WATER HIGHLIGHTS

D.C. Water Resources Research Center, Washington, D.C.

College of Life Sciences
University of the District of Columbia

NOVEMBER/DECEMBER 1989 Vol. IX NO.4

Season's Greetings To

American Water Works

THE McMillan WATER TREATMENT PLANT- OLD AND NEW*

The Old McMillan Water Treatment Plant

The original McMillan Water Treatment Plant, which was placed in service in October 1905, consisted of 29 one-acre slow sand filters together with a pumping station and other appurtenances. The plant and reservoir were named for Senator James McMillan of Michigan, who was instrumental in the development of this and numerous other projects as Chairman of the Senate District of Columbia Committee. The old plant has been named an American Water Landmark by the

Association

When the McMillan Plant was completed in 1905, it provided the first filtered water to the Nation's Capital. Before that, all water came from the original Washington Aqueduct designed and built by Capt. Meigs during the 1850's. That system provided only natural sedimentation *of* the Potomac River water in two large reservoirs, prior to delivery to the people. The quality of the water delivered to the consumer left much to be desired. Water at the tap was muddy, unappealing and at times unhealthful appearance. The McMillan Plant was constructed in response to growing public dissatisfaction and concerns for the public health.

During World War II, the plant was uprated to meet a rapidly increasing demand, and it has actually filtered over 160 mgd. This plant is one of the last remaining slow sand plants operating in the United States. The other major aqueduct treatment facility at Dalecarlia was completed in 1928 and expanded significantly in 1964. Pretreatment of the water destined for McMillan occurs at Dalecarlia, and the old Georgetown Reservoir

The new 120mgd (180mgd maximum) capacity McMillan Water

INSIDE

The expanded Dalecarlia Plant should meet the requirements of the service areas well into the future.

New McMillan Plant

Treatment Plant is on land once occupied by three of the one-acre slow sand filters. Construction began in the Fall of 1981. The plant was formally dedicated on September 13, 1985. The plant includes a Chemical Building containing a central control room; chemical unloading, handling, and storage areas for pebble lime, chlorine, sulfur dioxide; chemical feed facilities; chemistry laboratory and records storage and maintenance rooms. A new Filter Building, approximately 42,300 square feet in area, contains 12 rapid sand filters,0 pipe gallery, and settled water channels. (It is interesting to note that the filter surface area in the new plant is about one half the area of one of the 29 original slow sand filters.)

A significant feature of the new McMillan Plant is the computerized central process control system. All information required for operation of the pumping station and treatment plant is continuously monitored and presented to the plant operators in the form of color-graphic displays on two screens. Alarms signal any abnormal conditions. Operating reports are printed out on several logging devices. In addition, the computer accepts and processes commands issued by the operator in order to control the process. Distributed process control unit are located at several areas in the plant and pumping station and each of these monitors and controls the process in its respective area. Each contains one or more control strategies providing full closed-loop control for that respective area. Each unit can also communicate with others in the system through the central processing control computer. In this way, this system provides the capability for both full automatic control and remote manual control. The operator retains the ability to monitor all aspects of the plant, and may place all, or certain parts of the process, on full automatic closed-loop control or manually control the process.

The Washington Aqueduct

The Washington Aqueduct Division (WAD) of the U.S. Army Engineer District, Baltimore, provides the water supply for over one million residents of the District of Columbia and Northern Virginia and to the federal government. Facilities owned and operated by the WAD include intake works on the Potomac River at Great Falls and Little Falls, Maryland, a 12 mile long gravity conduit system of 200 mgd capacity; a 450 mgd raw water pumping station, two major water treatment plants at Dalecarlia and McMillan with about 350 mgd total capacity, three booster pumping stations, a 480 mgd finished water pumping station, six finished water storage reservoirs, and many large diameter transmission mains.

* The federal government sold excess acrage resulting from the McMillan modernization to the D.C. government which is considering proposals for public use and development.

Information provided by Mr. Harry Ways, Chief, Washington Aqueduct Division.

D.C. WRRC NOTES

Dr. Albert Jose Jones, chairman of the Department of Environmental Science and professor of marine sciences, is appearing weekly on 'Living with Animals', which is broadcasted at 6 pm, each Sunday on WHMM-TV, Channel 32. Dr. Jones hosts the segment on keeping and raising fish in aquaria. The show is seen on 100 PBS stations and 480 cable stations in the U.S., Canada and Puerto Rico.

* Excerpted from Every Monday of October 30, 1989.

COLLEGE OF LIFE SCIENCES PLANS NEW SEMINAR SERIES

Dean Ronald Field recently appointed Dr. H.M. Watt, DC WRRC director, Dr. J. Allen, AES director, and Dr. C. Cousin, biology professor, to work on a committee of the College of Life Sciences charged with planning seminars designed to expose the university community to ongoing faculty research and to schedule proposal development workshops to focus on individual federal agency research interests and requirements. The committee has announced the following tentative schedule for these events to be convened at the Van Ness Campus.

DATE	TIME SPEAKER	TOPIC	MODERATOR	LOCAT.
11/14/89	2-4 pm Dr. T. Renee	NIH Grants Workshop	Dr. C. Cousin	44/121
12/04/89	2-4 pm Dr. Marion J.	Sabbatical Research Topics	Prof. Abdi	44/212
01/26/90	2-4 pm. Dr. C. Docked	AES Research	Prof. J. Allen	44/213
02/23/90	2-4 pm Dr. J. Jones	Afric.-Americ. Marine Investig.	Dr. R. Field	44/212
03/09/90	2-4 pm Dr. H. Phelps	Sabbatical Research	Dr. G. Wyche	44/213
03/22/90	10am-12 30pm *Or.* R. Grady	Grants Workshop	Prof. J. Allen	44/A03
04/19/90	10am-12 30 p.m. USGS/DOI	Grants Workshop	Dr. H.M. Watt	44/A03

AFRICAN-AMERICAN CONTRIBUTORS ENVIRONMENTAL SCIENCE AND TECHNOLOGY

Dr. Albert Jose Jones

Dr. Jones is an unusual blend of scholar, teacher, scientist, administrator, and world class sportsman excelling both as a scuba diving deep sea explorer and a black belt karate master.

Dr. Jones has recently returned to his former position as Chairman of the Environmental Science Department of UDC after having served a one and half year stint as Acting Provost and Vice President for Academic Affairs.

Prior to serving as provost, Dr. Jones had served as Acting Dean of the College of Life Sciences, Chairman of the Environmental Science Department and Professor of Marine Science where he provided the drive and inspiration that led to establishment of a two-year and a four-year degree program in environmental science.

Dr. Jones also taught biology in the secondary school system of Washington, D.C. and served in the corporate sector as Vice President of the Division *of* Oceanographic and Environmental Sciences, Roy Littlejohn Associates and as a Special Consultant in aquatic and marine biology with the Oceans Resources Corporation.

As a sportsman, Dr. Jones is a living legend. His activities include karate, where among many honors and citations, he holds a the Fifth Degree Black Belt Tae Kwon Do Korean Karate. Dr. Jones is a world class skin diver with over 30 years experience encompassing biomes in the continental US, Hawaii, Ceylon, Australia, The Great Barrier Reef, The Caribbean, Bahamas and Morocco among other areas. His awards earned in diving competition nationally and internationally are too numerous to cite here. He is the holder of international instructor's certifications from The Professional Association of Diving Instructors (PADI) of Santa Ana, California and 'La Confederation Mondiale des Activities Subaquatiques of Paris. Dr. Jones is also an advanced skier and a sky diving novice.

Dr. Jones' educational background includes a B.S. in Biology, D.C. Teachers College; a Fulbright Scholarship at the University of Queensland, Australia; an M.S. in Aquatic Biology, Howard University; and a PhD. in Marine Biology, Georgetown University.

Dr. Jones has published numerous research papers in technical publications and in peer journals in the marine sciences, skin diving and karate as well.

*Editor's note. Water Highlights will continue to feature briefs on professionals in the environmental science and technology fields in coming editions.

AFRICAN AMERICAN UNDEWATER DIVERS-PROBING THE DEPTHS OF AN ADVENTUROUS HOBBY

Underwater Adventure Seekers of Washington, D.C., the world's oldest Black scuba (Self-Contained Underwater Breathing Apparatus) diving club, has been racking up an impressive dossier of undersea feats since its inception in 1959.

Indeed, OAS's 30th anniversary theme, 'Building on past explorations-seeking new adventures', aptly delineates the group's dive philosophy over the years. Founded by Dr. A. Jose Jones, Vice President for Academic Affairs of the University of the District *of* Columbia, and four other members (Maurice Jackson, Donald Green, Sylvester Dory and Molester Foxworth) expressly to teach the sport to swimmers, and promote safe water activities and the conservation of aquatic life UAS has concentrated on wreck diving, spearfishing without scuba, underwater photography and reef diving, capping its accomplishments each year with a trip to an exotic dive spot from Hawaii, Ceylon, Mexico, Venezuela, Belize, Tahiti, Guam, the Bahamas and other retreats in the Caribbean. The group also has flown to Australia's Great Barrier Reef, where diving sweeps your breath away', the Solomon Islands and Fiji in search *of* fun and

Underwater Adventure Seekers from Washington, D.C. in Rabat

adventure. Last August, UAS commemorated Its anniversary by taking a 62-member team (31 divers) to Morocco in West Africa.

MEETINGS

April 1-5, 1990. AWRA/CWRA Joint Symposium-International Aspects of Water Resources, Toronto, Ontario and Canada. CONTACT: AWRA, 5410 Grosvenor Lane, Suite 220, Bethesda, MD 20814-2192 (301/493-8600).

May 16-18, 1990. 43rd Annual Conference-Canadian Water Resources Association-'Innovation in River Basin Management', Penticton, DC, Canada. CONTACT: C.D. Sellers, Chrm., 1990 Conf. , Canadian Water Res. Asso,. c/o Klohn Leonoff Ltd.., 10180 Shellbridge Way Richmond B.C. V6X2W7 Canada

July 23-27, 1990. International Symposium on Tropical Hydrology and Fourth Caribbean Islands Water Resources Congress. SanJuan, Puerto Rico. CONTACT: AWRA, 5410 Grosvenor Lane, Suite 220, Bethesda, MD 208142192 (301/ 493-8600).

August 12-15, 1990. CONSERVE 90-National Conference and Exposition Offering Water Supply Solutions for the 1990's. Phoenix, AZ. CONTACT: Conserve 90, 6375 Riverside Dr., Dublin, OH 43017 (614/ 761-1711).

WATER HIGHLIGHTS is published quarterly by the D.C. Water Resources Research Center, University of the District of Columbia, Washington, D.C. 20008.

Dr. M.H. Watt, Director; J. Hannaham, A. Cisse' and M. Fronza contributing staff; T. Kelly contributing editor.

University of the District of Columbia
College of Life Sciences

D.C. Water Resources Research Center,
MB 5004
4200 Connecticut Avenue, N.W.
Washington D.C. 20008

Non-Profit
Organization
U.S. Postage Paid
WASHINGTON D.C.
Permit No. 9448