

Bellmawr Waterfront Development



**BROWNFIELDS DEVELOPMENT AREA
STEERING COMMITTEE:**

February 26, 2018

BROWNFIELDS VS. SUPERFUND SITES

- Solid Waste vs. Hazardous Waste
- State & Local Involvement vs. Federal Involvement

BROWNFIELDS:

- Abandoned, Poorly Maintained, Unused Industrial Sites
- Advanced Remedial Technologies & Processes make Restoration/Remediation Possible
- Low Environmental Health Risk

BENEFITS OF BROWNFIELDS REMEDIATION

- Revitalize Community
- Create Jobs
- Expand Tax Base
- Increase Surrounding Property Values
- Improve Environmental Health

HISTORY AND DESIGNATION AS A BROWNFIELD

- 1962 to 1979 Landfill Operations
- 1982 Closure with 2-3 Foot Soil Cover Completed
- Mid-1980's EPA (Federal) Determined NOT a Superfund site.
 - Deep Groundwater (Aquifer) Not Impacted: Thick Clay Layer
- 2004 Recognized Cap Poorly Maintained: Ponding, some Leachate Discharged & Exposed Trash along Creek.
- Mayor Filipek and Bellmawr Council Sought Solutions

HISTORY AND DESIGNATION AS A BROWNFIELD

- Bellmawr Waterfront Development, LLC was formed to Investigate the Environmental Conditions and Explore the Potential Feasibility of Future Development
- 2004 Mayor Filipek and Bellmawr Council worked with Camden County, Gloucester County and NJ State Officials to build a Coalition to Address Environmental Conditions at Landfill.
- Late 2004, under the Leadership of Mayor Filipek and Bellmawr Council a Plan was created to Finally Improve Conditions at the Landfill.

BROWNFIELD DEVELOPMENT AREA: NJDEP WORKS WITH LOCAL COMMUNITIES

- The 4 Goals of Bellmawr's Plan were:
 - Remediate the Landfills
 - Maintain Possibility of Future Access to Waterfront
 - Maintain Possibility of Future Commercial Development
 - Minimize Financial Risk to Bellmawr Taxpayers
- In Order to Accomplish These Goals a Team of Public and Private Members was Assembled.

BROWNFIELD DEVELOPMENT AREA: NJDEP WORKS WITH LOCAL COMMUNITIES

- Gary R. Brown, P.E., LSRP, President of RT Environmental Services, Inc, and Nationally Recognized Expert in Large-Scale Remediation Projects
- Bellmawr Waterfront Development, LLC, a Private Brownfield Real Estate Development Company, and whose Principals have Significant Experience in Brownfield Remediation and Redevelopment.

BROWNFIELD DEVELOPMENT AREA: NJDEP WORKS WITH LOCAL COMMUNITIES

- In Order to Implement Plan, BWD agreed to Acquire Title to the Two Landfills that were not already owned by Borough.
- BWD also Agreed to Accept the Enormous Job of Remediating all 3 Landfills.
- BWD Funded the Cost of the Remedial Investigation
- BWD Obtained the Federal and State Permits in order to Proceed with Remediation
- BWD was the Party that Executed the MOU with NJDEP
- Under the MOU BWD Voluntarily Agreed to Complete Remediation

NJDEP OVERSIGHT OF ALL REMEDIATION ACTIVITIES

- NJDEP Approved Remedial Investigation
- NJDEP Approved Remedial Action Workplan
- NJDEP Approved Soil Reuse Plan
 - Prior to Acceptance: Tested by NJ State Certified Laboratory, Application Profile including Site Environmental History.
 - Screened and Monitored During Acceptance
- NJDEP Conducts Regular and Unscheduled On-Site Compliance Inspections: NO Violations Ever Issued since Remediation Work Commenced in 2007.
- Monthly, Quarterly and Annual Reporting to NJDEP.

Bellmawr Waterfront Development



View: Phase I Sideslopes adjacent to Beaver Brook and Route 42

BWD THEN AND NOW

1970'S



2016



VIEW OF PHASE I LANDFILL ACTIVITIES FROM 1970'S



CAPPING: SOIL REUSE PROGRAM

8 Million Tons of Soil

Purpose:

- Meet NJDEP Landfill Closure Requirements
- Appropriately Grade & Cap Municipal Landfill
 - Inhibit Generation of Waste Water (Leachate)
- Create 27 Acres of Public Space
- Prepare 73 Acres for Redevelopment



Capping Construction Completed to Date

- Phase I: Remediation and Final Top Cap – 100%
- Phase II: Remediation and Final Top Cap- 90%
- Phase III: Remediation and Final Top Cap- 85%
- *FINAL CAP COMPLETED ON ALL SIDESLOPES ADJACENT TO BIG TIMBER CREEK, BEAVER BROOK, RT 42, RT 295.*



PHASE I REMEDIATION & CLOSURE

View: Final Cap System



COMPLETED CAP CONSTRUCTION



*View: Phase I Sideslopes, Beaver
Brook*



*View: Phase II Sideslopes, Big Timber
Creek*

COMPLETED CAP CONSTRUCTION



View: Phase III Sideslopes seeded



View: Phase III Rt. 295 Sideslopes

WATER MANAGEMENT:

Stormwater (Rainfall), Shallow Groundwater (Leachate),
Surfacewater (Big Timber Creek, Beaver Brook)

Purpose:

- Meet NJDEP Remediation Regulations
- Inhibit Infiltration of Water into Waste Mass
- Inhibit Migration into Big Timber Creek and Beaver Brook
- Prevent Erosion
- Reduce Rate of Decomposition
 - Reduce Rate of Production of Methane/Landfill Gases
- Continuous Monitoring Program
 - Measures Success of Remedial & Closure Technologies

WATER MANAGEMENT:

Stormwater (Rainfall), Shallow Groundwater (Leachate),
Surfacewater (Big Timber Creek, Beaver Brook)

Construction Completion:

- Stormwater Pipes: 100%: 4,563 Linear Feet of Piping
- Upgradient (Land-side) Cutoff Wall and Underdrain System: 100%: 1,800 Linear Feet
- Stormwater Culvert System: 100%: Entire Project Length Rt. 42
- Stormwater Drainage Channels: 100%
 - Lined Swales and Berms: 70%

WATER MANAGEMENT CONSTRUCTION



View: Phase I Lined Swales



View: Phase III Rip Rap Channel



View: Phase I Rip Rap Channels



View: Phase III Geodrain Conveyance

WATER MANAGEMENT CONSTRUCTION



*View: Phase I Berms, Lined Swales
prior to seeding*



*View: Phase III Berm and swale system
prior to seeding*

REMEDIATION ACHIEVEMENTS

- Nearly All Stormwater and Off-site Groundwater Diverted around Waste Mass
- Contaminants from Landfill not detected in Big Timber Creek
- Contaminants in Shallow Groundwater are Stable or Declining
- Eliminated Need for Active (Mechanical) Gas Management System in Phase I
 - 2014 Landfill Gas Yield Test Conducted
 - 2014 NJDEP Approved Passive (Gravity) Gas Management System (2007: Phases II and III)
 - Continued Monitoring in Post Closure Period
 - Perimeter Monitoring: Step-out Procedure

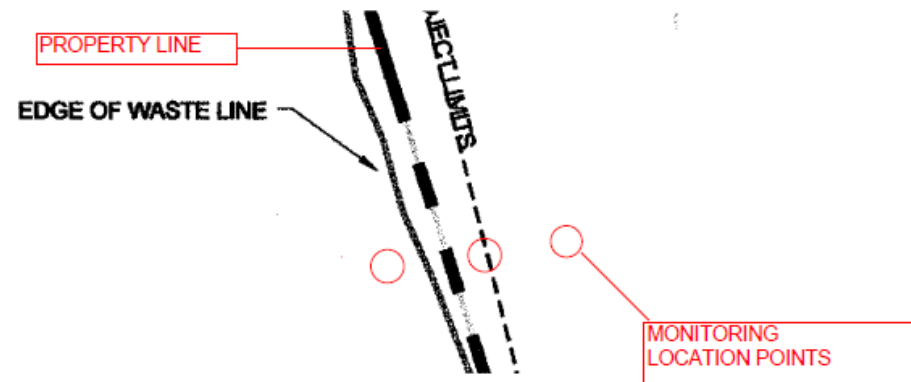
METHANE

- According to NJDEP Vapor Guidance, Methane is Non-Toxic
- The Largest Production Source of Methane is from Industrial Emissions of the Oil and Gas Industry
- Methane is Natural and Man Made
- According to U.S. Department of Labor Occupational Safety and Health Administration, Methane is not classified as a human carcinogen

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GAS MONITORING POINTS

LANDFILL GAS MONITORING: STEP-OUT PROCEDURE SAMPLING:



ANNUAL STREAM MONITORING OF BIG TIMBER CREEK



WATER MANAGEMENT CONSTRUCTION



View: Upgradient Cutoff Wall



View: Upgradient Stormwater Pipe



View: Underdrain for Cutoff Wall

BELLMAWR WATERFRONT DEVELOPMENT:

Remaining Construction & Post Closure Care

- PHASE II: Final Top Cap
- PHASE III: Final Top Cap & Swale Liners

POST CLOSURE CARE:

- Cap Maintenance
- Stormwater Maintenance
- Groundwater Monitoring
- Gas Monitoring

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□ PREPARED BY:

□ BELLEMAWR WATERFRONT DEVELOPMENT,
LLC.

□ and

□ RT ENVIRONMENTAL SERVICES, INC.:

□ GARY R. BROWN, P.E., L.S.R.P., PRESIDENT

□ JENNIFER BERG, PROJECT MANAGER