

South River Science Team

June 13, 2012

Minutes

Welcome, Introductions: *Don Kain, DEQ*

Remedial Options Programs Task Team Update: *Nancy Grosso, DuPont; Ceil Mancini, URS*

- Key Points
 - Remedial Options
 - Remedies are driven by conceptual site model
 - 3 categories: outfall, river, floodplain soil
 - 3 tiers: upper, middle, lower
 - Process of assessment of potential remedies has begun
 - Process is part of adaptive management approach
 - Adaptive Management Process
 - Quantitative decision framework to drive adaptive management models
 - Integrates current models, stakeholder preferences (weights) and monitoring data to calculate an output value for each management alternative
 - Transparent process promotes effective decision making
 - First step: Develop conceptual model using existing data and models
- ROP Feedback/Discussion
 - More information on pilot studies
 - Greater understanding of context of the remedial options
 - Relevant pathways
 - Sort options by source area
 - Looking for greater input/participation from broader ROPs team
- Next Steps
 - Better definition of options and how they link to conceptual site model
 - Share with team prior to next meeting
 - Meet in August
- Potential August Agenda Items
 - Draft conceptual remediation strategy including technologies and sequencing
 - Floodplain pathway analysis/conceptual site model
 - Revised options based on input from broader team
 - Findings/update on bank loading sampling
 - Summaries of pilots and key findings

Program Integration Task Team Update: *Mike Liberati, DuPont*

- Purpose of PITT is to explore ways of integrating several different regulatory and non-regulatory processes. Team involves members from DEQ, DCR, EPA, USF&W, DuPont and URS.
 - The Challenge
 - Six regulatory and non-regulatory programs
 - RCRA Corrective Action
 - South River Science Team

- NRDC/Sierra Club Settlement
 - NRDAR
 - TMDL (benthic, bacterial and mercury)
- First Meeting
 - Understand the challenge
 - Program reviews
 - Current remedial approach
 - Program strategy
- “Common Remedial Approach”
 - Final EcoStudy Report to NRDC/SC Aug. 2012
 - “Remediation Proposal” to NRDC/SC Aug. 2013
 - RCRA Corrective Measures Study ?
 - Mercury TMDL Implementation Plan ?
 - SRST Remedial Options Team Results ?
- “Bins” for Program Driver
 - Not attractive options
 - NRDC/SC Settlement under RCRA Citizens Suit
 - NRDA
 - Benthic/Bacterial TMDL
 - Attractive features, but authority and resource concerns
 - Mercury TMDL
 - SRST
 - Authority, but process flexibility and permit concerns
 - RCRA Corrective Action Program

Human Exposure Task Team Update: *Betty Ann Quinn, EPA*

- Objectives
 - Identify possible human exposure routes
 - Define risks and uncertainties
 - Communicate information to public
- Participants
 - DEQ, VDH, VDAC, VGIF, EPA, DuPont
- Recent Activity
 - Met May 2012
 - Livestock evaluation
 - Literature review on FTP site
 - Draft work plan recently posted on FTP site
 - Samples of muscle, organs, milk, fur planned
 - Sources – yearling and culled animals
 - Opportunistic samples as available
 - Control samples from local dairies
 - Milk samples from local dairies
 - Feedback on work plan welcome
 - Question asked about background sampling. May need to do background soil sampling.
 - 2011 Soil and Pond Fish Samples
 - Letters to individual property owners in preparation

- Aerial photos and data currently on FTP site
- Question asked about pond sampling results. Before sampling, ponds were identified using GIS then “pre-sampled” to determine whether they still existed, contained fish, etc. Of all the ponds sampled, only one pond contained fish below EPA/DEQ advisory levels and that pond was spring fed. Only one of the ponds sampled was a public fishing pond in the Town of Grottoes. Because of the results of this survey, VDH asked DEQ to collect more fish (10 of each species) so that they could perform a risk assessment of the pond. This resulted in the extension of the South River Consumption Advisory to include the public fishing pond in Grottoes. Besides the spring fed pond, all the other ponds sampled had fish tissue Hg concentrations similar to levels found in the river and above advisory levels.
- Poultry Study
 - Planning stages
 - Don Kain and Betty Ann Quinn have lead
 - Initial research protocol available (Plamondon, 2003)
 - Additional participants in work plan preparation and study welcome
- Factsheet
 - Combine results on single factsheet’
 - Subdivide as deemed appropriate
- Cristol’s Waterfowl Manuscript
 - Provided feedback

Communications and Outreach Update: *Mike Liberati, DuPont*

- “Should I Eat the Fish I Catch” brochure
 - Updated and stocked at all South River bulletin boards in both English and Spanish.
- Advisory signs
 - Only advisory in VA with Spanish signs. Will be printing new Spanish signs with updated translations.
- Newsletter
 - To be out this month.
- Riverfest
 - Great participation both Thursday for “kids’ day” and Saturday. Promotores had display at Saturday event.
- Website
 - Recreating site, flowchart/diagram of website shown. Easier access to material.
 - Password protected FTP site still exist for working documents.
 - Recommendations to provide link to website with flooding information (USGS) and a link from recreation tab back to Factsheets.
 - Emphasis to keep new site current.
 - Kathy Adams is contact for adding material to website.
 - Social media (Facebook, Twitter, etc.) not priority at this time.
- Promotores Program
 - See next presentation.
 - 4 times the amount of Latinos at this year’s event compared to last.

Promotores Program Update: *Joanna Jensen and Suzanna Lepley, Blue Ridge Area Health Education Center Program Director*

- Community Partners
 - Basic United Methodist Church
 - Casa de Amistad
 - St. Johns the Evangelist
 - Jose Rodriguez
 - Augusta Free Clinic
 - Migrant Education
- Building Relationships
 - Waynesboro City Hispanic population 3.3% - 6.4%
 - Population doubled since last census.
 - 14 women, 1 man interested in participating
 - Home visits, Spanish service @BUMC
- Next Steps
 - Interest group meetings
 - Local healthcare providers and community agencies as presenters
 - Tailor training to Waynesboro/Augusta
 - Complete 40 hour training by December
- 40 Hour Training
 - Goal: 5 graduates
 - Saturdays at Basic Methodist Church
 - 1st Group of Promotores in Waynesboro/Staunton/Augusta
 - Lay Health Promoters with South River Science Team
 - Monthly Meetings in Waynesboro post-training
 - Include appropriate use of the river as resource
 - Environmental Stewardship
 - Perhaps include in Annual South River Cleanup?
 - Given out 31 fishing licenses so far.
- Possibilities
 - Strengthening
 - 40 hour trainings in Waynesboro, Harrisonburg
 - Expanding
 - 40 hour training in Elkton, Front Royal/Winchester
 - Kurdish/Arabic Speaking Community
 - Russian Speaking Community

Eco-Study Findings: *Ralph Stahl, DuPont*

- Timeline
 - June 2005: Consent Decree between DuPont and NRDC; Presents framework for Ecological Study
 - No provision for draft report feedback.
 - March 2006: Field work began
 - December 2011: Field work completed
 - May 2012: Draft Ecological Study report sent to NRDC
 - July 2012: Consultation with NRDC

- August 2012: Final report submitted to NRDC
 - Feedback due by July 18th.
 - Do not make feedback “official”.
- August 2013: Remediation proposal submitted
- Objectives of Final Report are to answer 4 questions posed in the Consent Decree:
 - Why has mercury remained higher than previously predicted in fish tissue in certain areas?
 - How is bioavailable mercury getting to the river system?
 - How is the mercury getting into the tissue of fish and aquatic animals?
 - Are there specific mercury pathways that significantly contribute to mercury in fish tissue?
 - Notice questions do not deal with floodplain.
 - Study area includes South River plus about 5 miles past Port Republic.
- Report Contents
 - Environmental setting/Phase 1 findings
 - Chemistry
 - Hg in surface H₂O, sediment and pore H₂O increase between RRM 0-10.
 - The majority of Hg is loaded in the first 10 miles.
 - Floodplain soil THg declines with distance downstream.
 - River banks have high THg and some are eroding.
 - THg in soil and sediment is bioavailable.
 - Methylation is widespread, taking place in many environments, sediment types.
 - Biology
 - MeHg concentrations in biota generally increase with distance downstream.
 - Uptake rates of biota vary by trophic position and feeding behavior.
 - Little or no evidence that Hg exposure affects benthic invertebrate or fish communities.
 - Data Integration
 - Statistical models
 - Invertebrate and fish responses to Hg
 - Sediment quality triad
 - Integrated assessment of invertebrate and fish response to Hg
 - Conceptual System Model
 - Relative Risk Model
 - Findings
 - Why has Hg remained higher than previously predicted in fish tissue in certain areas?
 - Inputs of inorganic Hg have not been mitigated by natural attenuation.
 - Geomorphic constraints (not being “flushed” out)
 - Low sedimentation rates (not being “covered” up)
 - Original assessments may not have understood that small amounts of inorganic Hg in a system can support high concentrations of MeHg in fish.
 - How is bioavailable Hg getting to the river ecosystem?
 - Erosion of bank soils.
 - Transport of Hg from particle-associated Hg stored in sediment.
 - How is mercury getting into the tissue of fish and aquatic animals?
 - Input of inorganic Hg from soil.
 - Methylation of inorganic Hg
 - Widespread

- Diverse microbial community
 - Biomagnification
 - Are there specific Hg pathways that significantly contribute to Hg levels in fish tissue?
 - Dietary uptake is important, particularly for high trophic level fish.
 - At the base of the food web, aqueous exposure and consumption of particles is important for MeHg uptake.
- Uncertainties
 - Climate change
 - Landscape alteration
 - Regulatory changes
 - Advances in science and technology
- Conclusions
 - There may be remedial options that are safe, effective and reasonably necessary.
 - An adaptive management approach will be used to address contamination.
 - Structured and iterative process.
 - Combines moderate scale pilot studies with monitoring.
 - Future actions based on results of pilot studies.

Relative Risk Model: *Josh Collins, URS*

- This model is similar and based on the work of Wayne Landis (Western Washington University), but is not duplicative and is further development towards a watershed planning tool.
- See presentation for overview of model with smallmouth bass used as endpoint.
- Future Direction
 - The existing framework of the model allows for comparative assessments of the multiple risk regions with modified stressor or habitat conditions.
 - Stakeholder involvement; input needed to make truly valuable
 - Finalization of additional endpoint evaluations
 - Watershed planning tool development

October Expert Panel Meeting – group discussion: *All*

- Discussion on what works for Expert Panel or what members would like to see as far as presentations. Recommendations made as to including remediation stories from other Hg sites and lessons learned. Need was expressed for help organizing next meeting.

Meeting Recap, Action Items, Next Meeting Date

- Next meeting was scheduled for October 2-3, but several key participants indicated conflicts with those dates. Proposal to move meeting to October 16-17. Don Kain will inform SRST distribution of final date selection.