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"ENVIRONMENTAL CONTROL"

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MIDLAND, MICHIGAN 48667

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RE: GROUNDWATER RESOURCE TEAM MEETING - SARNIA, AUGUST 6/7, 1986

I want to thank you all for your participation during our day and a half meeting at the Sarnia site. I believe the joint session with the Groundwater Engineering Contacts proved beneficial to both groups and hope it will lead to further cross-communication on groundwater related projects at your individual locations.

As you will recall, we discussed what guidance documents or similar internal resources would be of value to individual members or locations as related to groundwater concerns, acknowledging that both the Tech Center and the U.S. Groundwater Issue Management Team were working on related activities. Based on a consensus of the group, three functional document needs were initially identified: 1) A groundwater "primer" for personnel newly assigned to groundwater related activities, (thorough and up-to-date, but not too lengthy), 2) A standardized groundwater assessment guide to facilitate the preliminary evaluation of a site's potential to impact the groundwater (possibly employed during site acquisitions or divestitures, as well as providing a tool for locations developing just a groundwater program), and 3) A list of procedural questions to ask oneself or contracted personnel to help ensure proper procedures are taking place during groundwater activities (a self-help memory jogger of sorts listing "things to consider").

As we discussed relative to the "primer", the Tech Center has placed an order for extra copies of "Practical Guide for Ground-Water Sampling", authored by Barcelona, Gibb, Helfrich, and Garske of the Illinois State Water Survey in 1985 and will distribute them for your review and feedback as to its applicability as soon as we receive them. In regard to the standardized assessment guide, the Tech Center will discuss this

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further internally, especially concerning its relationship to the initial work done by the Task Group under Chuck Oliver's direction, to determine if dual needs exist, if they can be combined, or if they are really one in the same. The third document, the memory jogger, may well be interrelated to an undertaking of the Groundwater Issue Management Team's Technology Work Group. Once again the need(s) must be clearly defined so that responsive work product(s) are achieved. To that end, you all vowed to begin keeping track of the questions that arise in your day to day activities that could serve as memory joggers and to then forward them to me handwritten on scraps of paper saturated with bentonite slurry if need be! I will be reminding you of your commitment.

We also discussed the continuing need for more communication, both with each other and with the Tech Center. Project reviews, whether capital money or expense money is involved, were encouraged. The benefits of the "panel review" approach initiated with Michigan Division were discussed along these lines. The need for the Groundwater Resource Team to provide more in the way of a resource to other Dow locations throughout the world requires that we keep as informed and up-to-date as possible. The most efficient and beneficial method (both for Dow and ourselves) of doing this is to communicate and learn from each other. As promised, I have enclosed a copy of the Tech Center's latest Quarterly Highlights for your information. I encourage you to submit any future highlights you feel are relevant through your respective Global Focal Points or Environmental Managers who route the information to the Tech Center for compilation. These highlights should be available to you through the same channels. If you have any other suggestions for improving communication, please let me know.

#### NOTEWORTHY ITEMS DISCUSSED BY LOCATION

##### Fort Saskatchewan

- New landfill design and construction with double synthetic liners.
- Old disposal area discovery during impoundment construction with resultant drum excavation and public relations impact; implementation of "Historical Landuse Task Force."
- Pond replacement and groundwater cleanup program at the Vinyl Chloride Plant.

##### Western Division

- Remedial action plan development in response to failing the Student's T-test as applied to groundwater monitoring data under RCRA.
- Preparation for "Continuing Release" inspection of old solid waste units and their potential for impacting the groundwater per RCRA.
- Continuing efforts to get out of the Solar Ponds. Should be out of four by January of 1988 with the two remaining. Newer ponds to be the subject of a waiver petition.
- A new person will soon be on board to assist the location with its groundwater endeavors, specifically for remedial actions.

#### Louisiana Division

- Impact of the location's brine storage ponds on the groundwater and recent regulatory interest in same.
- Problems associated with disposal of drilling fluids/muds associated with brine well installation and maintenance.
- Construction of new, non-hazardous landfill incorporating a slurry wall to prevent lateral migration in the shallow zones.
- Treatment scheme development for the contaminated groundwater to be withdrawn from the old Block 49 disposal area. The system will have to accomodate 200-400 ppm iron as well as the chlorinated compounds of concern while minimizing emulsifying tendencies.
- A unique method for recovery well installation is being worked on with C. Oliver to minimize drill cutting generation yet provide an efficient (non-smeared, as in the case of drive points) screened zone.
- A project providing greater protection to the groundwater in a typical tank farm environment has been slated for construction this fall. The project emphasizes drainage control with the segregation of those areas more apt to become contaminated (due to such things as pump seal leaks) and their associated drainage piping from other areas less likely to be of concern. This approach allows the cost effective use of such items as double-walled sumps only where needed in the 19 acre tank farm.

#### Texas Operations

- A 2100 foot long slurry wall at a cost of \$1.2 MM, coupled with 28 recovery wells and an air stripper capable of providing 100 cubic feet of air per gallon of water was discussed as part of the remedial action planned for the A-41 old disposal area.
- A hydraulic differential of approximately 1.5 feet is being maintained across the slurry wall previously installed at block B-47 by pumping the water from the shallow zone, allowing more efficient operation of recovery wells screened in the deeper, more contaminated zones. Attempting to alleviate iron fouling problems during treatment (200 ppm after phase separation), the pH will be lowered to 5.5 in hopes of keeping the iron in solution.
- Pending closure of several ponds at the Oyster Creek location due to their impact on the surficial groundwater was mentioned.
- Plans are being developed to assess the potential groundwater impact of several other inactive facilities within Texas Operations on a more site-wide basis.
- The excavation of some 6000 tons of earth from the "Farley" site as part of an off-site cleanup operation was described.

#### Sarnia Division

- The on-going installation of the vibrated beam slurry wall along 1000 feet of the river frontage to a maximum depth of 33 feet was described and visited. Once the "Aspemix" (an asphalt-cement-sand slurry) wall is in place, a series of recovery wells will be installed to mitigate any further potential for contaminant migration. Additionally, five trench collection systems have been installed in possible source production plant areas.

Michigan Division

- The panel review approach used by the Tech Center to review several on-going groundwater projects was discussed. Limited information on the projects themselves was offered by D. Fales, Midland and B. Baker, now based in Ludington, Michigan.
- The plans for assessment and potential for future remedial actions at Michigan's Ludington facilities involving predominantly inorganic materials of concern was discussed.

Solid Waste Tech Center

- An update on the on-going field activities as part of the groundwater investigation at the Estarreja, Portugal site was presented.
- The establishment of a water resource team in Dow Europe with Michael Werner, a geologist at the Stade location serving as the groundwater representative, was announced. Accordingly, Michael, who established the groundwater program at Stade, has been added to the Tech Center's Groundwater Resource Team as a most welcomed asset.
- On behalf of the U.S. Environmental Quality group, a presentation on the concern for underground storage tanks in place at Dow's U.S. facilities was delivered. A more formal recordkeeping procedure and elimination program is being proposed.
- The Tech Center will follow-up on the expressed need for a universal groundwater related data handling system for Dow locations. PC-adaptable systems capable of handling standardized boring logs and producing lithological cross sections will be given first priority for evaluation. Internal (Minerals Dept., computer services groups) and external (NWWA) resources will be surveyed for their possible assistance.

Please contact the appropriate team member at their respective locations for details of any of the above noted items. Let's keep each other informed! Let me know your areas of interest, location preferences, substance, etc. for our next meeting.

Regards,

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ENCLOSURES