TRANSMITTAL LETTER

ARCADIS

To:
Paul Owens
Michigan Department of Environment, Great Lakes & Energy
27700 Donald Court
Warren, MI 48092

From:
Kris Hinskey

Arcadis U.S., Inc.
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248 994 2240

Copies:

Date:
December 1, 2022

Subject:
Livonia Transmission Plant Utility Corridor Assessment – Monthly Update for the ResAP IRA Activities

Arcadis Project No.:
30146655

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MEMO

To:
Paul Owens, District Supervisor
EGLE Warren District Office
27700 Donald Court
Warren, Michigan 48092-2793
owensp@michigan.gov

Copies:
Jeanne Schlaufman, EGLE
Matt Williams, EGLE
Beth Vens, EGLE
Todd Walton, Ford
Chuck Pinter, Ford

Arcadis of Michigan, LLC
28550 Cabot Drive
Suite 500
Novi
Michigan 48377
Tel 248 994 2240

From:

Kris Hinskey

Date:

December 1, 2022

Arcadis Project No.:

30146655

Subject:
Utility Corridor Assessment – Monthly Update for the ResAP IRA Activities
36200 Plymouth Road, Livonia, Wayne County, Michigan
Consent Decree No 2:1712372-GAD-RSW (CD)
Site ID No.: 82002970

On behalf of Ford Motor Company (Ford), Arcadis of Michigan, LLC (Arcadis) has prepared this memorandum (memo) for the Livonia Transmission Plant (LTP) site (the site). This memo is intended to update the Michigan Department of Environment, Great Lakes, and Energy (EGLE) with the most recent field activities related to the Response Activity Plan for Interim Response Activities (ResAP IRA) submitted to EGLE on May 31, 2022 (approved by EGLE June 23, 2022) and serve as the submittal for the month of November 2022. Additional update memos detailing the activities associated with ResAP IRA will be provided to EGLE monthly until deemed otherwise.

Highlights

- **Analytical results from grab vapor compliance samples collected since June 10, 2022, have indicated no exceedances of the EGLE site-specific volatilization to indoor air criteria (SSVIAC) at the compliance location SL-2, while the system has been in operation.**

- **Rehabilitation of two on-site 425-foot segments of sanitary pipe is anticipated to take place December 2 through December 5, 2022.**

Utility Corridor Response Activity Plan for Interim Response Activities - Update

On-site Response Activities

Sanitary Sewer Vapor Extraction System Operation and Compliance Sampling

The sanitary sewer vapor extraction (SSVE) system has been operating at a flowrate of approximately 900 cubic feet per minute (cfm) since August 10, 2022, except for two periods of shut down that occurred in late October 2022 and mid-November 2022 as described below. Location of the SSVE system is provided in **Figure 1**. Compliance sampling continues to be completed monthly in accordance with the sampling frequency described in the ResAP IRA.

The SSVE system went down on October 25, 2022, due to a battery malfunction with the generator. The system was repaired on November 3, 2022. During the repair, modifications to the system telemetry were also completed so that shutdown alarms can be addressed more quickly in the future.

The SSVE system went down again on November 17, 2022, due to a fuel filter issue on the generator. The SSVE system was restarted the same day and ran intermittently until the generator was serviced on November 18, 2022. The SSVE system has been running continuously at 900 cfm since this latest repair (November 18, 2022). Arcadis is currently reviewing dedicated power options to replace the generator and increase operational reliability. The total downtime for the SSVE system was 9.9 days over the period of the two outages.

Following restart of the SSVE system on November 3, 2022, samples were collected on November 4, 2022 and results indicated a SSVIAC criteria exceedance for vinyl chloride at SAMH-1231 of 3.6 micrograms per cubic meter (µg/m3). Compliance samples for the month of November were collected on November 15, 2022 and the analytical results from SAMH-1231 and SL-2 were below SSVIAC criteria. Vapor grab sampling results to date for the SSVE compliance locations, along with influent and effluent data from the SSVE system, are included in **Table 1**. The next vapor sampling event of the compliance locations will be completed the week of December 12, 2022.

Overall, a significant decrease in analytical vapor concentrations at the compliance locations continues to be observed following the installation and operation of the SSVE system at the primary extraction location as detailed in **Exhibit 1** below.

Exhibit 1: Vapor Concentrations at Compliance Locations following On-Site SSVE System Installation

Structure	Pre-SSVE Installation (Baseline) Concentration (µg/m³) May 25, 2022	Compliance Sample Results (µg/m³) November 15, 2022
SAMH-1231	1,200 (VC)/29 (TCE)	<0.46 (VC)/<0.72 (TCE)
SL-2	58 (VC)/2.8 (TCE)	<0.46 (VC)/<0.72 (TCE)

Notes:
µg/m^3 = micrograms per cubic meter
TCE = trichloroethene
VC = vinyl chloride
< = Denotes not detected above method detection limit

Sanitary Sewer Rehabilitation

The rehabilitation of two 425-foot segments of sanitary pipe inside the LTP (SAMH J90 to SAMH E91 and SAMH E91 to SAMH 1253A) (**Figure 1**) is scheduled to take place over the weekend of December 2, 2022. Additional details will be provided to EGLE during the tri-weekly meetings and in the December 2022 monthly submittal.

Exhibit 2 below details the on-site planned and completed to date sanitary sewer cleaning and rehabilitation associated with the ResAP IRA.

Exhibit 2. Sanitary Sewer Cleaning and Rehabilitation

Pipe Rehabilitation	Date
Dye Testing and Lateral Confirmation	Completed Week of May 23, 2022
Design of Liner for Cured-in-Place-Pipe-Liner (CIPPL)	Completed Week of June 6, 2022
Cleaning of Mainline	Completed Week of June 20, 2022
Installation of CIPPL (SAMH 1260 to SAMH 1259)	Completed Week of June 20, 2022
Epoxy Lining of Manholes	Completed Week of July 4, 2022
Installation of Sanitary Manhole within the Plant (SAMH E91)	Completed Week of July 4, 2022
Dye Testing and Lateral Confirmation (SAMH J90 to SAMH E91)	Completed Week of August 22, 2022
Paint and Epoxy Restoration around New Manhole (SAMH E91)	Completed Week of August 22, 2022
Design of Liners for CIPPL	Completed Week of September 5, 2022
Heavy cleaning in preparation for CIPPL installation (SAMH J90 to SAMH E91 and SAMH E91 to SAMH 1253A)	Completed Week of October 24, 2022
Installation of CIPPL (SAMH J90 to SAMH E91)	To be completed Week of November 28, 2022
Installation of CIPPL (SAMH E91 to SAMH 1253A)	To be completed Week of November 28, 2022
Epoxy Lining of Additional Manholes	To be completed Q4 2022

In closing, information provided in this memo satisfies EGLE's request in the June 23, 2022, letter. Additional information related to the ResAP IRA will be submitted in subsequent monthly memos. Ford continues to work diligently to determine the source of the vapor and liquids present in the sanitary sewer on site and is committed to completing the activities outlined in this memo.

Enc.

Table 1. FROG Screening and Co-located Grab Sampling Results
Figure 1. Utility Corridor Response Activities

Table 1

FROG Screening and Co-located Grab Sampling Results

Table 1
FROG Screening and Co-located Grab Sampling Results
Ford Livonia Transmission Plant
36200 Plymouth Road
Livonia, Michigan

Location:	EGLE Residential SSVIAC 24-hour exposure	SAMH-1244		SAMH-1231B		SAMH-1231		SAMH-1231		SAMH-1231		SAMH-1231		SAMH-1231		SAMH-1231		SAMH-1231		SAMH-1231	
Sample Name:		SSVE-MH-1244_052522		SSVE-MH-1231B_071422		SSVE-MH-1231_052522		SSVE-MH-1231_052622		SSVE-MH-1231_053122		SSVE-MH-1231_060822		SSVE-MH-1231_061022		SSVE-MH-1231_061522		SSVE-MH-1231_062322		SSVE-MH-1231_063022	
Sample Date:		5/25/2022		7/14/2022		5/25/2022		5/26/2022		5/31/2022		6/8/2022		6/10/2022		6/15/2022		6/23/2022		6/30/2022	
Sample Time:		10:26		8:37		10:58		14:51		12:24		14:47		12:22		12:21		11:07		9:34	
Sample Type:		FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa*	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa
Volatile Organic Compounds (VOCs)																					
1,1-Dichloroethylene	210	NM	<0.60	NM	<0.60	NM	**9.3**	NM	<0.60	NM	<0.60	NM	<5.4	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60
1,4-Dioxane	5.1	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<5.8	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60
cis-1,2-Dichloroethylene	8.3	0.0	2.2	**241.16 J**	**1.0**	**292.63**	**870**	**75.93**	**1.1**	**57.49**	**2.2**	0.0	<5.5	0.0	<0.58	**37.17**	**7.6**	0.0	8.0	**71.54**	<0.58
Tetrachloroethylene	41	0.0	<1.0	0.0	<1.0	0.0	3.2	0.0	<1.0	0.0	<1.0	**6.12 J**	<8.7	**7.28 J**	<1.0	**26.83 J**	<1.0	**9.41 J**	<1.0	0.0	<1.0
trans-1,2-Dichloroethylene	83	0.0	<0.62	0.0	<0.62	0.0	14	0.0	<0.62	0.0	<0.62	0.0	<4.7	0.0	<0.62	0.0	<0.62	0.0	<0.62	0.0	<0.62
Trichloroethylene	2.0	0.0	<0.72	**18.34 J**	<0.72	**12.94**	**29**	0.0	<0.72	0.0	<0.72	0.0	<9.4	0.0	<0.72	0.0	<0.72	0.0	<0.72	0.0	<0.72
Vinyl chloride	1.6	NM	3.5	NM	<0.46	NM	1,200	NM	0.87	NM	1.8	NM	<6.7	NM	<0.46	NM	<0.46	NM	7.7	NM	<0.46

See Notes on last page

Table 1
FROG Screening and Co-located Grab Sampling Results
Ford Livonia Transmission Plant
36200 Plymouth Road
Livonia, Michigan

Location:	EGLE Residential SSVIAC 24-hour exposure	SAMH-1231		SAMH-1231		SAMH-1231		SAMH-1231		SAMH-1231		SAMH-1231		SAMH-1231		SAMH-1231		SAMH-1231		SAMH-1231	
Sample Name:		SSVE-MH-1231_070722		SSVE-MH-1231_071422		SSVE-MH-1231_071822		SSVE-MH-1231_072722		SSVE-MH-1231_080422		SSVE-MH-1231_081122		SSVE-MH-1231_081822		SSVE-MH-1231_082522		SSVE-MH-1231_090122		SSVE-MH-1231_090822	
Sample Date:		7/7/2022		7/14/2022		7/18/2022		7/27/2022		8/4/2022		8/11/2022		8/18/2022		8/25/2022		9/1/2022		9/8/2022	
Sample Time:		9:43		8:08		11:21		11:01		10:48		10:16		13:36		10:21		12:21		11:51	
Sample Type:		FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa
Volatile Organic Compounds (VOCs)																					
1,1-Dichloroethylene	210	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.6	NM	<0.6	NM	<0.6	NM	<0.6	NM	<0.6	NM	<0.6	NM	<0.6
1,4-Dioxane	5.1	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.6	NM	<0.6	NM	<0.6	NM	<0.6	NM	<0.6	NM	<0.6	NM	<0.6
cis-1,2-Dichloroethylene	8.3	0.0	<0.58	**179.88**	<0.58	0.0	<0.58	0.0	87 J	0.0	3.1	0.0	<0.58	0.0	<0.58	**127.87**	<0.58	**761.34**	<0.58	NM	<0.58
Tetrachloroethylene	41	0.0	<1.0	0.0	<1.0	0.0	<1.0	0.0	<1.0	0.0	1.1 J	0.0	<1.0	0.0	<1.0	0.0	<1.0	0	<1.0	0.0	<1.0
trans-1,2-Dichloroethylene	83	0.0	<0.62	0.0	<0.62	0.0	<0.62	**58.43 J**	**1.3**	0.0	<0.62	**218.41 J**	<0.62	0.0	<0.62	0.0	<0.62	0	<0.62	**131.35**	<0.62
Trichloroethylene	2.0	0.0	<0.72	0.0	<0.72	0.0	<0.72	0.0	2.1	0.0	<0.72	0.0	<0.72	0.0	<0.72	**29.45 J**	<0.72	0	<0.72	0.0	<0.72
Vinyl chloride	1.6	NM	<0.46	NM	<0.46	NM	<0.46	NM	41	NM	3.3	NM	<0.46	NM	<0.46	NM	<0.46	NM	<0.46	NM	<0.46

See Notes on last page

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FROG Screening and Co-located Grab Sampling Results
Ford Livonia Transmission Plant
36200 Plymouth Road
Livonia, Michigan

Location:	EGLE Residential SSVIAC 24-hour exposure	SAMH-1231	SAMH-1231	SAMH-1231	SL-2		SL-2		SL-2		SL-2		SL-2		SL-2		SL-2	
Sample Name:		SSVE-MH-1231_100322	SSVE-MH-1231_110422	SSVE-MH-1231_111522	SSVE-SL-2_052522		SSVE-SL-2_052622		SSVE-SL-2_053122		SSVE-SL-2_060822		SSVE-SL-2_061022		SSVE-SL-2_061522		SSVE-SL-2_062322	
Sample Date:		10/3/2022	11/4/2022	11/15/2022	5/25/2022		5/26/2022		5/31/2022		6/8/2022		6/10/2022		6/15/2022		6/23/2022	
Sample Time:		12:46	13:03	9:40	11:34		15:36		11:38		15:35		14:15		13:22		10:36	
Sample Type:		Summa	Summa	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa*	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa
Volatile Organic Compounds (VOCs)																		
1,1-Dichloroethylene	210	<0.6	<0.6	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<5.7	NM	<0.60	NM	<0.60	NM	<0.60
1,4-Dioxane	5.1	<0.6	<0.6	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<6.0	NM	<0.60	NM	<0.60	NM	<0.60
cis-1,2-Dichloroethylene	8.3	<0.58	7.1	1.5	**114.66**	**57**	**72.7**	<0.58	**325.89**	**6.3**	0.0	19	0.0	<0.58	0.0	<0.58	0.0	0.63 J
Tetrachloroethylene	41	<1.0	<1.0	<1.0	0	**14**	0.0	<1.0	0.0	1.2 J	**5.73 J**	<9.1	0.0	<1.0	0.0	<1.0	0.0	<1.0
trans-1,2-Dichloroethylene	83	<0.62	<0.62	<0.62	0	<0.62	0.0	<0.62	0.0	<0.62	0.0	<4.9	0.0	<0.62	0.0	<0.62	0.0	<0.62
Trichloroethylene	2.0	<0.72	<0.72	<0.72	**38.33**	**2.8**	0.0	<0.72	0.0	<0.72	0.0	<9.7	0.0	<0.72	0.0	<0.72	0.0	<0.72
Vinyl chloride	1.6	<0.46	3.6	<0.46	NM	**58**	NM	<0.46	NM	6.5	NM	<7.0	NM	<0.46	NM	<0.46	NM	<0.46

See Notes on last page

Table 1
FROG Screening and Co-located Grab Sampling Results
Ford Livonia Transmission Plant
36200 Plymouth Road
Livonia, Michigan

Location:	EGLE Residential SSVIAC 24-hour exposure	SL-2		SL-2		SL-2		SL-2		SL-2		SL-2		SL-2		SL-2		SL-2		SL-2	
Sample Name:		SSVE-SL-2_063022		SSVE-SL-2_070722		SSVE-SL-2_071422		SSVE-SL-2_071822		SSVE-SL-2_072722		SSVE-SL-2_080422		SSVE-SL-2_081122		SSVE-SL-2_081822		SSVE-SL-2_082522		SSVE-SL-2_090122	
Sample Date:		6/30/2022		7/7/2022		7/14/2022		7/18/2022		7/27/2022		8/4/2022		8/11/2022		8/18/2022		8/25/2022		9/1/2022	
Sample Time:		9:04		9:14		12:54		10:21		11:37		12:44		10:53		14:04		14:11		13:36	
Sample Type:		FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa
Volatile Organic Compounds (VOCs)																					
1,1-Dichloroethylene	210	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60
1,4-Dioxane	5.1	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60
cis-1,2-Dichloroethylene	8.3	**129.12**	<0.58	**112.53**	<0.58	**178.46 J**	<0.58	0.0	2.6	0.0	<0.58	0.0	<0.58	0.0	<0.58	0.0	<0.58	**101.5**	<0.58	0.0	<0.58
Tetrachloroethylene	41	0.0	<1.0	0.0	<1.0	0.0	<1.0	0.0	1.2 J	0.0	<1.0	0.0	<1.0	0.0	<1.0	0.0	<1.0	0.0	<1.0	0.0	<1.0
trans-1,2-Dichloroethylene	83	0.0	<0.62	0.0	<0.62	0.0	<0.62	0.0	1.7	**1,195.43 J**	<0.62	0.0	<0.62	**85.18 J**	<0.62	0.0	<0.62	0.0	<0.62	0.0	<0.62
Trichloroethylene	2.0	0.0	<0.72	0.0	<0.72	0.0	<0.72	0.0	0.80 J	0.0	<0.72	0.0	<0.72	0.0	<0.72	0.0	<0.72	0.0	<0.72	0.0	<0.72
Vinyl chloride	1.6	NM	<0.46	NM	<0.46	NM	<0.46	NM	0.59	NM	<0.46	NM	<0.46	NM	<0.46	NM	<0.46	NM	<0.46	NM	<0.46

See Notes on last page

Table 1
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Ford Livonia Transmission Plant
36200 Plymouth Road
Livonia, Michigan

Location:	EGLE Residential SSVIAC 24-hour exposure	SL-2		SL-2	SL-2	SL-2	Influent		Influent		Influent		Influent		Influent		Influent	
Sample Name:		SSVE-SL-2_090822		SSVE-SL-2_100322	SSVE-SL-2_110422	SSVE-SL-2_111522	SSVE-INF_052622		SSVE-INF_053122		SSVE-INF_060122		SSVE-INF_060822		SSVE-INF_061022		SSVE-INF_061522	
Sample Date:		9/8/2022		10/3/2022	11/4/2022	11/15/2022	5/26/2022		5/31/2022		6/1/2022		6/8/2022		6/10/2022		6/15/2022	
Sample Time:		10:08		13:01	13:13	9:52	17:26		13:55		13:32		13:59		11:23		11:31	
Sample Type:		FROG-5000	Summa	Summa	Summa	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa*	FROG-5000	Summa	FROG-5000	Summa
Volatile Organic Compounds (VOCs)																		
1,1-Dichloroethylene	210	NM	<0.60	<0.60	<0.60	<0.60	NM	2	NM	**5.9**	NM	**7.2**	NM	<5.2	NM	**2.1**	NM	**10**
1,4-Dioxane	5.1	NM	<0.60	<0.60	<0.60	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<5.5	NM	<0.60	NM	<0.60
cis-1,2-Dichloroethylene	8.3	**1815.19**	<0.58	0.67 J	<0.58	<0.58	**17.83**	**240**	**477.09**	**610**	0.0	**660**	0.0	**280**	**36.75**	**330**	0.0	**260**
Tetrachloroethylene	41	0	<1.0	<1.0	<1.0	<1.0	0.0	7.4	0.0	**13**	**12.05 J**	**6.6**	**22.81 J**	<8.4	**40.2 J**	**4.3**	**12.44 J**	**4.3**
trans-1,2-Dichloroethylene	83	**2114.56**	<0.62	<0.62	<0.62	<0.62	0.0	4.7	0.0	**7.2**	0.0	**8.5**	0.0	<4.6	**66.87**	**4.3**	0.0	**11**
Trichloroethylene	2.0	0.00	<0.72	<0.72	<0.72	<0.72	**12.76**	**31**	0.0	**17**	**11.21**	**34**	0.0	<9.0	0.0	**9.5**	0.0	**14**
Vinyl chloride	1.6	NM	<0.46	<0.46	<0.46	<0.46	NM	**220**	NM	**510**	NM	**630**	NM	**260**	NM	**260**	NM	**170**

See Notes on last page

Table 1
FROG Screening and Co-located Grab Sampling Results
Ford Livonia Transmission Plant
36200 Plymouth Road
Livonia, Michigan

Location:	EGLE Residential SSVIAC 24-hour exposure	Influent		Influent		Influent		Influent		Influent		Influent		Influent		Influent		Influent		Influent	
Sample Name:		SSVE-INF_061622		SSVE-INFF_062322		SSVE-INF_062322		SSVE-INF_062822		SSVE-INFF_063022		SSVE-INF_070722		SSVE-INF_071822		SSVE-INF_072722		SSVE-INF_08422		SSVE-INF_081122	
Sample Date:		6/16/2022		6/23/2022		6/23/2022		6/28/2022		6/30/2022		7/7/2022		7/18/2022		7/27/2022		8/4/2022		8/11/2022	
Sample Time:		11:27		12:11		14:03		10:41		10:35		10:37		12:15		10:34		10:07		9:45	
Sample Type:		FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa
Volatile Organic Compounds (VOCs)																					
1,1-Dichloroethylene	210	NM	--	NM	<0.60	NM	--	NM	--	NM	**7.2**	NM	**5.8**	NM	**7.5**	NM	<0.60	NM	**1.1**	NM	<0.60
1,4-Dioxane	5.1	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	**1.7 J**
cis-1,2-Dichloroethylene	8.3	0.0	--	**29.46**	**380**	**24.23 J**	--	**66.09**	--	**346.50 J**	**440**	**113.45**	**350**	**166.83**	**700**	**64.76**	**400 J**	**63.52**	**160**	**46.4**	**240**
Tetrachloroethylene	41	**9.92 J**	--	**26.03 J**	**2.6**	0.0	--	0.0	--	**4.44 J**	**3.0**	0.0	**1.8**	0.0	<1.0	0.0	<1.0	0.0	**5.5**	0.0	**4.0**
trans-1,2-Dichloroethylene	83	0.0	--	**52.4 J**	**5.5**	0.0	--	0.0	--	0.0	**4.9**	0.0	**3.9**	0.0	**7.6**	0.0	**4.2**	0.0	**3.4**	0.0	**2.9**
Trichloroethylene	2.0	0.0	--	0.0	**14**	0.0	--	0.0	--	0.0	**10**	**13.64 J**	**6.6**	0.0	<0.72	0.0	<0.72	0.0	**9.0**	0.0	**10**
Vinyl chloride	1.6	NM	--	NM	**280**	NM	--	NM	--	NM	**340**	NM	**280**	NM	**290**	NM	**250**	NM	**170**	NM	**140**

See Notes on last page

Table 1
FROG Screening and Co-located Grab Sampling Results
Ford Livonia Transmission Plant
36200 Plymouth Road
Livonia, Michigan

Location:	EGLE Residential SSVIAC 24-hour exposure	Influent		Influent		Influent		Influent		Influent	Influent	Influent	Effluent		Effluent		Effluent	
Sample Name:		SSVE-INF_081822		SSVE-INF_082522		SSVE-INF_090122		SSVE-INF_090822		SSVE-INF_100322	SSVE-INF_110422	SSVE-INF_111522	SSVE-EFF_052622		SSVE-EFF_053122		SSVE-EFF_060122	
Sample Date:		8/18/2022		8/25/2022		9/1/2022		9/8/2022		10/3/2022	11/4/2022	11/15/2022	5/26/2022		5/31/2022		6/1/2022	
Sample Time:		12:07		9:47		10:51		9:23		10:59	12:47	9:20	16:49		14:21		13:09	
Sample Type:		FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	Summa	Summa	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa
Volatile Organic Compounds (VOCs)																		
1,1-Dichloroethylene	210	NM	<0.60	NM	**.90**	NM	**.9**	NM	**2.1**	<0.60	7.0	<0.60	NM	<0.60	NM	<0.60	NM	<0.60
1,4-Dioxane	5.1	NM	<0.60	NM	<0.60	NM	1.5	NM	<0.60	<0.60	1.8 J	2.3 J	NM	<0.60	NM	<0.60	NM	<0.60
cis-1,2-Dichloroethylene	8.3	0.0	**190**	**117.26**	**210**	**60.25**	**250**	0.0	180	170	150	130	0.0	<0.58	0.0	<0.58	0.0	<0.58
Tetrachloroethylene	41	0.0	**2.4**	0.0	**1.2**	0.0	<1.0	0.0	<1.0	<1.0	1.4	<1.0	**26.88**	**13**	**148.26**	**35**	**21.11**	**18**
trans-1,2-Dichloroethylene	83	0.0	**4.5**	0.0	**3.4**	0.0	**3.5**	**12.43**	**3.9**	2.3	2.5	1.6	0.0	<0.62	0.0	<0.62	0.0	<0.62
Trichloroethylene	2.0	0.0	**9.5**	**48.79**	**8.3**	0.0	8.5	0.0	5.7	6.7	7.7	4.7	0.0	<0.72	0.0	**0.92 J**	0.0	<0.72
Vinyl chloride	1.6	NM	**140**	NM	**140**	NM	140	NM	150	130	130	120	NM	1.7	NM	<0.46	NM	**0.63**

See Notes on last page

Table 1
FROG Screening and Co-located Grab Sampling Results
Ford Livonia Transmission Plant
36200 Plymouth Road
Livonia, Michigan

Location:	EGLE Residential SSVIAC 24-hour exposure	Effluent		Effluent		Effluent		Effluent		Effluent		Effluent		Effluent		Effluent		Effluent		Effluent	
Sample Name:		SSVE-EFF_060822		SSVE-EFF_061022		SSVE-EFF_061522		SSVE-EFF_061622		SSVE-EFF_062322		SSVE-EFF_062322		SSVE-EFF_062822		SSVE-EFF_063022		SSVE-EFF_070722		SSVE-EFF_071822	
Sample Date:		6/8/2022		6/10/2022		6/15/2022		6/16/2022		6/23/2022		6/23/2022		6/28/2022		6/30/2022		7/7/2022		7/18/2022	
Sample Time:		13:41		11:13		11:09		10:39		11:36		13:37		11:21		10:07		10:31		11:51	
Sample Type:		FROG-5000	Summa*	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa
Volatile Organic Compounds (VOCs)																					
1,1-Dichloroethylene	210	NM	<6.4	NM	**1**	NM	<0.60	NM	--	NM	<0.60	NM	--	NM	--	NM	<0.60	NM	<0.60	NM	<0.60
1,4-Dioxane	5.1	NM	<6.8	NM	<0.60	NM	<0.60	NM	--	NM	<0.60	NM	--	NM	--	NM	<0.60	NM	<0.60	NM	<0.60
cis-1,2-Dichloroethylene	8.3	0.0	<6.5	0.0	**0.73 J**	0.0	**5.5**	**766.3**	--	0.0	**8.8**	0.0	--	**22.10 J**	--	**758.61 J**	**36**	**663.63 J**	**38**	0.0	**8.4**
Tetrachloroethylene	41	0.0	<10	0.0	**3.6**	0.0	**5.3**	0.0	--	0.0	<1.0	**17.29 J**	--	**7.51 J**	--	0.0	**1.1 J**	**14.15 J**	<1.0	0.0	<1.0
trans-1,2-Dichloroethylene	83	0.0	<5.6	0.0	<0.62	0.0	<0.62	0.0	--	0.0	<0.62	0.0	--	**20.53 J**	--	0.0	<0.62	0.0	<0.62	0.0	<0.62
Trichloroethylene	2.0	0.0	<11	0.0	<0.72	0.0	<0.72	**92.95**	--	0.0	<0.72	**54.48**	--	0.0	--	0.0	<0.72	0.0	<0.72	0.0	<0.72
Vinyl chloride	1.6	NM	<7.9	NM	**5.1**	NM	<0.46	NM	--	NM	**2.3**	NM	--	NM	--	NM	**9.6**	NM	<0.46	NM	<0.46

See Notes on last page

Table 1
FROG Screening and Co-located Grab Sampling Results
Ford Livonia Transmission Plant
36200 Plymouth Road
Livonia, Michigan

Location:	EGLE Residential SSVIAC 24-hour exposure	Effluent		Effluent		Effluent		Effluent		Effluent		Effluent		Effluent		Effluent	Effluent	Effluent
Sample Name:		SSVE-EFF_072722		SSVE-EFF_080422		SSVE-EFF_081122		SSVE-EFF_081822		SSVE-EFF_082522		SSVE-EFF_090122		SSVE-EFF_090822		SSVE-EFF_100322	SSVE-EFF_110422	SSVE-EFF_111522
Sample Date:		7/27/2022		8/4/2022		8/11/2022		8/18/2022		8/25/2022		9/1/2022		9/8/2022		10/3/2022	11/4/2022	11/15/2022
Sample Time:		10:11		9:43		9:31		12:04		9:40		10:46		9:23		10:51	12:53	9:22
Sample Type:		FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	FROG-5000	Summa	Summa	Summa	Summa
Volatile Organic Compounds (VOCs)																		
1,1-Dichloroethylene	210	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	<0.60	0.70 J	<0.60
1,4-Dioxane	5.1	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	NM	<0.60	<0.60	<0.60	0.92 J
cis-1,2-Dichloroethylene	8.3	0.0	**16 J**	0.0	**14**	0.0	**17**	**496.86**	**30**	**241.73**	**14**	**261.86**	**40**	**40**	**42**	53	52	130
Tetrachloroethylene	41	0.0	<1.0	0.0	<1.0	**25.79 J**	<1.0	0.0	<1.0	0.0	<1.0	0.0	<1.0	0.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethylene	83	0.0	<0.62	0.0	<0.62	**24.88 J**	<0.62	0.0	<0.62	0.0	<0.62	0.0	<0.62	0.0	<0.62	<0.62	1.1	0.76 J
Trichloroethylene	2.0	0.0	<0.72	0.0	<0.72	0.0	<0.72	0.0	<0.72	0.0	<0.72	0.0	<0.72	0.0	**1.3**	5.6	6.5	8.3
Vinyl chloride	1.6	NM	<0.46	NM	<0.46	NM	<0.46	NM	<0.46	NM	<0.46	NM	**13**	NM	**22**	41	37	68

See Notes on last page

Table 1
FROG Screening and Co-located Grab Sampling Results
Ford Livonia Transmission Plant
36200 Plymouth Road
Livonia, Michigan

Notes:

All results reported in µg/m^3.

	Result exceeds the EGLE site-specific volatilization to indoor air criteria (SSVIAC) to evaluate vapor migration in preferential pathways developed for residential 24-hour exposure.
Bold	Detected above method detection limit and detected by the FROG-5000.
<	Denotes not detected above method detection limit.
*	Method detection limits were elevated for this sample

Sample Type

FROG-5000	Indicates results are from FROG-5000^{TM} screening real time result.
Summa	Indicates results are from lab analyzed summa canister.

Abbreviations:

µg/m^3	micrograms per cubic meter
EGLE	Michigan Department of Environment, Great Lakes, and Energy
J	estimated result
MH	manhole
NM	not measured
SAMH	sanitary manhole
SSVE	sanitary sewer vapor extraction system
SL	sample location
INF/INFF	Influent
EFF	Effluent

Analytical Methods (Summa Canister):

United States Environmental Protection Agency (USEPA) Method TO-15

This document is a DRAFT document that has not received approval from EGLE. This document was prepared pursuant to a court Consent Decree. The opinions, findings, and conclusions expressed are those of the authors and not those of EGLE.

Figure 1

Utility Corridor Response Activities

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SAMH-1253A
SAMH-1253
SAMH-E91
SAMH-1252
SAMH-J90
SAMH-1260
SAMH-1259
SAMH-1260B
SAMH-1255
SAMH-1234
SAMH-1258
SAMH-1256
SAMH-1233
SAMH-1261
Permanent Sanitary Sewer Vapor Extraction System Location
EDC
EASTERN DIVERSION CHAMBER
SL-2
SAMH-1244
WDC
SAMH-1248
SAMH-1231
SAMH-1245
WESTERN DIVERSION CHAMBER
MMERCE STREET
LEVAN ROAD
BELDEN COURT
BEACON

LEGEND

- SANITARY MANHOLE
- FLOW DIRECTION
- SANITARY SEWER LINE
- LINES TO BE REHABILITATED
- LINES REHABILITATED
- FORD PROPERTY BOUNDARY

NOTES:

SAMH = SANITARY MANHOLE

SL = SAMPLING LOCATION

CIPPL = CURED-IN-PLACE-PIPE-LINER

EGLE = MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

0 300 600
SCALE IN FEET

FORD MOTOR COMPANY
LIVONIA TRANSMISSION PLANT
LIVONIA, MICHIGAN

UTILITY CORRIDOR RESPONSE ACTIVITIES

ARCADIS

FIGURE
1