



Environmental Quality Office  
Sustainability, Environment & Safety  
Engineering

Ford Motor Company  
Fairlane Plaza North  
290 Town Center Drive, Suite 800  
Dearborn, MI 48126

February 8, 2019

Mr. Paul Owens  
District Supervisor, Southeast Michigan District Office  
MDEQ Remediation and Redevelopment Division  
27700 Donald Court  
Warren, Michigan 48092-2793  
[owensp@michigan.gov](mailto:owensp@michigan.gov)

**VIA E-MAIL**

Re: Ford Livonia Transmission Plant  
Response to MDEQ Letter dated February 1, 2019

Dear Paul:

On behalf of Ford Motor Company (Ford), this letter and the attached memo from Arcadis dated February 8, 2019 respond to your February 1, 2019 letter regarding MDEQ review of shallow groundwater data collected in accordance with MDEQ-approved Response Activity Plan-Vapor Intrusion Evaluation and MDEQ's November 27, 2018 letter.

**We remain fully committed to protecting human health and the environment. Importantly, as previously shared with you, all indoor air sampling, sub-slab sampling, and sump sampling (if a sump exists) shows no detection of vinyl chloride in the residential neighborhood.**

If you have any questions, please feel free to contact me.

Sincerely,

Todd M. Walton  
Manager, Global Site Assessment & Remediation

cc: Mr. Kris Hinskey, Arcadis  
Mr. Shawn Collins, The Collins Law Firm, PC  
Mr. Paul Bernier, City of Livonia  
Senator Dayna Polehanki  
Representative Laurie Pohutsky  
Mr. Brian Negele, MDAG  
Mr. Aaron Cooch, DHHS  
Ms. Alexandra Rafalski, DHHS  
Mr. Darren Bowling, MDEQ  
Ms. Cyndi Mollenhour, MDEQ  
Ms. Krista Reed, MDEQ  
Ms. Beth Vens MDEQ  
Mr. Brandon Alger, MDEQ

# MEMO

To:

Paul Owens, District Supervisor  
MDEQ SE Michigan District Office  
27700 Donald Court  
Warren, Michigan 48092-2793

[owensp@michigan.gov](mailto:owensp@michigan.gov)

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Ms. Beth Vens, MDEQ  
Ms. Krista Reed, MDEQ  
Mr. Brandon Alger, MDEQ  
Mr. Todd Walton, Ford

Arcadis of Michigan, LLC

28550 Cabot Drive

Suite 500

Novi

Michigan 48377

Tel 248 994 2240

Fax 248 994 2241

From:

Joseph Quinnan

Date:

February 8, 2019

Arcadis Project No.:

MI001454.0007

Subject:

Livonia Transmission Plant  
Response to Michigan Department of Environmental Quality Comments  
Regarding Shallow Groundwater and Off-site Commercial Properties,  
Transmitted February 1, 2019  
36200 Plymouth Road, Livonia, Wayne County, Michigan  
MDEQ Site ID No. 82002970

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On behalf of Ford Motor Company (Ford), this response to comments has been prepared by Arcadis of Michigan LLC for the Livonia Transmission Plant (LTP) site (the site). The Michigan Department of Environmental Quality (MDEQ) provided a letter on February 1, 2019 regarding shallow groundwater data collected in the off-site area.

The MDEQ letter requested Ford provide the MDEQ the following information by February 8, 2019: “the extent of the groundwater plume should be determined, and non-residential building type and property use verified”. This information is provided and described in the following paragraphs.

### **Extent of Shallow Groundwater**

In consultation with the MDEQ, Ford has embarked on a shallow groundwater investigation in the off-site area. To date, 51 shallow wells have been installed with 65 more pending installation. Figure 1 presents the current “delineation line” of vinyl chloride at the Target Detection Limit (TDL) of 1 microgram per liter ( $\mu\text{g/L}$ ), which is shown as a blue dashed line, based on data collected through January 2019. Additionally,

a “100-foot off-set line”, which is shown as an orange dashed line, is included on Figure 1. The delineation line and 100-foot off-site line are shown as dashed lines because data collection is ongoing, and the locations may change in the future.

Residential parcels with structures within the delineation line or 100-foot off-set are color-shaded based on construction types. The highlighted parcels will be evaluated further through an on-site building construction survey and mitigation assessment, shallow groundwater sampling, and indoor air and sub-slab sampling as appropriate (See Tables 1 and 2). Additional shallow wells may be installed in the future, if warranted. Properties where a building construction survey and mitigation assessment will be completed are presented on Figure 1.

### **Commercial Properties**

Ford has completed building-specific indoor air and sub-slab sampling at 26 off-site properties east of the LTP. During sampling the building type and property use were confirmed for each property. The off-site commercial properties that are sampled are presented in red outline on Figure 2. This letter confirms that the usage at each property is commercial and the number of hours worked is less than 12-hours per day. The construction of each commercial property is slab on grade. The size of these commercial buildings is variable, but all are less than 50,000 square feet.

The MDEQ vapor intrusion guidance (2013) is based on a multiple lines of evidence approach that combines groundwater, soil gas, sub-slab soil gas and indoor air sampling data. Groundwater quality data and soil gas (exterior to buildings) are useful to determine if the vapor intrusion pathway is relevant for a building. Sub-slab soil gas and indoor air data collected during a building-specific evaluation provide the necessary data to determine if the vapor intrusion pathway is relevant and if it poses a risk. The MDEQ provided site-specific screening criteria for the site on October 30, 2018. MDEQ's Table 5 provides site-specific, groundwater volatilization to indoor air pathway (VIAP) screening criteria for commercial buildings constructed as slab-on-grade, where the work day is < 12-hours, and the depth to water is 5 feet below ground surface. This table provides a groundwater screening criterion for vinyl chloride in groundwater of 180 µg/L. The depth to groundwater (DTW) from monitoring wells along Belden Court has averaged 6.9 ft between May 2017 and November 2018. Monitoring well MW-73S/R had DTW measurements less than 5 ft in May 2017 (4.72 ft) and May 2018 (4.77 ft), but the average DTW was 5.8 ft between May 2017 and November 2018. None of the monitoring wells installed along the Ford property line have demonstrated DTWs less than 5 ft during that period of monitoring.

The maximum concentration of vinyl chloride detected in groundwater from any depth along Belden Court in 2018 is 2.8 µg/L. The maximum concentration of vinyl chloride along the eastern property boundary of the LTP in 2018 is 7.2 µg/L. These wells along the property boundary and Belden Court were installed based on vertical aquifer profiling and represent the interval with the highest observed groundwater concentrations. The maximum concentration of vinyl chloride measured in this area is 25X below the screening criterion.

During the first phase of the vapor intrusion evaluation, indoor air and sub-slab sampling was conducted to evaluate potential for vapor intrusion at the commercial buildings (Shown in red outline on Figure 2). Through January 4, 2018, 235 sub-slab soil vapor and 188 indoor air samples have been collected from these 26 commercial properties that indicate vinyl chloride is not present in either the vadose zone or indoor air of these buildings. Of these 423 samples, vinyl chloride has been detected in only one indoor air sample (estimated concentration [‘J’ flag] of 0.24J micrograms per cubic meter (µg/m<sup>3</sup>)) and one sub-slab soil vapor sample (estimated concentration of 2.4J µg/m<sup>3</sup>). These concentrations are more than two

orders of magnitude below the 12-hour non-residential screening values for vinyl chloride in indoor air of  $28 \mu\text{g}/\text{m}^3$  and sub-slab soil vapor of  $910 \mu\text{g}/\text{m}^3$ .

Based on the results of groundwater, indoor air, and sub-slab sampling, mitigation is not warranted at the commercial properties.

### **Next Steps**

Ford will continue to evaluate the vapor intrusion pathway in the off-site area east of LTP through the collection of additional samples consistent with the "Response Activity Plan – Vapor Intrusion Evaluation" which was submitted as part of the July 27, 2017 Consent Decree between the MDEQ and Ford Motor Company. As presented in the Response Activity Plan for Vapor Intrusion Evaluation (April 13, 2018), a second round of indoor air and sub-slab soil vapor sampling is ongoing and will continue. Nine new properties along Beacon Street, Boston Post, and Stark Road have been added to the investigation based on recent groundwater results; a first round of vapor intrusion sampling is proposed at seven of these locations while the other two are undeveloped. All properties where indoor air sampling, and sub-slab soil gas sampling where appropriate, will be conducted are presented on Figure 2. Additional shallow groundwater monitoring wells are being installed and sampled as shown on Figure 3. Building construction surveys and mitigation assessments are proposed at properties located within 100-feet of the shallow groundwater delineation line as presented on Figure 1. The proposed actions for each property are presented on Tables 1 and 2 for residential and commercial properties, respectively.

**Table 1. Ford Livonia Transmission Plant Off Site Vapor Intrusion Evaluation  
Summary of Required Actions on Residential Properties  
2/8/2019**

Site Address (Livonia, MI 48150)	Indoor Air Sampling Required	Shallow Well Installation and Sampling Required	Building Construction Survey and Mitigation Assessment Required
34380 Beacon Avenue	Yes	Yes - Install and Sample	Yes
34424 Beacon Avenue	Yes	Yes - Install and Sample	Yes
34450 Beacon Avenue	Yes	Yes - Install and Sample	Yes
34550 Beacon Avenue	Yes	Yes - Install and Sample	Yes
34600 Beacon Avenue	Yes	Yes - Sample Only	Yes
34644 Beacon Avenue	Yes	Yes - Install and Sample	Yes
34682 Beacon Avenue	Yes	Yes - Install and Sample	Yes
34920 Beacon Avenue	Yes	Yes - Install and Sample	Yes
34940 Beacon Avenue	Yes	Yes - Sample Only	Yes
34946 Beacon Avenue (1)	No	No	No
34950 Beacon Avenue	Yes	Yes - Install and Sample	Yes
34990 Beacon Avenue	Yes	Yes - Sample Only	Yes
34851 Beacon Avenue	Yes	Yes - Install and Sample	Yes
34591 Beacon Avenue	Yes	Yes - Install and Sample	Yes
34991 Beacon Avenue	Yes	Yes - Install and Sample	No
11775 Boston Post Road	Yes	Yes - Sample Only	No
11845 Boston Post Road	Yes	Yes - Install and Sample	No
12089 Boston Post Road	Yes	Yes - Sample Only	Yes
12100 Boston Post Road	Yes	Yes - Install and Sample	Yes
12121 Boston Post Road	Yes	Yes - Install and Sample	Yes
12124 Boston Post Road	Yes	Yes - Sample Only	Yes
12131 Boston Post Road	Yes	Yes - Sample Only	Yes
12141 Boston Post Road	Yes	Yes - Install and Sample	Yes
11701 Boston Post Road	Yes	Yes - Install and Sample	No
11721 Boston Post Road	Yes	Yes - Install and Sample	No
11981 Boston Post	Yes	Yes - Install and Sample	Yes
12067 Boston Post Road	Yes	Yes - Install and Sample	Yes
12070 Boston Post Road	Yes	Yes - Sample Only	Yes
12066 Boston Post Road	Yes	Yes - Install and Sample	Yes
12034 Boston Post Road	Yes	Yes - Sample Only	Yes
11866 Boston Post Road	Yes	Yes - Install and Sample	No
11850 Boston Post Road	Yes	Yes - Install and Sample	No
11710 Boston Post Road	Yes	Yes - Sample Only	No
11680 Boston Post Road	Yes	Yes - Sample Only	No
11865 Boston Post Road	Yes	Yes - Install and Sample	No
12075 Brewster Avenue	Yes	Yes - Sample Only	Yes
12088 Brewster Avenue	Yes	Yes - Install and Sample	Yes
12091 Brewster Avenue	Yes	Yes - Install and Sample	Yes
12101 Brewster Avenue	Yes	Yes - Install and Sample	Yes
12036 Brewster Avenue	Yes	Yes - Sample Only	Yes
12034 Brewster Avenue	Yes	Yes - Sample Only	Yes
12017 Brewster Avenue	Yes	Yes - Install and Sample	Yes
34367 Capitol Avenue	Yes	Yes - Install and Sample	Yes
34380 Capitol Avenue	Yes	Yes - Sample Only	Yes
34401 Capitol Avenue	Yes	Yes - Install and Sample	Yes
34450 Capitol Avenue	Yes	Yes - Install and Sample	Yes

**Table 1. Ford Livonia Transmission Plant Off Site Vapor Intrusion Evaluation  
Summary of Required Actions on Residential Properties  
2/8/2019**

Site Address (Livonia, MI 48150)	Indoor Air Sampling Required	Shallow Well Installation and Sampling Required	Building Construction Survey and Mitigation Assessment Required
34480 Capitol Avenue	Yes	Yes - Install and Sample	Yes
34934 Standish Street	Yes	Yes - Install and Sample	No
34966 Standish Street	Yes	Yes - Sample Only	No
34766 Standish Street	Yes	Yes - Install and Sample	No
34851 Wadsworth Avenue	Yes	Yes - Sample Only	No
34891 Wadsworth Avenue	Yes	Yes - Install and Sample	No
34935 Wadsworth Avenue	Yes	Yes - Sample Only	No
34965 Wadsworth Avenue	Yes	Yes - Sample Only	No
34990 Wadsworth Avenue	Yes	Yes - Install and Sample	No
34870 Wadsworth Avenue	Yes	Yes - Install and Sample	No
34403 Rosati (1)	No	No	No
11665 Boston Post Road	Yes	Yes - Install and Sample	No
34900 Standish Street	Yes	Yes - Install and Sample	No
34637 Beacon Avenue	Yes	Yes - Install and Sample	Yes
34669 Beacon Avenue	Yes	Yes - Install and Sample	Yes
34921 Beacon Avenue	Yes	Yes - Install and Sample	Yes
12001 Stark Road	Yes	Yes - Install and Sample	Yes
12069 Stark Road	Yes	Yes - Install and Sample	Yes
12087 Stark Road	Yes	Yes - Install and Sample	Yes
12147 Stark Road	Yes	Yes - Install and Sample	No
12050 Stark Road	Yes	Yes - Install and Sample	Yes
12068 Stark Road	Yes	Yes - Install and Sample	Yes
11921 Boston Post Road	Yes	Yes - Install and Sample	No
34360 Capitol Avenue	Yes	Yes - Sample Only	Yes
34424 Capitol Avenue	Yes	Yes - Sample Only	Yes
34850 Standish Street	Yes	Yes - Install and Sample	No
34800 Standish Street	Yes	Yes - Install and Sample	No
12033 Stark Road	Yes	Yes - Install and Sample	Yes
12051 Stark Road	Yes	Yes - Sample Only	Yes
12125 Stark Road	Yes	Yes - Install and Sample	Yes
11960 Boston Post	Yes	Yes - Install and Sample	Yes
12032 Stark Road (1)	No	No	No
12086 Stark Road (1)	No	No	No

Notes

1 - No Structure Present

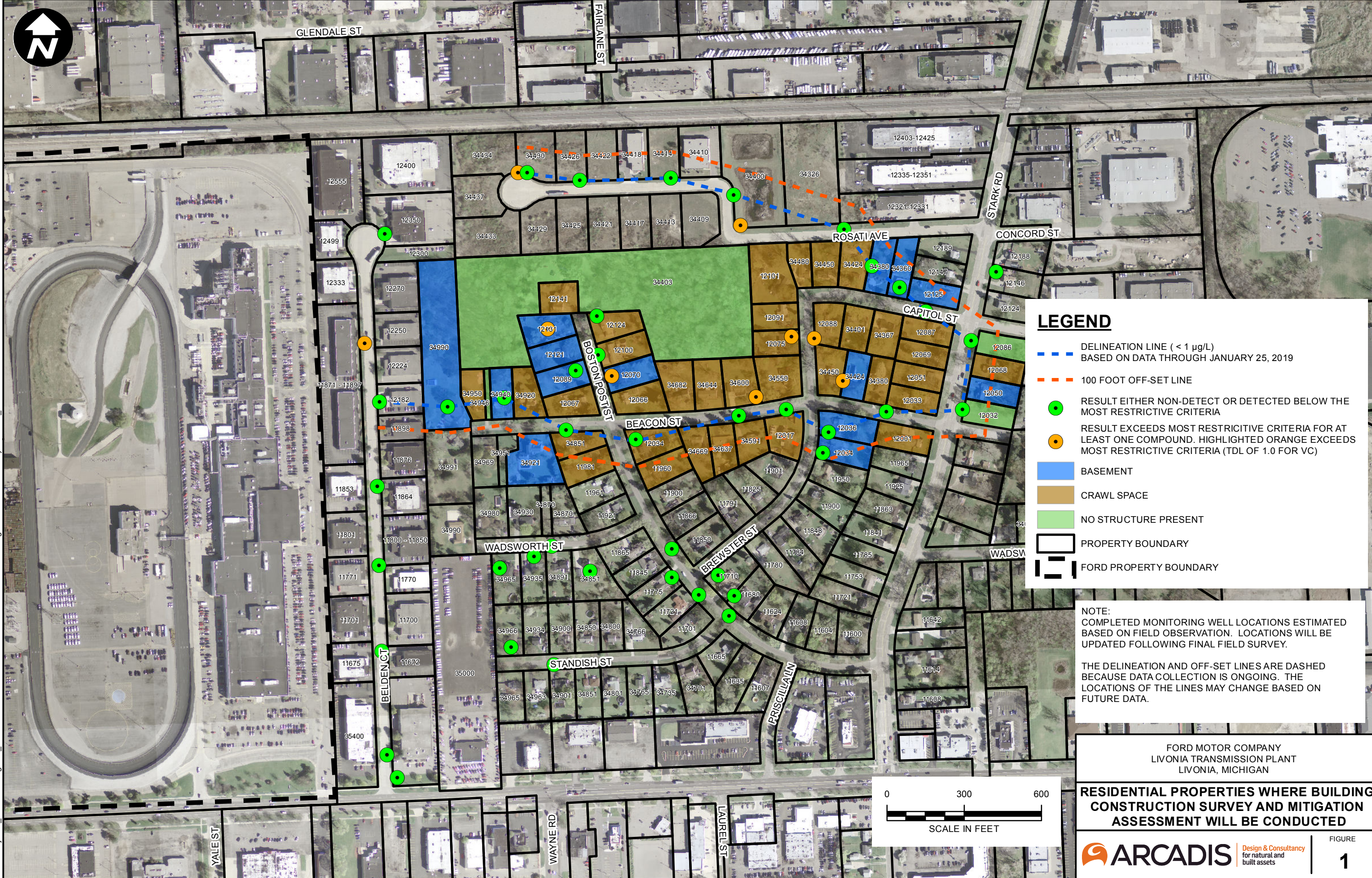
**Table 2. Ford Livonia Transmission Plant Off Site Vapor Intrusion Evaluation  
Summary of Required Actions on Commercial Properties  
2/8/2019**

Site Address (Livonia, MI 48150)	Indoor Air Sampling Required	Shallow Well Installation and Sampling Required	Building Construction Survey and Mitigation Assessment Required
11700 Belden Court	Yes	No	No
11770 Belden Court	Yes	No	No
11771 Belden Court	Yes	No	No
11800 - 11850 Belden Court	Yes	No	No
11876 Belden Court	Yes	No	No
11898 Belden Court	Yes	No	No
12182 Belden Court	Yes	No	No
12250 Belden Court	Yes	No	No
12333 Belden Court	Yes	No	No
12499 Belden Court	Yes	No	No
12555 Belden Court	Yes	No	No
12350 Belden Court	Yes	No	No
12400 Belden Court	Yes	No	No
11672 Belden Court	Yes	No	No
11675 Belden Court	Yes	No	No
11853 Belden Court	Yes	No	No
11864 Belden Court	Yes	No	No
35400 Plymouth Road	Yes	No	No
11701 Belden Court	Yes	No	No
11801 Belden Court	Yes	No	No
11871 - 11897 Belden Court	Yes	No	No
12224 Belden Court	Yes	No	No
12270 Belden Court	Yes	No	No
35000 Plymouth Road	Yes	No	No
34418 Rosati Avenue	Yes	No	No
34410 Rosati Avenue	Yes	No	No
34429 Rosati Avenue (1)	No	No	No
34430 Rosati Avenue (1)	No	No	No
34433 Rosati Avenue (1)	No	No	No
34434 Rosati Avenue (1)	No	No	No
34437 Rosati Avenue (1)	No	No	No
34425 Rosati Avenue (1)	No	No	No
34426 Rosati Avenue (1)	No	No	No
34422 Rosati Avenue (1)	No	No	No
34400 Rosati Avenue (1)	No	No	No
34421 Rosati Avenue (1)	No	No	No
34417 Rosati Avenue (1)	No	No	No
34413 Rosati Avenue (1)	No	No	No
34409 Rosati Avenue (1)	No	No	No

Notes

1 - No Structure Present

CITY: Novi DIV: ENV DB: MG PIC: R. ELLIS PM: K. HINSKEY PROJECT NUMBER: M001322.0001 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl  
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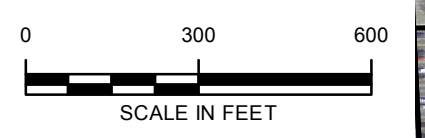


### LEGEND

- DELINEATION LINE (< 1 µg/L)  
BASED ON DATA THROUGH JANUARY 25, 2019
- 100 FOOT OFF-SET LINE
- RESULT EITHER NON-DETECT OR DETECTED BELOW THE MOST RESTRICTIVE CRITERIA
- RESULT EXCEEDS MOST RESTRICTIVE CRITERIA FOR AT LEAST ONE COMPOUND. HIGHLIGHTED ORANGE EXCEEDS MOST RESTRICTIVE CRITERIA (TDL OF 1.0 FOR VC)
- BASEMENT
- CRAWL SPACE
- NO STRUCTURE PRESENT
- PROPERTY BOUNDARY
- FORD PROPERTY BOUNDARY

NOTE:  
 COMPLETED MONITORING WELL LOCATIONS ESTIMATED  
 BASED ON FIELD OBSERVATION. LOCATIONS WILL BE  
 UPDATED FOLLOWING FINAL FIELD SURVEY.

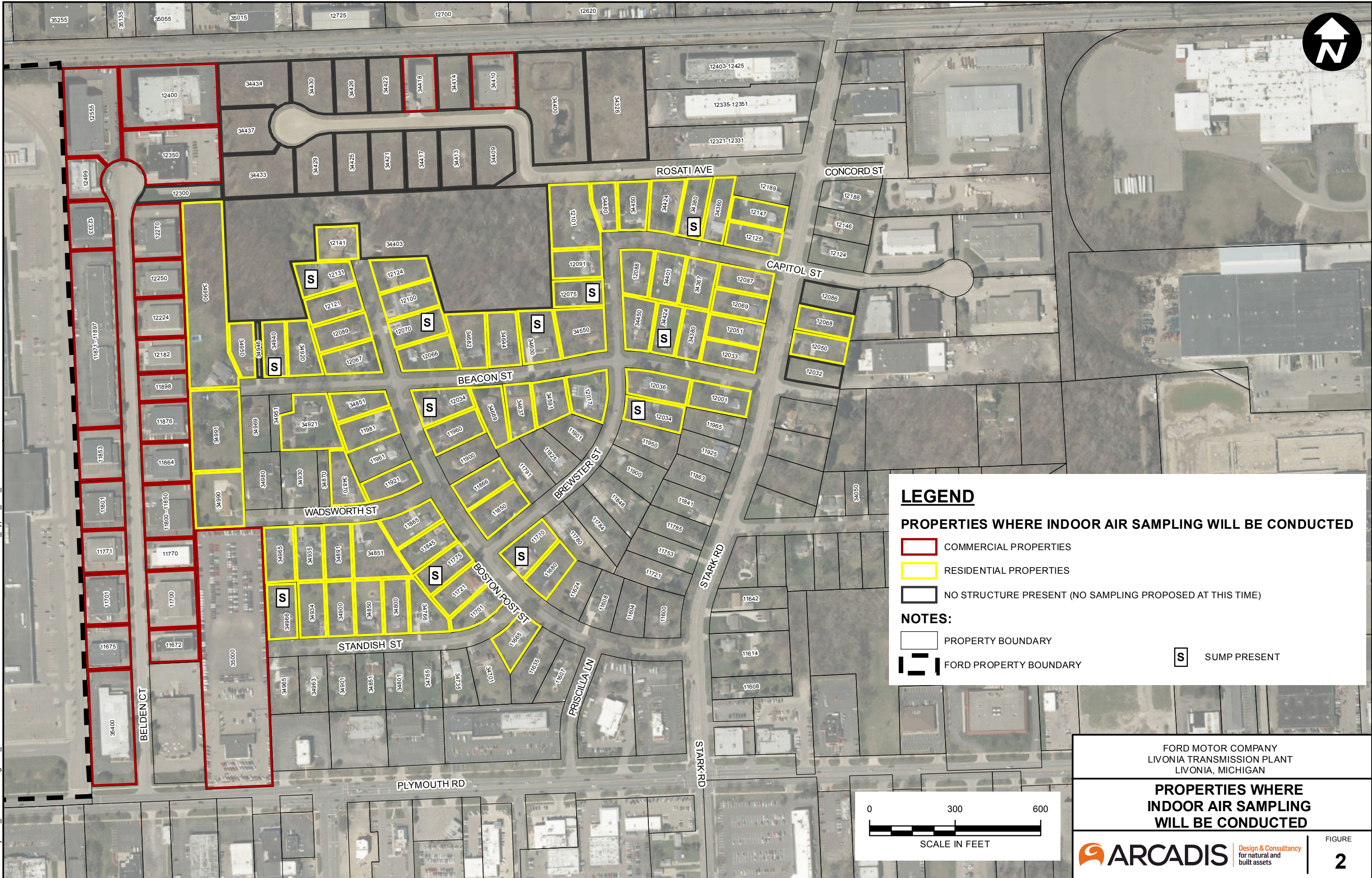
THE DELINEATION AND OFF-SET LINES ARE DASHED  
 BECAUSE DATA COLLECTION IS ONGOING. THE  
 LOCATIONS OF THE LINES MAY CHANGE BASED ON  
 FUTURE DATA.



FORD MOTOR COMPANY  
 LIVONIA TRANSMISSION PLANT  
 LIVONIA, MICHIGAN

**RESIDENTIAL PROPERTIES WHERE BUILDING  
 CONSTRUCTION SURVEY AND MITIGATION  
 ASSESSMENT WILL BE CONDUCTED**





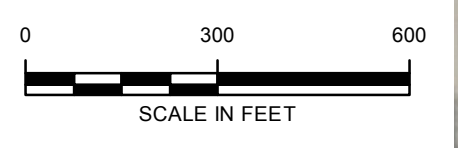
**LEGEND**

**PROPERTIES WHERE INDOOR AIR SAMPLING WILL BE CONDUCTED**

- COMMERCIAL PROPERTIES
- RESIDENTIAL PROPERTIES
- NO STRUCTURE PRESENT (NO SAMPLING PROPOSED AT THIS TIME)

**NOTES:**

- PROPERTY BOUNDARY
- FORD PROPERTY BOUNDARY
- S SUMP PRESENT



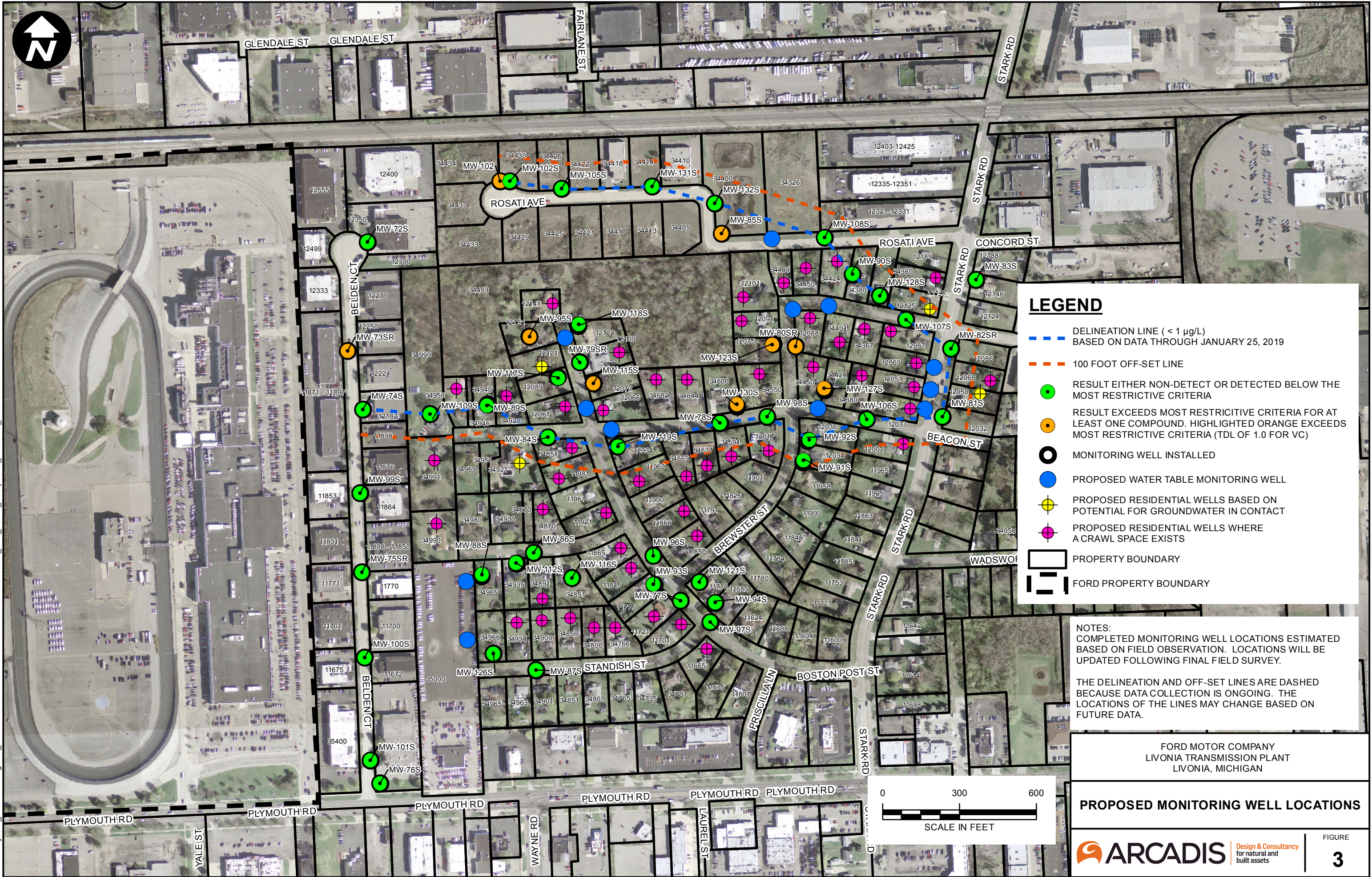
FORD MOTOR COMPANY  
LIVONIA TRANSMISSION PLANT  
LIVONIA, MICHIGAN

**PROPERTIES WHERE  
INDOOR AIR SAMPLING  
WILL BE CONDUCTED**

**ARCADIS** Design & Consultancy  
for natural and  
built assets

FIGURE  
**2**

CITY: Novi; DIV: ENV; DB: MG; PIC: R. ELLIS; PM: K. HINSKEY; PROJECT NUMBER: M001322.0001; COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl; Z:\GIS\Projects\ENVI\Novi\Brighton\_MI\Ford\GIS\docs\2019-02\201901\site\_MW\_Install\_Completed\_Contours\_02072019.mxd; PLOTTED: 2/6/2019 9:43:22 AM; BY: msmiller



### LEGEND

- DELINEATION LINE (< 1 µg/L) BASED ON DATA THROUGH JANUARY 25, 2019
- 100 FOOT OFF-SET LINE
- RESULT EITHER NON-DETECT OR DETECTED BELOW THE MOST RESTRICTIVE CRITERIA
- RESULT EXCEEDS MOST RESTRICTIVE CRITERIA FOR AT LEAST ONE COMPOUND. HIGHLIGHTED ORANGE EXCEEDS MOST RESTRICTIVE CRITERIA (TDL OF 1.0 FOR VC)
- MONITORING WELL INSTALLED
- PROPOSED WATER TABLE MONITORING WELL
- PROPOSED RESIDENTIAL WELLS BASED ON POTENTIAL FOR GROUNDWATER IN CONTACT
- PROPOSED RESIDENTIAL WELLS WHERE A CRAWL SPACE EXISTS
- PROPERTY BOUNDARY
- FORD PROPERTY BOUNDARY

**NOTES:**  
 COMPLETED MONITORING WELL LOCATIONS ESTIMATED BASED ON FIELD OBSERVATION. LOCATIONS WILL BE UPDATED FOLLOWING FINAL FIELD SURVEY.

THE DELINEATION AND OFF-SET LINES ARE DASHED BECAUSE DATA COLLECTION IS ONGOING. THE LOCATIONS OF THE LINES MAY CHANGE BASED ON FUTURE DATA.

FORD MOTOR COMPANY  
 LIVONIA TRANSMISSION PLANT  
 LIVONIA, MICHIGAN

## PROPOSED MONITORING WELL LOCATIONS

