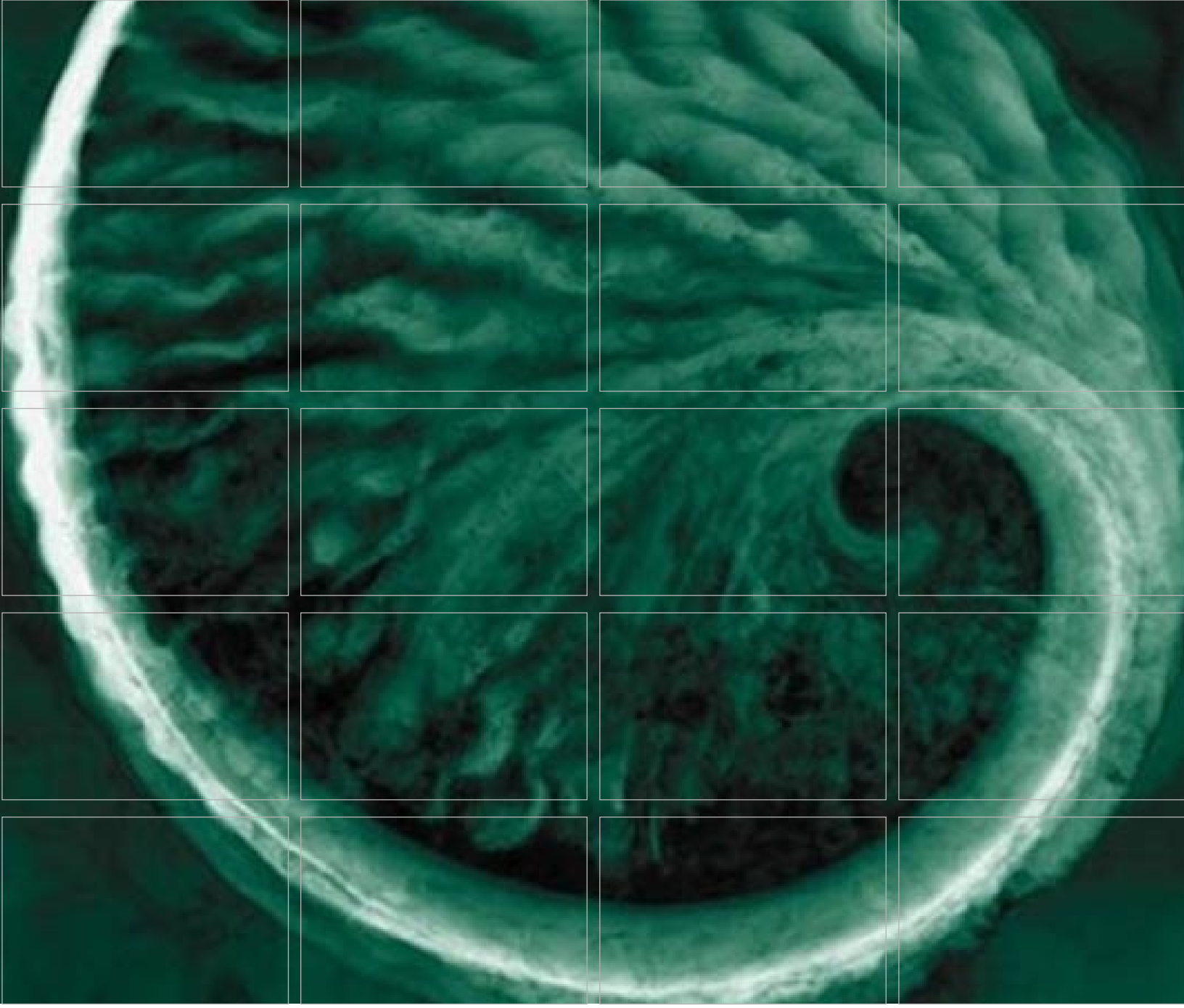

Site Investigation Work Plan

Fifth Street Area

Former Champaign MGP Site
Champaign, Illinois

August 2020

ERM Project No. 0529307

The business of sustainability

ERM

Site Investigation Work Plan
Fifth Street Area

Former Champaign MGP Site
Champaign, Illinois

August 2020

Prepared for:

AMEREN SERVICES
ST. LOUIS, MISSOURI

Prepared by:

ENVIRONMENTAL RESOURCES MANAGEMENT
ROLLING MEADOWS, ILLINOIS

ERM Project No. 0529307

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1.0 INTRODUCTION

This Site Investigation Work Plan has been prepared on behalf of Ameren Services (Ameren), by Environmental Resources Management, Inc. (ERM) for use at the former manufactured gas plant (MGP) site (the Site) located in Champaign, Illinois. The address of the former MGP is 308 N 5th Street. The actions described in this Work Plan are being implemented as part of the site management effort to assess potential impacts associated with the former MGP site. The investigation activities discussed in the work plan were prepared in accordance with 35 Illinois Administrative Code (IAC) Section 740 - Site Remediation Program (SRP), and 35 IAC Section 742 - Tiered Approach to Corrective Action Objectives (TACO). The Site is designated as LPC number 0190100008.

Historical investigation and remedial activities have been performed within the boundaries of the former MGP property, as well as investigation activities in areas surrounding the MGP site. Ameren has contracted ERM to complete supplemental site investigation activities within the Fifth Street (5th Street) area adjacent to the western property boundary of the former MGP site. The 5th Street Area described in this Work Plan includes the approximate 65-foot wide 5th Street right-of-way extending from the railroad property boundary to the north to the intersection of 5th and Hill Streets to the south.

ERM has prepared this Work Plan to support the field activities to be completed in the 5th Street Area. These activities are being conducted to further characterize and delineate the extent of impact observed during previous investigations. Data that is collected during the proposed field investigation activities described herein, along with data obtained from previous investigations, will be compared to the standards defined under TACO to determine the extent of impacts related to past operation of the MGP on the property, and to evaluate potential closure options for the 5th Street area.

This Work Plan is organized to provide a general overview of the Site and surrounding areas, previous environmental actions, and describe the activities to be completed within the 5th Street Area west of the former MGP Site.

2.0 BACKGROUND

2.1 SITE DESCRIPTION

The former MGP site, generally referred to as the Main Site, is located within the city limits of Champaign, Illinois in Champaign County in the northeast quarter of the southwest quarter of Section 7, Township 19 North, Range 9 East of the Third Principal Meridian. The Site address is 308 North Fifth Street, Champaign, Illinois. A Site Layout map is provided as Figure 1.

The Main Site property is currently vacant, secured by a chain-link fence, and is owned by Ameren. The Main Site is located in a predominantly residential area, with commercial properties on an adjacent property to the east. A medical center is located further to the east, and the campus for the University of Illinois is located southeast of the Site. A railroad line is adjacent to the north property boundary of the Main Site. A layout of the property and surrounding areas of the Site is shown on Figure 1.

The 5th Street Area borders the west side of the Main Site, and extends from the active railroad Norfolk-Southern Railroad line on the north end of the area, to the intersection of Hill Street on the south end of the area. Residential properties border the west side of the 5th Street Area right-of-way. The property immediately adjacent to the west side of 5th Street, north of Hill Street, is a former residential property that is currently owned by Ameren. The house on the Ameren-owned property has been removed.

2.2 FORMER CHAMPAIGN MGP HISTORY

Based on historical information and previous reports for the Main Site, gas was manufactured on the Site as early as 1869, and continued through 1933 by the former Champaign and Urbana Gas Light Company. Gas was produced by coal carbonization, oil gasification, and carbureted water gas methods during various periods of operation. After operations ceased, the plant was maintained for stand-by production purposes until about 1955. Plant facilities were demolished between 1955 and 1960, with the exception of the booster house, which was demolished in December 2008.

Although the property remained vacant after production ceased, Illinois Power, a predecessor of Ameren Illinois, maintained ownership of the property until 1979 when it was sold to the American Legion. Illinois Power repurchased the property from the American Legion in 1991 after preliminary environmental investigations indicated the presence of MGP related impacts at the Site. The Site is currently owned by Ameren.

Past MGP-related structural features included the former gas plant and associated buildings, three tar wells, two gas holders (GH-1 and GH-2) and two oil tanks located on the northern portion of the Site. The former booster house, a third gas holder (GH-3) three purifiers, and seven oil tanks were located on the southern portion of the Site. The historic structures associated with the former MGP were all removed in their entirety during the 2009 - 2011 remedial action, with the exception of areas adjacent to the perimeter of the Site where excavations were sloped/benched.

Based on historical records, the location of 5th Street and the associated right-of-way were present since before the MGP was constructed, and is currently owned and maintained by the City of Champaign. No known MGP-related structures were historically present within 5th Street or the associated right-of-way.

2.3 PREVIOUS INVESTIGATIONS

Investigation activities have been conducted at the former MGP Site since approximately 1990. A *Comprehensive Site Investigation Report* (CSIR) (PSC, 2007) was prepared to summarize investigation activities completed at the Site through this date. Investigation activities that were completed on the areas outside of the MGP property boundary were summarized in the *Off-Site Investigation Report, Former Manufactured Gas Plant, Champaign Illinois* (PSC, August 22, 2008). A summary of the samples collected during previous investigations is provided on Figure 2.

Between 2009 and 2011, a remedial action was completed that utilized excavation of impacted materials and offsite disposal. During this remedial action, the historic structures associated with the former MGP were all removed in their entirety. The depth of excavation across the Site ranged from 18 to 28 feet below ground surface (bgs), commonly terminating on the surface of the Unweathered Till soil unit, which is the confining layer that corresponds with the vertical extent of impact at the Site. Exceptions to the referenced depths of excavation were areas adjacent to the perimeter of the Main Site, where excavations were sloped or benched from the property boundary back into the Main Site.

Residual impacts along the perimeter of the MGP Site that remained following the completion of the 2009-2011 remedial action were addressed during subsequent remedial actions. In 2013, three separate in-situ chemical oxidation (ISCO) injection events were completed at select areas along the perimeter of the Site. In 2017, a supplemental excavation was

completed in the northwest portion of the MGP Site to remove impacted soils that could not be successfully treated to meet the remediation objectives. Soil excavation activities were completed up to the property boundary but did not proceed offsite.

During the January-February 2017 remedial measure, soil removal was completed over an approximate 165 feet long and 24 feet wide area adjacent to the northwestern Site property boundary, to a depth of 12 to 14 feet bgs. Confirmation sample results collected from the western sidewall of the excavation, adjacent to the property boundary, identified impacts with concentrations exceeding the TACO criteria for soil attenuation capacity. Figure 2 identifies the location of sidewall confirmation samples collected at the extent of excavation.

In February 2017, PSC conducted a site investigation within the 5th Street right-of-way, and to a limited extent, within 5th Street. MGP residual impact was identified in soil samples in the area extending from the MGP site boundary into the 5th Street.

2.4 SITE GEOLOGY AND HYDROGEOLOGY

The geology and hydrogeology information presented in this section was collected and summarized from previous reports generated for the former Champaign MGP Site.

Area Geology

The major geologic units present at the Site, in descending order, are the surficial fill layer, the weathered till unit (Wedron Formation), the unweathered till unit (Wedron), and the lower silty sand member of the Glasford Formation. A brief description of each unit is described further in this section. Additional detail on the subsurface geology of the site can be found in the CSIR.

The CSIR defined a surficial fill layer that is typically three to four feet thick on the Site, which was removed during the remedial action. However, similar fill material has been encountered on offsite areas. The fill material was described to contain gravelly silt and sand, with cinders, bricks, and debris.

The first natural subsurface material encountered is a weathered till unit. The unit is continuous beneath the Site and is believed to be part of the Batestown Till Member of the Wisconsinan Wedron Formation. The

Weathered Till Unit was contacted at various depths beneath the Site, averaging between 10 to15 feet thick. The Weathered Till Unit is comprised of brown to gray silty clay with some oxidation evident along clay fractures.

The Unweathered Till Unit is also believed to be part of the Batestown Till Member of the Wisconsinan Wedron Formation. The unit is generally differentiated from the Weathered Till Unit by the gray color and lack of weathering along fractures. The surface of the Unweathered Till was encountered at depths ranging from 9 to 20.5 feet bgs.

An intermediate depth groundwater system for the Site underlies the Unweathered Till Unit, which is mostly comprised of discontinuous outwash sands and gravel layers.

5th Street Geology

Based on boring logs recorded during the 2017 investigation in the 5th Street Area, similar geology exists under the 5th Street roadway and within the right-of-way. In the roadway, the upper three feet of subsurface materials are largely comprised of fill to support the road, including brick pavers that underlay most of the paved surfaces.

The soil boring depths in the 2017 investigation were advanced to 20 feet bgs. The logged soil profile of these soil borings were similar to the subsurface profile of the Area Geology described above, with silty clays throughout most of the soil borings, with small, intermittent and discontinuous sandy and sandy clay layers.

Hydrogeology

The shallow groundwater system at the Site is an unconfined water-bearing zone with the saturation depth (water table) found in the surficial fill layer above the uppermost till unit. Shallow groundwater is monitored by a network of nineteen wells located on and around the MGP Site. Groundwater in the shallow system beneath most of the study area generally flows in a somewhat radial pattern from the Site. The depth to the shallow groundwater typically ranges from 3 to 10 feet bgs.

Slug testing was performed on five of the shallow groundwater monitoring wells in June of 2011. The hydraulic conductivity results of the June 2011 testing ranged from a low of 2.6×10^{-6} centimeters per second (cm/sec) at well UMW-109 to a high of 9.6×10^{-5} cm/sec at well UMW-107, with a geometric mean value for all five wells of 3.1×10^{-5} cm/sec. The shallow groundwater meets the IEPA definition of a Class II groundwater.

The intermediate groundwater system for the Site is located underlying the Unweathered Till. Nine monitoring wells across the Site and surrounding properties are screened to monitor this groundwater unit. The depth to groundwater in the wells in the intermediate groundwater system for the Site typically ranges from 27 to 31 feet bgs, indicating that the two groundwater systems are hydraulically separated by the Unweathered Till unit. Slug testing was performed in four of the eight intermediate wells (UMW-301, UMW-302, UMW-303, and UMW-304) during the offsite investigation in 2008. The horizontal hydraulic conductivity values ranged from 2.80×10^{-2} cm/sec to 8.63×10^{-2} cm/sec. The mean hydraulic conductivity calculated using data from the four wells was 4.85×10^{-2} cm/sec or 137.5 feet per day. The intermediate groundwater meets the IEPA definition of Class I groundwater. Groundwater generally flows in a southeast direction.

3.0 SCOPE OF SERVICES

Based on the review of the available site data, the following field activities have been proposed in order to meet the project objectives of this Work Plan. Information from the previous site activities was used to prepare the scope of work, and assist in the selection of sample locations to meet the requirements of a focused site investigation in accordance with 35 IAC Section 740. Proposed field activities to be completed during the investigation are discussed in the following sections. This Work Plan also incorporates the site-specific Quality Assurance Project Plan (QAPP), which is provided under separate cover.

Field monitoring, analytical information, reporting, and proposed schedule are discussed in Sections 4.0, 5.0, 6.0, and 7.0, respectively.

The field activities associated with this Work Plan include the following tasks:

- Health and Safety;
- Site preparation and mobilization;
- Surveying (pre- and post-investigation) to identify property and 5th Street right-of-way boundaries, surface features, and the location of soil borings within the 5th Street Area;
- Complete utility locate and subsurface clearance activities;
- Install 23 soil borings to depths of approximately 25 feet bgs within the 5th Street Area;
- Collect soil samples from selected intervals for delineation of the horizontal and vertical extent of impacts; and
- Management of Investigation Derived Waste (IDW).

These activities are described in more detail below.

3.1 HEALTH AND SAFETY

A site-specific Health and Safety Plan (HASP) will be prepared for use during field activities. The Champaign MGP HASP will describe field protocols to be used to maintain a safe working environment, and procedures to follow in the event of a medical emergency.

Proposed soil boring locations include sampling within the street and adjacent right of way areas. ERM will coordinate with the Champaign/ Urbana City Engineer to complete temporary road closures in accordance

with City regulations. Appropriate signage will be used each day to warn drivers and pedestrians that that field crews are working at the Site. Lane restrictions may include limiting access to one side of the street, or complete closure while work is in progress.

Caution tape or other visual barrier will be placed around the work areas to control access. Non-project personnel will be restricted from entering the work zones. All open holes will be backfilled to ground surface prior to leaving the Site at the end of the day. Equipment will be secured and supplies placed in locked storage containers when personnel are off-site.

Ambient air quality in the work zone will be monitored using a photoionization detector (PID) during the investigation. Odors and measured changes in air quality in the work zone will be monitored to prevent the creation of an unsafe work environment. Air monitoring procedures and action level guidelines will be provided in the HASP.

3.2 SITE PREPARATION AND MOBILIZATION

ERM subcontractor field crews, equipment and supplies will be mobilized to the Site at the agreed-upon date following authorization to proceed. During the initial site setup, an equipment storage area, decontamination area, and IDW staging area will be designated within the fenced Ameren Site.

3.3 SURVEYING

Prior to starting investigation-related tasks, ERM will contract an Illinois licensed surveyor to define the property and right-of-way boundaries for the 5th Street Area, the Main Site, and eastern property boundaries of adjacent residential properties located on the western edge of 5th Street. Proposed soil boring locations, along with boring locations that were completed during previous investigation activities, will be located and marked. Other applicable features relevant to the investigation will also be surveyed, as determined by ERM.

The Illinois licensed surveyor will also survey available utility locations identified from the Illinois One- Call System (JULIE) and the private utility locate, and develop a Site Plan showing the locations of the items surveyed. The survey will be referenced to the East Zone of the Illinois State Plane Coordinate System and to an established NVGD 88 elevation benchmark. Following the completion of field work, a second survey will

be completed to locate final soil boring locations, and other relevant and applicable features identified during the site investigation, as determined by ERM.

3.4 SUBSURFACE CLEARANCE

Prior to the start of subsurface field activities, ERM will contact the local underground utility locate service (Illinois JULIE – Call Before You Dig – phone number 1-800-892-0123) to mark the locations of underground utilities in the proposed work areas.

In addition to the public JULIE locate, a private utility locator service will also be used to confirm the location of subsurface utilities, and to scan proposed soil boring locations within the 5th Street Area. Utilities that were marked during a previous utility locate are shown on Figure 3.

Subsurface clearance will include the use of hand auger and/or air-knife (vacuum extraction) equipment to pre-clear the soil boring locations to a minimum depth of five feet. At selected locations, the air knife may be used to confirm subsurface utility locations and depths.

For soil borings located in pavement and/or in brick paver areas, mechanical coring or saw cutting may be necessary to remove the pavement prior to hand clearance of the soil boring(s) to five feet bgs. After confirming public and private utility markings, the pavement will be cut to a maximum width of 18 inches, and only to the depth needed to cut through the paved surface.

Soil cuttings and materials generated during subsurface clearance will be transferred to a roll-off container to be staged at the Site.

3.5 *SOIL BORING INSTALLATION*

Twenty-three (23) soil borings are proposed to be installed at the locations shown in relation to the Main Site on Figure 4. A detailed view of the proposed soil boring locations are shown in Figure 5. The soil borings will be installed in an approximate 30-foot grid pattern to an approximate depth of 25 feet bgs. The grid is labeled as A through H from north to south, and numbered 1 through 3 from east to west. The proposed depth may be adjusted if unimpacted clay till soil is encountered at shallower depths, or conversely, the sampling depth may be extended at selected locations if impacts are encountered at greater depths.

Borings will be installed using a rotosonic drill rig. The drilling rig will continuously collect samples over the length of the soil boring. Rotosonic rigs typical sample over 10-foot intervals. Samples cores will be collected over this sample interval unless poor recoveries (<60%) dictate use of alternative sample collection intervals. As an example, the sample interval may be reduced to a five-foot interval to improve sample recoveries. The borehole locations may be offset, as necessary, if obstructions are encountered that prevent sampling to the proposed target depth.

An onsite field geologist or engineer will supervise and direct soil-sampling activities. The geologist will log each sample for percent recovery, soil type, moisture content, visual impact, photoionization detector (PID) readings, and odors. All observations, measurements, and other pertinent information will be recorded on a geologic log. The headspace from soil samples will be screened at approximate one-foot intervals with a PID with a 10.6 eV lamp.

The ground surface will be protected, to the extent practical, as field activities are completed at the Site. Plastic sheeting, plywood sheeting, tubs, or other materials may be used to protect the ground surface as drilling proceeds.

Upon completion at each location, the open hole will be backfilled with granular bentonite to within three feet of ground surface. All excess soils and liners will be transferred to the roll-off box, and the work area will be inspected and cleaned of residual soils. The soil boring location will be restored to match previously-existing conditions (*i.e.*, street surface, sidewalk, or grass).

All downhole rotosonic equipment will be decontaminated on a temporary decontamination pad after each use with pressurized hot water. ERM sampling equipment will be hand washed with an Alconox-based detergent followed by a distilled water rinse after each use. Water generated from the decontamination process will be collected and stored in drums and/or polyethylene totes on the Site for later disposition.

3.6 SAMPLE COLLECTION

The intent of the design for supplemental investigation activities described in this Work Plan is to characterize and delineate the extent of impact observed during previous investigations. This information may also be used for development of a remedial design, if deemed necessary. The rationale for sample collection includes collection of unimpacted soil

samples at the boundary of identified impact to be used for confirmation during potential remedial actions. Soil sampling results at the horizontal and vertical extents of the remedial area that demonstrate compliance with TACO remedial objectives would be used in lieu of collection of confirmation samples during any subsequent remedial action.

For the proposed soil boring locations in grids outside of previously identified MGP-related potential source impact, the field geologist will collect samples from the vertical profile in general accordance with TACO guidelines using the following rationale:

- Upper three feet – ERM will collect a sample from the interval with the greatest perceived impact to assess the ingestion (and other) exposure pathways. In the absence of impact, ERM will collect a sample from two to three feet bgs;
- Three to 10 feet – ERM will collect a sample from the interval with the greatest perceived impact to assess the inhalation (and other) exposure pathways. In the absence of observed impact, ERM will collect a sample from the shallowest interval within this depth profile;
- Impact deeper than 10 feet – ERM will collect a sample from the interval with the greatest perceived impact to assess various exposure pathways. In the absence of observed impact, ERM will collect a sample from the shallowest interval within this depth profile; and
- Bottom confirmation sample – ERM will collect a sample at the bottom of the boring, or at the location where potential unimpacted soils are present, to define the vertical extent of impact. If impact was not observed in the previous depth profile, a sample will be collected at 25 feet bgs.

If impact is observed at a depth of 25 feet bgs, the soil boring will be advanced further until impact is not observed. A sample will then be collected for analysis from a depth interval at least two feet below the base of the observed impact.

For soil boring locations where potential source impact has already been identified during previous investigations, ERM proposes to just collect soil samples from the interval to confirm the location of greatest observed impact (base of impact) and from the nearest underlying clean soil to provide data to delineate the vertical extent of impact. These borings are shown in red in Figure 2, and located in grids cells B1 through F1 (B1, C1, D1, E1, and F1), and D2 through F2 (D2, E2, and F2). For soil borings within these grid cells, the soil boring will be advanced to a total depth of 25 feet bgs, however a sample

will be collected at the first depth interval where impact is not observed beyond 20 feet. If impact is observed at 25 feet bgs, the boring will be advanced until potential impact is not encountered based on ERM's observations. A sample will be then be collected for analysis from a depth interval at least two feet below observed impact.

In the event impact is encountered at the peripheral edges of any of these areas that warrant expanding the scope of investigation, ERM will advise Ameren as work progresses. Soil borings may be added or relocated to delineate the extent of impacts, if necessary, depending on the conditions encountered in the field.

3.7 LABORATORY ANALYTICAL TESTING

Samples from each of the intervals described above will be selected based on visual and olfactory observations as well as PID instrument readings. Collected soil samples will be analyzed for the focused list of analyses provided in Section 5.0. These include the following:

- Target Compound List (TCL) Volatile organic compounds (VOCs);
- TCL Semi-Volatile Organic Compounds (SVOC)s;
- Low-Level Polycyclic Aromatic Hydrocarbons (LL PAHs);
- Resource Conservation and Recovery Act (RCRA) Total Metals;
- Total cyanide; and,
- pH.

At selected locations, samples will be collected for the following list of parameters:

- Total Petroleum Hydrocarbons (TPH); and
- Organic carbon ("fractional organic carbon" or FOC).

Additional analytical information and methodology are further discussed in Section 5.0 below.

In addition to the grid cell soil samples described above, quality assurance/quality control (QA/QC) samples, including duplicates, matrix spike (MS)/matrix spike duplicates (MSD), and trip blanks, will be obtained. Soil sampling and relevant QA/QC samples are described in further detail in the project QAPP.

The proposed locations and quantity of soil samples to be collected are as follows:

- Sixteen bottom of boring samples are proposed to be collected from the eight grid cell locations where potential source impacts were encountered. This includes grid locationsB1 through F1 (B1, C1, D1, E1, and F1), and D2 through F2 (D2, E2, and F2). These soil samples will be analyzed for the parameters defined in Table 1. Where impacts are encountered that have the potential to meet source definition, samples will be collected for TPH analysis;
- Sixty vertical profile samples from the remaining 15 grid locations. Each location includes the four depth interval sample locations described above. These samples will be analyzed for the parameters defined in Table 1.
- Eight duplicate quality assurance (QA) samples;
- Four matrix spike/matrix spike duplicate (MS/MSD) QA samples; and
- Four samples for FOC, if soils are encountered without any apparent MGP-related impact. Note that samples subject to FOC analyses will also be analyzed for VOCs and SVOCs to verify that the sample is not impacted.

Proposed soil boring locations are shown on Figure 4, with a detailed view of the proposed soil boring locations shown on Figure 5. Soil sampling depths and required analyses for each collected sample are included in Table 1.

Soil sample labeling procedures and nomenclature are further defined in the project QAPP. Generally, labeling of collected samples will include the grid cell identification followed by the depth interval where the sample was collected. As an example, a sample labeled "D3 (6-8')" would represent a sample collected from grid cell D3 from a depth of six to eight feet bgs.

Soil samples will be shipped under standard chain of custody procedures to the project-designated offsite laboratory, Teklab, Inc., (Teklab) of Collinsville, Illinois. Teklab will provide Level IV data packages for all samples submitted for analysis. Data validation will be completed to EPA Level 2a, with 20 percent of the samples evaluated at EPA Level 3. Data validation procedures are described in more detail in the project QAPP.

3.8 *MANAGEMENT OF IDW*

IDW generated during the field activities will include soil cuttings, decontamination fluids, disposable sampling equipment, and disposable personal protective equipment (PPE). All IDW generated during the field activities will be managed in a roll-off container and temporarily stored inside the fenced area of the Main Site for disposal after field activities have been completed.

Solid IDW will be placed in a roll-off container with tarp cover for storage until disposition can be determined. Liquid IDW will be placed in a polyethylene tank, totes, or drums for characterization and disposal. PPE, consisting of disposable gloves and tyvek suits, etc., will be managed with the soil cuttings for offsite disposal.

IDW soil and water will be characterized through the collection of composite samples for each media type at the conclusion of the field program. Soil characterization will depend on landfill or receiving facility requirements. Previously, the solid wastes were managed through the Waste Management Brickyard Landfill facility located in Danville, IL. Wastewater will be managed for offsite disposal by Clean Harbors.

4.0 FIELD MONITORING

The proposed site investigation includes ground-intrusive activities. Consequently, air monitoring will be conducted during the intrusive activities to monitor for the presence of VOCs in areas where human exposure may occur, to establish controlled work zones, and to document worker exposure. Air monitoring will be conducted based on guidance contained in the project HASP and QAPP.

Air monitoring will be performed using a PID. The monitoring procedure generally includes:

- Instrument calibration per Section 7.1 in the QAPP;
- Baseline survey of ambient VOC concentrations prior to soil disturbances;
- Setting alarm level;
- Establishment and monitoring of work zones;
- Monitoring work zones during soil disturbing activities; and
- Recordkeeping.

The HASP contains specific details regarding the air monitoring procedures to be used during the field investigation.

5.0 ANALYTICAL APPROACH

Analytical testing will be performed in accordance with United States Environmental Protection Agency (USEPA) Solid Waste (SW) methods (SW-846) requirements (USEPA, 1994). All environmental-related samples collected will be placed in laboratory-supplied, pre-preserved containers. The samples will be packed in coolers with ice to maintain a temperature of four degrees Centigrade. All environmental samples will be shipped under chain of custody procedures via courier service to Teklab in Collinsville, Illinois. Teklab is a National Environmental Laboratory Accreditation Program (NELAP) laboratory for chemical analyses. The chemical group and analytical methods that will be utilized during the course of the investigation are:

- Target Compound List (TCL) VOCs – USEPA Method 8260C using soil collection Method 5035;
- TCL Semi-volatile organic compounds (SVOCs)– USEPA Method 8270D SIM;
- RCRA Metals – USEPA Method 6010/7471;
- Total Cyanide - USEPA Method 9012;
- pH – USEPA 9045D (Method 9040B water);
- Fractional Organic Carbon – ASTM 2974, with the IEPA-required correction of 0.58; and
- Total Petroleum Hydrocarbons – OA-1 and OA-2 by USEPA 8260C/8015.

Select soil samples from native and unimpacted sample locations (based on visual observation) will be obtained from the Site and analyzed for FOC content. The absence of impact in the FOC samples will be validated through analysis of VOCs and SVOCs, which will be quantified for each FOC sample obtained. The FOC concentration will be determined using ASTM D2974, with the 0.58 correction prescribed by the IEPA.

If free-phase materials are encountered in soil, select samples will be obtained for analysis of TPH by Method OA-1 and OA-2, in addition to VOCs and SVOCs. These data will be used to determine if the sum of the organics exceeds the site-specific FOC numbers (soil attenuation capacity), or if the compound-specific soil saturation limits are exceeded.

Applicable QA/QC samples will be collected and submitted for analysis, as is described in the QAPP. Duplicate samples will be obtained at a 10 percent rate and MS/MSD samples at a five percent rate. Additional QA/QC information is provided in the project QAPP.

6.0 REPORT PREPARATION

6.1 SITE INVESTIGATION DATA SUMMARY

Following the completion of field activities and receipt of all analytical data from the laboratory, ERM will prepare a Site Investigation Data Summary to describe the activities and results of the investigation completed during this phase of work. The Data Summary report will include updated figures that incorporate the newly-acquired site data and previous site investigation sample locations and data. Supporting documentation will be provided in appendices, to include soil boring logs, laboratory analytical reports, and waste disposal records.

Data that is generated during the supplemental site investigation activities will be added to the project database. The development of the project database will simplify the site evaluation process to identify exceedance of TACO standards, and to streamline the process required to prepare applicable summary tables. The singular project database will be used to develop various displays for subsequent ROR and RAP documents, if necessary. This information will be incorporated into a Remedial Action Completion Report for the 5th Street Area.

7.0 PROJECT SCHEDULE

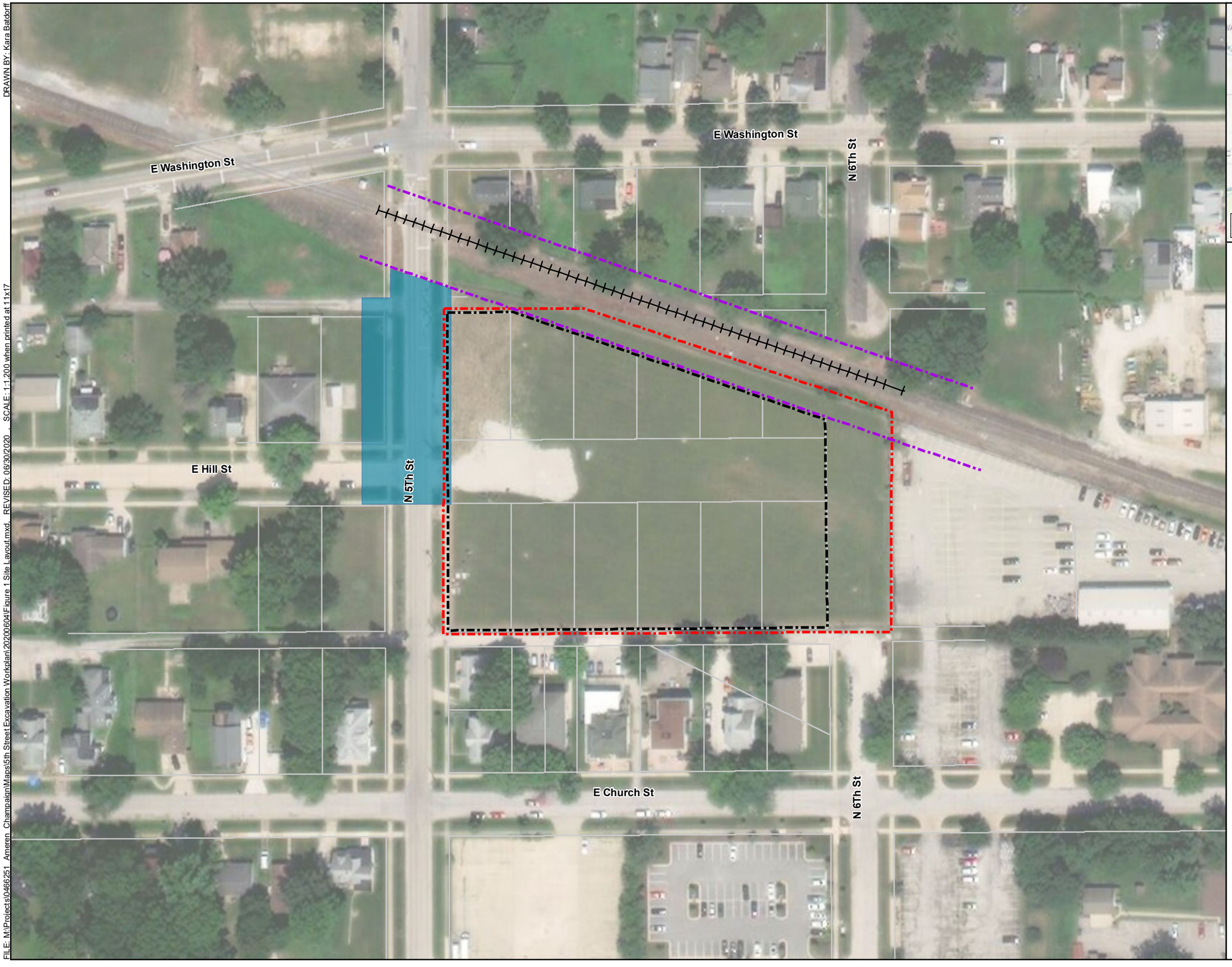
The field tasks described in this work plan will be completed in the following general order:

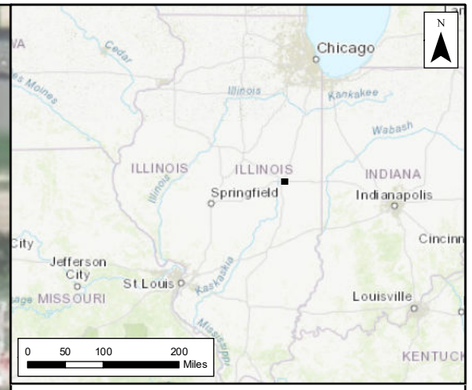
- Site setup will require approximately two to three days to complete; layout the sample points, complete the private utility location of the work area (one day), and preclear soil boring locations (two days). The roll-off container and wastewater tank, and pre-investigation surveying, will be mobilized to the Site during this period;
- Installation of soil borings will be initiated one day after subsurface clearance (air knife) activities have been initiated. Soil boring installations will be completed concurrently with subsurface clearance during this initial period. A seven-day period has been scheduled to complete soil boring installations;
- Site restoration activities will be completed on the final day at the Site. The ground surface areas will be restored to match pre-investigation conditions; i.e., patch roadway and sidewalk surfaces, and restore grass surfaces.
- Samples will be collected from the roll-off container and wastewater storage tanks to prepare disposal profiles for the selected waste management facility or vendor. A separate mobilization will be required approximately two weeks after the completion of the field activities to coordinate transportation of the containers to the respective facilities.

Site investigation activities are expected to begin within two weeks of approval of the Work Plan by IEPA, and with the approval of access agreements with the City.

Based on contractor availability and weather conditions, field activities are anticipated to take approximately two weeks to complete.

Figures





Legend

- Railroad
- 5th Street Investigation Area
- Ameren Property Boundary
- 2009 Remediation Site Boundary
- Norfolk Southern Railroad Property Boundary
- Parcel Lot Line

N

0 100 200
Feet

Figure 1
Site Layout
Ameren Services
Champaign, Illinois

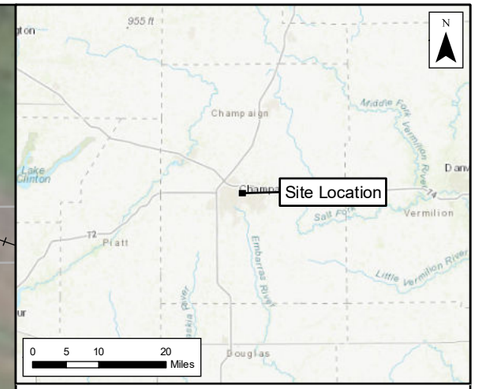
Environmental Resources Management
www.erm.com
ERM

DRAWN BY: Kara Batdorff

SCALE: 1:531 when printed at 11x17

FILE: M:\Projects\0466251_Ameren_Champaign\Maps\5th Street Excavation Workplan\20200604\Figure 2_Soil Sample Locations.mxd

B-834
B-836
UMW-108
UTB-08B
UTB-08A
5TH-PH05
SW-RES-REM-W1
B-832
5TH-PH09
5TH-PH03
B-833
FL-RES-REM-W2
SW-RES-REM-W2
SW-RES-REM-W3
5TH-PH11
5TH-PH02
5TH-PH08
UTB-16
FL-RES-REM-W4
B-831
SW-RES-REM-W4
B-840
UPZ-203
UMW-303
UMW-117
5TH-PH07
SW-RES-REM-W5
B-838
5TH-PH04
B-839
B-841
FL-RES-REM-W6
SW-RES-REM-W6
5TH-PH10
B-830
5TH-PH01
FL-RES-REM-W7
SEWER-2
SW-RES-REM-W7
UMW-107R
UTB-07
B-501
UMW-116
UTB-28
E Hill St
N 5Th St
SEWER-3
B-828
B-826
UTB-06
UMW-106
CSS-01
UMW-106R
B-824
SEWER-4



Legend

- Exceeds Soil Attenuation
- Exceeds Tier 1 Level
- Soil Boring
- Soil Excavation
- Air Monitor
- Monitoring Well
- Property Boundary
- Railroad
- 5th Street Investigation Area

N

0 44 88

Feet

Figure 2
5th St Sample Locations
308 North Fifth Street
Former Ameren Champaign MGP Site
Champaign, Illinois

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FILE: M:\Projects\0466251_Ameren_Champaign\Maps\2020 Presentation\5th street\Existing Utilities.mxd REVISED: 03/25/2020 SCALE: 1:360 when printed at 11x17

Stormwater Sewer

Buried Gas

Underground Fiber Optic (CCG)

Underground Fiber Optic (i3 Broadband)

E Hill St

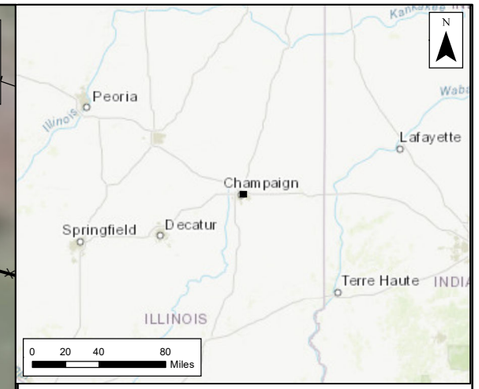
Underground Fiber Optic (i3 Broadband)

Water Main

N 5Th St

0 15 30 60 Feet

N



Legend

- Handhole
- Power Pole
- Street
- Sidewalk
- Buried Electric
- Water Main
- Gas Main
- Stormwater Sewer
- Underground Fiber Optic (CCG)
- Underground Fiber Optic (i3 Broadband)
- Fence
- Railroad

Figure 3
Existing Utilities
5th Street Area
Former Ameren Champaign MGP Site
Champaign, Illinois

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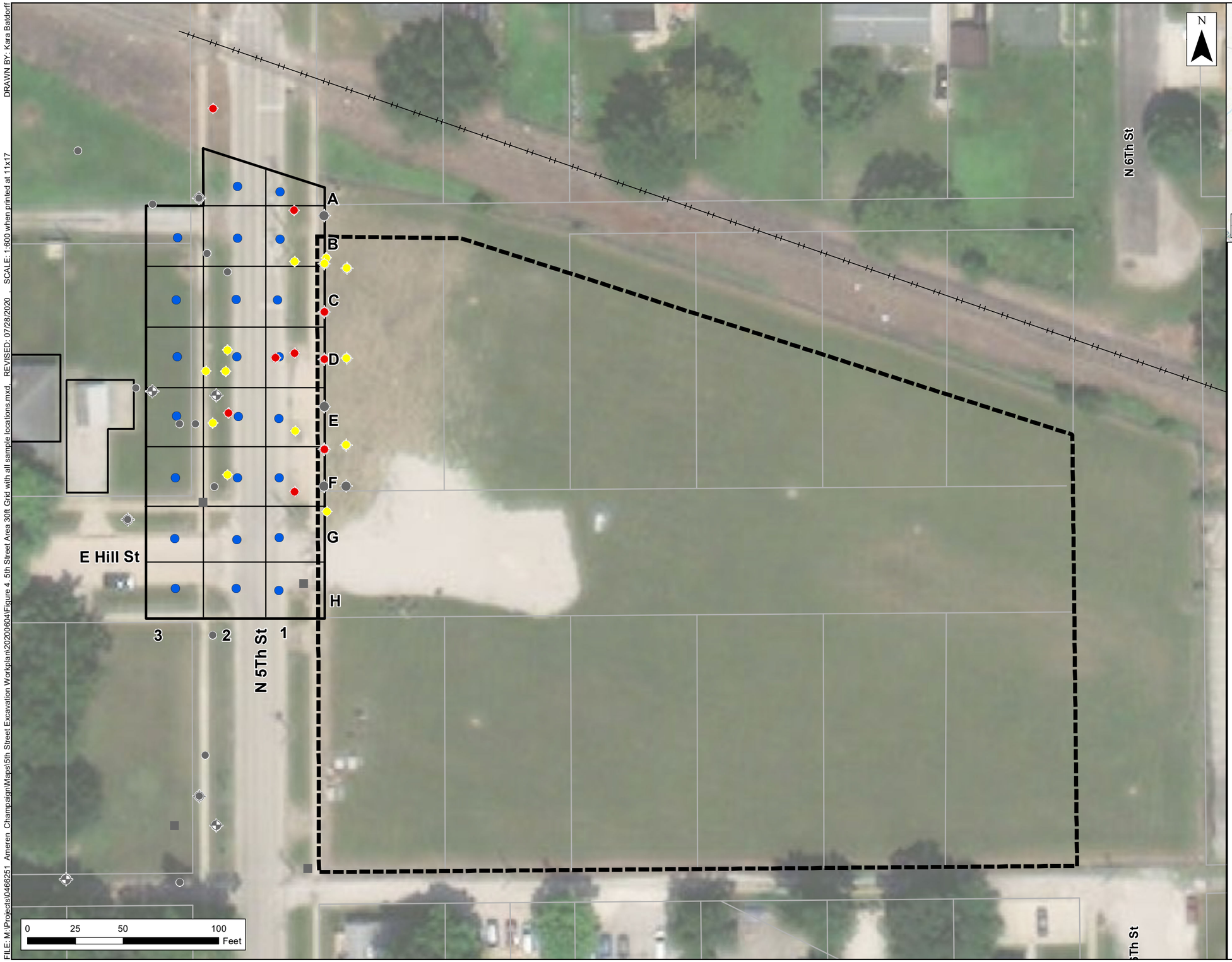

Legend

- Exceeds Soil Attenuation Capacity
- Exceeds Tier 1 Level
- Proposed Boring Location
- Soil Boring
- Soil Excavation Confirmation
- Air Monitoring Point
- Monitoring Well
- Property Boundary
- Railroad

Figure 4
Proposed Sample Locations
5th Street Area
Former Ameren Champaign MGP Site
Champaign, Illinois

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REVISED: 07/28/2020
FILE: M:\Projects\0466251_Ameren_Champaign\Maps\5th Street Excavation Workplan\20200604\Figure 4_5th Street Area 30ft Grid with all sample locations.mxd

DRAWN BY: Kara Batdorff

SCALE: 1:480 when printed at 11x17

REVISED: 07/28/2020

FILE: M:\Projects\0466251 Ameren Champaign\Maps\5th Street Excavation Workplan\20200604\Figure 5_5th Street Area 30ft Grid with all sample locations.mxd

A
B
C
D
E
F
G
H

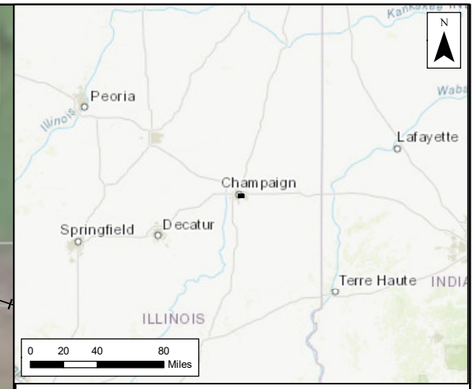
E Hill St

N 5Th St

3
2
1

0 20 40 80 Feet

N



Legend

- Exceeds Soil Attenuation Capacity
- Exceeds Tier 1 Level
- Proposed Boring Location
- Soil Boring
- Soil Excavation Confirmation
- Air Monitoring Point
- Monitoring Well
- Property Boundary
- Railroad

Figure 5
Proposed Sample Location
5th Street Area
Former Ameren Champaign MGP Site
Champaign, Illinois

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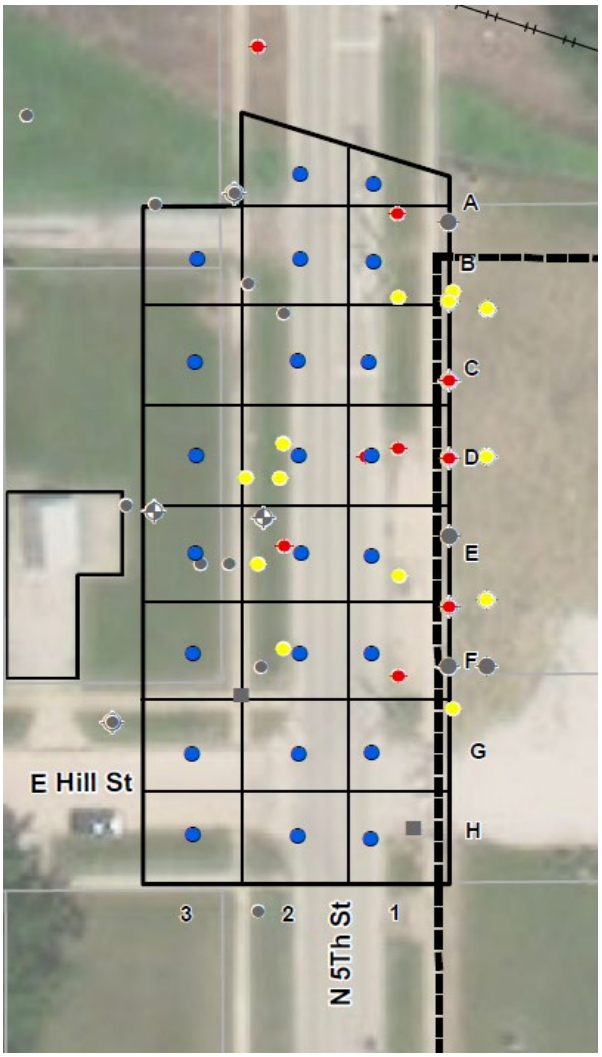
Tables

TABLE 1
Sample Summary - 5th Street Area
Champaign MGP Site
Ameren Services
Champaign , IL

		Analyte List and Depth Interval			
Grid Cell ID	**Total Boring Depth (feet)**	**0-3 Feet BGS**	**3-10 Feet BGS**	**Greater than 10 Feet BGS**	**Bottom of Boring (25 Feet BGS)**
A1	25	1	1,2	1,2	1,2
B1	25	NS	NS	1,2	1,2
C1	25	NS	NS	1,2	1,2
D1	25	NS	NS	1,2	1,2
E1	25	NS	NS	1,2	1,2
F1	25	NS	NS	1,2	1,2
G1	25	1	1,2	1,2	1,2
H1	25	1	1,2	1,2	1,2
A2	25	1	1,2	1,2	1,2
B2	25	1	1,2	1,2	1,2
C2	25	1	1,2	1,2	1,2
D2	25	NS	NS	1,2	1,2
E2	25	NS	NS	1,2	1,2
F2	25	NS	NS	1,2	1,2
G2	25	1	1,2	1,2	1,2
H2	25	1	1,2	1,2	1,2
A3	Not Proposed				
B3	25	1	1,2	1,2	1,2
C3	25	1	1,2	1,2	1,2
D3	25	1	1,2	1,2	1,2
E3	25	1	1,2	1,2	1,2
F3	25	1	1,2	1,2	1,2
G3	25	1	1,2	1,2	1,2
H3	25	1 or 3	1 or 3	1 or 3	1 or 3



Analyte List

1	VOC, SVOCs, LL PAHs, RCRA Metals, Cyanide, pH
2	TPH
3	FOC plus VOCs & SVOCs (per 740 Apendix A table A-B)

Notes:

TPH (Analyte List 2) sample locations may be moved based upon field observations

FOC (Analyte List 3) sample locations may be moved based upon field observations

NS - No Sample Collected from Depth Interval

TPH samples will only be collected where source material is suspected and/or observed in the field

FOC samples will only be collected from grid cells where unimpacted material is observed.

Proposed Sample Locations are provided in blue.