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110TH CONGRESS
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[Report No. 110–486]

To amend the Safe Drinking Water Act to protect the health of susceptible populations, including pregnant women, infants, and children, by requiring a health advisory, drinking water standard, and reference concentration for trichloroethylene vapor intrusion, and for other purposes.

IN THE SENATE OF THE UNITED STATES

AUGUST 1, 2007

Mrs. CLINTON (for herself, Mrs. DOLE, Mrs. BOXER, Mr. LAUTENBERG, Mr. KERRY, Mr. LIEBERMAN, Mr. NELSON of Florida, and Ms. KLOBUCHAR) introduced the following bill; which was read twice and referred to the Committee on Environment and Public Works

SEPTEMBER 24 (legislative day, SEPTEMBER 17), 2008

Reported by Mrs. BOXER, without amendment

A BILL

To amend the Safe Drinking Water Act to protect the health of susceptible populations, including pregnant women, infants, and children, by requiring a health advisory, drinking water standard, and reference concentration for trichloroethylene vapor intrusion, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

1 **SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

2 (a) SHORT TITLE.—This Act may be cited as the
 3 “Toxic Chemical Exposure Reduction Act of 2008” or the
 4 “TCE Reduction Act of 2008”.

5 (b) TABLE OF CONTENTS.—The table of contents of
 6 this Act is as follows:

Sec. 1. Short title; table of contents.

Sec. 2. Findings and purpose.

TITLE I—HEALTH ADVISORY AND NATIONAL PRIMARY DRINKING
 WATER REGULATION FOR TRICHLOROETHYLENE

Sec. 101. Health advisory and national primary drinking water regulation for
 trichloroethylene.

TITLE II—REDUCING DANGEROUS VAPOR INTRUSION FROM
 CONTAMINATED GROUNDWATER AND SOILS

Sec. 201. Health advisory and reference concentration for trichloroethylene.

7 **SEC. 2. FINDINGS AND PURPOSE.**

8 (a) FINDINGS.—Congress finds that—

9 (1) trichloroethylene is a metal degreaser and
 10 an ingredient in adhesives and paint removers;

11 (2)(A) waste from the use and improper dis-
 12 posal of chemicals containing trichloroethylene is
 13 widespread in soil and water;

14 (B) more than 1,000 waste sites in the United
 15 States are contaminated with trichloroethylene;

16 (C) it is well documented that individuals in
 17 many communities are exposed to trichloroethylene
 18 and experience associated health risks;

19 (D) certain human subpopulations might be at
 20 increased risk to trichloroethylene exposure because

1 of age, genetic polymorphisms, or preexisting dis-
2 eases; and

3 (E) in utero exposure to trichloroethylene has
4 been associated with birth defects and childhood dis-
5 eases, including cancer;

6 (3) according to the report of the National
7 Academy of Sciences entitled “Assessing the Human
8 Health Risks of Trichloroethylene: Key Scientific
9 Issues”—

10 (A) acute exposures to trichloroethylene oc-
11 ccurring as a result of occupational industrial
12 accidents are associated with nerve damage and
13 residual neurological deficits, including memory
14 loss;

15 (B) high-concentration exposure to air con-
16 taminated with trichloroethylene—

17 (i) causes nervous system damage;

18 (ii) has been associated with general-
19 ized skin eruptions and other more severe
20 skin and mucus membrane conditions, such
21 as Stevens-Johnson syndrome; and

22 (iii) can cause liver dysfunction, lead-
23 ing to jaundice, hepatomegaly, and hepatic
24 encephalopathy;

1 (C) trichloroethylene in drinking water can
2 alter the therapeutic action of medications, in-
3 cluding anticoagulants and barbiturates;

4 (D) evidence regarding carcinogenic risk
5 and other health hazards from exposure to tri-
6 chloroethylene has strengthened since 2001,
7 and there is strong evidence that exposure to
8 trichloroethylene in a dose-dependent manner is
9 associated in humans with increased rates of—

10 (i) kidney cancer; and

11 (ii) leukemia;

12 (E) exposure to mixtures of volatile or-
13 ganic compound contaminants in groundwater,
14 in combination with trichloroethylene, can accel-
15 erate tumor growth in humans; and

16 (F) evidence from animal-related and epi-
17 demiological studies suggests that several repro-
18 ductive and developmental toxicity end-points
19 may be associated with trichloroethylene expo-
20 sure, including—

21 (i) infertility in males and females;

22 (ii) impaired intrauterine growth and
23 development; and

24 (iii) cardiac teratogenesis;

1 (4) the report referred to in paragraph (3) rec-
2 ommended the use of currently available data to fi-
3 nalize a risk assessment to ensure that risk manage-
4 ment decisions can be made expeditiously;

5 (5)(A) exposures to volatile organic compound
6 vapors from migration to indoor air have become a
7 concern at sites throughout the United States, in-
8 cluding many Superfund sites under the Comprehen-
9 sive Environmental Response, Compensation, and
10 Liability Act of 1980 (42 U.S.C. 9601 et seq.);

11 (B) potential routes of exposure to trichloro-
12 ethylene exist with respect to susceptible popu-
13 lations, even at sites at which no current drinking
14 water pathways of exposure are known to exist; and

15 (C) in September 2002, the Office of Solid
16 Waste and Emergency Response of the Environ-
17 mental Protection Agency released an external re-
18 view draft entitled “Evaluating the Vapor Intrusion
19 to Indoor Air Pathway from Groundwater and Soils”
20 that focuses specifically on those exposures;

21 (6)(A) in 2006, the United States Geological
22 Survey published a report entitled “Volatile Organic
23 Compounds in the Nation’s Ground Water and
24 Drinking-Water Supply Wells”;

1 (B) as of the date of enactment of this Act, the
2 long-term investigation by the national water-quality
3 assessment program of the United States Geological
4 Survey provides the most comprehensive national
5 analysis of the occurrence of volatile organic com-
6 pounds in ground water, based on results of sam-
7 pling between 1985 and 2002; and

8 (C) among the major findings developed under
9 the program described in subparagraph (B) are—

10 (i) that volatile organic compounds were
11 detected in most aquifers throughout the
12 United States and were not limited to few spe-
13 cific aquifers or regions;

14 (ii) the most frequently detected volatile
15 organic compounds are chloroform, the solvents
16 perchloroethylene and trichloroethylene, and the
17 gasoline oxygenate methyl tertiary butyl ether;

18 (iii) 5 of the 29 regulated volatile organic
19 compounds had 1 or more concentrations great-
20 er than applicable maximum contaminant levels
21 that generally occurred in highly populated
22 areas of the United States, including 1,1-DCE,
23 methylene chloride, perchloroethylene, trichloro-
24 ethylene, and vinyl chloride;

1 (iv) the solvents perchloroethylene and tri-
2 chloroethylene comprised approximately $\frac{3}{4}$ of
3 the concentrations of potential concern;

4 (v) trichloroethylene was detected at levels
5 ranging from 0.002 to over 110 micrograms per
6 liter; and

7 (vi) as of the date of enactment of this
8 Act, the maximum contaminant level for tri-
9 chloroethylene is 5 micrograms per liter; and

10 (7) the document of the Environmental Protec-
11 tion Agency entitled “Draft Trichloroethylene
12 Health Risk Assessment: Synthesis and Character-
13 ization” and dated 2001—

14 (A) stated that the Agency for Toxic Sub-
15 stances and Disease Registry—

16 (i) reports that trichloroethylene is the
17 most frequently reported organic contami-
18 nant in groundwater; and

19 (ii) has estimated that between 9 and
20 34 percent of drinking water supply
21 sources have some trichloroethylene con-
22 tamination; and

23 (B) recommended extrapolation to lower
24 doses for oral exposure of trichloroethylene in

1 drinking water, resulting in a maximum con-
2 taminant level of 1 microgram per liter.

3 (b) PURPOSE.—The purpose of this Act is to require
4 the Administrator of the Environmental Protection Agen-
5 cy—

6 (1) to establish, by not later than 180 days
7 after the date of enactment of this Act—

8 (A) a health advisory for trichloroethylene
9 in drinking water that fully protects susceptible
10 populations (including pregnant women, in-
11 fants, and children), taking into consideration
12 body weight, exposure patterns, and all routes
13 of exposure to trichloroethylene; and

14 (B) an integrated risk information system
15 reference concentration of trichloroethylene that
16 is protective of the susceptible populations iden-
17 tified in subparagraph (A) from vapor intru-
18 sion, taking into consideration the factors de-
19 scribed in that subparagraph; and

20 (2) to promptly establish a national primary
21 drinking water regulation for trichloroethylene that
22 fully protects susceptible populations (including
23 pregnant women, infants, and children), taking into
24 consideration body weight, exposure patterns, and all
25 routes of exposure to trichloroethylene.

1 **TITLE I—HEALTH ADVISORY**
2 **AND NATIONAL PRIMARY**
3 **DRINKING WATER REGULA-**
4 **TION FOR TRICHLORO-**
5 **ETHYLENE**

6 **SEC. 101. HEALTH ADVISORY AND NATIONAL PRIMARY**
7 **DRINKING WATER REGULATION FOR TRI-**
8 **CHLOROETHYLENE.**

9 Section 1412(b)(12) of the Safe Drinking Water Act
10 (42 U.S.C. 300g–1(b)(12)) is amended by adding at the
11 end the following:

12 “(C) TRICHLOROETHYLENE.—

13 “(i) HEALTH ADVISORY.—Notwith-
14 standing any other provision of this sec-
15 tion, not later than 180 days after the date
16 of enactment of this subparagraph, the Ad-
17 ministrator shall publish a health advisory
18 for trichloroethylene that fully protects,
19 with an adequate margin of safety, the
20 health of susceptible populations (including
21 pregnant women, infants, and children),
22 taking into consideration body weight, ex-
23 posure patterns, and all routes of exposure.

24 “(ii) NATIONAL PRIMARY DRINKING
25 WATER REGULATION.—

1 “(I) PROPOSED REGULATION.—
2 Notwithstanding any other provision
3 of this section, not later than 1 year
4 after the date of enactment of this
5 subparagraph, the Administrator shall
6 propose a national primary drinking
7 water regulation for trichloro-
8 ethylene—

9 “(aa) that is protective of
10 susceptible populations (including
11 pregnant women, infants, and
12 children); and

13 “(bb) the maximum con-
14 taminant level of which is as
15 close to the maximum contami-
16 nant level goal for trichloro-
17 ethylene, and as protective of
18 those susceptible populations, as
19 is feasible.

20 “(II) FINAL REGULATION.—Not-
21 withstanding any other provision of
22 this section, not later than 18 months
23 after the date of enactment of this
24 subparagraph, after providing notice
25 and an opportunity for public com-

1 ment, the Administrator shall promul-
 2 gate a final national primary drinking
 3 water regulation (including a provi-
 4 sion for monitoring under subclause
 5 (III)) for trichloroethylene that is con-
 6 sistent with subclause (I).

7 “(III) MONITORING REQUIRE-
 8 MENTS.—

9 “(aa) DEFINITION OF
 10 QUALIFYING SYSTEM.—In this
 11 subclause, the term ‘qualifying
 12 system’ means a public water
 13 system that has been granted a
 14 monitoring waiver under section
 15 141.24 of volume 40, Code of
 16 Federal Regulations (or successor
 17 regulations).

18 “(bb) REQUIREMENTS.—
 19 The regulation under subclause
 20 (II) shall include a provision re-
 21 lating to monitoring that re-
 22 quires—

23 “(AA) that the Admin-
 24 istrator shall revise moni-
 25 toring requirements for all

1 systems to ensure detection
2 of potential trichloroethylene
3 contamination and full com-
4 pliance with the revised na-
5 tional primary drinking
6 water regulation;

7 “(BB) for each quali-
8 fying system located in the
9 vicinity of a subsurface mi-
10 gration of a known volatile
11 organic compound contami-
12 nation site, that the State
13 with primary enforcement
14 responsibility shall review
15 and submit the waiver of the
16 qualifying system for review
17 by the Administrator; and

18 “(CC) each qualifying
19 system potentially located in
20 the path of subsurface mi-
21 gration of a known volatile
22 organic compound be subject
23 to minimum regular moni-
24 toring for trichloroethylene,
25 as the Administrator and

1 primary State officials deter-
 2 mine to be appropriate.

3 “(iii) CONSUMER CONFIDENCE RE-
 4 PORTS.—

5 “(I) IN GENERAL.—Subject to
 6 subclause (II), simultaneously with
 7 the promulgation of the final regula-
 8 tion under clause (ii)(II), each con-
 9 sumer confidence report issued under
 10 section 1414(c)(4) shall disclose the
 11 presence of any trichloroethylene in
 12 drinking water, and the potential
 13 health risks to susceptible populations
 14 (including pregnant women, infants,
 15 and children) from exposure to tri-
 16 chloroethylene in drinking water, con-
 17 sistent with regulations promulgated
 18 by the Administrator.

19 “(II) EXCEPTION.—Notwith-
 20 standing subclause (I), trichloro-
 21 ethylene shall not be considered to be
 22 1 of the 3 regulated contaminants de-
 23 scribed in the matter following clause
 24 (vi) of section 1414(c)(4)(B).”.

1 **TITLE II—REDUCING DAN-**
2 **GEROUS VAPOR INTRUSION**
3 **FROM CONTAMINATED**
4 **GROUNDWATER AND SOILS**

5 **SEC. 201. HEALTH ADVISORY AND REFERENCE CON-**
6 **CENTRATION FOR TRICHLOROETHYLENE.**

7 (a) HEALTH ADVISORY.—Not later than 1 year after
8 the date of enactment of this Act, the Administrator of
9 the Environmental Protection Agency (referred to in this
10 section as the “Administrator”) shall publish a health ad-
11 visory for trichloroethylene that fully protects from vapor
12 intrusion, with an adequate margin of safety, the health
13 of susceptible populations (including pregnant women, in-
14 fants, and children), taking into consideration body
15 weight, exposure patterns, and all routes of exposure.

16 (b) ESTABLISHMENT AND APPLICATION OF REF-
17ERENCE CONCENTRATION.—

18 (1) ESTABLISHMENT OF REFERENCE CON-
19CENTRATION.—Not later than 18 months after the
20 date of enactment of this Act, the Administrator
21 shall establish an integrated risk information system
22 reference concentration of trichloroethylene vapor
23 that is protective of susceptible populations (includ-
24 ing pregnant women, infants, and children), con-

1 sistent with the health advisory described in sub-
2 section (a).

3 (2) REMEDIAL ACTION.—Not later than 2 years
4 after the date of enactment of this Act, the Adminis-
5 trator shall apply the reference concentration estab-
6 lished under paragraph (1) with respect to any po-
7 tential vapor intrusion-related investigations or ac-
8 tions to protect public health with respect to tri-
9 chloroethylene exposure carried out pursuant to the
10 Comprehensive Environmental Response, Compensa-
11 tion, and Liability Act of 1980 (42 U.S.C. 9601 et
12 seq.), the Safe Drinking Water Act (42 U.S.C. 300f
13 et seq.), or the Solid Waste Disposal Act (42 U.S.C.
14 6901 et seq.).

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