



The State of New Hampshire
Department of Environmental Services



Robert R. Scott, Commissioner

April 10, 2018

The Honorable Kevin Avard
Chair, Senate Energy and Natural Resources Committee
State House, Room 103
Concord, NH 03301

RE: HB 1592 as passed by the House - requiring the commissioner of the department of environmental services to review standards relative to arsenic contamination in drinking water

Dear Chair Avard and Members of the Committee:

Thank you for the opportunity to testify on HB 1592 as passed by the House. This bill would require the New Hampshire Department of Environmental Services (NHDES) to review the ambient groundwater quality standard (AGQS) and the drinking water maximum contaminant level (MCL) for arsenic and to revise the standards if NHDES determines that the standards should be lowered. The AGQS of 10 parts per billion (ppb) applies to facilities that discharge to groundwater. The arsenic MCL of 10 ppb applies to public water systems that serve residential populations and those that serve the same 25 or more people each day, such as schools and places of work with their own wells. NHDES believes that this would be an appropriate time to review these standards and supports this bill as passed by the House. A suggested amendment, to correct a technical issue with the bill, is attached.

The current federal and state standard of 10 ppb, although not as protective of public health as current drinking water standards for other contaminants, was chosen by the US Environmental Protection Agency (USEPA) to balance the cost of treatment with the monetized costs (based on such things as willingness to accept risk and willingness to pay to avoid cancer) associated with increased bladder and lung cancer risk. (USEPA, Arsenic in Drinking Water Rule Economic Analysis, 2000)

NHDES believes that this would be an appropriate time to re-assess the standard for three reasons. First, the current standard does not offer the level of health protection that is typically provided by drinking water standards. Second, the current standard is 17 years old and is based on consideration of the costs of water treatment and an incomplete estimate of health benefits, both of which may have changed considerably since then. Third, a good deal of work has been done during the past 17 years to better understand the developmental health risks associated with low-level exposure to arsenic. Such an assessment must be done with due consideration to water supply treatment costs, the compliance costs for facilities that discharge to groundwater, and the avoidable health risk and associated costs.

Health Risk from Arsenic in NH

Arsenic is naturally occurring and quite common in New Hampshire's groundwater, and health studies of New Hampshire residents have demonstrated the connection between arsenic and the increased prevalence of conditions such as bladder and other cancers and developmental effects on children. More than one-third of the community water systems in New Hampshire have a measurable amount of arsenic in their water. USEPA typically sets MCLs for drinking water contaminants at a level at which a lifetime of exposure

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would result in one excess cancer in 1,000,000 (one million) people exposed. However, USEPA makes exceptions in cases where the technology is not readily available to detect the contaminant at extremely low levels or to remove the contaminant (treat the water) to such low levels. For some contaminants, USEPA has established drinking water MCLs with cancer risks in the 10-in-a-million to 100-in-a-million range. The 10 ppb MCL for arsenic is associated with a far greater risk, 3,000 in a million (roughly 1 in 300).

Since USEPA established the MCL for arsenic in drinking water at 10 ppb, evidence has continued to mount about its health effects at low levels of exposure. For instance, the 2016 Northern New England Bladder Cancer Study found, "Bladder cancer mortality rates have been elevated in northern New England for at least five decades. . . about 20% higher than that for the United States overall," and "Our findings support an association between low-to-moderate levels of arsenic in drinking water and bladder cancer risk in New England." (Baris, et.al., Journal of the National Cancer Institute) Recent research also found that arsenic exposure of pregnant women in New Hampshire was associated with adverse effects on fetal growth and infections in infants. (Gilbert-Diamond, et. al., Environmental Health Perspectives, August 2016; Farzan, et.al., Environmental Health Perspectives, June 2016)

A 2014 report by researchers at Dartmouth College estimated that exposure to arsenic in drinking water from private wells can be blamed for 830 cancer cases in the current population and that nearly half of private well users have never tested their water for arsenic. (Borsuk, et.al.; Arsenic in Private Wells in NH) There is clearly a need to raise awareness of this health risk among private well users and to address the barriers to increased testing and water treatment, but to date NHDES has lacked the resources to bring about substantial improvement in this area.

History and Status of the 10 ppb Arsenic Standard

USEPA adopted the current 10 ppb standard in 2001, replacing the previous standard of 50 ppb, which did not take into account arsenic's effect on cancer risk. Water systems have been required to meet the new standard since January 23, 2006. The 10 ppb standard has been controversial, and almost since the day it was adopted, USEPA has been in the process of reassessing it. USEPA currently expects to complete a revised scope for its risk assessment in 2018, with completion of the risk assessment itself expected in 2020 or 2021.

To our knowledge, the only state that has adopted a stricter standard than USEPA's 10 ppb is New Jersey. In 2003 the State of New Jersey's Drinking Water Quality Institute recommended an arsenic standard of 3 ppb based on the feasibility of laboratory analytical methods and water treatment technology. Citing reservations about some of the water treatment methods available to attain the recommended 3 ppb standard, the State's Department of Environmental Protection adopted a drinking water standard of 5 ppb, which it has been enforcing since 2006.

Treatment Costs and Laboratory Capability

As noted above, the cost of treatment was a major factor in setting the federal arsenic standard at 10 ppb rather than a lower level, and the feasibility of treatment was the key factor in New Jersey's decision to set its standard at 5 ppb rather than 3 ppb. In NHDES' experience working with the public water systems that currently treat for arsenic, levels below 5 ppb can be consistently achieved with the currently available

technology, but levels as low as 1 ppb would not be technically feasible to consistently achieve for most water systems. NHDES estimates that annual costs for each water system that would need to treat to meet an arsenic standard of 5 ppb would increase by approximately \$10,000 to \$12,000 per year. Approximately 43 systems that do not currently treat for arsenic would need to do so if the standard were lowered to 5 ppb, and treatment costs would increase for approximately 200 systems that are currently treating for arsenic. A preliminary assessment suggests that lowering the standard to 5 ppb would prevent approximately 24 bladder and lung cancers in the current population, including 17 fatal cases, in addition to other cancers and negative health effects.

To implement the bill, NHDES would need to independently review available research regarding the health effects of arsenic exposure, review data regarding the occurrence of arsenic in treated and untreated water at public water systems (PWSs), estimate the reduction in health effects under various scenarios for lowered MCLs, and estimate the costs to PWSs of compliance. NHDES would also need to estimate the costs of compliance under corresponding scenarios for lowered AGQs. Since NHDES does not normally set drinking water standards (MCLs), it does not currently have staff with the expertise necessary to perform these functions. In order to complete this review and propose a revised limit in the time provided, NHDES would need to hire a contractor. NHDES estimates that the cost to hire a contractor could exceed \$100,000 if no new qualified staff are available to perform this work at NHDES.

In addition to addressing the drinking water and groundwater standards for arsenic, the bill as passed by the House would amend RSA 485:3,1(b) to (1) specify the considerations that NHDES shall take into account when adopting any drinking water standard and (2) require NHDES to submit a report to the House Executive Departments and Administration Committee within 60 days of proposing any drinking water standard. NHDES believes the reporting requirement was intended to apply only to a drinking water standard for arsenic. Accordingly, we offer the attached amendment to address this issue.

Thank you again for the opportunity to comment on this bill. Should you have further questions or need additional information, please feel free to contact either Sarah Pillsbury, Administrator, Drinking Water and Groundwater Bureau, (sarah.pillsbury@des.nh.gov, 271-1168) or Paul Susca, Supervisor, Planning, Drinking Water and Groundwater Bureau (paul.susca@des.nh.gov, 271-7061).

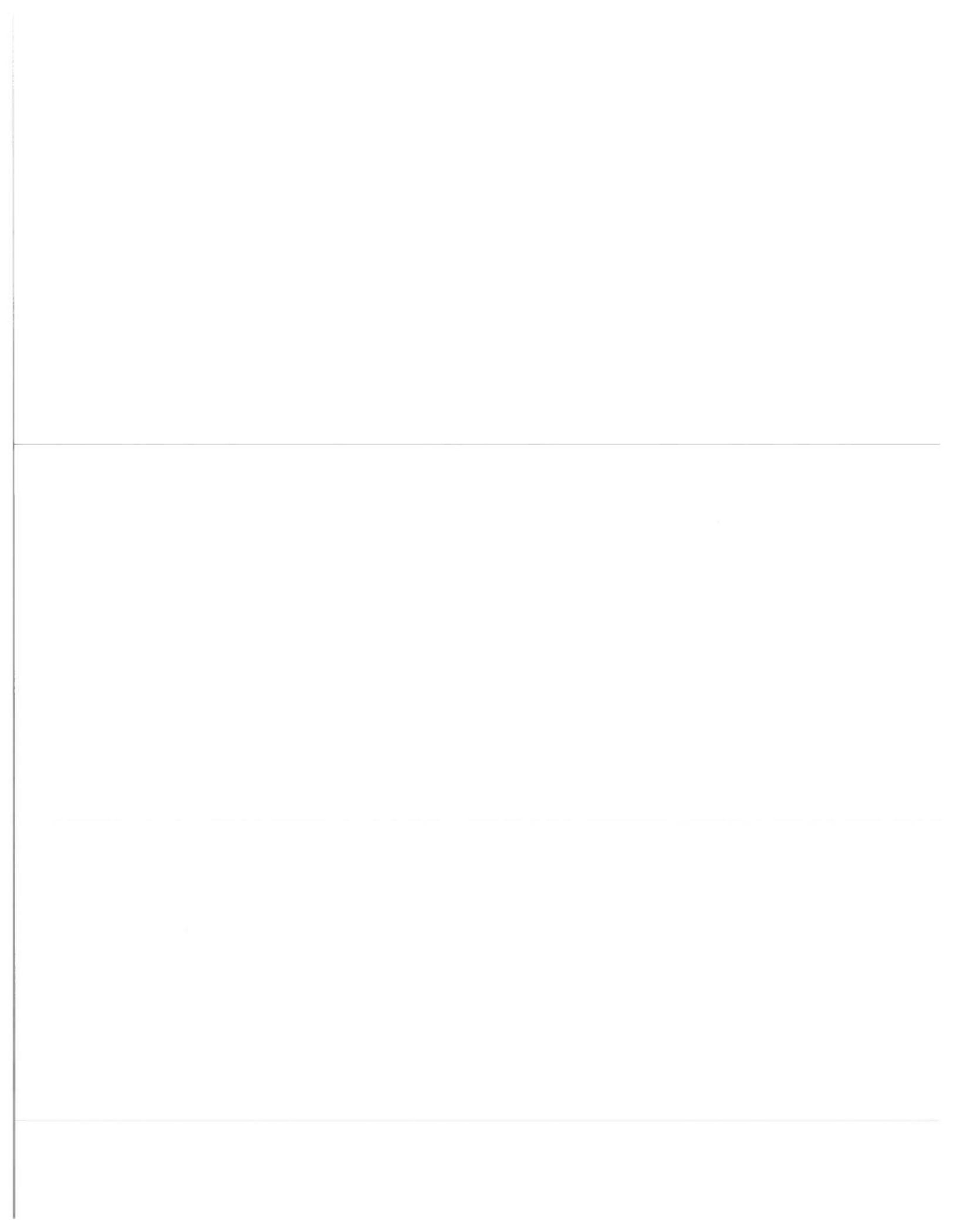
Sincerely,



Robert R. Scott
Commissioner

Attachment: Suggested amendment to HB 1592

cc: Sponsors of HB 1592: Representatives Messmer, McConnell, Cushing, Grassie, Altschiller, and Fraser



April 10, 2018

Amendment suggested by the Department of Environmental Services to
HB 1592-FN as passed by the House

Amend the bill by removing the following from paragraph 3:

(Note: so that it does not apply to all drinking water standards.)

(3) The commissioner shall submit a report to the house executive departments and administration committee within 60 days of proposing a specification under this subparagraph; and

Amend the bill by inserting the following at the end of paragraph 2:

(So that it applies only to an arsenic standard.)

and shall submit a report to the house executive departments and administration committee prior to initiating such rulemaking.

HB 1592-FN - AS AMENDED BY THE HOUSE

8Feb2018... 0324h
22Mar2018... 1100h

2018 SESSION

18-2378
08/04

HOUSE BILL **1592**

AN ACT requiring the commissioner of the department of environmental services to review standards relative to arsenic contamination in drinking water.

SPONSORS: Rep. Messmer, Rock. 24; Rep. McConnell, Ches. 12; Rep. Cushing, Rock. 21; Rep. Grassie, Straf. 11; Rep. Altschiller, Rock. 19; Rep. Fraser, Belk. 1

COMMITTEE: Resources, Recreation and Development

AMENDED ANALYSIS

This bill requires the commissioner of the department of environmental services to review standards relative to arsenic contamination in drinking water and make new rules if he or she determines there should be new standards.

This bill also requires the commissioner of the department of environmental services to consider certain criteria before adopting specifications for contaminants in drinking water.

.....
Explanation: Matter added to current law appears in **bold italics**.
Matter removed from current law appears ~~[in brackets and struck through]~~.
Matter which is either (a) all new or (b) repealed and reenacted appears in regular type.

8Feb2018... 0324h
22Mar2018... 1100h 18-2378
08/04

STATE OF NEW HAMPSHIRE

In the Year of Our Lord Two Thousand Eighteen

AN ACT requiring the commissioner of the department of environmental services to review standards relative to arsenic contamination in drinking water.

Be it Enacted by the Senate and House of Representatives in General Court convened:

1 New Paragraph; Ambient Groundwater Quality Standards. Amend RSA 485-C:4 by inserting after paragraph XII the following new paragraph:

XIII. By January 1, 2019, the commissioner shall review the ambient groundwater standard for arsenic to determine whether it should be lowered and, if it is determined that it should be lowered, shall initiate rulemaking in accordance with RSA 541-A to establish the new ambient groundwater quality standard.

2 New Paragraph; Contaminants in Drinking Water. Amend RSA 485:3 by inserting after paragraph XIV the following new paragraph:

XV. By January 1, 2019, the commissioner shall review the maximum contaminant level for arsenic to determine whether it should be lowered and, if it is determined that it should be lowered, shall initiate rulemaking in accordance with RSA 541-A to establish the new maximum contaminant level.

3 Drinking Water Rules. Amend RSA 485:3, I(b) to read as follows:

(b) *After consideration of the extent to which the contaminant is found in New Hampshire, the ability to detect the contaminant in public water systems, the ability to remove the contaminant from drinking water, and the costs and benefits to affected entities that will result from establishing the standard, a specification for each contaminant of either:*

(1) A maximum contaminant level that is acceptable in water for human consumption~~[, if it is feasible to ascertain the level of such contaminant in water in public water systems];~~ or

(2) One or more treatment techniques or methods which lead to a reduction of the level of such contaminant sufficient to protect the public health, if it is not feasible to ascertain the level of such contaminant in water in the public water system; and

(3) *The commissioner shall submit a report to the house executive departments and administration committee within 60 days of proposing a specification under this subparagraph; and*

4 Effective Date. This act shall take effect 90 days after its passage.

LBAO
18-2378
Amended 3/30/18

HB 1592-FN- FISCAL NOTE
AS AMENDED BY THE HOUSE (AMENDMENT #2018-1100h)

AN ACT requiring the commissioner of the department of environmental services to review standards relative to arsenic contamination in drinking water.

FISCAL IMPACT: State County Local None

STATE:	Estimated Increase / (Decrease)			
	FY 2019	FY 2020	FY 2021	FY 2022
Appropriation	\$0	\$0	\$0	\$0
Revenue	\$0	\$0	\$0	\$0
Expenditures	Indeterminable Increase	Indeterminable Increase	Indeterminable Increase	Indeterminable Increase
Funding Source:	<input checked="" type="checkbox"/> General	<input type="checkbox"/> Education	<input type="checkbox"/> Highway	<input type="checkbox"/> Other

COUNTY:

Revenue	\$0	\$0	\$0	\$0
Expenditures	Indeterminable Increase	Indeterminable Increase	Indeterminable Increase	Indeterminable Increase

LOCAL:

Revenue	\$0	\$0	\$0	\$0
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Expenditures	Indeterminable Increase	Indeterminable Increase	Indeterminable Increase	Indeterminable Increase
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METHODOLOGY:

This bill would require the Department of Environmental Services to review the arsenic Maximum Contaminant Level (MCL) for public water systems and the arsenic Ambient Groundwater Quality Standard (AGQS) to determine whether they should be lowered, and if it is determined that either should be lowered, initiate rulemaking to do so. If the Department were to lower the AGQS, the MCL, or both, county and local expenditures would likely increase for entities that own public water systems, wastewater lagoons, landfills, and other facilities that discharge to groundwater. For some of the affected facilities, the increased costs would be significant. The Department does not anticipate that revenues would increase for any unit of government. The Department indicates, a result of implementing lower limits would be indeterminable long-term reductions in health care costs associated with reductions in diseases and conditions caused by exposure to arsenic in drinking water.

The Department would need to independently review available research regarding the health effects of arsenic exposure, review data regarding the occurrence of arsenic in treated and untreated water at public water systems (PWSs), estimate the reduction in health effects under various scenarios for lowered MCLs, and estimate the costs for PWSs to comply with the lowered standard. The Department would also need to estimate the costs of compliance under corresponding scenarios for lowered AGQSs. The Department does not currently have staff with the expertise necessary to perform these functions, since the Department does not normally set drinking water standards (MCLs). In order to complete this review and propose revised limits in the time provided, the Department would need to hire a contractor. The Department estimates that the cost to hire a contractor could exceed \$100,000.

The Department indicates it is not possible to determine which or how many PWSs or other facilities would be affected without knowing what the new AGQS and/or MCL would be. However, the Department has prepared a preliminary estimate of some of the impacts of lowering the limits to 5 ppb, a level the Department believes is technologically achievable.

For Public Water Systems, the Department estimates lowering the arsenic in drinking water limit to 5 ppb would increase the operating costs of 246 affected public water systems (PWSs) by approximately \$2.5 million per year. This includes the cost impact on 33 affected municipal, county, and state-owned PWSs, which the Department estimates as approximately \$281,000 per year. Not included in the amount are municipal PWSs that currently treat for arsenic with greensand. The Department believes these systems would not experience a significant cost increase due to greensand's ability to remove arsenic to below 5 ppb without an appreciable effect on the useful life of the media.

For wastewater lagoons and other discharges to groundwater, the Department states lowering the AGQS for arsenic to 5 ppb would affect a number of facilities that hold groundwater discharge permits. Of the 102 facilities including wastewater lagoons, sludge lagoons, and wastewater discharges to the ground with permits, 40 are owned by public entities. At least 8 of those facilities struggle to comply with the current 10 ppb limit at least some of the time. Seven of those are unlined wastewater lagoons and one is a sludge lagoon. The facilities with persistent problems are in various

stages of evaluating ways to achieve continuous compliance, typically by removing accumulated solids, acquiring more discharge area (land) and in extreme cases by relocating. The cost of compliance for these facilities is not possible to determine at this time, but is expected to be \$10,000 to \$100,000 per year for each facility. By lowering of the AGQS to 5 ppb, the Department estimates the number of facilities needing to take on additional costs may double or even triple. If so, the compliance costs due to lowering the limit to 5 ppb could be on the order of \$80,000 to \$1.6 million per year for all publicly owned facilities. Including privately owned facilities would bring the total to the order of \$200,000 to \$4 million per year.

The New Hampshire Association of Counties does not expect this bill would have an impact on county revenues or expenditures.

AGENCIES CONTACTED:

Department of Environmental Services and New Hampshire Association of Counties
