

DOW CHEMICAL MAY 1ST NOD RESPONSE & GEOMORPH SAP

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BRIEFING PURPOSE

To discuss several critical issues in the Dow Chemical RCRA corrective action matter including: Dow's May 1st response to MDEQ's 2006 Notices of Deficiency (NODs); Dow's proposed GeoMorph Sampling and Analysis Plan (SAP); and Dow's Draft Screening Level Ecological Risk Assessment (SLERA) and Baseline Ecological Risk Assessment (BERA) Work Plans. EPA staff recommends that EPA provide to MDEQ written comments on the above-listed submittals in order to create a defensible administrative record.

BACKGROUND

On May 1, 2006, Dow submitted a partial response to MDEQ's March 2 and April 13, 2006 NODs. In addition, Dow has attempted to remedy many of the deficiencies identified by EPA and MDEQ in the NODs by replacing portions of Dow's Remedial Investigation Work Plans (RIWPs) with new studies and work plans, including a proposed GeoMorph Sampling and Analysis Plan (SAP) to characterize the first 6 miles of the Tittabawassee River (TR) in 2006. In addition, Dow amended its RIWP schedules proposing remedial response initiation for the City of Midland (Midland) in 2017 and the TR in 2011.

DOW'S MAY 1ST RESPONSE TO MDEQ NODs

- Many of the remedial investigation component completion dates proposed by Dow will result in a delay of the initiation of final remedies until at least 2011 for the TR and 2017 for Midland. Based upon an estimate of 20 years for remedy implementation, the final remedies may not be complete until 2031 and 2037.
- Dow has proposed numerous exposure studies, a bioavailability study and a lengthy human health risk assessment that will take at a minimum 6 years to complete prior to the initiation of any remedies.
- Rather than submitting new RIWPs to MDEQ in response to the MDEQ NODs, Dow has divided its response into numerous and segmented studies, proposals and technical memoranda, i.e. Dow has submitted a patchwork RIWP to MDEQ, making it extremely difficult to review the numerous revisions to the RIWPs and to understand the interrelationships and sequencing of the remedial investigation. Since the RIWPs are to become enforceable conditions of Dow's RCRA License, any unnecessary complexity in the RIWPs will affect the enforceability to Dow's License.

EPA'S POSITION

- Dow has proposed excessively long time frames for conducting many of the components of its remedial investigations. Given the very significant risks associated with exposure to dioxins, furans and other possible hazardous constituents throughout the Saginaw Bay watershed, Dow's time frame for the implementation of

final remedies is not reasonable or acceptable. EPA should request that MDEQ require Dow to revise the proposed schedules in the RIWPs and propose much more expeditious time frames for characterization and remediation.

- The scientific basis for the proposed extensive (and time intensive) exposure studies, and bioavailability study does not appear to be legitimate. Rather, these studies appear to be intended to delay the remediation process.
- EPA should recommend that MDEQ require Dow to resubmit new RIWPs for Midland and the TR by December 1, 2006 containing only currently proposed elements.
- EPA staff recommends that the numerous concerns with Dow's May 1st response to the MDEQ NODs be set forth by EPA in writing and provided to MDEQ so that such concerns can be made part of the administrative record. In addition, MDEQ has requested EPA's comments in order to formulate the State's response to Dow's May 1st submittal.
- EPA is requesting EPA OSW & ORD concurrence with Region 5's position as to the scientific validity, and consistency with EPA policy and guidance of Dow's risk assessment proposals.

GEOMORPH SAP

Dow (via contractor ATS, Inc.) has submitted an incomplete GeoMorph SAP for characterization of the TR. During numerous weekly working sessions, EPA and MDEQ have raised significant concerns with ATS's GeoMorph proposal including the continued failure of ATS to produce documents on an agreed to schedule. In addition, Dow management has refused to attend these meetings despite repeated requests from MDEQ and EPA. Lastly, several foundational elements of the SAP were not produced by ATS in its June 1, 2006 submittal including the following:

- A Geochemistry Study (Submitted June 5, 2006)
- A complete statistical methodology for the verification of GeoMorph assumptions (to be developed in June)
- An acceptable Potential Constituents of Interest (PCOI) study (to be developed in June).
- An acceptable QAPP & SOP (to be submitted in June and early July).

While Dow and ATS have habitually missed due dates for the above submittals, Dow maintains that MDEQ approval of the SAP by June 30th is necessary for implementation in 2006. Dow has stated that it expects to resolve many of the outstanding issues through additional working meetings throughout the month of June. While the working sessions during the month of May have achieved agreement on sampling locations, the above issues have been continuously deferred to future dates for resolution. Additionally, ATS does not appear to have independent authority to commit to agreements reached in the working

meetings.

EPA'S POSITION

- EPA staff recommends that the major concerns with the GeoMorph SAP be set forth in writing and provided to MDEQ as part of the above-referenced EPA comments on Dow's May 1st response to the MDEQ NODs and that Dow's GeoMorph proposal not be approved on more than a pilot basis, until EPA's comments have been adequately addressed. It should be noted that EPA and MDEQ are in substantial agreement on the identified deficiencies.
- EPA staff is concerned that Dow may be trying to place the MDEQ in the position of either approving an inadequately reviewed and/or incomplete SAP or forcing MDEQ to request additional time to review and approve the SAP and then Dow may attempt to blame MDEQ for delays to sampling in 2006. As a result, EPA staff recommends that MDEQ be requested to either approve Dow's GeoMorph proposal with modifications to ensure sampling begins in 2006 or require Dow & ATS to proceed with sampling in the TR during 2006 using a standard EPA approved gridding approach using standard analytical methods, should the Agencies and Dow not reach substantial agreement on the GeoMorph proposal. The Agencies have agreed that Dow and ATS may continue to revise the GeoMorph proposal during the rest of 2006 and may implement the study on a pilot basis in 2006 should it be substantially approved by MDEQ.
- Because no decision making representatives of Dow have participated in the process, it is not clear at this time whether Dow is actually committed to ensuring that this process will be successful.

DOW'S SLERA & BERA

MDEQ, EPA, MDNR, and US F&W have identified the following issues that have not been adequately resolved by Dow in response to Agency comments on their Draft SLERA and BERA Work Plans:

- Threatened and endangered species have not been considered.
- Dow has proposed to use screening levels from multiple sources in the SLERA.
- Tissue contaminant concentrations are used rather than media concentrations in the SLERA.
- The SLERA is incomplete in that it does not consider dioxins and furans. It appears Dow is avoiding documenting alarmingly high SLERA risk levels for D/Fs. Dow is willing to accept MDEQ D/F risk results, but will not include the results in the SLERA (presumably due to the high risk numbers).
- The SLERA and BERA need to extend to the Saginaw River since it is clear that risks extend downstream.
- A provision for considering interim responses needs to be included in the SLERA for risks that are significantly higher (order of magnitude) than the lowest acceptable effect level or present severe risk.
- The BERA considers D/F only.
- Population study areas for the BERA were chosen for convenience, and were not randomly selected, which will make representativeness statistically invalid.

- Some BERA population study areas have been restricted to the upper reaches of the river (e.g. mink) thus avoiding areas where animal contamination levels are known to be higher.
- The BERA does not consider fish, even though fish are known to be impacted.

AGENCY POSITIONS – MDEQ, MDCH, MDNR, US F&W, EPA

- EPA will provide a template to MDEQ for letters to MDNR and US F&W requesting identification on threatened and endangered species that should be considered for this project area. (Done)
- MDEQ will require Dow to use Region 5 ESLs rather than Dow selecting screening levels from multiple sources.
- MDEQ will require Dow to restrict the use of tissue contaminant concentrations to the BERA.
- MDEQ will require Dow to include D/F in the SLERA, or use MDEQ's risk numbers.
- MDEQ will not approve the BERA until after the SLERA is approved.
- Normally, the SLERA is performed after the PCOI is completed. Otherwise, the SLERA will need to be rerun every time a new constituent is added to the PCOI.
- The BERA must consider all relevant receptors.
- While EPA guidance allows "lines of evidence", the Agencies are concerned that Dow may use the population studies to "trump" the risk assessments, rather than be just one factor that is considered. Although EPA principles on how to integrate new information (lines of evidence) into an existing assessment is in development by EPA's Science Policy Council, this direction is not currently available. There is much uncertainty in population studies done over only 2-3 years. Also, none of the study areas were randomly selected. Areas were selected by Dow.
- The BERA receptor list is not comprehensive enough, and needs to include other receptors with high exposure potential including a moderate size predatory mammal (long-tailed weasel and red fox), and the American woodcock (300 ppt earth worms). Most receptors are chosen because MSU is collecting data on them (nest box).