



Instituto do Petróleo e Geologia – Instituto Público
(IPG)

4th IPG International Geosciences Conference on

Timor-Leste Geological Data and Information for Economic Diversification and Development

Dili 23-26 October 2018

Note Taker's Document

Date: 25/10/2018 Time: 15:45 Conference Day: 3
 Venue: CCD Conference Speaker: **Joaninha Belo Ornai (UNTL)**
 Presentation Title/Topic: **Geological Mapping and Groundwater Quality Analysis of Karst Aquifer in Baucau Municipality**

Presentation Notes	Q&A
<ul style="list-style-type: none"> • The great concern of the geological resources in Baucau Municipality is a water resource essentially in Baucau village. • The purpose of this research are : <ol style="list-style-type: none"> 1. Understand the geological framework of the research area 2. To characterize the hydrogeology condition on the resesarch area 3. To distinctly analyse the water quality as well identify the type of water contamination and its sources. • The Research Methodology consist of : Literature review, Data collection, Data Processing, Interpretation and Analyses and Evaluation and presentation. • There are four lithostratigraphic units : clay complex unit, white shale unit, coral limestone unit and alluvium. • Hydrogeology condition The drainage of subsurface water at low elevation is called by spring. The spring is one of the hyrogeological conditions that exists in the research area. There are two main springs type such as Uailili's and Uaimorimata's spring consist by bedding's spring that occurs due to the lithology contact of limestone and white shale. Caibada Uaimua's and Uailia's spring consist bt fracture's spring that occurs due to fracture zone of the limestone or dissolution area. Coral limestone is a permeable rocks that makes it easy to dissolve 	<p>1.Name: Gaspar Institution: Ministerio Saude Question/Clarification: Iha Ita bo'ot sira nia rezultadu peskija, ita bo'ot sira hetan bee matan balun iha kontamina no ita bo'ot sira rekomenda ona ba ministerio relevante k oinsa?</p> <p>Answer : Ami nia estudu ida ne'ebe foin hare liu ba parte akademiku no sei halo peskija detailu liu tan no husi peskija ne'e mak sei rekomenda ba suco sira atu prevene no proteje, no husi Ministerio saude mos fahe ona kartopiru hodi proteje kontamina ne'e rasik.</p> <p>2.Name: Domingos Mendonca Institution: UNDIL Question/Clarification: Bee matan ne'ebe kontamina ne'e sei iha tan seluk ou mak ida temi ne'e deit?</p> <p>Answer : Bee matan iha pontu 4 mak identifika</p>

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when contact directly with water and it will create its own flow and well store the water. However, coral limestone is a one of Karst Aquifer.

- Discussion:

Based on the geological condition of the research area in geological map, it shows fourth lithostratigraphic units: clay complex unit, white shale unit, coral limestone unit and Alluvium. The observation point is limestone unit because it is a permeable layer and it is possibility of being the karstic aquifer.

The aquifer system of Baucau region was indicated on the hydrogeological map, is covered by karst aquifer with its distribution to about 121.52 Km² of area. On the other side, there is also the intergranular and localized aquifer. The intergranular aquifer is located along the NE coast covered by the alluvium and the localized aquifer is located along the NE coast and SE coast covered by a clay unit and a white shale unit.

- Groundwater Flow Direction of the research area by aerial photo observation:

The groundwater flow line of the karsts aquifer in research area shows that the zone A and Zone B flow line interpretation very different of each other.

Zone A, it has dye tracing methods (*Australia Geoscience, 2012*) for water flow direction which indicate by two colors of green and pink, where the green color is a fluorescein and pink color is a Rodhamine WT. This dye tracing methods indicates to Ualili and Uaimorimata springs shown that the spring source's comes from Uailiabere and

baseia ba dadus jeolojia nian.

3.Name: Gilson

Institution: NZ Student

Question/Clarification: Timor Leste iha ona lei regula esplorasaun be'e rai okos klae?

Answer : Hau ladun hatene klaru kona ba asuntu ne'e, karik ida ne'e diresaun nasional de Agua no saniamentu mak servisu ba ida ne'e.

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Uailiamata spring where those springs are located in SW of the area.

Zone B, there is no any indication of dye tracing methods results of these two color of fluorescein and Rodhamine WT, that's means the water flow comes from circulation of meteoric water.

- Source of groundwater contamination of Baucau karstic aquifer :

In the research area there are two sources of contamination: Punctual and Diffuse contamination.

According to the result of the laboratory test of water quality by the water sample of those springs. On the North coast was affected by more contamination from: New Baucau referral Hospital for its remnants septic tank. Oil storage tank there are three oil tank points. Infrastructures: buildings and so many shops and others.

While on the SE coast and E also consists of less than contamination point's but are dominating of diffuse contamination due to the existence of much agricultural activity in that area.

- Conclusion

The Research area is located along the East coast the Timor Island stands out at Baucau Village of the Baucau Municipality.

This project is composed of various Sucos such as Bahu, Buibau, Caibada, Gairuai, Tirilolo, Triloca and Uailili its about 8 x 15 km².

There are four lithostratigraphic units: clay complex unit, white shale unit, coral limestone unit and alluvium.

Owing to the geological condition it is classified in three types of aquifers, intergranular aquifer, karstic aquifer and localized aquifer.

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<p>According to the laboratory test result the quality of groundwater by those springs indicate the physical, chemical properties are normal while the bacteriological property is enormous of microbe of Coliforms and E. coli. With the existence of microbial in the composition of water will affect the quality of groundwater and influence the degree of contamination in drinking water.</p>	
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