July 25, 2019 Reference No. 017390

Mr. Glenn May, CPG
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, NY 14203-2999

Dear Mr. May:

Re: GM Powertrain Group – Tonawanda, New York
Endoline Area First Annual Groundwater Monitoring

On behalf of General Motors, LLC (GM), GHD submitted a report titled Second Evaluation of Enhanced Attenuation for the Endoline Area Chlorinated Solvent Plume in February 2018. The report documented the activities and summarized the monitoring results for the Enhanced Attenuation program that had been completed to date.

The report concluded that the data from the perimeter wells showed that there are no exceedances of any Target Compound List (TCL) Volatile Organic Compound (VOC) parameters and based on the results, the plume does not appear to be migrating. Further, the data obtained from monitoring wells MW-2 through MW-5 showed that there had been no significant change in concentrations of benzene and MTBE. Benzene and methyl tert butyl ethane (MTBE) were still present at MW-3 and MTBE is still present at MW-4 at concentrations exceeding groundwater standards.

The report summarized that, although fluctuations are observed, conditions appear to be generally anaerobic at the Site and the presence of degradation products such as chloroethane and ethane show that natural attenuation is occurring. The ISEB treatments performed in this area have been effective in reducing the higher chlorinated VOC (CVOC) concentrations present at the Site; however, the tight clay matrix limits the dispersion and therefore the effectiveness of any injected amendments. Since the clay matrix is so tight at the site, impacted groundwater is not migrating, but is remaining on Site and slowly attenuating. Based on this information, no further injections were recommended for the Site.

It was recommended that groundwater continue to be monitored annually for 3 years. Plume monitoring wells, MW-2, MW-11, and MW-12, are sampled for TCL VOCs and attenuation parameters while samples from the perimeter wells, MW-1, MW-9, MW-101, MW-102, and MW-103 are only analyzed for TCL VOCs.

The groundwater monitoring program does not include monitoring for the STARS parameters at wells MW-2 through MW-5, as data from these wells has shown no significant change from the October 2009 event through the October 2017 event. The concentrations of benzene and MTBE remain stagnant, and the chemistry is not migrating. It was recommended in the February 2018 report that the monitoring requirement for the petroleum portion of Spill No. 9875474 be eliminated.

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This groundwater monitoring report is being submitted to present the data for the first annual sampling event completed in October 2018 (see the attached Table 1). After the third annual monitoring event, the continued effectiveness of the remedy will be evaluated.

Please contact Jim Hartnett at 315-856-0211 (GM) or Katherine Galanti at 716-856-2142 (GHD) if you should have any questions or comments.

Sincerely,

GHD

Katherine Galanti
Project Manager

KBG/CMB/ck/11

Encl.

cc: Jim Hartnett (GM)
Casey Essary (GM)
Greg Kulka (GM)
Christine Barton (GHD)

Table 1

Analytical Results Summary
Groundwater Plume Monitoring
Endoline Area Remediation/GM Tonawanda
Tonawanda, New York
October-November 2018

Location ID:				Perimeter MW-1	Plume MW-2	Perimeter MW-9	Perimeter MW-101	Perimeter MW-102
Sample Name:				WG-17390-110118-007	WG-17390-102918-001	WG-17390-103018-006	WG-17390-103018-005	WG-17390-110118-008
Sample Date:				11/01/2018	10/29/2018	10/30/2018	10/30/2018	11/01/2018
Parameters	**Unit**	**NYSDEC TOGs 1.1.1 Groundwater Guidance Value**	**Standard**					
Volatile Organic Compounds								
1,1,1-Trichloroethane	µg/L	NC	5	1.0 U	1000 U	1.0 U	0.25 J	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	NC	5	1.0 U	1000 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	NC	1	1.0 U	1000 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	NC	5	1.0 U	**3500**	1.3	1.0 U	0.33 J
1,1-Dichloroethene	µg/L	NC	5	1.0 U	1000 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	NC	0.6	1.0 U	1000 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	µg/L	5	NC	2.0 U	2000 U	2.0 U	2.0 U	2.0 U
1,2-Dichloropropane	µg/L	NC	1	1.0 U	1000 U	1.0 U	1.0 U	1.0 U
1,4-Dioxane	µg/L	NC	NC	15 J	50000 U	50 U	50 U	50 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	50	NC	2.2 J	10000 U	10 U	10 U	10 U
2-Hexanone	µg/L	50	NC	10 U	10000 U	10 U	10 U	10 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	NC	NC	0.96 J	10000 U	10 U	10 U	10 U
Acetone	µg/L	50	NC	6.9 J	10000 U	10 U	10 U	10 U
Benzene	µg/L	NC	1	1.0 U	**230 J**	1.0 U	1.0 U	1.0 U
Bromodichloromethane	µg/L	50	NC	1.0 U	1000 U	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	50	NC	1.0 U	1000 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	NC	5	1.0 U	1000 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	µg/L	60	60	1.0 U	1000 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	µg/L	NC	5	1.0 U	1000 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	NC	5	1.0 U	1000 U	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	NC	5	1.0 U	**45000**	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	NC	7	1.0 U	1000 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	µg/L	NC	5	1.0 U	1000 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	NC	5	1.0 U	1000 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	µg/L	NC	NC	1.0 U	1000 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	µg/L	50	NC	1.0 U	1000 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	µg/L	NC	5	1.0 U	1000 U	1.0 U	1.0 U	1.0 U
Methylene chloride	µg/L	NC	5	5.0 U	5000 U	5.0 U	5.0 U	5.0 U
Styrene	µg/L	NC	5	1.0 U	1000 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	NC	5	1.0 U	1000 U	1.0 U	1.0 U	1.0 U
Toluene	µg/L	NC	5	1.0 U	1000 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	µg/L	NC	5	1.0 U	1000 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	NC	NC	1.0 U	1000 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	NC	5	1.0 U	1000 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	NC	2	1.0 U	1000 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	µg/L	NC	5	2.0 U	**240 J**	2.0 U	2.0 U	2.0 U
Dissolved Gases								
Ethane	µg/L	NC	NC	-	410	-	-	-
Methane	µg/L	NC	NC	-	14000	-	-	-
General Chemistry								
Alkalinity, total (as CaCO3)	mg/L	NC	NC	-	250	-	-	-
Ammonia-N	mg/L	NC	2000000	-	3.3	-	-	-
Biochemical oxygen demand (BOD)	mg/L	NC	NC	-	9.3	-	-	-
Chemical oxygen demand (COD)	mg/L	NC	NC	-	180	-	-	-
Nitrate (as N)	mg/L	NC	10000000	-	0.10 U	-	-	-
Nitrite (as N)	mg/L	NC	1000000	-	0.10 U	-	-	-
Phosphorus	mg/L	NC	NC	-	0.090 J	-	-	-
Sulfate	mg/L	NC	250000000	-	3.1	-	-	-
Sulfide	mg/L	50000	NC	-	1.0 U	-	-	-
Total organic carbon (TOC)	mg/L	NC	NC	-	27	-	-	-

Notes:

J - Estimated concentration
U - Not detected at the associated reporting limit
- - Not applicable

Table 1

Analytical Results Summary
Groundwater Plume Monitoring
Endoline Area Remediation/GM Tonawanda
Tonawanda, New York
October-November 2018

Location ID:				Perimeter MW-103	Plume MW-11	Plume MW-11	Plume MW-12
Sample Name:				WG-17390-110118-009	WG-17390-103018-003	WG-17390-103018-004	WG-17390-103018-002
Sample Date:				11/01/2018	10/30/2018	10/30/2018 Duplicate	10/30/2018
Parameters	**Unit**	**NYSDEC TOGs 1.1.1 Groundwater Guidance Value**	**Standard**				
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/L	NC	5	1.0 U	**370**	**360**	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	NC	5	1.0 U	50 U	50 U	1.0 U
1,1,2-Trichloroethane	µg/L	NC	1	1.0 U	50 U	50 U	1.0 U
1,1-Dichloroethane	µg/L	NC	5	1.0 U	**2800**	**2800**	**50**
1,1-Dichloroethene	µg/L	NC	5	1.0 U	**1800**	**1700**	**0.19 J**
1,2-Dichloroethane	µg/L	NC	0.6	1.0 U	**15 J**	**15 J**	1.0 U
1,2-Dichloroethene (total)	µg/L	5	NC	2.0 U	**100**	**100**	0.57 J
1,2-Dichloropropane	µg/L	NC	1	1.0 U	50 U	50 U	1.0 U
1,4-Dioxane	µg/L	NC	NC	18 J	2500 U	2500 U	49 J
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	50	NC	10 U	500 U	**62 J**	10 U
2-Hexanone	µg/L	50	NC	10 U	500 U	500 U	10 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	NC	NC	10 U	500 U	500 U	10 U
Acetone	µg/L	50	NC	10 U	500 U	500 U	**410**
Benzene	µg/L	NC	1	1.0 U	50 U	50 U	0.72 J
Bromodichloromethane	µg/L	50	NC	1.0 U	50 U	50 U	1.0 U
Bromoform	µg/L	50	NC	1.0 U	50 U	50 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	NC	5	1.0 U	50 U	50 U	1.0 U
Carbon disulfide	µg/L	60	60	1.0 U	50 U	50 U	1.0 U
Carbon tetrachloride	µg/L	NC	5	1.0 U	50 U	50 U	1.0 U
Chlorobenzene	µg/L	NC	5	1.0 U	50 U	50 U	1.0 U
Chloroethane	µg/L	NC	5	1.0 U	50 U	50 U	1.7
Chloroform (Trichloromethane)	µg/L	NC	7	1.0 U	50 U	50 U	1.0 U
Chloromethane (Methyl chloride)	µg/L	NC	5	1.0 U	50 U	50 U	1.0 U
cis-1,2-Dichloroethene	µg/L	NC	5	1.0 U	**100**	**100**	0.57 J
cis-1,3-Dichloropropene	µg/L	NC	NC	1.0 U	50 U	50 U	1.0 U
Dibromochloromethane	µg/L	50	NC	1.0 U	50 U	50 U	1.0 U
Ethylbenzene	µg/L	NC	5	1.0 U	50 U	50 U	1.0 U
Methylene chloride	µg/L	NC	5	5.0 U	250 U	250 U	5.0 U
Styrene	µg/L	NC	5	1.0 U	50 U	50 U	1.0 U
Tetrachloroethene	µg/L	NC	5	1.0 U	50 U	50 U	1.0 U
Toluene	µg/L	NC	5	1.0 U	10 J	10 J	1.0 U
trans-1,2-Dichloroethene	µg/L	NC	5	1.0 U	50 U	50 U	1.0 U
trans-1,3-Dichloropropene	µg/L	NC	NC	1.0 U	50 U	50 U	1.0 U
Trichloroethene	µg/L	NC	5	1.0 U	**16 J**	**15 J**	1.0 U
Vinyl chloride	µg/L	NC	2	1.0 U	**54**	**49 J**	0.60 J
Xylenes (total)	µg/L	NC	5	2.0 U	100 U	100 U	2.0 U
Dissolved Gases							
Ethane	µg/L	NC	NC	-	7.7	8.1	2.4/2.6
Methane	µg/L	NC	NC	-	2200	2200	4100/3000
General Chemistry							
Alkalinity, total (as CaCO3)	mg/L	NC	NC	-	520	-	640
Ammonia-N	mg/L	NC	2000000	-	0.27	-	0.53
Biochemical oxygen demand (BOD)	mg/L	NC	NC	-	2.0 U	-	5.7
Chemical oxygen demand (COD)	mg/L	NC	NC	-	53	-	81
Nitrate (as N)	mg/L	NC	10000000	-	0.50 U	-	0.20 U
Nitrite (as N)	mg/L	NC	1000000	-	0.50 U	-	0.20 U
Phosphorus	mg/L	NC	NC	-	0.096 J	-	0.12
Sulfate	mg/L	NC	250000000	-	2000	-	460
Sulfide	mg/L	50000	NC	-	1.0 U	-	1.0 U
Total organic carbon (TOC)	mg/L	NC	NC	-	3.2	-	15

Notes:

J - Estimated concentration
U - Not detected at the associated reporting limit
- - Not applicable