

NOTES

Feb. 3, 2016 MRBCA Stakeholder Group Meeting Roaring River Conference Room, 1730 E. Elm St., Jefferson City, MO

In Attendance

Gene Schmittgens, Evans & Dixon; Julie Marks, Barr Eng.; Taylor Balogh, Barr Eng.; Diana Marquez, Burns & McDonnell; Kevin Perry, REGFORM; David Shanks, Boeing; Wesley Robb, Jackie Robb, and Liz Miller, Wellington Env.; Bob Kick, Foth I&E; Bob Veenstra, Geosyntec; Alex Walter, Arcadis US Inc.; Nancy Dickens and Lisa Schipper, TetraTech; Joshua Sales, Kennedy/Jenks

Participating by phone: Brian Porter, Terracon; Elyn Potter, Leggette, Brashears & Graham, Inc.; Laurie Haws, toxstrategies

MoDNR: David Lamb, Scott Huckstep, Tim Eiken, Chris Cady, Mike Washburn, Brian McCurren, Tim Chibnall

MDHSS: Michelle Hartman, Dennis Wambuguh

Introduction

David Lamb welcomed attendees and facilitated introductions.

Recap of Dec. 9, 2015 Meeting (led by Tim Chibnall, DNR)

- Recap of issues from the Dec. 9, 2015, stakeholder group (SHG) meeting specifically regarding MoDNR's proposal to update the risk-based target levels (RBTLs) and to expedite updating the RBTLs for tetrachloroethylene (PCE), trichloroethylene (TCE), cis-1,2-dichloroethylene (cis-1,2-DCE) and vinyl chloride (VC). Chibnall indicated he had not received any comments from stakeholders regarding either proposal, except as follows:
 - Kevin Perry of REGFORM indicated in an earlier meeting with Chibnall and David Lamb that his membership was not in favor of removing the RBTLs from the Missouri Risk-Based Corrective Action (MRBCA) rule. In addition, during the Feb. 3 meeting, Mr. Perry inquired about the feasibility of using an emergency rulemaking to update the RBTLs for PCE, TCE, cis-1,2-DCE, and VC. Department staff explained the limitations of an emergency rule, including that such a rule is only in place for six months while a regular rulemaking takes 12 to 18 months to complete. As a result, going the emergency rule route would leave a six to 12 month gap between expiration of the emergency rule and the effective date of the rule promulgated via a regular rulemaking. Because of these limitations, MoDNR prefers to update the RBTLs for the four chemicals using the 60-day notice provisions of section (23) of the MRBCA rule.
 - Chibnall indicated the department plans to use a Missouri Register "In Addition" notice, email announcement and web posting to announce beginning of comment period. He also explained that a regular rulemaking will be used to update the RBTLs for all other chemicals.
 - Lamb asked whether the group had a preference regarding continuing to incorporate the RBTLs into rule by reference or pulling the RBTLs out of rule and into guidance only.

- Michelle Hartman stated that DHSS favored removing the RBTLs from rule so they could be updated regularly to reflect the most current science.
- Nancy Dickens expressed concerns about removing the RBTLs from rule and the lack of predictability in target levels that could result.
- Chibnall explained if the RBTLs were no longer incorporated into rule by reference, future updates of the RBTLs would likely be much more limited than the current update which affects all chemicals; IRIS updated twice per year, but generally only for a few chemicals at a time. Chibnall also explained the department would continue to use the Brownfield/Voluntary Cleanup Program (BVCP) policy pertaining to this issue: When RBTLs change, if the BVCP participant has an approved Remedial Action Plan (RAP) in place, the participant may use either the RBTLs on which their RAP is based or the updated RBTLs; if an approved RAP is not in place when the RBTLs change, the participant must use the new RBTLs.
- Chibnall provided clarification regarding the use of alternative toxicity data at Tier 3. He explained based on conversations between MoDNR and DHSS, MRBCA users can present alternative toxicity data at Tier 3 of the process, and such data would be evaluated by DHSS in accordance with U.S. Environmental Protection Agency's (EPA) May 16, 2013, "Tier 3 Toxicity Value White Paper."
 - However, Michelle Hartman explained DHSS would not evaluate alternative toxicity value if a toxicity value was already available from EPA Tier 1 (IRIS), Tier 2 (PPRTVs) or Tier 3 sources. Chibnall indicated he thought this was inconsistent with EPA's Dec. 5, 2003, memo regarding human health toxicity values in Superfund risk assessment and an undated paper sent to MoDNR by DHSS titled "MDHSS Evaluation of Toxicity Values for Use in Tier 3 MRBCA Risk Assessments." Further discussion during the meeting did not resolve the matter. MoDNR will further discuss the issue with DHSS and report back to the group.
 - Laurie Haws asked whether other variables could be changed at Tier 3. Chibnall and Chris Cady explained that many other variables may be changed at Tier 3, including exposure factors, and alternative models may be used.
 - Chibnall suggested tabling the Tier 3 toxicity data issue and taking the issue up at a separate meeting.

Vapor Intrusion (led by Chris Cady, MoDNR)

- The Johnson-Ettinger Model (JEM) will no longer be used to develop VI-related RBTLs, instead will use EPA attenuation factors
- Will use inhalation unit risk values instead of inhalation slope factors in updating VI-related RBTLs
- Mutagens: Michelle Hartman explained what mutagens are and the EPA process for developing target levels for them (both TCE and VC are mutagens, among others); mutagenicity is not specifically related to vapor intrusion (VI)
- With update of RBTLs, will use EPA's definition of volatile, previously used Henry's Law constant and molecular weight, now will use Henry's Law constant or vapor pressure; new definition of volatile results in about 100 additional chemicals being considered volatile

- Soil target levels for VI not considered reliable by EPA due to volatile organic compound (VOC) loss during sampling, sample preparation and analysis. Discussion referenced EPA engineering issue paper “Challenges in Bulk Soil Sampling and Analysis for Vapor Intrusion Screening of Soil,” December 2014.
 - In addition, EPA has stated that issues with partitioning equations cause soil targets for VI to be unreliable
 - Diana Marquez explained the Interstate Technology & Regulatory Council (ITRC) VI document also does not include soil targets; however, she said she had not seen gross over prediction of VI risk with soil in comparison to soil gas. ITRC document may assist in identifying assessment methods when soil targets are lacking.
 - Nancy Dickens expressed concern that lack of soil targets will reduce the number of sites entering BVCP due to increased site characterization costs.
 - Chibnall said if the department accepted that soil targets are not reliable, then the department needs to develop a different approach; alternatively, we could look to demonstrate that soil targets are reliable.
 - No one presented a good, reliable alternative. Diana Marquez said she had talked to some EPA staff and private sector people about this issue but has not identified a good alternative thus far.
 - It appears the department will need to formulate a position regarding the soil target issue and bring that to the SHG for review
 - Screening for VI at the Default Target Level (DTL) stage will become more difficult without soil targets for VI, will likely need to be based on a weight of evidence approach using, for instance, groundwater and soil gas data (and/or sub-slab data)
 - For Tier 2, the department and SHG need to identify a model for developing site-specific attenuation factors (AF), the idea being to identify one or more “pre-approved” AF models (with the AF to be plugged into DHSS-developed spreadsheet for calculating Tier 2 Site-Specific Target Levels (SSTLs)
 - None of the stakeholders had a recommendation re. what models might be used except Michelle Hartman who suggested possibility of using the EPA Vapor Intrusion Screening Level (VISL) calculator
 - Diana Marquez said she believes the JEM remains worthwhile and solid, and that problems with the model generally come from non-representative or incorrect input data; she stressed her comment pertained to the original JEM and not necessarily to various later spreadsheets
 - Bob Veenstra noted that MoDNR had referred to VOCs that “exist” or “are present,” and was unsure what that means.
 - Cady and Chibnall explained that we have not established any limits or concentrations to establish when a VOC is or is not “present” or “of concern,” primarily because of the previously discussed issues with soil targets for VI
- Adopting EPA VI guidance
 - Cady introduced the issue, explaining EPA issued two VI guidance documents last year, one for petroleum and the other for non-petroleum contaminants. The question is whether the

department should adopt the guidance documents as-is and in their entirety, or develop Missouri-specific VI guidance (which might include references to some sections of the EPA guidance documents).

- Bob Veenstra pointed to the original purpose of developing MRBCA; staying consistent with that purpose would result in perhaps referencing parts of the EPA documents, but not adopting in whole, but rather developing Missouri-specific guidance
- Diana Marquez said both documents contain good information, but she wouldn't favor adoption of the documents in their entirety; she also said the applicability of the ITRC petroleum VI guidance is broader than that of the EPA PVI guidance, and the "clean soil" provisions in ITRC differ from those in EPA
- Nancy Dickens also voiced support for Missouri-specific guidance
- Chibnall proposed development of VI subgroup to look at developing Missouri-specific VI guidance, and the SHG concurred. Chibnall to send email to group asking for volunteers.
- Regarding adopting EPA petroleum VI guidance
 - Veenstra suggested using ITRC Petroleum Vapor Intrusion (PVI) guidance instead
 - Julie Marks asked whether the Tanks Section has been asked about this issue
 - Lamb said no, this would only apply to BVCP, but that the department might look at issues with Tanks RBCA in the future
- Discussion of representative concentrations (RCs) for VI
 - Current guidance does not address
 - Would need to consider both spatial and temporal variability in any RC
 - Diana Marquez discussed high-volume sub-slab as a new method that might be a suitable alternative to the MRBCA "averaging" to develop RCs, in this case for sub-slab at least

Free Product (led by Tim Chibnall, MoDNR)

- Definition of "Free Product" (FP)
 - MoDNR will develop a definition of FP for inclusion in the revised MRBCA guidance, definition will be provided to SHG for review
- FP recovery
 - Tanks RBCA guidance requires recovery to extent practicable, but this is a regulatory requirement not based on risk
 - Chibnall indicated MRBCA is a risk-based process and it follows that FP recovery should also be based on risk; regulatory requirements for FP recovery are not applicable to sites applying the MRBCA process (if Tanks RBCA is applicable to a site, the site is not eligible to use MRBCA or be in the BVCP)
 - Bob Kick suggested looking at the FP recovery endpoints in the ITRC LNAPL guidance
 - Nancy Dickens suggested FP recovery not be open-ended and closure end points be spelled out
 - No one in the group expressed opposition to making FP recovery provisions risk-based
- Capping RBTLs at saturation/solubility

- Group discussed pros and cons of capping RBTLs – potential to create a default FP recovery requirement if RBTLs were capped
- After discussion, group consensus appeared to be using “NA” when the calculated RBTL exceeds saturation/solubility
- RC when FP is present
 - The 2006 MRBCA guidance allows the use of calculated effective solubility may be used to represent FP when developing a RC for an exposure domain in which FP is found; the question is whether the revised guidance should retain this provision or, instead, require the FP be analyzed for contaminants of concern and the analytical data used in the RC calculation
 - Brian Porter pointed out that analyses of LNAPL frequently result in very high method detection limits, which can be problematic
 - Elyn Potter pointed out using a theoretical concentration (as with effective solubility) can be of value when LNAPL occurrence is irregular
 - Michelle Hartman recommended sampling FP for laboratory analysis. She also indicated the solubility/saturation calculations will not be in the DHSS Tier 2 spreadsheet
 - Alex Walter said the LNAPL conceptual site model can be very valuable in understanding risks associated with FP, including relevant exposure pathway and his company routinely samples FP for laboratory analysis, and such analyses are readily available.
 - The group seemed to come to the conclusion sampling and analyzing LNAPL is a viable option, but the use of a theoretical value is likely sufficiently conservative that no harm in retaining the option

Delineation

- Chibnall explained what the rule/guidance requirements are currently
- Question is whether delineation should be to residential standards in every case, particularly in light of requirement that an Environmental Covenant be used on every property at which contaminant concentrations will remain above a residential standard
- Cady suggested including BVCP off-site groundwater policy into guidance; ok to clarify in guidance that delineation should be to unrestricted since the department is already doing as much
- Brian Porter said an Illinois no further action (NFA) designation applies only to the property, not any off-site properties, but Illinois does require that model must be used to determine down gradient extent and any affected down gradient property owners must be notified
- Nancy Dickens indicated , in industrial areas, delineation might not get below a residential standard due to widespread historic contamination
- Chibnall said what is being done in practice should be the same as required by rule/guidance, and if they are different the rule/guidance should be changed (or vice-versa); MoDNR will look at how delineation requirements might be revised and, if revisions are determined to be warranted, the department will provide draft revised text to SHG for review

- Discussion ensued regarding municipal ordinances and their scope and reliability; MoDNR may honor such ordinance only if it is the subject of a memorandum of understanding (MOU) between MoDNR and the local government

Wrap Up

- Chibnall said at least two additional SHG meetings are needed to get through all of the identified issues
- Chibnall will send email asking for volunteers for VI subgroup
- Nancy Dickens asked about risk assessment using Total Petroleum Hydrocarbon (TPH) fractions (e.g., GRO, DRO)
 - Michelle Hartman stated risk assessment should not use the fractions but instead rely on constituent carbon ranges
 - MoDNR explained that with the RBTL update we are trying to develop RBTLs for the TPH fractions to match the current approach, and that the issue of TPH will be brought to the stakeholder group at a future meeting