BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)
	)
STANDARDS FOR THE DISPOSAL	) R 2020-019
OF COAL COMBUSTION RESIDUALS	) (Rulemaking – Water)
IN SURFACE IMPOUNDMENTS:	)
PROPOSED NEW 35 ILL. ADM.	)
CODE PART 845	)

TO: See Attached Service List

Please take notice that today I filed with the Illinois Pollution Control Board Public Comments on behalf of the Little Village Environmental Justice Organization, a copy of which is attached and served upon you.

Respectfully submitted,

Keith Harley

Keith Harley, Attorney for Little Village Environmental Justice Organization

Date: June 15, 2020

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Public Comments of the Little Village Environmental Justice Organization

Keith Harley of the Chicago Legal Clinic, Inc. respectfully submits these public comments on behalf of the Little Village Environmental Justice Organization.

I. The Little Village Environmental Justice Organization and Its Interest In This Rulemaking

The Little Village Environmental Justice Organization (LVEJO) is a not-for-profit organization based in Chicago's Little Village neighborhood. LVEJO's mission is to organize with the Little Village community to accomplish environmental justice and self-determination for its immigrant, low-income, and working-class families. LVEJO's mission is to build a sustainable community that promotes the healthy development of youth and families, provides economic justice, and practices participatory democracy and self-determination.[1]

Since 2018, LVEJO has participated in the still ongoing process of remediating the former Crawford coal-fired power plant site in Little Village. The demolition of buildings and the recent implosion of a smoke stack at this site have received significant public attention.[2] Less well known, LVEJO has also been active in addressing issues related to surface and subsurface conditions at the site. In October 2018, LVEJO formally began engaging with Illinois EPA

[1] LVEJO Home Page, http://www.lvejo.org/ (last visited June 13, 2020).
[2] "After Old Crawford Coal Plant Smokestack Blown Up, Little Village Residents Worry About Dust During Global Pandemic." Block Club Chicago, April 11, 2020, available at: https://blockclubchicago.org/2020/04/11/old-crawford-coal-plant-smokestack-blown-up-sending-dust-into-little-village-during-global-pandemic/ (last visited June 14, 2020).

regarding the remediation of the Crawford site, which poses complex challenges in light of its decades-long use as a coal-fired electric generating facility. LVEJO is participating in the present rulemaking to describe its hard-fought "lessons learned" as an environmental justice organization that is participating in the complex remediation of a former coal-fired electric generating facility.

Kim Wasserman is the Executive Director of LVEJO. She is also the Chair of the Illinois Commission on Environmental Justice. The Commission on Environmental Justice was created by the Environmental Justice Act. 415 ILCS 155/5. The Environmental Justice Act was enacted in 2011 based on the General Assembly's findings that environmental justice requires that no segment of the population regardless of race, national origin, age or income should bear disproportionately high or adverse effects of environmental pollution. 415 ILCS 155/5(i). The General Assembly also found that certain communities in the State may suffer disproportionately from environmental hazards and that these environmental hazards can cause long-term health effects. 415 ILCS 155/5(ii) and (iii). The Commission was created to advise State entities on environmental justice and related community issues, to review and analyze the impact of State laws and policies on environmental justice, to assess the adequacy of State and local laws to address environmental justice and to perform other related tasks. 415 ILCS 155/5(d)(1)-(5). Chairperson Wasserman's participation in this rulemaking is designed to place LVEJO's street level experiences in the larger context of the goal of achieving environmental justice in Illinois.

II. LVEJO's Crawford Site Environmental Justice Initiative

LVEJO began engaging formally with Illinois EPA about the remediation of the Crawford site in October, 2018. At the opening bell of its communications with Illinois EPA, LVEJO characterized the Crawford remediation as a critical environmental justice priority for the Little

Village community.[3] LVEJO described this environmental justice priority in the context of the characteristics of the area within one mile of the 70-acre Crawford site:

> According to information derived from the demographic feature of U.S. EPA's ECHO database, 24,717 people live in 6,213 households within a one-mile radius of the Crawford facility. More than 96% of the people who live in this one-mile radius are Hispanic. U.S. EPA's ECHO database also indicates that in this one-mile radius, there is a total population of 8,323 children 17 years and younger. There are densely populated residential communities immediately to the north and northwest of the facility, including the Gary Elementary School and Piotrowski Park.

In light of the environmental justice community immediately adjacent to the Crawford site, LVEJO asked Illinois EPA to implement enhanced public participation measures:

> LVEJO is unaware of any community relations plan that will enable public knowledge of, or participation in, the remediation of this site. 415 ILCS 5/58.7(h). LVEJO is requesting Illinois EPA to design and implement a strategy to ensure public participation in relationship to this project of significant interest. LVEJO is committed to working with Illinois EPA to help ensure a well-grounded public understanding of activities related to this site, and to helping to facilitate communications between the community and Illinois EPA.
>
> A proactive, comprehensive public participation strategy is justified in this case because of the composition of the surrounding community, the complexity of the site, and the statewide importance of establishing best practices for Illinois EPA's actions in relationship to the remediation and reuse of former coal-fired electric generating facilities.

In making this request, LVEJO underscored how critical a proactive and comprehensive public participation strategy is given the complexity of the site and the significant consequences of Illinois EPA's activities:

> Members of the public have a significant interest in understanding the nature and extent of contamination, the cleanup objectives, the scope of the remediation, and the technologies and techniques the Remedial Applicant is proposing to address site contamination. For its part, Illinois EPA has an unparalleled opportunity to demonstrate how the SRP functions to ensure a complete site characterization, the choice of protective cleanup standards and the choice of appropriate remedial measures.
>
> The remediation of this site is of statewide and national significance because it is one of the first generation of coal-fired facilities that is being remediated and repurposed. There

[3] A true and accurate copy of this correspondence is attached to these comments and labeled as LVEJO Exhibit One.

> are 275 similar retired facilities in the U.S., presenting remarkable challenges and opportunities. The remediation of the Crawford facility – among the most prominent facilities in the nation – offers Illinois EPA the opportunity to be a leader in developing best practices for this category of former industrial facilities, including in the way it designs and executes community relations and public participation.

LVEJO concluded this letter to Illinois EPA by recommending a comprehensive public participation strategy that incorporated the following elements:

> 1. promptly providing all tangible information that is part of the SRP process, both in a local repository and on-line (perhaps via Illinois EPA's existing document explorer website);
>
> 2. working with LVEJO to conduct local public information meetings at key intervals during the site remediation process (upon completion of the site investigation report, upon completion of the remediation objectives report, upon receipt of the remedial actions plan), including providing Illinois EPA staff members to participate in these meetings;
>
> 3. establishing a means for public comments and questions to be directed to the IL EPA staff members who will oversee site remediation activities;
>
> 4. developing fact sheets in both English and Spanish at key intervals in the remediation process to describe important activities that are being undertaken at the site and to address significant public comments and concerns;
>
> 5. identifying a primary point of contact at the Illinois EPA for the public to contact with questions and concerns about the design and implementation of site remediation activities.

Since 2018, LVEJO capitalized on the limited public participation measures Illinois EPA subsequently provided by organizing and hosting a public meeting attended by Illinois EPA staff members on August 6, 2019, reviewing and commenting on proposals to characterize the nature and extent of contamination in surface and subsurface materials and groundwater, commenting on potential strategies to address contaminants, hosting regular community forums regarding the remediation and proposed reuse of the Crawford site and developing educational materials for Little Village residents. LVEJO's public comments about Illinois EPA's regulatory proposal are based on these experiences; these comments are designed to give the Illinois Pollution Control Board the benefit of LVEJO's firsthand experience of what it's like for an environmental justice

group to participate in the remediation of a former coal-fired power plant that included ash generation, treatment, storage and transfer operations, and where the legacy impacts of these activities must now be addressed. LVEJO's purpose is entirely consistent with the public participation and environmental justice provisions of the Coal Ash Pollution Prevention Act. 415 ILCS 5/22.59(a)(5), (g)(6) and (g)(8).

III. Illinois EPA's Proposed Regulations Focus On Surface Impoundments At Power Plants, But Fail to Address Sites That Have Unconsolidated Accumulations of CCR In Fill Material. Illinois EPA's Proposed Regulations Are Based On an Incomplete Interpretation of the Scope of The Coal Ash Pollution Prevention Act Which The Illinois Pollution Control Board Must Remedy.

The Crawford site doesn't appear on Illinois EPA's inventory of sites that will be subject to the new regulations. Illinois EPA's regulatory proposal focuses on power generating facilities with CCR surface impoundments. Illinois EPA Statement of Reasons, pp. 1, 36-37. As a result, IL EPA anticipates its regulatory proposal will affect 23 power generating stations and the 73 surface impoundments located at these facilities, which it lists on pages 36 and 37 of its Statement of Reasons.

By contrast, sites like Crawford are characterized by accumulations of CCR that are unconsolidated; that is, the CCR is not located in discrete impoundments. Instead, it is found in the fill deposited across a site, not in engineered structures. Illinois EPA's regulatory proposal does not address sites with unconsolidated fill that includes accumulations of CCR. Illinois EPA's narrow interpretation of the scope of its authority and responsibility will have dire consequences. Absent a fundamental reworking of Illinois EPA's regulatory proposal, sites characterized by unconsolidated CCR fill will not be identified, appropriately assessed or properly remediated. They will remain as they are indefinitely. There will be an indefinite risk

that rainfall and snowmelt will migrate through these materials and contribute to the release of CCR contaminants into surface, subsurface and groundwater resources. There is also an indefinite risk that these materials will remain in contact with groundwater and directly release contaminants into this media. Leaving these CCR deposits behind is contrary to the purposes of the Coal Ash Pollution Prevention Act and its plain language mandates.

As part of its participation in the remediation of the Crawford site, LVEJO and its representatives reviewed borings of site material that were prepared for Illinois EPA by the owners of the site. A repository of information about environmental conditions at the Crawford site is available to any person using Illinois EPA's Document Explorer website, including complete copies of the documents from which LVEJO derived the boring results.[4] To aid the participants in this rulemaking, LVEJO is including the analysis of these boring results it presented to Illinois EPA in December, 2019 as Exhibit Two to these public comments, including appendices compiling the boring samples and other information on which it relied. LVEJO summarized this information in the following way.

> In 1998, then-owner ComEd retained a consulting agency to perform Phase I and Phase II Environmental Site Assessments. Part of this process included establishing environmental conditions through the collection of samples and boring logs throughout the subject property. In total, 30 soil borings were executed on site, each of which was logged and included in the report. Of the 30 boring logs, 23 of them included reference to either "slag," "coal," or "ash" in the description section.[5] The ubiquitous nature of the presence of coal and slag material is evidence of coal ash in the subsurface of this site.
>
> Following the decommissioning of the plant, current owners, HilCo Redevelopment Partners, hired a separate consulting agency to perform similar sampling necessary to develop a Comprehensive Site Investigation Report, which ultimately also included a Supplement to the CSIR. The first round of sampling took place in March of 2018, and generated a total of 69 soil borings. Of the 69 soil boring logs, 53 of them included a

[4] Illinois Environmental Protection Agency, *Site Remediation – Technical*, IEPA DOCUMENT EXPLORER, https://external.epa.illinois.gov/DocumentExplorer/Documents/Index/170000041238.

[5] V3 Companies, *Illinois Site Remediation Program: Comprehensive Site Investigation Report*, Former Crawford Station, Prepared for HRE Crawford, LLC, Appendix A.2 (July 2018).

> reference to either "slag," "coal," or "cinders" in the description section.[6] As part of the supplemental sampling activities, an additional 40 soil borings were performed in December of 2018. Of those 40 soil boring logs, 26 referenced some combination of the same three indicator words.[7] As a result, of the total 139 soil borings taken on site in both 1998 and 2018, 102—roughly 73%—included reference to the presence of coal, slag, or ash of some kind.

Notably, these conditions were not within the scope of Illinois EPA's only enforcement initiative related to CCR at the Crawford site, which addressed a discrete basin and surface materials, but did not address unconsolidated CCR fill on the site. In its December, 2019 letter to Illinois EPA, LVEJO expressed its concern about the limited scope of this enforcement action.

> In 2012, Illinois Environmental Protection Agency ("IL EPA") issued a Violation Notice to Midwest Generation for coal-ash related contaminant exceedances in two ground water monitoring wells at Crawford. IL EPA attributed the exceedances to operations at the site's coal ash impoundments. Emphasis added. In late 2011 and early 2012, groundwater samples were taken from Monitoring Wells MW-1 and MW-2 at Crawford while the plant was still in operation. On June 11, 2012, IL EPA issued a violation notice to Midwest Generation for exceedances in groundwater contaminants related to coal ash at Crawford. According to VN W-2012-00055, Crawford Generation Station's Monitoring Well MW-1 showed levels of pH, iron, manganese, sulfate, TDS, and chloride exceeding groundwater quality standards. Similarly, Monitoring Well MW-2, showed exceedances of pH, antimony, manganese, sulfate, chloride, and TDS.[8] IL EPA attributed the aforementioned exceedances to "operations at ash impoundments" located on site.[9]
>
> As part of the settlement of this Violation Notice, Midwest Generation was required to remove "ash residuals" from one impacted unit on the site – Basin 16. Midwest Generation was also required to remove surface ash materials, but no requirements were imposed to assess or address subsurface coal ash deposits. The CCA did not require Midwest Generation to continue operating monitoring wells to determine if groundwater conditions improved by virtue of the removal of surface materials and the remediation of Basin 16. In 2012, Crawford ceased operation and was decommissioned as a coal-fired generating unit.

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[6] *Id.*, at Appendix B.1.

[7] V3 Companies, *Illinois Site Remediation Program: Supplement to Comprehensive Site Investigation Report, Remediation Objectives Report, and Remedial Action Plan*, Former Crawford Station, Prepared for HRE Crawford, LLC, 153-192 (April 2019).

[8] *See* Figures 1- 4 on pages 7-9.

[9] Michael Crumly, Illinois Environmental Protection Agency, *Violation Notice: Midwest Generation, LLC, Crawford Generating Station Violation Notice No.: W-2012-00055,* Appendix A. (June 2012), available at: https://external.epa.illinois.gov/DocumentExplorer/Documents/Index/170000041238 ("Compliance").

Documents relating to this enforcement action are attached to LVEJO's public comments and labeled as Exhibit Three.

Based on its experience at the Crawford site – which does not appear as a site that Illinois EPA believes is subject to the Coal Ash Pollution Prevention Act - LVEJO is concerned that this site and many other locations in Illinois where CCR has been accumulated and disposed will be excluded by the proposed regulations. These excluded locations could include sites where CCR was directed by generators to third parties for treatment, storage or disposal, as well as areas of unconsolidated CCR fill at power plants that also employed engineered impoundments. Excluding these unconsolidated CCR disposal areas is contrary to the purpose of the Coal Ash Pollution Prevention Act, which must be liberally construed to prevent contaminants from CCR impoundments being discharged into the environment. 415 ILCS 5/22.59(a)(5) and (b)(1). Correspondingly, the definition of what constitutes a CCR surface impoundment is also broad, encompassing the accumulation of CCR in "topographical depressions" and "man-made excavations". 415 ILCS 5/3.143. 415 ILCS 5/22.59(b) broadly prohibits the discharge of any contaminants from a CCR surface impoundment that directly or indirectly causes a violation of the statute or its implementing regulations either alone or in combination with contaminants from other sources. From LVEJO's perspective, if CCR was disposed in an unconsolidated manner by placing it as fill into excavated areas or topographical depressions, this constitutes a CCR surface impoundment and should be addressed consistent with the mandates of the Coal Ash Pollution Prevention Act. Notably, this Act makes no exception for CCR disposal practices that were ad hoc or were conducted on a site separate from the generating facility. The Coal Ash Pollution Prevention Act makes no exception for practices that were common at the time in which they

occurred, were thought to be "de minimis", or that create complex challenges because they include large areas that include accumulations of unconsolidated CCR in fill material.

IV. The Illinois Site Remediation Program Is Not A Substitute For The Coal Ash Pollution Prevention Act

The Crawford site is being remediated pursuant to the Illinois Site Remediation Program, more commonly referred to as the Illinois state brownfield program. 415 ILCS 5/58 *et seq*. Based on its experience, LVEJO asserts that the Illinois Site Remediation Program (SRP) is not adequate to address CCR disposal sites, and that these CCR sites including Crawford should be addressed pursuant to the mandates of the Coal Ash Pollution Prevention Act. There are several reasons why the Illinois SRP is not an appropriate means for the remediating CCR sites, especially when contrasted with the targeted, tailored Coal Ash Pollution Prevention Act.

First, participation in the SRP is voluntary. The owner of an unidentified CCR disposal site unilaterally controls whether to enroll its site into the SRP. A remedial applicant can also elect to limit the remediation boundaries to only a portion of a property. Neither Illinois EPA nor any third party can force the owner of a CCR disposal site to participate in the SRP; by contrast, the Coal Ash Pollution Prevention Act imposes affirmative regulatory mandates for regulated sites and activities to be addressed.

Second, public participation is not required as part of the SRP. Illinois EPA can encourage but cannot require an SRP remedial applicant to implement a community relations plan as part of an SRP remediation. 415 ILCS 5/58.7(h). There is no public participation requirement for Illinois EPA in the SRP. Perhaps for this reason, LVEJO has been forced to justify, continue to insist upon and to devote its own resources to sustain public participation as part of the Crawford site remediation. At great effort, affected Little Village residents have been required to force

themselves into the Crawford site remediation process, an exhausting burden many vulnerable and environmental justice communities could not sustain. By contrast, in the Coal Ash Pollution Prevention Act, the statute mandates public participation as an essential, affirmative responsibility of the Illinois EPA when it administers remedial and permitting activities.

Third, the remedial standards utilized in the SRP are not tailored to the specific kinds of issues at CCR sites. This includes the kinds of groundwater contaminants that are commonly associated with CCR, but which are not even required to be assessed as part of an SRP cleanup. LVEJO was disappointed to learn that the SRP groundwater sampling protocol being utilized at the Crawford site did not include the assessment of common CCR-related parameters.

> Data available after 2012 omits information regarding constituents that IL EPA has identified as being closely related to coal ash. VN W-2012-00055 attributed manganese, iron, pH, antimony, chloride, sulfate, and TDS exceedances to the operation of the coal ash impoundments at Crawford.[10] Further, during an August 14, 2012 meeting requested by Midwest Generation pursuant to 415 ILCS 5/31(a)(4), IL EPA made clear that "[IL EPA] considers manganese and sulfate to be indicators of coal ash, even in the absence of elevated boron levels."[11] Despite these associations, however, data regarding sulfate, chloride, and TDS levels following the 2012 violation is unavailable or nonexistent. In fact, with the exception of the 2012 violation, every report completed on the former Crawford site inexplicably fails to test for sulfate, chloride, or TDS.
>
> For reference, IL EPA found that the sample taken from MW-1 contained 1,600 mg/l in 2010 and 810 mg/l of sulfate in 2012.[12] At MW-2, the sulfate value was 1,900 mg/l in 2011 and 1,200 mg/l in 2012.[13] The groundwater quality standard for sulfate is 400 mg/l. 35 Ill. Admin. Code § 620.420. Chloride in MW-2 reached 9,100 mg/l in 2011.[14] In 2012, the chloride value at MW-2 reached 2,200 mg/l.[15] The groundwater quality standard for chloride is no more than 200 mg/l. 35 Ill. Admin. Code § 620.420. Lastly, MW-1 reached a value of 15,000 mg/l TDS in 2012 and MW-2 showed a TDS level of 7,200 mg/l.[16] The

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[10] Michael Crumly, Illinois Environmental Protection Agency, *Violation Notice: Midwest Generation, LLC, Crawford Generating Station Violation Notice No.: W-2012-00055,* Appendix A. (June 2012).
[11] Susan Franzetti, Midwest Generation, *Violation notice, Midwest Generation, LLC, Crawford Generating Station Identification No.: 6280 Violation Notice No.: W-2012-00055* (Aug. 2012). at 3
[12] Michael Crumly, Illinois Environmental Protection Agency, *Violation Notice: Midwest Generation, LLC, Crawford Generating Station Violation Notice No.: W-2012-00055,* Appendix A. (June 2012).
[13] *Id.*
[14] *Id.*
[15] *Id.*
[16] *Id.*

> groundwater quality standard for TDS is no more than 1,200 mg/l. 35 Ill. Admin. Code § 620.420.

LVEJO concluded:

> IL EPA recently stated that "based on the sampling results, no remedial measures of [the former Crawford site] are warranted."[17] Given that three of the seven constituents which formed the basis of IL EPA's 2012 Violation Notice —sulfate, chloride, and TDS—were never evaluated during the course of the site investigation or supplemental site investigation, this conclusion appears premature.

LVEJO recognizes that the Crawford remedial applicant and Illinois EPA staff may not share its concerns about the adequacy of the groundwater sampling protocols and assessment methods now deployed at the Crawford site. But this is precisely the point. Under the SRP, there is no requirement for three contaminants commonly associated with CCR – sulfates, chlorides and total dissolved solids – to be assessed despite the fact that there are groundwater quality standards for all three. This demonstrates that the SRP, which is generically designed for the remediation of sites regardless of their prior industrial and commercial uses, is an inadequate substitute for the CCR-focused mandates of the Coal Ash Pollution Prevention Act. This is also evidenced by other CCR-focused provisions of the Coal Ash Pollution Prevention Act that are not part of the SRP, including requirements for a closure alternatives analysis (415 ILCS 5/22.59(d)), financial assurance requirements (415 ILCS 5/22.59(f)), dust controls[18] (415 ILCS

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[17] John Kim, Illinois Environmental Protection Agency, *RE: Former Crawford Power Plant Redevelopment 3501 Pulaski Avenue.* (Oct. 2019).

[18] Dust releases, both chronic and acute, were a major concern for the Little Village residents who participated in the August 6, 2019 Crawford public meeting with Illinois EPA SRP and EJ staff members. "City Tells Worried Little Village Residents To 'Limit Outdoor Activities' As Crews Demolish Old Coal Plant". Block Club Chicago, August 7, 2019, available at: https://blockclubchicago.org/2020/04/11/old-crawford-coal-plant-smokestack-blown-up-sending-dust-into-little-village-during-global-pandemic/ (last visited June 14, 2020). These residents specifically requested that air quality monitors be installed at the northern perimeter of the site, adjacent to a residential neighborhood. Neither Illinois EPA nor the Chicago Department of Public Health acted on this request, which was also presented in writing immediately following this 2019 public meeting. Unfortunately, air quality monitors were not deployed until after the April, 2020 stack implosion.

5/22.59(g)(10)), protection of adjacent surface water and groundwater (415 ILCS 5/22.59(g)(10)) and, as noted, public participation requirements.

From LVEJO's perspective, perhaps the most significant contrast between the SRP and the Coal Ash Pollution Prevention Act is on the subject of environmental justice. Neither the SRP nor its implementing regulations address environmental justice at all. Consequently, it is possible to complete an SRP remediation of a CCR site like Crawford without any consideration of environmental justice in relation to CCR surface impoundments, the priority that should be afforded to environmental justice communities and communities that face the highest public health risk, the meaningful participation of vulnerable populations, the incorporation of environmental justice into decision-making at every level, and the protection and improvement of the well-being of communities that bear disproportionate burdens imposed by environmental pollution. These environmental justice considerations which are not a part of the SRP are specifically referenced as central features of the Coal Ash Pollution Prevention Act. LVEJO looks forward to participating in this rulemaking to ensure these environmental justice mandates are fully realized in the final regulations and are applied to the full range of CCR disposal sites in Illinois.

Respectfully Submitted,

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Keith Harley, Attorney for Little Village Environmental Justice Organization

Date: June 15, 2020

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CERTIFICATE OF SERVICE

The undersigned, Keith Harley, an attorney, certifies that I served by email the Clerk and by email the individuals with email addresses named on the Service List provided on the Board's website - https://pcb.illinois.gov/Cases/GetCaseDetailsById?caseId=16858 – a true and accurate copy of Little Village Environmental Justice Organization's Public Comments before 5 p.m. on June 15, 2020.

Respectfully submitted,

Keith Harley

Keith Harley, Attorney for Little Village Environmental Justice Organization

Date: June 15, 2020

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October 16, 2018

Alec Messina, Director
Illinois Environmental Protection Agency
1021 Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

Re: Strengthening Public Involvement in Illinois Environmental Protection Agency Decision-Making: Site Remediation Program Actions Related To The Former Crawford Coal-Fired Electric Generating Facility

To The Director:

Please be advised that I represent Little Village Environmental Justice Organization ("LVEJO"), a not-for-profit organization focused on improving the health, safety, and welfare of the public and community in and around the Little Village neighborhood in Chicago, Illinois.[1] LVEJO's members include several Chicago residents who live near an industrial site formerly operated as a coal-fired electric generating unit by Midwest Generation. The common street address for this large site is 3501 S. Pulaski, Chicago, IL. A diagram depicting this 70-acre site is attached to this letter and labelled as LVEJO Exhibit A.

Upon information and belief, the site is now owned by Hilco Redevelopment Partners, a unit of Hilco Global. Other Hilco-related entities that are also connected to this property are HRE Crawford, LLC and Hilco Monarch Investments VI, LLC. LVEJO is concerned about the nature and extent of contamination on this site and plans for its remediation. These site activities will directly affect the health, safety and well-being of Little Village residents, including LVEJO's members, now and for the indefinite future.

I am writing to you because this site is now enrolled in Illinois EPA's Site Remediation Program. I'm attaching copies of the documents that initiated this process, labelled as LVEJO Exhibit B. LVEJO is unaware of any community relations plan that will enable public knowledge of, or participation in, the remediation of this site. 415 ILCS 5/58.7(h). LVEJO is requesting Illinois EPA to design and implement a strategy to ensure public participation in relationship to this project of significant interest. LVEJO is committed to working with Illinois EPA to help ensure a well-grounded public understanding of activities related to this site, and to helping to facilitate communications between the community and Illinois EPA.

A proactive, comprehensive public participation strategy is justified in this case because of the composition of the surrounding community, the complexity of the site, and the statewide

[1] For a more complete description of LVEJO, please see: http://lvejo.org/

importance of establishing best practices for Illinois EPA's actions in relationship to the remediation and reuse of former coal-fired electric generating facilities.

There is a strong environmental justice justification for a full and complete opportunity for public participation. According to information derived from the demographic feature of U.S. EPA's ECHO database, 24,717 people live in 6,213 households within a one-mile radius of the Crawford facility. More than 96% of the people who live in this one-mile radius are Hispanic. U.S. EPA's ECHO database also indicates that in this one-mile radius, there is a total population of 8,323 children 17 years and younger. There are densely populated residential communities immediately to the north and northwest of the facility, including the Gary Elementary School and Piotrowski Park.

The 70-acre site presents complex remediation challenges because of its long history as a coal-fired power plant. I am attaching a diagram of known operating units that may be sources of releases of hazardous substances into the air, surface material, subsurface material, groundwater, the adjacent Chicago Sanitary and Ship Canal and CSSC sediments. This diagram is labelled as LVEJO Exhibit B. Members of the public have a significant interest in understanding the nature and extent of contamination, the cleanup objectives, the scope of the remediation, and the technologies and techniques the Remedial Applicant is proposing to address site contamination. For its part, Illinois EPA has an unparalleled opportunity to demonstrate how the SRP functions to ensure a complete site characterization, the choice of protective cleanup standards and the choice of appropriate remedial measures.

The remediation of this site is of statewide and national significance because it is one of the first generation of coal-fired facilities that is being remediated and repurposed. There are 275 similar retired facilities in the U.S., presenting remarkable challenges and opportunities. The remediation of the Crawford facility – among the most prominent facilities in the nation – offers Illinois EPA the opportunity to be a leader in developing best practices for this category of former industrial facilities, including in the way it designs and executes community relations and public participation.

LVEJO recognizes that the Remedial Applicant may choose to execute its own community relations plan, either with or independent from Illinois EPA. LVEJO also recognizes that the Illinois Right-To-Know law may impose public notification requirements independent of the SRP. LVEJO is requesting Illinois EPA to develop a public participation strategy that includes specific familiar elements, regardless of RA cooperation or separate legal notification requirements. These elements are:

1. promptly providing all tangible information that is part of the SRP process, both in a local repository and on-line (perhaps via Illinois EPA's existing document explorer website);

2. working with LVEJO to conduct local public information meetings at key intervals during the site remediation process (upon completion of the site investigation report, upon completion of the remediation objectives report, upon receipt of the remedial actions plan), including providing Illinois EPA staff members to participate in these meetings;

3. establishing a means for public comments and questions to be directed to the IL EPA staff members who will oversee site remediation activities;

4. developing fact sheets in both English and Spanish at key intervals in the remediation process to describe important activities that are being undertaken at the site and to address significant public comments and concerns;

5. identifying a primary point of contact at the Illinois EPA for the public to contact with questions and concerns about the design and implementation of site remediation activities.

As you know, these proposed public participation techniques are entirely consistent with Illinois EPA's Environmental Justice Policy and with common Illinois EPA community relations practices.

Thank you for your consideration of this request. Please contact me if you have any questions or comments. I look forward to your response.

Sincerely,

Keith Harley

Keith Harley
Attorney at Law

enc.

cc: Chris Pressnall
Environmental Justice Officer
Illinois Environmental Protection Agency
1021 Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

CHICAGO LEGAL CLINIC, INC.
Sharon A. Hwang , President · Adam Salzman, Executive Director

Downtown Office | 211 W. Wacker Dr. Suite 750 Chicago, IL 60606 | Phone: 312-726-2938 Fax: 312-726-5206 TDD: 773-731-3477 | Keith I. Harley Greta M. Doumanian | Marta C. Bukata Daryl Grable

December 13, 2019

Todd Hall, Project Manager
Voluntary Site Remediation Unit, Bureau of Land
Illinois Environmental Protection Agency
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9275

Via email: todd.hall@illinois.gov

Re: Former Crawford Generating Station, 3501 S. Pulaski Rd., Chicago, IL

Dear Mr. Hall:

Please be advised that we represent the Little Village Environmental Justice Organization ("LVEJO)". The purpose of this letter is to address an issue previously raised by LVEJO in public comments regarding the Crawford Generating Station, which is now enrolled in the Illinois Site Remediation Program. In these earlier public comments, LVEJO inquired about the nature and extent of subsurface coal ash fill at the former Crawford Generating Station and the potential impacts of this fill on groundwater.

On behalf of LVEJO, we reviewed several site assessment documents dating from 1998-present. We are writing to explain why we believe there is evidence of subsurface coal ash fill at the Crawford site and, based on this evidence, why we recommend a near term changes in the IL EPA-HilCo protocol for assessing subsurface and groundwater conditions. Longer term, LVEJO asserts that it is inappropriate for any engineered barrier to be installed over the surface of the site that leaves coal ash fill in place because of the potential for ash-related contaminants to be permanently released into groundwater and, potentially, surface water and sediment.

Evidence of Subsurface Coal Ash Fill At The Crawford Generating Station

In 1998, then-owner ComEd retained a consulting agency to perform Phase I and Phase II Environmental Site Assessments. Part of this process included establishing environmental conditions through the collection of samples and boring logs throughout the subject property. In total, 30 soil borings were executed on site, each of which was logged and included in the report. Of the 30 boring logs, 23 of them included reference to either "slag," "coal," or "ash" in the description section.[1] The ubiquitous nature of the presence of coal and slag material is evidence of coal ash in the subsurface of this site.

[1] V3 Companies, *Illinois Site Remediation Program: Comprehensive Site Investigation Report*, Former Crawford Station, Prepared for HRE Crawford, LLC, Appendix A.2 (July 2018).

Following the decommissioning of the plant, current owners, HilCo Redevelopment Partners, hired a separate consulting agency to perform similar sampling necessary to develop a Comprehensive Site Investigation Report, which ultimately also included a Supplement to the CSIR. The first round of sampling took place in March of 2018, and generated a total of 69 soil borings. Of the 69 soil boring logs, 53 of them included a reference to either "slag," "coal," or "cinders" in the description section.[2] As part of the supplemental sampling activities, an additional 40 soil borings were performed in December of 2018. Of those 40 soil boring logs, 26 referenced some combination of the same three indicator words.[3] As a result, of the total 139 soil borings taken on site in both 1998 and 2018, 102—roughly 73%—included reference to the presence of coal, slag, or ash of some kind.

There is other evidence of subsurface coal ash disposal at the Crawford Generating Station. On May 4, 2011, KPRG prepared an All Appropriate Inquiry Phase One Site Assessment for Midwest Generation. The AAI Report included a user questionnaire that was completed Donald Isaacs on April 22, 2011. Mr. Isaacs identifies himself as an Environmental Specialist for Midwest Generation. In his questionnaire, Mr. Isaacs responds to the following question – "Are you aware of any fill materials that may have brought onto this site either currently or in the past?" His response:

> "Crawford ash apparantly [sic] was used as fill on NW-side of property (near Pit 18) As shown on attached 1975 drawing – "Site Plan – Runoff Areas" Fig 4.1.F-1."

Both Mr. Isaac's user questionnaire and the Site Plan he references are attached to this letter. Notably, this diagram also depicts a "pump pit" and drainage areas that are numbered from 2-22.

In 2012, Illinois Environmental Protection Agency ("IL EPA") issued a Violation Notice to Midwest Generation for coal-ash related contaminant exceedances in two ground water monitoring wells at Crawford. IL EPA attributed the exceedances to operations at the site's coal ash impoundments. Emphasis added. In late 2011 and early 2012, groundwater samples were taken from Monitoring Wells MW-1 and MW-2 at Crawford while the plant was still in operation. On June 11, 2012, IL EPA issued a violation notice to Midwest Generation for exceedances in groundwater contaminants related to coal ash at Crawford. According to VN W-2012-00055, Crawford Generation Station's Monitoring Well MW-1 showed levels of pH, iron, manganese, sulfate, TDS, and chloride exceeding groundwater quality standards. Similarly, Monitoring Well MW-2, showed exceedances of pH, antimony, manganese, sulfate, chloride, and TDS.[4] IL EPA attributed the aforementioned exceedances to "operations at ash impoundments" located on site.[5]

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[2] *Id.*, at Appendix B.1.
[3] V3 Companies, *Illinois Site Remediation Program: Supplement to Comprehensive Site Investigation Report, Remediation Objectives Report, and Remedial Action Plan*, Former Crawford Station, Prepared for HRE Crawford, LLC, 153-192 (April 2019).
[4] *See* Figures 1- 4 on pages 7-9.
[5] Michael Crumly, Illinois Environmental Protection Agency, *Violation Notice: Midwest Generation, LLC, Crawford Generating Station Violation Notice No.: W-2012-00055,* Appendix A. (June 2012).

As part of the settlement of this Violation Notice, Midwest Generation was required to remove "ash residuals" from one impacted unit on the site – Basin 16. Midwest Generation was also required to remove surface ash materials, but no requirements were imposed to assess or address subsurface coal ash deposits. The CCA did not require Midwest Generation to continue operating monitoring wells to determine if groundwater conditions improved by virtue of the removal of surface materials and the remediation of Basin 16. In 2012, Crawford ceased operation and was decommissioned as a coal-fired generating unit.

Current Conditions

The former Crawford Generating Station is now being remediated using Illinois Site Remediation Program standards. As part of this remediation, IL EPA is requiring HilCo, the remedial applicant, to sample groundwater at the Crawford site. This new groundwater monitoring data can be compared to groundwater sampling results in the 2012 IL EPA Violation Notice. Based on this comparison, manganese and iron levels have lessened since 2012 but continue to exceed groundwater quality standards on occasion. Additionally, there are fundamental omissions in the most recent sampling data. Data regarding previously detected coal ash-related contaminants (Sulfate, Chloride, and Total Dissolved Solids ("TDS")) is not being collected. Continued manganese and iron exceedances on site, combined with IL EPA's documented history of coal ash-related contamination, suggests that groundwater sampling for sulfate, chloride, and TDS is warranted in this case.

In April 2019, over five years after Midwest Generation's decommissioning efforts were completed, V3 Companies conducted groundwater sampling on the decommissioned Crawford site.[6] The study conducted by V3 found high levels of iron and manganese, two of the coal ash related contaminants to be resolved pursuant to Midwest Generations 2012-2013 CCA.[7] The 2019 study did not provide data regarding sulfate, chloride, and TDS levels.

Data available after 2012 omits information regarding constituents that IL EPA has identified as being closely related to coal ash. VN W-2012-00055 attributed manganese, iron, pH, antimony, chloride, sulfate, and TDS exceedances to the operation of the coal ash impoundments at Crawford.[8] Further, during an August 14, 2012 meeting requested by Midwest Generation pursuant to 415 ILCS 5/31(a)(4), IL EPA made clear that "[IL EPA] considers manganese and sulfate to be indicators of coal ash, even in the absence of elevated boron levels."[9] Despite these associations, however, data regarding sulfate, chloride, and TDS levels following the 2012 violation is unavailable or nonexistent. In fact, with the exception of the 2012 violation, every report completed on the former Crawford site inexplicably fails to test for sulfate, chloride, or TDS.

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[6] V3 Companies, *Illinois Site Remediation Program: Supplement to Comprehensive Site Investigation Report, Remediation Objectives Report, and Remedial Action Plan*, Former Crawford Station, Prepared for HRE Crawford, LLC, (April 2019).

[7] *Id.*

[8] Michael Crumly, Illinois Environmental Protection Agency, *Violation Notice: Midwest Generation, LLC, Crawford Generating Station Violation Notice No.: W-2012-00055,* Appendix A. (June 2012).

[9] Susan Franzetti, Midwest Generation, *Violation notice, Midwest Generation, LLC, Crawford Generating Station Identification No.: 6280 Violation Notice No.: W-2012-00055* (Aug. 2012). at 3

For reference, IL EPA found that the sample taken from MW-1 contained 1,600 mg/l in 2010 and 810 mg/l of sulfate in 2012.[10] At MW-2, the sulfate value was 1,900 mg/l in 2011 and 1,200 mg/l in 2012.[11] The groundwater quality standard for sulfate is 400 mg/l. 35 Ill. Admin. Code § 620.420. Chloride in MW-2 reached 9,100 mg/l in 2011.[12] In 2012, the chloride value at MW-2 reached 2,200 mg/l.[13] The groundwater quality standard for chloride is no more than 200 mg/l. 35 Ill. Admin. Code § 620.420. Lastly, MW-1 reached a value of 15,000 mg/l TDS in 2012 and MW-2 showed a TDS level of 7,200 mg/l.[14] The groundwater quality standard for TDS is no more than 1,200 mg/l. 35 Ill. Admin. Code § 620.420.

All available monitoring data shows that manganese levels at the Crawford site routinely surpass groundwater quality standards. The groundwater standard for manganese is 0.15 mg/l. 35 Ill. Admin. Code § 620.420. In 2012, IL EPA cited Midwest Generation for a heightened manganese level in both MW-1 and MW-2. According to IL EPA, the manganese level at MW-1 was 2.8 mg/l and 0.31 mg/l at MW-2. IL EPA attributed these heightened manganese levels to the operation of the on-site ash impoundment.[15]

While V3 did not test MW-2 for manganese, it was reported to be in exceedance of groundwater quality standards in several other areas on-site.[16] A manganese level of 0.64 mg/l was found at MW-08 while a sample at MW-13 contained 0.62 mg/l of manganese.[17] In 2018, MW-10, located in the ash dewatering area, showed a manganese level of 0.45 mg/l and MW-12 showed a manganese level of .70 mg/l.[18] At the west adjoining property, a sample taken from MW-11 supported a manganese level of 0.20 mg/L.[19] In 2019, MW-14 showed a manganese level of 0.40 mg/l.[20]

Similar to manganese, iron levels exceeding groundwater quality standards continue to be observed at the Crawford site.[21] The groundwater standard for iron is 5 mg/L. 35 Ill. Admin. Code § 620.420. In 2012, MW-1 showed an iron level of 6.3 mg/l.[22]A sample taken from MW-14 January 4, 2019 indicated an iron level of 8.1 mg/L, when MW-14 was tested again 10 days later the sample showed an iron level of 2.1 mg/L.[23]

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[10] Michael Crumly, Illinois Environmental Protection Agency, *Violation Notice: Midwest Generation, LLC, Crawford Generating Station Violation Notice No.: W-2012-00055,* Appendix A. (June 2012).
[11] *Id.*
[12] *Id.*
[13] *Id.*
[14] *Id.*
[15] Michael Crumly, Illinois Environmental Protection Agency, *Violation Notice: Midwest Generation, LLC, Crawford Generating Station Violation Notice No.: W-2012-00055,* Appendix A. (June 2012).
[16] V3 Companies, *Illinois Site Remediation Program: Supplement to Comprehensive Site Investgation Report, Remediation Objectives Report, and Remedial Action Plan*, Former Crawford Station, Prepared for HRE Crawford, LLC, (April 2019).
[17] *Id.* at 19.
[18] *Id.*
[19] *Id.*
[20] *Id.* at 32.
[21] V3 Companies, *Illinois Site Remediation Program: Supplement to Comprehensive Site Investgation Report, Remediation Objectives Report, and Remedial Action Plan*, Former Crawford Station, Prepared for HRE Crawford, LLC, (April 2019).
[22] Michael Crumly, Illinois Environmental Protection Agency, *Violation Notice: Midwest Generation, LLC, Crawford Generating Station Violation Notice No.: W-2012-00055,* Appendix A. (June 2012).

IL EPA recently stated that "based on the sampling results, no remedial measures of [the former Crawford site] are warranted."[24] Given that three of the seven constituents which formed the basis of IL EPA's 2012 Violation Notice —sulfate, chloride, and TDS—were never evaluated during the course of the site investigation or supplemental site investigation, this conclusion appears premature. The omission of monitoring data for these contaminants is amplified by the fact that IL EPA has the authority to require their sampling.

Although sulfate, chloride, and TDS do not appear on the Target Compound List, Ill. Adm. Code § 640.420, IL EPA has the explicit authority to "add or delete contaminants from the Target Compound List for sampling, analyses, and field screening measurements" during the phase II environmental site assessment. Ill. Adm. Code § 740.420(b)(1). Both the documented history of exceedances of these contaminants, and the known correlation their presence has to the presence of coal ash, provide ample support for IL EPA to require additional sampling.

Additional clarification from IL EPA is also needed to understand the basis of its assertion that "no contaminants exceeding the Class II groundwater objectives were detected."[25] This appears to be inconsistent with data collected in both 2018 and 2019 showing manganese and iron levels in exceedance of Class II groundwater objectives.[26] Again, monitoring data for chloride, sulfate, and TDS is unavailable, making it impossible to know whether these contaminants are present at levels which exceed Class II groundwater objectives.

Conclusion

Despite more than 20 years of environmental assessments at the Crawford Generating Station, it does not appear that the nature and extent of subsurface coal ash has been delineated. Groundwater contaminants that are associated with the release of contaminants from coal ash were and continue to be detected in groundwater monitoring wells at the site. The risk is that these contaminants could be indefinitely released from subsurface coal ash deposits, creating a permanent threat to groundwater and, in turn, nearby surface waters and sediments.

For the foregoing reasons, LVEJO is asserting IL EPA must require the Remedial Applicant to fully delineate the nature and extent of subsurface coal ash deposits at the Crawford Generating Station. LVEJO further asserts that the existing groundwater monitoring protocol should be amended to include chloride, total dissolved solids and sulfates. LVEJO believes the information derived from a subsurface and (enhanced) groundwater sampling protocol is essential to understanding groundwater conditions at the site. Couple with a comprehensive hydrogeologic assessment, this information will provide a basis for remedial activities that are necessary to protect human health and the environment now and in the future. These activities

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[23] V3 Companies, *Illinois Site Remediation Program: Supplement to Comprehensive Site Investgation Report, Remediation Objectives Report, and Remedial Action Plan*, Former Crawford Station, Prepared for HRE Crawford, LLC, (April 2019).

[24] John Kim, Illinois Environmental Protection Agency, *RE: Former Crawford Power Plant Redevelopment 3501 Pulaski Avenue.* (Oct. 2019).

[25] *Id.* at 4.

[26] V3 Companies, *Illinois Site Remediation Program: Supplement to Comprehensive Site Investigation Report, Remediation Objectives Report, and Remedial Action Plan*, Former Crawford Station, Prepared for HRE Crawford, LLC, (April 2019).

must occur before an engineered barrier is installed, which would effectively foreclose these essential site assessment activities.

LVEJO is also acutely aware that IL EPA's decisions about Crawford site could set the course for the remediation of other former coal-fired electric generating sites in Illinois. LVEJO urges IL EPA to employ best practices that will help ensure that remedial activities at these sites attain standards that are necessary to protect human health and the environment.

Thank you for your consideration of these comments. We would welcome the opportunity to discuss this matter with you and others at IL EPA.

Sincerely,

/s/ Daryl Grable and Keith Harley

Attorneys, Little Village Environmental Justice Organization
Chicago Legal Clinic, Inc.
211 W. Wacker, Suite 750
Chicago, IL 60606
(312) 726-2938

Enc

Cc: Chris Pressnall, Environmental Justice Officer, Illinois Environmental Protection Agency, via: Chris.Pressnall@illinois.gov

Figure 1[27]

Violation
Description
Operations at ash impoundments have resulted in violations of the Groundwater Quality Standards at monitoring well MW-1 for the following constituents:

Parameter	Sample Value	GW Standard	Collection Date
pH	6.20 su	6.5-9.0 su	12/9/2011
Iron	6.3 mg/l	5.0 mg/l	3/19/2012
Iron	5.1 mg/l	5.0 mg/l	6/13/2011
Iron	5.8 mg/l	5.0 mg/l	3/21/2011
Manganese	2.8 mg/l	0.15 mg/l	3/19/2012
Manganese	1.5 mg/l	0.15 mg/l	12/9/2011
Manganese	1.9 mg/l	0.15 mg/l	9/16/2011
Manganese	2.2 mg/l	0.15 mg/l	6/13/2011
Manganese	2.7 mg/l	0.15 mg/l	3/21/2011
Manganese	1.1 mg/l	0.15 mg/l	12/8/2010
Sulfate	810 mg/l	400 mg/l	3/19/2012
Sulfate	1,000 mg/l	400 mg/l	12/9/2011
Sulfate	750 mg/l	400 mg/l	9/16/2011
Sulfate	670 mg/l	400 mg/l	6/13/2011
Sulfate	800 mg/l	400 mg/l	3/21/2011
Sulfate	1,600 mg/l	400 mg/l	12/8/2010
Chloride	8,700 mg/l	200 mg/l	3/19/2012
Chloride	1,700 mg/l	200 mg/l	12/9/2011
Chloride	3,200 mg/l	200 mg/l	9/16/2011

Figure 2[28]

PAGE NO. 2 OF 3

ATTACHMENT A

MIDWEST GENERATION, LLC, CRAWFORD GENERATING STATION, ID:6280
VIOLATION NOTICE NO. W-2012-00055:

Violation
Description
MW-1 continued

Parameter	Sample Value	GW Standard	Collection Date
Chloride	9,000 mg/l	200 mg/l	6/13/2011
Chloride	9,100 mg/l	200 mg/l	3/21/2011
TDS	15,000 mg/l	1,200 mg/l	3/19/2012
TDS	5,900 mg/l	1,200 mg/l	12/9/2011
TDS	11,000 mg/l	1,200 mg/l	9/16/2011
TDS	17,000 mg/l	1,200 mg/l	6/13/2011
TDS	18,000 mg/l	1,200 mg/l	3/21/2011
TDS	6,800 mg/l	1,200 mg/l	12/8/2010

Rule/Reg. Section 12 of the Act, 415 ILCS 5/12, 35 Ill. Adm. Code 620.115, 620.301, 620.401, 620.405, and 620.410.

Violation

[27] Michael Crumly, Illinois Environmental Protection Agency, *Violation Notice: Midwest Generation, LLC, Crawford Generating Station Violation Notice No.: W-2012-00055,* Appendix A. (June 2012).
[28] *Id.* at 2.

Figure 3[29]

Violation
Description
Operations at ash impoundments have resulted in violations of the Groundwater Quality Standards at monitoring well MW-2 for the following constituents:

Parameter	Sample Value	GW Standard	Collection Date
pH	5.95 su	6.5-9.0 su	12/9/2011
Antimony	0.018 mg/l	0.006 mg/l	3/19/2012
Manganese	0.31 mg/l	0.15 mg/l	3/19/2012
Manganese	0.42 mg/l	0.15 mg/l	12/9/2011
Manganese	0.65 mg/l	0.15 mg/l	9/16/2011
Manganese	1.3 mg/l	0.15 mg/l	6/13/2011
Manganese	1.2 mg/l	0.15 mg/l	3/21/2011
Manganese	1.4 mg/l	0.15 mg/l	12/8/2010
Sulfate	1,200 mg/l	400 mg/l	3/19/2012
Sulfate	1,900 mg/l	400 mg/l	12/9/2011
Sulfate	1,100 mg/l	400 mg/l	9/16/2011
Sulfate	1,000 mg/l	400 mg/l	6/13/2011
Sulfate	1,400 mg/l	400 mg/l	3/21/2011
Sulfate	950 mg/l	400 mg/l	12/8/2010
Chloride	2,200 mg/l	200 mg/l	3/19/2012
Chloride	2,200 mg/l	200 mg/l	12/9/2011
Chloride	1,500 mg/l	200 mg/l	9/16/2011

Figure 4[30]

PAGE NO. 3 OF 3

ATTACHMENT A

MIDWEST GENERATION, LLC, CRAWFORD GENERATING STATION, ID:6280
VIOLATION NOTICE NO. W-2012-00055:

Violation
Description
MW-2 continued

Parameter	Sample Value	GW Standard	Collection Date
Chloride	2,400 mg/l	200 mg/l	6/13/2011
Chloride	2,000 mg/l	200 mg/l	3/21/2011
Chloride	610 mg/l	200 mg/l	12/8/2010
TDS	7,200 mg/l	1,200 mg/l	3/19/2012
TDS	7,200 mg/l	1,200 mg/l	12/9/2011
TDS	5,600 mg/l	1,200 mg/l	9/16/2011
TDS	7,300 mg/l	1,200 mg/l	6/13/2011
TDS	6,700 mg/l	1,200 mg/l	3/21/2011
TDS	2,700 mg/l	1,200 mg/l	12/8/2010

Rule/Reg. Section 12 of the Act, 415 ILCS 5/12, 35 Ill. Adm. Code 620.115, 620.301, 620.401, 620.405, and 620.410.

[29] *Id.*
[30] *Id.* at 3.

ENSR

Log of Borehole B-3

Project No: 1801-023-110

Project: Phase II Investigation

Client: Commonwealth Edison

Location: Crawford Power Station

Geologist: C. Howell

SUBSURFACE PROFILE			SAMPLE				
Depth ft / m	Symbol	Description / Classification	Number	Type	Recovery(%)	PID Reading	Lab Analysis
0 / 0		Ground Surface					
		Clay Fill Brown / dark brown clay fill w/ slag	1	GP	46	12.1	0 - 4 PNAs/BETX/pH/PCBs RCRA Metals
4 / 1		*Clay* Brown clay w/ slag	2	GP	100	10.0	
5		Auger refusal at 5' End of Borehole					
10 / 3							
13 / 4							
15							

Drilled By:Fox Drilling

Drill Method: Geoprobe

Drill Date: 9/23/98

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Westmont, IL 60559
630-887-1700

Sheet: 1 of 1

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Log of Borehole B-6

Project No: 1801-023-110

Project: Phase II Investigation

Client: Commonwealth Edison

Location: Crawford Power Station

Geologist: C. Howell

SUBSURFACE PROFILE			SAMPLE				
Depth (ft) (m)	Symbol	Description / Classification	Number	Type	Recovery(%)	PID Reading	Lab Analysis
0		Ground Surface					
0–1		*Fill* Dark-brown, very stiff clay w/ slag. Occasional small, fine gravel, trace medium-coarse sand	1	GP	71	18.4	
1–2		-grades to brown, very stiff clay and slag -abrupt change to soft, olive-gray/ brown clay fill -with approx. 3% med-coarse sand, some rust staining	2	GP	63	30.2	4 - 6 PNAs/BETX/pH/PCBs RCRA Metals
2–3		*Clay* Gray, very stiff clay w/ approx. 5% fine to coarse sand	3	GP	100	17.9	
3–4		-hit hard pan					
4		End of Borehole					

Drilled By: Fox Drilling

Drill Method: Geoprobe

Drill Date: 9/23/98

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Westmont, IL 60559
630-887-1700

Sheet: 1 of 1

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Log of Borehole B-7

Project No: 1801-023-110

Project: Phase II Investigation

Client: Commonwealth Edison

Location: Crawford Power Station

Geologist: C. Howell

SUBSURFACE PROFILE			SAMPLE				
Depth (ft / m)	Symbol	Description / Classification	Number	Type	Recovery(%)	PID Reading	Lab Analysis
0 / 0		Ground Surface					
		Gravel (GP) 6" of gravel					
1		*Sand (SP)* Gradual change to yellow-orange, fine to coarse sand					
2		*Fill* -Black slag/clay to 1.75' -Abrupt change to very stiff gray/dark gray clay w/ coarse sand and small fine gravel to 2.75'	1	GP	79	8.5	
3 / 1		*Clay (CL)* Gradual change to yellow-orange-brown clay, very stiff to medium stiff					
4		*Clay Fill* Yellow-orange-brown clay, medium stiff, w/ brick and gravel, moist					
5							
6			2	GP	58	20.9	4 - 8 PNAs/BETX/pH/PCBs/ RCRA Metals
7 / 2							
8		End of Borehole					
9							
10 / 3							
11							
12							
13 / 4							
14							
15							

Drilled By:Fox Drilling

Drill Method: Geoprobe

Drill Date: 9/24/98

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Westmont, IL 60559
630-887-1700

Sheet: 1 of 1

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Log of Borehole B-9

Project No: 1801-023-110

Project: Phase II Investigation

Client: Commonwealth Edison

Location: Crawford Power Station

Geologist: B. Buckley

SUBSURFACE PROFILE			SAMPLE				Lab Analysis
Depth (ft / m)	Symbol	Description / Classification	Number	Type	Recovery(%)	PID Reading	
0 / 0		Ground Surface					
0		*Clay (CL)* Gravel and coal slag to 6" Light brown clay, soft, dry	1	GP	63	15.7	
2		-grades to slightly plastic, silty clay	2	GP	63	18.2	
4			3	GP	63	17.1	
6 / 2		-w/ gravel	4	GP	63	18.2	
8		*Clayey Silt (ML)* Gray, clayey silt, stiff, dry	5	GP	54	18.5	
10 / 3			6	GP	63	17.1	
12		*Silt (ML)* Gray, silt, stiff, dry	7	GP	100	13.8	
14 / 4		*Clayey Silt (ML)* Gray, clayey silt, w/ medium subangular gravel					
15							

Drilled By: Fox Drilling

Drill Method: Geoprobe

Drill Date: 9/29/98

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740 Pasquinelli Drive
Westmont, IL 60559
630-887-1700

ENSR

Log of Borehole B-10

Project No: 1801-023-110

Project: Phase II Investigation

Client: Commonwealth Edison

Location: Crawford Power Station

Geologist: B. Buckley

SUBSURFACE PROFILE			SAMPLE				Lab Analysis
Depth (ft / m)	Symbol	Description / Classification	Number	Type	Recovery(%)	PID Reading	
0 / 0		Ground Surface					
0		*Fill* Coal slag w/ light brown sand mix, dry	1	HS	67	1.4	
2 / 1		*Clay (CL)* Light brown to gray clay. Black staining -grades to black, dry	2	HS	71	8.0	
4		-grades to light brown, slightly plasti	3	HS	54	8.3	
6 / 2			4	HS	54	11.4	
8		*Clayey Silt (ML)* Gray, clayey silt, stiff, dry	5	HS	88	2.6	
10 / 3			6	HS	83	14.2	
12			7	HS	100	13.4	
13 / 4							
14							
15							

Drilled By:Fox Drilling

Drill Method: Hollow Stem Auger

Drill Date: 9/28/98

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Log of Borehole B-11

Project No: 1801-023-110

Project: Phase II Investigation

Client: Commonwealth Edison

Location: Crawford Power Station

Geologist: C. Howell

SUBSURFACE PROFILE			SAMPLE				
Depth (ft / m)	Symbol	Description / Classification	Number	Type	Recovery(%)	PID Reading	Lab Analysis
0 ft / 0 m		Ground Surface					
0 – 3.5'		*Fill* Coal to 1' 3". Clay and slag to 3.5'	1	GP	83	32.7	
3.5 – 12'		*Clay (CL)* Black-stained clay, trace coarse sand -grades to yell-orange-gray at 4' -grades to soft to med. stiff -w/ rust stains, trace med. to coarse sand -grades to gray, occ. fine gravel -hardpan	2	GP	96	38.4	4 - 8 PNAs/BETX/pH/PCBs/ RCRA Metals
			3	GP	100	22.1	
12'		End of Borehole					

Drilled By: Fox Drilling

Drill Method: Geoprobe

Drill Date: 9/28/98

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Log of Borehole B-14

Project No: 1601-023-110

Project: Phase II Investigation

Client: Commonwealth Edison

Location: Crawford Power Station

Geologist: C. Howell

SUBSURFACE PROFILE			SAMPLE				
Depth (ft / m)	Symbol	Description / Classification	Number	Type	Recovery(%)	PID Reading	Lab Analysis
0 / 0		Ground Surface					
0		*Fill*					
1		Coal / slag	1	GP	83	24.6	
2							
3 / 1		*Clay (CL)*					
4		Gray clay, very stiff, dry, trace coarse sand					
5		-some black staining at 4'	2	GP	38	26.8	
6 / 2							
7							
8		-grades to stiff, some slag					
9		-grades to gray/brown, stiff to very stiff, sticky, w/ rust staining occ. gravel/coarse sand	3	GP	100	38.7	8 - 12 . PNAs/BETX/pH/PCBs/ RCRA Metals
10 / 3							
11		-grades to soft at 11' 11" to 12' 3"					
12		-grades to very stiff, no rust staining med. to coarse sand seam					
13 / 4		-grades to silty, little coarse sand					
14							
15							

Drilled By: Fox Drilling

Drill Method: Geoprobe

Drill Date: 9/28/98

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Log of Borehole B-16

Project No: 1801-023-110
Project: Phase II Investigation
Client: Commonwealth Edison
Location: Crawford Power Station

9/24/98
Geologist: C. Howell

SUBSURFACE PROFILE			SAMPLE				
Depth (ft / m)	Symbol	Description / Classification	Number	Type	Recovery(%)	PID Reading	Lab Analysis
0 / 0		Ground Surface					
		Fill Gravel/clay mix to 6". Coal, slag, clay mix	1	GP	67	10.7	
3 / 1		*Clay (CL)* Brown/gray clay, trace coarse sand -grades with zones of soft to medium stiff, trace slag	2	GP	90	19.4	4 - 8 PNAs/BETX/pH/PCBs/ RCRA Metals
6 / 2		-grades to gray clay, very stiff, trace medium to coarse sand	3	GP	42	20.2	
9 / 3		*Silt (ML)* Abrupt change to brown silt					
10		End of Borehole Auger refusal at 10'					
15 / 4							

Drilled By:Fox Drilling
Drill Method: Geoprobe
Drill Date: 9/24/98

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Log of Borehole B-17

Project No: 1801-023-110
Project: Phase II Investigation
Client: Commonwealth Edison
Location: Crawford Power Station

9/24/98
Geologist: C. Howell

SUBSURFACE PROFILE			SAMPLE				
Depth	Symbol	Description / Classification	Number	Type	Recovery(%)	PID Reading	Lab Analysis
0		Ground Surface					
0		Fill 4" asphalt surface Gravel/clay fill to 6", abrupt change to coal/slag to 1'. Void from 1' to 3' 8".	1	GP	29	14.4	
1		-grades to very stiff gray clay w/ rust stains					
4		Clay (CL) Brown/gray clay, very stiff, w/ approx. 3% medium to coarse sand	2	GP	98	28.3	4 - 8 PNAs/BETX/pH/PCBs/ RCRA Metals
8		-grades to gray clay, very stiff, w/ 10% med. to coarse sand, occasional small fine gravel	3	GP	100	14.6	
12		End of Borehole					
15							

Drilled By:Fox Drilling
Drill Method: Geoprobe
Drill Date: 9/24/98

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Project No: 1601-023-110

Project: Phase II Investigation

Client: Commonwealth Edison

Location: Crawford Power Station

Log of Borehole B-18

9/24/98

Geologist: C. Howell

SUBSURFACE PROFILE			SAMPLE				
Depth (ft / m)	Symbol	Description / Classification	Number	Type	Recovery(%)	PID Reading	Lab Analysis
0 ft / 0 m		Ground Surface					
0 – 3 ft		*Fill* 4" asphalt surface, Gravel and med. to coarse sand to 1' Brown clay and gravel to 1.5' Abrupt change to slag and brown clay w/ black stains	1	GP	46	19.1	
3 – 6 ft		*Clay (CL)* Olive gray clay, trace gravel to 4.5'. Gradual change yellow-orange clay w/ rust stains and occ. fine gravel to 5'. Gravel, trace clay to 6.5'	2	GP	63	25.5	4 - 8 PNAs/BETX/pH/PCBs/ RCRA Metals
6 – 7 ft		*Silt (ML)* Abrupt change to gray silt w/ rust stains					
7 ft / 2 m		End of Borehole					

Drilled By: Fox Drilling

Drill Method: Geoprobe

Drill Date: 9/24/98

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Project No: 1801-023-110
Project: Phase II Investigation
Client: Commonwealth Edison
Location: Crawford Power Station

Log of Borehole B-19

9/24/98

Geologist: C. Howell

SUBSURFACE PROFILE			SAMPLE				Lab Analysis
Depth (ft)	Symbol	Description / Classification	Number	Type	Recovery(%)	PID Reading	
0		Ground Surface					
0 – 1		Fill 4" asphalt surface Clay w/ gravel to 1' 3", gravel to 1' 9". Stained, fine to med. sand to 1' 11".	1	GP	58	19.5	
1 – 2		Clay (CL) Abrupt change to brownsh-gray clay, very stiff, trace slag/small fine gravel					
2 – 4		Silt (ML) Brown-gray silt, very stiff, trace med. to coarse sand	2	GP	100	23.7	4 - 8, PNAs/BETX/pH/PCBs/ RCRA Metals
4 – 6		-grades to gray, trace med. to coarse sand/small fine gravel	3	GP	100	19.3	
6 – 8		End of Borehole					

Drilled By:Fox Drilling
Drill Method: Geoprobe
Drill Date: 9/24/98

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Log of Borehole B-20

Project No: 1801-023-110
Project: Phase II Investigation
Client: Commonwealth Edison
Location: Crawford Power Station
Geologist: C. Howell

SUBSURFACE PROFILE			SAMPLE				
Depth (ft / m)	Symbol	Description / Classification	Number	Type	Recovery(%)	PID Reading	Lab Analysis
0 ft / 0 m		Ground Surface					
		Fill Gravel at top 2". Clay, slag, gravel fill	1	GP	67	22.8	
4 ft / 1 m		*Clay (CL)* Gray-yellow-orange clay, very stiff, w/ rust stains, some slag, some black stained soft zones	2	GP	88	21.5	
8 ft / 2 m		-grades to gray clay, very stiff, trace med. to coarse sand	3	GP	100	25.8	
10 ft / 3 m		-gravel seam					
11 ft		*Sandy Silt (ML)* Gray, sandy silt, very stiff					
12 ft		-6" med. to coarse sand seam					12 - 16 PNAs/BETX/pH/PCBs/ RCRA Metals
13 ft / 4 m							
15 ft							

Drilled By:Fox Drilling
Drill Method: Geoprobe
Drill Date: 9/24/98

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Log of Borehole B-21

Project No: 1801-023-110

Project: Phase II Investigation

Client: Commonwealth Edison

Location: Crawford Power Station

Geologist: C. Howell

SUBSURFACE PROFILE			SAMPLE				Lab Analysis
Depth (ft / m)	Symbol	Description / Classification	Number	Type	Recovery(%)	PID Reading	
0 / 0		Ground Surface					
0		*Fill* 4" asphalt surface. Gravel, sand to 1'. Abrupt change to gray clay w/ slag to 1' 9". Abrupt change to slag w/ clay to 3' 9" Black stained clay, trace fine sand to 4'	1	GP	63	19.6	
4 / 1		*Clay (CL)* Brownish-gray clay, stiff, to 4' 6" Gray clay, soft, to 5' 2"					
5		-grades to brown/gray clay, very stiff, trace med. sand, w/ rust stains	2	GP	75	31.2	4 - 8 PNAs/BETX/pH/PCBs/ RCRA Metals
8 / 2		-grades to brown clay, very stiff to hard, trace med. sand.					
9		-grades to gray	2	GP	100	21.7	
12 / 3		End of Borehole					
13 / 4							
15							

Drilled By: Fox Drilling

Drill Method: Geoprobe

Drill Date: 9/24/98

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Log of Borehole B-22

Project No: 1801-023-110
Project: Phase II Investigation
Client: Commonwealth Edison
Location: Crawford Power Station
Geologist: C. Howell

SUBSURFACE PROFILE			SAMPLE				
Depth (ft / m)	Symbol	Description / Classification	Number	Type	Recovery(%)	PID Reading	Lab Analysis
0 / 0		Ground Surface					
0		*Fill* Gravel to 0.5'. Gradual change to clay w/ gravel	1	GP	79	24.2	
3 / 1		-grades to slag and wood -grades to black-stained clay					
4		*Clay (CL)* gray clay, very stiff, trace med. sand					
5		-grades to soft, rust-stained					
6		-black liquid and coal	2	GP	88	27.1	4 - 8 PNAs/BETX/pH/PCBs/ RCRA Metals
7 / 2		-product and clay from 6.5' to 7.25' -grades to yellow-orange clay, trace fine gravel. Fine to med. sand seam at 7.5'					
8		*Sandy Clay (CL)* Yellow-orange, sandy clay, med. stiff					
9		*Clay (CL)* Gray clay, very stiff to hard, trace med. sand, trace silt. Some vertical rust staining	3	GP	100	23.7	
12 / 3		End of Borehole					
15 / 4							

Drilled By: Fox Drilling
Drill Method: Geoprobe
Drill Date: 9/24/98

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Log of Borehole B-23

Project No: 1801-023-110

Project: Phase II Investigation

Client: Commonwealth Edison

Location: Crawford Power Station

Geologist: C. Howell

SUBSURFACE PROFILE			SAMPLE				
Depth (ft / m)	Symbol	Description / Classification	Number	Type	Recovery(%)	PID Reading	Lab Analysis
0 ft / 0 m		Ground Surface					
0 – 3 ft		*Fill* 4" asphalt surface. Subbase and base gravel to 1' Clay/slag to 2' 9", slag to 3' 10"	1	GP	63	14.8	
4 – 8 ft		*Clay (CL)* Black-stained, clay, stiff, trace med. to coarse sand/fine gravel -grades to gray clay, stiff, w/ rust stains and black stain streaks at 4' 8" -grades to brown-gray	2	GP	92	25.6	4 - 8 PNAs/BETX/pH/PCBs/ RCRA Metals
8 – 9 ft		-grades to yell-orange-gray, trace sand/fine gravel -fine sand seam -fine/coarse gravel seam					
10 – 11 ft		*Clayey Silt* Gray, clayey silt, very stiff, trace med. to coarse sand, occasional gravel	3	GP	100	17.8	
12 – 15 ft		*Silty Clay (CL)* Gray, silty clay, trace med. to coarse sand/fine gravel					

Drilled By:Fox Drilling

Drill Method: Geoprobe

Drill Date: 9/28/95

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Log of Borehole B-24

Project No: 1801-023-110

Project: Phase II Investigation

Client: Commonwealth Edison

Location: Crawford Power Station

Geologist: C. Howell

SUBSURFACE PROFILE			SAMPLE				
Depth	Symbol	Description / Classification	Number	Type	Recovery(%)	PID Reading	Lab Analysis
ft m		Ground Surface					
0 0		*Fill*					
		Gravel to 6". Sand, clay, gravel to 1' -grades to olive-gray slag, trace gravel, w/ black and rust staining.	1	GP	58	NA	
3 1		Auger refusal at 4'					
4		End of Borehole					
6 2							
9 3							
12 4							
15							

Drilled By:Fax Drilling

Drill Method: Geoprobe

Drill Date: 9/24/98

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Log of Borehole B-26

Project No: 1801-023-110

Project: Phase II Investigation

Client: Commonwealth Edison

Location: Crawford Power Station

Geologist: C. Howell

SUBSURFACE PROFILE			SAMPLE				Lab Analysis
Depth	Symbol	Description / Classification	Number	Type	Recovery(%)	PID Reading	
0		Ground Surface					
0		Fill Gravel, clay, brick fill w/ slag	1	GP	85	23.4	0 - 4 PNAs/BETX/pH/PCBs/ RCRA Metals
1							
2							
3			2	GP	63	19.8	
4							
5							
6							
7							
8							
9			3	GP	71	21.9	
10							
11		-black liquid stained					
12		-grades to clay/slag fill					
13		-grades to wet from 13' to 13' 9"					
14		-grades to fine to medium sand					
15							

Drilled By:Fox Drilling

Drill Method: Geoprobe

Drill Date: 9/24/98

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Log of Borehole B-27

Project No: 1801-023-110

Project: Phase II Investigation

Client: Commonwealth Edison

Location: Crawford Power Station

Geologist: C. Howell

SUBSURFACE PROFILE			SAMPLE				
Depth (ft / m)	Symbol	Description / Classification	Number	Type	Recovery(%)	PID Reading	Lab Analysis
0 / 0		Ground Surface					
		Fill Ash, coal, gravel fill to 3' 6".	1	GP	75	208	0 - 4 PNAs/BETX/pH/PCBs/ RCRA metals
1		-grades to brick -grades to slag					
2		*Silty Clay (CL)* Gradual change to black liquid stained silty clay					
3		*Clay (CL)* Gray-brown-rust clay, stiff	2	GP	63	84.0	
1		-grades to brown-gray sandy clay					
4		*Sand (SP)* Medium coarse sand, trace clay					
5		*Silty Clay (CL)* Gradual change to silty clay	3	GP	88	22.5	
2		-gravel seam at 10' 3"					
6		End of Borehole					
7							
3							
8							
9							
4							
10							

Drilled By: Fox Drilling

Drill Method: Geoprobe

Drill Date: 9/28/98

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Log of Borehole B-29

Project No: 1801-023-110

Project: Phase II Investigation

Client: Commonwealth Edison

Location: Crawford Power Station

Geologist: C. Howell

SUBSURFACE PROFILE			SAMPLE				
Depth (ft / m)	Symbol	Description / Classification	Number	Type	Recovery(%)	PID Reading	Lab Analysis
0 / 0		Ground Surface					
0		*Clay (CL)* Gravel surface. Brown clay, very stiff, trace slag/fine to coarse sand/gravel	1	GP	88	22.8	
1							
2							
3 / 1							
4		-grades to gray, trace fine to medium sand	2	GP	63	19.4	
5							
6							
7 / 2		*Fill* Coal					
8			3	GP	63	26.2	8 - 12 PNAs/BETX/pH/PCBs/ RCRA Metals
9		*Silty Clay (CL)* Brown/rusty, silty clay, soft					
10 / 3		-brown, coarse sand, wet, layer at 9.25					
11		-grades to brown-red-black, silty clay					
12		-6" slag layer					
13 / 4		*Sand (SP)* Fine to medium sand					
14							
15		*Clay/Silt (CL), (ML)* Medium to coarse, sandy clay/silt					

Drilled By:Fox Drilling

Drill Method: Geoprobe

Drill Date: 9/28/98

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Log of Borehole B-31

Project No: 1801-023-110

Project: Phase II Investigation

Client: Commonwealth Edison

Location: Crawford Power Station

Geologist: C. Howell

SUBSURFACE PROFILE			SAMPLE				
Depth	Symbol	Description / Classification	Number	Type	Recovery(%)	PID Reading	Lab Analysis
0 ft / 0 m		Ground Surface					
0		*Fill* Gravel, clay, trace sand/slag	1	GP	67	20.2	
2		*Clay* Gray/brown/rust clay, trace med. to coarse sand					
1 m		-grades to gray, very stiff, some rust staining.					
4			2	GP	100	10.4	
6		-fine sand seam					
2 m		-grades to silty clay, occ. fine gravel					
8							
9							8 - 12 PNAs/BETX/pH/PCBs/ RCRA Metals
10			3	GP	100	108	
3 m							
11							
12		End of Borehole					
13							
4 m							
14							
15							

Drilled By:Fox Drilling

Drill Method: Geoprobe

Drill Date: 9/28/98

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Log of Borehole B-32

Project No: 1801-023-110

Project: Phase II Investigation

Client: Commonwealth Edison

Location: Crawford Power Station

Geologist: C. Howell

SUBSURFACE PROFILE			SAMPLE				
Depth (ft / m)	Symbol	Description / Classification	Number	Type	Recovery(%)	PID Reading	Lab Analysis
0 / 0		Ground Surface					
0		*Fill* Gravel, coal					
2		*Clay (CL)* Gray clay, some black-staining	1	GP	54	16.0	
3 / 1							
4		grades to gray-rust-black, very stiff, trace med. to coarse sand					
5							
6		-grades to red-gray, stiff	2	GP	100	16.4	
7 / 2		-grades to gray, very stiff, trace brick, rust stains					
8		-trace medium coarse sand					
9		-occasional fine gravel					8 - 12 PNAs/pH/BETX/PCBs/ RCRA Metals
10 / 3			3	GP	88	19.7	
11		-hard pan					
12		End of Borehole					
13 / 4							
14							
15							

Drilled By: Fox Drilling

Drill Method: Geoprobe

Drill Date: 9/28/98

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Log of Borehole B-33

Project No: 1801-023-110

Project: Phase II Investigation

Client: Commonwealth Edison

Location: Crawford Power Station

Geologist: C. Howell

SUBSURFACE PROFILE			SAMPLE				
Depth (ft / m)	Symbol	Description / Classification	Number	Type	Recovery(%)	PID Reading	Lab Analysis
0 / 0		Ground Surface					
0–3 / 0–1		*Fill* Gravel/clay/slag to 3'	1	GP	42	13.1	
3–4 / 1–1		*Clay (CL)* Brown-yellow-orange-rusty-black stained clay, very stiff, trace fine gravel					
4–8 / 1–2		*Clayey Silt (ML)* Gray, clayey silt, very stiff to hard, occ. fine gravel	2	GP	50	16.0	4 - 8 PNAs/BETX/pH/PCBs/ RCRA Metals
8–12 / 2–3		*Silty Clay (CL)* Abrupt change to silty clay, very stiff to hard, trace med. to coarse sand/small fine gravel	3	GP	100	9.5	
12 / 4		End of Borehole					

Drilled By: Fox Drilling

Drill Method: Geoprobe

Drill Date: 9/28/98

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Log of Borehole B-34

Project No: 1601-023-110

Project: Phase II Investigation

Client: Commonwealth Edison

Location: Crawford Power Station

Geologist: C. Howell

SUBSURFACE PROFILE			SAMPLE				
Depth	Symbol	Description / Classification	Number	Type	Recovery(%)	PID Reading	Lab Analysis
0		Ground Surface					
0 - 1		*Clay Fill* Clay w/ gravel	1	GP	63	23.3	
1 - 2		*Fill* Coal -grades to coal/slag -grades to black stained clay/slag/silt	2	GP	79	20.2	4 - 8 PNAs/BETX/pH/PCBs/ RCRA Metals
2 - 3		*Silty Clay (CL)* Gray/brown silty clay, stiff	3	GP	88	18.8	
3 - 4		End of Borehole					

Drilled By:Fox Drilling

Drill Method: Geoprobe

Drill Date: 9/28/98

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SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Drill Date: 3/22/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Boring: NS-GP-101
Total Depth (ft): 15	Water Table Depth (ft): 10	Boring Type: Soil Boring
Drilling Contr: Earth Solutions	Driller: Jorgito Luna	Project No.: 17303
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	Location: North Section

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
2	80	0			Fill- silty, sandy clay		
					Fill- crushed limestone, dense		
		0			Fill- coal, slag dense		
4							
					Fill-grey clay embeded with slag/coal and limestone		
6	100	0	2.5		CL-(Lean Clay)-grey brown, green hued clay silty clay very stiff dark grey to light brown mottling		NS-GP-101 (5-7)
8		0	2				
10	100	0	0.25		ML-(Silt)-grey clayey silt wet soft	Wet at 10 feet	
12							
14		0	0.25				NS-GP-101 (13-15)
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Drill Date: 3/22/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: North Section -
Total Depth (ft): 20	Water Table Depth (ft): 10	
Drilling Contr: Earth Solutions	Driller: Jorgito Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Boring: NS-GP-102
Boring Type: Soil Boring
Project No.: 17303

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
	60	0			Fill- sandy, silt, loamy clay		
2					Fill- limestone sands, gravels dense		
		0			Fill-black to red brown coal, slag loose		
4							
	60	0			Fill-grey sand, slag, cinders, grey brown silts, brick, debris, clay moist stiff	Moist at 8 feet	
6							
		0.4					
8							
	60	1	1		CL (Lean Clay)-grey brown silty, sandy clay wet	Wet at 10 feet	
10							
		5	0.25		CL (Lean Clay)-brown silty clay high plasticity		NS-GP-102 (12-14)
12							
	80	8.2	0.25		ML (Silt)-black sandy, clayey silt very soft	Stale petroleum, organic odor	NS-GP-102 (15-17)
14							
		0.6	0.25		ML (Silt)-grey clayey, silt very soft		
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Drill Date: 3/22/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: North Section
Total Depth (ft): 20	Water Table Depth (ft): 9.5	
Drilling Contr: Earth Solutions	Driller: Jorgito Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Boring: NS-GP-103
Boring Type: Soil Boring
Project No.: 17303

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0	60	0			Fill- sandy silty, loamy clay		
2					Fill- slag, coal loose		
4		0	2		Fill-grey brown clay embeded with slag, coal, cinders, and limestone very stiff		
6	60	0	2		Fill-grey clay with crushed limestone wet very stiff	Wet at 9.5 feet	
8		0	2				
10	100	0	1		Fill-grey clay with limestone, brick, coal, cinders stiff		
12		0	0.25				
14					CL (Lean Clay)-brown, grey clay very soft light brown mottling		NS-GP-103 (14-15)
16	100	20	0.25		CL (Lean Clay)- organic clay		
18		0.6	0.25				
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: NS-GP-104
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 3/22/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location:
Total Depth (ft): 15	Water Table Depth (ft): 14	North Section -
Drilling Contr: Earth Solutions	Driller: Jorgito Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
2	90	0			Fill-dark brown sandy silty loamy clay with root matter		
4		0			Fill-black to red brown coal, slag, limestone dense		
6	60	0	3.5		Fill-grey brown clay very stiff dark grey light brown mottling		
8		0	2		Fill-dark brown limestone, bricks, dark brown clay very stiff CL (Lean Clay)-brown to dark grey to black clay embedded with gravels very stiff		
10	50	0	1.5		CL (Lean Clay)-dark grey silty, sandy clay gravels throughout with black organic materials stiff		NS-GP-104 (12-14)
12		0	0.5		CL (Lean Clay)-dark grey clay wet soft		
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Boring: NS-GP-105/MW-08			
Boring Type: Soil Boring/Perm Well			
Project No.: 17303			
Drill Date: 3/22/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: North Section -	
Total Depth (ft): 20	Water Table Depth (ft): 7		
Drilling Contr: Earth Solutions	Driller: Jorgito Luna		
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push		

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
2	40	0			Fill-brown sandy, silty, loamy clay with root matter		NS-GP-105 (1-3)
4		0			Fill-slag coal		
6	80	0	1		ML (Silt)-dark grey clayey silt wet very soft	Wet at 7-10 feet.	
8		0	1		ML (Silt)-brown clayey silt wet very soft		NS-GP-105 (8-10)
10	100	0	4		ML (Silt)-grey brown clayey silt hard light brown mottling		
12		0	4.5				
14	80	0	4.5		ML (Silt)-grey clayey silt hard		
16		0	4.5				
18							
20							
22							
24							

Installed Permanent Well

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: NS-GP-106
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 3/22/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location:
Total Depth (ft): 10	Water Table Depth (ft):	North Section -
Drilling Contr: Earth Solutions	Driller: Jorgito Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
		0			Fill-dark brown silty loamy clay with root matter	No odor	
2	60				Fill- coal, crushed limestone, slag very loose		
		0	1				
4					Fill-brown clayey silt embedded with cinders stiff light brown mottling	Dark gray staining	
6		0	1.5				
	90				CL (Lean Clay)-dark grey reworked clay stiff high plasticity		
8		0	1.5				NS-GP-106 (8-10)
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Boring: NS-GP-107		
Boring Type: Soil Boring		
Project No.: 17303		
Drill Date: 3/22/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: North Section
Total Depth (ft): 10	Water Table Depth (ft): 2	
Drilling Contr: Earth Solutions	Driller: Jorgito Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
2	100	0			Fill-black/grey organic root matter, black/grey silts, coal; slag	Perched water at 2-4.5 feet	
					Fill- coarse to fine coal		
4		0			Fill- slag and coal wet		
					Fill-grey brown silty clay with slag light yellow mottling throughout		
6	100	0	1		CL (Lean Clay)-brown moist silty clay stiff high plasticity		NS-GP-107 (5-7)
8		0	4.5		CL (Lean Clay)-grey clayey silt with trace sand lenses - thinly bedded hard		
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: NS-GP-108
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 3/22/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location:
Total Depth (ft): 10	Water Table Depth (ft):	North Section -
Drilling Contr: Earth Solutions	Driller: Jorgito Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0	70	0	1		Fill-brown organic root matter, reworked clay light brown motting, noncohesive		
2					Fill- coal		
4		0					
6	90	0	1.5		Fill-grey clayey sand stiff dark gray to black root matter		
8		0	4		CL (Lean Clay)-brown grey sandy/silty clay, trace sand lenses stiff high plasticity		NS-GP-108 (6-8)
10					CL (Lean Clay)-grey brown clayey silt very stiff noncohesive		
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Drill Date: 3/22/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Boring: NS-GP-109
Total Depth (ft): 10	Water Table Depth (ft): 9	Boring Type: Soil Boring
Drilling Contr: Earth Solutions	Driller: Jorgito Luna	Project No.: 17303
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	Location: North Section

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
2	100	0	4.5		Fill-grey brown reworked clay embeded with gravels, slag, coal hard light brown to orange mottling	No odors	NS-GP-109 (1-3)
4		0	3		CL (Lean Clay)-light brown/grey moist clay moist very stiff low plasticity		
6	100	0	3.5		CL (Lean Clay)-dark grey brown to black clay, trace root matter and organics very stiff		
8		0	2		CL (Lean Clay)-grey brown clay wet very soft high plasticity	Wet at 9 feet	
10					ML (Silt)-brown clayey silt, fine ,noncohesive		
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: NS-GP-110
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 3/22/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location:
Total Depth (ft): 10	Water Table Depth (ft): 4	North Section -
Drilling Contr: Earth Solutions	Driller: Jorgito Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0	70	0	2.5		Fill- brown silts, gravels, coal	No odors	NS-GP-110 (2-4)
2					Fill-brown clay with coal throughout, slag, dense		
4		0			Fill-black slag, loose		
					Fill-black slag wet	Wet at 4 feet	
6	90	0	2.5		CL (Lean Clay)-grey brown clay, very stiff		
8		0	1.5		ML (Silt)-brown grey clayey silt, stiff		
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: NS-GP-111
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 3/22/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: North Section
Total Depth (ft): 10	Water Table Depth (ft):	
Drilling Contr: Earth Solutions	Driller: Jorgito Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0	100	0	3		Fill-brown grey sandy, silty clay trace coal moist stiff light brown mottling through out, cohesive, high plasticity	No odors	
4		0	2.5		CL (Lean Clay)-grey brown clay, trace sand with embedded gravels stiff light brown to dark grey mottling		NS-GP-111 (3-5)
8	100	0	3.5		CL (Lean Clay)-brown clay, trace poorly sorted gravels stiff becomes very stiff with depth		
		0	4				
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: NS-GP-112
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 3/23/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location:
Total Depth (ft): 20	Water Table Depth (ft): 9	North Section -
Drilling Contr: Earth Solutions	Driller: Jorgito Luna and Salvador Torres	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
	70	0			Fill- asphalt, crushed limestone/gravels, slag, cinders	No odor	
2					Fill-brown grey clay, slightly embedded slag moist hard noncohesive		
		0	4.5				
4					Fill- slag, coal, cinders		
	80	0	3		Fill-dark grey brown clay moist stiff		
6							
		0	1.5		ML (Silt)-light brown clayey silt stiff		NS-GP-112 (7-9)
8							
10							
	80	0	1				
12							
		0	0.5		ML (Silt)-light grey clayey silt wet medium	Wet at 9 feet	
14							
	90	0	1				
16							
		0	1				NS-GP-112 (18-20)
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Boring: NS-GP-113			
Boring Type: Soil Boring			
Project No.: 17303			
Drill Date: 3/22/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: North Section	
Total Depth (ft): 15	Water Table Depth (ft): 10		
Drilling Contr: Earth Solutions	Driller: Jorgito Luna		
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push		

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
	60	0			Fill-dark brown loamy silts, sands and root matter		NS-GP-113 (0-1)
					Fill- medium to fine grain sand	Plastic basin liner observed at 1 foot	
2							
		0			Fill-dark grey brown clay, limestone, gravels, sandy embedded with coal slag light brown and orange red mottling		NS-GP-113 (2-4)
4							
6		0					
	80				Fill-dark grey brown silty, sandy clay embedded with coal fines and slag very stiff		
8		0	2.5				
10					Fill-orange, red slag wet dense	Wet at 10 feet	
		0					
12	100				Fill-brown grey clayey, sandy silt light red and orange mottling		
		0					
14					Fill- coarse sand loose		
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: NS-GP-114
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 3/26/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location:
Total Depth (ft): 20	Water Table Depth (ft): 9.5	North Section -
Drilling Contr: Earth Solutions	Driller: Jorgito Luna and Salvador Torres	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0					Fill-black to dark brown silts, gravel, sands, and limestone		
2	100	0			Fill-grey brown clay, embedded with coal very stiff		
4		0	3.5		Fill- gravel, sand, brick, glass, coal, silts very stiff		
6	100	0	2		Fill-dark grey brown clay, with coal, brick glass, and gravel very stiff		
8		0	4.5		Fill-dark grey brown silty to sandy clay very stiff light yellow to light brown mottling Fill-yellow to light brown sandy clay with glass very stiff Fill-dark grey brown reworked clay, trace coal and glass very stiff	Wet at 9.5 feet	NS-GP-114 (7-9)
10	100	0	4.5		CL (Lean Clay)-light brown clay, trace gravel wet very stiff light grey mottling	Wet at 11 feet	
12					ML (Silt)-grey silt dry		
14		0	4.5		CL (Lean Clay)-grey clay with gravely sands very stiff		
16	100	0	4.5		CL (Lean Clay)-grey clay very stiff		
18		0	3.5				
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Drill Date: 3/21/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: North Section
Total Depth (ft): 10	Water Table Depth (ft):	
Drilling Contr: Earth Solutions	Driller: Juan Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Boring: NS-GP-115
Boring Type: Soil Boring
Project No.: 17303

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
2	70	0	1		Fill-grey brown slag, cinders, limestone, gravel, sands dense	No odors	NS-GP-115 (0-1)
					Fill-dark grey clay very stiff light brown mottling, high plasticity		NS-GP-115 (1-3)
4		0	3.5		Fill-brown clay with embedded gravels very stiff light brown/orange mottling, noncohesive		NS-GP-115 (3-5)
6	100	0	4		Fill-brown reworked clay hard		
8		0	4.5		ML (Sill)-grey clayey gravel/silt hard noncohesive		
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Drill Date: 3/21/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: North Section -
Total Depth (ft): 10	Water Table Depth (ft):	
Drilling Contr: Earth Solutions	Driller: Juan Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Boring: NS-GP-118
Boring Type: Soil Boring
Project No.: 17303

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
2	40	0			Fill- asphalt, crushed limestone, gravel, sand, cinder, slag dense		NS-GP-118 (1-3)
4		0	4.5		Fill-brown silty reworked clay hard light brown mottling	Slight musty stale petroleum odor at 1-3 feet	NS-GP-118 (3-5)
6	100	0	4.5				
8		0	4		GM (Silty Gravel)-grey gravely sandy clayey silt, poorly sorted moist medium dense CL (Lean Clay)-grey silty clay moist hard		
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Boring: NS-GP-120		
Boring Type: Soil Boring		
Project No.: 17303		
Drill Date: 3/23/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: North Section -
Total Depth (ft): 10	Water Table Depth (ft):	
Drilling Contr: Earth Solutions	Driller: Jorgito Luna and Salvador Torres	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0	90	0			Fill- asphalt, crushed limestone, brown silts, slag, cinders	3 inches of gravel	
2					Fill-orange brown clay with 3-inches of gravel hard		
4		0	4.5		Fill-brown grey clay embedded with gravels - poorly sorted hard ligh brown mottling		NS-GP-120 (3-5)
6	100	0	4.5		CL (Lean Clay)-grey silty clay hard		NS-GP-120 (5-7)
8		0	4.5		CL (Lean Clay)-grey silty clay hard		
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Boring: NS-GP-121			
Boring Type: Soil Boring			
Project No.: 17303			
Drill Date: 3/23/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: North Section	
Total Depth (ft): 15	Water Table Depth (ft):		
Drilling Contr: Earth Solutions	Driller: Jorgito Luna and Salvador Torres		
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push		

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
2	90	0			Fill- limestone sand/gravel	No odors	
		0	1.5		Fill- black coal fines, cinders, slag, grey brown clay stiff		NS-GP-121 (2-4)
4					Fill-brown reworked clay, embedded with slag hard light to dark grey mottling		NS-GP-121 (2-4) DUP
6	90	0	4.5		Fill-grey clay embedded with slag hard		
8		0	4				
10	100	0	4.5		CL (Lean Clay)-grey silty clay hard		
12		0	4.5		ML (Silt)-grey clayey silt hard		
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: NS-GP-122
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 3/26/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location:
Total Depth (ft): 15	Water Table Depth (ft): 5	North Section -
Drilling Contr: Earth Solutions	Driller: Jorgito Luna and Salvador Torres	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
		0	1.5		Fill- 6-inches concrete, 2-inches slag	Slight stale odor at 1-3 feet	
2	60				Fill-grey to dark grey clay moist hard light brown mottling, high plasticity		NS-GP-122 (1-3)
		0	4.5		Fill-brown clayey silt moist hard noncohesive		NS-GP-122 (3-5)
4							
6		0	3				
	50						
8		0	4.5				
10					CL (Lean Clay)-grey clay with embedded gravels at 5-10 feet hard becomes very stiff with depth, low plasticity		
		0	4.5				
12	100						
		0	3.5				
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Boring: NS-GP-125		
Boring Type: Soil Boring		
Project No.: 17303		
Drill Date: 3/23/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: North Section -
Total Depth (ft): 10	Water Table Depth (ft):	
Drilling Contr: Earth Solutions	Driller: Jorgito Luna and Salvador Torres	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0	50	0			Fill-grey and dark brown clay and sands with asphalt, cinders, slag, sands, gravels, coal	No odors	
2		0	3.5		CL (Lean Clay)-light brown clay embedded with gravels moist hard light grey mottling, noncohesive		
4							
6	100	0	4.5		CL (Lean Clay)-grey silty clay embedded trace gravels hard low plasticity		NS-GP-125 (5-7)
8		0	4.5		ML (Silt)-grey clayey silt hard low plasticity		
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: NS-GP-126
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 3/26/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location:
Total Depth (ft): 10	Water Table Depth (ft):	North Section -
Drilling Contr: Earth Solutions	Driller: Jorgito Luna and Salvador Torres	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0	100	0	4.5		Fill- concrete		
2		0	4.5		Fill-grey brown reworked silty, sandy clay embedded with limestone and gravel, trace slag and coal hard		NS-GP-126 (3-5)
4							
6	100	0	4.5		Fill-brown clay hard light brown mottling		
8		0	4.5		Fill- concrete Fill-brown gravelley, sandy clay hard light grey mottling CL (Lean Clay)-brown clay, trace embedded gravels hard trace dark grey mottling		
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Boring: NS-GP-127		
Boring Type: Soil Boring		
Project No.: 17303		
Drill Date: 3/26/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: North Section -
Total Depth (ft): 15	Water Table Depth (ft): 0.2	
Drilling Contr: Earth Solutions	Driller: Juan Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
10					Fill- 6-inches concrete	Refusal at 1-1.5 feet on metal surface. Moved 3 feet west. Logged and sampled at new location.	
					Fill- sand		
					Fill- 3+ gravel		
12	30	0					
		0	4.5		Fill- cinders, crushed brick, silty to sandy clay, silt/slag medium dense		NS-GP-127 (4-5)
14							
16	100	0	3		CL (Lean Clay)-grey; silty clay very stiff		
		0	3.5				
18							
10	100	0	4				
12		0	4		ML (Silt)- clayey silt hard		NS-GP-127 (13-15)
14							
16							
18							
20							
122							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: NS-GP-129
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 3/26/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: North Section
Total Depth (ft): 10	Water Table Depth (ft): 0.5	
Drilling Contr: Earth Solutions	Driller: Jorgito Luna and Salvador Torres	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
2	80	0	2.5		Fill-6-inches concrete, limestone, gravel and sands wet	Perched water in gravel at 0.5 feet	NS-GP-129 (1-3)
4		0	2		Fill-brown clay embedded gravels and coal stiff dark grey mottling		
6	100	0	4		CL (Lean Clay)-grey silty clay hard noncohesive		
8		0	4.5				
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Drill Date: 3/21/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: South Section -
Total Depth (ft): 15	Water Table Depth (ft): 11	
Drilling Contr: Earth Solutions	Driller: Juan Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Boring: SS-GP-101
Boring Type: Soil Boring
Project No.: 17303

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
2	50	0			Fill-dark clay, 3-inch slag at 0.5 feet		
4		0			Fill-light brown grey reworked clay light brown grey mottling		
6	100	0					
8		0			CL (Lean Clay)-grey silty clay embedded with fine gravels		SS-GP-101 (7-9)
10	70	0			ML (Silt)-grey clayey silt with well-graded gravels		
12		0			CL (Lean Clay)-grey silty clay wet	Wet at 11 feet	
14							SS-GP-101 (13-15)
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: SS-GP-103
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 3/20/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location:
Total Depth (ft): 15	Water Table Depth (ft):	South Section -
Drilling Contr: Earth Solutions	Driller: Juan Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
	50	0			Fill- 1.5 feet concrete, 8-inches of concrete above grade limestone, crushed base	No odors	
2					Fill-dark grey clay with cinders and slag very stiff		
		0	3.5				
4					Fill-light brown reworked silty clay trace embedded gravels very stiff dark grey mottling		
6	50	0	4				
		0	4.5				SS-GP-103 (7-9)
10	100	0	4.5		CL (Lean Clay)-grey silty clay embedded with fine gravels hard		
12							
		0	4.5				
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: SS-GP-105
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 3/19/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: South Section -
Total Depth (ft): 15	Water Table Depth (ft): 5	
Drilling Contr: Earth Solutions	Driller: Juan Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
2	90	0	3.5		Fill- sands, silts,limestone, gravels dry	No odor	
4		0	3		Fill-dark grey silty clay embedded with cinders, slag, coal, brick dry very stiff		SS-GP-105 (1-3) SS-GP-105 (3-5)
6	90	0	3		Fill-light brown silty clay embedded with sands, gravels, cinders, coal, limestone wet very stiff cohesive	Wet at 5 feet	
8		0	4.5				
10	100	0	4.5		CL (Lean Clay)-grey silty clay moist very stiff noncohesive		
12		0	4.5		ML (Silt)-grey clayey silt moist very stiff noncohesive		
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: SS-GP-106
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 3/20/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location:
Total Depth (ft): 15	Water Table Depth (ft): 8	South Section -
Drilling Contr: Earth Solutions	Driller: Juan Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
2	70	0	3.5		Fill-dark grey to dark brown coal, slag, cinders		
		0	3.5		Fill-black coal, clay very stiff		
4					Fill-grey silty clay trace embedded coal very stiff light brown mottling		
6	70	0	3.5		Fill-very dark grey clay very stiff light brown mottling		
8		0	4.5		CL (Lean Clay)-light brown clay wet very stiff	Wet at 8 feet	SS-GP-106 (6-8) SS-GP-106 (6-8)DUP
10	100	0			CL (Lean Clay)-grey silty clay very stiff		
12					ML (Silt)-grey clayey silt very stiff		
14		0					
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Drill Date: 3/20/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: South Section -
Total Depth (ft): 15	Water Table Depth (ft): 8.5	
Drilling Contr: Earth Solutions	Driller: Juan Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Boring: SS-GP-107
Boring Type: Soil Boring
Project No.: 17303

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
2	90	0	4		Fill-brown clay, coal, slag, limestone gravels very stiff	No odor	
4		0	2.5		Fill-dark grey brown silty clay trace embedded cinders very stiff light brown orange mottling		
6	80	0	2.5		CL (Lean Clay)-dark grey clay very stiff trace light brown mottling		SS-GP-107 (6-8)
8		0	2.5		ML (Silt)-brown clayey, sandy silt wet very stiff	Wet at 8.5 feet	
10	100	0	2		CL (Lean Clay)-grey silty clay very stiff		
12		0	4.5		ML (Silt)-grey clayey silt very stiff		
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Boring: SS-GP-108		
Boring Type: Soil Boring		
Project No.: 17303		
Drill Date: 3/20/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: South Section
Total Depth (ft): 15	Water Table Depth (ft): 4	
Drilling Contr: Earth Solutions	Driller: Juan Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0	60	6.8	3		Fill-dark brown silty, sandy, clay, limestone gravels, cinders, coal very stiff	Possible jet fuel odor at 4.5-7.5 feet	SS-GP-108 (2-4)
4		6.8	1		Fill-black to very dark grey 6-inches sand and 6-inches of coal wet	Wet at 4 feet	
6	100	3.5	1.5				
8		2.7	2.5		CL (Lean Clay)-grey silty clay very stiff		
10	100	0	3				
12		0	2		CL (Lean Clay)-grey silty clay moist soil becomes harder with depth		
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: SS-GP-109
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 3/20/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location:
Total Depth (ft): 3	Water Table Depth (ft): 1.5	South Section -
Drilling Contr: Earth Solutions	Driller: Juan Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0	100	0.3	2		Fill-dark brown clay, slag, cinders, coal, limestone, gravel	Strong petroleum odor	SS-GP-109 (1.5-3)
2		48.3	2		Fill-dark grey to black clay, silts, embedded cinders with 2-inch blue green silty clayey sand seam wet	Wet at 1.5 feet	
4					Fill-dark grey clay and crushed limestone very stiff		
6					- Refusal at 3 feet		
8							
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Drill Date: 3/20/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: South Section -
Total Depth (ft): 20	Water Table Depth (ft): 4.5	
Drilling Contr: Earth Solutions	Driller: Juan Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Boring: SS-GP-110/MW-09
Boring Type: Soil Boring/Perm Well
Project No.: 17303

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
2	80	0			Fill-black fine coal, silts	No odors	
					Fill-dark brown clay, cinders, slag, coal		
		0	2		Fill-coal, cinders, slag, silts, sands, trace clay very stiff		SS-GP-110 (2-4)
4							
6	70	0	4.5		Fill-brown to grey clay embedded cinders wet hard noncohesive	Wet at 4.5 feet	
8		0	4.5				
10							
12	100	0	4.5		CL (Lean Clay)-grey clay embedded fine gravels hard noncohesive		
14		0	4.5				
16		0	4.5				
18	100	0	4.5		ML (Silt)-grey clayey silt hard		
20							
22							
24							

Installed Permanent Well

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Boring: SS-GP-111		
Boring Type: Soil Boring		
Project No.: 17303		
Drill Date: 3/21/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: South Section -
Total Depth (ft): 15	Water Table Depth (ft): 4.5	
Drilling Contr: Earth Solutions	Driller: Juan Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
2	50	0			Fill-brown sands, silts, gravels, concrete wet	Wet at 4.5 feet	SS-GP-111 (3-4.5)
4		0					
6	70	100.2			Fill-black silts, clays, coal, cinders, brick wet	Petroleum odor at 5-15 feet; strongest odor at 5-8 feet	
8		13	4.5		CL (Lean Clay)-grey silty clay very stiff		
10	100	11	4.5				
12		0	2.5		ML (Silt)-grey clayey silt very stiff		
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Drill Date: 3/21/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Boring: SS-GP-112
Total Depth (ft): 15	Water Table Depth (ft): 13	Boring Type: Soil Boring
Drilling Contr: Earth Solutions	Driller: Juan Luna	Project No.: 17303
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	Location: South Section

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
2	50	0			Fill-brown sand, clayey loam, limestone, gravels, silts, asphalt	No odor	
4		0	3.5		Fill-dark brown grey to brown grey cinders, slag, coal, limestone, gravel		SS-GP-112 (3-5)
6	60	0	4.5		CL (Lean Clay)-grey brown clay very stiff		
8		0	4.5		CL (Lean Clay)- clayey silt very stiff		
10	100	0	3		CL (Lean Clay)-grey clay, gravel, sand, clayey silt very stiff		
12		0	4.5		CL (Lean Clay)-grey silty clay wet very stiff	Wet at 13 feet	
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: SS-GP-113
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 3/21/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location:
Total Depth (ft): 15	Water Table Depth (ft): 10.5	South Section -
Drilling Contr: Earth Solutions	Driller: Juan Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
2	40	0			Fill- limestone, crushed, cinders coal, slag		
4		0	4				SS-GP-113 (3-5)
					CL (Lean Clay)-dark grey silty clay		
6	90	0	4.5		CL (Lean Clay)-light brown silty clay hard brown orange mottling		
8		0	4.5		SM (Silty Sand)-brown fine clayey silty sand hard		
10					ML (Silt)-grey clayey silt hard		
	100	0	1.5		GW (Well Graded Gravel)-grey sandy gravel wet stiff	Wet at 10.5 feet	
12							
14		0	4.5		CL (Lean Clay)-grey silty clay hard		
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL-BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Boring: SS-GP-114	
Boring Type: Soil Boring	
Project No.: 17303	
Drill Date: 3/21/2018 12:00:00 AM	LoggedBy: Meghan Stahl
Total Depth (ft): 10	Water Table Depth (ft): 5
Drilling Contr: Earth Solutions	Driller: Juan Luna
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push
Location: South Section -	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
					Fill-dark loamy clay trace root matter, crushed limestone loose		
2	90	0	2.5		Fill- coal fines, brown clay, coal fragments, cinders, slag, sand, brick dense		SS-GP-114 (1-3)
4		0	0.5				
					Fill- 3+ limestone gravel wet dense	Wet at 5 feet	
6	70	0	2.5		SM (Silty Sand)- clayey sand; gravel		
8		0	4.5		ML (Silt)- clayey silt very stiff, thinly laminated orange and light brown beds		
					CL (Lean Clay)-grey silty clay very stiff		SS-GP-114 (9-10)
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: SS-GP-118
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 3/21/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: South Section
Total Depth (ft): 10	Water Table Depth (ft): 8	
Drilling Contr.: Earth Solutions	Driller: Juan Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0	70	0	2.5		Fill- 6 inches concrete	No odors	SS-GP-118 (1-3)
					Fill-brown reworked clay, in part sand and gravel stiff		
2					Fill-black slag, coal		
		0	4		Fill-grey reworked clay very stiff		
4					Fill-brown reworked clay very stiff light grey mottling		
6	90	0	3.		CL (Lean Clay)-light brown to dark grey clay stiff grey mottling		
8		0	3.5		CL (Lean Clay)-brown clay trace embedded gravels wet very stiff light grey mottling	Wet at 8 feet	
					ML (Silt)-grey clayey silt		
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: SS-GP-120
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 3/20/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: South Section
Total Depth (ft): 15	Water Table Depth (ft): 5	
Drilling Contr: Earth Solutions	Driller: Juan Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
2	60	0			Fill- asphalt crushed limestone		
					Fill-dark brown to black 2-inches sand, 4-inches cinders, slag, sand loose		SS-GP-120 (1-3)
		0	2.5		Fill-light brown reworked clay embedded with slag, cinders, coal stiff dark brown to grey mottling		
4					Fill-brown, black to red slag loose		
6	100	0	2.5		Fill-grown grey reworked silty clay trace slag/cinders wet hard	Wet at 5 feet	
8		0	3		Fill-grey brown reworked silty clay trace slag/cinders stiff cohesive, high plasticity		
10	30	0	3.5		Fill-grey brown reworked silty clay trace slag stiff dark grey mottling		
12							
14		0	3				
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: SS-GP-121
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 3/20/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location:
Total Depth (ft): 15	Water Table Depth (ft): 6	South Section -
Drilling Contr: Earth Solutions	Driller: Juan Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	HD (ppm	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
		0			Fill- 6-inches concrete, 6-inches brown sand	No odor	
					Fill-dark grey clay embedded slag/cinders stiff brown to light brown mottling	0.5 inch cinder seam at 2 feet	
2	100				Fill-dark grey clay embedded cinders and coal stiff		SS-GP-121 (1-3)
		0	2				
4							
					Fill-light brown clay embedded with sand wet stiff grey to light brown mottling	Wet at 6 feet	
6		0	2				
	60						
8		0	2				
					CL (Lean Clay)-grey silty clay trace embedded fine gravels very stiff		
10		0	4				
12	100						
		0	4 5		CL (Lean Clay)-grey clayey silt hard noncohesive		
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Drill Date: 3/20/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: South Section
Total Depth (ft): 15	Water Table Depth (ft):	
Drilling Contr: Earth Solutions	Driller: Juan Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Boring: SS-GP-122
Boring Type: Soil Boring
Project No.: 17303

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
10							
		0			Fill- large limestone, gravel, silts, sands, cinders, slag		
					Fill-black cinder, slag loose		
12	50						SS-GP-122 (1-3)
		0	2				
14					Fill-grey to light brown reworked clay embedded gravels hard light grey to brown mottling		
		0	4.5				
16	100						
		0	4.5				
18							
		0	4.5		CL (Lean Clay): grey silty clay embedded with fine gravels hard trace light brown mottling		
20	100						
		0	4.5				
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Boring: SS-GP-124	
Boring Type: Soil Boring	
Project No.: 17303	
Drill Date: 3/19/2018 12:00:00 AM	LoggedBy: Meghan Stahl
Total Depth (ft): 15	Water Table Depth (ft): 5
Drilling Contr: Earth Solutions	Driller: Juan Luna
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push
Location: South Section -	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0	30	0			Fill-dark grey to black silts, sands, cinders orange red mottling in cinders	No odors	
2		0	3		CL (Lean Clay)-grey brown clay hard light brown to red mottling high plasticity		SS-GP-124 (1-3)
4							
6	30	0	4.5		CL (Lean Clay)-grey brown silty clay wet hard dark grey mottling noncohesive	Wet at 5 feet	
8		0	4.5				
10	100	0	4.5		CL (Lean Clay)-grey silty clay poorly sorted embedded gravels moist hard		SS-GP-124 (11-13)
12							
14		0	4.5		CL (Lean Clay)-grey clayey silt poorly sorted gravels moist hard		
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Drill Date: 3/19/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Boring: SS-GP-125
Total Depth (ft): 15	Water-Table Depth (ft): 5	Boring Type: Soil Boring
Drilling Contr: Earth Solutions	Driller: Juan Luna	Project No.: 17303
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	Location: South Section

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0					Fill-grey 2-inches silty sandy clay, 4-inches concrete	No odors	
2	60	0			Fill-black coal fines		SS-GP-125 (1-3)
4		0			Fill- slag, cinders, grey brown reworked clay		
6	100	0	0.5		CL (Lean Clay)-light brown clay trace embedded gravels wet-medium	Wet at 5 feet	
8		0	4.5		CL (Lean Clay)-grey silty clay very stiff		
10	100	0	4.5				
12		0	4.5		ML (Silt)-grey clayey silt very stiff		
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: SS-GP-126
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 3/19/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: South Section -
Total Depth (ft): 10	Water Table Depth (ft):	
Drilling Contr: Earth Solutions	Driller: Juan Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0	50	0			Fill-dark grey clay with cinders and slag, sand, gravels, medium yellow orange mottling	Fishy odor at 2 feet	SS-GP-126 (0-1)
2							SS-GP-126 (1-3)
4		0	2.5				SS-GP-126 (3-5)
6	100	0	2.5				
8		0	3.5		CL (Lean Clay)-grey silty clay trace fine embedded gravels medium		
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Drill Date: 3/19/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: South Section
Total Depth (ft): 10	Water Table Depth (ft):	
Drilling Contr: Earth Solutions	Driller: Juan Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Boring: SS-GP-127
Boring Type: Soil Boring
Project No.: 17303

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0	90	0	3.5		Fill- silty, sands, limestone, gravels	No odors	SS-GP-127 (0-1)
2		0	4		Fill-light grey brown clay with crushed limestone, 3-inch cinder/slag at one foot very stiff		SS-GP-127 (1-3)
4					Fill-light brown grey silty, sandy clay very stiff light orange, red trace grey mottling		SS-GP-127 (3-5)
6	100	0	4.5		Fill-grey reworked clay traced embedded slag, poorly sorted gravels moist very stiff noncohesive		
8		0	4		CL (Lean Clay)- clayey silt, sandy poorly sorted gravel moist very stiff noncohesive		
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: SS-GP-128
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 3/19/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location:
Total Depth (ft): 15	Water Table Depth (ft):	South Section -
Drilling Contr: Earth Solutions	Driller: Juan Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
	100	0	4.5		Fill-grey reworked clay cinders, slag, coal, limestone, gravel dry hard	No odors	SS-GP-128 (0-1)
2					Fill-grey reworked clay dry hard trace light orange mottling	2 inch cinder seam at 2 feet	SS-GP-128 (1-3)
		0	4		Fill-grey reworked clay embeded with gravels, coal, chunks of coal moist hard noncohesive		SS-GP-128 (3-5)
4							
6	100	0	4.5				
8		0	3.5		CL (Lean Clay)-grey silty clay trace embedded gravels moist very stiff noncohesive		
10	100	0	4				
12		0	4.5		CL (Lean Clay)-grey silty to sandy clay with coarse to fine gravels, pyrite nodules throughout very stiff		
14					CL (Lean Clay)-grey silty clay moist very stiff noncohesive		
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Boring: SS-GP-129/MW-11			
Boring Type: Soil Boring/Perm Well			
Project No.: 17303			
Drill Date: 3/19/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: South Section -	
Total Depth (ft): 23.5	Water Table Depth (ft): 16		
Drilling Contr: Earth Solutions	Driller: Juan Luna		
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push		

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
		0			Fill-brown silts, sands, cinders, limestone	No odors	SS-GP-129 (0-1)
2	80						SS-GP-129 (1-3)
		0	4.5		Fill-light brown to grey silty clay, trace brick, cinders, gravels hard light yellow to orange red mottling, trace dark grey, mottling		
4							SS-GP-129 (3-5)
6		0	4.5				
	100						
8		0	4.5		CL (Lean Clay)- silty to sandy clay trace embdedded fine to medium gravels hard light brown mottling		
10							
		0	4.5				
12	100						
		0	4.5		CL (Lean Clay)-grey noncohesive silty clay moist hard		
14						Trace water at 16 feet	
16		0	4				
	100						
18		0	4		CL (Lean Clay)- sandy, noncohesive clay, poorly sorted medium gravels, to fine sand with embedded shale moist dense		
20							
		0	4				
22	100				CL (Lean Clay)-grey clay, trace embedded gravels wet very stiff	Wet at 21 feet	
		0	4				
24							

Installed Permanent Well

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Boring: SS-GP-130	
Boring Type: Soil Boring	
Project No.: 17303	
Drill Date: 3/19/2018 12:00:00 AM	LoggedBy: Meghan Stahl
Total Depth (ft): 10	Water Table Depth (ft):
Drilling Contr: Earth Solutions	Driller: Juan Luna
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push
Location: South Section -	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
		0	4.5		Fill-dark brown to brown clay, trace loamy organics, cinder, slag, limestone gravels hard	No odors	SS-GP-130 (0-1)
2	90						SS-GP-130 (1-3)
		0	3		Fill-light brown reworked silty clay embedded with large limestone gravels, trace mixed sand moist very stiff low plasticity		
4							SS-GP-130 (3-5)
6		0	4.5				
	100				CL (Lean Clay)-grey silty clay, medium to semi round gravels hard		
8		0	4.5				
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Boring: SS-GP-131		
Boring Type: Soil Boring		
Project No.: 17303		
Drill Date: 3/19/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: South Section
Total Depth (ft): 15	Water Table Depth (ft):	
Drilling Contr: Earth Solutions	Driller: Juan Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
2	100	0			Fill- limestone, gravel, black to red brown cinders/slag, trace black silty clay	No odors	SS-GP-131 (0-1)
4		0	4.5		Fill-dark grey silty clay embedded cinders/coal/slag hard	No odors	SS-GP-131 (1-3)
6	100	0	4.5		CL (Lean Clay)-grey brown to brown noncohesive clay poorly sorted gravels moist hard light brown mottling		SS-GP-131 (3-5)
8		0	4.5				
10	100	0	4.5		CL (Lean Clay)-grey silty clay hard		
12		0	4.5				
14	100	0	4.5		ML (Silt)-clayey silt hard		SS-GP-131 (13-15)
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Boring: SS-GP-132	
Boring Type: Soil Boring	
Project No.: 17303	
Drill Date: 3/19/2018 12:00:00 AM	LoggedBy: Meghan Stahl
Total Depth (ft): 10	Water Table Depth (ft):
Drilling Contr: Earth Solutions	Driller: Juan Luna
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push
Location: South Section -	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0					Fill- loamy clay with medium limestone gravel, sand	No odors	SS-GP-132 (0-1)
		0			Fill- fine cinders, coal fragments, medium slag, 1-inch sand seam moist medium		
2	50				Fill-grey reworked silty clay		SS-GP-132 (1-3)
		0	3.5		Fill-light brown to light grey clay embedded gravels medium light brown orange to trace yellow mottling		SS-GP-132 (3-5)
6		0	2.5				
	100				CL (Lean Clay)-grey silty clay trace fine to medium embedded gravels hard trace light brown mottling		
8		0	4.5				
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: SS-GP-133/MW-12
		Boring Type: Soil Boring/Perm Well
		Project No.: 17303
Drill Date: 3/19/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: South Section
Total Depth (ft): 20	Water Table Depth (ft): 8.5	
Drilling Contr: Earth Solutions	Driller: Juan Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
2	90	0			Fill- limestone, silts, sand, cinders, slag	No odors	SS-GP-133 (1-3)
4		0	4				
6	90	0	3		CL (Lean Clay)-brown clay wet very stiff, light brown, orange, trace grey black motting	Wet at 8.5 feet	
8		0	3.5				
10	100	0	4.5				
12		0	4.5		CL (Lean Clay)-light grey silty clay embedded gravels very stiff		
14							
16	100	0	3.5				
18		0			CL (Lean Clay)-grey non-cohesive clayey silt, trace embedded gravels, very stiff		
20							
22							
24							

Installed Permanent Well

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: SS-GP-134
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 3/19/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location:
Total Depth (ft): 15	Water Table Depth (ft): 9	South Section -
Drilling Contr: Earth Solutions	Driller: Juan Luna	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
					Fill-black silts, sands, root matter, cinders	No odors	
2	60	0			Fill-brown clay with coal fragments, sands, gravels, brick, slag, hard dark grey mottling		SS-GP-134 (1-3)
4		0	4.5				
6	60	0	3		CL (Lean Clay)-light brown to light grey clay, trace embedded gravels, very stiff, becomes softer with depth	Wet at 9 feet	
8		0	1.5				
10	90	0	4.5		CL (Lean Clay)-grey silty clay, trace embedded gravels, very stiff, becomes harder with depth		
12							
14		0	4				
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Drill Date: 3/26/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: East Section
Total Depth (ft): 15	Water Table Depth (ft): 6	
Drilling Contr: Earth Solutions	Driller: Jorgito Luna and Salvador Torres	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Boring: ES-GP-104
Boring Type: Soil Boring
Project No.: 17303

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
10	100	0	2.5		Fill- limestone, gravel, black coal silts, reworked brown grey silty clay embedded coal/slag		
12		0	0.5		Fill-brown silty clay, trace sand seams very stiff light grey mottling		ES-GP-104 (2-4)
14							
6	100	0	0.5		ML (Silt)-grey clayey silt wet medium noncohesive	Wet at 6 feet	
8		0	4.5				
10	100	0					
12					SM (Silty Sand)- gravely sand wet	Poorly sorted gravels from 11-12 feet, Well sorted gravels from 10-11 feet and 12-13 feet	
14		0	4.5		CL (Lean Clay)-grey clayey silt wet hard noncohesive		
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: ES-GP-105
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 3/26/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location:
Total Depth (ft): 15	Water Table Depth (ft): 7	East Section -
Drilling Contr: Earth Solutions	Driller: Jorgito Luna and Salvador Torres	
Drill Rig: 6620DT Geoprobe	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
		0			Fill- crushed limestone		
2	60						
		0	4		Fill- 1-inch black slag/cinders, grey brown clay embedded with limestone and poorly sorted gravel dark grey, red brown mottling		ES-GP-105 (3-5)
4							
		0			CL (Lean Clay)-light brown silty clay moist very stiff light to dark grey mottling, high plasticity	Wet at 7 feet	
6	100						
8		0					
10		0			ML (Silt)-grey clayey silt	Wet at 14 feet	
12	100						
		0					
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Boring:	ES-GP-106
Boring Type:	Soil Boring
Project No.:	17303
Drill Date:	3/26/2018 12:00:00 AM
LoggedBy:	Meghan Stahl
Location:	East Section -
Total Depth (ft):	15
Water Table Depth (ft):	6
Drilling Contr:	Earth Solutions
Driller:	Jorgito Luna and Salvador Torres
Drill Rig:	6620DT Geoprobe
Hammer:	Direct Push

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
10					Fill- dark brown silts, sands, gravels, limestone		
12	90	0			Fill-dark brown reworked silty sandy clay; gravels, coals; and trace red brown slag wet	Perched water at 4 feet	ES-GP-106 (1-3)
14		0					
16	70	0			Fill-dark brown clayey silty sand embedded with coal and poorly sorted gravels wet	Wet at 6 feet, stale odor at 7-9 feet.	
18		0.1	4.5				
20	80	0	4		CL (Lean Clay): grey clay, trace gravels very stiff light brown mottling		
22		0	4.5				ES-GP-105 (13-15)
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: NS-GP-301
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 12/17/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: North Section - West Branch of South Fork Chicago River
Total Depth (ft): 20	Water Table Depth (ft):	
Drilling Contr: Earth Solutions	Driller: Jorge, Daine	
Drill Rig: 6620 DT	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0	90	0.2			Fill- silty sand clayey loam, gravel, grass		NS-GP-301 (0-0.5)
2		0.2			Fill- limestone gravel		
4					Fill-black coal, slag, sand, and gravel		NS-GP-301 (3-5)
					Fill-grey silty clay moist stiff		
6	50	0.3			Fill- sand, silt, clay, large limestone gravel		
8		0.2	2.5				
10	40	0.3			Fill-dark grey clay, silt, sand, limestone gravel, and brick		
12		0.5					
14							
16	50	0.2	0.25		Fill-black coal, silt, sand	Slight petroleum odor with sheen 15-17 foot	NS-GP-301 (15-17)
18		0	0.25		CL (Lean Clay)-grey silty clay wet very soft		
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: NS-GP-302
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 12/17/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: North Section - West Branch of South Fork Chicago River
Total Depth (ft): 20	Water Table Depth (ft):	
Drilling Contr: Earth Solutions	Driller: Jorge, Daine	
Drill Rig: 6620 DT	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
					Fill-brown clay, silt, loam, sand, grass		NS-GP-302 (0-0.5)
		0.2			Fill- limestone gravel		
2	90						
					Fill-black cinders, slag, coal, sand, and silt		
		0.3					
4							
6		1.5	2.5		Fill-grey clayey silt moist stiff	Trace petroleum odor 6-15 foot	NS-GP-302 (5-7)
	80						
8		1.3					
10							
		1.4			Fill-grey brown clayey silt, brick, concrete, coarse gravel, sand		
12	50						
		1.3	0.25				
14							
					Fill-black coal, silt, slag, gravel, sand wet very soft		
16		0.7	0.25				NS-GP-302 (15-17)
	60				CL (Lean Clay)-grey silty clay wet very soft		
18		0	0.25				
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: NS-GP-303
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 12/17/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: North Section - West Branch of South Fork Chicago River
Total Depth (ft): 20	Water Table Depth (ft):	
Drilling Contr: Earth Solutions	Driller: Jorge, Daine	
Drill Rig: 6620 DT	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
	90	0.3			Fill-brown loam, sand, silt, clay, brick, grass		NS-GP-303 (0-0.5)
2					Fill- limestone sand and gravel, silt, sand		
		0.3	2.5		Fill- cinders, slag, gravel, sand, coal		
4					Fill- limestone concrete		
					Fill-grey clay, mixed limestone sand, gravel moist stiff		
6	80	0.4	1.5		Fill-grey clay with limestone sand and gravel	Clayey silt and sand seam 7.5-8 foot	
8		0.3					NS-GP-303 (7-9)
10							
	70	0.3			Fill-dark grey gravel, silt, sand, coal, coal fines, brick		
12							
		0.4	0.25				
14					Fill- slag coal		
		3.1	0.25		Fill-black sand, coal, gravel, clay	Sewage and petroleum odor 15-17 feet	NS-GP-303 (15-17)
16	80						
		0.4	0.25		CL (Lean Clay)-grey silty clay wet very soft		
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: NS-GP-304
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 12/17/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: North Section - West Branch of South Fork Chicago River
Total Depth (ft): 20	Water Table Depth (ft):	
Drilling Contr: Earth Solutions	Driller: Jorge, Daine	
Drill Rig: 6620 DT	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
	95	0.1			Fill- loam, clay, silt, sand, grass		NS-GP-304 (0-0.5)
2					Fill- limestone gravel		
		0.2			Fill- slag, coal, cinders, sand, silt		
4							NS-GP-304 (3-5)
6	80	0.2			Fill-grey brown clayey sand, limestone sand, brick, wood moist very soft		
8		0.2					
10		0.2	0.25				
12	80				Fill-grey brown sand, silt, clay, limestone gravel, brick		
14		0.3					
16		13.6	0.25		Fill-black sand, silt, clay, coal, wood wet very soft	Strong sewage and petroleum odor 15-19 feet	NS-GP-304 (15-17)
18	80	2.4	0.25				
20					CH (Fat Clay)-grey clay wet very soft		
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: NS-GP-305
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 12/18/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: North Section - West Branch of South Fork Chicago River
Total Depth (ft): 20	Water Table Depth (ft):	
Drilling Contr: Earth Solutions	Driller: Jorge Luna	
Drill Rig: 6620 DT	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
	95	0			Fill-brown clay, sand, silt, coal , slag, limestone		NS-GP-305 (0-0.5)
2		0.2			Fill-brown coal, slag, gravel	Poor recovery due to rocks at 2 feet	
4					Fill-grey clay, silt, sand, brick		NS-GP-305 (3-5)
6	3	0			Fill-grey black reworked clay, large rocks,		
8		0					
10	50	0.3			Fill-grey silt, clay, coal, gravel, sand moist very soft	Medium sewage and petroleum odor14-15 feet	
12							
14		0.3	0.25				
16	100	88.8	2.5		Fill-black clay, silt, trace sand, slag, coal moist stiff	Strong sewage and petroleum odor 15-20 feet	NS-GP-305 (15-17)
18		20.5	2.5		CL (Lean Clay)-grey brown silty clay trace small gravel moist stiff		
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: NS-GP-306
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 12/18/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: North Section - Coal Storage Area
Total Depth (ft): 20	Water Table Depth (ft): 15	
Drilling Contr: Earth Solutions	Driller: Jorge Luna	
Drill Rig: 6620 DT	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0	70	0			Fill-brown reworked clay, sand, silt, limestone, wood, gravel		NS-GP-306 (0-0.5)
2		0.2	4				
4							NS-GP-306 (3-5)
6	70	0.1	3.5		Fill-brown reworked clay, sand, slag, coal moist stiff		
8		0	4.5				
10					Fill-light brown orange clay, silt, coal, brick moist stiff mottled		
12	70	0			Fill- limestone gravel and sand		
14		0			Fill- coal, cinders, clay, slag, sand		
16	50	0			Fill-black grey slag, coal	Wet at 15 feet	NS-GP-306 (15-17)
18		0	2.5		CL (Lean Clay)-dark grey silty clay mottled ML (Silt)-grey brown clayey silt moist stiff		
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: NS-GP-307
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 12/18/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: North Section - Coal Storage Area
Total Depth (ft): 15	Water Table Depth (ft): 8	
Drilling Contr: Earth Solutions	Driller: Jorge Luna	
Drill Rig: 6620 DT	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0	90	0			Fill-dark brown silt, sand, limestone gravel, glass, coal		NS-GP-307 (0-0.5)
2		0	1		Fill-brown reworked clay, sand, limestone, trace brick mottled		NS-GP-307 (0-3)
4					Fill- cinders, gravel, coal, limestone		NS-GP-307 (3-5)
					Fill-brown reworked clay, gravel, sand		
6	70	0			Fill- coal		
8		0	2		Fill- slag	Wet at 8 feet	
					Fill-dark grey reworked clay, cinders moist stiff		
10	70	0	3.5		CL (Lean Clay)-light brown grey silty clay moist stiff mottled		
12							
14		0	3				
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Boring: NS-GP-309	
Boring Type: Soil Boring	
Project No.: 17303	
Drill Date: 12/17/2018 12:00:00 AM	LoggedBy: Meghan Stahl
Total Depth (ft): 5	Water Table Depth (ft):
Drilling Contr: Earth Solutions	Driller: Jorge, Daine
Drill Rig: 6620 DT	Hammer: Direct Push
Location: North Section - Oil/Fuel/Haz Storage Area	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0					Fill- limestone		NS-GP-309 (0-1)
					Fill- limestone, slag, silt		
		0.1					NS-GP-309 (1-3)
2	80				CL (Lean Clay)-light brown clay trace sand and silt dry hard		
		0	4.5				
4							
6							
8							
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Drill Date: 12/18/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Boring: NS-GP-310
Total Depth (ft): 15	Water Table Depth (ft):	Boring Type: Soil Boring
Drilling Contr: Earth Solutions	Driller: Jorge Luna	Project No.: 17303
Drill Rig: 6620 DT	Hammer: Direct Push	Location: North Section - Oil Water Separator

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
2	100	0	4.5		Fill-brown grey reworked clay, limestone gravel, coal dry hard mottled		NS-GP-310 (0-0.5) NS-GP-310 (0-0.5) Dup NS-GP-310 (0-3)
4		0.3	3.5				
6	90	0.2	3.5		Fill-grey reworked clay, gravel dry stiff		
8		0.4	3.5				
10	100	0	4.5		CL (Lean Clay)-grey silty clay, medium plasticity moist stiff		
12							
14		0	4		ML (Silt)-grey clayey silt, non plastic moist stiff		
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: NS-GP-311
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 12/18/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: North Section - Oil Water Separator
Total Depth (ft): 15	Water Table Depth (ft):	
Drilling Contr: Earth Solutions	Driller: Jorge Luna	
Drill Rig: 6620 DT	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0	70	0	2		Fill-brown sand, silt, gravel, limestone, coal, glass		NS-GP-311 (0-3)
2		0	2		Fill-brown grey reworked sand, silt, large gravel, coal		
4					Fill- sand, silt, clay		
6	70	0	2		Fill-grey brown reworked silty clay, non plastic		
8		0	3.5		CL (Lean Clay)-grey silty clay trace gravel, medium plasticity		
10	100	0	4.5		ML (Silt)-grey clayey silt small seams of coarse sand and gravel, low plasticity		
12		0	4.5		CH (Fat Clay)-grey clay, uniform, high plasticity		
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Drill Date: 12/18/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Boring: NS-GP-312
Total Depth (ft): 10	Water Table Depth (ft):	Boring Type: Soil Boring
Drilling Contr: Earth Solutions	Driller: Jorge Luna	Project No.: 17303
Drill Rig: 6620 DT	Hammer: Direct Push	Location: North Section - Locomotive House

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
2	70	0			Fill- asphalt, limestone sand and gravel, coal, cinders		
4		0	3.5		Fill-light brown grey sand, clay, coal, cinders, slag moist stiff Fill-light brown grey reworked clay trace small gravel mottled		NS-GP-312 (3-5)
6	70	0	1		CL (Lean Clay)-grey silty clay moist soft		
8		0	3.5		ML (Silt)-grey clayey silt trace large gravel moist stiff		
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Boring: NS-GP-313/MW-13	
Boring Type: Soil Boring/Perm Well	
Project No.: 17303	
Drill Date: 12/18/2018 12:00:00 AM	LoggedBy: Meghan Stahl
Total Depth (ft): 20	Water Table Depth (ft):
Drilling Contr: Earth Solutions	Driller: Jorge Luna
Drill Rig: 6620 DT	Hammer: Direct Push
Location: North Section - Oil/Fuel/Haz Storage Area	

Scale	Rec %	PID (ppm	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
2	70	0			Fill- asphalt, limestone sand and gravel		
		0	2.5		Fill-black slag, coal		NS-GP-313 (3-5)
4					Fill-light brown reworked clay, sand and gravel moist stiff mottled		
6	90	0	3				
8		0	3		Fill-grey red sand and gravel moist stiff		
10		0	3.5		CH (Fat Clay)-grey clay, uniform, high plasticity moist hard		
12	90						
14		0	4.5		ML (Silt)-grey clayey silt moist hard		
16		0	4				
18	100	0	4		CL (Lean Clay)-grey silty clay, low plasticity moist hard		
20							
22							
24							

Installed Permanent Well

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: SS-GP-302
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 12/17/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: South Section - Ash Dewatering Area
Total Depth (ft): 10	Water Table Depth (ft):	
Drilling Contr: Earth Solutions	Driller: Jorge, Daine	
Drill Rig: 6620 DT	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
	60	1			Fill- asphalt, sand, limestone sand and gravel, brick, trace clay		
2					Fill-dark brown slag, cinders, sand, silt		SS-GP-302 (0.5-3)
		0.8	3.5		Fill-light brown reworked clay trace gravel moist very stiff mottled		
4							SS-GP-302 (4-6)
6	100	0.8	4		CH (Fat Clay)-brown clay trace gravel moist very stiff		
8		0.8	4		CH (Fat Clay)-grey brown clay trace gravel, embedded pyrite moist very stiff		
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Boring: SS-GP-304	
Boring Type: Soil Boring	
Project No.: 17303	
Drill Date: 12/17/2018 12:00:00 AM	LoggedBy: Meghan Stahl
Total Depth (ft): 3	Water Table Depth (ft):
Drilling Contr: Earth Solutions	Driller: Jorge, Daine
Drill Rig: 6620 DT	Hammer: Direct Push
Location: South Section - Chemical Fill Station	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0					Fill- concrete		
		0			Fill- limestone sand and gravel, cinders, silt		
2	100				Fill-light grey brown silty clay trace gravel moist stiff		SS-GP-304 (0.5-3)
		0	2		Fill- reworked clay, coal, cinders, slag, sand		
4							
6							
8							
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Boring: SS-GP-306	
Boring Type: Soil Boring	
Project No.: 17303	
Drill Date: 12/17/2018 12:00:00 AM	LoggedBy: Meghan Stahl
Total Depth (ft): 2	Water Table Depth (ft):
Drilling Contr: Earth Solutions	Driller: Jorge, Daine
Drill Rig: 6620 DT	Hammer: Direct Push
Location: South Section - Debris Pile	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0	100	0.1	3.5		Fill- coal, cinders, slag		SS-GP-306 (0-2)
2					Fill-grey brown reworked clay, gravel moist stiff		
4							
6							
8							
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: SS-GP-307
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 12/17/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: South Section - Debris Pile
Total Depth (ft): 10	Water Table Depth (ft):	
Drilling Contr: Earth Solutions	Driller: Jorge, Daine	
Drill Rig: 6620 DT	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0					Fill- silt, sand, clay, cinders, coal, gravel		SS-GP-307 (0-0.5)
2	100	0.1	4.5		Fill-brown reworked clay, sand, silt, medium plasticity moist stiff mottled		SS-GP-307 (0-3)
4		0.1	3				
6	100	0	3.5		CH (Fat Clay)-brown grey clay trace gravel moist stiff		
8		0	3.5		CH (Fat Clay)-grey clay trace gravel, high plasticity moist stiff		SS-GP-307 (7-9)
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Drill Date: 12/17/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: South Section - Debris Pile
Total Depth (ft): 2	Water Table Depth (ft):	
Drilling Contr: Earth Solutions	Driller: Jorge, Daine	
Drill Rig: 6620 DT	Hammer: Direct Push	

Boring: SS-GP-308
Boring Type: Soil Boring
Project No.: 17303

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0	100	0.2	4.5		Fill- clay, silt, sand, gravel		SS-GP-308 (0-2)
					Fill- slag, coal, sand		
2					CH (Fat Clay)-brown clay moist stiff mottled		
4							
6							
8							
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: SS-GP-311
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 12/17/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: South Section - Generating Plant
Total Depth (ft): 1	Water Table Depth (ft):	
Drilling Contr: Earth Solutions	Driller: Jorge, Daine	
Drill Rig: 6620 DT	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0	0	0.5			Fill- clay, loam, sand, silt, gravel, trace slag		SS-GP-311 (0-1)
2							
4							
6							
8							
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Drill Date: 12/17/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Boring: SS-GP-314
Total Depth (ft): 5	Water Table Depth (ft):	Boring Type: Soil Boring
Drilling Contr: Earth Solutions	Driller: Jorge, Daine	Project No.: 17303
Drill Rig: 6620 DT	Hammer: Direct Push	Location: South Section - Transmission Bldg/Reactor

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
		0.7	4.5		Fill-brown reworked clay, coal, limestone sand and gravel		SS-GP-314 (0-0.5)
2	100						SS-GP-314 (0-3)
					Fill-black coal, cinders moist very stiff		
		0.6	4.5		Fill-brown reworked clay trace limestone moist very stiff mottled		
4							
6							
8							
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Boring: SS-GP-315	
Boring Type: Soil Boring	
Project No.: 17303	
Drill Date: 12/17/2018 12:00:00 AM	LoggedBy: Meghan Stahl
Total Depth (ft): 5	Water Table Depth (ft):
Drilling Contr: Earth Solutions	Driller: Jorge, Daine
Drill Rig: 6620 DT	Hammer: Direct Push
Location: South Section - Generating Plant	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0	50	0			Fill- asphalt, limestone	Refusal at 4 foot	SS-GP-315 (1-3)
2		0.5			Fill-black coal dust, sand, brick		
4							
6							
8							
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Boring: SS-GP-318	
Boring Type: Soil Boring	
Project No.: 17303	
Drill Date: 12/17/2018 12:00:00 AM	LoggedBy: Meghan Stahl
Total Depth (ft): 15	Water Table Depth (ft):
Drilling Contr: Earth Solutions	Driller: Jorge, Daine
Drill Rig: 6620 DT	Hammer: Direct Push
Location: South Section - Tractor Shed/Maintenance	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
					Fill- concrete		
		1.1			Fill- reworked clay, coal, cinders, slag, gravel, sand		
2	80				Fill- sand, limestone gravel and sand		SS-GP-318 (1-3)
		1.2	3.5		Fill-brown reworked clay moist stiff		
4							
					Fill- sand, gravel, limestone, clay, coal		
6		66.7					SS-GP-318 (5-8)
	90						
8					Fill- brick		
10							
		12.7	3		CH (Fat Clay)-grey clay trace gravel moist stiff		
12	50						
		2.3	3.5				
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: SS-GP-320
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 12/19/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: South Section - Generating Plant
Total Depth (ft): 10	Water Table Depth (ft):	
Drilling Contr: Earth Solutions	Driller: Sal, Jorgito	
Drill Rig: 7822 DT	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0					Fill- concrete		
		0	3		Fill-brown limestone sand and gravel, coal, silt, slag		SS-GP-320 (0.5-2)
2	90				CL (Lean Clay)-grey brown silty clay moist very stiff		
		0	4				
4							
		0	4.5		ML (Silt)-grey silty clay moist very stiff		
6	100						
		0	4.5				
8							
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: ES-GP-301
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 12/18/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: East Section - North Adjoining Property
Total Depth (ft): 5	Water Table Depth (ft):	
Drilling Contr: Earth Solutions	Driller: Jorge, Daine	
Drill Rig: 6620 DT	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
					Fill- limestone gravel and sand		
		0	4.5				ES-GP-301 (0-3)
2	100				Fill-grey reworked clay, coal, limestone gravel moist hard mottled		
		0	4.5				ES-GP-301 (3-5)
4							
6							
8							
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: ES-GP-302
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 12/18/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: East Section - Debris Pile
Total Depth (ft): 5	Water Table Depth (ft):	
Drilling Contr: Earth Solutions	Driller: Jorge, Daine	
Drill Rig: 6620 DT	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0							
2	80	0			Fill-light grey brown sand, silt, limestone, coal, gravel		ES-GP-302 (0-3)
4		0	3.5		ML (silt)-grey brown clayey silt, non plastic ML (silt)-grey clayey silt, non plastic moist stiff		ES-GP-302 (3-5)
6							
8							
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

		Boring: ES-GP-303
		Boring Type: Soil Boring
		Project No.: 17303
Drill Date: 12/18/2018 12:00:00 AM	LoggedBy: Meghan Stahl	Location: East Section - Debris Pile
Total Depth (ft): 5	Water Table Depth (ft):	
Drilling Contr: Earth Solutions	Driller: Jorge, Daine	
Drill Rig: 6620 DT	Hammer: Direct Push	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0	95	0	3.5		Fill-dark brown reworked clay, coal, limestone gravel moist stiff mottled		ES-GP-303 (0-1) ES-GP-303 (0-1) Dup
2		0	3		Fill-dark brown clayey sand, coal moist stiff		ES-GP-303 (3-5)
4							
6							
8							
10							
12							
14							
16							
18							
20							
22							
24							

Soil cuttings and bentonite chips

SOIL BORING LOG

Former Crawford Station
3501 S. Pulaski Rd.
Chicago, Illinois

Boring: ES-GP-305/MW-14	
Boring Type: Soil Boring/Perm Well	
Project No.: 17303	
Drill Date: 12/18/2018 12:00:00 AM	LoggedBy: Meghan Stahl
Total Depth (ft): 20	Water Table Depth (ft): 10
Drilling Contr: Earth Solutions	Driller: Jorge, Daine
Drill Rig: 6620 DT	Hammer: Direct Push
Location: East Section - Debris Pile	

Scale	Rec %	PID (ppm)	PP (tsf)	Symbol	Lithology Description	Observations	Soil Sample
0					Fill-brown sand, silt, clay, loam, coal moist stiff		ES-GP-305 (0-0.5)
2	100	0	3.5		Fill-brown reworked clay, coal, trace sand moist stiff mottled		ES-GP-305 (0-3)
4		0	2.5		ML (silt)-grey brown clayey silt trace sand and gravels, non cohesive moist stiff	Wet 6-7.5 foot / Dry 7.5-10 / wet 10-20	
6	80	0	4				
8		0	4.5				ES-GP-305 (7-9)
10	100	0	4.5				
12					ML (silt)-grey brown clayey silt, thinly laminiated moist stiff		
14		0	2.5				
16	100	0	2				
18		0	1.5				
20							
22							
24							

Installed Permanent Well

ENVIRONMENTAL CONSULTATION & REMEDIATION

ALL APPROPRIATE INQUIRY
USER QUESTIONNAIRE

Site Name: Midwest Generation - Crawford Station
Property Address: 3501 S Pulaski
City: Chicago State: IL 60623-4926
Property Description: for approximate reference see SDI Land Survey Sheet 2 of 3 attached
Approximate Land Area: 65 acres Number of Building(s): 15
Age of Building(s): 86
Area of Building(s): 300,000
Permanent Index Number(s) (PIN): 16-35-301-002, 16-35-301-003, 16-35-301-001, 16-35-300-001, 16-35-300-019, 16-35-117-002, 16-35-118-001
Name of Current Owner: Midwest Generation Property Purchase Date: 1999
Known previous owners, periods of ownership, and property usage:
Commonwealth Edison to 1999

1. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law? ☐ Yes ☒ No If yes, please provide this information:

2. Are you aware of any activity or use limitations, such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law? ☒ Yes ☐ No If yes, please describe:
Facility has operating permits for Units 7 and 8 permitting it to operate as a coal power plant

3. Do you have any specialized knowledge or experience related to the property or nearby properties? (For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?) ☐ Yes ☒ No If yes, please provide this information:

4. Does the purchase price being paid for this property reasonably reflect the fair market value of the property?
☐ Yes ☐ No If yes, please describe: N/A Since I'm not familiar with price.
If there is a significant difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property? ☐ Yes ☐ No
If yes, please describe: N/A

5. Concerning commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases:

a) Do you know the past uses of the property? ☒ Yes ☐ No
If yes, please describe: Power production since 1925.

b) Are you aware of any fill materials that may have been brought onto this site either currently or in the past? ☐ Yes ☒ No
If yes, please describe: Crawford ash apparantly was used as fill on NW-side of property (near Pit 18) as shown on attached 1975 drawing - "Site Plan - Runoff Areas" Fig 4.1 · F-1

c) Are you aware of any underground or above ground storage tanks associated with this property, either current or past? ☒ Yes ☐ No
If yes, please describe: UST Diesel tank. All AST's described on Table 2 from SPCC Plan. See Attached

d) Do you know of specific chemicals that are present or once were present at the property? ☒ Yes ☐ No If yes, please describe: See Tier II report for listing.

e) Do you know of spills or other chemical releases that have taken place at the property? ☐ Yes ☒ No
If yes, please describe:

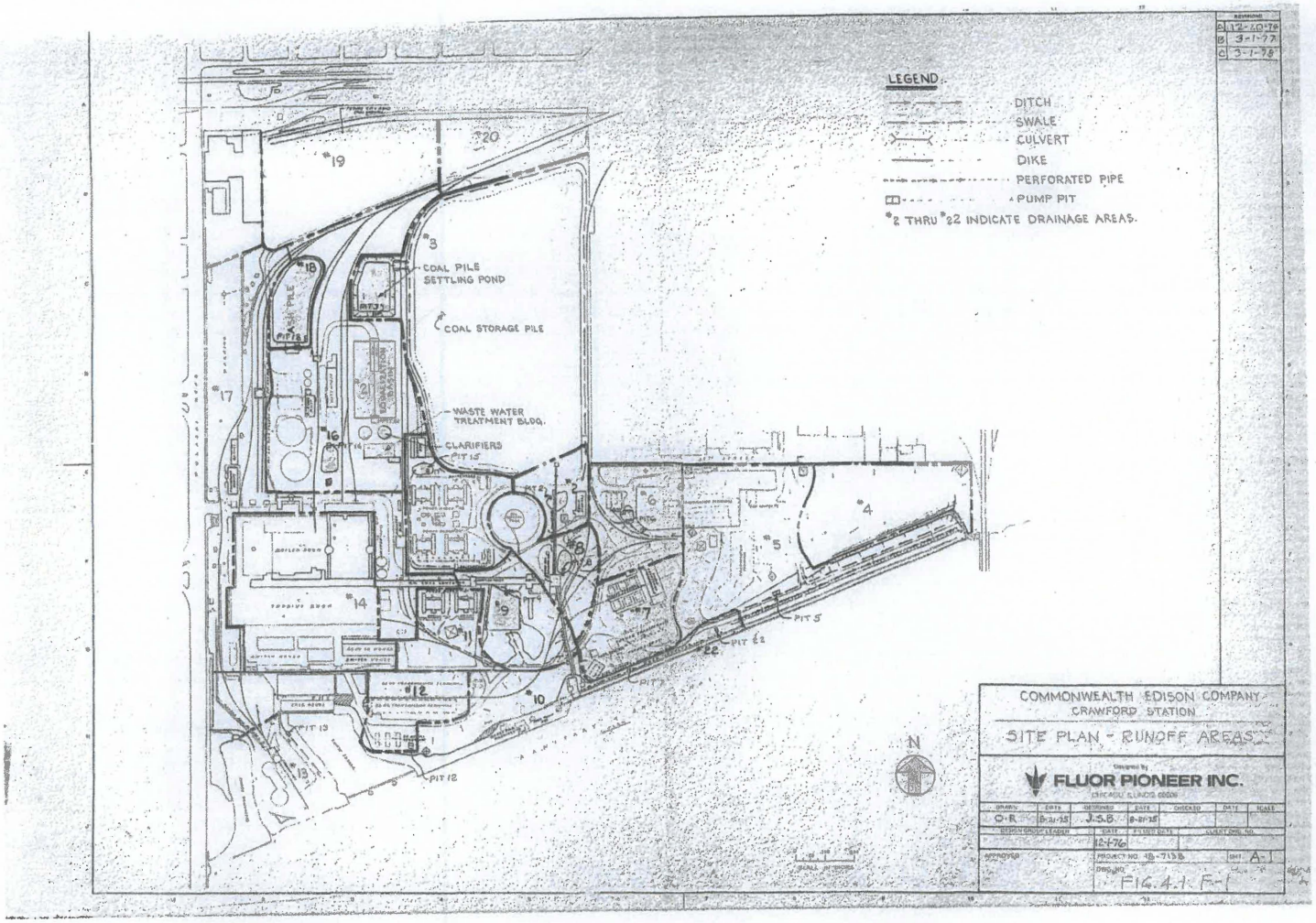
f) Do you know of any environmental cleanups that have taken place at the property? ☐ Yes ☒ No
If yes, please describe:

g) Do you know of any other information that would be helpful to the environmental professional? (i.e., prior Phase I or other environmental reports, notice of violations, etc.) ☒ Yes ☐ No
If yes, please describe: See Site Plan - Runoff Areas Fig 4.1 F-1 B describing run off areas 1975. See Tier II report for 2010. See SDI Consultants Surveys from 1998. All Attached.

6. Based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination on the property? ☐ Yes ☒ No
If yes, please describe: _____

The information provided in this Questionnaire is true and accurate to the best information, knowledge and belief of the undersigned, and no information has been omitted which would otherwise make any answer misleading.

Name (Please Print Neatly): Donald A Isaacs
Your relationship to site (i.e., owner, seller's rep, etc.): Environmental Specialist
Signature: Donald A Isaacs
Date: 4/22/2011
Company/Affiliation: Midwest Generation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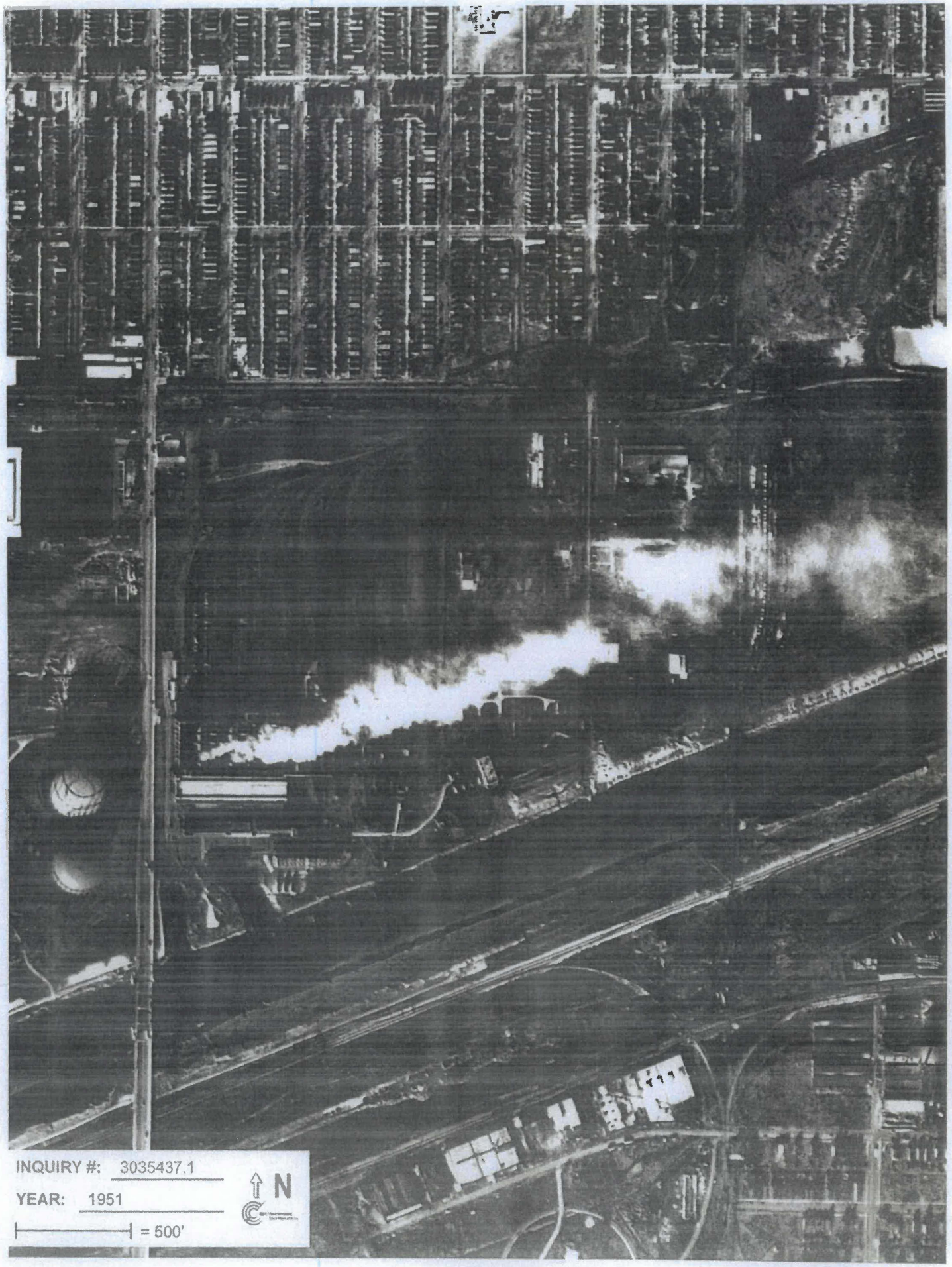
DITCH
SWALE
CULVERT
DIKE
PERFORATED PIPE
PUMP PIT
*2 THRU *22 INDICATE DRAINAGE AREAS.
COAL PILE SETTLING POND
COAL STORAGE PILE
WASTE WATER TREATMENT BLDG.
CLARIFIERS
PIT 5
PIT 12
N
COMMONWEALTH EDISON COMPANY
CRAWFORD STATION
SITE PLAN - RUNOFF AREAS
FLUOR PIONEER INC.
FIG. 4.1 F-1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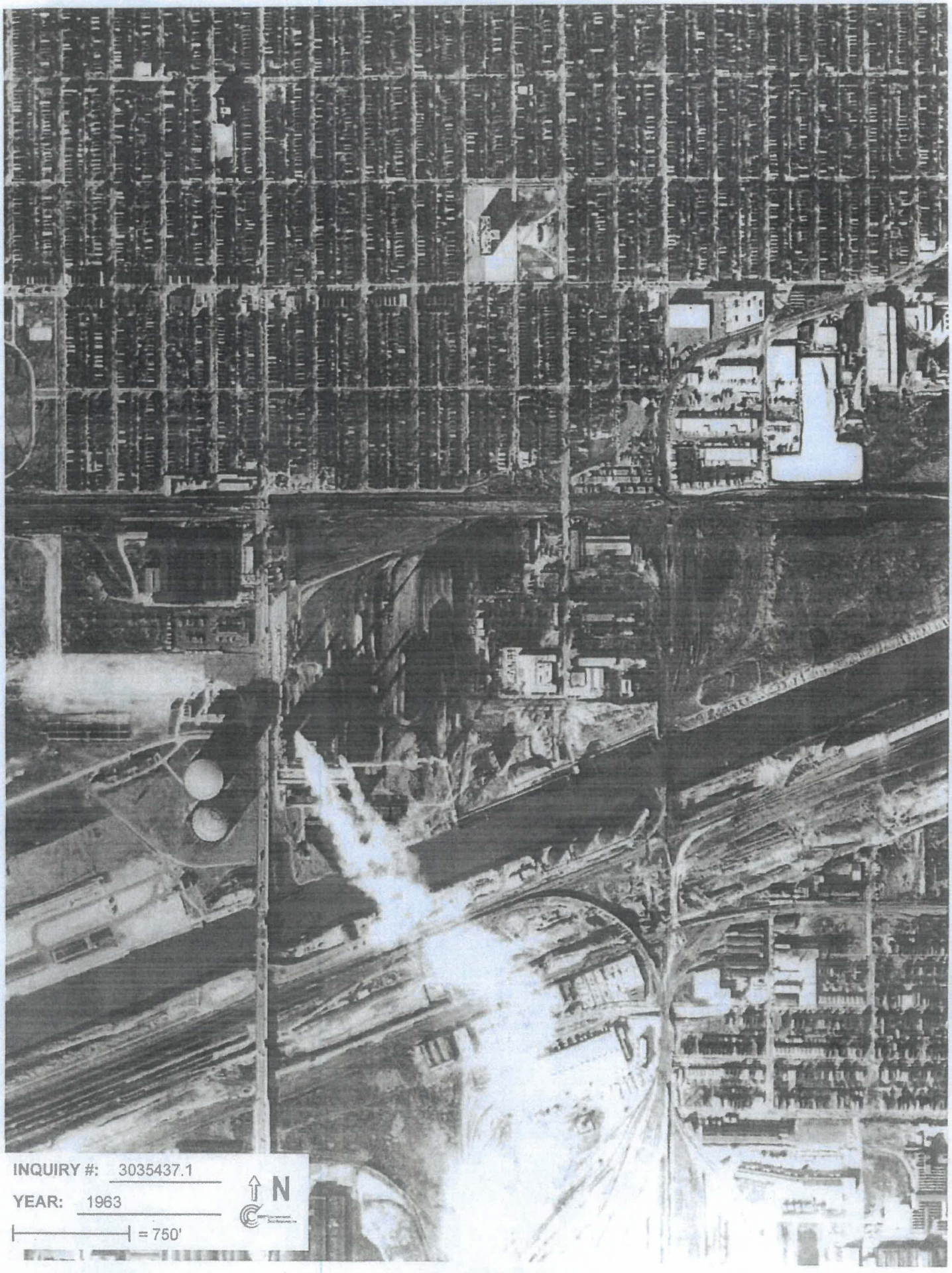
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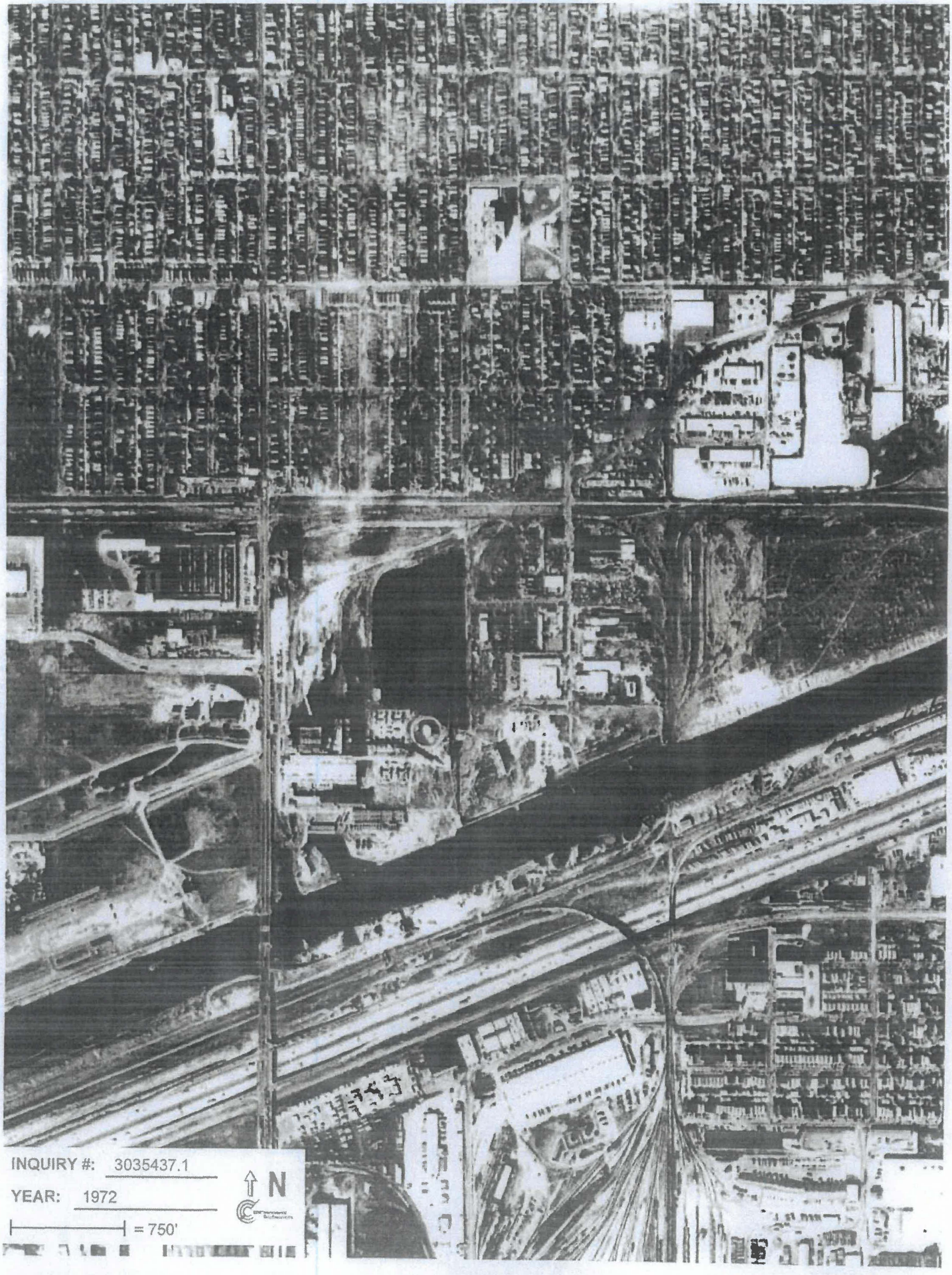
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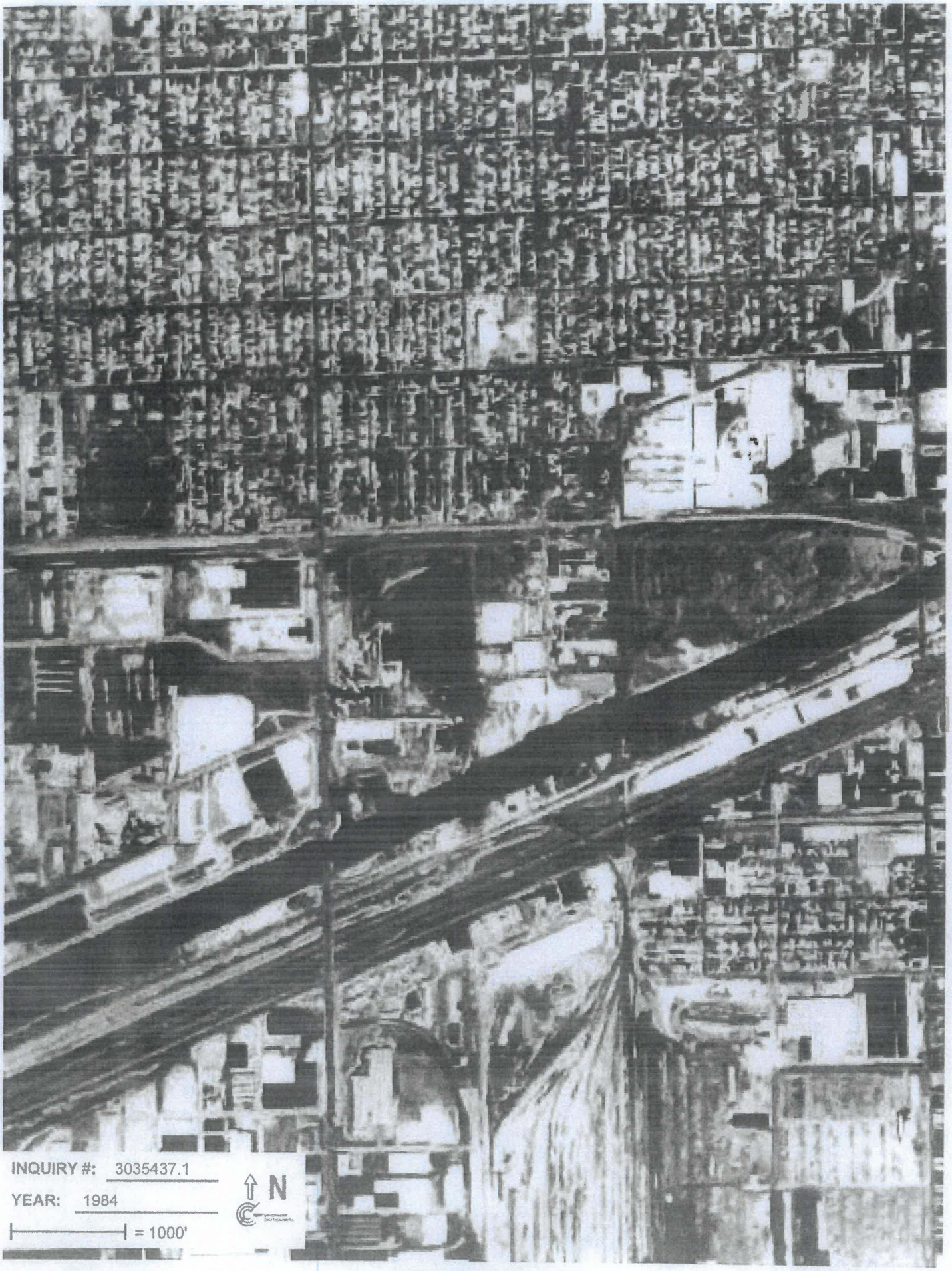
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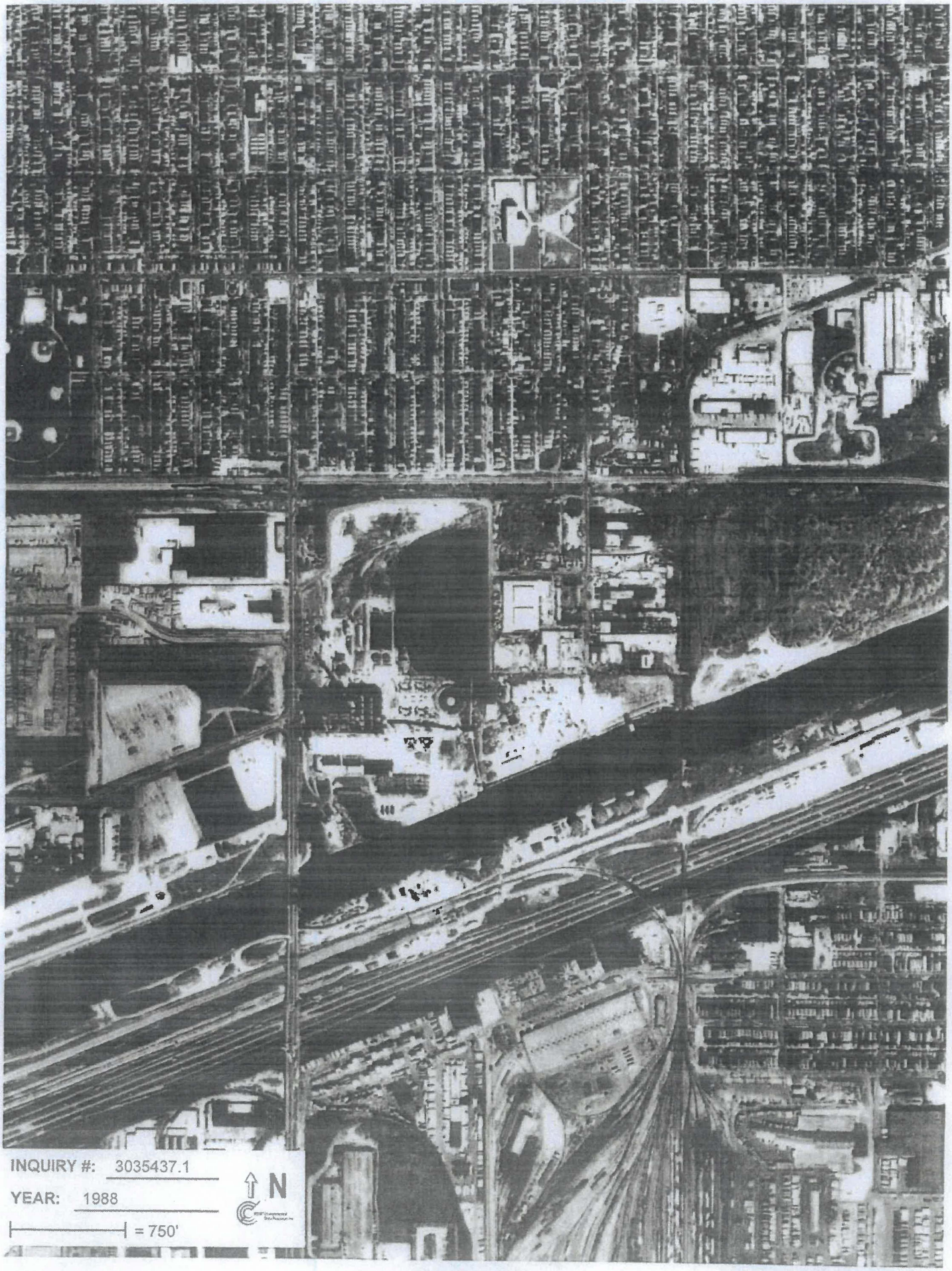
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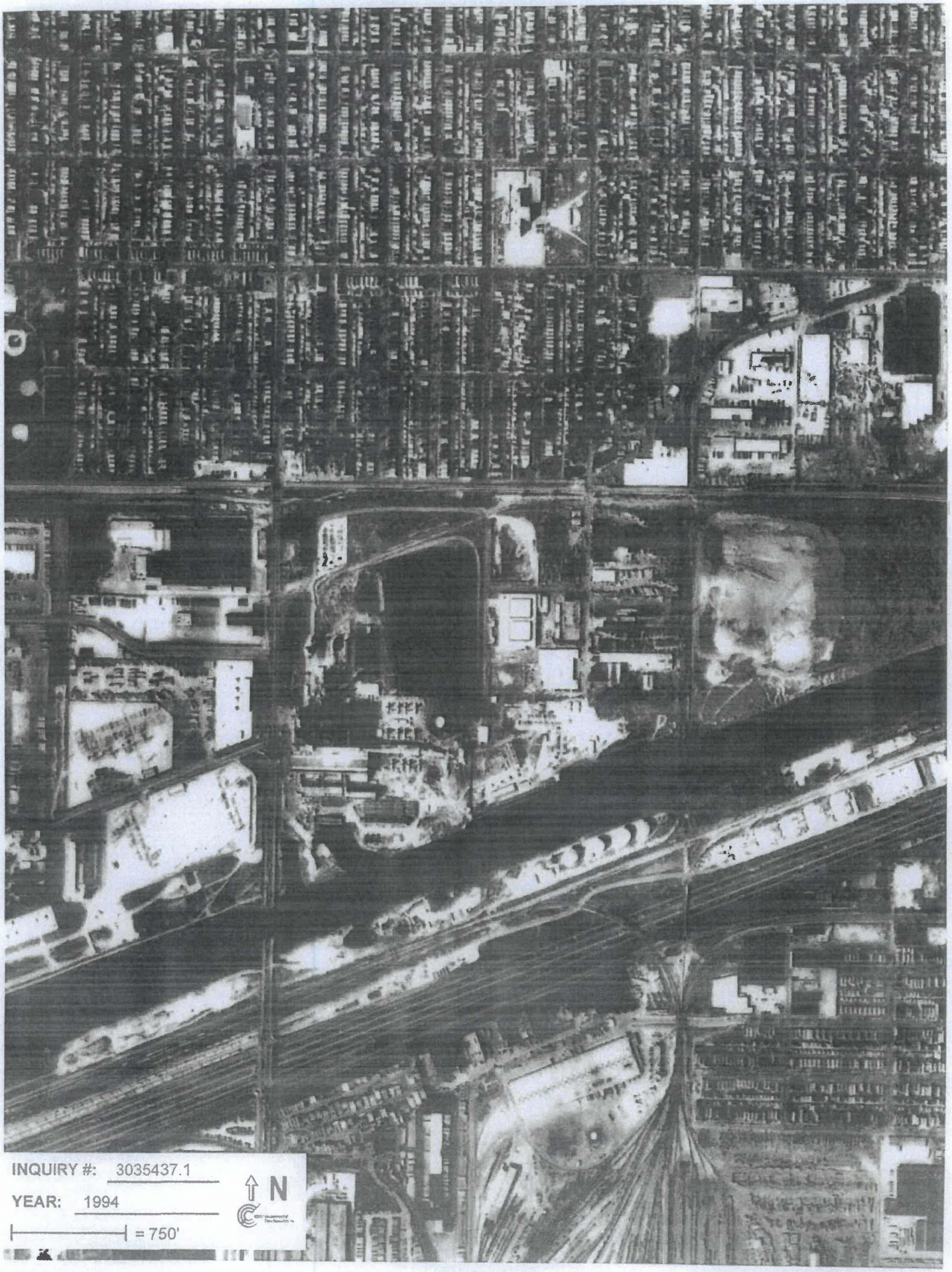
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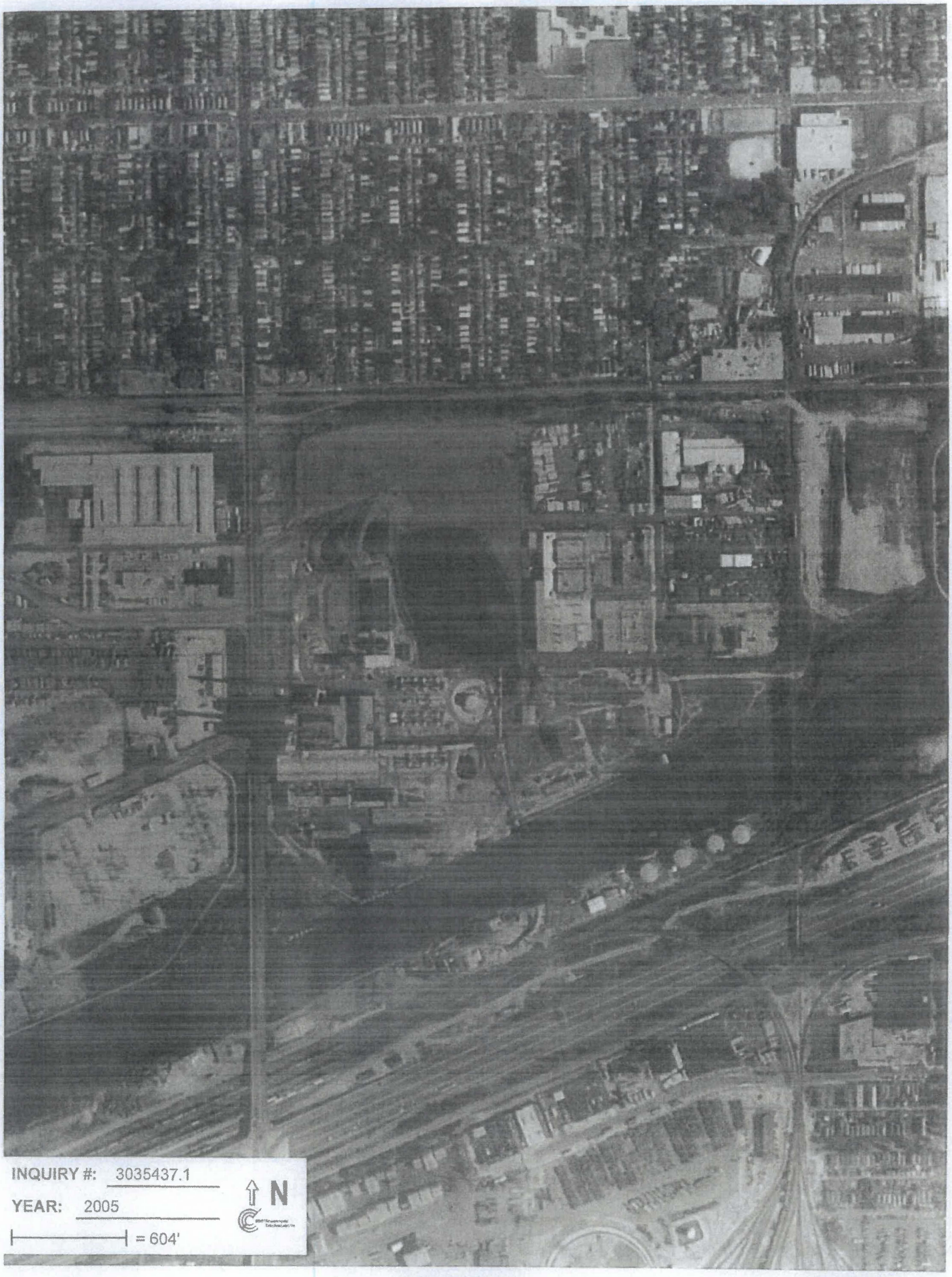
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YEAR: 2006
= 604'
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ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/785-0561

June 11, 2012

CERTIFIED MAIL # 7010 2780 0002 1163 7247
RETURN RECEIPT REQUESTED

Mr. Basil G. Constantelos: Managing Director, Environmental Services
Midwest Generation EME, LLC
2535 Remington Blvd
Suite A
Bolingbrook, IL 60440

Re: Violation Notice: Midwest Generation, LLC, Crawford Generating Station
Identification No.: 6280
Violation Notice No.: W-2012-00055

Dear Mr. Constantelos:

This constitutes a Violation Notice pursuant to Section 31(a)(1) of the Illinois Environmental Protection Act ("Act"), 415 ILCS 5/31(a)(1), and is based upon a review of available information and an investigation by representatives of the Illinois Environmental Protection Agency ("Illinois EPA").

The Illinois EPA hereby provides notice of alleged violations of environmental laws, regulations, or permits as set forth in Attachment A to this notice. Attachment A includes an explanation of the activities that the Illinois EPA believes may resolve the specified alleged violations. Due to the nature and seriousness of the alleged violations, please be advised that resolution of the violations may also require the involvement of a prosecutorial authority for purposes that may include, among others, the imposition of statutory penalties.

A written response, which may include a request for a meeting with representatives of the Illinois EPA, must be submitted via certified mail to the Illinois EPA within 45 days of receipt of this letter. If a meeting is requested, it shall be held within 60 days of receipt of this notice. The response must include information in rebuttal, explanation, or justification of each alleged violation and a statement indicating whether or not the facility wishes to enter into a Compliance Commitment Agreement ("CCA") pursuant to Section 31(a) of the Act. If the facility wishes to enter into a CCA, the written response must also include proposed terms for the CCA that includes dates for achieving each commitment and may include a statement that compliance has been achieved for some or all of the alleged violations. The proposed terms of the CCA should contain sufficient detail and must include steps to be taken to achieve compliance and the necessary dates by which compliance will be achieved.

4302 N. Main St., Rockford, IL 61103 (815)987-7760
595 S. State, Elgin, IL 60123 (847)608-3131
2125 S. First St., Champaign, IL 61820 (217)278-5800
2009 Mall St., Collinsville, IL 62234 (618)346-5120
9511 Harrison St., Des Plaines, IL 60016 (847)294-4000
5407 N. University St., Arbor 113, Peoria, IL 61614 (309)693-5462
2309 W. Main St., Suite 116, Marion, IL 62959 (618)993-7200
100 W. Randolph, Suite 11-300, Chicago, IL 60601 (312)814-6026

ID: 6280 Midwest Generation, LLC, Crawford Generating Station
VN W-2012-00055

The Illinois EPA will review the proposed terms for a CCA provided by the facility and, within 30 days of receipt, will respond with either a proposed CCA or a notice that no CCA will be issued by the Illinois EPA. If the Illinois EPA sends a proposed CCA, the facility must respond in writing by either agreeing to and signing the proposed CCA or by notifying the Illinois EPA that the facility rejects the terms of the proposed CCA.

If a timely written response to this Violation Notice is not provided, it shall be considered a waiver of the opportunity to respond and meet, and the Illinois EPA may proceed with referral to a prosecutorial authority.

Written communications should be directed to:

Illinois EPA – Division of Public Water Supplies
Attn: Andrea Rhodes, CAS #19
P.O. BOX 19276
Springfield, IL 62794-9276

All communications must include reference to this Violation Notice number, W-2012-00055.

Questions regarding this Violation Notice should be directed to Andrea Rhodes at 217/785-0561.

Sincerely,

Michael Crumly
Manager, Compliance Assurance Section
Division of Public Water Supplies
Bureau of Water

Attachments

cc: Maria Race

CASE ID: 2012-006

ATTACHMENT A

MIDWEST GENERATION, LLC, CRAWFORD GENERATING STATION, ID:6280
VIOLATION NOTICE NO. W-2012-00055:

A review of information available to the Illinois EPA indicates the following on-going violations of statutes, regulations, or permits. Included with each type of violation is an explanation of the activities that the Illinois EPA believes may resolve the violation.

Groundwater Quality

No person shall cause, threaten or allow the release of any contaminant to a resource groundwater such that: treatment or additional treatment is necessary to continue an existing use or to assure a potential use of such groundwater; or an existing or potential use of such groundwater is precluded. No person shall cause, threaten or allow the release of any contaminant to groundwater so as to cause a groundwater quality standard to be exceeded. Midwest Generation, LLC must take actions to mitigate existing contamination and prevent the continuing release of contaminants into the environment.

Violation Description

Operations at ash impoundments have resulted in violations of the Groundwater Quality Standards at monitoring well MW-1 for the following constituents:

Parameter	Sample Value	GW Standard	Collection Date
pH	6.20 su	6.5-9.0 su	12/9/2011
Iron	6.3 mg/l	5.0 mg/l	3/19/2012
Iron	5.1 mg/l	5.0 mg/l	6/13/2011
Iron	5.8 mg/l	5.0 mg/l	3/21/2011
Manganese	2.8 mg/l	0.15 mg/l	3/19/2012
Manganese	1.5 mg/l	0.15 mg/l	12/9/2011
Manganese	1.9 mg/l	0.15 mg/l	9/16/2011
Manganese	2.2 mg/l	0.15 mg/l	6/13/2011
Manganese	2.7 mg/l	0.15 mg/l	3/21/2011
Manganese	1.1 mg/l	0.15 mg/l	12/8/2010
Sulfate	810 mg/l	400 mg/l	3/19/2012
Sulfate	1,000 mg/l	400 mg/l	12/9/2011
Sulfate	750 mg/l	400 mg/l	9/16/2011
Sulfate	670 mg/l	400 mg/l	6/13/2011
Sulfate	800 mg/l	400 mg/l	3/21/2011
Sulfate	1,600 mg/l	400 mg/l	12/8/2010
Chloride	8,700 mg/l	200 mg/l	3/19/2012
Chloride	1,700 mg/l	200 mg/l	12/9/2011
Chloride	3,200 mg/l	200 mg/l	9/16/2011

ATTACHMENT A

MIDWEST GENERATION, LLC, CRAWFORD GENERATING STATION, ID:6280
VIOLATION NOTICE NO. W-2012-00055:

Violation Description

MW-1 continued

Parameter	Sample Value	GW Standard	Collection Date
Chloride	9,000 mg/l	200 mg/l	6/13/2011
Chloride	9,100 mg/l	200 mg/l	3/21/2011
TDS	15,000 mg/l	1,200 mg/l	3/19/2012
TDS	5,900 mg/l	1,200 mg/l	12/9/2011
TDS	11,000 mg/l	1,200 mg/l	9/16/2011
TDS	17,000 mg/l	1,200 mg/l	6/13/2011
TDS	18,000 mg/l	1,200 mg/l	3/21/2011
TDS	6,800 mg/l	1,200 mg/l	12/8/2010

Rule/Reg. Section 12 of the Act, 415 ILCS 5/12, 35 Ill. Adm. Code 620.115, 620.301, 620.401, 620.405, and 620.410.

Violation Description

Operations at ash impoundments have resulted in violations of the Groundwater Quality Standards at monitoring well MW-2 for the following constituents:

Parameter	Sample Value	GW Standard	Collection Date
pH	5.95 su	6.5-9.0 su	12/9/2011
Antimony	0.018 mg/l	0.006 mg/l	3/19/2012
Manganese	0.31 mg/l	0.15 mg/l	3/19/2012
Manganese	0.42 mg/l	0.15 mg/l	12/9/2011
Manganese	0.65 mg/l	0.15 mg/l	9/16/2011
Manganese	1.3 mg/l	0.15 mg/l	6/13/2011
Manganese	1.2 mg/l	0.15 mg/l	3/21/2011
Manganese	1.4 mg/l	0.15 mg/l	12/8/2010
Sulfate	1,200 mg/l	400 mg/l	3/19/2012
Sulfate	1,900 mg/l	400 mg/l	12/9/2011
Sulfate	1,100 mg/l	400 mg/l	9/16/2011
Sulfate	1,000 mg/l	400 mg/l	6/13/2011
Sulfate	1,400 mg/l	400 mg/l	3/21/2011
Sulfate	950 mg/l	400 mg/l	12/8/2010
Chloride	2,200 mg/l	200 mg/l	3/19/2012
Chloride	2,200 mg/l	200 mg/l	12/9/2011
Chloride	1,500 mg/l	200 mg/l	9/16/2011

ATTACHMENT A

MIDWEST GENERATION, LLC, CRAWFORD GENERATING STATION, ID:6280
VIOLATION NOTICE NO. W-2012-00055:

Violation
Description
MW-2 continued

Parameter	Sample Value	GW Standard	Collection Date
Chloride	2,400 mg/l	200 mg/l	6/13/2011
Chloride	2,000 mg/l	200 mg/l	3/21/2011
Chloride	610 mg/l	200 mg/l	12/8/2010
TDS	7,200 mg/l	1,200 mg/l	3/19/2012
TDS	7,200 mg/l	1,200 mg/l	12/9/2011
TDS	5,600 mg/l	1,200 mg/l	9/16/2011
TDS	7,300 mg/l	1,200 mg/l	6/13/2011
TDS	6,700 mg/l	1,200 mg/l	3/21/2011
TDS	2,700 mg/l	1,200 mg/l	12/8/2010

Rule/Reg. Section 12 of the Act, 415 ILCS 5/12, 35 Ill. Adm. Code 620.115, 620.301, 620.401, 620.405, and 620.410.

Water System Name Crawford Generating Station

W-2012-00055

DW Distribution List and/or bccs

X	VN Central File (Bev)		02 File		Marcia Willhite		Geoff Andres
	Mike Crumly		Dianne Potter		Jeri Long		Andrea Rhodes
	Paul Connelly		Allison Ristau		Mary Reed		Jewel Brant
	Sharon Dowson						
	Dave McMillan	X	Rick Cobb		Jerry Kuhn		
	Springfield FOS		Champaign FOS		Collinsville FOS		Elgin FOS
	Rockford FOS		Marion FOS				
X	Connie Tonsor		DLC File		Chuck Gunnarson	X	Chad Kruse
	Jason Boltz		John Kim		Joey Logan-Wilkey	X	Tom Poulter

Meeting/Response Due Date

Agency Response Due:		Meeting Due:	

Approvals (when Applicable)

Dave McMillan Approval On	Jerry Kuhn Approval On
Marcia Willhite Approval On	John Kim Approval On

cc: Addresses (if not already provided on merge)

SPECIAL INSTRUCTIONS:

Correspondence Route Slip

Initiated By GW	CAS Contact Andrea Rhodes
Mail Out DUE Date	Today's Date 6-4-12
Peer Review Completed On 6-4-12	Peer Reviewer Mary Reed
Supervisor Review Initials SRH 6/11/12	

NIJMAN · FRANZETTI LLP

10 South LaSalle Street · Suite 3600 · Chicago, Illinois 60603
312.251.5250 · fax 312.251.4610 · www.nijmanfranzetti.com

Jennifer T. Nijman
jn@nijmanfranzetti.com

Susan M. Franzetti
sf@nijmanfranzetti.com

July 27, 2012

VIA OVERNIGHT MAIL

Illinois EPA
Division of Public Water Supplies
Attn: Andrea Rhodes, CAS #19
P.O. Box 19276
Springfield, IL 62794-9276

Re: Violation Notice: Midwest Generation, LLC, Crawford Generating Station
Identification No.: 6280
Violation Notice No.: W-2012-00055

Dear Ms. Rhodes:

In response to the above-referenced June 11, 2012 Violation Notice ("VN"), received on June 13, 2012, this written response is timely submitted on behalf of the Midwest Generation, LLC (MWG), Crawford Generating Station (Crawford). MWG also requests a meeting with the Illinois Environmental Protection Agency ("Illinois EPA" or the "Agency") to discuss the VN and information provided in this response.

MWG regrets that the Illinois EPA decided to issue the VN because MWG has tried to work cooperatively with the Agency concerning the hydrogeologic assessment of the storm water basin, "Basin 16," at Crawford, which the VN inaccurately refers to as an "ash impoundment." MWG cooperated with the Agency even though it had significant concerns about and objections to how the Agency has proceeded in this matter.[1] Nevertheless, MWG complied with the Agency's request that it conduct a hydrogeologic assessment of the area around the basin and followed its requirements and comments for how the hydrogeologic assessment should be conducted, even though it was under no legal obligation to do so.[2] At no time however did MWG agree that the scope and nature of the hydrological assessment the

[1] See, *e.g.*, MWG (B. Constantelos) letter to Illinois EPA (A. Keller) dated July 15, 2009. MWG is also working cooperatively with the USEPA with regards to the Coal Combustion Residuals Proposed Rules, EPA-HQ-RCRA-2009-0640, and is trying to coordinate the responses and requirements of both Agencies. USEPA first issued the proposed rules on June 21, 2010, and requested additional comments and information on Oct. 12, 2011. The additional information comment period closed on November 14, 2011, and MWG is now waiting for the USEPA to issue the final rule.

[2] MWG continues to reserve its objection that the Illinois EPA did not have the legal authority to require the hydrological assessments of the ash pond under Sections 4 or 12 of the Illinois Environmental Protection Act (the "Act") or the Groundwater Quality Regulations, 35 Ill. Adm. Code Part 620.

Agency required it to perform would provide any basis for concluding that the small amount of ash that is temporarily accumulated in the runoff basin was impacting groundwater. The alleged violations in the VN are based solely on the results of the hydrogeologic assessment MWG performed at the Agency's request. The results of the hydrogeologic assessment do not show that runoff Basin 16 at the Crawford Station is impacting the groundwater and do not provide the necessary evidence to support the alleged violations contained in the VN.

Well prior to the issuance of this VN, MWG met with the Agency to discuss the groundwater monitoring results and to discuss cooperatively how to proceed based on those results, including what additional actions, if any, the Agency believed were necessary. The Agency told MWG that it had not yet decided how to proceed. The next development was the issuance of the VN. The VN itself provides no information concerning the basis for the Agency's apparent conclusion that Basin 16 is the cause of the alleged groundwater impacts, other than the conclusory statement that "[o]perations at ash impoundments [sic] have resulted in violations of the Groundwater Quality Standards." The VN also provides no information concerning the nature or type of corrective action which the Agency may deem acceptable to address the alleged violations. The Agency is not pursuing this matter in a way that allows MWG to prepare an effective response or a Compliance Commitment Agreement.

This letter provides a detailed response to each of the alleged violations in Attachment A of the VN to the extent possible given the lack of information provided in the VN. It also advances MWG's general objection to the legal sufficiency of the notice of the alleged violations contained in the VN. MWG maintains that the Illinois EPA cannot prove the alleged violations in the VN, and does not, by submitting this response, make any admissions of fact or law, or waive any of its defenses to those alleged violations.

I. General Objection to the Legal Sufficiency of the Violation Notice

The VN does not comply with the requirements of Section 31 of the Act. Section 31(a)(1)(B) of the Act requires the Illinois EPA to provide a detailed explanation of the violations alleged. 415 ILCS 5/31(a)(1)(B). Under the Act, MWG is entitled to notice of the specific violation charged against it and notice of the specific conduct constituting the violation.[3] The VN fails to provide adequate notice to MWG of either the alleged violations or the activities which the Agency believes are necessary to address them. The VN states that "[o]perations at ash impoundments have resulted in violations of the Groundwater Quality Standards...." (Violation Notice, Attachment A, page 1, 1st paragraph) No further description of the alleged "ash impoundments" is provided in the VN. Multiple ash impoundments do not exist at the Crawford Station. It is impossible to identify from the contents of the VN what operations or activities at the Crawford Station the Agency is claiming are the cause of the alleged violations.

[3] *Citizens Utilities Co., v. IPCB*, 9 Ill.App.3d 158, 164, 289 N.E.2d 642, 648 (2nd Dist., 1972) (a person is entitled to notice of the specific violation charged against it and notice of the specific conduct constituting the violation). *See also, City of Pekin v. Environmental Protection Agency*, 47 Ill.App.3d 187, 192, 361 N.E.2d 889, 893 (3rd Dist., 1977.

Absent an accurate or complete description of the activities or operations that the Agency is alleging caused the violations, it is also not possible to identify what action might be necessary to resolve them. Attachment A to the VN states: "Included with each type of violation is an explanation of the activities that the Illinois EPA believes may resolve the violation." However, no such explanation is provided in the VN. In sum, the VN fails to comply with the legal requirement that it include a detailed explanation of the violations alleged, does not inform MWG of the specific conduct constituting the alleged violations and provides no notice of what is necessary to resolve the alleged violations. The Section 31 process is based on fundamental principles of due process. MWG should not have to speculate about what activities it allegedly engaged in that caused the violations and how to address them to resolve the alleged violations. In the absence of this material, statutorily-required information, the Agency also has effectively denied MWG's statutory right to formulate an acceptable Compliance Commitment Agreement to submit for the Agency's approval.

The VN is also deficient regarding its explanation of what laws MWG has allegedly violated. The VN solely alleges that MWG violated "Section 12" of the Act. 415 ILCS 5/12. It does not provide any further specification as to which of the provisions of Section 12 MWG has allegedly violated. Sec. 12 of the Act has nine subsections, consecutively numbered (a) through (i). Each of these subsections describes a different and distinct water pollution prohibition. 415 ILCS 5/12(a)-(i). However, the VN issued to MWG does not identify which of the nine subsections the Agency is alleging MWG violated. Based on the contents of Section 12 of the Act, the Agency is taking the position that MWG violated each and every one of the provisions of Section 12. Based on the relevant facts, it is highly unlikely that this is the intent of the VN. Therefore, the VN's general reference to Section 12 of the Act, without any other explanation, is not a "detailed explanation of the violations." This is yet another example of how the VN fails to provide MWG with adequate notice as a matter of law and thereby violates MWG's due process rights.[4]

By failing to provide a detailed explanation of the violations and any explanation of the activities that the Illinois EPA believes may resolve the violations, , the Illinois EPA has effectively denied MWG the opportunity to properly and thoroughly respond to the alleged violations and to make an acceptable offer to resolve them. The VN's deficiencies conflict with the intent and purpose of Section 31 of the Act, which is to avoid unnecessary litigation. Therefore, MWG respectfully requests that Illinois EPA rescind the VN and suspend any further enforcement action unless and until it has taken the necessary actions to correct and cure the legal deficiencies in the notice of the alleged violations by following the statutory requirements under Section 31(a)(1)(B) of the Act. 415 ILCS 5/31(a)(1)(B).

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[4] *See, e.g., Grigoleit Co. v. IEPA*, PCB 89-184, slip op at p. 11 (November 29, 1990) (Failure to notify permit applicant of alleged violations and provide an opportunity to provide information in response was a violation of applicant's due process rights).

II. The Crawford Station is Closing and No Additional Enforcement is Necessary

For purposes of this response, MWG has assumed that Basin 16 is the subject of the VN. Basin 16 is the only structure operated at the Crawford Station which contains any ash. MWG maintains that the Crawford Station's Basin 16 is not releasing constituents into the groundwater. However, the Crawford Station, including the subject basin, will cease operations not later than December 31, 2012. Therefore, even assuming for argument's sake that ceasing operation of Basin 16 is necessary to resolve the alleged violations, which MWG denies, this will be done shortly. It effectively responds to and addresses the VN's allegation that "operations at ash impoundments" have resulted in the alleged violations.

Because Basin 16 will be shut down not later than December 31, 2012, this action dispenses with the need for any additional enforcement of the alleged violations. Certainly, once the basin is no longer operating, further enforcement action would only be punitive and unnecessary to securing compliance with the Act. 415 ILCS 5/*et seq*. The purpose of the enforcement provisions under Sections 31 and 42 of the Act is to provide a method to aid compliance with the Act.[5] Accordingly, as interpreted by the Illinois courts, once compliance is achieved, no further enforcement is necessary.[6] This is particularly true when compliance is achieved by a facility ceasing operations.[7] The Crawford Station will cease operations in less than two months. The purpose of the enforcement provisions in the Act, to achieve compliance, will be accomplished long before any additional enforcement could or should occur, making any additional enforcement both punitive and unnecessary.[8] Therefore, MWG respectfully requests that the Agency accept the proposed CCA described below which makes the impending shut down of the Crawford Basin 16 a binding commitment.

III. Response to Alleged Violations in the VN

Subject to and without waiving its objections to the legal sufficiency of the VN, and recognizing the alleged violations will very soon be moot, MWG nevertheless has attempted to discern the legal basis for the alleged violations and to prepare this response in defense to those allegations based on various assumptions. MWG reserves the right to supplement this response, including by submitting a separate response should the Agency provide the legally required notice under Section 31 of the Act.

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[5] *Southern Illinois Asphalt Co., Inc. v. IPCB*, 60 Ill.2d 204, 207, 326 N.E.2d 406, 408 (1975) (Court held assessed penalty inappropriate because defendant had ceased operating prior to filing of complaint).

[6] *Park Crematory, Inc. v. IPCB*, 264 Ill.App.3d 498, 506-507, 637 N.E.2d 520, 526 (1994) (Court found that Agency should not have continued enforcement of environmental violations because Respondent acted in good faith and was in full compliance before the matter was referred to the Illinois Attorney General).

[7] *See Southern Illinois Asphalt*, 60 Ill.2d. at 210. Moreover, the longer the time period between the cessation of the alleged violation and the commencement of the enforcement proceeding, *i.e.*, filing a complaint, the more likely such enforcement is considered only punitive and having no relation to securing compliance with the Act. *See, e.g.*, *City of East Moline v. IPCB*, 136 Ill.App.3d 687, 693-694, 483 N.E.2d 642, 64 (1985)

[8] *Park Crematory, Inc*, 264 Ill.App.3d at 507.

The VN alleges that "operations at ash impoundments" at MWG's Crawford Station have caused exceedances of the groundwater quality standards in 35 Ill. Admin. Code Part 620, thereby violating Section 12 of the Act and the underlying groundwater regulations in 35 Ill. Admin. Code Part 620. It is undisputable that the Agency has the burden to prove these alleged violations both in proceedings before the Illinois Pollution Control Board (the "Board") and in the courts.[9] However, the groundwater monitoring data on which the Agency primarily, if not solely relies, to assert these violations is not sufficient, legally or technically, to prove that any "ash impoundment" is the source of the alleged groundwater impacts. Further, if Basin 16 is the subject of the VN, its operation is not a likely source of the alleged groundwater impacts.

To support its defense to the alleged violations, MWG has set forth below a description of: (1) the condition and use of Basin 16 at Crawford; (2) the hydrogeologic assessment performed at the Crawford Station; (3) the site hydrogeology; and (4) why the analytical data from the monitoring wells does not establish that the subject basin is the source of the alleged exceedances of the groundwater standards.[10] In addition, for certain of the alleged exceedances, additional information not considered by the Agency shows that it is either more likely, or at least as likely, that the source of the alleged exceedance is something other than Basin 16. In either case, the Agency cannot sustain its burden to prove the alleged violations.

A. The Condition of Basin 16

As previously noted, the VN concerns the Crawford Station "ash impoundments." The term "ash impoundment" as applied to the Crawford Station is a misnomer. This basin is distinguishable from a typical ash pond both in the way it is constructed and how it has been used. It is more accurately described as a storm water basin which receives storm water runoff that contains small quantities of ash. It has never been considered or referred to by the Station as an "ash pond." It is neither used as a disposal site for ash nor is the flow it receives ash slurry that is typically discharged to an "ash pond." Instead, the pond receives storm water runoff from the hydrobin[11] area. The storm water runoff is mostly water with only a minor amount of ash.

Given its limited purpose to collect storm water runoff from the hydrobin area, unlike the typical ash pond, the Crawford pond is small and relatively shallow. It is approximately 70 feet long and 50 feet wide. Its sides slope down to the pump enclosure that services the basin, to a

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[9] Section 31(e) of the Act provides in relevant part: "In hearings before the Board under this Title, the burden shall be on the Agency...to show either that the respondent has caused or threatened to cause...water pollution or that the respondent has violated or threatens to violate any provision of this Act or any rule or regulation of the Board or permit or term or condition thereof." 415 ILCS 5/31(e); *Citizens Utilities v. IPCB*, 9 Ill. App. 3d 158, 164, 289 N.E.2d 642, 646 (1972) (the Agency has the burden of proof in enforcement actions).

[10] In preparing this response, MWG closely reviewed the groundwater monitoring reports previously submitted to the Agency for the monitoring wells which are identified in the VN. In the course of this review, some data transcription errors were found in the previously submitted data tables included in the groundwater monitoring reports. Copies of the corrected data tables are enclosed. The tables are annotated to identify the nature of the corrections made to the previously submitted reports. The most significant changes are that the values for monitoring wells MW-1 and MW-2 for the December 8, 2010 sampling event were inadvertently transposed.

[11] The hydrobin receives the ash slurry and separates the ash. The ash slurry is not discharged to the pond.

depth of only approximately 5 feet from grade level. The bottom is lined with asphalt. The pump enclosure is 22 feet long by 11 feet wide by 12 feet deep and is made of concrete. Pursuant to the terms of the Station's NPDES Permit, the basin and pump enclosure are part of the Station's stormwater management controls. They are managed pursuant to the terms of the Station's Storm Water Pollution Prevention Plan (SWPPP). The Agency has never indicated to MWG that its storm water management controls are in any way deficient or in violation of its NPDES Permit terms and conditions. MWG's operation of Basin 16 has been carried out in accordance with the terms and conditions of the NPDES Permit. Under Section 12(f) of the Act, compliance with the terms and conditions of any permit issued under Section 39(b) of the Act is deemed compliance with this subsection. Moreover, the ash particles that settle out from the runoff in the basin are periodically removed, which minimizes any potential for leakage of ash related constituents from the basin to groundwater. Only a small amount of ash temporarily accumulates in Basin 16. Whenever the ash is removed, MWG visually inspects the condition of the asphalt and the concrete in the adjacent pump pit. To date, MWG has not observed either cracks in the asphalt or concrete, or any separation in concrete seams within the pump pit, that would have caused the alleged groundwater exceedances. The nature of the Basin 16 operations and construction do not support the conclusion that the basin is a source of water pollution or a water pollution hazard.

The VN contains no facts concerning the condition of Basin 16 that would indicate it is allowing ash constituents to escape. For example, the Agency does not, and we submit that it could not, allege that there are any breaches in the integrity of the asphalt or concrete that are allowing ash constituents to be released to the groundwater. The Agency similarly does not claim that the asphalt liner is inadequate to prevent the migration of constituents. In the absence of such evidence, it is certainly far more likely than not that the existing Basin 16 at the Crawford Station is not the source of the groundwater impacts alleged in the VN.

B. Hydrogeologic Assessment and Site Hydrology

The VN appears to be based on the flawed premise that the hydrogeologic assessment which the Agency directed MWG to perform in the vicinity of Basin 16 would be sufficient to identify the basin as the source of any elevated levels of constituents in the groundwater. This is simply not the case. The results of the hydrogeologic assessment at best give rise to more questions about the source of the alleged groundwater impacts, and do not prove that the existing basin is the source of those impacts.

Based on the results of the hydrogeologic assessment, it generally appears that groundwater flows in a north to south direction. As approved by Illinois EPA, two monitoring wells were installed around Basin 16, monitoring wells MW-1 and MW-2. Monitoring well MW-1 is located to the north-northeast of the basin and monitoring well MW-2 is located south-southwest of the basin. The wells are approximately 150 feet apart. Throughout the quarterly groundwater monitoring, the groundwater elevations recorded in MW-1 are consistently higher than those recorded in MW-2. Further, based on visual observations, the surface water in the nearby Chicago Sanitary and Ship Canal, located to the south of Crawford Station, is consistently

lower than in both monitoring wells MW-1 and MW-2. All of this information indicates that the general direction of the groundwater flow beneath the basin is in a southerly direction. Therefore, monitoring well MW-1 is located up-gradient of both the Basin 16 and monitoring well MW-2.

Based on the indicated southerly groundwater flow direction, a comparison of the monitoring results from the two monitoring wells clearly does not support the contention that Basin 16 is the source of the alleged groundwater impacts. The distribution and observation of parameter concentrations is not consistent with the basin being the source of the impacts identified in the VN. In fact, as explained below, the more defensible conclusion is that the basin is not the source of these impacts.

First, the monitoring data from both MW-1 and MW-2 has not shown any exceedances of the boron Class 1 groundwater standard in any of the quarterly monitoring events which are the subject of the VN. Boron is a parameter closely associated with leachate from coal ash management facilities. The Agency's VN does not explain how, in the absence of any boron exceedances, the conclusion that the basin is causing alleged violations of the groundwater standards is legally justifiable.[12]

For the same reason, similar sulfate concentrations in both the upgradient and down gradient wells do not establish that Basin 16 is the source of the groundwater impacts. In fact, the sulfate concentrations in the upgradient wells reach higher concentrations than in the downgradient wells. This distribution pattern for sulfate is inconsistent with the Agency's conclusion that the basin is the cause of these groundwater exceedances.

In addition to the absence of any boron exceedances and the pattern of sulfate concentrations in both the upgradient and downgradient monitoring wells, the data shows that the levels of the remaining elevated parameters detected in MW-1 are higher than those in the downgradient MW-2. Again, the reverse should be true for these parameters if Basin 16 is the source of these groundwater impacts. There are three alleged exceedances of the iron groundwater standard in upgradient well MW-1; there are no alleged iron exceedances in the downgradient well MW-2.[13] There are an equal number of alleged manganese exceedances in both MW-1 and MW-2. However, the downgradient concentrations of manganese are consistently lower than those recorded in the upgradient MW-1 well. The results for total dissolved solids (TDS) are similar, with six alleged exceedances in both MW-1 and MW-2. Except for only one of the six sampling events, the December 2011 event, the concentrations of TDS have been consistently higher in the upgradient well MW-1. Finally, a similar pattern is

[12] Further, the fact that boron is only slightly elevated in both upgradient and downgradient monitoring wells is additional evidence that ash accumulated temporarily in the runoff basin is not the source of these groundwater impacts.

[13] Although the VN alleges that there are four exceedances of iron in MW-1, a review of the previously submitted groundwater monitoring reports has identified various transcription errors, including one for iron. Accordingly, a review of all of the previously reported monitoring results was undertaken and a table showing the corrected monitoring results is enclosed.

repeated in the case of chloride. There are six detected chloride exceedances in both the upgradient and downgradient wells.[14] Except for the first of the six sampling events, the concentrations of chloride have been consistently higher in the MW-1 upgradient well. The pattern of distribution of the constituents detected in the monitoring results between MW-1 and MW-2, when coupled with the absence of boron exceedances in either well, supports the finding that Basin 16 is not the source of these alleged groundwater impacts.

For two of the three remaining parameters which are the subject of the VN's allegations, antimony and pH, the allegations are based on isolated monitoring well results from a single sampling event that does not recur in any of the other five quarterly sampling events. These isolated detections are not consistent with the Basin 16 being the source of these exceedances. Moreover, isolated exceedances that are not reproducible over six, consecutive quarters of sampling suggest that the single, unconfirmed exceedance was an anomaly and is not representative of actual groundwater quality conditions.

In sum, the pattern of the constituent concentrations across monitoring wells MW-1 and MW-2, including repeatedly observing higher concentrations of constituents in the upgradient well, clearly does not support the contention that Basin 16 is the source of the alleged groundwater standards exceedances. The data are more consistent with the opposite conclusion, namely that Basin 16 is not the source of the alleged exceedances.

C. The Crawford Basin 16 Is Not Causing Groundwater Exceedances

Because the Agency failed to specify which of the provisions of Section 12 of the Act MWG allegedly violated, MWG has had to speculate to identify the potential Section 12 violations this response needs to address. As stated above, MWG objects to the vagueness of, and legally deficient notice provided by, the VN and reserves its right to respond further when and if the Illinois EPA properly identifies the provisions of Section 12 on which it is relying.

For purposes of this response, based upon the regulations cited by the Agency in the VN, MWG has assumed that the Agency's alleged violations of Section 12 are limited to Section 12(a), which prohibits causing or allowing water pollution, and to Section 12(d), which prohibits causing or allowing the creation of a water pollution hazard. 415 ILCS 5/12(a), (d). Based on these assumptions regarding the substance of the Illinois EPA's alleged violations, MWG submits that Illinois EPA cannot show that the Basin 16 caused or allowed water pollution or created a water pollution hazard.

The analytical results show that there is no causal relationship between Basin 16 and the alleged groundwater exceedances. Neither the boron nor the sulfate levels detected in the monitoring events support the conclusion that the basin is the source of these impacts. Rather, taken together, they lend more support to the conclusion that Basin 16 is not the source of these impacts. Further, for most of the parameters, the concentrations detected in the monitoring

[14] The VN alleges five chloride exceedances, the corrected enclosed table shows there are six.

events are higher in the up-gradient well MW-1 than in the down-gradient MW-2 well. For the remaining parameters, the necessary reproducibility of a groundwater impact in more than one, single monitoring event is absent.

To show a violation of Section 12(a) and 12(d), there must be a showing not only of the presence of a potential source of contamination, but also that it is in sufficient quantity and concentration to render the waters harmful. *Bliss v. Illinois EPA,* 138 Ill. App. 3d 699, 704 (1985) ("mere presence of a potential source of water pollutants on the land does not necessarily constitute a water pollution hazard"). In other words, there must be a causal link between the potential source and the water or groundwater. The groundwater monitoring data on which the Agency relies does not establish this essential causal link between Basin 16 and the groundwater. Therefore, the Agency has failed to meet its burden to prove that the pond is the cause of the alleged exceedances of the groundwater standards as required to prove a violation of Sections 12(a) or 12(d) of the Act. 415 ILCS 5/12(a), (d).

The Agency also alleges violations of the groundwater quality regulations based on exceedances of the groundwater quality standards in 35 Ill. Admin. Code § 620.401. There is no violation here of Section 620.401. Section 620.401 solely provides the legal criteria that groundwater must meet the standards appropriate to the groundwater's class. It is a foundational regulation, allowing for different classes of groundwater to meet different groundwater standards. It is not a prohibition regulation. There is no conduct prohibited by this section of the regulations in which MWG is alleged to have engaged. MWG cannot and did not violate Section 620.401.

The remaining alleged groundwater regulation violations, Sections 620.115, 620.301, 620.405, and 620.410 of the Board Regulations, are all based on the Agency's contention that MWG's operation of Basin 16 has caused the exceedances of the groundwater standards detected in the monitoring data. To sustain these allegations, the Agency must show that MWG caused a discharge of the subject constituents from the basin which in turn caused the exceedances of the groundwater standards.[15] The relevant facts and circumstances do not support either conclusion.

The use and condition of Basin 16 does not support a finding that it is releasing constituents to the groundwater. It is not an ash pond used to settle out ash from slurry. It is used to collect storm water from a portion of the plant that where run-off comes into contact with ash and hence, contains a small amount of ash. It is not a disposal site. Any ash residue is regularly removed from the basin by MWG. Moreover, asphalt, which lines this basin, is generally considered an impermeable barrier to prevent/minimize the release of constituents. For all of these reasons, the evidence shows that Basin 16 is not the source of the alleged exceedances of the groundwater standards.

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[15] *See People of the State of Illinois v. ESG Watts, Inc.*, PCB 96-107 slip op. at p. 41 (February 5, 1998) (By finding the respondent caused a discharge of constituents into the groundwater causing a violation of the Class II Groundwater standards, the Board found the respondent also violated 35 IAC §§ 620.301 and 620.115).

Similarly, the groundwater data on which the Agency relies does not provide a sufficient scientific or technical evidentiary basis on which to conclude that Basin 16 is causing the alleged groundwater exceedances. The essential "causal link" between the basin and the elevated constituents in the groundwater is missing. Particularly in the absence of any boron exceedances, the groundwater quality downgradient versus up gradient of the basin does not evidence a release of ash constituents from the basin. The elevated upgradient levels of virtually all the subject constituents refute the allegation that the downgradient basin is causing these impacts. The isolated, unconfirmed exceedances for pH and antimony are woefully insufficient to prove that there are any actionable groundwater impacts for these two constituents.

Because the evidence does not show that Basin 16 has caused a release of any contaminants that are causing the groundwater exceedances, the Agency's VN does not support its claims that MWG has violated Sections 620.405 or 620.301 of the Board regulations. Accordingly, MWG also has not violated Section 620.115 of the Board regulations.

IV. Compliance Commitment Agreement

This VN should not have been issued. Given the absence of proof that Basin 16 is the cause of the alleged groundwater exceedances, the Agency's request for a Compliance Commitment Agreement (CCA) is an attempt to compel MWG to conduct unnecessary corrective action to resolve the alleged violations.

However, the entire Crawford facility will cease operating not later than, December 31, 2012. The small amount of ash residue present in the basin will be removed as part of the Station's closure. Solely for purposes of settling this VN expeditiously, and avoiding further enforcement, these previously planned actions are relied upon here to resolve the alleged violations without any admission that ceasing basin operations are necessary to address the alleged violations.

Further, as the hydrogeologic assessment showed, there is no threat to human health presented by the alleged exceedances of the groundwater standards. There are no potable water wells within the 2,500 foot radius of the Site. In fact, the City of Chicago has an ordinance prohibiting the potable use of groundwater within its city limits.[16] In the absence of any potable groundwater receptors or use, groundwater at the Crawford site does not pose any risk to human health; this is further support for a decision that additional enforcement is unnecessary.

Because MWG's preference is to cooperate with the Agency in this matter, MWG presents here a proposed CCA that should be acceptable based on the relevant facts and circumstances. The proposed CCA terms are as follows:

A. The Crawford Station will shut down no later than December 31, 2012. As a part of closing the facility, MWG will cease operation of Crawford Basin 16.

[16] Chic. Muni. Code: 11-8-390

B. Any ash remaining in Basin 16 will be removed as part of the closure of the Crawford Station. MWG is working to identify a specific date by which the ash will be removed and will supply a proposed date to the Agency as soon as possible.

This letter constitutes our response to, and proposed CCA for, the Violation Notice W-2012-00055. MWG also reserves the right to raise additional defenses and mitigation arguments as may be necessary, in defense of the allegations listed in the Violation Notice in the event of any future enforcement. We look forward to discussing the above information further at the soon to be scheduled meeting with the Agency's representatives. Please contact me to schedule a mutually convenient date for the meeting.

Very truly yours,

Susan M. Franzetti
Counsel for Midwest Generation, LLC

Enclosures

cc: Maria L. Race, Midwest Generation, LLC

Table 3

GROUNDWATER ANALYTICAL RESULTS - AMENDED JULY 2012

Crawford Station - Chicago, Illinois

Midwest Generation

21153.032

PATRICK ENGINEERING	Sample Analysis Method	Groundwater Remediation Objectives (mg/L)	MW-1 (mg/L)	MW-1 (mg/L)	MW-1 (mg/L)	MW-1 (mg/L)	MW-1 (mg/L)	MW-1 (mg/L)
Chemical Name		Class I*	12/8/10	3/21/11	6/13/11	9/16/11	12/9/11	3/19/12
Antimony	Metals 6020	0.006	ND	ND	0.004	ND	ND	ND
Arsenic	Metals 6020	0.05	ND	ND	0.0016	0.0046	0.0047	0.0014
Barium	Metals 6020	2.0		0.084	0.08	0.062	0.043	0.065
Beryllium	Metals 6020	0.004	ND	ND	ND	ND	ND	ND
Cadmium	Metals 6020	0.005	ND	ND	ND	ND	ND	ND
Chromium	Metals 6020	0.1	ND	ND	ND	ND	ND	ND
Cobalt	Metals 6020	1.0		0.0094	0.0054	0.0037	0.0033	0.0094
Copper	Metals 6020	0.65	ND	ND	ND	ND	ND	ND
Cyanide	Dissolved 9014	0.2	ND	ND	ND	ND	ND	ND
Iron	Metals 6020	5.0		**5.8**	**5.1**	**5.0**	4.6	**6.3**
Lead	Metals 6020	0.0075	ND	ND	ND	ND	ND	ND
Manganese	Metals 6020	0.15		**2.7**	**2.2**	**1.9**	**1.5**	**2.8**
Mercury	Mercury 7470A	0.002	ND	ND	ND	ND	ND	ND
Nickel	Metals 6020	0.1		0.01		0.0063	0.0074	0.01
Selenium	Metals 6020	0.05	ND	ND	ND	ND	ND	ND
Silver	Metals 6020	0.05	ND	ND	ND	ND	ND	ND
Thallium	Metals 6020	0.002	ND	ND	ND	ND	ND	ND
Zinc	Metals 6020	5.0	ND	ND	ND	ND	ND	ND
Boron	Metals 6020	2		0.86	0.89	1.8		0.68
Sulfate	Dissolved 9038	400		**800**	**670**	**750**	**1,000**	**810**
Chloride	Dissolved 9251	200		**9,100**	**9,000**	**3,200**	**1,700**	**8,700**
Nitrogen/Nitrate	Nitrogen By calc	10	ND	ND	ND	ND	ND	ND
Total Dissolved Solids	Dissolved 2540C	1,200		**18,000**	**17,000**	**11,000**	**5,900**	**15,000**
Fluoride	Dissolved 4500 FC	4		0.17	0.25	0.28	0.35	0.24
Nitrogen/Nitrite	Dissolved 4500 NO2	NA		ND	ND	ND	ND	ND
Nitrogen/Nitrate/Nitrite	Dissolved 4500 NO3	NA	ND	ND	ND	ND	ND	ND

Notes:

*Class I Groundwater Standards from 35 IAC Part 620

Bold values show exceedences of 35 IAC Part 620

ND-non detect

mg/L-milligrams per liter

AMENDMENTS

- Value amended from original Table 3 (May 11, 2012).
- Value has not changed; font has been changed from normal to bold.
- Value has not changed; font has been changed from bold to normal.

Table 3
GROUNDWATER ANALYTICAL RESULTS - AMENDED JULY 2012
Crawford Station - Chicago, Illinois
Midwest Generation
21153.032

PATRICK ENGINEERING	Sample Analysis Method	Groundwater Remediation Objective (mg/L)	MW-2 (mg/L)	MW-2 (mg/L)	MW-2 (mg/L)	MW-2 (mg/L)	MW-2 (mg/L)	MW-2 (mg/L)
Chemical Name		Class I*	12/8/10	3/21/11	6/13/11	9/19/11	12/5/11	3/19/12
Antimony	Metals 6020	0.006	ND	ND	ND	ND	ND	**0.018**
Arsenic	Metals 6020	0.05	ND	ND	ND	ND	ND	ND
Barium	Metals 6020	2.0		0.038	0.036	0.035	0.033	0.24
Beryllium	Metals 6020	0.004	ND	ND	ND	ND	ND	ND
Cadmium	Metals 6020	0.005	ND	ND	ND	ND	ND	ND
Chromium	Metals 6020	0.1	ND	ND	ND	ND	ND	ND
Cobalt	Metals 6020	1.0		0.005	0.004	0.0021	ND	ND
Copper	Metals 6020	0.65	ND	ND	ND	ND	ND	ND
Cyanide	Dissolved 9014	0.2	ND	ND	ND	ND	ND	ND
Iron	Metals 6020	5.0		0.93	ND	ND	ND	ND
Lead	Metals 6020	0.0075	ND	ND	ND	ND	ND	ND
Manganese	Metals 6020	0.15		1.2	1.3	0.65	0.42	0.31
Mercury	Mercury 7470A	0.002	ND	ND	ND	ND	ND	ND
Nickel	Metals 6020	0.1		0.014	0.014	0.011	0.015	0.017
Selenium	Metals 6020	0.05	ND	ND	ND	ND	ND	ND
Silver	Metals 6020	0.05	ND	ND	ND	ND	ND	ND
Thallium	Metals 6020	0.002	ND	ND	ND	ND	ND	ND
Zinc	Metals 6020	5.0	ND	ND	ND	ND	ND	ND
Boron	Metals 6020	2		1.9	1.9	1.9	1.2	1.7
Sulfate	Dissolved 9038	400		1,400	1,000	1,100	1,900	1,200
Chloride	Dissolved 9251	200		2,000	2,400	1,500	2,200	2,200
Nitrogen/Nitrate	Nitrogen By calc	10	ND	ND	ND	ND	ND	ND
Total Dissolved Solids	Dissolved 2540C	1,200		6,700	7,300	5,600	7,200	7,200
Fluoride	Dissolved 4500 FC	4		0.21	0.22	0.31	0.25	0.21
Nitrogen/Nitrite	Dissolved 4500 NO2	NA		ND	ND	0.028	ND	ND
Nitrogen/Nitrate/Nitrite	Dissolved 4500 NO3	NA	ND	ND	ND	ND	ND	ND

Notes:
*Class I Groundwater Standards from 35 IAC Part 620
Bold values show exceedences of 35 IAC Part 620
ND-non detect
mg/L-milligrams per liter

AMENDMENTS
- Value amended from original Table 3 (May 11, 2012).
- Value has not changed; font has been changed from normal to bold.
- Value has not changed; font has been changed from bold to normal.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/785-0561

August 2, 2012

CERTIFIED MAIL # 7010 2780 0002 1163 4598
RETURN RECEIPT REQUESTED

Susan M. Franzetti
10 South LaSalle St
Suite 3600
Chicago, IL 60603

Re: IL1490300, MIDWEST GENERATION - Meeting Confirmation
Violation Notice Nos.: W-2012-00055, W-2012-00056, W-2012-00057, W-2012-00058, and W-2012-00059

Dear Ms. Franzetti:

The Illinois Environmental Protection Agency ("Illinois EPA") acknowledges your request for a meeting, which is scheduled for August 14, 2012, at 1:30 pm, in the Mississippi conference room at the Illinois Environmental Protection Agency offices located at 1021 North Grand Avenue East, Springfield, Illinois.

The Illinois EPA acknowledges receiving a response dated July 27, 2012. A party that meets with the Illinois EPA is given 21 days after the meeting to submit proposed terms for a Compliance Commitment Agreement ("CCA") pursuant to Section 31(a)(5) of the Illinois Environmental Protection Act ("Act"), 415 ILCS 5/31(a)(5). Because you have requested a meeting, the Illinois EPA will make its decision regarding issuance of a proposed CCA within 30 days of receipt of the meeting response. See Section 31(a)(7).

Questions regarding this matter should be directed to Andrea Rhodes at the 217/785-0561. Written communications should be directed to Andrea Rhodes at the Illinois Environmental Protection Agency, Bureau of Water, CAS #19, P.O. Box 19276, Springfield, Illinois 62794-9726 and all communications shall include reference to the appropriate Violation Notice numbers.

Sincerely,

Michael Crumly
Manager, Compliance Assurance Section
Division of Public Water Supplies
Bureau of Water

cc: Basil G. Constanelos

4302 N. Main St., Rockford, IL 61103 (815)987-7760
595 S. State, Elgin, IL 60123 (847)608-3131
2125 S. First St., Champaign, IL 61820 (217)278-5800
2009 Mall St., Collinsville, IL 62234 (618)346-5120
9511 Harrison St., Des Plaines, IL 60016 (847)294-4000
5407 N. University St., Arbor 113, Peoria, IL 61614 (309)693-5462
2309 W. Main St., Suite 116, Marion, IL 62959 (618)993-7200
100 W. Randolph, Suite 11-300, Chicago, IL 60601 (312)814-6026

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/785-0561

August 15, 2012

CERTIFIED MAIL # 7010 2780 0002 1163 4741
RETURN RECEIPT REQUESTED

Susan M. Franzetti
10 South LaSalle St.
Suite 3600
Chicago, IL 62701

Re: ID 6280, Midwest Generation, LLC, Crawford Generating Station - Meeting Held
Violation Notice No.: W-2012-00055

Dear Ms. Franzetti:

The Illinois Environmental Protection Agency ("Illinois EPA") wishes to acknowledge that you requested a meeting and confirm that the meeting was held on August 14, 2012. A party that meets with the Illinois EPA is given 21 days after the meeting to submit proposed terms for a Compliance Commitment Agreement ("CCA") pursuant to Section (31)(a)(5) of the Environmental Protection Act, 415 ILCS 5/31(a)(5). Your meeting response is due on or before September 4, 2012.

The Illinois EPA will make its decision regarding issuance of a proposed CCA within 30 days of receipt of the meeting response. See Section 31(a)(7).

Questions regarding this matter should be directed to Andrea Rhodes at 217/785-0561. Written communications should be directed to Andrea Rhodes at the Illinois Environmental Protection Agency, Bureau of Water, CAS #19, P.O. Box 19276, Springfield, Illinois 62794-9726 and all communications shall include reference to your Violation Notice number, W-2012-00055.

Sincerely,

Michael Crumly
Manager, Compliance Assurance Section
Division of Public Water Supplies
Bureau of Water

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
AUG 22 2012
REVIEWER EAV

cc: Basil G. Constanelos

CASE ID: 2012-006

NIJMAN · FRANZETTI LLP

10 South LaSalle Street · Suite 3600 · Chicago, Illinois 60603
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Jennifer T. Nijman
jn@nijmanfranzetti.com

Susan M. Franzetti
sf@nijmanfranzetti.com

August 29, 2012

VIA E-MAIL AND OVERNIGHT MAIL

Illinois EPA
Division of Public Water Supplies
Attn: Andrea Rhodes, CAS #19
P.O. Box 19276
Springfield, IL 62794-9276

Re: Violation Notice: Midwest Generation, LLC, Crawford Generating Station
Identification No.: 6280
Violation Notice No.: W-2012-00055

Dear Ms. Rhodes:

This letter is a supplemental response to the above-referenced June 11, 2012 Violation Notice ("VN") following the meeting between the Illinois Environmental Protection Agency ("Illinois EPA or the "Agency") and Midwest Generation, LLC ("MWG") on August 14, 2012.[1] MWG appreciated the opportunity to discuss the VNs and the underlying allegations with the Agency. The extensive participation at the August 14th meeting by Interim Director John Kim and Agency personnel was productive and helped to clarify the key issues. As a result, MWG believes it now has a better understanding of the Agency's views regarding resolution of this matter.

The August 14th meeting also helped MWG both to identify issues that warrant further attention and explanation in this supplemental response and to revise its proposed Compliance Commitment Agreement ("CCA") for the MWG Crawford Generation Station ("Crawford") for the Agency's consideration. Accordingly, this supplemental response does not repeat all of the information contained in MWG's July 27, 2012 response to the VN, but rather focuses on responding to the questions and concerns raised by the Agency during the meeting. It also includes a revised, proposed CCA that MWG submits should be acceptable to resolve the VN allegations.

[1] The August 14, 2012 meeting was held at the request of MWG, pursuant to Section 31(a)(4) of the Illinois Environmental Protection Act. 415 ILCS 5/31(a)(4).

By submitting this supplemental response, MWG does not waive any of the original objections to the VNs raised in our July 27th response. Moreover, MWG does not, by submitting this supplemental response, make any admissions of fact or law, or waive any of its defenses to those alleged violations.

I. Supplemental Response to Alleged Violations in the VN

To answer the questions presented at the meeting and further explain how Basin 16 at Crawford operated at the facility, MWG has set forth below additional information concerning: (1) the use and function of Basin 16; (2) the absence of clear evidence that the groundwater exceedances are from coal ash; and (3) the decommissioning activities for Basin 16 and other areas at the Crawford Station.

A. The Condition of Basin 16

As stated in MWG's July 27, 2012 VN response, and discussed further during the August 14th meeting, the term "ash impoundment" as applied to the Crawford Station is a misnomer. Basin 16 is distinguishable from a typical ash pond both in the way it is constructed and how it has been used. Basin 16 is approximately 70 feet long and 50 feet wide. Its sides slope down to a depth of only approximately 5 feet from grade level. The basin is small and shallow. The purpose of Basin 16 is to collect any storm water from the hydrobin area. Basin 16 was not used for ash settling or as a storage pond. The hydrobins are aboveground tanks used to settle out bottom ash from the process water. The bottom ash removed by the hydrobins is loaded into a truck and disposed of offsite or sent for beneficial use. The bottom ash is not discharged to, or otherwise placed in, Basin 16. The storm water that enters Basin 16 contains only a minor amount ash. The basin, pump and its role in the facility's operations are a part of the Station's storm water management controls, and are managed pursuant to the terms of the Storm Water Pollution Prevention Plan (SWPPP). The entire system is included in the Station's NPDES permit.

Because of Basin 16's limited use for storm water management, only a small amount of ash temporarily accumulates in the basin. That ash is periodically removed, at which time MWG visually inspects the condition of the asphalt and the concrete in the adjacent pump pit. Not later than September 30, 2012, and likely earlier, the entire Crawford Station facility, including the hydrobin area and Basin 16, will cease operating as a coal-fired electrical generating station. As part of the Crawford decommissioning, Basin 16 will be cleaned and the ash collected will be removed from the facility. MWG submits that this decommissioning of Basin 16 should alleviate the need for any further corrective action in response to the VN.

B. Absence of Data Showing Basin 16 is Causing a Release

As stated in the original VN Response, the monitoring well results do not support the contention that Basin 16 is the source of the alleged groundwater impacts.[2] Boron, a parameter closely associated with leachate from coal ash, was not detected above the Class 1 groundwater standard in either monitoring wells MW-1 or MW-2 at the Station. MWG understood from the Agency at the August 14th meeting that Illinois EPA considers manganese and sulfate to be indicators of coal ash, even in the absence of elevated boron levels. MWG respectfully disagrees with that conclusion and maintains its position stated in our July 27th response, that the monitoring data does not provide an adequate scientific basis on which to conclude that the use of Basin 16 has caused the alleged violations.

C. Crawford Decommissioning

As stated above, the Crawford Station will cease all operations no later than September 30, 2012. As part of the Crawford Station decommissioning process, MWG is undertaking many measures, including removing unused materials at the facility, ceasing all process wastewater discharges, and discontinuing the usual process wastewater treatment operations. During the August 14th meeting, the Agency asked about MWG's plans for decommissioning areas of the Crawford Station in which ash or coal handling operations have occurred. MWG has provided below additional information on the decommissioning of these areas in a good faith effort to resolve this matter through a Compliance Commitment Agreement.

As part of the decommissioning, ash residuals in Basin 16 will be removed. As part of the decommissioning of the ash management area, MWG will empty the fly ash silos and the hydrobins. Ash also will be removed from the precipitators.

Because MWG will no longer be operating the Crawford Station, all process wastewater discharges will cease. The Station's wastewater treatment system will be shut down and decommissioned. As part of the decommissioning, the clarifiers will be emptied and sediment will be removed from the equalization basins. (The equalization basins are concrete-lined basins with concrete sidewalls.)

With regard to coal handling areas at Crawford Station, MWG has already removed the coal from the coal pile area and scraped coal fines from the area. MWG will cover the area with topsoil and seed it for a vegetative layer. During the recent coal pile removal activity, areas beneath the surface were uncovered and revealed the presence of a continuous clay layer beneath the former coal pile, which has served to provide a stable staging surface for the coal pile and to impede percolation of precipitation through the underlying materials. MWG also will remove coal from the former handling areas, including the bunkers, the breaker house, conveyors and the barge unloading area. Finally, MWG will dredge the coal pile runoff pond.

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[2] MWG incorporates by reference all of its discussion and explanation of the groundwater monitoring results in the original VN response.

All of these decommissioning measures will be accomplished within 12 months of the date of this letter, likely much sooner.

II. Revised Compliance Commitment Agreement

Following the meeting with the Agency and in response to the comments and requests for additional information, MWG is revising its original Compliance Commitment Agreement ("CCA") submitted in its initial response to the VN. Because of MWG's desire to resolve this matter without the need for further litigation, it has significantly expanded its proposed CCA to include additional activities described herein as part of its binding commitment to the Agency. MWG believes its revised CCA should be an acceptable resolution to the VN issued to the Crawford station.

Further, as stated in the original VN response, there is no threat to human health presented by the alleged exceedances of the groundwater standards. There are no potable water wells within the 2,500 foot radius of the Site, and the City of Chicago has an ordinance prohibiting the potable use of groundwater within its city limits.[3] Both the lack of potable water wells and the City of Chicago ordinance support the conclusion that the groundwater at Crawford does not pose a risk to human health.

The modified CCA terms are as follows:

A. The Crawford Station will shut down no later than September 30, 2012. MWG will confirm to the Agency when the shutdown has occurred.

B. MWG will cease operation of the hydrobins.

C. Basin 16 will be rinsed and the rinsewater will be directed to the Basin 16 sump for discharge to the equalization basins. Basin 16 may continue to be used for stormwater management purposes.

D. Ash will be removed from the Crawford Station fly ash silos, hydrobins and precipitators.

E. The coal pile has been removed and coal fines scraped from the area. The coal pile area will be covered with topsoil and seeded.

F. The coal pile runoff pond will be dredged.

G. The wastewater treatment system equalization basins will be drained and sediment removed with a front end loader.

[3] Chic. Muni. Code: 11-8-390. The City of Chicago's ordinance is expressly referenced in the Memorandum of Understanding between the City of Chicago and Illinois EPA included as justification in support of "No Further Remediation" determinations.

H. Pending modification of the existing NPDES permit, or until a new NPDES stormwater permit is issued, to reflect the changed conditions at the Crawford Station, the wastewater treatment system will continue to operate, either in its existing condition or as modified to address the lack of process wastewater discharges and the ongoing discharge of stormwater from the Crawford Station.

I. The above-described decommissioning activities will be completed within 12 months of the date of this letter.

A draft CCA is enclosed that contains the above-described actions in paragraph 5(a) through (i).

This letter constitutes our supplemental response to, and modified CCA for, the Violation Notice W-2012-00055. MWG also reserves the right to raise additional defenses and mitigation arguments as may be necessary, in defense of the allegations listed in the Violation Notice in the event of any future enforcement. We believe that this supplemental response is responsive to all of the Agency's comments and concerns expressed in our meeting, and represents an appropriate resolution to the VN. Should you have any additional questions or concerns, please do not hesitate to contact me.

Very truly yours,

Susan M. Franzetti
Counsel for Midwest Generation, LLC

cc: Maria L. Race, Midwest Generation, LLC

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

IN THE MATTER OF:	)	
	)	
Midwest Generation, LLC	)	
Crawford Generating Station	)	
Chicago, Cook County, Illinois	)	
IEPA ID #170000041238	)	
	)	
	)	**ILLINOIS EPA VN W-2012-00055**
	)	**BUREAU OF WATER**
	)	

COMPLIANCE COMMITMENT AGREEMENT

I. Jurisdiction

1. This Compliance Commitment Agreement ("CCA") is entered into voluntarily by the Illinois Environmental Protection Agency ("Illinois EPA") and Midwest Generation, LLC, Crawford Generating Station ("Respondent") (collectively, the "Parties") under the authority vested in the Illinois EPA pursuant to Section 31(a)(7)(i) of the Illinois Environmental Protection Act ("Act"), 415 ILCS 5/31(a)(7)(i).

II. Allegation of Violations

2. Respondent owns and operates a coal filed electrical generating station at 3501 South Pulaski Road in Chicago, Cook County, IL.

3. Pursuant to Violation Notice ("VN") W-2012-00055, issued on June 11, 2012, the Illinois EPA contends that Respondent has violated the following provisions of the Act and Illinois Pollution Control Board ("Board") Regulations:

   a) Section 12 of the Illinois Environmental Protection Act, 415 ILCS 5/12

   b) 35 Ill. Adm. Code 620.115, 620.301, 620.401, 620.405, and 620.410

III. Compliance Activities

4. On July 27, 2012, the Illinois EPA received Respondent's response to VN W-2012-00055, which included proposed terms for a CCA. On August 14, 2011, the Parties met at the Illinois EPA offices to discuss the violation notice and July 27th response. On August 29, 2012, the Illinois EPA received Respondent's supplemental reply to the VN in response to Illinois EPA's comments at the meeting. The Illinois EPA has reviewed Respondent's proposed CCA terms, as well as considered whether any additional terms

and conditions are necessary to attain compliance with the alleged violations cited in the VN.

5. Respondent agrees to undertake and complete the following actions, which the Illinois EPA has determined are necessary to attain compliance with the allegations contained in VN W-2012-00055:

a) The Crawford Station will shut down no later than September 30, 2012. MWG will confirm to the Agency when the shutdown has occurred.

b) MWG will cease operation of the hydrobins.

c) Basin 16 will be rinsed and the rinsewater will be directed to the Basin 16 sump for discharge to the equalization basins. Basin 16 may continue to be used for stormwater management purposes.

d) Ash will be removed from the Crawford Station fly ash silos, hydrobins and precipitators.

e) The coal pile has been removed and coal fines scraped from the area. The coal pile area will be covered with topsoil and seeded.

f) The coal pile runoff pond will be dredged.

g) The wastewater treatment system equalization basins will be drained and sediment removed with a front end loader.

h) Pending modification of the existing NPDES permit, or until a new NPDES stormwater permit is issued, to reflect the changed conditions at the Crawford Station, the wastewater treatment system will continue to operate, either in its existing condition or as modified to address the lack of process wastewater discharges and the ongoing discharge of stormwater from the Crawford Station.

i) The above-described decommissioning activities will be completed within 12 months of the date of this letter.

IV. Terms and Conditions

6. Respondent shall comply with all provisions of this CCA, including, but not limited to, any appendices to this CCA and all documents incorporated by reference into this CCA. Pursuant to Section 31(a)(10) of the Act, 415 ILCS 5/31(a)(10), if Respondent complies with the terms of this CCA, the Illinois EPA shall not refer the alleged violations that are the subject of this CCA, as described in Section II above, to the Office of the Illinois Attorney General or the State's Attorney of the county in which the alleged violations occurred. Successful completion of this CCA or an amended CCA shall be a factor to be weighed, in favor of the Respondent, by the Office of the Illinois Attorney General in determining whether to file a complaint on its own motion for the violations cited in VN W-2012-00055.

7. This CCA is solely intended to address the violations alleged in Illinois EPA VN W-2012-00055. The Illinois EPA reserves, and this CCA is without prejudice to, all rights of the Illinois EPA against Respondent with respect to noncompliance with any term of this CCA, as well as to all other matters. Nothing in this CCA is intended as a waiver, discharge, release, or covenant not to sue for any claim or cause of action, administrative or judicial, civil or criminal, past or future, in law or in equity, which the Illinois EPA may have against Respondent, or any other person as defined by Section 3.315 of the Act, 415 ILCS 5/3.315. This CCA in no way affects the responsibilities of Respondent to comply with any other federal, state or local laws or regulations, including but not limited to the Act, and the Board Regulations.

8. Respondent represents that it has entered into this CCA for the purpose of settling and compromising the alleged violations in VN W-2012-00055. By entering into this CCA and complying with its terms, Respondent does not admit the allegations of violation within VN W-2012-00055 and this CCA shall not be interpreted as including such admission.

9. Pursuant to Section 42(k) of the Act, 415 ILCS 5/42(k), in addition to any other remedy or penalty that may apply, whether civil or criminal, Respondent shall be liable for an additional civil penalty of $2,000 for violation of any of the terms or conditions of this CCA.

10. This CCA shall apply to and be binding upon the Illinois EPA, and on Respondent and Respondent's officers, directors, employees, agents, successors, assigns, heirs, trustees, receivers, and upon all persons, including but not limited to contractors and consultants, acting on behalf of Respondent, as well as upon subsequent purchasers of Respondent's facility.

11. In any action by the Illinois EPA to enforce the terms of this CCA, Respondent consents to and agrees not to contest the authority or jurisdiction of the Illinois EPA to enter into or enforce this CCA, and agrees not to contest the validity of this CCA or its terms and conditions.

12. This CCA shall only become effective:

    a) If, within 30 days of receipt, Respondent executes this CCA and submits it, via certified mail, to Andrea Rhodes, CAS, CAS #19, Illinois EPA, Division of Public Water Supplies, P.O. Box 19276, Springfield, IL 62794-9276. If Respondent fails to execute and submit this CCA within 30 days of receipt, via certified mail, this CCA shall be deemed rejected by operation of law; and

    b) Upon execution by all Parties.

13. Pursuant to Section 31(a)(7.5) of the Act, 415 ILCS 5/31(a)(7.5), this CCA shall not be amended or modified prior to execution by the Parties. Any amendment or modification to this CCA by Respondent prior to execution by all Parties shall be considered a rejection of the CCA by operation of law. This CCA may only be amended subsequent to its effective date, in writing, and by mutual agreement between the Illinois EPA and

Respondent's signatory to this CCA, Respondent's legal representative, or Respondent's agent.

AGREED:

FOR THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY:

BY: _____ DATE: _____

Mike Crumly
Manager, Compliance Assurance Section
Division of Public Water Supplies
Bureau of Water

FOR RESPONDENT:

BY: _____ DATE: _____

Susan M. Franzetti
Counsel for Midwest Generation, LLC

Rhodes, Andrea

From: Susan Franzetti [sf@nijmanfranzetti.com]
Sent: Wednesday, August 29, 2012 5:52 PM
To: Kruse, Chad; Rhodes, Andrea
Subject: MWGen Crawford Station Ash Ponds VN Supplemental Response and Revised CCA
Attachments: Crawford 8-29-12 Supplemental Response and CCA (00014218).PDF

Dear Mr. Kruse and Ms. Rhodes: Please find attached an electronic copy of Midwest Generation's Supplemental Response to the referenced Violation Notice (VN) W-2012-00055 with an enclosed draft Compliance Commitment Agreement. The original is being sent by overnight mail to Ms. Rhodes.

Also, I wanted to ask you a question concerning the submission of the other Midwest Generation Supplemental Responses to the remaining VNs for Waukegan, Joliet #29, Powerton and Will County. The deadline for their submission is September 4. However, September 3 is the Labor Day holiday and hence, it will not be possible to use overnight mail delivery to ensure delivery on September 4. Similarly, such express mail delivery services are not available on Sunday September 3. Accordingly, if we are not able to complete all of these responses in time to mail them to the Agency prior to Sunday September 3rd, is it acceptable to the Agency for us to send them electronically by no later than the deadline of September 4 and arrange for overnight delivery of the originals to the Agency on September 5?

Regards,

Susan Franzetti
Counsel for Midwest Generation

Susan M. Franzetti
Nijman Franzetti LLP
10 S. LaSalle St., Suite 3600
Chicago, IL 60603
(312) 251-5590
fax (312) 251- 4610
sf@nijmanfranzetti.com

AR

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217-785-0561

September 28, 2012

CERTIFIED MAIL # 7010 2780 0002 1163 4901
RETURN RECEIPT REQUESTED

John Kennedy
Senior Vice President, Generation
235 Remington, Suite A
Bolingbrook, IL 60440

Re: Proposed Compliance Commitment Agreement
Violation Notice: W-2012-00055
Midwest Generation, LLC, Crawford Generating Station; ID Number: 6280

Dear Mr. Kennedy:

The Illinois Environmental Protection Agency ("Illinois EPA") has reviewed the proposed Compliance Commitment Agreement ("CCA") terms submitted by Midwest Generation, LLC, Crawford Generating Station in a letter dated August 29, 2012, in response to the Violation Notice dated June 11, 2012. Pursuant to the authority vested in the Illinois EPA under Section 31(a)(7)(i) of the Illinois Environmental Protection Act ("Act"), 415 ILCS 5/31(a)(7)(i), attached to this letter is a proposed CCA, which contains terms and conditions that the Illinois EPA has determined are necessary in order for you to attain compliance with the Act and Illinois Pollution Control Board Regulations [and conditions of Permit, if applicable].

Pursuant to Section 31(a)(7.5) of the Act, 415, ILCS 5/31(a)(7.5), **within 30 days of your receipt of this proposed CCA**, Midwest Generation, LLC, Crawford Generating Station or its duly authorized representative must either (1) agree to and sign the proposed CCA, and submit the signed and dated CCA by certified mail to Illinois EPA Bureau of Water, Andrea Rhodes, MC #19, 1021 North Grand Ave East, Springfield, IL 62702; or (2) notify the Illinois EPA by certified mail that you reject the proposed CCA.

The proposed CCA shall only become effective upon your timely submittal of the signed CCA as discussed above, and upon final execution by the Illinois EPA. Failure by you to execute and submit the proposed CCA within 30 days of receipt shall be deemed a rejection of the CCA by operation of law. Upon timely receipt of the signed CCA, the Illinois EPA will send you a fully executed copy of the CCA for your records.

In addition, the proposed CCA is not subject to amendment or modification prior to execution by you and the Illinois EPA. Any amendment or modification to the proposed CCA by Respondent prior to execution by you and the Illinois EPA shall be deemed a rejection of the proposed CCA by operation of law. The proposed CCA may only be amended subsequent to its effective date, in writing, and by mutual agreement between the Illinois EPA and you.

Questions regarding this matter should be directed to Illinois EPA, Bureau of Water, Andrea Rhodes at 217/785-0561. Written communications should be directed to Illinois EPA – DPWS, Attn: Andrea Rhodes, MC #19, 1021 North Grand Ave East, Springfield, IL 62702.

Sincerely,

Michael Crumly
Manager, Compliance Assurance Section
Division of Public Water Supplies
Bureau of Water

Attachments

cc: Basil G. Constantelos
Maria Race
Susan M. Franzetti

BOW ID: W0316000340 CASE ID: 2012-006

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

IN THE MATTER OF:	)	
	)	
MIDWEST GENERATION, LLC,	)	
CRAWFORD GENERATING STATION	)	
CHICAGO, COOK COUNTY, IL	)	
ID NUMBER: 6280	)	
	)	
	)	ILLINOIS EPA VN W-2012-00055
	)	BUREAU OF WATER
	)	

COMPLIANCE COMMITMENT AGREEMENT

I. Jurisdiction

1. This Compliance Commitment Agreement ("CCA") is entered into voluntarily by the Illinois Environmental Protection Agency ("Illinois EPA") and Midwest Generation, LLC, Crawford Generating Station ("Respondent") (collectively, the "Parties") under the authority vested in the Illinois EPA pursuant to Section 31(a)(7)(i) of the Illinois Environmental Protection Act ("Act"), 415 ILCS 5/31(a)(7)(i).

II. Allegation of Violations

2. Respondent owns and operated Crawford Generating Station in Chicago, Cook County, Illinois ("Crawford Station").

3. Pursuant to Violation Notice ("VN") W-2012-00055 issued on June 11, 2012, the Illinois EPA contends that Respondent has violated the following provisions of the Act and Illinois Pollution Control Board ("Board") Regulations:

   a) Operations at ash impoundments have resulted in violations of the Groundwater Quality Standards at monitoring wells MW-1 and MW-2.
   Section 12 of the Act, 415 ILCS 5/12, 35 Ill. Adm. Code 620.115, 620.301, 620.401, 620.405, and 620.410.

III. Compliance Activities

4. On August 29, 2012, the Illinois EPA received Respondent's response to VN W-2012-00055, which included proposed terms for a CCA. The Illinois EPA has reviewed Respondent's proposed CCA terms, as well as considered whether any additional terms and conditions are necessary to attain compliance with the alleged violations cited in the VN.

5. Respondent agrees to undertake and complete the following actions, which the Illinois EPA has determined are necessary to attain compliance with the allegations contained in VN W-2012-00055:

   a) Crawford Station shall shut down no later than September 30, 2012. Midwest Generation shall submit confirmation of this shut down to the Illinois EPA by November 15, 2012.

   b) Midwest Generation shall cease operation of the hydro-bins.

   c) Basin 16 shall be rinsed and the rinse water shall be directed to the Basin 16 sump for discharge to the equalization basins. Basin 16 may continue to be used for storm water management purposes.

   d) Ash shall be removed from the Crawford Station fly ash silos, hydro-bins, and precipitators.

   e) In the confirmation submitted pursuant to item 5(a), Midwest Generation must confirm that the coal pile has been removed and the coal fines scraped from the area. Midwest Generation shall cover the coal pile area with topsoil and seed it.

   f) The coal pile run-off pond shall be dredged.

   g) The wastewater treatment system equalization basins shall be drained and sediment removed with a front end loader.

   h) Pending modification of the existing NPDES permit, or until a new NPDES storm water permit is issued to reflect the changed conditions at the Crawford Station, the wastewater treatment system will continue to operate, either in its existing condition or as modified, to address the lack of process wastewater discharges and the on-going discharge of storm water from the Crawford Station.

   i) Once all of the decommissioning activities, items (b) through (g) above, have been completed, Midwest Generation shall submit a certification (or a statement) of compliance. Midwest Generation may submit either the attached "Illinois EPA Compliance Statement" or another similar writing to satisfy the statement of compliance within one year of the effective date of this CCA.

IV. Terms and Conditions

6. Respondent shall comply with all provisions of this CCA, including, but not limited to, any appendices to this CCA and all documents incorporated by reference into this CCA. Pursuant to Section 31(a)(10) of the Act, 415 ILCS 5/31(a)(10), if Respondent complies with the terms of this CCA, the Illinois EPA shall not refer the alleged violations that are the subject of this CCA, as described in Section II above, to the Office of the Illinois Attorney General or the State's Attorney of the county in which the alleged violations occurred. Successful completion of this CCA or an amended CCA shall be a factor to be weighed, in favor of the Respondent, by the Office of the Illinois Attorney General in determining whether to file a complaint on its own motion for the violations cited in VN W-2012-00055.

7. This CCA is solely intended to address the violations alleged in Illinois EPA VN W-2012-00055. The Illinois EPA reserves and this CCA is without prejudice to, all rights of the Illinois EPA against Respondent with respect to noncompliance with any term of this CCA, as well as to all other matters. Nothing in this CCA is intended as a waiver, discharge, release, or covenant not to sue for any claim or cause of action, administrative or judicial, civil or criminal, past or future, in law or in equity, which the Illinois EPA may have against Respondent, or any other person as defined by Section 3.315 of the Act, 415 ILCS 5/3.315. This CCA in no way affects the responsibilities of Respondent to comply with any other federal, state or local laws or regulations, including but not limited to the Act, and the Board Regulations [and Permit, if applicable].

8. Pursuant to Section 42(k) of the Act, 415 ILCS 5/42(k), in addition to any other remedy or penalty that may apply, whether civil or criminal, Respondent shall be liable for an additional civil penalty of $2,000 for violation of any of the terms or conditions of this CCA.

9. This CCA shall apply to and be binding upon the Illinois EPA, and on Respondent and Respondent's officers, directors, employees, agents, successors, assigns, heirs, trustees, receivers, and upon all persons, including but not limited to contractors and consultants, acting on behalf of Respondent, as well as upon subsequent purchasers of Respondent's Crawford Station in Chicago, Cook County, Illinois.

10. In any action by the Illinois EPA to enforce the terms of this CCA, Respondent consents to and agrees not to contest the authority or jurisdiction of the Illinois EPA to enter into or enforce this CCA, and agrees not to contest the validity of this CCA or its terms and conditions.

11. This CCA shall only become effective:

    a) If, within 30 days of receipt, Respondent executes this CCA and submits it, via certified mail, to Illinois EPA, Bureau of Water, Andrea Rhodes, MC #19, 1021 North Grand Ave East, Springfield, IL 62702. If Respondent fails to execute and submit this CCA within 30 days of receipt, via certified mail, this CCA shall be deemed rejected by operation of law; and

    b) Upon execution by all Parties.

12. Pursuant to Section 31(a)(7.5) of the Act, 415 ILCS 5/31(a)(7.5), this CCA shall not be amended or modified prior to execution by the Parties. Any amendment or modification to this CCA by Respondent prior to execution by all Parties shall be considered a rejection of the CCA by operation of law. This CCA may only be amended subsequent to its effective date, in writing, and by mutual agreement between the Illinois EPA and Respondent's signatory to this CCA, Respondent's legal representative, or Respondent's agent.

AGREED:
FOR THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY:

BY: _____ DATE: _____

Michael Crumly
Manager, Compliance Assurance Section
Division of Public Water Supplies
Bureau of Water

FOR RESPONDENT:

BY: _____ DATE: _____

John Kennedy
Senior Vice President, Generation
Midwest Generation, LLC

Illinois EPA Compliance Statement

The owner of the facility must acknowledge that all compliance commitment agreement (CCA) measures have been successfully completed.

Please complete, sign, and return.

I _____ *(print name)*, hereby certify that all violations addressed in Violation Notice (VN) number _____ have been addressed and that all CCA measures were completed on _____ *(date)*.

_____
Signature

_____
Title

_____
Telephone Number

_____
Date

Be sure to retain copies of this document for your files. Should you need additional notification forms, please contact this office at (217)785-0561. Return this completed form to:

Illinois Environmental Protection Agency
Compliance Assurance Section #19
Bureau of Water
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

"Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Agency,.....related to or required by this Act, a regulation adopted under this Act, any federal law or regulation for which the Agency has responsibility, or any permit, term, or condition thereof, commits a Class 4 felony..." (415 ILCS 5/44(h) (8))

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217-785-0561

October 24, 2012

CERTIFIED MAIL # 7011 1150 0001 0859 0089
RETURN RECEIPT REQUESTED

John Kennedy
Senior Vice President, Generation
235 Remington, Suite A
Bolingbrook, IL 60440

Re: Compliance Commitment Acceptance
Violation Notice: W-2012-00055
Midwest Generation, LLC, Crawford Generating Station; ID Number: 6280

Dear Mr. Kennedy:

The Illinois Environmental Protection Agency ("Illinois EPA") has approved the Compliance Commitment Agreement ("CCA") for Midwest Generation, LLC, Crawford Generating Station. Please find enclosed an executed copy of the CCA for your records.

Failure to fully comply with the CCA may, at the sole discretion of the Illinois EPA, result in referral of this matter to the Office of the Attorney General, the State's Attorney or the United States Environmental Protection Agency.

The CCA does not constitute a waiver or modification of the terms and conditions of any license or permit issued by the Illinois EPA or any other unit or department of local, state or federal government or of any local, state or federal statute or regulatory requirement.

Questions regarding this matter should be directed to Andrea Rhodes at 217/785-0561. Written communications should be directed to the Illinois Environmental Protection Agency, Bureau of Water, CAS #19, P.O. Box 19276, Springfield, IL 62794-9276, and all communications shall include reference to your Violation Notice Number W-2012-00055.

Sincerely,

Michael Crumly
Manager, Compliance Assurance Section
Division of Public Water Supplies
Bureau of Water

Attachments

cc: Basil G. Constantelos
Maria Race
Susan M. Franzetti

cc: Basil G. Constantelos
Midwest Generation EME, LLC
235 Remington Blvd, Suite A
Bolingbrook, IL 60440

Maria Race
Midwest Generation EME, LLC
2535 Remington Blvd, Suite A
Bolingbrook, IL 60440

Susan M. Franzetti
10 South LaSalle St.
Suite 3600
Chicago, IL 60603

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

IN THE MATTER OF:

MIDWEST GENERATION, LLC,
CRAWFORD GENERATING STATION
CHICAGO, COOK COUNTY, IL
ID NUMBER: 6280

ILLINOIS EPA VN W-2012-00055
BUREAU OF WATER

COMPLIANCE COMMITMENT AGREEMENT

I. Jurisdiction

1. This Compliance Commitment Agreement ("CCA") is entered into voluntarily by the Illinois Environmental Protection Agency ("Illinois EPA") and Midwest Generation, LLC, Crawford Generating Station ("Respondent") (collectively, the "Parties") under the authority vested in the Illinois EPA pursuant to Section 31(a)(7)(i) of the Illinois Environmental Protection Act ("Act"), 415 ILCS 5/31(a)(7)(i).

II. Allegation of Violations

2. Respondent owns and operated Crawford Generating Station in Chicago, Cook County, Illinois ("Crawford Station").

3. Pursuant to Violation Notice ("VN") W-2012-00055 issued on June 11, 2012, the Illinois EPA contends that Respondent has violated the following provisions of the Act and Illinois Pollution Control Board ("Board") Regulations:

   a) Operations at ash impoundments have resulted in violations of the Groundwater Quality Standards at monitoring wells MW-1 and MW-2.
   Section 12 of the Act, 415 ILCS 5/12, 35 Ill. Adm. Code 620.115, 620.301, 620.401, 620.405, and 620.410.

III. Compliance Activities

4. On August 29, 2012, the Illinois EPA received Respondent's response to VN W-2012-00055, which included proposed terms for a CCA. The Illinois EPA has reviewed Respondent's proposed CCA terms, as well as considered whether any additional terms and conditions are necessary to attain compliance with the alleged violations cited in the VN.

5. Respondent agrees to undertake and complete the following actions, which the Illinois EPA has determined are necessary to attain compliance with the allegations contained in VN W-2012-00055:

   a) Crawford Station shall shut down no later than September 30, 2012. Midwest Generation shall submit confirmation of this shut down to the Illinois EPA by November 15, 2012.

   b) Midwest Generation shall cease operation of the hydro-bins.

   c) Basin 16 shall be rinsed and the rinse water shall be directed to the Basin 16 sump for discharge to the equalization basins. Basin 16 may continue to be used for storm water management purposes.

   d) Ash shall be removed from the Crawford Station fly ash silos, hydro-bins, and precipitators.

   e) In the confirmation submitted pursuant to item 5(a), Midwest Generation must confirm that the coal pile has been removed and the coal fines scraped from the area. Midwest Generation shall cover the coal pile area with topsoil and seed it.

   f) The coal pile run-off pond shall be dredged.

   g) The wastewater treatment system equalization basins shall be drained and sediment removed with a front end loader.

   h) Pending modification of the existing NPDES permit, or until a new NPDES storm water permit is issued to reflect the changed conditions at the Crawford Station, the wastewater treatment system will continue to operate, either in its existing condition or as modified, to address the lack of process wastewater discharges and the on-going discharge of storm water from the Crawford Station.

   i) Once all of the decommissioning activities, items (b) through (g) above, have been completed, Midwest Generation shall submit a certification (or a statement) of compliance. Midwest Generation may submit either the attached "Illinois EPA Compliance Statement" or another similar writing to satisfy the statement of compliance within one year of the effective date of this CCA.

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7. This CCA is solely intended to address the violations alleged in Illinois EPA VN W-2012-00055. The Illinois EPA reserves and this CCA is without prejudice to, all rights of the Illinois EPA against Respondent with respect to noncompliance with any term of this CCA, as well as to all other matters. Nothing in this CCA is intended as a waiver, discharge, release, or covenant not to sue for any claim or cause of action, administrative or judicial, civil or criminal, past or future, in law or in equity, which the Illinois EPA may have against Respondent, or any other person as defined by Section 3.315 of the Act, 415 ILCS 5/3.315. This CCA in no way affects the responsibilities of Respondent to comply with any other federal, state or local laws or regulations, including but not limited to the Act, and the Board Regulations [and Permit, if applicable].

8. Pursuant to Section 42(k) of the Act, 415 ILCS 5/42(k), in addition to any other remedy or penalty that may apply, whether civil or criminal, Respondent shall be liable for an additional civil penalty of $2,000 for violation of any of the terms or conditions of this CCA.

9. This CCA shall apply to and be binding upon the Illinois EPA, and on Respondent and Respondent's officers, directors, employees, agents, successors, assigns, heirs, trustees, receivers, and upon all persons, including but not limited to contractors and consultants, acting on behalf of Respondent, as well as upon subsequent purchasers of Respondent's Crawford Station in Chicago, Cook County, Illinois.

10. In any action by the Illinois EPA to enforce the terms of this CCA, Respondent consents to and agrees not to contest the authority or jurisdiction of the Illinois EPA to enter into or enforce this CCA, and agrees not to contest the validity of this CCA or its terms and conditions.

11. This CCA shall only become effective:

    a) If, within 30 days of receipt, Respondent executes this CCA and submits it, via certified mail, to Illinois EPA, Bureau of Water, Andrea Rhodes, MC #19, 1021 North Grand Ave East, Springfield, IL 62702. If Respondent fails to execute and submit this CCA within 30 days of receipt, via certified mail, this CCA shall be deemed rejected by operation of law; and

    b) Upon execution by all Parties.

12. Pursuant to Section 31(a)(7.5) of the Act, 415 ILCS 5/31(a)(7.5), this CCA shall not be amended or modified prior to execution by the Parties. Any amendment or modification to this CCA by Respondent prior to execution by all Parties shall be considered a rejection of the CCA by operation of law. This CCA may only be amended subsequent to its effective date, in writing, and by mutual agreement between the Illinois EPA and Respondent's signatory to this CCA, Respondent's legal representative, or Respondent's agent.

AGREED:
FOR THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY:

BY: _____ DATE: 10/24/12
Michael Crumly
Manager, Compliance Assurance Section
Division of Public Water Supplies
Bureau of Water

FOR RESPONDENT:

BY: _____ DATE: Oct 15, 2012
John Kennedy
Senior Vice President, Generation
Midwest Generation, LLC

Illinois EPA Compliance Statement

The owner of the facility must acknowledge that all compliance commitment agreement (CCA) measures have been successfully completed.

Please complete, sign, and return.

I _____ *(print name)*, hereby certify that all violations addressed in Violation Notice (VN) number _____ have been addressed and that all CCA measures were completed on _____ *(date)*.

_____
Signature

_____
Title

_____
Telephone Number

_____
Date

Be sure to retain copies of this document for your files. Should you need additional notification forms, please contact this office at (217)785-0561. Return this completed form to:

Illinois Environmental Protection Agency
Compliance Assurance Section #19
Bureau of Water
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

"Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Agency,.....related to or required by this Act, a regulation adopted under this Act, any federal law or regulation for which the Agency has responsibility, or any permit, term, or condition thereof, commits a Class 4 felony..." (415 ILCS 5/44(h) (8))