

ACES Acton Citizens for Environmental Safety

October 30, 2008

Chief, Program Evaluation, Records Information Branch
Agency for Toxic Substances and Disease Registry (ATSDR)
Attn: Records Center, W.R. Grace & Company, Inc.
1600 Clifton Rd., NE (MS F-09)
Atlanta, GA 30333

Re: ACES Comments on
ATSDR Public Health Assessment, Public Comment Release
WR Grace Superfund Site
Acton, Middlesex County, Massachusetts
EPA Facility ID: MAD001002252
Report Date: August 26, 2008

Dear ATSDR Chief,

Thank you for the opportunity to provide comments on behalf of Acton Citizens for Environmental Safety (ACES), on the Agency for the Toxic Substances and Disease Registry (ATSDR) Public Comment Release, Public Health Assessment (PHA) for the WR Grace Superfund Site, dated August 26, 2008. ACES also thanks ATSDR for the opportunity to comment on an earlier version of this report, dated August 15, 2005, and appreciates ATSDR's efforts to address those comments, and to include responses to those and earlier comments in the 2008 Public Comment Release PHA.

ACES current comments will be mailed via overnight mail to reach ATSDR on October 30, 2008. This mailing will include Attachments A through L listed below. I will also email a copy of the comments, without attachments, to Robert Knowles, ATSDR Lead Health Assessor by October 30, 2008, with a follow-up email with attachments as needed. Some of the attached files may be large, so arrangements other than email may be needed to send electronic versions. This may be especially true for Attachment E. For Attachment E, please also note that it has been difficult to make a clear paper copy of these data sheets that are printed on striped computer paper and held in a tightly bound document. We will make every effort to provide as clear a copy as possible, and may need some extra time to provide an electronic version of these pages.

Please note also that Attachment A was a handout that ATSDR provided at a 2003 meeting in Acton, MA. Attachments B, C, D, G and K are in documents that ATSDR included in its reference section of the 2008 PHA. ACES mailed ATSDR Attachments F and I with our September 16, 2005 comments on an earlier draft of the PHA. Attachment F is also available online.

The attachments to these comments are as follows:

Attachment A: Comparison of Risk Assessment and Public Health Assessment. ATSDR Table provided as a handout at ATSDR's public availability session, October 28, 2003, Acton, MA

ATSDR Table, provided as a handout at their October 2003 public availability session in Acton, MA

Attachment B: Pre-1984, Plume Map; Distribution of VDC in Groundwater, Pre-1984, Draft Remedial Investigation Report, W.R. Grace Superfund Site, Acton, MA, by GeoTrans, August 30, 2002, Figure 3-7

Attachment C: 2001-2002 Plume Map; Distribution of VDC in Groundwater, 2001-2002, Draft Remedial Investigation Report, W.R. Grace Superfund Site, Acton, MA, by GeoTrans, August 30, 2002, Figure 3-3

Attachment D: Groundwater Exposure Areas and Sampling Locations; Public Health Risk Assessment, Interim Deliverable I & II, W.R. Grace Superfund Site, by Menzie Cura & Associates, October 31, 2003, Figure 3.

Attachment E: Additional public well data, Assabet I and Assabet II, Acton Water District public water supply wells, June 1982-January 1987

(Copies of relevant pages of a computer printout that the AWD recently located that contained past data for the AWD public water supply wells)

Attachment F: December 4, 2002 Letter Re: Lisa Lane and Bellantoni Drive; Private Irrigation Well Evaluation Results
Phase 2 Remedial Investigation Data Report, W.R. Grace Superfund Site, Acton, MA, by GeoTrans, May 14, 2003, Appendix A. Also online at <http://doc.acton-ma.gov/dsweb/Get/Document-6723/WRGracePrivateWellEvaluation.PDF>

Attachment G: "Private Wells" section of 2002 RI Report
Draft Remedial Investigation Report, W.R. Grace Superfund Site, Acton, MA, by GeoTrans, August 30, 2002, cover page, pages 2-7 to 2-8; Figure 2-8

Attachment H: "Private Wells" section of 2005 RI Report
Public Review Draft Remedial Investigation Report, W.R. Grace Superfund Site, Acton, MA, by GeoTrans, July 1, 2005, cover page, pages 2-7 to 2-8; Figure 2-9

Attachment I: Cover letter from ATSDR, 1992 Initial Release PHA
Public Health Assessment, WR Grace & Co. Inc., (Acton Plant), Initial Release, Sept. 30, 1992; Letter dated October 6, 1992, from Louise House of ATSDR Region I to Michael LeBlanc at the Massachusetts DEP

Attachment J: EPA comments on 1992 Initial Release PHA

Memorandum dated January 8, 1993, from Lynne Jennings at EPA, Region I
Comments on Draft Public Health Assessment for the W.R. Grace Superfund Site, Acton,
MA

Attachment K: “Initial Release” 1992 PHA

ATSDR Public Health Assessment, WR Grace & Co. Inc., (Acton Plant), Initial Release,
Sept. 30, 1992, cover page, pages 21-24

Attachment L: “Public Comment Release” 1992 PHA

ATSDR Public Health Assessment, WR Grace & Co. Inc., Draft Public Comment
Release, 1992, cover page & pages 22-24

The following comments are organized with general comments first, followed by more specific comments presented mostly by page order. While there is some repetition of comments, hopefully this format will prove helpful to the reviewers during the editing process.

A. General Comments and select specific comments:

1. Ideally the Public Health Assessment, (PHA), by the Agency for Toxic Substances and Disease Registry (ATSDR) would provide a complete evaluation of the risks and/or health outcomes from all possible past, current and future exposures to site contaminants. Unfortunately there are constraints that limit the ability of the 2008 ATSDR PHA to meet this lofty goal.

Given that the subject is complex, with many variables and assumptions, it may be difficult for a layreader to understand the scope, details and limitations of the PHA. There may also be public confusion about the role that the 2008 ATSDR report plays, especially given that a separate Public Health Risk Assessment on the WR Grace Superfund Site was completed in 2005 under the guidance of EPA. The next several comments concern these issues.

2. Comparison of ATSDR Public Health Assessment to EPA Public Health Risk Assessment

a. Attachment A: Comparison Table & Powerpoint slide

Please include in the ATSDR 2008 PHA a copy of the side-by-side comparison of the roles, assumptions, analytical techniques, etc. in the ATSDR Public Health Assessment (PHA) and the EPA guided Public Health Risk Assessment (PHRA). See Attachment A of these comments for a copy of the handout provided by ATSDR at the October 28, 2003 public meeting in Acton, MA that was used for this purpose at the Acton meeting.

b. Discussion in text

Please also include in the 2008 PHA text some discussion about the different roles of the two evaluations. In particular please point out the different approaches to assessing risk via the municipal drinking water wells, private irrigation wells, and other private wells. Under the EPA process, the highest levels of contaminants found in groundwater in the

area, and not just found in the wells themselves, are used to assess the potential risk from exposure to that water. This is appropriate given that EPA focuses on current and future risk, and that the goal of the EPA guided cleanup is to return the aquifer to a “fully usable condition” as mandated by a federal court consent decree. By analyzing risk in the groundwater throughout the site, the EPA can then guide a cleanup whose goal is to allow a municipal drinking water well, private irrigation well, or other private well to be installed anywhere on the site without the need for additional treatment in order to protect public health.

According to the ATSDR handout in Attachment A, the ATSDR process focuses on present and past exposures. The 2008 PHA only considers contaminant detections from the wells themselves, not the surrounding groundwater that supplies the wells. Risks are assessed for “completed exposure pathways”. In the case of current exposures in municipal well water, ATSDR does not calculate risk from VOCs in the groundwater, or untreated well water, but instead assumes that treatment by the Acton Water District will keep any exposure to VOCs in drinking water to acceptable levels.

c. ACES agrees with the comments submitted by O’Reilly, Talbot & Okun Associates (OTO) on behalf of the Town of Acton on the ATSDR recommendations regarding drinking water supply wells. See pages 3-4 of OTO’s September 30, 2008 comments.

3. Add Figure, Pre-1984 contaminant plume

New Figure, See Attachment B. and 2002 Monitoring Report Figure 3-7

Distribution of VDC in Groundwater, Pre-1984

Please include in the 2008 PHA, Figure 3-7 from the OU-3 Monitoring Program Report, 2002, WR Grace Superfund Site, Acton, MA, by GeoTrans, dated March 28, 2003. (See Attachment B.) This figure shows the pre-1984 extent of groundwater contamination from the WR Grace Site, as known at that time. (There are data gaps for the Northeast Area of the Site.) This figure is also available in all of the subsequent annual monitoring reports for the site to the present, and is shown as Figure 3 in the September 2005 EPA Record of Decision for the WR Grace Site. The pre-1984 figure clearly shows contamination at the two Assabet wells, which were shut down in 1978. Please note the colored contours that show contaminant concentrations up to 2900 ppb of VDC (1,1-dichloroethene).

4. Retitle Figure 2.: “Extent of groundwater contamination, 2002”

Page 83. Figure 2. Plume Map

Please retitle Figure 2 to say “Extent of groundwater contamination, 2002” since this plume outline appears identical to that shown in Figure 7-1 in the August 30, 2002 Remedial Investigation Report for the WR Grace Superfund Site, by GeoTrans. (Since at least 2002 a new VDC plume map has been generated each year based on annual monitoring. The contaminant concentration contours and aerial extent of the plume vary from year to year.)

5. Add Figure of 2001-2002 contaminant plume

New Figure, See Attachment C. and 2002 RI, Figure 3-3 Distribution of VDC in Groundwater, 2001-2002

Please also add to the PHA, Figure 3-3 from the August 30, 2002, Remedial Investigation Report for the WR Grace Superfund Site, by GeoTrans that shows the 2001-2002 VDC (1,1 dichloroethene), contaminant level contours. (See Attachment C.) This figure was used as a frame of reference throughout the RIFS process that led up to the September 2005 EPA Record of Decision (ROD) for the WR Grace Superfund Site.

6. Add Figure of “Groundwater Exposure Areas” to the Figures Section of the PHA New Figure, See Attachment D. and October 31, 2003, PHRA Figure 3.

Please add to the PHA, Figure 3 from the October 31, 2003, Public Health Risk Assessment, Interim Deliverable I & II, for the WR Grace Site, by Menzie Cura & Associates. This figure shows the groundwater exposure areas at the WR Grace Superfund Site that were used throughout the Ecological and Public Health Risk Assessments done under the guidance of EPA, and completed in 2005. It also shows the distribution of VDC in groundwater, 2001-2002.

7. Property vs. site

Please make a distinction in the text between the property owned by the WR Grace Company and the WR Grace Superfund Site. Please explain that the property consists of approximately 260 acres, the majority of which lies to the south of the MBTA rail line. In contrast the “site” includes all of the areas that have been affected by contamination from the property and extends beyond the WR Grace property lines, to the northeast under private residences, property owned by a private business, and Acton Water District property, including the three Acton Water District (AWD) School Street public drinking water wells/wellfields. In the past the plume of contamination also extended to two other AWD public wells on Acton Water District property located to the southwest of the WR Grace property.

Please change the terminology used in the PHA accordingly.

8. Add discussion of changes in contaminant levels

Page 1. “Background” section, “Site Description and History”

In the “Background” section of the PHA, under “Site Description and History”, please point out that contaminant levels at the site were much higher in the past, and covered a more extensive area on the southern part of the site. Refer the reader to the figure showing the pre-1984 plume of groundwater contamination, (Attachment B.), as well as to the new figure in the PHA which shows the groundwater plume as of 2001-2002 (Attachment C.). A comparison of these two figures, and the colored contours will help the reader visualize the extent of cleanup over the years. (Be aware that the contaminant levels represented by the contour intervals vary between the two figures.)

9. Include “Limitations” section

Please include a section in the report that explicitly discusses the limitations of the PHA. This will enable the reader to easily reference this information. (A summary table or list may also be helpful.)

Limitations include:

a. Data analyzed

The PHA focused on data from approximately the 2001-2003 time period, with additional analysis of one set of limited historical data from one summary table in a 1992 ATSDR Public Comment Release Public Health Assessment written under a cooperative agreement with the Massachusetts Department of Public Health—referred to hereafter as the 1992 ATSDR report.

For the purposes of these comments ACES will refer to the 2001-2003 data/time period as “current”. The “current” data were collected in and around 2002 as part of the Remedial Investigation and Ecological and Public Health Risk Assessment investigations conducted under the guidance of EPA.

The public repository at the Acton Memorial Library for the WR Grace Superfund Site contains hundreds of documents dating back to at least 1980, and extending to the present. These reports include countless data tables from analyses of well water, groundwater, soils, sludges, surface water, air, sediment, etc. It is now ACES understanding that it was beyond ATSDR’s resources and the scope of the current PHA to review all of these historic data. Please include a statement in the PHA that acknowledges the existence of the reams of historic data, but then cites the financial, personnel, time resources etc. or other practical constraints that resulted in ATSDR using the 1992 ATSDR summary table as its only historic data source to evaluate past exposures.

b. Current exposures

Please point out that analyses and conclusions based on “current” data, and “current” contaminant levels, even when calculated for 30 year time periods, are only applicable to “current” conditions—not past exposures.

c. Past exposures

Please point out that past exposures can only be accurately assessed using historic data. Levels of contaminants at the site in groundwater, soils & sludges were considerably higher in the past. Given that groundwater discharges to surface water, contaminant levels in surface water were also likely higher in the past. Contaminant levels in ambient air were also likely elevated in the past when the WR Grace facility was actively in production and onsite waste disposal was occurring. Airborne contamination was also likely higher in the early years of the operation of the air stripper towers when groundwater levels were much higher, and higher contaminant levels were being transferred from water to air by the ARS treatment system.

(Please refer the reader to the discussion about airborne contaminants found on pages 63-64 of the current report, in response to Comment #46.)

As you have done throughout the report, please describe in the proposed “Limitations” section, the problems with trying to assess risk from past exposures to contaminants using

the very limited data set that was in the municipal well summary table from the 1992 ATSDR report. Please also discuss the issue of contaminants such as vinyl chloride, acrylonitrile, arsenic, manganese and others that may have been in the drinking water, but gone undetected due to sampling gaps and/or technological limitations.

As further elaborated in comments below, ACES respectfully requests that ATSDR include an analysis of the limited historic data set from the municipal wells as an informational exercise, but that given the data limitations, ATSDR conclude that there is an indeterminate risk from past exposure to municipal well water. Accordingly, please discuss this issue in the proposed "Limitations" section of the text.

10. Past exposures—ACES request & ATSDR analysis

Thank you to ATSDR for calculating risk for the very limited data they had on past VOC contamination in the municipal drinking water wells as presented in the 1992 draft ATSDR public health study. As noted in comment 9 above and discussed more thoroughly below, **ACES requests that the evaluation be amended and retained** in the report as providing important insight into the issue, but that **given the serious data limitations and gaps, ATSDR conclude** that at this time that there is **an indeterminate risk from past exposure to contaminants in municipal well water.**

Background:

In our September 16, 2005 comments on the August 2005 draft of the ATSDR Public Health Assessment, ACES requested that ATSDR evaluate cumulative risk due to past, as well as present exposures to organic and inorganic contaminants at the WR Grace Site, taking into account the higher levels of contamination that people may have been exposed to in the past in drinking water, soils, sludge, groundwater, surface water and ambient air. We noted that there are historical data available dating back to 1978 and that some of the data had been summarized in the 1992 ATSDR documents.

We were concerned that past exposures would not be evaluated under the EPA risk assessment process, and that any ATSDR or EPA assessment based on current contaminant concentrations would underestimate past exposures and risk, even if long term exposure times were assumed for the current concentrations. Obviously site conditions, contaminant concentrations and exposure pathways have changed over the course of the 29 years since the contamination was identified. In the past, contaminant concentrations in groundwater and soils, were much higher; (Compare the groundwater contamination in the Pre-1984 figure [Attachment B], to that in the 2001-2002 figure [Attachment C.]; approximately 200 workers were employed onsite, highly contaminated sludge and surface water in lagoons may have been readily accessible, and the site was unfenced, and thus even more vulnerable to trespassing than under current conditions. Past contaminant levels in surface water and ambient air were also likely much higher. See comment 9 above; and page 63, ATSDR's response to Comment #46.)

ACES September 16, 2005 request regarding ATSDR evaluation of past exposures was made under the assumption that ATSDR would have complete access to all of the historical site documents in the public repository, as well as the resources to review these

documents and locate the data necessary, (in addition to the data in the 1992 report), to make the thorough evaluation requested. It is now ACES understanding that logistical and resource limitations have resulted in ATSDR using the draft 1992 ATSDR Public Health Study as its sole source of historical data for the site. ATSDR only evaluated one pathway for past exposures using historical data: municipal well water, using 1978-1987, & 1992 data from a summary table in the 1992 ATSDR report, and assuming that these were representative of the concentrations found in well water between 1970 and 1978.

11. Exposure assumptions may be incorrect

See p. 23 of 1992 ATSDR Initial Public Release PHA; VOCs in drinking water from 1982-1987?

a. Number of years of exposure: Nine? Fifteen? Unknown?

ACES appreciates that ATSDR evaluated the data contained in the 1992 table. However, ACES shares ATSDR's repeated reservations about the advisability of making any definitive public health determination based on such a limited data set. Also ATSDR's assumption that there were no VOCs in municipal drinking water after 1978 may be incorrect. The text on page 23 of the 1992 ATSDR Report, second paragraph from the bottom of the page states:

(See Attachment L.)

“Assabet Wells One and Two were reopened in 1982 after the installment of a carbon purification system. Since 1982, the level of VOCs distributed from the wells (after treatment by the carbon purification system) to the tap water has significantly reduced. According to Acton Water Department monitoring reports, no VOCs have been detected in the wells since 1987.”¹

Page 24 of the same report states:

“Currently water is treated prior to withdrawal for public use. Exposure to well water contaminants has been reduced as a result of treatment processes. Assuming the effectiveness of the carbon filtration and the ARS continues, future exposure to site contaminants via groundwater will be substantially reduced.”

Table C-12 of the 1992 report lists detections of seven different VOC contaminants in the municipal wells between 1978 and 1987, with only two of these limited to the years before 1982. Given that there were detections of 1,1-Dichloroethylene, 1,1,1-Trichloroethane, Trichloroethylene, Methylene Chloride, and 1,1-Dichloroethane between 1982 to 1987, and the statement in the text of the 1992 ATSDR report referring to detections in treated water, ATSDR should not limit the exposure assumption to a 9 year time period, but should assume at least an additional six years of exposure, (1982-1987?). Please also state in the text that the treatment system did not completely remove all contaminants from the drinking water, and so there was some exposure via this pathway even after the wells were brought back online in the 1980s.

¹ This text is from the “Public Comment Release” version of the 1992 Public Health Assessment, rather than the “Initial Release” version of the same report. ACES mailed Robert Knowles at the ATSDR a copy of the “Public Release” version of this report on September 16, 2005. See also comments 96 and 97 below.

b. VOCs, Technological limitations: Additional contaminants? (Vinyl Chloride, Acrylonitrile, etc.); High detection limits?

There may have been additional VOCs in the drinking water that went undetected due to technological and other sampling limitations. It is ACES understanding that routine VOC testing of drinking water supplies by certified labs was not required until after 1985. It is not clear from the 1992 ATSDR report whether more than the seven listed VOCs were sampled for. This report also does not include information about detection limits which may have been high in the 1970s and early 1980s. The Acton Water District, Massachusetts DEP, (formerly the DEQE), and the public repository for the WR Grace Site may all be sources of additional information.

As ATSDR acknowledged on pages 25-26 in the PHA, (under “Community Health Concerns”), Acton residents may also have been exposed to vinyl chloride and acrylonitrile in drinking water in the past. Vinyl chloride is a major contaminant at the WR Grace Superfund Site. It is ACES understanding that vinyl chloride was regulated differently than other VOCs, due in part to the difficulty in obtaining accurate sampling results. Drinking water sampling for vinyl chloride, “a known human carcinogen of high potency” was not required for all systems, and sampling errors for vinyl chloride in drinking water, before 1987 could be plus or minus 40 percent. (See Federal Register, Vol. 50, No. 219 Nov. 13, 1985/ Proposed Rules and Federal Register Vol. 52, No. 130 July 8, 1987/ Rules and Regulations.)

Acrylonitrile was detected at 1700 ppb in groundwater onsite under the Secondary Lagoon, but may not have been included in sampling in the Assabet wells since it is not routinely sampled in VOC sampling rounds. USEPA has a limit of 0.058 ppb for surface water because of public health concerns about the ingestion of acrylonitrile. The 1992 ATSDR report states that “Acrylonitrile exposure occurred via ingestion, inhalation and dermal contact for residents who received water from Assabet One and Two.”

There are data on toluene and chlorobenzene in the municipal drinking water wells, that ATSDR may be unaware of. (See comment 12. below.) In 1988, on behalf of the Acton Board of Health three epidemiologists, Drs. Wartenberg, Ozonoff, and Lagakos submitted a proposal to the Massachusetts Department of Environmental Quality Engineering. The proposed study, entitled "A Surveillance and Investigation Program to Assess the Health Status of Residents of Acton, MA" included development of a computer model to "reconstruct flows from the contaminated wells over time to evaluate which residences got the contaminated water and how much they got." Unfortunately budget problems at the state level prevented funding of this project. The study proposal listed toluene and chlorobenzene as being amongst the contaminants in the municipal well water.

c. Arsenic, manganese, other inorganics

The 1992 ATSDR table did not include any data for inorganic contaminants in the municipal wells. Was such sampling performed? WR Grace cites arsenic detections as being linked to increased VOC contamination in an area. As can be seen from a

comparison of the Pre-1984 plume (Attachment B) to the 2001-2002 plume (Attachment C), there were higher levels of VOC contamination at the Assabet wells in the past than present, (and the possibility of accompanying higher levels of arsenic, manganese, etc.?).

12. Additional VOCs in past municipal well water

See Attachment E, Additional Historical Data, Assabet Public Wells, 1982-1987

a. The Acton Water District recently located an old computer printout of data for the Assabet public drinking water wells. Copies of the pages related to the Assabet wells are provided in Attachment E of these comments. Detections in Assabet 2 between June 1984 and January 1987 include vinyl chloride, benzene, toluene, 1,2 dichloroethylene, chloroethane, ethyl benzene, isopropyl ether, and chloroform, etc. Most of these VOC contaminants were not included in the 1992 summary table that ATSDR considered.

b. Additional data for 1982-1987 and later may exist. The 2008 PHA used data from a summary table for the municipal wells found in the 1992 ATSDR report. It is not clear whether or not the 1982-1987 data in the 1992 ATSDR report was compiled based on the data recently located by the Acton Water District, other data, or some combination of the two.

c. While the detection of these additional VOCs, (vinyl chloride, benzene, toluene, 1,2 dichloroethylene, chloroethane, ethyl benzene, isopropyl ether, and chloroform) in Assabet 2 are at relatively low levels, they indicate that additional VOCs were likely in the drinking water that was distributed to Acton Water District customers in the 1970s and possibly into the 1980s. As discussed in comment 11 above, sampling for VOCs was an inexact science through at least the mid 1980's. No QA/QC information is provided with the data recently located by the Acton Water District, nor is there a comprehensive list of which contaminants were tested for and when. The data for Assabet 1 on pages 12-19 and Assabet 2 on pages 20-23 in Attachment E. are not labeled as to whether they are for treated or untreated water.

13. Additional earlier historical data?

Note that additional data for the earlier time period, 1970-May 1982 may also exist. Please consider such data if/when they are located and provided to ATSDR. Any additional earlier data are likely to include higher contaminant levels, as evidenced by the comparison of the 1978-1979 Assabet well data, in the ATSDR 1992 report to data from later years in the same summary table.

14. Discussion/Analysis of historical data

Given the factors discussed in the comments above, please retain a revised analysis of historical data and discussion of exposures, based on a longer exposure time, (1970-1978 and 1982-1987) and consideration of any additional information obtained from the Acton Water District, MA DEP, the site repository or any other source. **The evaluation, risk calculations, and the existing discussion, in the current report, especially regarding TCE, provide useful information, and a minimum exposure scenario, and should be included in the PHA.** In the discussion, please note that exposure and risk could have

been higher given the technological and sampling limitations discussed in the comments above.

15. Historic municipal well water --- Conclusion:

Given all of the uncertainty about the data for past exposures to municipal well water as discussed in the comments above, ACES respectfully requests that ATSDR **conclude there to be an indeterminate risk from past exposure to municipal well water**. Please consider revising this conclusion in the future if additional information and data to address the above concerns becomes available.

16. Limitations Section--Future exposures

In the proposed “Limitations” section of the PHA, please discuss the limitations on assessing future exposures to site contaminants. ATSDR has stated that its focus is on past and current exposures rather than future ones. (Attachment A).

ATSDR’s public health assessment is dependent on the availability of data for the relevant time period and also knowledge of the relevant site conditions and exposure pathways. There is insufficient information about future data, changing site conditions, and future exposure pathways. While it would be appropriate and serves a useful purpose for ATSDR to suggest reasons and ways to reduce future risk, (by limiting exposure pathways or recommending cleanup), it is beyond the scope of the PHA to assess these risks in the same way that it assesses current risks. Please make this PHA limitation on assessing future risks clear throughout the text and in the summaries and conclusions.

17. Limitations Section---Media/time periods not analyzed

Please include information about which media (exposure pathways), and time periods are not analyzed by the PHA. While this information may be in the current 2008 PHA, it is scattered throughout the text. Please increase the accessibility to this information by including an explicit discussion and/or table or list summarizing the information. Please also include this information in any summaries or conclusions of the report.

Proposed summary of media and time periods analyzed/not analyzed:

“The PHA analyzed risk from current exposures to site contaminants in sediment, surface water, vapor intrusion from groundwater into homes, municipal drinking water, (inorganic contaminants only), and six private wells identified around 2001-2003. Risk was assessed using current contaminant levels, and assuming a 7 to 70 year exposure period, depending on the particular circumstance. The PHA did not consider past exposures to soils, surface water, sediment, or airborne contaminants. An analysis was done of limited data on VOC contaminants in public drinking water in the past, but due to data limitations, definitive conclusions about past risk could not be reached.”

Please use the above summary, (or something comparable), as part of any summary or conclusions section in the PHA, and in any summary handouts or press releases.

Relevant information that could be used in a table, or presented as bullet points:

Analyzed:

- Municipal Drinking Water (current) As and Mn only (adult & child)
- Surface Water (current)
- Sediment (current), adolescent
- Private wells (current; 6 identified wells, VOCs only, 3 wells used for irrigation, one well used for drinking water, showers, and ice resurfacing)
- Vapor Intrusion (current; not clear if this was done sitewide in all areas of the plume—or only in areas with current structures)

Limited analysis (provides information, but cannot make definitive conclusions)

- Municipal Drinking water (past—VOC’s only, insufficient data)
- Fish (current, unable to catch fish of edible size, but that means people are not likely eating them and therefore are not currently at risk!)

Not analyzed: (beyond scope of current study and/or limited data/limited access to data or ATSDR assumes AWD treatment)

- Soils (past, current)
- Sludge (past)
- Sediment (past)
- Surface water (past)
- Ambient Air (past, current, See discussion on page #63 of current report; response to comment #46)
- Municipal wells (current, VOCs—instead ATSDR assumes that AWD treatment is effective in minimizing risk from VOCs)
- Private wells, including irrigation wells (past, current, Inorganics, also did not analyze any locations for VOCs other than 6 identified private wells)
- Consumption of fish (past)
- Future exposures --- calculations not possible for any media or exposure pathway

18. Index to information about select community concerns:

It may be difficult for the layreader to quickly and easily find the answers to specific questions in the current report. To make this process easier, please provide an index to information that ATSDR and/or the Massachusetts Department of Public Health (MDPH) have provided to answer specific community concerns. Please consider placing the following or similar information after the Table of Contents at the beginning of the report. It is presented below alphabetically in Table format, but could be reformatted, etc. as needed.

Concern	Page of current report	Response to comment
Acrylonitrile exposure	p. 25-26 & p. 48	Response to unnumbered comment & response to comment # 29
Airborne contaminants	pp.63-64	Response to comment # 46
ALS (Lou Gehrig’s Disease)	p. 59	Response to comment # 43

Asthma	p. 59	Response to comment # 43
Autism	pp. 59-60	Response to comment # 43
Birth Defects	p. 27 & p. 59	Response to unnumbered comment & response to comment # 43
Cancer cluster	p. 48; & Appendix G	Response to comment # 30
Cancer incidence vs. cancer mortality	p. 52	Response to comment # 39
Infant mortality & low birth weight	pp. 54-57	Response to comment # 40
Prostate Cancer	p. 42	Response to comment #17; only looked at one census tract out of five
Skin cancer & arsenic	p. 41	Response to comment # 17
Squamous cell carcinoma of the throat	p.26-27	Response to unnumbered comment
Vinyl chloride contamination	p. 24-25	Response to unnumbered comment

19. Mention Brain & CNS cancer and leukemia in ATSDR summary, conclusions and flyer

The statement that “In general, the six cancer types evaluated in this report...occurred approximately at or near the expected rates for Acton, its individual census tracts, and the Concord CT 3612 during the 19 year time period 1982-2000”, is misleading when it is taken out of context and used in isolation, without mention of the statistically significant incidences of brain and CNS cancer in Acton, and leukemia in Concord.

ATSDR summary flyer

At a minimum, please add the words, “with only a few exceptions” after “In general” in the ATSDR flyer that was handed out at the August 26, 2008 public meeting and/or follow the statement up with the second bullet point from the conclusions section of the MDPH report, page 33 in Appendix G. (Adding the statement is preferable.) Please do likewise within the PHA report, as appropriate.

Please add the following or similar wording after the “In general” statement: (from Appendix G; p. 33; second bullet point)

“Statistically significant elevations were observed for brain and CNS cancer in the town of Acton as a whole during the first time period, 1982-1987, and for leukemia in Concord CT 3612 during the middle time period, 1988-1993.”

The “neighborhood level” investigation conclusions are already included in the ATSDR flyer and would follow the suggested inserted text.

20. Table showing exposure assumptions & data source

To make the assumptions in the PHA more transparent, accessible and user friendly: Please include one or more tables that include columns that indicate the following for the data being used in dose calculations for a given exposure pathway or contaminant:

- Sampling dates (year: 2002-2003; 1979-1987...)
- exposure time per year (365 days, 350 days, 24 days...)
- exposure time frame (# of years and/or particular years: 6 years, 12 years, 30 years, 70 years, 1970-1978...)
- age category (children, adolescents, adults)

Or use some other appropriate method to display information in table format that clearly relates for example -- the application of 1978-1987 municipal well data to the 1970-1978 timeframe; or that the exposure scenario for sediment exposure was from 2002 data, and assumes 24 days of exposure for 1 hour/day, for an adolescent, for 12 years.

Please explicitly state that ATSDR did not have any municipal well data for the years 1970-1977, but that contaminants were most likely in the water during that time period.

21. Conservative assumptions; Indiscriminate use of qualitative dismissive statement

Throughout the report, ATSDR repeatedly uses a dismissive statement about the use of conservative assumptions, so that even when there is increased risk—it is downplayed with a qualitative blanket statement, such as the one in the third paragraph on page 20. Throughout the PHA, the qualitative reference to conservative assumptions seems to be used as a one-size fits all way to brush off potential concerns.

In the case of exposure to arsenic at the site, the risks are serious and should not be marginalized or dismissed. (Cumulative risk due to arsenic exposure = 1.37E-03; See p.20 and Table 10.)

22. Lack of data does not equal lack of risk

Please state in the report that a lack of sampling data does not necessarily equal a lack of contamination, exposure or risk, but rather an unknown exposure/risk. A comparison of the pre-1984 contaminant plume to the 2001-2002 contaminant plume illustrates this point. Both figures show the extent of VDC contamination (1,1 dichloroethene), as known at that time. The pre-1984 figure is in Attachment B of these comments. The 2001-2002 figure is in Attachment C. There was likely a considerable plume of contamination in the northeast area before 1984, but there was insufficient sampling until after 1999 to fully delineate it.

Another example is the recent sampling for 1,4 dioxane at the site that found up to 36 ppb of this contaminant in groundwater. A lack of previous monitoring for this contaminant did not mean that it was not there, just that there had been no sampling for it. (See additional comment about 1,4 dioxane below.)

There may be an analogous situation for past exposures to contaminants in municipal drinking water, or other media where there are data gaps.

A lack of data not being equivalent to a lack of exposure/risk is an important consideration throughout the PHA, but especially in the assessment of municipal well water and private well water exposures. As ATSDR has noted throughout the report they had very little historic data for the municipal wells, and as the PHA notes on pages 25 and 26 of this report, Acton Water District customers may have been exposed to vinyl chloride and acrylonitrile, (as well as other additional VOCs), in drinking water that were not detected either due to technological limitations or sampling gaps. Also, the 1992 data summary table used by ATSDR did not include any data for inorganic contaminants in past municipal well water. ATSDR is therefore currently unable to determine whether or not past drinking water customers were exposed to arsenic, manganese or other inorganic contaminants, and what risks these may have posed in past drinking water exposures. Likewise, no inorganic sampling data have been identified for private wells near the plume. We therefore do not know whether or not people may have been exposed to arsenic, manganese, or other inorganics via current or past private well water and what risks any such exposures would pose.

Also, as already stated in previous comments, the current PHA does not assess past exposures to contaminants in soils, sludge, and ambient air. Please ensure that the text makes it clear that although these analyses may have been beyond the scope of the current PHA by ATSDR, past exposures and risks via these pathways could have occurred.

23. Irrigation info = incorrect/incomplete

Please change the text on appropriate pages throughout the report to state that VOCs were detected in at least three private wells within 500 feet of the mapped plume at the WR Grace Superfund Site. The text on several pages incorrectly states that VOCs were only found in one private irrigation well. In several places the text also states that a homeowner has not granted permission to have his private irrigation well tested. That well, located on Bellantoni Drive, was tested, VOCs were detected, and the well was subsequently properly decommissioned. Please change the text of the PHA accordingly. Also please note in the text that no sampling was done for inorganics in these wells and so risk from arsenic, manganese, or any other inorganic in private wells cannot be determined. (For this and other related comments about private wells and irrigation wells see PHA report **pages v, 2, 4, 11, 28, etc.**)

Please see attachments F, G and H for private well data and information.

24. Private wells vs. Irrigation wells

In the text, please be careful to distinguish between private wells, and private irrigation wells, the latter being a subset of the former at the WR Grace Superfund Site.

Please also be clear throughout the report and especially in any conclusions or summaries, that ATSDR's calculations and conclusions were based on 2002 data from the six known existing private wells, three of which were irrigation wells. Especially in

summary sections, please be careful not to imply that an evaluation was done based on sitewide data, if that was not the case.

It is ACES understanding that, as of 2002, six wells were identified within 500 feet of the mapped plume. Two of these were private irrigation wells on residential properties, overlying some of the most contaminated portions of the “northeast plume”. (Lisa Lane & Bellantoni Drive). One was an irrigation well on a commercial property, (Powder Mill Plaza). The other three were not irrigation wells. One was a private well at a local Ice skating rink that supplies water for ice resurfacing, drinking water and bathing. (Valley Sports Arena). [Was TCE detected in this well at an earlier sampling date?—Please check with WR Grace and its consultant GeoTrans, EPA, and/or the MA Department of Environmental Protection, DEP, for more information] The other two private wells are located on the Starmet industrial property and provided process water (non-contact cooling water?) for that facility. (Starmet) The Starmet Property has been designated as a Superfund Site.

The July 1, 2005 Public Review Draft Remedial Investigation Report states that the Bellantoni Drive well was decommissioned in June 2003; the Lisa Lane well was converted to monitoring wells in August 2003; and an additional private, residential irrigation well in the Northeast Area was identified on School Street and then tested in June 2003. (This private well should not be confused with the nearby Acton Water District wells that are commonly referred to as the School Street wells and that supply public drinking water.) According to the 2005 RI Report, chloroform was the only VOC detected in this private residential irrigation well on School Street. Please adjust the PHA text accordingly to reflect this new information.

Does ATSDR have information about any additional private wells? If so, please include it in the analysis. The 2008 ATSDR report made reference to a 7th well in the first complete paragraph on page 4 of the PHA report, when it states that five wells, (rather than four), are located to the south and two to the north.

25. 1, 4 Dioxane, newly identified at the site

As discussed in the Town of Acton comments submitted by their consultant, O’Reilly Talbot & Okun Associates, there are new data available for the WR Grace Site, for 1,4-dioxane. Sampling was not done for this contaminant until 2006. 1,4-dioxane is mobile, does not breakdown easily, and is not effectively removed by the air stripper treatment used by the Acton Water District (AWD). The AWD has performed its own sampling in addition to that done by WR Grace. The AWD has reportedly detected low levels of this contaminant (around 0.2 ppb) in municipal well water. While there is not yet a federal MCL for this contaminant, the Massachusetts DEP has set a guideline of 3.0 ppb for 1,4-dioxane in drinking water. In 2007, there was a detection of 4.4 ppb of 1,4 dioxane in a monitoring well that is directly adjacent to the AWD public drinking water well known as the Christofferson Well, (one of the AWD School Street wells).

26. Proposed new public drinking water well WRG-3, (aka Assabet 3)

The Acton Water District is in the process of going through the permitting process for a new public drinking water well on property it acquired from WR Grace as part of a settlement of a court case concerning contamination from the WR Grace Site. This well, WRG-3 is located north and slightly east of the existing public wells Assabet 1 and Assabet 2/2A. It can be seen on the pre-1984 plume map in Attachment B, located in the most contaminated contour of the plume at that time. The current VDC plume does not extend to WRG-3. (WRG-3 was used by WR Grace for processing water when the industrial facility was in operation. The AWD refers to this well, WRG-3, as “Assabet 3”. As part of the permitting process for WRG-3 a pump test was performed in 2007 or 2008 and water quality samples were taken. 0.56 ppb of 1,4 dioxane was detected at the proposed municipal well. As stated in the comment above, existing treatment for the AWD Assabet public water supply wells is ineffective at removing 1,4-dioxane from drinking water.

Please include information about WRG-3 in the ATSDR report, as this is a potential future exposure pathway.

27. Acton Water District, separate from Town of Acton

The Acton Water District and Town of Acton are two separate political entities. The AWD was established by an Act of the Legislature and is not part of the municipal government.

28. Manganese; Comparison Value in Table 4. lists 500 ppb; instead of EPA health advisory level of 300 ppb; EPA screening value is 50 ppb

EPA’s lifetime health advisory level for manganese is 0.3 mg/L, (equivalent to 300 ppb), to protect against potential neurological effects. Based on staining and taste considerations the 2004 EPA health advisory document recommends reducing manganese levels to or below 0.05mg/L which is equivalent to 50 ppb, the EPA’s secondary maximum contaminant level for manganese.) See: “Drinking Water Health Advisory for Manganese”, U.S. Environmental Protection Agency, Office of Water (4304T), Health and Ecological Criteria Division, January 2004 at:

http://www.epa.gov/OGWDW/ccl/pdfs/reg_determine1/support_cc1_magnese_dwreport.pdf

In Table 4. of the 2008 PHA, ATSDR lists 500 ppb as a comparison value for manganese. Please consider using 300 ppb instead, since this is the EPA Health Advisory level. Under the EPA process, WR Grace used 50 ppb used as a screening value and ARAR (applicable, reasonable and appropriate requirement) for manganese. (See Table 3-1 in August 30, 2002 Remedial Investigation Report).

If ATSDR chooses to use a value other than 50 ppb or 300 ppb as a comparison value, please include an explanation and justification for this choice in the text.

29. Concord Library

The WR Grace Site is located partially in Concord, and Concord residents may have had past or current contact with site contaminants. Please provide a copy of the current draft ATSDR PHA to the Concord public libraries, especially the Fowler Library in West Concord, located closest to the site. Please also provide these libraries with final copies of the PHA, and any subsequent ATSDR studies related to the WR Grace Superfund Site located in Acton and Concord.

30. PR for release of final ATSDR report

When the final ATSDR PHA is available, please provide public notification of that fact with a press release to the Concord Journal, the Beacon (Acton's local newspaper) and other media, mailings to residents, Town officials, local libraries, and any other appropriate means.

B. General Comments—MDPH (& ATSDR)

31. Synergistic effects

It is a valid concern that individuals may have been exposed to a mixture of chemicals via municipal well water or and/or exposures via other media at the site, and that the risks posed by a mixture may be greater than the sum of the risks posed by each individual chemical in isolation. Even at low concentrations of individual chemicals, these synergistic effects are a concern.

As is stated in Appendix C. of the PHA, exposure to a cancer-causing compound, even at low concentrations, is assumed to be associated with some increased risk (page 96). ACES understands that ATSDR does not have an established means of evaluating synergistic effects, (Attachment A). Would the MDPH be willing to address the question of synergistic effects from exposure to a mixture of contaminants found in past municipal well water as shown in the 1992 ATSDR data summary table, as well as the additional VOC data for the Assabet public wells from 1982-1987 that were recently located by the AWD – See Attachment E. (Note that concentrations may have been higher between 1970 and 1978 when the wells were taken off line, and that the data ATSDR considered from 1978-1979 shows higher concentrations of contaminants than were detected in subsequent years.) Is there another authority that has experience with evaluating synergistic effects of exposure to a mixture of chemicals?

32. Temporal pattern of increased Brain and CNS Cancer in Acton

A statistically significant increase in brain cancer was found by MDPH in Acton townwide in the earliest time period examined—1982-1987; it was elevated in the next time period—1988-1993, and was slightly lower than expected in 1994-2000.

Question for MDPH: Is the temporal trend in observed brain and CNS cancer in Acton consistent with an environmental exposure between 1970 and 1978, and then the removal of that source as of the end of 1978? (People may have been exposed to contaminated drinking water from 1970, when the wells were opened, through 1978, when the wells were taken offline. Both wells were back in operation with stripping towers in place to remove VOCs by 1984. Contaminant levels in well water when they were put back

online were most likely much lower and/or non-detect due to treatment. Soils and sludge remediation was completed in 1997 and groundwater has been undergoing treatment by W.R. Grace since about 1985. It is unclear how important/extensive airborne exposure may have been in the past. (See discussion of airborne contamination from the WR Grace Site on page 63-64 of the 2008 PHA in response to comment # 46.) There were odor complaints from neighbors beginning in 1973. With all the cleanup at the site, and an odor control system on the groundwater treatment system, offsite odors are not considered to be an issue now.)

Given that there may be a latency period of a decade or more between exposure and disease--- if exposure via drinking water began in 1970 and were at their peak from 1970-1978, and then ceased or dropped off significantly after that--- would we expect an increased rate of brain & CNS cancer in the early years but then a dropoff in incidence by 1994-2000? Is this temporal pattern of disease consistent with exposures beginning in 1970, manifesting itself as disease (brain and CNS cancer), 15 years later in the mid 1980s? (Airborne contaminants may have followed a similar pattern of high levels in the 1970's, and much lower neighborhood exposure later.)

Or should we still expect higher incidence in 1994-2000 (and later?) if there were a link with environmental/drinking water exposures? By 1994-2000, twenty four or more years would have passed since the onset of exposure, and sixteen or more since exposures ceased or were significantly reduced, (at least via drinking water).

Please include discussion of this issue in the main text of the final MDPH report. (Please do likewise for the related issues in the next two comments.)

33. Spatial pattern, CNS and brain cancer

The 2008 MDPH cancer incidence report for Acton and Concord states:

“During the 19-year time period 1982-2000, brain and CNS cancer occurred approximately at expected rates in three of the census tracts in Acton (ie., CTs 3631.02, 3632.01, and 3632.02). Residents of 3631.01, however experienced an elevation in the incidence of this cancer type (18 diagnoses observed vs. 10.9 expected, SIR = 165). This observed increase was again of borderline significance (95% CI = 98-261). Increased incidence within this census tract during each of the smaller time periods was not statistically significant.” (MDPH report, page 11, Appendix G. of the 2008 ATSDR Public Health Assessment.)

The census tract with the elevated risk is the one that includes the WR Grace Superfund Site. The MDPH report states on page 29—“there were a few locations in Acton where two or three individuals with brain and CNS cancer were located in relative close proximity to each other, with some located in the southern area of town near the W.R. Grace site.”

Given that there was a statistically significant increase in incidence of brain and CNS in the Town as a whole for the years 1982-1987, and that the only census tract with elevated

risk for this cancer for this time period included the WR Grace Site, it still seems reasonable to conclude that the WR Grace Site may have played some role in the increased incidence of brain and CNS cancer in this part of town.

34. Brain and CNS cancer, histology types

The discussion on page 29 of the MDPH cancer incidence study about the census area in Acton that includes the WR Grace site, states:

“An evaluation of the dates of diagnosis did not suggest any temporal trends among individuals diagnosed with brain and CNS cancer, and a variety of histology types were represented among individuals located near to each other indicating that a common factor among individuals in these locations was unlikely.”

Question: Even with a common trigger, such as exposure to chemical contamination, wouldn't we expect there to be some variety in the manifestation of disease? Different people would have different immunological statuses, or other risk factors—so that in some it would take longer for cancer to develop than in others. Likewise, isn't it reasonable to expect some variety as to the histology type of brain and CNS cancer that occurred, without eliminating the possible role of a common factor?

35. 2001-2006 Cancer Data

Please include and analyze the 2001-2006 cancer data in the final ATSDR and MDPH reports. (Please especially look at brain & CNS cancer & leukemia.)

36. Pancreatic Cancer

Would MDPH please also include pancreatic cancer in its cancer incidence study? According to an online source, exposure to chlorinated hydrocarbon solvents have been linked to pancreatic cancer. The 1992 ATSDR report looked at pancreatic cancer and found that for the 1982-1988 time period, in the census tract that includes the WR Grace Site, there were five observed cases of pancreatic cancer versus 2.8 expected.

37. Benzene

Would MDPH please consider both cancer and non-cancer health effects from benzene in its study? MDPH states that its choice to concentrate on the six cancers in the report is based on the contaminants arsenic and vinyl chloride. Benzene is another major contaminant at the site, and is linked with blood disorders including leukemia, one of the cancers in the study. To address comments/questions in the ATSDR report would MDPH please include any information related to possible non-cancer health effects that may be related to benzene exposure?

38. Immunological disorders and other health related issues.

In addition to cancers, would MDPH and ATSDR please also assess non-cancer immunological disorders or other health effects that may be related to chemical exposures? Please provide information about such health conditions. Can Acton and Concord's rates of these or similar health issues be compared over time to state rates? Please especially examine rates for the areas near the WR Grace Site, as there are

anecdotal reports of unusual incidences of immunological related health issues in that area in the past. Could any of these health issues be related to the contaminants at the WR Grace Site?

Thank you to MDPH and ATSDR for addressing similar questions in the response to comments section of the 2008 PHA. Those questions did not explicitly ask about immunological disorders, hence the current request.

C. Tables & Figures, Additional comments:

39. Tables 1, 2 and 3 Exposure pathways for the W.R. Grace Site; Pages 72-74.

Is the intent of Tables 1, 2, and 3 to present a comprehensive list of the time periods and chemicals above comparison values that people may have been exposed to via select pathways? If so, then in Table 1, please add “present” for the “time of exposure” for the completed pathway for drinking water, as the Acton Water District has not historically and does not currently provide treatment for inorganics, and both arsenic and manganese have been found in current municipal well water. ATSDR has stated that it considers current exposure to arsenic and manganese in the public water supply wells to be a completed exposure pathway.

40. Tables 1 through 3; add note clarifying scope of PHA; Pages 72-74.

Tables 1 through 3 are valuable in that they give the reader a sense of some of the multiple ways in which people may have been/may be exposed. However, in order to clarify the scope and accomplishments of the current PHA, please add a footnote to the tables that not all of these pathways/time periods were assessed in the PHA, and there may have been additional past exposure pathways that are not part of the 2008 PHA. Please refer the reader to additional tables or lists that clarify which exposure pathways were analyzed as part of this PHA, and which were not. See comment 17 above, which includes suggested content for such tables or lists. The inclusion of these tables or lists would add to the clarity and transparency of the report, by helping to summarize some of the various complex assumptions and constraints of the PHA.

Clarification of this comment:

As noted in the text and proposed tables in comment 17 above, ATSDR did not have historic or future data to calculate exposure risk for **past or future** exposures via surface water, sediment, inorganics in municipal well water, VOCs in private wells, vapor intrusion, and consumption of fish. Current data were used to assess current exposures for each of these pathways, and calculations assumed these levels were encountered over various periods of time from 7 years to 70 years. There have now been 25 years or more of cleanup efforts at the site. Given that historic contaminant levels are likely to have been higher for most of the contaminants and pathways, exposure calculations for past exposures would have likely resulted in higher risk than those using current levels. By definition future data are not available and therefore future exposure risk could not be calculated. The 2008 PHA did not address past, present or future contamination in soils, sludge, or ambient air, although pages 63 to 64 of the report provide information on past

studies regarding airborne contamination at the site. Data for inorganics in private well water were unavailable and so the PHA could not determine risk for exposure to arsenic or other inorganics via this pathway for any time period.

41. Table 3. Pathways considered incomplete. Page 74.

Please add the word “currently” to the title of this table, so that it reads: “Pathways currently considered incomplete for the WR Grace Site.” This distinction is important since both exposure pathways listed, (vapor intrusion and consumption of fish), may have been complete in the past.

a. Vapor intrusion, past worker exposure, Table 3.

For the pathway named “Volatilizing of VOCs from groundwater into buildings”, please consider that when contamination was at its highest levels in groundwater, (much higher than current levels), there were multiple WR Grace buildings onsite with workers, (See Figure in Attachment B). It has been estimated that approximately 200 people worked at the site in the past. Given the higher levels of benzene, vinyl chloride, 1,1,-DCE (known locally as VDC) and other VOCs in groundwater at the time, workers may have been exposed to contamination via this pathway at levels that would have posed a health concern.

b. Consumption of Fish:

ATSDR only had information on current efforts to catch fish in the pond. There may or may not be past information about fish in Sinking Pond, which may or may not have posed a health risk to those consuming them. Was the pond sampled for fish before it was selected to receive the discharge of treated effluent? Given that it is a kettle pond a main source of its water is from groundwater. The figure of pre-1984 contaminant levels shows Sinking Pond to be within the historic plume. Without further information, past exposure via this pathway should be considered to pose an indeterminate risk.

**42. Table 5. Historical municipal well data
Page 75. Table 5, Contaminants Detected Above Comparison Values in Assabet Wells between 1970 and 1978; Historical Data**

a. Please retitle this table to something like: “Historical municipal well data; Contaminants detected above comparison values in Assabet Wells between 1978-1987; assumed to have been present in wells from 1970 to ??”
(Please consider using a longer exposure time than just 1970-1978---see discussion in previous comments.)

b. On this table, please add a note that ATSDR did not have any VOC data for the years 1970-1977; and the maximum detections shown were for the very limited data from the public wells from 1978-1979. Please note that the exception to this is that the maximum concentration for 1,1 dichloroethane was from 1985 (ATSDR did not have any VOC data for this contaminant for the years 1970-1984), and the minimum concentrations in Table 5 are from the years 1978-1987 & 1992. The maximum detections were analyzed as if these were the VOC concentrations in drinking water between 1970 and 1978.

c. Please ensure that analysis of these contaminants in public drinking water considers dermal and inhalation exposures as well as ingestion. (Also see next comment.)

43. Table 10. Arsenic—additional exposure pathways. Page 80.

For arsenic---the table lists “Ingestion of municipal and private well water” as a pathway. ATSDR did not have any arsenic data for private well water and therefore could not assess either ingestion or dermal exposure, although it may have occurred.

Please also assess dermal exposure for arsenic for the municipal well pathway and include this in the numeric cancer risk estimate. Please also add a footnote to the table that no data were available for ingestion and dermal exposure of arsenic for past municipal water, past and current private well water, past or current soils, past sediment, or past surface water.

44. Table 10. Arsenic cancer risk estimates in table different from those in text Page 80.

There are differences between the cancer risk estimates for arsenic in Table 10 versus those in the text as follows:

a. The text on page 20 states that the cumulative excess lifetime cancer risk is $1.37E-03$. But Table 10 lists this total numeric risk estimate as $9.50E-04$. (Any risk over $1.00E-03$ or 1 in 1000, would be considered a moderate risk according to ATSDR criteria provided with Table 10. EPA considers cancer risk over $1E-04$ (1 in 10,000) to be significant enough to trigger remediation. The 2005 EPA Record of Decision requires sediment remediation (cleanup), in two areas of the WR Grace Superfund Site due to high contaminant levels of arsenic and other inorganics.

b. According to page 14 of the PHA, ATSDR calculated an excess lifetime cancer risk of $5.73E-04$ for incidental ingestion and dermal exposure to arsenic in sediment. However Table 10. lists the risk from incidental ingestion as $1.83E-04$ and from dermal contact as $2.31E-05$. The sum of these two exposures is less than that given in the text, $5.73E-04$.

45. Table 10. Trichloroethylene—additional exposure pathways. Page 80.

a. Table 10 lists “Historical ingestion of municipal well water” as the only exposure pathway for Trichloroethylene, (TCE). Please also assess dermal and inhalation exposure for the past/historical municipal well pathway and include this in the numeric cancer risk estimates.

b. TCE was also detected in private well water. Please assess incidental ingestion, dermal and inhalation exposures for the private well pathways for trichloroethylene and include this in the numeric cancer risk estimates for private wells in this table, and in any other appropriate part of the report.

46. Table 10, Inhalation & dermal exposure to VOCs in past municipal well water Page 80.

For benzene, methylene chloride, and TCE, please calculate and include cancer risk from inhalation and dermal exposure, as well as ingestion in past municipal well water, and include these risks in Table 10.

47. Table 10. Vinyl chloride, additional VOCs? Page 80.

As discussed in a previous comment above, the Acton Water District has recently located additional data for the Assabet Public Supply Wells from 1982 to 1987. These data include a detection of 3.4 ppb of vinyl chloride in Assabet 2 on September 4, 1985. (See page 22 in Attachment E.) Please calculate a risk for vinyl chloride via historical municipal well water exposure using this concentration and add it to Table 10. Please also add a footnote to Table 10 that there could have been additional exposure to vinyl chloride through past municipal water, so the total numeric cancer risk might be higher. (See comment 11b above regarding vinyl chloride.)

48. Table 10. Surface water & sediment exposures for arsenic—dermal vs. incidental ingestion; Page 80.

It's interesting that the elevated cancer risk from exposure to arsenic in surface water is higher from dermal exposure than from incidental ingestion, and the reverse is true for arsenic in sediment. What factors account for this?

49. Figure 3 - Public Water Supply Wells; Page 84.

In addition to showing the private well locations, this figure also shows both the extent of the groundwater plume as of 2002, as well as the WR Grace property line. Especially since the legend on this figure is too small to read, please add this information to the figure title:

“Figure 3 – Public Water Supply wells (Assabet 1, Assabet 2, Lawsbrook, Scribner and Christofferson), along with WR Grace Property Boundary (red), and 2002 Groundwater Plume (blue).”

If possible, please also increase the size of the legend to make it legible.

D. Additional Specific Comments – mostly in order by page number

50. Acton Water District wells

Page iv. Summary, p. iv Second paragraph

In the first sentence in this paragraph, please change “the Town of Acton” to “the Acton Water District”. (The Acton Water District detected the contamination in its wells and then closed them.)

Please also make any similarly appropriate changes to the language under “Site Description and History”, on page 1.

51. Assabet wells back online, correction to text

Page iv. Summary, Second paragraph on page iv,

The summary text states: “Use of the municipal wells, Assabet One and Two, was restarted in 1982 after the well water was treated with an activated carbon purification system (air stripping process) to remove the VOCs.”

According to the Acton Water District, Assabet Two was not back in use in 1982, and Assabet One was only in use for a short while that year, and then was taken out of service again. Air stripping and carbon filtration are two separate and distinct technologies.

See page 49 of the ATSDR report for the correct information as follows:

Air strippers were not used on the Acton Water District wells until 1983-1984. Both Assabet 1 and Assabet 2 were taken offline in 1978. According to the AWD, Assabet 1 was brought back online with carbon filtration, for a few months in 1982. When testing showed that low levels of TCA were “breaking through” the carbon filters, they took this well offline again. In 1983 Assabet 1 was brought back online with both airstripping and carbon filtration technology in place. By March of 1984, Assabet 2 had also been brought back online with this same treatment. At some later date the AWD stopped using carbon filtration at these wells, but it continues to use an airstripper to remove VOCs from the water.

If all of the above the text is too detailed for the summary section, please consider stating:

“In 1983 Assabet 1 was brought back online with both airstripping and carbon filtration technology in place, to remove VOCs. By March of 1984, Assabet 2 had also been brought back online with this same treatment. At some later date the AWD stopped using carbon filtration at these wells, but it continues to use an airstripper to remove VOCs from the drinking water.”

52. Private wells, Irrigation wells, need to correct info

Page v. Summary, first complete paragraph on page v.

The six wells identified were not all irrigation wells, (three were)—see previous comments above.

- a. Please delete the word “irrigation” in the first sentence of this paragraph.
- b. Please correct the information about the irrigation well on Bellantoni Drive. It was sampled, as were the irrigation wells on Lisa Lane and Powder Mill Plaza, the well at the skating rink (Valley Sports Arena), and the two wells on the Starmet property. (See comments above, as well as sampling data information on pages 35 through 37 of the 2008 ATSDR report.)
- c. If ATSDR’s conclusions are based solely on exposures at the Lisa Lane, Bellantoni Drive and Powder Mill Plaza irrigation wells, please change the conclusion statement to read:

Therefore, ATSDR concludes that exposure to groundwater from the three existing private irrigation wells...

If ATSDR's conclusions considers all six identified private wells, (as of 2002), within 500 feet of the plume, (used for irrigation or non-irrigation purposes)—please include discussion and analysis of all six wells in the PHA, and if appropriate state:

Therefore, ATSDR concludes that exposure to groundwater from the six existing private wells...

Make adjustments to the text as needed to account for the additional private irrigation well on School Street (See July 1, 2005 Public Review RI Report, p. 2-7.)

53. Surface Water Exposure

Page v. Summary, Second paragraph on page v.

The text states: "ATSDR concludes that occasional exposure to surface water poses no apparent public health hazard."

- a. What if the current exposure is more than occasional?
- b. This paragraph mentions past exposures, but risks associated with past exposures are unknown, or at least not determined by the 2008 PHA. (Exposures via surface water may have been higher in the past, given the onsite lagoons and much higher contaminant concentrations in groundwater, with accompanying discharge to surface water.)

Therefore please add wording such as, "under current conditions and contaminant levels.." or , "under current conditions and with assumed exposures", to the ATSDR conclusion, so that it reads:

"ATSDR concludes that occasional exposure to surface water under current conditions..."

54. Sediments, Exposures to adults vs. adolescents

Page v. Summary

- a. Please note in the text that ATSDR's assumptions are for a person to be exposed for just 24 days per year for one hour/day.
- b. What is the basis for the assumption that adolescents are more likely to access the site than adults? Anecdotally, there are reports of frequent and regular trespassing on the WR Grace Superfund Site. ACES is not aware of any data regarding the age of trespassers. **The 2005 draft PHA included a sediment exposure assessment for children, and yet children are not assessed for the sediment pathway in the 2008 version of the PHA. Page 15 of the 2005 draft report estimated a dose of 0.00334 mg/kg/day for a child. This is more than ten times the health guideline of 0.0003 mg/kg/day (USEPA RfD).**

c. According to Appendix C., the figures/assumptions used for adults are different than those used for adolescents. These include a larger skin surface area for adults (6,074 sq cm; vs. 4,471 sq cm); higher exposure duration for adults (30 years, versus 12 years); higher body weight for adults (70 kg vs. 45 kg for adolescents); lower incidental ingestion rate for adults (100 mg/day vs. 150 mg/day for children); and a higher averaging time for non-cancer chemicals (10,500 days for adults vs. 4,200 days for adolescents). Given that there are not any identified data on the age of persons currently accessing the WR Grace Superfund Site, ACES requests that ATSDR base its “sediment” conclusions on the age group that shows the highest risk.

These comments apply to page 14, as well as page v. of the 2008 PHA.

55. Limitations: add section to report

Page 1. Purpose and Health Issues

As stated above in comment 9 and subsequent comments, please add information to the 2008 PHA about the limitations of the PHA, especially in regard to assessing past or future exposures. A new “Limitations” section could be logically placed on page 1 between the “Purpose and Health Issues” and “Background” sections of the report, or as part of the “Discussion of Environmental Contamination” section of the report that begins on page 2., or elsewhere as appropriate. If there is a mandated ATSDR report structure that does not allow the creation of a new section, please include the information in an existing discussion section, or elsewhere as appropriate.

56. Site vs. property---

Page 1. Background Section; Site Description and History;

As stated above in comment # 7, please provide a discussion of the distinction between the “WR Grace property” vs. the “WR Grace Superfund Site” in the Site Description and History section on page 1. (The “site” includes all the areas affected by contamination from the WR Grace facilities and extends beyond the “property” owned by the WR Grace Company. See PHA Figure 3 and the figures in Attachment B and Attachment D to these comments. At a minimum, please change the word “site” to “property” in the first three sentences in the Site Description and History paragraph, and discuss the fact that the contamination has migrated beyond the property lines and underlies privately owned residential, industrial, and Acton Water District property and extends to the northeast to the AWD School Street municipal drinking water wells.

57. Acton Water District

Page 1. Background Section; Site Description and History, near the end of this paragraph

a. The text currently states: The Town took precautionary action and closed the two wells. Please substitute the “Acton Water District” in place of the “Town” so that the sentence reads: “The Acton Water District took precautionary action and closed the two wells.”

b. Please add the word “currently” so that the text states: “The Acton Water District (AWD) currently operates and maintains air strippers...”

58. Surface water bodies, site vs. property

Page 2. Land Use and Natural Resources, second paragraph

a. In the first sentence of this paragraph, please change the word “site” to “property”, so that the text reads: “Sinking Pond, located on the center of the WR Grace property, is the only natural water body on the property.”

Two additional natural water bodies, Fort Pond Brook and the Assabet River could be considered to be part of the site.² WR Grace contamination discharges to both water bodies from groundwater, and in the Northeast Area groundwater contamination is now located on both sides of Fort Pond Brook. (Pumping of one of the AWD public wells - the Christofferson well - has pulled contaminants underneath and to the other side of Fort Pond Brook.)

b. Please add a figure to the report that includes the locations of the relevant surface water bodies, at a reasonable scale. The scale on Figure 1 is too small and Figures 2 and 3 do not include the natural and manmade surface water bodies: Sinking Pond, Fort Pond Brook, the Assabet River, Muskrat Pond, Turtle Pond, etc.

59. Proposed municipal well; onsite private wells

Page 2; Land Use and Natural Resources, third paragraph.

a. Please add information to the third paragraph on page 2 about the proposed new AWD municipal well at the site. Suggested new/changed text is shown in bold:

“The **Acton Water District** has six current wells/wellfields that draw water from the aquifer for the municipal water supply. **The Acton Water District has proposed the opening of a new municipal well at the site in the same location as an historic well, known as WRG-3, that the WR Grace Company used in its former industrial processes. The AWD is currently going through the DEP permitting process for this well it refers to as “Assabet 3” and has already performed a pump test in pursuit of a new municipal drinking water permit.**

c. Given the distinction between site vs. property, and the fact that only three of the identified wells were used for irrigation, please change the text to read, (changes in bold):

“There are no private wells on **the WR Grace property**; however six private wells have been identified **within 500 feet** of the plume.” (omits the word irrigation)

(Change the number of wells to include the additional private irrigation well on School Street?)

² The National Contingency Plan defines a site as: Area (s) where a hazardous substance has been deposited, stored, disposed, or placed, or has otherwise come to be located. Such areas may include the area between sources.

The August 30, 2002 Remedial Investigation Report states: “The Site includes the Grace property and the geographic region containing contaminated groundwater that resulted from contaminant releases at the Grace property.” (p.7-3)

60. Comparison values, choice of CVs

Page 2; Discussion of Environmental Contamination, Evaluation Process, last paragraph on page 2.

Is there a subjective “professional judgment” aspect to the choice of ATSDR comparison values (CVs) or comparison doses? Does EPA use a different set of comparison values? What factors are considered in the choice of the list of CVs or the choice of which CV, or which comparison dose to use for a given scenario, (RfD? MRL? CEL?)? Are more protective CVs or comparison doses sometimes not used due to “professional judgment”?

61. Potential exposure pathways, criteria?

Page 3. Discussion of Environmental Contamination, Pathways of Human exposure; last paragraph on page 3.

Please state explicitly why each of the pathways is designated as a “potential” exposure pathway, (private irrigation wells, surface water, and sediment), rather than as a “complete” exposure pathway. Which of the five listed criteria was absent for each specific pathway?

62. Private wells—was a fifth private well identified to the south?

Page 4. Discussion of Environmental Contamination, Public Water Supply, Private Well, and Groundwater Sampling, page 4, first paragraph

Was an additional private well identified within 500 feet of the plume—or is there a typo in the text? The text states: “Two private irrigation wells are located north of the WR Grace site and five are located south of the site.” (The text should say “WR Grace property” rather than “site”. See previous comments.) The two wells north of the property are located on Lisa Lane and Bellantoni Drive. Four wells that were identified to the south include the Powder Mill Plaza irrigation well, and three non-irrigation wells: the well at the ice skating rink, and two wells on the Starnet property. Is there a fifth well to the south?

63. Private wells—they are not all irrigation wells.

Page 4. Discussion of Environmental Contamination, Public Water Supply, Private Well, and Groundwater Sampling, page 4, second paragraph

Please delete the word “irrigation” from the first sentence in this paragraph, so that the text reads: “As of 2002, W.R. Grace identified six private wells located **within 500 feet of the plume of contamination from the W.R. Grace property.**” As noted later in the paragraph, three of the wells located to the south, were not irrigation wells. Please also note that VOCs were detected in at least three of these private wells. Please correct the information about the Bellantoni well. Sampling permission was obtained for this well. VOCs including vinyl chloride were detected, and this well was subsequently decommissioned. (Please make the appropriate corrections on page v, page 4, page 11, page 28)

64. Surface Water Table = Table 7

Page 5. Typo Surface Water and Sediment Sampling, end of first complete paragraph on page 5.

Typo: Please correct the three references to the surface water table. It's Table 7, not Table 6.

65. Sediment Table = Table 8.

Page 5. Surface Water and Sediment Sampling, second complete paragraph on page 5.

Typo: Please correct the three references to the sediment table. It's Table 8, not Table 7.

66. Fish Table = Table 9.

Page 6. Fish Sampling, Top of page 6.

a. Typo: Please correct the reference to the fish table. It's Table 9, not Table 8.

b. The text states: "Lead was also detected but has no CV. Does EPA have an ARAR or other value for lead that it uses for comparison purposes for fish tissue concentrations? If so, please use this value for ATSDR's evaluation. (Check the Ecological and Public Health Risk Assessments from 2003 and 2004 that ATSDR included in its list of references as # 33, and # 36.)"

67. Manganese RfD, Typo?? Pages 7, 13, and 16

ATSDR refers to two different numbers for the "established health guideline" (USEPA RfD) for manganese. On pages 7 and 16 it states that the health guideline is 0.05 mg/kg/day. On page 13 the text states that it is 0.14 mg/kg/day. Please make any appropriate corrections.

68. Municipal water exposure

Page 7. Public Water Supply Wells, Historical Data, VOCs

When referring to contamination in the municipal drinking water wells between 1970 and 1978, the text states: "However, most likely the exposure duration was less than nine years." What is the basis for this statement? The WR Grace property was used for industrial purposes for decades before the contamination was discovered in the public water supply wells. According to the August 30, 2002, RI Report, Volume I, (p. 7-2):

"Dewey & Almy acquired the property in 1946 and manufactured synthetic rubber container sealant products. An organic chemical plant that produced latex products, plasticizers, and resins began operating in 1949, and a paper battery separator production facility was constructed in 1951. Grace acquired Dewey & Almy in 1954, and chemical operations were continued at the property."

Unless ATSDR has clear evidence to the contrary, please delete the sentence stating that exposure duration was likely less than nine years.

69. Municipal wells – Inhalation and dermal exposures

Pages 7, Public Water Supply Wells, Historical Data, VOCs

As stated previously above, please include dermal and inhalation exposures in the evaluations of risk due to VOCs in the drinking water. The municipal well water was

also used for showering and other domestic uses. Accordingly, please change the text in this part of the report, and elsewhere as appropriate.

70. ATSDRs Evaluation Process

Pages 8 to 9, Public Water Supply Wells, Historical Data, VOCs, Benzene

a. The discussion of exposure to benzene in past municipal well water compares the calculated dose to the established health guideline of 0.004 mg/kg/day (US EPA RfD) and to the “Cancer Effect Level” (50 mg/kg/day), found in ATSDR’s toxicological profile for benzene. Please also calculate the inhalation and dermal exposure dose for benzene in past municipal well water, add these to the oral ingestion dose, and then compare the sum to the RfD and CEL doses.

It is striking how much higher the CEL is than the RfD. Please provide more information about CELs. Do they take into account exposures to children? Does EPA use these as reference values in their health risk assessments? CELs are not discussed in the text in Appendix C entitled “ATSDRs Evaluation Process”. For each/all contaminants at the WR Grace Site, please use whichever comparison figures are most protective.

Since the current report uses CELs for comparison purposes in the PHA, please provide a discussion of CELs in Appendix C., including their source, relevance, applicability to vulnerable populations (including children, pregnant women, the elderly, etc.), uncertainty associated with them, and who besides ATSDR uses these figures.

71. Methylene chloride, Typo

Page 8, Methylene Chloride conclusion, last sentence on page 8

Typo, The last sentence on this page is most likely meant to refer to “methylene chloride”, rather than “benzene”?

72. 1,1-dichloroethene, also known as VDC

Page 10. 1,1 dichloroethene (a.k.a 1,1 dichloroethylene), second paragraph from bottom of page.

At the WR Grace Superfund Site in Acton and Concord, 1,1-dichloroethene is also known as vinylidene chloride or VDC. VDC is the most widespread contaminant at the WR Grace Superfund Site, and is used to depict the areal extent of contamination. These plume maps are labeled as VDC contamination, rather than DCE or 1,1-dichloroethene. Please provide some explanation of this in the text when referring to the figures, to avoid potential confusion. (The Figures in Attachments B, C, and D of these comments are all labeled as depicting VDC in groundwater.)

73. Dermal absorption of vinyl chloride?

Page 11. Private wells, Vinyl chloride, second paragraph on page 11.

The text states: “ATSDR estimated dermal contact exposure doses for adults and children to vinyl chloride; however, no studies regarding vinyl chloride absorptions in humans were found for comparison. Animal data suggest that dermal absorption of vinyl chloride vapor is not likely to be significant.”

- a. Please include in the text the dose that ATSDR calculated for dermal exposure for adults and children. (The text lists the inhalation doses, but not the dermal doses.
- b. How do EPA public health risk assessments determine risk from dermal exposure to vinyl chloride? Please take the same approach as that used in the Public Health Risk Assessment done under EPA guidance.
- c. Is dermal contact with vapor the issue, or contact with vinyl chloride in solution--in the water? In a previous sentence ATSDR discounted exposure to vinyl chloride vapor, via inhalation due to dilution with ambient air. ATSDR already has a dose estimate for dermal exposure to vinyl chloride---so the animal studies about dermal absorption of vinyl chloride vapor may not be relevant.

74. PAHs & dermal exposure

Page 16-17 Polycyclic Aromatic Hydrocarbons (PAH's)

Was dermal exposure to PAHs assessed? The text states: “No studies were located regarding the distribution of PAH’s in humans following dermal exposure”. What does that mean? There is no further mention of dermal exposure to PAHs in sediment in the text, but Table 10 lists a numeric risk estimate of 8.83E-07. Please add this information along with any relevant discussion to the text. Again, please take the same approach as that used in the Public Health Risk Assessment done under EPA guidance.

75. Vapor intrusion, Volatilization into buildings

Page 18-19. Volatilization of VOC's from groundwater into buildings

The second complete paragraph on page 19 states: “ATSDR used a very health protective model and the highest values found in the groundwater to create a worst-case evaluation.”

Please clarify what groundwater data were used to assess the volatilization of VOC's into buildings. Was it site-wide data that considered a potential building over any part of the plume? Or just data from areas where current buildings overlie the current groundwater plume? In the latter case did the data only apply to the part of the site that WR Grace refers to as the Northeast Area, using the maximum contaminant levels only from this area? (The Northeast groundwater exposure area is outlined on the figure in Attachment D.) Higher contaminant levels are present in other portions of the plume.

It is important to clarify in the text the aerial extent of the current evaluation given that the site may eventually be reused with the potential of new buildings being proposed or built. If the evaluation does not extend to land overlying the existing plume that do not currently have buildings, please state this explicitly in the text.

76. Arsenic—dermal exposures in municipal water

Page 20. Arsenic, fourth paragraph

- a. Thank you for assessing cumulative cancer risk, and presenting this information in both the text and Table 10. Please calculate risk from dermal exposure to arsenic in current municipal well water and add this to the text and to the risk figures in Table 10.

b. The fourth paragraph on page 20 lists different routes of exposure to arsenic. Please include dermal contact in municipal water and private well water in this list. Please also note in the text on page 20, as well as in Table 10 that ATSDR did not have any data for arsenic in past municipal well water, past or current private well water, past surface water and sediment, or past or current soils, so the total numeric cancer risk for arsenic may actually be higher than the current estimate.

77. Manganese dermal exposure

Page 13 and Page 20. Manganese

Why was dermal exposure not assessed for manganese, as it was for arsenic? Both contaminants were found in sediment, surface water and municipal well water. Please include an assessment of dermal exposure to manganese in the PHA.

78. TCE health guideline

Page 21. Trichloroethylene (TCE), first paragraph on page 21.

The text states: "... people may have been exposed to TCE at levels that slightly exceed the health guideline." Please state in the text that the federal drinking water standard (or MCL) for TCE is 5.0 ppb. The maximum detection that ATSDR used for TCE in past municipal well water was 8.0 ppb, detected in 1978. Please also list the health guideline that the text references, if it is not the MCL.

79. Child Health Considerations; Pages 22-23.

The only risk estimate or calculations in the 2008 PHA that consider exposure to children appear to be for municipal and irrigation well water exposures. ATSDR makes the assumption that children do not have current access to the site and, as noted before, past exposures are only assessed for the municipal well water. Please consider that it is possible that children currently access the site.

Consideration of child health will be especially important with any future reuse of the site. ACES respectfully requests that ATSDR recommend that for any planned future reuse, further evaluation be done under EPA guidance to evaluate exposures/risks to children.

80. Discuss non-cancer health outcomes

Page 23. Health Outcome Data

In addition to cancer there are community concerns about other health outcomes possibly related to the WR Grace Site.

a. Please address non-cancer health outcomes in the Health Outcome Data section of the report. At a minimum please refer the reader to other pages in the report that discuss some of these concerns. As requested in comment 18 above, please also create a Table or Index to items of community concern and add a reference to this Table/Index in the Health Outcome Data section of the report. (Refer the reader to pages 54-57—low birthweight and infant mortality, and pages 58-60—ALS, birth defects, asthma, autism,

etc. Also pages 63-64 concerning airborne contaminants. See draft Table in comment 18 above for a more references.)

b. Please create a table for cumulative non-cancer related health risks, comparable to Table 10 which estimates cumulative carcinogenic risk.

81. Include West Concord Data

Page 23. Health Outcome Data

Please add discussion of the cancer incidence information for Concord Census Tract 3612 to the Health Outcome Data section of the report. Please ensure that the discussion is comparable to that provided for the Town of Acton, covering each of the individual time periods, as well as the overall period. Please also ensure that it includes discussion of the statistically significant higher incidence of leukemia in Concord for the 1988-1993 time period.

82. Public Availability Session in Acton Town Hall

Page 24 Community Health Concerns

While the October 28, 2003 availability session had been scheduled for the Acton Memorial Library, it was actually held at Acton Town Hall in Room 204.

83. Birth defects; Page 27 --- Comment for MDPH & ATSDR

According to the information on page 59, birth defects data are collected by the Massachusetts Center for Birth Defects Research and Prevention within the Massachusetts Department of Public Health (MDPH), Bureau of Family and Community Health and Nutrition. The MDPH Bureau of Environmental Health will request these data on birth defects and will make them available as part of the final report.

Please include the birth defects data, discussion and analysis in appropriate sections of the text of the ATSDR report and in the MDPH document in Appendix G. Please also include this information on page 27 as part of ATSDR's response to the question about birth defects.

84. Proper disclosure of brain & CNS cancer and leukemia incidence

Page 27 of ATSDR report; ATSDR summary flyer distributed on Aug. 26, 2008

ACES respectfully and very strongly requests that ATSDR include the following information in a new bullet after the first bullet on the bottom of page 27:

“Statistically significant elevations were observed for brain and CNS cancer in the town of Acton as a whole during the first time period 1982-1987. There were a few locations in Acton where two or three individuals were located in relative proximity to each other, with some located in the southern area of town near the W.R. Grace site. Statistically significant elevations were observed for leukemia in Concord Census Tract 3612, during the middle time period, 1988-1993.”

This information is from the second bullet point in the “Conclusions” section of the MDPH report, page 33, (Appendix G),; and from the “Analysis of Geographic Distribution of Cancer Incidence” section of the MDPH, (Appendix G), report on page 29.

As a matter of transparency and full public disclosure, it is vital that ATSDR include this bullet point in response to the question on page 27 of the ATSDR PHA and also in the ATSDR summary flyer that was distributed at the August 26, 2008 public meeting. To leave it out is misleading to the public. The bullet point that will come after it, at the top of page 28, states MDPH’s conclusions about its geographic analysis on the neighborhood level.

85. Appendix E not Appendix D.

Page 28 Conclusions

Typo: The health hazard categories are in Appendix E not Appendix D.

86. Past exposures municipal well water

Page 28. Conclusions section

As stated in comments 10, 14 and 15 above, please retain the current discussion and analysis of past exposure to TCE and other VOC contaminants in municipal well water. But given the serious limitations with the data set, including the lack of vinyl chloride data prior to 1985, and acrylonitrile data, please conclude an indeterminate risk for exposures via the municipal well water. Note that the Acton Water District has recently located additional VOC data that shows past detections of benzene, toluene, chlorethane, and other contaminants in public supply well Assabet 2 between 1982 and 1987.

87. Premature to determine future risks

Page 28. Conclusions, end of first bullet point

The text states: “*ATSDR considers current and future exposure to VOCs, arsenic and manganese in the municipal drinking supply to be a no apparent public health hazard.*” Please delete the words “and future” from this sentence.

Please consider:

- By definition we do not yet know future contaminant levels at the wells. There are no data to analyze to calculate future dose levels, or exposure risk.
- The Acton Water District wells do not have any past or current treatment for the removal of arsenic, manganese, or other inorganic contaminants.
- ATSDR states on page 34: “ATSDR agrees that arsenic and manganese levels could increase in the School Street wells in the future.”
- According to WR Grace reports, VOC levels are also likely to increase at the wells in the future.

- It should be WR Grace's responsibility to clean up the contaminants that originated on its property, without the ongoing need or requirement of the Acton Water District to provide treatment in order to remove WR Grace contaminants from public drinking water.
- No treatment system is 100% effective 100% of the time. (It may be advisable to also determine exposure levels based on contaminant levels in untreated water.)
- ATSDR's focus according to their October 2003 handout is on past and current exposures, not future ones.

(Please also see related comments on this issue in the September 30, 2008 comments submitted by OTO Associates on behalf of the Town of Acton.)

88. Soils were not evaluated in this PHA

Page 29. Conclusions, first bullet point on page 29

Please explicitly state in this bullet point that ATSDR did not evaluate exposures to contaminants in soils in the current study.

89. 30 year exposure only for adults

Page 32, Responses to Comments Received, Response to Comment 1

Is it true that ATSDR's dose calculations were based on a 30 year exposure duration only for adults, and that the exposure duration was 12 years for adolescents, and 6 years for children? (See Appendix C. in the 2008 PHA.) If so, please change the response to comment 1 accordingly.

90. Discrepancy in exposure assumptions?

Page 35-37. Responses to Comments Received, Response to Comments 4 and 6.

It looks like there may have been a typo in the exposure assumptions for irrigation wells in response to comment #4.

In response to comment #4, (page 36), ATSDR stated that for exposure via irrigation wells ATSDR assumed an exposure frequency of 24 days per year (2 days per week during three summer months). This is the same exposure scenario as that used for current sediment and surface water exposures.

But the response to comment #6, (also about exposure via private irrigation wells), states that the exposure assumptions were "incidental ingestion and dermal contact by wading or swimming in pools filled with water from these irrigation wells 1.5 hours per day for 90 days. Appendix C. states these same exposure assumptions for private irrigation wells. Please correct the response to comment #4 if appropriate.

91. Different assumptions for vinyl chloride than for VDC and benzene?

Page 37. Responses to Comments Received, Response to Comment # 6

The text states: "For vinyl chloride ATSDR estimated 30 year and 8 year maximum exposures. For VDC and benzene, ATSDR estimated an 8 year exposure."

Why was a thirty year exposure assumed for vinyl chloride, but not for VDC or benzene?

92. More data in site repository

Page 57. Responses to Comments Received, Response to Comment # 41

The text states “It is also important to note that ATSDR evaluated all environmental data for the site”. Please change this to:

“ATSDR evaluated all available current environmental data for the site in the 2002-2004 Remedial Investigation and Ecological and Public Risk Assessment documents produced under the guidance of EPA. Review of most historical site data was beyond the scope and ATSDR resources available for the 2008 Public Health Assessment, except that ATSDR did review one summary table of historical municipal well data that was in a 1992 report by MDPH, written under a cooperative agreement with ATSDR.”

ATSDR had access to extensive current data from the Remedial Investigation and Risk Assessments Investigations for the WR Grace Superfund Site performed under EPA guidance in the 2002-2004 time frame, but relied on a single historical document for past data. The public repository for the WR Grace Site contains hundreds of historical documents containing countless tables of data for past contaminant levels in groundwater, soils, surface water, air, sludge, sediments, etc. Due to logistical and/or resource constraints ATSDR review of these data was not part of the scope of the PHA. Should additional resources in terms of time and personnel become available ACES requests that a public health risk assessment be conducted for past exposures, using the extensive data set available in the public repository.

Appendix C.

93. Municipal well water, dermal and inhalation exposures, Appendix C; Pages 89-90

Municipal well water, should consider dermal and inhalation exposures also, not just ingestion for both past exposures to VOCs and current exposures to arsenic and manganese. (Note that arsenic and manganese are not removed from the drinking water by any past nor current treatment by the AWD at the municipal wells.) Please make appropriate changes to the text in Appendix C.

94. Non-cancer risk estimates—create new table Page 96, top of page, before Cancer Risk section.

As requested in a previous comment, please create a table that shows a cumulative evaluation for non-cancer risks, (comparable to Table 10 in the 2008 PHA which does this for cancer-risk.) Please refer to this table on page 96 in Appendix C. at the end of the Non-Cancer Health Effects Section that begins on page 94.

95. Cancer risk estimates—Table 10; Appendix. C. Page 97, Last sentence on page

Typo: Cancer risk estimates are included in Table 10 not Table 9.

References:

96. Add Public Release 1992 ATSDR Report to reference section

ATSDR consulted the 1992 ATSDR report for historical municipal well data. There are two versions of this report—the “Initial Release” version and the “Draft: Public Comment Release” version. The “Initial Release” is already included in the reference section of the 2008 report. Please add the “Public Comment Release” version also. Please note that Comment 11 above refers to the “Public Comment Release” version of this report.

(On behalf of ACES, I mailed Robert Knowles a paper copy of the 1992 “Public Comment Release” report on September 16, 2005. If you cannot locate this “Public Comment Release” version, please let me know and I will mail another copy.)

97. 1992 Public Comment Release vs. Initial Release, Comments by Lynne Jennings, EPA Project Manager

ACES has a copy of the “Initial Release” 1992 report with an accompanying cover letter, dated October 6, 1992, from Louise House of ATSDR Region I to Michael LeBlanc at the Massachusetts DEP. (Attachment I) Also with these documents is a memorandum dated January 8, 1993, from Lynne Jennings at EPA, Region I, (the WR Grace Superfund Site, project manager at that time?), providing comments on the draft Public Health Assessment. (Attachment J.)

A comparison of the “Initial Release” report to the “Public Comment” report shows that changes that Lynne Jennings suggested to the “Initial Release” PHA were incorporated into the “Public Comment” version of the report. For example, see Ms. Jennings’ comments about page 23 of the report and compare this to the relevant pages in the two versions of the PHA. (See Attachment K. for pages 21-24 of the “Initial Release” PHA and Attachment L. for pages 22-24 for the “Public Comment Release” PHA.

Thank you again for the opportunity to provide comments on the August 26, 2008 Public Comment Release, ATSDR Public Health Assessment for the WR Grace Superfund Site in Acton and Concord.

Sincerely,

Mary S. Michelman
ACES President