

FORD MOTOR COMPANY TWIN CITIES ASSEMBLY PLANT

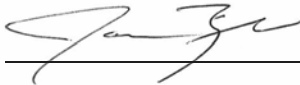
INTERIM RESPONSE ACTION PLAN Consolidated Impact Areas

October 2016



INTERIM RESPONSE ACTION PLAN

Consolidated Impact Areas
Twin Cities Assembly Plant
St. Paul, Minnesota



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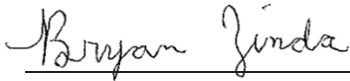
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1 INTRODUCTION

This Interim Response Action Plan (IRAP) provides a description of a portion of the environmental corrective actions which will be implemented by Arcadis U.S., Inc. (Arcadis), on behalf of Ford Motor Company (Ford), at the Twin Cities Assembly Plant (TCAP; Site) in St. Paul, Minnesota (Figure 1). These corrective actions will be implemented to address impacted areas identified during the Decommissioning and Phase II investigations that were completed at the Site. The three consolidated impact areas addressed in this IRAP include portions of the former Main Assembly Building, the North Parking Lot, and the portion of Former Fill Areas A/B located on Ford-owned property (Figure 2). This document is specific to the main parcel (east of South Mississippi River Boulevard) and is restricted to address soil impacts only.

2 SCOPE AND REMEDIAL OBJECTIVES

This IRAP was developed to provide detail on the proposed corrective actions within consolidated areas of impact identified during the Decommissioning and Phase II investigations of the Site. Other response actions, including the implementation of the Site Decommissioning Response Action Plan (SDRAP) Addendums and the Isolated Impact Area Response Action Plan are currently underway or have been completed.

The Consolidated Impact Area IRAP addresses three identified areas of impacted soil located on the Main Parcel. Additional details on each area are as follows:

- Former Main Assembly Building: This area contains twenty-two SDRAP addendums located within the footprint of the east side of the former Main Assembly Building footprint and were grouped together due to their proximity and potential for having one, long continuous area of impacted soil (Figure 3, Table 1). Analytical results from soil samples collected during the Site Decommissioning (Table 2) and Phase II investigations (Table 3) indicate concentrations of the following constituents that exceed MPCA Tier I Soil Reference Values: volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), diesel range organics (DRO), and gasoline range organics (GRO).
- North Parking Lot: This area comprises the North Parking Lot including the Former Diesel Shack (Figure 4). Analytical samples from soil samples collected during Phase II investigations indicate concentrations of the following constituents that exceed MPCA Tier I Soil Reference Values: VOCs, SVOCs, DRO, and GRO (Table 4).
- Former Fill Area A&B on Ford-owned Property: This area is located near the southern end of the Site (Figure 5). Analytical results from soil samples taken during a trench investigation of the area (Table 5) and Phase II investigations (Table 6) indicate concentrations of the following constituents that exceed MPCA Tier I Soil Reference Values: VOCs, SVOCs, and metals.

As discussed in detail below, the interim remedial action will include excavation of impacted soil, screening of excavated soil using a photo ionization detector (PID), visual inspections of all excavated and exposed soil, confirmation analytical sampling to ensure the removal of impacted soil is complete and backfilling of excavations.

The objective of the remedial actions proposed is to excavate and dispose of all soils exceeding Minnesota Pollution Control Agency (MPCA) Tier I Soil Reference Values (SRVs) and Petroleum Brownfields Program guidance values for DRO/GRO to levels below residential criteria.

This plan was prepared in accordance with MPCA guidance documents.

3 SUMMARY OF HISTORICAL INVESTIGATION ACTIVITIES

The following is a brief summary of the Phase II environmental investigations and other related investigations that have been completed at the Site.

- Soil investigations and a Surface Soil Risk Assessment were completed in 2007 to evaluate the Potential Battery Waste Disposal Area (Feature 139), located east of the plant.
- A Phase II investigation of the Site was initiated in June 2007, while the Site was still operational. The majority of this work was completed to investigate exterior RECs identified in the Phase I ESA.
- A Phase II investigation of interior RECs was initiated in August 2010, with additional work completed from May 2012 through January 2014.
- Phase II delineation work was completed in several mobilizations through July 2015 as data from initial investigations was received and as additional areas being accessible following removal of the building slab.
- A General Site-wide Characterization was completed in 2015 to fill in spatial gaps where no features were present and where no analytical or field screening data had been collected.
- Delineation trenching was completed from January 2016 through April 2016 to determine the extent of potential impacted soil within Former Fill Area A&B.

A comprehensive summary of the results of these investigations are included in the Comprehensive Phase II Site Investigation Report (Arcadis 2016) as well as the SDRAP Implementation Report (Arcadis 2016).

4 PROPOSED REMEDIAL ACTIVITIES

The proposed remedial action for the three identified consolidated impact areas is the excavation of impacted soil and off-site disposal at a properly permitted landfill.

Remedial activities will consist of excavation and field screening of soil to a depth of un-impacted soil or bedrock, whichever is shallower. Confirmation samples will be taken from soil left in place. In the event that final excavation limits reach bedrock, confirmation soil samples will not be collected. Analytical results will be compared to Residential/Recreational SRVs and/or Petroleum Brownfields Program guidance values.

Monitoring, inspection, documentation, analytical sampling and surveying of all excavations will be completed during excavation activities as discussed in the sections below.

4.1 Field Screening of Excavated Soil

An ARCADIS representative will be present during soil excavation activities to monitor and inspect the soil as it is removed. The soil will be field screened with a PID (11.7 eV lamp) at a frequency of one for every 10 cubic yards and monitored for visual/olfactory indications of impacts including odors, staining, free-product and/or non-organic debris. The screening frequency will be reduced to one for every 25 cubic yards in areas of known impacted soil. PID screening of excavated soil will be completed in accordance with MPCA Petroleum Brownfields Program Guidance Document 4-04 *Soil Sample Collection and Analysis Procedures*.

Excavated soil will be separated based on the following criteria:

- Soil with observed PID readings below 10 parts per million (ppm) and without any visual or olfactory indication of impacts will be stockpiled for re-use as backfill at their respective location.
- Soil with observed PID readings above 10 ppm and/or visual/olfactory indication of impacts will be segregated for off-site removal.

Stockpiled soil to be considered for re-use as backfill will be sampled in accordance with the procedures listed in Section 4.4.

Excavations will be extended until the sidewall soil does not exhibit PID readings above 10 ppm or any visual or olfactory indications of impacts.

4.2 Confirmation Analytical Sampling

Following impacted soil removal, base and sidewall confirmation samples will be collected to verify that remaining soil is below applicable standards. The confirmation samples will be analyzed for each of the constituents previously encountered in their respective consolidated impact area and will be compared to MPCA Tier 1 SRVs and/or Petroleum Brownfields Program guidance values, as applicable.

INTERIM RESPONSE ACTION PLAN – CONSOLIDATED IMPACT AREAS

Confirmation sampling frequency will be completed in accordance with the table below:

Square Feet of Excavation Floor Area	Minimum Number of Confirmation Samples
Less than 500	2 base and 4 sidewall
500 to <1,000	3 base and 5 sidewall
1,000 to <1,500	4 base and 6 sidewall
1,500 to <2,000	5 base and 7 sidewall
2,000 to <2,500	5 base and 8 sidewall
2,500 to <3,000	6 base and 8 sidewall
3,000 to <4,000	6 base and 9 sidewall
4,000 to <6,000	7 base and 1 sample per 45 lineal feet of sidewall
6,000 to <8,500	8 base and 1 sample per 45 lineal feet of sidewall
8,500 to <10,890 (.25 acres)	9 base and 1 sample per 45 lineal feet of sidewall
Greater than 10,890	Use Guidance Below

The following guidance is to be used when excavation floor areas exceed 10,890 square feet:

Floor Acreage	Square Feet	Base Grid Interval	Sidewall Samples
.25 – 3.0	10,890 – 130,680	15 – 30 Feet	1 sample per 45 lineal feet
3.0 and over	130,680 +	30 Feet plus	1 sample per 45 lineal feet

When sampling the sidewalls of excavations that exceed five feet in depth, the sidewall sampling locations will be staggered in the vertical plane. If excavations are vertically completed to bedrock, base sampling will not be completed. If perched groundwater is encountered during excavations, confirmation samples will be collected only from the soil above the saturated perched zone.

4.3 Water Sampling and Management

If perched groundwater is encountered during soil excavation, a water sample will be collected if the initial samples collected from that area exceed applicable groundwater SLVs (Table 1). This sample will be collected for characterization purposes only. No groundwater recovery or remediation is anticipated as part of this work.

If perched groundwater is encountered during a remedial excavation which limits the removal of remaining impacted soil at depth (without dewatering), MPCA staff will be contacted to discuss whether dewatering and continued soil excavation is warranted in that circumstance.

4.4 Stockpile Management

Soil Designated for Off-Site Disposal

All excavated soil requiring off-site disposal will be relocated to a designated on-site staging area. The stockpile will be placed on a minimum of 6-mil reinforced plastic and covered with securely anchored 10-mil reinforced plastic. Excavated soil designated for off-site disposal will be at a Ford-approved and MPCA-permitted off-site facility.

Prior to disposal, excavated soil will be sampled for waste characterization. Samples will be analyzed consistent with the receiving facility requirements. In the absence of receiving facility requirements, samples will be analyzed for total metals, Toxic Characteristic Leaching Procedure (TCLP) metals, VOCs, SVOCs, GRO, DRO, and polychlorinated biphenyls (PCBs). The number of samples required for waste characterization will also be dictated by the receiving facility.

Soil Designated for On-Site Reuse

Excavated soil that does not exhibit PID readings over 10 ppm and does not show visual or olfactory indication of impacts will be stockpiled for re-use on-site. Prior to stockpiled soil being used as backfill material it will be sampled for the constituents found in exceedance during the Site Decommissioning and Phase II investigations as listed in Section 2.

Stockpile Sampling Frequency

The number of samples will be dependent on the excavated soil volume as specified in the table below, which is consistent with MPCA Petroleum Remediation Program Guidance Document 4-04 Soil Sample Collection and Analysis Procedures.

Cubic Yards of Soil	Number of Grab Samples
Less than 50	1
51-500	2
501-1,000	3
1,001-2,000	4
2,001-4,000	5
Each additional 2,000	One additional sample

4.5 Backfilling

Excavated areas will be backfilled and returned to the original grade of the surrounding area after removal of impacted soil. Excavations will be backfilled using non-impacted soil removed from the excavation, Class 5 backfill material created during the site decommissioning, non-impacted soil obtained from other portions of the Site, and/or an approved off-site borrow source.

If possible, excavations will not be backfilled until sidewall and base analytical samples confirm all impacted soil has been removed. However, excavations may be backfilled prior to receiving analytical results if needed to allow for safe Site access, to avoid a safety hazard associated with an open excavation in a high traffic area, and/or to prevent accumulation of stormwater. Ford acknowledges that this backfill material may have to be disposed off-Site if confirmatory samples indicate the extent of impacts have not been removed and additional excavation is required.

4.6 Dust Control

Construction activities are not expected to produce excessive dust, however, a water truck will be utilized to mitigate dust generated during on-site truck movement if needed.

4.7 Documentation and Surveying

Arcadis will photo document each excavation and have the final lateral and vertical extents of each excavation surveyed. Excavation extents will be surveyed for X, Y and Z (ground surface) coordinates referencing the National Geodetic Vertical Datum of 1929 (NGVD 29) and North American Datum of 1983 (NAD 83).

4.8 Construction Contingency Plan

If unexpected conditions are encountered during soil excavation, work will be stopped and the area will be isolated until the conditions can be fully characterized and appropriate safety precautions and sampling procedures can be put in place.

4.8.1 Unexpected Debris

If unexpected debris (bricks, metal pieces, etc.) are encountered that cannot be easily separated from the surrounding soil, the soil will be removed and properly disposed of off-Site.

4.8.2 Unidentified Waste

If unidentified wastes, including drums or underground storage tanks, are encountered during soil excavation, work in the area will be stopped and the area will be secured until the wastes can be characterized and appropriate safety measures can be put in place. Any unidentified waste will be properly disposed off-Site following characterization.

4.8.3 Unidentified Utilities

If any unidentified utilities are encountered during excavation, work will be stopped in the area until the utility is identified and evaluated to determine if it is in use and if there is any immediate safety or environmental hazard to human health. If the utility is no longer in use it will be determined by appropriate Ford and City of St. Paul personnel if removal is required. If the utility is active, the response plan will be modified to either reroute the utility or work around it.

4.8.4 Additional Soil Removal

Upon receipt of analytical results of the confirmation samples from each consolidated impact area, Arcadis will review the results to determine if additional soil needs to be removed to meet applicable regulatory standards. If confirmation samples exceed applicable regulatory standards, additional soil from the sample location will be removed. After additional impacted soil is removed, confirmation samples will be re-collected from the areas where additional soil was removed. The new confirmation samples will be analyzed only for those criteria that exceeded an applicable regulatory standard during the initial round of confirmation sampling.

5 REPORTING

Activities discussed in this IRAP will be documented in the field and reported in a Response Action Implementation Report. That report will include a summary of all field observations (e.g., PID screening values, visual and olfactory observations, volume of soil removed at each location) as well as confirmation sample analytical results, surveyed extents of each excavation and final placement of all excavated soil that was reused on-site.

6 SCHEDULE

Excavation of contaminated soils and successive backfilling and restoration are expected to be completed during the 2017 calendar year, pending approval by the MPCA.

7 REFERENCES

Arcadis. 2007. Phase I Environmental Site Assessment. Ford Motor Company, Twin Cities Assembly Plant, St. Paul, Minnesota. June 29.

Arcadis. 2008. Supplemental Phase II – Exterior Investigation Work Plan. Ford Motor Company, Twin Cities Assembly Plant, St. Paul, Minnesota. May 13.

Arcadis 2010. Phase II – Interior Investigation Work Plan. Ford Motor Company, Twin Cities Assembly Plant, St. Paul, Minnesota. May 28.

Arcadis. 2016. Comprehensive Phase II Site Investigation Report, Twin Cities Assembly Plant, St. Paul, Minnesota. April 1.

MPCA. 2008. Guidance Document 4-04, Soil Sample Collection and Analysis Procedures. September. Available online at: <https://www.pca.state.mn.us/sites/default/files/c-prp4-04.pdf>.

TABLES



Table 1
Analytical Summary - Main Assembly Building
Ford Motor Company - Twin Cities Assembly Plant
966 South Mississippi River Boulevard
St. Paul, Minnesota

Addendum Number	Addendum Name	Date Sample Taken	Sample ID Name	SLV Exceedance	Elevated PID	Debris	Visual/Olfactory Impacts	Analytical Exceedances				
								VOCs	SVOCs	Metals	DRO	GRO
6	MAB - Glass Basement (Elevator Shaft)	4/27/2015	MAB-Glass-Pit-01 (20150427)	-	X	-	X	-	-	-	-	-
7	MAB - Glass Basement (Ft60)	4/27/2015	MAB-Glass-56 (20150427)	X	X	-	X	-	-	-	-	-
13	MAB - Oil Tunnel	05/01/2015; 05/05/2015	OTUNNEL_Base_15 (20150501); OTUNNEL_Base_02 (20150505); OTUNNEL_Base_08 (20150505); OTUNNEL_Base_11 (20150505); OTUNNEL_Base_22 (20150505); OTUNNEL_SW_16 (20150505); OTUNNEL_SW_26 (20150505); OTUNNEL_SW_33 (20150505)	X	X	-	X	X	X	-	X	X
17	MAB - Inner Foundation Footing #2	3/12/2015	MAB-IF-O28(20150312)	X	X	-	X	X	-	-	X	X
18	MAB - Inner Foundation Footing #3	3/18/2015	MAB-IF-P13(20150318)	-	X	-	-	-	-	-	-	-
22	MAB - Inner Foundation Footing #7	3/27/2015	MAB-P18 (20150327) MAB-P18-Base(20150326)	-	X	-	-	-	-	-	X	X
28	MAB - Inner MAB Foundation Wall #1	3/27/2015	MAB-LD-Base-05(20150327)	X	X	-	X	-	-	-	-	X
33	MAB - Northeast Foundation Wall #1	4/3/2015	MAB-NEFW-Base-3(20150403)	-	X	-	X	-	-	-	X	-
34	MAB - Northeast Foundation Wall #2	4/3/2015	MAB-NEFW-Base-7(20150403)	-	X	-	X	-	-	-	-	-
35	MAB - Northeast Interior Wall	4/6/2015	MAB-NEIW-Base(20150406)	-	X	X	X	-	-	-	X	X
36	MAB - Former Lift Station	4/9/2015	MAB-CPT-BASE4(20150409)	X	X	-	X	X	-	-	-	-
37	MAB - Exterior Foundation Wall	4/9/2015	MAB - EXFW-SW-1 (20150409)	-	X	-	X	-	-	-	X	X
38	MAB - Former Paint Operations	4/10/2015	MAB-PAINTOP-Base2(20150410)	-	X	-	X	-	-	-	X	X
40	MAB - Interior Foundation Wall 1	4/13/2015	MAB-IFW-55(20150413)	-	X	-	X	-	-	-	-	-
41	MAB - Interior Foundation Wall 2	--	(MAB-IFW-63)	-	X	-	-	-	-	-	-	-
42	MAB - Battery House/Tank Farm Trenches	4/14/2015	MAB-TFT-Base(20150414) (MAB-EXFW-14)	X	X	-	X	X	X	-	X	X
46	MAB - Bumper Foundation	4/17/2015	MAB-BB-Base2(20150417)	-	X	-	X	-	-	-	X	-
47	MAB - Training Center (Fire Loop)	4/30/2015	NEWP-SW1 (20150430)	-	X	-	X	-	-	-	-	-
48	MAB - Unidentified Pit 2	05/06/2015 05/07/2015	MAB_M28_Pit_Base SP118_01 / SP118_02;	X	X	X	X	-	-	-	X	X
49	MAB - Training Center (Debris)	8/18/2015	SP119-SL-0815	-	X	X	-	-	-	-	-	-
55	MAB-Sand Elevator Shaft	7/1/2015	MAB-SE-SW4 (20150701)	-	X	-	-	-	-	-	-	-
57	MAB - Grid Screening (R19)	5/29/2015	MAB-R19 (20150529)	-	X	-	X	-	-	-	X	-

Abbreviations and Acronyms:

DRO = diesel range organic
GRO = gasoline range organic
SLV = soil leaching value
SVOC = semi-volatile organic compound
VOC = volatile organic compound

Table 2
Main Assembly Building - SDRAP Addendum Analytical Exceedances
Ford Motor Company - Twin Cities Assembly Plant
966 South Mississippi River Boulevard
St. Paul, Minnesota

SDRAP Addendum Location Sample Name Sample Date	Units	Tier 1 Residential SRVs	Soil Leaching Values	SDRAP 7 MAB_GLASS_56 MAB_GLASS_56 (20150427) 4/27/2015	SDRAP 13 OTUNNEL_BASE_02 OTUNNEL_BASE_02(20150505) 5/5/2015	SDRAP 13 OTUNNEL_BASE_08 OTUNNEL_BASE_08(20150505) 5/5/2015	SDRAP 13 OTUNNEL_BASE_11 OTUNNEL_BASE_11(20150505) 5/5/2015	SDRAP 13 OTUNNEL_BASE_15 OTUNNEL_BASE_15 (20150401) 5/1/2015	SDRAP 13 OTUNNEL_SW_33 OTUNNEL_SW_33(20150505) 5/5/2015
TPH									
Diesel Range Organics	mg/kg	100	NS	95	2400	< 9.9	6.0 J	< 11	94
Gasoline Range Organics	mg/kg	100	NS	3.7 J	5300	< 11	< 11	2.1 J	1200
VOCs									
1,2,4-Trimethylbenzene	mg/kg	8	2.744504429	0.0063 J	200	< 0.23	0.98	0.011 J	< 1.4
1,3,5-Trimethylbenzene	mg/kg	3	2.732695461	< 0.29	76	< 0.23	0.27	< 0.26	< 1.4
Benzene	mg/kg	6	0.017237181	< 0.29	6.3 J	< 0.23	0.39	< 0.26	< 1.4
Dichloromethane	mg/kg	97	0.01664908	< 0.29	< 8.3	< 0.23	< 0.24	0.26	< 1.4
Ethylbenzene	mg/kg	200	1.048040824	0.0073 J	34	< 0.23	0.49	0.01 J	< 1.4
m&p-Xylenes	mg/kg	45	NS	0.023 J	140	< 0.23	1.8	0.023 J	< 1.4
Naphthalene	mg/kg	10	4.467565234	0.06 J	44	< 0.23	0.35	< 0.26	0.52 J
N-Butylbenzene	mg/kg	30	NS	< 0.29	16	< 0.23	0.078 J	< 0.26	2.6
N-Propylbenzene	mg/kg	30	NS	< 0.29	19	< 0.23	0.17 J	< 0.26	2.1
o-Xylene	mg/kg	45	NS	0.013 J	66	< 0.23	1	< 0.26	< 1.4
Tetrachloroethene	mg/kg	72	0.041530927	0.042 J	< 8.3	< 0.23	< 0.24	< 0.26	< 1.4
Toluene	mg/kg	107	2.459414763	< 0.29	57	< 0.23	1.9	0.025 J	< 1.4
Trichloroethene	mg/kg	29	0.002329608	< 0.29	< 8.3	0.08 J	< 0.24	< 0.26	< 1.4
SVOCs									
Naphthalene	mg/kg	10	**	NA	13	0.0062 J	0.11 J	< 0.42	0.13 J

Notes and Abbreviations on Page 5.

Table 2
Main Assembly Building - SDRAP Addendum Analytical Exceedances
Ford Motor Company - Twin Cities Assembly Plant
966 South Mississippi River Boulevard
St. Paul, Minnesota

SDRAP Addendum Location Sample Name Sample Date	Units	Tier 1 Residential SRVs	Soil Leaching Values	SDRAP 17 MAB_IF_O28 MAB_IF_O28 (20150312) 3/12/2015	SDRAP 18 MAB-IF-P13 MAB-IF-P13 (20150318) 3/18/2015	SDRAP 22 MAB-P18 MAB-P18 (20150327) 3/27/2015	SDRAP 22 MAB-P18-BASE MAB-P18-BASE (20150327) 3/27/2015	SDRAP 28 M28 Pit Base 01 MAB-M28_PIT_BASE_01(20150507) 5/7/2015	SDRAP 28 MAB-LD-BASE-05 MAB-LD-BASE-05 (20150327) 3/27/2015
TPH									
Diesel Range Organics	mg/kg	100	NS	850	7.7 J	440	< 10	13	34
Gasoline Range Organics	mg/kg	100	NS	1700	< 13	590	< 12	2.6 J	530
VOCs									
1,2,4-Trimethylbenzene	mg/kg	8	2.744504429	1.7 J	< 0.38	< 0.26	< 0.23	< 0.26	1.6 J
1,3,5-Trimethylbenzene	mg/kg	3	2.732695461	< 1.9	< 0.38	< 0.26	< 0.23	< 0.26	0.76 J
Benzene	mg/kg	6	0.017237181	< 1.9	< 0.38	< 0.26	< 0.23	< 0.26	< 1.4
Dichloromethane	mg/kg	97	0.01664908	< 1.9	< 0.38	< 0.26	< 0.23	0.1 J	< 1.4
Ethylbenzene	mg/kg	200	1.048040824	1.1 J	< 0.38	< 0.26	< 0.23	< 0.26	0.64 J
m&p-Xylenes	mg/kg	45	NS	< 1.9	< 0.38	< 0.26	< 0.23	< 0.26	3.7 J
Naphthalene	mg/kg	10	4.467565234	20	< 0.38	< 0.26	0.0065 J	0.0083 J	0.66 J
N-Butylbenzene	mg/kg	30	NS	6.4	0.027 J	< 0.26	< 0.23	< 0.26	0.26 J
N-Propylbenzene	mg/kg	30	NS	1.6 J	0.15 J	< 0.26	< 0.23	< 0.26	2.5 J
o-Xylene	mg/kg	45	NS	< 1.9	< 0.38	< 0.26	< 0.23	< 0.26	0.31 J
Tetrachloroethene	mg/kg	72	0.041530927	< 1.9	< 0.38	< 0.26	< 0.23	< 0.26	< 1.4
Toluene	mg/kg	107	2.459414763	< 1.9	< 0.38	< 0.26	< 0.23	< 0.26	< 1.4
Trichloroethene	mg/kg	29	0.002329608	< 1.9	< 0.38	< 0.26	< 0.23	< 0.26	< 1.4
SVOCs									
Naphthalene	mg/kg	10	**	NA	NA	< 2	< 0.4	NA	0.49

Notes and Abbreviations on Page 5.

Table 2
Main Assembly Building - SDRAP Addendum Analytical Exceedances
Ford Motor Company - Twin Cities Assembly Plant
966 South Mississippi River Boulevard
St. Paul, Minnesota

SDRAP Addendum Location Sample Name Sample Date	Units	Tier 1 Residential SRVs	Soil Leaching Values	SDRAP 33 MAB_NEFW_BASE_3 MAB_NEFW_BASE_3(20150403) 4/3/2015	SDRAP 34 MAB_NEFW_BASE_7 MAB_NEFW_BASE_7(20150403) 4/3/2015	SDRAP 35 MAB-NEIW-BASE MAB-NEIW-BASE (20150406) 4/6/2015	SDRAP 36 MAB-CPT-BASE4 MAB-CPT-BASE4 (20150409) 4/9/2015	SDRAP 37 MAB-EXFW-SW-1 MAB - EXFW-SW-1 (20150409) 4/9/2015	SDRAP 38 MAB-PAINTOP-BASE2 MAB-PAINTOP-BASE2 (20150410) 4/10/2015
TPH									
Diesel Range Organics	mg/kg	100	NS	590	29	650	71	30000	760
Gasoline Range Organics	mg/kg	100	NS	22	7.5 J	560	71	130	4400
VOCs									
1,2,4-Trimethylbenzene	mg/kg	8	2.744504429	0.013 J	< 0.23	< 0.28	0.33 J	1.1	< 1.5 J
1,3,5-Trimethylbenzene	mg/kg	3	2.732695461	< 0.22	< 0.23	< 0.28	0.12 J	.29	< 1.5 J
Benzene	mg/kg	6	0.017237181	< 0.22	< 0.23	< 0.28	< 2.7	.23 J	< 1.5 J
Dichloromethane	mg/kg	97	0.01664908	< 0.22	< 0.23	< 0.28	< 2.7	< 2.7	0.46 J
Ethylbenzene	mg/kg	200	1.048040824	< 0.22	< 0.23	< 0.28	24	.83	11 J
m&p-Xylenes	mg/kg	45	NS	< 0.22	< 0.23	< 0.28	52	3.3	21 J
Naphthalene	mg/kg	10	4.467565234	< 0.22	< 0.23	< 0.28	0.18 J	1.2	0.43 J
N-Butylbenzene	mg/kg	30	NS	0.026 J	< 0.23	0.34	0.11 J	.15 J	4.4 J
N-Propylbenzene	mg/kg	30	NS	< 0.22	< 0.23	< 0.28	0.3 J	.78	5.8 J
o-Xylene	mg/kg	45	NS	< 0.22	< 0.23	< 0.28	3	.92	4.2 J
Tetrachloroethene	mg/kg	72	0.041530927	< 0.22	< 0.23	< 0.28	< 2.7	< 2.7	< 1.5 J
Toluene	mg/kg	107	2.459414763	< 0.22	< 0.23	< 0.28	< 2.7	< 2.7	< 1.5 J
Trichloroethene	mg/kg	29	0.002329608	< 0.22	< 0.23	< 0.28	< 2.7	< 2.7	< 1.5 J
SVOCs									
Naphthalene	mg/kg	10	**	NA	NA	< 2	0.065 J	1.2	NA

Notes and Abbreviations on Page 5.

Table 2
 Main Assembly Building - SDRAP Addendum Analytical Exceedances
 Ford Motor Company - Twin Cities Assembly Plant
 966 South Mississippi River Boulevard
 St. Paul, Minnesota

SDRAP Addendum Location Sample Name Sample Date	Units	Tier 1 Residential SRVs	Soil Leaching Values	SDRAP 40 MAB-IFW-55 MAB-IFW-55 (20150413) 4/13/2015	SDRAP 42 MAB-TFT-BASE MAB-TFT-BASE (20150414) 4/14/2015	SDRAP 46 MAB-BB-BASE2 MAB-BB-BASE2 (20150417) 4/17/2015	SDRAP 48 SP118 SP118_02(20150506) 5/6/2015	SDRAP 48 SP118 SP118_01(20150506) 5/6/2015	SDRAP 57 MAB-R19 MAB-R19(20150529) 5/29/2015
TPH									
Diesel Range Organics	mg/kg	100	NS	22	2000	200	100	650	910
Gasoline Range Organics	mg/kg	100	NS	4.2 J	6700	< 9.2	73	200	60 J
VOCs									
1,2,4-Trimethylbenzene	mg/kg	8	2.744504429	0.036 J	180	< 0.26	0.07 J	0.13 J	0.0058 J
1,3,5-Trimethylbenzene	mg/kg	3	2.732695461	0.013 J	30	< 0.26	0.16 J	0.36 J	< 0.23
Benzene	mg/kg	6	0.017237181	< 0.26	< 5.5	< 0.26	< 0.26	< 0.51	< 0.23
Dichloromethane	mg/kg	97	0.01664908	< 0.26	< 5.5	< 0.26	0.12 J	0.23 J	< 0.23
Ethylbenzene	mg/kg	200	1.048040824	0.0093 J	8.8	< 0.26	< 0.26	< 0.51	< 0.23
m&p-Xylenes	mg/kg	45	NS	< 0.26	9.5	0.013 J	< 0.26	< 0.51	< 0.23
Naphthalene	mg/kg	10	4.467565234	0.067 J	37	0.01 J	< 0.26	< 0.51	< 0.23
N-Butylbenzene	mg/kg	30	NS	< 0.26	59	< 0.26	< 0.26	< 0.51	< 0.23
N-Propylbenzene	mg/kg	30	NS	< 0.26	31	< 0.26	< 0.26	< 0.51	< 0.23
o-Xylene	mg/kg	45	NS	< 0.26	< 5.5	< 0.26	< 0.26	< 0.51	< 0.23
Tetrachloroethene	mg/kg	72	0.041530927	< 0.26	< 5.5	< 0.26	< 0.26	< 0.51	< 0.23
Toluene	mg/kg	107	2.459414763	0.047 J	< 5.5	< 0.26	< 0.26	< 0.51	< 0.23
Trichloroethene	mg/kg	29	0.002329608	< 0.26	< 5.5	< 0.26	< 0.26	< 0.51	< 0.23
SVOCs									
Naphthalene	mg/kg	10	**	NA	11	< 7.5	0.027 J	< 1.5	NA

Notes and Abbreviations on Page 5.

Table 2
Main Assembly Building - SDRAP Addendum Analytical Exceedances
Ford Motor Company - Twin Cities Assembly Plant
966 Mississippi River Boulevard
St. Paul, Minnesota

General Notes:

Yellow = above Tier 1 residential SRVs

Italics/shaded = above soil leaching values

< = not detected

* = Values are MPCA-approved residential screening values based on typical background concentrati

** = SLVs not applicable for metals and PAHs at this site

Acronyms and Abbreviations:

J = estimated value (outside of detection limits)

mg/kg = milligram/kilogram

NA = not analyzed

ND = not detected

NS = no standard

SRV = soil reference value

Table 3
Main Assembly Building - Soil Boring Analytical Exceedances
Ford Motor Company - Twin Cities Assembly Plant
966 South Mississippi River Boulevard
St. Paul, Minnesota

Location		Tier 1 Residential SRVs	ASB-001	ASB-002	ASB-003	ASB-003	ASB-0206E	ASB-0206E	ASB-0206E
Sample Name	Units		ASB-001_6-8(20070619)DL	ASB-002_8-10(20070620)DL	ASB-003_6-8(20070620)DL	ASB-003_10-12(20070620)DL	ASB-0206E_0-1 (20150410)	ASB-0206E_6-8 (20150416)	ASB-0206E_9-11 (20150416)
Sample Date			6/19/2007	6/20/2007	6/20/2007	6/20/2007	4/10/2015	4/16/2015	4/16/2015
Depth Interval			6-8	8-10	6-8	10-12	0-1	6-8	9-11
TPH									
Diesel Range Organics	mg/kg	100	250	200	290	40	290	NA	NA
Gasoline Range Organics	mg/kg	100	740	1400	1000	1800	820	1300	1400
Metals, Total									
Antimony	mg/kg	12	NA	NA	NA	NA	NA	NA	NA
Arsenic	mg/kg	9	NA	NA	NA	NA	NA	NA	NA
Barium	mg/kg	1100	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	25	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	100	NA	NA	NA	NA	NA	NA	NA
Iron	mg/kg	9000	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	300	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	3600	NA	NA	NA	NA	NA	NA	NA
Mercury	mg/kg	0.5	NA	NA	NA	NA	NA	NA	NA
Vanadium	mg/kg	30	NA	NA	NA	NA	NA	NA	NA
VOCs									
1,1,2-Trichloroethane	mg/kg	9	< 0.8	< 1.2	< 0.55	< 0.39	< 0.45	NA	NA
1,2,4-Trimethylbenzene	mg/kg	8	12	57	31	20	0.034 J	NA	NA
1,3,5-Trimethylbenzene	mg/kg	3	3.5	18	7.2	4.9	1.8	NA	NA
Benzene	mg/kg	6	< 0.8	1.1 J	< 0.55	< 0.39	< 0.45	NA	NA
Isopropylbenzene	mg/kg	30	4	2.2	4.8	3.8	0.71	NA	NA
m&p-Xylenes	mg/kg	45	140	26	77	49	< 0.45	NA	NA
Naphthalene	mg/kg	10	2.1	24	12	4.1	3.8	NA	NA
N-Butylbenzene	mg/kg	30	2.9	14	4.7	3.6	2.7	NA	NA
N-Propylbenzene	mg/kg	30	3	6.4	5.1	3.7	2.4	NA	NA
o-Xylene	mg/kg	45	38	0.52 J	11	7	0.077 J	NA	NA
sec-Butylbenzene	mg/kg	25	1.7	1.5	1.2	0.88	0.88	NA	NA
Toluene	mg/kg	107	0.27 J	0.18 J	< 0.55	0.042 J	< 0.45	NA	NA
Total Xylenes	mg/kg	45	NA	NA	NA	NA	NA	NA	NA
SVOCs									
Benzo(a)pyrene	mg/kg	2	NA	NA	NA	NA	0.12 J	0.082 J	< 1.7
Naphthalene	mg/kg	10	NA	NA	NA	NA	1.4 J	8.3 J	1.9
BaP TEQ USEPA 1993 ND=0	mg/kg	2	NA	NA	NA	NA	0.14771	0.1099	< 0 U

Notes and Abbreviations on Page 5.

Table 3
Main Assembly Building - Soil Boring Analytical Exceedances
Ford Motor Company - Twin Cities Assembly Plant
966 South Mississippi River Boulevard
St. Paul, Minnesota

Location	Units	Tier 1 Residential SRVs	ASB-0211E ASB-0211E-5-7 (20140113) 1/13/2014 5-7	ASB-0211N ASB-0211N-8-10 (20140113) 1/14/2014 8-10	ASB-0211W ASB-0211W_5-7 (20150420) 4/20/2015 5-7	ASB-0214NE ASB-0214NE_10-12(20141209) 12/9/2014 10-12	ASB-0215 ASB-0215_8-10(20141212) 12/12/2014 8-10	ASB-0223 ASB-0223_4-6 (20150416) 4/16/2015 4-6	ASB-0223 ASB-0223_8-10 (20150416) 4/16/2015 8-10
TPH									
Diesel Range Organics	mg/kg	100	2700 J	150 J	450	810	290	4200	2200
Gasoline Range Organics	mg/kg	100	NA	NA	NA	1000	190	280	8000
Metals, Total									
Antimony	mg/kg	12	NA	NA	NA	< 0.84	< 1.0	0.54 J	0.51 J
Arsenic	mg/kg	9	NA	NA	NA	5.0	0.79 J	3.6	1.5
Barium	mg/kg	1100	NA	NA	NA	130	16 J	44	100
Cadmium	mg/kg	25	NA	NA	NA	0.28	< 0.20	0.048 J	0.24
Copper	mg/kg	100	NA	NA	NA	36	9.9	11	6.4
Iron	mg/kg	9000	NA	NA	NA	13000	8600	13000	6400
Lead	mg/kg	300	NA	NA	NA	6.8	1.4	3.6	5.7
Manganese	mg/kg	3600	NA	NA	NA	57	150	400	830
Mercury	mg/kg	0.5	NA	NA	NA	0.030 J	< 0.11	0.021 J	< 0.15
Vanadium	mg/kg	30	NA	NA	NA	34	14	16	12
VOCs									
1,1,2-Trichloroethane	mg/kg	9	< 0.4	< 0.35	< 0.23	< 0.98	< 26	< 0.26	< 4.1
1,2,4-Trimethylbenzene	mg/kg	8	0.0091 J	0.05 J	0.0095 J	< 0.98	340	< 0.26	< 4.1
1,3,5-Trimethylbenzene	mg/kg	3	< 0.4	< 0.35	< 0.23	< 0.98	110	< 0.26	< 4.1
Benzene	mg/kg	6	< 0.4	< 0.35	< 0.23	< 0.98	< 26	0.06 J	0.7 J
Isopropylbenzene	mg/kg	30	< 0.4	< 0.35	< 0.23	1.9 J	17 J	0.9	9.5
m&p-Xylenes	mg/kg	45	0.018 J	< 0.35	0.013 J	< 0.98	580	< 0.26	< 4.1
Naphthalene	mg/kg	10	< 0.4	< 0.35	< 0.23	< 0.98	27	0.028 J	1.3 J
N-Butylbenzene	mg/kg	30	< 0.4	0.098 J	< 0.23	2.9 J	27	0.44	44
N-Propylbenzene	mg/kg	30	< 0.4	< 0.35	< 0.23	4.4 J	75	0.97	22
o-Xylene	mg/kg	45	< 0.4	0.013 J	0.0096 J	< 0.98	210	< 0.26	0.2 J
sec-Butylbenzene	mg/kg	25	0.015 J	0.039 J	< 0.23	4.1 J	6.5 J	0.85	11
Toluene	mg/kg	107	0.03 J	< 0.35	< 0.23	< 0.98	440	< 0.26	< 4.1
Total Xylenes	mg/kg	45	NA	NA	NA	NA	NA	NA	NA
SVOCs									
Benzo(a)pyrene	mg/kg	2	NA	NA	NA	< 1.6 R	< 3.6	< 7.7	< 1.6
Naphthalene	mg/kg	10	NA	NA	NA	< 1.6 R	5.6	< 7.7	< 1.6
BaP TEQ USEPA 1993 ND=0	mg/kg	2	NA	NA	NA	< 0 U	< 0 U	< 0 U	< 0 U

Notes and Abbreviations on Page 5.

Table 3
Main Assembly Building - Soil Boring Analytical Exceedances
Ford Motor Company - Twin Cities Assembly Plant
966 South Mississippi River Boulevard
St. Paul, Minnesota

Location	Units	Tier 1 Residential SRVs	ASB-0224 ASB-0224_4-6 (20150416) 4/16/2015 4-6	ASB-0224 ASB-0224_8-10 (20150416) 4/16/2015 8-10	ASB-037 ASB037_12-14(20070703)DL 7/3/2007 12-14	ASB-038 ASB038_8-10(20070703)DL 7/3/2007 8-10	ASB-041 ASB041_6-8(20070705)DL 7/5/2007 6-8	ASB-135 ASB-135_2-4(20110826) 8/26/2011 2-4	ASB-135 ASB-135_6-8(20110826) 8/26/2011 6-8	ASB-135 ASB-135_8-9(20110826) 8/26/2011 8-9
TPH										
Diesel Range Organics	mg/kg	100	1000	22	1100	510	NA	100	23	32
Gasoline Range Organics	mg/kg	100	630	3100	NA	NA	200	170	450	280
Metals, Total										
Antimony	mg/kg	12	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	mg/kg	9	2.8	2.4	NA	NA	NA	NA	NA	NA
Barium	mg/kg	1100	41	67	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	25	0.072 J	0.15 J	NA	NA	NA	NA	NA	NA
Copper	mg/kg	100	NA	NA	NA	NA	NA	NA	NA	NA
Iron	mg/kg	9000	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	300	4.9	4.9	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	3600	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	mg/kg	0.5	< 0.12	< 0.12	NA	NA	NA	NA	NA	NA
Vanadium	mg/kg	30	NA	NA	NA	NA	NA	NA	NA	NA
VOCS										
1,1,2-Trichloroethane	mg/kg	9	< 1.2	< 4.9	< 0.28	NA	< 2.9	< 0.24	< 0.39	< 0.24
1,2,4-Trimethylbenzene	mg/kg	8	< 1.2	< 4.9	< 0.28	NA	< 2.9	0.033 J	< 0.39	< 0.24
1,3,5-Trimethylbenzene	mg/kg	3	< 1.2	< 4.9	< 0.28	NA	< 2.9	< 0.24	< 0.39	< 0.24
Benzene	mg/kg	6	0.072 J	0.76 J	< 0.28	NA	< 2.9	< 0.24	< 0.39	< 0.24
Isopropylbenzene	mg/kg	30	2.4	12	< 0.28	NA	< 2.9	0.053 J	0.22 J	0.067 J
m&p-Xylenes	mg/kg	45	< 1.2	< 4.9	< 0.57	NA	< 5.8	0.035 J	< 0.79	< 0.48
Naphthalene	mg/kg	10	15	4.1 J	< 0.28 J	NA	< 2.9 J	0.15 J	0.17 J	< 0.24
N-Butylbenzene	mg/kg	30	8.8	19	< 0.28	NA	< 2.9	0.52	0.54	0.17 J
N-Propylbenzene	mg/kg	30	7.9	29	< 0.28	NA	< 2.9	0.24	0.52	0.097 J
o-Xylene	mg/kg	45	< 1.2	0.39 J	< 0.28	NA	< 2.9	< 0.24	< 0.39	< 0.24
sec-Butylbenzene	mg/kg	25	3.4	12	< 0.28	NA	< 2.9	0.15 J	0.28 J	0.11 J
Toluene	mg/kg	107	< 1.2	< 4.9	< 0.28	NA	0.82 J	0.018 J	< 0.39	< 0.24
Total Xylenes	mg/kg	45	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo(a)pyrene	mg/kg	2	< 3.7	0.026 J	0.19 J	< 3.7	NA	0.03 J	< 0.43	0.0084 J
Naphthalene	mg/kg	10	2.5 J	1.3	< 3.9	< 3.7	NA	0.042 J	0.14 J	0.019 J
BaP TEQ USEPA 1993 ND=0	mg/kg	2	< 0 U	0.03093	0.234	< 0 U	NA	0.04188	0.000047	0.0096

Notes and Abbreviations on Page 5.

Table 3
Main Assembly Building - Soil Boring Analytical Exceedances
Ford Motor Company - Twin Cities Assembly Plant
966 South Mississippi River Boulevard
St. Paul, Minnesota

Location		Tier 1 Residential SRVs	ASB-136 ASB-136_1-3(20110829) 8/29/2011 1-3	ASB-146 ASB-146_6-8(20110831) 8/31/2011 6-8	ASB-147 ASB-147_6-8(20110831) 8/31/2011 6-8	ASB-159 ASB-159_5-7(20110902) 9/2/2011 5-7	ASB-160 ASB-160_5-7(20110902) 9/2/2011 5-7	ASB-234 ASB-234-0-1(20120531) 5/31/2012 0-1	ASB-235 ASB235_6-7(20120604) 6/4/2012 6-7	C061 S-150512-RA-C061 5/12/2015 8-10
TPH										
Diesel Range Organics	mg/kg	100	550	NA	29	290	150	< 12	NA	NA
Gasoline Range Organics	mg/kg	100	NA	780	3000	790 J	160 J	220	15	NA
Metals, Total										
Antimony	mg/kg	12	NA	NA	NA	NA	NA	NA	0.86 J	< 1.2 U
Arsenic	mg/kg	9	4.4	NA	NA	NA	NA	4.9	5.7	3.9
Barium	mg/kg	1100	59	NA	NA	NA	NA	82	78	90
Cadmium	mg/kg	25	0.46	NA	NA	NA	NA	0.25	0.16 J	0.26
Copper	mg/kg	100	NA	NA	NA	NA	NA	NA	19	17
Iron	mg/kg	9000	NA	NA	NA	NA	NA	NA	21000	13000
Lead	mg/kg	300	47	7.3	NA	NA	NA	10	370	6.6
Manganese	mg/kg	3600	NA	NA	NA	NA	NA	NA	430	240
Mercury	mg/kg	0.5	0.065 J	NA	NA	NA	NA	0.041 J	< 0.12	< 0.15 U
Vanadium	mg/kg	30	NA	NA	NA	NA	NA	NA	22	31
VOCs										
1,1,2-Trichloroethane	mg/kg	9	NA	< 1.5	< 1.3	< 1	< 0.32	< 0.3	< 0.25	NA
1,2,4-Trimethylbenzene	mg/kg	8	NA	< 1.5	< 1.3	28	2.9	0.14 J	0.025 J	NA
1,3,5-Trimethylbenzene	mg/kg	3	NA	< 1.5	< 1.3	5	0.4	< 0.3	< 0.25	NA
Benzene	mg/kg	6	NA	< 1.5	< 1.3	< 1	< 0.32	< 0.3	< 0.25	NA
Isopropylbenzene	mg/kg	30	NA	2.3	1.3	0.86 J	0.18 J	0.6	< 0.25	NA
m&p-Xylenes	mg/kg	45	NA	< 2.9	< 2.7	4.8	0.7	< 0.6	< 0.5	NA
Naphthalene	mg/kg	10	NA	2.8	< 1.3	5.2	0.63	0.69	0.06 J	NA
N-Butylbenzene	mg/kg	30	NA	20	16	4.5	0.66	1.2	0.046 J	NA
N-Propylbenzene	mg/kg	30	NA	6.2	3.6	3.5	0.39	1.6	< 0.25	NA
o-Xylene	mg/kg	45	NA	< 1.5	< 1.3	< 1	0.038 J	< 0.3	< 0.25	NA
sec-Butylbenzene	mg/kg	25	NA	3.5	3.6	0.91 J	0.21 J	1	< 0.25	NA
Toluene	mg/kg	107	NA	< 1.5	< 1.3	< 1	< 0.32	< 0.3	< 0.25	NA
Total Xylenes	mg/kg	45	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo(a)pyrene	mg/kg	2	0.14 J	NA	< 3.7	0.045 J	< 0.96	0.32 J	1.3 J	NA
Naphthalene	mg/kg	10	0.094 J	NA	< 3.7	0.46 J	0.29 J	0.44	0.084 J	NA
BaP TEQ USEPA 1993 ND=0	mg/kg	2	0.1863	NA	< 0 U	0.06209	< 0 U	0.46208	1.9634	NA

Notes and Abbreviations on Page 5.

Table 3.
Main Assembly Plant - Soil Boring Analytical Exceedances
Ford Motor Company - Twin Cities Assembly Plant
966 South Mississippi River Boulevard
St. Paul, Minnesota

General Notes:

Yellow = above Tier 1 residential SRVs

Italics/shaded = above soil leaching values

< = not detected

* = Values are MPCA-approved residential screening values based on typical background concentrations

** = SLVs not applicable for metals and PAHs at this site

Acronyms and Abbreviations:

J = estimated value (outside of detection limits)

mg/kg = milligram/kilogram

NA = not analyzed

ND = not detected

NS = no standard

SRV = soil reference value

Table 4
 North Parking Lot - Soil Boring Analytical Exceedances
 Ford Motor Company - Twin Cities Assembly Plant
 966 Mississippi River Boulevard
 St. Paul, Minnesota

Location Sample Name Sample Date Depth Interval	Units	Tier 1 Residential SRVs	ASB-0103E ASB-0103E_6-7 (20131016) 10/16/2013 6-7	ASB-0103E ASB-0103E_7-7.5 (20131016) 10/16/2013 7-7.5	ASB-0103W ASB-0103W_6-7 (20131016) 10/16/2013 6-7	ASB-0103W ASB-0103W_7.5-8 (20131016) 10/16/2013 7.5-8	ASB-0116 ASB-0116_4-6(20141215) 12/15/2014 4-6	ASB-0116 ASB-0116_6-8(20141215) 12/15/2014 6-8
TPH								
Diesel Range Organics	mg/kg	100	NA	NA	NA	NA	340	60
Gasoline Range Organics	mg/kg	100	NA	NA	NA	NA	3200	320
Metals, Total								
Antimony	mg/kg	12	NA	NA	NA	NA	NA	NA
Arsenic	mg/kg	9	NA	NA	NA	NA	NA	NA
Barium	mg/kg	1100	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	25	NA	NA	NA	NA	NA	NA
Copper	mg/kg	100	NA	NA	NA	NA	NA	NA
Iron	mg/kg	9000	NA	NA	NA	NA	NA	NA
Lead	mg/kg	300	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	3600	NA	NA	NA	NA	NA	NA
Mercury	mg/kg	0.5	NA	NA	NA	NA	NA	NA
Vanadium	mg/kg	30	NA	NA	NA	NA	NA	NA
VOCs								
1,1,2-Trichloroethane	mg/kg	9	< 0.55	< 1.5	< 0.59	< 6	< 15	< 0.78
1,2,4-Trimethylbenzene	mg/kg	8	21	26	7.1	30	160	20
1,3,5-Trimethylbenzene	mg/kg	3	2.2	5.2	1.9	10	51	0.68 J
Benzene	mg/kg	6	2.5	5.4	6.1	21	50	20
Isopropylbenzene	mg/kg	30	0.71	1.1 J	0.27 J	1.4 J	6.1 J	0.78
m&p-Xylenes	mg/kg	45	9.2	8.3	15	78	290	12
Naphthalene	mg/kg	10	6.1	3	0.94	3.2 J	15	3.2
N-Butylbenzene	mg/kg	30	1	2	0.16 J	1.8 J	13 J	1
N-Propylbenzene	mg/kg	30	4.1	5.2	1.3	6.4	33	4.2
o-Xylene	mg/kg	45	0.23 J	0.17 J	5.2	28	98	0.2 J
sec-Butylbenzene	mg/kg	25	0.32 J	0.58 J	< 0.59	0.56 J	2.9 J	0.34 J
Toluene	mg/kg	107	0.23 J	0.14 J	14	110	400	0.39 J
Total Xylenes	mg/kg	45	NA	NA	NA	NA	NA	NA
SVOCs								
Benzo(a)pyrene	mg/kg	2	NA	NA	NA	NA	NA	NA
Naphthalene	mg/kg	10	NA	NA	NA	NA	NA	NA
BaP TEQ USEPA 1993 ND=0	mg/kg	2	NA	NA	NA	NA	NA	NA

Notes and Abbreviations on Page 4.

Table 4
 North Parking Lot - Soil Boring Analytical Exceedances
 Ford Motor Company - Twin Cities Assembly Plant
 966 Mississippi River Boulevard
 St. Paul, Minnesota

Location Sample Name Sample Date Depth Interval	Units	Tier 1 Residential SRVs	ASB-0202S ASB-0202S_5-6(20131014) 10/14/2013 5-6	ASB-0205N ASB-0205N_5-7(20141215) 12/15/2014 5-7	ASB-0205N ASB-0205N_7-10(20141215) 12/15/2014 7-10	ASB-0207W ASB-0207W_4-5(20131017) 10/17/2013 4-5	ASB-0207W ASB-0207W_5-6(20131017) 10/17/2013 5-6	ASB-0208E ASB-0208E_7-8 (20131016) 10/16/2013 7-8
TPH								
Diesel Range Organics	mg/kg	100	2.6 J	73	75	150	90	50
Gasoline Range Organics	mg/kg	100	13	490	290	770	1000	1400
Metals, Total								
Antimony	mg/kg	12	NA	NA	NA	NA	NA	NA
Arsenic	mg/kg	9	3.2	NA	NA	NA	NA	NA
Barium	mg/kg	1100	31	NA	NA	NA	NA	NA
Cadmium	mg/kg	25	0.18 J	NA	NA	NA	NA	NA
Copper	mg/kg	100	NA	NA	NA	NA	NA	NA
Iron	mg/kg	9000	NA	NA	NA	NA	NA	NA
Lead	mg/kg	300	4.0	NA	NA	NA	NA	NA
Manganese	mg/kg	3600	NA	NA	NA	NA	NA	NA
Mercury	mg/kg	0.5	< 0.12	NA	NA	NA	NA	NA
Vanadium	mg/kg	30	NA	NA	NA	NA	NA	NA
VOCs								
1,1,2-Trichloroethane	mg/kg	9	< 0.98	< 2.7	< 0.31	< 3.3	< 2.8	< 4.9
1,2,4-Trimethylbenzene	mg/kg	8	18	68	7.4	87	84	77
1,3,5-Trimethylbenzene	mg/kg	3	7.1	24	1.7	29	29	23
Benzene	mg/kg	6	< 0.98	2.5 J	3.6	< 3.3	< 2.8	18
Isopropylbenzene	mg/kg	30	0.88 J	2.8	0.28 J	1.3 J	1.1 J	3.4 J
m&p-Xylenes	mg/kg	45	0.37 J	47	9	21	26	120
Naphthalene	mg/kg	10	< 0.98	5.7	1.1	9.4	12	7.3
N-Butylbenzene	mg/kg	30	1	7.8	0.31	7.4	5.2	4.3 J
N-Propylbenzene	mg/kg	30	4.8	14	1.4	6.1	5.3	16
o-Xylene	mg/kg	45	0.047 J	8.5	0.6	1.4 J	2.2 J	41
sec-Butylbenzene	mg/kg	25	0.27 J	1.9 J	0.084 J	1.4 J	1 J	1.2 J
Toluene	mg/kg	107	< 0.98	0.34 J	0.14 J	< 3.3	0.26 J	1.9 J
Total Xylenes	mg/kg	45	NA	NA	NA	NA	NA	NA
SVOCs								
Benzo(a)pyrene	mg/kg	2	< 0.37	NA	NA	0.033 J	0.055 J	NA
Naphthalene	mg/kg	10	0.029 J	NA	NA	1.6	4.1	NA
BaP TEQ USEPA 1993 ND=0	mg/kg	2	< 0 U	NA	NA	0.05568	0.081	NA

Notes and Abbreviations on Page 4.

Table 4
 North Parking Lot - Soil Boring Analytical Exceedances
 Ford Motor Company - Twin Cities Assembly Plant
 966 Mississippi River Boulevard
 St. Paul, Minnesota

Location Sample Name Sample Date Depth Interval	Units	Tier 1 Residential SRVs	ASB-0208N ASB-0208N_6-8 (20131016) 10/16/2013 6-8	ASB-0208S ASB-0208S_4-5(20131017) 10/17/2013 4-5	ASB-121 ASB-121_5-7(20110824) 8/24/2011 5-7	ASB-121 ASB-121_8-10(20110824) 8/24/2011 8-10	ASB-122 ASB-122_6-8(20110824) 8/24/2011 6-8	ASB-123 ASB-123_6-8(20110824) 8/24/2011 6-8
TPH								
Diesel Range Organics	mg/kg	100	< 11	< 10	42	12	26	46
Gasoline Range Organics	mg/kg	100	16	190	820	4000	2300	390
Metals, Total								
Antimony	mg/kg	12	NA	NA	NA	NA	NA	NA
Arsenic	mg/kg	9	NA	NA	NA	NA	NA	3.4
Barium	mg/kg	1100	NA	NA	NA	NA	NA	88
Cadmium	mg/kg	25	NA	NA	NA	NA	NA	0.30
Copper	mg/kg	100	NA	NA	NA	NA	NA	NA
Iron	mg/kg	9000	NA	NA	NA	NA	NA	NA
Lead	mg/kg	300	NA	NA	31	32	8.0	12
Manganese	mg/kg	3600	NA	NA	NA	NA	NA	NA
Mercury	mg/kg	0.5	NA	NA	NA	NA	NA	0.036 J
Vanadium	mg/kg	30	NA	NA	NA	NA	NA	NA
VOCs								
1,1,2-Trichloroethane	mg/kg	9	< 0.27	< 0.43	< 1.4	< 3.4	< 1.6	< 1.3
1,2,4-Trimethylbenzene	mg/kg	8	0.2 J	13	31	110	64	31
1,3,5-Trimethylbenzene	mg/kg	3	0.049 J	1.4	9.7	35	20	9.5
Benzene	mg/kg	6	7.3	1.1	2.9	15	9.2	8.4
Isopropylbenzene	mg/kg	30	0.18 J	0.45	1.3 J	4.8	2.6	1.2 J
m&p-Xylenes	mg/kg	45	1.4	8.2	61	240	120	47
Naphthalene	mg/kg	10	< 0.27	1.6	2.9	11	6.3	3.6
N-Butylbenzene	mg/kg	30	0.046 J	0.7	2.2	7.2	4.3	2.7
N-Propylbenzene	mg/kg	30	0.76	2.5	6.5	23	13	6.4
o-Xylene	mg/kg	45	0.088 J	0.93	21	87	42	16
sec-Butylbenzene	mg/kg	25	0.028 J	0.22 J	0.57 J	1.9 J	1.1 J	0.58 J
Toluene	mg/kg	107	0.08 J	0.26 J	16	120	28	24
Total Xylenes	mg/kg	45	NA	NA	NA	NA	NA	NA
SVOCs								
Benzo(a)pyrene	mg/kg	2	NA	NA	4.3	0.2 J	< 0.86	< 0.92
Naphthalene	mg/kg	10	NA	NA	1.2 J	3	1.9	0.98
BaP TEQ USEPA 1993 ND=0	mg/kg	2	NA	NA	5.893	0.2777	< 0 U	< 0 U

Notes and Abbreviations on Page 4.

Table 4
North Parking Lot - Soil Boring Analytical Exceedances
Ford Motor Company - Twin Cities Assembly Plant
966 South Mississippi River Boulevard
St. Paul, Minnesota

General Notes:

Yellow Shading = result value is above the MPCA Tier 1 Residential SRV

< = not detected above reporting detection limit

BOLD = detected concentrations

Acronyms and Abbreviations:

ASB = Arcadis soil boring

J = estimated result

mg/kg = milligrams per kilogram

NA = not analyzed

SVOC = semivolatile organic compound

TPH = total petroleum hydrocarbons

VOC = volatile organic compound

Table 5
 Areas A/B (Ford Property) - Trenching Analytical Exceedances
 Ford Motor Company - Twin Cities Assembly Plant
 966 Mississippi River Boulevard
 St. Paul, Minnesota

Location	Units	Tier 1 Residential SRVs	Soil Leaching Values	TRENCH-1_30 TRENCH-1_30_3-4(20151208) 12/8/2015 3-4	TRENCH-1-90 TRENCH-1-90_1-2 (20151209) 12/9/2015 1-2	TRENCH-2_50 TRENCH-2_50_6-7 (20151210) 12/10/2015 6-7	TRENCH-3-20 TRENCH-3-20_3-4(20151214) 12/14/2015 3-4	TRENCH-4_40 TRENCH-4_40_4-5(20151221) 12/21/2015 4-5	TRENCH-4_40 TRENCH-4_40_8-9(20151221) 12/21/2015 8-9	TRENCH-4_85 TRENCH-4_85_3-4(20151221) 12/21/2015 3-4
VOCs										
1,1,2-Trichloroethane	mg/kg	9	0.013634352	< 0.34	< 0.46	< 0.34	< 40	< 2.3	< 0.32	< 0.29
1,2,4-Trimethylbenzene	mg/kg	8	2.744504429	< 0.34	< 0.46	0.54	780	25	< 0.32	< 0.29
1,3,5-Trimethylbenzene	mg/kg	3	2.732695461	< 0.34	< 0.46	< 0.34	130	3.8	< 0.32	< 0.29
Benzene	mg/kg	6	0.017237181	< 0.34	< 0.46	0.053 J	< 40	0.083 J	< 0.32	< 0.29
Dichloromethane	mg/kg	97	0.01664908	< 0.34	< 0.46	< 0.34	< 40	6.3	0.3 J	0.28 J
Ethylbenzene	mg/kg	200	1.048040824	< 0.34	< 0.46	< 0.34	410	25	< 0.32	< 0.29
Hexachloro-1,3-butadiene	mg/kg	6	0.037267798	< 0.34	< 0.46	< 0.34	< 40	< 2.3	< 0.32	< 0.29
Isopropylbenzene	mg/kg	30	9.462561616	< 0.34	< 0.46	0.41	9.2 J	0.91 J	< 0.32	< 0.29
m,p-Xylene	mg/kg	45	NS	< 0.34	< 0.46	< 0.34	990	58	< 0.32	< 0.29
Naphthalene	mg/kg	10	4.467565234	< 0.34	< 0.46	3.8	790	95	< 0.32	< 0.29
N-Butylbenzene	mg/kg	30	NS	< 0.34	< 0.46	1.5	360	21	< 0.32	< 0.29
N-Propylbenzene	mg/kg	30	NS	< 0.34	< 0.46	1	39 J	2.3	< 0.32	< 0.29
o-Xylene	mg/kg	45	NS	< 0.34	< 0.46	< 0.34	410	1 J	< 0.32	< 0.29
sec-Butylbenzene	mg/kg	25	NS	< 0.34	< 0.46	0.84	36 J	1.4 J	< 0.32	< 0.29
SVOCs										
2-Methylnaphthalene	mg/kg	100	**	< 0.42	0.26 J	0.8 J	140	9.9 J	0.0093 J	< 0.4
Naphthalene	mg/kg	10	**	< 0.42	0.26 J	3.9	870	72	0.037 J	0.0067 J
Total Metals										
Antimony	mg/kg	12	**	NA	340	< 1.3	NA	< 1.3 J	< 1.2	< 1.1
Arsenic	mg/kg	9	**	7.5	6.9	3.1	6.5	5.1	4.2	4.2
Barium	mg/kg	1100	**	2000	7200	NA	120	NA	NA	29
Cadmium	mg/kg	25	**	0.12 J	17	0.26 J	0.34	0.21 J	< 0.24	< 0.22
Copper	mg/kg	100	**	NA	18	13	NA	16	21	12
Lead	mg/kg	300	**	12	130	6.0	92	12	3.9	1.9
Vanadium	mg/kg	50	**	NA	21	NA	NA	NA	NA	4.8 J

General Notes:

< = not detected above reporting detection limit

BOLD = detected concentrations

Yellow Shading = above Tier 1 Residential SRVs

Italics = above soil leaching values

** = SLVs not applicable for metals and PAHs at this site

Acronyms and Abbreviations:

J = estimated result

NA = not analyzed

ND = not detected

NS = no standard

SLV = Soil Leaching value

SRV = Soil Reference Value

Table 6
 Areas A/B (Ford Property) - Soil Boring Analytical Exceedances
 Ford Motor Company - Twin Cities Assembly Plant
 966 Mississippi River Boulevard
 St. Paul, Minnesota

Location	Units	Tier 1 Residential SRVs	ASB-014 ASB014_4-6(20070625) 6/25/2007 4-6	ASB-0405N ASB-0405N_1-3(20131029) 10/29/2013 1-3	ASB-0405N ASB-0405N_3-5(20131029) 10/29/2013 3-5	ASB-0406W ASB-0406W-2-3(20131028) 10/28/2013 2-3	ASB-0407E ASB-0407E_10-11(20131028) 10/28/2013 10-11	ASB-0407N ASB-0407N-8-10(20131028) 10/28/2013 8-10	ASB-0606N ASB-0606N_10-12 (20140115) 1/15/2014 10-12	ASB-0606S ASB-0606S_6-8 (20140115) 1/15/2014 6-8
TPH										
Diesel Range Organics	mg/kg	100	NA	NA	NA	NA	NA	NA	NA	62 J
Gasoline Range Organics	mg/kg	100	NA	NA	NA	NA	NA	NA	NA	210
Metals, Total										
Antimony	mg/kg	12	0.55 J	0.51 J	1.3	< 0.96 J	< 0.82	1.2	< 1.3	< 1.1
Arsenic	mg/kg	9	156	12	52	4.2	3.6	4.0	7.0	3.2
Barium	mg/kg	1100	29.8	34	57	120 J	61	61	49	61
Cadmium	mg/kg	25	< 0.6	0.32	0.44	0.20	0.30	0.15 J	< 0.25	< 0.22
Copper	mg/kg	100	30.7	9.6	13	12	9.7	13	15	15
Iron	mg/kg	9000	12300	11000	12000	11000	17000	13000	29000	13000
Lead	mg/kg	300	6.7	13	33	13	3.7	6.8	6.6	2.7
Manganese	mg/kg	3600	175	370	450	620	840	350	55	170
Mercury	mg/kg	0.5	< 0.12	< 0.098	0.095 J	0.52	< 0.14	0.025 J	< 0.13	< 0.12
Vanadium	mg/kg	30	5.1 J	17	12	14	14	18	8.2	9.2
VOCs										
1,1,2-Trichloroethane	mg/kg	9	< 0.3	NA	NA	NA	< 16	< 1.1	NA	< 0.34
1,2,4-Trimethylbenzene	mg/kg	8	< 0.3	NA	NA	NA	500	29	NA	< 0.34
1,3,5-Trimethylbenzene	mg/kg	3	< 0.3	NA	NA	NA	< 16	< 1.1	NA	< 0.34
Benzene	mg/kg	6	< 0.3	NA	NA	NA	< 16	< 1.1	NA	< 0.34
Isopropylbenzene	mg/kg	30	< 0.3	NA	NA	NA	32	4.2	NA	0.085 J
m&p-Xylenes	mg/kg	45	< 0.6	NA	NA	NA	< 16	< 1.1	NA	< 0.34
Naphthalene	mg/kg	10	< 0.3	NA	NA	NA	35	5	NA	< 0.34
N-Butylbenzene	mg/kg	30	< 0.3	NA	NA	NA	20	1.8	NA	< 0.34
N-Propylbenzene	mg/kg	30	< 0.3	NA	NA	NA	37	4.1	NA	0.18 J
o-Xylene	mg/kg	45	< 0.3	NA	NA	NA	< 16	< 1.1	NA	< 0.34
sec-Butylbenzene	mg/kg	25	< 0.3	NA	NA	NA	29	8.2	NA	0.62
Toluene	mg/kg	107	< 0.3	NA	NA	NA	< 16	< 1.1	NA	< 0.34
Total Xylenes	mg/kg	45	NA	NA	NA	NA	NA	NA	NA	NA
SVOCS										
Benzo(a)pyrene	mg/kg	2	< 0.39	NA	NA	5.6	< 1.6 R	< 4.4	< 0.44	< 0.43
Naphthalene	mg/kg	10	< 0.39	NA	NA	0.49 J	2.8 J	9.5	0.0050 J	< 0.43
BaP TEQ USEPA 1993 ND=0	mg/kg	2	< 0 U	NA	NA	7.973	< 0 U	< 0 U	< 0 U	< 0 U

Notes and Abbreviations on Page 8.

Table 6
 Areas A/B (Ford Property) - Soil Boring Analytical Exceedances
 Ford Motor Company - Twin Cities Assembly Plant
 966 Mississippi River Boulevard
 St. Paul, Minnesota

Location	Units	Tier 1 Residential SRVs	ASB-0606S ASB-0606S_8-10 (20140115) 1/15/2014 8-10	ASB-0606S ASB-0606S_10-12 (20140115) 1/15/2014 10-12	ASB-0606W ASB-0606W_5-7.5 (20140115) 1/15/2014 5-7.5	ASB-0607N ASB-0607N_2-4 (20140116) 1/16/2014 2-4	ASB-0607N ASB-0607N_5-6.5 (20140116) 1/16/2014 5-6.5	ASB-0607S ASB-0607S_2-4 (20140116) 1/16/2014 2-4	ASB-0612 ASB-0612_2-4(20141218) 12/18/2014 2-4
TPH									
Diesel Range Organics	mg/kg	100	550 J	< 11	NA	NA	NA	NA	NA
Gasoline Range Organics	mg/kg	100	970	27	NA	NA	NA	NA	NA
Metals, Total									
Antimony	mg/kg	12	1.4	< 1.2	< 1.3 J	1.8	< 1.3	1.0	NA
Arsenic	mg/kg	9	4.3	4.3	9.7	5.2	4.4	5.2	NA
Barium	mg/kg	1100	35	49	70	140	53	87	NA
Cadmium	mg/kg	25	0.084 J	< 0.25	0.089 J	0.31	0.046 J	0.27	NA
Copper	mg/kg	100	16	23	11	19	20	16	NA
Iron	mg/kg	9000	13000	27000	13000	13000	14000	12000	NA
Lead	mg/kg	300	7.2	8.2	4.6	46	4.0	39	NA
Manganese	mg/kg	3600	390	81	650	200	340	440	NA
Mercury	mg/kg	0.5	0.021 J	< 0.12	< 0.17	< 0.12	< 0.14	0.037 J	NA
Vanadium	mg/kg	30	19	8.3	14	6.1	13	11	NA
VOCs									
1,1,2-Trichloroethane	mg/kg	9	< 0.55	< 0.3	< 0.39	< 6.4	< 0.83	< 2.9	< 1.2
1,2,4-Trimethylbenzene	mg/kg	8	< 0.55	< 0.3	0.14 J	59	11	< 2.9	2.2
1,3,5-Trimethylbenzene	mg/kg	3	< 0.55	< 0.3	0.031 J	13	2	< 2.9	0.47 J
Benzene	mg/kg	6	< 0.55	< 0.3	< 0.39	< 6.4	< 0.83	< 2.9	< 1.2
Isopropylbenzene	mg/kg	30	0.25 J	< 0.3	0.13 J	0.9 J	< 0.83	< 2.9	0.33 J
m&p-Xylenes	mg/kg	45	< 0.55	< 0.3	0.07 J	62	12	< 2.9	1.1 J
Naphthalene	mg/kg	10	< 0.55	< 0.3	0.089 J	120	26	73	28
N-Butylbenzene	mg/kg	30	< 0.55	< 0.3	0.061 J	34	5.6	7.1	7.3
N-Propylbenzene	mg/kg	30	0.6	< 0.3	0.17 J	2.9 J	0.44 J	0.68 J	1.3
o-Xylene	mg/kg	45	< 0.55	< 0.3	0.016 J	30	1.5	< 2.9	< 1.2
sec-Butylbenzene	mg/kg	25	2.6	< 0.3	0.32 J	2.7 J	0.36 J	< 2.9	< 1.2
Toluene	mg/kg	107	< 0.55	< 0.3	< 0.39	< 6.4	< 0.83	< 2.9	< 1.2
Total Xylenes	mg/kg	45	NA	NA	NA	NA	NA	NA	NA
SVOCs									
Benzo(a)pyrene	mg/kg	2	0.028 J	< 0.44	< 0.5	< 39	0.0055 J	< 4.1	< 0.47
Naphthalene	mg/kg	10	< 2	< 0.44	0.048 J	170	5.4	12	15
BaP TEQ USEPA 1993 ND=0	mg/kg	2	0.0341	< 0 U	< 0 U	< 0 U	0.007059	< 0 U	0.0015

Notes and Abbreviations on Page 8.

Table 6
 Areas A/B (Ford Property) - Soil Boring Analytical Exceedances
 Ford Motor Company - Twin Cities Assembly Plant
 966 Mississippi River Boulevard
 St. Paul, Minnesota

Location Sample Name Sample Date Depth Interval	Units	Tier 1 Residential SRVs	ASB-0702S ASB-0702S_4-6(20131025) 10/25/2013 4-6	ASB-0703N ASB-0703N_0-2(20131025) 10/25/2013 0-2	ASB-0704E ASB-0704E_2-4 (20131031) 10/31/2013 2-4	ASB-0704E ASB-0704E_4-6 (20131031) 10/31/2013 4-6	ASB-0704E ASB-0704E_6-8(20131031) 10/31/2013 6-8	ASB-0704E ASB-0704E_8-10 (20131031) 10/31/2013 8-10	ASB-0705E ASB-0705E_4-5 (20131031) 10/31/2013 4-5	ASB-0705N ASB-0705N_8-9 (20131030) 10/30/2013 8-9
TPH										
Diesel Range Organics	mg/kg	100	NA	NA	NA	NA	NA	NA	NA	120
Gasoline Range Organics	mg/kg	100	NA	NA	NA	NA	NA	NA	NA	1600
Metals, Total										
Antimony	mg/kg	12	1.8	3.2	26	670	7.5	3.0	10	0.50 J
Arsenic	mg/kg	9	440	48	5.6	27	29	18	28	7.3
Barium	mg/kg	1100	190	31	190	1500	29	33	740	150
Cadmium	mg/kg	25	0.88	0.27	2.1	5.7	0.12 J	0.047 J	25	0.33
Copper	mg/kg	100	41	14	15	120	12	8.5	72	17
Iron	mg/kg	9000	8800	10000	13000	18000	12000	12000	15000	20000
Lead	mg/kg	300	300	190	150	9700	13	4.4	950	7.1
Manganese	mg/kg	3600	160	180	520	360	200	270	570	1100
Mercury	mg/kg	0.5	0.16	0.050 J	0.098 J	4.6	0.058 J	< 0.14	0.36	0.018 J
Vanadium	mg/kg	30	11	5.6 J	17	12	8.1	7.3	15	23
VOCs										
1,1,2-Trichloroethane	mg/kg	9	NA	NA	NA	NA	NA	NA	< 1	< 1.1
1,2,4-Trimethylbenzene	mg/kg	8	NA	NA	NA	NA	NA	NA	0.16 J	20
1,3,5-Trimethylbenzene	mg/kg	3	NA	NA	NA	NA	NA	NA	< 1	< 1.1
Benzene	mg/kg	6	NA	NA	NA	NA	NA	NA	< 1	< 1.1
Isopropylbenzene	mg/kg	30	NA	NA	NA	NA	NA	NA	0.73 J	2.2
m&p-Xylenes	mg/kg	45	NA	NA	NA	NA	NA	NA	< 1	0.16 J
Naphthalene	mg/kg	10	NA	NA	NA	NA	NA	NA	0.8 J	2.5
N-Butylbenzene	mg/kg	30	NA	NA	NA	NA	NA	NA	1.3	1.1
N-Propylbenzene	mg/kg	30	NA	NA	NA	NA	NA	NA	1	3
o-Xylene	mg/kg	45	NA	NA	NA	NA	NA	NA	< 1	< 1.1
sec-Butylbenzene	mg/kg	25	NA	NA	NA	NA	NA	NA	1.9	2.8
Toluene	mg/kg	107	NA	NA	NA	NA	NA	NA	< 1	< 1.1
Total Xylenes	mg/kg	45	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo(a)pyrene	mg/kg	2	NA	NA	NA	NA	NA	NA	0.17 J	0.047 J
Naphthalene	mg/kg	10	NA	NA	NA	NA	NA	NA	0.56 J	0.26 J
BaP TEQ USEPA 1993 ND=0	mg/kg	2	NA	NA	NA	NA	NA	NA	0.2306	0.06423

Notes and Abbreviations on Page 8.

Table 6
 Areas A/B (Ford Property) - Soil Boring Analytical Exceedances
 Ford Motor Company - Twin Cities Assembly Plant
 966 Mississippi River Boulevard
 St. Paul, Minnesota

Location	Units	Tier 1 Residential SRVs	ASB-0705N ASB-0705N_10-12 (20131030) 10/30/2013 10-12	ASB-0706W ASB-0706W_1-3(20131101) 11/1/2013 1-3	ASB-0706W ASB-0706W_10-12(20131101) 11/1/2013 10-12	ASB-0707E ASB-0707E_4-6(20131030) 10/30/2013 4-6	ASB-0707N ASB-0707N_3-4(20131029) 10/29/2013 3-4	ASB-0707N ASB-0707N_4-6(20131029) 10/29/2013 4-6	ASB-0707N ASB-0707N_10.5-11(20131029) 10/29/2013 10.5-11
TPH									
Diesel Range Organics	mg/kg	100	69	31	40	NA	NA	NA	NA
Gasoline Range Organics	mg/kg	100	420	6.1 J	1700	NA	NA	NA	NA
Metals, Total									
Antimony	mg/kg	12	< 1.1	68	0.64 J	3.6	< 1.2	< 1.1	< 1.1 J
Arsenic	mg/kg	9	10	15	30	58	22	23	12
Barium	mg/kg	1100	120	420	97	820	180	57	60
Cadmium	mg/kg	25	0.93	1.8	0.26	1.3	0.62	0.19 J	< 0.21
Copper	mg/kg	100	16	65	31	270	14	24	9.9
Iron	mg/kg	9000	39000	17000	30000	35000	14000	13000	15000
Lead	mg/kg	300	7.5	820	6.3	680	74	42	5.2 J
Manganese	mg/kg	3600	1500	350	510	400	160	250	160
Mercury	mg/kg	0.5	0.031 J	0.19	< 0.13	2.0	< 0.12	0.024 J	< 0.12
Vanadium	mg/kg	30	25	13	81	13	7.0	6.7	11
VOCs									
1,1,2-Trichloroethane	mg/kg	9	< 2.2	< 0.29	< 0.64	< 0.28	< 0.61	< 1.5	< 0.29
1,2,4-Trimethylbenzene	mg/kg	8	47	0.082 J	< 0.64	< 0.28	< 0.61	0.1 J	0.016 J
1,3,5-Trimethylbenzene	mg/kg	3	< 2.2	0.027 J	< 0.64	< 0.28	< 0.61	< 1.5	< 0.29
Benzene	mg/kg	6	< 2.2	< 0.29	< 0.64	0.024 J	< 0.61	< 1.5	< 0.29
Isopropylbenzene	mg/kg	30	3.7	< 0.29	0.65	0.26 J	0.19 J	0.61 J	0.12 J
m&p-Xylenes	mg/kg	45	< 2.2	0.099 J	< 0.64	0.088 J	< 0.61	< 1.5	< 0.29
Naphthalene	mg/kg	10	3.5	0.14 J	< 0.64	0.47	< 0.61	0.63 J	< 0.29
N-Butylbenzene	mg/kg	30	1.8 J	0.019 J	< 0.64	< 0.28	< 0.61	2.4	0.22 J
N-Propylbenzene	mg/kg	30	4.3	0.019 J	0.67	< 0.28	< 0.61	0.96 J	0.15 J
o-Xylene	mg/kg	45	< 2.2	0.035 J	< 0.64	< 0.28	< 0.61	< 1.5	< 0.29
sec-Butylbenzene	mg/kg	25	3.8	< 0.29	2.8	0.7	0.39 J	2.1	0.37
Toluene	mg/kg	107	< 2.2	0.056 J	< 0.64	0.23 J	< 0.61	< 1.5	< 0.29
Total Xylenes	mg/kg	45	NA	NA	NA	NA	NA	NA	NA
SVOCs									
Benzo(a)pyrene	mg/kg	2	< 0.87	0.61 J	< 1.7	1.9	0.01 J	0.011 J	< 0.39
Naphthalene	mg/kg	10	2.4	0.21 J	< 1.7	1.7 J	0.021 J	0.093 J	< 0.39
BaP TEQ USEPA 1993 ND=0	mg/kg	2	< 0 U	0.8418	< 0 U	2.813	0.01434	0.01517	0.001477

Notes and Abbreviations on Page 8.

Table 6
 Areas A/B (Ford Property) - Soil Boring Analytical Exceedances
 Ford Motor Company - Twin Cities Assembly Plant
 966 Mississippi River Boulevard
 St. Paul, Minnesota

Location	Units	Tier 1 Residential SRVs	ASB-0707W ASB-0707W_4-6(20131030) 10/30/2013 4-6	ASB-0712 ASB-0712_3-4(20131101) 11/1/2013 3-4	ASB-0712 ASB-0712_10-11(20131101) 11/1/2013 10-11	ASB-0713W ASB-0713W_2-4(20141218) 12/18/2014 2-4	ASB-0713W ASB-0713W_4-6(20141218) 12/18/2014 4-6	ASB-0713W ASB-0713W_6-8(20141218) 12/18/2014 6-8	ASB-165 ASB-165_0-2(20110906) 9/6/2011 0-2	ASB-166 ASB-166_2-4(20110906) 9/6/2011 2-4
TPH										
Diesel Range Organics	mg/kg	100	NA	300 J	< 11	230	480	21	100	NA
Gasoline Range Organics	mg/kg	100	NA	NA	NA	NA	440	280	2.2 J	33
Metals, Total										
Antimony	mg/kg	12	190	19	< 1.2	< 0.96	< 1.1 J	< 1.1	7.8	410
Arsenic	mg/kg	9	62	11	4.4	2.5	2.9	1.8	97	4.5
Barium	mg/kg	1100	1200	450	45	86	90	85	120	360
Cadmium	mg/kg	25	15	1.1	0.063 J	0.13 J	0.15 J	0.23	0.62	44
Copper	mg/kg	100	78	23	20	13	17	15	17	20
Iron	mg/kg	9000	23000	16000	29000	9000	12000	7100	14000	6800
Lead	mg/kg	300	2100	1300	7.3	18	32 J	9.0	83	720
Manganese	mg/kg	3600	380	300	130	420	230	160	300	190
Mercury	mg/kg	0.5	0.39	0.036 J	0.025 J	0.045 J	0.089 J	< 0.12	0.074 J	0.062 J
Vanadium	mg/kg	30	9.3	10	11	14	22	12	12	9.6
VOCs										
1,1,2-Trichloroethane	mg/kg	9	< 17	< 1.6	< 0.32	< 0.52	< 0.52	< 0.27	< 0.27	< 0.25
1,2,4-Trimethylbenzene	mg/kg	8	320	2.2	< 0.32	0.047 J	2.8	0.031 J	0.0074 J	0.25
1,3,5-Trimethylbenzene	mg/kg	3	220	0.62 J	< 0.32	< 0.52	1.1	0.0076 J	< 0.27	0.077 J
Benzene	mg/kg	6	< 17	< 1.6	< 0.32	0.066 J	< 0.52	0.021 J	< 0.27	< 0.25
Isopropylbenzene	mg/kg	30	2.3 J	0.34 J	< 0.32	2.9	1.5	0.044 J	< 0.27	0.057 J
m&p-Xylenes	mg/kg	45	47	0.49 J	< 0.32	0.25 J	0.27 J	< 0.27	< 0.54	0.079 J
Naphthalene	mg/kg	10	450	24	0.074 J	0.14 J	1.3	0.045 J	< 0.27	2.1
N-Butylbenzene	mg/kg	30	55	4.9	< 0.32	3.4	2.5	0.19 J	< 0.27	< 0.25
N-Propylbenzene	mg/kg	30	2.3 J	0.88 J	< 0.32	5.6	3.3	0.13 J	< 0.27	0.05 J
o-Xylene	mg/kg	45	9.8 J	< 1.6	< 0.32	< 0.52	< 0.52	< 0.27	< 0.27	< 0.25
sec-Butylbenzene	mg/kg	25	11 J	0.61 J	< 0.32	1.1	0.67	0.066 J	< 0.27	0.11 J
Toluene	mg/kg	107	< 17	< 1.6	< 0.32	< 0.52	< 0.52	< 0.27	< 0.27	< 0.25
Total Xylenes	mg/kg	45	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs										
Benzo(a)pyrene	mg/kg	2	< 180	< 2.8	< 0.43	NA	NA	NA	1.1 J	0.2 J
Naphthalene	mg/kg	10	400	5.6	< 0.43	NA	NA	NA	0.07 J	0.34 J
BaP TEQ USEPA 1993 ND=0	mg/kg	2	< 0 U	< 0 U	< 0 U	NA	NA	NA	1.6342	0.2794

Notes and Abbreviations on Page 8.

Table 6
 Areas A/B (Ford Property) - Soil Boring Analytical Exceedances
 Ford Motor Company - Twin Cities Assembly Plant
 966 Mississippi River Boulevard
 St. Paul, Minnesota

Location	Units	Tier 1 Residential SRVs	ASB-167 ASB-167_0-2(20110906) 9/6/2011 0-2	ASB-167 ASB-167_8-10(20110906) 9/6/2011 8-10	ASB-171 ASB-171_1-3(20110907) 9/7/2011 1-3	ASB-172 ASB-172_1-3(20110907) 9/7/2011 1-3	ASB-174 ASB-174_4-6(20110907) 9/7/2011 4-6	ASB-175 ASB-175_4-6(20110908) 9/8/2011 4-6	ASB-176 ASB-176_8-10(20110908) 9/8/2011 8-10	ASB-181 ASB-181_6-8(20110909) 9/9/2011 6-8	ASB-182 ASB-182_2-4(20110909) 9/9/2011 2-4
TPH											
Diesel Range Organics	mg/kg	100	170	1300	8.2 J	52	< 9.4	2600 J	500 J	56	3600 J
Gasoline Range Organics	mg/kg	100	6.3 J	3000 J	1.8 J	2.9 J	< 13	5800	4200	190	6200 J
Metals, Total											
Antimony	mg/kg	12	400	< 1.4 J	< 1.0	32	< 0.97	18 J	0.62 J	3.9	7.2 J
Arsenic	mg/kg	9	8.1	4.4	600	6.5	6.8	7.7	2.7	6.8	7.2
Barium	mg/kg	1100	150	140	92	480	29	1100	83	130	900 J
Cadmium	mg/kg	25	19 J	0.16 J	< 0.20	1.3	< 0.19	0.77	0.15 J	0.14 J	2.5
Copper	mg/kg	100	19	18	11	40	170	73 J	10	16	33
Iron	mg/kg	9000	17000	14000	15000	16000	15000	6600	11000	21000	17000
Lead	mg/kg	300	440	9.9	6.2	3000	5.3	1000	6.4	66	700
Manganese	mg/kg	3600	610	290	710	470	230	170	470	200	390
Mercury	mg/kg	0.5	0.052 J	< 0.14	0.062 J	0.079 J	< 0.11	6.1	< 0.12	0.052 J	0.042 J
Vanadium	mg/kg	30	27	21	28	16	6.9	8.5	21	27	10
VOCs											
1,1,2-Trichloroethane	mg/kg	9	< 0.26	< 3.3	< 0.27	< 0.27	< 0.28	< 1 J	< 21	< 0.29	< 15
1,2,4-Trimethylbenzene	mg/kg	8	0.019 J	< 3.3	< 0.27	0.014 J	< 0.28	< 1	440	< 0.29	170
1,3,5-Trimethylbenzene	mg/kg	3	< 0.26	< 3.3	< 0.27	0.0074 J	< 0.28	< 1	< 21	< 0.29	37
Benzene	mg/kg	6	< 0.26	< 3.3	< 0.27	< 0.27	< 0.28	< 1	< 21	< 0.29	< 15
Isopropylbenzene	mg/kg	30	< 0.26	8.5 J	< 0.27	< 0.27	< 0.28	3.8	28	< 0.29	5.5 J
m&p-Xylenes	mg/kg	45	0.017 J	< 6.5	< 0.54	0.013 J	< 0.57	< 2	< 42	< 0.57	340
Naphthalene	mg/kg	10	0.097 J	1.2 J	< 0.27	< 0.27	0.012 J	14	41	0.029 J	380
N-Butylbenzene	mg/kg	30	< 0.26	7.4 J	< 0.27	< 0.27	< 0.28	19	13 J	< 0.29	98
N-Propylbenzene	mg/kg	30	< 0.26	14 J	< 0.27	< 0.27	< 0.28	8.1	29	< 0.29	16
o-Xylene	mg/kg	45	0.011 J	< 3.3	< 0.27	< 0.27	< 0.28	< 1	< 21	< 0.29	150
sec-Butylbenzene	mg/kg	25	< 0.26	7.6 J	< 0.27	< 0.27	< 0.28	9.9	24	< 0.29	8.5 J
Toluene	mg/kg	107	< 0.26	< 3.3	< 0.27	< 0.27	< 0.28	< 1	< 21	< 0.29	56
Total Xylenes	mg/kg	45	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs											
Benzo(a)pyrene	mg/kg	2	< 2	< 1.9 J	0.93 J	NA	NA	NA	NA	NA	NA
Naphthalene	mg/kg	10	0.15 J	0.55 J	< 0.96	NA	NA	NA	NA	NA	NA
BaP TEQ USEPA 1993 ND=0	mg/kg	2	0.0442	< 0 U	1.352	NA	NA	NA	NA	NA	NA

Notes and Abbreviations on Page 8.

Table 6
 Areas A/B (Ford Property) - Soil Boring Analytical Exceedances
 Ford Motor Company - Twin Cities Assembly Plant
 966 Mississippi River Boulevard
 St. Paul, Minnesota

Location			ASB-183	HA-070
Sample Name	Units	Tier 1 Residential SRVs	ASB-183_0-2(20110909)	HA-070-1-2(20070711)DL
Sample Date			9/9/2011	7/11/2007
Depth Interval			0-2	0-1
TPH				
Diesel Range Organics	mg/kg	100	190	230
Gasoline Range Organics	mg/kg	100	2.1 J	NA
Metals, Total				
Antimony	mg/kg	12	< 1.0	NA
Arsenic	mg/kg	9	2.6	NA
Barium	mg/kg	1100	19 J	NA
Cadmium	mg/kg	25	0.11 J	NA
Copper	mg/kg	100	9.5	NA
Iron	mg/kg	9000	10000	NA
Lead	mg/kg	300	8.9	NA
Manganese	mg/kg	3600	810	NA
Mercury	mg/kg	0.5	< 0.096	NA
Vanadium	mg/kg	30	15	NA
VOCs				
1,1,2-Trichloroethane	mg/kg	9	< 0.24	NA
1,2,4-Trimethylbenzene	mg/kg	8	< 0.24	NA
1,3,5-Trimethylbenzene	mg/kg	3	< 0.24	NA
Benzene	mg/kg	6	< 0.24	NA
Isopropylbenzene	mg/kg	30	< 0.24	NA
m&p-Xylenes	mg/kg	45	0.0069 J	NA
Naphthalene	mg/kg	10	0.01 J	NA
N-Butylbenzene	mg/kg	30	< 0.24	NA
N-Propylbenzene	mg/kg	30	< 0.24	NA
o-Xylene	mg/kg	45	< 0.24	NA
sec-Butylbenzene	mg/kg	25	< 0.24	NA
Toluene	mg/kg	107	< 0.24	NA
Total Xylenes	mg/kg	45	NA	NA
SVOCs				
Benzo(a)pyrene	mg/kg	2	NA	NA
Naphthalene	mg/kg	10	NA	NA
BaP TEQ USEPA 1993 ND=0	mg/kg	2	NA	NA

Notes and Abbreviations on Page 8.

Table 6
Areas A/B (Ford Property) - Soil Boring Analytical Exceedances
Ford Motor Company - Twin Cities Assembly Plant
966 Mississippi River Boulevard
St. Paul, Minnesota

General Notes:

< = not detected above reporting detection limit

BOLD = detected concentrations

Yellow Shading = above Tier 1 Residential SRVs

Italics = above soil leaching values

** = SLVs not applicable for metals and PAHs at this site

Acronyms and Abbreviations:

J = estimated result

NA = not analyzed

ND = not detected

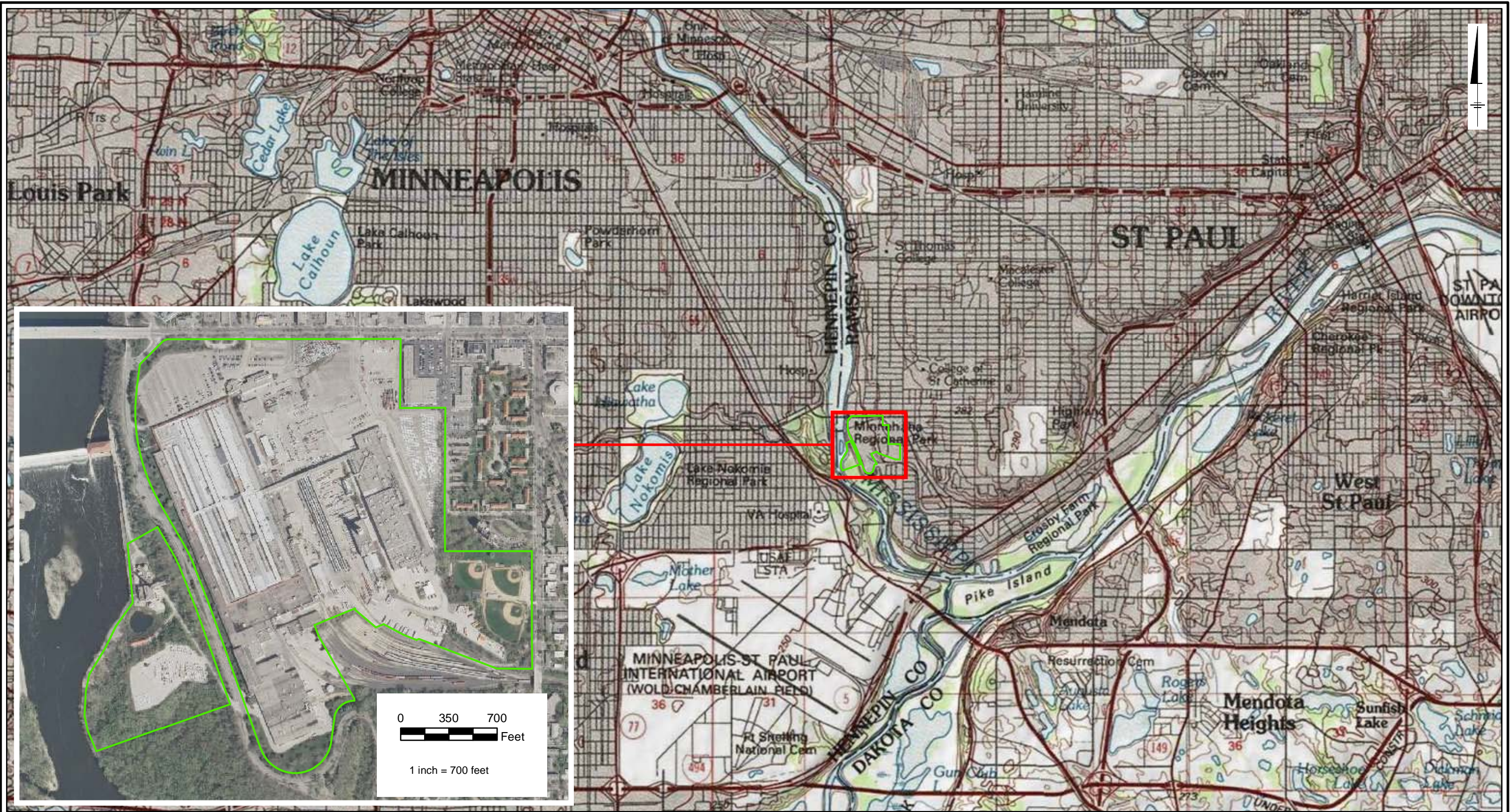
NS = no standard

SLV = Soil Leaching value

SRV = Soil Reference Value

FIGURES





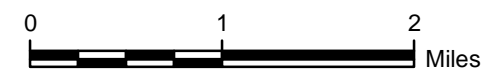
LEGEND:

— Ford Property Boundary

NOTES:

Imagery Source: MnGeo WMS service, 2010 color 7-county
<http://geoint.lmic.state.mn.us/cgi-bin/wms/> Accessed 4/26/2016

Topographic Map Source:
 © 2007 National Geographic Society



1 inch = 1 mile

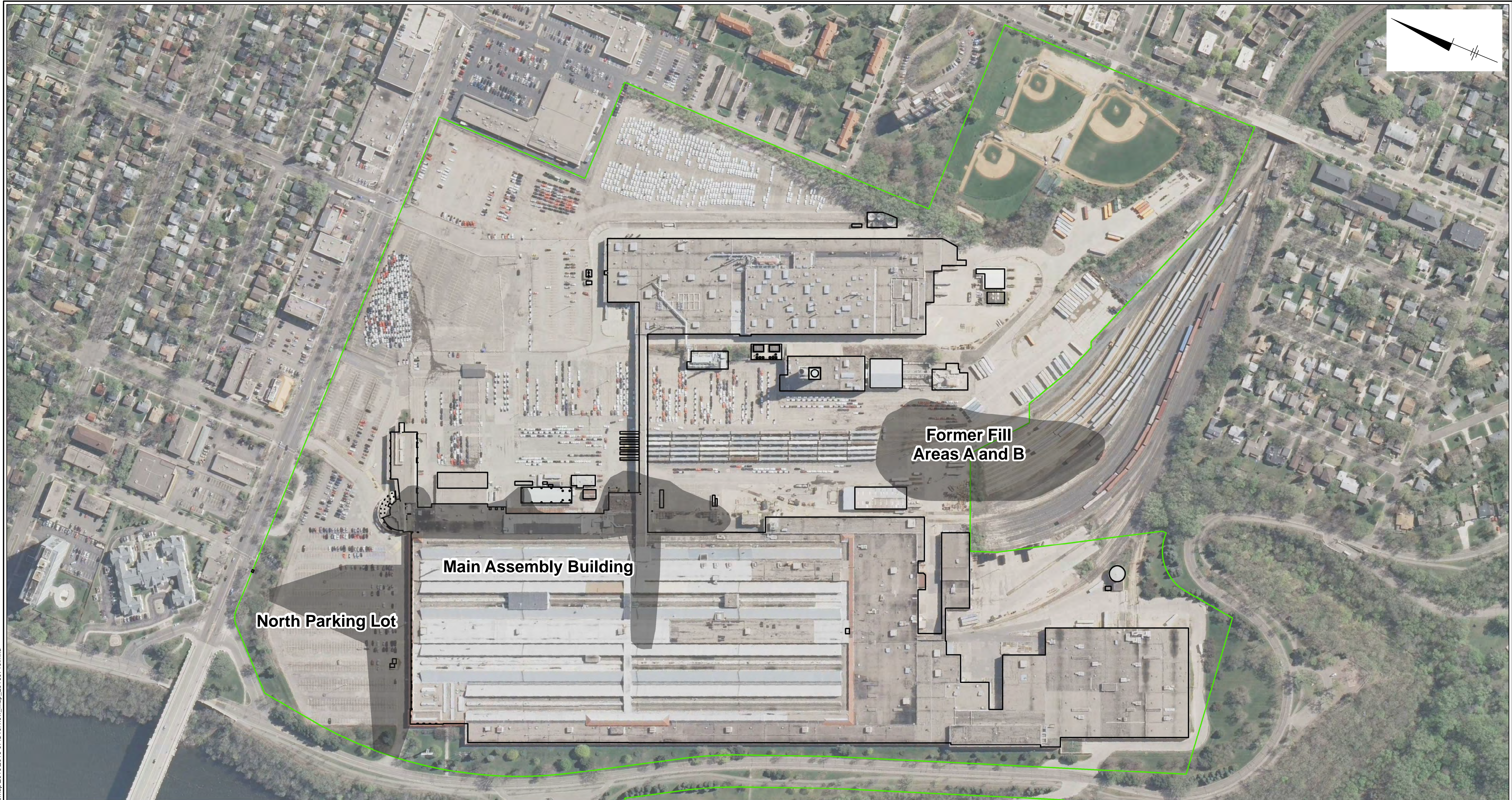


Twin Cities Assembly Plant
 Ford Motor Company
 St. Paul, Minnesota

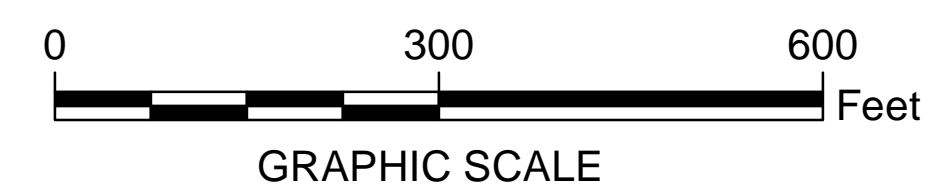
Site Location / Property Layout



FIGURE
1



- LEGEND:
- Consolidated Impact Area
 - Former Buildings
 - Ford Property Boundary



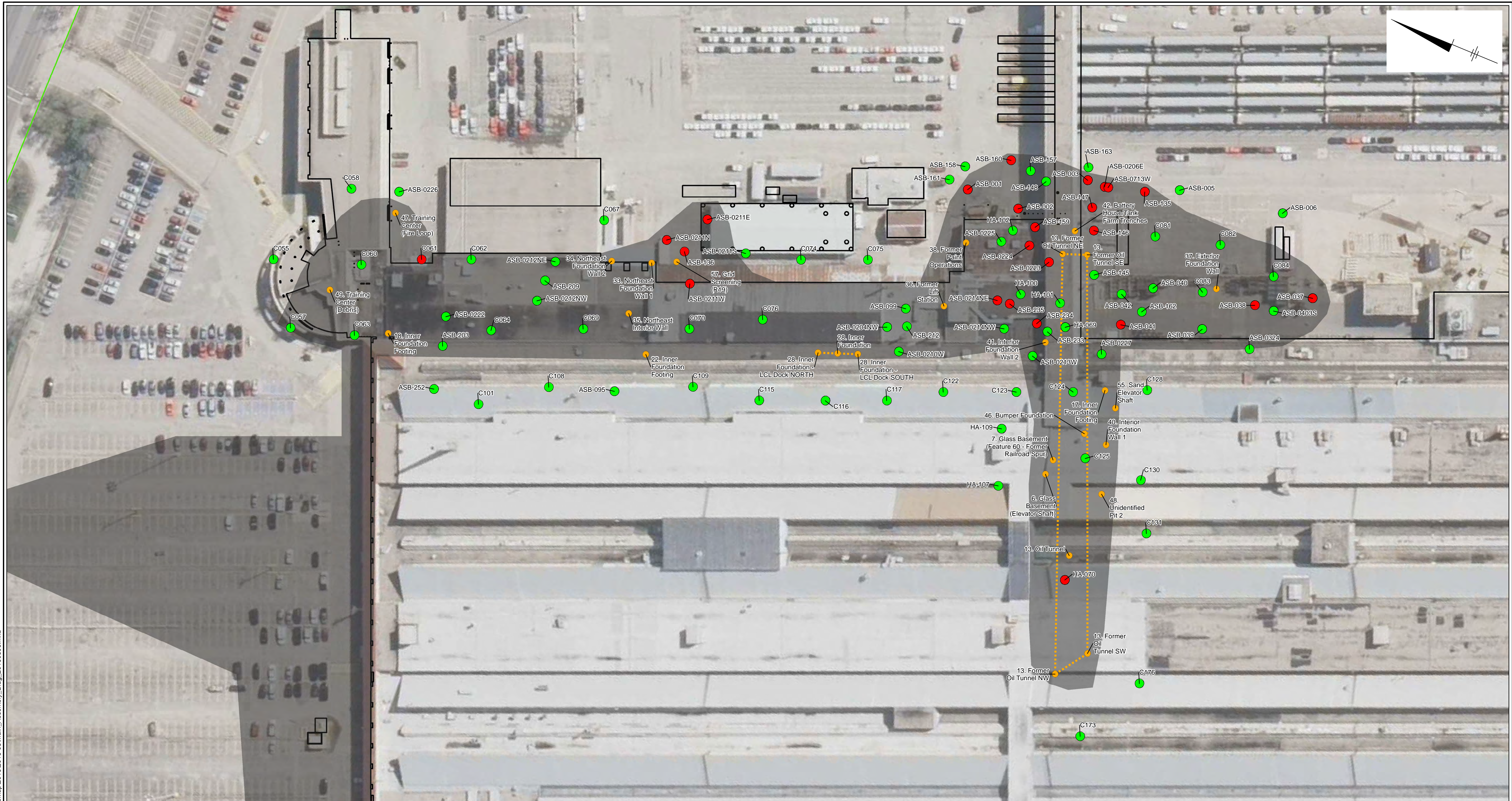
NOTES:
 Imagery Source: MnGeo WMS service, 2010 color 7-county
<http://geoint.lmic.state.mn.us/cgi-bin/wms?>



Twin Cities Assembly Plant
 Ford Motor Company
 St. Paul, Minnesota

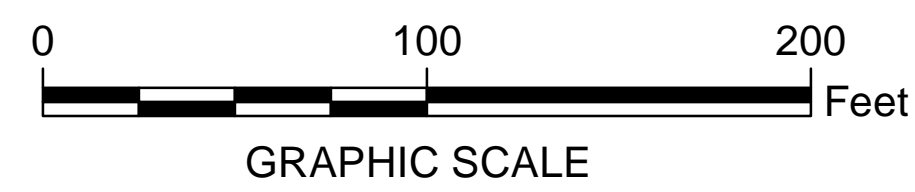
Site Overview Map





LEGEND:

- Soil Exceedance of MPCA Tier 1 Residential SRVs
- No Soil Exceedance of MPCA Tier 1 Residential SRVs
- Addendum Location
- - - - - Addendum Location Line
- Former Buildings
- Ford Property Boundary
- Consolidated Impact Area

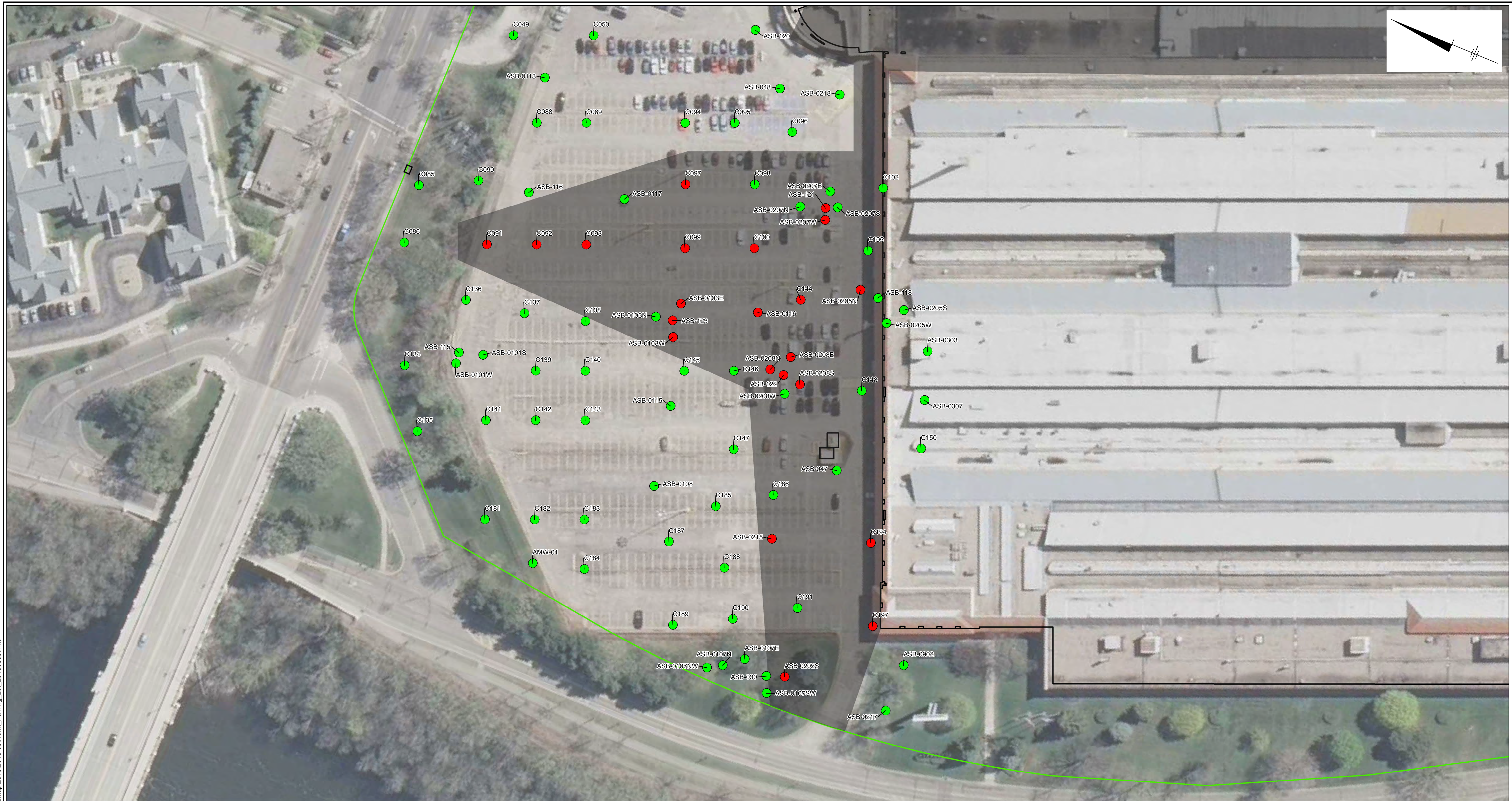


NOTES:

Imagery Source: MnGeo WMS service, 2010 color 7-county
<http://geoint.lmic.state.mn.us/cgi-bin/wms?>

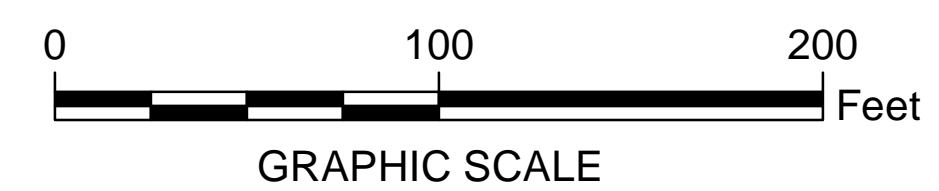
CITY: Minneapolis, MN DB: MG LD: AR
 TCAP Document Path: Z:\GIS\PROJECTS\ENV\Ford Ranger\ArcMap\2016-08\Main_Assembly_Bldg_20160805.mxd

	Twin Cities Assembly Plant Ford Motor Company St. Paul, Minnesota
<h2 style="margin: 0;">Main Assembly Building</h2>	
	FIGURE 3



LEGEND:

- Soil Exceedance of MPCA Tier 1 Residential SRVs
- No Soil Exceedance of MPCA Tier 1 Residential SRVs
- Former Buildings
- Ford Property Boundary
- Consolidated Impact Area



NOTES:

Imagery Source: MnGeo WMS service, 2010 color 7-county
<http://geoint.lmic.state.mn.us/cgi-bin/wms?>



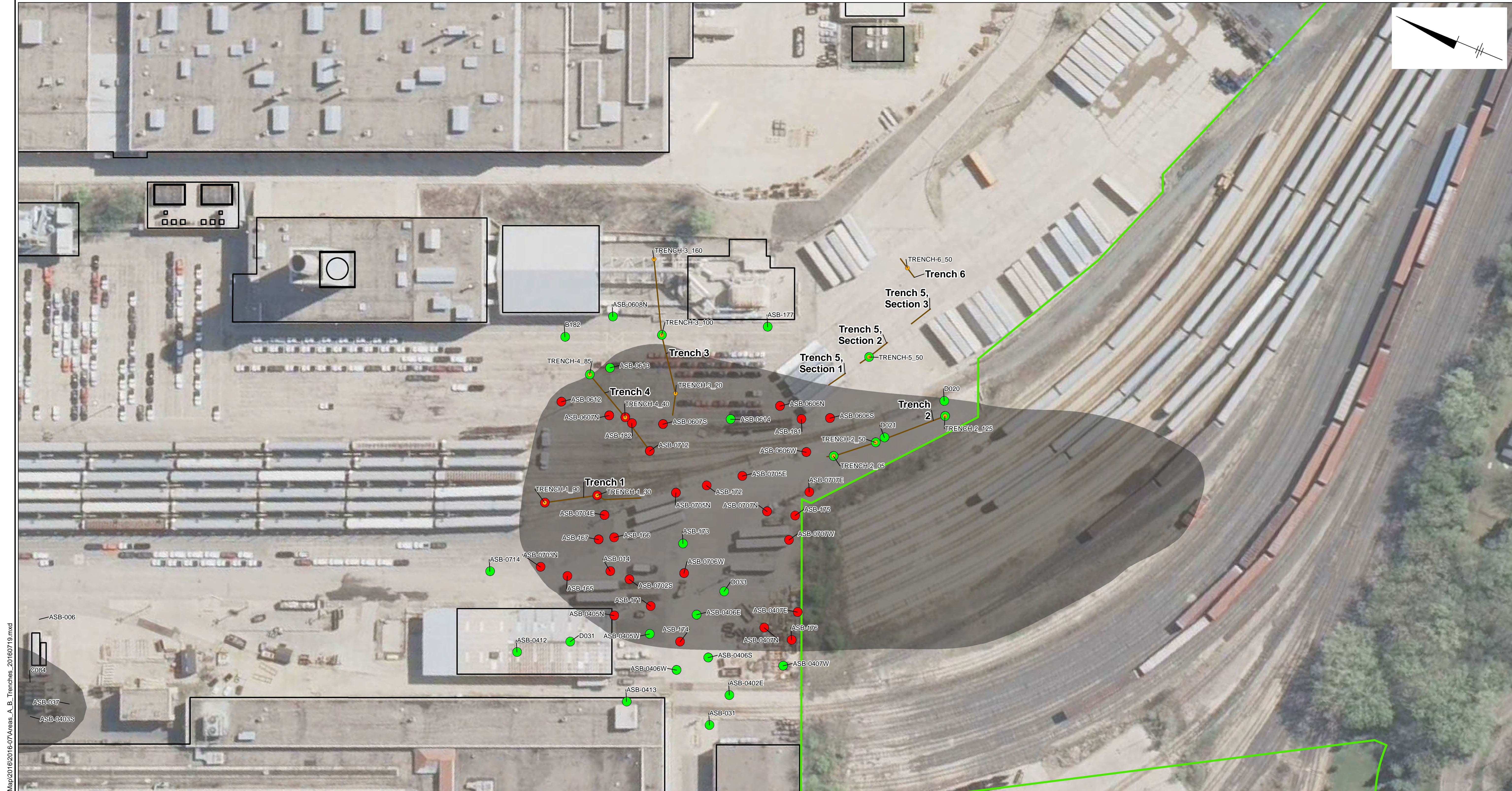
Twin Cities Assembly Plant
 Ford Motor Company
 St. Paul, Minnesota

North Parking Lot



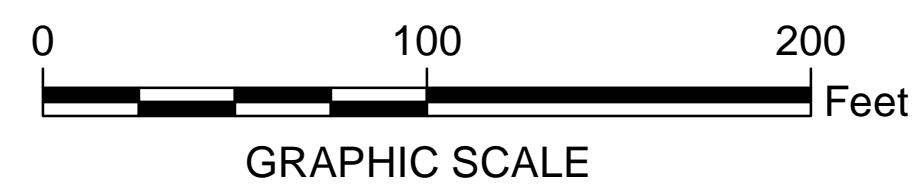
FIGURE

4



CITY: Minneapolis, MN; DB: MG; LD: AR
 T: CAP
 Document Path: Z:\GIS\PROJECTS\ENV\Ford Ranger\ArchMap\2018\2018-07\Areas_A_B_Trenches_20160719.mxd

- LEGEND:**
- Soil Exceedance of MPCA Tier 1 Residential SRVs
 - No Soil Exceedance of MPCA Tier 1 Residential SRVs
 - Trench Sample
 - Trench Location
 - Former Buildings
 - Ford Property Boundary
 - Consolidated Impact Area



NOTES:
 Imagery Source: MnGeo WMS service, 2010 color 7-county
<http://geoint.lmic.state.mn.us/cgi-bin/wms?>

Twin Cities Assembly Plant
Ford Motor Company
St. Paul, Minnesota

Former Fill Areas A and B

FIGURE
5

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