Results of Analysis for the Current Total Coliform Rule

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This Presentation

Objectives

Provisions

System compliance

Improvement

Current Total Coliform Rule

Research

Objectives of Presentation

- Present analysis of baseline cost associated with the current TCR
  - As written
  - As implemented

Current TCR System Categories

Category	TNCWS	NTNCWS	CWS				
			<1000	1,001 – 4,100	4,101 – 33,000	33,001 – 96,000	>96,000
Number of Systems	86,206	19,172	35,517	9,425	6,201	1,025	399

Source: Active, current systems, from SDWIS January 2006 frozen tables

Data Sources

- Six-Year Review Compliance Monitoring Data from 37 States
  - For Analysis of TC+ & Non-Acute MCL Violations
- Violation Data from SDWIS/FED
  - Acute MCL Violations

Baseline Monitoring Assumptions

- TCR as written:
  - CWS < 1,000 takes 1 sample/month
    - If system has no history of coliform contamination in its current configuration and a sanitary survey within the last 5 years shows that the system is supplied by a protected groundwater source and has no sanitary defects, then the State may reduce monitoring to quarterly
  - NCWS < 1,000 using SW or GWUDI takes 1 sample/month, same as CWS of same size
  - NCWS < 1,000 using GW takes 1 sample/quarter
    - If sanitary survey shows system free of defects, the State may reduce the sampling frequency

Reduced Monitoring under Current TCR

- Current TCR as implemented:
  - Some States/Primacy Agencies will not allow reduced monitoring or require a greater amount of monitoring
  - Some States/Primacy Agencies allow quarterly or annual monitoring for certain categories of systems
- Only State/Primacy Agency data available
  - Assumed that if reduced monitoring was allowed, all systems meeting the criteria in that State would go to reduced monitoring

States/Primacy Agencies with Provisions for Reduced Monitoring

	Number of States/Primacy Agencies (67 total)		
Monitoring Provision	CWS GW	TNCWS GW	NTNCWS GW
No reduced monitoring (at least monthly samples)*	52	38	38
Quarterly samples	15	16	16
Annual samples**	0	13	13

* Includes 3 agencies requiring more than 1 sample per month and one agency requiring 8 samples per year for TNCWS

** Includes 2 agencies requiring 2 samples per year for NTNCWS and TNCWS

Summary of Systems by Categories

Category	TNCWS	NTNCWS	CWS				
			<1000	1,001 – 4,100	4,101 – 33,000	33,001 – 96,000	>96,000
Total	86,206	19,172	35,517	9,425	6,201	1,025	399
Est. # Sampling annually	26,198	3,785	-	-	-	-	-
Est. # Sampling twice per year	12,396	2,609	-	-	-	-	-
Est. # Sampling quarterly	15,586	3,158	7,199	-	-	-	-
Est. # Sampling six times per year	7,353	2,142	-	-	-	-	-
Est. # Sampling eight times per year	2,465	-	-	-	-	-	-
Est. # Sampling monthly	22,051	6,683	26,627	-	-	-	-
Est. # Sampling > monthly	164	794	1,687	-	-	-	-

Note: The current TCR includes many more categories than the ones shown here; categories were simplified for presentation

Cost Components for Current TCR As Written

- Baseline monitoring
  - Includes reduced monitoring where applicable
- Repeat monitoring
- Follow-up monitoring (if applicable)
- State Costs
  - Administrative costs associated with tracking consequences of violations

Cost Components for Current TCR – Future Calculations

- Baseline monitoring
  - Includes reduced monitoring where applicable
- Repeat monitoring
- Follow-up monitoring (if applicable)
- Public notification
- Voluntary investigative and corrective actions by systems and States

Not calculated yet

Unit Costs used in Analysis

Size Category	Monitoring Costs per sample ($)	Contract	% in House
	In House		
≤1,000	$30.39	$86.30	0
1,001-4,100	$36.90	$88.90	0
4,101-33,000	$39.80	$90.10	0
33,001-96,000	$42.00	$91.00	50
>96,000	$44.20	$92.42	90

Current TCR – Compliance Summary (#s)

Category / Cost ($)	TN-CWS	NTN-CWS	CWS				
			<1000	1,001 – 4,100	4,101 – 33,000	33,001 – 96,000	>96,000
# of Systems	86,206	19,172	35,517	9,425	6,201	1,025	399
Est. # Sampling less than monthly	63,999	11,693	7,199	-	-	-	-
Est. # with at least 1 TC+/yr	9,931	2,274	5,988	1,598	1,649	452	305
Est. # with at least 1 Non-Acute /yr	4,431	1,108	2,195	534	442	25	9
Est. # with 2 Non-Acute /yr	1,043	295	479	102	87	3	4
Est. # with 2 consecutive Non-Acute	750	203	305	63	35	4	4
Est. # with at least 1 Acute	371	71	110	17	19	6	3

Current TCR – Compliance Summary (%s)

Category / Cost ($)	TN-CWS	NTN-CWS	CWS				
			<1000	1,001 – 4,100	4,101 – 33,000	33,001 – 96,000	>96,000
# of Systems	86,206	19,172	35,517	9,425	6,201	1,025	399
Est. % Sampling less than monthly	74.24%	60.99%	20.27%	-	-	-	-
% Systems with at least 1 TC+	11.52%	11.86%	16.86%	16.95%	26.59%	44.11%	76.47%
% Systems with at least 1 Non-Acute /yr	5.14%	5.78%	6.18%	5.67%	7.12%	2.41%	2.25%
% Systems with 2 Non-Acute /yr	1.21%	1.54%	1.35%	1.08%	1.41%	0.34%	1.12%
% Systems with 2 consecutive Non-Acute	0.87%	1.06%	0.86%	0.67%	0.57%	0.39%	1.12%
% Systems with at least 1 Acute	0.43%	0.37%	0.31%	0.18%	0.31%	0.59%	0.74%

Preliminary Cost of Complying with the TCR

Category / Cost ($)	TN-CWS	NTN-CWS	CWS				
			<1000	1,001 – 4,100	4,101 – 33,000	33,001 – 96,000	>96,000
# of Systems	86,206	19,172	35,517	9,425	6,201	1,025	399
Baseline Monitoring Cost	$24.6M	$12.0M	$31.3M	$24.4M	$79.4M	$46.5M	$34.7M
# of Systems with at least 1 TC+/yr	9,828	2,260	5,951	1,594	1,653	449	312
Repeat Monitoring Cost	$9.6M	$1.9M	$3.2M	$1.1M	$1.0M	$0.28M	$0.34M
Follow-Up Monitoring Cost	$8.4M	$2.1M	$3.2M	$0.64M	$0	$0	$0
Public Notification Cost	TBD	TBD	TBD	TBD	TBD	TBD	TBD
State Costs	$0.18M	$44,056	$87,332	$21,349	$17,692	$983	$367
Total Cost	$42.7M	$16.0M	$37.9M	$26.2M	$80.5M	$46.7M	$35.0M

Preliminary Cost of Complying with the TCR (cont.)

Category / Cost ($)	TN-CWS	NTN-CWS	CWS				
			<1000	1,001 – 4,100	4,101 – 33,000	33,001 – 96,000	>96,000
# of Systems	86,206	19,172	35,517	9,425	6,201	1,025	399
Total Cost	$43.2M	$16.2M	$38.1M	$26.2M	$80.6M	$46.7M	$35.0M
Cost per System	$507	$848	$1,079	$2,786	$12,961	$45,910	$85,792
Cost per Triggered System	$2,332	$2,797	$2,039 - $3,507	$3,880	$13,584	$46,531	$86,868
Cost per Household	NA	NA	$11	$3.40	$2.96	$2.23	$0.71
Cost per Household in Triggered System	NA	NA	$18.01 – 52.59	$4.73	$3.11	$2.26	$0.72

Preliminary Cost of Complying with the TCR including Voluntary Actions

Category / Cost ($)	TN-CWS	NTN-CWS	CWS				
			<1000	1,001 – 4,100	4,101 – 33,000	33,001 – 100,000	>100,000
# of Systems	86,206	19,172	35,517	9,425	6,201	1,025	399
Est. # Sampling less than monthly	63,999	11,693	7,199	-	-	-	-
Total of As Written Costs	$42.7M	$16.0M	$37.9M	$26.2M	$80.5M	$46.7M	$35.0M
Investigative Action Costs	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Corrective Action Costs	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Investigative State Costs	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Total Cost	TBD	TBD	TBD	TBD	TBD	TBD	TBD