

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., .

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Defendants. .

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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 JULY 1999 AND
PROGRESS REPORT AS OF AUGUST 13, 1999

The Massachusetts Water Resources Authority (the "Authority") submits the following monthly compliance report for the month of July 1999 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.

I. Schedule Six

There were no scheduled activities for the month of July 1999 on the Court's Schedule Six.

A. Progress Report.

1. Fiscal Matters.

(a) Federal Funding.

The United States House of Representatives Committee on VA, HUD and Independent Agencies included \$2 million for the Authority's combined sewer overflow ("CSO") program in its proposed federal appropriations bill for Fiscal Year 2000. The bill is expected to be considered by the full House of Representatives after the August recess.

2. Harbor Management.

(a) Construction of Effluent Outfall Tunnel.

As noted briefly in Compliance Order Number 163, two workers who were part of the diffuser safety plug removal team died on July 21, 1999, while working in the Effluent Outfall Tunnel, bringing all construction temporarily to a halt.

The safety plug removal team consisted of 12 men: two project managers located in a command center on the surface near the tunnel shaft; a five-man rescue team (equipped with its own vehicles and safety equipment) stationed in the tunnel at the base of the shaft; and a five-man crew to travel more than eight miles into the diffuser reach of the tunnel each day to perform the safety plug removal.¹ The five-man removal crew used two modified military all terrain vehicles (known as "Hummvees") equipped with redundant air supplies, diving gear, rafts and emergency rescue equipment to travel into the diffuser area. Although the finished diameter of the tunnel is approximately 24 feet along most of its length, the tunnel becomes progressively narrower in the diffuser reach. As a result, the Hummvees could travel only to the vicinity of diffuser No. 12, approximately 1,500 feet from the end of the tunnel. Two crew members remained with the vehicles to monitor the air supply and maintain communications with the surface (through a mine phone system extending the length of the tunnel), while the other three crew members proceeded with the removal of the safety plugs. All five workers at the heading were in contact with each other through two-way radios.

Actual plug removal commenced on July 20, with the successful removal of the safety plugs at diffuser risers No. 1 and No. 2.² On July 21, the workers proceeded to remove the safety plug at diffuser riser No. 3 and were working at diffuser No. 4 when they lost contact with the two workers remaining with the Hummvees as monitors. The three returned to the vehicles and discovered the two workers unconscious and in cardiac arrest. While attempting to resuscitate the unconscious men, the three proceeded to transport them back to the shaft, where fire rescue and emergency medical technicians awaited.³ Rescue personnel removed the two workers from the tunnel and evacuated them by helicopter to local hospitals, where the two were pronounced dead.

The incident is under investigation by both the Massachusetts State Police, who have impounded one Hummvee and other equipment, and the U.S. Occupational Safety and Health Administration ("OSHA"). One Hummvee and some equipment remain in the tunnel, and the State Police and OSHA have indicated that this equipment must be recovered in order to complete their investigations. To date, they have released no information on their findings.

The contractor is in the process of retaining an expert on diving and breathing gasses to review the incident and assist in developing a plan to recover safely the equipment remaining in the tunnel and subsequently to resume the safety plug removal effort. The schedule for completing this plan, for the State Police and OSHA allowing the contractor to enter the tunnel to recover the equipment and for completing the investigations remains uncertain.

In the meantime, after completing the initial stages of their investigations, the State Police and OSHA released the tunnel shaft to the contractor, and construction activity in the shaft area resumed on August 2. The contractor is currently pointing and patching the shaft, performing spot grouting and installing the shaft lining, collar and beams.

(b) Electrical System Modifications for Deer Island Pump Stations.

With levels of precipitation remaining low, Deer Island Treatment Plant staff continue to be unable to perform full scale testing of the additional harmonic filters installed earlier this year at the North Main and Lydia Goodhue Pump Stations.

(c) Construction on Nut Island.

The contractor for Nut Island facilities has completed the installation of the new sluice gates associated with the new headworks. The contractor is now making the necessary electrical connections from the gates to the Process

Instrumentation and Control System. Until this work is complete, staff will operate the gates manually, if needed.

With respect to the inspection of existing outfalls, the diving subcontractor completed mobilization activities and is now proceeding to perform the inspections. The contractor has completed inspections of two of the three outfalls.

(d) Secondary Battery C.

Work in Secondary Battery C is progressing. In the reactors, the contractor has completed water testing in Trains 1 and 2 and is currently testing Train 3. The contractor is continuing to mount motors for the oxygen mixers and install oxygen piping on the roof, along with pulling wires in the gallery and making electrical terminations to aerator and mixer motors.

In the clarifiers, the contractor has completed waterproofing and is currently performing work on the installation of the returned sludge and influent piping. In addition, installing the drop boxes and connecting the suction piping to the returned sludge pumps are proceeding for both the upper and lower level collector systems.

The contractor has also completed 95 percent of the new piping and 90 percent of the new electrical terminations in the cryogenic facility. In the polymer facility, piping and support installation is 99 percent complete; all wiring is in place; and electrical terminations for building systems are in progress. Overall, testing of Secondary Battery C is 17.6 percent complete, with approximately 3,300 individual field tests remaining.

3. NPDES Permit Appeal.

The Environmental Protection Agency ("EPA") has notified the Authority that it does not plan to rule on the appeals of the new NPDES permit described in last month's report until it explores potential options for settlement.

4. Residuals Program.

(a) Pelletizing Plant Expansion.

During the past month, the contractor for the pelletizing plant expansion implemented a modification to the mixer conveyors in the new dryer trains in preparation for resuming testing. However, a problem with excessive vibration in the pug mills that feed the new trains remains. A new larger-diameter pug mill shaft is in fabrication and scheduled for shipment by August 16. The contractor will install the new shaft in one of the trains for testing as soon as possible thereafter. If the new shaft is acceptable, fabrication of a second new pug mill shaft for the other new train will proceed.

On August 4, 1999, the Authority met once again with the contractor's senior management to address the continued slow progress of construction and start up of the new dryer trains. At the meeting, the contractor reaffirmed its commitment to complete the project and outlined the steps it was taking to resolve problems. The Authority has noted an increase in the work force since the meeting. Despite renewed progress, the Authority does not anticipate turnover of the new trains before October 1, 1999.

In the meantime, due to limitations in plant pelletizing capacity, the Authority has begun shipping some sludge cake for landfill disposal. The testing of the new dryer trains requires that dryer train No. 4 (one of the four original dryer trains) be off-line to make one of the four existing air pollution control devices known as Regenerative Thermal Oxidizers ("RTOs") available to support the new trains.⁴ With the loss of the drying capacity of dryer No. 4 during testing, combined with seasonal increases in secondary sludge during warmer weather, the remaining three dryers are unable to pelletize all of the sludge received from Deer Island. As a result, the Authority began bypassing two to three railcars of sludge cake a day to the ECDC back-up landfill on August 10. The bypass operation will continue four days a week until pelletizing capacity comes back into balance with sludge production.

(b) Residuals Backup Disposal Plan.

Discussions regarding the need to retain the residuals landfill site in Walpole are continuing.

5. CSO Program.

(a) Cambridge Sewer Separation.

Because of the unavailability of a key Cambridge official, the City of Cambridge asked to postpone the discussion planned for the August 11 meeting of the Authority's Board of Directors regarding the Cambridge sewer separation project, for which the scope and costs have escalated sharply.⁵ Cambridge representatives plan to attend the next Board meeting on September 15, 1999. The Authority will report further on its plans for the Cambridge project as soon as possible thereafter.

In the meantime, the Authority is moving forward with its reevaluation of other CSO control alternatives for Cambridge. Activities to date include detailed review of the original and supplemental preliminary design reports, including verification of the appropriateness of the cost estimates for sewer separation, determination of additional meter locations to update CSO flow estimates and initiation of modeling efforts. Cambridge is continuing its field investigations related to the new outfall discovered in 1998, to determine the extent of the area tributary to it and to develop accurate estimates of overflow frequency and volumes.

(b) North Dorchester Bay/Reserved Channel Consolidation Conduits and CSO Facility.

On July 23, 1999, the Secretary of Environmental Affairs (the "Secretary") issued the Certificate on the Notice of Project Change regarding the North Dorchester/Reserved Channel CSO projects filed by the Authority in June.⁶ A copy of the Certificate is attached as Exhibit "A." In the Certificate, the Secretary accepts the project changes proposed by the Authority and finds that no further review is required for purposes of the Massachusetts Environmental Policy Act ("MEPA").⁷ The Certificate also supports the Authority's recommendation to locate the new CSO facility at the site mid-way along Reserved Channel identified as "Site J."

With respect to design, the Authority completed its review of the 90-percent design documents and submitted its comments to the design consultant. The Authority expects to receive the 100-percent design documents early in the Fall. In connection with completing design, the consultant must incorporate the changes approved by the Secretary, as well as coordinate with the Neighborhood Working Group regarding certain design details, such as architectural treatments for the proposed buildings. The Authority must also complete its review of a recent proposal by the Boston Water and Sewer Commission to divert separate stormwater from one part of the project area, in order to determine whether the proposal would affect the Authority's plans to convey separate stormwater to the North Dorchester Bay consolidation conduit.

In the meantime, the Authority is working on completing other activities necessary for the commencement of construction, including obtaining regulatory permits from the Department of Environmental Protection ("DEP"), access permits from the Massachusetts Bay Transportation Authority ("MBTA") and state legislation to allow construction within designated parklands. The Authority is also continuing to work with the MBTA on coordination of activities at Site J.

The Authority is reviewing the proposed schedule for construction of the two consolidation conduits and the new CSO treatment facility to take into account the new information developed since its meeting in May with EPA and DEP regarding the project. The Authority has contacted the agencies to schedule another meeting in early September to update them on project developments and the Authority's schedule proposal.

(c) Hydraulic Relief Projects.

As anticipated in last month's report,⁸ on July 26, 1999 the Authority issued a Notice to Proceed with the construction contract for hydraulic relief projects at CSO outfalls CAM 005 and BOS 017. The projects are intended to reduce CSO discharges from these outfalls to the Upper Charles River Basin and the Lower Mystic River, respectively.

(d) Variance for Alewife Brook and Upper
Mystic River CSO Discharges.

On July 19, 1999, the Authority received comments from DEP on a proposed plan for receiving water monitoring in the Alewife Brook and Upper Mystic River during 1999, a plan submitted to DEP earlier this year in compliance with the Variance for CSO discharges to Alewife Brook/Upper Mystic waters. DEP approved the Authority's plan, subject to several conditions that responded to comments from the Mystic River Watershed Coalition and the Executive Office of Environmental Affairs' Boston Harbor Watershed Basin Team. The Authority's ongoing monitoring program now incorporates the DEP conditions.

By its attorneys,

Dated: August 13, 1999

NOTES:

1. The removal team consisted of highly trained and specialized divers with extensive experience performing underwater construction work while using breathing apparatus. The removal program was based on over a year of planning and preparation conducted prior to the team's arrival on site to begin mobilization activities in July.

2. To access each safety plug, a worker must crawl into the 30 inch diameter offtake pipe associated with each diffuser. The length of the offtake pipes varies. The most difficult safety plug to access was located at the end of the 20-foot offtake pipe at diffuser No. 1, which itself is at the end of the 375-foot length of 72-inch to 48-inch diameter pipe that forms the very end of the tunnel. Once reaching a safety plug, the worker must inspect to insure no water is behind the plug. The worker then loosens and removes the bolts and clips holding the plug in place and pushes the convex-shaped safety plug forward, turning it on its side. Finally, the worker pulls the 70-pound plug and associated hardware out of the offtake pipe and loads them onto a cart for transport to the tunnel shaft and ultimately to the surface.

3. The trip back to the shaft from the diffuser reach took approximately two hours.

4. The redesigned dryers incorporate recirculation of exhaust air, and the new dryer trains are designed to share the four existing RTOs. The old dryer trains are not equipped for recirculation and require a dedicated RTO for each dryer. Therefore, dryer No. 4 must be taken off-line in order to use RTO No. 4 for the testing of the new trains.

5. See July 15, 1999 Compliance and Progress Report, pp. 11-12, as well as previous reports on February 12, 1999, pp. 1016 and April 15, 1999, pp. 910.

6. See Compliance and Progress Reports dated June 15, 1999, pp. 16-19, and July 15, 1999, pp. 12-13.

7. The Certificate does require the Authority to develop and submit to the project Neighborhood Working Group and various regulatory agencies a draft plan for redirecting stormwater at Pleasure Bay. The draft and final plans must be included in the MEPA file.

8. See July 15, 1999 Compliance and Progress Report, p. 14.