

# Determination of underground water potential and water supply in some rural villages in Nigeria.

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*Geoscientists Without Borders Application:  
Q1Q2 2022*

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# FollowUp Form

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## *Basic Information*

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### Project Name\*

Name of Project

Determination of underground water potential and water supply in some rural villages in Nigeria.

### Project Performers\*

List all project participants. Include their title and affiliation.

Blessing O. Uzor	Student	Dept. of Physics, A.B.U., Zaria
Abdullahi A. Bala	Student	Dept. of Physics, A.B.U., Zaria
Shamsuddeen Zakari	Student	Dept. of Physics, A.B.U., Zaria
Abdulmalik I. Olyinka	Student	Dept. of Physics, A.B.U., Zaria
Stella Ogenyi	Student	Dept. of Physics, A.B.U., Zaria
Peter Adeniyi	Student	Dept. of Physics, A.B.U., Zaria
Daniel Agbo	Student	Dept. of Physics, A.B.U., Zaria
Peter Adeniyi	Student	Dept. of Physics, A.B.U., Zaria
Levi Temple	Student	Dept. of Physics, A.B.U., Zaria
Paul A. Hinjari	Student	Dept. of Geology, A.B.U., Zaria
Caleb K. Nyajon	Student	Dept. of Geology, A.B.U., Zaria
Christopher A. Baton	Student	Dept. of Geology, A.B.U., Zaria
Atari Y. Ayiwulu	Student	Dept. of Geology, A.B.U., Zaria
Adode D. Loyol	Student	Dept. of Geology, A.B.U., Zaria
Sanusi Yahaya	Student	Dept. of Mech. Eng., A.B.U., Zaria.
Kabir Imran	Student	Dept. of Mech. Eng., A.B.U., Zaria
Hassan Musa	Student	Dept. of Mech. Eng. A.B.U., Zaria
Ahmed Shehu	Student	Dept. of Mech. Eng. A.B.U., Zaria
Blessing Emmanuel	Student	Dept. of Mech. Eng. A.B.U., Zaria
Lucky O. Abah	Student	Dept. of Mech. Eng. A.B.U., Zaria
Friday O. Akava	Student	Dept. of Mech. Eng. A.B.U., Zaria
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Blessing Adikwu	Student	Dept. Sci. Edu. (Physics), A.B.U., Zaria
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Farida Magaji	Student	Dept. Sci. Edu. (Physics), A.B.U., Zaria
Zainab Abdullah	Student	Dept. of Guidance & Counselling, A.B.U., Zaria
Salisu A. Ahmed	Locals	Angwan Fulani, Palladan
Yusuf Salihu	Locals	Angwan Fulani, Palladan
Musa U. Shehu	Locals	Angwan Fulani, Palladan
Sabitu Salisu	Locals	Angwan Fulani, Palladan
Mohammad Lawal	Locals	Angwan Rimi Basawa
Shamsudeen Saidu	Locals	Angwan Rimi Basawa
Inusa Mohammed	Locals	Angwan Rimi Basawa

### Project Start Date\*

Select the date when your project was started.

09/16/2022

### Anticipated Project End Date\*

Select the date when you expect the project to be completed.

09/04/2023

## Report

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### Summary of Project Goals and Objectives\*

Provide a short summary of the project's goals and objectives.

Goal: To provide clean, safe and accessible water to 2 villages.

Objectives;

1. To map the earth's subsurface layers.
2. To determine the hydraulic and aquifer properties.
3. To provide safe and affordable drinking water.
4. To improved water quality.
5. To increase water-use efficiency by the supply of fresh water.
6. To help in water resources management that protects restoring aquifers.
7. To support community in water and sanitation,
8. To train the students and locals youths in capacity building.

### Summary of Progress Made\*

Provide a brief summary of the progress you have made toward the planning and execution of the tasks in your project as outlined in the statement of work in the grant agreement. If available, preliminary results should be included in this section.

In the order listed in the above objectives, we have progressed as follows;

For Palladan (Angwan Fulani) site

Objectives: 1 achieved 95%

2 achieved 95%

3 achieved 70%

4 achieved 80%

5 achieved 80%

6 achieved 50%

7 achieved 50%

8 achieved 80%

For Bassawa (Angwan Rimi) site

Objectives: 1 achieved 70%

2 achieved 70%

3 achieved 10%

4 achieved 10%

5 achieved 10%  
6 achieved 10%  
7 achieved 10%  
8 achieved 40%

Some results of progress made will be sent to the email

### Problems or Challenges Encountered\*

Describe any problems or challenges that the project team has encountered and what actions have been taken to mitigate those problems.

- 1.The release of fund was 4 months behind schedule and the access to fund was 2 months extra after the schedule release.
- 2.The general elections break in the country was extended and this affected the anticipated progress.
- 3.The extreme inflations in the country as a result of currency change and attempt to implement cashless policy has escalated the cost of the project, adjustments were made on some items.
- 4.Student's full participation was disrupted due to these breaks in the university.

### Evaluation of project schedule\*

Give an assessment of how the project is progressing according to the projected schedule. Is it on schedule? If not, what has contributed to the delays? How will the schedule need to be adjusted to complete the project? What, if any, challenges will the adjustment(s) create?

The project has been progressive but not as expected. We had to stop the first site and move to the second site because of some hitches. Students have started examination and hence will not be frequent at site, this has also retarded the progress recently. The schedule may be adjusted by 6 weeks.

Please provide high resolution photos and/or videos of project participants, people from the community, places impacted by the project and activities associated with the project to [withoutborders@seg.org](mailto:withoutborders@seg.org). Please use [Dropbox.com](https://www.dropbox.com), [WeTransfer.com](https://www.wetransfer.com), or some other file transfer program to send photos and videos. The SEG server will block any email with an attachment that is larger than 8 MB.

\*Summary of progress made continue

## **GWB Project, 202201009 Nigeria ABU Determination of underground water potential and water supply in some rural villages in Nigeria.**

Goal: To provide clean, save and accessible water to 2 villages.

### **For the Palladan (Angwan Fulanni) site**

Objectives and progress made so far;

#### **1.To map the earth's subsurface layers. (95%)**

We have been able to measure the VES, plotted the curves, identify the layers.

#### **2.To determine the hydraulic and aquifer properties. (95%)**

We have been able to determine the aquifer and the aquifer thickness and also the hydraulic properties of conductivity, transmissivity and aquifer thickness using the Dar Zourock fomular

#### **3.To provide safe and affordable drinking water. (70%)**

We have been able to drill one of the point of best yield, to bring the groundwater to the surface and will be free when certified.

#### **4.To improve water quality. (80%)**

We have taken samples of the drilled water for laboratory analysis, results are being complied for analysis. After the analysis, appropriate filters (if needed) will improve the water quality.

#### **5.To increase water-use efficiency by the supply of fresh water. (80%)**

We have educated the villagers on the need to safeguard scarce resources like water and when the plumbing work is concluded, we shall supply them with clean and fresh water.

#### **6.To help in water resources management that protects restoring aquifers. (50%)**

We have educated them on cleanliness of their environment and need for frequent sanitation to safeguard and protect the aquifer from contamination. When the water station is created we shall teach them on how to use the water facility.

#### **7.To support community in water and sanitation, (50%)**

Educated them on environmental cleanliness and will provide water to discourage open defecation to improve environmental sanitation.

#### **8.To train the students and locals youths in capacity building. (80%)**

The students and the locals have followed us through the various stages of the project from measurements, processing, analysis, selection of site to drill and drilling, Erecting the overhead tank structure. They are also going to participate in the installation of the solar pump and construction of the water station before commissioning for use.

## **For Bassawa (Angwan Rimi) site**

Objectives and progress made so far;

### **1.To map the earth's subsurface layers. (70%)**

We have been able to measure the VES and are still processing.

### **2.To determine the hydraulic and aquifer properties. (70%)**

We have used the VES to identify and determine the aquifer layer. We have not computed the hydraulic properties yet.

### **3.To provide safe and affordable drinking water. (10%)**

We are still in the process of analyzing results. We have not been able to drill yet

### **4.To improved water quality. (10%)**

We are still in the process of analyzing results. We have not been able to drill yet

### **5.To increase water-use efficiency by the supply of fresh water. (10%)**

We are still in the process of analyzing results. We have not been able to drill yet

### **6.To help in water resources management that protects restoring aquifers. (10%)**

We are still in the process of analyzing results. We have not been able to drill yet

### **7.To support community in water and sanitation, (10%)**

We are still in the process of analyzing results. We have not been able to drill yet

### **8.To train the students and locals youths in capacity building. (40%)**

The students and the locals have followed us through the first stage of field measurements and are in the processing stage.