Development of Long Term Monitoring and Maintenance Programs for Sister Sites: Tar Ponds/Coke Ovens and Sydney Steel Plant

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Outline of Presentation

• Brief background Tar Ponds/Coke Ovens sites
• Regulatory Context
• Remediation/Management Plans
• LTMM Plan Approval
• Brief background Harbourside Comm. Park
• Regulatory Context
• Remediation/Management Plans
• LTMM Plan Approval
• Conclusions
Tar Ponds Map and Issues

• North and South Ponds 34 hectares
• Over 700,000 tonnes of PAH and Metals Contaminated Sediments
• 5% of Sediments Contained PCBs
Coke Ovens Map and Issues

- Coke Ovens Site 68 hectares
- 560,000 tonnes of Petroleum Hydrocarbons, PAHs and Metals Impacted Soils
- Add. 1,300 tonnes of PAH Contaminated Sediment in COB and COBC
- Add. 25,000 tonnes Contaminated Soil at Tar Cell
Tar Ponds and Coke Ovens Remediation Plan

• Tar Ponds:
  – Construction of Materials Handling Facility
  – Solidification/Stabilization
  – Channel Construction
  – Surface Cap

• Coke Ovens:
  – Coke Ovens Brook Reconstruction
  – Tar Cell Solidification/Stabilization
  – Cutoff Wall Construction
  – Surface Cap
  – Groundwater Collection System and Water Treatment Plant
Regulatory Context

- Canadian Environmental Assessment Act
- NS Environment Approvals of Components
- Environmental Management Plan
- Env. Protection Plans (General and Component Specific)
- NSE Approval of LTMM Plan
EPP & EEM

• EPP:
  – EEM for construction activities
  – LTMM to provide ongoing data for long term management and maintenance, and compliance commitments to regulatory agencies and other stakeholders
  – Defined groundwater and surface water monitoring programs for EEM and LTMM
    • Monitoring Targets
    • Sampling Locations
    • Sampling Parameters
    • Sampling Frequency and Duration
  
• EEM:
  – Current and previous analytical sampling results and trending analysis
  – Provided information regarding some changes to original EEM
2013 LTMM Process

Monitor well selection for the LTMM program was based on:

– Requirements of the project EPPs
– EEM and groundwater monitoring reports
– Changes to the design during construction
– Monitor well location drawings
Summary of LTMM

• General Information About LTMM
• Roles and Responsibilities
• Provisions of LTMM
  – Cap Monitoring
  – Surface Water Monitoring
  – Groundwater Monitoring
• Alterations to Original LTMM
• Quality Assurance & Quality Control
MW Location Map
SW Location Map
Harbourside Commercial Park

- Approx. 170 hectares (420 acres)
- 70 hectares of estuary infilled
- Varied surrounding land use
  - Residential (Whitney Pier, North End)
  - Commercial (Terminal Road, Prince St.)
  - Brownfield (Coke Ovens/Tar Ponds)
Demolition

50 buildings and structures demolished.
15 buildings retained, including:

- Engineering
- Administration
- General Warehouse
- Rail Head Hardening
- 8 Bay RFM Extension
- Oxygen Plant
- Truck and train scale house
- Fuel cell building
- North water treatment plant
- Rail Mill Office
- North, South and EAF Substations
- Rail Mill Maintenance Building
- Portside Aggregates facilities
- South Water Treatment Plant
- Port Facility
Regulatory Context

• No triggers for a federal or provincial environmental assessment
• Nova Scotia Environment Approval required under the Activities Designation Regulations (reclamation of an iron and steel mill)
• Voluntary adherence to NS Contaminated Sites Guidelines
Phased Environmental Site Assessment

Millcreek Lease Area (EBS)

Approved Disposal Sites
Excluded Area
Lease Area
Study Area
Impacted Areas

- Coal Tar Impacts
- Petroleum Impacts
- Combined Impacts
Remedial Approach

• Risk Management through development of SSTLs
• Excavation and ex situ solidification / stabilization of petroleum- and PAH-impacted soils
• Bioremediation of select materials
Risk Management

• Statistical evaluation of data
• Development of Site-Specific cleanup criteria
• Remediation of isolated petroleum impacts
• Long-term management:
  ❌ Land use restrictions
  ❌ Site operations protocols
• Development of Environmental Management Plan as part of NSE Approval
• Ongoing groundwater monitoring and updating of EMP
Environmental Management Plan

- Surface Soil
- Subsurface Soil
- Groundwater
- Surface Water
- Air Quality
- Erosion and Sediment Control
- Imported Fill Quality Control
- Remedial Activities
Current Situation

• Habourside Commercial Park has assumed ownership of former Tar Ponds and Coke Ovens sites

• Tar Ponds → Open Hearth Park

• Coke Ovens → Harbourside East

• Nova Scotia Lands Inc. responsible for LTMM for all three sites

• Approved monitoring plans in place
Conclusions

• 3 sites with a shared history and notoriety now under control of one organization
• Two separate LTMM plans but data will be compiled by one organization
• Cohesive and comprehensive monitoring and response plans