Summary Results of Comparative Analysis for Proposed Options with Background Information Related to Options Review

Doug Owen and Vanessa Speight
TWG Representatives

TCRDS Federal Advisory Committee Meeting
May 21, 2008

This Presentation

Objectives

Provisions

System compliance

Improvement

Research

Summary and Background of Options Analysis

Presentations on Analysis

1. Summary and background (this presentation)
2. Details of analysis for CWS < 1000
3. Details of analysis for NCWS < 1000
4. Details of analysis for all systems > 1000

Data used in options analysis

- Statistical model based on 6-year review data
  - Used for estimates of number of TC+ and EC+ based on different routine & repeat monitoring scenarios
  - Results compared to historical data from SDWIS and are within an acceptable margin
  - 6-year review data is based upon current sampling practices with no assessment or corrective actions required and therefore may have limited ability to predict outcomes for the proposed options that include correction
  - Application of model was limited to systems < 1000

Data used in options analysis (2)

- Historical data from SDWIS showing violations by system size and category
  - Used for all systems > 1000
  - Additional comments?

Data used in options analysis (3)

- Reduced monitoring criteria required the use of several different data sources:
  - SDWIS database for MCL and M&R violations
  - 6-year review database for history of TC+
  - GWR EA for disinfection status
  - ASDWA / State data on sanitary surveys
  - State information on CCC programs

Initial Sensitivity Analysis

- Ran multiple sampling combinations to understand the ability of the model results to distinguish between different inputs
- *Additional comments?*

Summary of Sensitivity Analysis Results

- *Insert one or more tables like the ones Tom Schaeffer developed with additional explanation slides, if needed*

Overview of Cost Data

- Revised unit cost for sample analysis to better reflect impact of collecting and shipping multiple samples and with updated shipping costs
- Cost for conducting assessment was based on draft assessment template produced by FAC subgroup
- Costs for corrective actions were estimated using an upper/lower bound for the number of corrective actions that might result from assessments
- *Other? PN?*

Revised TCR Sample Unit Costs

System Size \ # Simultaneous Samples	5	4	3	2	1
≤100	$38.28	$39.46	$41.43	$45.37	$57.19
101-500	$39.31	$40.51	$42.50	$46.50	$58.48
501-1000	$47.58	$48.79	$50.81	$54.86	$67.01
1001-4100	$50.22	$51.47	$53.54	$57.68	$70.10
4100-33,000	$53.14	$54.41	$56.53	$60.78	$73.51
33,001-96,000	$57.16	$57.81	$58.89	$61.05	$67.54
>96,000	$71.90	$72.03	$72.25	$72.69	$74.01

Unit Costs for Assessment

- *Insert from Steve*

Unit Costs for Corrective Action

- *TBD*

Overarching Questions

- How can we interpret the data to compare the consequences and benefits of the different options?
- How does or doesn’t the data capture the preventative consequences or benefits of the new rule construct?
- *Others?*

Appendix

Assumptions on Unit Sample Costs

- Increased sample burden to account for travel time
  - ≤500: 0.5 hours/sample
  - 501 – 96,000: 0.75 hours/sample
  - >96,000: 1.0 hour/sample
- Updated labor rates to 2007 dollars
- Used $20.94 as average contractor lab analytical cost (based on quotes from labs in 9 states)
- Shipping 100 miles away
  - Most use ground shipping (50%)
  - Some using lab courier pick-up (20%), standard next day (12.5%), priority overnight (12.5%), and some delivering themselves (5%)
- In-house based on O&M cost + 0.5 hour x labor rate for given size category
- Same assumptions as before for in-house vs. contractor
  - ≤33,000: 100% contract lab
  - 33,000 – 96,000: 50% contract lab, 50% in-house
  - >96,000: 10% contract lab, 90% in-house

Delivery Assumptions for Unit Sample Costs

Total Shipping Cost	1 sample	2 samples	3 samples	4 samples	5 samples
Courier	$3.50	$3.50	$3.50	$3.50	$3.50
Ground	$6.65	$6.77	$6.88	$7.00	$7.12
Std. Next Day	$38.48	$38.48	$38.48	$38.48	$38.48
Priority Overnight	$45.12	$45.12	$45.12	$45.12	$45.12

Per Sample Cost	1 sample	2 samples	3 samples	4 samples	5 samples
Courier	$3.50	$1.75	$1.17	$0.88	$0.70
Ground	$6.65	$3.39	$2.29	$1.75	$1.42
Std. Next Day	$38.48	$19.24	$12.83	$9.62	$7.70
Priority Overnight	$45.12	$22.56	$15.04	$11.28	$9.02

Self-delivery depends on labor rate for given system size: Range of $184-238 for a single sample (per sample cost decreases when >1 sample is self-delivered)