

Part 201 TAG 2 Meeting 3

Exposure Pathway Assumptions and Data Sources

Thursday, July 17 | 1 PM–4 PM
Public Sector Consultants

AGENDA

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|--|------------|
| I. Welcome and Overview | Coscarelli |
| a. Recap Meeting 2/Summary | |
| b. Updated White Paper/Questions | |
| II. White Paper Questions | Group |
| a. Question 1 – (Discuss age-bins) | |
| b. Question 3 – (DEQ to provide overview of current process. Refer to Table A: December 2013 Non-residential Exposure Factors, Table B: December 2013 Residential Exposure Factors) | |
| c. Question 4 – (Discuss reordering as final question) | |
| d. Question 5 – (refer to White Paper Appendix E, Current Direct Contact Criteria Exposure Assumptions, Background Information: Nonresidential Land Use/Receptor, EPA Table 1. Standard Default Factors) | Group |
| e. Question 6 – (refer to Question 5 resources above) | |
| f. Question 7 – (open for discussion, start with Background Information: Nonresidential Land Use/Receptor) | Group |
| g. Question 8 – (refer to White Paper Appendix E) | |
| III. Next Steps | Coscarelli |
| a. Questions 4, 9, 10, 11 | |

PART 201 Technical Advisory Group 2: Exposure Pathway Assumptions *Meeting 3 Summary*

Thursday, July 17, 2014 | 1:00 PM–4:00 PM
Public Sector Consultants, Lansing, Michigan

Attendees

TAG Members

Steve Zayko	PM Environmental
Donal Brady	EnviroSolutions
Christene Jones	Barr Engineering
Patricia Koman	University of Michigan
Francis Ramacciotti	ENVIRON Corporation
Kory Groetsch	Department of Community Health
Christine Flaga	Department of Environmental Quality

MDEQ Staff

Anne Couture	Department of Environmental Quality
Divinia Ries	Department of Environmental Quality
Bob Wagner	Department of Environmental Quality

Project Staff

Mark Coscarelli	Public Sector Consultants
Jon Beard	Public Sector Consultants

INTRODUCTION

TAG 2 met on Thursday, July 17, 2014. Mark Coscarelli welcomed TAG members and reviewed the process that would be used by the TAG in making its recommendations to the Criteria Stakeholder Advisory Group (CSA). Coscarelli noted that, while a goal of the process is to reach consensus, it may not be feasible to reach complete agreement on all issues considering the diversity of opinions, complexity of the issues, and the project timeline. He said that a report would be developed that summarized the TAG's discussion and recommendations to the CSA. The report will outline areas of consensus and identify points where it was not reached. The CSA will evaluate these factors and make a recommendation to the director of the Michigan Department of Environmental Quality (MDEQ).

The TAG discussed the project timeline. The final meeting of the CSA is currently scheduled in mid-September. TAG 2 is tentatively scheduled to complete its report by the end of August. Coscarelli noted that these dates may be revised.

A TAG member proposed that the group could rely on Environmental Protection Agency (EPA) references as the basis for its considerations and outline potential concerns or deviations related to that guidance to help focus the group's discussion. TAG members discussed the approach and agreed that it would be an effective foundation for discussions. TAG members noted that other reference points could also be considered such as the current MDEQ guidance and Academy of Sciences reports. A TAG member suggested that the group could develop a framework or concept for consideration by the CSA rather than identifying every criteria. The TAG also discussed a potential recommendation that criteria should be evaluated on a periodic basis. The TAG 1 concept of a 4-year review cycle was discussed and

the TAG 2 was supportive of having a similar 4-year review cycle apply to the TAG 2 question topics (e.g. exposure assumptions, algorithms, ADAFs, and age bins).

The TAG concluded that, where appropriate, the TAG would rely on the EPA references as the basis for its discussion, and when there is any divergence from the EPA references, it would be documented.

REVIEW OF MEETING 2 SUMMARY

Coscarelli reviewed the summary of the second TAG meeting. He noted that he had received comments from TAG members via email. He briefly reviewed the comments, which mostly clarified terms, terms of reference, and wording on the references. He said that he would compile the comments into an updated draft which would be provided to the TAG in a redline version.

Coscarelli noted that the TAG also discussed changes to the White Paper itself, which was updated and provided to TAG members. He noted that there is still an opportunity to provide additional comments and revise the documents.

WHITE PAPER QUESTIONS AND DISCUSSION

The TAG continued its discussion from the previous meeting regarding questions outlined in the White Paper.

Question # 1: What is the most appropriate receptor to use for residential land use criteria?

The group continued its discussion regarding age bins from the previous meeting. At the previous meeting, a TAG member proposed four age bins (0-6; 7-11; 12-18; and 19-31) for soil contact and drinking water exposure values. A TAG member noted that the group had discussed how developmental toxicants should be considered and whether the proposed age bins would adequately protect against exposure during critical developmental points. The member suggested that the age-adjusted approach may not be appropriate because it assumes prolonged exposure rather than exposures at critical developmental points. TAG members agreed that the concern raised was over increased sensitivity during certain developmental periods (e.g., adolescence or adults of reproductive age) and not a concern over the potential for increased exposure during these periods.

Members noted that they had agreed earlier in the meeting to use the EPA data as their starting point for discussion. TAG members discussed the data used by the EPA to develop the age bins. The TAG discussed differences in exposure assumptions associated with the age bins and noted that there would be, in some instances, little to no difference in exposure assumptions between the age bins. In other words, the differences between Age Bin 1 and Age Bin 2 may be insignificant. Considering this, some TAG members suggested that a simpler approach may be to have fewer age bins if there is no difference in the exposure assumptions. One member noted additional data or new studies may become available in the future that could affect acceptable levels that may vary by age bin, and having the framework in place that anticipates new information would be important. TAG members suggested a process could be developed to periodically re-evaluate new information relative to the age bins. The group noted TAG 1 had recommended a process that would allow for periodic review of criteria and posed the question as to whether or not age specific criteria would be included within that process. The TAG also discussed and agreed to recommend that developing age-specific criteria is necessary for chemicals or groups of chemicals that have been documented as developmental toxicants. Also, the MDEQ should be able to protect against chemicals that have the worst effects, as is allowed in the current rule language that gives MDEQ the ability to regulate developmental toxicants.

After discussion, the TAG developed the following recommendations:

Recommendation: The MDEQ should follow EPA guidance for identifying age bins and develop a process for adding specific criteria for chemicals that have a developmental effect. The source of the age bins should be either the EPA RSL or the 2011 exposure handbook.

Recommendation: The MDEQ should maintain language in the rules that allows MDEQ to regulate developmental toxicants to protect people from these substances.

Question # 2: *Should the age-dependent adjustment factors (ADAFs) recommended by the EPA be used to address early life exposure from mutagenic carcinogens?*

The TAG briefly discussed Question 2 identified in the White Paper and concluded that the discussion during the previous meeting sufficiently addressed the question. Age-dependent adjustment factors recommended by the EPA should be used to address early life exposure from mutagenic carcinogens.

Question # 3: *What is the most appropriate nonresidential scenario for workers that is indoor, outdoor, or a combination of both?*

The TAG briefly reviewed MDEQ's current process for establishing non-residential screening levels. The current non-residential receptor is based on an outdoor worker that assumes an ingestion rate of 100 mg of soil per day. Indoor workers are assumed to have an ingestion rate of 50 mg of soil per day. The dermal exposure frequency discounts frozen days to account for Michigan winters.

TAG members discussed why the nonresidential generic criteria are based on an outdoor worker. It was noted that, prior to the 2010 amendments to Part 201, there were four commercial receptor (i.e., worker) subcategories. These were Commercial I (equivalent to the residential criteria), Commercial II (equivalent to the industrial worker criteria), Commercial III (a worker performing low soil-intensive activities, such as a warehouse operator or someone who works in a plant nursery), and Commercial IV (a worker performing high soil-intensive activities, such as a gardener or groundskeeper). As part of the amendments, the subcategories were combined into a single category to decrease the complexity of the program. At that time, an outdoor worker level (similar to the previous industrial subcategory) was used because it was more protective than an indoor worker, which assumes no outside dirt exposure.

A TAG member suggested that a relatively small proportion of workers are represented by the composite cohort and that a distinction could be drawn in the criteria between indoor and outdoor workers. The member also suggested that the generic criteria should be based on indoor workers because the majority of people work inside.

The TAG discussed due care obligations for sites not meeting residential criteria. It was noted that owners/operators are responsible for maintaining the site and must account for foreseeable acts (e.g., trespass). A site can reach closure by affecting either the contaminant levels or the exposure pathway. The group discussed compliance and enforcement related to due care sites. For those entities with due care obligations, MDEQ stated that they do not provide site-specific oversight or documentation of due care obligations. MDEQ does not document for all sites if due care obligations are being implemented properly. Without documentation, it is impossible to know how many sites are not compliant with due care requirements; however, many at MDEQ think that there is a significant level of non-compliance. Recently, MDEQ has started to provide educational outreach to entities with due care obligations because they do not know if these entities are aware of their legal obligations. MDEQ stated that larger entities seem to be most likely to understand and implement due care obligations. A TAG member stated that, as currently implemented, due care obligations do not appear to be equivalent to institutional controls.

An estimate was provided that there may be 9,700 Part 201 sites and 7,000 Part 213 sites in the state. The MDEQ has approximately 130 field staff that are not able to visit all sites to ensure compliance. It was

suggested that the TAG could develop a recommendation that focuses on increasing awareness among due care site owners/operators regarding compliance requirements (e.g., DEQ outreach/information sharing). It was noted that owner awareness generally increases during property transactions and when baseline environmental assessments (BEAs) are prepared.

The group discussed restrictive covenants and site-specific criteria. Under the current scenario, cleanup criteria are based on outdoor workers. A couple TAG members suggested that site-specific criteria could be developed that would allow for a higher level (e.g., indoor worker) if assurances could be provided that the site would be maintained appropriately. These assurances could include a due care plan if the implementation of the plan was inspected by MDEQ to ensure proper implementation and ongoing maintenance of the due care plan or a restrictive covenant (e.g., paving the affected area of the subject property).

A TAG member suggested that generic criteria should be established using the outdoor levels for all workers because while many employees may work indoors, the more protective approach should be used in instances of uncertainty.

To help facilitate a more informed discussion, the group agreed to review the former criteria levels that were in place before the 2010 amendments to Part 201. The former criteria included the four commercial subcategories mentioned above.

Additionally, the group agreed that it would be useful to review labor data that indicates employment proportions for indoor, outdoor, and composite workers.

The group noted that there were three primary alternatives for their consideration:

1. Set default criteria at outdoor worker with caveats based on DEQ's current approach
2. Set default criteria based on indoor worker with caveats based on DEQ's current approach
3. Develop two sets of specific criteria: one set for indoor workers and one for outdoor workers

A TAG member suggested that each member could provide their individual recommendations regarding exposure factor variables, which the TAG could review at its next meeting. This exercise would help facilitate discussion by better identifying specific areas where there may already be consensus and areas where additional discussion may be necessary. The TAG agreed that this approach would be useful.

Next Steps

- TAG 2 suggested that TAG 1 should provide input on a potential process to evaluate all exposure assumptions—including age bins—on a periodic basis.
- Donal will provide TAG members with labor data that identifies the employment levels by employee type (e.g. indoor, outdoor, or composite).
- Christine Flaga will provide a copy of the pre-2010 amendment tables that included commercial subcategories to show different, direct-soil contact criteria for each worker type.
- PSC will circulate tables for each member to provide their individual recommendation regarding exposure factor variables. TAG members should be aware of sources and able to provide them if requested.
 - July 24: Provide individual responses to PSC
 - July 28: PSC will compile the results and circulate back to TAG members
- The fifth TAG meeting was scheduled for Friday, August 8, from 8:00 am to noon.
- TAG members tentatively scheduled a sixth TAG meeting on Tuesday, August 26, from 9:00 am to noon, if necessary.