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Profile Site Survey Report for Borehole Drilling

CLIENT NAME	ZETDC Arcturus
CELL NUMBER	+263773452481
SITING DATE	18 NOVEMBER 2022
ADDRESS	Arcturus Mine
INSTRUMENT	PQWT

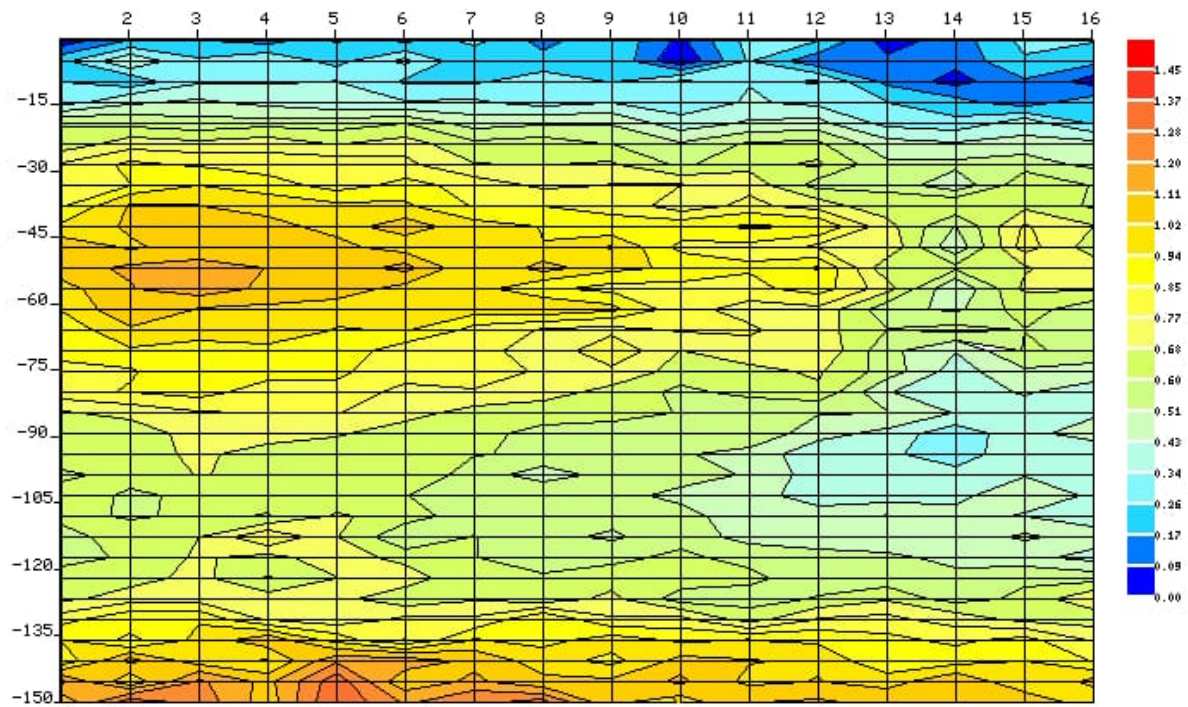
WATER SURVEY DETAILS :

- 1.MN Electrode Equidistance: **10 m**
- 2.Point Distance: **1 m**
- 3.Graph Depth: **150 m**

Disclaimer: There is no 100% Guarantee of availability of water on proposed point.

Profile Map/Graph of ZETDC Arcturus

Coordinates : S 17.78281° , E 31.32358°



KEY OF THE MAP/GRAPH

Red Colour represents **highly** strengthen: high resistivity of rock formation, and the colour indicate danger symbol, we don't get water in this zones, getting in limited areas.

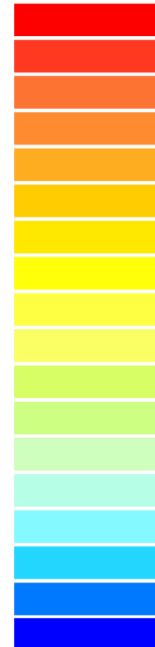
Orange Colour represents **less than the highly** strengthen rock formation, this colour also indicates some of danger zone, here we don't get water in this zones, getting in the limited areas.

Yellow Colour represents **medium** strengthen rock formation. this colour also indicates warning to getting water in this zones.

Green Colour represents the **less than medium** strengthen rock formation. this colour also indicates starting of water zones.

Light Blue Colour represents the **soft rock formation** water bearing rock formation, this colour indicates wealthy chances of getting water in the zone.

Blue Color represents the **soft rock formation**, water bearing rock formation, this color indicates wealthy chances of getting water in the zone.



RECOMMENDATIONS

Graph/ Map Analysis

A fairly uniform ground formation across the property is noted, with earth resistivity values classified from high to low and such a profile represents both surface and subsurface recharge potential .

1.The proposed site is at **Point 14** with a likelihood of giving an average yielding borehole and this is due to the availability of fractures that can store large quantities of groundwater and are capable of releasing it relatively freely.Other sites are good because they are able to hold significant groundwater resources, but because of differences in grain size and hence porosity will release it at different rates.

The proposed site (**Point 14**) requires **class 10** .There could also be a need for double casing to protect and support the wellstream ,prevent the pollution of water from the borehole,provide a strong upper foundation to allow the use of high-density drilling fluid to continue drilling deeper and prevents unbalanced upper formations from caving in and sticking the drill string . However, exact casing to be used will be determined during drilling of the borehole.

2.The minimum depth is **75m** and please be advised that the actual yield quality to determine the suitability of the groundwater will be known after carrying out a capacity test .Capacity test involves pumping water out of the borehole for at least 1 hour to determine the quality of water and is recommended to conduct after the borehole is drilled.

3. Chances of success are 60%

Summary

According to this profile, **Point 14** may be suitable to drill a borehole. Casings used can only be determined by drillers during the actual drilling of the borehole however class 6 casings can be used but we strongly recommend class 10 as it is a pressure class..

Minimum Depth: 75 meters and above

Maximum Depth: 150 meters

During drilling, the yield of water will be estimated by the drillers by means of a blow test, which is not accurate. A more accurate water yield may be obtained by having a capacity test done.The groundwater potential will be estimated based on pumping tests, and the optimal motorized pump capacity and pump installation depth as recommended considering water demand.If the borehole happens to run dry during this test, the recovery is used to determine the borehole yield.