



Michigan's Collaborative Stakeholder Initiative

MICHIGAN STATE
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EXTENSION

Reinventing the State's Cleanup and Redevelopment Program



Final Report and Recommendations
March 14, 2012

Prepared for
Dan Wyant, Director
Michigan Department of Environmental Quality
Lansing, Michigan

Prepared by
The CSI Coordinating Committee
with assistance of participants and MDEQ
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MICHIGAN'S COLLABORATIVE STAKEHOLDER INITIATIVE

March 14, 2012

Dan Wyant, Director
Michigan Department of Environmental Quality
P.O. Box 30473
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Dear Director Wyant:

We are pleased to transmit this report as the culmination of Michigan's Collaborative Stakeholder Initiative (CSI). This initiative was a focused and expedited effort to catalyze the governance transformation needed to align the State's cleanup and redevelopment program with Governor Snyder's goals. The goals set for this initiative were:

- Foster an improved climate of trust, cultural understanding and cooperation among stakeholders and state agency staff.
- Set the stage for swift and durable implementation of seven key issue groupings that affect progress in Michigan's cleanup and redevelopment program.

Consistent with Governor Snyder's vision, this initiative has been innovative, collaborative and swift, beginning with Michigan Department of Environmental Quality's Partnership with Michigan State University Extension and external consultants. We strived for "relentless positive action."

During the previous eight weeks, and with the closing session on March 15, 2012, we planned and facilitated the State's achievement of the two goals. The attached report summarizes the methods employed and the recommendations that emerged from the collaborative initiative.

The sheer number of people interested in the initiative or who committed their time to this expedited process speaks to the caliber of Michigan's work force and their interest in Michigan. The amount of consensus built through this process speaks to the MDEQ's and the external stakeholder's willingness to work together for a common goal for the benefit of Michigan. They worked to "get it right," "get it done," and "move forward for Michigan."

The Coordinating Committee thanks you for the opportunity to assist the department in the CSI process. We sincerely hope that the recommendations offered in this report will enable the department to continually improve and protect public health and the environment while building effective partnerships in your drive to reinvent and revitalize Michigan.

Sincerely,

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I. Executive Summary

Overview

In November 2011, the Michigan Department of Environmental Quality (MDEQ) with the support of Governor Snyder and key stakeholders convened the *Collaborative Stakeholders Initiative (CSI)*. CSI is a core element of an overall collaborative governance transformation being undertaken by the State of Michigan, its regulatory agencies and its stakeholders to address long-standing issues associated with Michigan's clean-up and redevelopment programs.

Two specific goals were set for this initiative:

Goal One: Foster an improved climate of trust, cultural understanding and cooperation among stakeholders and MDEQ staff.

Goal Two: Set the stage for swift and durable implementation through the development of recommendations to the MDEQ that address seven key issue groupings facing Michigan's Part 201 and 213 programs.

The overall approach being applied to the MDEQ cleanup and redevelopment program transformation is derived from an eight step model developed by John Kotter.¹ CSI was conceived and conducted as an initiating "spark" to expedite the cleanup and redevelopment program transformation. This "sparkling" phase of the transformation was condensed by design. All CSI-related deliberations and reporting occurred between February 3rd and March 15th, 2012 and were branded as "2-7-3" (two goals, seven issues, and three sessions) to highlight the accelerated activity and focused process.

The issues addressed through CSI were identified from the findings of previous stakeholder processes as program areas that may likely be impeding program progress and creating unnecessary utilization of scarce resources. The process was also designed to address thirteen recommendations of the Office of Regulatory Reinvention (ORR), Environmental Advisory Rules Committee. The seven Issue Groups that were established and convened are:

- A. Brownfield Redevelopment
- B. Cleanup Criteria
- C. Due Care Obligations
- D. Free Product /Source Removal/ Csat
- E. Groundwater Surface Water Interface
- F. Part 201 Rules
- G. Vapor Intrusion

Participants in the Issue Groups included both MDEQ staff and external practitioners with expertise and experience relevant to the issue. (See Appendix for a full participant list.)

¹ Kotter, J.P. "Leading Change - Why Transformation Efforts Fail." *Harvard Business Review* 73 (1995): 59-67. Print.

To facilitate the groups' complex deliberations and increase the likelihood of actionable and durable results, the MDEQ developed a Coordinating Committee in collaboration with Michigan State University Extension as well as external independent consultants. The Coordinating Committee was responsible for designing and guiding the CSI format and facilitating the engagement strategies for all CSI activities. The design of the three CSI working sessions was guided by principles of collaborative stakeholder discourse, appreciative inquiry, and use of neutral external facilitation. These principles included:

- Focusing on creating a hospitable space
- Exploring questions that matter
- Encouraging every one's contribution
- Connecting diverse people and ideas
- Listening together for insights, patterns and deeper questions
- Making knowledge visible

During their deliberations, issue group participants were encouraged to be collaborative, creative and innovative in developing actionable recommendations that:

- Demonstrate best professional judgment and practices in decision-making
- Recognize verifiable data and research
- Take into account trade-offs by considering relative risk, focusing on the most significant risks and most beneficial issues (e.g. "What Matters")
- Seek adaptable and durable program changes
- Use performance-based (e.g. outcome based) approaches where applicable.

This process was strengthened by the diversity of the individual participants. Participants were challenged to take advantage of this opportunity to: "get it right", "get it done", and play a significant role in leveraging Michigan's assets for its future.

Recommendation Summaries

The complete recommendations are located under section **III Recommendations**. The following summaries represent key highlights of the recommendations according to the CSI goals. The actual recommendations should be reviewed to obtain the complete analysis and detailed recommendations.

Goal One - Governance

It is evident from comments about the process and from the Issue Group recommendations that MDEQ staff and stakeholders agree that *a collaborative decision making process will be imperative to achieve the mutual goals of stakeholders and MDEQ - cleanup the environment and redevelop brownfield sites in Michigan.*

Goal Two - Issue Groups

Over 90 recommendations were compiled by the Issue Groups.² Many of the recommendations call for the *adoption of a more risk-based strategy of decision making and streamlining of the regulatory processes.* The *alignment of various statutory, rule and guidance documents* was also recommended along with *statutory changes to improve program performance consistent with program goals.*

The highlights of the individual Issue Group recommendations follow. The Issue Groups are listed in alphabetical order.

A. Brownfield Redevelopment

Work Group Issue Statement: *Various tools are available to facilitate brownfield redevelopment , including Act 381, state and federal brownfield redevelopment grants and loans, and private investment. Ultimately, the process must become more efficient and simplified. New funding mechanisms should be considered, and the effective date for using TIF (tax increment financing) financing under Act 381 must be extended past January 1, 2013.*

Recommendation: *The requirements for both Act 381 and non-Act 381 programs must be critically evaluated for improvement and program sustainability. Projects should be evaluated using objective measures through a streamlined decision-making process. The list of eligible activities under Act 381 should be evaluated for expansion. There should also be increased flexibility and decision-making options for local units of government. This will foster better public / private partnerships to facilitate effective property development within the State of Michigan.*

Implementation: *Eliminate the sunset provision in Act 381. Add reporting requirements that evaluate the program on an annual basis. Evaluate and modify eligible activities in Act 381: Streamline process at state and local level: Define/clarify roles and responsibilities of the various parties involved in projects.*

² Some of the Issue Group Recommendations may differ in organization or sequence of the executive summary listing. Only the highlights identified by the Issue Groups are included here. Many of the recommendations contain other suggestions.

B. Cleanup Criteria

Work Group Issue Statement: *The Issue Group agreed to evaluate the existing proposed redrafts of the Part 7 Rules, specifically changes to the exposure pathways and cleanup methodology from the perspective of additional stakeholders. The draft proposals present significant revisions to the current cleanup criteria algorithms and include but are not limited to the following proposals: combine two current exposure pathways; add an exposure pathway to the drinking water pathway; update and revise various generic exposure assumptions.*

Issue 1. *Use of MIOSHA workplace standards as the starting point for non-residential vapor intrusion (VI) criteria. (ORR Recommendation R-9)*

Recommendations: *A phased action plan to gather additional information to address the associated legal question of the scope of MIOSHA Standards applying to the workplace population and relevance or equivalence of the MIOSHA criteria to Part 201 non-residential exposures protectiveness standards.*

Implementation: *A detailed action plan is contained in recommendations.*

Issue 2. *Use of Age Dependant Adjustment Factors (ADAF) for specified mutagenic carcinogens unidentified by U.S. EPA. (ORR Recommendation R-3)*

Recommendation: *Adopt the ADAF; it uses best available Information.*

Implementation: *Propose amendments to the Part 7 Rules.*

Issue 3: *Propose Child Receptor for Residential Exposure to non-carcinogens.*

Recommendation: *Identify the child as the receptor for generic residential land use. Incorporate exposure assumptions for ages 0-2 and 2-6 year old in the algorithms for calculating cleanup criteria.*

Implementation: *The U.S. EPA white paper on RfD (Reference Dose) and Reference Concentration (RfC) process must be evaluated, as well as other pertinent information.*

Issue 4: *Promulgate the algorithms for generic cleanup criteria as administrative rules, but adopt the chemical specific data used in those algorithms to generate the generic cleanup criteria and the cleanup criteria themselves through a notice-and-comment process without formal rule making.*

Recommendation: *1) After updating the generic cleanup criteria as required by MCL 324.20120a(18), MDEQ to develop an ongoing schedule for updating cleanup criteria so that they do not all require updating at the same time; and 2) Algorithms remain in the administrative rules.*

Implementation: *Additional, and broadened, stakeholder discussion on the pros and cons for adopting the chemical specific data used to generate cleanup criteria and the criteria themselves without rule making. Look to other means such as the use of the Administrative Procedures Act.*

Issue 5: *Whether soil direct contact and soil protective of ambient air should be combined for prospective application.*

Recommendation: *No consensus was reached.*

Implementation: *Seek a policy determination based on group's findings. If this policy is pursued, then additional recommendations are provided.*

C. Due Care

Work Group Issue Statement: *As a key foundation component of the Part 201 program, the concept of due care must be clearly defined and understood and support the efficacy of the Part 201 program. As an essential element of both Part 201 and bona fide purchaser protection under CERCLA, due care must be understood and implemented consistently between the regulated community and the MDEQ. Inconsistent understanding of the statutory and rule-based due care provisions appear to be widespread, resulting in inconsistent and often ineffective implementation of the obligations of due care under Part 201.*

Issue 1: *Site-Specific Criteria*

Recommendation: *Encourage the use of site-specific criteria for implementation of due care without MDEQ approval.*

Implementation: *Amend MCL 324.20107a(2): per the recommended language to allow the use of site-specific language without MDEQ approval.*

Issue 2: *Exacerbation Exemption for State and Local Units of Government*

Recommendation: *Provide consistent standards for environmental protection by eliminating the due care exacerbation exemption for State and Local Units of Government.*

Implementation: *Amend MCL 324.20107a(5) to eliminate the due care exacerbation exemption for State and Local Units of Government.*

Issue 3: *Additional Changes to MCL 324.20107a(5) relating to Due Care Obligations for State and Local Units of Government*

Recommendation 1: *Provide equitable benefit to the public by exercising due care for voluntarily acquired property.*

Implementation: *Eliminate the partial exemption from due care obligations under MCL 324.20107a(5) for state and local units of government that complete and submit a BEA.*

Recommendation 2: *Provide MDEQ with increased knowledge of facilities. This will help MDEQ to inventory facilities, in accordance with Section 20112a(1), prioritize funding of orphan sites, and, is consistent with the disclosure of facility conditions to the MDEQ in connection with tax foreclosure laws (MCL 211.78g.) In addition, this would provide the MDEQ with information that could mitigate public health risk.*

Implementation: Amend MCL 324.20107a(5) to condition the partial exemptions for state and local units of government from the obligations under MCL 324.20107a1(b) and (c) at a facility acquired pursuant to MCL 324.20126(3)(a) on providing notice to the MDEQ.

Recommendation 3: Provide equitable benefit to the public by requiring state and local unit of government to exercise due care for voluntarily acquired property.

Implementation: Amend MCL 324.20107a(5) to eliminate the partial due care exemption for the state and local units of government for property voluntarily acquired prior to June 5, 1995.

Issue 4: Eliminate Migration Exemption – Apply Due Care Equitably

Recommendation: Provide that due care obligations would apply to facilities created by migration of hazardous substances from offsite sources.

Implementation: Amend MCL 324.20107a(5) to delete the reference to MCL 324.20126(4)(c).

Issue #5: Due-Care Plans Submitted as Response-Activity Plans for SBA Loans (ORR Recommendation R-13)

Recommendation 1: The MDEQ should review and provide a response under Section 20114b for Due Care plans submitted in support of an SBA loan within 45 calendar days. The Department should strive to provide the same response time for Due Care plans submitted in support of all transactions, effective no later than January 1, 2013. The MDEQ should offer expanded education and outreach regarding the suggested content and required measurements of a Due Care plan.

Implementation: Support ORR Recommendation R-13: Part 201.

Issue 6: Soil Relocation (ORR Recommendation R-10)

Recommendation: (Non-consensus item) Permit a person to relocate contaminated soil within the boundaries of property and adjacent property owned by that person, including areas not similarly contaminated, provided that the person complies with due care obligations under MCL 324.20107a.

Implementation:

1. Amend MCL 324.20120c
 2. Amend Part 115 rule 110 (I) to be consistent with this recommendation, and not require permitting under Part 115.
 3. Repeal portions of Rule 542 under Part 201 that are inconsistent with the above recommendation.
-

Issue 7: Due Care Rules re: Soil Relocation

Recommendation: Non-consensus item

Specific Action to Implement: Repeal Rule 1013(1)(b) (Soil Erosion Issue)

Issue 8: *MDEQ Outreach materials*

Recommendation: *Require that MDEQ Due Care materials (implementation requirements and recommendations) (Education and Outreach materials) be reviewed by stakeholders prior to publication.*

Specific action: *Develop governance and/or policy*

Issue 9: *Review CSI draft recommendations*

Recommendation: *All issue groups should have interaction and opportunity to review and comment upon the draft final recommendations.*

Issue 10: *Implementing CSI recommendations*

Recommendation: *Support ongoing involvement of CSI participants during implementation of recommendations.*

D. Free Product / Source Removal / Csat

Work Group Issue Statement: *The group agreed to develop a risk-based decision approach to non-aqueous phase liquid (NAPL) corrective actions that focused on expected outcome and likely final remedy.*

Recommendation 1: *Govern all program decisions based on risk assessment and risk management principles. Structure decision process to distinguish relevant site components; focus on outcome and remedy selection. Non-risk factors may be considered in outcome/remedy selection if they result in a net environmental or societal benefit.*

Implementation: *Develop guidance outlining the decision making process relying on best practices such as ASTM and ITRC guidance. Follow up with rules.*

Recommendation 2: *Require decisions be based on adequate conceptual site model (CSM) relying on best practices.*

Implementation: *Develop policy/guidance with stakeholder input to implement the CSM process as soon as possible. Follow up with rules.*

Recommendation 3: *Allow alternative corrective action responses when generic criteria are not reliable due to site conditions.*

Implementation: *1) Issue policy that diverts reliance on Csat and similar factors in favor of the recommended process. Follow up with rules. 2) Pursue guidance on NAPL impacted site specific analysis and clarify toxicological assumptions for generic criteria.*

Recommendation 4: *Define source and describe source control requirements (see detailed recommendations). (ORR Recommendation R-11).*

Implementation: *Amend Part 201 and adopt/amend Part 201 administrative rules to define appropriate source control through both new definitions and appropriate source control measures.*

Recommendation 5: *Plan and conduct in conjunction with ITRC and environmental professional organizations a required NAPL and CSM training program for all lead MDEQ Staff and Michigan environmental professionals. Require training certification as a condition of preparing a CSM for the MDEQ. Establish a stakeholder steering committee to guide/plan training programs.*

Implementation: *Issue a policy establishing routine collaborative stakeholder supported technical training and conduct NAPL training in the next six months.*

Recommendation 6: *Define key terms. (See recommendations for proposed definitions.)*

Implementation: *Request that the proposed definitions in Senate Bill 531 (Part 213 amendments) be modified and amend Part 201 to reflect these recommendations.*

Recommendation 7: *Define the conditions for NAPL no further action (See recommendations).*

Implementation: *Issue policy establishing process for evaluating and determining when NAPL corrective actions will be required and when exceptions will be allowed. Rule changes may be required to implement this process as a legally enforceable procedure.*

Recommendation 8: *Additional work items are recommended for further/ongoing work.*

Implementation: *Support groups are continuing to work on determining a balance between the objectives of removing easily recoverable NAPL and cost benefit considerations when unacceptable risks have been abated. Look at funding of small scale source control for contemporary releases with low interest revolving loan fund. An internal MDEQ NAPL team is suggested to assist with consistent district decision making.*

Recommendation 9: *Csat conditions and exceeding effective solubility (soil) should not be automatic triggers for remediation. There should be some flexibility for evaluating and responding to "free phase" situations.(ORR Recommendation R-6)*

Implementation: *Develop a risk-based decision approach to NAPL corrective actions that focus on expected outcome and likely final remedy. Eliminate reliance on Csat and effective solubility (soil) as triggers of remediation and provide alternatives for evaluating and responding to NAPL conditions. Define source and describe responses to identified sources. Define terms to eliminate the confusion about free phase. Define conditions for no further action for NAPL.*

E. Groundwater Surface Water Interface (GSI):

Work Group Issue Statement: *There remains significant opportunity to develop alternative and new approaches to managing risk from the GSI pathway to improve efficiency, sustainability and movement to closure while protecting the environment. Proposals to address these will be presented by this Committee. (ORR Recommendation R-1)*

Issue 1: Section 20e Groundwater Venting to Surface Water

Recommendation: *Amend statutory language in Section 324.20120e of Part 201 to include more options for addressing storm sewers and using alternative mechanisms for managing the GSI pathway in the cleanup program to facilitate closures while still remaining protective of surface water resources. This recommendation also streamlines the regulatory framework by incorporating pertinent language from Rule 716 into Section 20e to allow for the elimination of Rule 716.*

Implementation: *Adopt new language for Section 20e and Eliminate Rule 716 – see Full recommendations. An action plan is being developed for guidance material.*

Issue 2: Evaluating mercury in groundwater plumes relative to GSI

Recommendation: *Utilize 200 ppt U.S. EPA Method 245.1 quantification level for mercury as an action level.*

The expectation is that if mercury is detected in venting groundwater at levels above 200 ppt then response activities will be necessary.

The group decided that levels below 200 ppt in venting groundwater provide insufficient environmental benefit relative to air deposition sources. Air emissions of Mercury are 4,000 pounds in Michigan in 2011, and all permitted point sources in water equates to 20 pounds of mercury.

Implementation: *Adopt and implement the policy. Publish the policy in the guidance.*

F. Part 201 Rules

Work Group Issue Statement: *Align statute, rules, operational memoranda, guidance, internal processes and department goals with current statute (Part 201) to reduce the real risk to human health and the environment, expedite site cleanup and foster brownfield redevelopment. (ORR Recommendation R-4)* Issue 2: *Where inconsistencies exist between statute and rules, Operational Memoranda, guidance, internal processes and department goals, statutory changes may be recommended.*

Issue 1: Align Rules with Part 201:

Recommendations: *Forty three specific rule rescissions or updates were recommended for the following list of Part 201 Rules. The Group specifically recommended provisions that would promote self-implemented remedies. The Group recommended the use of a No Further Interest (NFI) letter to identify sites that are of minimal risk. The recommendations included statutory provisions to allow for shrinking the "facility" for partial closures. These*

recommendations also build on the use of the Conceptual Site Model and emphasis on risk reduction which is addressed under the Source Control Issue Group:

Part 1-2 Rules
Part 4-5 Rules
Part 7-9 Rules

Implementation: *Specific actions are provided in the Issue Group's recommendations.*

Issue 2: *Align operational memoranda, statutory provisions. The recommendations included statutory provisions to allow for shrinking the "facility" for partial closures.*

Recommendations: *Twelve additional recommendations for statutory, regulatory and operational changes.*

Implementation: *Specific actions are detailed in the Issue Group's Recommendations.*

Issue 3: *The above recommendations suggest the preparation of several promulgated guidance documents. The recommendations are not to be construed as a determination by the group that there are resources within the MDEQ to prepare such guidance documents. The group made no determination in that regard.*

Recommended Follow Up Actions: *Within the recommendations set forth above there are several action items. For clarification, given the large task and the time constraints, this group worked diligently to first evaluate each Part 201 Rule. To a lesser extent, a review was done with respect to the statute. The group generally discussed guidance documents and memoranda. In addition, given the other group assignments, Group 6 did not perform a detailed study of the language in each rule associated with GSI, BEA, Due Care or Soil Movement. We did discuss each of those rules as to whether the rule was necessary, or should the content of the rule be contained within the statute or a guidance document. The group is willing to designate a member or members to continue working on the CSI process, along with representatives from other groups on these recommendations.*

G. Vapor Intrusion (VI):

Work Group Issue Statement: *The Vapor Intrusion Workgroup intends to modify the approach to investigation, evaluation, and selection of a remedy for the VI pathway. The process should be flexible, efficient and produce reliable data gathering and decisions that meet stakeholders' needs. This change should be approached in a manner that protects human health consistent with the best scientific evidence. (ORR Recommendation R-2)*

Issue 1: *Develop vapor intrusion criteria*

Recommendation: *Address ORR R-2 i, ii and iv. Develop internally consistent vapor intrusion criteria considering media type, distance from the source, building use, land use, soil type. "Collapse" (or simplify) criteria if components result in insignificant differences.*

Implementation: *Pursue implementation through rules.*

Issue 2: *Non-residential criteria (MIOSHA)*

Recommendation: *Seek legal opinion on whether MIOSHA/OSHA applies to protection of the worker population in the workplace for chemicals not used in production.*

Implementation: *Recommends implementation action plan and sharing with criteria committee.*

Issue 3: *Change needed to Part 201 rules to support recommendations*

Recommendation: *Modify existing rules.*

Implementation: *Coordinate with Part 201 Rules committee and engage a larger forum of stakeholders than those representing VI.*

Issue 4: *Develop guidance documents for vapor intrusion assessment*

Recommendation: *MDEQ should develop guidance documents for a) a tiered approach to vapor intrusion assessment; and, b) a process for easier implementation and approval of site-specific criteria.*

Implementation: *Draft guidance should be vetted through a continuation of a stakeholder process.*

Issue 5: *Definition of "facility" for all pathways under Part 201 according to key site specific factors.*

Recommendation: *Consensus was not achieved during deliberations.*

Implementation: *Consider the potential to convene a broader stakeholder group including program and departmental specialists from the MDEQ, representatives from the Department of Attorney General, as well a wide variety of stakeholders including lending institutions, small business associations, manufacturing, environmental consultants, realtors, and local units of governments to evaluate the definition of a "facility".*

II. The Collaborative Stakeholder Initiative (CSI)

Background

Michigan holds 20 percent of the world's fresh (surface) water, 19 million acres of forested land, and 10 million acres of farmland. These natural assets are fundamental to Michigan's future. But in 2012, Michigan also holds an inventory of thousands of abandoned land parcels in cities like Detroit and Flint. Conservative estimates indicate there are 40 square miles of abandoned property in Detroit alone. And, both Detroit and Flint have less than half the populations they once held.

Given the state's changing economy, Michigan is at a crossroads and must be more strategic in its resources governance by focusing on its assets *and* the intersection of job creation, affordability, science and sustainability.

Michigan's cleanup and redevelopment program is housed in the Michigan Department of Environmental Quality. It addresses the cleanup and redevelopment of properties where hazardous substances that exceed the cleanup criteria have been released to the environment above acceptable levels.

The primary governing statute for the cleanup and redevelopment program is Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection act, 1994 PA 451 as amended, (NREPA). The Part 201 regulations impact many segments of Michigan's environment and economy including: public health and welfare, land use including the reuse of our numerous abandoned and blighted properties, surface water and groundwater use, fishery and wildlife health, business, banking, and real estate transactions. Part 213 of NREPA regulates the cleanup of releases from underground storage tanks.

In 1995, Part 201 was amended to change the cleanup standards to be more flexible, based on exposure risks; it also modified the liability scheme. Since then, a number of stakeholder processes revealed opportunities for further program enhancement and improved governance:

- 2007: Michigan's Part 201, Environmental Remediation Program Review, Public Sector Consultants;
- 2010: Michigan Department of Environmental Quality (MDEQ) Recommendations, Environmental Advisory Council
- 2010: Transition Report - Setting the Stage for Sustainability, Michigan Department of Natural Resources and Environment (DNRE)
- 2011: Recommendations to Governor Snyder, Office of Regulatory Reinvention (ORR)

There are a number of similar themes in each of these reports:

- The need to reassess and improve regulatory transactions to meet the current and future public interest given changes in Michigan's economy and resources limitations.
- Maximizing return on investment by focusing on those things that matter and reduce or eliminate those regulations that provide little corresponding effort.
- Encourage active and positive interactions and partnerships with the public and those regulated by the MDEQ.
- Focus on "outcomes", measuring progress and success.

These previous stakeholder processes provided many valuable hours of deliberation and documented some of the state's environmental practitioners' best thinking. All previous reports included provisions for increasing stakeholder involvement in the development of MDEQ's rules and guidance; and streamlining and improving upon the regulatory process. Each of the above reports is available on the MDEQ Web site at www.michigan.gov/remediation, along with other staff and participant reports that were shared as part of this collaborative process.

Purpose and Process

Why a Collaborative Governance Initiative?

While previous steps have been taken by MDEQ and others to change elements of the cleanup and redevelopment program, most changes have been incremental and not sufficient to address the scope and urgency of the numerous stakeholder concerns and recommendations. Michigan's Office of Regulatory Reinvention also recently issued its recommendations from the Environmental Advisory Rules Committee, including 16 recommendations for the Remediation program. Given these concerns, in November 2011, the MDEQ partnered with Michigan State University Extension and external consultants to create an expedient collaborative governance process designed to "spark" durable transition in the way the cleanup and redevelopment program makes and implements decisions.

Why CSI

- Urgency – Move Michigan Forward
- Continuity – Discussion to Implementation
- Complexity – Collective Consideration
- Commitment – Collective Stewardship

CSI is the culmination, at a critical time, of the previous collaborative evaluations related to State of Michigan Environmental Programs and programs conducted pursuant to Part 201 and Part 213 of the Natural Resources and Environmental Protection act, 1994 PA 451 as amended (NREPA.) It was undertaken in a few short months to improve the state's delivery of environmental stewardship and reinvent its remediation and brownfield redevelopment programs in support of Governor Rick Snyder's goals to:

- Reinvent our government
- Create more and better jobs
- Restore our cities
- Enhance our national and international image
- Protect our environment
- Solve problems through relentless positive action

Governor Snyder has sought improvement to Michigan's governance including the cleanup and redevelopment program. There is renewed urgency to move this program forward in a swift manner; build on previous initiatives - moving them from discussion to implementation; address the complexity in the decision making through a collaborative process; and remain committed to collective and wise stewardship for Michigan.

The Convener: MDEQ

The MDEQ is responsible for the implementation of Michigan's environmental remediation and brownfield redevelopment programs. As part of MDEQ's efforts to reinvent Michigan, MDEQ's Remediation Division identified several technical issue areas where there were opportunities for program streamlining and improvement; these included ORR recommendations. To effectively evaluate these program areas and develop recommendations for action, Remediation Division conceived of a comprehensive, expedited, collaborative effort with DEQ staff and stakeholders, using professional facilitators to guide the process. This effort, the Collaborative Stakeholders Initiative, was then developed and undertaken in a partnership with MDEQ, MSUE, and a broad representation of stakeholders.

The Participants: Leaders and Legends

Participants in the CSI sessions included **Leaders** and **Legends**. Leaders were those cleanup and redevelopment practitioners assigned to participate in specific Issue Groups. Leaders were charged with deliberating on a number of very complex issues and providing implementation ready recommendations. Legends are composed of State Leadership and opinion leaders who helped steer and support the initiation of the Michigan Collaborative Stakeholder Initiative.

The Coordinating Committee and Facilitators

Professional educators from MSU, facilitators and policy experts were identified and selected to help design a collaborative governance process. This team developed the schedule, secured the identified facilities and designed the process, in collaboration with the Convener to swiftly bring forward implementable recommendations for the enhancements of Michigan's cleanup and redevelopment program.

The names of the Leaders and the facilitators who facilitated the groups are provided with each Issue Group's recommendations. The Leaders and Legends and Coordinating Committee members are listed in section IV Acknowledgements of this report. Together, the Convener, the Leaders, Legends, facilitators and Coordinating Committee were charged with: getting it right; getting it done; and moving the cleanup and redevelopment program forward for Michigan's future.

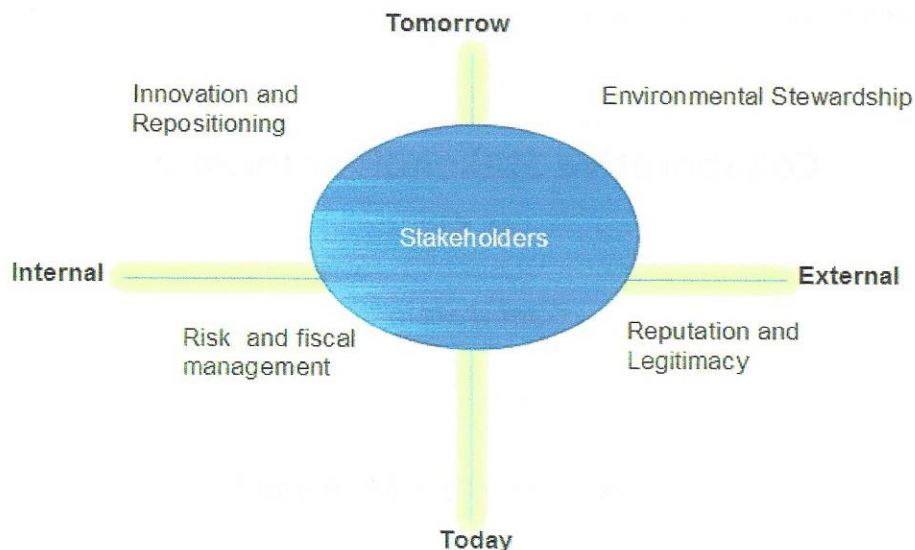
Collaborative Stakeholder Initiative**(CSI)*****"Get it right"******"Get it done"******"Move forward for Michigan"***

The CSI Model

The overall approach being used to transform Michigan's cleanup and redevelopment program follows an eight step model developed by Kotter (1995). The eight steps of Kotter's model include:

1. **Establishing a sense of urgency** - Evaluating realities, crises and opportunities.
2. **Forming a powerful guiding coalition** - Assembling a cohesive and powerful enough team to lead change.
3. **Create the vision** - Create the vision to help direct the change effort along with strategies to achieve the change.
4. **Communicating the vision** - Flooding communication with the new vision by branding and teaching new behaviors and affording the opportunity to master new skills.
5. **Empowering others to act on the vision** - Change systems or structures that undermine the vision. Embrace risk taking and nontraditional ideas.
6. **Plan for and create short term gains** - Demonstrate visible performance gains. Reward employees making those gains.
7. **Consolidate improvements and produce still more change** - Continually reinvigorate the process with furthering employee development and reinvigorate the process with new projects, themes and change agents.
8. **Institutionalizing new approaches** - Articulate the connections between the new behaviors and program. Develop leadership, inoculate widely and plan for the future.

CSI GOVERNANCE MODEL



In addition to the work of Kotter, the Coordinating Committee also considered the work of Hart, Milstein and Caggiano.³ The governance diagram shown above is based on their research. Successful organizations balance the four quadrants - relying upon social or stakeholder capital - both internal and external; and, balancing the needs of today with tomorrow. It is a collaborative model reaching outside the normal decision making course and seeks new knowledge from other sources as well as applying new knowledge in creative ways.

The CSI design was also informed by principles of appreciative inquiry principles and a participatory governance framework recommended by the National Academy of Sciences. The method, "Deliberation with Analysis," is a dialogue-based model that recognizes the importance of both scientific analysis and personal value systems in advancing solutions for public problems. Those with a stake in a public health or environmental problem gather in small groups to analyze scientific information and weigh the benefits and trade-offs of various approaches to improving the problem. The goal is collective decision-making that is informed as much as possible by both relevant data and understanding of, and respect for, what's at stake for those close to the issue.

"2-7-3"

Informed by these models and methods, the Coordinating Committee designed an integrated collaborative approach summarized as "2-7-3" - two goals, seven issues, in three sessions.

Two goals:

1. *Foster an improved climate of trust, cultural understanding and cooperation among stakeholders and state agency staff.*

Research has shown that interpersonal trust is built by the perceived legitimacy and fairness of the negotiation process - more so than any historic track record of producing mutual agreeable policy.⁴ Regardless of technical issue resolution, for CSI to be successful, trust needed to be developed among the stakeholders and MDEQ staff.

2. *Set the stage for swift and durable implementation that addresses seven key issue groupings that affect progress in Michigan's cleanup and redevelopment program.*

While all problems are important, resource limitations and the complexity of some issues dictated that only a handful of regulatory issues could be tackled in Issue Groups created for this expedited process.

Seven issues:

- A. Brownfield Redevelopment
- B. Cleanup Criteria
- C. Due Care Obligations
- D. Free Product /Source Removal/Csat
- E. Groundwater Surface Water Interface
- F. Vapor Intrusion
- G. Part 201 Rules

³ S.L. Hart, M.B. Milstein, and J. Caggiano, "Creating Sustainable Value: Executive Commentary," *The Academy of Management Executive*, 17(2): 56-69.

⁴ Leach and Sabatier To Trust an Adversary: Integrating Rational and Psychological Models of Collaborative Policymaking, *The American Political Science Review*, Vol. 99, No. 4 (Nov., 2005), pp. 491-503 Published by: [American Political Science Association](http://www.apsa.org/) Article Stable URL: <http://www.jstor.org/stable/30038960>

Three sessions:

First Session: February 3, 2012, Plenary Session, Kellogg Conference Center, Michigan State University (MSU).

At the opening plenary session, speakers set the stage for deliberations by highlighting the two guiding goals of the Initiative. Dan Wyant, MDEQ Director, and Bill Rustem, Director of Strategy to Governor Snyder, both spoke about the need to move Michigan forward into a new era, one where government and industry work together to make Michigan a vibrant, beautiful place to live and work for future generations.

Energy and enthusiasm followed the Leaders and Legends into their first work session together. Group size was small, between 8 and 12 members, with two facilitators per group.

In order to keep the goals of CSI in the forefront of participant's minds, facilitators asked Leaders to reflect their degree of agreement with both goals. Some groups were asked to stand along a wall in the room, with "Completely Agree" to "Completely Disagree" on opposite ends of the wall, other groups used the "fist to five" activity to indicate their opinion of how likely they felt the goals would be accomplished during the process (a fist being no confidence, 5 fingers indicating complete confidence). This step helped the participants and facilitators understand the initial level of trust and optimism of the Leaders.

Next, facilitators guided group members to generate ground rules that would govern their discussion and conduct during the Initiative. Common rules included "Speak Respectfully" and "Expect Unfinished Business." Facilitators also asked the group to decide the level of agreement acceptable to move a recommendation forward. Each group then developed its own "issue statement" that named the key questions and subtopics to be discussed at the retreat. The groups were briefly introduced to the decision criteria that would be used to weigh their decisions against - ensuring that recommendations would meet the stated goals for the program and this initiative. Some groups exchanged contact information and assigned tasks to various participants to complete prior to the retreat.

Second Session: February 15-17, Working Session, MSU Kellogg Biological Station, Hickory Corners, Michigan

A kick-off meeting opened the retreat portion of the CSI. All Leaders, Legends, and the Coordinating Committee gathered to review the goals of the CSI and the structure and process for the Issue Group recommendations. Facilitators conducted a learning activity that demonstrated the need for understanding common interests and in making trade-offs to advance those shared interests. Last, the Coordinating Committee revealed the recommendation template. This template would be each Issue Group's product by the end of the retreat. Included in the template was a checklist of "Decision Criteria" that each recommendation should be weighed against. These criteria utilized: "science," "judgment," "what matters," "will it last" and "success" as the decision categories. A more detailed description of the decision criteria is provided in the section V, Appendices.

Once oriented, each group began their small group deliberations. Facilitators guided discussion and listened for common ground and areas of agreement. As issues were deliberated, the facilitators asked probing questions to check assumptions and attitudes from both stakeholders and MDEQ staff. This was done to encourage full discussion of the trade-offs between different points of view and in most instances helped groups reach

consensus on their recommendation. Within this framework participants were willing to talk respectfully to one another during the retreat deliberations. A "scribe" from each group was designated to type the group's recommendations into a shared, online document. Attempts were made throughout the process to provide immediate access to work products, even during the developmental stage. This had two purposes: transparency and expediting the work product in a collaborative environment.

Leaders recognized that much of their group work would overlap or intersect with other group's topics, and they were wary of overlapping or contradicting other efforts. The shared, online template was one tool used to address this concern. Facilitators also asked participants to write on index cards any topics they wanted a different group to address in their deliberations. These cards were delivered to the relevant Issue Groups for them to address if they saw fit. An intentional effort to address the concerns and need for cross-group sharing of ideas was an evening activity where groups placed their issues on a large "mind map" and drew connections to other groups' issues. This spurred conversation between the groups and set the tone for continued dialogue between issue groups where necessary.

The conclusion of the retreat brought all groups together again to share their recommendations, and to report a plan with a deadline for tying up loose ends. Groups were encouraged to continue to work with each other as needed, but the Convener and the Coordinating Committee stressed that the report needed to reflect the group's deliberations and decisions that occurred during the plenary session and the retreat.

Final Session: March 15, 2012, Closing Plenary and Final Report and Recommendations, Kellogg Conference Center, Michigan State University.

Collaborative Stakeholder Initiative

The Spark "2-7-3"

- ✓ Framing the Issues
- ✓ Getting to a Decision
- ✓ Making the Recommendations
- ✓ Contributing to the Final Report

Continuing the Process

- ✓ Implementing Recommendations
- ✓ Continuing to Move Michigan Forward

The final session of the CSI will summarize this report and its findings.

Keeping with the collaborative approach discussion panels will be used to provide the conclusions and recommendations of the CSI. Opportunity will be provided to ask questions and further explore

solutions within the Plenary Session as well as afterwards in breakout tables in an informal setting on the Michigan State Campus. The intent is to keep the dialog and collaboration going.

The intent of this process was to "spark" the transformation, and provide recommendations to the MDEQ for action. On behalf of the participants of this process we look forward to seeing the recommendations being prioritized by the Convener for action.

III. Recommendations

Goal One: Governance

Previous stakeholder reports recognized a need for new models of decision making to achieve remediation and environmental cleanup goals. CSI Goal One similarly reinforces an outcome of improving the existing governance process. In the course of their deliberation, the Issue Groups considered resolution of their technical/ programmatic issue as well as which department policies, or governance systems, within MDEQ might be changed to achieve the desired outcome.

Due to the short time allowed during this "2-7-3" process, a number of the recommendations call for a *meeting of members from each of the issue groups to address any cross-cutting issue areas needing more clarity and work*. One specific suggested approach calls for convening one representative from each of the issue groups to work through issues that are not in agreement; determine timelines for what gets done first; and to draft a final set of integrated recommendations. A third and frequent recommendation is for *additional and expanded stakeholder processes*. This would allow the inclusion of additional expertise in the development of recommendations.

The majority of the Issue Groups recommended *alternative approaches to reduce real risks to human health and the environment*. Lead by the Rules Group, and observed on other recommendations, there appears to be a shift toward improving upon the programs guiding objectives in the statute, refining key program terms and definitions, clarifying and consolidating requirements in the applicable statutes, and rescinding many unnecessary or conflicting rules. Many recommendations call for *department adoption of a risk-based strategy of decision making - affording more flexibility in program implementation*. MDEQ program guidance would be used to implement the program including tools such as the as conceptual site models. This program guidance, lead by MDEQ, would be established through collaborative processes and implemented with the assistance of more training and outreach programs.

Overall, it is evident from comments about the process (see section V Appendices, Leaders and Legends Feedback), and from the issue group recommendations, that MDEQ staff and stakeholders agree that a collaborative decision making process will be imperative to achieve the mutual goals of stakeholders and MDEQ - cleanup the environment and redevelop brownfield sites in Michigan.

Goal Two: Issue Groupings

These recommendations are provided by the Issue Groups. Each issue Group was provided with a broad issue statement compiled from information provided by the state (MDEQ and ORR recommendations), and a template to help guide the format and deliberations of the Issue Groups. Each Issue Group was able to refine their Issue Statement within their Issue Group. It should be noted that the scope of each Issue Group was not necessarily similar therefore some of the recommendations did not lend themselves to strict adherence to the template. We asked that each group provide a summary of their Issue Specific rules on decision making or proxy. Many of the groups chose full consensus in the development of their recommendations.

A. Brownfield Redevelopment

Issue Statement

Various tools are available to facilitate brownfield redevelopment, including Act 381, state and federal brownfield redevelopment grants and loans, and private investment. Ultimately, the process must become more efficient and simplified. New funding mechanisms should be considered, and the effective date for using TIF financing under Act 381 must be extended past January 1, 2013.

The requirements for both Act 381 and non-Act 381 programs must be critically evaluated for improvement and program sustainability. Projects should be evaluated using objective measures through a streamlined decision-making process. The list of eligible activities under Act 381 should be evaluated for expansion. There should also be increased flexibility and decision-making options for local units of government. This will foster better public / private partnerships to facilitate effective property development within the State of Michigan.

Our consensus process:

The Brownfield Workgroup gained 100% consensus on suggestions recommended. There was a strong effort to continue to work on a recommendation until there was consensus on the language of the recommendation. If we were unable to reach a consensus on the language, then that recommendation was not included in the list below. Our group did spend considerable time following the guideposts in regards to all the recommendations below.

Our workgroup included state and local government, brownfield authority experts, legal and environmental practitioners and many, many years of brownfield redevelopment expertise. The group exhibited best professional judgment and use our experience when making recommendations. A risk analysis was completed for each recommendation during discussions and we weighed the tradeoffs and options for each recommendation. Our overall theme was to make the program better and more efficient, so we utilized that concept to ensure our approach was durable and efficient.

A further discussion on specific metrics will occur at our March 8 meeting, but the desire to have additional metrics and measurements of success was shared by all group members.

Proxy:

The Brownfield Workgroup reviewed these recommendations as they were typed in and signed off on them at the CSI meeting. A copy of this document has been circulated amongst the group. Any changes will be communicated.

Recommendations:

- 1) Eliminate the sunset provision in Act 381. Add reporting requirements that evaluate the program on an annual basis.*
- 2) Evaluate and modify eligible activities in Act 381*
 - a. Add to the definition for "Additional response activities" to include contaminated sediment transportation and disposal. Or, the preferred route is to have MDEQ establish cleanup criteria for sediment.*

- b. *Add to the definition for “infrastructure” to include “multi-level” and “underground” parking structures, whether private or public. It is the expectation that the MEGA/MEDC will create policies to provide guidance.*
 - c. *Add urban stormwater management systems to list of eligible activities, whether public or private. It is the expectation that the MEGA/MEDC will create policies to provide guidance.*
 - d. *Add a new category for limited eligible activities to achieve energy efficiency and sustainability, whether public or private. It is the expectation that the MEGA/MEDC will create policies to provide guidance.*
 - e. *Evaluate the merits of the list of “qualified local governmental units” for MEGA eligible activities.*
- 3) *Streamline process at state and local level.*
- a. *Eliminate statutory requirement for 2 public notices in a newspaper and defer to local process.*
 - b. *If legally permissible, allow the qualified local governmental unit to designate itself as the BRA; or the qualified local governmental unit can delegate the approval of the brownfield plan to the BRA.*
 - c. *For preliminary assessment activities (investigation, BEA, preparing due care plan, etc), allow approval of both local and state tax increment revenues by qualified local governmental unit for expenses incurred prior to the approval of the brownfield plan.*
 - d. *Allow MDEQ to retroactively approve state TIF for the costs associated with emergency removal activities. Require consultation with MDEQ prior to undertaking activities.*
 - e. *Allow qualified local governmental unit to approve local tax increment revenues for reimbursement of any eligible costs incurred prior to the approval of a Brownfield Plan.*
 - f. *Delegate MEGA work plan approval to the Chair of MEGA, or designee for projects with total MEGA eligible activities of \$500,000 or less, including interest.*
 - g. *Allow MEGA to approve state TIF for reimbursement of any reasonable MEGA costs incurred prior to Brownfield plan approval. It is the expectation that guidance will be provided so that it is clear that there is no expectation that MEGA is obligated to approve these costs.*
 - h. *Consider incentive (e.g. increase admin fee) for regionalized BRA management/administration.*
- 4) *Define/clarify roles and responsibilities.*
- a. *Require developer to provide annual report to the qualified local governmental unit each year that the project receives reimbursement.*
 - i. *Allow the qualified local governmental unit the discretion to terminate reporting requirements earlier.*
 - ii. *Reports to include data for metrics (TBD).*
 - iii. *Templates to be established by MEDC/MDEQ in consultation with LUGs/ABRA.*
 - b. *Treasury - Move reporting due date from qualified local governmental unit to Treasury from March to year end.*
 - i. *Copies of reports to be provided to MEDC/MDEQ.*
 - ii. *Provide resources for monitoring by Treasury.*
 - iii. *Consolidate state reporting to Tax Commission and legislature.*
 - c. *State assistance – consider adopting consultancy approach to facilitate redevelopment projects at the state level.*

- i. *Strive for seamless inter-departmental approach.*
 - ii. *Association of Brownfield Redevelopment Authorities (ABRA) may provide assistance.*
- d. *Support the creation and development of the ABRA.*
- 5) *Funding redevelopment programs*
 - a. *Where state TIF is approved, 3 mills of the SET are captured to fund brownfield projects under State Brownfield Redevelopment Fund. This would continue for the duration of state TIF capture.*
 - b. *Eliminate requirement for separate accounting and handling of state TIF fund (i.e. act 381 work plans and separate accounting) for LSRRF.*
 - c. *Allow LSRRF to capture MEGA state and local up to 5 years in the same manner as MDEQ. The captured amount goes to the state brownfield redevelopment fund, and if approved by the state as part of an Act 381 work plan, 50% goes to the LSRRF.*
 - d. *Shift portion of the MDEQ loan funds to grants.*
 - e. *Eliminate full faith and credit requirement under MDEQ loans.*

Brownfield Redevelopment

Peter Anastor, Michigan Economic Development Corporation

John Byl, National Brownfield Association – Michigan Chapter/Warner Norcross & Judd

Jean Derenzy, Grand Traverse County Brownfield Redevelopment Authority (BRA)

Marc Hatton ABRA/ City of Kalamazoo

Anne Jamieson AKT Peerless

Jim Mills, Department of Treasury

Sarah Rainero, Michigan Economic Development Corporation

Jim Tischler, Michigan State Housing Development Authority

Mitch Adelman, Jackson District, MDEQ

Ron Smedley, Brownfield Unit, MDEQ

**MSUE Facilitators: Ann Chastain,
Dave Ivan**



B. Cleanup Criteria

Issue Statement

The charge to the CSI Cleanup Criteria workgroup was to review several MDEQ proposals for changes to the Part 201 cleanup criteria and the Part 7 Rules.

During our initial meeting on February 3rd, the workgroup members were presented with an overview of the MDEQ's proposed redraft of the Part 7 Rules, specifically, changes to the exposure pathways and cleanup criteria methodology. These draft proposals present significant revisions to the current cleanup criteria algorithms and include but are not limited to the following proposals: combine two current exposure pathways; add an exposure pathway to the drinking water pathway; update and revise various generic exposure assumptions.

During the CSI workshops at Kellogg Biological Station, with the limited time available, the workgroup members agreed it would not be possible to thoroughly evaluate all aspects of the proposed criteria changes. We agreed to evaluate the existing proposals from the perspective of additional stakeholders to the MDEQ while working to ensure that group recommendations were supported by sound science, providing recommendations on several of the more significant and far-reaching topics. We were unable to evaluate the more technical proposals such as the revised generic exposure assumptions and revised algorithms but agreed that they must be considered as part of a thorough future rules review and promulgation process.

As part of the preliminary rules development process, the workgroup discussed and rendered opinions on several significant recommendations that have the potential to broadly affect the MDEQ's cleanup criteria and remediation program as well as existing remedial actions.

Issues discussed:

- 1. Proposal to expand the list of hazardous substances relevant to vapor intrusion pathway by adopting a revised Henry's Law Constant (HLC) threshold. The current threshold is a $HLC > 1.0E^{-5}$ and the proposed threshold would be reduced to $HLC > 1.0E^{-7}$ atm-m³/mol.*
- 2. Proposal to adopt the 0-6 year old child as the generic residential receptor for non-carcinogenic hazardous substances.*
- 3. Proposal to apply the Age Dependent Adjustment Factors (ADAF) to criteria for hazardous substances identified by U.S. EPA as mutagenic carcinogens.*
- 4. Proposal to replace the residential Drinking Water Criteria with the residential Tapwater Criteria which will combine ingestion and inhalation exposures. Incorporation of dermal exposure is also being considered.*
- 5. Proposal to combine soil incidental ingestion and dermal contact exposures (the existing Soil Direct Contact Criteria) with the inhalation of volatile and particulate contaminants from soil (the existing Volatilization or Particulate Soil Inhalation Criteria to ambient air).*
- 6. Proposal to promulgate the algorithms for generic cleanup criteria as administrative rules, but adopt the chemical-specific data and the calculated generic cleanup criteria through a notice-and-comment process without formal rulemaking.*
- 7. Proposal by the CSI Vapor Intrusion workgroup to use the MIOSHA workplace standards as the starting point for non-residential vapor intrusion criteria.*

Issue for Implementation: *Whether to adopt a new threshold for the Henry's Law Constant (HLC) of 1×10^{-7} (changing from 1×10^{-5}) to determine if the vapor intrusion pathway is relevant.*

Recommendation:

The group's current recommendation is to leave the HLC at the current level of 1×10^{-5} and consider inclusion of hazardous substances that have chemical-specific or site-specific data that suggest that they are a concern for the VI pathway.

Specific Action to be taken to implement (check and describe):

| | | | | | | | |
|-----------|--|------|---|--------|---|------------|--|
| Statutory | | Rule | x | Policy | x | Governance | |
|-----------|--|------|---|--------|---|------------|--|

Generic Decision Criteria: To be applied to each recommendation

| | yes | no | Level of agreement | Comments |
|---|-----|----|--------------------|---|
| 1 Applies Best Judgment | x | | | Further study is suggested to evaluate the appropriateness of inclusion of other chemicals. |
| 2 Uses Sound Science | x | | | Further study is suggested to evaluate the appropriateness of inclusion of other chemicals. |
| 3 Considers Relative Risk | x | | | Further study is suggested to evaluate the appropriateness of inclusion of other chemicals. |
| 4 Is Adaptable and Durable | x | | | |
| 5 Includes Measures of Success | | | | n/a |
| 6 Other decision-criteria developed by group: | | x | | |

Supporting arguments:

- Certain Semi Volatile Organic Compounds (SVOCs) whose Henry's Law Constant (HLC) is less than 1×10^{-5} are being picked up in indoor air and soil gas monitoring at certain locations while there are no parallel standards for the initial screening requirements*
- Changing the threshold HLC from 1×10^{-5} to 1×10^{-7} would increase the number of chemicals of concern for the Vapor Intrusion (VI) pathway by at least 75 additional chemicals without sufficient documentation that they indeed would pose a vapor intrusion issue. Better documentation is required to evaluate whether the additional screening and analytical burden is justified.*
- The vapor intrusion pathway is relevant for those hazardous substances whose HLC is greater (more volatile) than 1×10^{-5} ; no good model exists for predicting indoor air pathway based on soil levels for SVOCs*
- Further evaluation is suggested in order to evaluate extent to which SVOCs should be captured for indoor air evaluation due to vapor intrusion.*

Issue for Implementation: *Proposed Child Receptor for Residential Exposures to non-carcinogens.*

Recommendation:

Identify the child as the receptor for generic residential land use. Incorporate exposure assumptions for ages 0-2 and 2-6 year old into the algorithms for calculating cleanup criteria.

Specific Action to be taken to implement (check and describe):

| | | | | | | | |
|-----------|--|------|---|--------|---|------------|--|
| Statutory | | Rule | x | Policy | x | Governance | |
|-----------|--|------|---|--------|---|------------|--|

Generic Decision Criteria: To be applied to each recommendation

| | yes | no | Level of agreement | Comments |
|---|-----|----|---------------------------------|----------|
| 1 Applies Best Judgment | x | | Process would use best judgment | |
| 2 Uses Sound Science | x | | | |
| 3 Considers Relative Risk | x | | | |
| 4 Is Adaptable and Durable | x | | | |
| 5 Includes Measures of Success | | | | n/a |
| 6 Other decision-criteria developed by group: | | | | n/a |

Supporting arguments:

1. *The concern is that the current process is not adequately protective of young children as it assumes a 30 year exposure. The 0-6 year old child is exposed for 6 years. A 6 year exposure is typically considered a subchronic exposure. In the development of their Regional Screening Levels (RSL) for residential use, EPA uses a child receptor and a chronic RfD (reference dose). The Science Advisory Board (SAB) stated that this approach is overly protective for most chemicals. They also stated that the approach may be appropriate for chemicals with chronic RfDs based on toxic endpoints that are specific to children or where the dose-response curve is steep.*

DEQ should consider adjusting the chronic RfD to accurately represent a subchronic exposure for ages 0-6 so as not to be "overly" protective but to be adequately protective. The most appropriate toxicity endpoint for a child receptor must be determined. It must also be determined if the general population – whose exposure is chronic – will be protected when the generic criteria are developed using a child receptor and a subchronic toxicity endpoint. If the RfD is based on developmental effects, then the developmental RfD should be used. If subchronic data or developmental data are not available, a policy to address these chemicals must be developed. One option is consideration of a database gap uncertainty factor.

2. *The EPA whitepaper on the RfD and Reference Concentration (RfC) process must be evaluated. The National Academy of Science (NAS) Science and Decisions Report (2009) must be considered, as well as any other pertinent information.*

Issue for Implementation: *Use of Age Dependent Adjustment Factors (ADAF) for specified mutagenic carcinogens identified by USEPA.*

Recommendation:

Recommend adopting the ADAF as it uses Best Available Information.

Specific Action to be taken to implement (check and describe):

| | | | | | | | |
|-----------|--|------|---|--------|---|------------|--|
| Statutory | | Rule | x | Policy | x | Governance | |
|-----------|--|------|---|--------|---|------------|--|

Proposed rule recommend for adoption for this issue in the Part 7 rules.

Generic Decision Criteria: To be applied to each recommendation

| | yes | no | Level of agreement | Comments |
|---|-----|----|--------------------|----------|
| 1 Applies Best Judgment | X | | Consensus topic | |
| 2 Uses Sound Science | x | | | |
| 3 Considers Relative Risk | x | | | |
| 4 Is Adaptable and Durable | x | | | |
| 5 Includes Measures of Success | | | | n/a |
| 6 Other decision-criteria developed by group: | | | | |

Supporting arguments:

- The ADAF accounts for the greater susceptibility of young children to mutagenic carcinogens by using a multiplier to effectively increase the calculated effect of the exposure.*
- The younger the child, the greater the adjustment factor that is used to take into account the child's greater sensitivity at a younger age. The ADAF gradually decreases with age and after age 16, the factor defaults to 1, same as an adult.*

Issue for Implementation: *Whether existing drinking water pathway should be replaced with a tapwater pathway which also includes inhalation and potentially includes dermal exposure.*

Recommendation:

Further evaluation of the tap water pathway is suggested to determine if inclusion of inhalation in the tapwater pathway is appropriate for VOCs.

Specific Action to be taken to implement (check and describe):

| | | | | | | | |
|-----------|--|------|---|--------|---|------------|--|
| Statutory | | Rule | x | Policy | x | Governance | |
|-----------|--|------|---|--------|---|------------|--|

Generic Decision Criteria: To be applied to each recommendation

| | yes | no | Level of agreement | Comments |
|---|-----|----|--------------------|---|
| 1 Applies Best Judgment | | | | Further evaluation required |
| 2 Uses Sound Science | | | | Further evaluation required |
| 3 Considers Relative Risk | x | | | |
| 4 Is Adaptable and Durable | | | | n/a |
| 5 Includes Measures of Success | | | | n/a |
| 6 Other decision-criteria developed by group: | | x | | To be addressed with further evaluation |

Supporting arguments:

1. *Will drive residential criteria down significantly for certain VOCs. When addressing non MCL compounds it may have a significant effect depending upon the inhalation toxicity endpoint. The inhalation component is being proposed only for residential land use. The non-residential criteria are solely based on ingestion of drinking water and will not change if the tapwater pathway is adopted. EPA refers to tapwater for any household water use that can introduce VOCs into ambient air. Shower vapor exposure modeled to entire indoor air space for exposure evaluation. Test chemicals were very volatile substances.

EPA assumes that 50% of amount of chemical in the water will volatilize (a K factor of 0.5). DEQ research to date indicates that the EPA and some states relied on a single study to incorporate as a generic volatilization factor. Additional existing studies should be considered as part of this review process.*
2. *Default up to the MCL if the criterion is lower than currently existing MCL. If health based limit lower than method detection limit, default is to the MDL.*
3. *Site-specific criteria are time consuming and expensive to develop and then there are significant transactional delays..*

Issue for Implementation: *Pathways: Soil Criteria: Whether soil direct contact and soil protective of ambient air should be combined for prospective application?*

Recommendation:

The group does not have a consensus recommendation for combining the pathways for reasons noted below. From a scientific review process, it may make sense where the adverse health effects are the same across all routes of exposure. The difficulty is with real world implementation of remedial approaches and management of site-related risks. With driving criteria levels lower, this will capture more sites as a Facility and slow the movement of sites through the Part 201 program.

Specific Action to be taken to implement (check and describe):

| | | | | | | | |
|-----------|--|------|---|--------|---|------------|--|
| Statutory | | Rule | x | Policy | x | Governance | |
|-----------|--|------|---|--------|---|------------|--|

Policy determination as to whether the pathways should be combined; if so, then revise the process for developing the criteria and incorporate into the draft rules for stakeholder and public comment. If criteria are revised, then evaluation needed whether numerical criteria or simply procedural rules to recalculate chemical-specific criteria.

Generic Decision Criteria: To be applied to each recommendation

| | Yes | No | Level of agreement | Comments |
|--------------------------|-----|----|--------------------|--|
| 1. Applies Best Judgment | | | No consensus | If combining pathway based on EPA RSL, depends on how the states actually use the combined pathway; can't tell what is driving the reduction in exposure levels (i.e. arsenic) |

| | Yes | No | Level of agreement | Comments |
|--|-----|----|---|--|
| 2. Uses Sound Science | X | | General conceptual | If chemicals effect doesn't vary based on route of exposure, then Yes; if different effect depending on route of exposure, then No; Chemical specific review will be required. |
| 3. Considers Relative Risk | | | | Individual pathways still considers relative risk. DEQ suggests all exposures to be considered together to better represent the real world health effect. Combining will make a huge difference for some substances, i.e. same systemic effect for all exposures, results in a significantly lower number. |
| 4. Is Adaptable and Durable | | | No consensus. Largest barrier to implementation | Feasibility for Implementation; makes it difficult to determine how to manage risk without additional information. Concern about combining pathways limiting remedial options or they are less apparent. |
| 5. Includes Measures of Success | | | | |
| 6. Other decision-criteria developed by group: | | | | |

Pro: Following the EPA Regional Screening Level (RSL) process is one way to partially address cumulative risk. Adoption may result in better protection of public health. The concept is generally consistent with other Region V states.

Con: Don't presently know how the other states actually implement combined pathways or criteria. It may eliminate ability to select cost-effective remedial alternative if exceed criteria, (-v-now, being able to fence instead of cap). Combining pathways may make it more difficult to meet cleanup criteria for Unrestricted Residential Use. Unclear if it will simplify process. Net effect will be to make more sites a Facility

Issue Recommended for Follow Up:

Issue: Need to fully understand the justification for the change. Unclear as to how and why EPA is proposing the combined pathway approach across all chemicals. Is current process no longer adequately protective?

Does same chemical have a different effect depending on the route of exposure? Define characteristics so that only certain chemicals included, i.e. manganese not combined since AQD determined particulate problem not same detrimental effect for ingestion; hex chrome may be appropriate to combine. DEQ to do individual chemical review to look at effects for different routes of exposure to propose chemical inclusion in generic table for combined pathways or individual pathway.

Recommended Follow Up Actions:

Separate study group suggested to evaluate the various drivers that influence the development of criteria. DEQ and outside stakeholder involvement.

Issue for Implementation: *Promulgate the algorithms for generic cleanup criteria as administrative rules, but adopt the chemical-specific data used in those algorithms to generate the generic cleanup criteria and the cleanup criteria themselves through a notice-and-comment process without formal rulemaking.*

Recommendation:

1. *The group recommends that, after updating the generic cleanup criteria as required by MCL 324.20120a(18), MDEQ develop an ongoing schedule for updating cleanup criteria so that they do not all require updating at the same time.*
2. *The group recommends that the algorithms remain in the administrative rules.*
3. *The group does not have a consensus recommendation for adopting the chemical-specific data used to generate cleanup criteria and the criteria themselves without rulemaking. Some of the pros and cons of this approach are documented at the end of this form. The group recommends further discussion of this issue by stakeholders.*

Specific Action to be taken to implement (check and describe):

| | | | | | | | |
|-----------|--|------|---|--------|---|------------|--|
| Statutory | | Rule | X | Policy | X | Governance | |
|-----------|--|------|---|--------|---|------------|--|

Generic Decision Criteria: To be applied to each recommendation

| | Yes | no | Level of agreement | Comments |
|--------------------------------|-----|----|----------------------------|--|
| 1 Applies Best Judgment | | | No consensus at this time. | Both the question of scheduling criteria updates and maintaining the algorithms in the administrative rules have consensus. The lack of consensus relates to the issue concerning adopting chemical-specific data or cleanup criteria without rulemaking. |
| 2 Uses Sound Science | | | No consensus at this time. | The issue weighs the needs to update generic cleanup criteria when the science changes with the lengthy process state law requires for rulemaking. |
| 3 Considers Relative Risk | X | | | The absence of consensus and recommendation of further discussion reflects the fact that rulemaking is less responsive to changes in science and that generating generic criteria without rulemaking may not be legally enforceable – both approaches have inherent risks and benefits. |
| 4 Is Adaptable and Durable | | | No consensus at this time. | Adaptability (taking data and criteria out of the rules) may be legally inconsistent with durability (making the generic criteria legally enforceable). Part 201 and the Administrative Procedures Act may have to be amended to make generic cleanup criteria generated with unpromulgated data generally applicable and legally enforceable. |
| 5 Includes Measures of Success | | | | Adopting an approach to developing cleanup criteria that is more responsive to changing science but is also consistent with applicable legal requirements to be enforceable will be a sign of success. |

| | Yes | no | Level of agreement | Comments |
|---|-----|----|--------------------|----------|
| 6 Other decision-criteria developed by group: | | | | |

Supporting arguments:

1. *The Department should adopt a schedule for updating the generic criteria, prioritize the hazardous substances for review, use staff resources more efficiently, and schedule the criteria updates in a way that will minimize inconsistency with the current science.*
2. *There is no requirement in the APA that all rules related to a particular subject matter be amended at the same time. Other state agencies and even divisions within MDEQ promulgate administrative rules on a more regular basis than the cleanup criteria have been updated.*

Description and comments:

Currently, generic cleanup criteria are generated by using chemical-specific data and generic assumptions about exposures in algorithms established in administrative rules. The proposal would maintain the algorithms in the administrative rules as well as most of the generic assumptions, but MDEQ would adopt chemical-specific data to use in the algorithms and the cleanup criteria without rulemaking; a different notice-and-comment process would be used to adopt the chemical-specific data to be used in the algorithms and the cleanup criteria.

Pros:

(a) The process for promulgating administrative rules takes roughly 18 months on top of the time needed to evaluate and determine the chemical-specific data used in algorithms to generate the generic cleanup criteria. This makes the generic cleanup criteria less responsive to updated science than they could be if there was a faster process for updating the data. If the information upon which the cleanup criteria are based is outdated, the existing generic cleanup criteria may not be protective of public health, or they may be unnecessarily low (overly protective or overly conservative) resulting in cleanups that may be more costly.

(b) The MDEQ could adopt a system where chemical-specific data are proposed for adoption on the MDEQ website for 90 days during which public comment would be taken, with finalized/adopted data maintained in a website that could continually provide the most up-to-date generic cleanup criteria. This would allow a similar process for public involvement as the rulemaking process. The Department could also provide a revision history, which would allow for easier identification of changes made to the generic cleanup criteria.

(c) The footnote G spreadsheet for GSI criteria already incorporates site-specific data not promulgated in the administrative rules, suggesting that not all factors used to generate cleanup criteria must be promulgated as administrative rules.

(d) The generic cleanup criteria were first promulgated in 2002, suggesting that Part 201 cleanup criteria can be developed and applied in a format that does not require rulemaking, as was done prior to 2002.

(e) There is no specific judicial precedent barring this approach to adopting generic cleanup criteria under Part 201 and section 20a of Part 201 does not specifically mention promulgating generic cleanup criteria as administrative rules.

Cons:

(a) *If the Administrative Procedures Act (APA) requires MDEQ to adopt generic cleanup criteria as administrative rules, then MDEQ must follow the APA rulemaking process. "The label an agency gives to a directive is not determinative of whether it is a [legally enforceable administrative] rule or a [non-enforceable] guideline under the" APA.⁵ The APA defines a "rule" as*

an agency regulation, statement, standard, policy, ruling, or instruction of general applicability that implements or applies law enforced or administered by the agency, or that prescribes the organization, procedure, or practice of the agency, including the amendment, suspension, or rescission of the law enforced or administered by the agency. [MCL 24.207 (emphasis added).]

The generic cleanup criteria meet this statutory definition of a rule because the Department intends for the criteria to be generally applicable to owners/operators of property (and others) in this state. The Department also intends to use the generic cleanup criteria to implement Part 201 and its different requirements, including cleanup requirements, due care obligations, fines, criminal sanctions, and other penalties.⁶ Further, generic cleanup criteria developed by MDEQ are not listed among the agency policies that are exempt from rulemaking.⁷ By promulgating only the algorithms for generic cleanup criteria, the data used to calculate the generic cleanup criteria and the criteria will not be of equal legal weight and enforceability as the algorithms.⁸

This approach of removing the chemical-specific data and the generic criteria from the rules could lead to protracted legal disputes regarding the proper chemical-specific data to use with the algorithms and the possibility of inconsistent (less generic) criteria applied across the state. If the numeric criteria or the chemical-specific data are not formally promulgated, the criteria risk being legally unenforceable by the Department. In that situation, MDEQ's authority may be restricted to enforcing Part 201 where a generic cleanup criterion was not essential to applying the act, such as when an imminent and substantial endangerment exists or where there is a discharge to groundwater that exceeds the maximum contaminant levels used as drinking water standards that are adopted by reference in Part 201.

(b) *Providing the public notice and an opportunity to comment on proposed generic cleanup criteria does not satisfy the APA procedural requirements for rulemaking when they apply.*

(c) *The spreadsheet used to calculate GSI criteria does use site-specific data. This approach could be used more widely to allow a degree of greater precision in developing generic cleanup criteria without the need to resort to site-specific criteria. However, there is a legal difference between the agency action of adopting data outside of the rules to use in the algorithms and allowing members of the public to provide data for use in the algorithms.*

⁵ *AFSCME v Dep't of Mental Health*, 452 Mich 1, 9; 550 NW2d 190 (1996).

⁶ See *Kent County Aeronautics Bd v Dept of State Police*, 239 Mich App 563, 583-584; 609 NW2d 593 (2000) (suggesting that agency must promulgate rule when its policy is intended to have the "force and effect of law" on the public and to "require compliance with . . . stipulations or requirements").

⁷ See MCL 24.207(a) through (q).

⁸ See *Dept of Natural Resources v Bayshore Associates, Inc*, 210 Mich App 71, 85-86; 533 NW2d 593 (1995) ("Simply put, an administrative agency cannot rely upon a guideline or unpromulgated policies in lieu of rules promulgated under the APA.").

(d) MDEQ could choose to adopt the generic cleanup criteria as guidance if it did not want to make generic cleanup criteria legally binding. However, a court may interpret the requirements in MCL 324.20120a that MDEQ “develop” and “establish” generic cleanup criteria to require rulemaking for a number of reasons, including:

(i) MCL 324.20104(1) grants MDEQ rulemaking authority, so the Department does not lack the ability to adopt generic cleanup criteria by rule.⁹

(ii) MCL 324.20104(2) was added in 2010 to state that a “guideline, bulletin, interpretive statement, or operational memorandum under this part shall not be given the force and effect of law. A guideline, bulletin, interpretive statement, or operational memorandum under this part is not legally binding on any person.” This provision essentially reiterates the requirements of the APA and suggests that formal rulemaking is the proper method for establishing requirements to enforce Part 201.

(iii) Case law suggests that, when a statute requires MDEQ to develop standards for certain actions, the statute is referring to agency rulemaking.¹⁰

(iv) There is no express statement in Part 201 or the APA that exempts generic cleanup criteria from the rulemaking process.

The fact that many or even most individuals would voluntarily comply with the Part 201 legal obligations that would apply if the cleanup criteria were not formally adopted as administrative rules does excuse the APA’s rulemaking requirement if those criteria are intended to be legally binding.¹¹ The cost of challenging in court whether generic cleanup criteria can be developed without rulemaking can be prohibitive and there may be other limitations, such as the pre-enforcement judicial review bar, that make it difficult to find a court in which to make such a challenge.

(e) There may also be other unintended effects of adopting cleanup criteria that may not be legally enforceable. For instance, federal regulations concerning the ARAR (applicable or relevant and appropriate requirements) analysis under CERCLA explain:

Only those state standards that are promulgated, are identified by the state in a timely manner, and are more stringent than federal requirements may be applicable or relevant and appropriate. For purposes of identification and notification of promulgated state standards, the term promulgated means that the standards are of general applicability and are legally enforceable. [40 CFR 300.400(g)(4).]

Therefore, if the generic cleanup criteria developed outside of the rules are not legally enforceable, state concerns may have less influence in EPA-led cleanups.

⁹ Compare *Kent County*, *supra* at 584 (State Police lacked statutory authority to promulgate rule).

¹⁰ See *City of Romulus v Michigan Dept of Environmental Quality*, 260 Mich App 54, 83; 678 NW2d 444 (2003) (Part 111 does not require MDEQ to “develop standards” for permitting, so MDEQ did not have to promulgate rule governing consideration of need for hazardous waste disposal well in permitting process).

¹¹ See *Auto Club Ins Ass’n v Sarate*, 236 Mich App 432, 436; 600 NW2d 695 (1999) (“The fact that the public normally will follow the [agency’s] interpretation [of a statute in a policy statement] does not mean that it is binding in and of itself. Such behavior is to be expected, since the regulation provides a practical guide as to how the office representing the public interest in enforcing the law will apply it.”) (internal citations and quote marks omitted).

(f) This specific approach to MDEQ pairing algorithms in rules with data and criteria outside of the rules has not yet been tested in court. There is more than a minor risk of proceeding without full rulemaking for developing generic cleanup criteria if the process is not approved by the courts, particularly if the Part 7 rules are rescinded at the same time, leaving no backup to criteria to apply.

Issue Recommended for Follow Up:

Issue: Explore an amendment to the APA, which would provide a fast-track process for promulgating generic cleanup criteria as rules. That type of amendment would accommodate both the Department's concern that it be able to apply current science and risk assessment with the Legislature's authority to prescribe the process for the Department to follow.

Recommended Follow Up Actions:

Further discussion of this issue to reach consensus. Discussion should include representatives from the Attorney General's Office that are familiar with Part 201 and APA rulemaking requirements, representatives from other areas of the Remediation Division that implement and enforce Part 201, as well as members from the stakeholder community (including at least one attorney) outside of the Department.

Issue for Implementation (Vapor Intrusion—as modified by Cleanup Criteria group):

Use of MIOSHA workplace standards as the starting point for non-residential vapor intrusion (VI) criteria.

Recommendation:

Step one:

Seek a legal opinion from the Michigan Attorney General on whether MIOSHA standards apply to protection of the worker population in a workplace where chemicals of concern for the VI pathway are not used in production or processes and whether those standards meet the requirements for protection from non-residential exposures under Part 201. We suggest that the Department of the Attorney General seek additional technical input from MIOSHA, MDEQ, and MDCH staff who develop and implement exposure criteria regarding the equivalent protectiveness issue.

Step two:

If the answer to the question is Yes, then: Recommend that MIOSHA regulate indoor air in the workplace (while the facility is in operation) where VI is a source of worker exposure. If the answer to the question is No, then: Recommend formation of an interagency and stakeholder workgroup to look at this issue with the goal of establishing appropriate standards for regulating indoor air in these workplaces.

Specific Action to be taken to implement (check and describe):

| | | | | | | | |
|-----------|---|------|--|--------|--|------------|---|
| Statutory | X | Rule | | Policy | | Governance | X |
|-----------|---|------|--|--------|--|------------|---|

- See actions listed above.
- Mixed use facilities may be a special case – need to regulate the most sensitive population (e.g., Workers versus residents in a nursing home).

Generic Decision Criteria: To be applied to each recommendation

| | yes | no | Level of agreement | Comments |
|---|-----|----|--------------------|---|
| 1 Applies Best Judgment | | | | More info requested |
| 2 Uses Sound Science | | | | Unknown, issue is whether OSHA numeric value alone (PEL and no other OSHA requirements) will be protective for chronic worker exposure and if adequate monitoring will be applied |
| 3 Considers Relative Risk | | | | See above |
| 4 Is Adaptable and Durable | | | | Potentially, if protective |
| 5 Includes Measures of Success | | | | |
| 6 Other decision-criteria developed by group: | | | | Legal opinion required for implementation |

Supporting arguments:

1. Avoids double regulation of an operating facility when running.
2. Clarifies who is the regulating agency
3. Relative risk issue of workplace while in operation (e.g., risk of chemicals being used in workplace versus VI)

Description:

Is it appropriate to use the MIOSHA numeric standards as the basis for the non-residential VI criteria where exposures are originating from environmental rather than workplace production or processing sources? If so, then determine whether additional components of the MIOSHA rule(s) are required, such as how to comply with air monitoring, medical surveillance, and worker notification requirements under MIOSHA.

Are the MIOSHA permissible exposure limits (PELs) protective of human health in the absence of implementation of additional requirements such as medical monitoring/workplace air monitoring? If so, then the question is how to incorporate the additional requirements of MIOSHA so that the use of a PEL is, in effect, protective of human health.

An occupational standard may have been established based on acute health effects such as CNS depression, not chronic exposure such as cancer or other long term health effects. In addition, OSHA/MIOSHA allows for consideration of technical and economic feasibility of compliance in establishing a chemical-specific standard, while Part 201 does not take those factors into consideration in the context of developing generic cleanup criteria under section 20a. Given this difference between statutory programs, it is not clear whether MIOSHA PELs will be adequately protective of human health when implemented under Part 201 for non-residential exposures.

Recommended Follow Up Actions:

- Send to Attorney General's office
- Address issues raised above in terms of the genesis of the MIOSHA standards

Cleanup Criteria

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C. Due Care Obligations

Issue Statement

As a key foundation component of the Part 201 program, the concept of due care must be clearly defined and understood and support the efficacy of the Part 201 program. As an essential element of both Part 201 and bona fide purchaser protection under CERCLA, due care must be understood and implemented consistently between the regulated community and the MDEQ. Inconsistent understanding of the statutory and rule based due care provisions appear to be widespread, resulting in inconsistent and often ineffective implementation of the obligations of due care under Part 201.

Issue #1: Site-Specific Criteria

Recommendation 1: Permit use of site-specific criteria for implementation of due care without MDEQ approval.

Amend MCL 324.20107a(2): "The owner's or operator's obligations under this section shall be based upon the current numeric cleanup criteria under section 20120a(1)" shall be amended to "The owner's or operator's obligations under this section shall be based upon: (i) the current numeric cleanup criteria under section 20120a; or (ii) site-specific criteria developed consistent with Section 20120b. The use of site-specific criteria under this section is not subject to Department approval.

Recommendation 2: Add the following new subsection (3) and re-number subsequent sections.

"(3) Where site-specific criteria have been developed pursuant to Section 20107a(2)(ii), a person subject to this section shall disclose due care documentation to the Department within eight months from purchase, occupancy, foreclosure; or from discovery of the condition that gives rise to the development of the site-specific criteria, or within eight months of the effective date of this section."

Recommendation 3: *Revise Rule 542 to allow the use of site-specific criteria developed consistent with this recommendation.*

Specific Action: *Amend Statutes and Rules*

Level of Consensus: 100%

Decision Criteria:

1. Best professional judgment: yes
2. Understands consequences: yes
3. Trade offs/What matters: *Focuses on "what matters" by encouraging more compliance with Due Care requirements, which will help safeguard public health. Also maximizes safe and productive reuse of contaminated properties. One tradeoff: The MDEQ staff may incur more work, as they have to acknowledge receipt of the documentation. Fact that documentation is FOIA-able may result in heavier work load as well.*
4. Adaptable and durable: *At certain properties, compliance with site-specific criteria may be more cost effective and therefore achievable than compliance with generic criteria; some*

owners/operators may choose to skip preparation and implementation of Due Care/Due Care plan if seen as too confusing or onerous; with this recommendation, the potential exists that more owners/operators will comply with their due care obligations.

5. Measure of Success: *None agreed upon, although one possibility is an increase in the number of Due Care documentation/plans filed with the Department due to the requirement to submit a due care plan or documentation utilizing site-specific criteria.*

Supporting arguments:

1. *Encourages people to implement due care based on site-specific conditions.*
2. *Provides for consistency with Section 20114, which allows for a party with Section 14 obligations to develop site-specific criteria. Unlike Section 14 however, does not require department review and approval of the site-specific criteria.*
3. *Encourages flexibility by allowing site-specific assessments for due care obligations*

Non-consensus items: None.

Issue Recommended for Follow-Up:

1. Penalties: If the fines and penalties section of Part 201 is otherwise going to be reopened, we recommend that the penalty for failure to disclose a due care plan/documentation utilizing site-specific criteria should be no more than \$1,000/day civil fine under Section 20137(1)(e). Failure to turn in documentation of site-specific criteria development activities would be penalized for nondisclosure, but not for failure to perform due care. This penalty is distinctly different from those fines and penalties for failure to perform due care
2. Rule Revision: Rule 542 should be amended to allow the use of site-specific criteria developed consistent with Issue #1 above (use of site-specific criteria).

Issue #2: *Exacerbation Exemption for State and Local Units of Government*

Recommendation 1: *Amend MCL 324.20107a(5) to eliminate the due care exacerbation exemption for State and Local Units of Government.*

Amend MCL 324.20107a(5): "Subsection 1(a) to (c)..." shall be amended to "Subsection 1(b) and (c) ..."

Specific Action: *Amend Statute*

Level of Consensus: 100%

Decision Criteria:

1. Applies best judgment: yes
2. Uses Sound Science: yes
3. Considers Relative Risk: yes
4. Is Adaptable and Durable: yes
5. Measure of Success: *None agreed upon*

Supporting Arguments:

1. *No one should be allowed to exacerbate contamination.*

Non-consensus items: *None*

Items recommended for Follow-Up: *None*

Issue #3: *Additional Changes to MCL 324.20107a(5) relating to Due Care Obligations for State and Local Units of Government*

Recommendation 1: *Eliminate the partial exemption from due care obligations under MCL 324.20107a(5) for state and local units of government that complete and submit a BEA.*

Supporting Argument:

1. *Equitable benefit to the public is provided by everyone exercising due care for voluntarily acquired property. For example, a state or local unit of government acquiring property (that is a facility) voluntarily for use as a DPW or office space will have due care obligations under this revision, as opposed to the current statute where it is exempt.*

Recommendation 2: *Amend MCL 324.20107a(5) to condition the partial exemptions for state and local units of government from the obligations under MCL 324.20107a1(b) and (c) at a facility acquired pursuant to MCL 324.20126(3)(a) on providing notice to the MDEQ.*

Supporting Argument:

1. *This would provide MDEQ with an increased knowledge of facilities, which is consistent with MDEQ requirements to inventory facilities, in accordance with Section 20112a(1), and aid in the prioritization of funding of orphan sites. Also this is consistent with provisions for the disclosure of facility conditions to the MDEQ in connection with tax foreclosure laws (MCL 211.78g.) In addition, this would provide the MDEQ with information that could mitigate public health risk.*

Recommendation 3: *Amend MCL 324.20107a(5) to eliminate the partial due care exemption for the state and local units of government for property voluntarily acquired prior to June 5, 1995.*

Supporting argument:

1. *Equitable benefit to the public is provided by everyone exercising due care for voluntarily acquired property.*

Specific Actions: *Amend Statutes for all three recommendations.*

Level of Consensus: *100%*

Decision Criteria:

1. Applies best judgment: *yes*
2. Uses Sound Science: *yes*
3. Considers Relative Risk: *yes*
4. Is Adaptable and Durable: *yes*
5. Measure of Success: *None agreed upon*

Non-Consensus Items: *None*

Recommended Follow-Up Actions: *None*

Issue #4: *Eliminate Migration Exemption – Apply Due Care Equitably*

Recommendation 1: *Amend MCL 324.20107a(5) to delete the reference to MCL 324.20126(4)(c), and thus provide that due care obligations would apply to facilities created by migration of hazardous substances from offsite sources.*

Specific Actions to be Taken to Implement: *Amend Statute*

Level of Agreement: *100%*

Decision Criteria

1. Applies best judgment: *yes*
2. Uses Sound Science: *yes*
3. Considers Relative Risk: *yes*
4. Is Adaptable and Durable: *??*
5. Measure of Success: *None agreed upon*

Supporting Arguments:

1. *Human health should be protected at a property regardless of whether the hazardous substances present migrated onto the property or were released at the property.*

Opposing Arguments:

1. *Imposes new and potentially burdensome obligations on parties who may not be capable of carrying them out, particularly homeowners and small businesses. They are already subject to 20107a(1)(d),(e), and (f), providing some public health protection.*

Non-consensus items: *None*

Recommended follow-up actions: *None*

Issue #5: *Support ORR Recommendation R-13: Part 201 Due-Care Plans Submitted as Response-Activity Plans for SBA Loans and expand its scope to other transactions.*

Recommendation 1: *MDEQ should review and provide a response under Section 20114b for a due care plans submitted in support of an SBA loan within 45 calendar days. The Department should strive to provide the same response time for Due Care plans submitted in support of all transactions, effective no later than January 1, 2013. The MDEQ should offer expanded education and outreach regarding the suggested content and required measurements of a Due Care plan.*

Specific Actions to be taken to Implement: *Implement the policy recommendation.*

Level of Agreement: *100%*

Decision Criteria

1. Applies best judgment: *yes*
2. Uses Sound Science: *yes*
3. Considers Relative Risk: *yes*
4. Is Adaptable and Durable:
5. Measure of Success: *None agreed upon*

Supporting Arguments:

1. *Aids in redevelopments moving forward in a timely manner; provides good customer service from the MDEQ.*
2. *In order for due care to operate as a key element of the Part 201 program, owners or operators need to have timely review and approvals of a due care plan from the MDEQ. In the context of any pending transaction, including but not limited to an SBA loan, the MDEQ's prompt replies and approvals of a due care plan will facilitate the safe reuse of property and the expanded implementation of appropriate due care measure. The MDEQ reports that they have implemented an expedited approval process for due care plans submitted in connection with SBA loan. We recommend that this success be expanded to all types of transactions.*

Opposing Arguments:

1. *May increase MDEQ workload at peak times with no additional MDEQ resources anticipated to be provided.*

Non-consensus items: *None*

Recommended follow-up actions:

1. *Internally, MDEQ will need to evaluate available resources in light of this recommendation.*

Issue # 6: *Soil Relocation*

Recommendation 1: *MCL 324.20120c should be amended to permit a person to relocate contaminated soil within the boundaries of property and adjacent property owned by that person, including areas not similarly contaminated, provided that the person complies with due care obligations under MCL 324.20107a.*

Specific Actions to be Taken to Implement:

1. Amend MCL 324.20120c
2. Amend Part 115 rule 110 (I) to be consistent with this recommendation, and not require permitting under Part 115.
3. Repeal portions of Rule 542 under Part 201 that are inconsistent with the above recommendation.

Level of Agreement: 5 supporting, 3 opposing

Decision Criteria:

1. Applies best judgment: yes
2. Uses Sound Science:
3. Considers Relative Risk:
4. Is Adaptable and Durable:
5. Measure of Success: *None agreed upon*

Supporting Arguments:

1. Will facilitate redevelopment of contaminated areas without causing additional environmental harm.
2. Provides equitable benefit statewide.
3. Facilitates increased implementation of due care by consolidation of contamination.
4. Provides an economic benefit for redevelopment. Fosters redevelopment of brownfield sites.
5. Reduces environmental exposure, where consolidation can reduce exposure.
6. Allows state to more economically use state funding.
7. Supports and expands on the recommendation of ORR R-10.
8. All concerned parties agree that MCL 324.20120c and Rule 542 are confusing and difficult to understand, resulting in barriers to proper understanding and compliance.

Opposing arguments:

1. No consideration given for how environmental harm (additional or otherwise) would be evaluated or determined.
2. Creates waste piles and/or waste disposal areas.
3. Creates a new release and possible new facility, which are currently not allowed by the Part 201 statute.
4. Due care may not provide same level of environmental protection and stewardship as a permit is required under Part 115 to create a disposal area and/or waste pile
5. Potentially increases offsite migration of contamination. Does a potentially non-liable party now become liable? With the elimination of the migration exemption, creating or increasing off-site migration would impart due care obligations on a person who may not otherwise have any due care obligations.
6. No mechanism for monitoring offsite migration or environmental harm either on or off-property.
7. Insufficient input from the Resource Management Division and other stakeholders, such as the Brownfield community.

Recommend for follow up actions:

1. *Support amendment of Part 115 and/or Part 115 rules to permit on-site use of crushed concrete.*

Recommendation: *Revise Part 115 and/or Part 115 rules to confirm, clarify or facilitate the on-site relocation and retention of crushed concrete that does not create an unacceptable risk to human health and the environment by application of Part 201 criteria (and no longer the former "Type B" criteria), consistent with our soil relocation recommendations. Reconcile any inconsistent requirements between Part 115 and Part 201 and their respective rules.*

Supporting argument:

1. *There are large quantities of concrete and crushed concrete products that could be used on-site as fill material that presently cannot be left on site due to Part 115 requirements, even though they do not present an environmental risk. The application of Part 201 criteria, together with any appropriate due care or response activities to protect human health and the environment, would facilitate increased reuse of property and implementation of due care activities.*

Issue #7: Due Care Rules

Recommendation 1: *Repeal Rule 1013(1)(b) (Soil Erosion Issue)*

Specific Action: *Rule*

Level of Consensus: *5 support, 2 abstain, 1 absent*

Decision Criteria:

1. Applies best judgment: yes
2. Uses Sound Science:
3. Considers Relative Risk:
4. Is Adaptable and Durable:
5. Measure of Success: *None agreed upon*

Supporting Arguments:

1. *Not required or authorized by Section 20107a.*
2. *Inconsistent with general understanding of due care obligations.*
3. *May be addressed by other laws, in some circumstances*
4. *Due care for passive migration of impacted soil should be implemented by providing notices of off-site migration similar to the existing requirement for migration of contaminated groundwater.*

Opposing Argument:

1. *The rule is in place for circumstances where an impact to an off-property location is caused by something like soil erosion or blowing particulates or volatile contaminants*

emanating from the source property and the exposure to the off-property cannot be mitigated by the off-property owner or operator even if noticed. For example, when road dust is contaminated and is blowing across a property line, it is not possible for the adjacent property owner to choose not to breathe the air and he has no control of the activities on the source property to stop the creation of dust. By contrast, if a groundwater plume is migrating under his property, once he has been notified he/she can mitigate the exposure by choosing to utilize a different drinking water source. The Rule could be clarified so that 1013 (1)(b) states the obligation of the source property owner/operator to mitigate is triggered when circumstances cause an unacceptable off property exposure that cannot be independently mitigated by the off-property owner., such as dispersion of particulate or volatile hazardous substances or soil erosion that may cause unacceptable exposures off –property.

Recommended Follow-Up Action:

Recommendation 2: *Modify Rule 1013(5) as necessary based on the outcome of the Vapor Intrusion Committee's work and MIOSHA standards recommendation (ORR R-9).*

Specific Action: *Amend Rule*

Level of consensus: *100%*

Supporting Arguments:

1. *Rule 1013(5) should be reviewed and modified consistent with the outcome of the expected revision of the vapor intrusion pathway evaluation process.*

Opposing Arguments:

Recommended Follow-Up Action: *Refer to Vapor Intrusion group for consideration*

Recommendation 3: *Amend Rule 1021 to provide grandfather protection in the event of amendments to section 20107a or Part 10 rules.*

Level of Agreement: *100%*

Decision Criteria:

1. Applies best judgment: *yes*
2. Uses Sound Science:
3. Considers Relative Risk:
4. Is Adaptable and Durable:
5. Measure of Success: *None agreed upon*

Supporting Argument:

1. *Supports prior MDEQ decisions and provides a level of comfort for current property owners who can rely on those prior decisions.*

Issue #8: *MDEQ Outreach materials*

Recommendation 1: *MDEQ Due Care materials (implementation requirements and recommendations) (Education and Outreach materials) be reviewed by stakeholders prior to publication.*

Specific action: *Develop governance and/or policy*

Level of agreement: *100%*

Decision Criteria:

1. Applies best judgment: *yes*
2. Uses Sound Science:
3. Considers Relative Risk:
4. Is Adaptable and Durable:
5. Measure of Success: *None agreed upon*

Supporting Argument:

1. *Stakeholder participation in development of outreach materials will ensure the materials meet the needs of the users as well as ensure the materials are consistent with associated rules and regulations. Prolonged discussions and review processes are to be discouraged, so that MDEQ education and outreach efforts will not be unnecessarily delayed.*

Opposing Argument:**Recommended Follow-Up Action:**

Issue #9: *Review draft recommendations:*

Recommendation1: *All committees should have interaction and opportunity to review and comment upon the draft final recommendations.*

Level of agreement: *100%*

Issue #10: *Ongoing involvement of CSI participants during implementation of recommendations.*

Level of agreement: *100%*

Follow up Action: *Expand and/or clarify overall due care obligations*

1. *Amend MCL 324.20107a and the Part 10 rules to provide or clarify that due care obligations include not exacerbating conditions that result in an adverse impact upon the natural resources and environment.*

Specific action: *Amend MCL 324.20107a and Part 10 rules as appropriate.*

Items to be Considered:

1. *As a key foundation component of the Part 201 program, the concept of due care must be clearly defined and understood and support the efficacy of the Part 201 program. As an essential element of both Part 201 and bona fide purchaser protection under CERCLA, due care must be understood and implemented consistently between the regulated community and the MDEQ. Inconsistent understanding of the statutory and rule based due care provisions appear to be widespread, resulting in inconsistent and often ineffective implementation of the obligations of due care under Part 201.*
2. *The committee has not identified a valid basis for not considering the impact upon natural resources and the environment in the evaluation of whether activities constitute exacerbation within the meaning of MCL 324.20107a.*
3. *Confirmation or expansion of the relevance of impact upon natural resources and the environment in the framework of due care will facilitate expanding acceptance of due care and remedial measures such as soil relocation as part of site redevelopment that will lead to increased redevelopment of property and resulting increased implementation of due care measures that are protective of not just human health but also natural resources and the environment.*

Due Care Obligations

Richard Barr, Honigman, Miller Schwartz and Cohn

Scott Beckerman, Comerica

Fred Dindoffer, Bodman

Tom Greene, Edward Levy

Steve Luzkow, Applied EcoSystems

Tom O'Connell, ERM

Michael Vollick, Michigan State Housing Development Authority

Jeanne Schlaufman, SE Michigan District, MDEQ

Kathy Shirey, Lansing District, MDEQ



MSUE Facilitators: Claire Layman,
James Ribbron

D. Free Product / Source Removal / Csat

Issue Statement

The workgroup agreed to develop a risk-based decision approach to NAPL corrective actions that focused on expected outcome and likely final remedy. Recommendations will be developed for: what steps and information are needed in the decision making process, the definition of NAPL and NAPL states, C-sat concentrations and effective solubility, what constitutes a source and appropriate source control measures, how to evaluate risks associated with NAPL, when NAPL objectives may be based on net environmental and societal benefit, and conditions for no further action regarding NAPL.

Our consensus process:

The workgroup determined that consensus of MDEQ staff with recommendations was critical to the recommendation moving forward. In the case where consensus was not reached suggestions for further work between stakeholders and MDEQ was recommended.

Proxy:

A copy of the recommendations drafted at the February 17, 2012 was sent to the free product workgroup after the meeting. Additional revisions were made and a phone meeting with the members was held on February 24th. The final document was approved by all via email on February 28th.

Linkage with ORR recommendations:

After each of the ORR issues listed below is a reference to the corresponding free product (FP) workgroup recommendation intended to address the issue.

R - 6 Subject: *Effective Solubility and Free Phase Contamination*

Recommendation:

- 1. The MDEQ should immediately discontinue applying the un-promulgated alternative criteria for gasoline that are based on U.S. EPA effective - solubility formulas and that are attached to the MDEQ Draft Q&A document dated May 12, 2011, and should use the existing promulgated criteria. **FP workgroup recommendation #2 and #3.***
- 2. To the extent the MDEQ believes that new criteria are appropriate for "free phase" contamination, it must seek the appropriate changes to Part 213 or promulgate new criteria under Part 201 pursuant to the Administrative Procedures Act. **FP workgroup recommendation #3.***
- 3. In developing any new criteria to address free - phase contamination, the MDEQ should use science and look to national best practices. **FP workgroup recommendation #3.***
- 4. The MDEQ should allow regulatory flexibility when evaluating "free phase" situations where there is no demonstrated impact to groundwater present. Justification: See Issue Paper "R - 6" in Appendix A on Pg. A - 39. **FP workgroup recommendation #1 through #7.***

R-11 Subject: *Source Control Requirements under MCL 324.20114(1) and R 299.5526(4)*

Recommendation: *R 299.5526(4) should be amended to facilitate a clear understanding of the requirements of MCL 324.20114(1), including what constitutes a “source” subject to the Section.*

Justification: *See Issue Paper “R - 11” in Appendix A on Pg. A - 55. Be sure “C-SAT” is brought to the table. Part 213 draft amendments. **FP workgroup recommendations #1, #2, #3, #4, #6 and #7.***

These recommendations need to be considered as a whole to understand the context in which our decisions were made.

Issue Group: *Free Product, Source Removal and Control, Csat*

Recommendation #1: *Govern all program decisions based on risk assessment and risk management principles.*

Specific Action to be taken to implement (check and describe):

| | | | | | | | |
|-----------|--|------|--|--------|---|------------|--|
| Statutory | | Rule | | Policy | X | Governance | |
|-----------|--|------|--|--------|---|------------|--|

- Abate acute risks as first priority
- Address highest risks in order of priority
 - Exposed sensitive receptors
 - Exposed non-sensitive receptors
 - Threatened receptors
 - Unstable plume(s)
 - Expanding non aqueous phase liquid (NAPL) body
- Non-risk factors should be considered in outcome/remedy selection if they result in a net environmental or societal benefit
- Structure decision process to distinguish “Compositional” components (e.g. dissolved and vapor plumes) of the conceptual site model (CSM) from the “Saturation” components (e.g. NAPL body). Both saturation and compositional objectives (i.e. dissolved phase and vapor phase) may be used as NAPL remedial objectives.
- Focus analysis on expected outcome and likely final remedy – perform relevant work needed to assist in decision process. Don’t work on issues that are not important based on CSM. NAPL remediation metrics should be based on NAPL site objectives (see ITRC December 2009 Evaluating LNAPL Remedial Technologies for Achieving Project Goals Section 4.2).
- Guidance to be prepared outlining the decision making process relying on most recent guidance documents such as ITRC (i.e December 2009 – Evaluating LNAPL Remedial Technologies for Achieving Project Goals) and ASTM E2531-06. Figure 1 and 6 of ASTM E2531-06 provides a brief outline of the process.

Generic Decision Criteria: To be applied to each recommendation

| (for reflection, polling, and reporting out) | | | | |
|---|-----|----|---|----------|
| | yes | no | Level of agreement | Comments |
| 1 Applies Best Judgment | X | | 100% for all of the decision criteria | |
| 2 Uses Sound Science | X | | | |
| 3 Considers Relative Risk | X | | | |
| 4 Is Adaptable and Durable | X | | | |
| 5 Includes Measures of Success | X | | *See last note below re: General Measures of Success) | |
| 6 Other decision-criteria developed by group: | | | | |

Supporting arguments:

1. *Statute requires risk based remedial actions – these changes re-establish risk based standards as governing principles*
2. *Allows protection of public health and relevant ecological receptors and habitats using risk management methodology.*
3. *Relying on best practices developed thru ITRC and ASTM*
4. *It is possible to have mobile NAPL after unacceptable risks have been abated. In these cases, NAPL site objectives may be based on a combination of cost assessment and risk management principles.*
5. *It is possible to have aesthetic and nuisance issues remain after known unacceptable risks have been abated. In these cases, NAPL site objectives may be based on a net environmental and societal benefit.*

Recommendation #2

Require that decisions be based on adequate conceptual site model (CSM) relying on best practices such as most current ASTM guidance such as E2531 or most current ITRC guidance and MDEQ issued guidance (to be developed with stakeholder input). The CSM describes the physical properties, chemical composition, and setting of the NAPL body from which assessments of flux, risk, and potential remedial action can be generated. An adequate conceptual model should consider the following:

- *Focus analysis on expected outcome and likely final remedy – perform relevant work needed to assist in decision process.*
- *Adequate site data is required for remedial response conclusions*
- *Eliminate use of Csat and effective solubility (soil) as a trigger for remediation. Define presence/absence of NAPL and state/occurrence (migrating, mobile, or residual) consistent with the recent guidance such as: ASTM LNAPL standard (2531-06) ITRC LNAPL classroom training or internet based training “LNAPL Characterization and Recoverability - Improved Analysis - Part 2 “, and ITRC DNAPL guidance document (September 2003 An Introduction to Characterizing Sites Contaminated with DNAPLs).*

- Rely on anticipated remedy, risk based concerns, land use and consider the amount of uncertainty identified under CSM and the feasibility analysis to guide the level of detail in the CSM.
- Must take into consideration seasonal ground water changes.

The CSM should present the delineated extent (horizontal and vertical) of NAPL impacted environmental media and compositional plumes, in both plan view and cross sections and should include the following:

- Release source, material released, and timing of the release.
- Physical properties and chemical composition of the NAPL.
- Distribution (vertical and horizontal) and state (migrating, mobile, and/or residual) of the NAPL.
- Hydraulic, hydrogeologic, and geologic information and history.
- Chemical flux from NAPL and/or plume concentrations.
- Risks/exposure pathways/receptors (current and future)

Note: The CSM should rely on anticipated remedy, risk based concerns, land use and consider the amount of uncertainty identified under CSM and the feasibility analysis to guide the level of detail in the CSM.

Specific Action to be taken to implement (check and describe):

| | | | | | | | |
|-----------|--|------|--|--------|--|------------|--|
| Statutory | | Rule | | Policy | | Governance | |
|-----------|--|------|--|--------|--|------------|--|

A policy implementing a CSM process incorporating the referenced ASTM and ITRC guidance should be issued as soon as possible with a set of administrative rules. Establishing the same program by rule is required to ensure enforceable and long term practice.

Generic Decision Criteria: To be applied to each recommendation

| (for reflection, polling, and reporting out) | | | | |
|---|-----|----|---------------------------------------|----------|
| | yes | no | Level of agreement | Comments |
| 1 Applies Best Judgment | X | | 100% for all of the decision criteria | |
| 2 Uses Sound Science | X | | | |
| 3 Considers Relative Risk | X | | | |
| 4 Is Adaptable and Durable | X | | | |
| 5 Includes Measures of Success | X | | See below | |
| 6 Other decision-criteria developed by group: | | | | |

Supporting arguments:

1. *Adoption of a formal Conceptual Site Model process allows structured site investigation, assemble of relevant information and presentation to MDEQ*
2. *This process will help define and focus on most important issues at each site and allow more efficient use of resources on issues that matter to the final decisions.*
3. *Better remedial decisions are expected from a better organized and focused process*
4. *Per ASTM guidance this process is expected to result in more efficient, consistent, economical, and environmentally protective decisions.*
5. *If a NAPL was released and there is an ongoing dissolved or vapor phase plume, then it is very likely that at least residual NAPL remains at the site; therefore, Csat has little value.*
6. *The statement "The CSM should rely on anticipated remedy, risk based concerns, land use and consider the amount of uncertainty identified under CSM and the feasibility analysis to guide the level of detail in the CSM." was repeated for emphasis and clarity.*

Recommendation #3:

In those instances where generic criteria are not reliable due to site conditions (i.e excess NAPL inconsistent with generic risk formulas) one of the following alternatives may be selected.

- *Allow site specific risk evaluations to define appropriate remedial response*
- *Define boundaries of NAPL impacted zone (including states/occurrence of NAPL) and address risks from the NAPL body, both saturation and compositional.*
- *Implement remedy*

Specific Action to be taken to implement (check and describe):

| | | | | | | | |
|-----------|--|------|--|--------|--|------------|--|
| Statutory | | Rule | | Policy | | Governance | |
|-----------|--|------|--|--------|--|------------|--|

1. *Issue Policy that diverts reliance on Csat and similar factors in favor of the recommended process and immediately develop administrative rules that implement the recommended process*
2. *MDEQ should pursue development of guidance on NAPL impacted site specific risk analysis and clarify toxicological assumptions for generic criteria.*

Generic Decision Criteria: To be applied to each recommendation

| | yes | no | Level of agreement | Comments |
|---------------------------|-----|----|---------------------------------------|----------|
| 1 Applies Best Judgment | X | | 100% for all of the decision criteria | |
| 2 Uses Sound Science | X | | | |
| 3 Considers Relative Risk | X | | | |

| | yes | no | Level of agreement | Comments |
|---|-----|----|--------------------|----------|
| 4 Is Adaptable and Durable | X | | | |
| 5 Includes Measures of Success | X | | See below | |
| 6 Other decision-criteria developed by group: | | | | |

Supporting arguments:

1. *Csat, effective solubility (soil), and other factors are not reflective of actual environmental conditions or risk (having NAPL present at a site does not necessarily mean there is a risk). Discontinue the practice of using Csat or effective solubility (soil) as a trigger for remediation. The recommended process integrates risk assessment and site specific considerations.*
2. *If a NAPL was released and there is an ongoing dissolved or vapor phase plume, then it is very likely that at least residual NAPL remains at the site; therefore, Csat has little value.*
3. *Based on site specific factors this process will better reflect best available information regarding toxicity, exposure from hazardous substances at a specific site as required by Part 201.*
4. *This process allows for incorporation of best national practices and industry standards.*

Recommendation #4:

Define "Source" as:

- *"Primary Source" of contamination includes tank, pipeline or other container from which there was a release. See ASTM figure 3 from ASTM 2081-00*
- *"Secondary Sources" include the impacted environmental media such as soil, groundwater, etc.*
- *"LNAPL Source Zone" means 3 dimensional zone in the subsurface associated with the release area where LNAPL acts as a source for dissolved phase and vapor phase plumes (see ASTM E2531-06 section 3.1.46)*
- *"DNAPL Source Zone" means the entire subsurface region in which DNAPL is present at residual saturation, as "pools" of accumulation above confining units, or as mobile DNAPL (see ITRC September 2003 An Introduction to Characterizing Sites Contaminated with DNAPLs section 2.2.2).*

Responses to identified sources:

- *Immediate implementation of source control per Section 20114(1)(c) and 20114(1)(d) means control/abate/removal of the Primary Source*
- *Immediate implementation of "liquid phase" abatement/removal per Section 20114(1)(f) means to the extent feasible abate/removal of NAPL related to contemporaneous releases.*
- *Apply risk management principles to determine appropriate responses to Secondary Sources utilizing a conceptual site model (CSM).*

Specific Action to be taken to implement (check and describe):

| | | | | | | | |
|------------------|---|------|---|--------|--|------------|--|
| Statutory | X | Rule | X | Policy | | Governance | |
|------------------|---|------|---|--------|--|------------|--|

1. Amend Part 201 to incorporate new definitions and modify Section 20114 to clarify when source control is necessary.
2. Adopt new Part 201 administrative rules (and amend existing rules as needed) to define appropriate source control measures for the conditions noted above.

**To assist in implementing recommendation #4 we are including the document "References to Liquid Phase, Free Phase, Free Product, and Source" with our recommendations.*

Generic Decision Criteria: To be applied to each recommendation

| (for reflection, polling, and reporting out) | | | | |
|---|-----|----|---------------------------------------|----------|
| | yes | no | Level of agreement | Comments |
| 1 Applies Best Judgment | X | | 100% for all of the decision criteria | |
| 2 Uses Sound Science | X | | | |
| 3 Considers Relative Risk | X | | | |
| 4 Is Adaptable and Durable | X | | | |
| 5 Includes Measures of Success | X | | See below | |
| 6 Other decision-criteria developed by group: | | | | |

Supporting arguments:

1. *Current confusion over requirements for source control and whether the term "source" is intended to mean an active source such as leaking drum, leads to inconsistent responses. In some cases this confusion results in inadequate responses and in other instances in potentially unnecessary responses.*
2. *Immediate NAPL abatement/recovery/removal from primary and secondary sources when there is a contemporaneous (new) release generally results in the most cost effective remediation for human health and environmental protection.*
3. *Utilizing risk management principles and a CSM to determine appropriate responses to secondary sources from non contemporaneous releases generally results in the most cost effective remediation for human health and environmental protection.*

Recommendation #5:

Plan and conduct in conjunction with ITRC and environmental professional organizations a required NAPL and CSM training program for all lead RD staff and other Michigan environmental professionals.

Require a training certificate as a condition of preparing a CSM for the MDEQ. The training must be approved by the MDEQ for this purpose and may be provided by MDEQ and/or environmental professional organizations.

Establish collaborative stakeholder steering committee to guide and plan training programs provided by the MDEQ.

Specific Action to be taken to implement (check and describe):

| | | | | | | | |
|-----------|--|------|--|---------------|---|------------|--|
| Statutory | | Rule | | Policy | X | Governance | |
|-----------|--|------|--|---------------|---|------------|--|

Issue policy establishing routine collaborative stakeholder/MDEQ supported technical training programs including a program in the next 6 months to provide training on the program changes and strategies recommended herein.

Generic Decision Criteria: To be applied to each recommendation

| (for reflection, polling, and reporting out) | | | | |
|---|-----|----|---------------------------------------|----------|
| | yes | no | Level of agreement | Comments |
| 1 Applies Best Judgment | X | | 100% for all of the decision criteria | |
| 2 Uses Sound Science | X | | | |
| 3 Considers Relative Risk | X | | | |
| 4 Is Adaptable and Durable | X | | | |
| 5 Includes Measures of Success | X | | See below | |
| 6 Other decision-criteria developed by group: | | | | |

Supporting arguments:

1. Collaborative training programs will build trust and allow both MDEQ and all stakeholders to develop a common understanding of program goals and objectives to improve what stakeholders produce and facilitate better MDEQ review and approval process.

Recommendation #6:

***Define NAPL, DNAPL LNAPL, Mobile NAPL, and Residual NAPL Saturation by using the proposed Part 213 definitions which are based on ITRC guidance – however, the proposed Part 213 amendments should omit ASTM references to avoid confusion over meanings and to account for evolution of ASTM guidance. (Reference to ASTM to be maintained as explanation of intent but not locked into law)*

Define migrating NAPL as follows: "Migrating NAPL" means NAPL that is observed to spread or expand laterally or vertically or otherwise result in an increased volume of the NAPL

extent, usually indicated by time series data or observation. Migrating NAPL does not include NAPL that appears in a well within the historical extent of NAPL due to a fluctuating water table. Migrating NAPL includes mobile LNAPL as defined in ASTM E 2531- 06E1.

**** Eliminate the terms "Free Phase" or "Liquid Phase" from Part 201 and the Part 201 rules.**

Specific Action to be taken to implement (check and describe):

| | | | | | | | |
|------------------|-------------------------------------|------|--------------------------|--------|--------------------------|------------|--------------------------|
| Statutory | <input checked="" type="checkbox"/> | Rule | <input type="checkbox"/> | Policy | <input type="checkbox"/> | Governance | <input type="checkbox"/> |
|------------------|-------------------------------------|------|--------------------------|--------|--------------------------|------------|--------------------------|

Request that the proposed definitions in SB 531 (Part 213 amendments) be modified as described above and amend Part 201 to adopt consistent definitions to reflect the recommendations in this document.

****To assist in implementing recommendation #6 we are including the documents "Definitions of NAPL and NAPL phases/states" and "References to Liquid Phase, Free Phase, Free Product, and Source" with our recommendations.**

Generic Decision Criteria: To be applied to each recommendation

| (for reflection, polling, and reporting out) | | | | |
|---|-----|----|---------------------------------------|----------|
| | yes | no | Level of agreement | Comments |
| 1 Applies Best Judgment | X | | 100% for all of the decision criteria | |
| 2 Uses Sound Science | X | | | |
| 3 Considers Relative Risk | X | | | |
| 4 Is Adaptable and Durable | X | | | |
| 5 Includes Measures of Success | X | | See below | |
| 6 Other decision-criteria developed by group: | | | | |

Supporting arguments:

1. *Current definitions do not reflect evolving best practices, professional judgment and/or current national guidance and/or industry standards.*
2. *The current definition of migrating NAPL in the proposed Part 213 states, "Migrating NAPL does not include NAPL that appears in a well due to a fluctuating water table." A change in the definition above is suggested because migrating NAPL could occur with water table drop if the NAPL extent expanded beyond historical limits.*
3. *Referencing specific ASTM and ITRC guidance documents in the statute does not account for evolution of the guidance and allow the regulated community to use the most current guidance.*
4. *There is some conflict between the ASTM and ITRC terms, which can be clarified with clear definitions in the statute. ASTM use of "Free" addresses same condition as ITRC "Mobile" and ASTM "Mobile" is ITRC "Migrating."*

Recommendation #7:

Conditions for NAPL no further action

1. *NAPL body is and will remain stable as determined to be consistent with ASTM and ITRC guidance and based on an adequate CSM (stability of the NAPL body should be determined with respect to site specific risk). Exposures are within site specific risk levels or controlled by appropriate engineering controls. Institutional controls are in place if necessary.*
2. *Compositional exposures (i.e. benzene, VOCs, etc.) will remain stable and within risk levels or are controlled by appropriate engineering or institutional mechanisms*
3. *Vapor exposures and all other NAPL related risks are within risk levels*
4. *No cost effective recoverable mobile NAPL remaining (see ITRC metrics – more work is required of the CSI workgroup to determine the most appropriate standard/end point).*
5. *Natural Source Zone Depletion (NSZD) analysis demonstrates natural depletion is occurring and that information is considered in the cost/benefit cost effective analysis above.*
6. *Net environmental benefit analysis supports no further action is required for NAPL*

In certain circumstances on a site specific basis NAPL no further action may be approved with cost effective recoverable mobile NAPL remaining:

- *Conditions 1,2,4 and 5 above are met*
- *Based on site specific factors, at least one of the following is true:*
 - *the distance to potential receptors from NAPL and dissolved plumes are sufficiently large that transient expansions result in de minimus risk to receptors*
 - *the NAPL is controlled with engineering controls (e.g. slurry walls, etc.) so that any changes in conditions will not result in NAPL migration outside the control boundaries, or*
 - *the nature of other barriers demonstrates a de minimus level of potential risk to receptors.*

Specific Action to be taken to implement (check and describe):

| | | | | | | | |
|-----------|--|-------------|---|---------------|---|------------|--|
| Statutory | | Rule | X | Policy | X | Governance | |
|-----------|--|-------------|---|---------------|---|------------|--|

- *Issue Policy establishing process for evaluating and determining when NAPL recovery will be required and when the exception may be allowed.*
- *Rule changes may be required to implement this process as a legally enforceable procedure*

Generic Decision Criteria: To be applied to each recommendation

| (for reflection, polling, and reporting out) | | | | |
|---|-----|----|---------------------------------------|----------|
| | yes | no | Level of agreement | Comments |
| 1 Applies Best Judgment | X | | 100% for all of the decision criteria | |
| 2 Uses Sound Science | X | | | |
| 3 Considers Relative Risk | X | | | |
| 4 Is Adaptable and Durable | X | | | |
| 5 Includes Measures of Success | X | | See below | |
| 6 Other decision-criteria developed by group: | | | | |

Supporting arguments:

1. The proposed process secures the option of implementing a risk based NAPL closure without imposing an obligation to remove NAPL .
2. The objective is to provide additional guidance on the process required to determine the conditions when no further action can be approved when NAPL recovery is involved at a site.
3. It is recognized that there may be some minor movement of NAPL within the NAPL body and the stability and resolution required (how closely spaced the monitoring points are) should be defined with respect to site specific risk. The stability should be determined by the overall "footprint" (horizontal and vertical) of the NAPL body remaining the same.

Overall Comments regarding the 7 Recommendations:

Non Consensus Items: *None*

Overall Issues Recommended for Follow Up:

1. *How to determine the balance between the objective of removing easily recoverable NAPL and the need to limit that objective based on cost benefit considerations. All targets should be used with professional judgment. A subgroup is working on this issue: Nick Swiger and Grant Trigger and Mark Adamski.*
2. *Funding of small scale source control for contemporary releases with low interest revolving loan fund - recommend allocation of a portion of the UST fees to support this fund.*

3. *Assembling and coordinating an internal (MDEQ) NAPL team to assist with consistent district decision making for site NAPL related issues. This is not meant to add another layer in an approval process. As necessary, assembling and coordinating a review team, consisting of both internal and external professionals to assure sound science is applied to NAPL related issues (precursor to appeal panel).*

Suggested Measures of Success for NAPL Recommendations

- Number of work plans submitted for approval
- Number of work plans approved
- Number of work plans not approved and reasons
- Number of remedial action plans submitted
- Number of remedial action plans approved
- Number of remedial action plans not approved and reasons
- Number of site closure reports submitted
- Number of sites closed
- Number of NFA requests
- Number of NFAs issued
- Amount of NAPL removed/remediated
- Number of sites Ready for Reuse
- Stakeholder survey of MDEQ performance
- MDEQ survey of stakeholder performance

References to Liquid Phase, Free Phase, Free Product, and Source

References to liquid phase and free product and source in the Part 201 statute. There are no references to free phase in the Part 201 statute.

20101 (1)(v) "Free product" means a hazardous substance in a liquid phase equal to or greater than 1/8 inch of measurable thickness that is not dissolved in water and that has been released into the environment.

Sec. 20114.(1) Except as provided in subsection (4), an owner or operator of property who has knowledge that the property is a facility and who is liable under section 20126 shall do all of the following:

(c) Immediately stop or prevent the release at the source.

(d) Immediately implement source control or removal measures to remove or contain hazardous substances that are released after June 5, 1995 if those measures are technically practical, cost effective, and provide protection to the environment. At a facility where hazardous substances are released after June 5, 1995, and those hazardous substances have not affected groundwater but are likely to, groundwater contamination shall be prevented if it can be prevented by measures that are technically practical, cost effective, and provide protection to the environment...

(f) Immediately initiate removal of a hazardous substance that is in a liquid phase, that is not dissolved in water, and that has been released.

20101(1) (q) "Exacerbation" means the occurrence of either of the following caused by an activity undertaken by the person who owns or operates the property, with respect to contamination for which the person is not liable: (i) Contamination that has migrated beyond the boundaries of the property which is the source of the release at levels above cleanup criteria for unrestricted residential use unless a criterion is not relevant because exposure is reliably restricted as otherwise provided in this part.

20101(II) "Release" includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing of a hazardous substance into the environment, or the abandonment or discarding of barrels, containers, and other closed receptacles containing a hazardous substance. Release does not include any of the following: (iii) A release of source, by-product, or special nuclear material from a nuclear incident, as those terms are defined in the atomic energy act of 1954, 42 USC 2011 to 2297h-13, if the release is subject to requirements with respect to financial protection established by the nuclear regulatory commission under 42 USC 2210, or any release of source by-product or special nuclear material from any processing site designated under 42 USC 7912(a)(1) or 42 USC 7942(a).

20108(2) The state treasurer may receive money or other assets from any source for deposit into the fund. The state treasurer shall direct the investment of the fund. The state treasurer shall credit to the fund interest and earnings from fund investments.

Sec 2018a (2) The state treasurer may receive money or other assets from any source for deposit into the revitalization revolving loan fund. The state treasurer shall direct the investment of the revitalization revolving loan fund. The state treasurer shall credit to the revitalization revolving loan fund interest and earnings from revitalization revolving loan fund investments.

Sec. 20108c. (1) The state site cleanup fund is created within the state treasury.

(2) The state treasurer may receive money or other assets from any source for deposit into the state site cleanup fund.

20108 c (7) Six months after the effective date of this section, and annually thereafter by October 1 of each year, each state executive department and agency shall provide to the department a detailed list of all facilities where the state executive department or agency is liable as an owner or operator under section 20126. Subsequent lists do not need to include facilities identified in a previous list. This list shall include the following information for each facility:

- (a) The facility name.
- (b) Location.
- (c) Use history of the facility.
- (d) A detailed summary of available information regarding the source, nature, and extent of the contamination at the facility.

20118(8) A remedial action plan approved by the department shall include an analysis of source control measures already implemented or proposed, or both. A remedial action plan may incorporate by reference an analysis of source control measures provided in a feasibility study.

20120a(4) If a hazardous substance poses a carcinogenic risk to humans, the cleanup criteria derived for cancer risk under this section shall be the 95% upper bound on the calculated risk of 1 additional cancer above the background cancer rate per 100,000 individuals using the generic set of exposure assumptions established under subsection (3) for the appropriate category or subcategory. If the hazardous substance poses a risk of an adverse health effect other than cancer, cleanup criteria shall be derived using appropriate human health risk assessment methods for that adverse health effect and the generic set of exposure assumptions established under subsection (3) for the appropriate category or subcategory. A hazard quotient of 1.0 shall be used to derive noncancer cleanup criteria. For the noncarcinogenic effects of a hazardous substance present in soils, the intake shall be assumed to be 100% of the protective level, unless compound and site-specific data are available to demonstrate that a different source contribution is appropriate. If a hazardous substance poses a risk of both cancer and 1 or more adverse health effects other than cancer, cleanup criteria shall be derived under this section for the most sensitive effect.

20126 (4)(c) The owner or operator of property onto which contamination has migrated unless that person is responsible for an activity causing the release that is the source of the contamination.

20132 (4)(f) Whether the fund or other sources of funding would be available for any additional response activities that might eventually be necessary at the facility.

References to free phase liquids and Csat in the Part 201 rules.

Rule 101(f) "Csat" means the concentration in soil at which the solubility limits of the soil pore water, the vapor phase limits of the soil pore air, and the absorptive limits of the soil particles have been reached. As used in these rules, Csat is a theoretical threshold above which a free phase liquid hazardous substance may exist.

Rule 526(4)(c) If there is free phase liquid hazardous substance present at the facility, then the person who is subject to section 20114 of the act shall immediately implement source control measures to remove reasonably recoverable free phase liquid on an ongoing basis to reduce the potential for increasing environmental damage.

Rule 706a. (2) Except as provided in R 299.5532(9) and subrules (10), (11), and (12) of this rule, generic soil cleanup criteria for the residential and commercial categories shall be the values shown in table 2 of R 299.5746.

(a) If a generic soil cleanup criterion is greater than Csat, then the person proposing or implementing response activity shall document whether additional response activity is required to control free-phase liquids or to protect against hazards associated with free-phase liquids that are not accounted for in development of the generic criteria.

References to source in the Part 201 rules

522(4)(d) A summary of the information which shows that contamination is emanating from, or has emanated from, and is present beyond the boundary of the source property at a concentration which exceeds that allowed by section 20120a(1)(a) of the act. This summary shall identify the environmental media affected, specific hazardous substances, and the concentrations of those hazardous substances in all affected environmental media at the property boundary and in any sample locations beyond the property boundary. The summary shall also describe the basis for the conclusion that the contamination is emanating, has emanated, or is present beyond the boundary

of the source property, including whether the conclusion is based on groundwater analytical data or fate and transport modeling, both, or neither.

Rule 526. (1) An interim response may be undertaken once a person has knowledge that a property is a facility. All of the following factors shall be considered, if relevant to the facility, in determining the appropriateness of an interim response activity:

(g) The likelihood that source control measures implemented immediately will effectively prevent, minimize, or mitigate injury to the public health, safety, or welfare or to the environment.

Rule 526(2) Interim response activities may include, but are not limited to, any of the following:

(b) Drainage controls where precipitation or runoff from other sources can enter the release area and spread hazardous substances.

526(4) (a) If hazardous substances have contaminated groundwater or surface water which serves as a water supply source, and if the contamination poses an unacceptable risk to the public health, safety, or welfare, then the person who is subject to section 20114 of the act shall assure that all persons whose water supplies are contaminated or immediately threatened by contamination have alternate water service.

526(4)(b) (b) If there is a threat of fire or explosion at the source or anywhere on the facility where contamination has come to be located, then the person who is subject to section 20114 of the act shall immediately notify local fire officials, in addition to any other action undertaken in response to the threat of fire or explosion.

526(4)(c) If there is free phase liquid hazardous substance present at the facility, then the person who is subject to section 20114 of the act shall immediately implement source control measures to remove reasonably recoverable free phase liquid on an ongoing basis to reduce the potential for increasing environmental damage.

Rule 528. (1) The purpose of a remedial investigation is to assess site conditions in order to select an appropriate remedial action, if one is required, that adequately addresses those conditions. The remedial investigation identifies the source or sources of any contamination and defines the nature and extent of contamination originating from that source. Defining the nature and extent of contamination includes identifying contamination that may have migrated beyond the boundary of the source property in excess of applicable generic residential cleanup criteria.

Rule 528...The information that shall be provided in a remedial investigation, as appropriate to the facility, is as follows:...(3) (e) All of the following with respect to the physical setting of the facility:...(g) Source identification and evaluation.

Rule 532 (7) A RAP shall identify which of the pathways, risks, and conditions in this rule are relevant for the facility and include an analysis of source control measures, as required by section 20118(8) of the act. All of the following are potential exposure pathways which shall be considered to determine if they are relevant:

- (i) Risks due to hazardous substances in groundwater as a result of use of that groundwater for drinking water.
- (ii) Risks due to hazardous substances in groundwater as a result of dermal contact with that groundwater.
- (iii) Risks due to hazardous substances in groundwater as a result of those hazardous substances venting to surface water.

- (iv) Risks due to hazardous substances in groundwater as a result of volatilization of those substances to indoor air.
- (v) Risks due to hazardous substances in soil as a result of direct contact with soil.
- (vi) Risks due to hazardous substances in soil as a result of the inhalation of the substances being emitted to and dispersed in ambient air.
- (vii) Risks due to hazardous substances in soil as a result of the leaching of the substances to drinking water.
- (viii) Risks due to hazardous substances in soil as a result of the leaching of the substances to groundwater and subsequent dermal contact with the groundwater.
- (ix) Risks due to hazardous substances in soil as a result of the leaching of the substances to groundwater and the subsequent venting of the groundwater to surface water.
- (x) Risks due to hazardous substances in soil as a result of the direct transport of those substances to surface water as a result of erosion, runoff, or other similar means.
- (xi) Risks due to hazardous substances in soil as a result of volatilization of those substances to indoor air.
- (xii) Risks due to hazardous substances in surface water sediments when considering the factors identified in R 299.5730.
- (xiii) Risks due to free-phase liquids and abandoned or discarded hazardous substances that have not yet been dispersed in the environment.**
- (xiv) Risks due to hazardous substances when considering acute toxic effects, physical hazards, and other hazards not accounted for in the development of generic cleanup criteria.
- (xv) Risks due to hazardous substances when considering impacts on terrestrial flora and fauna, on the food chain, and on the aesthetic characteristics of the affected environmental media, consistent with the requirements of R 299.5728.

Rule 540 (a) Environmental monitoring is not required if a complete interim response activity or a remedial action complies with criteria provided for in section 20120a(1)(a) to (e) of the act, unless it is necessary to assure compliance with criteria that apply outside the boundary of the property that is the source of the release.

Rule 701(c) (ii) Information sources recognized by the risk assessment community, such as the integrated risk information system database maintained by the United States Environmental Protection Agency or other scientifically reliable databases.

Rule 703 (d) "Relative source contribution factor" or "RSC" means that portion of a person's total daily intake of a noncarcinogenic hazardous substance that comes from the medium being addressed by the cleanup criterion.

Rule 706a (a) The following chemical-physical properties may be modified as part of a site-specific cleanup criterion developed under section 20120a(2) of the act, if documented by the person proposing the site-specific criterion to be more appropriate for a specific facility than the generic parameter listed in table 4 of R 299.5752:

- (i) Relative source contribution factor for drinking water.
- (ii) Ingestion absorption efficiency.
- (iii) Dermal absorption efficiency.
- (iv) Relative source contribution factor for soil.

Rule 714 (4) Facility-specific measurements of the following parameters may be substituted individually for the generic assumptions and still allow the facility to satisfy the generic categorical criteria under section 20120a(1)(a) to (e) of the act.

- (e) Source-building foundation separation distance.

Rule 716(7) A person may request, as provided in R 299.5526(9) and R 299.5532(11)(d), that the department authorize a response activity that includes a mixing zone. The mixing zone determination request shall provide the information required by the department to process the request, including all of the following:

- (b) The location, nature, and chemical characteristics of past and current sources of groundwater contamination.
- (c) The name, chemical abstract service number, and concentration in the groundwater at the GSI and upgradient of the interface to the source area of hazardous substances and water quality characteristics described in subrule (3) of this rule.

Rule 716(13)(d) A demonstration that the proposed alternative GSI monitoring points allow for reliable, representative monitoring of groundwater quality. This demonstration shall take into account all of the following:

- (i) Temporal and spatial variability of hazardous substance concentrations in groundwater throughout the plume from the source or sources to the points of venting to surface water.

Rule 716(17) If a person has controlled the source of groundwater contamination and has demonstrated that compliance with a GSI criterion developed under this rule is unachievable, then that person may appeal to the director for resolution of the matter.

Rule 724 (6) A site-specific SVIIC may be developed for remedial action plans prepared pursuant to section 20120a(2) of the act that is based on demonstration of compliance with 1974 PA 154, MCL 408.1001 et seq. and the rules promulgated pursuant to that act. This subrule shall apply only when all of the following conditions are satisfied:

- (b) The exposure to hazardous substances from environmental contamination is a portion of the exposure to which workers are otherwise subject from process-related sources of the same hazardous substance.

Rule 907(3)(h) For all hazardous substances that will be used at the facility, documentation of the extent of existing contamination for hazardous substances known to have been released, and general projections about the fate of contamination, including all of the following:

- (ii) Identification of known sources of hazardous substance releases on the property.

Rule 1013(5)(b) The exposure to hazardous substances from environmental contamination is a portion of the exposure to which workers are otherwise subject from process-related sources of the same hazardous substance.

Senate Bills 528-533 as of 1/24/12 (Proposed Part 213)

21323a (4) notwithstanding subsection (1), the following persons are not liable under this part:

- (a) the owner or operator of property onto which contamination has migrated unless that person is responsible for an activity causing the release that is the source of the contamination.

21308a (1)(b) Site information and site characterization results. The following items shall be included as appropriate given the site conditions:

- (xix) Identification of any other contamination on the site not resulting from the release and the source, if known.

Definitions of NAPL and NAPL Phases/States

Recommendation #6 includes:

Define phases/states of NAPL to include residual, mobile, and migrating by using the proposed Part 213 definitions which are based on ITRC guidance – however, the proposed Part 213 amendments should omit ASTM references to avoid confusion over meanings and to account for evolution of ASTM guidance. (Reference to ASTM to be maintained as explanation of intent but not locked into law) Note: ASTM use of “Free” addresses same condition as ITRC “Mobile” and ASTM “Mobile” is ITRC “Migrating.”

DEFINITIONS in proposed Part 213:

"NAPL" means a nonaqueous-phase liquid or a nonaqueous-phase liquid solution composed of 1 or more organic compounds that are immiscible or sparingly soluble in water. NAPL includes both DNAPL and LNAPL.

"DNAPL" means a dense nonaqueous-phase liquid with a specific gravity greater than 1 and composed of 1 or more organic compounds that are immiscible or sparingly soluble in water. DNAPL encompasses all potential occurrences of DNAPL.

"LNAPL" means a light nonaqueous-phase liquid having a specific gravity less than 1 and composed of 1 or more organic compounds that are immiscible or sparingly soluble in water, and the term encompasses all potential occurrences of LNAPL.

"MIGRATING NAPL" means NAPL that is observed to spread or expand laterally or vertically or otherwise result in an increased volume of the NAPL extent, usually indicated by time series data or observation. Migrating NAPL does not include NAPL that appears in a well due to a fluctuating water table. Migrating NAPL includes mobile LNAPL as defined in ASTM E 2531- 06E1.

"MOBILE NAPL" means NAPL that exceeds residual NAPL saturation, and includes migrating NAPL, but not all mobile NAPL is migrating NAPL. Mobile NAPL includes free LNAPL as defined in ASTM E 2531-06E1

"RESIDUAL NAPL SATURATION" means the range of NAPL saturations greater than zero NAPL saturation up to the NAPL saturation at which NAPL capillary pressure equals pore entry pressure and includes the maximum NAPL saturation, below which NAPL is discontinuous and immobile under the applied gradient residual NAPL saturation includes residual LNAPL as defined in ASTM E 2531-06E1.

ASTM definitions:

3.1.8 *entrapped LNAPL, n*—residual LNAPL in the form of discontinuous blobs in the void space of a porous medium in a submerged portion of a smear zone resulting from the upward movement of the water table into an LNAPL body.

3.1.8.1 *Discussion*—At a residual condition, however, a transient fall of the water table can result in local area redistribution of LNAPL that is no longer in a residual condition.

3.1.12 *free LNAPL, n*—LNAPL that is hydraulically connected in the pore space and has the potential to be mobile in the environment.

3.1.12.1 *Discussion*—Often exhibited by LNAPL accumulations in wells. Free LNAPL exceeds the residual saturation. Not all free LNAPL is mobile LNAPL.

3.1.15 *LNAPL, n*—a light nonaqueous phase liquid having a specific gravity less than one and composed of one or more organic compounds that are immiscible or sparingly soluble in water and the term encompasses all potential occurrences of LNAPL (for example, free, residual, mobile, entrapped). (See Fig. 2.)

mobile LNAPL, n—free LNAPL that is moving laterally or vertically in the environment under prevailing hydraulic conditions.

3.1.23.1 *Discussion*—The result of the LNAPL movement is a net mass flux from one point to another. Not all free LNAPL is mobile, but all mobile LNAPL is free LNAPL.

3.1.38 *residual LNAPL, n*—LNAPL that is hydraulically discontinuous and immobile under prevailing conditions.

3.1.38.1 *Discussion*—Residual LNAPL that cannot move through hydraulic mechanisms (unless prevailing conditions change), but is a source for chemicals of concern dissolved in ground water or in the vapor-phase in soil gas. The residual LNAPL saturation is a function of the initial (or maximum) LNAPL saturation and the porous medium. (See Fig. 3.)

CSI Free Product Workgroup recommended definition of “Migrating NAPL”

"MIGRATING NAPL" means NAPL that is observed to spread or expand laterally or vertically or otherwise result in an increased volume of the NAPL extent, usually indicated by time series data or observation. Migrating NAPL does not include NAPL that appears in a well within the historical extent of NAPL due to a fluctuating water table. Migrating NAPL includes mobile LNAPL as defined in ASTM E 2531- 06E1.

Note: Changes to the definition of migrating NAPL are suggested because migrating LNAPL could occur with water table drop if the LNAPL extent expanded beyond historical limits.

Free Product / Source Removal / Csat

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E. Groundwater Surface Water Interface

Issue Statement

There remains significant opportunity to develop alternative and new approaches to managing risk from the GSI pathway to improve efficiency, sustainability and movement to closure while protecting the environment. Proposals to address these will be presented by this Committee.

Issue for Implementation: *Section 324.20120e Groundwater Venting to Surface Water*

Recommendation: *Suggested language for statutory enactment*

324.20120e Response activity providing for venting groundwater.

Sec. 20120e. (1) The pathway addressed by groundwater surface water interface (GSI) criteria shall be considered a relevant pathway when a remedial investigation or application of best professional judgment leads to the conclusion that a hazardous substance in groundwater is reasonably expected to vent to surface water in concentrations that exceed the generic GSI criteria. The factors to be considered in determining whether the pathway is relevant include all of the following:

- (a) Whether there is a hydraulic connection between groundwater and the surface water in question.
- (b) The proximity of surface water to source areas and areas of the groundwater contaminant plume that currently, or may in the future be expected to, exceed the generic GSI criteria.
- (c) Whether the receiving surface water is surface waters of the state as that term is defined in administrative rules under Part 31 of the act as modified by section 20120e.
- (d) The direction of groundwater movement.
- (e) The presence of artificial structures or natural features that would alter hydraulic pathways. This includes, but is not limited to, highly permeable zones, utility corridors, and seawalls.
- (f) The mass of hazardous substances present at the facility that may affect groundwater.
- (g) Documented facility-specific evidence of natural attenuation, if any.
- (h) Whether or not a sewer which has an outfall to surface water has openings in the portion of the sewer where the sewer and the groundwater contaminant plume intersect which allows the groundwater contaminant plume to migrate into such sewer. If the sewer can be demonstrated as being tight to prevent inflow to the sewer where the groundwater contaminant plume intersects the sewer or if the sewer is otherwise impervious, based on accepted industry standards, to inflow from groundwater into the sewer at that location, then the groundwater-surface water interface pathway with respect to the sewer is not relevant and shall not apply.

(2) GSI monitoring wells, as described in section 20e(12) of the act, are not required in order to make a determination under subsection (1) of this rule if other information is sufficient to make a judgment that the pathway is not relevant. Fate and transport modeling may be used, if appropriate, to support a professional judgment under subsection (1) of this rule.

(3) A person may demonstrate compliance with requirements under this part for a response activity providing for venting groundwater by meeting any of the following, singly or in combination:

- (a) Generic groundwater-surface water interface criteria, which are the water quality standards for surface waters developed by the department pursuant to part 31 or variances from such water quality standards approved by the department. The use of surface water quality standards, and such variances, shall be allowable in any of the cleanup categories provided for in section 20120a(1). Whole effluent toxicity testing shall not be required or be a criterion or be the basis for any criteria for venting groundwater except for samples taken at the groundwater-surface water interface.
- (b) Mixing zone-based groundwater-surface water interface criteria established under this part. The use of mixing zone-based criteria shall be allowable in any of the categories provided for in section 20120a(1) and (2) and shall be allowable for criteria based on chronic or acute based surface water quality criteria.
- (c) Site-specific criteria established under section 20120b or subsection (16). The use of mixing zones established under this part may be applied to, or included as, site-specific criteria.

(4) A person may proceed under section 20114a to undertake the following response activities:

- (a) Evaluation activities associated with a response activity providing for venting groundwater using groundwater-surface water interface monitoring wells, alternative monitoring points, an ecological demonstration, a modeling demonstration, or any combination of these. If such person who is liable under section 20126 determines to take no further action based on alternative monitoring points, an ecological demonstration, a modeling demonstration, or a determination under subsection (15), or any combination of these, then such person shall notify the department and request approval under section 20114b.
- (b) Response activities that rely on monitoring from groundwater-surface water interface monitoring wells to demonstrate compliance under subsection (3)(a).
- (c) Except as provided in subdivision (a) and subsection (5), response activities that rely on monitoring from alternative monitoring points or rely on a modeling demonstration, or any combination of these to demonstrate compliance with subsection (3)(a) if the person submits to the department a notice of alternative monitoring points, a modeling demonstration, or any combination of these, at least 30 days prior to relying on those alternative monitoring points, a modeling demonstration, or any combination of these, that contains substantiating evidence that the alternative monitoring points, a modeling demonstration, or any combination of these, comply with this section.

(5) A person must proceed under section 20114b to undertake response activities that rely on monitoring from alternative monitoring points, or rely on an ecological demonstration, a modeling demonstration, or a combination of these, to demonstrate compliance with subsection (3)(a) if 1 or more of the following conditions apply to the venting groundwater:

- (a) An applicable criterion is based on acute toxicity endpoints.
- (b) The venting groundwater contains a bioaccumulative chemical of concern as identified in the water quality standards for surface waters developed pursuant to part 31 and for which the person is liable under this part.
- (c) The venting groundwater is entering a surface water body protected for coldwater fisheries identified in the following publications:
 - (i) "Coldwater Lakes of Michigan," as published in 1976 by the department of natural resources.

- (ii) "Designated Trout Lakes and Regulations," issued September 10, 1998, by the director of the department of natural resources under this authority of part 411.
 - (iii) "Designated Trout Streams for the State of Michigan," as issued under order of the director of the department of natural resources, FO-210.08, on November 8, 2007.
 - (d) The venting groundwater is entering a surface water body designated as an outstanding state resource water or outstanding international resource water as identified in the water quality standards for surface waters developed pursuant to part 31.
- (6) A person must proceed under section 20114b to undertake response activities that rely on monitoring from alternative monitoring points, or rely on an ecological demonstration, or rely on a modeling demonstration, or any combination of these, as applicable, to demonstrate compliance with subsection(3)(b) or (3)(c).
- (7) Alternative monitoring points may be used to demonstrate compliance with this section if the alternative monitoring points meet the following standards:
- (a) The locations where venting groundwater enters surface water have been reasonably identified to allow monitoring for the evaluation of compliance with criteria. Such identification shall include all of the following:
 - (i) Identification of the location of alternative monitoring points within areas of venting groundwater.
 - (ii) Documentation of the approximate boundaries of the areas where the groundwater plume vents to surface water. This documentation shall include information about the substrate character and geology in the areas where groundwater vents to surface water.
 - (iii) Documentation that the venting area identified and alternative monitoring points include points that are reasonably representative of the higher concentrations of hazardous substances present in the groundwater at the groundwater-surface water interface.
 - (b) The alternative monitoring points allow for venting groundwater to be sampled at the groundwater-surface water interface.
 - (c) Sentinel monitoring points are used in conjunction with the alternative monitoring points to assure that any potential exceedance of an applicable surface water quality standard can be identified with sufficient notice to allow additional response activity, if needed, to be implemented that will address the exceedance. Sentinel monitoring points shall include, at a minimum, monitoring points upland of the surface water body.
- (8) An ecological demonstration may be used to demonstrate compliance with this section if the ecological demonstration meets the following:
- (a) The boundaries of the area where the groundwater plume vents to surface water are documented as provided in (7)(a)(ii).
 - (b) Sampling data for the area in (a), when compared to other reasonably proximate areas of that surface water body, do not show an impairment of existing or designated uses for that surface water body caused by, or contributed to by, the venting plume, or do not show that the venting plume will cause or contribute to impairment of existing or designated uses of surface water quality in a situation where the area of the surface water immediately outside the venting area of the venting plume shows an impairment of existing or designated uses.
 - (c) Sampling data for the area in (a) do not show exceedances of surface water quality standards in the surface water body caused by or contributed to by, the venting plume.

- (d) The sampling data in (b) and (c) may be data on benthic organisms, fish, and the water column of the surface water which data may be in the form of an in situ bioassay or a biological community assessment.
 - (e) Sentinel monitoring in on-land wells is performed for a period as needed to show that the groundwater plume is not likely to migrate to the surface water body and vent in the future in a mass amount and rate that would impair the existing or designated uses for that surface water body, or cause or contribute to exceedances of surface water quality standards in the surface water body.
- (9) A modeling demonstration may be used to demonstrate compliance with this section if the modeling demonstration meets the following:
- (a) The modeling methodology is generally recognized as a means to model venting groundwater plumes or is an innovative method that is scientifically justifiable.
 - (b) The results of the modeling show that the venting plume at the groundwater-surface water interface complies with the applicable criteria under subsection (3) or supports the ecological demonstration, as applicable.
 - (c) The model shall be supported by site-specific information and appropriate field measurements.
- (10) If a person intends to utilize mixing zone-based groundwater-surface water interface criteria under subsection (3)(b) or site-specific criteria under subsection (3)(c) in conjunction with alternative monitoring points, an ecological demonstration or a modeling demonstration, or a combination of these, the person shall submit to the department a response activity plan that includes the following:
- (a) A demonstration of compliance with the standards in subsection (7), (8) or (9) as applicable.
 - (b) If compliance with a mixing zone-based groundwater-surface water interface criterion under subsection (3)(b) is to be determined with data from the alternative monitoring points, documentation that it is possible to reasonably estimate the volume and rate of venting groundwater.
- (11) Compliance with a site-specific criterion or mixing zone criterion shall be based on a site-specific monitoring plan that takes into account the basis for the site-specific criterion or mixing zone criterion.
- (12) If there is an exceedance of an applicable GSI criterion based on acute toxicity at a compliance monitoring point applicable at a particular facility, then action shall be taken as described in this rule:
- (a) A person who is implementing the response activity at that facility who determines that there is such an exceedance shall notify the department of that condition within 7 days of obtaining knowledge that the exceedance is occurring.
 - (b) If the person described in subdivision (a) is a person liable under section 20126, then that person shall, within 30 days of the date on which notice is required under subdivision (a) of this subsection, do one or more of the following:
 - (i) Commence response activity to address such exceedance at the applicable compliance monitoring point and submit a schedule to the department for such response activity.
 - (ii) Submit a notice of intent to the department to propose an alternative monitoring point or perform an ecological demonstration or perform a modeling demonstration or a combination of these. The notice shall include a schedule for submission of the proposal.
 - (iii) Submit a notice of intent to the department to propose a site-specific criterion or a mixing zone criterion under section 20120a and 20120b of the act. The notice shall include a schedule for submission of the proposal.

The department may approve a schedule as submitted under this subdivision or direct reasonable modifications in the schedule. The department may grant extensions of time for actions required under subdivision (b) of this subsection and for activities in an approved or department-modified schedule if the person is acting in good faith and site conditions inhibit progress or completion of such activity. The department's decision, to grant an extension or impose a schedule modification, shall consider the practical problems associated with carrying out the response activity and the nature and extent of the exceedances of applicable GSI criteria.

- (13) For the purpose of this section, surface water does not include:
- (a) groundwater.
 - (b) hyporheic zone water.
 - (c) water in enclosed sewers.
 - (d) water in drainage ways and ponds used for wastewater conveyance, treatment, or control.
 - (e) water in subgrade utility runs and utility lines and permeable fill in and around them.
- (14) As used in this section, "groundwater-surface water interface monitoring well" means a vertical well installed in the saturated zone as close as practicable to surface water with a screened interval or intervals that are representative of the groundwater venting to the surface water.
- (15) No response action beyond evaluations shall be required where a venting plume has no effect or only a de minimis effect on a surface water body. Such a determination may be based on mass flow and rate of groundwater movement calculations.
- (16) Devices used for sampling at alternative monitoring points may be beyond the waters edge and on top of or into the sediments.
- (17) Biological criteria may be used as site-specific criteria under (3)(c). If biological criteria are used, then sentinel wells shall be used to determine if the biological criteria may be exceeded due to future increased mass loading to the surface water from the venting plume. Numerical evaluations of analyses of the samples from the sentinel wells shall be performed in connection with the determination in the preceding sentence.
- (18) If alternative monitoring points, or an ecological demonstration or a modeling demonstration or a combination of these is used for the response activity and sentinel wells are installed, a contingency plan for potential additional response activity may be required.
- (19) If a person has controlled the source of groundwater contamination and has demonstrated that compliance with GSI criteria developed under this part is unachievable, then that person may file a technical impracticability waiver request with the department. The technical impracticability waiver shall document the reasons why compliance is unachievable. The department shall respond to such a waiver within 180 days with an approval, request for additional information, or denial that provides a detailed description of the reasons for denial.
- (20) Natural attenuation of hazardous substances in venting groundwater upgradient of the GSI is an acceptable form of remediation and may be relied upon in lieu of any active remediation of the groundwater. Natural attenuation may be occurring by way of dispersion, diffusion, sorption, degradation, transformative reactions, and other methods.
- (21) No permit shall be required under Part 31 of NREPA for any venting groundwater contamination plume which is addressed under this section.
- (22) Wetlands shall be protected for the groundwater surface water pathway to the extent that particular designated uses, as defined by Part 31, which are specific to that wetland would

otherwise be impaired by a groundwater contamination plume venting to surface water in the wetland.

(23) If a groundwater contamination plume is entering a sewer which discharges to surface water, and the GSI pathway is relevant, the following shall apply:

- (a) If the groundwater enters a storm sewer owned or operated by an entity that is subject to federal municipal separate storm sewer system regulations and a part 31 permit for the discharges from such system, then the contaminated groundwater entering such sewer is subject to regulation by such entity's ordinance regarding illicit discharges, but such regulation of the contaminated groundwater shall not prevent the use of subparagraph (b) or other provisions of this section to determine the need for response activity under this part.
- (b) The following shall also apply:
 - (j) The compliance monitoring point may be a groundwater monitoring well, if proposed by the person performing the response action, or such person may choose another point for measuring compliance under this subparagraph.
 - (ii) A mixing zone may be applied which accounts for the mixing which occurs in the receiving surface water into which the sewer system discharges.
 - (iii) Attenuation which occurs in the sewer system prior to the sewer system outfall to surface water shall be considered.
 - (iv) The compliance point is at the sewer system outfall to surface water, which shall account for any applicable mixing zone for the sewer system outfall.
 - (v) Monitoring to determine compliance may be performed at a location where the contaminated groundwater enters the sewer or downstream from that location but upstream of the sewer outfall at the surface water, if practicable and representative. Appropriate back calculation from the compliance point to such monitoring point may be applied to account for mixing and other attenuation that occurs in the sewer system before the compliance point. As appropriate, such a monitoring point may require another monitoring point in the sewer system upstream from the area where the contaminated groundwater enters the sewer. Upstream sampling in the sewer may be performed to determine source contribution.
 - (vi) The contaminant mass flow, and the rate and amount of groundwater flow, into the sewer can be considered and may result in a determination that the migration into the sewer is de minimis and does not require any response activity in addition to the evaluation that leads to such determination.
- (c) Factors in (b) may be considered and applied to determine if an illicit discharge is occurring and how to regulate the discharge.

(24) If the department denies a response activity plan containing a proposal for alternative monitoring points, an ecological demonstration or a modeling demonstration, or a combination of these, the department shall state the reasons for denial, including the scientific and technical basis for the denial.

(25) A person may appeal a decision of the department in a response activity plan or no further action report regarding venting groundwater as a scientific or technical dispute under section 20114e.

Specific Action to be taken to implement (check and describe):

| | | | | | | | |
|-----------|---|------|--|--------|--|------------|--|
| Statutory | X | Rule | | Policy | | Governance | |
|-----------|---|------|--|--------|--|------------|--|

Generic Decision Criteria: To be applied to each recommendation

| | yes | no | Level of agreement | Comments |
|---|-----|----|--------------------|---|
| 1 Applies Best Judgment | X | | ALL | |
| 2 Uses Sound Science | X | | ALL | |
| 3 Considers Relative Risk | X | | ALL | |
| 4 Is Adaptable and Durable | X | | ALL | |
| 5 Includes Measures of Success | X | | ALL | provides a pathway to closure where GSI is the remaining pathway to consider and is protective based on WQS |
| 6 Other decision-criteria developed by group: | X | | ALL | |

Supporting arguments:

1. *We focused regulatory compliance to protect surface water resources.*
2. *We have addressed the concerns of the regulated parties.*
3. *We have implemented ORR Recommendations.*

Recommended Follow Up Actions:

- *Guidance needs to be developed for uniform application of amendments.*
- *This group has expressed the willingness to continue providing input into the legislative process on these issues.*
- *We recommend that more involvement by Water Resources Division is needed to effectively administer the GSI part of the program.*
- *Develop a training program with the focus on education across the division and districts for consistent application of GSI recommendations, and develop broader understanding of the degree of data needed to empower staff to make decisions with a reasonable amount of data.*
- *MDEQ provides guidance for MS4 communities to understand meaning of “illicit discharge” Meaning – “Illicit Discharge” means any discharge (or seepage) to the separate storm water drainage system that is not composed entirely of storm water or uncontaminated groundwater. “Uncontaminated groundwater” to mean groundwater that will not contribute substantially to the violation of a water quality standard or will not be a significant contributor of pollutants upon discharge to the surface waters of the state.*
- *Guidance on de minimis determination*
- *Guidance regarding various sampling devices for the interface*
- *Guidance on how to address acute exceedances*

Action Plan: The GSI Stakeholder Group plans to meet via conference call on March 2, 2012 to further refine the proposed statutory language provided as part of the recommendations made on February 17, 2012.

Issue for Implementation: *Evaluating Mercury in Groundwater Plumes Relative to GSI*

Recommendation:

- Utilize 200 ppt U.S. EPA Method 245.1 detection limit for mercury as an action level
- The expectation is that if mercury is detected in venting groundwater at levels above 200 ppt then response activities will be necessary.
- The group decided that levels below 200 ppt in venting groundwater provide insufficient environmental benefit relative to air deposition sources.
- Air emissions of Mercury are 4,000 pounds in Michigan in 2011, and all permitted point sources in water equates to 20 pounds of mercury.

Specific Action to be taken to implement (check and describe):

| | | | | | | | |
|-----------|--|------|--|--------|---|------------|--|
| Statutory | | Rule | | Policy | X | Governance | |
|-----------|--|------|--|--------|---|------------|--|

Generic Decision Criteria: To be applied to each recommendation

| (for reflection, polling, and reporting out) | | | | |
|---|-----|----|--------------------|---|
| | yes | no | Level of agreement | Comments |
| 1 Applies Best Judgment | X | | ALL | |
| 2 Uses Sound Science | X | | ALL | |
| 3 Considers Relative Risk | X | | ALL | |
| 4 Is Adaptable and Durable | X | | ALL | |
| 5 Includes Measures of Success | X | | ALL | provides a pathway to closure for GSI to consider and is protective based on relative contribution from sources |
| 6 Other decision-criteria developed by group: | | | | |

Supporting arguments:

1. We focused regulatory compliance to protect surface water resources.
2. We have addressed the concerns of the regulated parties.

Recommended Follow Up Actions:

- Adopt and implement the policy.
- Publish the policy in the form of guidance

Groundwater Surface Water Interface

Derek Kaiding, Haley & Aldrich of Michigan

Gary Klepper, Conestoga-Rovers

Anna Maiuri, Miller, Canfield Paddock and Stone

Dan O'Neil, ARCADIS

Mike Robinson, Warner Norcross & Judd

Shay Wideman, Valero Companies

Chris Alexander Water Resources Division, MDEQ

Bill Creal, Chief Water Resources Division, MDEQ

Steve Hoin, SE Michigan District, MDEQ

Sara Pearson, Grand Rapids District, MDEQ

MSUE Facilitators: Bonnie Wichtner-Zoia, Terry Gibb



F. Part 201 Rules

Issue Statement

Align statute, rules, Op. Memos, guidance document, internal processes and Department goals with current statute (Part 201) to reduce the real risk to human health and the environment, expedite site cleanups, and foster brownfield redevelopment.

Where inconsistencies exist between statute and rules, Op memos, guidance, internal processes and Department goals, statutory changes, may be recommended.

Recommendation: Part 201 Rules

I. RULES

1. Rule 101 and 103 - Rescind all definitions except terms that are necessary for the rules, only. Otherwise place terms and definitions into statute or guidance. Scientific terms should be moved into guidance. Rationale: Statute very detailed, also more flexibility by reliance on professional judgment.
2. Rule 105 – Rescind. Rationale: irrelevant.
3. Rule 107 - Rescind. Rationale: covered by statute.
4. Rule 109 - Rescind, but add statement to statute that Department approved or Department funded cleanups are exempt from other NREPA permit obligations, similar to CERCLA. Rationale: expedite cleanups, streamlines remedy review process, eliminates interdepartmental disputes, is performance based.
5. Rule 111 – Rescind. Rationale: Not necessary – restate basic legal principle.
6. Rule 113 – Rescind. Rationale: unnecessary and eliminates burden on Department.
7. Rule 115 - Move applicable parts to statute (subrules 1 and 2). Rationale: still useful to Department.
8. Rule 117 – Rescind and update statutory reference to current 40 CFR Section. Rationale: covered by statute.
9. Part 2 Rules - “Site Identification and Tracking”, Rules 209-219 - rescind rules due to current Part 201 amendments. Department may consider a guidance document on managing the new site inventory program. Rationale: No longer applicable based on Part 201 amendments.
10. Rules 401 through 415 - Rescind, state in statute that providing alternative water is a response activity and review for consistency with public health code. Move to § 324.20101(pp) - definition of “Response Activity”. Rationale: Can be covered under statute, simplifies program.
11. Rules 520 (1)-(6) and (9)-(13) – Rescind; requirement is already in statute or doesn't add any benefit.
12. Rule 52 (7) and (8) - Leave in the Rules the access provision. Clarify in the Rule what constitutes diligently pursuing off site access. The revised Rule would state that sufficient time and effort for obtaining access is dependent on site complexity.
13. Rules 520 (14) - Modify and move to statute.

14. Rule 522 - General Recommendation: consolidate any remaining notice provision rules from all of Part 201 Rules into one rule and revise statute to focus notice determinations on reasonable and relevant pathways and exposures.
15. Rules 522 (1) to (4), (6) and (8) - Rescind. Requirement is already in statute or doesn't add any benefit.
16. Rule 522 (5) – Move to NREPA Part 615.
17. Rule 522 (7) – Move to guidance.
18. Rule 524 (1) to (4) – Rescind. Requirement is already in statute or doesn't add any benefit.
19. Rule 524 (5) – Move to statute with other land use restrictions and clarify it is a deed notice.
20. Rule 524 (6) – Rescind, covered by NFA post closure agreement.
21. Rule 526 (1) to (9) – Rescind; requirement is already in statute or doesn't add any benefit.
22. Rule 528 – Rescind existing rules and replace with new rules that describe the conduct of investigations utilizing a Conceptual Site Model (“CSM”) addressing reasonable and relevant pathways and exposures.
23. Rule 530 – Rescind or move to guidance. Add language in Section 20114(h)ii that refers to undertaking a feasibility study. Rationale: unnecessary in rules, interferes with best professional judgment, allows flexibility.
24. Rule 532 - Rescind. Department may promulgate guidance on the preparation of response activity plans and NFA reports. Rationale: Statute is detailed, rule is outdated, MDEQ internal review can be accomplished more simply through guidance.
25. Rule 534 - Rescind. Unnecessary because it is addressed by NFA and Due Care provisions.
26. Rule 536 – Rescind. Not relevant to current statute.
27. Rules 538 and 540– Rescind and move to guidance document if necessary.
28. Rules 601 to 607 - Rescind. Requirement is already in statute or doesn't add any benefit. See recommendation 31 below to prepare a guidance document on what should be included in the contents of a Response Activity Plan. The contents would depend on closure method selected including, but not limited to, plans for a NFA letter.
29. Rules 701 and 703 - Rescind. Definitions. Consolidate all remaining rule definitions under Rule 101. Only include definitions from Part 7 that are necessary and not otherwise defined in Statute. Develop definition for cleanup criteria that better reflects the multiple purposes that numeric criteria serve under Part 201, i.e., numeric criteria may be used as:
 - a. screening levels,
 - b. basis for “facility” determination
 - c. basis for closure

Develop different terminology to better reflect multiple purposes that numeric criteria serve under Statute, such as “risk based criteria”.

30. Rule 705 or Rule 528 - Should be replaced and incorporated into Statute and/or a rule with a clear statement that a site closure (with NFA determination or self-implemented remedy) may be accomplished via compliance, singularly or in combination with any one of the following:
 - a. Generic criteria
 - b. Site Specific Criteria
 - c. Non-numeric methods that rely on engineering controls and or land and resource use restrictions)

Indicate that all three approaches are equally protective and are to be given equal consideration in MDEQ review procedures. The applicability of the criteria is to be determined based on completion of a CSM (as recommended in No. 22 above) and identification of reasonable and relevant pathways of exposure.

31. Rule 705 - Rescind. Promulgated guidance should be developed to provide guidelines for contents of NFA's, Response Activity Plans, etc. Amend statute at 20118(6) to eliminate reference to Rule 705(5)&(6).
32. Rule 706 - Rescind. Document in a Promulgated Guidance Document available methods/ approaches to demonstrating compliance with numeric criteria. Guidance should be developed for each exposure pathway for which generic criteria are available and should emphasize that site conditions and risk management/assessment principals will dictate the compliance demonstration methods. Available compliance demonstration methods should be presented in a hierarchy (from simple, straightforward to complex). The Guidance should indicate methods that are acceptable but not preclude alternative approaches. The Guidance should be reviewed every two to three years and updated, if appropriate.
33. Rules 706a, 734, 736, 738 - Rescind. Incorporate all toxicological inputs and physical/chemical parameters used in development of generic criteria into promulgated guidance. Develop new rule that specifies the hierarchy of sources used in the development of toxicological inputs and physical/chemical parameters.
34. Rule 707 - Modify to expand definition of background to include regional and anthropogenic background.
35. Rules 708 to 726 - Rescind each rule and replace with rules that codify algorithms to be used in the calculation of generic criteria. Criteria tables to be included in promulgated guidance.
36. Rule 728 - Revise and title it "Other Injury". Modify and clarify the scope of "other injury" to exclude reference to developing criteria and replace with language that requires the injury to be assessed (confirm absence or presence of injury) and, if necessary mitigated if that injury is not otherwise addressed by the Statute and other applicable rules. "Injury" should be limited to aesthetic, physical, acute toxicity, and use impairment.
37. Rule 730 - Modify to delete reference to cleanup criteria. Indicate that remedial actions that address sediments associated with waters of the State shall consider the need to assess and, if necessary mitigate use impairments as appropriate to the facility in question.
38. Rule 732 - Rescind. Retain concept that OSHA/MIOSHA standards may be relied on to establish cleanup criteria at sites subject to OSHA/MIOSHA requirements regardless of whether the chemical is used in the process.

39. Rule 740 – Rescind. Basis and inputs for criteria development to be included in promulgated guidance.
40. Rule 742 – Rescind. Addressed in 2010 Statute amendments 20120a(10).
41. Rules 744 to 752. Rescind. Not needed since criteria tables will be deleted from rules and incorporated in promulgated guidance.
42. Part 8 Rules – Rescind. No longer applicable. Rationale: No longer applicable based on Part 201 Amendments.
43. Part 9 Rules – Section longer relevant due to Part 201 amendments. Statute could state the Department may develop a form for disclosing a BEA. Rationale: Statute has changed and the Amendment has directed that most of these BEA rules are to be rescinded. This rescinding of the rules would simplify the program. A single guidance document could clarify the BEA disclosure process.

II. ADDITIONAL COMMENTS FOR RECOMMENDED REGULATORY AND OPERATIONAL CHANGES

1. Amend statute to include certificate of completion from MDEQ for completion of response activities upon request. Rationale: Allows for MDEQ approval for something less than NFA, provides incentive for regulated parties to complete response actions.
2. Amend statute to allow for NFAs on all or a portion of a facility. Rationale: Facilitates redevelopment and risk reduction, reduces “facility” acreage, measurable
3. Provide a definition of “unacceptable risk” in statute. Rationale: Has been a source of confusion on this in the past.
4. Act 451 § 324.20114c(1) - Clarify that no restrictions or monitoring is required for remedial action that satisfies unrestricted site specific criteria.
5. Act 451 § 20114d(2)(a) - Clarify provision that a post closure plan or post closure agreement is not required for remedial action that satisfies unrestricted site specific.
6. Act 451 § 324.20101(rr) – Consider modifying the definition of response action plan to include OM&M plans.
7. Act 451 § 324.20114a – Add a Section to encourage and support self-implementation of response activities that will: achieve closure, are consistent with risk reduction and are consistent with the law that was applicable at the time the remedy was implemented . This Section should include statutory language that would protect a party that has selected a self-implemented remedy. The self-implementing party should demonstrate (through an equivalent record and data) that the remedy selected would otherwise have been approvable by the MDEQ for the risk posed by the site. Parties undertaking such a self-implemented remedy would receive protection from regulatory changes. This is a protection that is otherwise only afforded a party completing an MDEQ approved remedy.
8. Act 451 § 324.20114c(2)bii – Delete reference to “10 times an applicable soil direct contact cleanup criterion” as it is not based on risk.
9. Act 451 § 324.20120b(2) – Add reference allowing site-specific criteria to be developed consistent with U.S. EPA’s cancer risk target range consistent with their risk management framework.

10. Consolidate notice provision rules from all of Part 201 rules into one rule and revise statute to focus notice determinations on reasonable and relevant pathways and exposures.
11. The use of the CSM (as contemplated in Section I, Recommendation No. 22 and No. 30 above) has the potential to clearly transform the remedy selection process. CSMs would emphasize the designing of the site investigation and remedial selection process to specifically address how to manage the actual risk the site poses. The elements of a CSM could be set forth in a guidance document. The CSM would improve the pace, quality and efficiency of site assessments and cleanup activities undertaken pursuant to Part 201.
12. Insert a statutory provision into Part 201, allowing the MDEQ to issue No Further Interest ("NFI") letters upon request. The NFI letter would be a written acknowledgment by the MDEQ that, based on the site investigation undertaken, no further response activities are necessary. The NFI letter would also signify that, given the de minimis levels of chemicals present on the site, or given site use, no remedial action is necessary.

Specific Action to be taken to implement (check and describe):

| | | | |
|-----------|------|--------|------------|
| Statutory | Rule | Policy | Governance |
|-----------|------|--------|------------|

See Above

Generic Decision Criteria: To be applied to each recommendation

| | yes | no | Level of agreement | Comments |
|--|-----|----|--------------------|-------------------|
| 1. Applies Best Judgment | x | | Unanimous | |
| 2. Uses Sound Science | x | | Unanimous | |
| 3. Considers Relative Risk | x | | Unanimous | |
| 4. Is Adaptable and Durable | X | | Unanimous | |
| 5. Includes Measures of Success | X | | Unanimous | Where applicable. |
| 6. Other decision-criteria developed by group: | X | | Unanimous | |

Issue Recommended for Follow Up:

Issue: *The above recommendations suggest the preparation of several promulgated guidance documents. The recommendations are not to be construed as a determination by the group that there are resources within the MDEQ to prepare such guidance documents. The group made no determination in that regard.*

Recommended Follow Up Actions: *Within the recommendations set forth above there are several action items. For clarification, given the large task and the time constraints, this group worked diligently to first evaluate each Part 201 Rule. To a lesser extent, a review was done with respect to the statute. The group generally discussed guidance documents and memoranda. In addition, given the other group assignments, Group 6 did not perform a*

detailed study of the language in each rule associated with GSI, BEA, Due Care or Soil Movement. We did discuss each of those rules as to whether the rule was necessary, or should the content of the rule be contained within the statute or a guidance document. The group is willing to designate a member or members to continue working on the CSI process, along with representatives from other groups on these recommendations.

Part 201 Rules

Charlie Denton, Barnes and Thornburg LLP

Ed Peterson, GM

Allen Reilly, Horizon Environmental

Susan Sadler, Dawda Mann

Eric Van Dellen, Amway

David Warwick, Envirologic

Thomas Wilczak, Pepper Hamilton

Ken Wiley, FTC&H

Paul Owens, SE MI District Office, MDEQ

Bob Wagner, Gaylord Office, MDEQ

MSUE Facilitators: John Amrhein, Bethany Prykucki



G. Vapor Intrusion

Issue Statement

The VI Workgroup intends to modify the approach to investigation, evaluation, and selection of a remedy for the VI pathway. The process should be flexible, efficient and produce reliable data gathering and decisions that meet stakeholders' needs. This change should be approached in a manner that protects human health consistent with the best scientific evidence.

Our consensus process:

The VI Workgroup prefers 100% consensus but in the case we cannot reach consensus, we will conduct a vote. The numbers for and against will be recorded but not names. Minority written opinions will be included. See the "generic voting criteria" section in each recommendation for this information.

Proxy:

The VI Workgroup reviewed these recommendations as they were typed in and signed them at the meeting. A copy of this document will be circulated amongst the group after our return. Any changes will be communicated.

Linkage with ORR recommendations:

The VI Workgroup has listed which ORR issues are addressed by our recommendations for each recommendation. For reference the ORR issue we addressed is included here:

ORR Recommendation R - 2

Subject: Part 201/213 Vapor Intrusion Criteria

Recommendation: *The MDEQ should carefully address the important vapor intrusion pathway in a manner which protects human health consistent with the best scientific evidence available. In doing so, the MDEQ should: (i) allow the initial use of a conceptual site model and other site evaluation techniques before concluding the presence of a complete exposure pathway and vapor intrusion risk; (ii) allow data collection and evaluation processes consistent with the needs of business transactions, which may include greater use of real - time sampling techniques; (iii) prioritize the compilation and comparison to initial screening levels (not generic criteria) of Michigan - based data from the many sites which are known to exist and are available to the MDEQ; and (iv) develop generic vapor intrusion criteria (with variations based on soil type and other site specific features) with meaningful input from resources outside of the MDEQ with particular expertise in this important area.*

Issue for Implementation: *Development of vapor intrusion criteria*

Recommendation: *(addresses ORR R-2 i, ii and iv)*

Develop internally consistent (in terms of the assumptions that are common to all media) vapor intrusion criteria considering this list of components:

- Media type (soil, soil-gas, groundwater)
- Distance from source (vertical, horizontal)*
- Building use (building, no building, type of building)*
- Land use (residential, non-residential)
- Soil type (fine versus coarse)*

Note: Consider all these components when developing criteria. In some instances there may not be enough difference and criteria could be "collapsed".

*see objections for details

Specific Action to be taken to implement (check and describe):

| | | | | | | | |
|-----------|--|------|---|--------|--|------------|--|
| Statutory | | Rule | X | Policy | | Governance | |
|-----------|--|------|---|--------|--|------------|--|

See recommendation above

Note: These criteria should also be used to establish facility status. See Recommendation #4.

Generic Decision Criteria: To be applied to each recommendation

| (for reflection, polling, and reporting out) | | | | |
|---|-----|----|--------------------|---|
| | yes | no | Level of agreement | Comments |
| 1 Applies Best Judgment | X | | 100% | |
| 2 Uses Sound Science | X | | 100% | |
| 3 Considers Relative Risk | X | | 100% | We are considering various site factors to determine the vapor intrusion criteria and that is the context we are using to answer this question. |
| 4 Is Adaptable and Durable | X | | 88% | Minority opinion is: Not durable because it requires re-evaluation if you change usage of your facility Majority opinion is: From regulatory standpoint, seems durable as land-use changes over time |
| 5 Includes Measures of Success | X | | 100% | What is the context? Ease of which people can use criteria would be one measure but is that implementable? |
| 6 Other decision-criteria developed by group: | | | 100% | |

Supporting arguments:

1. *Adding soil gas criteria adds more certainty to determining facility status. However, soil criteria in some form should be retained (particularly for property transactions and existing data sets).*
2. *Direct evaluation of the pathway instead of a single number. Focus on Risk-based and practical. Allows consideration for more site-specific factors.*
3. *Framework provided by factors matrix creates flexibility to manage site-specific issues. Account for the limited number of key factors that effectively reduce risk in the determination of facility status.*

Non Consensus Items:

Description: *Developing criteria for factors that the owner can change (developing generic criteria for things that can be changed)*

Pros:

Cons:

- *Requires monitoring of changes to site conditions and tracking land use changes over time*
- *May create a need to change the definition of a facility depending on how you interpret the definition of facility (see recommendation #4)*

Issue Recommended for Follow Up:

Issue: *See action items below.*

Recommended Follow Up Actions:

- *Does this recommendation fly outside this room?*
 - *Should a similar approach be applied to other pathways? (e.g., direct contact)*
 - *Does not include a screening level approach*
 - *Determine how to implement this in the regulatory program context.*
 - *What happens if you "flunk" one criteria and not another?*
 - *What if data doesn't match up with what we know about the site and its conceptual site model (CSM) due to a spill or "bad" data (whatever the source)?*
 - *Rules need to clarify how you investigate a release according to the CSM*
 - *Develop a notification process for non- residential facility status to address notification for future land use changes.*
 - *Assembling a database of empirical Michigan-specific attenuation factors would be valuable but such an effort would require significant expertise and resources which we do not think are currently available. Seek outside resources for funding and support.*
-

Issue for Implementation: *Non-residential criteria (MIOSHA)*

Recommendation:

Step one: Seek a legal opinion on whether MIOSHA/OSHA applies to protection of the worker population in the workplace for chemicals not used in production.

If Yes, then: Recommend that MIOSHA/OSHA regulate indoor air in the workplace (while the facility is in operation) where vapor intrusion is a source.

If No, then: Recommend formation of an interagency and stakeholder workgroup to look at this issue with the goal of establishing common standards for regulating indoor air in these workplaces.

Specific Action to be taken to implement (check and describe):

| | | | | | | | |
|-----------|---|------|--|--------|--|------------|---|
| Statutory | X | Rule | | Policy | | Governance | X |
|-----------|---|------|--|--------|--|------------|---|

- See actions listed above.
- Mixed use facilities may be a special case – need to regulate the most sensitive population (e.g., Workers versus residents in a nursing home).

Generic Decision Criteria: To be applied to each recommendation

| (for reflection, polling, and reporting out) | | | | |
|---|-----|----|--------------------|----------|
| | yes | no | Level of agreement | Comments |
| 1 Applies Best Judgment | NA | | | |
| 2 Uses Sound Science | NA | | | |
| 3 Considers Relative Risk | NA | | | |
| 4 Is Adaptable and Durable | NA | | | |
| 5 Includes Measures of Success | NA | | | |
| 6 Other decision-criteria developed by group: | NA | | | |

Supporting arguments:

1. *Avoids double regulation of an operating facility when running.*
2. *Clarifies who is the regulating agency*
3. *Relative risk issue of workplace while in operation (e.g., risk of chemicals being used in workplace versus VI)*

Recommended Follow Up Actions:

- Share with Criteria committee
- Send to Attorney General's office

Issue for Implementation: *Changes needed to Rules to Support Recommendation*

Recommendation: (addresses ORR R-2 *i, ii and iv*)

Modify existing Rules 299.5714 and 299.5724 consistent with recommendation #1 from the VI group and add an additional rule to address the development of soil-gas criteria.

Specific Action to be taken to implement (check and describe):

| | | | | | | | |
|-----------|--|------|---|--------|--|------------|--|
| Statutory | | Rule | X | Policy | | Governance | |
|-----------|--|------|---|--------|--|------------|--|

- *Write the rule changes needed in order to implement recommendation #1.*

Generic Decision Criteria: To be applied to each recommendation

| (for reflection, polling, and reporting out) | | | | |
|---|-----|----|--------------------|----------|
| | yes | no | Level of agreement | Comments |
| 1 Applies Best Judgment | NA | | | |
| 2 Uses Sound Science | NA | | | |
| 3 Considers Relative Risk | NA | | | |
| 4 Is Adaptable and Durable | NA | | | |
| 5 Includes Measures of Success | NA | | | |
| 6 Other decision-criteria developed by group: | NA | | | |

Supporting arguments:

1. *Necessary to implement changes in VI recommendation #1*
2. *Framework provided by factors matrix creates flexibility to manage site-specific issues. Account for a limited number of key site factors that effectively reduce risk in the determination of facility status.*

Recommended Follow Up Actions:

- *Prepare and propose for stakeholder review the draft language that supports the changes for recommendation #1*
- *Link to Part 201 Rules Workgroup (evaluation of non-residential land-use for determination of facility status)*

Issue for Implementation: *Development of Guidance Documents for Vapor Intrusion Assessment*

Recommendation: *(addresses ORR R-2 i and ii)*

We recommend MDEQ develop guidance documents for a tiered approach vapor intrusion assessment. We recommended this guidance address the following:

- *Tiered approach to assessment*
 - *Property transactions*
 - *Due care*
 - *Remedies and response actions*
 - *Closure*
 - *Sampling Methodologies (getting the data):*
 - *CSM (conceptual site model) process*
 - *Data evaluation process (making decisions with the data)*
 - *Monitoring*

We also recommend the development of a process for the easier development, implementation and approval of site-specific criteria.

Specific Action to be taken to implement (check and describe):

| | | | | | | | |
|-----------|--|------|--|--------|---|------------|--|
| Statutory | | Rule | | Policy | X | Governance | |
|-----------|--|------|--|--------|---|------------|--|

Use Guidance document dated January 2012 draft "Sample Collection And The Evaluation Of The VI To The Indoor Air Pathway When The Generic Criteria Do Not Apply" as a starting point.

Generic Decision Criteria: To be applied to each recommendation

| (for reflection, polling, and reporting out) | | | | |
|--|-----|----|--------------------|---|
| | yes | no | Level of agreement | Comments |
| 1. Applies Best Judgment | X | | | |
| 2. Uses Sound Science | X | | | |
| 3. Considers Relative Risk | X | | | |
| 4. Is Adaptable and Durable | X | | | |
| 5. Includes Measures of Success | X | | | For something binary like this, developing the document is the measure of success. Consider doing post-implementation customer review to see if the guidance works well for clients. Or there may be other ways (e.g., social media) to get at whether or not implementation of the guidance has been successful. |
| 6. Other decision-criteria developed by group: | | | | |

Supporting arguments:

- Consistency and clarity for stakeholders
- Flexible approaches to address the VI pathway
- Will be developed with stakeholder input
- Reduces regulatory burden

Trade-off:

- Perception by both regulated community and regulators that the guidance must be used when guidance use isn't a statutory requirement

Recommended Follow Up Actions:

- Modify document as appropriate
- Conduct stakeholder process for guidance document review
- Additional MDEQ resources are required to complete this recommendation – the existing system is back-logged.

Issue Group: Though discussed in the Vapor Intrusion Group, this issue affects the efforts of multiple groups including Rules, Criteria Development, Brownfields, and Due Care. Consensus was not obtained. Therefore this item is not moved forward. The information is provided below as a non-consensus item that includes a recommendation for follow-up.

Issue for Implementation: Definition of facility for all pathways under Part 201 according to key site specific factors (including but not limited to land use)

Recommendation: Though the idea was discussed, no consensus was obtained on how the process could be developed,

Specific Action to be taken to implement (check and describe):

| | | | | | | | |
|-----------|---|------|--|--------|--|------------|--|
| Statutory | X | Rule | | Policy | | Governance | |
|-----------|---|------|--|--------|--|------------|--|

Generic Decision Criteria: To be applied to each recommendation

***Note:** The vote identified below represent whether the issue is carried forward as an item for the vapor intrusion group and not whether further discussion on a facility may be appropriate.

| | yes | no | Level of agreement | Comments |
|--------------------------|-----|----|----------------------------|--|
| 1. Applies Best Judgment | 4 | 5 | There were 9 people voting | Whether or not this applies best judgment is based on your interpretation of risk. The change in the definition of facility should be considered but is such a broad change it is outside the scope of the VI group. This idea is worthy of discussion in a broader stakeholder group. |
| 2. Uses Sound Science | 6 | 3 | There were 9 people voting | |

| | yes | no | Level of agreement | Comments |
|--|-----|----|----------------------------|--|
| 3. Considers Relative Risk | 8 | 1 | There were 9 people voting | |
| 4. Is Adaptable and Durable | N/A | | There were 9 people voting | Group had trouble defining the terms for this question |
| 5. Includes Measures of Success | N/A | | There were 9 people voting | |
| 6. Other decision-criteria developed by group: | | | | |

Supporting arguments: *See below*

Trade-offs: *See below*

Non Consensus Items:

Description: *Develop a process to redefine facility to allow consideration of land use (residential or non-residential) as well as some or all of the following key factors:*

- *Media type (soil, soil-gas, groundwater)*
- *Distance from source (vertical, horizontal)*
- *Building use (building, no building, type of building)*
- *Land use (residential, non-residential)*
- *Soil type (fine versus coarse)*

Recommendation:

Convene a stakeholder group to review the definition of a facility under Part 201. The stakeholder group must include program and departmental specialists from the MDEQ, representatives from the Attorney General's office, as well a wide variety of stakeholders including lending institutions, small business associations, manufacturing, environmental consultants, realtors, and local units of governments. The group should consider how a facility is defined and whether a process can be developed that notifies a party of the presence of contamination (e.g., notice) from the presence of a facility (i.e., a location that has a human health risk present based on current site conditions).

Pros:

- *Minimizing the number of sites that become facilities.*
- *Creates flexibility to manage site-specific issues using framework of key site-specific factors.*
- *Removes the stigma of being labeled a "facility" (which may impact property values, may result in additional regulatory requirements including additional investigation, etc.).*

Cons:

- *May not be clear if a site is a facility or not and may not simplify the process as properties could go in and out of facility status.*
- *Potential requirement for monitoring, reporting, and MDEQ oversight (e.g., approval of response activity plan, etc.) which adds regulatory burden.*

- A causal/liability party may still have clean-up responsibility/liability (both on and off-site) for a property that is not a facility.
- Any owner/operator may have due care responsibility for a site that is not a facility under the regulation.
 - Concern is applicability of 324.20107a if not a facility
 - Soil relocation for sites not a facility
- Ability to obtain brownfield financing and incentives are limited.
- May provide additional financial and personal resource burdens on local units of government to record, store and provide copies of notices.
- Every property transaction would require a detailed environmental investigation to determine facility status.
- MDEQ may need facility status for regulatory authority and for state-funded clean-ups on abandoned parcels.

Issue Recommended for Follow Up: Consider the issue in the broader context of Part 201

Issue: See non-consensus item above

Recommended Follow Up Actions: Consider the potential to convene a larger stakeholder group including program and departmental specialists from the MDEQ, representatives from the Attorney General's office, as well a wide variety of stakeholders including lending institutions, small business associations, manufacturing, environmental consultants, realtors, and local units of governments to evaluate the definition of a facility.

Vapor Intrusion

Jeff Crum, Hamp Mathew

James Harless, SME Inc.

Steve Innes, NTH Consultants

Stephen Song, Environ
International Corp.

Sharon Woolman, Dow Chemical

Carrie Geyer, Program Support
Section, MDEQ.

David Harn, Kalamazoo District,
MDEQ

Matt Williams, Superfund Section,
MDEQ



MSUE Facilitators: Kendra Wills, Glenn Pape

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Julie Pioch, Public Policy Education Specialist, Michigan State University Extension

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¹² http://nrconservation.msu.edu/nrconservation/enr_governance_fellows

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V. Appendices

Leaders and Legends Feedback

Opening Plenary - February 3, 2012

The following feedback was collected from the CSI leaders and legends in response to the question: *"What's one thing we can accomplish as a result of this (CSI) initiative?"*



1. Feedback Applicable to Both Goals: An Implementable (i.e., mutually agreed-upon) Path Forward

- Consensus on (at least some) of the issues (4)
- Achieve consensus on the implementation strategy for most of the ORR recommendations
- Identification of the most important issues and goals for MI clean-up program
- Elevate the importance of addressing some of our legacy problems in order to allow us to move forward
- Agree upon a common purpose
- Cross-cutting agreement
- Proposals for change that are widely supported
- Mutually satisfactory recommendations
- Recommendations that are achievable, agreeable and make good sense and are in the spirit of doing good for MI and its citizens
- Directions for resolution
- Pathway to more approved clean-ups and closures
- Develop some successful doable implementable action to move the 7 issues forward
- Draft workable properly balanced statutory and rule changes that provide needed environmental protection and are consistent with economic progress and sustainability
- Putting into place the specific steps (i.e. statutory amendments, rules and/or guidance) that are tools to support redevelopment rather than abandonment of property
- Create measurable goals that can be effectively implemented
- Define objectives for policy change
- Implementable changes and improvements rooted in sound risk management principles

- Incentives for responsible parties to complete voluntary cleanup; not necessarily by agency approval
- An improved and expanded list of eligible activities for which tax increment financing could support
- A plan to implement the best thinking of this group
- Find a way to assure that following CSI, we can agree on the meaning of the initiatives that are suggested; sound science; practicality; better relationships that we understand each other and agree on the meaning of our suggestions
- Develop a brownfield program that allows for final closure
- Approval of a path for vapor intrusion
- Strengthen MI business and environmental health
- Effectively use resources to promote environmental stewardship
- Improved likelihood of achieving closure/NFA at more contaminated sites
- Identify and remove barriers that prevent site closures
- Implementation of a new paradigm for protecting surface water resources from substances in groundwater plumes
- Improved resources to build local economy while improving the environment

2. Feedback Specific to Goal One: Gain Shared Understanding of Each Other and the Issues

- Greater understanding of various groups' issues/viewpoint/priorities (2)
- Gain more knowledge of the persistent issues between these stakeholders and agree upon certain issues
- Better understanding of each other's perspective as we all work together to do what is in the best interests of the people of MI
- Better understanding of the contentious issues (that) stakeholders believe are road blocks to program improvements
- Common understanding of our objectives and rationale
- Better communication between stakeholders
- Better understanding/definition of free product/source as it relates to various materials and implications to cleanups
- A better understanding of the collaborative nature between LUG, State and developers within the brownfield and redevelopment process
- Shared understanding of MDEQ's objectives

3. Feedback Specific to Goal One: Create Trust and Renewed Relationship

- Begin rebuilding and increase trust among MDEQ staff and MI citizens, regulated community/businesses, and organizations (4)
- Build more trust
- Trust that 95% want to do the right thing
- Establish trust to work together for the common good of MI as it relates to managing risks on properties with environmental contamination
- Getting to know one another as people
- Dialogue
- Collaboration (2)
- More cooperative relationships with each other
- A strong and trusting partnership between MDEQ and MSUE
- Bridge the divide between stakeholders and MDEQ staff; we can agree to move forward
- Improved communication and understanding between the regulated community and MDEQ
- Development of stronger working relationships with stakeholders on all sides

4. Feedback Specific to Goal Two: Create Process Clarity and Efficiencies

- Make the legislation and rules easier to understand
- Points for clarity within our existing statutory framework
- Clear consistent cleanup criteria that have the support of both business and environmental groups
- Clearly defined processes for MI clean-up program
- Provide clarity and consistency to existing MDEQ processes
- Clean definable decision points
- Laying out a clearer practical framework for bringing sites to closure and encourage redevelopment
- Clarity or direction of how to implement a successful remediation and redevelopment program
- More consistency in regulatory interpretation and application (2)
- Change in process
- We will help to update and streamline the risk-based cleanups in MI making this much more efficient
- Streamlined approval process

- Develop a process to streamline closures and provide a mechanism to protect the environment with reasonable cost to industry
- Develop reasonable clean-up policies and consistency of how those policies are implemented
- Improvement in the regulatory structure where the regulated and the regulators have common goals and a clear path on how to get there
- Improved clean-up regulations that foster economic development and empower professionals
- Remove some of the complexities in Part 201 program
- Reform Part 201 to facilitate the pace of clean-up in MI
- Develop a more effective 201 program that facilitates use and development of property in a safe, timely, and cost effective manner
- Improve and streamline Part 201 tools and processes so more sites moved to “no further action” status
- Determine what the future of the Part 201 program will look like and how it will protect the environment and support economic development
- Bring certainty to clean-up program and enforcement; focus on compliance instead of “gotcha”
- Make brownfield redevelopment process more efficient

5. Feedback Specific to Goal Two: Apply and Use Sound Science

- Assure sound science is applied to environmental issues (2)
- Conjoining what is scientifically proper with the feasibility and practicality to achieve protection of the public health and environment
- Infuse flexibility and state of the science reasoning into MI approach for environmental regulation
- Consideration of “relative risk” in decision-making
- What is the impact on the community as a result of this CSI process?
- Adequate protection of public health and the environment in the recommendations
- Protection of public health from chemical hazards
- Identify a mechanism by which to better protect human and environmental health in MI for now and into the future

CSI February 15-17 Retreat

Closing Session Feedback

One sentence describing your group's experience (at this retreat):

- Brownfield Redevelopment: we came together to move Michigan forward we reached consensus
- Clean-Up Criteria: We did a lot and we didn't do much
- Due Care: Positive and honest exchange of ideas on a broad variety of complicated issues ... *because we "due" care.*
- Free Product: Through collaboration we reached consensus on "greasing the skids" towards site closure
- GSI: We were very productive and goal-oriented group - we "flushed our problems down the drain"
- Rules: Thoughtful discussion with unanimous recommendations – we rule!
- Vapor Intrusion: "It was a gas!"



Complete the following statement: "What I appreciated most about this experience is..."

- It increased my faith in thoughtful people coming together to address complicated issues that will improve our state.
- The opportunity to meet and work out solutions with colleagues across the environmental industry
- Opportunity to work with a group of hard-working people willing to truly work collaboratively and for me to understand their point of view
- I was not the most optimistic person in my group when we started, but could now be that person. This process worked extremely well for our group. I now appreciate much more the positions of our fellow regulators. The compromises made by our group collectively are awesome.

- Ability to help impact policy and procedure changes to help move the clean-up process forward
- That I have had the honor to be part of progress in such an important and meaningful effort
- Work hand-in-hand with the MDEQ to a sustainable partnership
- Work side-by-side with MDEQ representatives to reach a common goal
- Collaborating and getting to know non-MDEQ stakeholders
- Mutual productive collaboration that will help us move forward
- Collaboration and desire of group members to achieve concrete results
- Range of stakeholders made our discussion meaningful; great job with organizing the groups
- Got to know others better
- Got to meet and get to know professionals from both in and out of the Department
- Building new relationships and meeting new people
- Renewing relationships, establishing new ones, and learning more about what others do
- Establishment of mutual respect
- Talent and respect given to all opinions and discussions
- Work with really smart and thoughtful people
- Addressing complex issues in a collaborative environment with other good thinkers
- Working with awesome stakeholders to make the Act 381 program better for brownfield development
- Being able to participate with a team that has a deep and true understanding of MI brownfield program that will enable legislation to move Michigan forward
- Collaborating with peers to move Michigan forward
- Chance to discuss the issues in a non-project, non-confrontational manner
- Opportunity to discuss issues, problems and possible paths forward to eliminate obstacles with a diverse group of stakeholders
- Opportunity to begin discussions on how best to improve the program to get closures and facilitate redevelopment
- Time with group members listening to alternative viewpoints and attempting (!) to reach understanding
- Ability to share ideas and make recommendations for substantial improvements
- Opportunity to hear and discuss others views
- Chance to share experiences and honest opinions
- Honest and open discussions from all aspects and "sides of the table"
- Got a clearer understanding of other perspectives which allows development of better solutions
- Opportunity to gain understanding of how to make progress with common goals

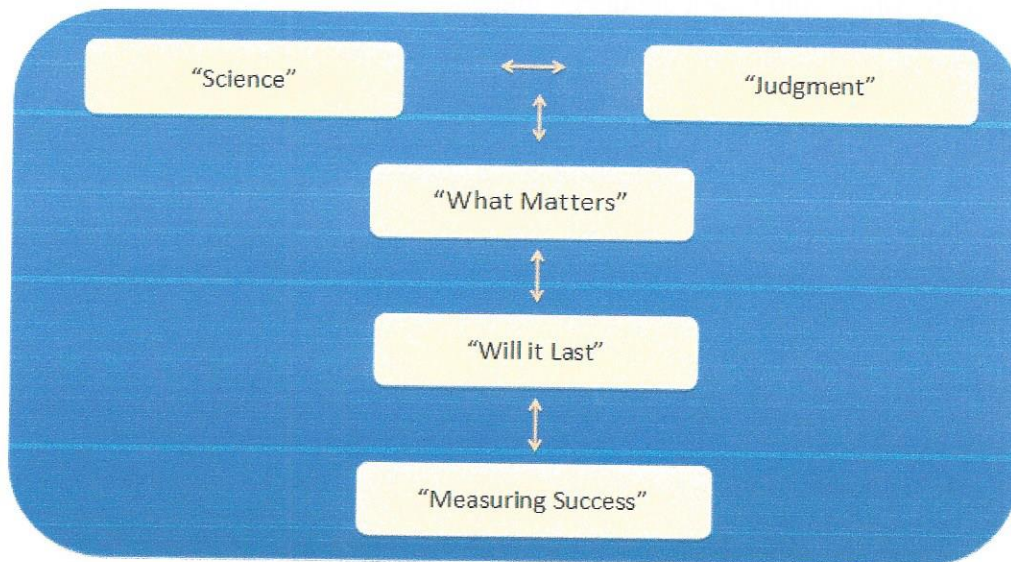
- To gain better understanding of the MDEQ's progress toward revised clean-up criteria
- Learning the perspectives from both the Part 201 and Part 31 programs and how they intersect
- Gained a better understanding of various viewpoints and worked well together as a group
- Sharing perspectives, thoughts, ideas
- Open, honest and collaborative discussions that led to unanimous agreement
- Meaningful interaction with other stakeholders and meaningful exchange of positions on the issues
- Working together to achieve meaningful change
- Opportunity to be a part of meaningful and implementable change
- Opportunity to be part of the conversation and discuss all different ideas with people that really are the experts
- Very productive session; hopefully solving this issue on my third try
- Hoping that this will make a difference
- Resulting prognosis for actual issue resolution and substantial program improvement and effectiveness
- It was productive and intense but time barred
- Opportunity to improve and update a very effective brownfield program
- The opportunity to do this and the facilities provided. The facilitators kept things on time and pace.
- Rich's wine (3)



Decision Criteria

All Issue Groups were asked to consider a common set of decision criteria during their deliberations. The Convener, in collaboration with the Coordinating Committee, developed the following Decision Criteria to provide consistent guidelines for the Issue Group deliberations and recommendations. Issue Groups were also able to add criteria that were specifically applicable to their topic and areas of interest and concern.

Summary of Decision Criteria



1. Science: Recognizes verifiable data and research; understands consequences.
 - Assessment of pros and cons
 - Management of risk and uncertainty
2. Judgment: Demonstrates best professional judgment and practices in decision-making.
 - Relevant, transparent and achievable
 - Fair and congruent
 - Widely understood or understandable, not overly complex
3. What Matters: Takes into account trade-offs by considering relative risk, focusing on the most significant risks and most beneficial issues (e.g., "What Matters")
 - It safeguards the public, environmental health, and quality of life for our current and future generations (e.g., inter-generational equity).
 - Accounts for resources and ease in implementation (public, private, human, and economic resources: skill level; existing or new resources)
 - Maximizes the safe and productive reuse of contaminated properties, given economic demand.

4. Will it last: Ensures approaches are adaptable and durable (efficiencies and longevity)
 - Consider incentives to gain voluntary compliance (reduces resource utilization)
 - Allow for ease of resolution for subsequent hurdles that may arise
 - at the individual level-- having to take legal action is not the best solution,
 - at the program level-- build resiliency into the program for ease in program implementation
 - Use a performance-based approach where applicable vs. prescriptive (or task based)
5. Measuring Success: Relies upon metrics or means by which success can be measured, including by whom and how it should be measured.