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STATE OF COLORADO

Bill Owens, Governor
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Dedicated to protecting and improving the health and environment of the people of Colorado

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Colorado Department
of Public Health
and Environment

January 10, 2000

Dr. David Mellard
ATSDR
1600 Clifton Road (MS-32)
Atlanta, GA 30333

Re: ATSDR Draft Public Health Assessment, Vasquez Boulevard and I-70 Site, Denver, Colorado (December, 1999)

Dear Dr. Mellard:

The Colorado Department of Public Health and Environment (CDPHE) appreciates having the opportunity to review the above-referenced document. Our comments are attached.

CDPHE strongly recommends including Phase III sampling data in the report as soon as it is available. This includes updating the "scatter grams" in the appendices. Additionally, many questions have been raised about the significance of pica behavior in children. The state believes that the Working Group would benefit from a better understanding of this behavior and its application to risk management decisions at VBI70 and other CERCLA sites.

Please do not hesitate to call me at (303) 692-3395 if you have any questions.

Sincerely,

Barbara O'Grady

Barbara O'Grady
State Project Manager

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EPA REGION VIII
SUPERFUND BRANCH

cc:

Joan Hooker	Susan Muza	Lorraine Granado
Steve Hamel	Anthony Thomas	Rob Mann
Bob Litle	Michael Maes	Celia Vanderloop
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Bonnie Lavelle	Sandy Douglas	

State of Colorado Comments on ATSDR's Draft Public Health Assessment Vasquez Boulevard and I-70 Site Denver, Colorado, December 1999

Page 3, *Public Health Issues*

Please explain the process used to identify these public health issues. Was there a needs assessment or some other process performed?

Page 3, *Introduction to the Site*

When referring to Figure 1, it is unclear as to what the "expanded study area" means. Please explain what has been expanded. It seems that Figure 1 represents the Study Area and Figure 2 is the NPL site.

Please remove South Globeville from the Study Area. The EPA is not conducting sampling or removals in this area.

Page 4, *Site History*

There may be historical inaccuracies in this section. CDPHE suggests that ATSDR consult original source material for accounts of historic operations and relevant dates. While we appreciate that some of this information may have been obtained from CDPHE reports, please keep in mind that the historical information contained in technical reports is often general in nature and may not have been thoroughly researched.

Please change the reference in the last sentence of the first paragraph (Apostolopolous 1998 and ATSDR 1995) to (CDPHE 1998 and ATSDR). This change needs to be made in several locations throughout the document.

Page 5, *CDPHE Investigations at VBI70*

Please clarify the difference between the VBI70 study area and the VBI70 NPL site. Expand the acronym, 'NPL'.

Page 5, *EPA Investigations at VBI70*, 2nd paragraph

For readers not familiar with the history of the site, it would be helpful to explain the significance or basis of the 450 ppm arsenic and 2000 ppm lead in soil numbers (i.e., interim cleanup levels established by EPA to address more urgent short-term risk).

In the sentence beginning "The EPA received permission...", please correct the reference to read: (EPA ***1998***a; EPA 1998c.).

Page 5, *EPA Investigations at VBI70*

Please clarify the difference between Phase I and Phase II sampling and how the properties were chosen. Provide definitions of composite and discrete sampling.

It would be helpful to identify how the boundaries of the study area differ for Phases I, II,

and III. How did EPA determine which properties to collect dust samples from?

As part of Phase I and II cleanup, the EPA conducted / collected indoor dust, paint, water, blood, urine and hair samples from the 18 cleanup properties. This data seems to have been omitted from any and all discussion.

Page 6, *Demographic Information*, 2nd paragraph

a. The background soil arsenic level of 28 ppm established for the Globe Plant Site was based on a statistical analysis of soil sampling data collected during the site investigation. This analysis revealed a bimodal distribution, or concentration data showing two distinctly separate populations. The background concentration of 28 ppm was established as a concentration level which could be identified *statistically* as being above typical background values for that neighborhood. The goal was to distinguish between properties affected by emissions from the plant from those not impacted by the plant and is not likely to be nor ever assumed to be representative of the entire Denver area.

b. Some of the statistics shown in Figure 4 have been rounded and some have not. It would be best to select a consistent approach

Page 6, *Demographic Information*

Is there any way to characterize the area with updated information? This Census data is 10 years old.

Please change "South Globeville" to "West Globeville"

Page 7, *Arsenic*

Is any further action being taken to describe the background levels of Arsenic in north Denver? An ATSDR MRL is available for arsenic. There is also an oral reference dose (RfD) published by the EPA. Does it make sense to estimate the amount of exposure of adults and children and compare to the MRL as was done in the Cadmium section?

Page 7, *Lead*

This section should summarize the concentrations of lead found in soil samples collected at the site and clearly state the justification for identifying lead as a "Contaminant of Concern Requiring Further Evaluation". Exceedance of background values is not, by itself, sufficient justification for inclusion as a COC. Therefore, it is unclear if lead is a problem at this site. Please refer to the EPA guidance, *Revised Interim Soil Lead Guidance for CERCLA and RCRA Corrective Action Facilities (1994)*. This document recommends an action level of 400 ppm in the absence of site specific data and can be used as a frame of reference.

Pages 8-10, *Adequacy of Environmental Data*

Visual comparison of maximum and average concentrations of arsenic and lead for Phase I and II data compared to more intensive sampling at some of the same properties seems somewhat subjective. It wasn't clear why the conclusion for comparison of the arsenic datasets was that the levels were "substantially different" whereas the conclusion for lead was that values were "somewhat similar". A statistical comparison of these data sets would provide a more compelling argument. It also would be worth noting that the workgroup is in agreement that Phase I and II data are not adequate for making health based decisions.

Page 7-8, Cadmium

Please provide the calculations of estimated dose described in the text in an appendix.

Page 8, *Other Contaminants of Concern*

The second sentence explains that "most" of the 44 Phase I samples came from Swansea and Elyria. Please state exactly how many and where the rest were located.

Is it appropriate to compare metals concentrations found at the site with the levels found in the western United States? Perhaps a more site specific number could be identified.

A concluding statement at the end of the zinc paragraph stating that this constituent will not be evaluated further in the assessment may be appropriate.

Are there any references to substantiate that thallium levels are below levels that would have harmful effects to humans?

Please state that lead and arsenic are the only constituents that will be evaluated further in the.health assessment.

Page 9, *Phase I and II samples*

The first sentence should be clarified by stating that " ...EPA collected approximately 3 soil samples from ***each*** of the properties samples."

(final paragraph in section)
There is no reason stated in the text that explains why Phase I and Phase II samples have limited use in making public health decisions. Only an example is given. Please provide further explanation about sampling representativeness and completeness of the yard.

Page 10, *Phase III samples*

Please clarify which properties were included in Phase III. Clarify that they are properties which were not included in Phase I and Phase II.

Page 10, *Information from Regional Geographic Initiative*

It would be more appropriate to include this information in the site background discussion. It isn't clear how this information relates to the adequacy of the environmental data for the VBI70 Superfund site. Why is there a discussion about truck fleets? Is there a link to high arsenic and lead levels from trucks? These constituents are not listed in the text as resulting from fleet trucks. If chemicals emitted from these trucks pose a threat to public health, they should be discussed further in the main body and conclusions of this report.

Page 11, bottom of page

The list of NPL sites shown appear to be "in or near" zipcode 80216 rather than the VBI70 study area. None of these NPL sites are "in" the VBI70 study area.

Page 13, *Soil Ingestion for children and adults*, 4th paragraph

As part of the review of the pica studies cited to estimate ingestion rates typical of pica behavior, it is important to also discuss the characteristics of the populations studied and how these study populations do and don't compare demographically and behaviorally to the VBI70 area. Institutionalized populations, for example, may exhibit more frequent or higher pica behavior than do children in the general population.

Page14, *Eating home grown produce*

(paragraph 2)

It may be appropriate to cite the report which concluded that the amount of arsenic that people might get from eating home-grown produce is below levels that cause harmful effects.

(paragraph 3)

State that the CDPHE fact sheet was distributed in English and Spanish.

Page 16, *Drinking Groundwater*

Please clarify the source of the surface water used to supply drinking water to VBI70 residents. If the point of this section is to indicate that neither groundwater nor other potentially impacted sources are currently used as drinking water by residents in the study area, it should be clarified. The city of Thornton maintains a surface water intake on the South Platte River at the Burlington Ditch. Please verify whether this is inside or immediately outside the 80216 zip code. Perhaps the title of the section should be changed to *Drinking Water Sources*.

Page 16, *Breathing Outdoor and Indoor Air*

Please correct the last sentence of the first paragraph to read "...is not ***known*** at this time..."

Phase II sampling included one basement sample, collected from a dirt floor basement at 3535 Humboldt Street (one of the 18 emergency cleanup properties). Analytical results are as follows: arsenic 90 U; Lead 900.

Phase II cleanup included air monitoring surrounding the cleanup properties. In addition to realtime Total Suspended Particulate (TSP) monitoring, air samples were collected around each property and were analyzed for arsenic and lead. This data was validated and is available as an appendix on CD-ROM to the construction oversight report prepared by URS Operating Services.

Page 17, *Lead Distribution in the Study Area*

The 5 highest lead levels were as follows: One sample was collected from a National Western Stock Show Parking Lot. Three samples were collected from an excavation that the Colorado Department of Transportation (CDOT) did during Highway construction. One sample was collected from a backyard that has since been acquired as a ROW purchase. These properties were all located less than 100 feet from Interstate 70. The three samples collected from the CDOT excavation were observed to be collected directly from waste material that was presumed to be left over from smelter operations at the Omaha-Grant.

Page 17 & 18, *Lead and Arsenic distribution in the study area*

Spatial distribution maps provided in Figures12-22 provide a potentially useful tool for assessing the adequacy of the study area boundaries. However, CDPHE agrees with ATSDR's conclusion on page 26 that Phase I and II data cannot be used to accurately estimate average arsenic and lead concentrations for VBI70 properties. Therefore, we are concerned about using plots of Phase I and II soil data to draw conclusions about where to conduct further sampling. Repeated trend analysis of metals distributions using Phase III data should be completed before the PHA is released to the public. CDPHE strongly recommends technical input from a statistician to investigate what statistical tools could be applied to assess the existence of statistically significant trends, rather than relying on visual analysis of the data.

Page 18, *Lead and arsenic distribution in the study area*

Discussions of metal distribution patterns in intensively sampled yards and adjoining properties uses language indicating that metals have "migrated " off intensively sampled properties and contaminated adjoining properties by "runoff ". It seems equally plausible that there may be other reasons and mechanisms of transport which could account for the phenomenon discussed. Data for all of the intensively sampled properties, rather than the one property shown, should be summarized and analyzed before this assumption is made.

Page18, *Arsenic at several properties in the study area*

The statements regarding intensive and confirmatory samples seems redundant (see page

9). The title of this section does not really convey the content.

(first paragraph)
correct the second sentence "...as the number of samples increased in ***a*** certain area..."

(last paragraph)
Define 'run off' from highly contaminated properties. This term may convey 'surface water run off'.

Page 19

Close parentheses after Figure 26 at the end of the first sentence..

Correct last item on the check list to "groups that might ***have*** higher than...

Page 20, *Children with soil pica behavior and the possibility of non-cancerous health effects from arsenic, 1st paragraph*

a. Please provide a reference for the statement that "...children typically eat about 5,000 milligrams of dirt at a time...". Is this an average or upper bound estimate of soil ingestion for a pica child?

b. *Footnote 7* - Assuming 5000 mg of soil and dust equals 1 tablespoon, then 1/16th of a teaspoon would be about 100 mg of soil and dust (versus 25 to 50).

Page 20, *Footnotes 7, 8, and 9*

Footnotes - Are there references which describe these measurements? There is also a formatting problem with the text.

Footnote 11 - Short term exposure might need to be further explained. Some people may think several years is a chronic exposure.

Footnote 13 - Do not use the root word in the definition. It does not help to use 'larynx' in the definition of 'laryngitis'. Perhaps use 'voice box' instead of 'larynx'.

Pg. 22 (2nd paragraph)

Sufficient information exists for 55 properties. Eight properties were part of the intensive sampling effort. The total number of properties with more intensive sampling equals 63 (versus 64). See subsequent references to these properties on the top of page 23 and bottom of page 24. Is there another property with information?

Pg 23. (1st complete paragraph)

What is ATSDR's conclusion based on 64 properties. If there is not enough information to make conclusive statements, indicate it in the report.

Page 23, *Adults and the Possibility of non-cancerous health effects from arsenic contamination in the VBI70 study area* -

Last paragraph should be changed from "... 3,000 properties not previously sampled." to "... 1,534 properties not previously sampled."

Page 23, *People Who Live in the VBI70 Study Area and Possible Cancerous Effects*

Last sentence of paragraph 1 needs to be changed to reflect short term and long term exposures. Most certainly if someone has been exposed for 10 - 20 years, then they have also been exposed for a lifetime, unless of course their lifetime is less than 10 - 20 years.

Pg. 24 *People who live in the VBI70 Area and possible cancerous effects*

Is there enough evidence to state that arsenic is known to cause specific types of cancers? EPA toxicity values (i.e., slope factors) are not usually associated with a specific cancer.

Footnote 15 is not a helpful definition to the general public. Do not use the word 'squamous' to define the phrase 'squamous cell carcinoma'.

Page 25, *Possible Health Effects in children and adults from exposure to lead ain the VBI70 study area*

End of first paragraph should specify that the summary shown is for Phase I and II sampling events only.

Page 26, *Conclusions*

4809 Milwaukee was sampled during Phase I and had arsenic concentrations ranging from 100 ppm to 270 ppm in surface soils, and 130 ppm at depth (6 inches). Please specify that this needs to be re-sampled under current / existing protocol as well as the rest of Phase I and Phase II properties.

See comment, Page 17, Lead Distribution in the Study Area

Page 27, *Recommendations*

a) Recommendation 2 should be reworded to avoid identifying a specific address (4809 Milwaukee). While this may not be strictly confidential information from a legal standpoint, identifying one address out of many properties which need to be addressed seems inappropriate.

b) As discussed above in comment # 8, Recommendation 4 seems premature. Trend analysis and decisions about the adequacy of the study area boundaries should be

based on Phase III data and other site characterization studies which are still pending.

Item 2 would be covered under Item 1 (See comment Page 26, Conclusions)

Item 4 - Please specify areas, neighborhoods to be expanded upon. Has ATSDR received analytical data from recent Park Hill study/sampling conducted by NABE and CU Boulder? If not, this data, preliminary at best, should at least be looked at and plotted into the distribution / scatter plots. Park Hill has a higher population density than Clayton, Cole, Elyria and Swansea neighborhoods.

Appendices

Appendix E - What is the significance of vehicle miles traveled? Is this information useful in drawing conclusions about public health impacts in the area?

Table 2 - Does ASARCO emit arsenic?
Table 3 - what does ******* indicate?
Table 4 - define VOC/HC?
Table 5 - What does this table indicate about diesel emissions or PM10?

Appendix K
Figure 26 - What is this graph and what is it conveying? It is not adequately labeled.