

November 11, 2014

Via email to: LCRWorkingGroup@epa.gov National Drinking Water Advisory Council Lead and Copper Rule Working Group

Via U.S. Mail to: Environmental Protection Agency Office of Groundwater and Drinking Water Mail Code: 4601M 1200 Pennsylvania Avenue, N.W. Washington, DC 20460

Re: Lead and Copper Rule Long-Term Revisions: Issues Regarding Lead Service Line Replacement

To whom it may concern,

Earthjustice strongly recommends that EPA restore the broad interpretation of "control" for purposes of lead service line replacement that EPA previously adopted in the 1991 Lead and Copper Rule. As detailed below, the narrower "ownership" approach to lead service line replacement that was adopted under the 2000 revisions to the Lead and Copper Rule has failed to achieve the fundamental goals of the rule. Rather than fostering removal of lead from public drinking water infrastructure, the ownership approach fostered extensive *partial* lead service line replacements that have been shown to aggravate conditions that cause lead to leach from pipes into water, causing at least a temporary increase in health risks to people served by the affected service lines. The ownership approach may also encourage public water systems to embrace a very narrow interpretation of their own control of service lines that further undermines public health and the goal of removing sources of lead from the distribution system. The current long-term revision process presents an opportunity to address these

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¹ U.S. EPA, Office of the Administrator Science Advisory Board, Evaluation of the Effectiveness of Partial Lead Service Line Replacements, September 28, 2011, p. 10 (available at http://yosemite.epa.gov/sab%5Csabproduct.nsf/964CCDB94F4E6216852579190072606F/\$File/EPA-SAB-11-015-unsigned.pdf) (last visited Oct. 28, 2014).

shortcomings and get back on track toward fulfilling the public health goals of SDWA and the Lead and Copper Rule.²

BACKGROUND

Health hazards of lead exposure and the history of using lead in drinking water infrastructure

Lead is a dangerous poison that adversely impacts nearly every system in the body. No level of lead has been found to be safe for humans, and lead is particularly harmful to developing fetuses and children. People have known of the human health hazards associated with lead for many years, dating back to first century Romans.³ The early focus on lead hazards tended to center on extreme acute exposure and severe poisoning events. But since the 1970s more evidence has emerged which establishes "a causal association between very small increments in blood lead – from 0.5 to 3 [micrograms of lead per deciliter of blood ($\mu g/dL$)] – and highly significant increases in blood pressure, risks of atherosclerosis, and premature death due to cerebrovascular disease and stroke."⁴ Health harms associated with blood lead levels in this range also include impairment of a growing child's neurodevelopment including attention deficit disorder, learning disabilities, disruptive behavior, and a range of sociopathic behaviors including delinquency and drug use.⁵

U.S. regulatory responses to this hazard have been slow and incomplete due in part to lack of political will, and in part to intentional obfuscation by dating at least as far back as the 1920s when, for example, the Ethyl Gas Corporation deceived the public about dangers of leaded gasoline. Consequently, while information about the hazards of leaded gasoline became widely known in the 1920s, it was not until the 1990s that Congress mandated that lead be removed from U.S. gasoline supplies. Similarly, lead-based paint continued to be used in homes until the late 1970s.

visited Oct. 28, 2014).

² Among other things, EPA's goal for the Lead and Copper Rule Long-Term Revisions process is to "[r]emove sources of lead in the distribution system; encourage optimization of [corrosion control treatment] to prevent lead leaching; address environmental justice concerns associated with [lead service line replacement]; and maintain and enhance enforceability of the LCR. EPA, LCR Long-term Revisions White Paper, available at: http://water.epa.gov/drink/ndwac/upload/lcrwgmeetsumaxd32514.pdf (last visited 10/23/14).

³ Jack Lewis, *Lead Poisoning: A Historical Perspective*, EPA Journal (May 1985), available at http://www2.epa.gov/aboutepa/lead-poisoning-historical-perspective (last visited Oct. 28, 2014);

⁴ See Testimony of Dr. Ellen K. Silbergeld, *Lead Exposure in D.C.: Prevention, Protection and Potential Prescriptions* (June 15, 2010) at 3, and studies cited therein. http://web.jhu.edu/administration/gcpa/govt affairs/federal/images/pdfs/Silbergeld lead exposure 6.15.10.pdf (last

⁵ *Id*.

⁶ Robert N. Proctor, PhD, review of *Deceit and Denial: The Deadly Politics of Industrial Pollution*, N. Engl. J. Med. 2003; 348:2696-2697 (June 26, 2003).

Amid this background of knowledge about the hazards of lead, lead pipes have continued to be used in public water systems that deliver drinking water to homes and businesses. Water is carried from a treatment facility to the communities it serves via large water mains, and then flows into individual buildings through smaller "service lines." While corrosion can cause lead from any part of this distribution system to leach into tap water, this memorandum focuses on lead service lines. Lead service lines were commonly used until the mid-1950s,7 although municipalities may have continued installing them up until 1986 when they were banned. In 1991 EPA estimated that there were at that time "about 10 million lead service lines/connections in the United States and that about 20 percent of all public water systems [had] some lead service lines/connections within their distribution system." EPA's current estimates indicate that there are still roughly 10.3 million full or partial lead service lines in the United States.

In at least one city, the utility and local government were aware of potential risks to public health due to the presence of lead service lines in their systems, but did nothing to remedy the problem.¹⁰

Regulatory history

The Safe Drinking Water Act ("SDWA"), 42 U.S.C. 300f et seq., requires EPA to set standards for drinking water quality, including maximum levels for contaminants that may have an adverse effect on the health of persons. SDWA applies to every public water system ("PWS") in the United States. A PWS is defined as "a system for the provision to the public of water for human consumption through pipes or other constructed conveyances, if such system has at least fifteen service connections or regularly serves at least twenty-five individuals." 42 U.S.C. § 300f (4)(A).

EPA published the Lead and Copper Rule in 1991 in response to Congress' 1986 amendments to the Safe Drinking Water Act.¹¹ EPA had originally contemplated setting a

⁷ DC Water and Sewer Authority, Understanding Lead and Water website ("In the U.S., lead service pipes were installed until the mid-1950s. Older properties may still have lead service pipes, which connect the water main in the street to household plumbing.") http://www.dcwater.com/lead/default.cfm (last visited Oct. 28, 2014).

⁸ Maximum Contaminant Level Goals and National Primary Drinking Water Regulations for Lead and Copper, 56 Fed. Reg. 26460, 26466 (June 7, 1991) (hereafter "1991 Lead and Copper Rule" or "1991 LCR"). EPA based its estimate on a survey by the American Water Works Association.

⁹ U.S. EPA, Lead Service Line Replacement Primer for Nat'l Drinking Water Advisory Comm. Lead and Copper Rule Working Group (Oct. 22, 2014).

¹⁰ We are aware of one such instance. Prior to enacting the D.C. Water and Sewer Repair and Compensation Act of 1976, the District of Columbia Council considered but rejected Bill No. 1-18, which would have imposed a requirement "to undertake a study regarding the hazards associated with the use of lead pipes throughout the water distribution system."

¹¹ 1991 Lead and Copper Rule, 56 Fed. Reg. at 26460. Before 1991, under an interim rule published by EPA in 1975, the maximum contaminant level for lead was 0.050 milligrams per liter. *Id.* at 26463.

maximum contaminant level of zero for lead in drinking source water, but in the final 1991 rule EPA agreed with commenters who "argued that setting [a maximum contaminant level] for levels in source water in addition to the treatment technique requirements for corrosion byproducts would result in unnecessary confusion among the public and the regulated community." Instead of setting a maximum contaminant level, EPA adopted a final rule "consisting solely of a treatment technique that seeks to remedy all sources of lead and copper contamination caused by both corrosion and contaminated source water." *Id.* EPA also established a maximum contaminant level *goal* of zero, and stated that "[t]he goal of [the] rule is to provide maximum human health protection by reducing the lead and copper levels at consumers' taps to as close to the [maximum contaminant level goal] as is feasible."

The treatment technique requirements include corrosion control treatment, source water treatment, lead service line replacement, and public education. The rule requires the PWS to monitor a specified number of sites depending on the size of the system. ¹⁴ Treatment techniques are triggered if samples show an exceedance of the "lead action level" under the rule, which is "exceeded if the level of lead in more than 10 percent of the targeted tap samples is greater than 0.015 mg/L (90th percentile)." ¹⁵ If the action level is exceeded and the system has already installed corrosion control or source water treatment, the PWS must undertake a lead service line replacement program to annually replace "at least 7 percent of the initial number of lead service lines in its distribution system." ¹⁶

Prior to revisions adopted in 2000, the 1991 rule required that a PWS replace the entire portion of the lead service line over which the PWS has control. The rule established a presumption that a PWS controls the entire service line unless the PWS demonstrated that it lacked any of the forms of control recognized by the rule, which included "authority to set standards for construction, repair, or maintenance of the line, authority to replace, repair, or maintain the service line, or ownership of the service line." A PWS that controlled only part of a service line was required to replace only the portion of the service under its control, and was required to offer to replace the private portion of the service line at the expense of the private lot owner. B

¹² *Id.*, 56 Fed. Reg. at 26472.

¹³ *Id.*, 56 Fed. Reg. at 26478.

^{14 40} C.F.R. § 141.86(d)(2).

¹⁵ Id.; 40 C.F.R. § 141.80(c)(1).

¹⁶ Id. § 141.84(a), (b)(1).

¹⁷ 1991 Lead and Copper Rule previously codified at 40 C.F.R. §§ 141.84(d), 141.84(e) (1991) ("(d) A water system shall replace the entire service line (up to the building inlet) unless it demonstrates to the satisfaction of the State under paragraph (e) of this section that it controls less than the entire service line... (e) A water system is presumed to control the entire lead service line (up to the building inlet) unless the system demonstrates... that it does not have any of the following forms of control over the entire line[]: authority to set standards for construction, repair, or maintenance of the line, authority to replace, repair, or maintain the service line, or ownership of the service line.").

Following revisions adopted by EPA in 2000, the current version of the Lead and Copper Rule only requires the PWS to replace the portion of the service line that the PWS owns.¹⁹ EPA adopted the "ownership" approach based in part on speculation that "the broader definition of 'control'... could result in unintended delays and other complications."²⁰ The current rule does not address how ownership of service lines is to be determined or what form of proof of non-ownership a PWS is required to provide, if any. Similar to the 1991 rule, for any portion of the service line that the PWS does not own the rule requires the PWS to notify the abutting lot owner that the PWS is going to replace the portion of the service line that it owns, and requires the PWS to offer to replace the portion of the line on private property at the property owner's expense. If a homeowner is unwilling or unable to pay for replacing the portion of the service line inside their property boundary, a PWS can undertake only a partial lead service line replacement.

Public commenters in 1996 and 1998 "expressed concern about the possible adverse health effects associated with partial replacement" of lead service lines, citing case studies showing that "replacing only part of the service line could actually increase the lead levels at the tap because of galvanic action, the disruption of the protective coating on the inside of the pipe and the entry of particulate lead to the supplied water." EPA "confirmed that lead levels at the tap, will in some instances, increase immediately after partial replacement of the LSL," but without supporting data EPA opined that "over the long run, lead levels will decrease below the pre-replacement levels." EPA also stated that "the temporary rise in lead levels indicates not only the presence of lead materials in [lead service lines], but also poor corrosion control," and surmised that "potential for temporary increases in lead levels will be minimal for those systems where corrosion control has been fully implemented and optimized as required by the Rule." ²³

EPA did not assess the affordability of full service line replacement for private lot owners, or address disparate impacts of the rule upon lower-income property owners and non-owner residents. However, EPA speculated that "many systems required to replace [lead service lines] will receive consent to remove any privately-owned portions since it is in the homeowners' interest to completely remove this source of lead in their drinking water."²⁴

¹⁹ 2000 Lead and Copper Rule Revisions, 65 Fed. Reg. at 1950, 1966 (Jan. 12, 2000) (stating that "EPA has eliminated the 'control' terminology from the Rule" and "revise[d] §141.84(d) to require the water system to replace only the portion of the [lead service line] that it owns.").

²⁰ Id. at 1963.

²¹ Id., 65 Fed. Reg. at 1964.

²² Id.

²³ Id.

²⁴ Id. at 1964-65.

ANALYSIS

EPA must restore the broad interpretation of "control" for the lead service line replacement requirement in order to realize the goals of the Lead and Copper Rule. The "ownership" approach raises serious public health and equity concerns because it requires private property owners to pay for replacing any portion of the service line that the PWS claims is not publicly owned. The rule therefore significantly increases the likelihood of partial service line replacements for properties where the owners are unable or unwilling to pay the substantial cost of replacing the portion of line within private property boundaries. For example, between October 2002 and September 2003, DC Water was required to replace 1,615 lead service lines to satisfy the requirement in 40 C.F.R. § 141.84(b) that at least seven percent of the initial number of lead service lines be replaced annually. In total, 1,626 service lines were affected by DC Water's replacement program. Of these, only 79 involved full lead service line replacements, while 306 involved partial replacement. The rest were "tested out" and therefore deemed to be "constructive replacements."

EPA predicted in 2000 that "[c]onfusion could result from different perceptions of the precise scope of the system's legal authority, and resolution of such disputes could require the intervention of the State in a potentially time-consuming process."²⁹ But the same could be said regarding the potential for confusion about the scope of the PWS's ownership. The disincentive for conducting full service line replacements can be exacerbated where a PWS or municipality adopts a narrow interpretation of its ownership of lead service lines.

1. The current rule incentivizes PWSs to claim that private property owners own the portion of the service line in the public space.

Statements and surveys of PWS officials raise cause for concern that utilities and local governments may be attempting to minimize their mandatory duties under the Lead and Copper Rule by asserting that the entire service line, from the main to the building inlet, is owned by private property owners. Successfully asserting that the entire service line is owned by the private property owner could enable a PWS to avoid the mandatory duty to replace lead service lines. We are not aware of any active effort to require lot owners to pay the full cost of

²⁵ See D.C. Appleseed Center, Lead in the District of Columbia Drinking Water: A Call for Reform, December 2004, p. 33. Available at http://www.dcappleseed.com/wp-content/uploads/2013/09/leadreport3.pdf (emphasis added) (last visited 10/31/14) (estimating that costs of replacing service lines on private property are approximately \$2,500 per home).

²⁶ Administrative Order for Compliance on Consent, Docket No. SDWA-03-2004-0259DS, p. 4 (2004).

²⁷ Id. at 7.

²⁸ A "test out" occurs when the lead concentration of all samples from a particular line contain less than or equal to 0.015 mg/L. Under 40 C.F.R. § 141.84(c) this is deemed a "constructive replacement," and counts toward the seven percent annual replacement requirement. The Lead and Copper Rule long-term revision may address questions regarding the accuracy of "test out" protocols.

²⁹ 2000 Lead and Copper Rule Revisions, 65 Fed. Reg. at 1963 (citing comments on EPA's April 1996 proposed rule revisions).

full service line replacements. This does not eliminate our concern, since the mandatory duties for lead service line replacement under the current Lead and Copper Rule turn on ownership. Absent a mandatory federal duty, individual water consumers are left at the mercy of local policy. A national public health law that depends on local policy is not adequately protective, and raises serious environmental justice concerns regarding for communities that lack adequate political representation.

Washington, D.C.'s PWS provides the most prominent example. According to public reports, DC Water has recently publicly asserted that private property owners in the District own the entire service line from the water main to the tap.³⁰ Indeed, language on DC Water's website was altered in 2012 in a manner that could be construed that way. Until March 2012, the website stated simply: "To encourage pipe replacement on private property, DC WASA is offering homeowners the chance to replace their lead service pipe at the same time that contractors replace the lead pipe on public property."³¹ The website now reads:

Each year, DC Water replaces lead service pipes in conjunction with scheduled infrastructure upgrades.... During these projects, DC Water replaces water service pipes in public space, including the replacement of any existing lead service pipes, and will offer to coordinate the replacement of the water service pipe on private property, at the owner's expense.... *The water service pipe connects the water main in the street to your household plumbing. The water service pipe is owned by the property owner*. However, under certain conditions such as construction projects, DC Water is authorized to repair, maintain or renew the portion of the service pipe in public space. Maintenance of the portion of the service pipe on private property is the exclusive responsibility of the property owner.³²

If DC Water is now publicly taking the view that the entire service line from the main to the building is owned by private lot owners, this stance could reflect a troubling nationwide trend occurring quietly behind the scenes, as evidenced by a recent report:

³⁰ Sheila Kaplan and Corbin Hiar, *How an EPA Project Backfired, Endangering Drinking Water With Lead* (Aug. 8, 2012) (quoting DC Water's legal counsel: "'Questions were raised as to who is responsible for doing what in public space, whether or not the property owner is responsible. Are they responsible for doing everything, if they do their own half?" DC Water's legal counsel "declined to say who raised the questions. He said he researched the history of the relevant codes, and found that an 1896 statute passed by Congress *gave property ownership of the entire line, from the water main to the tap, to the property owner.* The District of Columbia enacted revisions in 1977, [he] said, to 'maintain, renew and replace the portion in public space.' [He] said the D.C. City Council's policy is that the utility will still pay to replace the public portion of the service line, but that his review of the law says the D.C. code, 'did not transfer ownership.'") (emphasis added).

³¹ *Id*.

³² DC Water, Lead Service Pipe Replacements website, available at: http://www.dcwater.com/lead/pipe replacement.cfm (last visited Oct. 28, 2014) (emphasis added) (copy on file).

According to a survey of 90 utilities of varying sizes and from different regions, published in a 2008 report by the industry-funded [American Water Works Association] Research Foundation and EPA, "77 percent of utilities responding claimed ownership of the service line from the main to the curb stop [property line]" Yet ... three years later, the water association conducted another survey, which found that of its 805 respondents, 69 percent said they did not own any of the lead service line.³³

The implications of these two surveys are unclear in part because the second survey covered many more respondents, and also because it is unclear whether the respondents to the first survey were included in or were representative of the respondents in the later survey. If the surveys reflect a nationwide trend of PWSs adopting a narrow interpretation of their ownership of service lines, it starkly illustrates a serious flaw with the ownership approach. Allowing PWSs to adopt policies or interpret local laws in a way that undermines the goals of the Lead and Copper Rule could have grave consequences for public health and environmental justice.

While we <u>do not</u> think there is strong legal support for the view that private property owners in the District of Columbia own the service lines under public space, there can be no question that DC Water's claims regarding ownership raise complicated legal questions. It is easy to see why individual private property owners would be at a severe disadvantage when confronted by a PWS' assertion that the private owner owns the entire service line, particularly property owners or residents with no financial resources or access to legal representation. Placing these complex questions at the center of the lead service line replacement program does nothing to foster removal of lead from systems, and is completely at odds with EPA's primary justification for adopting the ownership approach in the first place. Further, issues of practicality and fairness counsel strongly against a policy that would allow any PWS to avoid its duty to protect public health by claiming that the PWS does not own any portion of a lead service line.

The current discussion is the latest in a history of disputes over the fairness of requiring property owners to pay for service lines over which they have almost no practical control. A group of private property owners in the District challenged the 1896 Drainage Act in a case that reached the U.S. Supreme Court, *D.C. v. Brooke*, 214 U.S. 138 (1909). While the Act was upheld, the Court's opinion in that case serves to highlight the unfairness of requiring private property owners to pay for replacing the dangerous lead service lines that serve their homes. The court explained that Congress has the power to establish a uniform system which a property owner *must* conform to.³⁴ The Court added that the lot owner could not avoid connecting to the District's system by arguing that the owner had "adopted a system of his own" that was better than the one prescribed by the District under the Drainage Act.³⁵ Not only did the law compel

³³ See Kaplan, cited above. We were not able to find results of any more recent PWS surveys regarding ownership of service lines.

³⁴ D.C. v. Brooke, 214 U.S. at 148.

³⁵ Id.

lot owners to conform to a deficient water system, it now requires them to personally bear the costs of its replacement with a non-deficient system. Since lot owners have no control over service line specifications, it is particularly unjust to require them to pay for damage stemming from a state's or municipality's choice of a hazardous material.³⁶

In the District of Columbia, the unfairness of the current rule is most acute with respect to service lines that were installed after 1976. Among the several bills that were considered by the D.C. Council as alternatives for revising the D.C. Drainage Act of 1896, Bill No. 1-18 directed the mayor "to undertake a study regarding the *hazards associated with the use of lead pipes* throughout the water distribution system," and "report to the Council his findings and recommendations including his statement [of] estimated costs and projected time periods required to perform any corrective measures."³⁷ The Council *refused* to incorporate this provision into the final version of the bill enacted on December 30, 1976.³⁸ To require lot owners to bear the cost of replacement of defective pipes that were prescribed by the municipality where the municipality had knowledge of their potential defects and did nothing to prevent their installation is nothing less than egregious.

2. Determining ownership of service lines is far more complex and difficult than determining a PWS has control over service lines.

DC Water's statements disclaiming service line ownership appear to rest primarily upon an 1896 Act adopted by the U.S. Congress to "provide for the drainage of lots in the District of Columbia" ("1896 Drainage Act").³⁹ The 1896 Drainage Act has been subject to several revisions, and the current version is set forth at D.C. Code § 8-201, *et seq*. The 1896 Drainage Act required all property lots that were situated on a street where there was a public sewer, and that contained a building used as a dwelling, factory, business, or animal shelter, to be connected with the sewer and water main.⁴⁰ The 1896 Act specified that the work must be "done in accordance with the regulations governing plumbing and house drainage in [the] District."⁴¹ The Act made failure to connect a misdemeanor punishable by a daily fine, and it provided that if the owner of the lot could not be located it would be the duty of the District to make the connection, with the expense "assessed as a tax against such lot."⁴² DC Water's theory seems to be that because property owners in 1896 were required to pay to install the full length of the

³⁶ See *Horton v. Inhabitants of N. Attleboro*, 302 Mass. 137 (1939) (holding that a PWS was negligent and responsible to injury caused for consumer who was poisoned by lead leached into drinking water through lead service line installed according to the PWS specifications).

³⁷ See Committee Report on Bill 1-65 at 13, 18, discussing Title IV, sec. 401(b) of Bill No. 1-18 (emphasis added).

³⁸ Id. at 18.

³⁹ 29 Stat. 125, ch. 206 (May 19, 1896), amended by 64 Stat. 393, ch. 513 (Aug. 1, 1950), now codified at D.C. Code § 8-201 *et seq*.

^{40 1896} Drainage Act §§ 1, 2.

⁴¹ Id. § 2.

⁴² Id. §§ 3, 4.

service line serving their property, the current property owners now own the service lines in both private and public space.

Statutes and ordinances like the 1896 Drainage Act are more appropriately viewed as analogous to an exaction,⁴³ or impact fee.⁴⁴ These mechanisms are used to require property owners to contribute financially to improvements that are made in the public way for the public good, but they do not create an ownership interest in the public improvements themselves. To argue that the lot owner owns the public portion of the service line just because they were required to pay for it is akin to arguing that the property owner owns the public parks or wetlands they were required to pay for as a condition for developing their property. In fact, it has been held that a municipality *cannot* give away its rights in the public way. One treatise on the law of municipalities affirms this principle, stating that "[o]ne who builds a private sewer in a public street, with the city's permission, it has been held, does not own the sewer. A city, it has been said, cannot give away its rights in the public streets."⁴⁵

DC Water may also be relying on the legislative history of amendments to the 1896 Drainage Act, the Water and Sewer Repair and Compensation Act of 1976. The Committee Report for the 1976 amendments recites a legal opinion offered by the District of Columbia's legal counsel who took the view that, under legal arrangements that existed before the 1976 Drainage Act, "once connection is made, the property owner is deemed the owner of such

⁴³ "Exactions" are "various dedications and conditions, but also fees or charges for off-site improvements, service capacity expansion, or facilities. Typical exactions include water and sewer facilities, other utilities or other facilities, off-site street improvements, parks, public resource access, public safety, wetlands protection, and flood control." 1 Subdivision Law and Growth Mgmt. § 6:20 (2d ed.).

⁴⁴ Impact fees are similar: "[i]mpact fees are a popular type of exaction used to finance the incremental cost of improvements to those public facilities and services necessitated by new development. Impact fees have been upheld as a means of requiring developers to pay for improvements to roadways and other municipal facilities, such as stormwater collection systems and water and sewer systems." State and Local Government Land Use Liability § 18:2.

⁴⁵ 11 McQuillin Mun. Corp. § 31:9 (3d ed.) and cases cited therein. The context makes clear that the term "sewer" refers to service lines or other connections, not to an entire sewage system. *See also City of Shawnee v. Thompson*, 275 P.2d 323, 324 (Ok., 1954) ("The permission given by the city to plaintiff to build the sewer line did not give plaintiff a franchise for the use of the city streets for a private sewer. The city cannot give away its rights in the public streets. *The sewer here constructed was intended to be and did become an integral part of the city system...*") (emphasis added).

⁴⁶ D.C. Council Act 1-187 § 2, D.C. Law 1-98 (December 30, 1976) (effective March 29, 1977), now codified at D.C. Code § 8-205(b). The 1976 Act "provide[d] that the District of Columbia shall be responsible for the repair and maintenance of water service pipes and building sewers connecting lots with water mains and the public sewer." Under the 1976 amendments, DC Water is authorized to "perform maintenance or repair work on private property, in which case, the cost, including overhead expense, shall be paid by the property owner." However, private property owners are only charged for the cost of repairs on public property if the repairs were made necessary by the property owner or tenant's negligence. Id.

⁴⁷ Report to the D.C. Council from the Committee on Transportation and Environmental Affairs regarding Bill 1-65 ("Committee Report on Bill 1-65"). Bill no. 1-65 was vetoed by District's Mayor and replaced by the D.C. Council with Bill no. 1-319, which was "principally derived" and "substantially similar" to bill no. 1-65. Committee Report on Bill 1-65 at 4.

pipes."⁴⁸ This statement was "predicated on the theory that 'lateral water feeders or service pipelines from water mains in public space to private residences belong to the property owner *as an appurtenance to realty.*"⁴⁹ However, under longstanding common law principles of property rights, an "appurtenance" does not necessarily bring with it an ownership interest, and is more commonly used to refer to easements, rights of access, or other similar privileges.⁵⁰ An appurtenance can be (and most often is) something incorporeal, such as a privilege or right that passes with the land to subsequent owners.⁵¹ In other words, even if property owners and subsequent purchasers retain the *privilege* of using the service line in public space in order to draw water from a main, this does not mean that the physical materials are the personal property of the lot owner.

DC Water may be relying on the theory that a service line is a "fixture" to the private property, which is a similar but narrower concept than an "appurtenance." Under longstanding common law of property conveyances, fixtures are articles such as fences, paving stones, or buildings that are annexed or affixed to real estate such that they become part of the property. ⁵² However, a service line is as much affixed to a PWS' water main as it is to the private property, and there is no reason to focus on one connection while ignoring the other. Moreover, this theory runs contrary to the District's definition of "property line," which is contained within the District's law regarding service line connections: "'Property line" means *the line beyond which a private property owner has no legal or vested property rights in any fronting or abutting public space* or street....'"⁵³ The definition is unambiguous. Because private property owners have *no* legal rights to property beyond the line that marks the end of their property and the beginning of the public space, they cannot be said to own the service line in public space.⁵⁴

The foregoing discussion is greatly simplified, but should be sufficient to illustrate why DC Water's attempt to disclaim ownership of service lines in the public space lacks a strong legal basis. Nonetheless, it serves as an example of the sort of claim that could be made by major PWSs across the country. Resolving such claims would be difficult, slow, and inefficient—and

⁴⁸ *Id*. at 3.

⁴⁹ *Id.* (Emphasis added).

⁵⁰ An appurtenance is "[s]omething that belongs or is attached to something else." Black's Law Dictionary (9th ed. 2009) (citing as an example: "the garden is an appurtenance to the land.")

⁵¹ See Herbert Thorndike Tiffany's treatise on real property law, 4 Tiffany Real Prop. § 998 (3d ed.); An appurtenance is "[s]omething that belongs or is attached to something else," citing as an example: "the garden is an appurtenance to the land.")

⁵² A "fixture" is "an article which was once a chattel, but which, by being physically annexed or affixed to the realty, has become an accessory to it and part and parcel of it.... The character of the personal property attached to the real estate is determined at the time that the property is attached to the real estate." 35A Am. Jur. 2d Fixtures § 1.

⁵³ D.C. Code § 8-205(a)(2), (3), and (4) (emphasis added).

⁵⁴ "Real property" is not defined in the District's drainage provisions under D.C. Code, § 8-205. The Real Property Title of the D.C. Code sets forth a broad definition: "The words 'real property' mean every estate or right, legal or equitable, present or future, vested or contingent in lands, tenements, or hereditaments located in whole or in part within the District." D.C. Code § 42-1101.

would engender just the kind of delay and confusion that EPA said it meant to avoid in adopting the ownership rule in 2000.

3. Retaining the ownership-based rule undermines the purpose of the Lead and Copper Rule.

In its final 2000 rule EPA stated that "[i]n practice, EPA believes that many systems required to replace [lead service lines] will receive consent to remove any privately-owned portions since it is in the homeowners' interest to completely remove this source of lead in their drinking water."⁵⁵ However, by focusing on "consent" EPA elided over the most significant barriers to obtaining widespread homeowner participation: inability or unwillingness of homeowners to pay.⁵⁶ Nowhere in EPA's rule were questions of affordability addressed.

The choice in 2000 to focus on ownership rather than control has done nothing to reduce confusion and delay. If anything it exacerbated complications and erected new hurdles on the path toward eliminating drinking water lead contamination. In D.C., for example, the new rule substituted a *one-party compulsory* requirement with a *multiple-party cooperation-based* mechanism, encompassing more than a hundred thousand actors.⁵⁷ EPA's efficacy rationale was not served by exponentially increasing the number of parties to the transaction. Consequently, the new regime increased replacement-related complications and brought the replacement of private property service lines to a near-standstill:

Perhaps *the most important complication* facing WASA's lead service line replacement program is that ownership of lead service lines in the District of Columbia is shared... Through the length of WASA's lead service line replacement program, beginning in fiscal year 2003 and running through the first quarter of fiscal year 2008, of the 14,260 lead service lines replaced in public space, only 2,128 homeowners replaced the private portion of their lead service line.⁵⁸

⁵⁵ 2000 Lead and Copper Rule Revisions, 65 Fed. Reg. at 1964-65.

⁵⁶ This phenomenon may have been exacerbated by ineffective public education about the risks of lead service lines. EPA staff reviewed DC Water's public education and outreach activities that occurred in response to elevated lead levels in the District's drinking water during 2002 and 2003, and published their findings and recommendations on April 30, 2004. Among other things, EPA found that among the District residents surveyed, only half had an "immediate sense of the urgency of the situation," which "was conveyed in the news rather than by WASA outreach directly." EPA, Recommendations for Improving the Washington DC Water and Sewer Authority Lead in Drinking Water Public Education Program, available at: http://www.epa.gov/dclead/pep_recommendations.htm#2 (last visited on 10/31/14).

⁵⁷ See U.S. Census Bureau, State and County Quick Facts, District of Columbia, available at http://quickfacts.census.gov/qfd/states/11000.html (last visited 10/31/14) (Number of non–multi-unit housing structures in D.C. was more than 114,000 in 2013.)

⁵⁸ The District of Columbia and Communities Nationwide Face Serious Challenges in Their Efforts to Safeguard Water Supplies, GAO-08-687T at 6-8 (April 15, 2008); *See also* GAO-05-344, Agencies Have Improved Coordination, but Key Challenges Remain in Protecting the Public from Elevated Lead Levels, Report to the Chairman,

Further, EPA's ownership rule could incentivize PWSs to adopt a novel interpretation of the term "ownership," or adopt a narrow interpretation of the extent of the PWS' ownership, in a manner that undermines the LCR's purpose. While EPA feared that requiring full service line replacement might cause delays, allowing a PWS to exempt itself from the replacement requirement could terminate service line replacement efforts altogether, leaving residents at the mercy of local policies or practices. The control-based replacement requirement is superior because it sets questions of ownership aside and requires a PWS to replace service lines if it has the authority to do so. By focusing on authority instead of ownership, the control-based approach also substantially reduces transaction costs because it does not require the *active* participation of multiple property owners.

By driving down private-property service line replacements, the current rule undermines the SDWA's purpose of protecting public health.⁵⁹ According to EPA's Science Advisory Board ("SAB"), "[t]he weight of evidence indicates that [partial lead service line replacement] often causes tap water lead levels to increase significantly for a period of days to weeks, or even several months."⁶⁰ These findings suggest that the practice of partial lead service line replacement has "the potential for harm, rather than benefit during that time period."⁶¹ In addition, partial lead service line replacement does not result in a major reduction in observed lead levels in tap water.⁶² Partial replacement can exacerbate plumbosolvency and give rise to

Subcommittee on Environment and Hazardous Materials, Committee on Energy and Commerce, House of Representatives (March 2005), p. 4 (raising the same concerns as in 2005).

⁵⁹ Congress enacted the SDWA "to assure that water supply systems serving the public meet minimal national standards for protection of public health" (H.R. Rep. 93-1185, at 1 (1974), *reprinted in* 1974 U.S.C.C.A.N. 6454.)

⁶⁰ U.S. EPA, Office of the Administrator Science Advisory Board, Evaluation of the Effectiveness of Partial Lead Service Line Replacements, September 28, 2011 p. 2 (available at http://yosemite.epa.gov/sab%5Csabproduct.nsf/964CCDB94F4E6216852579190072606F/\$File/EPA-SAB-11-015-unsigned.pdf)

Description (TMU 9030), Final Report to the Department of the Environment 75 (1992), available at http://dwi.defra.gov.uk/research/completed-research/reports/dwi0290.pdf; DC Water, Press Release, Lead Levels Decrease Dramatically in Retest of Two Homes with Highest Levels (Mar. 11, 2004), available at http://www.dcwasa.com/site_archive/news/press_release147.cfm ("Tests have shown that cutting the lead pipes, which occurs when homeowners do not replace the portion of the pipe on their property at the time WASA is replacing lead pipes, may result in significant short-term increases in lead concentrations."); Rebecca Renner, Reaction to the Solution: Lead Exposure Following Partial Service Line Replacement, Environ Health Perspect. 118(5): A202-A208 (2010), available at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2866705/. ("Washington, DC abandoned an extensive and expensive lead service line replacement program in 2008 in part due to data indicating partial replacement caused higher levels of lead in drinking water for at least several months").

⁶² Chambers & Hitchmough at 76. In fact, replacement of the total lead line (water main and service line) would more likely bring about a significant reduction in lead at the kitchen tap. *Id*.

increased and erratic levels of lead observed at the tap.⁶³ A study conducted in Washington, D.C. between November 2000 and December 2006 demonstrated that children living in homes with a lead service line were at increased risk of having higher blood lead levels than children living in homes without a lead service line.⁶⁴ Partial replacement of LSLs did not result in a decrease in the association between lead service line and elevated blood lead levels.⁶⁵ Partial replacement is therefore not a solution to lead level reduction.

In 2004, following a series of press reports regarding WASA's failure to adequately address the problem of lead in D.C. drinking water, District Councilmember Carol Schwartz, at the time chair of the Committee on Public Works and the Environment in D.C., asked the DC Appleseed Center for Law & Justice, Inc. ("Appleseed") to examine the effectiveness of the legal framework regulating lead in drinking water in D.C. The Appleseed report, which was prepared by the law firm of Weil, Gotshal & Manges LLP, recommended "prohibiting partial lead line replacement as this can exacerbate existing problems with leaching due to physical disturbance of the existing system, and potential creation of galvanic lead corrosion conditions."66 Noting that "[u]nder WASA's first phase of partial lead line removal, only 14 homeowners have volunteered to incur the expense of removal of the portion of the lead line on private property,"67 the authors of the report concluded that it would be preferable that "WASA bear the full costs of lead line replacement, including that portion on private property."68 Indeed, full lead service line replacement is the only effective and reliable solution for achieving long-term reductions of lead levels in drinking water.⁶⁹ To have any hope of achieving the public health goals of the SDWA, EPA must exercise its regulatory authority to require full service line replacements.

⁶³ *Id.* at 75 (stating that partial replacements using copper piping can result in creating a galvanic cell, which exacerbates plumbosolvency – an effect that can be persistent and annul any beneficial effects of the partial replacement); Renner, *supra*, at A202-A208 ("When copper water pipe is connected to lead water pipe, standard electrochemistry indicates the lead pipe should be more susceptible to galvanic corrosion. If corrosion is significant and long-lasting, it would significantly add to lead release.")

⁶⁴ Brown, M.J., et al., Association between children's blood lead levels, lead service lines, and water disinfection, Washington, DC, 1998–2006, at 7, Environ. Res. (2010), doi:10.1016/j.envres.2010.10.003.

⁶⁵ Id.

⁶⁶ D.C. Appleseed Center, *Lead in the District of Columbia Drinking Water: A Call for Reform,* December 2004, p. 54. *Available at* http://www.dcappleseed.com/wp-content/uploads/2013/09/leadreport3.pdf (emphasis added) (last visited 10/31/14).

⁶⁷ Id. at 50.

⁶⁸ *Id.* (emphasis added).

⁶⁹ U.S. EPA, Office of the Administrator Science Advisory Board, Evaluation of the Effectiveness of Partial Lead Service Line Replacements, September 28, 2011 p. 2 (available at http://yosemite.epa.gov/sab%5Csabproduct.nsf/964CCDB94F4E6216852579190072606F/\$File/EPA-SAB-11-015-unsigned.pdf)

4. EPA's original rationale for adopting the "control" approach to foster full service line replacements remains valid today.

When EPA promulgated the control-based lead service line replacement requirement in 1991, it was aware that ownership of service lines is oftentimes divided between lot owners and the municipality. However, EPA interpreted the SDWA as providing authority to require replacement of any portion of the line that the PWS controls, based on the statutory definition of a PWS as including "distribution facilities under the control of the operator." EPA observed that many PWSs "retain authority to specify standards for construction, maintenance, and composition of service lines to be able to safeguard the integrity of the distribution system and, thereby to ensure the delivery of safe water to the consumer." Id. Because leaching lead threatens the quality, integrity and safety of drinking water, EPA believed that requiring PWSs to replace private service lines was "consistent with the underlying purpose of the SDWA to protect public health as well as with practices of the water supply industry designed to maintain the integrity of water distribution systems." Id. At the same time EPA's rule appropriately accounted for practical questions regarding access to private property: the duty to replace the private portion of service lines applied only in cases where the PWS retained "a right of entry to perform work deemed necessary." Id.

This is a reasoned approach that is entitled to deference by a reviewing court. EPA's interpretation of control is consistent with express congressional intent that EPA regulate "distribution facilities under the control of the operator" in a manner that protects public health. It therefore satisfies the analysis under Step One of *Chevron, USA v. NRDC,* 467 U.S. 837, 842-43 (1984). To the extent there is any ambiguity in the language of the definition, the broad control-based approach is a reasonable interpretation of the SDWA and is therefore entitled to deference under Step Two of *Chevron*.

Conversely, it would not be reasonable to retain the current ownership-based rule in light of the facts that have emerged after fourteen years of the rule's implementation. After considering public comments in 2000, EPA concluded that the ownership rule would avoid "unintended delays and other complications." For this reason only EPA decided "to equate 'control' with 'ownership' in order to eliminate potential legal confusion and delays in implementing the Rule." However, it is now apparent that EPA's rationale for the rule in 2000 has not held true.

⁷⁰ 1991 Lead and Copper Rule, 56 Fed. Reg. at 26503 ("EPA acknowledges that ownership and/or control of lead service lines is often split between the public water system and the property owner. Depending on State law or regulations, or local ordinances, some public water systems control and/or own connections up to the property line, others control and/or own the service line and other connections up to the building (especially if the water meter is located inside the building), and still others control and/or own the service connections only up to the curb.")

⁷¹ *Id.* 26504 (emphasis added); 42 U.S.C. § 300f(4)(A).

⁷² Id.

⁷³ Id.

Nor does the history of litigation over the 1991 Lead and Copper Rule justify retaining the ownership approach. In response to a challenge by the American Water Works Association, the D.C. Circuit struck down EPA's definition of "control" in the final 1991 rule, solely on the grounds that "EPA failed to provide adequate notice that it would adopt a novel definition of control."⁷⁴ Any questions regarding the scope or meaning of "control" could be addressed in a new rulemaking that provides ample public notice to affected PWSs. To the extent there is any merit to the American Water Works Association's substantive allegations against the 1991 control rule – that EPA lacked authority to adopt a control-based rule, and that the definition was impermissibly vague because EPA did not indicate whether the rule created a right of entry on private property – EPA can address those issues in a new rulemaking.

5. Solutions exist to concerns about the practicability of a control-based requirement

In 2000 EPA considered comments from interested parties that supported a "limited definition that equates control with ownership."⁷⁵ Reasons varied. Some commenters argued that PWSs lack legal authority to replace service lines on private property, or that EPA lacks authority to impose a duty on PWSs to replace service lines on private property. Others raised concern about potential complications in obtaining lot owners' permission to perform work on private property and potential conflicts that might arise between utilities, homeowners and independent contractors. Some of these arguments lack legal merit, others are practically solvable, and none should be accepted as a reason not to change the current service line replacement regime.

As an initial matter, the potential for confusion must be addressed in light of the legislative purpose underlying the public-health purpose of SDWA. Potential for confusion is only relevant if it might undermine the Act's goal and cannot readily be resolved. As discussed only briefly above, the question of service line ownership is not at all simple to answer because it is rooted deeply in several competing common law theories of property rights, disparate court

⁷⁴ Am. Water Works Ass'n v. E.P.A., 40 F.3d 1266, 1275 (D.C. Cir. 1994). The D.C. Circuit viewed EPA's definition of "control" as novel because "public water systems generally own only that part of the service line that underlies public property." *Id.* at 1274. (emphasis added). However, the proposed rule had clearly rebuttable presumption "that the water supplier owns or controls and therefore can replace, the lead components up to the wall of the building served." Drinking Water Regulations; Maximum Contaminant Level Goals and National Primary Drinking Water Regulations for Lead and Copper, 53 Fed. Reg. 31516, 318548 (Aug. 18, 1988). The court also reasoned that the only case to have interpreted the definition of "public water system" was a 1988 ruling of the Georgia Supreme Court interpreting the Georgia Safe Drinking Water Act, which was identical to the definition of a PWS under the SDWA, as "confining the regulatory authority to portions of the service line not underlying private property." Am. Water Works Ass'n at 1275, citing Bass v. Ledbetter, 257 Ga. 738, 363 (Ga. 1988) (emphasis added). But EPA's proposal clearly went beyond the Georgia court's interpretation by presuming that "lead components up to the wall of the building served" could be within a PWS's "control." Nonetheless, because EPA had given "control" a specific definition that was not articulated in the proposed rule, and had deviated from the Georgia court's interpretation of "PWS" under the state's law, the D.C. Circuit concluded that interested public could not "reasonably have anticipated the final rulemaking." Am. Water Works at 1275.

⁷⁵ 2000 Lead and Copper Rule Revisions, 65 Fed. Reg. at 1963.

⁷⁶ Id.

rulings, and state statutes. The question whether a PWS owns a service line is therefore much more difficult to answer than the question whether the same PWS has the authority to prescribe standards for lead service lines or to replace, repair, or maintain the portions of the service line under private property. The control test encompasses ownership, and can be informed by looking to current practice and policy rather than historical property transactions.

The only way an ownership rule might prevent confusion is by leaving the decision whether or not to replace portions of service lines solely in the hands of the PWS. This approach puts private property owners at a severe disadvantage. EPA should not trade a risk of confusion for a risk of obfuscation regarding the scope of a PWS's ownership of service lines.

~ Potential for "confusion or ambiguities" regarding a PWS's authority to replace service lines

Claims of confusion about the scope of a PWS's control over service lines are not credible. As EPA noted in 1991, many systems retain authority to enter private property to conduct service line replacement. EPA referenced a study that "evaluated the extent of authority over service connections in publicly owned water systems in Boston, Chicago, Dallas, Denver, the District of Columbia, Los Angeles, New York, Pittsburgh, San Diego, and San Francisco, and other investor-owned utilities in various States," and found that "[i]n the majority of cases evaluated, the water system was found to retain access to virtually all property serviced by the system and to reserve the right to perform work on privately owned service lines (usually at the expense of the property owner). To varying degrees, most of the systems also require property owners to meet certain specifications relating to service line location, size, and material composition."77

Finally, there are practical solutions to concerns about authority or liability relating to full service line replacements. The simplest of these is to reimburse private property owners for expenditures incurred in replacing lead service lines. According to the American Water Works Association, successful programs may include customer reimbursement, providing credit to a certified plumber, and reducing the homeowner's property taxes through a one-time tax assessment.78

Concern about "using public funds to do work on private property

Most states have constitutional provisions restricting the use of public funds to public purposes. In some states, courts recognized a general "public purpose doctrine," even in the

⁷⁷ 1991 Lead and Copper Rule, 56 Fed. Reg. at 26504.

absence of such constitutional provision.⁷⁹ The application of this doctrine may vary from one state to another, but in general a public purpose "has for its objective the promotion of public health, safety, morals, security, prosperity, contentment, and the general welfare of the community."⁸⁰ The term "public purpose" is broad and should not be construed "in a narrow or restrictive sense."⁸¹ Thus, a public purpose may be served even if it involves making payments to individuals.⁸² The question to be determined is not whether an individual is benefitted by the actions of the state, because there is always a beneficiary when a state acts.⁸³

A control-based replacement rule would meet this test because it furthers public health by providing safer drinking water, a clear public purpose. Any financial benefit to an individual property owner is incidental to the public purpose of protecting the public health. In addition, a rule fostering full lead service line replacement can substantially reduce the cost of corrosion control treatment, a significant public expense that may grow larger if EPA decides to revise sampling methods in light of evidence that current sampling protocols may underestimate the amount of lead in water that contacts a lead service line.⁸⁴

The American Water Works Association has observed that "replacement of lead service lines would allow the utility to avoid significant drinking water and wastewater treatment costs that would otherwise have caused increases to the water and sewer rates of all utility customers." The Association notes that utilities can therefore support public investments in

⁷⁹ "The exercise of the spending power must be in the pursuit of the general welfare, and the appropriations of public funds must be for a public purpose." 63C Am. Jur. 2d Public Funds § 46; see also Town of Beloit v. Cnty. of Rock, 259 Wis.2d 37 (2003) ("although there is no specific language in the state constitution establishing the public purpose doctrine, this court has recognized that the doctrine is firmly accepted as a basic constitutional tenet mandating that public appropriations may not be used for other than public purposes").

⁸⁰ Slawson v. Alabama Forestry Comm'n, 631 So.2d 953, 956 (Ala. 1994); Clifford v. City of Cheyenne, 487 P.2d 1325, 1329 (Wyo. 1971); Platte Valley Public Power & Irrigation Dist. v. Lincoln County, 14 N.W.2d 202, 205 (Neb. 1944); State ex rel. McClure v. Hagerman, 98 N.E.2d 835, 838 (Ohio 1951); Greensboro-High Point Airport Authority v. Johnson, 226 N.C. 1, 15 (N.C. 1946); State ex rel. Warren v. Nusbaum, 59 Wis.2d 391, 423 (Wis. 1973); City of Pipestone v. Madsen, 287 Minn. 357, 366 (Minn. 1970).

⁸¹ Burkhardt v. City of Enid, 771 P.2d 608, 610 (Okla. 1989); Madison Cablevision, Inc. v. City of Morganton, 325 N.C. 634, 646 (N.C. 1989); Dannheiser v. City of Henderson, 4 S.W.3d 542, 546 (Ky. 1999) (and cases cited therein).

⁸² See Ullrich v. Bd. of Cnty. Comm'rs of Thomas Cnty., 234 Kan. 782, 788-89 (Kan. 1984) ("The generally recognized rule is that a state legislature may appropriate public money or property for private individuals, if thereby the public welfare is promoted."); see also Mountain Water Co. v. Montana Dept. of Public Service Regulation, 919 F.2d 593, 601 (9th Cir. 1990) (upholding a requirement applicable to privately-owned water utilities "to help assure service line maintenance [and] redistribute the cost of service line maintenance among all customers.").

⁸³ Bauer v. S.C. State Hous. Auth., 246 S.E.2d 869, 871 (1978) (upholding state program for funding programs to provide "sanitary and safe residential housing" for persons and families of low income).

⁸⁴ See NDWAC, Lead and Copper Rule Long-Term Revisions White Paper (March 2014); Del Toral, Porter, and Schock, Detection and Evaluation of Elevated Lead Release from Service Lines: A Field Study, Environ. Sci. Technol. 47, 9300–9307 (2013).

⁸⁵ American Water Works Association, *Strategies to Obtain Customer Acceptance of Complete Lead Service Line Replacement*, 9 (2005), available at: http://www.awwa.org/Portals/0/files/legreg/documents/StrategiesforLSLs.pdf.

replacing customer-owned service lines "by documenting direct costs that could accrue to all utility customers and less quantifiable ancillary costs that could accrue to the community as a whole if lead service lines were not replaced." *Id.*

CONCLUSION

Strong policy considerations support a control-based lead service line replacement. In its current form the service line replacement rule simply does not work. Experience has shown that the objectives of the SDWA and the Lead and Copper Rule can best be restoring the control approach that EPA adopted in its 1991 Lead and Copper Rule.

Please feel free to contact me if you have any questions or would like to discuss.

Sincerely,

<u>/s/ Jennifer C. Chavez</u>

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