



**CONESTOGA-ROVERS
& ASSOCIATES**

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September 10, 2004

Reference No. 012559-41

Mr. Thomas Jones
Remedial Section/Voluntary Cleanup Unit
Bureau of Environmental Remediation
Kansas Department of Health & Environment
1000 SW Jackson, Suite 410
Topeka, Kansas 66612

VIA REGULAR MAIL

Dear Mr. Jones:

Re: Amendment to Pre-Design Investigations Work Plan
Voluntary Cleanup Investigation
Former GM Fairfax I Plant
Kansas City, Kansas

This letter is in response to the Kansas Department of Health & Environment's (KDHE's) letter of July 23, 2002 to General Motors Corporation (GM). In their letter, KDHE requested that additional soil and groundwater samples be collected across the Fairfax I property to verify previous investigative activities. In response to the KDHE request GM has agreed to perform this additional "confirmatory" sampling along with the original investigations that formed the "pre-design" studies outlined in GM's Work Plan submitted to the KDHE in August 2001. Consequently, this letter presents amendments to the August 2001 Pre-Design Investigations Work Plan (Work Plan) prepared by Conestoga-Rovers & Associates (CRA), which address the July 23, 2002 request by KDHE.

This addendum describes investigations that supplement the soil and groundwater sampling (in the vicinity of monitoring well MW-103A) as proposed in the CRA August 2001 Work Plan. The supplemental work outlined in this addendum includes the collection of soil and groundwater samples at locations identified in previous studies as Areas of Concern (AOC). These are locations where previous soil and groundwater samples were collected as part of the decommissioning of the Fairfax I former manufacturing facility. HDR Engineering, Inc. (HDR) performed an Environmental Site Assessment (ESA) during the period from August 1987 to January 1988 for GM prior to the decommissioning of the Fairfax I Plant. A summary of HDR's findings was provided in CRA's report entitled "Environmental Site Assessment Summary of Subsurface Conditions" (July 2000).

The following section of this report present the methods to be applied during the requested confirmatory sampling program.

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1.0 SOIL SAMPLING

Soil sampling will be conducted at AOCs previously identified by HDR in 1987/1988. Soil sampling locations have been selected by CRA based on a review of the above CRA report and on historical data.¹ Soil samples collected will be submitted for laboratory analysis of volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and target analyte list (TAL) metals².

A brief description of the AOCs to be sampled and the rationale for the sampling is provided below. Figure 1.1 presents proposed confirmatory soil sampling locations. Table 1.1 presents a sampling key for the proposed confirmation soil sampling locations. Refer to the July 2000 CRA summary report of the HDR ESA for previous soil and groundwater data mentioned below and for locations of the historical sample locations.

1.1 Underground Storage Tanks 1 And 2

Background

Underground storage tank (UST) 1 contained gasoline and diesel fuel, and UST 2 contained automatic transmission fluid. The tanks, associated soil, and appurtenances were removed in August 1987. Three soil samples were collected at the base of the excavation at that time. Ethylbenzene at 2,200 micrograms per kilogram ($\mu\text{g}/\text{kg}$) and xylenes at 17,000 $\mu\text{g}/\text{kg}$ were detected in one of the soil samples while the other two samples had no detections. Soil from S-39, S-119, and S-120 and groundwater from S-119 and S-120 did not contain VOCs. Toluene was detected in groundwater at S-39 at a concentration of 39 micrograms per liter ($\mu\text{g}/\text{L}$).

Confirmatory Sampling

A soil sample will be collected to verify that soil at the approximate depth of the base of the tanks is not impacted at levels above KDHE risk based standards. One soil sample will be collected in the vicinity of USTs 1 and 2 at a depth of approximately 10 to 12 feet below ground surface (ft bgs).

¹ The AOCs previously identified as the former tank farm and rail line unloading area have been excluded from this supplemental confirmatory sampling as these AOCs are currently being addressed through the remedial action and pre-design studies outlined in CRA's August 2001 Work Plan.

² TPH is not included in the confirmatory sampling as the VOC and SVOC analyses will provide more useful data.



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1.2 Underground Storage Tanks B And C

Background

USTs B and C contained gasoline. HDR advanced three borings proximal to the USTs. Soil from boring S-40 did not contain VOCs. VOCs detected in groundwater at S-109 were 1,2-dichloroethene (1,2-DCE) (23 µg/L) and trichloroethene (TCE) (7 µg/L); at S-110 were 1,2-DCE (16 µg/L), TCE (13 µg/L), and tetrachloroethene (PCE) (5 µg/L); and at S-40 was 1,2-DCE (13 µg/L).

Confirmatory Sampling

A soil sample will be collected to verify that soil at the approximate depth of the base of the tanks is not impacted at levels above KDHE risk based standards. One soil sample will be collected in the vicinity of USTs B and C at a depth of approximately 10 to 12 ft bgs.

1.3 Fuel Island and Truck Maintenance Facilities

Background

Five USTs at the fuel island contained gasoline, diesel fuel, lubricating oil, and antifreeze. These five USTs were removed in August 1987. Two of the three soil samples collected from beneath the fuel island had VOCs detected. Sample 87-204 contained ethylbenzene at 15,000 µg/kg and xylenes at 26,000 µg/kg. Sample 87-205 contained xylenes at 620 µg/kg. Three soil and groundwater samples (S-1, S-2, and S-3) collected in August 1987 in the vicinity of the fuel island had no VOC detections.

Four USTs at the truck maintenance facility contained fuel oil and waste oil and were removed August 1987. Soils samples beneath these USTs were not analyzed at that time due to exceeding the sample holding times. Three soil and groundwater samples collected in August 1987 in the vicinity of the truck maintenance building had no VOC detections, with one exception. Groundwater collected from boring S-4 contained benzene (82 µg/L), toluene (40 µg/L), ethylbenzene (63 µg/L), and xylenes (31 µg/L).

Confirmatory Sampling

Soil samples will be collected to verify that soil at the approximate depth of the base of the tanks is not impacted at levels above KDHE risk based standards. One soil sample will be collected in the vicinity of the fuel island and one soil sample will be collected in the vicinity of the truck maintenance facility at a depth of approximately 10 to 12 ft bgs.



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1.4 Underground Storage Tank 10 And Baler Room

Background

The baler room was used to collect general plant refuse and contained a large trash compactor/baler. UST 10, which contained unleaded gasoline and was removed August 1987, was located adjacent to the northern exterior wall of the baler room. Soil boring S-8 contained PCE at 10 ft bgs (2,500 µg/kg) and 15 ft bgs (760 µg/kg). Groundwater collected from S-8 contained 1,2-DCE (110/140 µg/L), PCE (160/180 µg/L), and TCE (93/100 µg/L). Soil boring S-9 did not contain VOCs. Groundwater from S-9 contained benzene (25 µg/L) and toluene (14 µg/L). Soil borings S-107 and S-108, installed in January 1988, contained no VOCs. 1,2-DCE was detected in groundwater from S-107 (197/202 µg/L) and S-108 (29 µg/L).

Confirmatory Sampling

A soil sample will be collected to verify that soil at the approximate depth of the base of the tank is not impacted at levels above KDHE risk based standards. One soil sample will be collected in the vicinity of UST 10 and the baler room at a depth of approximately 10 to 12 ft bgs.

1.5 Powerhouse Area

Background

Eight USTs in the powerhouse area contained diesel fuel, waste fuel oil, and gasoline. These tanks were removed in August 1987.

Three soil samples were collected beneath USTs 3 and 4. No VOCs were detected in one of the August 1987 soil samples while ethylbenzene was detected at 87-209 (7,300 µg/kg) and toluene was detected in 87-211 (1,200 µg/kg). No VOCs were detected in soil collected at S-15 (August 1987) or S-111 (January 1988). 1,2-DCE was detected in groundwater at S-111 (15 µg/L).

Three soil samples were collected beneath USTs 5, 6, and 11. No VOCs were detected in two of the August 1987 soil samples while PCE (626 µg/kg) and xylenes (1,100 µg/kg) were detected in 87-206. No VOCs were detected in soil collected in August 1987 at S-16, S-17, and S-18 or in soil collected in January 1988 at S-112. No VOCs were detected in groundwater at S-16 and S-18. 1,2-DCE was detected in groundwater at S-17 (16 µg/L) and S-112 (133 µg/L). PCE and 1,2-DCE were detected in groundwater at S-17 (16 µg/L).



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No VOCs were detected in soil collected August 1987 in the vicinity of USTs 7, 8, and 9 (samples S-19 through S-22).

Confirmatory Sampling

Soil samples will be collected to verify that soil at the approximate depth of the base of the tanks is not impacted at levels above KDHE risk based standards. One soil sample will be collected in the vicinity of USTs 3 and 4, one soil sample will be collected in the vicinity of USTs 5, 6, and 11, and one soil sample will be collected in the vicinity of USTs 7, 8, and 9 at a depth of approximately 10 to 12 ft bgs.

1.6 Waste and Paint Sludge Sump

Background

Soil collected in August 1987 at boring S-37 at 15 ft bgs contained toluene (3,000 µg/kg), ethylbenzene (870 µg/kg), and xylenes (1,800 µg/kg). Soil collected at 20 ft bgs contained only toluene (650 µg/kg). No VOCs were detected in groundwater at S-37 or in soil or groundwater at boreholes S-121 and S-122, installed in January 1988.

Confirmatory Sampling

A soil sample will be collected to verify that soil in the vicinity of the sump has not been impacted at levels above KDHE risk based standards. One soil sample will be collected near the sump at a depth of approximately 4 to 6 ft bgs.

1.7 Paint Mix and Sludge Storage/Paint Sludge Overflow Tanks

Background

No VOCs were detected in soil and groundwater collected in August 1987 at borehole S-38 which was placed near these tanks.

Confirmatory Sampling

A soil sample will be collected to verify that soil in this area has not been impacted at levels above KDHE risk based standards. One soil sample will be collected at a depth of approximately 4 to 6 ft bgs.



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2.0 CONFIRMATORY GROUNDWATER SAMPLING

Groundwater samples will be collected from existing Site shallow monitoring wells in the vicinity of the above AOCs and at other areas on the former Fairfax I Plant property. Water level measurements will also be collected at each monitoring well to be sampled. Groundwater samples collected will be submitted for laboratory analysis of VOCs, SVOCs, and TAL total metals³. Table 2.1 presents a summary of groundwater monitoring wells to be sampled as part of the confirmatory sampling program in this addendum.

Table 2.2 of the CRA August 2001 Pre-Design Work Plan identified ten monitoring wells to be sampled for VOCs and natural attenuation parameters as part of the remedial action program for the area around MW-103A. As part of this addendum, these ten monitoring wells will also be sampled for SVOCs and TAL total metals.

The ten monitoring wells identified in the August 2001 Work Plan will be purged and sampled using a bladder pump, precleaned stainless steel bailer, disposable bailer, electronic submersible stainless steel pump, or peristaltic pump. Field measurements of natural attenuation parameters (dissolved oxygen, pH, specific conductance, temperature, and redox) will be collected at the time of groundwater sampling using low-flow methods and a flow-through cell.

Five additional monitoring wells (MW-1A, MW-106, MW-107, MW-110, and MW-111) will be sampled along with those proposed in the CRA August 2001 Pre-Design Work Plan. These monitoring wells will be sampled for VOCs, SVOCs, and TAL total metals. The monitoring wells will be purged and sampled using a bladder pump, precleaned stainless steel bailer, disposable bailer, electronic submersible stainless steel pump, or peristaltic pump. Field measurements of pH, specific conductance, and temperature will be collected at these five monitoring wells at the time of groundwater sampling using low-flow methods. Figure 2.1 presents pre-design and confirmatory monitoring well sampling locations.

3.0 CONFIRMATORY SAMPLE LOCATIONS

Figure 1.1, enclosed herein, presents the approximate locations of the AOCs and planned soil sample locations. In order to locate these areas and their respective sample points in the field, it will be necessary to pre-survey in historical Site features prior to performing the sample collection. As the Fairfax I Plant has been demolished and the floor slabs and other building

³ TPH is not included in the confirmatory sampling as the VOC and SVOC analyses will provide more useful data for the decisions that need to be made.



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features removed, there is no way that the soil sample locations can be determined in the field. Therefore, based on historical facility drawings, historical surveys, and historical photos, the general locations of the AOCs identified on Figure 1.1 will be staked in the field prior to sampling. Anderson Surveying Company of Lee's Summit, Missouri will be employed to stake these historical site features, as they were previously involved with surveying activities at the Fairfax I Plant when it was operational. Consequently, GM can only make a reasonable attempt to place the confirmatory sample locations near the historical AOCs.

4.0 DATA COMPILATION AND REPORTING

The objectives of the investigations outlined in CRA's August 2001 Pre-Design Work Plan are to assist in the development of remedial measures for the AOC associated with the area around MW-103A (former tank farm and railcar unloading areas). However, the objectives of the confirmatory soil and groundwater studies presented in this addendum area different than the Pre-Design Studies. As such, two separate reports will be prepared presenting a summary of the soil and groundwater data. One report will address the objectives of the CRA August 2001 Pre-Design Work Plan and the other will address issues raised in the KDHE July 23, 2002 letter. Each report will present a summary of data in tables and figures and will make recommendations for any further actions (if necessary).

If you have any questions regarding this Work Plan amendment, please do not hesitate to call me.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

for Phil Harvey

PH/ko/3
Attachments

c.c.: Ken Richards, GM
Kevin Brown, GM

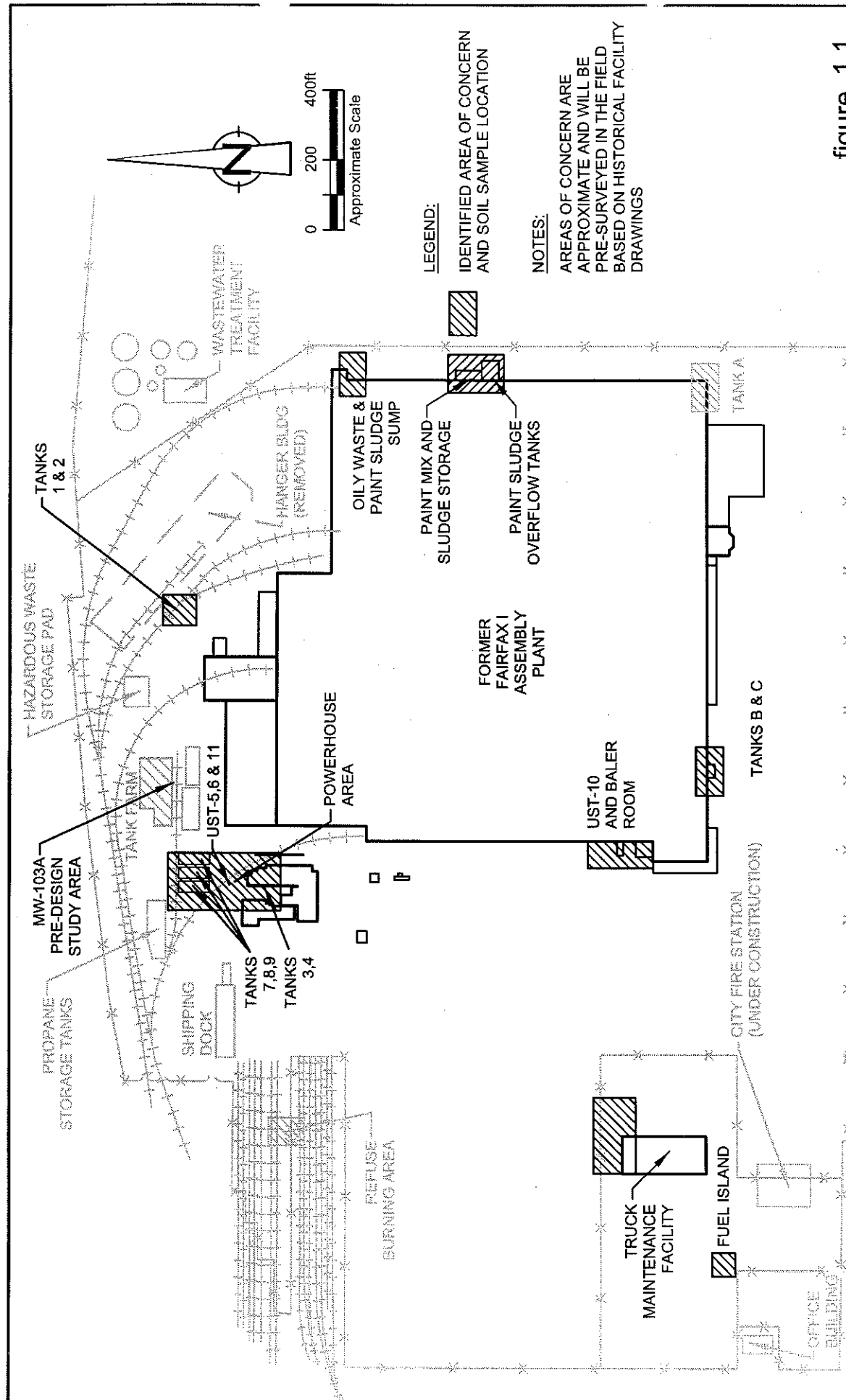


figure 1.1

CONFIRMATORY SOIL SAMPLING LOCATIONS FORMER FAIRFAX I PLANT SITE *Kansas City, Kansas*

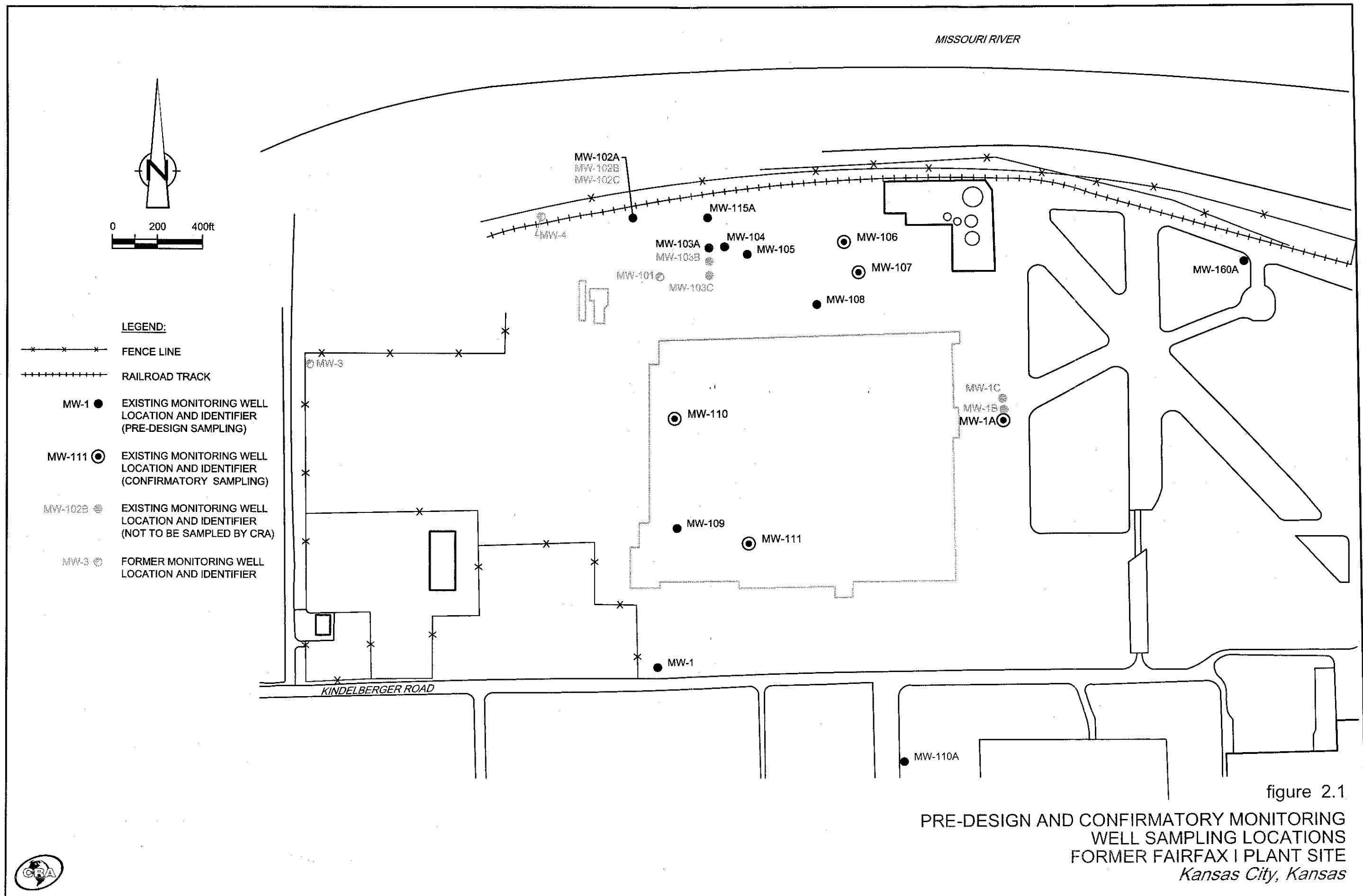


TABLE 1.1

SEPTEMBER 2004 ADDENDUM
 PROPOSED SITE-WIDE CONFIRMATORY SOIL SAMPLING KEY
 GM FAIRFAX I PLANT SITE
 KANSAS CITY, KANSAS

<i>Soil Sample Location</i>	<i>Upper Depth (ft bgs ¹)</i>	<i>Lower Depth (ft bgs)</i>	<i>Chemical Analyses ²</i>
USTs 1 & 2	10	12	VOCs, SVOCs, TAL Metals
USTs B & C	10	12	VOCs, SVOCs, TAL Metals
Fuel Island	10	12	VOCs, SVOCs, TAL Metals
Truck Maintenance Facility	10	12	VOCs, SVOCs, TAL Metals
UST 10 & Baler Room	10	12	VOCs, SVOCs, TAL Metals
USTs 3 & 4	10	12	VOCs, SVOCs, TAL Metals
USTs 5, 6, & 11	10	12	VOCs, SVOCs, TAL Metals
USTs 7, 8, & 9	10	12	VOCs, SVOCs, TAL Metals
Waste & Paint Sludge Sump	4	6	VOCs, SVOCs, TAL Metals
Paint Mix & Sludge Storage/Overflow Tanks	4	6	VOCs, SVOCs, TAL Metals

Notes:¹ ft bgs - feet below ground surface² VOCs - volatile organic compounds, analytical method USEPA SW-846 8260B

SVOC - semivolatile organic compounds

TAL Metals - target analyte list metals

TABLE 2.1

SEPTEMBER 2004 ADDENDUM
MODIFIED GROUNDWATER SAMPLING KEY
GM FAIRFAX I PLANT SITE
KANSAS CITY, KANSAS

TOC ¹ Elevation (ft AMSL ²)	Sample Location ID	Top Screen Depth (ft btoc) ³	Bottom Screen Depth (ft btoc)	Chemical Analyses
746.43	MW-1	17.25	32.25	VOCs ⁴ , SVOCs, TAL Total Metals, NAP ⁵ , FP ⁶
748.82	MW-102A	16.02	31.02	VOCs, SVOCs, TAL Total Metals, NAP, FP
747.71	MW-103A	17.30	32.30	VOCs, SVOCs, TAL Total Metals, NAP, FP
746.51	MW-104	15.05	30.05	VOCs, SVOCs, TAL Total Metals, NAP, FP
746.70	MW-105	17.75	32.75	VOCs, SVOCs, TAL Total Metals, NAP, FP
747.17	MW-108	16.61	31.61	VOCs, SVOCs, TAL Total Metals, NAP, FP
746.11	MW-109	17.50	32.50	VOCs, SVOCs, TAL Total Metals, NAP, FP
743.89	MW-110A	21.45	36.45	VOCs, SVOCs, TAL Total Metals, NAP, FP
748.07	MW-115A	14.35	29.35	VOCs, SVOCs, TAL Total Metals, NAP, FP
746.56	MW-160A	22.55	37.55	VOCs, SVOCs, TAL Total Metals, NAP, FP
745.93	MW-1A	22.19	37.19	VOCs, SVOCs, TAL Total Metals
747.43	MW-106 ⁷	N/A ⁸	N/A	VOCs, SVOCs, TAL Total Metals
N/A	MW-107	N/A	N/A	VOCs, SVOCs, TAL Total Metals
745.79	MW-110	N/A	N/A	VOCs, SVOCs, TAL Total Metals
745.96	MW-111	N/A	N/A	VOCs, SVOCs, TAL Total Metals

Notes:¹ TOC - top of casing² ft AMSL - feet above mean sea level³ btoc - below top of casing⁴ VOC - volatile organic compound, analytical method USEPA SW-846 8260B

SVOC - semivolatile organic compounds

TAL Total Metals - target analyte list total metals

⁵ NAP - natural attenuation parameters (limited set), various USEPA SW-846 analytical methods

Groundwater NAP limited set includes total and dissolved metals (calcium, magnesium, manganese), total kjeldahl nitrogen (TKN), ammonia-N, nitrate-N, chemical oxygen demand (COD), total organic carbon (TOC), Ortho phosphate, pH, total heterotrophic microbial count, and BTEX degrading microbial count.

Microbial (50 g) samples to be collected in sterile, air tight sample jars, and are to be shipped the same day they are collected.

⁶ Field measurements of natural attenuation parameters such as dissolved oxygen (DO), pH, specific conductance, temperature, and redox will also be collected at the time of groundwater sampling using low-flow methods and a flow-through cell.⁷ May not be able to sample due to previous damage to well head⁸ N/A - not available