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UNITED STATES DISTRICT COURT
for the
DISTRICT OF MASSACHUSETTS

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UNITED STATES OF AMERICA, .

Plaintiff, .

. CIVIL ACTION
v. . No. 85-0489-MA

METROPOLITAN DISTRICT COMMISSION, .

et al., .

Defendants. .

.

CONSERVATION LAW FOUNDATION OF .
NEW ENGLAND, INC., .

Plaintiff, .

. CIVIL ACTION
v. . No. 83-1614-MA

METROPOLITAN DISTRICT COMMISSION, .

Defendants. .

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MWRA MONTHLY COMPLIANCE REPORT FOR
APRIL 2000 AND PROGRESS REPORT AS OF MAY 15, 2000

The Massachusetts Water Resources Authority (the "Authority") submits the following monthly compliance report for the month of April 2000 and supplementary compliance information in accordance with the Court's order of December 23, 1985, subsequent orders of the Court and undertakings of the Authority.

1. Schedule Six.

A status report for the scheduled activities for the month of April 2000 on the Court's Schedule Six, certified by Douglas B. MacDonald, Executive Director of the Authority, is attached hereto as Exhibit "A."

A. Activities Completed.

1. Report on Backup Disposal Plan.

In accordance with Schedule Six, the Authority submitted its report on the actions taken pursuant to its backup residuals disposal plan to the Court

on April 14, 2000.¹ In addition, the Authority and the Commonwealth submitted their Joint Report on the Memorandum of Understanding on beneficial use of biosolids.

B. Progress Report.

1. Fiscal Matters.

(a) State Budget.

On April 14, 2000 the Massachusetts House of Representatives approved its budget for Fiscal Year ("FY") 2001. As in the proposed House budget described previously, the budget includes \$53.914 million for statewide debt service assistance, \$500,000 for the operation and maintenance of the Clinton Wastewater Treatment Plant, \$41.87 million for a state contribution to the Clean Water Act State Revolving Fund and \$10.63 million for the Safe Drinking Water Act State Revolving Fund. However, the approved budget defers a requirement that communities contribute two percent toward interest on loans acquired through the two State Revolving Fund programs from FY 2001 to FY 2002.

2. Harbor Management.

(a) Construction of Effluent Outfall Tunnel.

The Authority is pleased to report that, working with the contractor, it has made significant and encouraging progress in the past month in developing a plan for resuming work in the Effluent Outfall Tunnel. Following a number of technical meetings involving representatives of the Authority, the contractor and their respective consultants, a plan for re-ventilation of the tunnel using an offshore platform is nearly complete. Engineering issues that were of concern last month have been resolved. As a result, the contractor has gained increasing confidence that implementation of the offshore ventilation plan is achievable this year, although the schedule for doing so is extremely tight. All work must be complete by early fall, to allow demobilization of the offshore platform before unacceptable weather conditions prevail.

The plan involves positioning a jack-up barge to serve as a staging area over one of the three diffusers from which the safety plugs were removed last July. Workers will remove the protective dome from the diffuser and install a steel casing extending from the diffuser up to the deck of the barge. After dewatering the casing, workers will expose the riser pipe by removing the manhole cover at the top of the diffuser and fit a 48-inch diameter steel ventilation pipe to the top of the riser. Fans placed on the barge and at the top of the tunnel shaft on Deer Island will force fresh air through the tunnel and out the ventilation pipe attached to the barge. Once acceptable breathing conditions are established and verified, a plug removal crew will enter the tunnel through the shaft and proceed with removal of the remaining safety plugs.

One uncertainty about the plan that remained to be addressed was in regard to the process of review required to satisfy the concerns of the Occupational Safety and Health Administration ("OSHA") in order for implementation of the plan to proceed unhindered. With the assistance of the United States Attorney, the Authority and contractor met with OSHA on May 9 to brief OSHA staff on the conceptual plans for providing ventilation from the platform. While many details of the plans both for ventilation and for conducting the remaining plug removal work within the tunnel once ventilation is in place remain to be described and resolved, OSHA indicated that the overall approach appears feasible. OSHA expressed interest in working closely with the contractor in the coming weeks in order to review health and safety aspects of the plans. It also recommended that the contractor engage a team of health and safety experts on various components of the plan as soon as possible to provide a thorough and informed review and provide assurance that any concerns have been adequately considered and addressed. In addition, OSHA requested that the contractor involve representatives of the trades who will perform the work in the review of the plans. The Authority and its contractor will keep OSHA fully informed as plans are refined and elaborated. Although conducting the health and safety review within the short timeframe available if the safety plugs are to be removed this year will be extremely challenging, all agreed to work aggressively toward that goal.

In the meantime, on May 10 the Authority's Board of Directors took action to support the plan, approving in principle an agreement negotiated with the contractor to resolve outstanding issues concerning responsibility for the plan and cost-sharing. The agreement settles a number of issues that had been in contention, including one of the large, outstanding claims the contractor had submitted regarding a prior phase of outfall construction. The Board's approval of the agreement clears the way for the contractor to move forward expeditiously to confirm arrangements with the subcontractor that will execute major portions of the ventilation plan and to start work.

With plans to proceed with the offshore ventilation plan now confirmed, the Authority has submitted a written description of the plan to various environmental regulatory agencies involved in the preliminary meeting described in last month's report. The agencies include the Army Corps of Engineers, Coastal Zone Management and the Massachusetts Executive Office of Environmental Affairs (MEPA Unit2). Supported by the United States Attorney, the Authority looks forward to working with those agencies and providing any other information, as needed, to facilitate their timely review of any permitting issues.

In order to maintain the schedule, the Authority has already agreed to authorize fabrication of the materials necessary to complete the work, which will commence over the next several weeks. The current schedule calls for loading the jack-up barge on the transporter for shipping from Venezuela to Boston during the week of May 25. Once the barge is here, the contractor will begin outfitting and readying it to start work on-site during July.

(b) Construction of Secondary Battery C.

Since the Authority last reported, the contractor for Secondary Battery C has completed all of the basic construction required, except for some minor remaining electrical work. Functional testing is now 94 percent complete, and inter-CP testing is expected to begin tomorrow. Almost half of the inspections and walkthroughs to be conducted by Construction Management and Deer Island Treatment Plant ("DITP") staff in various components of the new facilities have now taken place.

In the past several weeks, functional testing has disclosed a number of issues that must be addressed before inter-CP testing can be completed and the facilities are available for turnover to DITP staff for water testing. These include, for example, adding emergency shutdown switches to the clarifier collector system; relocating cross-collector override switches from inside control panel boxes to the outside; connecting the foam spray component of the scum system to the automated process control system; and changing the size of conduits connecting cables to the clarifier tip tubes to accommodate the type of connection used. Even though these changes may entitle the contractor to change orders and additional time and compensation, the contractor is performing the work as needed, without waiting for the normal contract change order approval. Also, the Authority is paying the contractor for "premium time" on change order work, to compensate the contractor for overtime in an effort to expedite the work.

In addition, the inspections and walkthroughs to date have revealed a large volume of punch list items that require correction. With 44 percent of the walkthroughs done, the list includes more than 5,000 items.³ Because of the urgency of completing this facility, the Authority will not require correction of those items that are not essential for inter-CP testing or water testing (approximately 2200 of the 5000 items) before turnover of the facility.⁴ The contractor is correcting the most urgent items as rapidly as possible and, where feasible, is addressing similar items ahead of scheduled walkthroughs in other parts of the facility.

It has become apparent that previous projections regarding when the new facility would be ready for water testing by Deer Island Treatment Plant staff did not take into account the additional time that will be required to address both functional testing and punch list issues. Because of its extreme concern about the implications of the change order and punch list work for the schedule for completing Battery C, the Authority recently asked for and received from the contractor a detailed and comprehensive analysis of the work that remains and the time that may be required to complete it. The Authority is subjecting the contractor's schedule to a rigorous review and proposes to report further to the Court regarding this matter no later than the end of this week.

(c) Water Transportation Systems.

At its April 19, 2000 meeting, the Board of Directors approved six-month extensions to the water transportation contracts for Roll-On/Roll-Off and Personnel Transport services to support ongoing construction on Deer Island through December 2000. Pursuant to an agreement with the Town of Winthrop, all truck traffic associated with Deer Island construction after December 2000 will be able to travel through Winthrop. Bus service for construction

workers from the parking area at Suffolk Downs to Deer Island will continue until December 2001.⁵

3. Outfall Monitoring Report.

On April 19, 2000, Authority staff provided the Board of Directors with updated information on the results of the ongoing outfall monitoring program.⁶ The *1998 Outfall Monitoring Overview Report* (the "1998 Report") is attached as Exhibit "B." The 1998 Report is a summary of effluent and ambient monitoring from 1992 to 1998 and specifically relates the 1998 results to the thresholds contained in the Contingency Plan that will be in effect when offshore discharges through the new outfall begin.⁷

In 1998, the effluent monitoring data showed continued improvements in effluent quality as secondary treatment increased. The ambient monitoring results reflected a somewhat unusual year in the water column, with no spring algae bloom, high early-winter nutrient levels and long-lasting water layering due to mild fall conditions. Levels of pollutants in mud near the new outfall site were low and similar to previous years. Levels of pollutants in fish and shellfish remained well below levels of concern.

The ambient monitoring data gathered represents baseline conditions from which to gauge the effects of the new outfall once it commences operation. Due to the delay in the start up of the outfall, the Authority has been able to collect extensive information and to document the large natural variability of Massachusetts and Cape Cod Bays. With this information, the Authority will be better able to work with the Outfall Monitoring Science Advisory Panel and regulators to refine thresholds in the Contingency Plan based on the most current scientific data.

A report on 1999 monitoring results is expected to be available during the coming summer. In the future, the Authority will provide overview reports as part of an anticipated NPDES8 permit requirement to report annually on monitoring and will post the reports on its Internet web site.

4. Combined Sewer Overflow Program.

(a) Cambridge Sewer Separation.

As expected, on April 19, 2000, Authority staff briefed the Board of Directors on a proposed revised recommended plan for combined sewer overflow ("CSO") control in Alewife Brook.⁹ The revised plan recommends completion of sewer separation in the CAM 004 tributary area¹⁰, separation in the CAM 400 tributary area, relief of dry weather connections to the interceptor system at CAM 002, CAM 401B and SOM 001A and relief of an existing siphon at MWR 003. It also recommends no further sewer separation in the CAM 002 tributary area.

Authority and Cambridge staff continue to negotiate cost sharing and a proposed implementation schedule, and Authority staff anticipate seeking Board of Directors' approval of the revised control plan, funding approach and proposed schedule at the Board meeting on May 24, 2000. Thereafter, the Authority will discuss the recommended plan and schedule with the Environmental Protection Agency ("EPA") and the Massachusetts Department of Environmental Protection ("DEP").

In the meantime, Authority and Cambridge staff are attempting to define what additional regulatory review and approvals may be necessary prior to implementation of the revised plan, including reopening MEPA review. The Authority expects public review and comment to be an important component of further regulatory review.

(b) Cottage Farm CSO Facility Upgrade.

Since last reporting, the Authority has completed installation of the redesigned automatic sampling systems at the Cottage Farm CSO facility. These sampling systems are intended to deliver flows to automatic samplers for NPDES permit compliance testing and to automatic, continuous residual chlorine analyzers. The new sampling systems are operational, awaiting activation during wet weather.

In addition, the Authority was able to observe the operation of the new flow meters following recent recalibrations, during an activation of the treatment facility on April 21. The new flow meters again appeared to measure the flows acceptably, with the exception of a few occasions when the control system indicated erratic readings. The Authority is currently reviewing some of the physical instrument loop and wiring connections and signal stability, as well as verifying the accurate handling and recording of functional data by the facility's central Programmable Logic Controller. In addition, revisions to some standard operational procedures are underway, based on lessons learned on April 21. The Authority will continue calibration of the entire facility and performance checks during the next significant wet-weather activation.

During the April 21 activation, the Authority continued to operate the disinfection and sampling systems successfully using manual controls. Staff are prepared to continue this mode of operation until the redesigned automatic sampling system is fully tested and accepted.

(c) Floatables Control and Outfall Closing Projects.

The Authority is continuing to explore feasible approaches to installing underflow baffles for floatables control at seven regulators tributary to CSO outfalls MWR 018, MWR 019 and MWR 020, which discharge to the Lower Charles River Basin.¹¹ This effort is part of a broader reevaluation of some of the recommendations for floatables control and outfall closing projects included in the Authority's long-term CSO control plan. Additional information gathered by the Authority and the CSO communities, especially from preliminary design investigations, suggests that changes to some of the original recommendations may be warranted and could affect the schedule for completing the work at some locations.¹²

The Authority is preparing a report for submission to EPA and DEP later this week presenting the current status of the ongoing work and proposing adjustments to the plan and schedule. The report will review the original plan for floatables control and outfall closing projects relative to all CSO outfalls and regulators, identify the status of ongoing design and construction activities, including completed projects, and will present new recommendations where preliminary design efforts indicate the need for changes. The report will also review project schedules and, in particular,

will identify locations where proposed activities may affect schedule compliance.

With regard specifically to MWR 018, MWR 019 and MWR 020, in addition to the activities described last month, the Authority is conducting an updated evaluation of the performance of the Boston Marginal Conduit, in part to gain an updated understanding of the frequency of activations at the three outfalls. This work will also include a review of conditions at outfall MWR 010, located further upstream on the Charles River, which the Authority proposed to close under its original System Optimization Plan recommendations in 1993. The recommended plan for MWR 010 was to close the four CSO regulators tributary to this outfall and to keep the outfall in service only to convey separate stormwater to the river. More recent information shows that a considerable amount of what the Authority understood to be separate stormwater is actually combined sewage. The main objective of the current evaluation is to determine whether the interceptor system can continue to convey these combined flows without serious surcharging if the four regulators are closed as planned.

After submission of the forthcoming report to EPA and DEP, the Authority expects to schedule a meeting with regulatory staff to discuss the new information and proposed changes to the plans and schedule for outfall closings and installation of floatables control. The Authority will report to the Court further following that meeting.

(d) CSO Construction Progress.

The Authority, the Boston Water and Sewer Commission ("BWSC") and the City of Cambridge are making progress on several CSO projects now under construction. Significant CSO construction is underway or recently completed in Cambridge, Charlestown, Chelsea and Dorchester.

As final acceptance testing continues at the upgraded Cottage Farm CSO Facility, the Authority has made substantial progress with construction at the four remaining CSO facilities undergoing similar upgrades. The Authority is incorporating lessons learned from the ongoing Cottage Farm testing into the work at the other facilities.

Construction at the Prison Point Facility, which began in May 1999, is 60 percent complete and is on schedule for completion by October 2000. The contractor has completed construction of the new chemical building and installation of the new chemical storage tanks and pumps and is now installing chemical piping and electrical wiring. At Commercial Point, Fox Point and Somerville Marginal, the contractor has completed or commenced laying the foundations for the new chemical buildings associated with these facilities, completed installation of utility services and initiated installation of the dechlorination chemical force mains. Construction is on schedule for completion by March 2001.

With respect to hydraulic relief projects at CSO outfalls CAM 005 and BOS 017, the contractor has completed all work at CAM 005 (on the Charles River), as previously reported, and expects to complete all work at BOS 017 (on the Mystic River) by July, well in advance of the respective

milestones. Hydraulic relief is now operational at both locations, thereby providing the intended CSO reduction at these outfalls. Remaining work at BOS 017 is limited to installation of a new manhole structure and underflow baffle for floatables control, installation of permanent flow diversion weirs and landscaping.

Construction is also proceeding on schedule on the project to relieve a City of Chelsea-owned trunk sewer to minimize CSO discharges at outfalls CHE 002, 003 and 004 and on a separate contract to relieve the Authority's Chelsea Branch Sewer and repair the CHE 008 outfall. Construction to relieve the Chelsea-owned trunk sewer, which commenced in September 1999, is 55 percent complete. The contractor expects to complete the installation of all new mainline and outfall replacement piping this month, thereby bringing hydraulic relief on-line. On the Chelsea Branch Sewer Relief and CHE 008 Repair project, which began in December 1999, the contractor is now constructing jacking and receiving pits to accommodate the first few sections of pipe jacking.¹³ Work at that location is proceeding on schedule.

Last month, the Authority advertised a separate, smaller construction contract to make modifications to the existing Chelsea Screen House. The changes will allow for connection of the new Chelsea Branch Relief Sewer to the facility, which screens the flows prior to transport to Deer Island.

With respect to sewer separation projects in Boston, BWSC is progressing on schedule with the first two construction contracts (Contract 1 and Contract 5) to separate sewers in the South Dorchester Bay area. These two contracts primarily involve storm drain construction in Savin Hill and in other neighborhoods along Dorchester Bay. Preparations are in progress to begin construction on a third contract (Contract 2) by fall. BWSC is also completing the final phases of sewer separation projects in the Neponset River and Constitution Beach areas, scheduled to be completed by June 2000 and October 2000, respectively, thereby allowing elimination of CSO discharges to these receiving waters.

With respect to sewer separation in Cambridge, the City of Cambridge is currently working in the Fresh Pond area on Contract 2B of the CAM 004 sewer separation project. Contract 2B involves the construction of a large sewer and large storm drain to separate the combined sewer trunk along Fresh Pond Parkway. Cambridge expects Contract 2B to be substantially complete by spring 2001.

(e) North Dorchester/Reserved Channel

On April 26, 2000, the United States filed a motion seeking to compel the Authority to make a formal request that the Governor of Massachusetts file in the Legislature of the Commonwealth a bill for the legislation required under Article 97 of the Massachusetts Constitution before the Authority can proceed with the North Dorchester/Reserved Channel CSO projects. The Commonwealth and the Authority opposed the motion on May 10, 2000, pointing out, respectively, the relief requested would be an unwarranted intrusion upon the constitutional role of the Governor of the Commonwealth and that it would not serve to advance the North Dorchester/Reserved Channel CSO projects toward completion.

5. Residuals Management.

(a) Management of Pelletizing Operations.

On April 19, 2000, the Board of Directors voted to adopt the recommendations of the Authority's consultant pertaining to the rebid of the contract for the management of the pelletizing operations. The Authority will seek a long-term (15 years) operator to provide sludge dewatering, pelletization, marketing and disposal services, as well as sludge barging services until the sludge pipeline from Deer Island to the pellet plant is complete.

The Authority will issue a combined request for qualifications and proposals on May 17. The procurement process is expected to result in the award of a long-term contract in the early fall for services to commence on January 1, 2001. The current operating contract with the New England Fertilizer Company ends on December 31, 2000.

Notes:

1. See Compliance and Progress Report for April 14, 2000, Exhibit "C."
2. Massachusetts Environmental Policy Act
3. This number of items is not untypical of construction projects of the nature and scale of Battery C, but apparently was not anticipated by the contractor when it projected the time required to complete the project.
4. Although correction of some punch list items is not required before turnover, it will be necessary for the contractor to address all items by the time DITP water testing is complete and before actual start-up of Battery C operations.
5. See Compliance and Progress Reports for April 15, 1998, pp. 6-7 and November 15, 1999, p. 8.
6. The monitoring program accumulates data about plant operations and existing Massachusetts Bay conditions. The Authority has conducted the monitoring since 1992, in compliance with the orders of this Court and with regulatory directives, under the guidance of the former Outfall Monitoring Task Force and, more recently, the Outfall Monitoring Science Advisory Panel. See previous report on this matter in the December 15, 1997 Compliance and Progress Report, pp. 14-16.
7. See Exhibit "C" to the December 15, 1997 Compliance and Progress Report as well as discussion in the Compliance and Progress Report for March 15, 1995, pp. 11-12.
8. National Pollutant Discharge Elimination System
9. As previously reported, the Authority and the City of Cambridge found it necessary to reevaluate plans for CSO control in Alewife Brook after design activities revealed conditions very different from those indicated by previously available information. See Compliance and Progress Reports for

February 12, 1999, pp. 10-16 and August 17, 1998, pp. 4-5 for previous reports on the differing conditions in Cambridge's system.

10. As previously reported, Cambridge is now proceeding with final design and early phases of construction to separate sewers in the CAM 004 tributary area and has completed a sewer separation contract in a small area tributary to CAM 002. See also Section 4(d) below for more information on the status of construction.

11. See April 14, 2000 Compliance and Progress Report, pp. 12-13.

12. The long-term CSO control plan recommends closing certain CSO outfalls, either as part of the implementation of a larger CSO control project or independently. The plan also recommends providing floatables control at all CSO outfalls that will remain active in the long term. At CSO outfalls that fall within the scope of a larger CSO control project, floatables control will be provided as part of the project, in compliance with schedule milestones for the larger project. For floatables control and outfall closings not associated with larger projects, Schedule Six requires completion of construction by May 2001.

13. Pipe jacking, a form of tunneling, is the primary means of installing the Chelsea Branch Relief Sewer, to minimize open cuts and traffic impacts along Eastern Avenue in Chelsea.

Dated: May 15, 2000