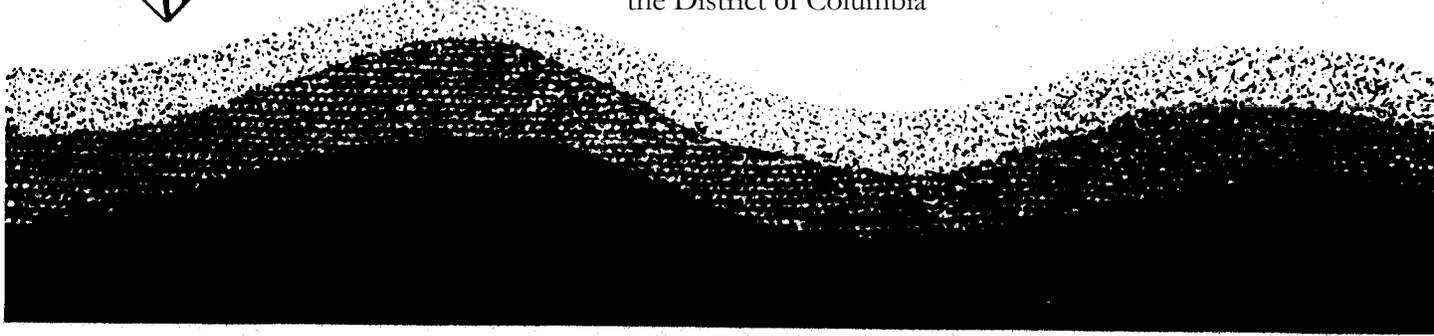




WATER HIGHLIGHTS

D.C. Water Resources Research Center, Washington, D.C.
College of Life Sciences University of
the District of Columbia



WINTER 1989 VOLUME No: 1

Editor's note:

Water Highlights is pleased to commemorate the ongoing Anacostia River restoration effort with a feature article by Dr. Martin K Gordon, Historian of the Corps of Engineers who takes us back to the beginning of serious restoration efforts over a hundred years ago. If the past is prologue, the future prospects for a clean and wholesome Anacostia River are encouraging.

Dr. Gordon's paper was presented at the 1984 Conference on District of Columbia Historical Studies and was subsequently featured In the Spring 1987 Issue of Soundings, A Journal of Writings and Studies of the Potomac River Basin Consortium.

THE ORIGINS OF THE ANACOSTIA RIVER IMPROVEMENT PROJECT- The Role of the Army Corps of Engineers

By Martin K. Gordon
Office of History
Office, Army Corps of Engineers
Fort Belvoir, Virginia

In an 1872 study which Congress requested, the Army Corps of Engineers first paid serious post-Civil War attention to the condition of the Anacostia River. Congress was principally concerned over the navigation and health problems of the Potomac flats. The flats was a wetland or marshy area west of the Washington Monument into which canals and sewers drained waste products from Washington. An Army Engineer board recommended a six million dollar project for both the Potomac and Anacostia rivers that would solve both problems and also provide new waterfront land. No action was taken at the time.

Army Engineers and others showed that the current of the Potomac and Anacostia rivers slowed as the river water entered their respective tidal estuaries within the boundaries of the District of Columbia. The decreased rate produced siltation which resulted in mud flats. Those flats received the waste products from the area; they both stank and created a health hazard according to the miasma theory of disease, commonly believed at the time. The miasma theory explained the incidence of disease near swamps as being caused by infectious matter that emanated from contaminated soil and

was spread by night air. Fear of miasma born disease was to become a major reason for Congressional and local interest in having the Corps of Engineers improve the condition of the Anacostia River^{1/}.

A severe flood in 1881 renewed Congressional interest in work on the two rivers. In response, Mr. S.T. Albert, a civil engineer and the first District Engineer in charge of the Washington Engineer Office, proposed a plan probably much different from his 1876 plan. That earlier plan called for the improvement of the two rivers by dredging the Anacostia as far as Bladensburg and using the dredge

material to fill in the flats. That work was not carried out. Interestingly, in spite of the increasing interest in reclaiming the flats both the appropriate Congressional committees and Albert and his successor, Lieutenant Colonel Peter C. Hains, justified their work in terms of the traditional authority of the Corps of Engineers to aid commercial navigation and establish definitive harbor lines. Although Hains thought the diseases produced by the flats was a reason to eliminate the swampy areas, the almost non existant commerce on the Anacostia remained an official reason for the project until after World War I. But, from the 1890's on, control of disease became an increasingly important and official reason for the reclamation of the Anacostia flats. Meanwhile, discussions about work on the river continued intermittently through the decade.^{2/}

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Congressional concern for sanitary conditions at Washington Barracks, now Fort McNair, not a concern either for the health of the city as a whole or for river and harbor work to aid commerce, gave rise to the development of the Anacostia River as it is known today. Congress in 1887 asked the Quartermaster Corps to study the problem of the James Creek Canal which flowed north to the Barracks. The Quartermasters passed the problem of studying the open sewer to the Engineers. The canal ran from the foot of Capitol Hill through Southwest Washington, -parallel to Washington Barracks, where Canal Street is today, and emptied into the Anacostia just above where that river flowed into the Potomac. Used by small craft, the canal in 1887 daily carried an estimated ten million gallons of sewage. Colonel Hains studied the problem and reported back that the canal should not be considered in isolation, but as part of the larger problem of the Anacostia itself. He argued that the canal should only be cleaned up as part of a larger plan to improve sanitary conditions in that part of Washington. He favored a comprehensive plan for the development of the river at least as far as Benning's Bridge, then the limits of the City of Washington. Importantly, Hains even in this discussion could not escape the traditional justifications. He formally requested that the study be made "with a view to the improvement of navigation, the establishment of the harbor lines, and the disposal of the sewage discharged into that river". 3/

In September 1890, Congress authorized Hains to develop that comprehensive plan. The following year, Hains recommended that the Anacostia River be dredged and the flats reclaimed at least within the city limits where both Federal and commercial interests were concentrated. He argued that Congress should start the project in stages working upstream for several reasons. First, to enable larger ships to reach the Navy Yard without fear of grounding, as often happened. Current Army and Navy

dredging projects were not adequate to meet the needs of new large naval vessels. Secondly, the waterfront of Washington was becoming crowded and the commercial interests of the city could use the additional wharfage which the dredging and reclamation could provide. Next, with nearly one-half of Washington's sewage already flowing into the Anacostia, future population growth of the city would increase the unsanitary conditions of the

flats. That in turn would render increasing portions of that part of the city unhealthy if not uninhabitable. (As Capitol Hill is not far from the Anacostia, that logic most likely caught the attention of Congressmen who lived on the Hill) Finally, Hains argued that the reclamation work would pay for the project. Use of dredge material was becoming common nationally as a means of both providing land through filling in marshes and disposing of the dredge material. He warned, prophetically, that the essential first step was to insure federal ownership of all land to be reclaimed. He was right. Land title problems dogged this project from almost its first day until at least 1962. 4/

Meanwhile, Washington was growing. In November 1889, the city's business leadership organized the Board of Trade to promote, among other goals, the improvement of sanitation and a sound public health program, perhaps along with their real estate interests. Neighborhood citizens' associations were springing up to look after more parochial concerns. 5/

The East Washington Citizens' Association endorsed the Hains plan. Its report supported the use of the waterfront for wharfage and agreed with Hains that the sale of the new land would pay for the entire project. The Association felt the project would increase commercial activity in their area. That is an interesting endorsement in view of the later legislation that mandated

that the Federal land both condemned for the project and reclaimed by it be used for park purposes only. But the Association devoted most of its energies to arguing the need for reclamation work for sanitation. It submitted medical evidence that the death rate in the vicinity of Potomac Flats had declined as the Engineers had filled in those swamps with dredged material. The citizens lined up substantial medical support for the Anacostia improvement project. 6/

Only limited dredging went on after 1892. Meanwhile the malaria rate climbed in areas near the Anacostia flats. Dr. Walter Reed reported that Fort Myer and Washington Barracks led the Army in incidence of malaria for 1897. He blamed the rate at Washington Barracks on the mud flats which the disposal of the dredge materials of the Anacostia had generated in past years. Other prominent medical authorities in Washington blamed the incomplete dredging and reclamation work for the increase in malaria. But those reports were only part of a larger chorus of citizens' meetings, meetings, medical reports, and newspaper coverage, that all demanded action on the Anacostia. Congress accepted the criticism of the work and asked for an updated survey of -what needed to

be done to end the "emanations from these flats" that were causing the disease. 7/

Lieutenant Colonel Charles J. Allen's 1898 report, updating the Mains report of six years earlier, became the basis for starting the Anacostia River project. Allen accepted Hains' justifications for the project: access to the Navy Yard; increased facilities for commerce and navigation; and removal of unsanitary conditions. Allen refused to suggest that the Federal government could set the reclaimed lands to pay for the project, as Heins did. He merely cautiously pointed out that land title questions would have to be solved and it was premature to discuss selling the new land. Allen only knew that it would be valuable. Neither Hains Allen, nor the citizen's association envisioned using that reclaimed land for park purposes. They all agreed that creation of that land provided an economic justification for the entire Anacostia Improvement project. Also showing their concern with health and economics, all agreed that work on the Anacostia above the city limits near Banning's Bridge could be deferred to some future time. 8/

The Allen plan called for dredging a 20-foot deep and 400-foot wide channel to the Navy Yard, about two miles upstream and a smaller channel of 16-feet with a 200-to 300-foot width to the city limits. At some time off, a third, smaller project would carry the project to the District boundaries. 9/

Conditions continued to deteriorate along the river. In June 1900, John D. Long, Secretary of the Navy, asked the Secretary of the Army to have the Corps do something about the Anacostia. Shortly thereafter, a naval supply vessel bringing coal to the Navy Yard grounded in mud. The Navy had to pull her off with a tugboat. Finally, Congress, in 1902, appropriated \$150,000 to start the project to the Navy Yard. The official justification remained to aid navigation and commerce.

Even though the dredged material was used to fill in marshes at St. Elizabeth's to improve sanitary conditions there, Colonel Allen, supervising the project, justified the landfill as the most economical disposal of the material. He reported that he was not using improved sanitation as a justification in his work.

By 1916, that first phase was 94 percent completed and 450 acres of land had been reclaimed. 10/

Meanwhile, the 1900 centennial of the arrival of the Federal government in the District of Columbia stirred new interests in planning, for the District's future. In 1901, Senator James McMillan, Chairman of the Senate District Committee, implemented a Senate resolution to study the District's park system. He organized the McMillan Commission, formally titled the Senate Park Commission, to plan the future growth of federal buildings, monuments and parks in the District of Columbia. Among the distinguished experts McMillan brought to this task was landscape architect Frederick Law Olmsted, Jr. Olmsted was interested in large unified park systems. One of his suggestions was to reserve over a thousand acres along the Anacostia River for a park allowing public access to the waterfront and to avoid cutting off the eastern portion of the District with industrial development. The final report of the McMillan Commission, tactfully avoiding antagonizing the Engineers, did not seek changes to the Corps' plan for the lower Anacostia. But it did recommend a dam across the river along the line of Massachusetts Avenue to develop a pleasure park, complete with islands, centered on the resulting reservoir. The park would be about 1100 acres, half land and half water. The District of Columbia Commissioners favored the plan, provided the sale of the land on the lower part of the river would cover the costs of the project.

As discussed earlier, neither the local citizen's group nor the Army's Engineers had suggested parkland as a justification for the Anacostia project when they had asked Congress for money for it. Congress had specified navigation and commerce as the principal justifications in the 1902 appropriations that started the work. Nevertheless, the increasingly successful development of the Potomac Rains as parkland, the growth of the City Beautiful movement, which emphasized planned uses of open spaces, and an increasing realization of the social benefits of parks, all influenced rethinking the Anacostia project's goals. 11/

In 1911, Congress established the Board of Reclamation and Development of the Anacostia River and Flats, to be composed of three Engineer officers. The

first task of that board was to consider a plan for developing the river upstream from the Navy Yard to the District line. The board accepted the recommendations of the McMillan Commission for the dam end park, but no further action was taken at that time.

By 1914, these concepts had influenced Major Charles W. Kutz, then in charge of the work on the river. He reported there was no commercial need to finish reclaiming the flats at that time, but, he felt that Congress should not leave the area as it was because it furnished breeding places for mosquitoes. He suggested that the work should be completed and the reclaimed land used as a public park until commercial needs increased to the point where the land was needed for those purposes.

Four years later, in 1916, the board, with all new members, reconvened to reconsider the plan. The new board decided that siltation and pollution problems made the dam impractical. But it accepted the idea of the park and recommended opening a western channel in the river where the reservoir would have been for park and recreational purposes. That project, completed after World War I is now Kingman Lake. 12/

Just before the pressures of World War I forced suspension of work on the river, Congress accepted the need for parks and included park purposes in the legal justifications the Washington Engineer District could use to condemn land for the

Anacostia project. Congress In 1916 ended the park debate when it declared all reclaimed land along the part of the river in the District to be part of the District park system with the name of Anacostia Park.

That legislation, at the suggestion of the Corps of Engineers, merged the commerce-oriented lower Anacostia and park oriented upper river projects in the District. Thus, Anacostia Park as we know it today was a change in the original plan. Its origins are in Hain's realization that sanitary conditions near Washington Barracks could not be considered as an isolated problem, but only as part of a larger problem of the Anacostia River had its basis in land condemned for use for roads, borrow pits, levees, for the river improvement project and in land reclaimed during the project. Outsiders were the first to realize its potential as a park site, but its completion marks successful Federal and local cooperation with the framework of the Federal responsibility for the District that marked those decades. 13/

ENDNOTES

1. The views expressed in this paper are strictly those of the author and do not reflect official positions of the Office of History, the Army Corps of Engineers, or any other Federal Agency. Cowdrey, City for a Nation pp.31-32; Preliminary Examination and Survey Reports made to Jan. 1, 1938, H.Doc. 10E 78th Cong., 1st Sess., p.8; Williams, Morgue site T., A History of Erosion in the Anacostia Drainage Basin, (Washington, Catholic U Press, 1942) p.7:1 am indebted to Dr. Robert J. T. Joy, Professor of the History of Medicine Uniformed Services University of the Health Sciences, and to the staff of the Medical History Branch, U.S. Army Center of Military History, for their advice on the medical aspects of this paper.

2. The Annual Reports of the Chief of Engineers are an important source for the year-by-year thinking and action by the Corps about specific projects. Published by the Government Printing Office in the year which the report covers, they will be cited in this paper as ARCE with the year, volume number, and page added. ARCE 18781, 355358; ARCE 18831, 770-794. The Anacostia River Is Indexed under 'Eastern Branch of the Potomac' in those reports. Preliminary Reports, p.8.

3. Survey of the Anacostia River. House Exec. Dec. No. 97, 50th Cong., 1st Sess., January 19, 1888.

4. Essem Branch, Potomac River. House Exec. Dec. No. 30, 52nd Cong., 1st Sess. This 'Heine Report' became the basis for all subsequent discussions of Improvement of the Anacostia River. The Corps' archives held in the National Archives are full of these land disputes. They are fascinating reading but largely irrelevant to this paper. Record Group 77, Entry 103, 'General Correspondence, 1893-1923'; Files 12988 and 19408, contain the bulk of the records of Corps work on the Anacostia from its beginning to roughly 1923. Later records are in Record Group 77, Entry 111, 'Anacostia River,' held in the Modern Military Field Branch, WNRC. Further citations will simply be to the entry number and the document. The most recent controversy I found is in 'Underwater Land Dispute Seta Problem.' Washington Post, Sept 15, 1982.

5. Green Washington: Capital City. 1879-1950 pp.30-34

6. Memorial of the East Washington Citizen's Association Relative to the Reclamation of the Flats of the Anacostia River. Sen. Doc. No. 115, 54th Cong., 1st Sess. Senator James McMillan Chairman of the Senate District Committee, presented this memorial to the Senate.

7. Reclamation of the Anacostia Flats. Sen. Report 454 and House Report 426, 55th Cong., 2nd Sess. The report by Lieutenant Colonel Charles J. Allen, was published as ACRE 1899 1, 1443-1463, and as House Doc. No. 87, 55th Cong., 3rd Sess. My references are to the publication in ACRE; "Allen report ACRE 1899, 1 pp 1447-1449. Lt. Col. Allen became one of my minor heroes when upon receiving his assignment to study the Anacostia, he immediately asked for an extension of his deadline. Allen to Brig. Gen. John M. Wilson, Chief of Engineers, June 16, 1897. Entry 103, File 12968/ no subserial, box 275; Major Charles E.L.B. Davis, the Washington District Engineer before Allen summarized this lobbying effort in his letter to Brig. Gen. W.P. Craighill, Chief of Engineers, Oct.

31, 1895 Entry 103, File 12968/ no subserial, box 275.

, 8. Allen Report," ACRE 1899, 1 pp. 1443- 1463

9. Ibid.

10. Long to the Secretary of War, June 25, 1900, Entry 103, File 12968/24, box 275; Evening Star, Jan. 26, 1901; City for a Nation, pp. 43-44: Allen to Brig. Gen. George L. Gillespie, Chief of Engineers, Aug. 4, 1902 Entry 103, File 12968/30, box 275

11. Gutheim, Federal City: Plans and Realities, pp. 32-37; Gutheim, Worthy of the Nation. The History of Planning for the National Capital, pp.143-146; Improvement of the Anacostia Flats, House Doc. 903, 59th Cong, 1st Sess., p.3; Report of Committee of Anacostia Citizens' Association on Anacostia Flats, Senate Doc. No. 510. 60th Cong. 1st Sess.

13. That legislation also extended Corps jurisdiction to the high water mark and incidentally increased the number of legal actions centering around the questions of land ownership involved in this project. The Engineer officers in charge sometimes wanted to seize small parcels along the edge of the project to which they were not entitled, presumably to even out the parcels. Entry 103, Benedict Cromwell, Asst Sec War, to the Board of Commissioners of the

District of Columbia, July 20, 1918, File 12968/621; Louis L Graham, Asst. Attorney General, to Sec. War, Sept.21, 1918 File 12968/630; F.P. Keppel, 3rd Asst. Sec. war, to the Attorney General, May 27, 1919, File 12968/665; Col. H. Taylor, Office of Chief of Engineers (OCE) to Sec. War, Sept 25, 1919, File 12968/679; Frank W. Nelickey, Asst. Attorney General to Sec. War, Oct. 29, 1919, File 12968/702, box 273

WRRC ANNOUNCES PUBLICATION OF TECHNICAL REPORTS

The Center is pleased to announce the publication of the following proceedings and technical reports resulting from symposia and research investigations supported during FY 1987:

M.H. Watt, A. Felix and M.T. Fronza, Editors. Proceedings on : Agri-Chemicals and Ground Water, Future Directions. A Symposium Co-Sponsored by: American Water Resources Association (AWRA), American Society of Civil Engineers (ASCE) & Water Resources Research Center (WRRC), February 24, 1988. Washington, D.C. University Of the District of Columbia. WRRC Report NO.88.

Chang, F.M. Watt, M.H. and Sreenivas, V. Impact of Erosion and Sedimentation on the Water Quality of the Anacostia River. Phase II. D.C. Water Resources Research Center. University of the District of Columbia. Washington D.C. WRRC Report No.81. 1989.

CAPITOL UPDATE

Appropriation

Patrick Brezonik (Director, WRRC Minnesota) and Dave Moreau (Director WRRC North Carolina) presented testimony February 9, 1989 on behalf of the National Association of Water Institute

Directors (NAWID) before the House Interior Appropriations Subcommittee

Reauthorization

On February 22, California Congressman George Miller introduced legislation to reauthorize the Water Resources Research Institute Program. Groundwater legislation (S. 203) has been introduced in the Senate containing Institute reauthorization and is similar to legislation introduced in the last Congress.

The NAWID has decided to press for passage of an independent reauthorization bill in both houses of Congress. In addition, agreement was reached not to seek major changes in the bill passed by the house during the second session of the last Congress.

Specifically, NAWID would like to see the information transfer program added to section 106 restored and authorization for section 104g restored to \$10 million or more as originally requested

A commentary by Paula Hughes, NASULGC, Washington, D.C.

WRRC NOTES

WRRC Co- Sponsors Symposium on Acid Rain

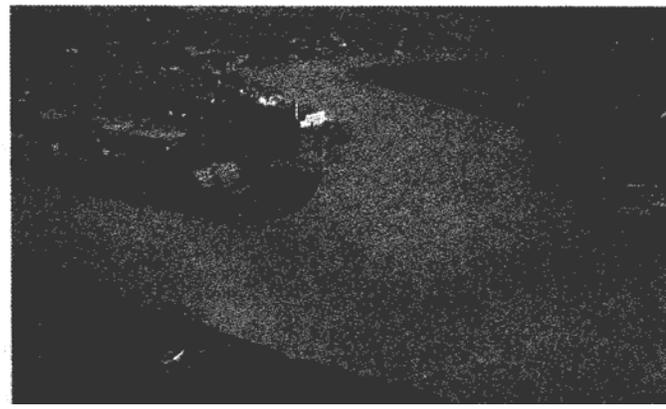
Representatives of the U.S. and Canadian governments, as well as Washington representatives of several special interest groups participated in a symposium on Acid Rain on February 9th at the University of the District of Columbia (UDC) Van Ness Campus

The symposium was sponsored by the Water Resources Research Center of the UDC, the National Capital Section of the American Water Resources Association and the American Society of Civil Engineers and featured two panel discussions; one on U.S. and Canadian perspectives on acid rain and another focusing on the issue from the point of view as special interest groups, including the United Mine Workers, The National Wildlife Federation and the Edison Electric Institute.

Washington representatives of special interest groups in the second panel discussion included William Samuel of the United Mine Workers; Milliam Klinefelter of the National Wildlife Federation and John Kinsan of the Edison Electric Institute.

Smart Conference

WRRC Director, M.H. Watt and Assistant Director, J.H. Hannaham were active participants at the Science, Mathematics, Aeronautics, Research Technology (SMART) and the Black Family Interface Conference convened February 3-5 in Washington D.C. The conference examined ways of increasing African Americans' access to the retention in science and technology related fields. Dr. Watt and Mr. Hannaham co-authored- and presented a paper entitled



Kingman Lake Under Construction, Circa 1926
Office of History, Chief of Engineers, Fort Belvoir, VA

"D.C. Water Resources Research Center's Special Environmental Science Programs for Students." They also participated as panelists and as moderators for featured sessions at the Conference.

Black History Month Program

Dr. James S. Burton a former director of DC WRRC and now one of the top African American executives in the U.S. Geological Survey was presented as guest lecturer at the UDC Black History Month in February. Dr. Burton's topic was "Educational Opportunities and Responsibilities." The presentation was well received, especially by the student body to whom Dr. Burton's remarks were directed. Several UDC student engineering and science organizations including the Mechanical and Civil Engineering Clubs and the Environmental Science Club involved in the program arrangements were among the large group of appreciative student and faculty attendees.

June 7-9. International Symposium on the Design of Water Quality Information Systems. Fort Collins, Colorado. Sponsored by U.S. EPA & Colorado State University. Contact: Department of Agricultural and Chemical Engineering, Fort Collins, Colorado 80523 at (303) 491-8362.

June 19-23. International Symposium on Estuarine Water Quality Management. Geesthacht, West Germany. Contact: W. Michaelis, GKSS Research Center, Geesthacht, Inst. of Physics, P.O. Box 1160, D-2054 Geesthacht, Fed. Repub. Of Germany.

July 9-19. 28th International Geological Conference. Washington Convention Center, Washington, D.C. Sponsored by the U.S Geological Survey, the National Academy of Sciences, and the American Association of Petroleum Geologists. Contacts: Donovan Kelly at (703) 648-4460.

September 17-22. Water: Laws and Management. American Water Resources Association-25th Annual Conference. Tampa, FL. Contact: L.M. Buddy Bain at (813) 228-6422.

October 16-18. Conference on Ground Water in the Piedmont of the Eastern United States. Charlotte, NC.

Conference information contact: April Smith, 113 McAdams hall son University, Clemson, SC 29634-0357 at (803) 656-4073. Abstract information contact: Charles Daniel, U.S. Geological Survey-Water Resources Division, P.O. Box 2857, Raleigh, NC 27602

The Association of Ground Water Scientists and Engineers, et al. Program of Ground Water Issues and Solutions in the Potomac River Basin /Chesapeake Bay Region. March 14-16, 1989. Washington, DC.

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Virginia Water Resources Research Center. Research Projects, 1988-1989. Virginia Polytechnic Institute and State University. Blacksburg, VA

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Wang, Y. T. The Effect of Preozonation on the Anaerobic Biodegradability of Resin tart Phenolic Compounds. Water Resources Research Institute. University Columbia

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Dr. M.H. Watt, Director; J. Hannaham, A. Cisse and M. Fronza contributing staff; T. Kelly, contributing director

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