



State of Alaska
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Surface Water Treatment Rules
Monthly Operator Reporting Forms
 Conventional or Direct Treatment using 1 or 2 Filters only



Special notice: The following instructions apply only to water systems that use conventional or direct filtration, having LESS THAN 3 filters AND REPORTING CFE TURBIDITY READINGS IN LIEU OF INDIVIDUAL FILTER EFFLUENT (IFE) READINGS.

Page 1 DAILY CHLORINE, COMBINED FILTER EFFLUENT TURBIDITY AND FLUORIDE READINGS

Entry Point Chlorine Residual:

- Chlorine residual readings must be collected daily at the entry point to the distribution system.
 - The frequency for measuring entry point chlorine residual is dependent on the number of individuals served each day: (500 or fewer = 1 sample/day); (501 – 1,000 = 2 samples/day); (1,001 – 2,500 = 3 samples/day); (2,501 – 3,300 = 4 samples/day); (3,301 or greater and all others that monitor continuously must report lowest value each day).
 - Entry point chlorine residuals must be at least 0.2 mg/l at all times (treatment technique violation). **
 - If the entry point chlorine residual drops below 0.2 mg/l, contact ADEC as soon as possible, but no later than the end of the next business day. The date and duration must be recorded on page 2.
- **If chlorine level is raised above 0.2mg/l within 4 hours, no violation will be assessed.**

Combined Filter Effluent Turbidity:

- Combined filter effluent (CFE) turbidity measurements must be taken after the point where all the individual filter effluents combine. CFE turbidity must be reported on page 1 using grab sample test results or online recordings taken at four hour intervals.
- Systems wanting to use continuous monitoring data in lieu of grab sample test results for reporting CFE turbidity must have approval from ADEC and be able to demonstrate that the CFE online turbidimeter recordings are verified weekly and the turbidimeter is calibrated at least quarterly in accordance with the manufacturer's recommended procedures.
- CFE turbidity must not exceed 1.49 NTUs at any time (maximum limit - treatment technique violation).
- If the CFE turbidity exceeds 1.49 NTUs, contact ADEC within 24 hours.
- During the month, 95% of all CFE turbidity measurements taken at four hour intervals must be less than or equal to 0.3 NTUs. Use CFE turbidity measurements recorded on page 1 and formula provided on page 2 to determine compliance (treatment technique violation).

Fluoride Residual (only required if system is fluoridating):

- Fluoride readings must be collected daily at the entry point to the distribution system.
- Entry point fluoride residual must not exceed 2.0 mg/l.
- If entry point fluoride residual is equal to or greater than 2.0 mg/l, contact ADEC within 24 hours.
- A confirmation sample needs to be sent to a certified laboratory to verify test results the first day entry point fluoride is equal to or greater than 2.0 mg/l.

Page 2 FILTER AND DISINFECTION PERFORMANCE

Combined Filter Effluent Grab Sample Test Results:

- Calculate the percentage of CFE turbidity samples exceeding 0.3 NTUs. (Use turbidity measurements recorded on page 1 to calculate percentage.)
- System must record each incident in which the CFE turbidity measurement (as recorded at four hour intervals) exceeded 1.49 NTUs and include the date the violation was reported to ADEC.

Entry Point Disinfection Performance Criteria:

- System must report each incident in which the entry point chlorine residual dropped below 0.2 mg/l for more than 4 hours, the duration of the incident and include the date the violation was reported to ADEC.

Distribution System Disinfectant Residual Criteria:

- System must report the distribution chlorine residual reading taken **at the same time and place** as each coliform bacteria sample collected during the month.

COMBINED FILTER EFFLUENT - CONTINUOUS MONITORING SUMMARY (This report form is for reporting continuous monitoring CFE test results in lieu of continuous monitoring IFE results. This form is to be used by systems having less than 3 filters only.)

- | | |
|--------------------------|--|
| <input type="checkbox"/> | System must continuously monitor the combined filter effluent (CFE) turbidity using on-line turbidimeters that record the turbidity at least every 15 minutes during production. Provide the summary of these 15 minute readings by answering the questions on page 3. The records of the 15 minute readings do not need to be sent to ADEC, but must be kept <i>on-site for 3 years and be available during inspections and sanitary surveys.</i> |
| <input type="checkbox"/> | System must report to ADEC if the CFE turbidity exceeds 1.0 NTU in 2 consecutive 15 minute readings during the month. |
| <input type="checkbox"/> | If the CFE turbidity exceeded 1.0 NTU in 2 consecutive 15 minute readings during the month, a Turbidity Exceedance Report (page 4) must be completed and submitted with monthly operator report. |
| <input type="checkbox"/> | If the CFE turbidity as measured by the continuous monitoring turbidimeter exceeds 1.0 NTU in 2 consecutive 15 minute readings in 3 consecutive months, a Filter Self Assessment is required 14 days after the self-assessment trigger occurs. (The filter self-assessment trigger is the first day the turbidity exceeded 1.0 NTU in the 3rd consecutive month.) If the system has 2 filters, both filters need to be assessed if system reports CFE readings in lieu of IFE readings. |
| <input type="checkbox"/> | The system must report the date the Filter Self-Assessment was triggered and the date the self-assessment was completed . |
| <input type="checkbox"/> | Contact ADEC within 24 hours any time the CFE's continuous monitoring turbidimeters indicate a turbidity above 2.0 NTU in two 15 consecutive minute measurements. |
| <input type="checkbox"/> | If the CFE turbidity online turbidimeter indicates that the turbidity exceeds 2.0 NTUs in 2 consecutive 15 minute readings in 2 consecutive months, a Comprehensive Performance Evaluation (CPE) is required within 90 days of when the CPE trigger occurs. (The CPE trigger occurs the first day the turbidity exceeds 2.0 NTU in the second consecutive month.) |
| <input type="checkbox"/> | The system must report the date the CPE was triggered and the date the CPE was scheduled to be performed by ADEC. |

Page 4 COMBINED FILTER EFFLUENT - TURBIDITY EXCEEDANCE REPORT

- | | |
|--------------------------|---|
| <input type="checkbox"/> | If the CFE online turbidimeter indicates that the turbidity has exceeded 1.0 NTU during 2 consecutive 15 minute readings during the month, a Turbidity Exceedance Report (page 4) must be completed and submitted with the monthly Operator Report by the 10th of the following month to provide details of each occurrence and the cause if known. |
| <input type="checkbox"/> | List the filter number, date, time and duration of the exceedance and the highest of the two turbidity values that exceeded 1.0 NTU during 2 consecutive readings. |
| <input type="checkbox"/> | If the cause of the elevated turbidity is known, indicate which of the listed reasons is responsible for the elevated turbidity level. If the cause is not on the list provided, a brief explanation should be made at the bottom of the reporting form. |
| <input type="checkbox"/> | Reminder: If the CFE turbidity exceeds 1.0 NTU in 2 consecutive 15 minute readings during 3 consecutive months, the system must complete a Filter Self Assessment within 14 days of the self-assessment trigger. If the system has 2 filters, a self assessment must be completed on both filters. |
| <input type="checkbox"/> | Reminder: If the CFE turbidity exceeds 2.0 NTUs in 2 consecutive 15 minute readings during 2 consecutive months, the system must have a Comprehensive Performance Evaluation completed within 90 days of the CPE trigger. |

All monthly forms must be submitted to the appropriate ADEC office by the 10th day of the following month. Forms must be signed in accordance with 18 AAC 80.1900.

**ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION - DRINKING WATER PROGRAM
DAILY CHLORINE, COMBINED FILTER EFFLUENT AND FLUORIDE READINGS**

Public Water System Name _____

PWSID# _____

Address _____

Phone _____

Type of Filtration: _____

For the Month of _____, 20__

Conventional or Direct

Combined Filter Effluent (CFE) Turbidity Limit = 0.3 NTU

Entry Point Chlorine Residual Measurements					Combined Filter Effluent Turbidity (Grab samples ___ or Online Turbidimeter Readings ___) ² Enter 'NR' during time periods when not filtering water.						Did You Filter		Daily Fluoride Level
Date	Sampling times: ¹				12:00 AM	4:00 AM	8:00 AM	12:00 PM	4:00 PM	8:00 PM	Yes	No	
	8:00 AM	12:00 PM	4:00 PM	8:00 PM									
1													
2													
3													
4													
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Total Entry Point Chlorine Residual Measurements					Total Number of CFE Turbidity Samples						Total days fluoride measured		
Total Chlorine Residual Measurements < 0.2 mg/l					Total Number CFE Turbidity Samples > 1.49 NTU (If any, call ADEC to report MCL violation)						Total days fluoride > = 2.0 mg/l		
					Highest single turbidity reading								
					Total Number of CFE Turbidity Samples > 0.3 NTU						B =		

¹Frequency of entry point chlorine residual readings is dependent on population. Systems serving more than 3,300 people per day and all others using continuous monitoring must record lowest chlorine residual value for day. Smaller systems using grab sample test results must spread sampling out over the day (see instructions for number of grab samples required).
²CFE turbidity must be recorded at four hour intervals. Substitution of online turbidimeter recordings (continuous monitoring) for CFE grab samples must be approved by ADEC.

Date Submitted _____ Signature of Operator: _____

COMBINED FILTER AND DISINFECTION PERFORMANCE

COMBINED FILTER PERFORMANCE CRITERIA

- A. Total number of Combined Filter Effluent (CFE) turbidity measurements during the month A=
- B. Total number of CFE turbidity measurements that are less than or equal to 0.3 NTU B=
- C. The percentage of CFE turbidity measurements less than or equal to 0.3 NTU (value in B) divided by the total number of measurements taken during the month (value in A), multiplied by 100

(B/A) X 100 = (/) X 100 = % Is This Number Less Than 95%? (Y/N)

If CFE turbidity exceeds 1.49 NTU, report the event to ADEC within 24 hours and record it below:

TABLE 1 - DAYS CFE TURBIDITY MEASUREMENTS EXCEEDED 1.49 NTU								
Date	Turbidity	State	Date	Turbidity	State	Date	Turbidity	State
Total Number of Days CFE TURBIDITY Measurements Exceeded 1.49 NTU								

ENTRY POINT DISINFECTION PERFORMANCE CRITERIA

If the entry point disinfectant residual drops below 0.2 mg/l, report it to ADEC as soon as possible, but no later than the next business day. Record dates and time entry point chlorine residual was less than 0.2 mg/l below:

TABLE 2 - DAYS CHLORINE RESIDUAL ENTERING DISTRIBUTION WAS LESS THAN 0.2 MG/L								
Date	Duration	Reported to	Date	Duration	Reported to	Date	Duration	Reported to
Total Number of Days Entry Point Chlorine Was Less Than 0.2 mg/l								

DISTRIBUTION SYSTEM DISINFECTANT RESIDUAL CRITERIA

At a minimum, the distribution chlorine residuals must be measured at the same time and place that the coliform sample is taken. In the table below, enter all the dates a coliform sample was taken, the location, and the corresponding chlorine residual measurement taken at the same time and place.

TABLE 3 - DISTRIBUTION CHLORINE RESIDUAL READINGS								
Date	Location	Residual	Date	Location	Residual	Date	Location	Residual
Total number of chlorine residual measurements taken that were 'non-detect':								

If system conducts heterotrophic plate counts when chlorine residual is at a non-detectable level, contact ADEC for further reporting requirements.

COMBINED FILTER EFFLUENT TURBIDITY

SUMMARY OF CONTINUOUS MONITORING RESULTS FOR _____ (month/year)

This report is for systems that are using conventional or direct filtration with LESS THAN 3 filters and reporting combined filter effluent (CFE) turbidity in lieu of individual filter effluent (IFE) turbidity.

1. Was continuous monitoring of the Combined Filter Effluent (CFE) turbidity conducted during the month?

No Yes

2. Was the CFE turbidity recorded at least every 15 minutes?¹

No Yes

3. Was there a failure of the CFE's continuous monitoring equipment?²

No Yes

4. Was the CFE turbidity greater than 1.0 NTU in two consecutive 15 minute readings?

No Yes

If yes, submit the Turbidity Exceedance Report Form (page 4) with this monthly report.

5. Was the CFE turbidity greater than 0.5 NTU in two consecutive measurements after on line for more than four hours?

No Yes

6. Was the CFE turbidity greater than 1.0 NTU in 2 consecutive 15 minute readings during the past 3 consecutive months?³

No Yes

If yes, enter date Individual Filter Self-Assessment was triggered:

If yes, enter date Individual Filter Self-Assessment was completed:

7. Was the CFE turbidity greater than 2.0 NTUs in 2 consecutive 15 minute readings during the past 2 consecutive months?²

No Yes

8. If yes, has the owner/operator arranged for a Comprehensive Performance Evaluation (CPE) to be completed by ADEC within 90 days of the CPE trigger?

No Yes

Indicate the date the CPE was triggered:

Indicate the date the CPE was scheduled:

¹The continuously monitored CFE turbidity results recorded every 15 minutes do not need to be submitted to ADEC each month. The 15 minute recordings must be kept on-site for 3 years and available during site visits and sanitary surveys.

²If there is a failure of the continuous monitoring equipment, systems may take grab samples of the CFE turbidity every four hours in lieu of continuous monitoring. Failure to resume continuous monitoring of CFE turbidity within 14 days is a treatment technique violation.

³Filter Self Assessment reports should be submitted to ADEC and must also be kept on-site for 3 years.

