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ENVIRONMENTAL CONSULTATION & REMEDIATION

KPRG and Associates, Inc.

SOUTH PARKING LOT MEMORANDUM

March 1, 2021

To: Mr. Mark Drews, P.G., Wisconsin Department of Natural Resources
141 NW Barstow Street, Room 180
Waukesha, WI 53188

From: Tim Stohner, Rich Gnat, KPRG and Associates, Inc. (KPRG)

VIA E-MAIL and FEDEX KPRG Project No. 11717

Re: Technical Memorandum – South Parking Lot Remedial Action Options / Interim Remedial Action Plan
Former Navistar/RMG Foundry - 1401 Perkins Avenue, Waukesha, WI
BRRTS # 02-68-098404

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KPRG and Associates, Inc. (KPRG), in support of our client Navistar, Inc. (Navistar), is pleased to present this Technical Memorandum to summarize Remedial Action Options for the South Parking Lot impacts on the foundry property and to outline the Interim Remedial Action Plan to implement the selected remedial action option.

The purpose of this memorandum is as follows: to inform WDNR of the remedial action options that Navistar and KPRG have developed and evaluated to address potential soil vapors from the historic shallow soil chlorinated volatile organic compound (CVOC) impacts, specifically trichloroethene (TCE), beneath the south parking lot located on the south side of Perkins Avenue and west of Raymond Street. This memorandum then provides the preferred remedial action option for this area and requests WDNR's concurrence with the selected approach prior to Navistar initiating bidding and scheduling the work in 2021.

It should be noted that KPRG presented a similar technical memorandum dated May 29, 2020 for the parking lot area near the southwest corner of the RMG foundry property, which was approved by WDNR in an October 5, 2020 letter. KPRG has used that document as a model for this document for addressing the shallow soil TCE impacts in this other parking lot location.

Background Information

There are two asphalt-paved parking lots that were used by RMG Foundry located on the south side of Perkins Avenue (see Figure 1) on the west and east sides of Raymond Street. To further address these two areas, six borings were initially drilled (borings GP-67 through GP-72) in May 2019 at approximate locations shown on Figure 1. The data from all sampling indicated no elevated detections of VOCs with the exception of TCE at location GP-69 (2-4' and 4-6' intervals), both of these detections being above the soil-to-groundwater residual screening level of 3.6 micrograms per kilogram (µg/kg) but below the non-industrial direct contact level of 1,300 µg/kg. Further, there were no detectable TCE concentrations in borings GP-67 and GP-68 on the north side of the parking lot and west of GP-69. Analytical results also indicated no detectable TCE concentrations in borings GP-70 to GP-72 in the parking lot to the east of Raymond Avenue. Thus, no further investigation of the east parking lot was planned or warranted.

To further define the extent of the TCE impact encountered at GP-69, seven additional geoprobe soil borings (GP-73 to GP-76 and GP-82 to GP-84) were completed at locations shown on Figure 1 in June and October 2019, respectively. The data from these sampling locations revealed no detections of VOCs at sample locations GP-75 and GP-84, which delineated impacts to the south and east, respectively. TCE detections above the soil-to-groundwater residual screening level were noted at sampling locations GP-73 (0-2', 2-4' and 4-6'), GP-74 (0-2' and 2-4'), GP-76 (0-2', 2-4' and 4-6'), GP-82 (0-2', 2-4' and 4-6') and GP-83 (2-4' and 6-8', both estimated values). These sampling locations are presented on Figure 1 and demonstrated the completion of definition of the extent of TCE impacts in the south parking lot area.

Borings GP-69, GP-73, GP-74, GP-76, GP-82, and GP-83 (laboratory estimated values only) indicated TCE concentrations above the soil to groundwater standard of 3.6 µg/kg but concentrations decreased relative to depth. Relative to the vertical extent of TCE impacts, a review of the data in Table 1 indicates that the deepest impacts extend to approximately 6-8 feet bgs at only one location, GP-83 (laboratory estimated value). At all other locations, TCE impacts below six feet were not detected. The combined vertical and horizontal distribution of impacts, and the historical knowledge that this area was never used/developed for manufacturing purposes and not used for any chemical storage, suggests that the impacts are associated with a wedge of fill material of an unknown origin that was brought onto the property to bring the surface elevation up to current grade.

In an effort to further refine the estimated TCE impacted soil area in excess of the 3.6 µg/kg TCE soil-to-groundwater standard, on December 2, 2020 KPRG advanced an additional five soil borings (GP-85 through GP-89) on the south parking lot property with vertical soil samples being collected at each locations at the same intervals as the previous sampling events. In addition, KPRG collected a representative soil sample volume from the vicinity of previous boring GP-73 (see Figure 1) which had the highest TCE concentration to date. That sample was submitted for bench scale treatability study to assist in evaluating potential in-situ chemical oxidation treatment of the impacts (see detailed discussion below for in-situ chemical oxidation).

TCE detections above the soil-to-groundwater residual screening level were noted at sampling locations GP-86 (2-4', 4-6', and 6-8'), GP-88 (0-2', 2-4', and 4-6'), and GP-89 (0-2', 2-4', and 4-6'). It should also be noted that soil boring GP-85 also exhibited cis-1,2-dichlorothene concentrations in excess of the soil-to-groundwater residual screening level of 41.2 µg/kg in the 2-4' and 4-6' intervals. Using these and earlier results KPRG developed the attached Figure 1 illustrating an estimated TCE impacted soil area in excess of the 3.6 µg/kg TCE soil-to-groundwater standard of approximately 9,000 square feet (0.21 acres). Generally, elevated concentrations were noted within the range of 0-6 ft bgs (only at GP-83, estimated value, and GP-86 were exceedances noted at 6-8 ft bgs, the rest had exceedances noted at 0-6 ft bgs). Based on this data, it is estimated that approximately 2,200 cubic yards (CY) of soils or approximately 3,200 tons in excess of the 3.6 µg/kg TCE WDNR standard may be present in the parking lot. Note that Figure 1 and Table 1 document that there was only one identified soil concentration in this southern parking lot in excess of the non-industrial direct contact standard of 1,300 µg/kg: GP-89 (0-2'), 3,190 µg/kg.

It is worth reiterating that a soil vapor intrusion study has been performed (and is ongoing) as part of the site investigation work. The residential neighborhood (including the Phoenix Heights subdivision) to the south of Perkins Avenue was found to have TCE vapor intrusion impacts, which have been initially addressed, as necessary, via the installation and operation of sub-slab depressurization systems (SSDSs). However, considering the historical industrial use of the properties to the south of Perkins Avenue prior to construction of what is referred to as the Phoenix Heights subdivision, the overall distribution of vapor intrusion impacts within those areas, the distribution of TCE groundwater impacts beneath those areas and associated with off-site sources of those impacts, the overall vapor intrusion issue is not singularly sourced from the subject RMG foundry property. However, preventing potential migration of CVOC vapors from the parking lot area to the south is also being considered as part of interim remedial action objectives.

Initial Remedial Action Option Evaluation

In addition to the remedial options criteria defined in NR 722.07(4), the remedial options discussed for this south parking lot will also consider site-specific conditions, regional conditions including those encountered in the southwest parking lot, and the site's proximity to a residential neighborhood. Due to the paved parking lot development and expected usage at that time, relatively low TCE concentrations, and proximity to nearby residential properties, the initial remedial measure considered was soil vapor extraction (SVE). In order to assess the potential practicality and effectiveness of this measure and to obtain design parameters, a pilot test was conducted within the southwest parking lot in 2019. The pilot test and its results were discussed extensively in KPRG's May 29, 2020 Southwest Parking Lot Remedial Action Options / Interim Remedial Action Plan (i.e., the SW RAOR). These pilot test results are included in Attachment 1.

Boring logs from both the south parking lot and the previously studied southwest parking lot indicate varying amounts and types of fill material. In particular, boring logs of the TCE area on the south parking lot suggest the apparent presence of foundry sands. Also, KPRG's review of 1950 and 1963 aerial photographs indicate a building formerly appeared to be present within the defined impact area. The SVE pilot test results from the southwest parking lot indicated varying

vacuum and flow rates across the study area that may have been attributable to the fill material and remnants of prior development. It is also worth noting that the highest detected concentration in this southern parking lot was 3,190 µg/kg in GP-89 (0-2 ft bgs), which is slightly above the highest concentration of 2,720 µg/kg that was detected in the southwest parking lot at GP-18 (2-4 ft bgs). As noted above, the highest TCE concentration in this south parking lot is also above the non-industrial direct contact standard of 1,300 µg/kg. It was also noted that two residences border the TCE impact area of this parking lot to the south and west. Thus, the utilization of the non-industrial direct contact standard as a remedial comparison would mean that only limited direct source removal was necessary, but the remedial measures to be considered will aim to prevent any potential lateral migration of remaining low-level CVOC concentrations toward the nearby residences.

Interim Remedial Action Options

Given the above background information on environmental conditions in the south parking lot, the identified remedial action options are summarized in detail below and evaluated in accordance with the following criteria established in NR 722.07(4):

- Technical Feasibility
  - Long-Term Effectiveness
  - Short-Term Effectiveness
  - Implementability

- Economic Feasibility

A narrative discussion of the identified remedial action options follows below, while the technological and economic feasibility of each option are further explored in the attached Table 2.

South Parking Lot CVOCs in Soils

SVE

Upon review of the SVE pilot test results completed for the southwest parking lot, KPRG determined that the method is a technologically viable option to address south parking lot shallow TCE soil concentrations. However, given that there are site conditions that may complicate system design and add cost and time to the completion of remediation, KPRG believed it was warranted to consider other remedial action option alternatives. Unencumbered future site usage would require cleanup to the soil-to-groundwater standard of 3.6 µg/kg. However, as stated previously in the attached analysis, the estimated footprint of the 3.6 µg/kg plume in conjunction with noted possible site heterogeneities will make achieving this goal in a timely manner using SVE challenging. Further, it is likely that the parking lot area will remain part of a commercial or industrial property for the foreseeable future. In that regard, it was noted that there were no exceedances of the industrial direct contact TCE standard of 8,410 µg/kg and only one exceedance of the non-industrial direct contact TCE standard of 1,300 µg/kg. Given the presence of nearby residences and the

potential ongoing future use of this area as a paved parking lot (i.e., an engineered barrier), the 1,300 µg/kg standard was recommended as an alternative remedial objective. This remedial option selected will be based on the assumptions that the relevant portion of the parking lot is maintained as an engineered barrier (continuing obligation) and that a non-residential usage of the property will be included as an institutional control.

Based on the locations of the observed "hot spots", the SVE system would be located on the east side of the parking lot roughly running 110-feet north-northeast from approximately 10 feet south of GP-76 to GP-82, 60 feet east from GP-76 to GP-74, and 80 feet southwest-northeast from GP-76 to GP-83. The system would use horizontal slotted header pipe to capture the extent of the highest TCE concentrations within the plume. A series of vertical extraction wells would be placed at approximate 30-foot intervals and connected to the header pipes with four vertical wells along the north-northeast leg, two wells along the eastern leg, and three wells along the southwest-northeast leg. The system would include an approximately 150 scfm blower at 30 inches of water. The system will require site power at 240 volts, 3 phase, 60 Hertz and would include a water separator for capturing condensate. The system would be enclosed in an eight-foot square shed with pressure treated plywood flooring, lighting, and a 600-watt heater. The system as designed is intended to collect identified elevated TCE concentrations along an approximately 250-foot long by 30-foot wide corridor and operate until the 3.6 µg/kg objective is met. Although one turn/intersection point in the route was required, lateral piping was avoided in this design to maximize efficiency of the blowers.

KPRG evaluated setting the header pipe using trenching or horizontal drilling and found that trenching was preferred for cost, availability of local contractors, ease of setting pipe at desired depths, and ability to reuse most excavated material as backfill. A rubber liner is proposed as a top layer prior to sub-base and fresh asphalt to prevent short-circuiting of fresh air into the system during operation.

The operating timeframe of the system would depend upon system effectiveness. System monitoring by KPRG field personnel would occur on a monthly basis during the first year and quarterly thereafter. System telemetry would be installed to notify KPRG of any system outages outside of these regular inspections. For remedial action comparison purposes, KPRG included quarterly sample effluent VOC analysis and annual progress reports over a 5-year timeframe.

The projected installation and operating cost for the system over a 5-year timeframe including a 15% engineering contingency is $450,000. This cost has assumed normal system maintenance and repairs and includes establishing an on-site electrical service and estimated monthly utility bills.

Chemical Oxidation

In-situ chemical oxidation (ISCO) represents another strategy to address soil impacts in place without incurring significant disposal costs. ISCO involves the introduction of a

chemical oxidizing agent, such as Fenton's reagent (hydrogen peroxide and ferrous iron), potassium/sodium permanganate, or catalyzed sodium persulfate, into the subsurface soil. The oxidizing agent reacts chemically with the organics within the soil (including the contaminants) resulting in non-hazardous by-products such as chlorine, carbon dioxide and ferric iron in the case of Fenton's reagent treatment. Typically, when ISCO is considered, source samples of impacted soils are collected to be used in bench-scale testing to determine total oxidant demand and treatability of site soils and impacts. This testing is used to determine which oxidant and catalyzing agent will be most effective with site soils and known site concentrations and also to calculate the approximate dose level and quantity of oxidants and agents. For purposes of this remedial option comparison, KPRG has utilized our experiences with this remedial technology on other sites. However, as noted above, KPRG also collected additional representative soil samples during the December 2020 additional soil boring investigation for bench testing by Orin Technologies, LLC (Orin) of Verona, Wisconsin. Orin's December 29, 2020 Treatability Testing Report and the December 2020 soil sampling laboratory report are included as Attachment 2.

According to Orin's report, representative soils were combined into a composite sample and then divided into nine separate jars with 250 grams of soil per jar with one jar set aside as the control sample. The remaining eight jars were treated with various dosage rates and blends of treatment chemistries. Samples were dosed with the prescribed treatment chemistry and thoroughly mixed with stainless steel laboratory spoons. The treatment chemistries utilized for the treatability study included high and low dosages of a modified Fenton's Reagent consisting of hydrogen peroxide, ferrous sulfate, and sulfuric acid followed by adding bioavailable absorbent media (BAM); high and low doses of BAM alone; high and low doses of sodium permanganate; and high and low doses of activated sodium persulfate.

(For reference, BAM is a proprietary sustainable, pyrolized, recycled cellulosic bio-mass product (greater than 80% fixed carbon) derived from a blend of recycled organic materials with a high cation exchange and an estimated half-life of 500 years. BAM has diverse pore sizes with a minimum total surface area of up to 1,133 square meters per gram. These structural characteristics and absorption capability prevents exterior surface microfilm buildup. This allows BAM to absorb contaminants for more productive bio-attenuation of contaminants over a longer period of time.)

Samples were sent for post-treatment CVOC analysis according to USEPA Method 8260 by Pace Analytical four days after dosing. Analytical results of the control sample indicated that only TCE was present at a detectable concentration of 170 µg/kg. The most effective treatment chemicals were sodium persulfate and the high dose modified Fenton's reagent/BAM at 78 percent and 77 percent reduction, respectively. Based on the cost difference between these two treatment chemistries, the recommended treatment chemistry is the high dose modified Fenton's reagent with BAM. It was noted that none of the treatment chemistries were able to reduce TCE concentrations to below the 3.6 µg/kg TCE soil-to-groundwater standard. However, it was noted that increasing the BAM loading rate

would be the most feasible option to increase the potential for achieving the 3.6 µg/kg standard.

Based on KPRG's experiences on other sites and given the relatively low concentrations of TCE at shallow depths potentially present across the roughly 0.21 acres of parking lot, KPRG would recommend in-situ soil mixing rather than use of a grid of geoprobe-installed injection points for treating to the most conservative remediation objective of 3.6 µg/kg. Given the calculated dosage of treatment chemicals, a per square foot quantity of chemicals would be determined to be applied during soil mixing. This method will involve the removal and recycling of the existing top cover of deteriorated asphalt and associated granular sub base to expose the underlying impacted soils. Once impacted soils are exposed, the remediation area would be divided into smaller, more manageable treatment grid zones. A hydraulic excavator or backhoe would be used to expose soils in each treatment zone while chemicals are applied. This process would continue iteratively across the treatment area. Assuming sufficient mixing to allow oxidant contact with impacted soils, the reaction would proceed rapidly. Therefore, in order to determine sufficient concentration reductions are taking place and that a second round of treatment is not required, KPRG would collect representative documentary samples from a limited grid area (likely the area with highest concentrations near GP-89 and GP-73) for expedited chlorinated VOC analysis while treatment and mixing are continuing. This process would allow rapid evaluation of analytical data and determination of whether additional treatment is required. Further, it would alleviate the potential need for a second mobilization of personnel, equipment, and chemicals. This gridded in-situ mixing and confirmation soil sampling practice has been used by KPRG successfully on other projects with WDNR approval including Western Industries (BRRTS #02-68-543967).

It should be noted that ISCO can have a detrimental effect on the strength properties of the soils due to the oxidants reacting with the natural organic soil components. Therefore, upon completion of remediation, it is recommended that the treated soils be left exposed to the atmosphere for several months to allow for drying and settling. Further, machine compaction and proof-rolling would be required and recommended prior to any future paving. Amendment with engineered backfill in place of treated soils may be necessary prior to application of paving materials. Another option is to blend Portland cement into the soil matrix during the chemical mixing activities. However, it should be noted that none of these structural adjustments to site soils were included in this estimate.

The projected cost of this estimated 10-day field treatment approach to treat the parking lot area to the most conservative objective of 3.6 µg/kg including a second treatment over a small portion of the treatment area and a 15% engineering contingency is $520,000.

Focused Trench Excavation/Active Venting

Recognizing that the subject area will likely remain used as parking or other non-residential usage for the foreseeable future, a more economical approach can be achieved through

using a combination of technologies and the soil non-industrial direct contact cleanup objective of 1,300 µg/kg to alleviate the potential for off-site soil vapor migration.

Using existing soil data, there was only one sample location with an interval in excess of this objective and thus only that limited area must be excavated. However, to address the potential soil vapor migration from lower concentration residually impacted soils that may remain in place, a vapor interceptor trench can be constructed. This approximately 260-foot (90 feet each in the north-northeast and east-west directions and 80 feet in the southwest-northeast direction) approximately three to four-foot wide trench will be dug to a depth of up to 8-feet. Trenches would be located within and along the western and southern boundaries and crossing the interior of soils with TCE concentrations (GP-89) that may be above the soil-to-groundwater standard in order to achieve some incidental source impact removal. These soils comprising approximately 540 tons would be removed as part of the trench construction and sent off-site for proper landfill disposal. The top, bottom, and western or southern face of the trench would be lined with Bentomat CL, a reinforced geosynthetic clay liner (specifications were provided in KPRG's May 29, 2020 RAOR). The trench would be backfilled with a uniform graded stone to create a more porous active vapor vent. A four-inch diameter slotted horizontal pipe would be located within the backfill with one terminating vertical header placed at the intersection of the three horizontal pipes in a protective location near the southwest corner of the area with low level TCE impacts. This terminating vertical header would reach a height of 15 to 20 feet and will utilize a radon-style electric motor with manometer to provide a continuous negative pressure (i.e., vacuum) within the horizontal trench pipes. The vertical header would also be topped with a roof-type "pinwheel" vent to provide backup passive venting in the event of power outage or motor maintenance event. The stone would be topped with the geosynthetic clay liner as noted to prevent short circuiting with ambient air and topped with gravel sub base prior to asphalt surface. Bollards would be placed to protect the turbine vent from vehicle damage.

There are no known subsurface utilities on the parking lot property. Therefore, no clay "check" plugs as were proposed for the southwest parking lot are necessary or planned.

The projected cost of this treatment approach assuming a 10-year operating period, which would require maintenance of the parking lot as an engineered barrier, including a 15% engineering contingency is $440,000.

Excavation/Disposal

Soil excavation and disposal is an option for remediation by physically removing the source soils from the site and disposing of them properly at a regulated solid waste disposal facility. This option has assumed that the soils are considered a non-hazardous waste and can be profiled for disposal at a local landfill such as the Advanced Disposal Emerald Park Landfill in Muskego or the Waste Management Orchard Ridge Disposal facility in Menomonee Falls. As indicated above, 3,200 tons of soils are estimated to be present

within the 3.6 µg/kg impact area. This quantity assumes that the overlying asphalt is removed and recycled.

For estimating purposes, KPRG has assumed that the excavation can be accomplished in approximately 7 days using 8 to 9 trucks per day with each truck making three trips to the landfill per day. When possible, trucks would return to the site with loads of virgin stone or crushed recycled concrete for backfill. An exception to the stone backfill would be along the southern and western sidewalls (facing residential property) where clay backfill would be placed as a means to block any potential vapor migration in those directions from any minimal remaining soil impacts. Site restoration would include machine compaction upon completion of remediation. Further site restoration such as pavement or placement of top soil and seeding for grass would be on hold pending a determination of future usage of this parking lot location. Except in cases where existing clean sample locations are used to define excavation boundaries, documentary bottom and sidewall verification soil samples would be collected at a spacing of approximately one for every 20 linear feet for CVOC analysis to document successful remediation.

The projected cost of this treatment approach including a 15% engineering contingency is $470,000 without repaving.

Summary Table

The attached summary Table 2 provides brief summaries of the potential remedial options discussed above and the relative technical and economic feasibilities of each.

Conclusions/Recommendations

Navistar/KPRG has evaluated all presented remedial options in general accord with NR 722.13(2)(e) as outlined below. Although all of the presented remedial options are technically feasible, the time horizons and potential costs to complete remedial action, particularly if the soil-to-groundwater TCE standard of 3.6 µg/kg were the clean-up objective, are wide ranging. Thus, in consideration of these potential long-term treatment windows and high cost per weight of impacted soil, Navistar/KPRG select excavation/disposal as the most expedient, technically sound, and cost-effective means to address the shallow residual soil TCE impacts in this south parking lot. It is noted that there are no known subsurface utilities in this area.

Navistar/KPRG propose to begin planning the implementation of the selected remedial options upon written approval of this document by WDNR. This process will include preparation of bid documents, contractor site walk, bid opening and review, preparation of waste profiles, scheduling, and planning. It is expected that this pre-construction planning phase may take up to 8 weeks. The construction phase of the selected remedial options is expected to be completed within two weeks. The timing of this construction phase, aimed for spring 2021, will depend in part on the timing of the approval of this document. The cost of the selected remedial measure is estimated to be $470,000. Compliance with the WDNR non-industrial direct contact standard of 1,300 µg/kg

has already been achieved and demonstrated with one exception. Compliance with the soil-to-groundwater TCE standard of 3.6 µg/kg has been demonstrated in areas to the east and to the south. However, upon excavation, limited expedited confirmation sampling will be used, to the extent deemed to be necessary, to further document compliance. The excavation will achieve immediate improvements in soil and soil vapor conditions. As previously noted, the excavated soils and debris are expected to be profiled for disposal at a nearby landfill as a non-hazardous waste.

It is noted that the selected remedial option is believed to be the most sustainable of all of the options evaluated. By conducting soil excavation of the shallow impacts over a relatively small area, significant environmental improvements in site soil and soil vapor conditions will be achieved most rapidly. Further, this environmental remediation is the quickest option to prepare the site for any type of site unrestricted redevelopment or reuse. In addition, this option will result in minimal, if any, wasted water usage or impact on water resources. The only water usage may be limited spraying of the excavation area if work is conducted during especially dry conditions. Additionally, there will be no noteworthy electrical power usage compared to the potential power usage of a SVE or active vent system over time and no ongoing site visits since there will be no remediation system to inspect or maintain. Other sustainable practices to be implemented as feasible may include recycling of overlying asphalt and reuse of underlying pavement sub base (if deemed suitable). The short construction timeline of this project will also result in the most immediate improvement in site environmental conditions.

Below is presented the general steps to implement these interim remedial actions.

INTERIM REMEDIAL ACTION IMPLEMENTATION

This section provides the proposed implementation plan for the preferred remedial alternative identified above for soil and soil vapors. The Interim Remedial Action Plan (IRAP) phase includes the following tasks:

- Task 1 – Direct Excavation/Spoils Off-Site Disposal
  - 1a. Excavation/spoils disposal
  - 1b. Clean backfill placement
  - 1c. Site restoration

- Task 2 – Interim Response Action Summary Report

Each task is discussed separately below.

Task 1 – Direct Excavation/Spoils Off-Site Disposal

This task will include the following:

- Complete a Waste Profile for submittal and approval to the Advanced Disposal Emerald Park Landfill in Muskego or the Waste Management Orchard Ridge Disposal facility in Menomonee Falls for disposal.

- Contact Diggers Hotline and a private locate contractor to mark public and private underground utilities within the excavation area in conjunction with knowledgeable foundry personnel.

- Revise the existing site health and safety plan to include the proposed interim remedial actions.

- Sawcut the perimeter of the estimated 9,000 square foot of asphalt pavement overlying the impacted area. Remove and recycle the existing asphalt. Segregate reusable sub-base gravel if acceptable.

- Excavate and load an estimated 3,200 tons of residually impacted soils to a depth of up to 8 feet from the estimated impact area.

- Transport and dispose of the impacted soils to the selected local landfill.

- As warranted based on the footprint of the excavation area in relation to existing soil sampling data, verification soil samples may be collected from sidewalls and bottom of the excavations at approximate 20-foot intervals (30 to 40 samples are estimated). As necessary, have the soil samples analyzed for CVOCs on an expedited basis (24-hour turn around) to document/confirm that there are no exceedances of the soil to groundwater standard of 3.6 µg/kg. If necessary, perform additional limited soil excavation and verification sampling in specific areas based on the results of the initial verification samples.

- Upon completion of all subsurface work in the south parking lot, the completed excavation asphalt boundaries will be sawcut to create clean edge. Although all documented exceedances of the soil-to-groundwater standard will be excavated, the southern and western sides of the excavation (in closest proximity to nearby residential property) will be backfilled with clean clay. The remainder of the excavation will be backfilled with either virgin stone backfill or clean (non-painted) recycled crushed concrete. Backfilling will occur in six-inch to one-foot lifts with machine compaction. Since all documented exceedances of the soil-to-groundwater standard will be excavated, no paving of the excavation area as an engineered barrier is planned or necessary at this time. Although there are no formal site redevelopment plans at this time, it is possible that placement of topsoil and sodding may occur at a later date but again is not necessary or proposed at this time.

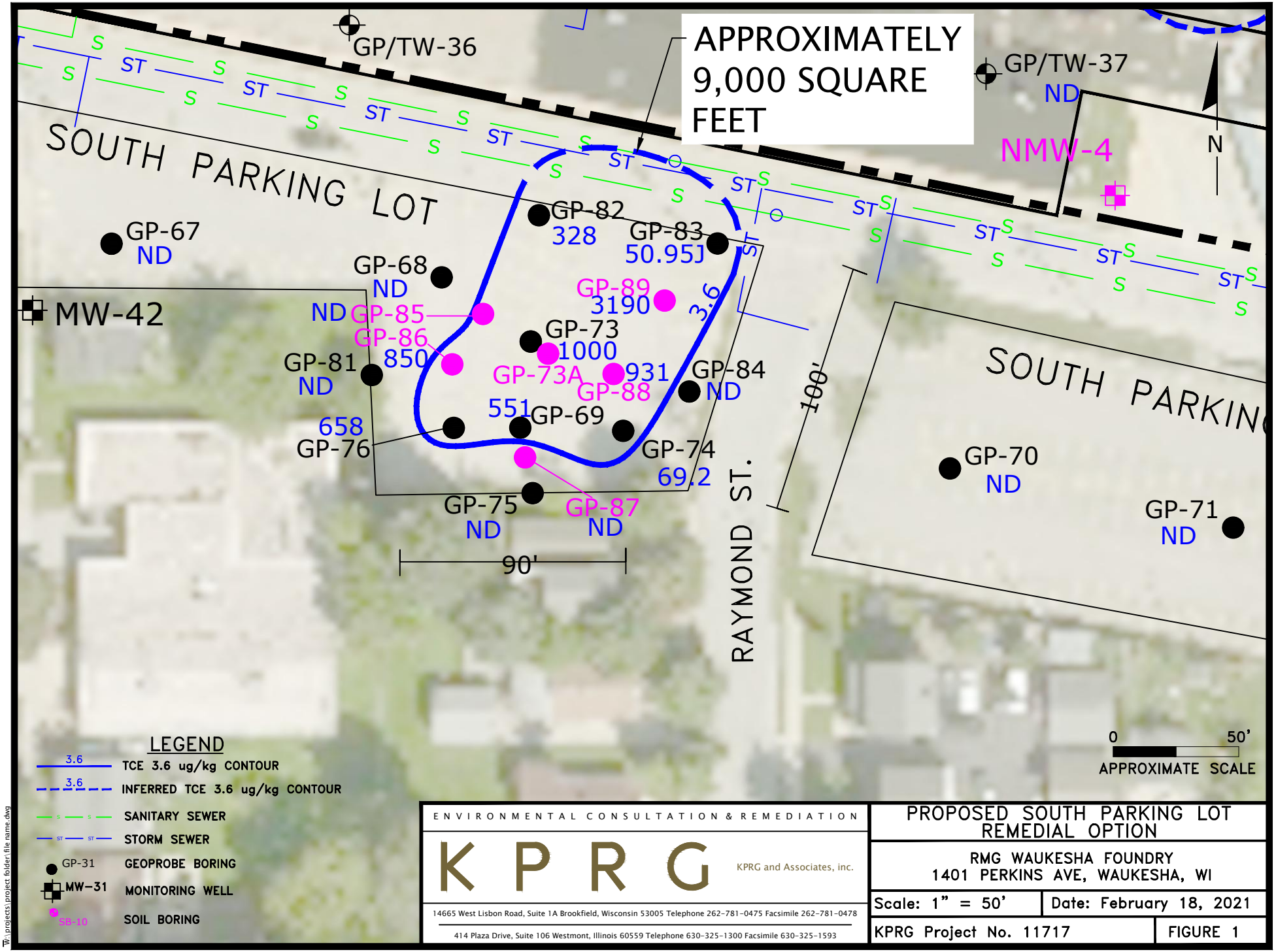
The implementation will consider a water management plan if the excavation needs to be dewatered due to rains or an unexpectedly high-water table. The water pumped from the excavation would be stored temporarily, sampled and sent for proper off-site disposal or permitted sanitary sewer discharge as appropriate.

Task 2 – Response Action Summary Report

Upon completion of the excavation, all necessary remediation activities in the South Parking Lot area will be concluded. At that time, a Response Action Summary Report will be issued. The report may include, but not be limited to, the following:

- Background and Response Objective(s)
- Documentation of soil and soil vapor remediation activities. This will include a narrative describing the field activities and all associated transport and disposal documentation.
- Soil sampling results from trench wall and bottom locations as necessary documenting that there are no exceedances of the soil to groundwater standard of 3.6 µg/kg.
- Summary/Conclusions

Figure



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ENVIRONMENTAL CONSULTATION & REMEDIATION

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PROPOSED SOUTH PARKING LOT REMEDIAL OPTION

RMG WAUKESHA FOUNDRY
1401 PERKINS AVE, WAUKESHA, WI

Scale: 1" = 50' | Date: February 18, 2021

KPRG Project No. 11717 | FIGURE 1

Tables

Table 1. Summary of VOC Soil Analytical Data. South Parking Lot, RMG Foundry, Waukesha, WI

Parameter	Sample Depth / Date	WDNR NR720 Standards DC - Ind.	DC - Non-Ind.	Soil-GW	GP-67 0-2 5/16/2019	GP-67 2-4 5/16/2019	GP-67 4-6 5/16/2019	GP-67 6-8 5/16/2019	GP-68 0-2 5/16/2019	GP-68 2-4 5/16/2019	GP-68 4-6 5/16/2019	GP-68 6-8 5/16/2019	GP-69 0-2 5/16/2019	GP-69 2-4 5/16/2019	GP-69 4-6 5/16/2019	GP-69 6-8 5/16/2019	GP-70 0-2 5/16/2019
Trichloroethene		8,410	1,300	3.6	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	**551**	**63.1J**	<25.0	<25.0

Parameter	Sample Depth / Date	WDNR NR720 Standards DC - Ind.	DC - Non-Ind.	Soil-GW	GP-70 2-4 5/16/2019	GP-70 4-6 5/16/2019	GP-70 6-8 5/16/2019	GP-71 0-2 5/16/2019	GP-71 2-4 5/16/2019	GP-71 4-6 5/16/2019	GP-71 6-8 5/16/2019	GP-72 0-2 5/16/2019	GP-72 2-4 5/16/2019	GP-72 4-6 5/16/2019	GP-72 6-8 5/16/2019	GP-73 0-2 6/19/2019	GP-73 2-4 6/19/2019
Trichloroethene		8,410	1,300	3.6	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	<25.0	**364**	**264**

Parameter	Sample Depth / Date	WDNR NR720 Standards DC - Ind.	DC - Non-Ind.	Soil-GW	GP-73 4-6 6/19/2019	GP-73 6-8 6/19/2019	GP-74 0-2 6/19/2019	GP-74 2-4 6/19/2019	GP-74 4-6 6/19/2019	GP-74 6-8 6/19/2019	GP-75 0-2 6/19/2019	GP-75 2-4 6/19/2019	GP-75 4-6 6/19/2019	GP-75 6-8 6/19/2019	GP-76 0-2 6/19/2019	GP-76 2-4 6/19/2019	GP-76 4-6 6/19/2019
Trichloroethene		8,410	1,300	3.6	**1,000**	<25.0	**69.2**	**42.0 J**	<25.0	<25.0	<25.0	<25.0	<27.8	<25.0	**658**	**93.6**	**474**

Parameter	Sample Depth / Date	WDNR NR720 Standards DC - Ind.	DC - Non-Ind.	Soil-GW	GP-76 6-8 6/19/2019	GP-82 0-2 10/22/2019	GP-82 2-4 10/22/2019	GP-82 4-6 10/22/2019	GP-82 6-8 10/22/2019	GP-83 0-2 10/22/2019	GP-83 2-4 10/22/2019	GP-83 4-6 10/22/2019	GP-83 6-8 10/22/2019	GP-84 0-2 10/22/2019	GP-84 2-4 10/22/2019	GP-84 4-6 10/22/2019	GP-84 6-8 10/22/2019
Trichloroethene		8,410	1,300	3.6	<25.0	**153**	**328**	**156**	<25.0	<25.0	**50.9 J**	<25.0	**44.1 J**	<25.0	<25.0	<25.0	<25.0

Parameter	Sample Depth / Date	WDNR NR720 Standards DC - Ind.	DC - Non-Ind.	Soil-GW	GP-85 0-2 12/2/2020	GP-85* 2-4 12/2/2020	GP-85* 4-6 12/2/2020	GP-85 6-8 10/22/2019	GP-86 0-2 12/2/2020	GP-86 2-4 12/2/2020	GP-86 4-6 12/2/2020	GP-86 6-8 12/2/2020	GP-87 0-2 12/2/2020	GP-87 2-4 12/2/2020	GP-87 4-6 12/2/2020	GP-87 6-8 12/2/2020	GP-88 0-2 12/2/2020
Trichloroethene		8,410	1,300	3.6	<22.1	<24.7	<25.2	<20.9	<19.8	260	**850**	96.8	<19.8	<23.4	<23.4	<21.3	514

Parameter	Sample Depth / Date	WDNR NR720 Standards DC - Ind.	DC - Non-Ind.	Soil-GW	GP-88 2-4 12/2/2020	GP-88 4-6 12/2/2020	GP-88 6-8 12/2/2020	GP-89 0-2 12/2/2020	GP-89 2-4 12/2/2020	GP-89 4-6 12/2/2020	GP-89 6-8 12/2/2020
Trichloroethene		8,410	1,300	3.6	**931**	**322**	<20.5	**3,190**	**299**	**86.7**	<19.7

Notes: Results are in ug/kg

DC-Ind. - Direct Contact - Industrial

DC-Non-Ind. - Direct Contact - Non-Industrial

Soil-GW - Soil to Groundwater

NP Soil to Groundwater

Underline - Value exceeds the DC-Non-Ind.

Underline - Value exceeds the DC-Ind.

BOLD - Value exceeds the Soil-GW

J - Result is between the laboratory limits of detection and quantification.

NA - Not analyzed.

Maximum exceedance at a boring location

* *GP-85 had cis-1,2-DCE at 153 ug/kg and 52.5J ug/kg in 2-4' and 4-6', respectively*

Table 2. Evaluation of Remedial Options, South Parking Lot, RMG, 1401 Perkins Avenue, Waukesha, WI 53186

KPRG
ENVIRONMENTAL CONSULTATION & REMEDIATION
KPRG and Associates, Inc.

Soil Remedy Options	Technology Description	Technical Feasibility	Economic Feasibility	Relative Timeframe	Remedy Cost including 15% Engineering Contingency
No Action	This option assumes there is a no action alternative for the south parking lot soils relying strictly on natural biodegradation and volatilization processes to reduce contaminant mass over time.	There is documentation of soil impacts above the soil-to-groundwater soil screening level for TCE. This alternative would only be feasible in conjunction with engineered barriers and/or institutional controls. However, due to regional soil vapor intrusion concerns, this option alone is unlikely to be acceptable to regulators.	No substantive additional cost.	The use of engineered barriers/institutional controls represents an ongoing obligation. This obligation would be ongoing unless the property owner elected to later reopen the site and pursue a different remedial option.	**$0.00***
Soil Vapor Extraction (SVE)	This option includes the installation of one SVE system to address the shallow TCE-impacted soils of the south parking lot. Installation would involve approximately 250 feet of trenching on a roughly north-northeast, east-west, southwest-northeast trajectories to install slotted horizontal piping. This piping would be connected to vertical extraction wells at approximately 10-foot intervals along the horizontal piping. The System would be equipped with approximately one (1) 150 scfm blower using 240-volt, 3 phase electrical service.	This option is technically feasible, however, the pilot test results from the southwest parking lot indicated that potential subsurface heterogeneities may impact the ability to reach soils at the calculated radii of influence, which would negatively impact the performance and the time required to complete treatment. If the remediation objective is 3.6 ug/kg and the maximum detected concentration is 3,190 ug/kg, then a maximum 99.9% reduction must be achieved, which will be a challenging SVE goal even with ideal soil conditions.	Regular system performance monitoring will be conducted (monthly the first year and quarterly thereafter) with a site investigation to be performed at the five-year operating point to determine progress at contaminant mass reduction. Project budget assumes a five-year operating window; however, additional costs would be incurred if operation is required to continue. Budget cost is over an estimated five years.	The timeframe for this option has initially been set at 5 years based on the relative levels of TCE present, the limits of the remediation technology, and the heterogeneities of the subsurface conditions. At 5 years, remedial progress would be evaluated and the project timeframe revisited. Based on experience at other sites, this timeframe is likely to extend past the 5 years.	**$450,000.00**
In-Situ Treatment w/ Chemical Oxidation	This option generally involves: Introduction of a chemical oxidizing agent into the subsurface soil via direct mixing or injection points. Oxidizing agent would react chemically with the organics within the soil (including the contaminants) resulting in non-hazardous by-products such as chlorine, carbon dioxide, water, oxygen and manganese oxide depending upon the oxidant used in treatment. In theory no soils would be excavated with this option, so soil handling/disposal issues would be minimized or eliminated. Due to the size of the area potentially encompassing soils with TCE in excess of 3.6 ug/kg & deteriorated condition of existing pavement, KPRG would propose using a hydraulic excavator to mechanically mix soils and oxidant iteratively across the treatment area. This process would more quickly, economically, and completely introduce oxidant to the contaminant mass than multiple injection points.	Chemical oxidation technology has evolved over time. Oxidant selection is important. This option generally requires a treatability study to determine the proper chemical and dosage to use. Since the oxidant chemically reacts with the contaminant to physically breakdown the chemical to non-hazardous by-products and the reaction occurs quickly, this treatment option is effective on both the short and long term basis relative to meeting cleanup objectives and risk reduction. In general, cleanup objectives are not always met with only one treatment and based on verification sampling, a "polishing" second mixing over a portion of the treatment area may be needed to meet final goals. One downside of the reaction of the oxidant with the natural organic components of the soil is the potential negative effect on the structural properties of the soil, which may effect its strength as an underlying material for the parking lot in the future.	The economic feasibility of this option is driven by: The mass of contaminant that needs to be treated (and thus the quantity of oxidant required), the natural oxidant demand of the soil, the size of the treatment area, the permeability of the soils and the levels of treatment that need to be achieved. Based on the data available, the estimated costs include $15,000 to collect a representative sample and conduct a treatability study. The mixing process would include expedited confirmation sample analysis over a small area to determine treatment effectiveness and whether further additions of oxidant were warranted to complete treatment. For budgetary purposes, a second smaller round of mixing is assumed for approximately one third of the treatment area.	The timeframe for this option assumed that 300 cubic yards of impacted soils could be treated each day, which would require 12 days of treatment.	**$520,000.00**
Trench Excavation/Active Soil Vent (Pavement as Engineered Barrier)	This remedial alternative uses trench excavations that traverse those soils with TCE concentrations in excess of the soil-to-groundwater residual contaminant level of 3.6 ug/kg in north-northeast and east-west orientations. This incidental and limited cleanup would be done in conjunction with the installation of a geosynthetic clay lined active vapor vent trench along 260 feet of the western and southern perimeters and third central trench of the low-level TCE area as boundaries against residences to the south and west. An electric vacuum motor would provide a continuous negative pressure within this trench to draw and exhaust potential soil vapors. This option assumes that approximately 300 cubic yards of potentially impacted trench soils will be removed and disposed of at a non-hazardous solid waste landfill. This cleanup strategy would require maintenance of the exhaust motor and asphalt parking lot pavement as an engineered barrier to manage the risks associated with the site and to eliminate direct contact hazards and minimize potential leaching associated with the infiltration of precipitation.	The currently known distribution of impacted soils on the subject property above the 3.6 ug/kg objective are known to be clustered around boring GP-73 in each direction and have been defined on site to the west, east, and south. No TCE concentrations above 1,300 ug/kg are known to be present in this area aside from GP-89 to the northeast which will be excavated as part of the central third trench. The installation of a very low permeability geosynthetic clay liner as a vapor barrier will act to prevent any remaining lower TCE concentrations from potentially migrating off site in the southern and western directions (where residences directly abut the parking lot site). This feature will be combined with a high permeability, high porosity stone backfilled vapor evacuation trench that will also include piping and riser that will be connected to an electric exhaust fan (with wind-driven backup) to enhance outward vapor flow through diffusion and advection.	This option eliminates the potential vapor migration pathway. It is economical and practical in that some low concentrations of TCE are allowed to remain in place beneath an asphalt parking lot engineered barrier. Most of the site is already under an engineered barrier type material consisting of concrete or asphalt. Some replacement/upgrade and maintenance of the existing asphalt may be necessary. Further, this option represents one of the fastest means to address potential vapor migration in this area.	Once electrical service to the site is established, the construction of this remedial option has been estimated at 5 days. This option is also dependent on trucking considerations. This option also considers the productivity of several trades involved in installing the trench lining, vapor trench piping, stacks, bollards, motor and electrical service, and pavement restoration. The option also uses engineered barriers/institutional controls. This obligation would be ongoing unless the property owner elected to reopen the site and pursue a different remedial option.	**$440,000.00**
Soil Excavation and Off-Site Disposal	This option includes the excavation of the primary impacted source soils exceeding the soil-to-groundwater residual contaminant level of 3.6 ug/kg TCE and transport of the soils for proper off-site disposal. Based on data collected to date, KPRG estimates that approximately 3,200 tons of TCE-impacted soil exists to a depths of 6-8 feet bgs beneath the site using a 1.45 tons per cubic yard conversion. Excavation would include temporarily restricting access to the parking lot, removing and recycling overlying asphalt, setting aside the top un-impacted sub base material if suitable for reuse, excavating the impacted soils, backfilling the excavation with virgin stone/clean recycled concrete (clay along west & south sides), and machine compacting the work area. Based on the observed TCE concentrations, the soil is assumed to be suitable for disposal as a non-hazardous waste.	This option is technically feasible and would cause only short-term disruption of the parking lot area use. Excavation of source material provides a good short and long term solution to eliminating impacted soils and the potential vapor migration pathway. Select documentary sampling during the course of the excavation would be used to document successfully reaching the 3.6 ug/kg cleanup standard, which would eliminate the need for any further remediation in this area and subsequent institutional controls.	This analysis assumes that 3,200 tons of soils are present across approximately 0.234 acres at concentrations in excess of the 3.6 ug/kg soil-to-groundwater standard. This conservative approach will eliminate shallow soil TCE concentrations that have the potential to contribute to vapor migration.	The timeframe for this option has been estimated at 7 field days. However, this is dependent upon the number of dump trucks that can be utilized each day, the number of trips each truck can make to the landfill each day, and the number of truckloads of clean backfill that each truck can return with each day.	**$470,000.00**

*This does not include ongoing maintenance costs associated with the engineered barrier or regulatory reporting labor costs.

Attachment 1

In considering remedial options for the shallow soil southwest parking lot TCE impacts, initial discussions focused on soil vapor extraction (SVE) as a possible means to prevent vapor migration off site and to treat the source contamination. Based on the above soil results, KPRG completed two SVE pilot tests on shallow extraction wells EW-1 and EW-2. EW-1 and EW-2 were installed at locations on the west and east sides of the parking lot adjacent to soil borings GP-55 and GP-32, respectively, which had the highest TCE concentrations of any of the parking lot borings advanced by KPRG. EW-2 was also in close proximity to the location of the highest overall TCE concentration in parking lot soils at GP-18. The pilot testing was completed in June and July 2019. The goals of KPRG's SVE pilot testing were the following:

- To evaluate the potential effectiveness of SVE as a means to remove vapor phase TCE from the vadose zone;
- To estimate approximate SVE radius of influence (ROI) to remove vapor phase TCE across the parking lot;
- To assess potential SVE levels of vacuum and flow rates given existing soil conditions; and
- To provide data on the vapor phase concentrations in the vacuum-driven vapors.

The purpose of the extraction well induced vacuum variable rate pilot tests was to define the pressure/flow characteristics of sub-surface soils around each extraction well and to estimate potential conditions for an operational SVE system design. Starting the test with lower variable rates of vacuum and flow allowed the extraction well and outer wells sufficient time to adjust and stabilize and minimized the risk of developing preferential pathways within the subsurface or short-circuiting to the ground surface. This methodology also assisted the development of newly installed extraction wells. Overall, the SVE pilot tests indicated that SVE is a viable remedial technology for the parking lot TCE soil concentrations, but the test results also indicate the potential for variable operational performance and results across the parking lot site. This variability may be attributable to the presence of heterogeneous fill materials from the former home foundations and other potential imported fill materials used to construct the parking lot. In summary, extraction well EW-1 yielded a maximum induced well vacuum of 25 inches of water and a maximum vapor flow of 28.68 standard cubic feet per minute (scfm), while EW-2 yielded respective values of 8 inches of water and 47.45 scfm.

Over the course of each approximately 8-hour pilot test, the system vacuum was increased at approximately 2-hour time periods and the flow rate recalculated. Measurements were taken at observation wells surrounding each extraction well to record observed vacuum. The measurements recorded over the course of each test were used to calculate 1 percent (%) and 3% ROI. Thus, 1% and 3% ROI with an average vacuum of 17 inches of water at EW-1 correspond to vacuums of 0.17 and 0.51 inches of water, respectively. It is assumed that beyond these points, the pressure gradient (driving force) of the system would be negligible to effectively transport vaporized contaminants to the extraction well. Under continuous operation, it is expected that vacuum and ROI would likely continue to increase horizontally and vertically. Although vacuum and flow were different on the western and eastern portions of the parking lot, the 1% and 3% ROI were similar. Specifically, at EW-1 the 1% and 3% ROI were approximately 15 feet and 13 feet, while at EW-2 they were 16.4 feet and 14.4 feet, respectively. However, it should be noted that one of the observation wells installed to the east of EW-2 and adjacent to historic hot spot GP-18 exhibited

minimal vacuum response, indicating a possible physical obstruction such as a former building foundation between the extraction and observation wells.

As part of the pilot testing, KPRG also collected vapor Summa canister "grab" samples for VOC analysis according to Method TO-15 at time periods representing the approximate beginning, middle, and end of each of the two pilot tests. These results are summarized below in micrograms per cubic meter ($\mu g/m^3$).

West Side		East Side	
Extraction Well #1	TCE ($\mu g/m^3$)	Extraction Well #2	TCE ($\mu g/m^3$)
EW-1 Start	87,300	EW-2 Start	7,340
EW-1 Mid	95,900	EW-2 Mid	5,380
EW-1 End	145,000	EW-2 End	5,320

The west side EW-1 results indicate increasing TCE concentrations as vacuum and flow rates were increased over the course of the test, while EW-2 results indicate steady to decreasing concentrations over the test period. It is noted that the higher soil vapor concentrations were found on the west side of the parking lot, which has TCE soil concentrations that are an order of magnitude lower than that observed in soils on the east side. These results again point to possible heterogeneities in subsurface materials across the parking lot site. Another site feature that would need to be incorporated into an SVE system design is a sanitary sewer line running roughly north-south across the approximate center portion of the parking lot. This sewer would need to be bridged as part of a single system design or used as a dividing line for a multi-system design. Regardless, the SVE system would need to intercept the sewer backfill to prevent it from potentially acting as a preferential migration pathway for TCE.

Attachment 2

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

December 09, 2020

Rich Gnat
KPRG AND ASSOCIATES, INC.
14665 W. Lisbon Road
Suite 1A
Brookfield, WI 53005

RE: Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Dear Rich Gnat:

Enclosed are the analytical results for sample(s) received by the laboratory on December 04, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Green Bay

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

Sincerely,

Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures

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CERTIFICATIONS

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Pace Analytical Services Green Bay
1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150
Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

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SAMPLE SUMMARY

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40219305001	**GP-88 0-2'**	Solid	12/02/20 09:00	12/04/20 08:45
40219305002	**GP-88 2-4'**	Solid	12/02/20 09:01	12/04/20 08:45
40219305003	**GP-88 4-6'**	Solid	12/02/20 09:02	12/04/20 08:45
40219305004	**GP-88 6-8'**	Solid	12/02/20 09:03	12/04/20 08:45
40219305005	**GP-89 0-2'**	Solid	12/02/20 09:30	12/04/20 08:45
40219305006	**GP-89 2-4'**	Solid	12/02/20 09:31	12/04/20 08:45
40219305007	**GP-89 4-6'**	Solid	12/02/20 09:32	12/04/20 08:45
40219305008	**GP-89 6-8'**	Solid	12/02/20 09:33	12/04/20 08:45
40219305009	**GP-85 0-2'**	Solid	12/02/20 10:20	12/04/20 08:45
40219305010	**GP-85 2-4'**	Solid	12/02/20 10:21	12/04/20 08:45
40219305011	**GP-85 4-6'**	Solid	12/02/20 10:22	12/04/20 08:45
40219305012	**GP-85 6-8'**	Solid	12/02/20 10:23	12/04/20 08:45
40219305013	**GP-86 0-2'**	Solid	12/02/20 10:40	12/04/20 08:45
40219305014	**GP-86 2-4'**	Solid	12/02/20 10:41	12/04/20 08:45
40219305015	**GP-86 4-6'**	Solid	12/02/20 10:42	12/04/20 08:45
40219305016	**GP-86 6-8'**	Solid	12/02/20 10:43	12/04/20 08:45
40219305017	**GP-87 0-2'**	Solid	12/02/20 11:25	12/04/20 08:45
40219305018	**GP-87 2-4'**	Solid	12/02/20 11:26	12/04/20 08:45
40219305019	**GP-87 4-6'**	Solid	12/02/20 11:27	12/04/20 08:45
40219305020	**GP-87 6-8'**	Solid	12/02/20 11:28	12/04/20 08:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40219305001	**GP-88 0-2'**	EPA 8260	MDS	13	PASI-G
		ASTM D2974-87	MMX	1	PASI-G
40219305002	**GP-88 2-4'**	EPA 8260	MDS	13	PASI-G
		ASTM D2974-87	MMX	1	PASI-G
40219305003	**GP-88 4-6'**	EPA 8260	MDS	13	PASI-G
		ASTM D2974-87	MMX	1	PASI-G
40219305004	**GP-88 6-8'**	EPA 8260	MDS	13	PASI-G
		ASTM D2974-87	MMX	1	PASI-G
40219305005	**GP-89 0-2'**	EPA 8260	MDS	13	PASI-G
		ASTM D2974-87	MMX	1	PASI-G
40219305006	**GP-89 2-4'**	EPA 8260	MDS	13	PASI-G
		ASTM D2974-87	MMX	1	PASI-G
40219305007	**GP-89 4-6'**	EPA 8260	MDS	13	PASI-G
		ASTM D2974-87	MMX	1	PASI-G
40219305008	**GP-89 6-8'**	EPA 8260	MDS	13	PASI-G
		ASTM D2974-87	MMX	1	PASI-G
40219305009	**GP-85 0-2'**	EPA 8260	MDS	13	PASI-G
		ASTM D2974-87	MMX	1	PASI-G
40219305010	**GP-85 2-4'**	EPA 8260	MDS	13	PASI-G
		ASTM D2974-87	MMX	1	PASI-G
40219305011	**GP-85 4-6'**	EPA 8260	MDS	13	PASI-G
		ASTM D2974-87	MMX	1	PASI-G
40219305012	**GP-85 6-8'**	EPA 8260	MDS	13	PASI-G
		ASTM D2974-87	MMX	1	PASI-G
40219305013	**GP-86 0-2'**	EPA 8260	MDS	13	PASI-G
		ASTM D2974-87	MMX	1	PASI-G
40219305014	**GP-86 2-4'**	EPA 8260	MDS	13	PASI-G
		ASTM D2974-87	MMX	1	PASI-G
40219305015	**GP-86 4-6'**	EPA 8260	MDS	13	PASI-G
		ASTM D2974-87	MMX	1	PASI-G
40219305016	**GP-86 6-8'**	EPA 8260	MDS	13	PASI-G
		ASTM D2974-87	MMX	1	PASI-G
40219305017	**GP-87 0-2'**	EPA 8260	MDS	13	PASI-G
		ASTM D2974-87	MMX	1	PASI-G
40219305018	**GP-87 2-4'**	EPA 8260	MDS	13	PASI-G
		ASTM D2974-87	MMX	1	PASI-G
40219305019	**GP-87 4-6'**	EPA 8260	MDS	13	PASI-G

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SAMPLE ANALYTE COUNT

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		ASTM D2974-87	MMX	1	PASI-G
40219305020	**GP-87 6-8'**	EPA 8260	MDS	13	PASI-G
		ASTM D2974-87	MMX	1	PASI-G

PASI-G = Pace Analytical Services - Green Bay

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SUMMARY OF DETECTION

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40219305001	**GP-88 0-2'**					
EPA 8260	1,1,1-Trichloroethane	33.1J	ug/kg	53.8	12/08/20 01:27	
EPA 8260	Trichloroethene	514	ug/kg	53.8	12/08/20 01:27	
ASTM D2974-87	Percent Moisture	7.0	%	0.10	12/05/20 10:59	
40219305002	**GP-88 2-4'**					
EPA 8260	1,1,1-Trichloroethane	24.6J	ug/kg	58.6	12/08/20 11:18	
EPA 8260	Trichloroethene	931	ug/kg	58.6	12/08/20 11:18	
ASTM D2974-87	Percent Moisture	14.6	%	0.10	12/05/20 11:00	
40219305003	**GP-88 4-6'**					
EPA 8260	Trichloroethene	322	ug/kg	53.0	12/08/20 02:07	
ASTM D2974-87	Percent Moisture	5.7	%	0.10	12/05/20 11:00	
40219305004	**GP-88 6-8'**					
ASTM D2974-87	Percent Moisture	8.8	%	0.10	12/05/20 11:00	
40219305005	**GP-89 0-2'**					
EPA 8260	Trichloroethene	3190	ug/kg	58.7	12/08/20 02:48	
ASTM D2974-87	Percent Moisture	14.8	%	0.10	12/05/20 11:00	
40219305006	**GP-89 2-4'**					
EPA 8260	Trichloroethene	299	ug/kg	62.9	12/08/20 11:58	
ASTM D2974-87	Percent Moisture	20.6	%	0.10	12/05/20 11:00	
40219305007	**GP-89 4-6'**					
EPA 8260	Trichloroethene	86.7	ug/kg	52.8	12/08/20 12:38	
ASTM D2974-87	Percent Moisture	5.3	%	0.10	12/05/20 11:00	
40219305008	**GP-89 6-8'**					
ASTM D2974-87	Percent Moisture	5.3	%	0.10	12/05/20 11:00	
40219305009	**GP-85 0-2'**					
ASTM D2974-87	Percent Moisture	15.2	%	0.10	12/05/20 11:00	
40219305010	**GP-85 2-4'**					
EPA 8260	cis-1,2-Dichloroethene	153	ug/kg	65.9	12/08/20 13:39	
ASTM D2974-87	Percent Moisture	24.2	%	0.10	12/05/20 11:00	
40219305011	**GP-85 4-6'**					
EPA 8260	cis-1,2-Dichloroethene	52.5J	ug/kg	67.5	12/08/20 14:19	
ASTM D2974-87	Percent Moisture	25.9	%	0.10	12/05/20 11:00	
40219305012	**GP-85 6-8'**					
ASTM D2974-87	Percent Moisture	10.6	%	0.10	12/05/20 11:00	
40219305013	**GP-86 0-2'**					
ASTM D2974-87	Percent Moisture	5.6	%	0.10	12/05/20 11:00	
40219305014	**GP-86 2-4'**					
EPA 8260	Trichloroethene	260	ug/kg	59.0	12/08/20 15:19	
ASTM D2974-87	Percent Moisture	15.2	%	0.10	12/05/20 11:00	

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(920)469-2436

SUMMARY OF DETECTION

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40219305015	**GP-86 4-6'**					
EPA 8260	cis-1,2-Dichloroethene	34.4J	ug/kg	60.3	12/08/20 15:39	
EPA 8260	Trichloroethene	850	ug/kg	60.3	12/08/20 15:39	
ASTM D2974-87	Percent Moisture	17.1	%	0.10	12/05/20 11:00	
40219305016	**GP-86 6-8'**					
EPA 8260	Trichloroethene	96.8	ug/kg	67.7	12/08/20 00:07	
ASTM D2974-87	Percent Moisture	26.2	%	0.10	12/05/20 11:00	
40219305017	**GP-87 0-2'**					
ASTM D2974-87	Percent Moisture	5.4	%	0.10	12/05/20 11:00	
40219305018	**GP-87 2-4'**					
ASTM D2974-87	Percent Moisture	20.1	%	0.10	12/05/20 11:00	
40219305019	**GP-87 4-6'**					
ASTM D2974-87	Percent Moisture	20.2	%	0.10	12/05/20 11:00	
40219305020	**GP-87 6-8'**					
ASTM D2974-87	Percent Moisture	12.1	%	0.10	12/05/20 11:26	

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ANALYTICAL RESULTS

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Sample: GP-88 0-2' **Lab ID: 40219305001** Collected: 12/02/20 09:00 Received: 12/04/20 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
1,1-Dichloroethane	**<13.8**	ug/kg	53.8	13.8	1	12/07/20 09:00	12/08/20 01:27	75-34-3	
1,2-Dichloroethane	**<12.4**	ug/kg	53.8	12.4	1	12/07/20 09:00	12/08/20 01:27	107-06-2	
1,1-Dichloroethene	**<17.9**	ug/kg	53.8	17.9	1	12/07/20 09:00	12/08/20 01:27	75-35-4	
cis-1,2-Dichloroethene	**<11.5**	ug/kg	53.8	11.5	1	12/07/20 09:00	12/08/20 01:27	156-59-2	
trans-1,2-Dichloroethene	**<11.6**	ug/kg	53.8	11.6	1	12/07/20 09:00	12/08/20 01:27	156-60-5	
Tetrachloroethene	**<20.9**	ug/kg	53.8	20.9	1	12/07/20 09:00	12/08/20 01:27	127-18-4	
1,1,1-Trichloroethane	**33.1J**	ug/kg	53.8	13.8	1	12/07/20 09:00	12/08/20 01:27	71-55-6	
1,1,2-Trichloroethane	**<19.6**	ug/kg	53.8	19.6	1	12/07/20 09:00	12/08/20 01:27	79-00-5	
Trichloroethene	**514**	ug/kg	53.8	20.1	1	12/07/20 09:00	12/08/20 01:27	79-01-6	
Vinyl chloride	**<10.9**	ug/kg	53.8	10.9	1	12/07/20 09:00	12/08/20 01:27	75-01-4	
Surrogates									
Toluene-d8 (S)	122	%	56-140		1	12/07/20 09:00	12/08/20 01:27	2037-26-5	
4-Bromofluorobenzene (S)	122	%	52-137		1	12/07/20 09:00	12/08/20 01:27	460-00-4	
1,2-Dichlorobenzene-d4 (S)	123	%	50-150		1	12/07/20 09:00	12/08/20 01:27	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**7.0**	%	0.10	0.10	1		12/05/20 10:59		

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ANALYTICAL RESULTS

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Sample: GP-88 2-4' **Lab ID: 40219305002** Collected: 12/02/20 09:01 Received: 12/04/20 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
1,1-Dichloroethane	**<15.0**	ug/kg	58.6	15.0	1	12/07/20 09:00	12/08/20 11:18	75-34-3	
1,2-Dichloroethane	**<13.5**	ug/kg	58.6	13.5	1	12/07/20 09:00	12/08/20 11:18	107-06-2	
1,1-Dichloroethene	**<19.4**	ug/kg	58.6	19.4	1	12/07/20 09:00	12/08/20 11:18	75-35-4	
cis-1,2-Dichloroethene	**<12.5**	ug/kg	58.6	12.5	1	12/07/20 09:00	12/08/20 11:18	156-59-2	
trans-1,2-Dichloroethene	**<12.6**	ug/kg	58.6	12.6	1	12/07/20 09:00	12/08/20 11:18	156-60-5	
Tetrachloroethene	**<22.7**	ug/kg	58.6	22.7	1	12/07/20 09:00	12/08/20 11:18	127-18-4	
1,1,1-Trichloroethane	**24.6J**	ug/kg	58.6	15.0	1	12/07/20 09:00	12/08/20 11:18	71-55-6	
1,1,2-Trichloroethane	**<21.3**	ug/kg	58.6	21.3	1	12/07/20 09:00	12/08/20 11:18	79-00-5	
Trichloroethene	**931**	ug/kg	58.6	21.9	1	12/07/20 09:00	12/08/20 11:18	79-01-6	
Vinyl chloride	**<11.8**	ug/kg	58.6	11.8	1	12/07/20 09:00	12/08/20 11:18	75-01-4	
Surrogates									
Toluene-d8 (S)	134	%	56-140		1	12/07/20 09:00	12/08/20 11:18	2037-26-5	
4-Bromofluorobenzene (S)	139	%	52-137		1	12/07/20 09:00	12/08/20 11:18	460-00-4	S1
1,2-Dichlorobenzene-d4 (S)	135	%	50-150		1	12/07/20 09:00	12/08/20 11:18	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**14.6**	%	0.10	0.10	1		12/05/20 11:00		

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ANALYTICAL RESULTS

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Sample: GP-88 4-6' **Lab ID: 40219305003** Collected: 12/02/20 09:02 Received: 12/04/20 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
1,1-Dichloroethane	**<13.6**	ug/kg	53.0	13.6	1	12/07/20 09:00	12/08/20 02:07	75-34-3	
1,2-Dichloroethane	**<12.2**	ug/kg	53.0	12.2	1	12/07/20 09:00	12/08/20 02:07	107-06-2	
1,1-Dichloroethene	**<17.6**	ug/kg	53.0	17.6	1	12/07/20 09:00	12/08/20 02:07	75-35-4	
cis-1,2-Dichloroethene	**<11.3**	ug/kg	53.0	11.3	1	12/07/20 09:00	12/08/20 02:07	156-59-2	
trans-1,2-Dichloroethene	**<11.4**	ug/kg	53.0	11.4	1	12/07/20 09:00	12/08/20 02:07	156-60-5	
Tetrachloroethene	**<20.6**	ug/kg	53.0	20.6	1	12/07/20 09:00	12/08/20 02:07	127-18-4	
1,1,1-Trichloroethane	**<13.6**	ug/kg	53.0	13.6	1	12/07/20 09:00	12/08/20 02:07	71-55-6	
1,1,2-Trichloroethane	**<19.3**	ug/kg	53.0	19.3	1	12/07/20 09:00	12/08/20 02:07	79-00-5	
Trichloroethene	**322**	ug/kg	53.0	19.8	1	12/07/20 09:00	12/08/20 02:07	79-01-6	
Vinyl chloride	**<10.7**	ug/kg	53.0	10.7	1	12/07/20 09:00	12/08/20 02:07	75-01-4	
Surrogates									
Toluene-d8 (S)	139	%	56-140		1	12/07/20 09:00	12/08/20 02:07	2037-26-5	
4-Bromofluorobenzene (S)	132	%	52-137		1	12/07/20 09:00	12/08/20 02:07	460-00-4	
1,2-Dichlorobenzene-d4 (S)	137	%	50-150		1	12/07/20 09:00	12/08/20 02:07	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**5.7**	%	0.10	0.10	1		12/05/20 11:00		

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ANALYTICAL RESULTS

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Sample: GP-88 6-8' **Lab ID: 40219305004** Collected: 12/02/20 09:03 Received: 12/04/20 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
1,1-Dichloroethane	**<14.0**	ug/kg	54.8	14.0	1	12/07/20 09:00	12/08/20 02:28	75-34-3	
1,2-Dichloroethane	**<12.6**	ug/kg	54.8	12.6	1	12/07/20 09:00	12/08/20 02:28	107-06-2	
1,1-Dichloroethene	**<18.2**	ug/kg	54.8	18.2	1	12/07/20 09:00	12/08/20 02:28	75-35-4	
cis-1,2-Dichloroethene	**<11.7**	ug/kg	54.8	11.7	1	12/07/20 09:00	12/08/20 02:28	156-59-2	
trans-1,2-Dichloroethene	**<11.8**	ug/kg	54.8	11.8	1	12/07/20 09:00	12/08/20 02:28	156-60-5	
Tetrachloroethene	**<21.3**	ug/kg	54.8	21.3	1	12/07/20 09:00	12/08/20 02:28	127-18-4	
1,1,1-Trichloroethane	**<14.0**	ug/kg	54.8	14.0	1	12/07/20 09:00	12/08/20 02:28	71-55-6	
1,1,2-Trichloroethane	**<19.9**	ug/kg	54.8	19.9	1	12/07/20 09:00	12/08/20 02:28	79-00-5	
Trichloroethene	**<20.5**	ug/kg	54.8	20.5	1	12/07/20 09:00	12/08/20 02:28	79-01-6	
Vinyl chloride	**<11.1**	ug/kg	54.8	11.1	1	12/07/20 09:00	12/08/20 02:28	75-01-4	
Surrogates									
Toluene-d8 (S)	121	%	56-140		1	12/07/20 09:00	12/08/20 02:28	2037-26-5	
4-Bromofluorobenzene (S)	118	%	52-137		1	12/07/20 09:00	12/08/20 02:28	460-00-4	
1,2-Dichlorobenzene-d4 (S)	125	%	50-150		1	12/07/20 09:00	12/08/20 02:28	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**8.8**	%	0.10	0.10	1		12/05/20 11:00		

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ANALYTICAL RESULTS

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Sample: GP-89 0-2' **Lab ID: 40219305005** Collected: 12/02/20 09:30 Received: 12/04/20 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
1,1-Dichloroethane	**<15.0**	ug/kg	58.7	15.0	1	12/07/20 09:00	12/08/20 02:48	75-34-3	
1,2-Dichloroethane	**<13.5**	ug/kg	58.7	13.5	1	12/07/20 09:00	12/08/20 02:48	107-06-2	
1,1-Dichloroethene	**<19.5**	ug/kg	58.7	19.5	1	12/07/20 09:00	12/08/20 02:48	75-35-4	
cis-1,2-Dichloroethene	**<12.6**	ug/kg	58.7	12.6	1	12/07/20 09:00	12/08/20 02:48	156-59-2	
trans-1,2-Dichloroethene	**<12.7**	ug/kg	58.7	12.7	1	12/07/20 09:00	12/08/20 02:48	156-60-5	
Tetrachloroethene	**<22.8**	ug/kg	58.7	22.8	1	12/07/20 09:00	12/08/20 02:48	127-18-4	
1,1,1-Trichloroethane	**<15.0**	ug/kg	58.7	15.0	1	12/07/20 09:00	12/08/20 02:48	71-55-6	
1,1,2-Trichloroethane	**<21.4**	ug/kg	58.7	21.4	1	12/07/20 09:00	12/08/20 02:48	79-00-5	
Trichloroethene	**3190**	ug/kg	58.7	21.9	1	12/07/20 09:00	12/08/20 02:48	79-01-6	
Vinyl chloride	**<11.9**	ug/kg	58.7	11.9	1	12/07/20 09:00	12/08/20 02:48	75-01-4	
Surrogates									
Toluene-d8 (S)	125	%	56-140		1	12/07/20 09:00	12/08/20 02:48	2037-26-5	
4-Bromofluorobenzene (S)	111	%	52-137		1	12/07/20 09:00	12/08/20 02:48	460-00-4	
1,2-Dichlorobenzene-d4 (S)	123	%	50-150		1	12/07/20 09:00	12/08/20 02:48	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**14.8**	%	0.10	0.10	1		12/05/20 11:00		

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ANALYTICAL RESULTS

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Sample: GP-89 2-4' **Lab ID: 40219305006** Collected: 12/02/20 09:31 Received: 12/04/20 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
1,1-Dichloroethane	**<16.1**	ug/kg	62.9	16.1	1	12/07/20 09:00	12/08/20 11:58	75-34-3	
1,2-Dichloroethane	**<14.5**	ug/kg	62.9	14.5	1	12/07/20 09:00	12/08/20 11:58	107-06-2	
1,1-Dichloroethene	**<20.9**	ug/kg	62.9	20.9	1	12/07/20 09:00	12/08/20 11:58	75-35-4	
cis-1,2-Dichloroethene	**<13.5**	ug/kg	62.9	13.5	1	12/07/20 09:00	12/08/20 11:58	156-59-2	
trans-1,2-Dichloroethene	**<13.6**	ug/kg	62.9	13.6	1	12/07/20 09:00	12/08/20 11:58	156-60-5	
Tetrachloroethene	**<24.4**	ug/kg	62.9	24.4	1	12/07/20 09:00	12/08/20 11:58	127-18-4	
1,1,1-Trichloroethane	**<16.1**	ug/kg	62.9	16.1	1	12/07/20 09:00	12/08/20 11:58	71-55-6	
1,1,2-Trichloroethane	**<22.9**	ug/kg	62.9	22.9	1	12/07/20 09:00	12/08/20 11:58	79-00-5	
Trichloroethene	**299**	ug/kg	62.9	23.5	1	12/07/20 09:00	12/08/20 11:58	79-01-6	
Vinyl chloride	**<12.7**	ug/kg	62.9	12.7	1	12/07/20 09:00	12/08/20 11:58	75-01-4	
Surrogates									
Toluene-d8 (S)	137	%	56-140		1	12/07/20 09:00	12/08/20 11:58	2037-26-5	
4-Bromofluorobenzene (S)	129	%	52-137		1	12/07/20 09:00	12/08/20 11:58	460-00-4	
1,2-Dichlorobenzene-d4 (S)	130	%	50-150		1	12/07/20 09:00	12/08/20 11:58	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**20.6**	%	0.10	0.10	1		12/05/20 11:00		

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ANALYTICAL RESULTS

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Sample: GP-89 4-6' **Lab ID: 40219305007** Collected: 12/02/20 09:32 Received: 12/04/20 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
1,1-Dichloroethane	**<13.5**	ug/kg	52.8	13.5	1	12/07/20 09:00	12/08/20 12:38	75-34-3	
1,2-Dichloroethane	**<12.1**	ug/kg	52.8	12.1	1	12/07/20 09:00	12/08/20 12:38	107-06-2	
1,1-Dichloroethene	**<17.5**	ug/kg	52.8	17.5	1	12/07/20 09:00	12/08/20 12:38	75-35-4	
cis-1,2-Dichloroethene	**<11.3**	ug/kg	52.8	11.3	1	12/07/20 09:00	12/08/20 12:38	156-59-2	
trans-1,2-Dichloroethene	**<11.4**	ug/kg	52.8	11.4	1	12/07/20 09:00	12/08/20 12:38	156-60-5	
Tetrachloroethene	**<20.5**	ug/kg	52.8	20.5	1	12/07/20 09:00	12/08/20 12:38	127-18-4	
1,1,1-Trichloroethane	**<13.5**	ug/kg	52.8	13.5	1	12/07/20 09:00	12/08/20 12:38	71-55-6	
1,1,2-Trichloroethane	**<19.2**	ug/kg	52.8	19.2	1	12/07/20 09:00	12/08/20 12:38	79-00-5	
Trichloroethene	**86.7**	ug/kg	52.8	19.8	1	12/07/20 09:00	12/08/20 12:38	79-01-6	
Vinyl chloride	**<10.7**	ug/kg	52.8	10.7	1	12/07/20 09:00	12/08/20 12:38	75-01-4	
Surrogates									
Toluene-d8 (S)	133	%	56-140		1	12/07/20 09:00	12/08/20 12:38	2037-26-5	
4-Bromofluorobenzene (S)	127	%	52-137		1	12/07/20 09:00	12/08/20 12:38	460-00-4	
1,2-Dichlorobenzene-d4 (S)	137	%	50-150		1	12/07/20 09:00	12/08/20 12:38	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**5.3**	%	0.10	0.10	1		12/05/20 11:00		

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(920)469-2436

ANALYTICAL RESULTS

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Sample: GP-89 6-8' **Lab ID: 40219305008** Collected: 12/02/20 09:33 Received: 12/04/20 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
1,1-Dichloroethane	**<13.5**	ug/kg	52.8	13.5	1	12/07/20 09:00	12/08/20 12:58	75-34-3	
1,2-Dichloroethane	**<12.1**	ug/kg	52.8	12.1	1	12/07/20 09:00	12/08/20 12:58	107-06-2	
1,1-Dichloroethene	**<17.5**	ug/kg	52.8	17.5	1	12/07/20 09:00	12/08/20 12:58	75-35-4	
cis-1,2-Dichloroethene	**<11.3**	ug/kg	52.8	11.3	1	12/07/20 09:00	12/08/20 12:58	156-59-2	
trans-1,2-Dichloroethene	**<11.4**	ug/kg	52.8	11.4	1	12/07/20 09:00	12/08/20 12:58	156-60-5	
Tetrachloroethene	**<20.5**	ug/kg	52.8	20.5	1	12/07/20 09:00	12/08/20 12:58	127-18-4	
1,1,1-Trichloroethane	**<13.5**	ug/kg	52.8	13.5	1	12/07/20 09:00	12/08/20 12:58	71-55-6	
1,1,2-Trichloroethane	**<19.2**	ug/kg	52.8	19.2	1	12/07/20 09:00	12/08/20 12:58	79-00-5	
Trichloroethene	**<19.7**	ug/kg	52.8	19.7	1	12/07/20 09:00	12/08/20 12:58	79-01-6	
Vinyl chloride	**<10.7**	ug/kg	52.8	10.7	1	12/07/20 09:00	12/08/20 12:58	75-01-4	
Surrogates									
Toluene-d8 (S)	120	%	56-140		1	12/07/20 09:00	12/08/20 12:58	2037-26-5	
4-Bromofluorobenzene (S)	120	%	52-137		1	12/07/20 09:00	12/08/20 12:58	460-00-4	
1,2-Dichlorobenzene-d4 (S)	121	%	50-150		1	12/07/20 09:00	12/08/20 12:58	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**5.3**	%	0.10	0.10	1		12/05/20 11:00		

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ANALYTICAL RESULTS

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Sample: GP-85 0-2' **Lab ID: 40219305009** Collected: 12/02/20 10:20 Received: 12/04/20 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
1,1-Dichloroethane	**<15.1**	ug/kg	59.0	15.1	1	12/07/20 09:00	12/08/20 13:18	75-34-3	
1,2-Dichloroethane	**<13.6**	ug/kg	59.0	13.6	1	12/07/20 09:00	12/08/20 13:18	107-06-2	
1,1-Dichloroethene	**<19.6**	ug/kg	59.0	19.6	1	12/07/20 09:00	12/08/20 13:18	75-35-4	
cis-1,2-Dichloroethene	**<12.6**	ug/kg	59.0	12.6	1	12/07/20 09:00	12/08/20 13:18	156-59-2	
trans-1,2-Dichloroethene	**<12.7**	ug/kg	59.0	12.7	1	12/07/20 09:00	12/08/20 13:18	156-60-5	
Tetrachloroethene	**<22.9**	ug/kg	59.0	22.9	1	12/07/20 09:00	12/08/20 13:18	127-18-4	
1,1,1-Trichloroethane	**<15.1**	ug/kg	59.0	15.1	1	12/07/20 09:00	12/08/20 13:18	71-55-6	
1,1,2-Trichloroethane	**<21.5**	ug/kg	59.0	21.5	1	12/07/20 09:00	12/08/20 13:18	79-00-5	
Trichloroethene	**<22.1**	ug/kg	59.0	22.1	1	12/07/20 09:00	12/08/20 13:18	79-01-6	
Vinyl chloride	**<11.9**	ug/kg	59.0	11.9	1	12/07/20 09:00	12/08/20 13:18	75-01-4	
Surrogates									
Toluene-d8 (S)	130	%	56-140		1	12/07/20 09:00	12/08/20 13:18	2037-26-5	
4-Bromofluorobenzene (S)	115	%	52-137		1	12/07/20 09:00	12/08/20 13:18	460-00-4	
1,2-Dichlorobenzene-d4 (S)	124	%	50-150		1	12/07/20 09:00	12/08/20 13:18	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**15.2**	%	0.10	0.10	1		12/05/20 11:00		

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ANALYTICAL RESULTS

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Sample: GP-85 2-4' **Lab ID: 40219305010** Collected: 12/02/20 10:21 Received: 12/04/20 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
1,1-Dichloroethane	**<16.9**	ug/kg	65.9	16.9	1	12/07/20 09:00	12/08/20 13:39	75-34-3	
1,2-Dichloroethane	**<15.2**	ug/kg	65.9	15.2	1	12/07/20 09:00	12/08/20 13:39	107-06-2	
1,1-Dichloroethene	**<21.9**	ug/kg	65.9	21.9	1	12/07/20 09:00	12/08/20 13:39	75-35-4	
cis-1,2-Dichloroethene	**153**	ug/kg	65.9	14.1	1	12/07/20 09:00	12/08/20 13:39	156-59-2	
trans-1,2-Dichloroethene	**<14.2**	ug/kg	65.9	14.2	1	12/07/20 09:00	12/08/20 13:39	156-60-5	
Tetrachloroethene	**<25.6**	ug/kg	65.9	25.6	1	12/07/20 09:00	12/08/20 13:39	127-18-4	
1,1,1-Trichloroethane	**<16.9**	ug/kg	65.9	16.9	1	12/07/20 09:00	12/08/20 13:39	71-55-6	
1,1,2-Trichloroethane	**<24.0**	ug/kg	65.9	24.0	1	12/07/20 09:00	12/08/20 13:39	79-00-5	
Trichloroethene	**<24.7**	ug/kg	65.9	24.7	1	12/07/20 09:00	12/08/20 13:39	79-01-6	
Vinyl chloride	**<13.3**	ug/kg	65.9	13.3	1	12/07/20 09:00	12/08/20 13:39	75-01-4	
Surrogates									
Toluene-d8 (S)	139	%	56-140		1	12/07/20 09:00	12/08/20 13:39	2037-26-5	
4-Bromofluorobenzene (S)	144	%	52-137		1	12/07/20 09:00	12/08/20 13:39	460-00-4	1q
1,2-Dichlorobenzene-d4 (S)	145	%	50-150		1	12/07/20 09:00	12/08/20 13:39	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**24.2**	%	0.10	0.10	1		12/05/20 11:00		

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ANALYTICAL RESULTS

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Sample: GP-85 4-6' **Lab ID: 40219305011** Collected: 12/02/20 10:22 Received: 12/04/20 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
1,1-Dichloroethane	**<17.3**	ug/kg	67.5	17.3	1	12/07/20 09:00	12/08/20 14:19	75-34-3	
1,2-Dichloroethane	**<15.5**	ug/kg	67.5	15.5	1	12/07/20 09:00	12/08/20 14:19	107-06-2	
1,1-Dichloroethene	**<22.4**	ug/kg	67.5	22.4	1	12/07/20 09:00	12/08/20 14:19	75-35-4	
cis-1,2-Dichloroethene	**52.5J**	ug/kg	67.5	14.4	1	12/07/20 09:00	12/08/20 14:19	156-59-2	
trans-1,2-Dichloroethene	**<14.6**	ug/kg	67.5	14.6	1	12/07/20 09:00	12/08/20 14:19	156-60-5	
Tetrachloroethene	**<26.2**	ug/kg	67.5	26.2	1	12/07/20 09:00	12/08/20 14:19	127-18-4	
1,1,1-Trichloroethane	**<17.3**	ug/kg	67.5	17.3	1	12/07/20 09:00	12/08/20 14:19	71-55-6	
1,1,2-Trichloroethane	**<24.6**	ug/kg	67.5	24.6	1	12/07/20 09:00	12/08/20 14:19	79-00-5	
Trichloroethene	**<25.2**	ug/kg	67.5	25.2	1	12/07/20 09:00	12/08/20 14:19	79-01-6	
Vinyl chloride	**<13.6**	ug/kg	67.5	13.6	1	12/07/20 09:00	12/08/20 14:19	75-01-4	
Surrogates									
Toluene-d8 (S)	139	%	56-140		1	12/07/20 09:00	12/08/20 14:19	2037-26-5	
4-Bromofluorobenzene (S)	134	%	52-137		1	12/07/20 09:00	12/08/20 14:19	460-00-4	
1,2-Dichlorobenzene-d4 (S)	133	%	50-150		1	12/07/20 09:00	12/08/20 14:19	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**25.9**	%	0.10	0.10	1		12/05/20 11:00		

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ANALYTICAL RESULTS

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Sample: GP-85 6-8' **Lab ID: 40219305012** Collected: 12/02/20 10:23 Received: 12/04/20 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
1,1-Dichloroethane	**<14.3**	ug/kg	55.9	14.3	1	12/07/20 09:00	12/08/20 14:39	75-34-3	
1,2-Dichloroethane	**<12.9**	ug/kg	55.9	12.9	1	12/07/20 09:00	12/08/20 14:39	107-06-2	
1,1-Dichloroethene	**<18.6**	ug/kg	55.9	18.6	1	12/07/20 09:00	12/08/20 14:39	75-35-4	
cis-1,2-Dichloroethene	**<12.0**	ug/kg	55.9	12.0	1	12/07/20 09:00	12/08/20 14:39	156-59-2	
trans-1,2-Dichloroethene	**<12.1**	ug/kg	55.9	12.1	1	12/07/20 09:00	12/08/20 14:39	156-60-5	
Tetrachloroethene	**<21.7**	ug/kg	55.9	21.7	1	12/07/20 09:00	12/08/20 14:39	127-18-4	
1,1,1-Trichloroethane	**<14.3**	ug/kg	55.9	14.3	1	12/07/20 09:00	12/08/20 14:39	71-55-6	
1,1,2-Trichloroethane	**<20.4**	ug/kg	55.9	20.4	1	12/07/20 09:00	12/08/20 14:39	79-00-5	
Trichloroethene	**<20.9**	ug/kg	55.9	20.9	1	12/07/20 09:00	12/08/20 14:39	79-01-6	
Vinyl chloride	**<11.3**	ug/kg	55.9	11.3	1	12/07/20 09:00	12/08/20 14:39	75-01-4	
Surrogates									
Toluene-d8 (S)	118	%	56-140		1	12/07/20 09:00	12/08/20 14:39	2037-26-5	
4-Bromofluorobenzene (S)	117	%	52-137		1	12/07/20 09:00	12/08/20 14:39	460-00-4	
1,2-Dichlorobenzene-d4 (S)	124	%	50-150		1	12/07/20 09:00	12/08/20 14:39	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**10.6**	%	0.10	0.10	1		12/05/20 11:00		

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ANALYTICAL RESULTS

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Sample: GP-86 0-2' **Lab ID: 40219305013** Collected: 12/02/20 10:40 Received: 12/04/20 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
1,1-Dichloroethane	**<13.6**	ug/kg	53.0	13.6	1	12/07/20 09:00	12/08/20 14:59	75-34-3	
1,2-Dichloroethane	**<12.2**	ug/kg	53.0	12.2	1	12/07/20 09:00	12/08/20 14:59	107-06-2	
1,1-Dichloroethene	**<17.6**	ug/kg	53.0	17.6	1	12/07/20 09:00	12/08/20 14:59	75-35-4	
cis-1,2-Dichloroethene	**<11.3**	ug/kg	53.0	11.3	1	12/07/20 09:00	12/08/20 14:59	156-59-2	
trans-1,2-Dichloroethene	**<11.4**	ug/kg	53.0	11.4	1	12/07/20 09:00	12/08/20 14:59	156-60-5	
Tetrachloroethene	**<20.6**	ug/kg	53.0	20.6	1	12/07/20 09:00	12/08/20 14:59	127-18-4	
1,1,1-Trichloroethane	**<13.6**	ug/kg	53.0	13.6	1	12/07/20 09:00	12/08/20 14:59	71-55-6	
1,1,2-Trichloroethane	**<19.3**	ug/kg	53.0	19.3	1	12/07/20 09:00	12/08/20 14:59	79-00-5	
Trichloroethene	**<19.8**	ug/kg	53.0	19.8	1	12/07/20 09:00	12/08/20 14:59	79-01-6	
Vinyl chloride	**<10.7**	ug/kg	53.0	10.7	1	12/07/20 09:00	12/08/20 14:59	75-01-4	
Surrogates									
Toluene-d8 (S)	128	%	56-140		1	12/07/20 09:00	12/08/20 14:59	2037-26-5	
4-Bromofluorobenzene (S)	129	%	52-137		1	12/07/20 09:00	12/08/20 14:59	460-00-4	
1,2-Dichlorobenzene-d4 (S)	135	%	50-150		1	12/07/20 09:00	12/08/20 14:59	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**5.6**	%	0.10	0.10	1		12/05/20 11:00		

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ANALYTICAL RESULTS

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Sample: GP-86 2-4' **Lab ID: 40219305014** Collected: 12/02/20 10:41 Received: 12/04/20 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
1,1-Dichloroethane	**<15.1**	ug/kg	59.0	15.1	1	12/07/20 09:00	12/08/20 15:19	75-34-3	
1,2-Dichloroethane	**<13.6**	ug/kg	59.0	13.6	1	12/07/20 09:00	12/08/20 15:19	107-06-2	
1,1-Dichloroethene	**<19.6**	ug/kg	59.0	19.6	1	12/07/20 09:00	12/08/20 15:19	75-35-4	
cis-1,2-Dichloroethene	**<12.6**	ug/kg	59.0	12.6	1	12/07/20 09:00	12/08/20 15:19	156-59-2	
trans-1,2-Dichloroethene	**<12.7**	ug/kg	59.0	12.7	1	12/07/20 09:00	12/08/20 15:19	156-60-5	
Tetrachloroethene	**<22.9**	ug/kg	59.0	22.9	1	12/07/20 09:00	12/08/20 15:19	127-18-4	
1,1,1-Trichloroethane	**<15.1**	ug/kg	59.0	15.1	1	12/07/20 09:00	12/08/20 15:19	71-55-6	
1,1,2-Trichloroethane	**<21.5**	ug/kg	59.0	21.5	1	12/07/20 09:00	12/08/20 15:19	79-00-5	
Trichloroethene	**260**	ug/kg	59.0	22.1	1	12/07/20 09:00	12/08/20 15:19	79-01-6	
Vinyl chloride	**<11.9**	ug/kg	59.0	11.9	1	12/07/20 09:00	12/08/20 15:19	75-01-4	
Surrogates									
Toluene-d8 (S)	119	%	56-140		1	12/07/20 09:00	12/08/20 15:19	2037-26-5	
4-Bromofluorobenzene (S)	122	%	52-137		1	12/07/20 09:00	12/08/20 15:19	460-00-4	
1,2-Dichlorobenzene-d4 (S)	125	%	50-150		1	12/07/20 09:00	12/08/20 15:19	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**15.2**	%	0.10	0.10	1		12/05/20 11:00		

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ANALYTICAL RESULTS

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Sample: GP-86 4-6' **Lab ID: 40219305015** Collected: 12/02/20 10:42 Received: 12/04/20 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
1,1-Dichloroethane	**<15.4**	ug/kg	60.3	15.4	1	12/07/20 09:00	12/08/20 15:39	75-34-3	
1,2-Dichloroethane	**<13.9**	ug/kg	60.3	13.9	1	12/07/20 09:00	12/08/20 15:39	107-06-2	
1,1-Dichloroethene	**<20.0**	ug/kg	60.3	20.0	1	12/07/20 09:00	12/08/20 15:39	75-35-4	
cis-1,2-Dichloroethene	**34.4J**	ug/kg	60.3	12.9	1	12/07/20 09:00	12/08/20 15:39	156-59-2	
trans-1,2-Dichloroethene	**<13.0**	ug/kg	60.3	13.0	1	12/07/20 09:00	12/08/20 15:39	156-60-5	
Tetrachloroethene	**<23.4**	ug/kg	60.3	23.4	1	12/07/20 09:00	12/08/20 15:39	127-18-4	
1,1,1-Trichloroethane	**<15.4**	ug/kg	60.3	15.4	1	12/07/20 09:00	12/08/20 15:39	71-55-6	
1,1,2-Trichloroethane	**<21.9**	ug/kg	60.3	21.9	1	12/07/20 09:00	12/08/20 15:39	79-00-5	
Trichloroethene	**850**	ug/kg	60.3	22.6	1	12/07/20 09:00	12/08/20 15:39	79-01-6	
Vinyl chloride	**<12.2**	ug/kg	60.3	12.2	1	12/07/20 09:00	12/08/20 15:39	75-01-4	
Surrogates									
Toluene-d8 (S)	122	%	56-140		1	12/07/20 09:00	12/08/20 15:39	2037-26-5	
4-Bromofluorobenzene (S)	125	%	52-137		1	12/07/20 09:00	12/08/20 15:39	460-00-4	
1,2-Dichlorobenzene-d4 (S)	128	%	50-150		1	12/07/20 09:00	12/08/20 15:39	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**17.1**	%	0.10	0.10	1		12/05/20 11:00		

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ANALYTICAL RESULTS

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Sample: GP-86 6-8' **Lab ID: 40219305016** Collected: 12/02/20 10:43 Received: 12/04/20 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
1,1-Dichloroethane	**<17.3**	ug/kg	67.7	17.3	1	12/07/20 09:00	12/08/20 00:07	75-34-3	
1,2-Dichloroethane	**<15.6**	ug/kg	67.7	15.6	1	12/07/20 09:00	12/08/20 00:07	107-06-2	
1,1-Dichloroethene	**<22.5**	ug/kg	67.7	22.5	1	12/07/20 09:00	12/08/20 00:07	75-35-4	
cis-1,2-Dichloroethene	**<14.5**	ug/kg	67.7	14.5	1	12/07/20 09:00	12/08/20 00:07	156-59-2	
trans-1,2-Dichloroethene	**<14.6**	ug/kg	67.7	14.6	1	12/07/20 09:00	12/08/20 00:07	156-60-5	
Tetrachloroethene	**<26.3**	ug/kg	67.7	26.3	1	12/07/20 09:00	12/08/20 00:07	127-18-4	
1,1,1-Trichloroethane	**<17.3**	ug/kg	67.7	17.3	1	12/07/20 09:00	12/08/20 00:07	71-55-6	
1,1,2-Trichloroethane	**<24.7**	ug/kg	67.7	24.7	1	12/07/20 09:00	12/08/20 00:07	79-00-5	
Trichloroethene	**96.8**	ug/kg	67.7	25.3	1	12/07/20 09:00	12/08/20 00:07	79-01-6	
Vinyl chloride	**<13.7**	ug/kg	67.7	13.7	1	12/07/20 09:00	12/08/20 00:07	75-01-4	
Surrogates									
Toluene-d8 (S)	119	%	56-140		1	12/07/20 09:00	12/08/20 00:07	2037-26-5	
4-Bromofluorobenzene (S)	119	%	52-137		1	12/07/20 09:00	12/08/20 00:07	460-00-4	
1,2-Dichlorobenzene-d4 (S)	122	%	50-150		1	12/07/20 09:00	12/08/20 00:07	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**26.2**	%	0.10	0.10	1		12/05/20 11:00		

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ANALYTICAL RESULTS

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Sample: GP-87 0-2' **Lab ID: 40219305017** Collected: 12/02/20 11:25 Received: 12/04/20 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
1,1-Dichloroethane	**<13.5**	ug/kg	52.8	13.5	1	12/08/20 08:15	12/08/20 20:31	75-34-3	
1,2-Dichloroethane	**<12.2**	ug/kg	52.8	12.2	1	12/08/20 08:15	12/08/20 20:31	107-06-2	
1,1-Dichloroethene	**<17.5**	ug/kg	52.8	17.5	1	12/08/20 08:15	12/08/20 20:31	75-35-4	
cis-1,2-Dichloroethene	**<11.3**	ug/kg	52.8	11.3	1	12/08/20 08:15	12/08/20 20:31	156-59-2	
trans-1,2-Dichloroethene	**<11.4**	ug/kg	52.8	11.4	1	12/08/20 08:15	12/08/20 20:31	156-60-5	
Tetrachloroethene	**<20.5**	ug/kg	52.8	20.5	1	12/08/20 08:15	12/08/20 20:31	127-18-4	
1,1,1-Trichloroethane	**<13.5**	ug/kg	52.8	13.5	1	12/08/20 08:15	12/08/20 20:31	71-55-6	
1,1,2-Trichloroethane	**<19.2**	ug/kg	52.8	19.2	1	12/08/20 08:15	12/08/20 20:31	79-00-5	
Trichloroethene	**<19.8**	ug/kg	52.8	19.8	1	12/08/20 08:15	12/08/20 20:31	79-01-6	
Vinyl chloride	**<10.7**	ug/kg	52.8	10.7	1	12/08/20 08:15	12/08/20 20:31	75-01-4	
Surrogates									
Toluene-d8 (S)	118	%	56-140		1	12/08/20 08:15	12/08/20 20:31	2037-26-5	
4-Bromofluorobenzene (S)	114	%	52-137		1	12/08/20 08:15	12/08/20 20:31	460-00-4	
1,2-Dichlorobenzene-d4 (S)	119	%	50-150		1	12/08/20 08:15	12/08/20 20:31	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**5.4**	%	0.10	0.10	1		12/05/20 11:00		

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ANALYTICAL RESULTS

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Sample: GP-87 2-4' **Lab ID: 40219305018** Collected: 12/02/20 11:26 Received: 12/04/20 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
1,1-Dichloroethane	**<16.0**	ug/kg	62.6	16.0	1	12/08/20 08:15	12/08/20 20:51	75-34-3	
1,2-Dichloroethane	**<14.4**	ug/kg	62.6	14.4	1	12/08/20 08:15	12/08/20 20:51	107-06-2	
1,1-Dichloroethene	**<20.8**	ug/kg	62.6	20.8	1	12/08/20 08:15	12/08/20 20:51	75-35-4	
cis-1,2-Dichloroethene	**<13.4**	ug/kg	62.6	13.4	1	12/08/20 08:15	12/08/20 20:51	156-59-2	
trans-1,2-Dichloroethene	**<13.5**	ug/kg	62.6	13.5	1	12/08/20 08:15	12/08/20 20:51	156-60-5	
Tetrachloroethene	**<24.3**	ug/kg	62.6	24.3	1	12/08/20 08:15	12/08/20 20:51	127-18-4	
1,1,1-Trichloroethane	**<16.0**	ug/kg	62.6	16.0	1	12/08/20 08:15	12/08/20 20:51	71-55-6	
1,1,2-Trichloroethane	**<22.8**	ug/kg	62.6	22.8	1	12/08/20 08:15	12/08/20 20:51	79-00-5	
Trichloroethene	**<23.4**	ug/kg	62.6	23.4	1	12/08/20 08:15	12/08/20 20:51	79-01-6	
Vinyl chloride	**<12.6**	ug/kg	62.6	12.6	1	12/08/20 08:15	12/08/20 20:51	75-01-4	
Surrogates									
Toluene-d8 (S)	131	%	56-140		1	12/08/20 08:15	12/08/20 20:51	2037-26-5	
4-Bromofluorobenzene (S)	118	%	52-137		1	12/08/20 08:15	12/08/20 20:51	460-00-4	
1,2-Dichlorobenzene-d4 (S)	119	%	50-150		1	12/08/20 08:15	12/08/20 20:51	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**20.1**	%	0.10	0.10	1		12/05/20 11:00		

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ANALYTICAL RESULTS

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Sample: GP-87 4-6' **Lab ID: 40219305019** Collected: 12/02/20 11:27 Received: 12/04/20 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
1,1-Dichloroethane	**<16.0**	ug/kg	62.7	16.0	1	12/08/20 08:15	12/08/20 21:11	75-34-3	
1,2-Dichloroethane	**<14.4**	ug/kg	62.7	14.4	1	12/08/20 08:15	12/08/20 21:11	107-06-2	
1,1-Dichloroethene	**<20.8**	ug/kg	62.7	20.8	1	12/08/20 08:15	12/08/20 21:11	75-35-4	
cis-1,2-Dichloroethene	**<13.4**	ug/kg	62.7	13.4	1	12/08/20 08:15	12/08/20 21:11	156-59-2	
trans-1,2-Dichloroethene	**<13.5**	ug/kg	62.7	13.5	1	12/08/20 08:15	12/08/20 21:11	156-60-5	
Tetrachloroethene	**<24.3**	ug/kg	62.7	24.3	1	12/08/20 08:15	12/08/20 21:11	127-18-4	
1,1,1-Trichloroethane	**<16.0**	ug/kg	62.7	16.0	1	12/08/20 08:15	12/08/20 21:11	71-55-6	
1,1,2-Trichloroethane	**<22.8**	ug/kg	62.7	22.8	1	12/08/20 08:15	12/08/20 21:11	79-00-5	
Trichloroethene	**<23.4**	ug/kg	62.7	23.4	1	12/08/20 08:15	12/08/20 21:11	79-01-6	
Vinyl chloride	**<12.7**	ug/kg	62.7	12.7	1	12/08/20 08:15	12/08/20 21:11	75-01-4	
Surrogates									
Toluene-d8 (S)	121	%	56-140		1	12/08/20 08:15	12/08/20 21:11	2037-26-5	
4-Bromofluorobenzene (S)	117	%	52-137		1	12/08/20 08:15	12/08/20 21:11	460-00-4	
1,2-Dichlorobenzene-d4 (S)	126	%	50-150		1	12/08/20 08:15	12/08/20 21:11	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**20.2**	%	0.10	0.10	1		12/05/20 11:00		

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ANALYTICAL RESULTS

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Sample: GP-87 6-8' **Lab ID: 40219305020** Collected: 12/02/20 11:28 Received: 12/04/20 08:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Med Level Normal List	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B Pace Analytical Services - Green Bay								
1,1-Dichloroethane	**<14.6**	ug/kg	56.9	14.6	1	12/08/20 08:15	12/08/20 21:31	75-34-3	
1,2-Dichloroethane	**<13.1**	ug/kg	56.9	13.1	1	12/08/20 08:15	12/08/20 21:31	107-06-2	
1,1-Dichloroethene	**<18.9**	ug/kg	56.9	18.9	1	12/08/20 08:15	12/08/20 21:31	75-35-4	
cis-1,2-Dichloroethene	**<12.2**	ug/kg	56.9	12.2	1	12/08/20 08:15	12/08/20 21:31	156-59-2	
trans-1,2-Dichloroethene	**<12.3**	ug/kg	56.9	12.3	1	12/08/20 08:15	12/08/20 21:31	156-60-5	
Tetrachloroethene	**<22.1**	ug/kg	56.9	22.1	1	12/08/20 08:15	12/08/20 21:31	127-18-4	
1,1,1-Trichloroethane	**<14.6**	ug/kg	56.9	14.6	1	12/08/20 08:15	12/08/20 21:31	71-55-6	
1,1,2-Trichloroethane	**<20.7**	ug/kg	56.9	20.7	1	12/08/20 08:15	12/08/20 21:31	79-00-5	
Trichloroethene	**<21.3**	ug/kg	56.9	21.3	1	12/08/20 08:15	12/08/20 21:31	79-01-6	
Vinyl chloride	**<11.5**	ug/kg	56.9	11.5	1	12/08/20 08:15	12/08/20 21:31	75-01-4	
Surrogates									
Toluene-d8 (S)	134	%	56-140		1	12/08/20 08:15	12/08/20 21:31	2037-26-5	
4-Bromofluorobenzene (S)	122	%	52-137		1	12/08/20 08:15	12/08/20 21:31	460-00-4	
1,2-Dichlorobenzene-d4 (S)	124	%	50-150		1	12/08/20 08:15	12/08/20 21:31	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974-87 Pace Analytical Services - Green Bay								
Percent Moisture	**12.1**	%	0.10	0.10	1		12/05/20 11:26		

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QUALITY CONTROL DATA

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

QC Batch: 373098
QC Batch Method: EPA 5035/5030B
Analysis Method: EPA 8260
Analysis Description: 8260 MSV Med Level Normal List
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40219305001, 40219305002, 40219305003, 40219305004, 40219305005, 40219305006, 40219305007, 40219305008, 40219305009, 40219305010, 40219305011, 40219305012, 40219305013, 40219305014, 40219305015, 40219305016

METHOD BLANK: 2156626 Matrix: Solid
Associated Lab Samples: 40219305001, 40219305002, 40219305003, 40219305004, 40219305005, 40219305006, 40219305007, 40219305008, 40219305009, 40219305010, 40219305011, 40219305012, 40219305013, 40219305014, 40219305015, 40219305016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/kg	<12.8	50.0	12/07/20 17:24	
1,1,2-Trichloroethane	ug/kg	<18.2	50.0	12/07/20 17:24	
1,1-Dichloroethane	ug/kg	<12.8	50.0	12/07/20 17:24	
1,1-Dichloroethene	ug/kg	<16.6	50.0	12/07/20 17:24	
1,2-Dichloroethane	ug/kg	<11.5	50.0	12/07/20 17:24	
cis-1,2-Dichloroethene	ug/kg	<10.7	50.0	12/07/20 17:24	
Tetrachloroethene	ug/kg	<19.4	50.0	12/07/20 17:24	
trans-1,2-Dichloroethene	ug/kg	<10.8	50.0	12/07/20 17:24	
Trichloroethene	ug/kg	<18.7	50.0	12/07/20 17:24	
Vinyl chloride	ug/kg	<10.1	50.0	12/07/20 17:24	
1,2-Dichlorobenzene-d4 (S)	%	126	50-150	12/07/20 17:24	
4-Bromofluorobenzene (S)	%	117	52-137	12/07/20 17:24	
Toluene-d8 (S)	%	119	56-140	12/07/20 17:24	

LABORATORY CONTROL SAMPLE: 2156627

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/kg	2500	2380	95	70-130	
1,1,2-Trichloroethane	ug/kg	2500	2180	87	70-130	
1,1-Dichloroethane	ug/kg	2500	2350	94	69-143	
1,1-Dichloroethene	ug/kg	2500	2600	104	73-118	
1,2-Dichloroethane	ug/kg	2500	2330	93	70-130	
cis-1,2-Dichloroethene	ug/kg	2500	2270	91	69-130	
Tetrachloroethene	ug/kg	2500	2480	99	70-130	
trans-1,2-Dichloroethene	ug/kg	2500	2300	92	70-130	
Trichloroethene	ug/kg	2500	2370	95	70-130	
Vinyl chloride	ug/kg	2500	2430	97	53-110	
1,2-Dichlorobenzene-d4 (S)	%			121	50-150	
4-Bromofluorobenzene (S)	%			124	52-137	
Toluene-d8 (S)	%			126	56-140	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2156628 2156629

Parameter	Units	40219305016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/kg	<17.3	1690	1690	1470	1570	87	93	66-130	7	20	
1,1,2-Trichloroethane	ug/kg	<24.7	1690	1690	1470	1410	87	83	70-130	4	20	
1,1-Dichloroethane	ug/kg	<17.3	1690	1690	1640	1680	97	99	69-143	3	20	
1,1-Dichloroethene	ug/kg	<22.5	1690	1690	1490	1520	88	90	58-120	2	20	
1,2-Dichloroethane	ug/kg	<15.6	1690	1690	1650	1730	97	102	70-136	5	20	
cis-1,2-Dichloroethene	ug/kg	<14.5	1690	1690	1620	1530	96	90	69-130	6	20	
Tetrachloroethene	ug/kg	<26.3	1690	1690	1600	1610	94	95	68-130	1	20	
trans-1,2-Dichloroethene	ug/kg	<14.6	1690	1690	1670	1570	99	92	70-130	6	20	
Trichloroethene	ug/kg	96.8	1690	1690	1750	1720	98	96	70-130	1	20	
Vinyl chloride	ug/kg	<13.7	1690	1690	1290	1400	76	83	32-118	9	20	
1,2-Dichlorobenzene-d4 (S)	%						132	114	50-150			
4-Bromofluorobenzene (S)	%						127	108	52-137			
Toluene-d8 (S)	%						126	121	56-140			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

QC Batch: 373190
QC Batch Method: EPA 5035/5030B
Analysis Method: EPA 8260
Analysis Description: 8260 MSV Med Level Normal List
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40219305017, 40219305018, 40219305019, 40219305020

METHOD BLANK: 2156986 Matrix: Solid
Associated Lab Samples: 40219305017, 40219305018, 40219305019, 40219305020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/kg	<12.8	50.0	12/08/20 17:09	
1,1,2-Trichloroethane	ug/kg	<18.2	50.0	12/08/20 17:09	
1,1-Dichloroethane	ug/kg	<12.8	50.0	12/08/20 17:09	
1,1-Dichloroethene	ug/kg	<16.6	50.0	12/08/20 17:09	
1,2-Dichloroethane	ug/kg	<11.5	50.0	12/08/20 17:09	
cis-1,2-Dichloroethene	ug/kg	<10.7	50.0	12/08/20 17:09	
Tetrachloroethene	ug/kg	<19.4	50.0	12/08/20 17:09	
trans-1,2-Dichloroethene	ug/kg	<10.8	50.0	12/08/20 17:09	
Trichloroethene	ug/kg	<18.7	50.0	12/08/20 17:09	
Vinyl chloride	ug/kg	<10.1	50.0	12/08/20 17:09	
1,2-Dichlorobenzene-d4 (S)	%	112	50-150	12/08/20 17:09	
4-Bromofluorobenzene (S)	%	106	52-137	12/08/20 17:09	
Toluene-d8 (S)	%	109	56-140	12/08/20 17:09	

LABORATORY CONTROL SAMPLE: 2156987

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/kg	2500	2690	108	70-130	
1,1,2-Trichloroethane	ug/kg	2500	2220	89	70-130	
1,1-Dichloroethane	ug/kg	2500	2090	84	69-143	
1,1-Dichloroethene	ug/kg	2500	2690	108	73-118	
1,2-Dichloroethane	ug/kg	2500	2560	103	70-130	
cis-1,2-Dichloroethene	ug/kg	2500	2220	89	69-130	
Tetrachloroethene	ug/kg	2500	2680	107	70-130	
trans-1,2-Dichloroethene	ug/kg	2500	2370	95	70-130	
Trichloroethene	ug/kg	2500	2680	107	70-130	
Vinyl chloride	ug/kg	2500	2220	89	53-110	
1,2-Dichlorobenzene-d4 (S)	%			115	50-150	
4-Bromofluorobenzene (S)	%			124	52-137	
Toluene-d8 (S)	%			127	56-140	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2156988 2156989

Parameter	Units	40219305020 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/kg	<14.6	1420	1420	1470	1390	104	98	66-130	5	20	
1,1,2-Trichloroethane	ug/kg	<20.7	1420	1420	1180	1340	83	95	70-130	13	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2156988 2156989

Parameter	Units	40219305020 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1-Dichloroethane	ug/kg	<14.6	1420	1420	1440	1450	102	102	69-143	0	20	
1,1-Dichloroethene	ug/kg	<18.9	1420	1420	1330	1250	93	88	58-120	6	20	
1,2-Dichloroethane	ug/kg	<13.1	1420	1420	1610	1590	113	112	70-136	1	20	
cis-1,2-Dichloroethene	ug/kg	<12.2	1420	1420	1350	1320	95	93	69-130	2	20	
Tetrachloroethene	ug/kg	<22.1	1420	1420	1400	1360	98	96	68-130	3	20	
trans-1,2-Dichloroethene	ug/kg	<12.3	1420	1420	1290	1240	91	87	70-130	4	20	
Trichloroethene	ug/kg	<21.3	1420	1420	1460	1420	103	100	70-130	3	20	
Vinyl chloride	ug/kg	<11.5	1420	1420	1250	1130	88	79	32-118	11	20	
1,2-Dichlorobenzene-d4 (S)	%						136	132	50-150			
4-Bromofluorobenzene (S)	%						128	122	52-137			
Toluene-d8 (S)	%						129	130	56-140			

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REPORT OF LABORATORY ANALYSIS

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1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

QC Batch: 373040
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40219305001, 40219305002, 40219305003, 40219305004, 40219305005, 40219305006, 40219305007, 40219305008, 40219305009, 40219305010, 40219305011, 40219305012, 40219305013, 40219305014, 40219305015, 40219305016, 40219305017, 40219305018, 40219305019

SAMPLE DUPLICATE: 2156463

Parameter	Units	40219305006 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	20.6	19.5	5	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

QC Batch: 373041
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40219305020

SAMPLE DUPLICATE: 2156467

Parameter	Units	40219325002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	14.4	14.3	1	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

1q	Surrogate recovery outside laboratory control limits due to matrix interferences (confirmed by similar results from re-analysis of 40219305-002 that demonstrated similar interference).
S1	Surrogate recovery outside laboratory control limits (confirmed by re-analysis).

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Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 11717 FORMER NAVISTAR
Pace Project No.: 40219305

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40219305001	GP-88 0-2'	EPA 5035/5030B	373098	EPA 8260	373102
40219305002	GP-88 2-4'	EPA 5035/5030B	373098	EPA 8260	373102
40219305003	GP-88 4-6'	EPA 5035/5030B	373098	EPA 8260	373102
40219305004	GP-88 6-8'	EPA 5035/5030B	373098	EPA 8260	373102
40219305005	GP-89 0-2'	EPA 5035/5030B	373098	EPA 8260	373102
40219305006	GP-89 2-4'	EPA 5035/5030B	373098	EPA 8260	373102
40219305007	GP-89 4-6'	EPA 5035/5030B	373098	EPA 8260	373102
40219305008	GP-89 6-8'	EPA 5035/5030B	373098	EPA 8260	373102
40219305009	GP-85 0-2'	EPA 5035/5030B	373098	EPA 8260	373102
40219305010	GP-85 2-4'	EPA 5035/5030B	373098	EPA 8260	373102
40219305011	GP-85 4-6'	EPA 5035/5030B	373098	EPA 8260	373102
40219305012	GP-85 6-8'	EPA 5035/5030B	373098	EPA 8260	373102
40219305013	GP-86 0-2'	EPA 5035/5030B	373098	EPA 8260	373102
40219305014	GP-86 2-4'	EPA 5035/5030B	373098	EPA 8260	373102
40219305015	GP-86 4-6'	EPA 5035/5030B	373098	EPA 8260	373102
40219305016	GP-86 6-8'	EPA 5035/5030B	373098	EPA 8260	373102
40219305017	GP-87 0-2'	EPA 5035/5030B	373190	EPA 8260	373191
40219305018	GP-87 2-4'	EPA 5035/5030B	373190	EPA 8260	373191
40219305019	GP-87 4-6'	EPA 5035/5030B	373190	EPA 8260	373191
40219305020	GP-87 6-8'	EPA 5035/5030B	373190	EPA 8260	373191
40219305001	GP-88 0-2'	ASTM D2974-87	373040		
40219305002	GP-88 2-4'	ASTM D2974-87	373040		
40219305003	GP-88 4-6'	ASTM D2974-87	373040		
40219305004	GP-88 6-8'	ASTM D2974-87	373040		
40219305005	GP-89 0-2'	ASTM D2974-87	373040		
40219305006	GP-89 2-4'	ASTM D2974-87	373040		
40219305007	GP-89 4-6'	ASTM D2974-87	373040		
40219305008	GP-89 6-8'	ASTM D2974-87	373040		
40219305009	GP-85 0-2'	ASTM D2974-87	373040		
40219305010	GP-85 2-4'	ASTM D2974-87	373040		
40219305011	GP-85 4-6'	ASTM D2974-87	373040		
40219305012	GP-85 6-8'	ASTM D2974-87	373040		
40219305013	GP-86 0-2'	ASTM D2974-87	373040		
40219305014	GP-86 2-4'	ASTM D2974-87	373040		
40219305015	GP-86 4-6'	ASTM D2974-87	373040		
40219305016	GP-86 6-8'	ASTM D2974-87	373040		
40219305017	GP-87 0-2'	ASTM D2974-87	373040		
40219305018	GP-87 2-4'	ASTM D2974-87	373040		
40219305019	GP-87 4-6'	ASTM D2974-87	373040		
40219305020	GP-87 6-8'	ASTM D2974-87	373041		

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(Please Print Clearly)	
Company Name:	KPRG
Branch/Location:	WI
Project Contact:	Rich Gnat
Phone:	262 781 0475
Project Number:	11717
Project Name:	Former Navistar
Project State:	WI
Sampled By (Print):	ERIN BYLSON
Sampled By (Sign):	Er Bln
PO #:	Regulatory Program:

Pace Analytical®
www.pacelabs.com

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

Page 1 of 2

40219305

CHAIN OF CUSTODY

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

Quote #:	
Mail To Contact:	
Mail To Company:	
Mail To Address:	
Invoice To Contact:	
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes

A = Air	W = Water
B = Biota	DW = Drinking Water
C = Charcoal	GW = Ground Water
O = Oil	SW = Surface Water
S = Soil	WW = Waste Water
SI = Sludge	WP = Wipe

PACE LAB #	CLIENT FIELD ID		COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analyses Requested: CVOCs	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
001	GP-88	0-2'	12/2	0900	S	N	F	X			
002	GP-88	2-4'		0901							
003	GP-88	4-6'		0902							
004	GP-88	6-8'		0903							
005	GP-89	0-2'		0930							
006	GP-89	2-4'		0931							
007	GP-89	4-6'		0932							
008	GP-89	6-8'		0933							
009	GP-85	0-2'		1020							
010	GP-85	2-4'		1021							
011	GP-85	4-6'		1022							
012	GP-85	6-8'		1023							
013	GP-86	0-2'		1040							

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:	
Email #2:	
Telephone:	
Fax:	

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	12-3-20 1200	Mary Jann	12/3/20 1200
Mary Jann	12/3/20 1320	[signature]	
CS Logistics	12/4/20 0845	Susan Wyke Pace	12/4/20 0845

PACE Project No.
40219305

Receipt Temp = R01 °C

Sample Receipt pH
OK / Adjusted

Cooler Custody Seal
Present / Not Present
Intact / Not Intact

Version 9.0 06/14/06

C219e(07-Jun2006)

ORIGINAL

40219305

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www.pacelabs.com

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

CHAIN OF CUSTODY

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

(Please Print Clearly)	
Company Name:	KPRG
Branch/Location:	WI
Project Contact:	Rich Gnat
Phone:	262 781-0475
Project Number:	11717
Project Name:	Former Navistar
Project State:	WI
Sampled By (Print):	ERIN Bruson
Sampled By (Sign):	
PO #:	Regulatory Program:

Quote #:	
Mail To Contact:	
Mail To Company:	
Mail To Address:	
Invoice To Contact:	
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes

A = Air	W = Water
B = Biota	DW = Drinking Water
C = Charcoal	GW = Ground Water
O = Oil	SW = Surface Water
S = Soil	WW = Waste Water
SI = Sludge	WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analyses Requested: CVOCs	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
014	GP-86 2-4'	12-2	1041	S	N	F	X			
015	GP-86 4-6'	12-2	1042							
016	GP-86 6-8'		1043							
017	GP-87 0-2'		1125							
018	GP-87 2-4'		1126							
019	GP-87 4-6'		1127							
020	GP-87 6-8'	↓	1128	↓			↓			

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):
Email #1:
Email #2:
Telephone:
Fax:

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
	12-3-20 NOON	Mary Fannin	12/3/20 1200
Mary Fannin	12/3/20 1320		
Logistics	12/4/20 0845	Susan Ulfig Pace	12/4/20 0845

PACE Project No.: 40219305
Receipt Temp: ROI °C
Sample Receipt pH OK / Adjusted
Cooler Custody Seal Present / Not Present
Intact / Not Intact

Version 6.0 06/14/06

C019a(27Jun2006)

ORIGINAL

Pace Analytical Services, LLC
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Sample Preservation Receipt Form

Client Name: KPRG Project # 40219305

All containers needing preservation have been checked and noted below: ☐Yes ☐No ☐N/A Initial when completed: Date/ Time:

Lab Lot# of pH paper: Lab Std #ID of preservation (if pH adjusted):

	Glass							Plastic					Vials						Jars				General			VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
Pace Lab #	AG1U	BG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	VG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	JG9U	WGFU	WPFU	SP5T	ZPLC	GN						
001																		/					/									2.5 / 5 / 10
002																		/					/									2.5 / 5 / 10
003																		/					/									2.5 / 5 / 10
004																		/					/									2.5 / 5 / 10
005																		/					/									2.5 / 5 / 10
006																		/					/									2.5 / 5 / 10
007																		/					/									2.5 / 5 / 10
008																		/					/									2.5 / 5 / 10
009																		/					/									2.5 / 5 / 10
010																		/					/									2.5 / 5 / 10
011																		/					/									2.5 / 5 / 10
012																		/					/									2.5 / 5 / 10
013																		/					/									2.5 / 5 / 10
014																		/					/									2.5 / 5 / 10
015																		/					/									2.5 / 5 / 10
016																		/					/									2.5 / 5 / 10
017																		/					/									2.5 / 5 / 10
018																		/					/									2.5 / 5 / 10
019																		/					/									2.5 / 5 / 10
020																		/					/									2.5 / 5 / 10

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other:_____ Headspace in VOA Vials (>6mm) : ☐Yes ☐No ☐N/A ***If yes look in headspace column**

AG1U	1 liter amber glass
BG1U	1 liter clear glass
AG1H	1 liter amber glass HCL
AG4S	125 mL amber glass H2SO4
AG4U	120 mL amber glass unpres
AG5U	100 mL amber glass unpres
AG2S	500 mL amber glass H2SO4
BG3U	250 mL clear glass unpres

BP1U	1 liter plastic unpres
BP3U	250 mL plastic unpres
BP3B	250 mL plastic NaOH
BP3N	250 mL plastic HNO3
BP3S	250 mL plastic H2SO4

VG9A	40 mL clear ascorbic
DG9T	40 mL amber Na Thio
VG9U	40 mL clear vial unpres
VG9H	40 mL clear vial HCL
VG9M	40 mL clear vial MeOH
VG9D	40 mL clear vial DI

JGFU	4 oz amber jar unpres
JG9U	9 oz amber jar unpres
WGFU	4 oz clear jar unpres
WPFU	4 oz plastic jar unpres
SP5T	120 mL plastic Na Thiosulfate
ZPLC	ziploc bag
GN	

Pace Analytical 1241 Bellevue Street, Green Bay, WI 54302	Document Name: **Sample Condition Upon Receipt (SCUR)**	Document Revised: 25Apr2018
	Document No.: **F-GB-C-031-Rev.07**	Issuing Authority: Pace Green Bay Quality Office

Sample Condition Upon Receipt Form (SCUR)

Client Name: KPRG Project # 40219305

Additional Comments/Resolution:

004- VG9M time 0902.

009- WPFU time 0920

010- time 0921

011- time 0922

012- time 0923

12-4-20 SW

Project Manager Review: _____ **Date:** _____

Pace Analytical® 1241 Bellevue Street, Green Bay, WI 54302	Document Name: **Sample Condition Upon Receipt (SCUR)**	Document Revised: 26Mar2020
	Document No.: **ENV-FRM-GBAY-0014-Rev.00**	Author: Pace Green Bay Quality Office

Sample Condition Upon Receipt Form (SCUR)

Client Name: KPRG

Project #:

WO# : 40219305

40219305

Courier: ☑ CS Logistics ☐ Fed Ex ☐ Speedee ☐ UPS ☐ Waltco ☐ Client ☐ Pace Other: _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☒ yes ☐ no Seals intact: ☒ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other _____

Thermometer Used SR - N/A **Type of Ice:** Wet Blue Dry None ☒ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: ROI /Corr:

Temp Blank Present: ☐ yes ☒ no **Biological Tissue is Frozen:** ☐ yes ☐ no

Person examining contents: Date: 12-4-20 /Initials: SKW

Labeled By Initials: MA

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C if shipped on Dry Ice.

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☐Yes ☑No ☐N/A	2. No Mail x Quote info 12-4-20 SW
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No	5.
- VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☐Yes ☑No	6.
Rush Turn Around Time Requested:	☐Yes ☑No	7.
Sufficient Volume: For Analysis: ☑Yes ☐No MS/MSD: ☐Yes ☑No ☐N/A		8.
Correct Containers Used:	☑Yes ☐No	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☑N/A	
Containers Intact:	☑Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☐Yes ☑No ☐N/A	12. See attached form 12-4-20 SW
-Includes date/time/ID/Analysis Matrix: S		
Trip Blank Present:	☐Yes ☑No ☐N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: If checked, see attached form for additional comments ☒

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

PM Review is documented electronically in LIMs. By releasing the project, the PM acknowledges they have reviewed the sample logi

December 29, 2020

Rich Gnat
KPRG
14665 W. Lisbon Rd., Suite 1A
Brookfield, WI 53005

Subject: **Treatability Testing Report for the RMG Foundry Site Located in Waukesha, Wisconsin**

Dear Rich,

ORIN Technologies, LLC. (ORIN) is pleased to present this report to KPRG for Treatability Testing at the RMG Foundry site located in Waukesha, WI (site).

Approach

ORIN understands the contaminant of concern (COC) is Trichloroethene (TCE) in soils at this site. Soil samples were collected from GP-73-1 at a depth ranging from 3-6 feet below ground surface. The goal of the treatability test was to confirm the effective use of several treatment chemistries and dosage rates for treatment of the COC in soils. The effectiveness is determined by testing various treatment options on site soils and measuring their performance when compared to a control sample. The testing methodology and results of the treatability test are summarized in this report.

Treatability Testing

Materials

Bioavailable Absorbent Media – BAM – A proprietary formula developed by ORIN from pyrolyzed cellulosic material
Sodium Persulfate – $Na_2S_2O_8$ – PeroxyChem
Sodium Hydroxide – NaOH – Hydrite
Hydrogen Peroxide – H_2O_2 – Sigma Aldrich
Ferrous Sulfate Heptahydrate – $FeSO_4$ $7H_2O$ – Crown Technologies
Sulfuric Acid – H_2SO_4 – Sigma Aldrich
Sodium Permanganate – $NaMnO_4$ – Sigma-Aldrich, 40%/wt solution

Treatability Study Methodology

Site soils were used to perform the treatability testing as outlined in this report. Soil samples were analyzed for CVOCs under EPA Method 8260 and EPA Method 1312.

Soils were combined into a composite sample and then divided into nine separate jars with 250 grams in each jar. One jar was set aside as the control sample while the other eight jars were scheduled to be treated with various dosage rates and blends of treatment chemistries. Samples were dosed with the prescribed treatment chemistry and thoroughly mixed with a stainless steel laboratory spoon. The treatment chemistries utilized for this treatability study were a high and low dosage of a modified Fenton's Reagent consisting of hydrogen peroxide, ferrous sulfate, and sulfuric acid followed by adding BAM Ex; a high and low dose of BAM Ex; a high and low dose of sodium permanganate; and a high and low dose of activated sodium persulfate.

High and low dosages were determined by using an assumed total oxidant demand (TOD) for the samples treated with sodium permanganate and sodium persulfate. For this treatability study, the TOD used for the high loading rate was 2g/kg. For Fenton's Reagent, the high loading rate was based on ORIN's standard dosage for use in the field.

Samples were dosed on December 10th and sent to Pace Analytical Green Bay (Pace) on December 14th.

Results

For the 8260 analysis, TCE was the only analyte that produced a result out of the suite of CVOCs tested for all samples. The control sample measured TCE at 170 µg/kg. Of the treated samples the high doses of the Fenton's Reagent, BAM Ex, and sodium persulfate displayed the greatest reduction compared to the control sample, however each result was given a "J" qualifier which means the result was above the limit of detection and below the limit of quantitation leaving the result as an estimate. The high dose of permanganate did not have a qualifier.

The precent reductions in descending order for the high dose treated samples are: 78% for sodium persulfate, 77% for Fenton's / BAM Ex, 62% for BAM Ex, and 52% for permanganate.

The corresponding low dose samples did not have any qualifiers. The precent reductions in descending order for the high dose treated samples are: 53% for permanganate, 51% for BAM Ex, 48% for Fenton's / BAM Ex, and 47% for sodium permanganate. A table summarizing results can be found in Table 1.

For the 1312 analysis, the CVOCs analyzed did not produce a result above the detection limit for all samples including the control. The SPLP results are shown in Table 2.

Summary

The goal of the treatability study was to provide a treatment chemistry option that will be effective in reducing the COC below the Wisconsin DNR standard of 3.6 µg/kg for TCE. For this treatability study ORIN was unsuccessful in lowering the contamination below the 3.6 µg/kg standard. However, the three samples that have a "J" qualifier have an estimated result.

For this site, ORIN recommends utilizing a combination of Fenton's Reagent and BAM Ex. ORIN feels this combination gives the most cost-effective approach to reducing TCE within impacted soils. The treatment combination achieved a 77% reduction in TCE. Increasing the BAM loading rate vs the other tested chemistries would be the most feasible option to achieve the 3.6 µg/kg standard.

BAM is a sustainable, pyrolized, recycled cellulosic bio-mass product (>80% fixed carbon) derived from a proprietary blend of recycled organic materials with a high cation exchange and an estimated half-life of 500 years. BAM has diverse pore sizes with a minimum total surface area of up to 1,133 square meters per gram or 127 acres/lb.

The unique absorption capability of BAM prevents exterior surface microfilm buildup providing long term remediation capabilities. This allows BAM to absorb contaminants for more productive bio-attenuation of contaminants over a longer period of time. BAM has been proven to supply long term maintenance free remedial abilities over other remedial products. Laboratory tests have also shown that BAM has a significantly higher absorptive capacity than other products.

ORIN appreciates the opportunity to provide you these services. If you have any questions or comments, please contact me at 608-838-6699 or on my cell at 563-468-7645.

Sincerely,

Jacob Mirfield
Project Manager
ORIN Technologies, LLC.

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Treatability Table

ORIN Technologies

Table 1. 8260 Soil Results in µg/kg

Analyte (µg/kg)	Control	Fentons BAM High	Percent Reduction	Fentons BAM Low	Percent Reduction	BAM Ex High	Percent Reduction	BAM Ex Low	Percent Reduction
Trichloroethene	170	40	77%	89	48%	65	62%	83	51%

Permanganate High	Percent Reduction	Permanganate Low	Percent Reduction	Persulfate High	Percent Reduction	Persulfate Low	Percent Reduction
82	52%	80	53%	37	78%	91	47%

Table 2. 1312 SPLP Soil Leachate Results

Analyte (ug/L)	Control	Fentons BAM High	Fentons BAM Low	BAM Ex High	BAM Ex Low	Permanganate High	Permanganate Low	Persulfate High	Persulfate Low
Trichloroethene	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6

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