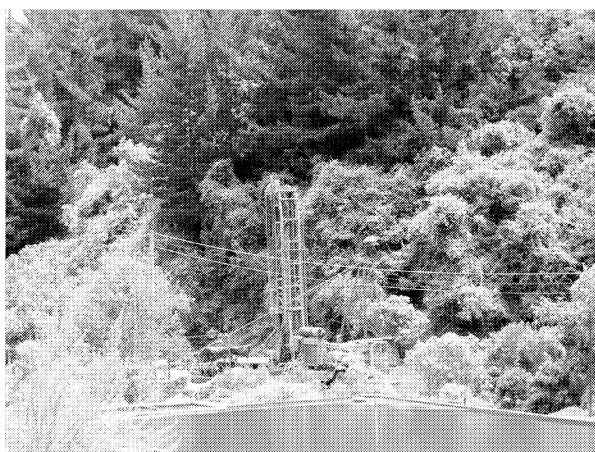
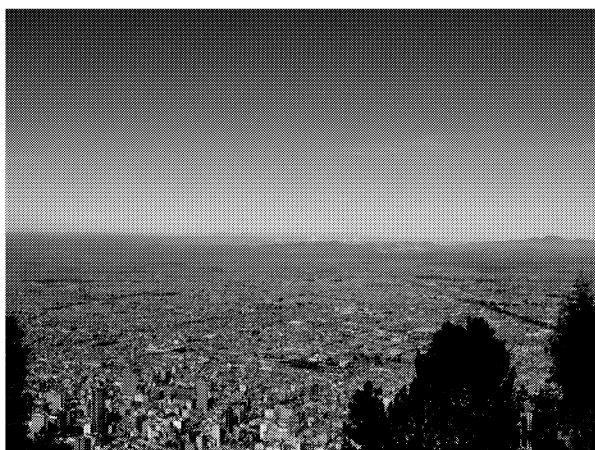


JAPAN INTERNATIONAL COOPERATION AGENCY

**WATER SUPPLY AND SEWERAGE COMPANY OF BOGOTA
IN THE REPUBLIC OF COLOMBIA**

**THE STUDY
ON SUSTAINABLE GROUNDWATER DEVELOPMENT
FOR BOGOTA PLAIN
IN THE REPUBLIC OF COLOMBIA**

**FINAL REPORT
MAIN REPORT**



February 2003

**YACHIYO ENGINEERING CO., LTD.
ASIA AIR SURVEY CO., LTD.**

Exchange Rate

US\$1.00 = Col.\$2,700 = ¥135.00 as of July 2002

PREFACE

In response to a request from the Government of the Republic of Colombia, the Government of Japan decided to conduct a study on Sustainable Groundwater Development in the Bogota Plain in the Republic of Colombia, and entrusted the study to the Japan International Cooperation Agency.

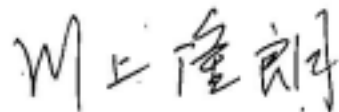
JICA selected and dispatched a study team headed by Mr. Watanabe Masatomo of Yachiyo Engineering Co., Ltd. to Colombia, three times between November 2000 and January 2003.

The team held a series of discussions with the officials concerned of the Government of Colombia and conducted field surveys at the study area. Upon returning to Japan, the team conducted further studies and prepared this final report.

I hope that this report will contribute to the promotion of this project and to the enhancement of friendly relationship between our two countries.

Finally, I wish to express my sincere appreciation to the officials concerned of the Government of the Republic of Colombia for their close cooperation extended to the study.

February 2003



Kawakami Takao
President
Japan International Cooperation Agency

February 2003

MR. Takao Kawakami
President
Japan International Cooperation Agency
Tokyo, Japan

Dear Mr. Kawakami,

LETTER OF TRANSMITTAL

We are pleased to submit to you the final report of the Study on Sustainable Groundwater Development for Bogotá Plain in the Republic of Colombia. The report contains plans of groundwater development and conservation projects, taking into account of the advices and suggestions of your Agency. Also included are comments made by Bogotá Water Supply and Sewerage Company.

The report consists of master plan for sustainable groundwater development for Bogotá Plain targeting the year of 2015. In the master plan, we proposed projects for groundwater development and conservation aiming at water supply for Bogotá City, capital city of Colombia. Also we proposed projects of groundwater conservation for Bogotá Plain. Water supply to Bogotá City is currently depending on surface water. However, it is possible to replace a part of surface water with groundwater for water resources of water supply to Bogotá City. This replacement will increase stability of both usual and emergent water supply. Moreover, it can improve water environment of Bogotá Plain and will produce new economic benefits of the area.

Currently, groundwater is highly used for floriculture and the other purposes in Bogotá Plain, which produces great profits for Bogotá Plain. Therefore, groundwater conservation is necessary for the sustainable groundwater use in Bogotá Plain. For this purpose, we proposed suitable methods for groundwater conservation in the master plan.

In view of the urgent necessity for groundwater development and conservation, we recommend that Government of Colombia implements urgently the projects for groundwater development and conservation, being proposed in the report.

We wish to take this opportunity to express our sincere gratitude to your Agency and the Ministry of Foreign Affairs. We also wish to express our deep gratitude to the Bogotá Water Supply and Sewerage Company and the relating organizations for close cooperation and assistance extended to us during our investigation and study

Very truly yours,



Masatomo Watanabe
Team Leader
The Study on the Sustainable Groundwater Development
For Bogotá Plain in the Republic of Colombia