City Water, Light & Power

CCR Impoundments

Springfield, Sangamon County, Illinois

Response to Sierra Club Witness – Discovery Report and Deposition – Mark Hutson

May 2025

Prepared for:
City Water, Light & Power
3100 Stevenson Drive
Springfield, Illinois 62703

ANDREWS ENGINEERING

3300 Ginger Creek Drive, Springfield, IL 62711 | 217.787.2334

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EXHIBIT
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RESPONSE TO SIERRA CLUB WITNESS DISCOVERY REPORT AND DEPOSITION
MARK HUTSON
CITY WATER, LIGHT AND POWER

Mark Hutson provided a "Review of Closure Permit Application and Other Pertinent Materials", dated January 5, 2025 (Report), to Ms. Faith Bugel. Subsequently City Water, Light and Power (CWLP) deposed Mr. Hutson on March 5, 2025 regarding the content of his document. Provided below are my comments with respect to Mr. Hutson's deposition and report as related to his comments.

The comments listed below are based on their occurrence in Mr. Hutson's deposition.

1 Page 8, Lines 3-22 - Applicability of Attached Publications

Mr. Huston is questioned about the publications that were provided in his Report. Specifically, he was asked about remedial investigations and feasibility studies (RI/FS) specific to CCR surface impoundments. His response was "Most of the projects listed in there in that section are not CCR related."

A RI/FS can be for multiple purposes and multiple sets of regulations. Mr. Hutson's Report was specific to CWLP's two permit applications; the Initial Operating Permit Application (October 2021) and the Closure Construction Permit Application (February 2022). The referenced permit applications were specifically completed pursuant to 35 Ill. Adm. Code Part 845. None of the publications and presentations provided by Mr. Hutson in his Report were specific to the Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments of Part 845. The publications are not specific to the aforementioned applications and regulations.

2 Page 13, Lines 4-5 – Groundwater Impact Assessment

Mr. Hutson made a statement that he "did the groundwater impact assessment" for Midwest Generation in Joliet. Mr. Hutson referred to the first bullet item under Site Characterization and Remediation (page 4) which was attached to his resume as identifying the work he completed for Midwest Generation. That bullet item also listed the Groundwater Impact Assessment.

It was not certain as to the definition of the Groundwater Impact Assessment. The term has a regulatory meaning for landfills permitted pursuant to 35 Ill. Adm. Code 814, Subpart C, which includes contaminant transport modeling. However, by his own admission in lines 13-14 of page 6, Mr. Hutson is not a modeler and does not do any contaminant transport modeling.

3 Page 21, Lines 17-24 and Page 22, Lines – Table 1

Mr. Hutson stated that Table 1 was provided by Ms. Bugel, which was obtained from information contained on the Earthjustice website. Table 1 listed only those units that were proposed to be closed by removal or where actual removal of CCR did occur. However, the full table from the aforementioned website listed approximately 219 CCR impoundments that proposed closure in-place, or where closure in-place did occur, double that of closure by removal. Mr. Hutson did not review the information contained in the complete database but only that which was provided by Earthjustice. Mr. Hutson does not appear to have evaluated how Earthjustice defined the categories, where the data was obtained and who categorized the impoundments on behalf of Earthjustice. In fact, the website provides a disclaimer in the section identified as "About the data". It states "By providing these data, we are not confirming that the industry disclosures and documents are compliant with the CCR Rule or contain true, accurate, and complete information".

4 Page 23, Lines 14-22 – Secured Facility

When Mr. Hutson was asked to define a secure facility; he described a setting similar to that of CWLP as not being a secure facility, but failed to explain what a secure facility actually is. It is unsure if Mr. Hutson understands what a secured facility is.

5 Pages 34-50 – FEMA Flood Map

Ms. Williams asked Mr. Huston (page 36, Lines 2 and 5) if flood damage from inundation is relied on repeatedly as a basis for his remedy. Mr. Hutson replied it is an important factor in the recommended remedy (closure by removal). Mr. Hutson provided a map titled Natural Flood Hazard Layer FIRMette as Appendix D to his January 5, 2025 report.

Mr. Hutson read into the record the first two paragraphs of the Section titled "Flood Damage Potential". Within those paragraphs, Mr. Hutson makes it clear that he used the data provided by the FIRMette map for forming an argument against closure by removal of the CCR impoundments. Mr. Hutson further states (page 38, Lines 1-6) that the "FEMA mappers who do the flood projects expect that during the 100-year flood water will flow over the dam and roadway." Mr. Hutson was inferring the "mappers" were expecting the water to flow over the dam and roadway. The mappers have no intent or expectations with the data.

Ms. Williams made reference to my deposition (page 34, Line 12 and page 39, Lines 15 and 16)) (September 9, 2019; pages 13 and 14) where I provided details as to why the FIRMette map was inaccurate. Mr. Hutson stated he believed he had reviewed the transcript of my deposition in the matter of the flood elevations but could not recall when.

I communicated directly with staff from the FEMA Flood Map Service Center who provided a description of how the flood elevations were derived, which was not representative of actual conditions at and in the vicinity of the impoundments. In addition, Mr. Hutson provides a footnote in his report referencing the Closure Construction Permit Application (Feb. 2022). This infers that he did read the said document. The document includes a section that clearly states the "FEMA maps do not accurately reflect the elevations of the berms at the site" (Exhibit N).

Mr. Hutson apparently did not recall the discrepancies in the FIRMette map from previous reports and depositions. A key argument from Mr. Hutson was the inundation of the impoundments by floodwater, and water over the roadway (East Lake Shore Drive) and the dam, none of which had occurred or is expected to occur.

Mr. Hutson made the comment that he had witnessed a 300-year storm "out there" and that the difference between a "normal flood and a 300-year flood is unbelievable" (page 46, Lines 21-22). Ms. Williams asked if he has reviewed the updated Inflow Design Flood Control plan which had studied the 1,000-year flood. Mr. Hutson did not recall. The updated plan was submitted as part of the Annual Consolidated Report, submitted January 31, 2025. The plan showed there was sufficient capacity within the impoundment area to retain and control precipitation received during a 1,000-year, 24-hour storm event. Based on the National Oceanic and Atmospheric Administration Atlas 14, Volume 2, Version 3, the 24-hour rainfall estimate for the site location is 8.37 inches versus 6.22 inches for the 100-year 24-hour event. The difference is less than unbelievable.

Mr. Hutson was questioned on the operation of the flood gates (pages 48-49). He had no understanding that the dam contained five flood gates that could be lowered to 552 msl to control the level of Lake Springfield and surface elevations of its tributaries. He further did not know if FEMA considered the flood gate control system in their completion of the FIRMette map. Mr. Hutson simply relied on the blue color on the map as to where flood waters would be pursuant to a 100-year flood.

As a witness providing testimony, the individual should be able to review documentation and assess whether the documentation is representative and reasonable for the specific environment, especially when utilizing the information for a key argument. The FIRMette map provided inaccurate information, and previous information and testimony was provided to explain why the map and accompanying data was inaccurate. Mr. Hutson was asked if water flowing over the road on the dam (East Lake Shore Drive) made sense to him (page 45, Lines 2-7). Mr. Hutson responded "I don't know why I would question that". It should have been apparent something was incorrect with the FIRMette map if water from a 100-year flood event was over topping a significant dam structure in a populated and highly regulated city/state.

6 Pages 50-80 – Groundwater Quality

Mr. Hutson utilizes specific data/information that benefit his opinion while ignoring potentially conflicting data/information. As contained on page 54, Lines 11-24, and page 55, Lines 1-17, Mr. Hutson provides one page of a table (page 2 of 5) that was extracted from the Annual Groundwater Monitoring and Corrective Action Report, 40 CFR Part 257, Year Ending December 31, 2023. Page 2 specifically showed total arsenic concentrations exceeding the Groundwater Protection Standard (GWPS) during 2023. As stated on page 55, Lines 11-12, the purpose of isolating arsenic pertained to his disagreement with the use of arsenic concentrations from well AP-4 in derivation of the statistical background concentration.

On a few occasions, Mr. Hutson labels arsenic concentrations as "high" or "contains a lot of arsenic" in well AP-4, even though recent concentrations are typically only 10-25 parts per billion over the 35 Ill. Adm. Code 620.410 Class I groundwater quality standard of 10 parts per billion.

Mr. Hutson disagrees with utilizing arsenic concentrations from AP-4 for derivation of background concentrations. He believes that only arsenic data should be used from AP-5. His reasoning is that it is incongruent (page 63, Line 19) with data from AP-5. Mr. Huston did not appear to have an issue with using other parameter concentrations from AP-4 for derivation of background concentrations. Boron, sulfate and TDS are accepted indicator parameters for monitoring the groundwater at CCR facilities. However, Mr. Hutson found those to be "not particularly elevated for those parameters" (page 63, Lines 7-8) when asked if he looked at those specific constituents at AP-4.

Arsenic, boron, chloride, sulfate, and TDS (at a minimum) are good indicator parameters for monitoring the groundwater at CCR sites. If a CCR impoundment is leaking, all constituents should be detected at elevated concentrations. However, the lack of elevated concentrations of boron, chloride, sulfate and TDS at AP-4 indicates influences from the Lakeside Ash Pond to AP-4 are minimal/negligible. Use of data from AP-4 for derivation of background concentrations is appropriate.

Mr. Hutson infers that because well AP-4 is hydraulically downgradient to the "ash pond", it cannot be used as a background well (page 71, Line 24). In fact, the use of data from wells not hydraulically downgradient of the CCR units are addressed in both 35 Ill. Adm. Code Section 845.630(a)(1) and 40 CFR 257.91(a)(1). Both the State and Federal regulations allow for use of data from wells that are not upgradient to the CCR units.

Mr. Hutson states that he has seen multiple sites playing games with background wells (page 73, Lines 19-21). His inference is specific to arsenic at well AP-4. Well AP-4 was installed as part of groundwater monitoring program required by and vetted by the Illinois EPA (submitted November

18, 2011). Background concentrations derived from data from AP-4 and AP-5 were reviewed and approved by the Illinois EPA as part of the aforementioned groundwater monitoring program. Pursuant to 40 CFR Part 257 and 35 Ill. Adm. Code 845, the initial groundwater monitoring program was revised for each regulatory program. Both groundwater monitoring programs utilized the same two background wells (AP-4 and AP-5) to derive the background concentrations and Groundwater Protection Standards. The use of data from well AP-4 has been thoroughly reviewed by both regulatory authorities.

Mr. Hutson's conclusion (page 75, Lines 10-19) that arsenic data from AP-4 should not be used in calculation of the background concentration is unfounded and contrary to the opinions of the regulatory authorities which conduct such oversite. Both the US EPA and the Illinois EPA have seen the same information that Mr. Hutson has seen with respect to derivation of background concentrations. The US EPA responded to this issue specifically in the Consent Agreement and Final Order (CAFO), dated January 14, 2025. Paragraph 265 of the CAFO requires that the background concentration of arsenic be recalculated using data from monitoring wells AP-4 and AP-5. Based on the CAFO, the US EPA found it appropriate to use data from both AP-4 and AP-5 for derivation of the background concentrations, including total arsenic.

The Illinois EPA reviewed the Initial Operating Permit Application (October 26, 2021) and the Closure Construction Permit Application (February 1, 2022), both combined as Illinois EPA Bureau of Water application Log No. 2021-100001. In response to Illinois EPA comments, revised background concentrations were derived by using pooled data from wells AP-4 and AP-5, including arsenic.

Mr. Hutson was asked about the distribution of arsenic at the site (page 66, Lines 1-4). He responded there were statistically significant increases over the background at wells AP-7 and RW-3 and identified both wells as being downgradient to the impoundments. The presence of arsenic in RW-3 has been well documented and evaluated. Arsenic detections in well AP-7 were recently evaluated through an alternate source demonstration 40 CFR 257.(g)(3)(ii) [CCR Surface Impoundments – Alternate Source Demonstration (40 CFR 257.95(g)], data October 2024.

The extent of exceedances of total arsenic concentrations at wells RW-3 have been delineated. Detections in wells across the creek appear to be the result of natural spatial variability or influences from other sources north of the impoundments. Bedrock contours and potentiometric surface data indicate groundwater movement is from north to south towards Sugar Creek in wells north of the creek. The geochemistry differs substantially between wells north of the impoundments and west of the impoundments. Wells containing exceedances of boron along the west periphery of the impoundments do not show exceedances of arsenic. Wells containing arsenic exceedances do not show elevated concentrations of boron. Boron is the most likely indicator constituent for CCR due to fate and transport characteristics. As such, the arsenic

concentrations in AP-7 are not affiliated with the impoundments and are likely the result of upgradient sources (north) or natural spatial variability.

7 Page 77, Lines 2-24 – Resample of Arsenic

Mr. Hutson stated that he believed the reason arsenic was being resampled in the background wells was due to problematic sample procedures that may be influencing the data. The actual reason was due to a laboratory reporting limit set above the groundwater protection standard. The reporting limit was lowered to account for any detections above the groundwater protection standard of 10 ug/L. This was specifically addressed by the US EPA in the CAFO, paragraph 56.

8 Page 80, Lines 16-17 – Groundwater Flowing Through the Waste

Mr. Hutson implies that groundwater is flowing through the waste with his answer in Lines 16-17. Groundwater is not flowing through the CCR material in either Lakeside or Dallman Ash Ponds. The water levels within the ash ponds are currently greater than the potentiometric surfaces within the monitoring wells on the periphery of the impoundments. As such, there is an outward hydraulic gradient from the impoundments. There is no groundwater or surface water flowing through the CCR.

9 Page 83, Lines 15-20 – Porewater Flows from Sides and Bottom

Mr. Hutson states in Lines 19-20 that porewater will flow into the CCR unit from the "sides and bottom" in the event the units were to be dewatered. Based on the hydrogeologic site characteristics, as presented in numerous recent reports and documents submitted to both the Illinois EPA and US EPA, groundwater will neither flow upwards nor from the sides into the units. The "high head" as referenced by Mr. Hutson is caused by the water within the ash ponds. Once this the ponds are dewatered, the heads will be at or below the bottom of the ponds. Artesian conditions do not naturally occur at the site.

Mr. Hutson later states that the groundwater will only infiltrate from the bottom, not the sides (page 85, Lines 1-17) and that the basal sand is under hydrostatic pressure that would cause groundwater to enter through the bottom of the CCR unit. Mr. Hutson also agreed that the basal sand was semi-confined (page 86, Lines 20-21).

The basal sand, which has been identified as the upper-most aquifer for the two impoundments, is fed by the water within the impoundments; this is the outward gradient. In most locations, the basal sand is the lower-most surficial deposit directly overlying the Pennsylvanian bedrock. The basal sand is a gray colored, poorly graded, silty to clayey fine sand to well graded sand with minor amounts of fine gravel. The top elevation of the basal sand varies from 491 to 513 feet

mean sea level (MSL) and the thickness ranges from about 0 to 12.3 feet. The unit was not encountered consistently, likely due to excessive erosion of the creek bottom. The basal sand generally overlies the bedrock surface and underlies the lower cohesive deposit.

The lower cohesive deposit consists of brown, gray, and brownish gray silty clays, clayey silts, and clays. The lower cohesive deposit ranges in thickness from 0 to 22 feet with an average thickness of about 15 feet.

The lower cohesive deposit consists of 0% gravel, 5% to 48% sand, and 52% to 95% silt/clay; and has a relatively low hydraulic conductivity. The vertical hydraulic conductivity ranges from 1.3 x 10^{-8} to 1.8 x 10^{-6} cm/sec (triaxial permeameter). The low vertical hydraulic conductivity is the reason why the basal sand is semi-confined. The values are lower than the clay liner requirement of a maximum of 1.0 x 10^{-7} cm/sec.

Mr. Hutson's assertion that the CCR units will be recharged by the basal sand in the event units are dewatered is erroneous. Mr. Hutson later reiterates this asserting on page 93, that the CCR is being saturated by the groundwater, which implies vertical upward movement of the groundwater from the basal sand, through the low hydraulic conductivity lower cohesive soil, and into the CCR unit.

Continuing with this line of answers, Mr. Hutson references reports done on the landfill property which discusses an upward vertical gradient. What he does not seem to understand is that the impoundments have been in place decades prior to any hydrogeologic investigation for permitting and constructing of the landfill. The presence of the impoundments created the potentiometric surfaces now exhibited.

Mr. Hutson again implies (page 95, Lines 10-11) that the groundwater infiltration to the impoundments creates the surface water levels within the impoundments. This is simply backwards.

10 Page 88, Lines 7-18 – Clay Liner

Mr. Hutson was referring to the policy at the Illinois EPA during his brief employment there when he stated the intent of a low permeability clay liner was to keep a landfill from leaking. Pursuant to 35 Ill. Adm. Code Part 807, the clay liners in fact were designed to leak. The premise was through cation exchange, the clay particles would essentially filter the leachate as it seeped from the disposal unit, and that organic compounds would be degraded by the organic carbon content of the underlying soils. He is incorrect in his understanding of the process or recollection of the policy.

11 Page 89, Lines 1-24 – Clay Lenses

Mr. Hutson states that the clay present on site is in the form of lenses with limited continuity. The silty clay/clayey silt deposits identified as the upper cohesive deposit or lower cohesive deposit are largely present beneath and adjacent to the impoundments. The cross sections for the area illustrate a significant presence for both deposits. For the vast majority of the site, the Sugar Creek bed rested on top of the lower cohesive soil. Based on the Shelby tube samples from beneath the impoundments, liner quality clays are present beneath the impoundments. The hydraulic conductivity geometric mean for 8 samples from beneath the impoundments is 3.42×10^{-7} cm/sec. To infer the clayey deposits can only be found in lenses on site is a mischaracterization.

12 Page 98, Lines19-23 – AP-5 and Basal Sand

Mr. Hutson states that AP-5 is measuring the head in the basal sand. The basal sand is not present at AP-5. The basal sand is found within the Sugar Creek drainageway. AP-5 is located outside the drainageway where the bedrock is significantly higher than beneath the impoundments. The well is screened slightly above the bedrock surface in a more permeable deposit. Because the basal sand contains a significantly higher horizontal hydraulic conductivity than the clayey deposits at the bedrock surface of AP-5, the basal sand can transmit the groundwater faster than it can be recharged from the area to the east and southeast. This causes a lower potentiometric surface within the confines of the drainageway.

13 Page 112, Lines 2-6 – Velocity of Discharge from the Dam

Mr. Hutson states that the lower the flood gates are, the potential for erosion on the berms is going to be elevated due to the velocity of the discharged water. Mr. Hutson needs to understand the hydrology of the creek and receiving water, the Sangamon River. First, the spillway discharges due north, not in the direction of the impoundments. Under flood conditions, the Sugar Creek elevation increase as the Sangamon River elevation also increases. The water from the spillway is then discharging into a standing body of water that immediately dissipates the velocity of the discharge.

13.1 Biography

I have almost 38 years of environmental consulting, all of which has been in the employment of Andrews Engineering, Inc. I am a licensed professional geologist in the States of Illinois, Wisconsin, Indiana, Missouri, and Tennessee. The majority of my experience entails compliance with either municipal, state, or federal regulatory authorities; however, some projects require adherence to multiple regulatory authorities.

My experience incorporates a wide array of projects which include design and implementation of hydrogeologic site investigations and studies at environmentally sensitive sites, including municipal solid waste (MSW), clean construction demolition debris (CCDD), compost, CCR, industrial, and leaking underground storage tank (LUST) facilities. Although the majority of projects pertain to groundwater issues, many projects include surface water assessment and permitting as well as gas migration investigation and mitigation.

My project management experience includes planning, budgeting, and scheduling, oversight of site investigations, groundwater studies, computer-based modeling (contaminant transport modeling), and oversight of professional and technical staff. I have provided expert testimony for various projects regarding geologic and hydrogeologic issues relating to public health, safety, and welfare for non-hazardous special waste disposal- and CCR-related facilities. I have also provided technical assistance to clients and the related industry organization for regulatory revisions as overseen by the Illinois Pollution Control Board.

I have significant hydrogeologic and permitting experience pertaining to the permitted landfill and impoundments at the CWLP property north of the Spaulding Dam. My tenure at the facility began in 1988, pertaining to disposal of flue gas desulfurization material and groundwater monitoring at the disposal cell. I conducted drilling oversight for preliminary investigation for permitting and construction of the current landfill disposal area. I provided periodic services related to the landfill as needed. Beginning in 2011, I provided services which included derivation of a groundwater monitoring program for the Lakeside and Dallman Ash Ponds as required by the Illinois EPA. Services have continued consistently since that with the implementation of the regulations of 40 CFR Part 257 and 35 Ill. Adm. Code Part 845.

An updated CV is provided in Attachment A.

Brad J. Hansberger 5-19-25

Brad J. Hansberger Date

Seal



ATTACHMENT A:

Bradley Hunsberger, L.P.G.
Vice President
Director of Hydrogeological Services

ANDREWS ENGINEERING

Experience
- Andrews: 37 years

Education
- B.S. – Geology
  Illinois State University

Professional Registration
- L.P.G.: IL, IN, MO, TN, WI

Certifications
- OSHA 40-hr Hazardous Waste Site Worker
- OSHA 30-hr Construction Industry

Mr. Hunsberger, Vice President of Andrews Engineering, has over 37 years of experience in environmental consulting. He is responsible for design and implementation of hydrogeologic site investigations and studies at environmentally sensitive sites, including municipal solid waste (MSW), clean construction demolition debris (CCDD), compost, CCR, industrial, and leaking underground storage tank (LUST) facilities. Mr. Hunsberger utilizes the results of such investigations for facility design specifications and design of subsurface monitoring and remediation systems (gas and groundwater).

Mr. Hunsberger has extensive experience in project management. His responsibilities under this role include planning, budgeting, and scheduling, oversight of site investigations, groundwater studies, and computer-based modeling. He has also provided expert testimony for various projects regarding geologic and hydrogeologic issues relating to public health, safety, and welfare for non-hazardous special waste disposal and mining related facilities.

Representative Project Experience

City Water, Light & Power – Springfield, Illinois
Mr. Hunsberger is the technical lead and project manager for hydrogeologic-related tasks pertaining to the FGDS Development Landfill and the CWL&P Ash Impoundment Strategy. He has provided services for the site since 1988, beginning with new cell permitting and development for the landfill and continues with the CCR impoundment permitting and regulatory maintenance. Mr. Hunsberger technically justified the existing groundwater monitoring plan for the permitted landfill and on-site ash impoundments. He has designed additional groundwater quality assessments pursuant to the Federal rules (40 CFR Part 257), and more recently, the newly approved Illinois State regulations of 35 Illinois Administrative Code Part 845.

Harsco Minerals – Kincaid, Illinois
Harsco Minerals assists other industrial organizations by providing economically and environmentally viable solutions for recycling various industrial production by-products. Harsco reclaims usable ash generated from Dominion's Kincaid power plant production from on-site impoundments as part of its materials processing/recycling operations. Harsco contracted Andrews Engineering, Inc. to perform a feasibility study to characterize a surface impoundment of approximately 30 acres and determine if ash types within the pile could be segregated and mined to increase reclamation.

Under the direction of Mr. Hunsberger, Andrews performed an initial site investigation and prepared a plan for characterizing the ash pile at the site. Upon approval from the client, the Andrews field team conducted sampling of the impoundment, with sample quality control and oversight provided by one of the firm's licensed professional engineers. Andrews also provided drilling oversight and completion of boring logs as part of the overall investigation. After sampling and data review, Andrews prepared volumetric calculations and provided facility maps to identify the differentiable ash types within the impoundment.

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Lake County Grading Company – Libertyville, Illinois
The Lake County Grading Company facility is a closed construction and demolition debris landfill. Fly and/or bottom ash was placed within the waste unit and appears to have impacted the groundwater quality adjacent to the unit. Andrews designed and permitted via the Illinois EPA a subsurface investigation to determine the rate and extent of contamination pursuant to applicable regulations. Results indicated ash was present outside the waste boundary in the matrix of the shallow soil. Additionally, Mr. Hunsberger has provided project management for redesign of the surface contours of the landfill with the objective of utilizing the surface for operational tasks of the facility.

Five Oaks Recycling & Disposal Facility – Taylorville, Illinois
This site is an operating solid waste disposal facility. Previous property owners of the facility constructed an ash pond for sluicing operations within the current limits of cell development. The pond was subsequently removed, but influences to the groundwater quality remained and worsened. Andrews designed and permitted a multi-phased investigation to evaluate the extent of influences to the groundwater. Andrews provided the field oversight to the drilling operations, and collected soil and groundwater samples for analyses. Mr. Hunsberger managed the initial corrective action and related permitting to address the groundwater quality.

Hillerman Farms Environmental Assessment – Joppa, Illinois
Coal combustion residue (CCR) was utilized as backfill material to aid in topographic modification to a rural parcel of property. The receipt of CCR was conducted pursuant to an Illinois EPA permit and applied to low areas and an access road. Due to the changing political environment, the Illinois Attorney General Office initiated enforcement actions for the mitigation of the CCR material and potential environmental impacts. Under the direction of Mr. Hunsberger, Andrews Engineering was contracted to conduct an environmental assessment of the property and respond to alleged statutory violations issued by the Attorney General Office.

The environmental assessment included evaluating the laboratory analyses of the CCR, samples from both the site and from the coal-fired power plant. At that time, the ash was not determined to be a solid waste pursuant to 35 Administrative Code 721.102, but a beneficial use material. This was consistent with a solid waste determination conducted by the Illinois EPA. The assessment concluded the ash complied with Section 3.135(a)(8) of the Illinois Environmental Protection Act.

The ash was further evaluated to show it contained pozzolanic properties making the material conducive as structural backfill such that there were no mass or slope stability issues. The pozzolanic properties also resulted in a low hydraulic conductivity, minimizing the potential for transport of ions contained in the ash. Based on the evaluation of the laboratory analyses in conjunction with the pozzolanic characteristics of the ash, it was determined influences to the local groundwater quality would be minimal, if at all.

Andrews conducted an evaluation of potential groundwater contamination sources in the project area, which included multiple entities, some with historical data showing environmental impacts. Andrews identified potable water supplies in the area and downgradient receptors from the project site. Andrews provided a written opinion that aided in mitigation of the enforcement activities.

Winnebago Landfill – Rockford, Illinois
Mr. Hunsberger has provided consulting services for Winnebago Landfill since 1990. Responsibilities included design and implementation of the subsurface investigation for an expansion of the Northern Unit which had been designated as a CERCLA site by the US EPA. The subsurface investigation included the installation of monitor wells and piezometers, and aquifer characterization testing. Mr. Hunsberger provided peer review of the Groundwater Impact Assessment and completed the Groundwater Monitoring Plan. He

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also provided test liner design, construction oversight and subsequent documentation/reporting. He has assisted in three subsequent facility expansions by providing peer review of draft applications and related materials. Mr. Hunsberger provides oversight for groundwater and leachate quality review and regulatory reporting, including review of residential well analyses. He has completed or provided oversight of the five-year corrective action status reports and assists with the evaluation of the draft US EPA's Five-Year Review Report prior to publishing. Mr. Hunsberger assisted with the wetland delineatin and mitigation plan west of Kilbuck Creek, and recently compiled and submitted a Section 401 water quality certification pursuant to the Clean Water Act. Andrews Engineering has provided quarterly groundwater reporting services at the facility since 1995.

Carus Chemical – Ottawa, Illinois
Mr. Hunsberger has provided consulting services for Carus Chemical since 1987, which include three separate waste disposal units and the plant in LaSalle, IL. Responsibilities included design and implementation of the subsurface investigations related to evaluation of the groundwaer quality for the three disposal units. Mr. Hunsberger provided permitting services that included well installations and groundwater reporting for the Carus No. 2 units, which are on separate properties from the Carus No. 3 facility. Mr. Hunsberger worked with the project engineers to design and maximize the avialable area for the new disposal area (Carus No. 3), including the depth of the unit, potential dewatering issues, and area needed to temproarily store the excavated material. Mr. Hunsberger assisted with the regulatory needs for the expansion, including the State solid waste regulations and local ordinances as the facility was not deemed a regional pollution control facility. Mr. Hunsberger partipated in meeting/teleconferences with the LaSalle County Environmental Services and Land Use Department during the permitting process for the Carus No. 3 facility. He has conducted facility inspections as part of development and closure activities for all three units. Andrews Engineering has provided environment sampling services at the facilities since 1980.

Honeywell Metropolis Works – Metropolis, Illinois
Responsibilities included design and implementation subsurface investigations, and design of the environmental monitoring program for an onsite landfill (adjacent to manufacturing facility). Additional responsibilities included design and implementation of a three-phased RCRA soils and groundwater investigation at the plant, design and installation of lysimeters (via angle drilling), and investigation of subsurface contamination due to surface infiltration of process waters. The investigation included revisions to their Part B RCRA permit.

Equistar – Tuscola, Illinois
Mr. Hunsberger designed and managed a hydrogeologic investigation and groundwater assessment for a chemical plant containing seven closed landfill units. The investigation and assessment included the installation of nested wells and piezometers in three hydrostratigraphic units at strategic locations to isolate areas of elevated concentrations and differentiate the sources among the seven waste units.

Litchfield-Hillsboro Landfill – Litchfield, Illinois
Mr. Hunsberger was responsible for all aspects of site geology and hydrogeology studies for the active municipal solid waste landfill. These duties included groundwater and leachate quality evaluations, evaluations of remedial activities, a corrective action assessment and report generation and submittals. He also provided annual assessments of remedial activities at the site, prepared annual reports, and supplied expert testimony at a public meeting for permitting and corrective action measures. The contaminant transport modeling included a single-layered aquifer conceptual scenario and two-dimensional analytical modeling. Andrews Engineering has provided environmental sampling and reporting for the facility since 2005.

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Willowhill Landfill - Kendall County, Illinois
Mr. Hunsberger's responsibilities included evaluation of site hydrogeologic information for purposes of defining a groundwater monitoring program and simulating solute and fate transport at the proposed facility. He provided peer review of the Report of Hydrogeologic Investigation as part of the siting expansion application and provided testimony for the groundwater monitoring program and the groundwater impact assessment for a proposed 1200 acre facility.

ADS/McLean County Landfill – Bloomington, Illinois
Responsibilities included conducting hydrogeologic investigations and reports for siting efforts (vertical and horizontal expansion) and regulatory permitting requirements. The investigations included boring and well/piezometer installation oversight for revisions to the groundwater monitor well network and the proposed expansion of the facility, and test pit evaluations for liner construction planning. Mr. Hunsberger conducted the initial liner evaluation including identification of useable soils for liner construction in the South Fill Area. He was also the on-site quality control representative for construction of the Initial Fill Area, which included oversight of the cell excavation, and placement of the clay liner, leachate collection pipe and sand drainage layer. Andrews Engineering has conducted environmental sampling and reporting services for the facility since 2006.

Livingston Landfill – Pontiac, Illinois
Mr. Hunsberger provided oversight and review for the hydrogeological aspects of the county siting application submitted on behalf of Envirite Corporation. Subsequent to the siting approval, Mr. Hunsberger was the project hydrogeologist for the initial significant modification application, including design of the Groundwater Monitoring Program and review and oversight of the groundwater impact assessment. He also designed the Groundwater Monitoring Program for the Parcel D expansion and provided assistance with the Parcel D groundwater impact assessment for the County siting application and hearing, and the Illinois Environmental Protection Agency application. Mr. Hunsberger designed and supervised drilling operations for a 50 million cubic yard expansion, which included the installation of 54 wells and piezometers. Other responsibilities at the facility have included monitor well installations, boring oversight, field hydraulic conductivity tests, methane migration investigations, slurry wall design, and groundwater quality evaluations as well as related documentation and reporting in accordance with regulatory requirements and facility compliance for groundwater and surface water.

Peoria Disposal Company, Hazardous Waste Landfill – Peoria County, Illinois
Responsibilities included coordination and evaluation of site hydrogeologic information for purposes of simulating solute and fate transport at the proposed facility expansion (Groundwater Impact Assessment). He provided peer review of the Report of Hydrogeologic Investigation and Groundwater Monitoring Program submitted as part of the siting expansion application.

Brickyard Disposal and Recycling – Danville, Illinois
Brickyard Disposal and Recycling is a municipal solid waste dispoal facility which consists of two units separated by a haul road, which allows independent groundwater and gas monitoring systems. Mr. Hunsberger designed the boring program, provided field oversight for boring and piezometer installation, and review for the initial permit application pursuant to the new solid waste rules. Mr. Hunsberger resposibilities now include oversight for quartelry groundwater evalautions, and on-going groundwater assessments. Mr. Hunsberger designed the phased extransous materials investigation, revised the Unit 1 monitoring well network, and created the technical documentation for an Illinois Pollution Control Board Adjusted Standard Petition to revise the Unit 1 groundwater compliance boundary. The complexities of Unit 1 include the combination of underground and surface mining of coal within the waste limits. Mr. Hunsberger was the

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project manager for an application proposing combining the two separate waste units, which resulted in a successful appeal through the Illinois Pollution Control Board and a successful defense in the Illinois Appellate Court system.

Envirofil of Illinois Recycling and Disposal Facility – McDonough County, Illinois
Mr. Hunsberger was responsible for site hydrogeologic investigation and reports for local siting requests and regulatory permit applications of an approximately 75.6-acre area containing 28 wells. This included a Report of Hydrogeologic Investigation and Groundwater Monitoring Program. Additional investigations included aquifer analysis for potential offsite contaminant source and with the utilization of an electromagnetic survey. Mr. Hunsberger's responsibilities included a proposed liner redesign and related contaminant transport modeling, annual evaluation of the corrective action measures and groundwater management zone.

Mr. Hunsberger provided project oversight for the installation of a cutoff wall in the expansion area and revisions to the contaminat transport model as a result of a model failure. He also provided oversight for the annual remedial action report due to impacted groundwater associated with the old waste unit.

Dixon/GROP Landfill No. 2 – Lee County, Illinois
Responsibilities included regulatory permit applications for an approximately 40-acre fill area containing four separate units and 30 wells. This work included subsurface investigations and a report of the hydrogeologic investigation, groundwater impact assessment (peer review), groundwater monitoring program, and dewatering feasibility studies of a confined aquifer (affecting design and construction activities). He designed the remedial investigation that resulted in the installation of a slurry wall around an old waste unit. Andrews Engineering has conducted environmental sampling and reporting since 2012.

Transfer Stations and Waste Service Facilities – Illinois and Indiana
Mr. Hunsberger is responsible for NPDES modifications/renewals and revisions to existing Stormwater Pollution Prevention Plans and Spill Prevention, Control and Countermeasures Plans for numerous transfer stations and waste service facilities in Illinois and Indiana.

Streator Area Landfill No. 3 – Livingston County, Illinois
Mr. Hunsberger was responsible for conducting a site hydrogeologic investigation and reports for local siting requests and regulatory permit application for an approximately 20-acre fill area with 15 wells. This included a report of hydrogeologic investigation, and coordination and review of the groundwater impact assessment and groundwater monitoring program. This facility was undermined by coal mining operations and contained surface mines due to shale mining for brick productions. His responsibilities also included construction oversight of test liners and dewatering feasibility studies for the coal seam and mined areas. He also designed and directed studies for methane migration through the shale and wall units. Andrews Engineering has conducted environmental sampling and reporting for the facility since 2012.

Sangamon Valley Landfill – Sangamon County, Illinois
Responsibilities included regulatory permit applications consisting of subsurface investigations, peer review of the groundwater impact assessment (GIA), groundwater monitoring program, and groundwater flow studies for two separate solid waste units that were approximately 75 acres that contain in excess of 55 wells. Responsibilities also include design and oversight of groundwater management zone investigations and related mitigation, including the design and implementation of a reactive barrier at multiple locations to control VOC migration. The groundwater quality appears to have been influenced by historical property use, including the use of coal-fired boilers as part of the World War I munitions production facility.

Proppant Specialists, LLC – Arcadia, Wisconsin
Mr. Hunsberger provided technical assistance, assisted with the coordination of meeting logistics and provided on-site technical support for two public meetings with the Town of Arcadia, Wisconsin, in support of a proposed sand mine. He prepared the overall zoning application for the proposed sand mine related to the hydrogeology of the proposed facility to assist in the demonstration that no potential for contamination to the underlying aquifer located on site. He also participated in the public hearing held by Trempealeau County, Wisconsin, for the zoning application and provided information for lay persons on both the County Board and from the community related to the hydrogeological aspects of the application.

Upper Rock Island County Landfill – East Moline, Illinois
Mr. Hunsberger was responsible for all aspects of site geology and hydrogeology studies for this active municipal solid waste landfill. He prepared two siting applications and maintained regulatory compliance and permitting including an approved expansion permit application. His other specific duties at the facility included oversight of flow and contaminant transport modeling, preparation of annual reports and assessments of potential groundwater impact, remedial investigations of the site including field classification and oversight, groundwater and leachate quality testing, soils and gas testing, and assessments of potential groundwater impact. Mr. Hunsberber designed and provided project management for a recent geologic investigation to identify a clay borrow source adjacent to the existing facility.

Fiat Allis of North America – Magnetic Survey for Buried Drums, Springfield, Illinois
Mr. Hunsberger participated in conducting an environmental investigation to determine the extent of soil contamination. An electromagnetic survey was performed on the site to locate and define the aerial extent of waste materials buried on-site. A feasibility study (**FS**) to determine the appropriate method of remediation was also conducted as well as sampling to confirm that all wastes and soils had been removed.

CID Recycling and Disposal Facility Area I Groundwater Remediation System – Calumet City, Illinois
CID Recycling and Disposal Facility is a closed RCRA disposal facility located near Calumet City, Illinois. Mr. Hunsberger completed the design documentation and construction workplan for implementation of a groundwater pump and treat system for a deep aquifer underlying the Area I waste unit, and a phytoremediation system for the shallow groundwater in the same vicinity.

Blackwell Forest Preserve Site Investigation – Warrenville, Illinois
Under the direction of Mr. Hunsberger, Andrews conducted a site investigation at a former asphalt plant located within the Blackwell Forest Preserve. The purpose of the investigation was to determine the extent of tar within the soil and any residual environmental impacts to the soil and groundwater. The subject investigation was conducted as a follow-up to a previous investigation, which determined volatile organic compounds (VOCs) and polynuclear aromatic hydrocarbons (PNAs) to be contaminants of concern.

To determine the extent of tar and any environmental impacts, a total of six soil borings were advanced using a Geoprobe 540B direct push drill rig. All borings were extended to a depth of 10-ft below ground surface and were continuously sampled. Soil samples from all borings were field screened for VOCs and visual/olfactory observations were recorded. Any boring indicating the presence of VOCs was converted to a temporary well for groundwater analyses. Groundwater samples were also collected from five pre-existing monitoring wells at the site.

A report detailing the results of the investigation was submitted to the client. Recommendations for further soil management were also provided.

Illinois Department of Transportation – Statewide Waste Assessment Investigations, Studies and Designs Contract, Statewide, Illinois

Multiple PTB Contracts

As a Division Director, Mr. Hunsberger's responsibilities include the coordination of such activities as scheduling of field activities, technical review and comment of final drafts and budget evaluations. At times Mr. Hunsberger performed a final review for these projects and helps ensure all projects meet the quality standards and specifications of both IDOT and AEI. The vast majority of projects were preliminary site investigations (PSIs).