



PDBBN 24

*United States of America*  
**AGENCY FOR INTERNATIONAL DEVELOPMENT**  
Office: KUWAITI TOWER BLDG. NILE AVE, KHARTOUM, SUDAN  
TELEX NO. 22033 USAID SD



United States Postal Address:  
United States Agency for International Development  
Ambassy Khartoum  
APO New York 09668-7001

International Postal Address:  
USAID Mission Sudan  
United States Embassy  
P.O. Box 699 Khartoum, Sudan

Mr. Robert A. Bisson  
Chairman and Chief Executive  
BCI Geonetics, Inc.  
Airport Road  
P.O. Box 529  
Laconia, New Hampshire  
3247  
(603) 528-1007  
Telex 953041

Subject: Grant No. 650-0510-G-00-8067  
New Water and Prosperity in the Red Sea Area

Dear Mr. Bisson:

Pursuant to the authority contained in the Foreign Assistance Act of 1961, as amended, the Agency for International Development (hereinafter referred to as "A.I.D." or "Grantor") hereby grants to BCI, Geonetics Inc. (hereinafter referred to as "BCI" or "Grantee"), the sum of U.S.\$730,000 and 3,000,000 Sudanese Pounds to provide support for the New Water and Prosperity in the Red Sea Area Program as described in the Schedule of this grant and the Attachment 2, entitled "Program Description". An additional 500,000 Sudanese Pounds will be made available at a later date to fully fund the proposal, subject to the availability of funds.

This grant is effective and obligation is made as of the date of this letter and shall apply to commitments made by the Grantee in furtherance of program objectives during the period beginning with the effective date and ending eighteen months thereafter, unless further extended by the mutual agreement of the parties.

This grant is made to BCI, on condition that the funds will be administered in accordance with the terms and conditions as set forth in Attachment 1, entitled the Schedule, Attachment 2, entitled "Program Description", and Attachment 3, entitled "Standard Provisions", which have been agreed to by your organization.

If, during the term of this grant, a joint venture company consisting of the Sudanese Founders Group and BCI known as the Sudanese Company for Water and Economic Development, Ltd. (SUWED) is established under Sudanese Law, the parties to the Grant agree to enter into a novation agreement amending the grant to substitute SUWED for BCI as the Grantee.

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Please sign the original and seven (7) copies of this letter to acknowledge your receipt of the grant, and return the original and six (6) copies to the Grant Officer.

Sincerely yours

*Frederick E. Gilbert*  
Frederick E. Gilbert  
Acting Mission Director and  
Grant Officer

Attachments:

1. Schedule
2. Program Description
3. Standard Provisions

FISCAL DATA

Appropriation: 72-1181014  
Budget Plan Code GSSA88-21650-KG13  
PIO/T No. 650-0510-3-80057  
Total Obligated Amount: \$ 730,000.00  
IRS Employer ID No.

Appropriation: 72-FT800  
Allotment: 180-50-650-00-10-00  
Amount: Ls. 3,000,000.00

ACKNOWLEDGED:

BCI Genetics, Inc.

BY: *Robert A. Berman*

TITLE: C.E.O.

DATE: 22 Aug. 1988

**FUND AVAILABLE**  
DATE: *8/10/88* BY: *[Signature]*

**ATTACHMENT 1**  
**Schedule**

**A. Purpose of Grant**

The purpose of this grant is to provide support to the Grantee to demonstrate the physical and economic feasibility of exploiting Sudanese groundwater reserves in the Port Sudan area, as more specifically described in Attachment 2 to this grant, entitled "Program Description".

**B. Period of Grant**

The effective date of this grant is the date of signature and the grant expires twenty-one months after the date of signature.

**C. Amount of Grant and Payment**

1. AID hereby obligates the amount of \$730,000 and LS 3,000,000 for purposes of this grant. An additional 500,000 Sudanese Pounds will be made available at a later date to fully fund the proposal, subject to the availability of funds.

2. Dollar payments shall be made to the grantee in accordance with procedures set forth in Attachment 2 - Standard provisions, in the provision entitled "Payment - Cost Reimbursement"

3. Local currency payments shall be made to the grantee in accordance with procedures set forth in Attachment 3 - Standard Provisions, in the provision entitled "Payment - Periodic Advances".

**D. Financial Plan**

The following is the plan for use of the funds provided under this grant. In addition to the amounts stipulated, the Grantee will provide LS 300,000 as an in-kind contribution to further the purpose of the grant. Revisions to this plan will be made in accordance with procedures set forth in Attachment 3 - Standard Provision, in the provision entitled "Revision of Grant Budget".

**Cost Element**

	<u>U.S. Dollars</u>	<u>Sudanese Pounds</u>
1. Personnel Costs	517,000	300,000
2. Sub-contractors	60,000	2,365,000
3. MESA Technology	100,000	335,000
4. Travel and Subsistence	53,000	
Totals	<u>730,000</u>	<u>3,000,000</u>

## E. Reporting

1. Implementation Reports - Grantee will be required to submit reports after the implementation of Phases I, II, III as defined in Attachment II. Reports will be due one month after the end of each phase. Grantee will submit quarterly reports for Phase IV. Implementation reporting should stress the status of the grant in meeting its objectives, the implementation status of each component of the grant, major actions anticipated, and any major problems that the grantee is encountering. Reports will contain drilling log data to include geological identification of stratum drilled and depth at which water is encountered. Implementation reports will be submitted to the Chief Engineer, USAID/Sudan, one month after the end of each reporting period.

A final report will be required identifying specific development plans, schedules and time frame for development of the water resources identified. The report will be due three months after the end of the feasibility study.

2. Financial Reports - Financial reports should be submitted in accordance with procedures set forth in Attachment 3 - Standard Provisions, in the provisions entitled "Payment - Cost Reimbursement" or "Payment - Periodic Advances" (with respect to LS disbursements).

Reports will include listing of personnel working on the project and salary rates, listing of equipment purchased, rental and/or leased, total charges to project during the quarter. Financial reports will be submitted to the Controller, USAID/Sudan.

## F. Title to Property

Title to property will reside with the Grantee during and after the implementation of the Grant.

## G. Authorized Geographic Code: Development Fund For Africa Grants

The authorized geographic code for procurement of goods and services under this grant is as set forth in Optional Standard Provision 6., paragraph (b) (1), Notwithstanding that the value of the procurement element may exceed \$250,000.

## H. Special Provisions

(a) Without the prior written approval of the AID Project Officer (a copy of which must be furnished to the Grant Officer by the grantee), the grantee may not exceed the estimated cost for any individual line item of cost shown in Section D - Financial Plan by more than ten percent (10%) of such line item.

(b) Unless A.I.D otherwise agrees in writing, prior to the first disbursement under the grant, or to the issuance of commitment documents under which disbursement shall be made, the Grantee shall furnish, in form and substance satisfactory to A.I.D., evidence that the Government of Sudan has been made aware of Grantee's proposal and that it will cooperate with the Grantee as necessary in the issuance of required permits and other authorizations to enable the Grantee to determine the physical and economic feasibility of exploiting Sudanese groundwater reserves in the Port Sudan region.

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**ATTACHMENT 2**  
**Proposal Description**

The goal of the proposal is to develop business applications which capitalize on the economic value of water identified in the "Megawatersheds" as defined. The purpose of the proposal is to demonstrate the physical and economic feasibility of exploiting Sudanese groundwater reserves initially in the Port Sudan region. The Grantee has concluded that the greatest near-term positive impact would come from the Red Sea, Port Sudan area due to accessibility (as opposed to the other two areas), favorable groundwater conditions and major opportunities for development in agriculture, mining, and industrial development, plus the foreign trade potential represented by Port Sudan. In addition, prior mining activities and recent geology studies performed in the Red Sea Province indicate that the same geotectonic events which created highly favorable quote megawatersheds unquote conditions when combined with the type and age of local rock implements, have resulted in highly promising economic mineral deposits. The occurrence of substantial supplies of groundwater proximate to mineral prospects would make new mining activities economically viable in the region.

The soils in this area are highly favorable for citrus crops, with substantial potential to provide in-country needs, as well as for export to neighboring countries.

Under the proposal, Grantee will demonstrate the geophysical feasibility of finding and developing groundwater reserves in the Port Sudan area. Similarly, the Grantee will work with the firm of Hassabo and Company, certified accountants and management consultants in Sudan, to analyze and evaluate the economic and financial feasibility of a range of business uses of water reserves. Both dimensions of the study will entail four phases. The timing and focus of effort of the four phases is mutually interdependent and is summarized as follows:

Phase I is the data acquisition, compilation, review, synthesis, and interpretation of all available socio-economic and hydrogeophysical information; identify priority target areas - Duration 3 months.

Phase II is the field reconnaissance of designated priority target areas - Duration 3 months.

Phase III is the high resolution mapping and location of test wells - Duration 3 months.

Phase IV is test hole drilling, pumping tests and final reports: socio-economic feasibility and geophysical exploration feasibility - Duration 9 months.

## Outputs

### A) Geophysical Feasibility

The program outputs and time frame of each phase are described below:

#### Phase I Program Outputs Include:

Program output No.1; a map, showing preliminary priority target areas (PTA) within the general study region for new water development;

Program output No.2; a preliminary economic analysis on the selected areas; and

Program output No.3; identification of preliminary environmental impact factors of consequence in the target areas.

Phase I will require 90 days to complete, and Grantee will then meet with the USAID to discuss the results and refine the Phase II plan.

Phase II output (no.4 of the program) is a map showing best priority target areas (PTA's), screened for favorable hydrogeologic and economic attributes by field teams of BCI's US/Sudanese scientists and other appropriate Sudanese experts. The Phase II output PTA's will number 10 to 15 and encompass 100 to 1,000 acres each. Phase II completion will require 90 days.

#### Phase III Outputs include:

Program output NO.5, the installing of several stakes in the ground at each of 5 to 10 of the Phase II target areas, indicating test drilling locations for aquifer access or other geologic quote down hole unquote analyses. The Phase III screening process, once again, involves both hydrogeologic and economic criteria. Many areas not chosen for water testing, will remain as highly favorable locations for future development, as the region develops further.

Program output No.6 is a technical report with preliminary estimates of resource magnitude, gallons per day.

Program output No.7 is a report with drilling specifications for test drilling relating to approximate depths, rock type, etc.

Program output No.8 is a preliminary (in-house) environmental impact analyses, performed for the 5-10 final PTA. Phase III will take 90 days to complete.

#### Phase IV outputs includes:

Program output No.9, which is a report from BCI regarding water resource development potential at the final 3-5 sites tested by the firm.

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Socio-economic program output 4 will result from the collection of more detailed data on the remaining priority target businesses. Each of the factors previously applied for the purposes of quote screening unquote will now be analyzed in more depth. More extensive business profiles will be developed along more quantitative and qualitative lines.

The socio-economic team will then undertake business data collection of relevance to and for input into the environmental impact analyses to be carried out by the BCI team. Socio-economic program output 5 will present the results for integrating into the evaluation process.

#### Phase IV Program Outputs:

Socio-economic program output 6. During Phase IV the socio-economic study team will analyse technical data provided by the geophysical exploration team regarding estimates of water resource magnitude, production well drilling specifications and the like. The resulting cost and availability implications will be evaluated in relation to the remaining business profiles. Depending upon the potential, one or perhaps two business applications will be selected for in-depth analysis. Business plans will be drawn up; investment requirements and financing plans will be developed and proforma financial statements will be projected. These and an Action Plan will guide the post-proejct phase of business development implementation.

#### Inputs

The total cost of the proposal is as follows:

	Foreign Exchange (U.S.Dols)	Local Currency (U.S.Dol.Equiv.)
Personnel costs	517,000	60,000
Sub-Contractors	60,000	636,000
MESA Technology	100,000	-
Travel and Subsistence	53,000	74,000
TOTAL	<u>730,000</u>	<u>770,000</u>

The in-kind contribution of the Grantee is as follows:

Office space	LS 15,000 x 12 months	= LS 180,000
Office Staff	3,000 x 12 months	= 36,000
Transportation	5,000 x 12 months	= 60,000
Supplies		= 24,000
TOTAL		<u>= LS 300,000</u>