

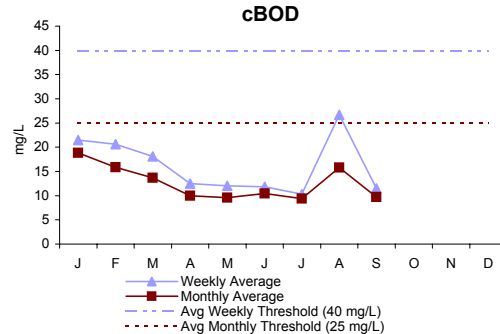
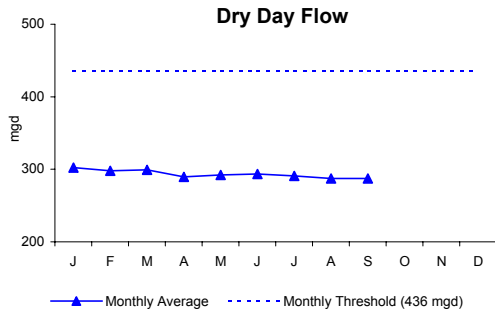
**Massachusetts Water Resources Authority  
Contingency Plan Quarterly Report on  
Deer Island Treatment Plant Effluent Monitoring  
Third Quarter 2002**

| <b>Effluent Characteristics</b>           |                 | <b>Threshold</b> | <b>Threshold Exceedence</b> |
|---|-----------------|------------------|-----------------------------|
| Dry Day Flow                              | mgd             | 436              | 0                           |
| cBOD: Monthly Avg                         | mg/L            | 25               | 0                           |
| Weekly Avg                                | mg/L            | 40               | 0                           |
| TSS: Monthly Avg                          | mg/L            | 30               | 1                           |
| Weekly Avg                                | mg/L            | 45               | 2                           |
| TCR: Monthly Avg                          | ug/L            | 456              | 0                           |
| Daily Avg                                 | ug/L            | 631              | 0                           |
| Fecal Coliform                            | col/100mL       | 14000            | 0                           |
| pH: Minimum                               | SU              | 6.0              | 0                           |
| Maximum                                   | SU              | 9.0              | 0                           |
| PCB, Aroclors                             | ug/L            | 0.000045         | 0                           |
| Total Nitrogen: Caution Level             | mtons/year      | 12500            | 0                           |
| Warning Level                             | mtons/year      | 14000            | 0                           |
| Acute Toxicity: Mysid Shrimp              | %               | 50               | 0                           |
| Acute Toxicity: Inland Silverside         | %               | 50               | 0                           |
| Chronic Toxicity: Inland Silverside       | %               | 1.5              | 0                           |
| Chronic Toxicity: Sea Urchin              | %               | 1.5              | 0                           |
| Oil and Grease, Petroleum Origin (Weekly) | mg/L            | 15               | 0                           |
| Plant Performance: Caution Level          | # of violations | 5                | 0                           |
| Warning Level                             | % noncompliance | 5                | 0                           |

\* - All levels are Warning Levels, unless specified

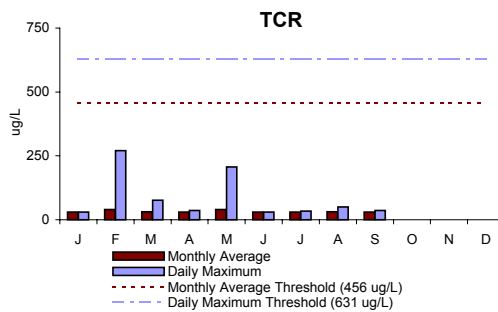
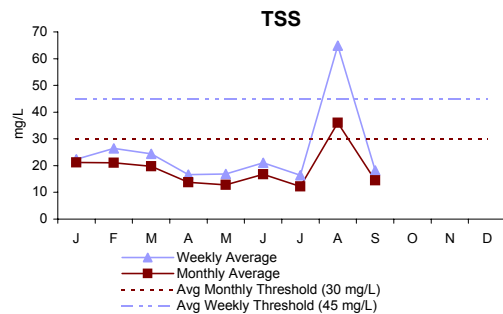
For Calendar 2001, the Deer Island Treatment Plant received a "Peak Performance Silver Award" from the Association of Metropolitan Sewerage Agencies (AMSA) for having only three NPDES permit violations. The AMSA Peak Performance Silver Award is presented to facilities not exceeding five NPDES permit violations in a calendar year (CY). Another measure of plant performance is percent of permit non-compliance. Deer Island's three NPDES permit violations, of a possible 1,632 violations, for CY2001 translates into 0.2% non-compliance, well below the warning level threshold of 5%.

The Total Suspended Solids (TSS) threshold exceedences in August 2002 were due to a secondary process upset that was caused by excessive growth of filamentous bacteria. The bacteria growth is believed to be related to an approved discharge of sulfate-rich industrial effluent into the MWRA system.



The dry day flow is calculated by averaging influent flow over the previous 365 days during dry weather. A dry day is defined as a day with < 0.09 inches of precipitation and no snow melt. In addition, the precipitation for the previous three days must be less than 0.3, 1.0, and 2.0 inches, respectively.

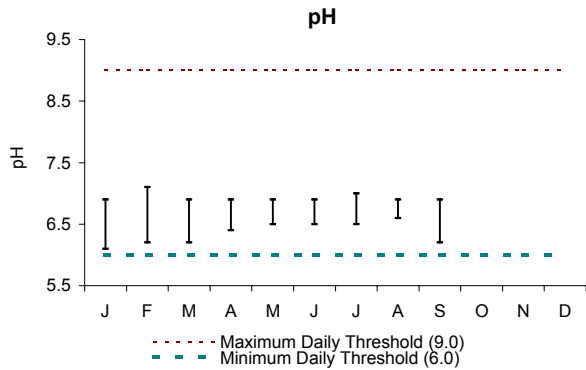
cBOD is a measure of the amount of dissolved oxygen required for the decomposition of organic materials in effluent. The weekly and monthly concentrations for the quarter were below threshold values. The 5-day cBOD percent removal range for the period was 87.9-92.4%.



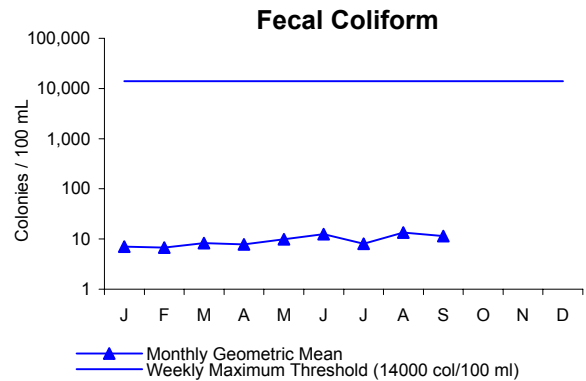
Effluent Total Suspended Solids is a measure of the amount of solids that remain suspended after treatment. There were three TSS threshold exceedences from July 2002-September 2002: Two average weekly thresholds and one average monthly threshold were exceeded. The TSS percent removal range for the period was 81.9-93.3%.

Total Chlorine Residual is the concentration of chlorine in the effluent as it leaves the treatment plant. Chlorine levels will drop off significantly as the effluent travels the length of the 9.5 mile outfall pipe.

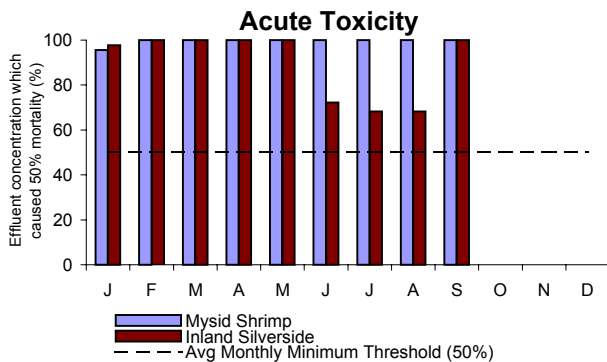
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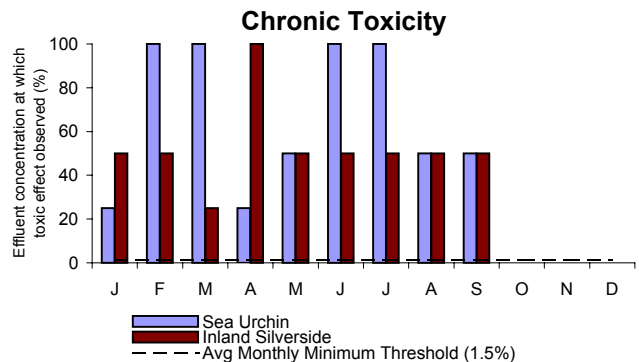
pH is a measure of the alkalinity or acidity of the effluent. Small fluctuations in pH do not have an adverse effect on marine environments, because seawater is well buffered. Secondary treatment technology at Deer Island tends to produce effluent at the low end of the range. All pH measurements were within the threshold range for the quarter.



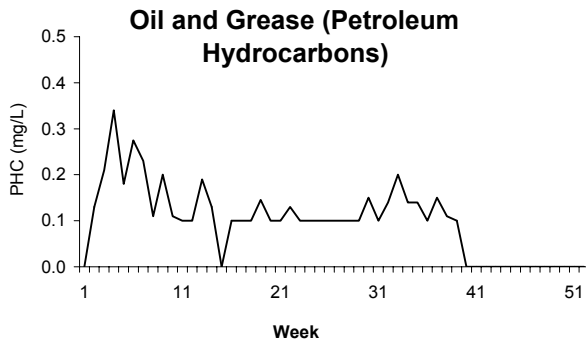
Fecal Coliform is an indicator of the presence of pathogens. The levels of these bacteria after disinfection show how effectively the plant is inactivating disease-causing microorganisms. The Contingency Plan requires that the monthly geometric mean not exceed 14000 col/100ml. The monitoring results for the quarter were well below the threshold value.



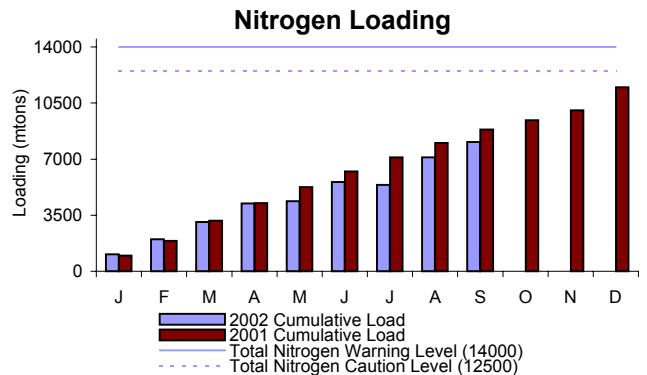
The acute toxicity test simulates the short-term toxic effects of pollutants in sewage effluent on marine animals. The test measures the concentration (percent) of effluent that kills half the test organisms within four days. The higher the concentration of effluent required, the less toxic the effluent. For permit compliance, the effluent concentration that causes mortality to mysid shrimp and inland silverside must be at least 50%. The threshold limits were met for the quarter.



Typically, effects of chronic exposures differ from those of acute exposures. Because of this, chronic toxicity responses are not necessarily related to acute toxicity. The chronic toxicity test simulates the long-term toxic effects of pollutants in sewage effluent on marine animals. To meet permit limits, at least 1.5% effluent must show no observed effect on the growth and reproduction of the test species. The threshold limits were met for the quarter.



The graph depicts PHC readings well below the Contingency Plan Threshold warning level of 15 mg/L per week. A reason for such low levels is that PHCs are less dense than water and therefore tend to float and adhere to floating materials (scum). Scum collection mechanisms in place at the primary and secondary clarifiers at DITP remove these materials.



Total nitrogen is not regulated under the permit, but the Contingency Plan requires it to be closely monitored because of its potential effects on Massachusetts Bay. Total nitrogen includes total kjeldahl nitrogen, nitrates, and nitrites. The cumulative load for Calendar Year 2001 was below the caution and warning thresholds.