

Corrective Action Program Review Waynesboro Invista Plant



October 10, 2007

Corrective Action Programs

- RFI Investigations
- Outfall Monitoring
- Groundwater Monitoring
- Sewer Investigation
- Next Steps

Site History

- 177 acres, abundant water, railroad, workforce
- Acetate flake and yarn operations 1929-1977
- Mercury used from 1929-1950
- Other products:
 - Orlon 1958 – 1990
 - Permasep 1960 – 2000
 - Lycra 1962 – current
 - BCF Nylon 1978 - current



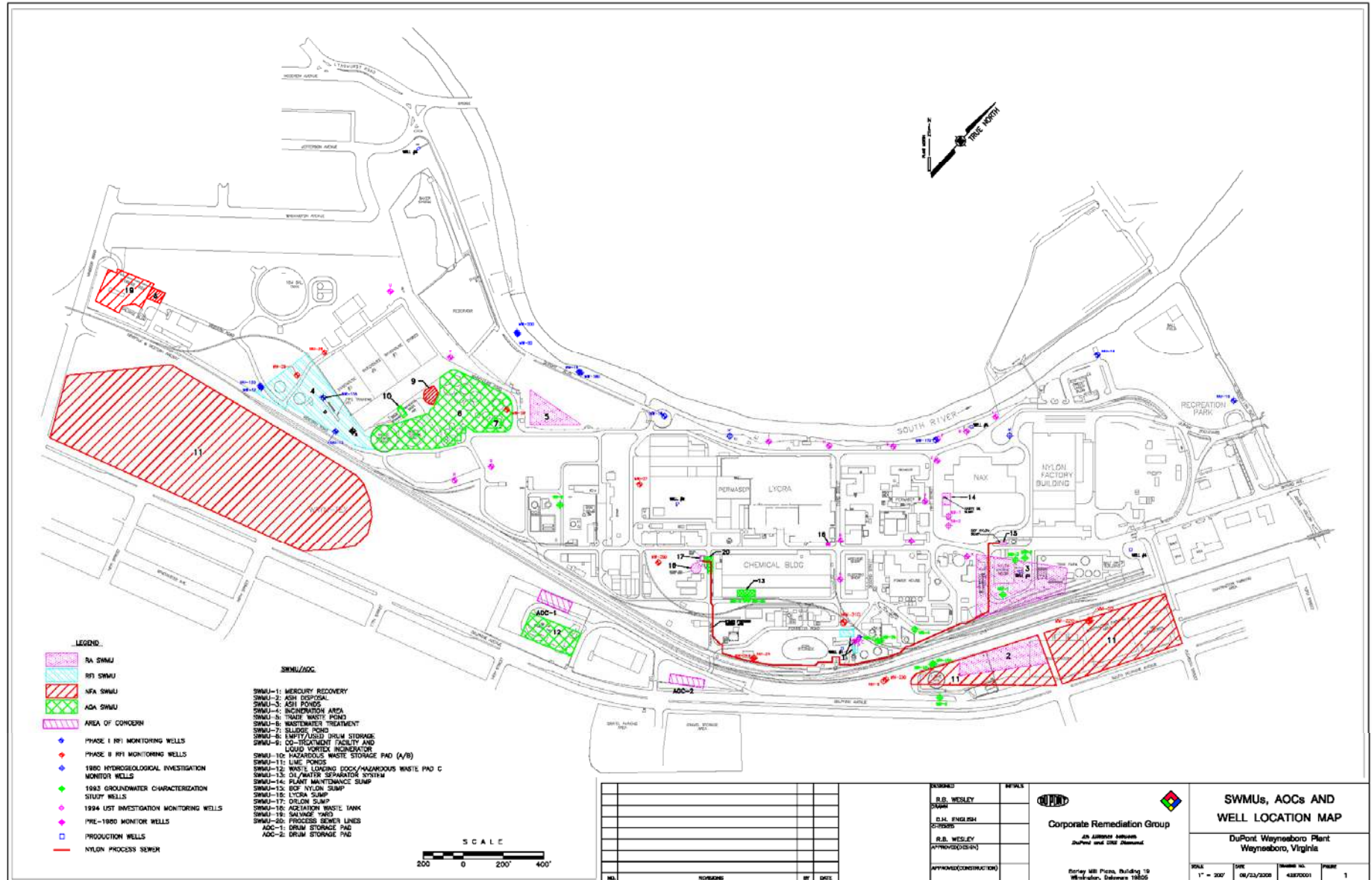
Site History (cont.)

- Plant assets sold to Koch Industries (Invista) in 2003
- Property (land) transfer upon the completion of the Corrective Action Program

RFI Investigations

- Plant RCRA Facility Investigation (RFI)
- Semiannual Groundwater Monitoring Program
- Stormwater (Outfall) Monitoring
- Sewer Investigation

Plant RFI



Plant RFI

- SWMU Status
 - 20 SWMUs identified in RCRA Permit
 - Classified as RA, RFI, AOA and NFA
 - 4 SWMUs currently under investigation
 - 12 SWMUs recommended for no further investigation
 - 4 SWMUs recommended for no further action

Plant RFI (cont)

- Phase I and II (2000-2001 and 2004-2005)
- Phase III (2007)
- Soil Sampling
 - 4 SWMUs
 - 76 soil samples + QA/QC
 - VOCs, SVOCs, metals, meHg, HMD, DMF, DMAC
- Groundwater Sampling
 - 5 samples + QA/QC
 - VOCs, SVOCs, metals, meHg, HMD, DMF, DMAC
- Other Activities
 - Groundwater level measurements

Plant RFI (cont.)

- Phase III
 - SWMU -1 (Mercury Recovery Area)
 - Collected soil samples where previous Hg in soil gas was high
 - Sampled former process ditches in Chemical Bldg area for Hg
 - SWMU – 4 (Incineration Area)
 - Additional delineation of Hg in soil
 - SWMU 6/7 (WWTP / Sludge Pond)
 - Geoprobe soil sampling to determine source of constituents at well MW-29
 - Drilled 2 wells to determine if constituents are migrating from this SWMU

Plant RFI (cont.)

- Phase III (cont'd.)
 - Northeast Area Investigation
 - Located and restored Well #1 surface completion
 - Geophysical logging performed
 - Plant well sampling
 - Water level study to evaluate effect of plant well pumping on overburden wells – on going

Plant RFI (cont.)

- **Phase III (cont'd.)**

- Preliminary Findings of Well #1 Logging

- Open to 600', 12" casing extends to 187', Surface casing in good shape and grout seal intact
 - Borehole diameter is highly variable and may be affected by solutioning of carbonate bedrock
 - Acoustic Televiwer (ATV) log not useable due to large borehole diameter variability
 - Series of significant water bearing zones below 430'
 - Borehole fluid is highly conductive indicating large concentrations of dissolved minerals
 - Results do not indicate that the well serves as a conduit for the migration of shallow water to the bedrock aquifer

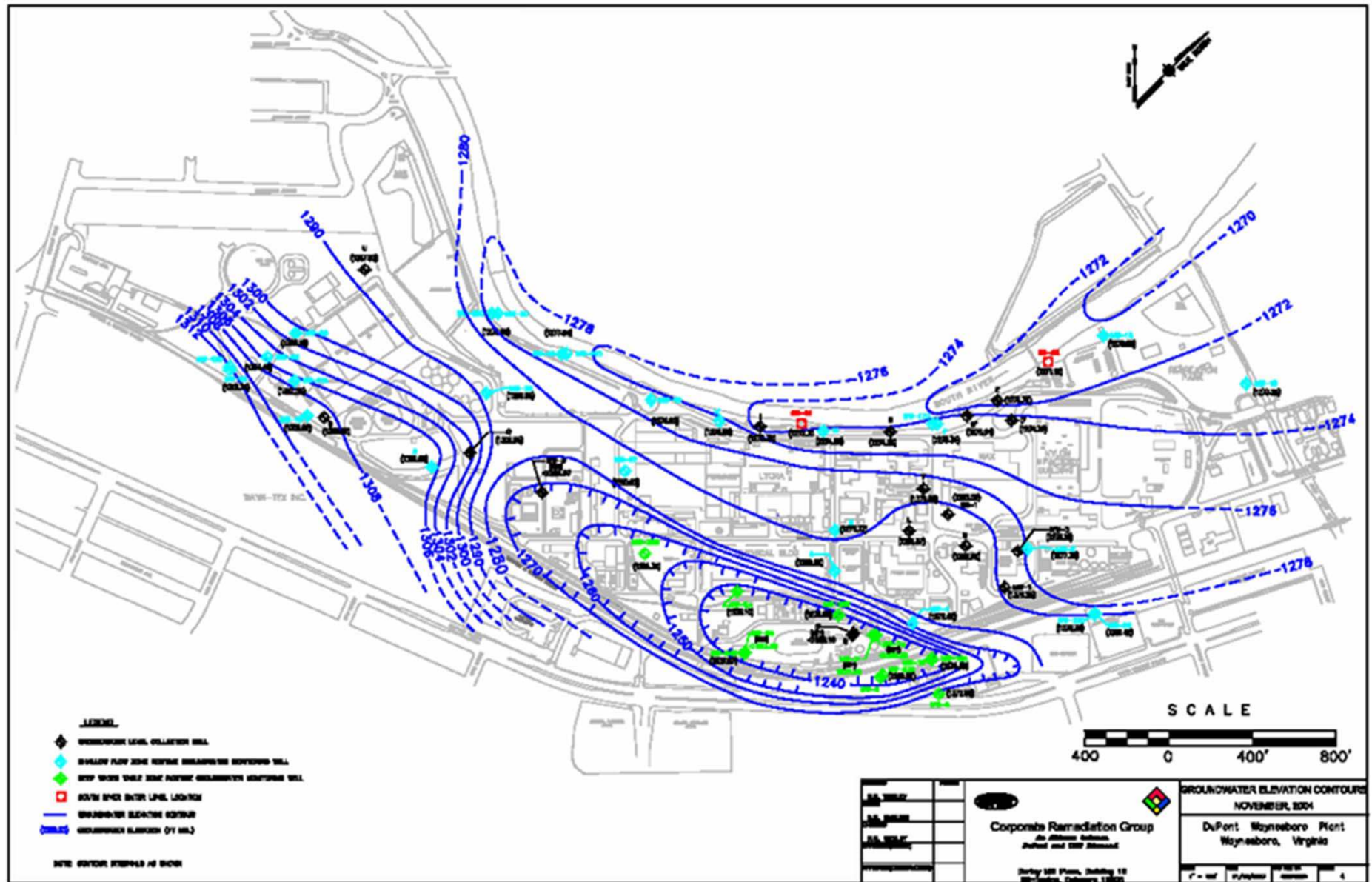
Plant RFI (cont.)

- **Phase III A (planned for 2008)**
 - Investigation of Hg in Chemical Building area and SWMU 1
 - To be accelerated
 - Interviews, test pits, soil and soil gas sampling
 - Northeast Area Investigation
 - Sample Well #1, additional water level study
 - SWMU 4
 - Additional delineation of Hg, sampling of seeps
 - SWMU 6/7
 - Investigate groundwater downgradient to the north

Groundwater Monitoring Program

- Semiannual monitoring program recommended after the Phase I RFI
- Monitoring Plan submitted in 2004 (38 wells, 55 water levels)
- Three and a half years (7 events) of sampling completed to date
- Findings
 - Hg concentrations localized at SWMU-1, SWMU-4 and SWMU 6/7
 - Deep Water Table Zone water levels (Northeast Area) fluctuate significantly
 - Downgradient perimeter wells are below VGS criteria

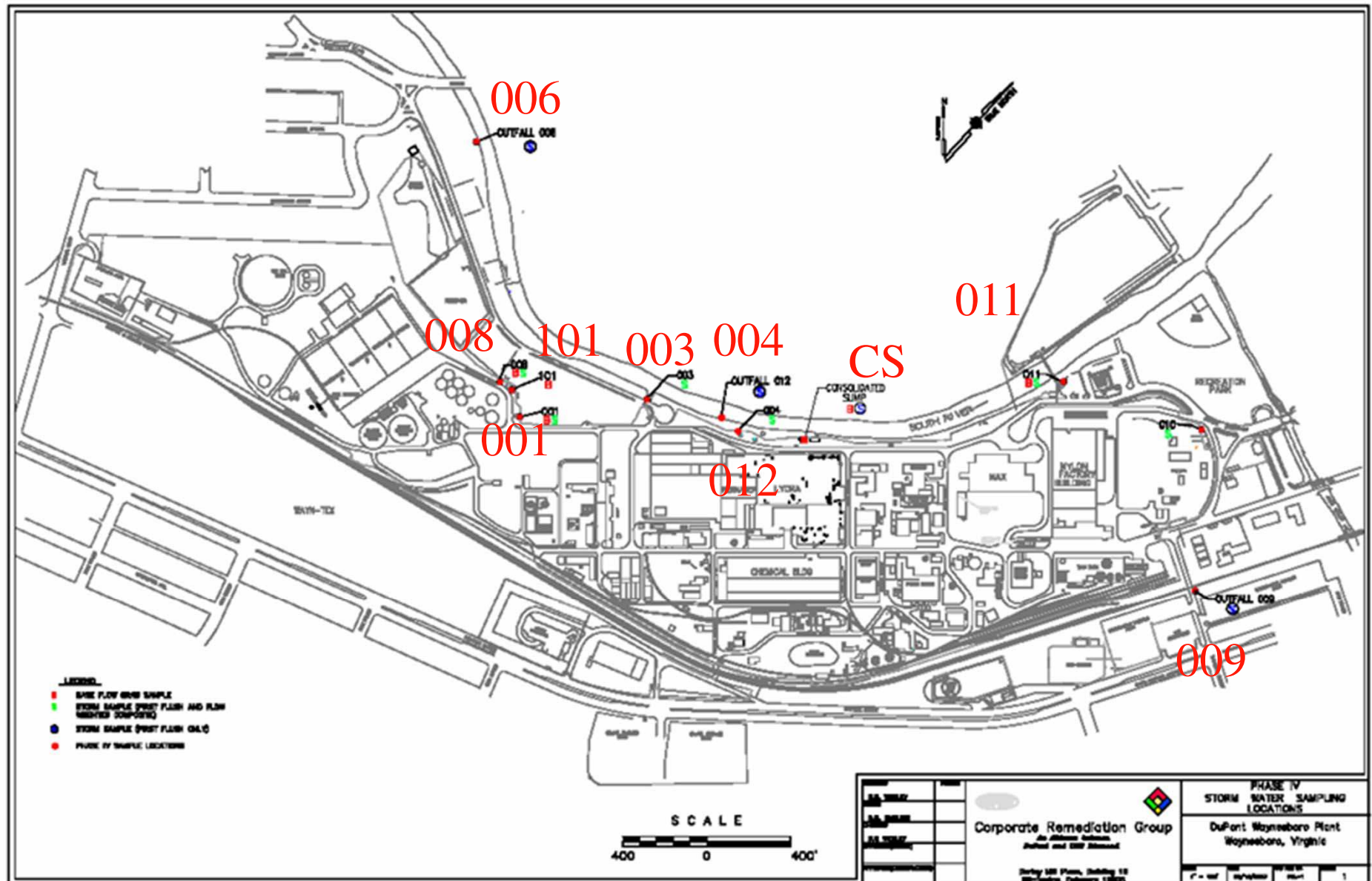
Groundwater Monitoring (cont.)



Stormwater (Outfall) Monitoring (cont'd.)

- Phases I – III (2003-2007)
- Phase IV (Started June 2007)
 - Continue to Sample 9 outfall locations + Consolidated Sump
 - Monthly baseflow samples at 4 outfalls and Consolidated Sump
 - Storm Samples to be collected twice per year at 9 outfalls and the Consolidated Sump.
 - 011 to be sampled for concentration only, no flow readings
 - EDDs to be submitted quarterly

Stormwater (Outfall) Monitoring



Sewer Investigation (cont.)

- Phase I (Completed in January 2007)
- Phase II (Proposed for 2007)
 - Closed circuit television (CCTV) inspection in the vicinity of the Old Chemical Building and upstream portions of 011 sewer system
 - Upstream sediment and water sampling and soil vapor sampling of pipe backfill .
 - Update basemap and GIS database with structures and piping sections
- Hg Inspection and Abatement
 - Cleanup of observed Hg in Chem Bldg area immediately
 - Weekly inspection and abatement program implemented

Drain to Pump House Sewer along RR Ave



Hg Beads in Trench



Looking Ahead

- Phase IV Stormwater Sampling (Began in Jun 07)
- Hg Inspection and Abatement program ongoing
- Phase II Sewer Investigation (4Q07-1Q08)
- Groundwater Monitoring (Nov 07)
- Reporting of Phase III RFI (Dec 07)
- Corrective Measures Study (2008/2009)