UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

In the Matter of:	)	**UNILATERAL ADMINISTRATIVE ORDER**
City of Benton Harbor Public Water Supply, PWS ID MI0000600	)	**Proceeding under Section 1414(g) of the Safe Drinking Water Act, 42 U.S.C. § 300g-3(g)**
Benton Harbor, Michigan	)	

WHEREAS, the Michigan Department of Environment, Great Lakes, and Energy ("EGLE") has primary responsibility for the implementation and enforcement of the public water supply program in Michigan, and on March 5, 2019, EGLE and the City of Benton Harbor ("Benton Harbor" or "City") entered into an Administrative Consent Order, ACO-399-07-2019 ("2019 ACO"), to address violations and significant deficiencies of Michigan Safe Drinking Water Rules ("MSDWRs"). On August 7, 2020, EGLE and Benton Harbor agreed to amend the 2019 ACO ("2020 Amended ACO") to acknowledge completion of several activities required by the 2019 ACO and to require Benton Harbor to take additional actions to correct MSDWR violations and significant deficiencies, including developing a Capacity Study to address significant technical, managerial, and financial deficiencies.

WHEREAS, on August 19, 2021, EGLE requested that the United States Environmental Protection Agency ("EPA") participate in a joint Safe Drinking Water Act ("SDWA") inspection of the Benton Harbor Public Water System ("System") that the agencies scheduled for the week of September 20, 2021.

WHEREAS, between September 20-27, 2021, EPA and EGLE conducted the scheduled joint compliance inspection of the System to assess the SDWA compliance status of the System ("September 2021 Inspection").

WHEREAS, on October 14, 2021, Michigan Governor Gretchen Whitmer issued Executive Directive No. 2021-6 ("Executive Directive") that requires, among other actions, a whole-of-government response that directs Michigan departments and agencies to expeditiously take all appropriate action to ensure residents of Benton Harbor have immediate access to free bottled water for consumption through distribution sites and drop-off delivery until further notice.[1]

WHEREAS, the Executive Directive also requires, among other actions, that Michigan departments and agencies expeditiously take all appropriate action to leverage available state resources to support the City in replacing lead service lines.

1 For additional information on Michigan's Benton Harbor drinking water response visit: https://www.michigan.gov/cleanwater/0,9779,7-411-98113_99988_109059---,00.html.

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WHEREAS, on October 14, 2021, Michigan Governor Gretchen Whitmer announced an expedited timeline to replace 100 percent of lead service lines in Benton Harbor in the next 18 months.

WHEREAS, based on EPA's commitment to follow the best science to address lead in drinking water, EPA is conducting a confirmatory filter study, in coordination with community, local and state partners, to provide reassurance of filter effectiveness in relation to Benton Harbor's specific water chemistry.

WHEREAS, on October 19, 2021, the EPA Acting Regional Administrator, Region 5, issued a letter to EGLE Director Liesl Eichler Clark ("October 19, 2021 letter") indicating that EPA was considering its enforcement options to address any violations or deficiencies identified as a result of the September 2021 Inspection, and indicating that EPA expected to work with EGLE and the System to address such violations or deficiencies under a joint enforcement approach to maintain consistency of obligations and a better result.

WHEREAS, in the October 19, 2021 letter, EPA committed to continuing to exercise its independent oversight of Michigan's primary enforcement authority for the SDWA in the State, including continuing to provide technical assistance, pursue joint enforcement of the SDWA against the System, oversee EGLE's continuing enforcement against the System, "and if problems arise, [EPA] will . . . exercise [its] independent authorities to ensure that the residents of Benton Harbor are provided safe drinking water."

WHEREAS, in the October 19, 2021 letter, EPA further committed to continuing to be involved in Benton Harbor to support and monitor the effectiveness of the immediate interventions initiated by Michigan and the development of long-term solutions in Benton Harbor.

WHEREAS, the System's technical, managerial, and financial capacity is essential to the provision of drinking water that is compliant with the SDWA and is a critical component of ensuring corrosion control treatment is effective at reducing lead levels in the System's distribution system during and after lead service line replacement.

NOW THEREFORE, EPA FINDS and ORDERS:

I. STATUTORY AUTHORITY

1. The Director of the Enforcement and Compliance Assurance Division, EPA Region 5, is issuing this Order ("Order") to the System, PWS Identification Number MI0000600, under Section 1414(g) of the SDWA, 42 U.S.C. § 300g-3(g).

2. Section 1414 of the SDWA, 42 U.S.C. § 300g-3(g), authorizes EPA to order persons subject to SDWA to comply with all applicable requirements under the SDWA. Applicable

requirements include, among other things, the National Primary Drinking Water Regulations ("NPDWRs") promulgated at 40 C.F.R. Part 141 pursuant to Section 1412 of the SDWA, 42 U.S.C. §§ 300g-1, 300g-3(i).

3. The Administrator of EPA has delegated the authority to take these actions to the Regional Administrator of EPA Region 5, pursuant to Delegation 9-32, who has, in turn, delegated the authority to the Director of the Enforcement and Compliance Assurance Division.

II. FINDINGS OF FACT AND CONCLUSIONS OF LAW

General Findings

4. The City ("Respondent") is the owner and/or operator of the System located at 200 East Wall Street, Benton Harbor, Michigan 49022.

5. Respondent is a "person," as defined by Section 1401(12) of the SDWA, 42 U.S.C. § 300f(12), and 40 C.F.R. § 141.2.

6. The System is a "public water system" ("PWS") within the meaning of Section 1401(4) of the SDWA, 42 U.S.C. § 300f(4); and 40 C.F.R. § 141.2 that provides water from a surface water source.

7. The System regularly serves at least twenty-five (25) year-round residents and is therefore a "community water system" ("CWS") within the meaning of Section 1401(15) of the SDWA, 42 U.S.C. § 300f(15), and 40 C.F.R. § 141.2.

8. The System serves approximately 9,970 persons and has 3,335 active service connections.

9. The System has an intake in Lake Michigan as its source of drinking water.

10. Respondent's ownership and/or operation of the System makes it a "supplier of water" within the meaning of Section 1401(5) of the SDWA, 42 U.S.C. § 300f(5), and 40 C.F.R. § 141.2, and subject to the requirements of Part B of the SDWA, 42 U.S.C. § 300g, and the NPDWRs at 40 C.F.R. Part 141.

11. Pursuant to SDWA Section 1413, 42 U.S.C. § 300g-2, EGLE has primary responsibility for the implementation and enforcement of the public water supply program in Michigan.

12. Between September 20–27, 2021, EPA and EGLE conducted a joint compliance inspection of the System pursuant to Section 1445(b) of the SDWA, 42 U.S.C. § 300j-4(b), and identified numerous violations of the NPDWRs identified in Paragraphs 15–104 below, including NPDWR violations related to the System's technical, managerial, and financial capacity.

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13. On October 29, 2021, EGLE referred the identified violations to EPA to require the System to comply with the associated applicable requirements under the SDWA.

14. On October 26, 2021, EPA met with EGLE to confer on this Order, in conformance with Section 1414(g)(2) of the SDWA, 42 U.S.C. § 303g-3(g)(2).

Lead and Copper Public Education

15. The System is classified as a medium-sized PWS (3,301 to 50,000 people served) under the Lead and Copper Rule ("LCR"), as defined at 40 C.F.R. §§ 141.2 and 141.81(a)(2), and as such, was required to conduct sampling, beginning with two (2) consecutive six-month monitoring periods during July 1 to December 31, 1992 and January 1 to June 30, 1993 to determine compliance with the LCR at 40 C.F.R. § 141.86(d).

16. After meeting lead and copper action levels during the two (2) consecutive six-month monitoring periods, a medium-sized water system may reduce monitoring frequency to once per year. 40 C.F.R. §§ 141.86(d)(1)(ii)(B); 141.86(d)(4).

17. After three (3) consecutive years of monitoring, a medium-sized water system in compliance may further reduce the frequency of monitoring from annually to once every three (3) years. 40 C.F.R. §§ 141.86(d)(4)(iii).

18. An LCR compliance sample is a sample that has been collected and analyzed for lead and copper according to the requirements of the LCR at 40 C.F.R. § 141.86. The lead action level is exceeded if the concentration of lead in more than ten (10) percent of tap water samples collected during any monitoring period conducted in accordance with 40 C.F.R. § 141.86 is greater than 0.015 mg/L (i.e., if the "90th percentile" lead level is greater than 0.015 mg/L or 15 parts per billion ("ppb")).

19. Between January 2016 and December 2018, the 90th percentile of the samples collected during this period was 22 ppb, which is a lead action level exceedance ("ALE") pursuant to the LCR at 40 C.F.R. § 141.80(c).

20. Between January 2019 and June 2019, the 90th percentile of the samples collected during this sampling period was 27 ppb, which is a lead ALE pursuant to the LCR at 40 C.F.R. § 141.80(c).

21. Between July 2019 and December 2019, the 90th percentile of the samples collected during this sampling period was 32 ppb, which is a lead ALE pursuant to the LCR at 40 C.F.R. § 141.80(c).

22. Between January 2020 and June 2020, the 90th percentile of the samples collected during this sampling period was 23 ppb, which is a lead ALE pursuant to the LCR at 40 C.F.R. § 141.80(c).

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23. Between July 2020 and December 2020, the 90th percentile of the samples collected during this sampling period was 24 ppb, which is a lead ALE pursuant to the LCR at 40 C.F.R. § 141.80(c).

24. Between January 2021 and June 2021, the 90th percentile of the samples collected during this sampling period was 24 ppb, which is a lead ALE pursuant to the LCR at 40 C.F.R. § 141.80(c).

25. A PWS that exceeds the lead action level based on tap water samples collected in accordance with 40 C.F.R. § 141.86 must comply with certain public education requirements at 40 C.F.R. § 141.85.

26. 40 C.F.R. § 141.85(a) regulates the content of written public education materials (e.g., brochures and pamphlets), while 40 C.F.R. § 141.85(b) regulates the delivery of such public education materials.

27. Pursuant to 40 C.F.R. § 141.85(b)(2)(ii)(A), a CWS that exceeds the lead action level must contact the local health department and deliver education materials that meet the content requirements of 40 C.F.R. § 141.85(a) to local public health agencies even if they are not located within the water system's service area, along with an informational notice that encourages distribution to all the organization's potentially affected customers or CWS's users.

28. 40 C.F.R. § 141.85(b)(3) requires contact with the local health department at least every twelve (12) months as long as the CWS exceeds the lead action level.

29. According to the System's February 2021 and August 2021 public education certifications, the System did not contact the local health department in the 12-month period between August 2020 and August 2021.

30. Respondent's failure to contact the local health department in the 12-month period between August 2020 and August 2021 is a violation of 40 C.F.R. §§ 141.85(b)(2)(ii)(A) and 141.85(b)(3).

31. Pursuant to 40 C.F.R. § 141.85(b)(2)(ii)(B), a CWS that exceeds the lead action level must contact customers who are most at risk by delivering materials that meet the content requirements of 40 C.F.R. § 141.85(a) to the following organizations within the water system's service area, along with an informational notice that encourages distribution to all the organization's potentially affected customers or CWS's users: public and private schools or school boards, Women, Infants and Children (WIC) and Head Start programs, public and private hospitals and medical clinics, pediatricians, family planning clinics, and local welfare agencies.

32. 40 C.F.R. § 141.85(b)(3) requires contact with the organizations identified in 40 C.F.R. § 141.85(b)(2)(ii)(B) at least every twelve (12) months as long as the CWS exceeds the lead action level.

33. According to the System's February and August 2021 public education certifications, the System did not contact public and private hospitals, pediatricians, family planning clinics, community centers, or adult foster care facilities in the 12-month period between August 2020 and August 2021.

34. During the September 2021 Inspection, the inspectors asked the System to produce a distribution list confirming that organizations identified in 40 C.F.R. § 141.85(b)(2)(ii)(B) within the System's service area were contacted and delivered materials.

35. During and after the September 2021 Inspection, the System did not produce the requested distribution list.

36. Respondent's failure to contact certain organizations identified in 40 C.F.R. § 141.85(b)(2)(ii)(B) in the 12-month period between August 2020 and August 2021 is a violation of 40 C.F.R. §§ 141.85(b)(2)(ii)(B) and 141.85(b)(3).

37. Pursuant to 40 C.F.R. § 141.85(b)(2)(ii)(C), a CWS that exceeds the lead action level must make a good faith effort to locate the following organizations within the service area and deliver materials that meet the content requirements of 40 C.F.R. § 141.85(a) to them, along with an informational notice that encourages distribution to all potentially affected customers or users: licensed childcare centers, public and private preschools, and obstetricians-gynecologists and midwives.

38. 40 C.F.R. § 141.85(b)(3) requires good faith effort to locate such organizations identified in 40 C.F.R. § 141.85(b)(2)(ii)(C) at least every twelve (12) months as long as the CWS exceeds the lead action level.

39. According to the System's February and August 2021 public education certifications, the System did not make a good faith effort to locate and contact obstetricians-gynecologists in the 12-month period between August 2020 and August 2021.

40. Respondent's failure to make a good faith effort to locate organizations identified in 40 C.F.R. § 141.85(b)(2)(ii)(C) in the 12-month period between August 2020 and August 2021 is a violation of 40 C.F.R. §§ 141.85(b)(2)(ii)(C) and 141.85(b)(3).

41. Pursuant to 40 C.F.R. § 141.85(b)(2)(iii), a CWS that exceeds the lead action level must provide, no less often than quarterly, information on or in each water bill, including verbatim text, notifying customers that the system has found high levels of lead, as long as the system exceeds the lead action level.

42. 40 C.F.R. § 141.85(b)(3) requires provision of the information required under 40 C.F.R. § 141.85(b)(2)(iii) in each billing cycle.

43. According to the System's February and August 2021 public education certifications, the System did not provide information notifying customers that the System has found high levels of lead in each water bill during the 12-month period between August 2020 and August 2021.

44. During the September 2021 Inspection, the System stated to the inspectors that no public education materials are sent with water bills delivered through the mail.

45. Respondent's failure to provide information notifying customers that the System has found high levels of lead in each water bill during the 12-month period between August 2020 and August 2021 is a violation of 40 C.F.R. §§ 141.85(b)(2)(iii) and 141.85(b)(3).

Performing Turbidity Measurements

46. Pursuant to 40 C.F.R. § 141.550, systems which serve populations fewer than 10,000, are required to filter, and utilize filtration other than slow sand filtration or diatomaceous earth filtration must meet the combined filter effluent turbidity requirements of 40 C.F.R. §§ 141.551 through 141.553.

47. Pursuant to 40 C.F.R. § 141.551, the first combined filter effluent turbidity limit is a "95th percentile" turbidity limit that your system must meet in at least 95 percent of the turbidity measurements taken each month. Measurements must continue to be taken as described in 40 C.F.R. § 141.74(a) and (c). For systems using conventional filtration or direct filtration the 95th percentile turbidity value is 0.3 NTU. For systems using conventional filtration or direct filtration the maximum turbidity value is 1 NTU.

48. Pursuant to 40 C.F.R. § 141.74(c)(1), turbidity measurements must be performed on representative samples of the system's filtered water every four (4) hours (or more frequently) that the system serves water to the public. A PWS may substitute continuous turbidity monitoring for grab sample monitoring if it validates the continuous measurement for accuracy on a regular basis using a protocol approved by the State.

49. The System uses fifteen (15) Hach 1720E Turbidimeters to conduct continuous turbidity monitoring throughout the PWS. Twelve (12) of the fifteen (15) Hach 1720E Turbidimeters used to collect continuous turbidity measurements are on the System's filters.

50. The manufacturer's recommendation for the Hach 1720E Turbidimeters is that meters should be recalibrated quarterly for accurate measurements. The manufacturer also recommends recalibration after any significant maintenance or repair and at least once every three (3) months during normal operation.

51. During and after the September 2021 Inspection, the System did not demonstrate that it calibrates the twelve (12) turbidimeters on the filters every three (3) months and after significant maintenance activities, consistent with the manufacturer's recommendations.

52. Respondent's failure to calibrate the turbidimeters consistent with the manufacturer's recommendation is a failure to accurately measure turbidity, in violation of 40 C.F.R. § 141.74(c)(1).

Monitoring of Residual Disinfectant Concentration

53. Pursuant to 40 C.F.R. § 141.72(b), each PWS that provides filtration treatment must provide disinfection treatment consistent with requirements at 40 C.F.R. §§ 141.72(b)(1)–(3).

54. The System provides filtration treatment and is subject to the requirements at 40 C.F.R. §§ 141.72(b)(1)–(3).

55. Pursuant to 40 C.F.R. § 141.72(b)(2), the residual disinfectant concentration in the water entering the distribution system, measured as specified in 40 C.F.R. §§ 141.74(a)(2) and (c)(2), cannot be less than 0.2 mg/l for more than four (4) hours. The residual disinfectant concentration in the distribution system, measured as total chlorine, combined chlorine, or chlorine dioxide, as specified in 40 C.F.R. § 141.74(a)(2) and (c)(2), cannot be undetectable in more than five (5) percent of the samples each month, for any two (2) consecutive months that the system serves water to the public.

56. Pursuant to 40 C.F.R. § 141.74(a)(2), PWSs must measure residual disinfectant concentrations with specified analytical methods. If approved by the State, residual disinfectant concentrations for free chlorine and combined chlorine also may be measured by using DPD colorimetric test kits. Free and total chlorine residuals may be measured continuously by adapting a specified chlorine residual method for use with a continuous monitoring instrument provided the chemistry, accuracy, and precision remain the same. Instruments used for continuous monitoring must be calibrated with a grab sample measurement at least every five (5) days, or with a protocol approved by the State.

57. The System has numerous continuous chlorine analyzer devices installed throughout the PWS to perform continuous monitoring of chlorine residuals.

58. During the September 2021 Inspection, the System did not demonstrate that the continuous chlorine analyzers were calibrated every five (5) days with a grab sample when the chlorine analyzers were operating.

59. Respondent's failure to calibrate the chlorine analyzers every five (5) days with a grab sample when in operation is a violation of 40 C.F.R. § 141.74(a)(2).

60. Pursuant to 40 C.F.R. § 141.74(c)(2), the residual disinfectant concentration of the water entering the distribution system must be monitored continuously, and the lowest value must be recorded each day. Grab sampling every four (4) hours may be conducted in lieu of continuous monitoring if the continuous monitoring equipment fails, but for no more than five (5) working days following the failure of the equipment.

61. During the September 2021 Inspection, the inspectors observed that multiple continuous chlorine analyzer devices located on the raw water line, downstream of the plate settlers, at the point of entry station inside the PWS laboratory, and at the high service pump were offline and had been offline for more than two (2) weeks. The point of entry station inside the PWS laboratory monitored the residual disinfectant concentration of the water entering the distribution system.

62. Respondent's failure to repair the continuous chlorine analyzers monitoring the residual disinfectant concentration of the water entering the distribution system no more than five (5) working days following the failure of the equipment is a violation of 40 C.F.R. § 141.74(c)(2).

63. During the September 2021 Inspection, the inspectors observed that the System was taking manual grab samples every two (2) hours during the six (6) to eight (8) hours daily that the treatment plant filters are in operation. At the time of the September 2021 Inspection, the water treatment plant was continuously pumping water to the distribution system. System personnel stated they were not taking residual disinfectant concentration grab samples during after hours outside of the six (6) to eight (8) hours a day when the water plant filters were in operation.

64. Respondent's failure to maintain continuous monitoring of the residual disinfectant concentration is a violation of 40 C.F.R. § 141.74(c)(2).

SCADA System

65. 40 C.F.R. § 141.63(e) identifies the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant level for total coliforms and for achieving compliance with the maximum contaminant level for *E. coli*, including: maintenance of a disinfectant residual throughout the distribution system; proper maintenance of the distribution system including appropriate pipe replacement and repair procedures, main flushing programs, proper operation and maintenance of storage tanks and reservoirs, cross connection control, and continual maintenance of positive water pressure in all parts of the distribution system; and filtration and/or disinfection of surface water, as described in 40 C.F.R. §§ 141.70 through 141.76 and 40 C.F.R. §§ 141.500 through 141.571.

66. During the September 2021 Inspection, the inspectors observed that the System has a Supervisory Control and Data Acquisition (SCADA) system in place for monitoring and

operating the plant to, among other things, achieve proper disinfection. The SCADA system has the capability to set alarms and send out calls or alerts to operators 24/7 in the event a monitoring parameter falls out of a preset range or if there is an emergency at the PWS. At the time of the September 2021 Inspection, the System did not know what alarms had been set in place, and the SCADA system was in an unknown and inadequate working condition to continuously monitor residual disinfectant concentration of the water entering the distribution system. The inspectors observed that the depth sensor values being collected through the SCADA system were not consistent with the physical observations of the chlorine tanks. During the September 2021 Inspection, the System could not verify that the SCADA system is configured to issue alarms or call outs when water levels in the reservoir are low and/or there is a loss of positive pressure in the distribution system.

67. Respondent's failure to maintain alarms and/or alerts through the SCADA system is a violation of 40 C.F.R. § 141.63(e).

Filter and Disinfection Profiling and Benchmarking

68. Pursuant to 40 C.F.R. § 141.530, if a system is a Subpart H CWS which serves fewer than 10,000 persons, the system must develop a disinfection profile unless the State determines that the system's profile is unnecessary. Pursuant to 40 C.F.R. § 141.500, the requirements of Subpart T (40 C.F.R. §§ 141.500 through 141.571), including the requirements regarding disinfection, constitute NPDWRs.

69. Pursuant to 40 C.F.R. § 141.533, to calculate a disinfection profile, a system must monitor the following parameters to determine the total log inactivation using the analytical methods in 40 C.F.R. § 141.74(a), once per week on the same calendar day, over twelve (12) consecutive months:

    (a) The temperature of the disinfected water at each residual disinfectant concentration sampling point during peak hourly flow;

    (b) If the system uses chlorine, the pH of the disinfected water at each residual disinfectant concentration sampling point during peak hourly flow;

    (c) The disinfectant contact time(s) ("T") during peak hourly flow; and

    (d) The residual disinfectant concentration(s) ("C") of the water before or at the first customer and prior to each additional point of disinfection during peak hourly flow.

70. Pursuant to 40 C.F.R. § 141.534, systems must use the tables in 40 C.F.R. § 141.74(b)(3)(v) to determine the appropriate CT99.9 value.

71. During and after the September 2021 Inspection, the System did not demonstrate it calculates CT, which is needed to calculate a disinfection profile as described in 40 C.F.R. § 141.533.

72. During the September 2021 Inspection, the inspectors observed that the flow meters for treated water were not functioning properly, as is needed to calculate a disinfection profile as described in 40 C.F.R. § 141.533.

73. During the September 2021 Inspection, the inspectors observed that the continuous chlorine analyzers were not working, as is needed to calculate a disinfection profile as described in 40 C.F.R. § 141.533.

74. Respondent's failure to calculate CT, failure to maintain a properly functioning flow meter, failure to maintain working continuous chlorine analyzers, all of which are needed to calculate disinfection profiles pursuant to the NPDWRs, is a violation of 40 C.F.R. § 141.533.

75. Pursuant to 40 C.F.R. § 141.540, a system subject to Subpart H (40 C.F.R. §§ 141.70 through 141.76) that is required to develop a disinfection profile under 40 C.F.R. §§ 141.530 through 141.536, must develop a disinfection benchmark if it decides to make a significant change to its disinfection practice. A system must consult with the State for approval before it can implement a significant disinfection practice change.

76. Pursuant to 40 C.F.R. § 141.541, significant changes to the point of disinfection include: changes to the point of disinfection, changes to the disinfectant(s) used in the treatment plant, changes to the disinfection process; or any other modification(s) identified by the State.

77. On or about February 2017, the System ceased chlorine addition to the intake crib for the purposes of zebra mussel control. Later in 2017, the System altered chlorine addition from the raw line to the settled water feed. Such changes to the point of disinfection are considered a significant change to disinfection practice, as defined in 40 C.F.R. § 141.541. Therefore, according to 40 C.F.R. § 141.540, the System was required to develop disinfection benchmarks and notify the State prior to making the change.

78. During and after the September 2021 Inspection, the System did not demonstrate that it develops disinfection profiles and disinfection benchmarks after changing the point of disinfection.

79. Respondent's failure to develop disinfection profiles and disinfection benchmarks prior to making changes to the point of disinfection, in 2017, pursuant to the NPDWRs, is a violation of 40 C.F.R. § 141.540.

Requirements for Disinfection

80. Pursuant to 40 C.F.R. § 141.72, each PWS that provides filtration treatment must provide disinfection treatment.

81. Pursuant to 40 C.F.R. § 141.500, the requirements of Subpart T (40 C.F.R. §§ 141.500 through 141.571) constitute NPDWRs. These regulations establish requirements for filtration and disinfection that are in addition to criteria under which filtration and disinfection are required under Subpart H. The regulations establish or extend treatment technique requirements in lieu of maximum contaminant levels for the following contaminants: *Giardia lamblia,* viruses, heterotrophic plate count bacteria, *Legionella, Cryptosporidium,* and turbidity. The treatment technique requirements consist of installing and properly operating water treatment processes which reliably achieve:

    (a) At least 99 percent (2-log) removal of *Cryptosporidium* between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer for filtered systems, or *Cryptosporidium* control under the watershed control plan for unfiltered systems; and

    (b) Compliance with the profiling and benchmark requirements in 40 C.F.R. §§ 141.530 through 141.544.

82. Respondent's failures identified in Paragraphs 59, 62, 64, 67, 74, and 79, above, constitute Respondent's failure to demonstrate that the System provides adequate disinfection pursuant to the NPDWRs, in violation of 40 C.F.R. §§ 141.72 and 141.500.

Operational Evaluation Level Calculations for Disinfectant Byproduct Monitoring

83. A CWS that uses a primary or residual disinfectant other than ultraviolet light or delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light is subject to monitoring and other requirements at Subpart V (40 C.F.R. §§ 141.620 through 141.629) of the NPDWRs for achieving compliance with maximum contaminant levels based on locational running annual averages ("LRAA") for total trihalomethanes ("TTHM") and haloacetic acids five ("HAA5").

84. 40 C.F.R. § 141.621(a) establishes routine monitoring requirements, including the frequency of and locations for routine monitoring.

85. Pursuant to 40 C.F.R. § 141.626(a), a CWS has exceeded the Operational Evaluation Level ("OEL") at any monitoring location where the sum of the two (2) previous quarters' TTHM results plus twice the current quarter's TTHM result, divided by four (4) to determine an average, exceeds 0.080 mg/L, or where the sum of the two (2) previous quarters' HAA5 results plus twice the current quarter's HAA5 result, divided by four (4) to determine an average, exceeds 0.060 mg/L.

86. During the September 2021 Inspection, the System did not demonstrate that it performs OEL calculations.

87. Respondent's failure to perform OEL calculations pursuant to the NPDWRs is a violation of 40 C.F.R. § 141.626.

America's Water Infrastructure Act

88. On October 23, 2018, the America's Water Infrastructure Act ("AWIA") of 2018 (Public Law 115-270) amended the SDWA.

89. Section 1433(a)(1) of the SDWA, 42 U.S.C. § 300i-2(a)(1), requires each CWS serving a population of greater than 3,300 persons to conduct a Risk and Resilience Assessment (RRA) of its system, including an assessment of:

(a) The risk to the system from malevolent acts and natural hazards;

(b) The resilience of the pipes and constructed conveyances, physical barriers, source water, water collection and intake, pretreatment, treatment, storage and distribution facilities, electronic, computer, or other automated systems (including the security of such systems) which are utilized by the system;

(c) The monitoring practices of the system;

(d) The financial infrastructure of the system;

(e) The use, storage, or handling of various chemicals by the system; and

(f) The operation and maintenance of the system.

90. Section 1433(a)(3)(A)(iii) of the SDWA, 42 U.S.C. § 300i-2(a)(3)(A)(iii), requires each CWS serving a population greater than 3,300 but less than 50,000 to submit a certification to the EPA Administrator that it has conducted an RRA prior to June 30, 2021.

91. Section 1433(b) of the SDWA, 42 U.S.C. § 300i-2(b), requires each CWS serving a population greater than 3,300 to prepare or revise, where necessary, an Emergency Response Plan (ERP) that incorporates the findings of the RRA and to certify to the EPA Administrator no later than six (6) months after completion of the RRA that the system has completed an ERP. The ERP shall include:

(a) Strategies and resources to improve the resilience of the system, including the physical security and cybersecurity of the system;

(b) Plans and procedures that can be implemented, and identification of equipment that can be utilized, in the event of a malevolent act or natural hazard that threatens the ability of the community water system to deliver safe drinking water;

(c) Actions, procedures, and equipment which can obviate or significantly lessen the impact of a malevolent act or natural hazard on the public health and the safety and supply of drinking water provided to communities and individuals, including the development of alternative source water options, relocation of water intakes, and construction of flood protection barriers; and

(d) Strategies that can be used to aid in the detection of malevolent acts or natural hazards that threaten the security or resilience of the system.

92. Section 1433(d) of the SDWA, 42 U.S.C. § 300i-2(d), requires that each CWS shall maintain a copy of the RRA and the ERP (including any revised RRA or ERP) for five (5) years after the date on which a certification of such assessment or plan is submitted.

93. According to EPA's AWIA database, the System certified on June 29, 2021 that it had completed both an RRA and an ERP.

94. During the September 2021 Inspection, the System stated that it could not produce the ERP because it had not yet prepared the ERP.

95. Respondent's failure to retain a copy of the ERP pursuant to Section 1433(b) of the SDWA, 42 U.S.C. § 300i-2(b), is a violation of Section 1433(d) of the SDWA, 42 U.S.C. § 300i-2(d).

Record Maintenance

96. Any owner or operator of a PWS subject to the NPDWRs must comply with record maintenance requirements at 40 C.F.R. § 141.33.

97. Pursuant to 40 C.F.R. § 141.33(a), any owner or operator of a PWS subject to the NPDWRs shall retain, on its premises or at a convenient location near its premises, records of microbiological analyses and turbidity analyses made pursuant to the NPDWRs for not less than five (5) years and records of chemical analyses made pursuant to the NPDWRs for not less than ten (10) years.

98. During and after the September 2021 Inspection, the System did not produce analysis records for disinfectant byproducts ("DBP"), Total Organic Carbon precursor, turbidity, or residual chlorine that the inspectors asked Respondent to produce during and after the September 2021 Inspection.

99. Respondent's failure to retain records of microbiological, turbidity, and chemical analyses made pursuant to the NPDWRs is a violation of 40 C.F.R. § 141.33(a).

100. During the September 2021 Inspection, the inspectors requested the Total Organic Carbon precursor monitoring and DBP distribution system sampling. The System provided an incomplete set of records and did not provide the data from February 2018 to October 2020, and January and February 2021.

101. Respondent's failure to retain complete records of Total Organic Carbon precursor monitoring and DBP distribution system sampling made pursuant to the NPDWRs is a violation of 40 C.F.R. § 141.33(a).

102. Pursuant to 40 C.F.R. § 141.91, any system subject to the requirements of Subpart I (40 C.F.R. §§ 141.80 through 141.93) shall retain on its premises original records of all sampling data and analyses, reports, surveys, letters, evaluations, schedules, State determinations, and any other information required by 40 C.F.R. §§ 141.81 through 141.88. Each water system shall retain the records required by this section for no fewer than twelve (12) years.

103. During and after the September 2021 Inspection, the inspectors asked the System to provide a distribution list with dates of public education materials provided to organizations and customers following each lead ALE, as required by 40 C.F.R. § 141.85. The System did not provide these records for the June 2018 through June 2020 time period.

104. Respondent's failure to retain complete lead and copper public education materials required by 40 C.F.R. § 141.85 is a violation of 40 C.F.R. § 141.91.

Conclusions of Law

105. Based on the findings above, EPA has determined that the System has numerous SDWA violations, including violations of the NPDWRs.

106. The NPDWR violations identified in the findings above represent significant technical, managerial, and financial deficiencies, as contemplated by 40 C.F.R. § 141.723.

III. ORDER

Based on the foregoing FINDINGS, and pursuant to the authority of Section 1414(g) of the SDWA, 42 U.S.C. § 300g-3(g), EPA is issuing this Order to comply with the SDWA and the NPDWRs, 40 C.F.R. Part 141. **EPA hereby ORDERS:**

107. Lead and Copper Public Education Requirements. Beginning no later than the Effective Date of this Order, Respondent shall comply with the following requirements:

(a) The System must provide, no less often than quarterly, the following information on or in each water bill when the System exceeds the action level for lead:

> "The Benton Harbor Public Water System found high levels of lead in drinking water in some homes. Lead can cause serious health problems. For more information, please call the Benton Harbor Public Water System."

The message on the water bill must include the above statement exactly as written except that the message or delivery mechanism can be modified in consultation with the State; specifically, the State may allow a separate mailing of public education materials to customers if the water system cannot place the information on water bills. The System must repeat this task every time the System exceeds the action level for lead.

(b) The System must contact the local health department and deliver education materials that meet the content requirements of 40 C.F.R. § 141.85(a) along with an informational notice that encourages distribution to all the organization's potentially affected customers. The System must repeat this task every twelve (12) months as long as the System exceeds the action level for lead.

(c) The System must contact customers who are most at risk by delivering materials that meet the content requirements of 40 C.F.R. § 141.85(a) to the following organizations that are located within the water system's service area, along with an informational notice that encourages distribution to each of the organization's potentially affected customers or CWS's users: (1) Public and private schools or school boards, (2) Women, Infants and Children (WIC) and Head Start programs, (3) Public and private hospitals and medical clinics, (4) Pediatricians, (5) Family planning clinics, and (6) Local welfare agencies. The System must repeat this task every twelve (12) months as long as the System exceeds the action level for lead.

(d) The System must make a good faith effort to locate the following organizations within the service area and deliver materials that meet the content requirements of 40 C.F.R. § 141.85(a) to them, along with an informational notice that encourages distribution to all potentially affected customers or users: (1) licensed childcare centers, (2) public and private preschools, and (3) obstetricians-gynecologists and midwives. The System must repeat this task every twelve (12) months as long as the System exceeds the action level for lead.

(e) The System must provide documentation to EPA that the requirements in Paragraph 107(a)–(d) have been met within seven (7) days of the System completing each Public Education requirement.

108. Address the Non-Operable Continuous Monitoring Devices Throughout the System.

(a) The System must repair and/or bring online the continuous flow meters the System currently utilizes in the drinking water treatment process to meet the monitoring standards of 40 C.F.R. § 141.533 within seven (7) days of the Effective Date of this Order.

(b) The System must create a plan and schedule to repair and/or bring online all non-operable continuous monitoring devices which the System currently utilizes in the drinking water treatment process. The plan must include specific deadlines for repairing and/or bringing online the continuous chlorine analyzers to meet the monitoring standards of 40 C.F.R. § 141.74(c)(2), continuous flow meters to meet the monitoring standards of 40 C.F.R. § 40 C.F.R. § 141.533, and depth sensors in the chlorine tanks. The plan must also include a detailed description of how the System will connect and ensure all active continuous monitoring devices remain connected to the SCADA system as well as a specific deadline to complete this action. The System must submit the plan to EPA and EGLE for review and approval within thirty (30) days of the Effective Date of this Order.

(c) Following EPA and EGLE's approval of the plan, the System must implement the plan according to the approved schedule. Any request for an extension to the approved schedule must be submitted in writing to both EPA and EGLE for review and approval.

(d) The System must also develop a separate calibration schedule for all continuous monitoring devices, including, but not limited to, the chlorine analyzers, flow meters, turbidimeters, and depth sensors. The System must submit the calibration schedule to EPA and EGLE for review and approval within forty-five (45) days of the Effective Date of this Order.

(e) Following EPA and EGLE's approval of the calibration schedule, the System must immediately implement the calibration schedule.

109. SCADA Alarms.

(a) The System must determine for which components of the PWS is the SCADA system currently configured to issue alarms and/or initiate calls to the operator when alarms are activated.

(b) The System must configure the SCADA system to issue alarms for all appropriate situations including, but not limited to:

i. When chlorine levels are outside the regulatory limits of 40 C.F.R. § 141.72(b)(2);

ii. When turbidity levels are outside the regulatory limits of 40 C.F.R. § 141.73(a)(2); and
iii. When water levels in the reservoir are low such that the System's ability to maintain adequate disinfection and/or positive pressure in the distribution system, per 40 C.F.R. §§ 141.72(b) and 141.63(e) respectively, is adversely affected.

(c) The System must configure the SCADA system to initiate calls to the operator of record for all appropriate situations including, but not limited to:

i. When chlorine levels are outside the regulatory limits of 40 C.F.R. § 141.72(b)(2);
ii. When turbidity levels are outside the regulatory limits of 40 C.F.R. § 141.73(a)(2); and
iii. When water levels in the reservoir are low such that the System's ability to maintain adequate disinfection and/or positive pressure in the distribution system, per 40 C.F.R. §§ 141.72(b) and 141.63(e) respectively, is adversely affected.

(d) The System must demonstrate to EPA that the SCADA system has been configured to meet the requirements of Paragraph 109(a)–(c) within sixty (60) days of the Effective Date of this Order.

110. Adequate Disinfection of Finished Water and Reducing Exposure to Disinfection Byproducts.

(a) The System must develop a Disinfection Profile and Benchmarking Report by following the steps in the EPA guidance document, "*Disinfection Profiling and Benchmarking Technical Guidance Manual*", June 2020, or an EPA-approved equivalent. The Disinfection Profile and Benchmarking Report must:

i. Identify disinfection segments;
ii. Collect relevant disinfection data, including, but not limited to:
    1. Peak Hourly Flow;
    2. Residual Disinfection Concentration;
    3. Temperature; and
    4. pH;
iii. Calculate CT;
iv. Calculate inactivation and required CT;
v. Develop the disinfection profile and benchmark; and
vi. Report and evaluate the disinfection profile and benchmark.

(b) The System must begin monitoring, at a frequency of at least once weekly, the necessary parameters to complete the Disinfection Profile and Benchmarking Report within thirty (30) days of the Effective Date of this Order.

(c) The System must deliver to EPA a preliminary report of the requirements in Paragraph 110(a)(i)–(iv) for the first four (4) weeks of monitoring within sixty (60) days of the Effective Date of this Order.

(d) If the System chooses to bring online the chlorine injection point at the intake as a zebra mussel control measure, this action would be considered a significant change to the point of disinfection. If the System brings online the zebra mussel chlorine injection point at the intake, the System must notify EPA of when this occurred and restart the monitoring and actions describe in Paragraph 110(a), (b), and (c).

(e) The System must deliver to EPA a completed Disinfection Profile and Benchmarking Report within four hundred and twenty-five (425) days of the Effective Date of this Order.

111. Alternatives Analysis.

(a) The System shall complete an Alternatives Analysis of the PWS.

(b) The Alternatives Analysis must be completed with the assistance of an independent third-party approved by the Director of the Enforcement and Compliance Assurance Division, EPA Region 5. For purposes of this Order, the term "independent" shall mean a third party that has not been employed or contracted by Respondent within the last five (5) years, as well as any affiliates, subsidiaries, officers, shareholders, employees, or assigns of such entity. Respondent shall select an independent third-party and submit to EPA for approval within thirty (30) days of the Effective Date of this Order. The independent third-party selected by Respondent should consist of at least one licensed Professional Engineer.

(c) The Alternatives Analysis should use the information gathered to support development of the System's Capacity Study required under the 2020 Amended ACO to identify, at a minimum, the following potential alternatives in an Alternatives Analysis Report ("Report"):

i. Staffing and administrative changes to enable Respondent to be the direct majority provider of long-term technical, managerial, and financial capacity;
ii. Consolidation, restructuring, or regionalization, including:
    1. Physical consolidation of the System with one (1) or more other systems;
    2. Consolidation of significant management and administrative functions of the System with one (1) or more other systems; and
    3. Transfer of ownership of the system that may reasonably be expected to improve drinking water quality;
iii. Entering into contractual agreements with third-party entities to provide significant management or administrative functions; and
iv. A combination or hybrid of alternatives in Paragraph 111(d)(i)–(iii), above.

(d) The System shall complete the Report within one hundred and eighty (180) days of approval of the independent third-party by EPA.

(e) After the Report is complete, the System must post the Report for public comment for at least thirty (30) days. The System must post the Report online and make hard copies available at the local public library, City Hall, the Berrien County Health Department, the Armory Community Center, and other locations that are accessible on weekends and outside working hours on weekdays, such as local schools, churches, and welfare agencies. The System must notify customers at least through local radio and local newspapers that the Report is available and provide clear instructions for how customers can review and comment on the Report.

(f) After the public comment period closes, the System must consolidate all public comments received by the System within seven (7) days of the end of the public comment period.

(g) The System shall submit the Report and the consolidated public comments to EPA immediately following the completion of the requirement in Paragraph 111(f) as well as post these documents online and make hard copies available at the local public library.

112. Water Treatment Plant Filter Repair

(a) The System must immediately identify the number of filters necessary to produce the daily demand during the hours of plant operation along with adequate redundancy and prioritize repair of those filters. The approved filtration rate is 2 gpm/ft^2 over the entire filter run.

(b) Within fifteen (15) days of the Effective Date of this Order, the System must initiate repairs to return the full backwash functionality to the water treatment plant filters identified pursuant to Paragraph 113(a), above. Full backwash functionality includes, but is not limited to:

i. Functioning mechanical surface washers, such as the existing sprayer arms;
ii. Utilizing the filter to waste valves to enable a filter to waste step with each backwash cycle;
iii. Monitoring for combined filter effluent using an appropriate location;
iv. Adequate sludge monitoring and removal activities from the plate settlers;
v. Regularly and properly testing backflow prevention devices;
vi. Ability to accurately monitor flow through each filter;
vii. Continuous turbidity monitoring;

viii. Fully functioning control panels with working indicator lights and accurate readouts. Repairs to Programmed Logic Controllers (PLCs) as necessary;
ix. Finalized Standard Operating Procedures for filters including the backwash procedures; and
x. All operations staff trained on the filter operation procedures.

(c) The System must ensure that volume through the filters over the course of each filter run cycle is evenly balanced between all combinations of filters used to comply with Paragraph 112(a).

(d) The System must notify EPA and EGLE once all repairs are complete, and the filters identified pursuant to Paragraph 112(a) have been returned to full functionality.

113. AWIA: By December 31, 2021, Respondent shall provide written confirmation to EPA, that Respondent has met the requirements of Section 1433(b) of the SDWA, 42 U.S.C. § 300i-2(b), and that Respondent is in compliance with Sections 1433(b) and (d) of the SDWA, 42 U.S.C. § 300i-2(b) and (d). Respondent should not submit an ERP to the below addresses; the above referenced confirmation shall be submitted electronically via email to the staff identified in Paragraph 114.

114. Reporting: Respondent must submit all submissions, including progress reports, required by this Order by electronic mail to EPA at r5weca@epa.gov, and the address identified in below. All electronically submitted materials must be in final and searchable format, such as Portable Document Format (PDF) with Optical Character Recognition (OCR) applied. Do not use the email address r5weca@epa.gov for submission of any information for which you intend to assert a claim of business confidentiality under 40 C.F.R. Part 2, Subpart B. If Respondent is unable to send a report or notification to these addresses due to email size restrictions, the confidential nature of the information, or another problem, contact the EPA case manager and send an email to r5weca@epa.gov to make alternative arrangements for the transmission of the report or notification.

EPA points of contact:

Taylor Girouard
Water Enforcement and Compliance Assurance Branch
U.S. EPA Region 5
77 West Jackson Boulevard (ECW-15J)
Chicago, IL 60604
Email: girouard.taylor@epa.gov

Victoria Anderson
Water Enforcement and Compliance Assurance Branch
U.S. EPA Region 5
77 West Jackson Boulevard (ECW-15J)

Chicago, IL 60604
Email: anderson.victoria@epa.gov

Matthew Russo
Office of Regional Counsel
U.S. EPA Region 5
77 West Jackson Boulevard (C-14J)
Chicago, IL 60604
Email: russo.matthew@epa.gov

EGLE point of contact:

Ernest Sarkipato
Drinking Water and Environmental Health Division
Michigan Department of Environment, Great Lakes, and Energy
Email: sarkipatoe@michigan.gov

IV. PARTIES BOUND

115. The provisions of this Order shall apply to and be binding upon Respondent, its officers, employees, agents, successors, and assigns.

V. GENERAL PROVISIONS

116. This Order constitutes final agency action. Under Section 1448(a) of the SDWA, 42 U.S.C. § 300j-7(a), Respondent may seek federal judicial review.

117. EPA may modify this Order. EPA will consider information provided by Respondent to modify this Order. EPA will communicate any modification(s) to Respondent in writing and the modification(s) shall be incorporated into this Order.

118. Compliance with the terms and conditions of this Order does not constitute compliance with the SDWA or the NPDWRs nor any permits or orders issued thereunder. This Order shall not in any way be construed to relieve Respondent from its obligations to comply with all provisions of federal, state, or local law, nor shall it be construed to be a determination of any issue related to any federal, state, or local permit. Compliance with this Order shall not be a defense to any actions subsequently commenced for any violation of federal laws and regulations administered by EPA, and it is the responsibility of Respondent to comply with such laws and regulations.

119. EPA reserves all rights against Respondent and all other persons to take any further civil, criminal, or administrative enforcement action pursuant to any available legal authority, and to exercise its information gathering and inspection authorities. Nothing in this Order shall preclude EPA from taking any additional enforcement actions, including modification

of this Order or issuance of additional Orders, and/or additional actions as EPA may deem necessary, and/or from requiring Respondent in the future to perform additional activities pursuant to the SDWA or any other applicable law. EPA further expressly reserves the right to disapprove work performed by Respondent.

120. Failure to comply with this Order may subject Respondent to a penalty up to $59,017 per day per violation for each day in which a violation occurs, as assessed by the United States District Court, under Section 1414(g)(3)(A) of the SDWA, 42 U.S.C. § 300g-3(g)(3)(A), (C), or up to $41,120 per violation, as assessed by the Administrator, under Section 1414(g)(3)(B) of the SDWA, 42 U.S.C. § 300g-3(g)(3)(B).

VI. EFFECTIVE DATE

121. This Order is effective on the date of signature by the Director of the Enforcement and Compliance Assurance Division, EPA Region 5, and will remain in effect until EPA has notified Respondent of termination of the Order pursuant to Section VII, below. If modifications are made by EPA to this Order, such modifications will be effective on the date on which the modification is signed by EPA.

VII. TERMINATION

122. The provisions of this Order shall be deemed satisfied when Respondent receives written notice from EPA that Respondent has demonstrated, to the satisfaction of EPA, that the terms of this Order, including any additional tasks determined by EPA to be required under this Order or any continuing obligation or promises, have been satisfactorily completed, and the written notice from EPA will state that this Order is terminated.

United States Environmental Protection Agency

Harris, Michael
Digitally signed by Harris, Michael
Date: 2021.11.02 10:15:50 -05'00'

Michael D. Harris
Director
Enforcement and Compliance Assurance Division
U.S. Environmental Protection Agency, Region 5