

## APPENDIX A

### **Detailed Comments of Pall Life Sciences (PLS) on DEQ's Review of PLS's Final Feasibility Study, DEQ's Proposed Remedial Alternative.**

These comments respond to DEQ's review of PLS's proposal, and provides comments on DEQ's proposed selection of remedy.

#### *Response to DEQ's Comments on FS*

#### **1. Cleanup timeframes**

DEQ stated with respect to review of virtually all of the alternatives that "there is no documentation to support" the time frames that were used in the cost estimates for computing estimated cleanup costs. These statements imply that PLS has deliberately omitted data that DEQ considers essential in reviewing remedial alternatives. This is not the case. The Fact Sheet lays out the criteria that DEQ uses to review the FS (Fact Sheet at 5). Also, the FS lays out the criteria for such studies as established by rule (FS at 54-55). While cost estimates are required, there is nothing that requires detailed documentation supporting estimates of cleanup times. Such an analysis is inherently difficult. PLS used 20-year horizons for the leading edge remedies and longer horizons for remedies that allow portions of the plume to migrate so that it would be possible to make a normalized comparison in terms of relative costs.

DEQ's proposed remedial alternative bases costs on 10 years of extraction at Wagner Road, 10 years in the neighborhood for the leading edge, and 20 years at Maple Road suffers from the same lack of support. DEQ has not provided any documentation to support their time frames. DEQ also selectively uses the "timeframes" as a way to promote its selected alternative. So, for example, it notes that all of the "leading edge" alternatives reviewed in the FS leave "long-term uncertainties" because the groundwater would be present for at least 20 years. DEQ goes on to claim that during this time, there is the possibility that uses of groundwater could allow human exposures or cause contamination to migrate out of the expected flow path. (Fact Sheet, at 7) . This analysis is flawed because it ignores the fact that DEQ's remedy also assumes cleanup on the same time frame (20 years at Maple Village). Moreover, the possibility that people will start to use groundwater in the area is not realistic. As DEQ well knows, homeowners and businesses in the vicinity of the plume already have municipal water and do not need groundwater. The County's Well Ordinance discussed in the FS requires any new well to first be permitted by the County Health Officer. Permits "shall" be denied if the well would be located in a contaminated portion of the aquifer.

In sum, PLS does not agree that DEQ has made out any distinction based on time frame between its proposed remedy and any of the alternatives proposed by PLS.

## 2. Review of Alternative 2

DEQ's review of Alternative 2 (monitored attenuation) correctly notes that if acceptable institutional controls can be put in place to reliably restrict human consumption of contaminated groundwater, this alternative would be protective of public health and safety. (Fact Sheet, at 6). PLS agrees with this statement.

PLS does not, however, support DEQ's conclusion that the institutional controls cited in the FS combined with the city of Ann Arbor's decision not to resume operation of the northeast water supply well<sup>1</sup> "does not sufficiently restrict human consumption of contaminated groundwater." The Washtenaw County ordinance referenced in the FS does indeed prevent permitting of wells in contaminated aquifers. In addition, the plume is under the City of Ann Arbor and all residents in the City must use municipal water. Finally, while the City of Ann Arbor has not decommissioned the northeast supply well, it has taken it out of service and has sued PLS to replace it. This is sufficient evidence to come to the conclusion that the water supply well will not be placed back in use. To come to a different conclusion elevates form over substance.

For the reasons noted in the FS, PLS did not propose Alternative 2 as its preferred alternative. PLS stands by those reasons, but for the reasons stated above, disputes the DEQ's conclusion that the existence of the northeast supply well should be determinative of a decision on remediation.<sup>2</sup>

## 3. Review of Alternatives 3a, 3c, 4a, 4c and 5

DEQ's collective review of these alternatives (Fact Sheet, at 7) incorrectly concludes that there is no significant difference from a health and safety standpoint between treating groundwater at PLS, and construction and operating a new treatment system in the vicinity of Maple Village. There is no basis for this conclusion. In fact, as PLS stated in its FS, there are significant differences. To quantify this difference, one need only compare the scope of treatment systems required for PLS's proposed remedy and that advocated by DEQ.

System	Capacity	Footprint	Liquid Oxygen	H2O2	Bi-Sulfite	Electricity	On-site Storage
DEQ	1300 gpm	60 x 115 + ponds	40,000 cf/day	1,500 lbs/day	7,200 lbs/day	303 KW/day	Unknown
PLS	200 gpm	1 trailer 40' X 8'	None (ozone generator)	216 lbs/day	None	104 KW/day	1 trailer 40' X 8'

<sup>1</sup> This is the name for the so-called "Montgomery Well" referenced in the Fact Sheet and FS.

<sup>2</sup> Later in these comments PLS raises a substantive issue regarding the northeast water supply well that it believes renders moot questions raised about the need to protect it as it relates to the presence of 1,4-dioxane.

The larger systems needed for leading edge capture would generate significantly more truck traffic and storage requirements for chemicals, in an area (unlike at PLS) where such traffic and storage is not welcome nor routine, and is near significant recreational and retail assets. PLS does not believe that it is appropriate to operate a liquid oxygen based treatment system in such a location. PLS, therefore, disagrees that this consideration is insignificant.

It should also be emphasized that the burden and health and safety issues created by the treatment facility are *in addition* to the short and long-term threats to the public health, safety and welfare created by the lengthy pipelines that will be required for all of these options. DEQ recognizes these latter burdens as “moderate” (Fact Sheet, at 7) but acceptable. PLS disagrees that this is the appropriate analysis. The burdens of the infrastructure, including the pipelines and the treatment system, should be viewed as a whole for each option that requires both.

#### **4. Review of Alternatives 3a and 4a**

DEQ believes these two alternatives (which involve treatment and disposal at the Huron River) to be preferable to the other leading edge approaches. (Fact Sheet, at 7). This conclusion was reached notwithstanding DEQ’s finding that these two alternatives involve significantly more pipeline and would place the treatment system closer to areas used by the public. (Fact Sheet, at 7). As explained above, PLS believes DEQ has not adequately understood the burdens placed on the community by these options and has therefore come to an incorrect judgment. The DEQ also does not explain how access for pipelines to be located far from the area of contamination would be obtained. PLS is not aware of a legal basis for compelling such access.

Also, as noted below in the comments on DEQ’s review of discharge options, DEQ has understated or ignored the technical challenges that will likely be raised in connection with a new NPDES discharge permit to the Huron River.

#### **4. Alternatives 3c and 4c**

PLS does not agree that the uncertainties inherent with reinjection of groundwater are any different from that associated with other discharge options. As PLS explained in its FS, while there may not be adequate capacity to reinject the large quantities of groundwater that would need to be purged in order to capture the width of the plume in two locations (as DEQ suggests), it is an accepted method of disposal. The Unit E can certainly absorb the purge and injection rates proposed by PLS for its preferred remedy, particularly since PLS is extracting and then injecting the same amount of water in the same general area.

PLS rejects as a rationale that expansion of an area of contamination at “detection limits” is a legitimate basis for rejecting this option. Avoiding expansion of the 1 ppb contour is neither legally required nor necessary to protect the environment, public health, or safety. Moreover, as PLS’s modeling indicates, little if any expansion of the plume will occur

due to the proposed injection. Again, PLS is proposing to inject the same amount of water that it is withdrawing, so a balance will be achieved.

## 5. **Alternative 3e**

The sole reason offered for disfavoring this alternative is that there is public opposition to use of the Honey Creek as a discharge point. (Fact Sheet, at 8). As explained below, no reason has been offered, and none exists, to support the assumption that discharge directly to the Huron River will not attract the same level of public opposition or raise similar or new technical issues.<sup>3</sup>

## 6. **Alternative 6**

The DEQ states that it has determined that Alternative 6 does not meet the criteria established by Part 201 and the Part 201 Rules. (Fact Sheet at 8). DEQ identified six conditions, that if met, would create an approvable remedy. As discussed in PLS's Summary Comments, PLS disagrees DEQ's approval of PLS's plan should be conditioned on abandonment of the northwest supply well and a new ordinance.

## 7. **DEQ's Proposed Remedial Alternative**

### **Discharge Methods**

As noted in the Fact Sheet, "a method for discharge of treated groundwater has been difficult throughout the history of this contamination site, and the difficulty in doing so has often delayed implementation of response actions." (Fact Sheet, at 9).

Astonishingly, DEQ concludes that reinjection and discharge to Honey Creek via an NPDES permit are not viable, but discharge to the Huron River directly is. There is simply no support for this determination.

The challenges that would be faced by meeting the requirements and defending a new NPDES permit for discharge to the Huron River are no less than those presented by the other options, including discharge to the Honey Creek. It should be noted that every NPDES permit sought by PLS has faced technical challenges and contests from citizens, including a 1996 permit that had as an outfall the Huron River (via the Allen Drain). The same issues will likely be raised for any NPDES permit, plus additional issues for the Huron River as reflective of the new constituency that will likely oppose it.

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<sup>3</sup> The question of ex-filtration along the pipeline pathway and from the river is one such issue. In fact, DEQ has itself raised the question of the need to determine whether Unit E underflows the river in connection with PLS's proposed remedy. This is the reverse of the issue that has been contested in the past for Honey Creek.

