Unit E

PALL Pall Corporation

Life Sciences
600 South Wagner Road
Ann Arbor, MI 48103-9019 USA

734.665.0651 phone

March 30, 2007

RECEIVED
APR 3 2007
MDEQ - RRD
JACKSON DISTRICT OFFICE

Ms. Sybil Kolon
Environmental Quality Analyst
Michigan Department of Environmental Quality
Jackson District Office
301 East Louis Glick Highway
Jackson, MI 49201-1556

Re: Maple Village Interim Response – Performance Monitoring Wells

Dear Ms. Kolon:

Pall Life Sciences (PLS) is providing this letter as a follow-up to our March 9, 2007, discussion regarding our respective positions on performance monitoring for the Maple Road Interim Response (MRIR).

PLS, on several occasions, has articulated reasons why proceeding with the Michigan Department of Environmental Quality (MDEQ) proposal to install nested performance monitoring wells in Veterans Park is not based on either science or logic, considering PLS' commitment to investigate and monitor further upgradient. PLS strongly believes that if it were to demonstrate that 2,800 microgram per Liter (ug/L) is not in the area of the existing extraction well, that routine monitoring of wells on the west side of Maple Road would be sufficient to demonstrate the MRIR is meeting its design objective. Our plan would also have the added benefit of providing an earlier indication of important water quality changes in the area around TW-19, a benefit not provided by wells positioned further downgradient and east of Maple Road.

In our December 21, 2006 letter, in response to your December 8, 2006 letter regarding the MDEQ's review of PLS Performance Monitoring Plan (dated February 3, 2006) and our July 17, 2006 Performance Review, PLS had proposed to install borings/wells to fill in monitoring gaps around TW-19, recognizing that collection of such data could suggest the need for wells even further downgradient. If that were the case, PLS would be willing to install wells on the east side of Maple Road. Unfortunately, the MDEQ is apparently not willing to accept any plan that does not include downgradient monitoring, no matter what available data say, or no matter what level of investigations are done upgradient, even considering the fact that the MDEQ agrees that TW-19 does not need to be running at this time to meet its designed objectives.

In your December 8, 2006 response to PLS' February 3, 2006 Maple Road Performance Monitoring Plan (the January 17, 2005 Work Plan for Response Activities, Maple Road Area, Unit E Aquifer, and July 17, 2006 Initial Performance Review – Maple Road Interim Response), the MDEQ requested that PLS install three well clusters in Veterans' Park on the east side of Maple Road. PLS has decided to consider the department's request for downgradient monitoring in lieu of installing wells in upgradient areas.

The MDEQ has proposed three well clusters on the east side of Maple Road. The locations of these proposed clusters are shown on Attachment 1. PLS provides the following comments regarding these locations:

- MDEQ MRC-1 — PLS agrees this is a suitable downgradient monitoring location. Minor field adjustments may be necessary to accommodate site-specific conditions (e.g., infrastructure, surface conditions, etc.).

- MDEQ MRC-2 and MRC-3 — PLS does not believe both of these well clusters are needed. PLS believes that MDEQ MRC-2 should be moved to the south and east, and MRC-3 should be eliminated. Alternative locations to the three MDEQ proposed clusters are shown on Attachment 2

PLS' primary justification for moving MDEQ MRC-2 and eliminating MDEQ MRC-3 is as follows:

1,4-Dioxane concentrations at MW-87s and MW-87d never detected levels of 1,4-dioxane over 2,800 ug/L (the highest level detected at this cluster was 1,312 µg/L at MW-87s and 767 µg/L at MW-87d). 1,4-Dioxane concentrations at the Maple Village East boring (installed 7/30/03) were below 2,800 ug/L when that boring was installed (the highest concentration encountered was 856 µg/L). 1,4-Dioxane concentrations at the PLS-05-06 (installed in 8/05) were below 2,800 ug/L when that boring was installed (the highest concentration encountered was 660 µg/L). These data suggest 1,4-dioxane concentrations in the area along Maple Road, south of TW-19, never reached 2,800 ug/L (and in fact, 1,4-dioxane concentrations at these locations never exceeded 50% of 2,800 ug/L). After injection started in this area, the concentrations in MW-87s and MW-87d have decreased and are expected to remain well below 2,800 ug/L as a result of the injection process. Installing a monitoring well hydraulically downgradient of this area (see the attached potentiometric surface map) as proposed by the MDEQ, will provide little value.

Analyses by PLS indicate an effective location for a monitoring well is on the east side of Maple Road, south of MW-85 and north of IW-5 (the southern injection well). Available water quality data, including data from Maple Village East, suggests the longitudinal axis of the plume is positioned north of the Maple Village East boring and in the capture of TW-19. Nevertheless, one could argue that 1,4-dioxane could migrate south of MW-85 and north of the injection well. Obviously, the plume will not migrate toward IW-5. PLS proposes that a well be positioned in the area south of MW-85 and north of IW-5. A proposed location for this well is shown on Attachment 1. Installing another well south of this location is not justifiable. Additionally, MW-89 serves as an effective well to monitor for 1,4-dioxane moving south of the IW-5 area.

Wells installed at the locations proposed by PLS would result in a maximum well spacing of approximately 600-feet. This spacing would be between the proposed southern monitoring well and MW-89. The spacing between the wells to the north would be considerably less. PLS would also like to note that, although slightly further east than perhaps ideal, MW-84s/d is also strategically positioned as a downgradient monitoring location.

Upon your approval, PLS will complete the installation of the two proposed well clusters prior to the end of this calendar year, providing access to the drill sites can be worked out with the City of Ann Arbor.

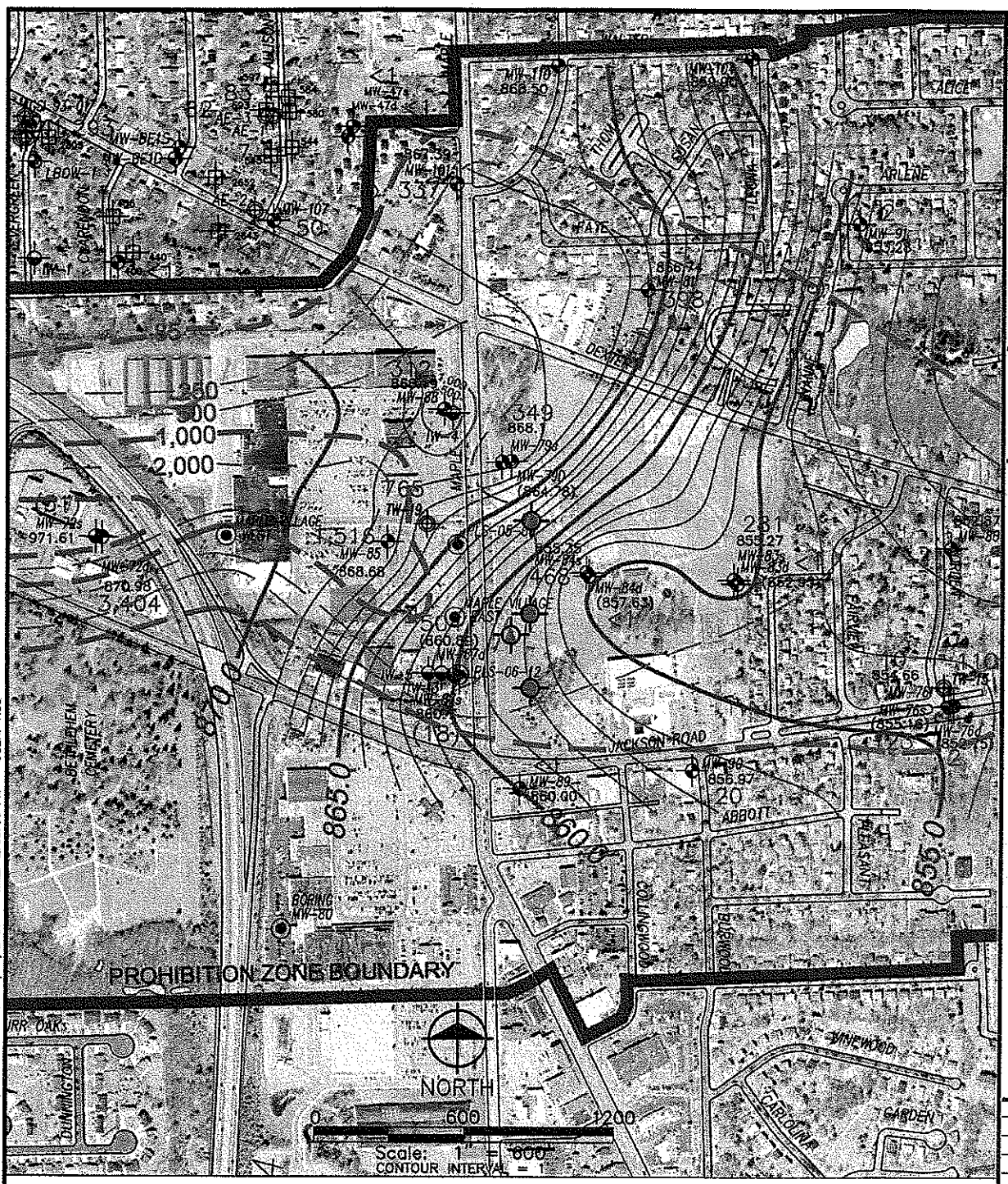
If you have any questions regarding our plans, please feel free to contact me at (734) 913-6130.

Sincerely,

Farsad Fotouhi

Farsad Fotouhi
Vice President
Corporate Environmental Engineering

cc: Matthew Naud, City of Ann Arbor



LEGEND

- MONITOR WELL
- RESIDENTIAL WELL
- PURGE WELL
- HYDROGEOLOGIC TEST BORING
- MDEQ PROPOSED MONITORING WELL LOCATIONS
- PLS PROPOSED MONITORING WELL LOCATIONS
- POTENTIOMETRIC SURFACE CONTOUR (FEET AMSL)–2/22/07
- 870.02 – POTENTIOMETRIC SURFACE ELEVATION (FEET AMSL)–2/22/07
- (880.89) – DATA NOT USED
- UNIT E 1,4–DIOXANE ISOCONCENTRATION CONTOUR (ug/L) JANUARY 2007

UNIT E-MAPLE ROAD PROPOSED BORING/MONITORING WELL LOCATIONS

fishbeck
engineers
scientists
architects
constructors

fishbeck, thompson, carr & huber, inc.

Hard copy is intended to be 8.5"x11" when plotted. Scale(s) indicated and graphic quality may not be accurate for any other size.

Pall Life Sciences
Scio Twp., Washtenaw County, Michigan

Maple Road Interim Response

PROJECT NO.
F96502

ATTACHMENT
1

PLOT INFO: F:\WORK\96502\DWG\WAGNER RD INVESTIGATION 2006 CONTOURS.DWG DATE: 3/19/2007 TIME: 2:35:00 PM USER: ACS
F:\WORK\96502\DWG\AERIAL2003.DWG M:\CUSTOM\ACAD2005\SYMBOLS\B-11X17.DWG R:\96502\TW-18 PUMP TEST\PUMPING W_ TW-18SURF.DWG
F:\WORK\96502\RASTER\022207 MAPLE RD PSC.DE\96502\TW-18 PUMP TEST\PRE-PUMPING SURF [illegible] WASHTENAW CNTY PARCELS