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*DEM Investigation of Issues
Associated with
Charbert, Division of NFA Corp*



David Chopy, DEM Compliance Office

Ernie Panciera, DEM Water Office

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Discussion Topics

- History of Wastewater Lagoons
- History of Soil Stockpiles
- Notice of Violation
- Consent Agreement
- Closure of Lagoon 4
- Wetland Restoration
- Status of Lagoons 1-3



River Street

Poplar Avenue

Approximate Boundary

2001
Soil Stock Pile

200 Foot Riverbank Wetland

2004
Soil Stock Pile

Pawcatuck River

L1
L2
L3
L4

1998
Soil Stock
Pile

Wood River

History of Wastewater Lagoons

- Company received approval from DOH in July 1976 to construct Lagoons 1-3. Lagoons designed to infiltrate wastewater into underlying soil
- Company constructed Lagoon 4 between April 1981-April 1985 without approval from DEM
- A portion of Lagoon 4 constructed in 200 Foot Riverbank Wetland
- Company submitted application to DEM in December 1992 for a UIC permit for Lagoons 1-3. Approval issued by DEM in December 1992-no mention in application of Lagoon 4.

History of Wastewater Lagoons

- Inspections by DEM in December 1998 revealed that wastewater was leaching into the Pawcatuck River from Lagoon 4
- Test results of leachate revealed presence of Chromium, Lead, Naphthalene, and Zinc
- Test results of Lagoon 4 revealed presence of Barium, Chromium, Copper, Lead, Nickel and Zinc
- Company stated that Lagoon 4 used when maintenance of Lagoons 1-3 required

History of Soil Stockpiles

- July 1976 approval by DOH for Lagoons 1-3 allowed for periodic removal of surface layer of organic material and stockpiling on property
- Stock piles came under DEM jurisdiction in 1987 with promulgation of solid waste regulations
- 2 soil stock piles present in 1998 - approximately 3,800 cubic yards
- Sampling conducted in 2001 to characterize soil stock piles and determine if suitable for reuse in closure of Lagoon 4
- Samples analyzed for volatile organics, semi-volatile organics, total petroleum hydrocarbons, priority pollutant metals, and leachable metals - approximately 150 compounds in total

History of Soil Stockpiles

- Sample results revealed low levels of metals and volatile organics below regulatory standards and an unknown hydrocarbon
- Sampling conducted in January 2005 to characterize unknown hydrocarbon – results revealed that 90% of the unknown hydrocarbon was silicone based, not petroleum based
- Silicone is a common component of many compounds used during the finishing of fabric
- Sampling conducted in February 2005 to characterize soil stockpiled in 2001 and 2004 and determine if suitable for reuse in closure of Lagoon 4-same compounds as previously analyzed

History of Soil Stockpiles

- Sample results revealed that all compounds detected below DEM residential direct exposure criteria and leachability criteria
- Company requested permission to reuse 2,000 cubic yards of soil stockpiles for closure of Lagoon 4 and remaining 5,600 cubic yards for closure of Lagoons 1-3
- DEM concurred that soil stockpiles were suitable for reuse for closure of Lagoons and approved request

Consent Agreement

- Executed July 25, 2005 to settle appeal of Notice of Violation
- Company paid \$9,500 fine and agreed to specific actions to correct violations, among which were:
 - closure of Lagoon 4
 - reuse or removal of soil stockpiles
 - restoration of Riverbank Wetland
- Consent Agreement vacated by Superior Court judge October 17, 2005 after appeal by Town of Richmond
- Supreme Court issued stay of Superior Court decision January 6, 2006

Consent Agreement

- DEM issues letter to company December 15, 2006
 - advises company it is not acting in good faith to evaluate wastewater alternatives
 - requires closure of Lagoon 4 and restoration of Riverbank Wetland in accordance with Consent Agreement or submission of required reports to evaluate wastewater alternatives
- Company advises DEM November 5, 2007 of its intention to close plant and proceed with closure of Lagoon 4 and restoration of Riverbank Wetland as required in Consent Agreement

Closure of Lagoon 4

Closure of Lagoon 4 requires following actions:

Step 1- submission of sampling plan to DEM to characterize sediment in the lagoon

Step 2- completion of sampling within 45 days of approval of sampling plan by DEM

Step 3- submission of application to DEM within 30 days of completion of sampling that includes written report summarizing sample findings, method to close lagoon, and schedule

Step 4- publish notice in newspaper providing opportunity for public comment on the application

Closure of Lagoon 4

- Step 4- publish notice in newspaper providing opportunity for public comment on the application
- Step 5- provide summary of public comments to DEM within 30 days of end of public comment period
- Step 6- DEM review of public comments and issuance of approval for application, if appropriate
- Step 7- initiate closure of lagoon within 14 days of DEM approval of application and completion of work in accordance with schedule included in application

Closure of Lagoon 4

- Currently at Step 6 – the company published the notice in Providence Journal on March 2, 2008 and DEM received no comments
- DEM will shortly issue the approval and the company will have until July 1, 2008 to complete the closure
- Company will take following actions to close Lagoon 4:
 - use 1,400 cubic yards of on-site gravel within the Riverbank Wetland to match surrounding grade
 - use 2,000 cubic yards of stockpiled soils outside of Riverbank Wetland to match surrounding grade
 - loam and seed disturbed soils and allow area to vegetate naturally

Wetland Restoration

Wetland Restoration requires following actions:

Step 1- remove all unauthorized fill material from Riverbank Wetland

Step 2- backfill all excavated areas to match surrounding grade

Step 3- stabilize all regraded areas with loam and wildlife conservation seed

Step 4- plant the Riverbank Wetland with trees and shrubs

Step 5- complete all work within 180 days of approval of Lagoon 4 closure application

Status of Lagoons 1-3

- Discharge to Lagoons 1-3 ceased at the end of March.
- Lagoons are draining out at different rates. Lagoon 2 has the fastest infiltration rate.
- Lagoons 1 and 3 are being pumped into Lagoon 2 to facilitate drainage.
- Quarterly groundwater monitoring in vicinity of lagoons will continue in compliance with the UIC Order of Approval.

Status of Lagoons 1-3

- Closure Steps:
 - Submit sampling plan for lagoon sediments (similar to that done for lagoon 4).
 - Complete sampling.
 - Submit closure application.
- Continue sampling groundwater monitoring wells in vicinity of lagoons for at least 1 year post closure.

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RI Department of Environmental Management

For additional information, please contact:

David Chopy

DEM, Office of Compliance and Inspection

222-1360 extension 7257

or

david.chopy@dem.ri.gov

Ernie Panciera

DEM, Office of Water Resources

222-4700 extension 7603

or

ernie.panciera@dem.ri.gov

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