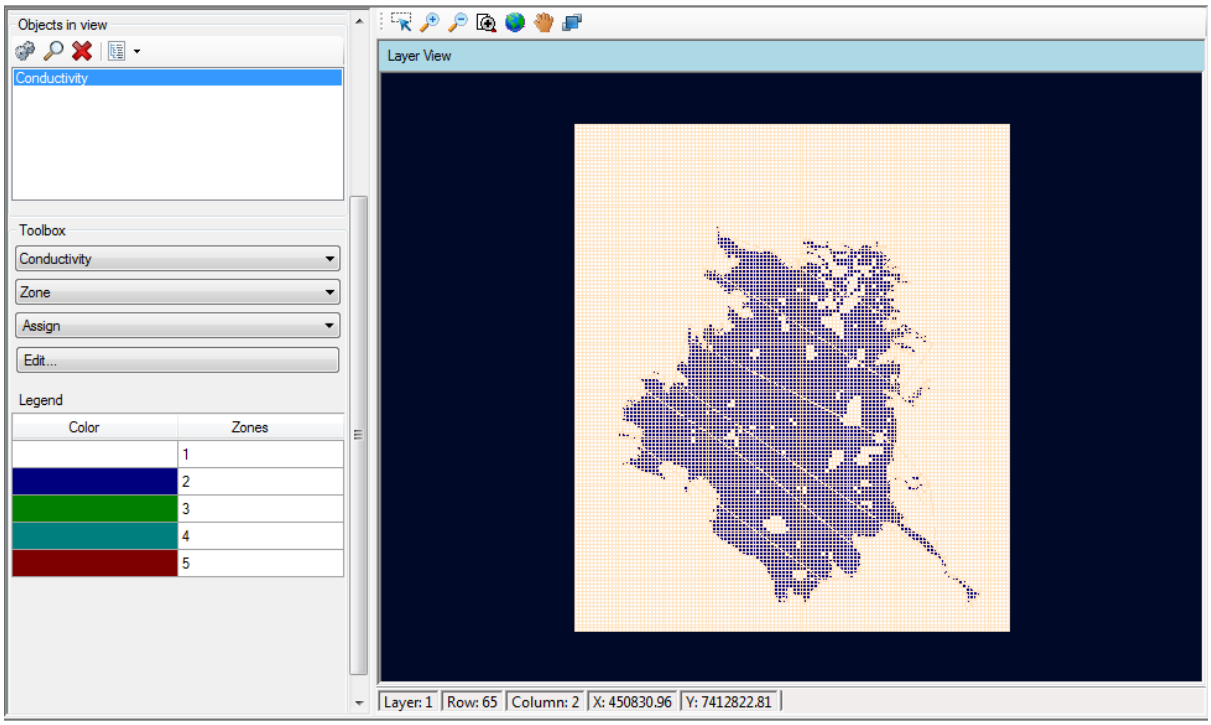
Bottom Layer 1: 328mAHD

Bottom Layer 2: 320mAHD

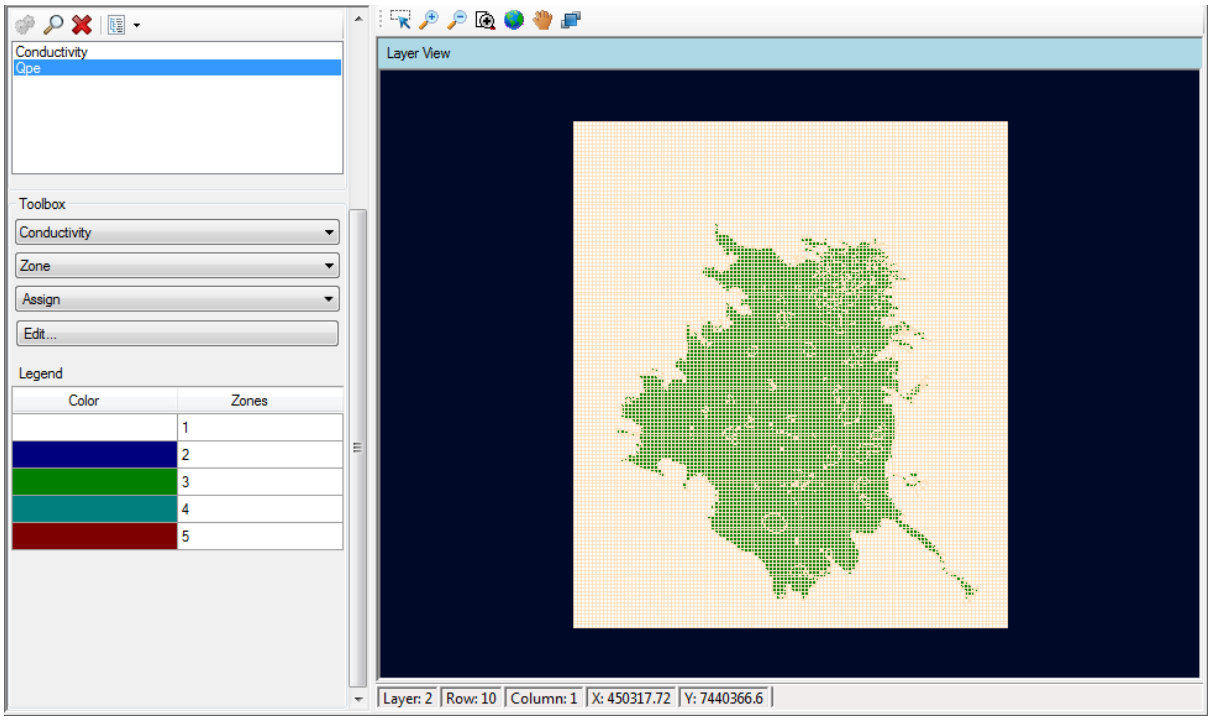
Bottom Layer 3: 240mAHD

Bottom Layer 4: 180mAHD

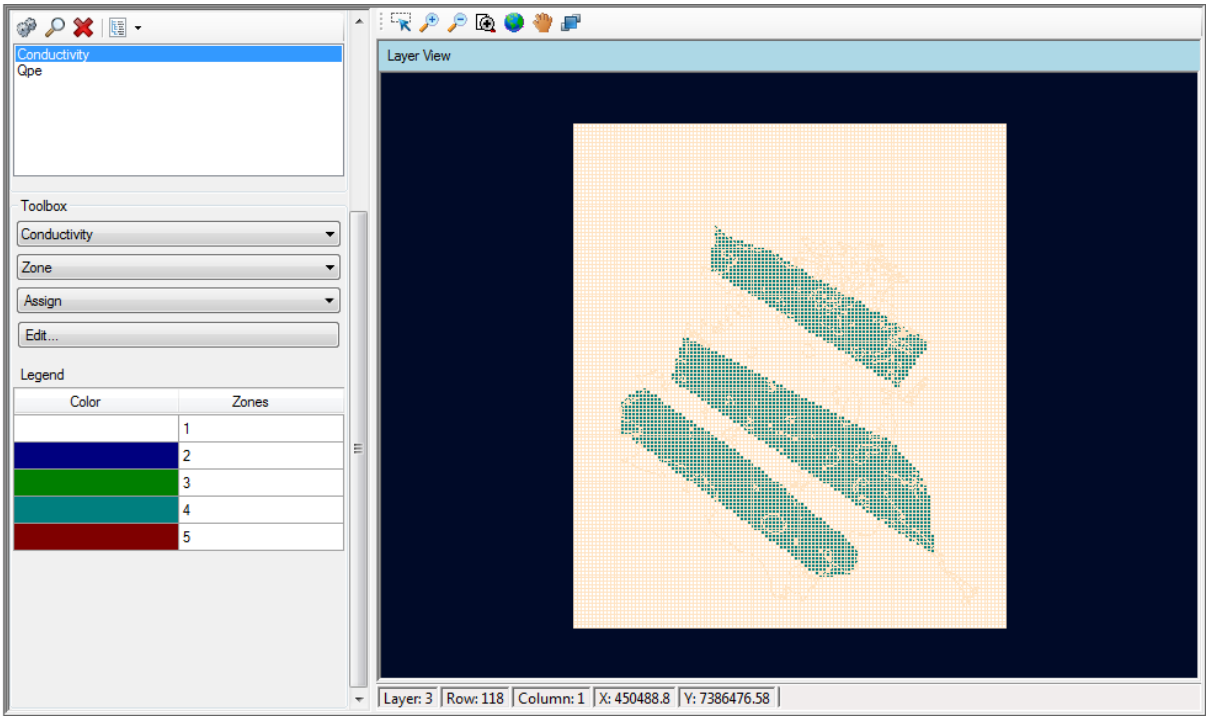
Layer 1



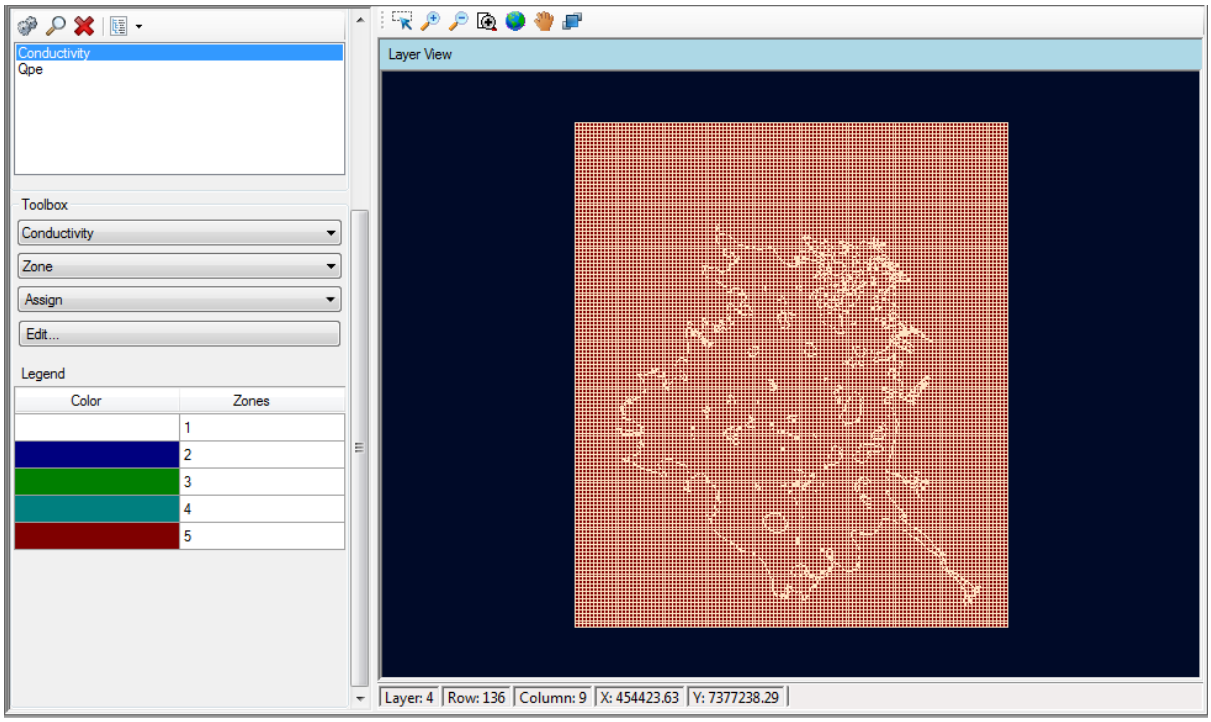
Layer 2



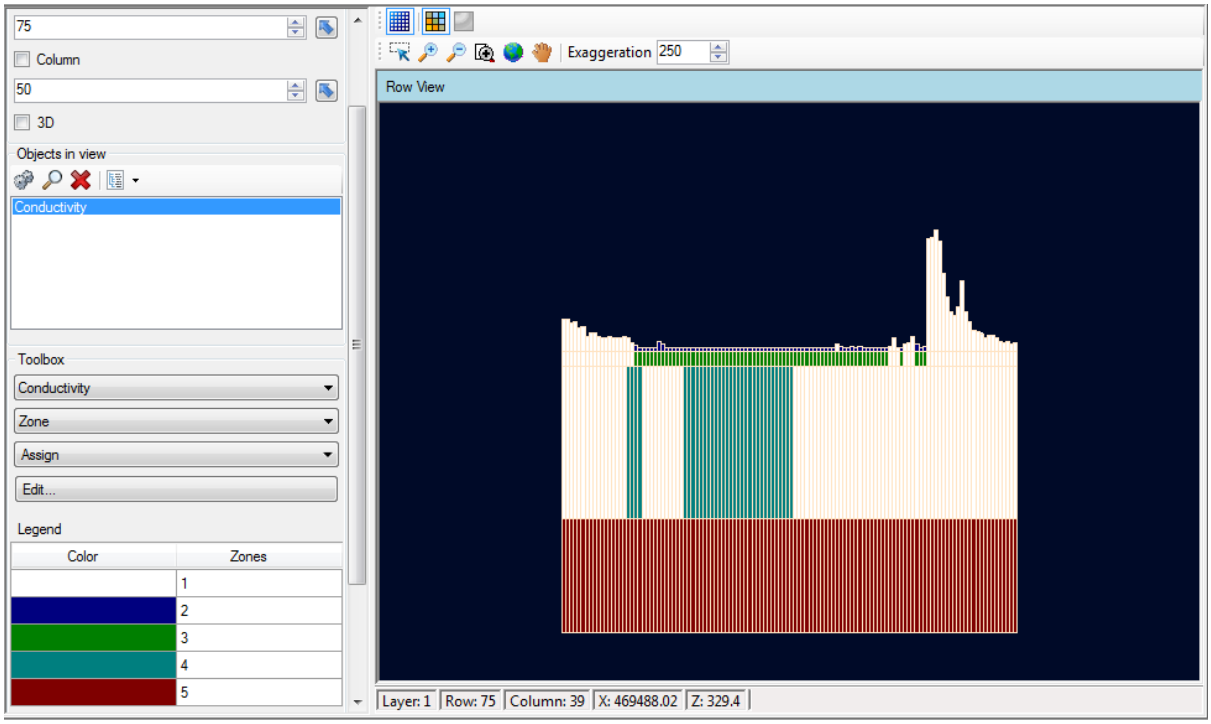

Layer 3



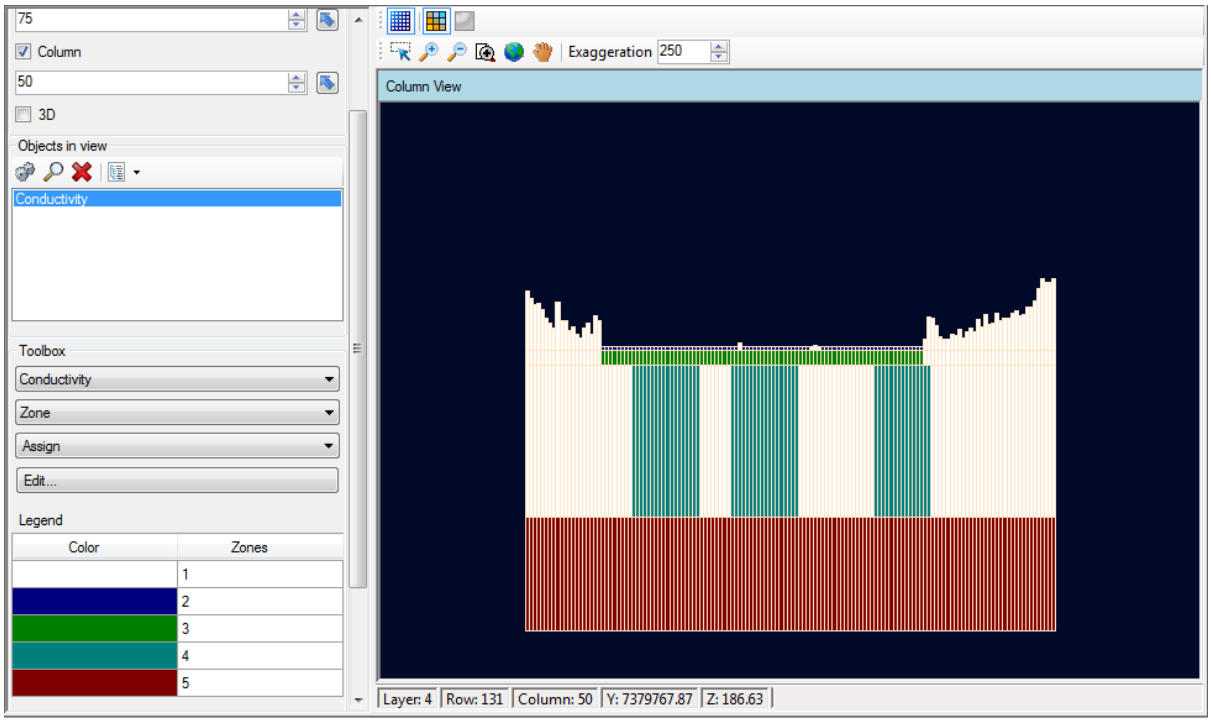
Layer 4




Row 75

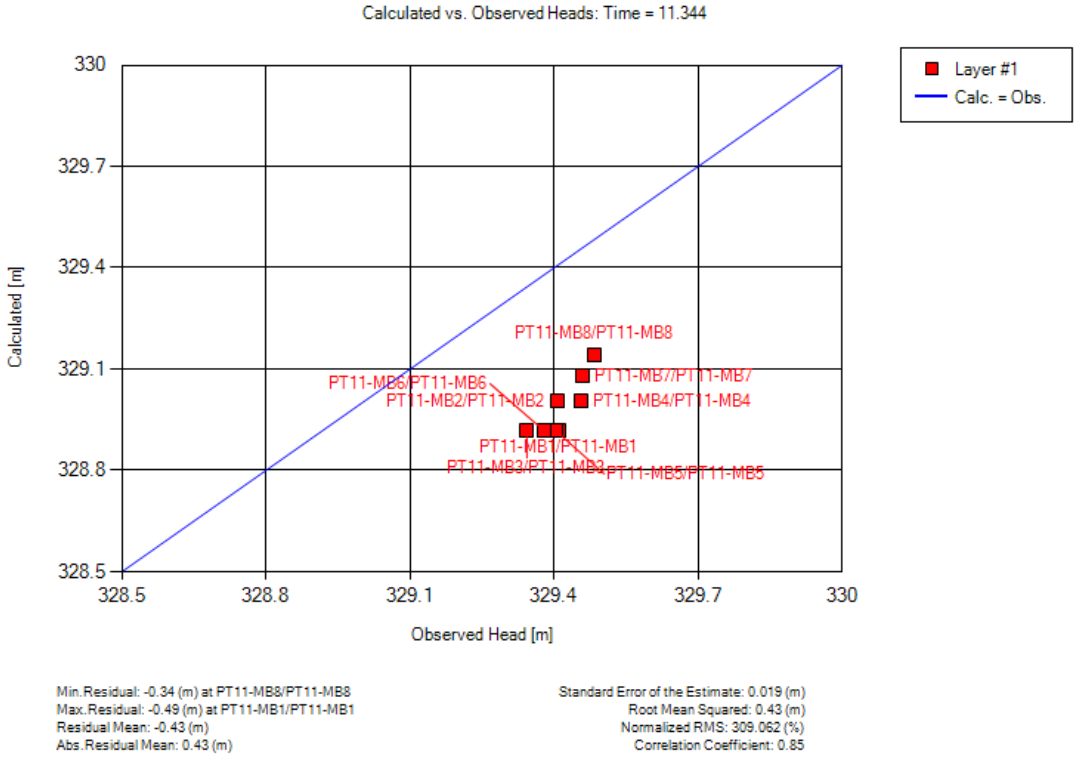


Column 50


75
Column
50
3D
Objects in view
Conductivity
Toolbox
Conductivity
Zone
Assign
Edit...
Legend
Color
Zones
1
2
3
4
5
Exaggeration
250
Column View
Layer: 4
Row: 131
Column: 50
Y: 7379767.87
Z: 186.63

3) Model Calibration (Sensitivity to K in Zone 2)
   a) Layer 1 K = 5, results in poor calibration

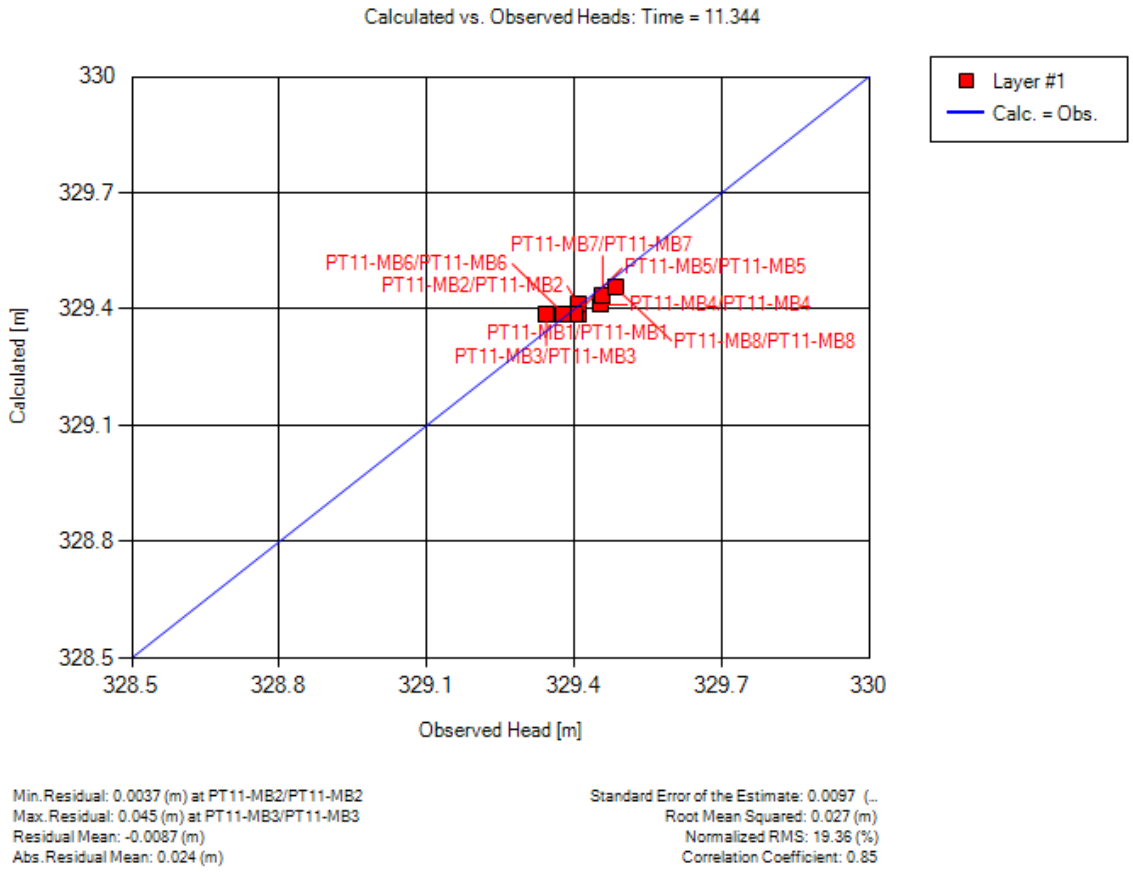
   b) Layer 1 K = 100, results in reasonable calibration



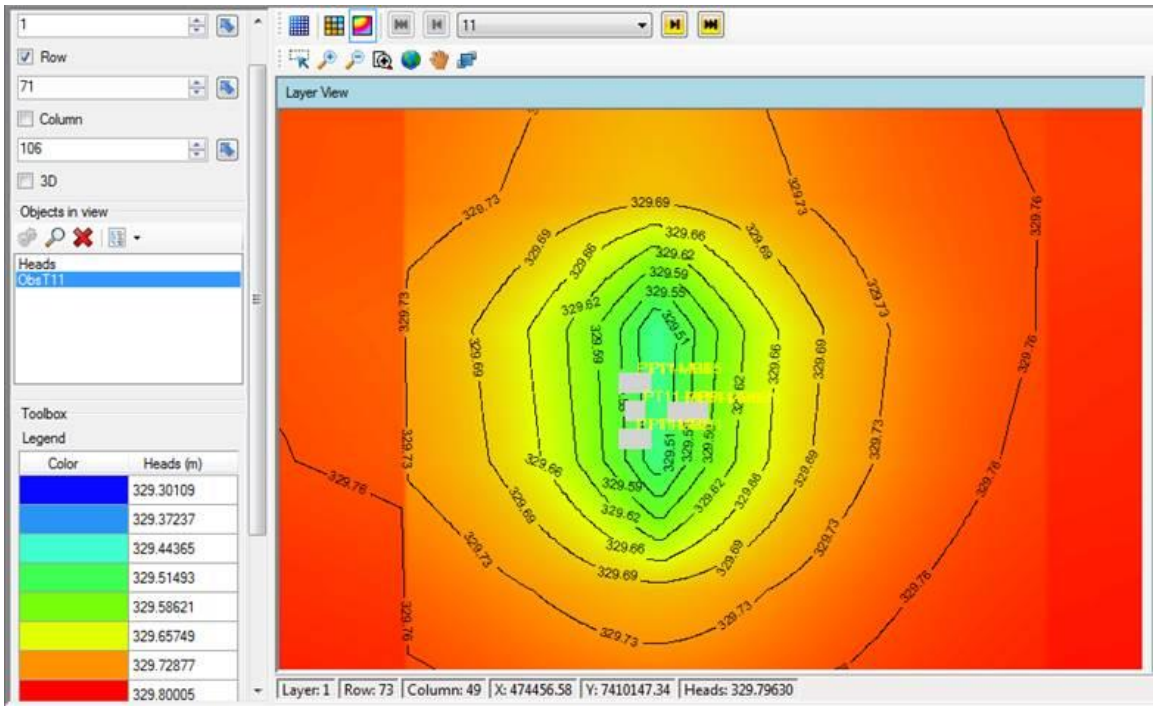

Min.Residual: -0.34 (m) at PT11-MB8/PT11-MB8
Max.Residual: -0.49 (m) at PT11-MB1/PT11-MB1
Residual Mean: -0.43 (m)
Abs.Residual Mean: 0.43 (m)

Standard Error of the Estimate: 0.019 (m)
Root Mean Squared: 0.43 (m)
Normalized RMS: 309.062 (%)
Correlation Coefficient: 0.85

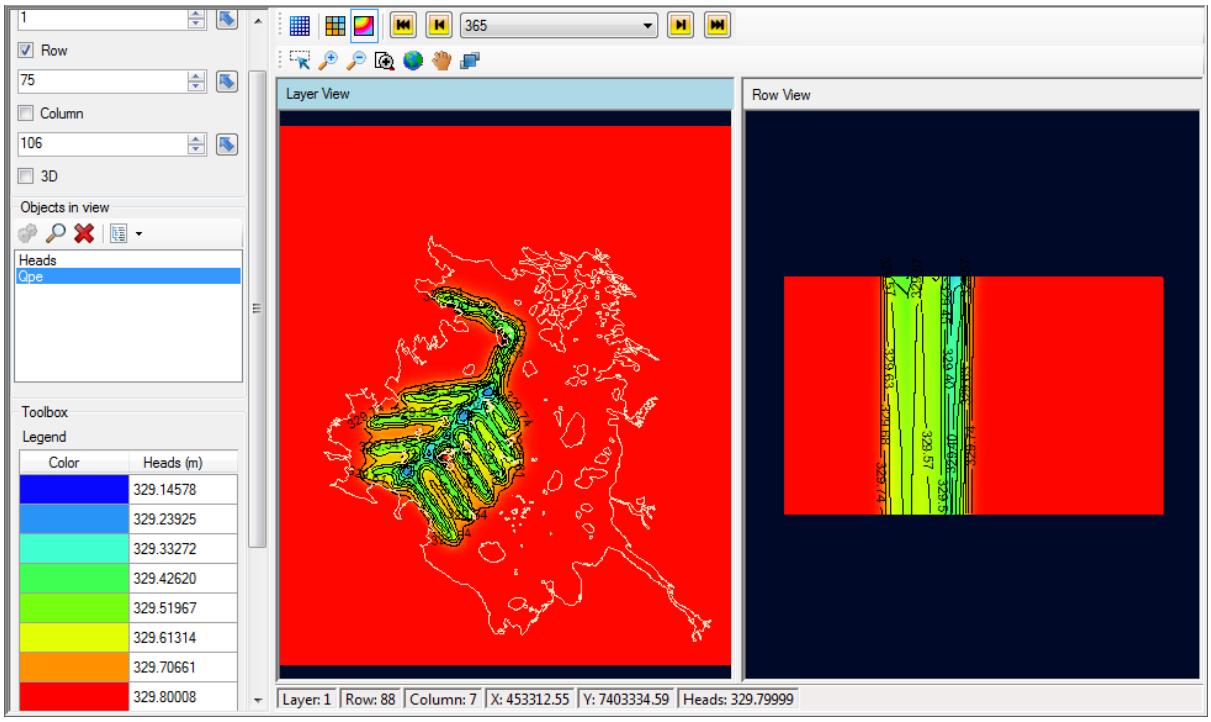
c) Layer 1 K = 250, good correlation with PT11 (pumping rate to 430kL/day for 11.3days).



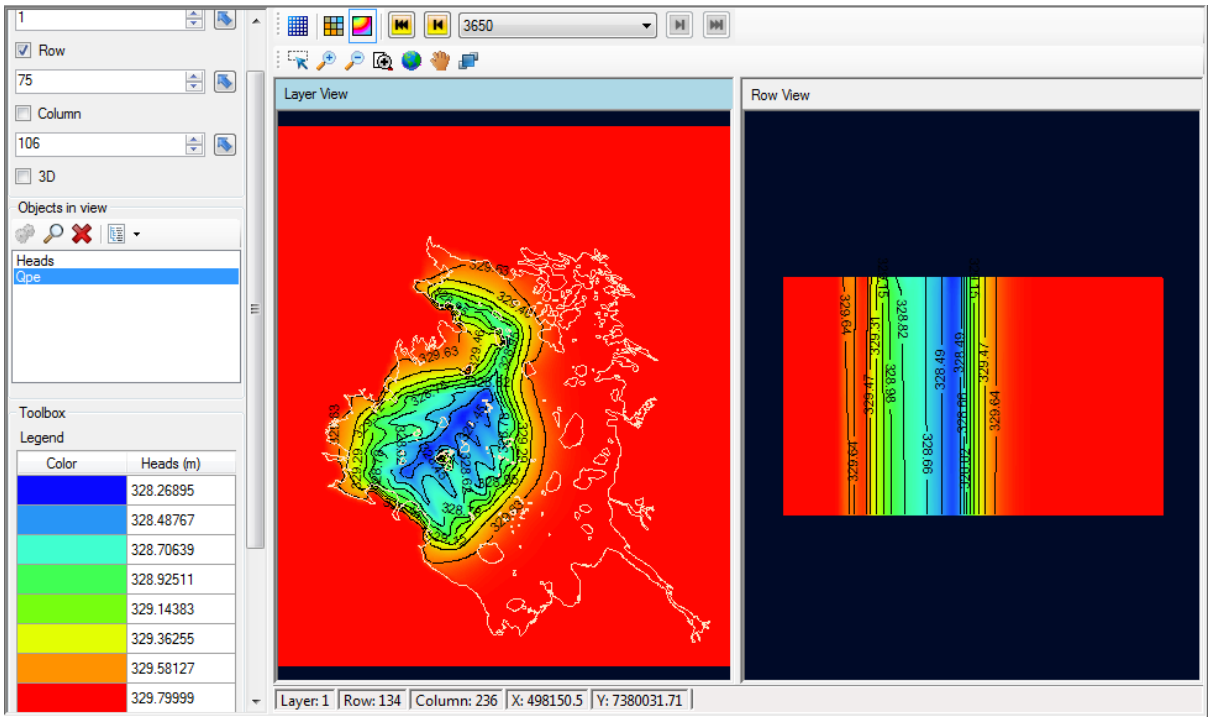

K=250 heads around T11 at day 11



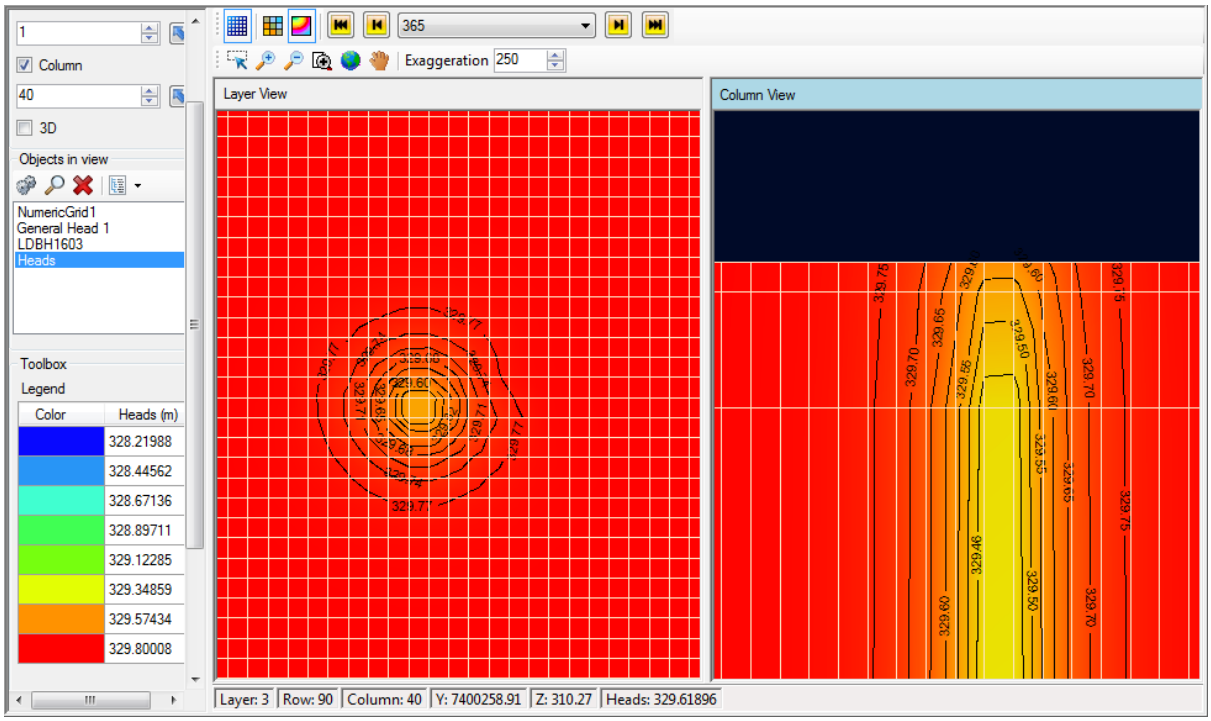
4) Results




K=250 heads after 1yrs no recharge

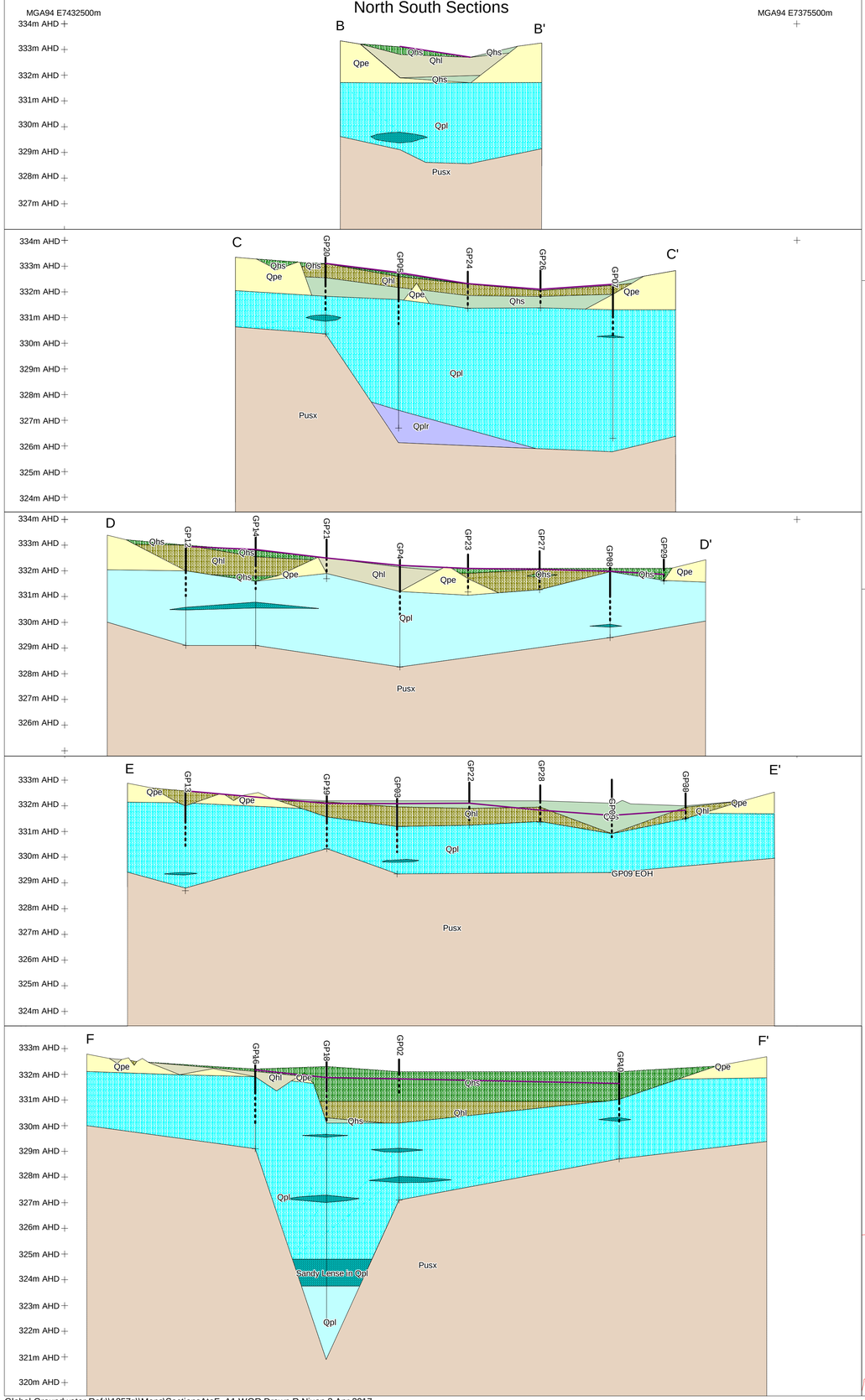



K=250 heads after 10yrs no recharge

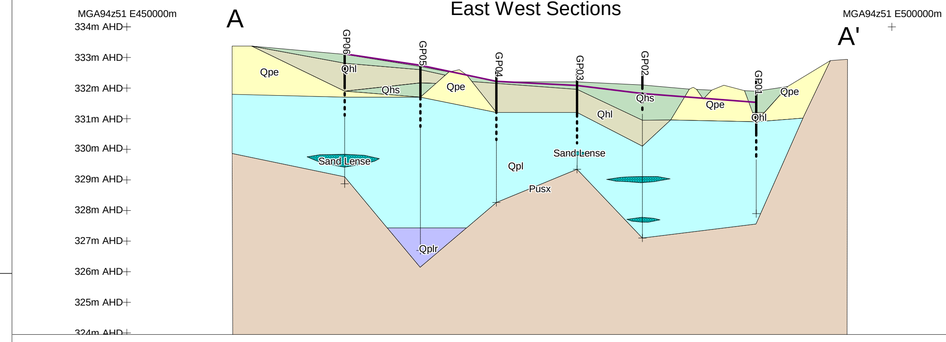



K=250 heads after 1yr no recharge pumping from bore LDBH1603 at 10L/s

# North South Sections

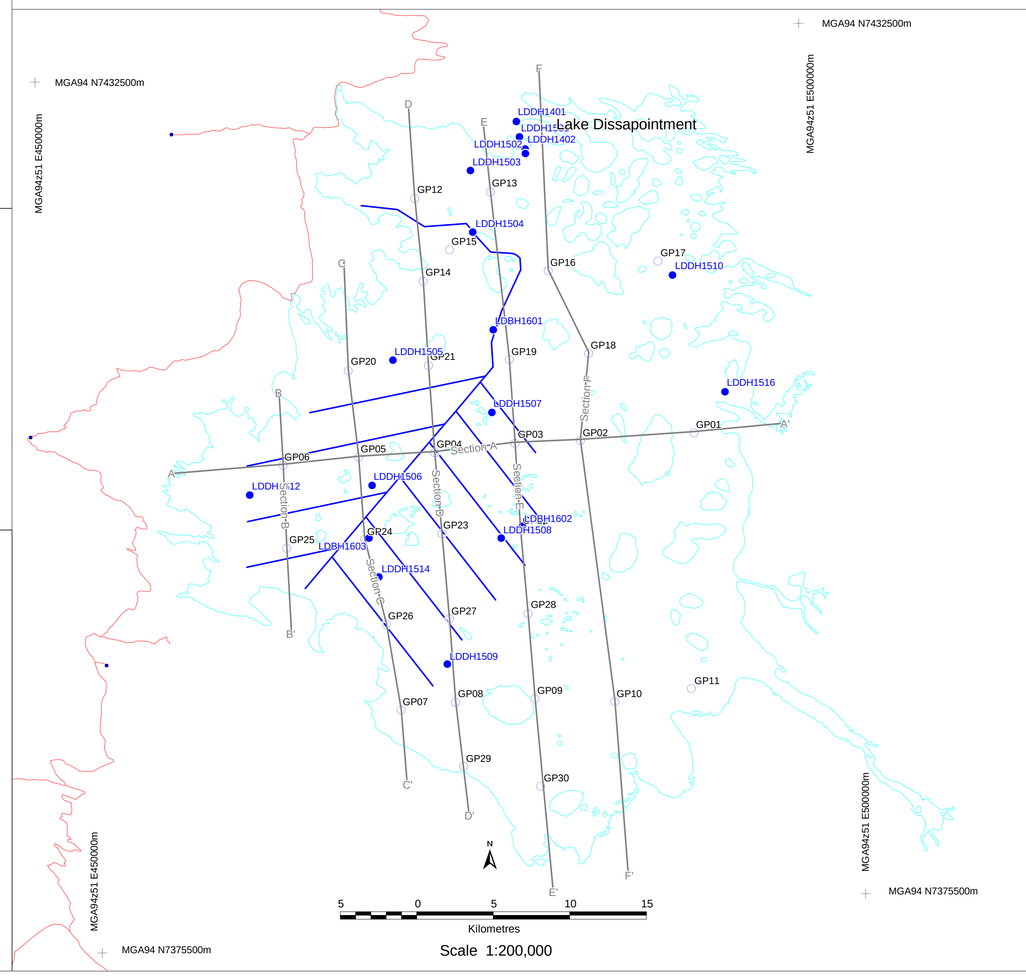



# East West Sections





Horizontal Scale 1:200,000
Vertical Exaggeration x 2000
All Maps and Sections




## Legend

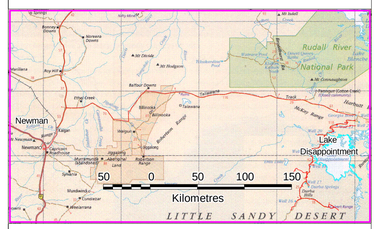
- Interpreted section (plan view)
- Monitoring bore (plan view)
- Stock bore/well
- Potentiometric contours
- Road/track

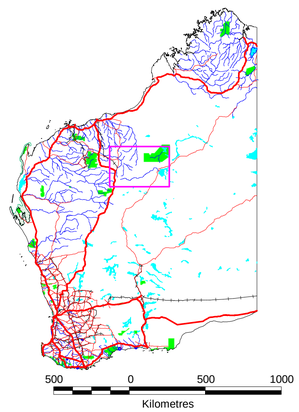
- Bore
- Bore screen
- uncased
- End of hole, during drilling

### Geology

- Qhs - Reworked gypsiferous sand deposits comprising orange, brown, green, fine to coarse grained silty to clayey sands and sandy to clayey gravels.
- Qhl - Lacustrine deposits comprising, orange, brown, green, clays to sandy clays, sandy silts and clayey sands with variable decomposed organic material.
- Qpe - Aeolian deposits comprising orange, brown, fine to medium grained silty to clayey sands.
- Q/Tpl - Alluvial/lacustrine sequence comprising orange, red, brown, sandy clays and clays with minor lenses of clayey to silty sands.
- Subset - Sandy lenses
- Qplr - Alluvial/lacustrine sequence comprising pale green clays.
- Czk - Calcrete, massive, nodular and cavernous sandy limestone, locally silicified.
- Pusx - Sandstone with interbedded siltstone and shale of the Tarcunyah Group.

The geological boundaries shown are interpreted and indicative only.




Global Groundwater Ref:\\1257g\\Maps\SectionsAtoF_A1.WOR Drawn R.Nixon 3 Apr 2017

Enclosure 1 Lake Disappointment Sections Upper Lake Bed Sequence