## EXPERT PANEL

## for THE DICKSON COUNTY LANDFILL DICKSON, TENNESSEE

## Memorandum

TO: Timothy V. Potter, Esq., Reynolds Potter, Ragan & Vandivort, PLC

Michael K. Stagg, Esq., Waller Lansden Dortch & Davis, LLP Michael E. Wall, Esq., Natural Resources Defense Council, Inc.

FROM: David E. Jackson, P.G., P.H.

David E. Langseth, Sc.D., P.E., D. WRE Stavros S. Papadopulos, Ph.D., P.E. NAE

MATTER: Natural Resources Defense Council, Inc., et al., v. County of Dickson, Tennessee,

et al., No.: 3:08-cv-00229

Consent Order Entered December 9, 2011

DATE: April 15, 2015

SUBJECT: Expert Panel Communication Number 10,

Preliminary Evaluation and Recommendations Related to Bruce Spring

Based on our review of the revised draft report on vapor quality in the Bruce Spring area<sup>1</sup> the Expert Panel for the Dickson County Landfill (DCL), Dickson County, Tennessee (EP) offers the following observations and recommendations regarding air quality in the Bruce Spring area.

## **Background**

In very brief summary, the study of air and surface water quality in the Bruce Spring area has indicated that trichloroethylene (TCE), and to a lesser extent cis-1,2-dichloroethylene (cis-1,2-DCE) are being released into the air (offgassing) from the water that flows through Bruce Spring. Further, these vapors appear to be migrating to at least one nearby residence in sufficient quantity to create breathing zone concentrations above local background concentrations and above regional screening levels (RSLs) established by the US EPA for residential occupancy<sup>2</sup>. Several other chemicals were also detected in air samples taken during the recent study of Bruce Spring area air quality, but none of the other chemicals appear to be associated with offgassing from either Bruce Spring or area groundwater, and thus can reasonably be considered to be related to sources other than the DCL. Further, neither TCE nor cis-1,2-DCE were detected in soil vapors, indicating that they are not offgassing from groundwater at rates that could create

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<sup>&</sup>lt;sup>1</sup> EnSafe. 2015. Bruce Spring Area Work Plan Results. prepared for the Expert Panel for the Dickson County Landfill, Dickson County, Tennessee. Revised draft dated Feburary 25, 2015.

<sup>&</sup>lt;sup>2</sup> See <a href="http://www.epa.gov/region9/superfund/prg/">http://www.epa.gov/region9/superfund/prg/</a>

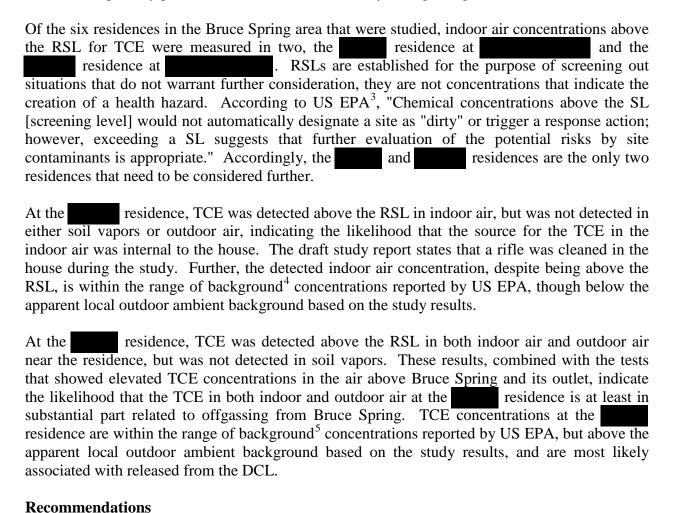
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recommendations:

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any cause for concern. Based on the studies to date, therefore, the only air quality issue in the Bruce Spring area of potential concern that may be associated with releases from the DCL is offgassing of TCE and cis-1,2-DCE. US EPA has not, however, established an RSL for cis-1,2-DCE, so the primary potential issue for Dickson County is offgassing of TCE.



Though the study report is not yet final, the EP has sufficient information to make the following

<sup>&</sup>lt;sup>3</sup> See http://www.epa.gov/reg3hwmd/risk/human/rb-concentration\_table/faq.htm#FAQ2 accessed 10 April 2015.

<sup>&</sup>lt;sup>4</sup> Background in this context means that there are no known localized sources external to the structure from which the sample was taken. An example localized source would be contaminate shallow groundwater underneath a structure.

<sup>&</sup>lt;sup>5</sup> Background in this context means that there are no known localized sources external to the structure from which the sample was taken. An example localized source would be contaminate shallow groundwater underneath a structure.

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- The County should offer to relocate the studies have been completed. In making this recommendation, the EP is not suggesting that it believes the residents of this house have suffered any adverse health effects due to TCE offgassing from Bruce Spring. RSLs are highly conservative and designed to be broadly protective of human health. The EP is rather making this recommendation out of an abundance of caution and in consideration of concerns raised by that have been brought to our attention<sup>6</sup>. This relocation should be considered temporary, until a long-term solution to the offgassing from Bruce Spring has been selected and implemented.
- The County should request their consultant to perform a follow-up study of the residence. In this follow-up study, the residence should be screened carefully for possible TCE sources and any such sources that are found should be removed from the house for at least three days prior to resampling. The resampling should include the following sample locations, using the same sampling and chemical analysis protocols as used for September-October 2014 study.
  - o Three indoor air samples at various locations within the residence
  - o Four outdoor air samples at locations spaced evenly around the residence (ideally at the compass points, but adjusted as needed for local conditions)
  - o Two soil gas samples at locations other than the location sampled during the September-October 2014 study.
  - o If reasonably feasible, a soil gas sample from below the soil underneath the house footprint.
- The County should request their consultant to evaluate the feasibility of developing controls for the offgassing from Bruce Spring. This evaluation should include consideration of alternative technologies and development of conceptual level designs and cost estimates.
- Since the preliminary results for Sullivan Spring indicate that offgassing may be an issue there also, the consultant should perform the same type of feasibility study for Sullivan spring.

The consultant performing the studies described above ( residence resampling and Bruce and Sullivan Springs offgassing control feasibility study) should be instructed to provide work plans to the EP for review and comment prior to performing the studies.

We will make recommendations for further actions when the results of these additional studies are available.

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<sup>&</sup>lt;sup>6</sup> Letter from to Reynolds, Potter, Ragan and Vandivort dated March 3, 2015.