

MOR compliance: Improving common problems

Enter the report date as the relevant monitoring period for the data as MM/YYYY, not the current month (if submitting in March, the monitoring period would be February)

Revised 01/04/07

MONTHLY OPERATIONS REPORT (MOR) FOR ALL WATER SYSTEMS

MONTH & YEAR (mm/yyyy)

Indicate one with "X"

- SURFACE WATER
- GROUNDWATER
- PURCHASE/DISTRIBUTE ONLY

Always enter the PWSID as KY followed by the 7 digit ID number
KY1234567

PWS ID:

PLANT ID:

PLANT NAME:

PWS NAME:

PLANT CLASS:

DIST. CLASS:

CY INTEREST (AI):

SOURCE NAME:

Water producers enter plant ID as A, B, C, etc.
If only one plant enter A

OPERATOR(S) RESP:

CERTIFICATION NUMBER

WTP SHIFT 1:

WTP SHIFT 2:

WTP SHIFT 3:

DISTRIBUTION:

THIS REPORT MUST BE RECEIVED BY THE DIVISION OF WATER AND APPLICABLE FIELD OFFICE
NO LATER THAN 10 DAYS AFTER THE END OF THE MONTH.

TREATMENT PLANTS COMPLETE:

1. DESIGN CAPACITY (gpm):

2. TYPE OF FILTRATION USED:



MOR Compliance

MOR page 5 Water Quality Plant Tap/Entry Point Chlorine Residuals

All water producers must report the lowest amount of chlorine leaving the plant and entering the distribution system everyday of plant operation

Please answer Y/N question below this chart. PAGE 5 OF 11

DAY	FLUORIDE		FREE / TOTAL	RAIN	WATER
	RAW	TAP			
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
			Monthly Minimum	Total Rainfall	
			Number of readings		
			For Free Chlorine, # less than 0.2 mg/L		
			For Chloramines, # less than 0.5 mg/L		

Use either an online chlorine analyzer OR a grab sample

Report free chlorine for all disinfectants except chloramine. For chloramine report total chlorine

Enter the lowest sample reported each day. Enter only one value per line. Do not enter zero for no production days, either leave blank or write closed

Ensure the summary numbers are complete and accurate

If your system uses chloramines enter Y. Otherwise enter N

Disinfectant Chloramines? (Y/N)

MOR Compliance

Transfer MOR page 5 data to plant summary

Compliance is primarily determined based on the summary pages. It is imperative that the summary pages are complete and accurate

KENTUCKY DIVISION OF WATER / DRINKING WATER BRANCH
WATER TREATMENT PLANT - MONTHLY OPERATING REPORT

APPLICABLE TO ALL PLANTS

PLEASE ANSWER THE QUESTION BEFORE YOU START

DAY	FREE CHLORINE		TOTAL CHLORINE		CHLORAMINE		FREE TOTAL	TOTAL	RESIDUAL	CHLORINE
	MIN	MAX	MIN	MAX	MIN	MAX				
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
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27										
28										
29										
30										
31										

Monthly Minimum

Number of samples for Free Chlorine when from 0.2 mg/L for Chloramines & Residual

	Monthly Minimum
Number of readings	
For Free Chlorine, # less than 0.2 mg/L	
For Chloramines, # less than 0.5 mg/L	

Ensure that the data corresponds between plant tap/entry point minimum chlorine residuals and the summary page

ENTRY POINT RESIDUAL DISINFECTANT CONCENTRATION
APPLICABLE TO ALL PLANTS

ANALYTE CODE 0999

Number of days of plant operation _____

Were samples taken each day of operation? (Y/N)

Number of lowest chlorine samples recorded _____

Lowest single chlorine reading _____

If less than required: _____

Was residual restored within 4 hours of plant operation? (Y/N)

Free Chlorine (for all disinfectants except chloramine):

Number of samples under 0.2 mg/L _____

Total Chlorine (when disinfectant is Chloramine):

Number of samples under 0.5 mg/L _____

KENTUCKY DIVISION OF WATER / DRINKING WATER BRANCH
MONTHLY OPERATING REPORT (MOR) PLANT SUMMARY FORM

NOTE: COMPLETE ALL APPLICABLE FIELDS! NOT ALL OF THE FIELDS ARE FILLABLE FOR ALL PLANTS

ANALYTE CODE: 0999

Number of days of plant operation: _____

Were samples taken each day of operation? (Y/N)

Number of lowest chlorine samples recorded: _____

Lowest single chlorine reading: _____

If less than required: _____

Was residual restored within 4 hours of plant operation? (Y/N)

Free Chlorine (for all disinfectants except chloramine):

Number of samples under 0.2 mg/L: _____

Total Chlorine (when disinfectant is Chloramine):

Number of samples under 0.5 mg/L: _____

Means total number of minimum chlorine samples **NOT** how many samples were at the lowest value. To be in compliance, this number should be equal to the number of days of plant operation

If using excel, cells will auto-populate from preceding data pages, **except** Y/N questions



MOR Compliance

MOR page 7 Distribution

Distribution System Chlorine Residuals

Community Systems: Must report at least one chlorine residual **everyday**

*Non-Community Systems: Must report at least one chlorine residual **everyday the system is open** and serving water to the public

A system with multiple plants will have the same distribution chlorine residuals for both plants' MORs

If a system purchases both chlorine and chloramine within the same month,

report total chlorine for all samples

Ensure the summary numbers are complete and accurate

DAY	CHEMICALS ADDED		DISTRIBUTION SYSTEM OPERATION TEST RESULTS											
	CHLORINE BOOSTER LBS	CHLORINE BOOSTER LBS	TOTAL (T) AND FREE (F) CHLORINE RESIDUAL (ppm)											
			NORTH		SOUTH		EAST		WEST					
			T	F	T	F	T	F	T	F	T	F	T	F
1														
2														
3														
4														
5														
6														
7														
8														
...														
23														
24														
25														
26														
27														
28														
29														
30														
31														
AVERAGE														
TOTAL														

Free chlorine must be reported for all disinfectants except chloramine. For chloramine report total chlorine

Enter at least one chlorine sample everyday.* Reporting multiple daily samples will ensure full coverage and help avoid instances of missing data. Skipping a day will result in a violation

For months with less than 31 days, write NA

If your system uses chloramines enter Y. Otherwise enter N

Total # Chlorine Samples # Less than 0.2 mg/L @ 5 mg/L	Minimum Monthly Free Residual
Number of Free Residuals	Minimum Monthly Total Residual
Number of Total Residuals	
Total # Less than 0.2 mg/L	
Total # Less than 0.5 mg/L	

Disinfectant Chloramines? (Y/N)	Number of days of operation?
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Community: Total days of distribution must equal the number of days in the month
Non-Community: Total days system was open and serving water to the public

MOR Compliance

PWS ID _____ MONITORING PERIOD (MMYYYY) _____

NOTE: COMPLETE ALL APPLICABLE FIELDS!!! NOT ALL OF THE FIELDS ARE PRE-POPULATED FOR YOU!!!

INFORMATION APPLICABLE TO ALL PLANTS	
PLANT ID _____	TOTAL WATER TREATED (gallons) _____
PLANT NAME _____	AVE. DAILY PRODUCTION (gallons) _____
AGENCY INTEREST _____	MAXIMUM PUMPAGE (gallons per day) _____

Plant ID must be A, B, C, etc.
If only one plant, enter A

COMBINED FILTER EFFLUENT TURBIDITY APPLICABLE TO ALL PLANTS WITH FILTRATION	
ANALYTE CODE <u>0100</u>	
Was each filter monitored continuously? (Y/N) _____	<input type="checkbox"/>
Were samples collected every four hours of operation? (Y/N) _____	<input type="checkbox"/>
Were repairs completed within 5 working days? (Y/N) _____	<input type="checkbox"/>
Were there any consecutive measurements? (Y/N) _____	<input type="checkbox"/>
Were there any consecutive measurements after on line for more than four hours? (Y/N) _____	<input type="checkbox"/>
Were there any consecutive measurements in three consecutive months? (Y/N) _____	<input type="checkbox"/>
Were there any consecutive measurements in two consecutive months? (Y/N) _____	<input type="checkbox"/>

SW and GUI systems must complete the turbidity boxes

If any of the last 4 boxes are YES, fill out the individual Filter Turbidity Sheet and submit with the MOR

COMBINED FILTER EFFLUENT TURBIDITY APPLICABLE TO ALL PLANTS WITH FILTRATION	ENTRY POINT RESIDUAL DISINFECTANT CONCENTRATION APPLICABLE TO ALL PLANTS
ANALYTE CODE <u>0100</u>	ANALYTE CODE <u>0999</u>
Number of hours of plant operation _____	Number of days of plant operation _____
Were samples taken every 4 hours of plant operation? (Y/N) <input type="checkbox"/>	Were samples taken each day of operation? (Y/N) <input type="checkbox"/>
Number of samples taken _____	Number of lowest chlorine samples recorded _____
Highest single turbidity reading _____	Lowest single chlorine reading _____
For all filtration except slow sand filtration:	If less than required:
Number of samples exceeded 0.1 NTU _____	Were residual restored within 4 hours of plant operation? (Y/N) <input type="checkbox"/>
Number of samples exceeded 0.3 NTU _____	Free Chlorine (for all disinfectants except chloramine):
Number of samples exceeded 1 NTU _____	Number of samples under 0.2 mg/L _____
When filtration is slow sand filtration:	Total Chlorine (when disinfectant is Chloramine):
Number of samples exceeded 1 NTU _____	Number of samples under 0.5 mg/L _____
Number of samples exceeded 5 NTU _____	

CHLORINE DIOXIDE ENTRY POINT MONITORING APPLICABLE TO PLANTS UTILIZING CHLORINE DIOXIDE	CHLORITE ENTRY POINT MONITORING APPLICABLE TO PLANTS UTILIZING CHLORINE DIOXIDE
ANALYTE CODE <u>1008</u>	ANALYTE CODE <u>1009</u>
Number of days of plant operation _____	Number of days of plant operation _____
Were samples taken each day of operation? (Y/N) <input type="checkbox"/>	Were samples taken each day of operation? (Y/N) <input type="checkbox"/>
Number of samples taken _____	Number of samples taken _____
Highest single chlorine dioxide reading _____	Highest single chlorite reading _____
Number of chlorine dioxide samples exceeded 0.8 mg/L _____	Number of chlorite samples exceeded 1 mg/L _____

Plant Summary

All water producers must complete the plant summary

If using excel, cells will auto-populate from preceding data pages, **except** Y/N questions

Once all data is complete and accurate, sign and date

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein. Based on my inquiry of those individuals immediately responsible for obtaining the information, the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. Violations of 401 KAR Chapter 8 are subject to severe penalties prescribed in KRS 224.99-010, up to \$25,000 fine per day per violation and in some cases a violation may subject the violator to prison.



MOR compliance: Improving common problems

- Do Not Handwrite
 - Illegible
 - Error prone
- Use Microsoft Excel
 - Calculations are completed automatically
 - Errors easily identified and corrected
- Computer access is available to everyone
 - Administrative offices
 - Public Libraries
- Create redundancy in training
 - Valuable experience and knowledge is lost if a system fails to train replacements before staff leave
 - Ensure multiple individuals are trained to complete compliance obligations
 - If responsible party is absent, retires, or unexpectedly leaves, there should always be another individual trained and readily available to complete required duties



MOR Compliance: Final reminders

- Review all data before signing and dating the MOR
- Your signature acknowledges that all data within the MOR is true, accurate, and complete
- The MOR must arrive to the DOW within 10 days after the monitoring period
- Mail certified to guarantee delivery. A failure to submit violation will not be rescinded unless the water system has proof of delivery (certified mail receipt)
- Mail to:
 - Division of Water**
 - Drinking Water Branch 3rd Floor**
 - 300 Sower Blvd**
 - Frankfort, KY 40601**
 - Attn: DWB MOR**
- If any errors are found after submitting to the state, notify the compliance officer immediately and send a correction

