Additional Investigation Results, Response Action Plan and Construction Contingency Plan

Proposed Lowertown Ballpark
Southwest of I94 and Lafayette Road North
Saint Paul, Minnesota
VP 14224

Prepared for

The City of Saint Paul

Project SP-12-03735A
October 12, 2012

Braun Intertec Corporation

Table of Contents

Description **Page**

Table of Contents *(Continued)*

Description **Page**

Figures:

Tables:

Appendices:

October 12, 2012 Project SP-12-03735A

Mr. Andrew Nichols and Mr. Mark Koplitz
Minnesota Pollution Control Agency
520 Lafayette Road North
Saint Paul, Minnesota 55115-4194

Re: Additional Investigation Results, Response Action Plan
and Construction Contingency Plan
Proposed Lowertown Ballpark
Southwest of I94 and Lafayette Road North
Saint Paul, Minnesota

Dear Mr. Nichols and Mr. Koplitz:

Braun Intertec prepared the attached report on behalf of the City of Saint Paul for the former Diamond Products Site that is slated for redevelopment as the Lowertown Ballpark. The attached report provides both a summary of the results of the recently completed additional investigation, as well as a Response Action Plan/Construction Contingency Plan (RAP/CCP) for the above-referenced Site. The report is being submitted for Minnesota Pollution Control Agency (MPCA) review and approval prior to redevelopment of the Site. Following redevelopment, the City intends to request approval of response actions completed and a limited No Further Action for soil. Because contamination will be left in place, the City anticipates an institutional control will be required. The City of Saint Paul is planning to construct the Lowertown Ballpark at the Site, which currently consists of a vacant manufacturing facility located on the southern half of the Site and surface parking lots on the northern half of the Site. Fifth and John Streets also are located at the Site. Historical use of the property to manufacture personnel care products, liquid correction fluid, as well as historical use of the Site to manufacture coal gas has impacted soil, groundwater and soil vapor at the property. The attached RAP/CCP provides a description of the methods that will be used to manage contaminated materials at the Site and to identify, evaluate and manage potentially contaminated materials that may be encountered during construction.

If you have any questions, please call Jennifer Force at 952.995.2454 or Mike Bratrud at 952.995.2430.

Sincerely,

BRAUN INTERTEC CORPORATION

Jennifer A. Force, PG
Associate Principal

Michael L. Bratrud, PG
Vice President

Attachment:
Response Action Plan/Construction Contingency Plan

c: Paul Johnson, Nelson Tietz & Hoye
Jody Martinez, City of Saint Paul

Additional Investigation Results, Response Action Plan, and Construction Contingency Plan
Proposed Lowertown Ballpark
Saint Paul, Minnesota

A. Introduction

On behalf of the City of Saint Paul, Braun Intertec prepared this report documenting the results of a recently completed additional investigation for the proposed Lowertown Ballpark Site located in Saint Paul, Minnesota (Site). This report also includes a Response Action Plan/ Construction Contingency Plan (RAP/CCP) for the Site. The Site is located in the southwest quadrant of Interstate 94 and Lafayette Road North, just east of downtown Saint Paul within the Lowertown neighborhood. A Site location map is included as Figure 1, and a Site layout is provided as Figure 2.

As part of the project, the Site, which is currently occupied by a vacant manufacturing facility and surface parking lots, will be redeveloped with a baseball ballpark. To construct the project, the portions of Fifth Street and John Street, which run through the Site will be abandoned, and the northern portion of the Diamond Products building will be razed. The redevelopment also includes significant changes to existing Site grade with the northern portion of the Site being lowered between about 5 feet and 20 feet and with the southern portion of the Site being raised by about 4 to 6 feet. The new ballpark will include a street level (Broadway & Fifth Street) concourse, a lower level clubhouse and a baseball field.

The results of an additional investigation that was completed in September/October 2012 are presented herein. The RAP/CCP portion of this report provides a description of the methods that will be used to manage contaminated materials at the Site and to identify, evaluate and manage potentially contaminated materials that may be encountered during construction.

B. Project Contacts

Site Owner

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Owner's Representative

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Project Designer and General Contractor

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Excavation Contractor

TBD

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MPCA Petroleum Brownfields Program

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MPCA Emergency (State Duty Officer)

(651) 649-5451

Local Emergency

911

C. Proposed Development

Proposed redevelopment at the Site includes construction of a baseball ballpark, which will include construction of baseball field that will be surrounded on the north and west sides by an open air street level concourse with a lower-level clubhouse. A fire lane may be constructed on the north side of the Site, and a pedestrian walkway is planned for the south side of the Site. The area on the east side of the Site behind left field is currently planned to be used for staging and/or parking; however, long-term plans for the area include construction of a building that could be used for baseball training. As no design plans for the outfield building have been developed, construction of the outfield building is not included in this RAP/CCP. Site redevelopment plans are summarized on Figure 4, and Site redevelopment plans are provided in Appendix A.

To ready the Site for redevelopment, the existing Diamond Products building will be largely demolished. A portion of the floor slab along the western and far southern edge of the building is currently proposed to remain in place, and the existing foundation system will be reused/integrated into the new design (see Figure 4).

Based on a review of Site plans, the existing building is supported on driven H piles, and between seven and eight piles are present beneath each column. Following removal of the remainder of the floor slab, the pile caps will be removed, and the piles will be cut off at an elevation of 714 or about 6 feet below the proposed field and about 2 feet below the existing floor slab.

As part of the initial redevelopment effort, the portions of Fifth Street and John Street that run through the Site will be abandoned and utilities beneath the streets will be relocated, primarily to the northern portion of the Site.

The field will be constructed at elevations ranging from about 720 to 722 or about 4 to 6 feet higher than the existing basement floor and about 16 to 20 feet lower than Fifth Street and the existing parking lots. The infield will be constructed at about elevation 722, and the field will slope downwards towards the outfield to promote surface drainage. To build the sub-grade for the field, an impermeable liner will be placed on top of the soil that will be exposed after the floor slab is removed; the purpose of the liner is to prevent infiltration of storm water through the underlying impacted soil. A drain tile system will be placed on top of the liner to capture storm water that will be routed to a storm water detention system that is currently planned for the southeast corner of the Site. (Please note, given the shallow water table and contamination present in the southeast corner of the Site, relocation of the storm water detention system is being evaluated.) Clean fill will then be used to raise the grade beneath the field.

A concourse will be constructed on the northern and western sides of the field with the main concourse level being constructed at an elevation of about 734 or about 6 feet lower than Fifth Street and about 8 to 20 feet lower than the existing parking lots. Club seating and suites will be located above the main concourse. A lower clubhouse with locker rooms is proposed for beneath the northwestern and western portion of the concourse. The clubhouse level will have finished floor elevation of 720 feet, which will necessitate raising grade about 4 feet from the current finished floor elevation for the Diamond Products building.

Access points and staging/parking areas are proposed for the eastern side of the Site. To construct the access points and the staging areas the existing grade for the surface parking lots will be cut about 3 to 5 feet, and the grade beneath the Site building will be raised about 10 feet. A raised pedestrian walkway will be constructed along the southern boundary of the Site and along the eastern edge of the ballfield to provide 360 degree access at the concourse level. Retaining walls will be built on the northern portion of the Site. It is anticipated, the lower portion of the western wall for the Diamond Products building will be left in place as a permanent retention system along Broadway.

D. Project Background

D.1. Site Location

The Site is located in the southwest quadrant of Highway 52 and Interstate 94 in the Lowertown neighborhood of Saint Paul and includes the addresses of 310 and 333 East Fifth Street. The Site is currently occupied by a vacant, 650,000-square-foot manufacturing facility constructed in 1969/1970, which was most recently used by the Diamond Products Company to mix and manufacture personal care products and liquid correction fluid. Surface parking lots are located onsite north of the manufacturing facility, and portions of Fifth Street and John Street are located on the Site.

The Site is bordered to the north by Interstate 94, to the east by the Lafayette Bridge and surface parking lots, to the south by the Operation and Maintenance Facility for the Central Corridor light rail line, and to the west by Broadway Street. The Site has a long industrial history dating back to the early 1900s, and site uses have included coal gas manufacturing, cold storage, meat packing and plumbing wholesales.

D.2. Site Investigations

Several environmental investigations have been conducted at the Site beginning in the early 2000s, the results of which are summarized in the following reports:

- Phase I Environmental Site Assessment for the Gillette SPMC, 310 East 5th Street, St. Paul, Ramsey County, Minnesota. Prepared by Professional Services Industry, Inc. for Diamond Products Company and dated May 5, 2000.

- Phase II Environmental Site Assessment for Diamond Products Facility, 310 East 5th Street, St. Paul, Minnesota. Prepared by Environmental Resources Management for Diamond Products Company and dated February 2001.

- Supplemental Phase II Environmental Site Assessment for the Diamond Products Facility, 310 East 5th Street, St. Paul, Minnesota. Prepared by Environmental Resources Management for Diamond Products Company and dated February 2002.

- Phase II Environmental Site Assessment Data Report; Former Diamond Products; 4th Street East under Lafayette Bridge; St. Paul, Ramsey County, Minnesota. Prepared by Terracon Consulting Engineers and Scientists and dated June 30, 2008.

- Phase One Environmental Site Assessment, Former Diamond Products, 310 5th Street East, St. Paul, Minnesota 55101. Prepared by Liesch Associates, Inc. for the Saint Paul Port Authority and dated April 8, 2011.

- Former Diamond Products Site, St. Paul, Minnesota, Phase II Investigation Report. Prepared by Liesch Associates, Inc. for the Saint Paul Port Authority and dated July 22, 2011.

Previous investigation locations are shown on Figure 2, and Figure 3 summarizes the historic land uses at the Site.

According to the previous investigations, former Site uses have included coal gas manufacturing, a shoe factory, cold storage, meat packing, plumbing wholesales and transformer storage. The Site was developed by 1885 for coal gas manufacturing. Coal gas manufacturing continued until the 1960s and coal gasification operations were located mainly in the central to eastern portion of the Site. The coal gasification plant included at least three gas holders/gasometers, a purifying house, retorts, and several tar and gas distillate storage tanks. The western portion of the manufacturing facility was historically

occupied by a shoe factory (beginning in about 1903), a plumbing wholesaler and fish company (beginning in about 1926) and transformer yard (beginning in about 1926). The existing parking lots north of the manufacturing building were historically occupied by meat packing and cold storage facilities (1903 to as late as 1969). Approximate locations of the historic site uses are shown on Figure 3.

Surrounding historic property use has included railroads and freight storage and loading operations east and south of the site and a paint factory, a National Lead Company warehouse and gasoline stations located north of the site. Historic property use west of the site has included a tanning operation, residential dwellings, a machine shop and a dry goods wholesaler, as well as other commercial and industrial uses.

Construction of the manufacturing facility began in 1969, and the Gillette Company began operations in 1970. The Site was used from 1970 to about 2003 to manufacture personal care products (i.e., hair spray, shampoo, deodorant) and paper correction fluid. According to the previous environmental reports, a significant amount of soil was excavated to accommodate the ground floor of the manufacturing facility, and the northern portion of the building is about 25 feet lower than the original grade.

Manufacturing and mixing operations occurred on all three floors of the Site building. Storage of raw materials occurred mainly in the eastern portion of the manufacturing facility and in the aboveground storage tanks located east of the Site. Trench drains are located throughout the ground floor of the building and are connected to the sanitary sewer.

The production of correction fluid included the use of chlorinated solvents [trichloroethene (TCE) and 1,1,1-trichloroethane (TCA)] from 1983 to 1991. The chlorinated solvents were stored in the northeast corner of the facility and mixing of the correction fluid occurred on the ground floor of the facility on the west side of the building.

Between 2001 and 2011, several subsurface investigations, including Phase II environmental site assessments (ESAs), a Supplemental Phase II ESA, and groundwater monitoring were conducted at the Site.

Based on the results of the environmental investigations, groundwater generally occurs at an elevation of about 723 on the northwestern portion of the Site [or at a depth of about 15 feet below ground surface (bgs)] and at an elevation of about 710 on the southeastern portion of the Site (or at a depth of about 3 feet bgs). Groundwater was generally encountered 4 to 8 feet below the floor slab for the manufacturing building. Groundwater flow direction is to the south, southeast toward the Mississippi

River. Elevated concentrations of volatile organic compounds (VOCs), including chlorinated solvents, polynuclear aromatic hydrocarbons (PAHs), and cyanide have been detected in groundwater. During the 2011 Phase II ESA, free product was encountered in soil borings SB-3, 2C-1, and A-4. The locations of these borings are depicted on Figure 2.

Results for the soil and groundwater testing indicated a release of chlorinated solvents in the northeast portion of the manufacturing building. In addition, PAHs and other compounds consistent with coal gas manufacturing were detected in the central and eastern portions of the site with the highest concentrations detected in the southeast corner of the Site and in the eastern parking lot near Liesch Soil Boring SB-3, which was advanced near a former gas holder. The greatest soil impacts have been detected near the soil/groundwater interface at depths below 10 feet bgs; however, soil boring logs for borings advanced inside of the manufacturing facility indicate soil with elevated photoionization detector (PID) readings is present in shallow soils below the floor slab. No impacts were identified during previous investigations within the far western portion of the manufacturing facility or in the western parking lots.

In addition to the soil and groundwater impacts, elevated soil-vapor concentrations of 1,3-butadiene and TCE, relative to 10 times the Industrial Intrusion Screening Values (ISVs) are present at the Site.

Following the 2001 Phase II ESA, the Site was enrolled into the Minnesota Pollution Control Agency (MPCA) Voluntary Investigation and Cleanup (VIC) Program. In March 2003, following completion of the groundwater monitoring, the MPCA issued a No Action Determination for the site to Diamond Products, Rasoir, and the Gillette Company. The No Action Determination was contingent upon a Declaration of Restrictions and Covenants and Affidavit Concerning Real Property Contaminated with Hazardous Substances (Declaration of Restrictions) being filed in the Ramsey County real estate records by Diamond Products and Rasoir for their respective parcels. In December 2005, Retroactive No Association Determinations were issued to Diamond Products, the Gillette Company and Rasoir. A Declaration of Restrictions prepared for M Rasoir LTD, dated and last signed by the MPCA March 7, 2007 also was located in the MPCA files. Correspondence regarding a draft Declaration of Restrictions prepared for Diamond Products was reviewed in the MPCA files; however, based on discussions with the MPCA, Diamond Products has not finalized the Declaration of Restrictions, which according to current requirements will be titled Environmental Covenant and Easement, for the parcels that it owned.

E. 2012 Additional Investigation

Braun Intertec recently conducted an additional investigation of the Site in late September/early October 2012. The objective of the additional investigation was to further evaluate known soil and groundwater impacts and potential impacts in areas where excavation activities will take place during redevelopment. Specifically, the additional investigation focused on the northern side of the Site where significant excavation and grading activities will take place during redevelopment. The results of the 2012 additional investigation are summarized herein, and the data generated during the investigation was incorporated into the RAP/CCP for the redevelopment.

E.1 Scope of Services

To meet the project objective, the following tasks were conducted at the Site as part of the assessment:

- Advanced nine soil borings designated as ST-1 through ST-4, ST-6, ST-8, ST-10, ST-17 and ST-18 to evaluate soil and groundwater.
- Excavated seven test pits designated as TP-1 through TP-7 to evaluate soil.
- Screened soil samples collected from the soil borings and test pits for the presence of organic vapors using a PID. Visual and olfactory observations regarding potential contamination also were made and recorded.
- Collected soil and groundwater samples for chemical analyses.
- Collected bulk samples of potential asbestos-containing material (ACM) and analyzed them for asbestos content using polarized light microscopy.
- Collected groundwater samples from three of the soil borings (ST-3, ST-6, and ST-18) for chemical analyses.

Soil boring and test pit locations are shown on Figures 2 and 3. Please note, a geotechnical assessment was conducted concurrently with this additional investigation and included advancement of 11 additional soil borings. No environmental monitoring was conducted during advancement of the 11 geotechnical soil borings.

E.2 Investigation Methods and Procedures

The fieldwork relating to the Investigation was conducted on September 26 through 28, October 1, and October 8, 2012.

The soil boring and test pit locations and elevations were recorded using Global Positioning System (GPS) technology that uses the Minnesota Department of Transportation's permanent GPS Virtual Reference Network. Soil borings and test pit locations are shown on Figure 2.

E.3 Investigation Locations

Soil Borings

As part of the additional investigation, Braun Intertec advanced nine soil borings, designated as ST-1 through ST-4, ST-6, ST-8, ST-10, ST-17 and ST-18, at the Site to depths ranging from 15 to 30 feet bgs. The soil borings were completed with a hollow-stem auger rig, and split-spoon samples were collected at 2.5-foot intervals to a depth of 15 feet bgs and then at 5-foot intervals below a depth of 15 feet.

The soil borings were located in the following areas:

- Soil Borings ST-1 through ST-4 and ST-10 were completed along the northern boundary of the Site in an area where between 3 and 15 feet of soil will be excavated to construct the ballpark. These borings were also located near former gas stations either located on or adjacent to the northern edge of the Site. Soil Borings ST-3 and ST-4 also were located within the former boundaries of the former manufactured gas plant.

- Soil boring ST-6 was completed east of the Site building in an area historically used for coal storage.

- Soil Boring ST-8 was completed within Fifth Street and near the former manufactured gas plant.

- Soil Boring ST-17 was completed in the parking lot north of the Site building within the footprint for the former Swift Armour Packing Plant.

- Soil Boring ST-18 was completed within Fifth Street on the western side of the Site.

Prior to arrival onsite, the drill rig and sampling equipment were cleaned with a high pressure, hot water sprayer. Between sampling locations, sampling equipment was cleaned with a soap and water scrub followed by a clean water rinse. Upon completion, each soil boring was sealed in accordance with Minnesota Department of Health (MDH) regulations. Soil cuttings were containerized and are currently staged onsite in a lined and covered roll-off box pending offsite disposal SKB Industrial Facility in Rosemount, Minnesota.

Test pits

Carl Bolander and Sons of Saint Paul, Minnesota advanced seven test pits, designated as TP-1 through TP-7, at the Site to depths ranging from 7 to 9 feet bgs. The test pits were completed using a track-mounted backhoe. Upon completion, each test pit was backfilled and compacted with spoils from the excavation. Test pits TP-1 through TP-7 were excavated within the surface parking lots on the northern portion of the Site in the following locations:

- Test Pits TP-1 and TP-2 were excavated within the former building footprint for the Swift Armour Packing Plant.
- Test Pits TP-3 and TP-7 were excavated within the former building footprint for a cold storage building.
- Test Pit TP-4 was excavated to evaluate potential impacts from a former gas station located to the north and to evaluate fill soil.
- Test Pits TP-5 and TP-6 were excavated to evaluate potential impacts associated with former gas holder.

E.4 Soil Classification

The soils encountered in the soil borings and test pits were visually and manually classified in the field by an environmental technician using ASTM D 2487 “Verified Soils Classification System” and ASTM D 2488 “Recommended Practice for Visual and Manual Description of Soils.” Additionally, soils were classified at the Braun Intertec soils laboratory by a geotechnical engineer using ASTM D 2487 and ASTM D 2488.

Soil boring logs and test pit logs, with descriptions of the various soil strata encountered during the soil boring and test pit advancement, are contained in Appendix B. The depths shown as changes between the soil types are approximate. The actual changes may be transitional, and the transition depths are likely to be horizontally variable.

E.5 Soil Screening

During advancement of the soil borings, soil samples were collected at 2.5-foot intervals to 15 feet bgs, then at 5-foot intervals to the termination depth of each soil boring. Soil samples were collected at 2-foot vertical intervals to the termination depth of each test pit. Soil samples retrieved were examined by an environmental technician, who was a licensed asbestos inspector by MDH for unusual staining, odors, and other apparent signs of contamination. In addition, the soil samples were screened for the presence of organic vapors using a PID. The PID was equipped with a 10.6-electron-volt lamp and calibrated to an isobutylene standard. The PID was used to perform a headspace method of field-analyses, as recommended by the MPCA in Petroleum Remediation Program Guidance Document 4-04 (September 2008).

E.6 Soil and Groundwater Sampling Procedures

E.6.1 Soil Sampling

In general, two soil samples from each soil boring, one from fill and one from underlying native soil, and one soil sample from each of the test pits were collected for chemical analyses. If potentially contaminated fill soil was identified, soil samples were collected for chemical analyses from the interval where potential impacts were identified. If no indications of contamination were encountered in the fill soil, samples for chemical analyses were collected from depths most likely to have been impacted by past land use or from depths at which soil will be excavated during Site redevelopment. Please note, no soil samples for chemical analyses were collected from Soil Boring ST-17, which was advanced in the footprint of the former Swift Armour plant. Soil Boring ST-17 encountered large amounts of brick presumably from the former building, and little to no soil was present in the sampler.

The soil samples were analyzed at the Braun Intertec laboratory for the presence and concentrations of the following chemical parameters:

- VOCs using Environmental Protection Agency (EPA) Method 8260
- PAHs using EPA Method 8270
- The 8 Resource Conservation Recovery Act (RCRA) metals using EPA Methods 6010 and 7471
- Diesel-range organics (DRO) using the Wisconsin Department of Natural Resource (WDNR) method
- Gasoline-range organics (GRO) using the WDNR method
- Total cyanide using EPA method 9012
- Lead using the toxicity characteristic leaching procedure (TCLP) – selected samples only where total lead greater than 100 milligram per kilogram (mg/kg) were detected

E.6.2 Groundwater Sampling

Three groundwater samples (ST-3W, ST-6W and ST-18W) were collected from Soil Borings ST-3, ST-6, and ST-18.

After encountering the water table, a temporary well was set within the borehole. The well was constructed with new, 1-inch PVC casing and a 5-foot-long screen. Groundwater samples were collected using new polyethylene tubing and a check ball.

The groundwater samples were analyzed at the Braun Intertec laboratory for the presence and concentrations of the following chemical parameters:

- VOCs using EPA Method 8260
- PAHs using EPA Method 8270
- Dissolved 8 RCRA metals using EPA Methods 6010 and 7470
- DRO using the WDNR Method
- GRO using the WDNR Method
- Total cyanide using EPA method 9012

E.7 Investigation Results

E.7.1 Geologic Conditions

Fill soil was encountered in all of the soil borings and test pits completed at the Site. The fill consisted of a mixture of soil types including poorly graded sand, gravel, silty sand and sandy clay. The thickness of fill soil ranged from 7 feet encountered in ST-3 to over 31 feet encountered in ST-10. Debris was noted in six of the soil borings and all seven of the test pits and included the following:

- Test Pit TP-1 – fill soil mixed with brick and concrete from 1 foot to 7 ft bgs
- Test Pit TP-2 – fill soil mixed with brick, concrete and trace metal scrap from 2 ft to 7 ft bgs
- Test Pit TP-3 – buried concrete footing encountered at 7 ft bgs.
- Test Pit TP-4 – fill consisting of silty sand mixed with weathered limestone and cobbles to a depth of 8 ft bgs
- Test Pit TP-5 – buried concrete footing at 8 ft bgs, fill soil mixed with trace wood and railroad ties and brick pieces at 6 to 8 ft bgs.
- Test Pit TP-6 – fill soil mixed with brick, asphalt, tile, concrete and cobbles to a depth of about 5 ft bgs.
- Test Pit TP-7 – fill soil mixed with weathered limestone and cobbles to a depth of 8 ft bgs.
- Soil Boring ST-4 – fill soil mixed with brick and concrete to a depth of 12 ft bgs.

- Soil Boring ST-6 – ash and slag were observed at 2.5 ft bgs.
- Soil Boring ST-8 – bituminous pieces were observed between 4 ft and 7 ft bgs.
- Soil Boring ST-17 – fill soil mixed with rubble, concrete and brick to a depth of 17 ft bgs.

Native soil consisted primarily of poorly graded sand, where present, overlying sandy clay. Groundwater was generally encountered at elevations ranging from 713 on the northern side of the Site to 699 on the far eastern portion of the Site. Perched water was encountered in Soil Boring ST-2 at a depth of 12 feet bgs or elevation 734 on the north central portion of the Site. (Soil Boring ST-7, which was advanced for geotechnical purposes in the vicinity of ST-2, encountered groundwater at a depth of 30 feet bgs.)

Coal tar was encountered in ST-4 at a depth of about 12 feet. Because the soil at this depth was very loose and the rods and sampler fell from a depth of 12 feet to 15 feet before encountering what appeared to be a hard surface, it is assumed ST-4 encountered a buried pit or brick structure. ST-4 was offset by about 10 feet to the south and similar contaminant and drilling conditions were encountered. Neither ST-4 nor ST-4A were advanced below a depth of 15 feet, and both borings were grouted.

Soil boring and test pit logs are included in Appendix B, and test pit photographs are included in Appendix C.

E.7.2 Field-Screening Results

Field indications of contamination were encountered at three sampling locations and included the following:

- In Soil Boring ST-4 advanced near a former gas holder, coal tar, a strong mothball odor and elevated PID readings between 260 and 510 parts per million (ppm) were noted at depths between 12 and 15 feet bgs. As discussed above, it appears ST-4 was advanced in a buried pit or structure.

- In Soil Boring ST-6, advanced downgradient of the former manufactured gas plant, a strong mothball odor and elevated PID reading of 11.5 ppm was noted at the water table at a depth of about 30 feet bgs. A sheen and oily residue was noted on the groundwater and possible black globules of coal tar were noted in the groundwater sample collected at this location.

- In Soil Boring ST-8, advanced within Fifth Street, PID readings between 8 and 8.6 ppm were observed in the upper 6 feet; however, no odors or staining were encountered.

Refer to Section E.7.1 for discussion related to observed debris.

E.7.3 Soil Analytical Testing Results

The soil analytical testing results for the soil borings are summarized in Tables 1, and the analytical results from the test pits are summarized in Table 2. For comparison purposes, the tables also include MPCA Residential and Industrial Soil Reference Values (SRVs) and Soil Leaching Values (SLVs). The SRVs and SLVs are allowable risk-based contaminant concentrations established by the MPCA to guide Site investigation and cleanup actions.

Please note, analytical results for Soil Boring ST-10 are pending. In addition, TCLP lead results for the following samples are also pending: ST-4 (3.5-5), ST-6 (1-2.5), ST-6 (6-7.5), TP-1(3-4), TP-5 (0-2), and STP-6 (2-4).

The results of the laboratory analysis indicated:

- VOCs were detected at three of the sampling locations, ST-1, ST-4, and TP-4. In ST-1, which was advanced in the northwestern portion of the Site, two VOCs, TCE and PCE were detected at concentrations exceeding the SLVs, but not the Residential SRVs. Soil Borings ST-4 and TP-4 were located in the former manufactured gas plant located in the northeastern portion of the Site. Within ST-4, several VOCs were detected at concentrations exceeding the Industrial SRVs and/or SLVs and included 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, total xylenes, naphthalene, styrene and toluene.

- Several PAHs were detected above the laboratory MRLs in soil samples collected from the Site; however, none of the individual compounds were detected above their respective SRVs or SLVs, where established with the exception of 2-methylnaphthalene, acenaphthene, dibenzofuran, fluoranthene, fluorene and naphthalene, which were detected in ST-4 at a depth of 11 to 12.5 feet bgs. In addition, the calculated benzo(a)pyrene (BaP) equivalent concentrations exceeded the Industrial SRV in Soil Samples ST-4 (3.5-5’), ST-4 (11-12.5’), ST-6 (1-2.5’), ST-8 (1-2.5’), TP-1 (3-4’), TP-5 (0-2’) and TP-6 (2-4’).

- DRO was detected at concentrations ranging from 14 mg/kg to 7,000 mg/kg in 14 of the samples. DRO was detected at concentrations exceeding 100 mg/kg in the samples ST-4 (3.5-5’), ST-4 (11-12.5’), ST-6 (1-2.5’), ST-8 (1-2.5’), TP-1 (3-4’), TP-5 (0-2’), and TP-6 (2-4’). Currently, there are no established regulatory limits for DRO. However, guidelines do not allow for off-Site reuse of soil with concentrations in excess of 100 mg/kg. Soil samples with concentrations of DRO in excess of 100 mg/kg were predominantly taken from the northeast and northwest corners of the Site.

- GRO was detected in only one sample, ST-4(11-12.5) at a concentration of 4,900 mg/kg. Currently, there are no established regulatory limits for GRO. However, guidelines do not allow for off-Site reuse of soil with concentrations in excess of 100 mg/kg.

- Elevated concentrations of lead relative to the SRVs and/or SLVs were detected in two samples, ST-6 (1-2.5') and TP-6 (2-4'). Soil Boring ST-6 was located on the east side of the Site and the sample was collected from an interval where ash also was observed. Test Pit TP-6 (2-4') was located on the former manufactured gas plant. Chromium was detected at concentration slightly exceeding the SLV of 18 mg/kg in Soil Samples ST-2 (1-2.5') and ST-6 (1-2.5'). The concentrations are below the Residential SRV, but exceeded the Tier 1 SLV for hexavalent chromium. The total chromium results did not exceed the Tier 1 SLV for trivalent chromium. The SLV for hexavalent chromium is 18 mg/kg while the SLV for trivalent chromium is 1,000,000 mg/kg. Because it is unlikely that all, if any, of the chromium detected is hexavalent chromium, chromium is not considered a contaminant of concern.

- Cyanide was detected and exceeded the SLV of 10 mg/kg in Soil Samples ST-4 (3.5-5'), ST-4 (11-12.5'), ST-6 (1-2.5') and TP-5 (0-2'). These samples were collected from the northeast corner of the Site where the former manufactured gas plant was located.

- No asbestos was detected in the floor tile sample collected from Test Pit TP-6.

The laboratory analytical reports and chain-of-custody forms are included in Appendix D.

E.7.4 Groundwater Analytical Testing Results

The groundwater analytical testing results are summarized in Table 3. For comparison purposes, the table also includes Drinking Water Criteria from MPCA Risk-Based Site Evaluation guidance. The Drinking Water Criteria include MDH Health Risk Limits (HRLs), which are the allowable drinking water standards recommended by the MDH, Health Based Values (HBVs), or Maximum Contaminant Levels (MCLs) which are established by the EPA. Drinking Water Criteria are expressed in micrograms per liter (ug/L).

The results of the laboratory analysis indicated that:

- No VOCs were detected in Samples ST-3W or ST-18W at concentrations greater than the MRLs. In sample ST-6W, several VOCs were detected, including 1,2,4-trimethylbenzene, 1,3,5-trimethylenzene and benzene, which were detected at concentrations exceeding the Drinking Water Criteria.

- DRO was detected at concentrations of 730 ug/L and 32,000 ug/L in groundwater Samples ST-3W and ST-6W, respectively. No DRO was detected in Sample ST-18W. Currently, there is no Drinking Water Criteria for DRO.

- GRO was detected at a concentration of 14,000 ug/L in Groundwater Sample ST-6W. No GRO was detected in Samples ST-3W and ST-18W. Currently, there is no Drinking Water Criteria for GRO.

- Several PAHs were detected in Sample ST-6W, which was located downgradient of the manufactured gas plant. Two of the individual PAHs detected, naphthalene and pyrene, were detected at concentrations of 13,000 ug/L and 210 ug/L, respectively, which exceeded their individual Drinking Water Criteria. In addition, the BaP equivalent calculated for ST-6W greatly exceeded the Drinking Water Criteria. Naphthalene was the only PAH detected in Sample ST-3W, but the concentration detected did not exceed the Drinking Water Criteria. No PAHs were detected in Sample ST-18W.

- No elevated concentrations of metal or cyanide were detected in the groundwater samples.

The laboratory analytical reports, including the chain-of-custody forms are included in Appendix D.

E.8 Conclusions

Based on the results of the Phase II ESA, we conclude the following:

- Fill soil was identified at depths ranging from 7 to 31 feet bgs at the Site. Native soil consisted primarily of poorly graded sand, where present, overlying sandy clay. Groundwater was generally encountered at elevations ranging from 713 on the northern side of the Site to 699 on the far eastern portion of the Site. Perched groundwater also was encountered along the northern edge of the Site.

- Buried rubble consisting mainly of brick, concrete, and limestone was encountered in the test pits on the western portion of the parking lots. Based on drilling conditions (i.e., high blow counts and poor recovery), buried debris is also assumed to be present along the northern side of the Site. Based on the analytical results from the soil borings and test pits located in the western portion of the parking lots and along the northern Site boundary, elevated concentrations of carcinogenic PAHs relative to the SRVs and elevated concentrations of chlorinated solvents relative to the SLVs were detected in fill soil.

- Elevated concentrations of coal tar contaminants are present in the northeast portion of the Site where coal gas was manufactured. In addition, coal tar was also observed in soil samples collected at depths between 12 feet and 15 feet bgs in Soil Boring ST-4. Coal tar contamination also was encountered near the water table in Soil Boring ST-6, which was advanced east and downgradient of the former manufactured gas plant.

- Elevated concentrations of carcinogenic PAHs and lead were detected in near surface soils in soil boring ST-6. Ash and slag also were observed in the sampling intervals.

F. Response Action Plan

F.1 Proposed Response Actions

Based on the previous investigation data, contaminated materials that will be encountered during Site redevelopment include the following:

- Buried rubble consisting mainly of brick, concrete, and limestone was encountered in the test pits on the western portion of the parking lots to depths of about 8 feet. Based on drilling conditions (i.e., high blow counts and poor recovery), buried debris is also assumed to be present along the northern side of the Site. Based on the analytical results from the soil borings and test pits located in the western portion of the parking lots and along the northern Site boundary, elevated concentrations of carcinogenic PAHs relative to the SRVs and elevated concentrations of chlorinated solvents relative to the SLVs were detected in fill soil.

- Elevated concentrations of carcinogenic PAHs and lead were detected in near surface soils in Soil Boring ST-6. Ash and slag also were observed in the sampling intervals.

- Contaminated soil is present below the eastern two thirds of the Site building and below the eastern most parking lots. The soil is impacted with PAHs and VOCs associated with former coal gas manufacturing operations at the Site.

- Contaminated groundwater is present at elevations ranging from 723 on the northwestern portion of the Site (or at a depth of about 15 feet bgs) and at an elevation of about 710 on the southeastern portion of the Site (or at a depth of about 3 feet bgs). Elevated concentrations of VOCs, PAHs, diesel-range organics (DRO) and cyanide have been detected in the groundwater. In addition, free product has been identified in the south-central portion of the building and in the far eastern parking lot.

During implementation of the response actions, the methods, procedures, sampling frequencies and soil re-use criteria described in Section F.2 will be used. As part of the redevelopment, contaminated soil will be excavated only to the extent necessary to allow construction of the new Site improvements, and contaminated soil will be left in place wherever possible. Proposed response actions include the following:

F.1.1 Building Demolition

Prior to floor slab removal, Braun Intertec will examine the floor for the presence of staining or discoloration. If no staining or discoloration is noted, the floor will be considered contaminant-free and may be reused on the project or recycled offsite. If indicators of contamination are noted, additional sampling of the floor will be conducted by coring the floor or collecting chip samples for purposes of possible beneficial onsite reuse providing concentrations are found to be less than Industrial Soil Reference Values (SRVs) or for landfill profiling.

During floor slab removal, excess soil adhered to the concrete will be removed to the extent feasible by shaking or scraping the concrete with the excavation equipment.

During removal of the floor slab and footings and as the piles are cut off at an elevation of about 714 (or about 2 feet below the floor slab), full-time environmental monitoring will be conducted. Particular attention will be paid to the northeast corner of the building where TCE was previously stored, during removal of trench drains from the basement and during removal of the eastern portion of building where the coal gasification occurred. Because an impermeable liner consisting of high-density polyethylene or similar product will be installed at a depth of 4 to 6 feet beneath the field, it is proposed that soil excavated during removal of the floor slab, footings or piling will be backfilled into the excavation.

F.1.2 Site Grading and Excavation

Significant grading will be required to construct the ballpark. Site grades on the southern portion of the Site will be raised as much as 6 feet, and site grades below Fifth Street and to the north will be lowered as much as 20 feet.

During Site grading and excavation, full time environmental monitoring will be conducted.

Former Manufactured Gas Plant

Based on the results of previous investigations, no soil from the former manufactured gas plant on the northeast side of the Site will be reused onsite as the concentrations of coal tar contaminants exceed the Industrial SRVs. The boundaries of the former facility are generally bound by SB-4, SB-5, SB-3 and ST-4.

Existing grades in this area of the Site will be cut by about 5 to 10 feet, and additional excavation is anticipated to construct the retaining wall, install footings and conduct soil correction. The excavated soil will be transported offsite for disposal at an appropriately permitted landfill. During excavation activities on this portion of the Site, an exclusion zone will be established and only equipment and workers required to conduct the excavation will be present in the exclusion zone. Excess soil also will be removed from equipment leaving the work area to limit tracking of contaminants out of the work area. During excavation in the vicinity of ST-4 and SB-3, it is anticipated soil with free product will be encountered. In order to control free liquid in the soil, methods such as mixing non-product saturated soil or adsorbent material into the product saturated soil as it is excavated will be evaluated and employed as necessary. To the extent possible, soil will be direct loaded for disposal and will not be stockpiled onsite. In addition, to the extent possible, the excavation will occur in an expeditious and efficient manner. To control odors, wind direction and speed will be factored into scheduling the work and the use of foam or other odor suppressant measures might be employed such as covering the excavation at the end of each working day with a layer of clean soil. Following excavation on the former manufactured gas plant parcel, confirmation soil samples will be collected in accordance with Section F.2.c.

Western Parking Lots and Fifth and John Streets

Based on the results of the previous investigations, buried debris is present beneath most of the western parking lots to depths ranging from about 8 to 10 feet bgs. Elevated concentrations of carcinogenic PAHs also were detected in test pit TP-1 in an interval where debris also was present. Soil encountered below Fifth and John Streets was generally debris free and analytical testing indicated that contaminants detected were below the onsite reuse criteria. During excavation activities in this area, soil with debris in excess of 5% by volume will be transported offsite for disposal at an appropriately permitted landfill. Soil with no indications of contamination will meet the following criteria: no staining, no chemical or petroleum-like odor, less than 5% debris by volume and headspace readings less than 10 ppm.

- Soil with no indications of contamination will be reused onsite without restriction. Excess soil with no indications of contamination that is proposed for offsite reuse will be segregated and stockpiled in accordance with Section F.2.b so that samples for analytical testing can be collected. The soil samples will be chemically analyzed for VOCs, PAHs, DRO, cyanide, and the 8 RCRA metals. The number of samples analyzed will be in accordance Section F.2.b. The fill soil will be reused offsite provided that it meets the MPCA Best Management Practices criteria for offsite reuse of fill soil. Excess fill soil not meeting the offsite reuse criteria will be transported offsite for disposal at an appropriately permitted landfill.

- Soil with indications of contamination might be reused onsite in accordance with Section F.2.d provided existing analytical data is available and levels of contaminants can be assessed relative to the SRVs and Soil Leaching Values (SLVs). If no analytical data from previous investigations is available, the soil will be stockpiled in accordance with Section F.2.b so that samples for analytical testing can be collected. The soil samples will be chemically analyzed for VOCs, PAHs, DRO, cyanide, and the 8 RCRA metals. The number of samples analyzed will be in accordance Section E.2.b. The fill soil will be reused onsite as restricted fill soil provided it meets the criteria in Section E.2.d. Excess fill soil not meeting the onsite restricted reuse criteria will be transported offsite for disposal at an appropriately permitted landfill.

Excavation East of John Street

Based on previous investigation results, the surface soil in the upper 2 to 3 feet is impacted with elevated concentrations of PAHs and lead relative to the Industrial SRVs. Existing grades in this area will be raised by as much at 10 feet along the northern side of the Site and will generally remain the same along the southern side of the Site. If soil in the upper 2 to 3 feet is excavated as part of development, it will be transported offsite for disposal. The underlying soil, if excavated, will be screened for indications of contamination and if no indications of contamination are observed, it will be reused onsite. If indications of contamination are observed, the soil will either be transported offsite for disposal or will be stockpiled so that samples for analytical testing can be collected. Decisions regarding reuse or disposal of the material will be made in accordance with Section F.2.c.

F.1.3 On-Site Storm Water Management

A storm water detention system will be installed beneath the southeast corner of the Site. Plans for the system have not yet been finalized; however, it is anticipated the invert of the system will be installed above an elevation of 710 (i.e., above the water table). As plans for the system are finalized, they will be provided to the MPCA along with additional response actions, as appropriate. As indicated in Section F.1.1, an impermeable liner consisting of high-density polyethylene or similar product will be installed at a depth of 4 to 6 feet beneath the entire playing field and infiltrating water will be directed to the system.

During excavation to install the system, full-time environmental monitoring will be conducted. Given the proposed location of the storm water system in relation to the former coal gas manufacturing operations, soil excavated to install the system will be disposed of offsite at an appropriately permitted landfill; however, if soil with no indications of contamination is encountered, it will be segregated and stockpiled. Soil samples for analytical testing will be collected from the soil in accordance with Section F.2.b, and based on the analytical testing results, the soil will be re-used or disposed off in accordance with the criteria in Section F.2.d. Following exaction to install the system, confirmation samples for chemical analyses will be collected in accordance with Section F.2.d.

F.1.4 Dewatering

Groundwater dewatering and dewatering of storm water that accumulates in excavations with exposed contaminated soil may be necessary. The discharge will be permitted with the Metropolitan Council Environmental Services and as necessary, the groundwater will be treated onsite to remove free product or excess contaminant concentrations prior to discharge.

F.1.5 Vapor Mitigation

Vapor mitigation measures will be taken to address the elevated levels of 1,3-butadiene and TCE that were detected during the 2011 Phase II ESA. Specifically, an engineered vapor mitigation system will be installed beneath the lowest level of the concourse and clubhouse. In portions of the building where the existing floor slab will be left in place, the vapor mitigation system will be installed on top of the former floor slab. The soil-vapor mitigation system will consist of piping that will be installed in the subgrade beneath the proposed building and a vapor retarder that will be installed above the vapor mitigation system piping and beneath the building floor slab. The vapor barrier will consist of a 15-mil-thick, high-density polyolefin liner manufactured by Stego Industries, LLC, or similar product. Penetrations through the vapor barrier and seams will be sealed with tape to mitigate the potential for soil vapors to enter the building.

As the foundation system and building plans are finalized, an engineered vapor mitigation system will be designed and provided to the MPCA for review.

F.1.6 Construction Contingency Plan

If unexpected contamination is encountered during excavation activities, the MPCA will be notified, and the CCP will be implemented.

F.1.7 Imported Soil

Imported soil will be evaluated using the methods and criteria described in Section F.2.5.

F.2 Methods and Procedures

F.2.a. Soil Screening

A Braun Intertec environmental technician with asbestos inspector credentials will be on Site during removal of the floor slab and pilings and during excavation activities at the Site. Soils will be observed for the presence of visual and olfactory indications of contamination. Direct olfactory evaluation of contaminated soil is not recommended for safety reasons, but incidental observations will be noted and acted on. The technician will follow MPCA-approved headspace methodology using a PID equipped with a 10.6-electron-volt lamp to monitor soil for the presence of organic vapors. A minimum of one sample for headspace analysis will be collected for every 10 cubic yards of soil removed. Screening results will be documented.

The headspace procedure is used to field-screen organic vapor levels in soils. The procedure consists of half-filling a new quart-sized sealable bag with a soil sample. The bag is quickly closed and headspace development is allowed to proceed for at least 10 minutes. The bag is shaken vigorously for 15 seconds, both at the beginning and the end of headspace development. After headspace development, the PID probe is inserted into the bag to one-half the headspace depth. The highest reading observed on the PID is then recorded.

F.2.b. Stockpile Procedures

If it becomes necessary to stockpile impacted soils prior to reuse on Site or for off-Site disposal, the soils will be staged on Site in one or more stockpiles. The stockpiles will be numbered, a sketch will be made of each stockpile location, and a description will be made of the type of material and where it originated. Soils from different areas with suspected different contaminants, soils exhibiting different visual or olfactory characteristics, or soils with significantly different PID measurements will be stored separately.

Stockpiled soils will be placed on polyethylene sheeting or other impervious surface and covered with polyethylene sheeting at the end of each workday and they will be secured in place. The stockpiles will be bermed to prevent storm water run-on and/or runoff.

If laboratory analysis of stockpiled soils is required, the number of stockpile samples collected will be in accordance with stockpile sampling requirements of the MPCA Petroleum Remediation Program, specifically:

Cubic Yards of Soil in Stockpile	Number of Grab Samples
<500	1 per 100 cubic yards
501-1,000	1 per 250 cubic yards
1,001 or more	1 per 500 cubic yards

F.2.c. Confirmation Sampling and Analytical Testing

If confirmation sampling is conducted, confirmation soil samples will be collected from the excavation base and sidewalls in the area where indications of contamination were found.

If laboratory analysis of the confirmation samples is needed, the number of soil samples will be collected based on the following:

Base of Excavation (ft^2)	Number of Samples	Sidewalls (ft^2)	Number of Samples
<500	2	<500	4
500-1000	3	500-1000	5
1000-1500	4	1000-1500	6
1500-2500	5	1500-2000	7
2500-4000	6	2000-3000	8
4000-6000	7	3000-4000	9
6000-8500	8	>4000	1 per 45 linear feet
8500-10890	9		

F.2.d. Soil Disposal and/or Reuse

Decisions regarding onsite and offsite reuse will be based on the following criteria:

- Offsite reuse of soil from the Site will be in accordance with the MPCA's Best Management Practices for Off-Site Reuse of Excess Fill from Development Sites and will meet the following criteria: soil will be free from solid waste, will not exhibit field indications of contamination, contaminant concentrations will be less than the Residential SRVs and SLVs and no DRO or GRO greater than 100 mg/kg will be present.

- Soil will be reused on Site without restriction, provided there are no indications of contamination based on field screening, headspace readings are less than 10 ppm, and contaminant concentrations are less than the Residential SRVs. In greenspace areas, contamination concentration also will be less than the SLVs.

- Impacted fill soil might be reused at the Site provided it meets the stated criteria:

  Thin-spread beneath paved surfaces and building floor slabs:
  - Beneath 2 feet of clean fill.
  - PID headspace readings less than 100 ppm.
  - Contaminant levels are less than the Industrial SRVs.
  - Debris content is less than 5 percent (%) by volume.

  Green Space Areas and Field
  - PID headspace readings are less than 10 ppm.
  - Contaminant levels are less then Industrial SRVs and SLVs.
  - - Debris content is less than 5% by volume.

Utility Corridors

- PID headspace readings are between background and 10 ppm.
- Contaminant levels are less than the Industrial SRVs and SLVs.
- If PID headspace readings are greater than 10 ppm in the trench sidewalls or base, the need for a vapor barrier will be evaluated.

- Soils containing more than 5% by volume construction debris or soils containing ACM will not be reused on Site and will be disposed of at an appropriately permitted disposal facility.

- Soil that cannot be reused on Site as restricted fill because of space constraints or because soils exhibit contaminant concentrations in excess of the proposed standards described above will be transported for offsite disposal.

F.2.e. Soil Import

Fill sources will be considered on a case-by-case basis and evaluated for the potential presence of contaminants in the material. If the fill source is from a site with no environmental concerns, such as native pit run material or from a residential development with no underground storage tanks (USTs) or other environmental concerns, no analytical testing of the material will be conducted.

Acceptance of fill from other sources with potential environmental concerns will be made on a case-by-case basis. As part of the decision making process, the land-use history of the source facility will be evaluated, existing environmental reports will be reviewed, the geotechnical suitability of the material will be assessed, and existing analytical data will be reviewed. If additional analytical testing of the material is deemed warranted after input from the MPCA, samples will be collected at a frequency of at least one sample per 1,000 cubic yards of material. Analytical parameters will be determined based on historic use of the source facility and the Site contaminants of concern. Analytical results will be compared to the Residential SRVs and SLVs. Environmental monitoring of fill soils as they are loaded into trucks from the source facilities will be conducted on a case-by-case basis.

G. Construction Contingency Plan

In the event indications of contamination or regulated waste are unexpectedly encountered during construction, this CCP will be implemented.

For the purposes of this CCP, indicators of potentially contaminated soil, groundwater or surface water include, but are not limited to the following:

- Odor, including gasoline, diesel, creosote (odor of railroad ties), mothballs, or other chemical-like odor.
- Soil-stained green or black (but not because of organic content), or with dark, oily appearance, or any unusual soil color or texture.
- A rainbow color (sheen) on surface of water or soil.

Indicators of regulated wastes include, but are not limited to the following:

- Cans, bottles, glass, scrap metal, wood (indicators of solid waste and a possible dump)
- Concrete and asphalt rubble (indicators of demolition waste)
- Roofing materials, shingles, siding, vermiculite, floor tiles, any fibrous material (indicators of demolition waste that could contain asbestos, lead or other chemicals)
- Culverts or other pipes with tar-like coating, insulation or transite (indicators of asbestos)
- Ash (ash from burning or regulated materials may contain lead or other chemicals)
- Sandblast residue (could contain lead or other metals)
- Treated wood, including, but limited to products referred to as green-treated, brown-treated and creosote (treated wood disposal is regulated)
- Chemical containers such as storage tanks, drums, filters and other containers (possible sources of chemical contaminants)
- Old basements with intact floor tiles or insulation (could contain asbestos), sumps (could contain chemical waste), waste traps (could contain oily waste) and cesspools (could contain chemical or oily wastes)

G.1 Notification Requirements

In the event that unexpected contaminated materials or debris are encountered during construction when the environmental consultant is not on Site, work in the area shall cease immediately, and the work area shall be secured. Work outside of the vicinity of the discovery area can continue if conditions remain safe to do so for project personnel and the surrounding community. The contractor shall immediately notify the owner and/or the owner's representative. At the owner's and/or owner's representative's request, the environmental consultant will mobilize to the Site in the event that contamination is encountered. At this time, the soils will be assessed in-situ as part of a preliminary reconnaissance for the presence of contamination using both visual and olfactory indications of contamination, as well as laboratory analysis.

In the event contaminated materials are encountered during construction, the MPCA project managers will be notified and a release may need to be reported to the State Duty Officer in accordance with Minnesota Statute 115.061.

G.2 Preliminary Reconnaissance

If contamination or regulated waste is unexpectedly encountered, the environmental consultant will mobilize to the Site to conduct a preliminary reconnaissance. During the preliminary reconnaissance, samples of the potentially impacted soil will be collected from any stockpiles or from the excavation base and sidewalls for headspace screening using a PID using MPCA recommended methodologies. A minimum of one sample for headspace analysis will be collected for every 10 cubic yards of material removed. Visual and indirect olfactory indications of contamination will be noted. Screening results will be documented, and Site photographs will be taken, as appropriate.

As part of the preliminary reconnaissance, any potentially contaminated soil that is stockpiled will be placed on polyethylene sheeting or other impervious surfaces and covered with polyethylene sheeting that is secured in place. Staging areas for potentially impacted soil or material will be clearly marked.

The results of the preliminary reconnaissance will be provided to the owner and/or the owner's representative. The contractor will not be allowed to continue to work in the area until the type(s) of contamination is identified and an appropriate response action is defined by the owner and/or the owner's environmental representative.

G.3 Potential Response Actions

In general, after conducting the preliminary reconnaissance and assessing the type of contamination, environmental monitoring will be conducted during excavation of potentially contaminated materials. The results of the environmental monitoring will be used to segregate and stockpile the potentially contaminated material. Field methods and procedures, analytical testing and decisions regarding soil disposition will be consistent with those described in Section F.2.

If potential ACM is encountered, no excavation work will be conducted until the results of polarized light microscopy (PLM) testing are available. If ACM is detected, procedures established in Section G.3.b. will be followed.

Response actions, listed by contaminant/waste type, to manage unidentified contamination that is encountered during construction are detailed below:

G.3.a. Petroleum-Contaminated Soils

If petroleum-contaminated soils are identified during construction, soils will be segregated and handled in accordance with MPCA Petroleum Remediation Guidance Document 3.01 "Excavation of Petroleum Contaminated soil and Tank Removal Sampling."

G.3.b. Debris and Asbestos-Containing Materials

In the event that debris suspected of containing asbestos is encountered during earthwork activities, it will be evaluated in-situ for the presence of asbestos by bulk sampling and analysis by PLM. If ACM is encountered, protocol outlined in the July 1999 MPCA *Asbestos Guidance on Excavation Projects* will be followed including implementation of an Emissions Control Plan (ECP). An ECP will be prepared if needed, upon request. In addition, as the debris is excavated and removed, if encountered, it will be properly recycled or soil containing greater than 10% debris will be disposed. ACM will be properly disposed of offsite; no soil containing ACM will be reused on Site.

G.3.c. Non-Petroleum-Impacted Soil

Soils that exhibit non-petroleum impacts will be segregated, stockpiled, and sampled. The results of the analytical testing will be compared to the reuse criteria in Section F.2.4.

G.3.d. Storage Tanks or Drums

In the event that drums or other storage containers are encountered during earthwork activities, they will be removed and their condition evaluated by appropriately trained personnel. If the containers are determined to be in poor condition, the materials will be transferred to a new drum that is in good condition. The drums will be placed in a secure location. Containerized materials will be evaluated, tested, and properly disposed.

Soil from the area around the container will be screened for indications of contamination. Potentially impacted soil will be segregated and stockpiled. Soil samples will be collected from stockpiled materials for chemical analyses and confirmation soil samples will be collected from remaining in-place soil.

If a possible UST indicated metal or concrete surface, is encountered during excavation activities, the area around the possible underground structure will be carefully excavated. The underground structure will be tested to evaluate the depth to bottom or the presence of liquid. If liquid is present, further testing will be conducted to evaluate its contents. Liquid will be removed by pumping prior to removal and disposal of the structure. All UST contents will be handled in accordance with MPCA and OSHA requirements. The UST will be removed by a licensed UST removal contractor and will be completed

in accordance with MPCA requirements. Soil surrounding the tank or structure will be monitored for possible impacts and sampled for chemical analyses in accordance with MPCA, Petroleum Remediation Program, Guidance Document #3-01.

G.3.e. On-Site Wells and Septic Systems

If potential wells or septic systems are encountered, Braun Intertec will mobilize to the Site to conduct a preliminary reconnaissance. All wells must be sealed by a licensed well contractor in accordance to MDH regulations. Septic systems also should be properly abandoned in accordance with local and state code.

H. Site Health and Safety Plan

Braun Intertec will prepare a Health and Safety Plan for its personnel that will be on site. Site contractors will be provided with information regarding the locations of potential soil contamination, including this RAP/CCP, as they become available. Exclusion zones will be established as applicable and as required by OSHA regulations. Backhoe operators, environmental technicians and other workers within exclusion zones will have had 40-hour HAZWOPER training. Each contractor working within the exclusion zone will be responsible for implementing its own Site-specific health and safety plan.

I. Schedule

Building demolition is anticipated to begin in February 2013 with construction beginning in summer 2013. Opening day is scheduled for spring 2015.

J. Reporting

Upon completion of construction activities and chemical analyses, a RAP Implementation Report will be prepared documenting methods and results of the soil monitoring activities. The report will be submitted to the MPCA and will request a No Further Action letter and approval of the response actions.

K. Standard of Care

In performing its services, Braun Intertec used that degree of care and skill ordinarily exercised under similar circumstances by reputable members of its profession currently practicing in the same locality. No warranty, express or implied, is made.

Figures

Tables

Appendix A

Site Redevelopment Plans

Appendix B

Soil Boring and Test Pit Logs

Appendix C

Test Pit Photographs

Appendix D

Laboratory Analytical Reports