

EXPERT PANEL
for
THE DICKSON COUNTY LANDFILL
DICKSON, TENNESSEE

Memorandum

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FROM: David E. Jackson, P.G., P.H.
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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 18, 2013

SUBJECT Expert Panel Communication No. 7
Recommendations No. 7 and 8, and Summary of Pending Action Items

This Communication No. 7 from the Expert Panel (EP) established under the referenced Consent Order presents recommendations on an expanded monitoring program and on priorities for connecting properties within the Expanded Environmental Risk Area (EERA) to public water-supply systems (PWS).

Recommendation 7 - Monitoring Program

The Consent Order requires that all in-use residential wells and springs within the EERA are sampled semi-annually, with the costs of these sampling events funded by the Remedy Fund. To meet this term of the Consent Order, the County's consultants are currently sampling semi-annually 65 residential wells and nine springs on properties that are not connected to a PWS. The EP's review of the sampled wells indicates that they include 15 wells which are outside the EERA but on properties partially within the EERA; these wells are listed on Table 1 and their location is shown in Figure 1.¹ In designing the EERA, the EP members provided what they believe to be a sufficient buffer zone. It is, therefore, the EP's opinion that wells which are physically outside the boundaries of the EERA do not need to be sampled under the Consent Order, and the EP recommends that sampling of these 15 wells be discontinued, unless, as

¹ Later in this communication, six of these 15 wells are proposed for "detection monitoring" and are shown as such in Figure 1.

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discussed below, they are part of the recommended “detection monitoring” program. The EP also notes that the sampled wells include 13 “limited use” wells on properties that are connected to a PWS. The EP will address the issue of sampling such wells in a later communication.

In addition to the semi-annual sampling of the in-use wells and springs within the EERA, the EP recommends that the County implements the following monitoring program:

- (a) Semi-annual sampling of surface water during expected high and low flow periods in the Worley Furnace Branch and the West and East Piney Rivers (late April and early October) at the five locations labeled A through E in the attached Figure 1.
- (b) The data available to the EP indicates that there are 27 springs within the EERA. Eight of these 27 springs are used as sources of residential water supply and one is a “limited use” spring; these nine springs are included in the current semi-annual sampling program. Controlling the use of a spring within the EERA is more difficult than controlling the use of a well; therefore, the EP recommends that the remaining 18 springs are also monitored as follows. Four of these 18 springs, the Sullivan, Bruce, and the springs on the [REDACTED] and [REDACTED] properties, should be added to the semi-annual sampling program. The remaining 14 springs should be sampled annually by alternating during each semi-annual sampling event (seven springs during a semi-annual sampling event and the remaining seven during the next semi-annual sampling event). Table 2 lists the 13 springs that should be sampled semi-annually, and the seven pairs of springs that should be sampled during alternating sampling events; the locations of these springs are shown in Figure 1.
- (c) To help detect site-related contaminants that may migrate outside the EERA, the EP recommends that a “detection monitoring” program be initiated. This program should consist of the semi-annual sampling of 10 active residential wells, located near the boundary of the EERA; these 10 wells are listed on Table 3 and their location is shown in Figure 1.²

We recommend that surface water samples described above be collected in late April and early October. To minimize sampling costs, semi-annual sampling of all wells and springs should also be conducted during the same sampling events. Note also that all ten residential wells proposed for detection monitoring are active. In the event any of these wells become inactive, due to connection of the property to PWS or some other reason, the EP should be notified so that we may consider alternatives.

Finally, based on review of historical data from the Landfill perimeter monitoring wells, the EP does not believe that these wells provide information that serves the purpose of either reducing or eliminating risk to human health or environment within the EERA or detecting migration of contaminants to the outside of the EERA. As such, under the terms of the Consent Order, the EP

² Note that six of these 10 wells are part of the 15 “outside the EERA” wells that are currently sampled semi-annually.

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does not think monitoring of these wells should be funded from the Remedy Fund. If the County desires to discontinue the sampling of these wells, the EP would be prepared to assist the County in convincing the Tennessee Department of Environmental Conservation (TDEC) that monitoring of these wells is no longer necessary. However, the EP recommends that Landfill monitoring wells MW-DS and MW-DD continue to be sampled on an annual frequency (October), as these two wells provide information on water-quality conditions at the Landfill, which conditions may influence future adjustments to the monitoring program.

Recommendation 8 – PWS Connection Priorities

The records available to EP indicate that there are 43 wells within the EERA on properties that are not connected to a PWS; these wells are listed, alphabetically by owner, on Table 4 and their locations are shown in Figure 2. As shown on Table 4, 31 of these 43 wells are active, and include three wells that are shared by two households each, and five wells are inactive because they are located on developed properties that are temporarily vacant for reasons not known to the EP. The remaining seven wells are on undeveloped/vacant properties; four of these seven wells are hand-dug wells and the remaining three are drilled. Six of the seven wells on undeveloped/vacant properties are inactive, but one, the [REDACTED] ([REDACTED]) well, is reported as being in “limited use” for agricultural purposes, primarily for livestock watering.³

Three of the 31 active wells listed on Table 4, the [REDACTED] ([REDACTED]) the [REDACTED] ([REDACTED]) and the [REDACTED] ([REDACTED]) or [REDACTED] wells, have been designated by the EP as detection monitoring wells (see Table 3); the EP prefers that these three wells continue to remain active. The EP recommends, however, that the properties with the remaining 28 active wells, the five temporarily inactive wells, and eventually, the seven vacant properties be connected to a PWS. The EP has classified these properties into ten “connection priorities” as shown on Table 5, based on EP’s perception of the relative degree of imminent risk to these properties. The EP also included consideration of the likely cost to connect for one property, as described below. Table 5 also shows the public water line closest to each property, as determined from data available to the EP.

Priority 1 includes properties along [REDACTED] with wells near the [REDACTED] ([REDACTED]) and the [REDACTED] ([REDACTED]) & [REDACTED] properties which were recently connected to PWS at the recommendation of the EP (Recommendation 5 of Communication 5 dated August 24, 2012), due to the detection of low levels of TCE in their wells. The EP’s understanding is that the owners of the properties on the Priority 1 list have already agreed to be connected to PWS, with possible exception of [REDACTED] ([REDACTED]) who the EP understands is still in negotiations regarding a PWS connection. Priority 2 includes properties along [REDACTED] or [REDACTED] ([REDACTED]) with wells near the [REDACTED] ([REDACTED]) [REDACTED] ([REDACTED]) and [REDACTED] ([REDACTED]) properties where Landfill-related contaminants have been and continue to be detected. Priority 3 includes properties along [REDACTED] [REDACTED] [REDACTED] with wells west of Sullivan Spring.

³ Personal communication from Shaun Winter of Ensafe, April 8, 2013.

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The one property for which the EP considered the likely cost of connection as a factor in establishing the priority is the [REDACTED] ([REDACTED] & [REDACTED] property. The residence on this property is located half-way between [REDACTED] and [REDACTED]. Although the property could be at a higher risk than its priority designation indicates, due to its location south of the [REDACTED] well, the EP expects that the cost to connect this property to PWS will likely be much higher than for other properties due to the large distance between the well and a PWS water line.

Priority 10 lists the properties that are undeveloped/vacant. The EP recommends the County to require that connection to PWS for these properties be part of any development plan submitted to the County for approval.

The EP makes the following requests of the County with respect to these PWS connection priorities:

- The County shall prepare a long-term plan for implementing PWS connections in the priority order described herein for EP review and comment.
- The County shall keep the EP informed of progress implementing PWS connections.
- The County shall provide the EP with an estimated cost of connection for the [REDACTED] ([REDACTED] & [REDACTED] property so that the EP can evaluate whether its connection priority should be revised.

Summary of Pending Action Items

There are several requests for information and questions related to earlier communications by the EP that have not yet been addressed. These are listed below in their order of importance:

- 1) In Communication No. 6, dated December 7, 2012, the EP indicated its concern regarding the indoor TCE vapor concentrations at the [REDACTED] residence, as discovered during the Bruce Spring vapor intrusion study, and requested that the County develop an action plan to either demonstrate that the air in and around the [REDACTED] residence is of acceptable quality with respect to TCE concentrations or provide remedial measures to reduce the TCE concentrations to acceptable levels, and that such a plan be delivered to EP for review and comment by no later than March 29, 2013. To evaluate the potential for vapor intrusion at other residences in the vicinity of Bruce Spring, the EP also requested (1) that a Residence Reconnaissance Survey be conducted in the vicinity of Bruce Spring, and (2) a plan for an Air Pathway Dispersion Survey be developed for this area. The EP received in early April a plan for the Air Pathway Dispersion Survey and more recently a plan for conducting a Residence Reconnaissance Survey, both of which the EP will be reviewing shortly; however,

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the EP did not yet receive the requested plan of action for addressing the indoor vapor concentrations at the [REDACTED] residence, and is concerned about the potential exposure to vapor-borne contaminants by the inhabitants of the [REDACTED] residence. The EP does, therefore, repeat its request that such a plan of action be provided to the EP as soon as possible. (Earlier today, the EP has been informed by the County's consultant that such a plan is in preparation and that it will be soon provided to the EP.)

- 2) Communication No. 3, dated June 7, 2012, included a request for "...the County to proceed with contacting the WADC and STCP and inventorying approved or potentially imminent plans for water utility expansion in or near the newly-defined EERA." The EP requests being informed of the information obtained from the WADC and STCP so that we can be aware of additions to the existing distribution system that may be already planned.
- 3) Communication No. 5 included the following information requests that are still pending:
 - a) Any educational materials that the County intends to provide to landowners or other residents in the EERA; and
 - b) Copies of the protocols used, or to be used, by County's consultants for sampling residential wells, springs, and streams.

The members of the EP would greatly appreciate that these requests/questions be addressed by the County as soon as possible.