**Section 611.1352 Corrosion Control Treatment**

Each supplier must complete the corrosion control treatment requirements this Section describes that applying to the supplier under Section 611.1351.

a) System Recommendation Regarding Corrosion Control Treatment

1) Based on the results of lead and copper tap monitoring and water quality parameter monitoring, a small‑ or medium-sized system exceeding the lead or copper action level must recommend to the Agency that the supplier install one or more of the corrosion control treatments in subsection (c)(1) that the supplier believes constitutes optimal corrosion control for its system.

2) The Agency may issue a SEP requiring the supplier to conduct additional water quality parameter monitoring under Section 611.1357(b) to assist the Agency in reviewing the supplier’s recommendation.

b) Agency-Required Studies of Corrosion Control Treatment. The Agency may issue a SEP requiring a small or medium-sized system supplier exceeding the lead or copper action level to perform corrosion control studies under subsection (c) to identify optimal corrosion control treatment for the supplier’s system.

c) Performance of Studies

1) Any supplier performing corrosion control studies must evaluate the effectiveness of each of certain treatments and combinations of those treatments if appropriate to identify the optimal corrosion control treatment for the supplier’s system:

A) Adjusting alkalinity and pH;

B) Adjusting calcium hardness; and

C) Adding a phosphate- or silicate-based corrosion inhibitor at a concentration sufficient to maintain an effective residual concentration in all test tap samples.

2) The supplier must evaluate each of the corrosion control treatments using pipe rig/loop tests; metal coupon tests; partial-system tests; or analyses based on documented analogous treatments in other systems of similar size, water chemistry, and distribution system configuration.

3) The supplier must measure specific water quality parameters in any tests the supplier conducts under this subsection (c) before and after evaluating the corrosion control treatments in subsection (c)(1):

A) Lead;

B) Copper;

C) pH;

D) Alkalinity;

E) Calcium;

F) Conductivity;

G) Orthophosphate (when the supplier uses an inhibitor containing a phosphate compound);

H) Silicate (when the supplier uses an inhibitor containing a silicate compound); and

I) Water temperature.

4) The supplier must identify all chemical or physical constraints that limit or prohibit using any particular corrosion control treatment and document those constraints:

A) With data and documentation showing that a particular corrosion control treatment adversely affects other water treatment processes when another supplier uses that treatment in a system with water having comparable water quality characteristics; or

B) With data and documentation demonstrating that the supplier previously evaluated a particular corrosion control treatment, finding either that the treatment is ineffective or adversely affects other water quality treatment processes.

5) The supplier must evaluate the effect of the evaluated corrosion control treatment chemicals on other water quality treatment processes.

6) Based on an analysis of the data the supplier generated during each evaluation, the supplier must recommend in writing to the Agency the treatment option the corrosion control studies indicate constitutes optimal corrosion control treatment for the supplier’s system. The supplier must give a rationale for its recommendation together with all supporting documentation subsections (c)(1) through (c)(5) specify.

d) Agency Approval of Treatment

1) Based on consideration of available information, including applicable studies the supplier performed under subsection (c) and a supplier’s recommended treatment alternative, the Agency must either issue a SEP requiring the corrosion control treatment option the supplier recommended or deny a SEP and require the supplier to further investigate and recommend alternative corrosion control treatments from among those in subsection (c)(1). When approving optimal corrosion control treatment, the Agency must consider the effects that additional corrosion control treatment will have on water quality parameters and other water quality treatment processes.

2) The Agency must notify the supplier of the basis for this determination in any SEP it issues under subsection (d)(1).

e) Installing Optimal Corrosion Control. A supplier must properly install and operate the optimal corrosion control treatment throughout its distribution system that the Agency approved under subsection (d).

f) Agency Review of Treatment and Specification of Optimal Water Quality Control Parameters. The Agency must evaluate the results of all lead and copper tap samples and water quality parameter samples the supplier submits and determine whether the supplier properly installs and operates the optimal corrosion control treatment the Agency approves under subsection (d).

1) Upon reviewing the results of the supplier's tap water and water quality parameter monitoring, both before and after installing optimal corrosion control treatment, the Agency must issue a SEP specifying operating parameters:

A) A minimum value or range of values for pH at each entry point to the distribution system;

B) A minimum pH value for all tap samples. This value must be equal to or greater than 7.0, unless the Agency determines that a pH 7.0 is not technologically feasible or is not necessary for the supplier to optimize corrosion control;

C) If the supplier uses a corrosion inhibitor, a minimum inhibitor concentration or range of concentrations, for each entry point to the distribution system and in all tap samples, that the Agency determines is necessary to form a passivating film on the interior walls of the pipes of the distribution system;

D) If the supplier adjusts alkalinity as part of optimal corrosion control treatment, a minimum concentration or a range of concentrations for alkalinity for each entry point to the distribution system and in all tap samples;

E) If the supplier uses calcium carbonate stabilization as part of corrosion control, a minimum concentration or a range of concentrations for calcium in all tap samples.

2) The values for the applicable water quality control parameters in subsection (f)(1) must be those the Agency determines reflect optimal corrosion control treatment for the supplier.

3) The Agency may issue a SEP approving values for additional water quality control parameters the Agency determines reflect optimal corrosion control for the supplier’s system.

4) The Agency must explain the determinations under subsection (f)(3) giving the basis for its decisions in a SEP.

g) Continued Operation and Monitoring. All suppliers optimizing corrosion control must continue to operate and maintain optimal corrosion control treatment, including maintaining water quality parameter values at or above minimum values or within ranges the Agency approved under subsection (f), under this subsection (g) for all samples the supplier collects under Section 611.1357(d) through (f). The supplier must determine whether it complies with this subsection (g) every six months, as Section 611.1357(d) specifies. A water system does not comply with this subsection (g) in any six-month period during which the supplier has excursions from any Agency-specified parameter on more than nine days. An excursion occurs whenever the daily value for one or more of the water quality parameters measured at a sampling location is below the Agency-designated minimum value or outside the Agency-designated range. The supplier calculates daily values as subsections (g)(1) through (g)(3) provide. The Agency must delete results from this calculation that it determines are obvious sampling errors.

1) On days when the supplier collects more than one measurement for a water quality parameter at a sampling location, the daily value is the average of all results the supplier collected during the day, regardless of whether the supplier collected the samples through continuous monitoring, grab sampling, or a combination of both.

BOARD NOTE: Corresponding 40 CFR 141.82(g)(1) (2020) further provides as follows: If USEPA approves an alternative formula under 40 CFR 142.16 in the State’s application for a program revision submitted under 40 CFR 142.12, the approved formula is used to aggregate multiple measurements at a sampling point for the water quality parameter in lieu of the formula in this subsection (g).

2) On days when the supplier collects only one measurement for a water quality parameter at a sampling location, the daily value is that measurement.

3) On days when the supplier collects no measurement for a water quality parameter at a sampling location, the daily value is the daily value calculated on the most recent day on which the supplier measured the water quality parameter at the sample site.

h) Modifying Agency Treatment Decisions

1) On its own initiative or in response to a request by the supplier, the Agency may issue a SEP modifying its determination of the optimal corrosion control treatment under subsection (d) or of the optimal water quality control parameters under subsection (f).

2) A supplier must request modification in writing, explaining the propriety of the modification and providing supporting documentation.

3) The Agency may modify its determination if it determines that a change will ensure that the supplier continues optimizing corrosion control treatment. A revised determination must give the new treatment requirements, explain the basis for the Agency’s decision, and provide an implementation schedule for completing the treatment modifications.

4) Any interested person may submit information to the Agency bearing on whether the Agency should exercise its discretion and issue a SEP modifying its determination under subsection (h)(1). An Agency determination not to act on information an interested person submits is not an Agency determination for the purposes of Sections 39 and 40 of the Act.

i) USEPA Treatment Decisions. Under 40 CFR 142.19, USEPA reserves the prerogative to review Agency treatment determinations under subsections (d), (f), or (h) and issue federal treatment determinations consistent with 40 CFR 141.82(d), (e), or (h) (2020) if USEPA finds that certain conditions exist:

1) The Agency fails to issue a treatment determination by the applicable deadlines in Section 611.1351 (corresponding with 40 CFR 141.81 (2020));

2) The Agency abuses its discretion in a substantial number of instances or in instances affecting a substantial population; or

3) The technical aspects of the Agency’s determination would be indefensible in a federal enforcement action taken against the supplier.

BOARD NOTE: This Section corresponds with Section 611.1352 and derives from 40 CFR 141.82 (2020).

(Source: Added at 47 Ill. Reg. 16486, effective November 2, 2023)