

South River Science Team

September 9, 2003

Harrisonburg, VA

AGENDA

<u>Time</u>	<u>Issue</u>	<u>Responsible</u>
9:00	Welcome	Don Kain
9:15	Crop Study Update	Bill Berti Dean Cocking
10:00	Clam Study Proposal	Tom Benzing
10:30	Break	
10:45	DEQ Intensive Water Survey and Follow-up Sediment Options	Ted Turner
11:00	Loadings, modeling, mass balance	Nancy Grosso
11:30	Update – Coring results	Erin Mack
12:00	LUNCH	
12:30	Floodplain Survey / Sampling Plan	Dick Jensen Annette Guiseppi- Elie
1:15	Bird Studies	Ralph Stahl
1:30	Communications <ul style="list-style-type: none">• Newsletter• Science Team Makeup• Press Issues• Manuscript• Other Outreach	Mike Liberati Don Rick Straitman Ralph Rick
2:15	October Expert Panel Meeting	Ralph / Don
2:45	Brainstorming	Ralph
3:15	Wrap-up / Action Items / Next Mtg	Ralph / Don

Meeting Summary

Introductions. Don Kain welcomed attendees and went over housekeeping details. Self-introductions were made. Attendees are listed on Attachment 1.

DuPont Waynesboro Plant Name Change. Brenda Kennel shared an update from DuPont on the name change for the Waynesboro plant. 1-2 years ago, the plant name changed to DTI (DuPont Textiles and Interiors). The name has now changed to Invista. This most recent change is a name change only. DuPont is still committed to its work and commitment on the South River, regardless of plant name or ownership. Invista logo is shown below:



Crop Study Update. Dean Cocking presented a status report of the crop study at the Augusta Forestry Center in Crimora (refer to Presentations folder). He provided a very informative outline of the study design, progress to date, difficulties encountered, procedural and sample processing details, and an anticipated schedule for summer 2003 sample results. Dean also shared plans for continuing the study in 2004 with new plantings of crops.

Clam Study Proposal. Tom Benzing and Doug Graber-Neufeld provided a recap of *Corbicula sp* clam studies that have been conducted on the South River during the last two years. These studies have shown that clams are excellent bioindicators of mercury levels and correlate extremely well with fish tissue data. Two follow-up studies are proposed:

1. Follow-up study to the one done by Benzing in 2002 incorporating additional South River sites to include nearly all of the South River from Waynesboro to Port Republic.
2. A clam transplant project to be conducted by Graber-Neufeld, in which “clean” clams from North River are transplanted to “dirty” sites on South River and monitored for mercury uptake.

Work on these proposed studies is tentatively scheduled to begin in fall 2003. The above presentation is included in the Presentations folder.

Discussion included an inquiry of whether we could achieve lower detection limits with more tissue material. It was believed that the tissue quantity was not a factor in detection limits. Ralph suggested that we may want to run methyl mercury on some subset of samples and that it would be interesting to compare the clam data to corresponding ultraclean water samples and sediment samples. The recommendation to include parallel sediment samples was also made during the discussion for the clam transplant study. Suggestions were made to have the

transplant study be run “both ways,” including “clean clams moved to a “dirty” site and vice-versa.

DEQ Intensive Water Survey and Follow-up Sediment Options. Don Kain provided a brief update on the recent follow-up intensive South River surveys in Waynesboro. Repeat sampling was conducted downstream of Hopeman Parkway in an effort to bracket the area where a mercury peak was found during July 2002 water sampling. Also, approximately one mile of the South River between Wayne Avenue (above DuPont) and Broad Street (below DuPont) was sampled, right bank only, at 0.1-mile intervals. Results are expected shortly.

Don also shared recent explorations into various sediment sampling devices and techniques and proposed that this issue be presented to the expert panel members in October. DEQ’s next scheduled (in the 100-year plan) sediment sampling event is in 2007. Past sediment sampling has not clearly accounted for grain size or other factors which may affect mercury concentration. DEQ would like to “normalize” sampling in such a manner that similar materials (grain size, composition, etc.) are collected at each site to allow more meaningful comparisons between sites and sampling periods.

Loadings, modeling, mass balance. Nancy Grosso led a discussion on modeling for sediments, soils and water (see Presentations folder). Sediment and soil discussion issues included transport, “particle tracking,” and predictive considerations to support remedial alternatives. Nancy identified a number of firms and individuals with expertise in this area and suggested we consider having experts visit with the Science Team and provide us with a basic overview of these issues and potential applications for assessment and remedial options. The discussion expanded into a suggestion that we consider a special Science Team meeting in which experts from several areas of specialization provide presentations and lead discussions. These areas of specialization would be mercury fate, transport and risk assessment as they relate to fish populations, waterfowl and birds, and geomorphology. Nancy, Erin Mack, Ralph Stahl, Don Kain, and Mike Sherrier agreed to head up a group to pursue this plan.

Nancy next presented an overview of a conceptual water budget for South River. She has gathered or is in the process of gathering considerable data on river flows (via USGS and DEQ gauges), climatologic data, drainage basin information, contributions from dischargers and withdrawers, and known inputs from groundwater. This approach will allow a general characterization of basin hydrology, estimate groundwater inputs, and help identify areas with significant subsurface contributions. Mike Newman suggested we explore whether peak concentrations in fish might be related to flow. Ralph Stahl suggested that a quick response clam sampling event may provide insight on effects of flow on mercury body burden.

summaries indicate that the majority of the riparian area is wooded, followed by pasture, usually with a narrow treed buffer. The detailed observations and recordings from the survey are being compiled in a report, accompanied by a CD with electronic files of all voice recordings and photos.

Communications. Mike Liberati asked for suggestions and volunteers for articles for the next newsletter. He shared a summary of article topics from past newsletters (see Attachment 2, page 7). We have received good feedback to date on the newsletter. A suggestion was made to include the E-Mail addresses of contacts for DEQ and DuPont in the newsletter and to invite readers to submit questions that could be answered in future newsletters.

Don Kain asked the group about membership of the Science Team. Should we actively solicit additional stakeholders? Potential participants included representatives from the City of Waynesboro, The Wildlife Center, Canaan Valley Institute, US Fish & Wildlife Service, DCR, NRCS and others. Don will look into contacting individuals from these organizations.

Ralph Stahl led a discussion on the manuscript of South River issues and the work of the Science Team. A draft outline for the manuscript has been completed and team members are developing sections of the manuscript. At this point we are targeting either Transactions of the American Fisheries Society or a new technical publication being developed by SETAC.

Bird Studies. Ralph shared information from a web search on bird data and impacts from mercury contamination (Presentations folder). His presentation included "criteria" used by several organizations and states and also identified birds most likely to be at risk. A number of piscivorous species are present in the watershed, including herons, ospreys, kingfishers and bald eagles. Other waterfowl, such as ducks and geese may also carry some risk, especially since they are hunted and eaten within the area. It is unclear how large a geographic range these birds cover, what specific diet items they are consuming, and how much time they reside within the watershed. No local information on population dynamics or trends in numbers is available. Ralph will compare our fish numbers with other areas that have both fish and bird data and see if the data suggest that we may have high concentrations in birds.

Brainstorming. Ralph led a discussion examining where we've been, what we've learned, where we have data gaps, and how to fill them. He shared an impressive list of all projects the Science Team has undertaken or considered (see Attachment 3, page 8). The team identified those we agreed were top priorities for continued work; these are included in blue font in the attachment.

October Expert Panel Meeting. Ralph and Don led a discussion on the scheduling and format of the October expert panel meeting. A 3-day period has been scheduled (Oct 21-23) and the meeting will be at the Harrisonburg DEQ office. Draft agenda items are included in Attachment 10. Each topic will consist

of a 10-15 minute presentation, followed by 15-20 minutes of discussion. The last half-day will be reserved for group discussion and identifying priorities for further work. In advance of the meeting, each presenter is asked to prepare a 1-page briefing paper on their topic. These briefing papers will be provided to the expert panel members and the entire Science team at least several days before the meeting.

Next Meeting. October 21-23, DEQ, Harrisonburg.

Attachment 1. Attendees

SOUTH RIVER SCIENCE TEAM MEETING – September 9, 2003

Name	Organization	Phone No.	E-Mail Address
Don Kain	DEQ	540-574-7815	DKKAIN@DEQ.STATE.VA.US
DEAN COCKIN	JMU	540-568-6566	cockinwd@jmu.edu
Alex Barron	DEQ	804-698-4119	ambarron@deg.state.va.us
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Tom Benzinger	JMU	540-528-2794	benzintr@jmu.edu
Bill Van Wart	DEQ	540-574-7861	wjvanwart@deg.state.va.us
Robert Brent	DEQ	540-574-7848	rbrent@deg.state.va.us
Ralph Stahl	DuPont	302 892 1369	ralph.g.stahl-jr@usa.dupont.com
Andrew Federaro	EMU	540-437-6045	andrew.federaro@emu.edu
Daniel Brubaker	EMU	540-437-6044	daniel.brubaker@emu.edu
Doug Graber Neufeld	EMU	540-432-4401	neufeld@emu.edu
Mike Newman	VIMS	804-648-7725	newman@vims.edu
Allen Gutshall	VDH	540-352-7880	AGutshall@vdh.state.va.us
Bill Jordan	VDH	540-332-7830	wqjordan@vdh.state.va.us
ERIN MACK	DuPont	302-316-6703	er.sabath-erin.mack@usa.dupont.com
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Annette Guiseppi-Ribe	DuPont	804.383.4584	annette.guiseppi-eric@usa.dupont.com
Mike Liberati	DuPont	302 892 7421	michael.r.liberati@ " "
Dick Jensen	DuPont	302 547 6286	JENSEN@DELAWARE.NET
MIKE SHERRIER	DuPont/URS	(302) 892-1168	Michael.p.sherrier@usa.dupont.com

Attachment 2. Newsletter articles to date

	At A Glance	Tech Corner	Did You Know?	From The Team
Summer 2002	A Quick Look at South River History and Activities	The Basics of Mercury and the Environment	Expert Panel Formed	VDH Modifies Fish Advisories
Winter 2002	South River Monitoring Programs and Activities	Remediation Techniques for Mercury	South River: Home to Diverse Fish Community	Virginia Tech Conducts Fish Diet Study
Summer 2003	Pictures of the Puzzle: Conceptual System Models	Sediment Cores Used to Date Mercury Inputs to River	Tidbits About the Shenandoah Valley	Mercury Monitoring Using Clams
Winter 2003 (proposed)	The DuPont Company and the South River	The Water Cycle of the South River Basin	Birds of the South River Watershed	Findings of the Virginia Tech Fish Diet Study

Attachment 3. Filling Data Gaps

Ongoing or Completed

- **Sediment Sampling and Coring**
- **Corbicula Studies (& intensive around plant site)**
- **Fish Diet Studies**
- **DuPont Site Stormwater Investigation**
- **Intensive Water Followup**
- **Tributary & Bridge Sampling**
- Investigate Floodplain (& for purposes of CSM) / Vegetation / Biota
- River / land use survey
- Food Crop Study (spring 04)
- **Publications (need some common definitions)**
- Water Column Sampling (ions, etc.)
- Atmospheric Deposition Studies (summer 04 results)
- Initial Estimate of Bird Exposure and Risk
- Water Balance

Planned or Proposed

- **Investigate 2nd St. Landfill**
- Sampling Periphyton / Aquatic Vegetation (Bill make presentation)
- **Sediment Sampling & Analysis**
- **Re-emergent Hg (under sediment surface in river bed)**
- **Outreach (website, workshop)**
- **Sediment Traps**
- **Non Trust-fund Fish Sampling**
- **Develop set of bioindicators (including fish)**
- **Modeling Help**
- **Hg Speciation**

Related Activities