

PROJECT COMPLETION REPORT

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Prepared by the Agency for International Development, an Agency of the Government of the United States of America.

Project n° : 512-11-599-062.1

Project Title: National Water Supply and Sewage-Training Centers

Date of Original Agreement: March 2, 1964

Project Completion Date: August 7, 1969

For the Director AID

William F. Schubert

USAID/Brazil

During the time that has elapsed between effective termination of the project and submission of this report, GOB and USAID authorities involved have been replaced, so USAID is submitting this Project Completion Report to AID/W as a unilateral action.

✓ July 31, 1972.

PROJECT COMPLETION REPORT

PROJECT Nº

512-11-599-062.1

I. SUMMARY OF PROJECT FINANCING

A. AID Financing

	<u>Dollars</u>	<u>U.S. Owned Cruzeiros</u>	
		<u>Cr\$</u>	<u>US\$ Equivalent</u>
Direct Hire/PASA Services	-	-	-
Contract Services	-	-	-
Commodities	24,587	-	-
Participant Training	-	-	-
Other Costs	-	80,845	14,437 *
TOTAL	<u>24,587</u>	<u>80,845</u>	<u>14,437</u>

B. Financing by other Parties to Project Agreement

	<u>Cr\$</u>	<u>US\$ Equivalent</u>
DNOS	40,000	7,143 **

TOTAL	<u>40,000</u>	<u>7,143</u> **
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- * - Exchange rates Cr\$5.60 to 1 US\$
- ** - Contributed by DNOS

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II. Purpose

The purpose of this project was to further accelerate and intensify the training and development in a two years period of water works employees who were to be in charge of the management, maintenance, and operation of water utilities. The agreement was to provide " (a) technical and financial assistance to FSESP for the further development of a national training program for both professional and sub-professional personnel and (b) facilities and personnel for research and investigation on such matters as water rates, water consumption and use, effect of metering on water use etc".

Project History

The project activity began with the construction of a new building on the FSESP property in Recife. This building was to provide training facilities for the program with the original idea being that the building would serve as a training center for the Northeast. This building was completed in late 1965.

All U.S. equipment purchased under PIO/C's 40032 and 50356 was received and delivered to FSESP by July 1966, including laboratory equipment, well drilling, and audio-visual equipment. In accordance with M.O. BRA-1333.1 an inventory of this equipment is attached. By this time FSESP had been completely reorganized and the Recife office, formerly the Northeast district office, was relegated to an equal status with regional offices at Fortaleza, Ceará - São Luiz, Maranhão, and Salvador, Bahia, with each office responsible for its own training program which required approval and coordination by the FSESP headquarters in Rio. Also the FSESP training office decided to hold courses in the smaller interior cities rather than concentrate the training in Recife or other centers. The new building was subsequently occupied by the FSESP engineering section in Recife. The FSESP regional director agreed to reserve classroom and office space for training activities, and to conduct training on a smaller but more realistic scale. Training proceeded on this basis until 1968 when changes were again made in the FSESP organization which affected training. The FSESP training director in Rio and the Recife regional director were replaced. With this new change the training program ceased.

In 1968, the FSESP office agreed to cooperate in a training program to be carried out by a Institute of Sanitary Engineering of the Pernambuco State Polytechnical School in Recife. For this purpose, equipment for the laboratory and office and audio-visual aids provided FSESP by USAID were loaned to the Institute. The remaining USAID-provided equipment was to be used in future FSESP training programs. Soon after the equipment transfer was made to IES a new school director was appointed. The new director decided to abandon the proposed training program. The school thereafter used the equipment in fields of training other than water plant practice.

Accomplishments

In spite of the constant change in FSESP plans and personnel, the FSESP Recife office did carry out training on a modest scale in 1965-67. The number of personnel trained was small (79) due to the length of the courses which ranged from 1 1/2 to 4 months. Other training was carried out

by FSESP in the Northeast by the regional office in Fortaleza. However, this was limited to training of well drillers and geologist aides and had been in existence before the USAID/FSESP agreement.

U.S. owned cruzeiros were utilized in the construction of the small training center in Recife consisting of a laboratory, classroom and faculty offices. DNOS provided some funds for the same purpose. FSESP administered the construction and provided plans and the site for the center. It had been originally planned that they would provide teaching and administrative personnel for the **training** program utilizing the center for this purpose.

5.

INVENTORY OF EQUIPMENT

(Cost over \$500)

PIO/C - 50356

<u>Q^y</u>	<u>DESCRIPTION</u>	
3	Kodak Pageant Sound Projector, Model GSA-2B FSC Group 67, Port III, Contract GS-005- 52090 FED St. N° 6730-530-4692 w/220 v., 60 cy. 1ph AC Wt. 34 lbs.	Have been used about one year in courses held in Palmares and Recife (some in cooperation with CETESB). At present in storage awaiting decision of FSESP/RIO office which is preparing schedule for new training program.
2	Fully automatic calculator for engineers with automatic squaring and square root. Similar to Friden Model SRQ. Export shipping wt. 74 lbs. Operation w/220 v Ac 60 cy, 1 ph.	One being used in the FSESP office and the other loaned to and being used by Escola Politécnica with consent of AID/NE.
1	Automatic Electric Mimeograph machine, 220 v. A.C. 60 cycles, 1 ph M.B. Dick or equal.	Never used. Both will be sent in January 1972 to new FSESP office in Maceió now being organized.
1	Copying machine, electric. Similar to Ditto Model R-101, Master Fax for 220 v. 60 cy. 1ph AC operation. Wt. 60 lbs.	
1	Oil viscosimeter saybolt-Universal, single tube ASTM Fischer item 13-566W4, 1963 catalogue pg.779. 230 v. AC 60 cy. 1ph. Other suppliers Beckman, Sargent, Central Scientific.	Never used. FSESP has no use for this equipment. NEENR is checking with Instituto de Tecnologia and Escola de Engenharia, Univ. de Pernambuco, to ascertain interest and need.

Notes All items are in FSESP storage at Recife except as noted.

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INVENTORY OF EQUIPMENT
(cost over \$ 500)

PIO/C 40032

<u>Item</u>	<u>Quantity</u>	<u>DESCRIPTION</u>
1	1	<p>DEEP TURBINE PUMP, WATER LUBRICATED, POWERED by gasoline type engine to be used as deep well test pump for the following service conditions and including the following auxiliary components:</p> <p><u>PUMP</u> -- Water lubricated open impellers Bowl material - Cast iron, liquid inside diameter of well - 6". Depth of well (max.) 300 feet Yield (max.) 250 GPM Total Head 310 ft.</p> <p><u>COLUMN AND DRIVE SHAFT</u> Water lubricated with bearings spaced every 5 or 10 ft. The column shall be of black steel, with monel wearing sleeves under the bearings; Total length, including pump - 310 ft.</p> <p><u>DISCHARGE HEAD</u> Type - Unite Drive Material - Cast Iron Location - above ground Discharge Pipe Connection 3 to 4"</p> <p><u>RIGHT ANGLE</u> Gear Drive, to be coupled by means of a Watson spicer flexible shaft, size WL-27, 24" length, with KS flanges including special large KS flange for motor support.</p> <p><u>DRIVER</u> (One) Wisconsin Heavy-Duty air-cooled gasoline engine, Model VG 4 D, with clutch, Variable Speed Governor and Standard accessories.</p> <p>From Johnson Pump Co. E. Foothill Drive at Santa Fé RR. Pasadena, California or equal.</p>
2	1	<p><u>RIGHT ANGLE GEAR DRIVE</u> Pump 1750 RPM Speed of Driver 1750 RPM Ratio 1:1 Allowable HP 27 Fairbanks Morse - Model FM 1/2 Number 7310</p> <p>From Fairbanks Morse & CO. Inc., Export Div. Fair Lawn, New Jersey, or equal.</p>
3	1	<p><u>WELL SCREENS</u> - Telescope Size, Welded a) Nominal Screen Size - 8" b) Length of Screen - 10 ft.</p>

- d) 1000 of Metric Standard
 e) Slot openings: 2 ea. N° 10
 2 ea. N° 12
 2 ea. N° 20

From Edward E. Johnson, Inc.
 315 North Pierce Street
 St. Paul 4, Minnesota or equal.

9 1 ENGINEERS PORTABLE WATER LABORATORY*

Model DR-BL for colorimetric and volumetric tests
 - with carrying case and reagents

From: Hach Chemical Company
 Box 597, Ames, Iowa, or equal.

12 1 FORD METER TESTING EQUIPMENT

Test-Rite
 Fig. M-266 - Mach. n° 5 with indicator

From: Joseph G. Pollard Co. Inc.,
 New Hyde Park, N.Y. or equal.

18 SOIL TESTING EQUIPMENT

- 1 DR-90 Soil Sampling Kit
 1 Drive Weights N° 140 DR-291
 1 Drive Pipe Assembly, 30", DR-294
 1 Tripod (10°) DR-325
 1 Casing drive show MK-NR-257
 1 Casing drive show NS-DR-264
 1 Flush coupled casing NS-DR-247
 1 Casing couplings NS-DR-503
 1 Split tube Sampler (O.D. 2") (Arod) DR-120
 1 Extra Show (Sampler) DR-121
 1 Dart Valve Bailer (3" O.D.) DR-188
 1 Clean-cut auger (2" O.D.) (Arod) DR-344
 1 Closed spiral auger (2" O.D.) (Arod) DR-196
 1 Ship auger (2" O.D.) (Arod) DR-199
 1 Jamaica Spiral auger (A rod) D-202
 1 Drill rods, Size "A" 5 feet 15/8" O.D. DR-2831
 1 Adapter, MS Pin A-Rod-DR-1874
 1 Hand drive head "Rod A" DR-304
 1 Tracer pins 3238, 3 R
 1 Clamp tong (Size A) DR-672
 1 Cleaning Fluid 3233, 3 R
 1 Drive Pipe Assembly 30" DR-294

From: Soiltest Inc.
 4711 W. North Av.
 Chicago 39, Illinois, or equal.

19 SAND LABORATORY EQUIPMENT

- 1 Mechanical Sieve Shaker, CI-305, 115 volts
 60 cycles
 1 Fine sieve brush, CI-315

- 1 Wire Sieve Brush, CI-316
- 1 U.S. Standard Sieve (8") Code ECA-6
- 1 U.S. Standard Sieve (8") Code EEA-8
- 1 U.S. Standard Sieve (8") Code EGA-12
- 1 U.S. Standard Sieve (8") Code ETA-16
- 1 U.S. Standard Sieve (8") Code EKA-20
- 1 U.S. Standard Sieve (8") Code EMA-30
- 1 U.S. Standard Sieve (8") Code EDA-40
- 1 U.S. Standard Sieve (8") Code EKA-50
- 1 U.S. Standard Sieve (8") EEA-70
- 1 U.S. Standard Sieve (8") Code EUA-100
- 1 Brass pen, CIA
- 1 Brass cover, CIA

From: Soiltest, Inc.
 4711 W. North Avenue
 Chicago 39, Illinois, or equal

20 1 STIRRING APPARATUS

Six-unit, motor drive, 115 volt AC with 12 glass stirrers, 12 glass covers and 12 400 ml glass breakers for each of the above units. Fisher Model 14 14-506-V4.

From: Fisher Scientific Co.
 633 Greenwich St.
 New York 14, N.Y. or equal

7 1 MARLOW SELF DRIVING CENTRIFUGAL PUMP-3"

23,000 GPM - 10' 3" Suction hose, 10' of 3" Discharge hose - Foot valve mounted on steel wheel - Connected to a Wisconsin Gasoline Engine Spare parts, 12 shaft seal assemblies.

8 1 MARLOW SELF DRIVING CENTRIFUGAL PUMP-4"

10 ft. of 4" suction hose - 10 ft. of 4" discharge hose-foot valve - steel wheel mounted Wisconsin gasoline engine driven-standard export spare parts-12 shaft seal assemblies.

From: Marlow Pumps, Bell & Gossett Co.
 P.O. Box 566, Ridgewood, N.J. or equal

17 1 SPARLING MASTERFLO MAINLINE METER

Propeller drive, velocity - Size 8" metric system - flange joint

16 1 SPARLING MASTERFLO MAINLINE METER

Propeller driven, velocity - Size 6", metric system - flange joint

From: Harsco-Sparling Meter Co.
 4097 N. Temple City Blvd.
 El Monte, California, or equal.

- 3 1 MAIL SCREENS - Screens Size, Welded
- a) Nominal Screen Size - 8"
 - b) Length of Screen - 10 ft.
 - c) Kind of Metal: Everdur
 - d) Slot Openings: 2 each N^o 10
2 each N^o 12
2 each N^o 20

From: Edward E. Johnson, Inc.
315 North Pierce Street
St. Paul 4, Minnesota, or equal.

- 6 1 FLEXICLEANER
- Model "A-3" - Cat. N^o PF-1, with 2 HP Gasoline engine for small sewers of 0.20 to 0.50 meters in diameter with 8 helicoidal rods,
Cat. N^o PF-7 (200 ft.)
1 Point - Cat. N^o PF-11
1 Tool - Cat. N^o PF-24

From: Flexible Inc.
3786 Durango Avenue
Los Angeles, 34
California, or equal

- 21 1 SEWAGE LABORATORY
- Packaged unit for medium size secondary treatment plant, including equipment and materials for testing pH, alkalinity, all solids, residual chlorine, BOD, etc., Laboratory N^o 3, Model 17-520, Fisher Hetsfield Sewage Testing Unit.

STATUS AND LOCATION

At FSESP, Recife:

- 1) Turbine Pump
- 2) Right Angle Gear Drive
- 3) Engineers' Portable Laboratory
- 4) Gas meter Testing Equipment
- 5) Soil Test Equipment
- 6) Sand Laboratory Equipment
- 7) Stirring Apparatus
- 8) Flexicleaner, Model A-3
- 9) Sparling Masterflo Main Line Meter - 6"
- 10) Marlow Self Driving Centrifugal Pump - 4"

At FSESP, Macaio:

- 1) Marlow Self Driving Centrifugal Pump - 3"

Installed in Palmares water system:

- 1) Sparling Masterflo Main Line Meter - 8"

Installed in various systems constructed by FSESP:

1) Well Screens, Telescope Size

At Escola Politécnica, Recife

1) Sewage Laboratory

All items which could be inspected were in good condition.

Clearances:

Messrs. Jay B. Carter

T. McLaughlin

J. Fiolomeder

B. Gelabert

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AEW/malp. 7.25.72