Discussion of Proposed IRM and Related Issues

Operable Unit 3
(Former Grumman Settling Ponds – Bethpage Community Park), Bethpage, New York
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Overall RI/FS Approach

- On Site: Soil, Soil Vapor, and Groundwater RI
  - Includes identification of source area(s) for potential IRM.
- Off Site: Groundwater RI
  - Includes new scope to characterization VOCs near site and identify areas contributing to soil vapor.
- Groundwater IRM Proposal – NGSC has committed substantial funding for an IRM in the near-term.
- Complete FS based on more complete understanding of the plume.

Why is an IRM Preferable?

- An IRM is preferable at this time because:
  - An IRM will control potential off-site migration of VOCs prior to off-site soil vapor sampling, as changes in groundwater quality may affect soil vapor quality.
  - An IRM will improve groundwater quality.
  - Off-site soil vapor sampling will be re-considered after an IRM is implemented.
- In accordance with DER-10, an IRM is encouraged to address a source or exposure pathway before completion of the RI.
- NGSC seeks an on-site IRM that will have immediate benefits.

IRM Objectives & Benefits

- Mitigate the potential off-site migration of VOC-impacted groundwater.
- Expedite the schedule for site remediation and the removal of contaminants.
- IRM will constitute part of the final remedy.

IRM General Description

- The proposed IRM will be:
  - Designed to remove dissolved phase VOCs in groundwater migrating from the Park.
  - Installed on the NSGC-owned Plant 24 Access Road area south of the Park.

IRM Technologies "Short List"

- IRM technologies under consideration at this time include:
  - Permeable Reactive Barrier (PRB) (favored at this point).
  - In-well Air Sparge System.
  - Other technologies, as deemed appropriate.

Permeable Reactive Barrier

- In-situ reactive barrier wall composed of zero-valent iron (ZVI) installed via specialized wells.
- Proven technology, effective on VOCs.
- ZVI barrier dimensions to be determined based on the data obtained.
- Remediation Process - abiotic degradation.

Permeable Reactive Barrier (cont'd)

- PRBs can be installed with minimal disturbance to the community (short term and long term).
- O&M is minimal.
- Long-term environmental effectiveness monitoring program will be implemented.

In-Well Air Sparging

- Proven technology, effective on VOCs.
- Preliminary Design:
  - In-Well Air Sparge Wells and Pumps.
  - Air Blowers.
  - Buried groundwater and vapor pipelines.
  - Vapor Treatment System, using vapor-phase GAC.
  - Structure to house above grade equipment.
- Remediation Process – Mass Transfer.

In-Well Air Sparging (cont'd)

- Ex-situ treatment of groundwater not needed, thus disposal of treated groundwater not needed.
- Once installed, minimal disturbance to community.
- Ongoing O&M required.
- Long-term environmental effectiveness monitoring program will be implemented.

Proposed Community Outreach

- The IRM proposed by NGSC would be *non-time critical*.
- NGSC will conduct appropriate public availability sessions or public meetings.

PRB Tentative Schedule

- If PRB is selected as IRM remedial technology, then schedule requires ~12 months to implement (with expedited agency review & approval and expedited community participation process).
- If another technology is selected, then the following schedule applies.

Typical Tentative Schedule – 2006

- Applies to technologies other than PRB.
- First / Second Quarters of Year 2006:
  - In conjunction with RI:
    - Complete delineation of VOC plume in Park/Access Road Areas.
    - Collect data for IRM determination.
  - Select IRM Technology(ies) for Pilot Testing.
  - Submit Pilot-Test Work Plan to NYSDEC.
- Third / Fourth Quarters of Year 2006:
  - Finalize Pilot-Test program, Implement Pilot Test(s), and Submit IRM Work Plan to NYSDEC.

Tentative Schedule - 2007

- First Quarter in Year 2007:
  - NYSDEC/Public comment.
  - Finalize IRM Work Plan.
- Second Quarter in Year 2007:
  - Prepare technical specifications.
  - Implement competitive bid process.
  - Implement IRM.