

CLOSURE / POST-CLOSURE PLAN

GRAND TOWER ENERGY CENTER LLC (GTEC) INACTIVE ASH BASIN CLOSURE

**This Closure/Post-Closure Plan has been prepared in accordance with
Title 35 Illinois Administrative Code Section 845.540, Section 845.650,
Section 845.710, Section 845.720 and Section 845.780**

Prepared For:

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**CLOSURE / POST-CLOSURE PLAN
GRAND TOWER ENERGY CENTER, LLC (GTEC)
INACTIVE ASH BASIN**

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CLOSURE / POST CLOSURE PLAN
GRAND TOWER ENERGY CENTER, LLC (GTEC)
INACTIVE ASH BASIN
Grand Tower, Illinois

SECTION 1.0 – BACKGROUND INFORMATION

Grand Tower Energy Center, LLC (GTEC) was a 478 Megawatt (MW) natural gas combined cycle facility that is located north of Grand Tower, Illinois adjacent to the east bank of the Mississippi River in Jackson County. GTEC is located on about 300 acres of land and was a “merchant facility” that sold energy and capacity into the Midcontinent Independent System Operator (MISO) system. The GTEC facility is currently owned by Main Line Generation LLC, a subsidiary of Rockland Capital, and was purchased from Ameren in February 2014.

GTEC has reportedly produced electricity since 1951 utilizing both coal and oil-fired boilers prior to converting to natural gas in 2001. While operating coal fired boilers, GTEC developed a coal combustion residual (CCR) impoundment for both fly ash and bottom ash residuals. Reportedly, the original construction of the impoundment contained an internal divider soil berm to segregate bottom ash and fly ash residuals. The earliest plans reviewed for the GTEC CCR impoundment were prepared by Sargent & Lundy dated 1969. Based on plans dated 1985, the GTEC CCR impoundment was expanded from an original 10-acre footprint to the current 21.7-acre footprint.

The CCR impoundment did not receive any additional CCR material after the facility was converted to natural gas in 2001. Until the CCR impoundment was closed, it continued to receive a low volume of facility wastewater, which was discharged to an unnamed tributary of the Mississippi River under an NPDES permit (NPDES Permit No. IL0000124). Subsequent to closure, the low volume wastewater was diverted from the CCR impoundment basin to a treatment system within the power plant to eliminate influent sources to the basin.

Based on the operational history of the facility, the GTEC CCR impoundment is classified as an “Inactive Ash Basin” in accordance with IEPA Regulations. Based on additional field explorations performed in 2015 within the CCR impoundment footprint, approximately 650,000 cubic yards (CY) of ash material were estimated to be present within the impoundment footprint. These materials were identified to be located above a low permeable soil layer with coefficients of permeability generally ranging from 1×10^{-5} cm/sec to 1×10^{-7} cm/sec. Through the installation of additional soil test borings along the perimeter of the impoundment, it was determined that soil berms were constructed on the north, west and east perimeter of the impoundment. With this information in mind, the GTEC CCR impoundment was proposed to be “closed in place” with a consolidation of materials into a smaller footprint under an engineered cap.

SECTION 2.0 – REGULATORY REQUIREMENTS

Closure of the 21.7-acre GTEC CCR impoundment was originally proposed to meet or exceed the regulatory requirements of the Federal Regulations under 40 Code of Federal Regulations (CFR) Section 257 Subpart D (257.50 to 257.107) Standards For The Disposal Of Coal Combustion Residuals In Landfills And Surface Impoundments. The regulations under 40 CFR 257 Subpart D were used because the state regulations under Title 35 of the Illinois Administrative Code (IAC) Section 845 - Standards For The Disposal Of Coal Combustion Residuals In Surface Impoundments had not yet been promulgated. Therefore, as requested by the Illinois Environmental Protection Agency (IEPA), the closed GTEC CCR impoundment needs to now demonstrate compliance with the state regulations under 35 IAC Section 845, and in relation to this closure/post-closure plan the requirements of 35 IAC 845 outlined below:

Per 35 IAC 845.710 Closure Plan:

Closure of a CCR surface impoundment, or any lateral expansion of a CCR surface impoundment, must be completed either by leaving the CCR in place and installing a final cover system or through removal of the CCR and decontamination of the CCR surface impoundment, as described in Sections 845.720 through 845.760

This written closure plan is prepared in accordance with 845.720 which states:

Section 845.720 (a) Preliminary Written Closure Plan

Content of the Preliminary Closure Plan. The owner or operator of a new CCR surface impoundment or an existing CCR surface impoundment not required to close under Section 845.700 must prepare a preliminary written closure plan that describes the steps necessary to close the CCR surface impoundment at any point during the active life of the CCR surface impoundment consistent with recognized and generally accepted engineering practices. The preliminary written closure plan must include, at a minimum, the following:

- A) A narrative description of how the CCR surface impoundment will be closed in accordance with this Part.*
- B) If closure of the CCR surface impoundment will be accomplished through removal of CCR from the CCR surface impoundment, a description of the procedures to remove the CCR and decontaminate the CCR surface impoundment in accordance with Section 845.740.*

(This requirement does not apply to this facility, as the CCR impoundment was closed in place).

- C) If closure of the CCR surface impoundment will be accomplished by leaving CCR in place, a description of the final cover system, designed in accordance with Section 845.750, and the methods and procedures to be used to install the final cover. The closure plan must also discuss how the final cover system will achieve the performance standards specified in Section 845.750.*
- D) An estimate of the maximum inventory of CCR ever on-site over the active life of the CCR surface impoundment.*

- E) *An estimate of the largest area of the CCR surface impoundment ever requiring a final cover (see Section 845.750), at any time during the CCR surface impoundment's active life.*

- F) *A schedule for completing all activities necessary to satisfy the closure criteria in this Section, including an estimate of the year in which all closure activities for the CCR surface impoundment will be completed. The schedule should provide sufficient information to describe the sequential steps that will be taken to close the CCR surface impoundment, including identification of major milestones such as coordinating with and obtaining necessary approvals and permits from other agencies, the dewatering and stabilization phases of CCR surface impoundment closure, or installation of the final cover system, and the estimated timeframes to complete each step or phase of CCR surface impoundment closure. When preparing the preliminary written closure plan, if the owner or operator of a CCR surface impoundment estimates that the time required to complete closure will exceed the timeframes specified in Section 845.760(a), the preliminary written closure plan must include the site-specific information, factors and considerations that would support any time extension sought under Section 845.760(b).*

Post-closure Inspection Requirements of the 21.7-acre GTEC CCR impoundment is proposed to meet or exceed the regulatory requirements of:

Section 845.540 Inspection Requirements for CCR Surface Impoundments

- a) *Inspections by a Qualified Person.*
 - I) *All CCR surface impoundments and any lateral expansion of a CCR surface impoundment must be examined by a qualified person as follows:*
 - A) *At intervals not exceeding seven days and after each 25-year, 24- hour storm, inspect for the following:*
 - i) *Any appearances of actual or potential structural weakness and other conditions that are disrupting, or have the potential to disrupt, the operation or safety of the CCR surface impoundment;*
 - ii) *Deterioration, malfunctions or improper operation of overtopping control systems, where present;*
 - iii) *Sudden drops in the level of the CCR surface impoundment's contents;*
 - iv) *Erosion that creates rills, gullies, or crevices six inches or deeper, other signs of deterioration*

including failed or eroded vegetation in excess of 100 square feet, or cracks in dikes or other containment devices; and

v) *Any visible releases;*

B) *At intervals not exceeding seven days, inspect the discharge of all outlets of hydraulic structures that pass underneath the base of the CCR surface impoundment or through the dike, of the CCR surface impoundment, for abnormal discoloration, flow or discharge of debris or sediment; and*

C) *At intervals not exceeding 30 days, monitor all CCR surface impoundment instrumentation.*

2) *The owner or operator must prepare a report for each inspection that includes the date of the inspection, condition of the CCR surface impoundment, any repairs made to the CCR surface impoundment, and the date of the repair. The results of the inspection by a qualified person must be recorded in the facility's operating record as required by Section 845.800(d)(13).*

3) *The owner or operator of a CCR surface impoundment must initiate the inspections required by subsection (a) by April 30, 2021, or by initial receipt of CCR in a CCR surface impoundment if the owner or operator becomes subject to this Part after April 30, 2021. The inspections required by subsection (a) must continue until the completion of closure by removal or the completion of post-closure care.*

4) *If a 25-year, 24-hour storm is identified more than 48 hours before the next scheduled weekly inspection, an additional inspection must be conducted within 24 hours after the end of the identified storm event, before the scheduled seven-day inspection.*

b) *Annual Inspections By a Qualified Professional Engineer.*

1) *The CCR surface impoundment must be inspected on an annual basis by a qualified professional engineer to ensure that the design, construction, operation, and maintenance of the CCR surface impoundment is consistent with recognized and generally accepted engineering standards. The inspection must, at a minimum, include:*

A) *A review of available information regarding the status and condition of the CCR surface impoundment, including files available in the operating record (e.g., CCR surface*

impoundment design and construction information required by Sections 845.220(a)(1) and 845.230(d)(2)(A), previous structural stability assessments required under Section 845.450, the results of inspections by a qualified person, and results of previous annual inspections);

- B) A visual inspection of the CCR surface impoundment to identify signs of distress or malfunction of the CCR surface impoundment and appurtenant structures;*
 - C) A visual inspection of any hydraulic structures underlying the base of the CCR surface impoundment or passing through the dike of the CCR surface impoundment for structural integrity and continued safe and reliable operation;*
 - D) The annual hazard potential classification certification, if applicable (see Section 845.440);*
 - E) The annual structural stability assessment certification, if applicable (see Section 845.450);*
 - F) The annual safety factor assessment certification, if applicable (see Section 845.460); and*
 - G) The inflow design flood control system plan certification (see Section 845.510(c)).*
- 2) Inspection Report. The qualified professional engineer must prepare a report following each inspection that addresses the following:*
- A) Any changes in geometry of the impounding structure since the previous annual inspection;*
 - B) The location and type of existing instrumentation and the maximum recorded readings of each instrument since the previous annual inspection;*
 - C) The approximate minimum, maximum, and present depth and elevation of the impounded water and CCR since the previous annual inspection;*
 - D) The storage capacity of the impounding structure at the time of the inspection;*
 - E) The approximate volume of the impounded water and CCR at the time of the inspection;*

- F) *Any appearances of an actual or potential structural weakness of the CCR surface impoundment, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR surface impoundment and appurtenant structures; and*
 - G) *Any other changes that may have affected the stability or operation of the impounding structure since the previous annual inspection.*
- 3) *By January 31 of each year, the inspection report must be completed and included with the annual consolidated report required by Section 845.550.*
 - 4) *Frequency of Inspections. The owner or operator of the CCR surface impoundment must conduct the inspection required by subsections (b)(1) and (2) on an annual basis. The deadline for conducting a subsequent inspection is based on the date of conducting the previous inspection.*

If a deficiency or release is identified during an inspection, the owner or operator must submit to the Agency documentation detailing proposed corrective measures and obtain any necessary permits from the Agency.

This written post-closure plan is prepared in accordance with 845.780 which states:

Section 845.780 (d) Written Post-closure Care Plan

Content of the Plan. The owner or operator of a CCR surface impoundment must prepare a written post-closure care plan that includes, at a minimum, the information specified in this subsection (d)(1).

- A) *A description of the monitoring and maintenance activities required in subsection (b) for the CCR surface impoundment and the frequency at which these activities will be performed;*
- B) *The name, address, telephone number, and email address of the person or office to contact about the facility during the post-closure care period; and*
- C) *A description of the planned uses of the property during the post-closure care period. Post-closure use of the property must not disturb the integrity of the final cover, liners, or any other component of the containment system, or the function of the monitoring systems unless necessary to comply with the requirements of this Part. Any other disturbance is allowed if the owner or operator of the CCR surface impoundment demonstrates that disturbance of the final cover, liner, or other component of the containment system, including any removal of CCR, will not increase the potential threat to human health or the environment. The demonstration must be certified by a qualified professional engineer and must be submitted to the Agency.*

SECTION 3.0 – CLOSURE PLAN

3.1 CLOSURE NARRATIVE

The 21.7-acre GTEC CCR impoundment was closed in place with installation of an engineered cap system to resist erosion and minimize rainfall infiltration. The closure footprint of the impoundment was reduced from 21.7 acres to approximately 14 acres. The estimated total amount of ash material currently in place under the engineered cap system is 650,000 CY.

The impoundment was slowly dewatered utilizing the existing NPDES outfall located at the southern end of the impoundment and in accordance with the conditions of the NPDES permit enforced at the time of the consolidation and closure activities. Following and during dewatering, ash from the north end of the impoundment was excavated and transported to the south end of the impoundment, consolidating the overall footprint. Ash materials was placed at a maximum slope of 4H:1V for long term stability and maintenance. An estimated 200,000 CY of ash material was excavated and/or re-graded to achieve the final surface elevations. Once the proposed final elevations were achieved, the surface was prepared for installation of a synthetic liner system. A minimum of three (3) feet of soil was placed above the synthetic liner system for long term protection and establishing an erosion resistant vegetated surface.

As with the CCR impoundment prior to closure, portions of the proposed closure footprint were located in the 100-year floodplain. All sloped surface areas of the consolidated and capped ash material located below the 100-year floodplain elevation received an additional layer of rock/stone protection to protect against erosive forces during flooding events.

The remainder of the existing impoundment area beyond the closure limits was seeded to provide a stabilized vegetative cover for long term drainage and erosion control. The existing soil berm located on the west side of the impoundment (currently in the 100-year floodplain) will be removed and the soils used as cover material above the synthetic liner system. The removal of this berm will increase the capacities of the 100-year floodplain and floodway in the immediate vicinity of the GTEC CCR impoundment.

The original closure plan dated March 2019 was placed in the GTEC operating record prior to closure. This revision to the closure plan will also be placed in the GTEC operating record, as will any subsequent revision based on periodic review and update should any changes occur at the facility that may require a deviation from this closure plan.

3.2 FINAL COVER SYSTEM

The final cover system was designed to meet or exceed the requirements included in 40 CFR Part 257.102 (d) *Closure performance standard when leaving CCR in place*. The final cover system was also designed to meet 35 IAC Section 840.126 *Final Cover System*, which was developed specifically for the closure of Ash Pond D at the Hutsonville Power Station in Hutsonville, Illinois. The intent of the final closure system is to:

- Minimize storm water infiltration into the closed footprint with a low

- permeable/barrier layer;
- Provide an infiltration layer above the low permeable/barrier layer to avoid instability due to saturated conditions;
- Provide a protective layer above the low permeable/barrier layer; and
- Provide a stabilized final closure surface to resist erosive forces.

The final cover system for the GTEC CCR impoundment closure consisted of an erosion layer, protective soil layer, drainage layer and a barrier layer. The multi-layered final cover system will provide permeability less than the minimum requirement of 1×10^{-7} cm/sec per 35 IAC 35 811.314 – Final Cover System.

The final cover system consisted of the following layers (listed from top to bottom) for the engineered cap system:

- A 6-inch **Erosion (Vegetative Soil) Layer** consisting of soil capable of supporting native plant growth and designed to maintain vegetative growth over the closure footprint. These soils were sourced from the onsite western berm area that was removed during closure construction activities. For areas of the closure cap located below the 100-yr floodplain elevation, an additional layer of appropriately sized rock/stone protection was placed to protect against flooding erosive forces.
- A 30-inch **Protective Soil Layer** to prevent damage due to freezing or puncture to the Drainage and Barrier Layers located beneath. Soil was sourced from on-site;
- A **Drainage Layer** consisting of double-sided heat-bonded or sewn geocomposite. The geocomposite is designed to horizontally drain storm water that has percolated through the Erosion and Protective Soil Layers in order to prevent the build-up of water over the Barrier Layer; therefore minimizing infiltration; and
- A **Barrier Layer** consisting of a 40-mil Textured Linear Low-Density Polyethylene (LLDPE) geomembrane placed over prepared subgrade ash materials.

Due to the highly elastic nature of the LLDPE membrane, the final cover system will accommodate differential settlement anticipated to occur during the post-closure period. The post settlement surface slopes will be no less than 5% to promote positive drainage across the cover system surface and at a maximum slope not greater than twenty 25% (pre-settlement) to facilitate construction and prevent erosion.

Elements related to the closure activities are shown on the Grand Tower Inactive Ash Basin Closure Construction Quality Assurance Certification dated October 2021.

3.3 MAXIMUM INVENTORY OF CCR ONSITE

Prior to closure, the GTEC CCR impoundment was inactive and had not received additional ash materials since 2001. In order to estimate the volume of ash material in place within the impoundment, twenty (20) auger probes were advanced through the impoundment footprint to record the thickness of ash within the impoundment and to evaluate the underlying base liner materials. Using these results, a bottom of ash grading plan was developed to compare

with existing topography to compute a volume of ash in-place within the CCR impoundment.

Based on these results and those included in Table 1 below, an estimated 650,000 CY of CCR ash materials was identified within the CCR impoundment. The ash pond was determined to be of adequate stability based on boring logs completed in 2016.

Grand Tower Energy Center (GTEC)
Ash Basin - Volume of Ash Currently in Place

Based on exploration borings and development of bottom of ash plan, determine the amount of ash in place using the contour method

CONTOUR	PERIMETER AREA (SF)	INTERIOR EXISTING BELOW AREA (SF)	ADJUSTED AREA FOR REMOVAL (SF)	AVG. AREA (SF)	THICKNESS (FT)	VOLUME (CF)	VOLUME (CY)
348	32,050	0	32,050				
				116,683	2	233,366	8,643
350	201,316	0	201,316				
				406,228	2	812,456	30,091
352	611,140	0	611,140				
				656,023	2	1,312,045	48,594
354	700,905	0	700,905				
				714,540	2	1,429,080	52,929
356	728,175	0	728,175				
				735,996	2	1,471,992	54,518
358	749,567	5,750	743,817				
				748,864	2	1,497,727	55,471
360	767,864	13,954	753,910				
				758,620	2	1,517,240	56,194
362	786,321	22,991	763,330				
				767,821	2	1,535,641	56,876
364	804,937	32,626	772,311				
				773,858	2	1,547,715	57,323
366	823,714	48,310	775,404				
				751,485	2	1,502,969	55,666
368	842,651	115,086	727,565				
				712,611	2	1,425,222	52,786
370	861,747	164,090	697,657				
				689,619	2	1,379,238	51,083
372	881,004	199,423	681,581				
				526,975	2	1,053,949	39,035
374	483,397	111,029	372,368				
				270,051	2	540,101	20,004
376	0	167,733	167,733				
				107,010	2	214,020	7,927
378	0	46,287	46,287				
				30,934	2	61,867	2,291
380	0	15,580	15,580				
						TOTAL	649,431 CY

Table -1

3.4 SCHEDULE FOR CLOSURE

Closure of the GTEC CCR impoundment occurred following appropriate permitting from the IEPA. In March 2019, ERM submitted a GMZ application for the impoundment, which

was approved by the IEPA on 15 November 2019, resulting in corrective actions and final closure of the GTEC CCR impoundment.

3.4.1 CLOSURE SEQUENCE

The GTEC CCR impoundment closure activities were initiated in phases beginning with dewatering of free-standing ponded waters within the impoundment footprint. This was accomplished utilizing the NPDES permit in effect and the outfall structure located at the south end of the impoundment prior to closure activities. Following substantial dewatering, removal of CCR materials began on the west side of the impoundment to establish drainage to the sediment basin. These activities were followed by moving ash from the north end of the impoundment to the south end for final disposition. This process continued until the proposed grades are achieved in accordance with the Closure Plans. Following completion of excavation and grading activities, a synthetic liner system, including a 40-mil LLDPE liner and geocomposite drainage layer, were installed over the prepared closure footprint above. Three feet of soil cover including a 30-inch-thick vertical percolation layer overlain by a six (6)-inch vegetative layer was placed above the synthetic liner system. The perimeter of the closure area incorporated an anchor trench two (2) feet in depth for permanently securing the synthetic liner system at the toe of the side-slopes.

3.4.2 DETERMINATION OF CLOSURE AREA

Determination of the closure area was performed through evaluation of historic plans and field verifications including twenty (20) auger probes within the impoundment footprint. Based on these results and computations for volume of CCR materials in place, a consolidated closure footprint of about 14 acres was developed to encapsulate the 650,000 CY of CCR materials identified.

3.4.3 NOTIFICATION OF INTENT TO CLOSE

Notification of intent to close the GTEC CCR impoundment was placed in the facility operating record dated March 3, 2015; Technical Memorandum – Prepared by ERM NC, Inc., Rockland Capital – Grand Tower Energy Center, LLC, Former CCR Impoundment Closure Alternatives, Grand Tower, Jackson County, Illinois.

3.4.4 FINAL CLOSURE CONSTRUCTION

The final closure system at the GTEC CCR impoundment was constructed in accordance with the requirements of the Construction Quality Assurance (CQA) Plan, Technical Specifications, and Engineering Drawings developed for the execution of this project, which are incorporated by reference as part of this Closure Plan. Each referenced item has been prepared specifically for the GTEC CCR impoundment closure.

3.4.5 CERTIFICATION OF CLOSURE CONSTRUCTION

Following closure construction activities, the Grand Tower Inactive Ash Basin Closure

Construction Quality Assurance Certification, dated October 29, 2021, was prepared summarizing closure activities along with CQA activities conducted throughout the closure. This document was signed by the project engineer, an Illinois registered professional engineer, verifying that closure has been completed in accordance with the closure plan. This document was also placed in the facility operating record. The Grand Tower Inactive Ash Basin Closure Construction Quality Assurance Certification is dated October 29, 2021.

3.4.6 RECORDATION OF DEED

Following closure of the GTEC CCR impoundment, GTEC shall record a notation on the deed to the facility property, or some other instrument that is normally examined during title search. The notation on the deed shall, in perpetuity, notify any potential purchaser of the property that the land has been used for closure of a CCR inactive ash basin and is subject to requirements of a post-closure care plan.

SECTION 4.0 – POST CLOSURE CARE PLAN

Post-closure care began immediately following final closure of the GTEC CCR impoundment and continue for a minimum period of five (5) years. The post-closure care period may increase up to 30 years based on conditions of the approved Groundwater Management Zone (GMZ) issued by IEPA. The purpose of the plan is to provide the necessary information for preserving the integrity of the impoundment closure during the post- closure period. This post-closure plan specifically addresses maintenance activities for the final cover, groundwater monitoring wells, and erosion and sedimentation control system to be installed at the closed GTEC CCR impoundment.

4.1 MAINTENANCE AND MONITORING

Following final closure of the GTEC CCR impoundment, GTEC shall conduct post- closure care for a minimum of five (5) years, except as may be provided under the approved Groundwater Management Zone, once issued by IEPA. At a minimum, post- closure care shall consist of the activities as detailed below.

4.1.1 FINAL COVER SYSTEM

Inspection of the final cover system will take place quarterly. The inspection will consist of a field reconnaissance of the entire final cover system. Items of concern to be noted by the inspector including but are not limited to signs of erosion (ruts, sediment deposits, etc.), patches of distressed or dead vegetation, animal burrows, settlement and/or ponded water, upheaving, stained soil due to seeps, cracks in the cover, and tree saplings (especially species with tap roots). Following each inspection, a summary report of the condition of the final cover and the items requiring repair or maintenance shall be recorded on an inspection form and filed in the post-closure logbook for the facility. Areas that require further attention should be photographed and delineated on a map of the facility and attached to the inspection report. Since post-closure inspection personnel will most likely change during the post-closure period, the post-closure logbook should be kept in a standardized format as part of the operating record of the facility so that new inspection personnel may easily review the results of past post-closure inspections of the site.

Action should be taken immediately to address any items of concern identified during the inspection. Obvious repair items should be performed under the supervision of the post-closure maintenance manager. If an item of concern requires further investigation to determine a course of action, the Engineer responsible for closure design should be contacted for consultation.

Maintenance required for the final cover is minimal. The vegetative cover shall be mowed at least twice a year to suppress weed and brush growth. If vegetative cover is not adequate in any particular area, fertilizer should be applied and the area re-seeded in order to re-establish vegetation. Insecticides may be used to eliminate insect populations that are detrimental to the vegetation. Animal burrows and eroded or depressed areas should be filled in with compacted soil and reseeded.

4.1.2 GROUNDWATER MONITORING WELLS

Inspection of the groundwater monitoring wells will take place quarterly during sampling events. The inspection will consist of verifying the condition of the monitoring wells to ensure that they are providing representative samples of the groundwater being collected. The inspector should note the following:

- 1) The total depth of the well should be recorded every time a water sample is collected or a water level reading is taken to determine if sediment has accumulated at the bottom. If sediment build-up has occurred, the sediment shall be removed by pumping or bailing, and the cause investigated.
- 2) If turbid samples are collected from a well, redevelopment of the well will be performed.
- 3) The aboveground protective casing shall be inspected for damage. The protective casing shall be of good structural integrity and free of any cracks or corrosion. The lockable cover and lock shall also be inspected at this time.
- 4) The surface seals shall be inspected for settling and cracking. If the seal is damaged in any way, the seal shall be replaced.
- 5) The well casing and cap shall be inspected. The casing and cap shall be of good structural integrity and free of any cracks or corrosion. Any debris shall be removed from around the cap to prevent it from entering the well.

The condition of the groundwater monitoring system shall be recorded on the inspection form and filed in the post-closure logbook following each sampling event. Monitoring of the groundwater wells shall be conducted as described in the groundwater monitoring plan.

4.1.3 GROUNDWATER SAMPLING

Based on the recent results of groundwater monitoring, GTEC proposes to monitor the well network for a minimum period of five years following completion of the CCR impoundment closure. Sampling and analyses will occur quarterly following completion of CCR impoundment closure activities. Wells will be developed and sampled using low flow peristaltic pumps with samples placed in laboratory supplied containers and shipped using chain-of-custody. The samples will be placed in laboratory supplied coolers and shipped to the laboratory for analytical testing. Groundwater samples will be analyzed by an IEPA-approved laboratory quarterly and analyses will include all of the constituents listed below under 35 Ill. Adm. Code 845.650(a), on at least a quarterly basis, except as allowed under 35 Ill. Adm. Code 845.650(b), and additional constituents requested by the IEPA. The constituents are as follows:

Calcium, Chloride, Fluoride, pH, Sulfate, Total Dissolved Solids, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Lead, Lithium, Mercury, Molybdenum, Selenium, Thallium, and Radium 226 and 228, and turbidity.

Field parameters will include pH, specific conductivity, and temperature, at a minimum.

The quarterly results will be submitted to IEPA including a summary of field activities and laboratory analyses. Annual reporting will be submitted to the IEPA and will include a summary of the quarterly field activities, analysis of constituent trends and evaluation of statistically significant increases for constituent concentrations. At the end of the first five-year monitoring and reporting post-closure time frame, a groundwater performance monitoring report will be submitted to IEPA to either demonstrate restoration of groundwater quality to Class I standards or present a continued groundwater monitoring plan for an additional five years. In addition, the results will be compared to the modeled concentrations to evaluate that a decreasing trend, as defined through modeling, is occurring at the predicted rate. Significant changes from the model results will lead to additional calibration and assessment of future expected rates of decrease for the constituents of concern.

All sampling and reporting will be completed in accordance with the requirements listed in 35 Ill. Adm. Code 845.600.

4.1.4 SURFACE WATER MONITORING

Stormwater sampling in accordance with NPDES requirements for closed landfills shall continue in accordance with NPDES General Permit NCG 120000.

4.2 INDIVIDUAL RESPONSIBLE FOR POST-CLOSURE MAINTENANCE

The GTEC Plant Manager will be responsible for operations and maintenance of the site during the post-closure period. The Owner can be reached at the following address:

John (Jeb) Brodhead
Plant Manager
Grand Tower Energy Center
1820 Power Plant Road Grand Tower, IL 62942
Cell: 217-620-7203
jbrodhead@grandtowerec.com

Over the course of the post-closure period, the individual responsible for providing the post-closure services is subject to change. The IEPA shall be informed of the individual serving as responsible party if changes occur.

4.3 PLANNED USE FOLLOWING CLOSURE

Post-closure use of the property shall not disturb the integrity of the final cover, liner, or any other components of the containment system, or the function of the monitoring systems. The IEPA may approve any disturbance of these systems if the owner or operator demonstrates that disturbance of the final cover, liner or other component of the containment system, including any removal of waste, will not increase the potential threat to human health or the environment.

There are no planned uses for the closed and capped CCR impoundment. The property will continue to be owned and maintained by GTEC with public access prohibited. If at some

later date GTEC wishes to propose alternative end uses for the facility, this plan will be revised accordingly.

4.4 NOTIFICATION

GTEC shall notify the IEPA that a post-closure plan has been prepared and placed in the operating record prior to permit issuance. The post-closure plan shall be updated if any changes occur at the facility that require a deviation from the approved post-closure plan.

4.5 CERTIFICATION OF POST-CLOSURE

Following completion of the post-closure care period for the closed and capped CCR impoundment, GTEC shall notify the IEPA that a certification, signed by an independent registered Illinois Professional Engineer, verifying that post-closure care has been completed in accordance with the post-closure plan and has been placed in the operating record.