

Turner/Jensen Updates

- Concurrent Sampling
- Hydrosol Results
- Unusual Sfc Water Results from Crimora
- Instream Loading Calculations
- Reconsidering Plant Reach Sources
- Mapping Scour Routes

Concurrent Sfc H₂O Sampling (Dupont, VDEQ, USGS)

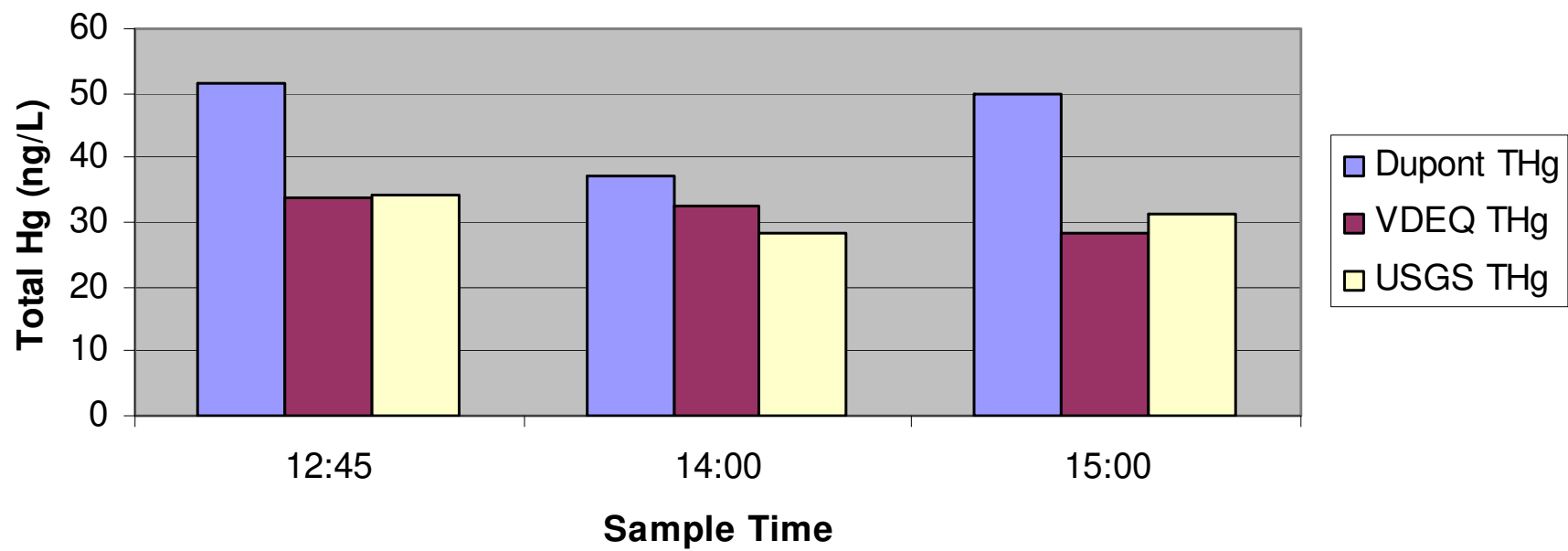
- September 6, 2005
- Two locations
 - Lyndhurst Ave, low/bkg Hg, 1 sample
 - Doods, high Hg, 3 samples
- Three laboratories
 - StudioG/USGS ran THg and MHg
 - VDEQ ran THg only
- Each group provided samples to other two groups

- Dupont and VDEQ “field filtered”
- USGS “lab filtered”
- Dupont used pump to sample
- USGS and VDEQ “dipped” samples
- Some results from USGS still pending

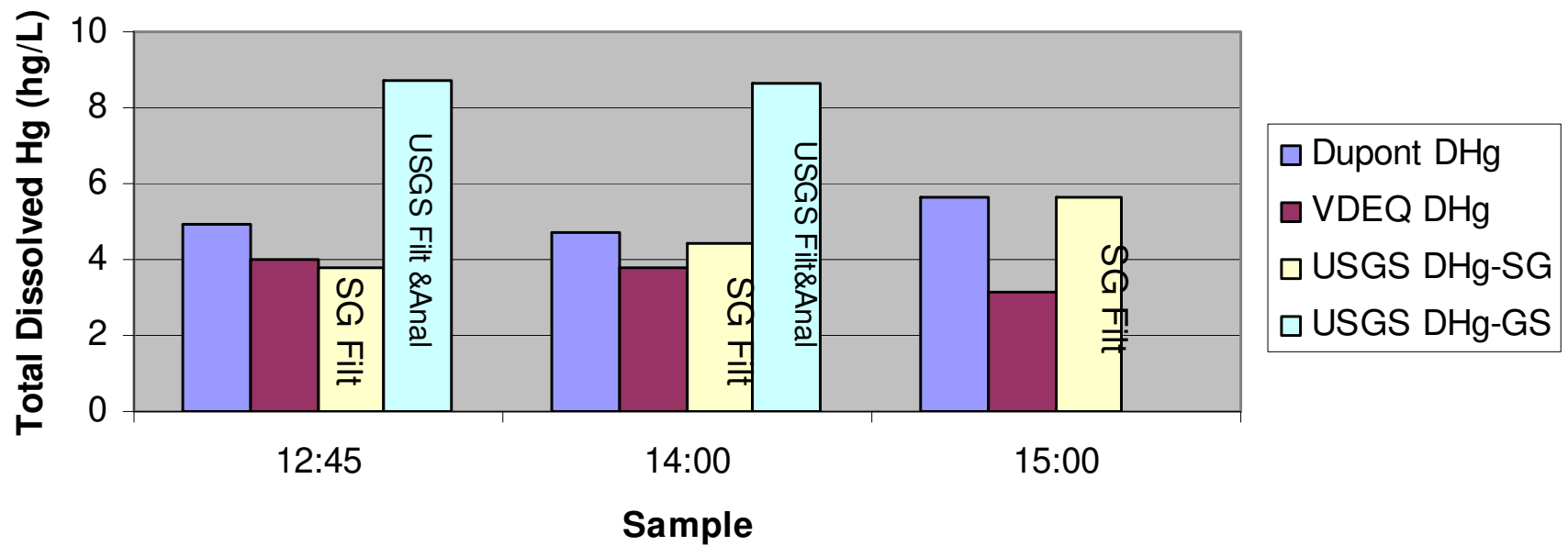




Studio Geochimica-Dooms



Studio Geochimca-Dooms



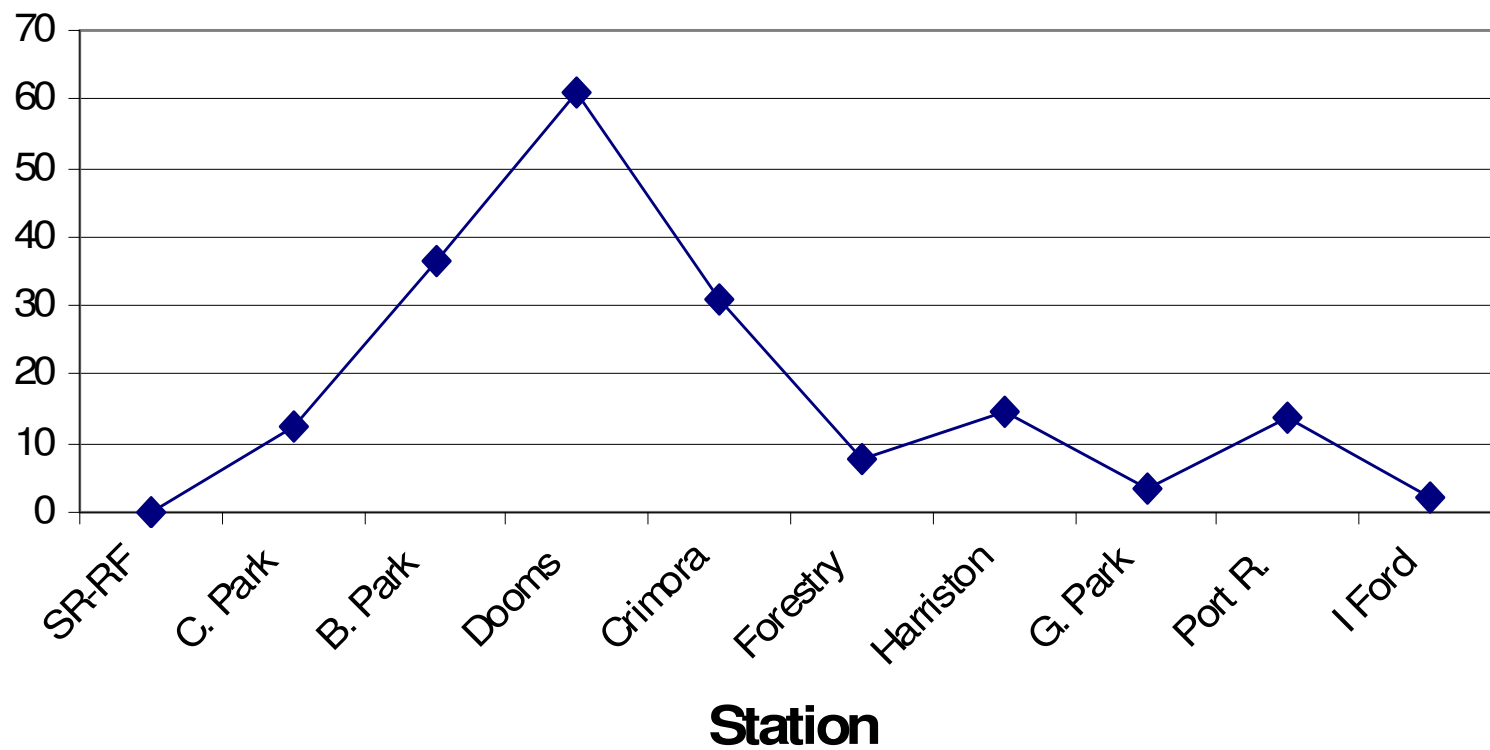
Hydrosol Results

September 13, 2005

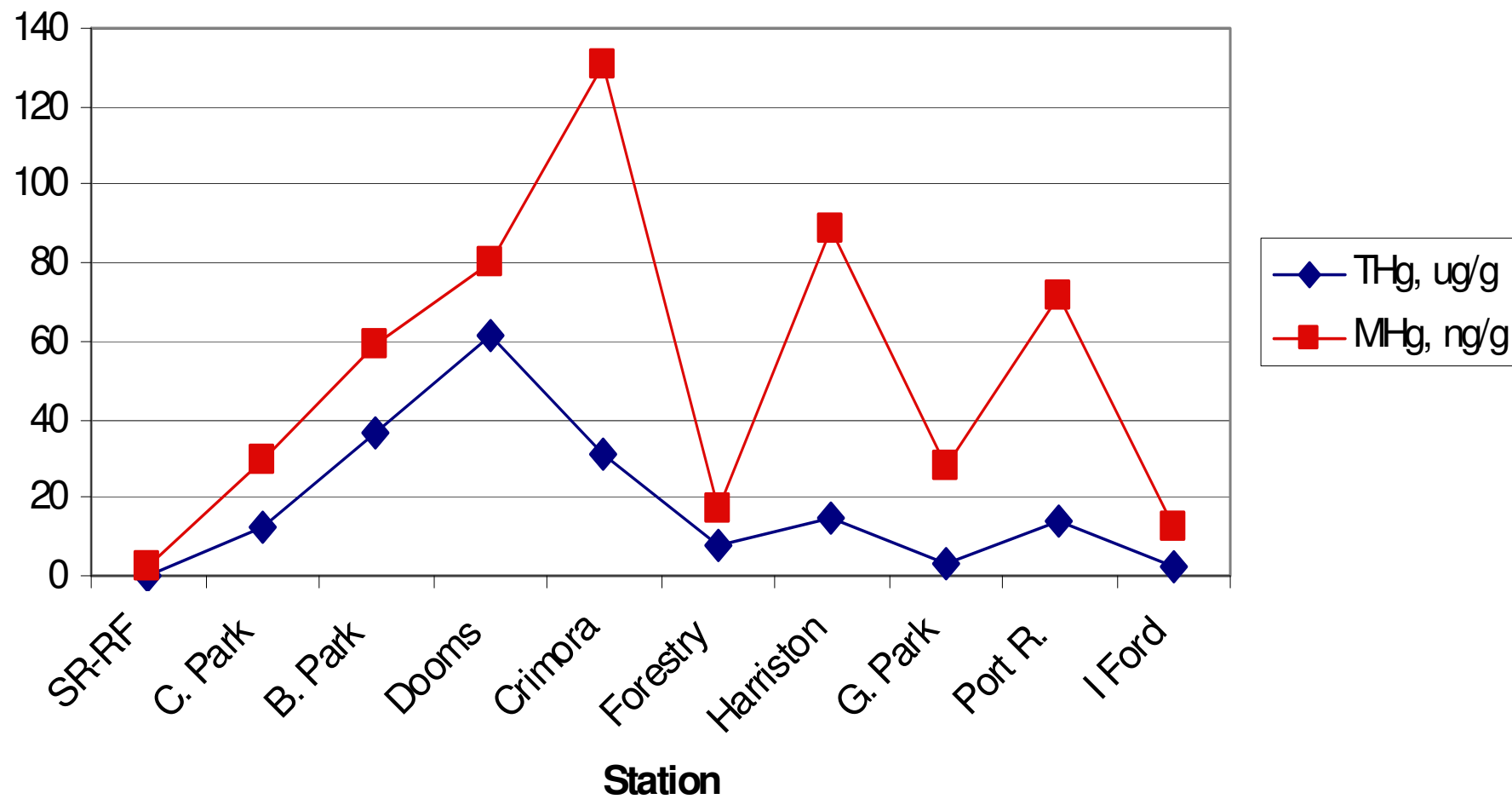




Total Mercury in Hydrosol 9/05 ug/g, dry wt



THg & MHg in Hydrosol 9/05



Anomaly at Crimora

September 18, 2005

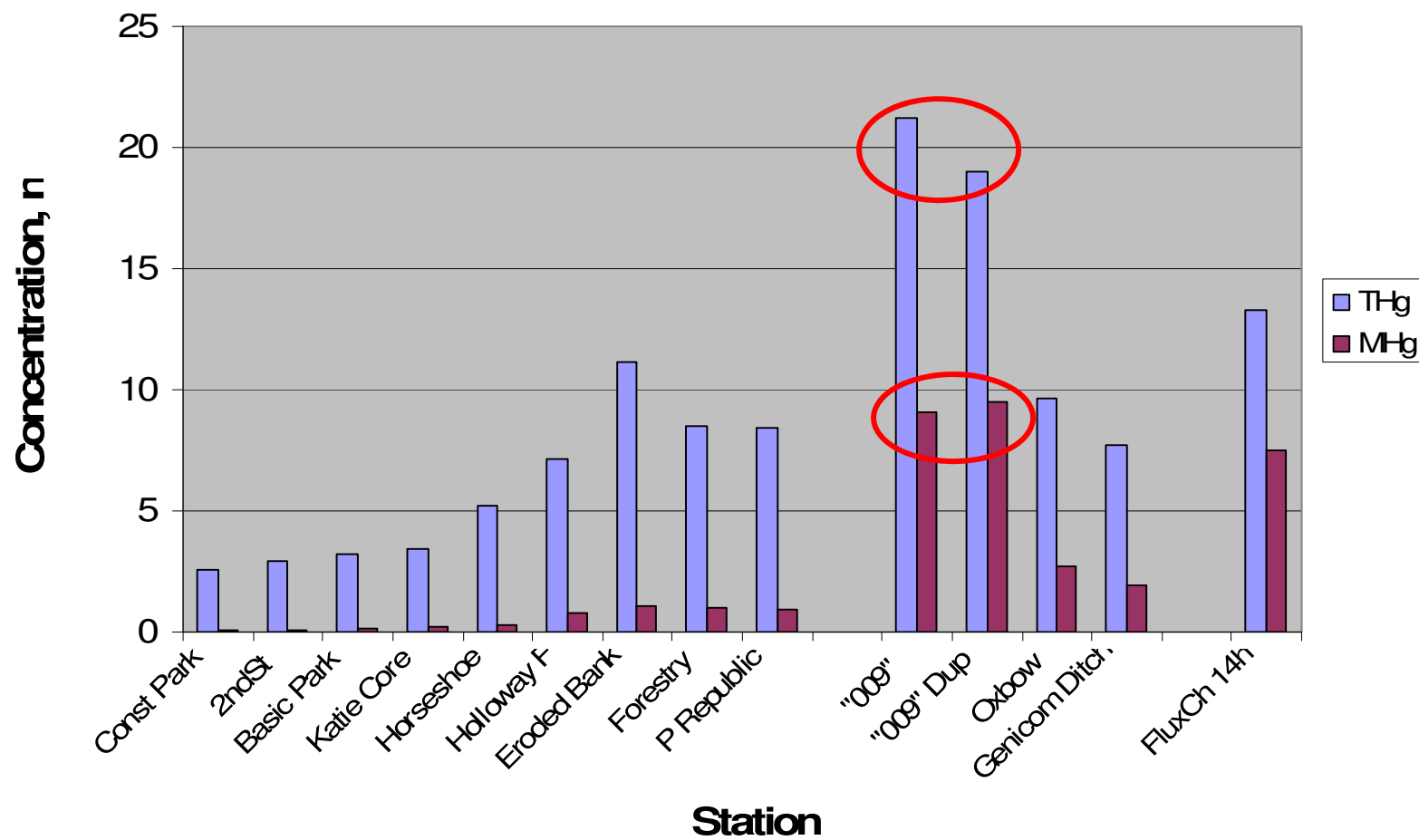
Unusual THg/MeHg Results

Near Crimora-Sept 2005 (ng/L)



Dissolved Surface Water

Sept 2004 - "Transect" Sampling Averages









Very Preliminary River Loadings

4 Surface Water Sampling Events

- Assumptions
 - Used unfiltered THg concentration data at 14 stations and 4 sampling events
 - Interpolated discharges between SR-Ref and Harriston
 - $\text{Loading} = \text{Concentration} * \text{Discharge}$
 - Loading inputs between stations = Differences in loading between stations

Loading Inputs

Between Key Sample Stations

Reaches	RRM	4-Aug	Flood 04	5-Feb	5-Sep
SR-REF to Constitution Park	-1.5 to 0.3	1	1230	24.4	1.2
Constitution Park to Dooms	0.3 to 5.5	14.6	1689	-14.1	12.9
Dooms to Crimora	5.5 to 10.5	-4.5	374	14.4	-8
Crimora to Harriston	10.5 to 17	0.4	2842	-1.5	-0.3
Harriston to Port Republic	17 to 25	-3.8	211	-5.9	-0.2

Loading Inputs

Between Key Sample Stations

Summer Base Flow

Reaches	RRM	4-Aug	Flood 04	5-Feb	5-Sep
SR-REF to Constitution Park	-1.5 to 0.3	1	1230	24.4	1.2
Constitution Park to Dooms	0.3 to 5.5	14.6	1689	-14.1	12.9
Dooms to Crimora	5.5 to 10.5	-4.5	374	14.4	-8
Crimora to Harriston	10.5 to 17	0.4	2842	-1.5	-0.3
Harriston to Port Republic	17 to 25	-3.8	211	-5.9	-0.2

Loading Inputs

Between Key Sample Stations

Flood Flow

Reaches	RRM	4-Aug	Flood 04	5-Feb	5-Sep
SR-REF to Constitution Park	-1.5 to 0.3	1	1230	24.4	1.2
Constitution Park to Dooms	0.3 to 5.5	14.6	1689	-14.1	12.9
Dooms to Crimora	5.5 to 10.5	-4.5	374	14.4	-8
Crimora to Harriston	10.5 to 17	0.4	2842	-1.5	-0.3
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Loading Inputs

Between Key Sample Stations

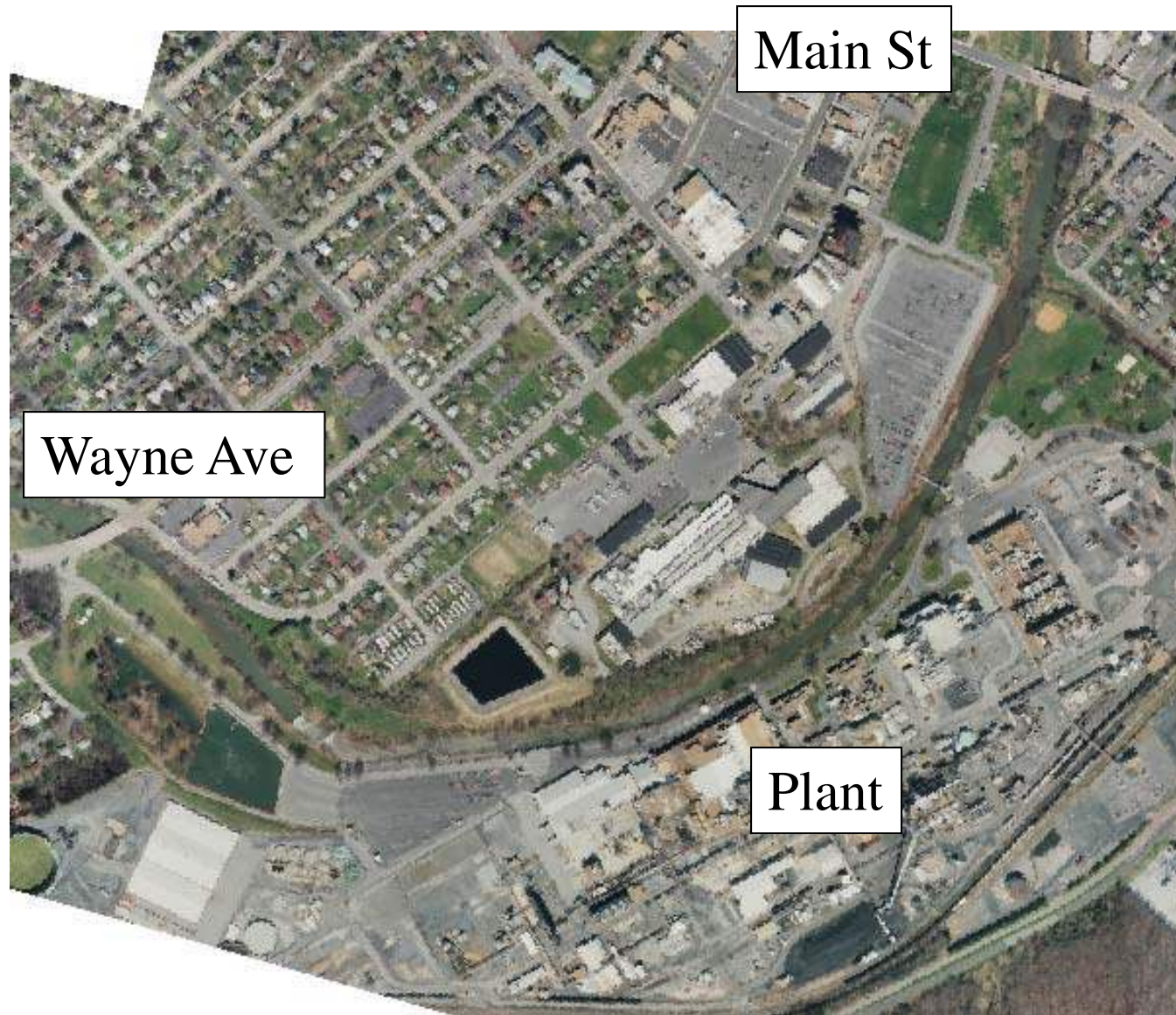
Add Moderate Flow in Feb 05

Reaches	RRM	4-Aug	Flood 04	5-Feb	5-Sep
SR-REF to Constitution Park	-1.5 to 0.3	1	1230	24.4	1.2
Constitution Park to Dooms	0.3 to 5.5	14.6	1689	-14.1	12.9
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Very Preliminary Loading Indications

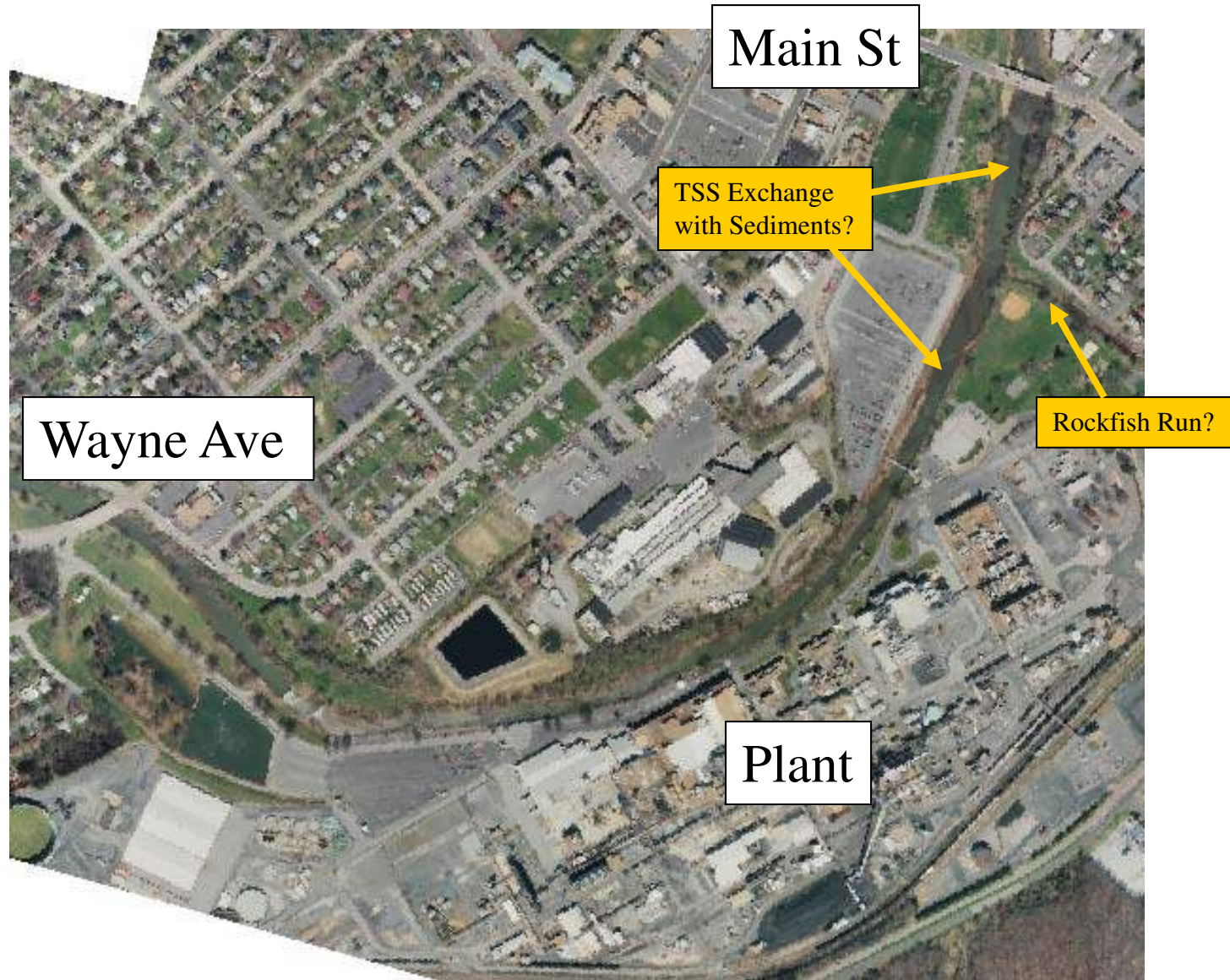
- Higher THg inputs above Constitution Park at moderate to high flow
- Minimal THg inputs above Constitution Park during 2 very low flow samplings
- During flood of 9/04, inputs continued along entire South River below plant
- During low to moderate flow, inputs limited to upper river to Dooms or Crimora

Plant Reach



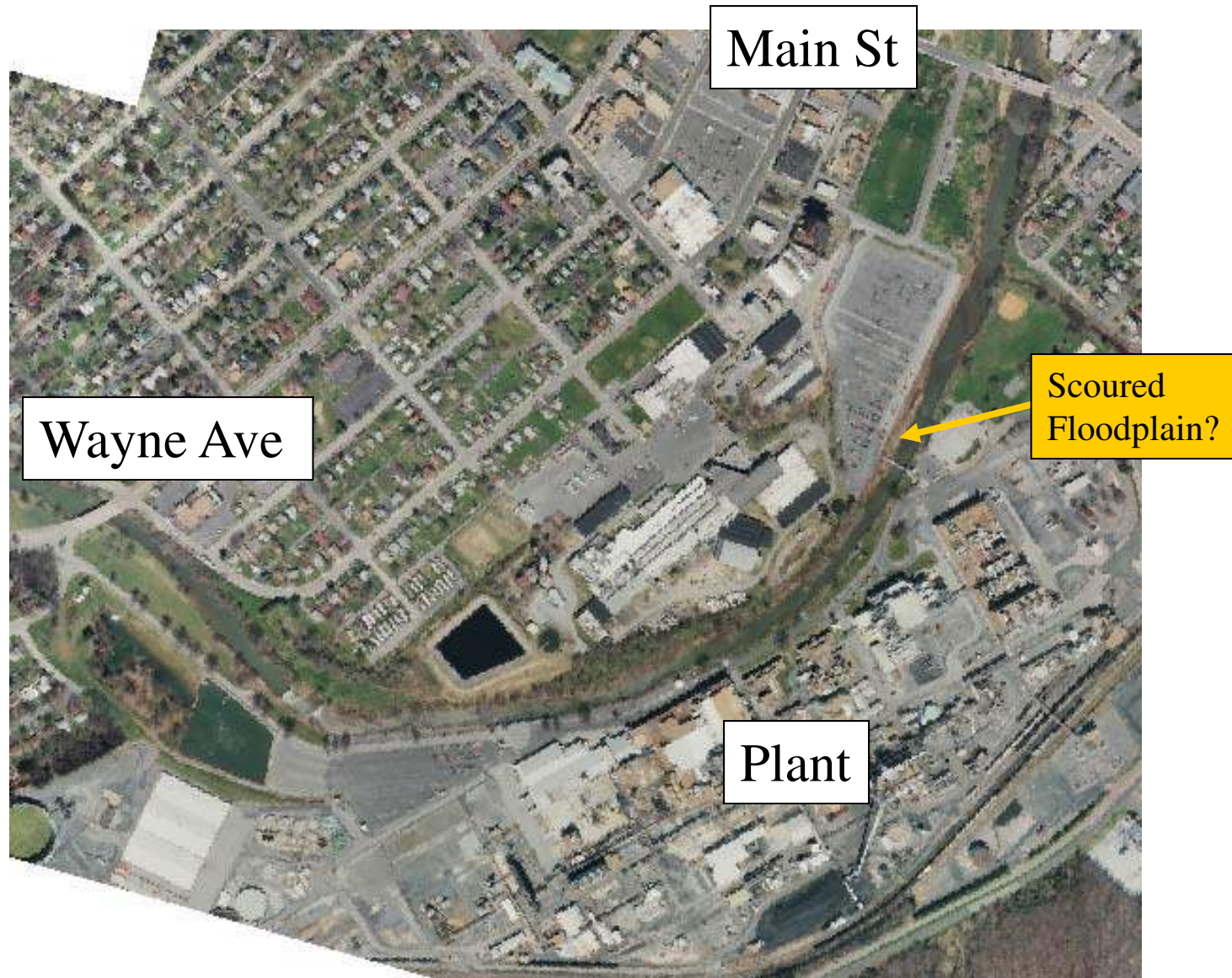
Plant Reach

Possible Explanations for Plant Reach Loading



Plant Reach

Possible Explanations for Plant Reach Loading



Plant Reach Floodplain







