The Era of Big Data: Opportunities and Legal Considerations

2015 National Clean Water Law Seminar

Karen Hansen

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Big Data Legal Considerations

- Availability of real-time data (and lots of it) and use of analytics are increasing
  - Compliance and enforcement will be fundamentally different five years from now
- If legal rules stay (mostly) static, what does this mean for compliance, reporting, recordkeeping, negotiation, litigation?
- What are the key legal risks and opportunities of Big Data and EPA Next Gen for the Utility of the Future?
Big Data Legal Considerations

• EPA Next Gen Compliance Model
EPA Next Gen Components

- **Design regulations and permits** that are easier to implement, with a goal of improved compliance and environmental outcomes.
- Use and promote **advanced emissions/pollutant detection technology** so that regulated entities, the government, and the public can more easily see pollutant discharges, environmental conditions, and noncompliance.
- Shift toward **electronic reporting** to help make environmental reporting more accurate, complete, and efficient while helping EPA and co-regulators better manage information, improve effectiveness and transparency.
- Expand **transparency** by making information more accessible to the public.
- Develop and use **innovative enforcement** approaches (e.g., data analytics and targeting) to achieve more widespread compliance.
How will the rules of the game change?

1. CWA 308, monitoring, reporting, recordkeeping, CMOM, CDs, etc.
2. Advanced methods to collect real-time data and lots of it
   a. Discharge details
   b. Environmental conditions
   c. Noncompliance
3. Electronic reporting
   a. Searchable format
   b. Greater public transparency
4. Data analytics
   a. Targeted enforcement
   b. Inform next NPDES permit
Shield or sword (or both?)

“the numbers don’t lie”
“perception is reality”
“here’s what our analysis shows”
“truth is in the eye of the beholder”
Opportunities

• Real-time management of sewer flows, WWTP influent

• More data, better understood = better decisions, $ wisely spent
  – E.g. right-sized sewer cleaning programs

• Energy and other operational and/or capital efficiencies = $ savings
  – E.g., model and validate

• More proactive environmental stewardship

• Community engagement
Concerns

• Data eats the real story
  – CEMS experience under CAA (1000s of real-time exceedances yet compliant 99.6% of time)
• What becomes reportable or required for compliance under standard permit, CMOM, consent decree provisions?
• Data, not well understood = misinformed decisions, costly in $ and in environmental impacts
• Information requests and sunshine laws – future inundation of requests?
• Discoverable in litigation? Chain of custody and quality assurance/accuracy issues?
• Enhanced IT needs and qualified personnel to manage lots of data; security/hacking issues?
• Risk that legal requirements and data capabilities mismatched - lots of uncertainty about impact
Some things to consider

**Clarity of Purpose**
- Define why the data will be collected
- What are the objectives of collecting this data?
- Is it required by a permit, CD or other legal instrument?
- Is it voluntary?
- How will the data be used? What is the greatest risk of misuse?
- Cost/benefit?
- Review legal requirements before authorizing data collection
- Is the scope right-sized to the purpose?

**Plan and Manage**
- Think about the positive reasons for collecting the data (left column) then think about the ways the data could be misused and plan for avoidance of significant negative impacts and issues
- Establish technical specifications for data collection
- Establish data management, QA/QC, control and access protocols & train
- Manage the data towards the objective

**Evaluate Results**
- What did we learn from gathering the data?
- Did we achieve our objective? What did it cost? (hard and soft costs)
- How was the data helpful to our mission, compliance record, relationship with regulators and public?
- How did it hurt us in each of these regards?
- What do we want to change?
- Are we allowed to change?
Big Data Take-Away Observations

~ Big Data and the Internet of Things are already here and growing
~ Next Gen and third parties will become savvy about data opportunities, demands, availability and interpretations
~ Perception is reality so planning, management and evaluation are key!
Questions? Thank you!

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