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Michigan Department of Environment, Great Lakes, and Energy
Remediation and Redevelopment Division
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525 West Allegan Street
Lansing, MI 48909

Date May 4, 2020

PFAS Screening Scope of Work

This scope of work has been prepared by O’Brien & Gere, a Ramboll Company (OBG), on behalf of the Revitalizing Auto Communities Environmental Response Trust (RACER Trust) to provide a scope of work for initial screening sampling and analysis for per- and polyfluoroalkyl substances (PFAS) at the Hemphill Road Industrial Land (HRIL) facility located in Burton, Michigan (Site).

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This scope of work is being submitted in response to a letter from the Michigan Department of Environment, Great Lakes, and Energy (EGLE) dated April 7, 2020, which requested an evaluate for the presence of PFAS at the Site.

Background

The HRIL Site is located at the southeast corner of the South Saginaw Street and Hemphill Road intersection in Genesee County, Burton, Michigan (**Figure 1**). The Site contains the 7.8-acre western portion of the former Hemphill Landfill and is presently an unused lot with portions covered with asphalt or gravel. A section is currently being leased as a construction laydown area for Consumers Energy.

The Site is bounded to the north by Hemphill Road, on the west by an active service station, medical center, and South Saginaw Street, on the east by an open field (privately owned) which was previously part of the former municipal Hemphill Landfill, and on the south by Storage One (commercial property).

Prior to 1941 the property was used for agricultural purposes. As part of the municipal Hemphill Landfill, a portion of the Site was filled with industrial and municipal wastes from sometime after 1941 to approximately 1958. Filling

activities continued east of the Site until 1978. The Site was developed for commercial use beginning in 1955 with the construction of a building occupied by Kroger on the northern portion. A second building occupied by Taystee Bread was formerly located in the central portion of the Site, and a discount department store was added in the southern part of the Site in 1959.

The former General Motors Corporation (GMC) purchased the property in 1978. Prior to GMC purchasing the property it was owned by the City of Burton. Remediation & Liability Management Company, Inc. (REALM), a wholly owned subsidiary of GMC, managed the Site from 2001 until 2009, when GMC changed its name to Motors Liquidation Company (MLC) and continued management of the property as part of the GMC bankruptcy process. The property was transferred to the current owner, RACER Properties LLC, (an entity wholly owned by RACER Trust), on March 31, 2011.

Sample Protocol

PFAS are used in a variety of applications and products, such as fire retardants, water repellant clothing, microwavable food wrappers, cosmetics, etc. Therefore, special care will be taken during sampling and transport of the samples to avoid contamination from clothing, sampling material and storage containers due to the extremely low detection limits for PFAS (<1 ng/L). Samples will be collected in accordance with the EGLE Groundwater PFAS Sampling Guidance (EGLE, 2018).

For the sampling events, the sample team will wear natural fiber clothing (predominantly 100% cotton, or as near to 100% as possible); especially no water repellant materials (coats, gloves, shoes, etc.) and avoided bathing with or applying particular products (deodorants/antiperspirants, lotions, cosmetics, etc.) prior to sampling to avoid cross contamination.

Furthermore, all clothing worn by the field sampling crew will be well laundered, at least 6 times, without the use of fabric softeners. Well laundered, 100% cotton sheets will be utilized in place of plastic sheeting as ground cover, where needed, to avoid using non-high-density polyethylene (HDPE) sheeting.

New HDPE and silicon tubing contained in their unopened manufacturer's wrappers will be utilized to avoid using rolls of tubing previously opened to further avoid potential exposure to PFAS during the transportation to the Site. As much as possible, the sample containers, coolers, materials, and equipment utilized during sampling will be stored and transported in the back of the company trucks, rather than within the carpeted cabin of the trucks that could have been treated, to avoid potential cross contamination by PFAS.

Groundwater Sample Collection

To evaluate for the presence of PFAS in the groundwater at the Site, collection of groundwater samples for PFAS analysis is proposed from seven shallow onsite monitoring wells (OBG MW-1S, OBG MW-2S, OBG MW-3, OBG MW-5S, OBG MW-6S, OBG MW-7S, and OBG MW-8), two shallow onsite monitoring wells with LNAPL impacts (OBG MW-4S and OBG MW-10), and one deep onsite monitoring well (OBG MW-7D) for two events. See **Figure 2** for further detail.

Low flow groundwater sampling will be performed in accordance with USEPA, *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures* (EPA/540/S-95/504) and the USEPA Region 1 (July 30, 1996, Revision 3) *Low Stress (Low-Flow) Purging and Sampling Procedure for the Collection of Ground Water Samples from Monitoring Wells*.

Low-flow groundwater sampling will be performed using high-density polyethylene sample tubing lowered approximately to the midpoint of the well screen and connected to a peristaltic pump utilizing silicon tubing. The tubing will then be attached to a flow-through cell attached to a physical parameter measurement instrument capable of measuring temperature, conductivity, pH, dissolved oxygen (DO), and oxidation-reduction potential (ORP). Turbidity will be measured with a turbidity meter.

An attempt will be made to purge at a rate that produces less than 0.3 ft of drawdown in the well. If drawdowns of 0.3 ft or less cannot be maintained because of the permeability of the formation at a particular well location, "ultra-low flow" purge techniques will be employed. Ultra-low flow purge rates are rates below 100 ml/min. However, if ultra-low flow purging still results in the well purging "dry," the well will be allowed to recharge, and the sample will be collected once sufficient water is present to obtain the necessary sample volume.

Purging will continue until the water quality parameters stabilize within the USEPA Low Stress Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells over three consecutive 5-minute periods. Once stabilized, the pumping rate will be reduced (when possible) and the flow-through cell will be disconnected. Purge water will be discharged to the ground surface on site.

Samples will be collected directly into laboratory supplied containers. The sample container selection and preservation techniques will follow EGLE Remediation and Redevelopment Division (RRD) Standard Operating Procedure for Sample Preservation, Sample Handling, and Holding Time (RRD-34).

The samples will be labeled, packed on ice, and shipped via courier under routine chain-of-custody protocols to Merit Laboratories, Inc. (Merit) of East Lansing, Michigan. The groundwater samples will be analyzed for PFAS by method ASTM D7979-19 Modified (no preservative). Specific compounds and reporting limits are provided in **Attachment A**. Note that the reporting limits for PFOA and PFNA are higher than their proposed Michigan Maximum Contaminant Levels (MCLs) but the method detection limit for both are below their proposed MCLs. Also, samples will be collected from wells that have in the past and are expected to contain LNAPL so detection and reporting limits could be elevated for those samples.

Quality Assurance/Quality Control (QA/QC) samples will consist of a field duplicate and field (ambient) blank which will act as a check for cross contamination as well as a trip blank. An equipment blank will be collected if deemed necessary.

Schedule

We are prepared to initiate the implementation of this scope of work within three weeks of approval by EGLE depending upon any restrictions due to the current COVID-19 outbreak. The initial sampling results will be available within approximately three weeks of sample collection and the results will be tabularize and provided in an email along with a figure summarizing the results.

Reporting

Following completion of initial round of PFAS screening sampling a brief letter report will be provided along with a table of the results, a figure summarizing the results, and recommendations for next steps. The results will be compared to proposed MCLs.

If you have any questions or comments concerning this work plan, please feel free to contact me at 313.333.0211 or Dave Favero at 734.879.9525.

Yours sincerely

O'BRIEN & GERE ENGINEERS, INC.



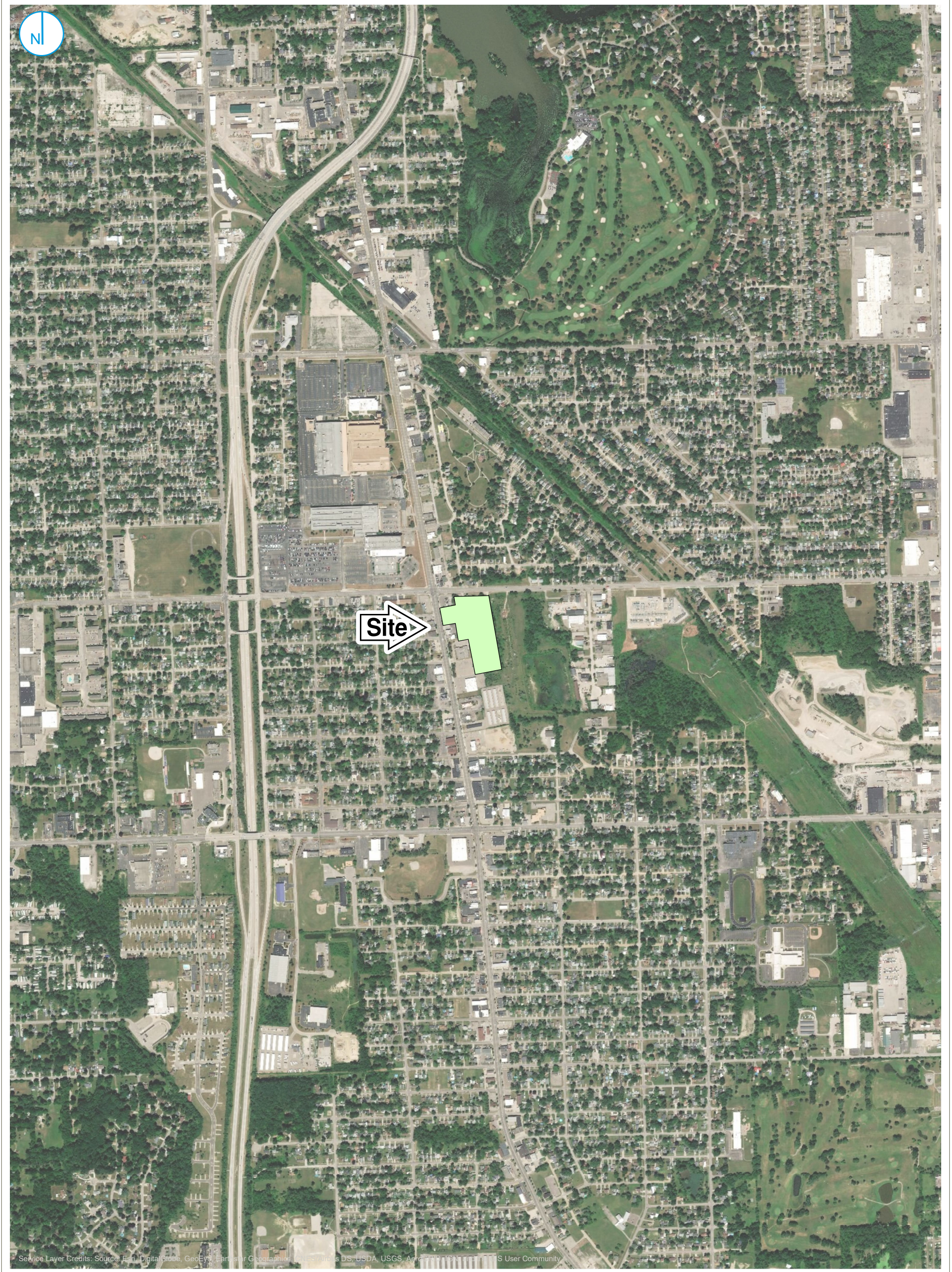
Clifford S. Yantz
Senior Hydrogeologist

Enclosures

- Figure 1 – Site Location Map
- Figure 2 – Proposed PFAS Sample Locations
- Attachment A – Analytical Parameters and Reporting Limits

cc: Brad Ermisch - EGLE
David Favero - RACER Trust
Kevin Schneider - OBG

FIGURES



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SITE LOCATION MAP

FIGURE 01

0 500 1,000 2,000 Feet

RACER TRUST
HEMPHILL ROAD INDUSTRIAL LAND
BURTON, MICHIGAN

RAMBOLL US CORPORATION
A RAMBOLL COMPANY





Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DLR, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- LEGEND**
- MONITORING WELL LOCATION (SCREENED IN NATIVE SOIL)
 - MONITORING WELL LOCATION (SCREENED IN FILL)
 - PROPOSED PFAS SAMPLE LOCATION
 - FENCE LINE

PROPOSED PFAS SAMPLE LOCATIONS

FIGURE 02

0 50 100 Feet

RACER TRUST
HEMPHILL ROAD INDUSTRIAL LAND
BURTON, MICHIGAN

RAMBOLL US CORPORATION
A RAMBOLL COMPANY



ATTACHMENT

ATTACHMENT 1
RACER Trust - Hemphill Road Industrial Land
PFAS Parameters and Reporting Limits

Parameter	Synonym	Cas #	Reporting Limit
PFBA	Perfluorobutanoic Acid	375-22-4	20
PFPeA	Perfluoropentanoic Acid	2706-90-3	10
4:2 FTSA	4:2 Fluorotelomer Sulfonic Acid	757124-72-4	10
PFHxA	Perfluorohexanoic Acid	307-24-4	10
PFBS	Perfluorobutane sulfonic Acid	375-73-5	10
PFHpA	Perfluoroheptanoic Acid	375-85-9	10
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4	10
6:2 FTSA	6:2 Fluorotelomer Sulfonic Acid	27619-97-2	10
PFOA*	Perfluorooctanoic Acid	335-67-1	10
PFHxS	Perfluorohexane Sulfonic Acid	355-46-4	10
PFHxS-LN	Perfluorohexane Sulfonic Acid - LN	355-46-4-LN	10
PFHxS-BR	Perfluorohexane Sulfonic Acid - BR	355-46-4-BR	10
PFNA*	Perfluorononanoic Acid	375-95-1	10
8:2 FTSA	8:2 Fluorotelomer Sulfonic Acid	39108-34-4	10
PFHpS	Perfluoroheptane Sulfonic Acid	375-92-8	10
PFDA	Perfluorodecanoic Acid	335-76-2	10
N-MeFOSAA	N-methyl perfluorooctanesulfonamidoacetic acid	2355-31-9	10
EtFOSAA	N-Ethyl Perfluorooctane Sulfonamidoacetic Acid	2991-50-6	10
PFOS	Perfluorooctane Sulfonic Acid	1763-23-1	10
PFOS-LN	Perfluorooctane Sulfonic Acid - LN	1763-23-1-LN	10
PFOS-BR	Perfluorooctane Sulfonic Acid - BR	1763-23-1-BR	10
PFUnDA	Perfluoroundecanoic Acid	2058-94-8	10
PFNS	Perfluorononane Sulfonic Acid	68259-12-1	10
PFDoDA	Perfluorododecanoic Acid	307-55-1	10
PFDS	Perfluorodecane Sulfonic Acid	335-77-3	10
PFTrDA	Perfluorotridecanoic Acid	72629-94-8	10
FOSA	Perfluorooctane Sulfonamide	754-91-6	10
PFTeDA	Perfluorotetradecanoic Acid	376-06-7	10
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9	10
9Cl-PF3ONS	9-chlorohexadecafluoro-3-oxanone1-sulfonic acid	756426-58-1	10
ADONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4	10
HFPO-DA	Hexafluoropropylene oxide dimer	13252-13-6	10

Notes: *the proposed MCLs for PFOA (8 ng/L) and PFNA (6 ng/L) are less than the current reporting limit.