GENERAL INFORMATION:

Size:
- Proposed Landfill Site: 705.36 acres
- Proposed Facility Boundary: 78.17 acres
- Proposed Waste Boundary: 78.17 acres

Height / Depth:
- Existing Elevations Range Across Facility: High 720 feet above MSL
- Low of 520 feet above MSL
- Approximate average of 640 feet above MSL
- Proposed Peak: Approximately 804 feet above MSL
- Average Mass Excavation Depth: Approximately 573 feet above MSL

Capacity:
- Proposed Capacity: Approximately 13.4 million airspace cubic yards
- Estimated Throughput: Approximately 270,600 tons/year in 2020
  (and assuming a 1% annual growth rate)
- Approximate Landfill Life: 32 years
- Assumed In-Place Density: 1,500 lbs/ascy
- Daily / Intermediate Cover Factor: 10%
- Utilization Factor: 0.75 tons/ascy

General:
Municipal Solid Waste, construction and demolition debris, non-special waste, and non-hazardous special wastes that have been approved by the Peoria City/County Landfill Committee.

Criterias 2.1 - Location:

Located within the southwest quarter of Section 23, Township 9 North, Range 6 East of the Fourth Principal Meridian.

Airport:
No airports are located within 10,000 feet of the proposed facility.

Floodplain:
No area of the facility is located within a 100-year floodplain, as defined by the Federal Emergency Management Agency based on Flood Insurance Rate Map, Peoria County, Illinois (Unincorporated Areas) FIRM Rate Panel Numbers 170533 0100 B, 170533 0125B, 170533 0150B, and 170533; all revised June 1, 1983, published by FEMA.

Wetlands/Waters of the US:
Approximately 1.62 acres of identified wetland area is proposed to be disturbed during the construction of Peoria City/County Landfill No. 3. PCCLI will acquire an Individual Permit from the USACOE for development of Peoria City/County Landfill No. 3, which will include mitigating loss of waters of the US or wetlands at a minimum 2:1 replacement ratio. No construction will take place within wetlands.
prior to receiving this permit.

Faults and Unstable Areas: There are no known faults within 200 feet of the facility. Additionally, an extensive coal mine investigation was completed as part of the site investigation. Based on the results of this investigation, no underground coal mines are located under the Peoria City/County Landfill No. 3 waste footprint. Furthermore, site specific studies have not identified site characteristics conducive to the formation of karst features.

Seismic Impact Zone: The facility is not located in an area that has a greater than 10% chance of exceeding 0.10g in 250 years based on the Earthquake Hazards Program - National Seismic Hazards Mapping Project, United States Geological Survey. Nevertheless, Peoria City/County Landfill No. 3 has been designed to safely withstand the maximum horizontal acceleration anticipated at the Facility. Peoria City/County Landfill No. 3 has been designed to achieve a safety factor greater than 1.3 against slope failure under seismic conditions.

Wild and Scenic Rivers: There are no wild or scenic rivers within the proposed facility watershed (United States Department of Interior).

Historic and Natural Areas: A Phase I Archaeological Survey of the proposed facility area found that the proposed facility does not contain any archeological sites that meet the requirements for National Register Eligibility. Additionally, no national landmarks or natural areas will be impacted as part of Peoria City/County Landfill No. 3 development.

Endangered Species: There are no endangered species that will be adversely impacted by the proposed Peoria City/County Landfill No. 3.

Water Quality Management: The development and operation of the landfill will not violate any water quality management plans.

Water Supply Well Setback: No known water supply wells are located within 200 feet of the waste boundary, nor are there any community water supply wells located within 2,500 feet of the waste boundary, per the setback zones defined in the Illinois Environmental Protection Act.

Sole-Source Aquifer and Regulated Recharge Areas: No sole-source aquifers or regulated recharge areas are located in this area.

Roads and Highways: The proposed Peoria City/County Landfill No. 3 waste unit is not located within 500 feet of a township or county road or state or interstate highway.

Occupied Dwellings: The are no occupied dwellings within 500 feet of the waste boundary.
Criteria 2.2 - Site Investigation:

Geologic and Hydrogeologic Investigation

39 Continuously Sampled Boring Locations
41 monitoring wells were installed at 20 of the boring locations
(2 inch diameter Schedule 40 PVC; 0.010-inch slotted)
Unconsolidated and rock samples submitted to laboratory for geotechnical analysis
All monitoring wells were developed.
Aquifer testing was completed at every location.
Groundwater elevations routinely measured within the monitoring wells.

General Site Geology:

Mine Spoil:

4.5 to 67.5 feet thick beneath the site and the only unconsolidated material identified above bedrock in the investigation.

Carbondale Formation:

Approximately 275 feet thick in the region.
Predominantly shale bedrock
Includes several economically viable coal seams, including the Herrin (No. 6) Coal and the Springfield (No. 5) Coal. The Herrin (No. 6) Coal was strip mined at the site and strip mine operations are responsible for the presence of the Mine Spoil from the bedrock surface to the ground surface across the entire site. The Springfield (No. 5) Coal was mined in the subsurface in the vicinity of the site.

General Site Hydrogeology:

Surface Water:

Generally consist of isolated ponds which have formed in depressions left following the cessation of surface mining activities

Mine Spoil:

Material left by surface mine activities upon removal of the Herrin (No. 6) Coal from the bedrock surface.

Geometric Mean Horizontal Hydraulic Conductivity: $5.64 \times 10^{-4} \text{ cm/sec}$

Geometric Mean Vertical Hydraulic Conductivity: $5.72 \times 10^{-8} \text{ cm/sec}$

Upper Shale Zone of Carbondale Formation:

Predominantly shale uppermost bedrock

Geometric Mean Horizontal Hydraulic Conductivity: $6.71 \times 10^{-6} \text{ cm/sec}$

Geometric Mean Vertical Hydraulic Conductivity: $3.32 \times 10^{-8} \text{ cm/sec}$
Springfield (No. 5) Coal Zone of Carbondale Formation:

Coal seam mined in the subsurface in the vicinity of the site.

Geometric Mean Horizontal Hydraulic Conductivity: $8.62 \times 10^{-7}$ cm/sec

Potentiometric Surfaces:

Mine Spoil: Considered to be the Uppermost Aquifer
Groundwater flow is radial from an area just east of the existing Peoria City/County Landfill No. 2.

Upper Shale Zone: Groundwater flow is radial from an area just east of the existing Landfill No. 2. Although similar to the surface of the Mine Spoil, the Upper Shale potentiometric surface is lower with an average vertical gradient of 0.62 between the units.

Springfield Coal Zone: Groundwater flow is generally to the northeast across the Peoria City/County Landfill No. 3. This surface is very different and considerably lower than the surfaces created for the Mine Spoil and Upper Shale Zone. This is a result of the large vertical gradient (1.74) through the Upper Shale, indicating that there is little vertical hydraulic connection between these units.

Coal Mine Investigation:

The extent of underground mining activities has been well defined. No underground mines extend beneath the proposed Peoria City/County Landfill No. 3. Furthermore, the waste boundary is positioned outside of the angle of draw and, therefore, the landfill will not be affected by the collapse of any known underground mines. The investigation included the following components:

- Record Research and Field Reconnaissance
- Drilling
- Borehole Sonar Mapping
- High Resolution Surface Seismic Reflection Survey
- Hypothetical Subsidence Modeling

Criteria 2.3 - Design Report:

Liner / Leachate Collection System:

Excavation:
573 feet above MSL

Composite Liner System:
12" Granular Drainage Layer
60-mil HDPE Geomembrane
3' Earth Liner ($1 \times 10^{-7}$ cm/sec)

Leachate Collection System:
Liner Interior Side Slope: 3 Horizontal : 1 Vertical
Leachate Collection Slopes: Ranges 0.5% to 1.0% toward sump and 2.0% toward pipe
Spacing of Leachate Collection: Maximum 450 feet

Final Cover System:

Final Cover System:
Native Prairie Grasses and Other Suitable Grasses
6" Vegetative Soil Cover
30" Protective Soil Cover
Geocomposite Drainage Net
40-mil Textured HDPE Geomembrane
12" Low Permeability Soil (1 x 10⁻⁹ cm/sec)
12" Intermediate Cover

Final Cover Side Slope:
4 Horizontal : 1 Vertical (max.)
10 Horizontal : 1 Vertical (min)

Maximum Final Cover Elevation: Approximately 804 feet above MSL

Landfill Gas:

Composite: Methane (CH₄) and Carbon Dioxide (CO₂)
Monitoring: 1) Waste Unit; 2) Below Ground Perimeter; 3) Ambient Air; 4) Buildings
Management: Development of an active gas collection system consisting of vertical extraction wells with a well spacing having a radius of influence of 100 feet.

Criteria 2.4 - Stormwater Management Plan:

Runoff Calculation Method: SCS TR-20
Reach Routing Method: Storage Indication Method (also known as Modified-Puls)
Pond Routing Method: Storage Indication Method (also known as Modified-Puls)
Storm Distribution: SCS Type II
Unit Hydrograph: SCS

Modeled Storm Events: 1-hour and 24-hour storm events for 2-year, 25-year, and 100-year frequencies

Post-development release rates are less than pre-development release rates for all modeled storm events.

Proposed detention basins (Northeast and Southeast Detention Basins) are all sized to detain the 100-year, 24-hour storm.

Criteria 2.5 - Construction Quality Assurance (CQA) Program:

The CQA Program will consist of comprehensive oversight, material testing and documentation during the construction phases, and certification by an Illinois Registered Professional Engineer that the constructed features at the facility meet or exceed the design standards.
Criteria 2.6 - Operating Plan:

Personnel: Vice President of Landfills; Facility Manager; Gate Control Administrators; Equipment Operators; General Laborers

Equipment: Water wagon, backhoe loader, grader, excavator, compactor, bulldozers, sweeper

Types of Waste Accepted:
Municipal Solid Waste, construction and demolition debris, non-special waste, and non-hazardous special wastes that have been approved by the Peoria City/County Landfill Committee.

Operating Hours: 7:00 A.M. to 5:30 P.M. Monday through Saturday

Criteria 2.7 - Groundwater Impact Assessment:

The Groundwater Impact Assessment was performed in order to evaluate the proposed Peoria City/County Peoria City/County Landfill No. 3 design.

Baseline Model: POLLUTE

Evaluated: The most direct contaminant migration pathway to the zone of attenuation - laterally through the sidewall liner and Mine Spoil

Results: Satisfactory

Sensitivity Analyses: Multiple sensitivity analysis were conducted on this model, all of which were satisfactory.

Upper Shale Sensitivity Analysis: One of the sensitivity analyses included the use of a MIGRATE model to evaluate contaminant transport vertically downward through the liner system and then outward toward the zone of attenuation in the Upper Shale. The results of this sensitivity analysis was satisfactory.

The findings of this Groundwater Impact Assessment indicate that the Peoria City/County Landfill No. 3 design, when incorporated into the site specific geology and hydrogeology, will be safe and protect the public health, safety, and welfare.

Criteria 2.8 - Groundwater Monitoring:

23 proposed groundwater monitoring wells

Criteria 2.9 - Closure and Post-Closure Care Plan:

Premature closure costs and post-closure care estimates have been developed for Landfill No. 3.