



July 1, 2005

U.S.EPA Region 5
Waste Pesticides and Toxics Division, DE-9J
77 West Jackson Blvd.
Chicago, IL 60604-3590
Attn: Ms. Mirtha Capiro

RE: General Motors Corporation - Moraine, Ohio
Supplemental Groundwater Investigation Work Plan

Dear Ms. Capiro:

On behalf of General Motors Corporation (GM), BOW Environmental Solutions, Inc. is providing the following submission of a Supplemental Groundwater Investigation Work Plan for the Former Delphi Harrison Thermal Systems, General Motors Truck Group Moraine Assembly Plant, and the former General Motors Powertrain Group Moraine Engine Plant in Moraine Ohio. As a follow up to our discussions at the May 24, 2005 meeting in Moraine, GM has further evaluated data collected from the Site-Wide Groundwater Monitoring program and is proposing to conduct supplemental data collection to further refine the available information on groundwater flow and quality in the following study areas: upper aquifer monitoring well GM-16 located downgradient of the GM Moraine Facilities, and on the southeastern side of the Former Oil House Area (Figure 1). The data collected from this supplemental investigation is expected to be used to further evaluate and refine, if necessary, the current corrective measures.

GM-16 Study Area Work Plan

As indicated by the data presented in GM's annual site-wide groundwater monitoring reports, an increasing trend in trichloroethene (TCE) and tetrachloroethene (PCE) concentrations has been observed in upper aquifer monitoring well GM-16 over the last several years. This well is located downgradient of the site, north of lower aquifer pumping well DN-13 and west of Landfill L1 (Figure 1). Based on this observed trend, GM will sample two existing wells in this area (WSU-20 and WSU-22) and install three additional upper aquifer monitoring wells to refine the characterization of groundwater chemistry and flow direction between the west edge of RZ-3 and GM-16. The locations of these well are shown on Figure 1.

- Well GM-47 will be installed upgradient of GM-16 in the right of way on Telhurst Street, the residential neighborhood west of Landfill L1. An access agreement with the City of Moraine will need to be obtained prior to drilling at this location.

- Well GM-48 will be installed west of GM-16 and east of the Great Miami River near the bike path. Well GM-49 will be installed southwest of GM-16 and east of the Great Miami River near the bike path. A permit to drill near this bike path will need to be obtained from the Miami Conservancy District prior to drilling at these locations.

Wells GM-47, GM-48, and GM-49 will be installed using rotosonic drilling methodology. These borings will be continuously sampled for lithologic characterization to the regional clay till, if present. The wells will be installed to the depth of the regional clay till, which is approximately 58 to 70 feet below land surface in this area. During drilling of these wells, vertical aquifer sampling will be conducted to provide an understanding of the volatile organic compound (VOC) concentration profile. This data will be considered as screening quality and will be used to determine whether another well with the screen set at a shallow depth should also be installed. Once the water table is reached at each boring, a groundwater sample will be collected at the water table and a second groundwater sample will be collected at an intermediate depth, approximately 10 to 15 feet beneath the top of the water table. These groundwater samples will be submitted for expedited laboratory analysis of the site-specific parameter list (benzene, 1,1-dichloroethane, 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, ethylbenzene, PCE, toluene, 1,1,1-trichloroethane, TCE, vinyl chloride, and xylenes). The samples will be analyzed on a rush turn basis so that the analytical results can be reviewed while the drilling rig is still mobilized. Specifically, these data will be assessed for evidence of significant vertical stratification of VOC concentrations. If higher concentrations are observed in the shallower portion of the aquifer, then a shallow monitoring well will also be installed. Once installed, these wells will be developed and surveyed following procedures defined in the Supplemental RFI Work Plan (ARCADIS 1997).

In addition to the new monitoring wells to be installed, GM identified three existing monitoring wells in the GM-16 study area. These wells, WSU-20, WSU-22, and WSU-23, are located on GM property, north of Hoylake Court and south of the closed South Settling Lagoon (Figure 1). The wells were installed in the upper aquifer by Wright State University in 1981 as part of a research project to study the geology and hydrogeology of the Dayton area. Other wells installed by Wright State University near the GM site are currently used in the site-wide groundwater monitoring program, including WSU-17, WSU-18, WSU-19, and WSU-24. GM will coordinate use of wells WSU-20, WSU-22, and WSU-23 with Wright State University and will redevelop the wells prior to use.

Once the new monitoring wells are installed and the three WSU wells are redeveloped, GM will complete a site-wide round of water level measurements. Additionally, the newly installed wells and wells WSU-20 and WSU-22 will be sampled following procedures defined in the Site-Wide Groundwater Monitoring Plan (ARCADIS 2002). The groundwater samples will be submitted for laboratory analysis of the site-specific VOC parameter list.

Former Oil House Study Area Work Plan

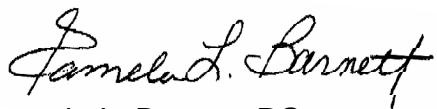
In order to refine the characterization of groundwater chemistry and flow direction in the Former Oil House Area, GM will install an upper aquifer monitoring well southeast of the eastern edge of RZ-1 and the source area (currently monitored with well GM-23). The location of this new well, GM-46, is shown on Figure 1. This well will be installed at the first encountered clay till, which may be the upper clay till or the regional clay till. During installation, the boring will be continuously sampled for lithologic characterization. The upper clay till is a continuous unit beneath the Former Oil House Area. If the upper clay till is present southeast of the Former Oil House Area, GM-46 may be installed at an approximate depth of 25 to 40 feet below land surface. If the upper clay till is not present, GM-46 will be installed at the regional clay till at an approximate depth of 55 to 60 feet below land surface. Rotasonic drilling will be used to install this monitoring well. Once installed, the well will be developed and surveyed following procedures defined in the Supplemental RFI Work Plan (ARCADIS 1997). Well GM-46 will be sampled following procedures defined in the Site-Wide Groundwater Monitoring Plan (ARCADIS 2002). The groundwater sample will be submitted for laboratory analysis of the site-specific VOC parameter list.

Data Report

The data generated from this supplemental investigation will be used to evaluate groundwater chemistry and flow direction in the vicinity of GM-16 and the Former Oil House Area to better assess the current corrective measures, including the site-wide groundwater monitoring program. GM will incorporate these data into a letter report that will be submitted to U.S. EPA. The data evaluation will include the boring logs, a groundwater contour map, tabulated analytical results, analytical results posted in databoxes on figures, and an assessment of how these supplemental data affects the current corrective measures, if at all.

GM will proceed with the field work portion of this proposed work plan when permits and access agreements are finalized and will notify U.S. EPA when the drilling is scheduled. Please call 937-455-2636, if you have any questions.

Sincerely,

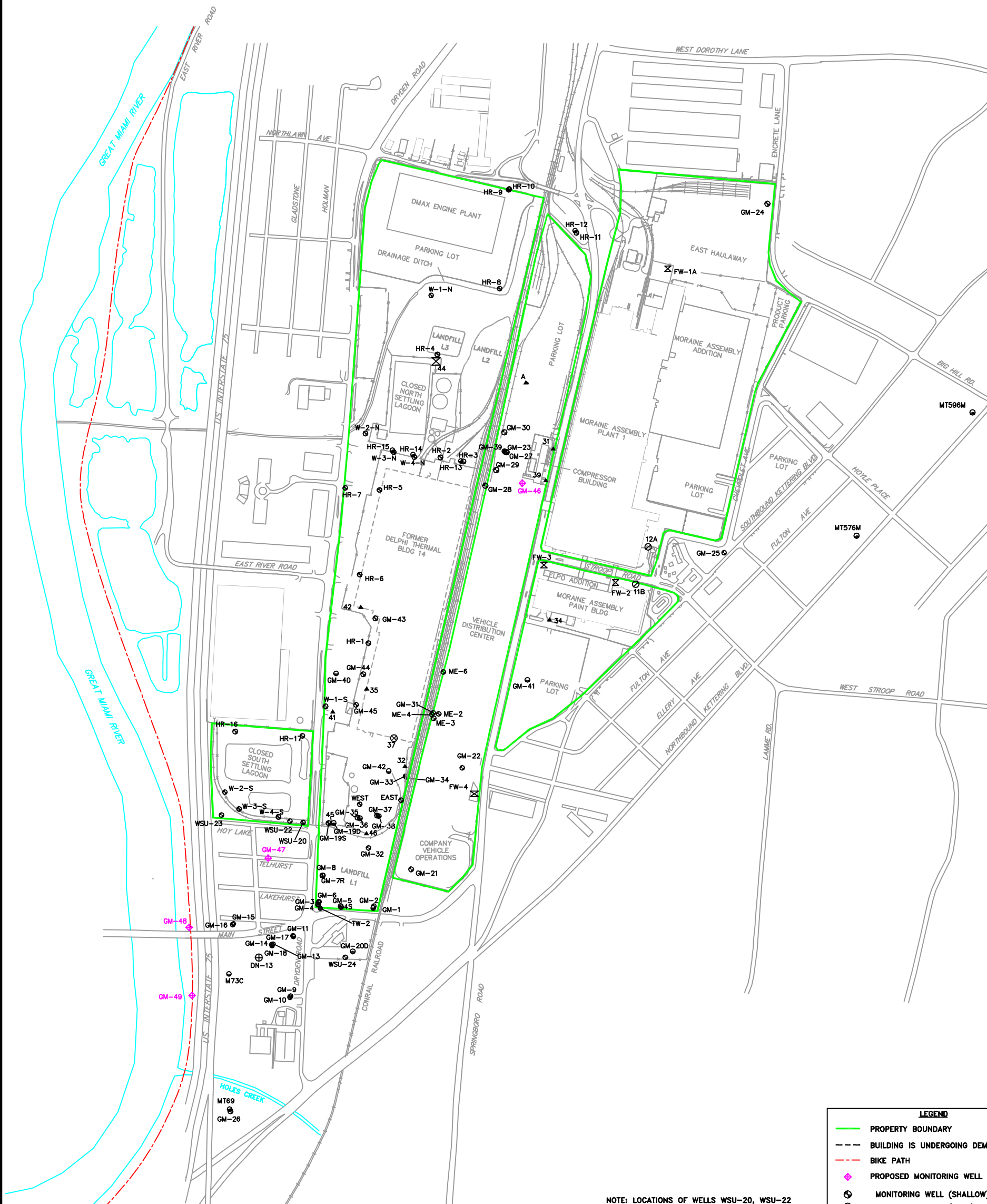


Pamela L. Barnett, PG
Project Manager
BOW Environmental Solutions, Inc. on behalf of GM

cc: H. O'Connell, Ohio EPA
J. Caufield, GM Remediation



0 200 500ft



NOTE: LOCATIONS OF WELLS WSU-20, WSU-22 AND WSU-23 ARE APPROXIMATE.

LEGEND	
	PROPERTY BOUNDARY
	BUILDING IS UNDERGOING DEMOLITION
	BIKE PATH
	PROPOSED MONITORING WELL
	MONITORING WELL (SHALLOW)
	MONITORING WELL (DEEP)
	FIRE WELLS
	INACTIVE PRODUCTION WELLS
	ACTIVE PRODUCTION WELLS
	PUMP TO WASTE WELL
	SEALED WELL
	RECOVERY WELL



PROPOSED WELL LOCATIONS GENERAL MOTORS CORPORATION MORAIN, OHIO

284 Cramer Creek Court
Dublin, OH 43017
Tel: 614/764-2310 Fax: 614/764-1270

DATE 6/22/2005	PROJECT MANAGER N. GILLOTTI	DRAWING NAME 05\05wkpln\05pln-01
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PROJECT NUMBER OH000294.0007.0003	DRAWING NUMBER 1	