Setting the Stage – ACWA Perspective

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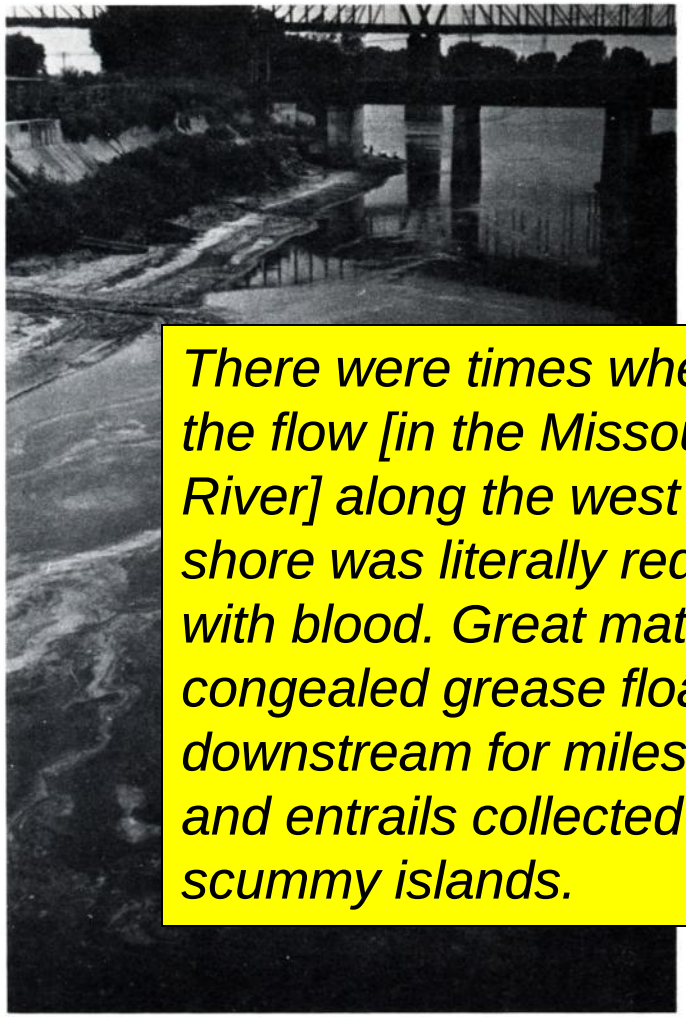
When water quality was worse:



Packing house waste being discharged to the Floyd River in Sioux City, August 1952.

There were times when the flow [in the Missouri River] along the west shore was literally red with blood. Great mats of congealed grease floated downstream for miles and entrails collected in scummy islands.

Des Moines Register, November 19, 1969

Sewage Pre-Treatment Plant In Omaha Ends Bloody River

By a Staff Writer

OMAHA, NEB. — One of the worst pollution situations in the entire nation has been all but eliminated here with completion of a sewage pre-treatment plant for the huge Omaha [illegible]estock industry.

[illegible]his city's stockyards and [illegible]cking industry have been [illegible]ong the largest in the world [illegible]ce the mid-1950s. Since that [illegible]e and before, all the waste millions of gallons a day — [illegible]s been dumped untreated into [illegible] Missouri River.

[illegible]here were times when the [illegible]w along the west shore was [illegible]erally red with blood. Great [illegible]a t s of congealed grease [illegible]ated downstream for miles. [illegible]ir and entrails collected in [illegible]ummy islands.

"The Worst"

"People who know have told [illegible] this was absolutely the [illegible]rst pollution they have seen [illegible]ywhere in the U.S.," says [illegible]arl Chloupek, area representative for the Federal Water Pollution Control Commission in Lincoln, Neb.

Now the bloody flow into the river has stopped, thanks to the unique pre-treatment plant which began its shakedown last week. The $5.5 million plant is expected to go into full operation later this month.

Federal efforts to end the flow of packinghouse wastes into the river began in 1956 — 13 years ago — Chloupek [illegible]. The river still is far [illegible] clean, he said, but [illegible] passed a "real milestone" week.

The City of Omaha still [illegible] only primary treatment [illegible] wastes, but has agreed in [illegible]ciple to construct secondary [illegible]cilities, Chloupek said. No [illegible]table has been established [illegible] added.

Primary treatment [illegible] moves sewage solids, [illegible] 35 per cent of the pollu[illegible] Secondary treatment ren[illegible] about 90 per cent.

Omaha's primary trea[illegible] plant went into operation four years ago. Before t[illegible] too dumped all its waste[illegible] treated into the river.

As it was, Chloupek sa[illegible] city plant has been operat[illegible] only half of its capacit[illegible] cause, without pre-treatm[illegible] was unable to handle the [illegible]inghouse wastes. So half [illegible] plant has been idle for [illegible] years waiting for the pa[illegible] to pre-treat their wastes.

This half was placed in operation for the first time last week, Chloupek said, when it began handling the effluent from the pre-treatment plant.

Income Gained

The uniqueness of the pre-treatment plant lies in its use [illegible]er-[illegible]ro-[illegible]ed [illegible]he [illegible]of [illegible]wo [illegible]ex-[illegible]he [illegible]se [illegible]ity [illegible]ef- [illegible]e [illegible]d [illegible]h [illegible]o [illegible]e [illegible]m [illegible]u- [illegible]ay [illegible]in [illegible]on [illegible]d built by the Carver-Greenfield Corp. Kirkham, Michael & Associates were the consultants.

Omaha's primary treatment plant went into operation only four years ago [~1965]. Before that, it too dumped all its wastes untreated into the [Missouri] river.

Nutrients and Water Quality

- Nutrient over-enrichment is creating problems for recreation, drinking water and aquatic life.
  - *Big Creek Lake (Polk Co.)*
    Recreation
  - *Lake Rathbun (Appanoose Co.)*
    Drinking Water Supply
  - *Middle Fork of South Beaver Creek (Grundy Co.)*
    Aquatic Life
  - *Gulf of Mexico Hypoxia*

Swan Lake, June 2011

Why has it been so difficult to move forward?

- Competing water quality priorities (2006)
- Excessive nutrients can cause a variety of water quality problems
- Scale issues (e.g., land size vs. population)
- Numeric nutrient criteria development presents challenging problems (1998)(17,000 impairments, 8,000 TMDLs)
  - Difficult to pin down cause & effect relationship
  - Difficult to comply with permit limits and costly to try
  - Possibly every water body impaired by an order of magnitude
  - Polarizing approach, litigation common
- **Different options needed**

Stoner Memo – March 16, 2011

- Ensure effectiveness of point source permits in targeted/priority sub-watersheds for:
  - **Municipal and Industrial Wastewater Treatment Facilities** that contribute to significant measurable N & P loadings;
  - **All Concentrated Animal Feeding Operations** (CAFOs) that discharge or propose to discharge; and/or
  - **Urban Storm Water** sources that discharge into N & P-impaired waters or are otherwise identified as a significant source.

Beauvais Memo – September 22, 2016

- **Renewed call to action to reduce nutrient pollution and support for incremental actions to protect water quality and public health**
  - Call for **monitoring requirements** for TP & TN in NPDES permits for major municipal WWTPs
  - EPA to conduct nationwide survey of municipal WWTPs to determine **how nutrient removal can be improved with enhancements to O & M**
  - Highlights NNC as an important tool that can be used

PS and NPS Common Threads Made Possible

- Acknowledgement of the problem
- Recognition that traditional approaches are not workable (e.g. cost, technically)
- Willingness to want to do something now to make progress
- Needs to be practical in its implementation

New flexibilities = New possibilities

ACWA Nutrient Policy Committee

- Worked with EPA to account and recognize different permitting approaches
- Created survey of ACWA membership as EPA offered to begin work on a variety of tools and focused efforts to assist states with their nutrient permitting efforts.
- Permit compendium was #1
- Early returns show 32 of 52 states and territories are permitting for nutrients in some fashion

Each state has story to tell…

We'll learn about permitting systems from the states that utilize:

-NNC (Montana)

-numeric translators of narrative criteria (Michigan & New Mexico)

-nutrient reduction frameworks (Iowa)

-performance-based approaches (Colorado)

-state variances (Wisconsin & Montana)

-watershed approaches (Virginia, North Carolina, & Connecticut)

-integrated planning (New York)

-adaptive management (Wisconsin)

-antidegradation (Kansas)

Partnerships are critical to make progress…

We'll learn valuable insights from key partners and states regarding:

-Nutrient Removal Technologies (HDR)

-Optimization Efforts (The Water Planet Co.)

-Struvite Harvesting (City of Boise)

-Biosolids Farming (City of Boise)

-Water Quality Trading (Willamette Partnership, Minnesota, North Carolina)

-Interrelation of Permitting (NEIWPCC & Kansas)

-Nutrient Mitigation in Boise: Dixie Drain (City of Boise)

You're not alone…

We'll work together to identify and troubleshoot permitting and technology barriers and create a stronger network of permit practitioners

So, yes – ANYTHING IS POSSIBLLLE!!!