Gibbons Creek Environmental Redevelopment Group, LLC

CCR CLOSURE AND POST CLOSURE PLAN

GCSES CCR UNIT CLOSURE PROJECT

Gibbons Creek Steam Electric Station

Anderson, Texas

April 9, 2021

RECORD OF TECHNICAL PLAN AMENDMENTS, REVISIONS OR REVIEWS

Technical amendments/revisions to this Closure and Post Closure Plan are recorded here. A P.E. certification is required whenever technical changes are made and must be included on a new certification page – See Section 2.

Date	Amendment/ Revision or Update	Summary of Changes to Plan and/or Update Observations	Pages or Sections Changed
10/19/2015	Initial	Initial Plan Issued Edward Doyon Main, P.E. Environmental Resources Management Austin, TX 78701	Entire Plan
4/9/2021	Revision 1	Revised for GCERG ownership and TCEQ adoption of CCR rules by 30 TAC §352 Revised to close Surface Impoundments by CCR Removal Removed references to the Texas Risk Reduction Program per 30 TAC §352.901 Revised Schedule and Figures David C. Vogt, P.E. HDR Engineering, Inc. Dallas, TX 75248 Texas P.E. Firm No. 754	Entire Plan Clouded Sections Strikethrough Replaced in Entirety

Table of Contents

hdrinc.com
17111 Preston Road
Suite 300
Dallas, TX 75248-1232
(972) 960-4400

1.0 INTRODUCTION

The Gibbons Creek Environmental Redevelopment Group (GCERG) has purchased the Gibbons Creek Steam Electric Station (GCSES) facility from the Texas Municipal Power Agency (TMPA) and is in the process of decommissioning the facility. This facility is located in unincorporated Grimes County, Texas. While operational, the GCSES generated coal combustion residuals (CCR) regulated under Title 40, Code of Federal Regulations, Part 257 (40 CFR Part 257) (CCR Rule) and Texas Administrative Code 30 TAC §352.

This document is the Closure Plan and Post-Closure Plan (CPC Plan) for two CCR surface impoundments and one CCR landfill at the GCSES:

- the Ash Ponds (APs),
- the Scrubber Sludge Pond (SSP), and
- the Site F Landfill (SFL).

This CPC Plan describes the steps necessary to close the CCR units. Closure of the APs and SSP will be accomplished by removing the CCR from these units and placing the CCR in the SFL. Closure of the SFL will be accomplished by leaving the CCR in place in accordance with 40 CFR §257.102(b) and 30 TAC §352.1221.

This CPC Plan also describes post-closure inspection, maintenance and monitoring required for the CCR unit closed with CCR left in place in accordance with 40 CFR Part 257.102(b) and 30 TAC §352.1221.

According to 40 CFR 257.102 (b)(3)(i), GCERG **may** amend this initial or any subsequent written closure plan at any time.

Per 40 CFR 257.102 (b)(3)(ii), GCERG **must** amend the closure plan whenever:

- there is a change in operation of the CCR unit that would substantially affect the written closure plan in effect; or,
- before or after closure activities have commenced, unanticipated events necessitate a revision of the written closure plan.

Per 40 CFR 257.102 (b)(3)(iii), GCERG **must** amend the closure plan at least 60 days prior to a planned change in the operation of the facility or CCR unit, or no later than 60 days after an unanticipated event requires the need to revise an existing written closure plan. If a written closure plan is revised after closure activities have commenced for a CCR unit, GCERG must amend the current closure plan no later than 30 days following the triggering event.

1.1 REQUIREMENTS

Regulations in 40 CFR §257.102 et seq. require the preparation, certification, posting on an internet site accessible by the public, and, on closure, implementation of a Closure Plan and Post-Closure Plan for each existing active CCR unit. A completed, certified copy of this Plan must be placed and maintained indefinitely in the GCERG Operating Record.

GCERG will issue notifications and implement recordkeeping in accordance with 40 CFR §257.105 and 40 CFR §257.106 (see section 6).

1.2 DEFINITIONS

This CPC Plan includes terms defined consistent with parts of 40 CFR §257.53 (re: 80 FR 21468, April 17, 2015; 80 FR 37988, July 2, 2015). and associated editions of the Federal Register as noted below.

Active life or in operation means the period of operation beginning with the initial placement of CCR in the CCR unit and ending at completion of closure activities in accordance with 40 CFR §257.102 and 30 TAC §352.1221.

Closed means placement of CCR in a CCR unit has ceased, and the owner or operator has completed closure of the CCR unit in accordance with 40 CFR §257.102 and 30 TAC §352.1221 and has initiated post-closure care in accordance with §257.104.

Coal combustion residuals (CCR) means fly ash, bottom ash, boiler slag and flue gas desulfurization materials generated from burning coal for the purpose of generating electricity by electric utilities and independent power producers

CCR landfill means an area of land or an excavation that receives CCR and which is not a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground or surface coal mine, or a cave. For purposes of the CCR Rule, a CCR landfill also includes sand and gravel pits and quarries that receive CCR, CCR piles, and any practice that does not meet the definition of a beneficial use of CCR

CCR surface impoundment means a natural topographic depression, manmade excavation, or diked area, which is designed to hold an accumulation of CCR and liquids, and the unit treats, stores, or disposes of CCR.

CCR unit means any CCR landfill, CCR surface impoundment, or lateral expansion of a CCR unit, or a combination of more than one of these units, based on the context of the paragraph(s) in which it is used. This term includes both new and existing units, unless otherwise specified.

Facility means all contiguous land, and structures, other appurtenances, and improvements on the land, used for treating, storing, disposing, or otherwise conducting solid waste management of CCR. A facility may consist of several treatment, storage, or disposal operational units (e.g. one or more landfills, surface impoundments, or combinations of them).

Qualified professional engineer means an individual who is licensed by a state as a Professional Engineer to practice one or more disciplines of engineering and who is qualified by education, technical knowledge and experience to make the specific technical certifications required under this subpart. Professional engineers making these certifications must be currently licensed in the state where the CCR unit(s) is located.

2.0 CCR UNIT DESCRIPTION

The GCSES was a coal fired steam electric plant capable of generating approximately 470 MW. Construction of the GCSES began in 1977. The GCSES began generating electric power in 1982 and ceased producing power in 2018.

There are three CCR units at the GCSES which are subject to requirements in 40 CFR §257:

- the Ash Ponds (APs),
- the Scrubber Sludge Pond (SSP), and,
- the Site F Landfill (SFL).

The location of each of those CCR unit is shown on Figure 1. The CCR units are described below.

2.1 ASH PONDS

The APs are three adjoining and connected CCR surface impoundments constructed by TMPA, the original owner, between 1977 and 1978 as part of the original GCSES plant construction.

The APs are a surface impoundment that was constructed and received CCR before October 14, 2015. In addition, the APs received CCR waste until the GCSES was retired in 2018. Hence, in accordance with 40 CFR §257.53, the APs were classified as an active existing CCR surface impoundment.

In addition, the APs are listed as Solid Waste Management Unit (SWMU) 006 on the Notice of Registration (NOR) for Solid Waste Registration (SWR) 32271 issued to TMPA by the TCEQ. The NOR states that the APs are an active surface impoundment.

As shown on the NOR and the TMPA water balance, TMPA Dwg. No. 10-C-301, dated February 17, 2016, the APs received and stored bottom ash transport water overflow from hydrobins used to dewater the bottom ash CCR produced by the GCSES. Those wastes contain CCR as defined in 40 CFR §257.52.

The APs are located on the GCSES site generally southeast of the GCSES electric power generation plant and west of Gibbons Creek Reservoir; see Figure 1.

As shown on TMPA Dwg. No. C-230-003, dated October 28, 1977, each of the three APs is approximately 1820 feet long and 245 feet wide at the dike crest interior top of bank, and 20 feet deep from the dike crest to the pond bottom. Based on those dimensions, the total area inside the interior top of bank of the three APs is approximately 30.7 acres. Similarly, the total area drained to the APs, including the interior and the dike crest area, is approximately 34.8 acres.

According to TMPA personnel, the estimated maximum total volume of CCR ever on-site over the active life of the APs was estimated to be 360,000 cubic yards, estimated by 50% of the available storage capacity of the APs.

2.2 SCRUBBER SLUDGE POND

The SSP is a CCR surface impoundment constructed by TMPA between 1977 and 1978 as part of the original GCSES plant construction.

The SSP is a surface impoundment that was constructed and received CCR before October 14, 2015 and until the GCSES retirement in 2018. Hence, in accordance with 40 CFR §257.53, the SSP is classified as an active existing CCR surface impoundment.

In addition, the SSP is listed as SWMU 004 on the NOR for SWR 32271 issued to TMPA by the TCEQ. The NOR states that the SSP is an active surface impoundment.

As shown on the NOR and the TMPA water balance, TMPA Dwg. No. 10-C-301, dated February 17, 2016, the SSP received process water from the Scrubber Purge Treatment system. That waste contains CCR as defined in 40 CFR §257.52.

Also as shown on the TMPA water balance, TMPA pumped water from the SSP to the APs at times and rates determined by TMPA to be necessary and appropriate to maintain adequate freeboard in the SSP.

The SSP is located on the GCSES site generally south of the plant and west of the APs; see Figure 1.

As shown on TMPA Dwg. No. 11-C-019.1, dated February 15, 2000, the SSP is approximately 750 feet long, 380 feet wide on the northern side, 470 feet wide on the southern side at the dike crest interior top of bank, and 20 feet deep from the dike crest to the pond bottom.

Based on those dimensions, the total area inside the SSP is approximately 7.3 acres. Similarly, the total area drained to the SSP, including the interior and the dike crest areas, is approximately 7.9 acres.

According to TMPA personnel, the maximum volume of CCR ever on-site over the active life of the SSP was estimated to be 95,000 cubic yards, estimated by 50% of the available storage capacity of the SSP.

2.3 SITE F LANDFILL

The SFL is a CCR landfill constructed by TMPA in 1990 and expanded in 1995 to increase the onsite disposal capacity for CCR solid wastes generated by the GCSES.

The SFL is a landfill that was constructed and received CCR before October 14, 2015. In addition, the SFL currently receives CCR. Hence, in accordance with 40 CFR §257.53, the SFL is classified as an active existing CCR landfill.

In addition, the SFL is listed as SWMU 001 on the NOR for SWR 32271 issued to TMPA by the TCEQ. The NOR states that the SFL is an active SWMU.

The NOR states that the SFL receives CCR wastes consisting of fly ash, fly ash mixed with dewatered scrubber sludge, dewatered scrubber sludge, and bottom ash generated by the GCSES plant. Those wastes are defined as CCR in 40 CFR§257.52.

The SFL is located generally northeast of the GCSES plant and north of the Gibbons Creek Reservoir; see Figure 1.

The total area covered by the SFL inside the perimeter dike interior top of bank, is approximately 95 acres.

According to TMPA personnel, the maximum volume of CCR ever on-site over the active life of the SFL is estimated to be 7,398,346 cubic yards.

The largest area of the SFL final cover is approximately 95 acres.

3.0 CCR UNIT CLOSURE PLAN

The closure concept for this revised closure plan is to close the APs and SSP by removing the CCR and by leaving CCR in place at the SFL. Closure by removal procedures will comply with the requirements found in 40 CFR §257.102(c) for the surface impoundments. Closure of the landfill by leaving CCR material in place will comply with requirements in 40 CFR §257.102(d). This section describes the steps necessary to close the CCR units consistent with recognized and generally accepted good engineering practices and in accordance with 40 CFR§257.102(b), including:

A written closure plan for each CCR unit is required by 40 CFR 256.102(b). Each closure plan is required to include:

- the closure performance standard;
- a narrative description of the closure;
- a description of the procedures to remove the CCR and decontaminate the CCR unit;
- a description of the final cover system;
- the maximum CCR inventory;
- the maximum area covered; and,
- the closure schedule.

The CCR unit closure plan is described in this section.

3.1 CLOSURE PERFORMANCE STANDARDS

The performance standards for closure by removal of CCR for the surface impoundments is in accordance with 40 CFR §257.102(c)(closure by removal).

The performance standards for closure by leaving CCR in place at the landfill is in place in accordance with 40 CFR §257.102(d)(closure in place).

3.1.1 Closure By Removal

GCERG will close the APs and SSP by removing the CCR material in accordance with the performance standards stated in 40 CFR §257.102(c):

- *Remove and decontaminate all areas affected by releases from the CCR unit.*
- *Groundwater monitoring concentrations do not exceed the groundwater protection standard established pursuant to §257.95(h) for constituents listed in appendix IV to this part.*

3.1.2 Closure In Place

GCERG will close the Site F Landfill by leaving CCR in place and constructing a final cover system in accordance with the performance standards stated in 40 CFR §257.102(d)(1):

- *Control, minimize or eliminate, to the maximum extent feasible, post-closure infiltration of liquids into the waste and releases of CCR, leachate, or contaminated run-off to the ground or surface waters or to the atmosphere;*
- *Preclude the probability of future impoundment of water, sediment, or slurry;*
- *Include measures that provide for major slope stability to prevent the sloughing or movement of the final cover system during the closure and post-closure care period;*
- *Minimize the need for further maintenance of the CCR unit; and,*

- *Be completed in the shortest amount of time consistent with recognized and generally accepted good engineering practices.*

~~In addition, requirements for closure of the CCR unit using TRRP Remedy Standard B in accordance with 30 TAC §350 will also apply to closure of a CCR unit by leaving CCR in place.~~

3.2 NARRATIVE DESCRIPTION OF CLOSURE BY REMOVAL

Closure by removal of CCR at the surface impoundments will be accomplished in steps related to the closure performance standard.

3.2.1 Description of Closure by Removal

Remove Liquids: Free liquids will be eliminated by removing liquid wastes and/or solidifying the remaining CCR and CCR residues in the CCR unit.

- Liquids may be pumped from SSD to APs or from APs to SSD to dewater the CCR unit.
- Liquids may be pumped from APs, SSD, and/or SFL and discharged to the reservoir in accordance with the TPDES permit. If treatment is required, liquids will be treated before discharge.
- Liquids may be transferred from SSD and APs to SFL and evaporated by pumping it through an evaporator (atomizer) system and spraying over CCR material.
- Coagulants, flocculants, and/or chemical stabilizers may be mixed with the scrubber sludge to promote dewatering and solidification.

Remove CCR Material: Once the ponds have been sufficiently dewatered, CCR material and any contaminated soil and sediment will be mechanically excavated with standard earthmoving equipment. The excavated material will be hauled by trucks to the SFL for disposal. The pond will be visually inspected to verify all CCR materials and any contaminated soils and sediment have been removed from the impoundment.

Stabilization: After the CCR material has been removed, the area will be seeded to establish vegetation and stabilize the bare soils. Additional surface grading, spillways, outfalls, berms, swales, and other measures may be installed to minimize erosion and control stormwater.

Conceptual representations of the APs and SSP grading plans are presented in Figures 2 through 3.

3.3 NARRATIVE DESCRIPTION OF CLOSURE IN PLACE

Closure of the SFL will be accomplished in steps related to the closure performance standard, the characteristics of the bottom liner, the CCR properties contained in the landfill, and the surrounding area.

~~In addition, requirements for closure of the CCR unit using TRRP Remedy Remedy Standard B for closure in place in accordance with 30 TAC §350 will also be implemented for the closure chosen by TMPA.~~

3.3.1 Description of Closure In Place

The SFL at the GCSES will be closed by leaving CCR in place (closure in place), the closure will be accomplished in the following steps:

~~TRRP Planning Deliverables: GCERG will prepare, submit to the TCEQ, and obtain TCEQ approval of an Affected Property Assessment Report (APAR) and Response Action Plan (RAP) for closure of the SFL in accordance with Remedy Standard B and related rules in 30 TAC §350.~~

Remove Liquids: Free liquids will be eliminated by removing liquid wastes and/or solidifying the remaining CCR and CCR residues.

Prepare Final Cover System Subgrade: The interim cover surface will be stripped of vegetation and temporary cover, non-CCR contact, soils leaving a minimum 1-foot thick compacted clay soil cover. Excavated material will be stockpiled adjacent to the landfill for use in the final cover system. The surface will be graded and compacted as necessary to support the final cover system.

Final Cover System: The final cover system will be constructed in place over the prepared subgrade to achieve the final cover system criteria in 40 CFR§257.102(d)(3).

~~TRRP Completion Report: GCERG will prepare, submit to the TCEQ, and obtain TCEQ approval of a Response Action Completion Report for closure of the CCR unit in accordance with the RAP approved by the TCEQ and related rules in 30 TAC §350.~~

3.3.2 FINAL COVER SYSTEM

The final cover system constructed for closure of the SFL will achieve the final cover system design criteria specified in 40 CFR 102(d)(3)(i):

- *The permeability of the final cover system must be less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than 1 × 10^{-5} cm/sec, whichever is less.*
- *The infiltration of liquids through the closed CCR unit must be minimized by the use of an infiltration layer that contains a minimum of 18 inches of earthen material.*
- *The erosion of the final cover system must be minimized by the use of an erosion layer that contains a minimum of six inches of earthen material that is capable of sustaining native plant growth.*
- *The disruption of the integrity of the final cover system must be minimized through a design that accommodates settling and subsidence.*

~~Additional final cover system design criteria specified in a RAP prepared by GCERG for closure of that CCR unit and approved by the TCEQ in accordance with rules in 30 TAC §350 will also apply.~~

Conceptual representations SFL grading plans are presented in Figures 2 through 3.

3.4 ALTERNATIVE FINAL COVER SYSTEM DESIGN CRITERIA

If GCERG chooses to construct an alternative final cover system for closure of the CCR unit, the final cover system will achieve the alternative final cover system design criteria specified in 40 CFR §257.102(d)(3)(ii):

- *The design of the final cover system must include an infiltration layer that achieves an equivalent reduction in infiltration as the infiltration layer specified in 40 CFR §257.102](d)(3)(i)(A) and (B)* [i.e. the permeability of the final cover system must be less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than 1 × 10^{-5} cm/sec, whichever is less; and the infiltration of liquids through the closed CCR unit must be minimized by the use of an infiltration layer that contains a minimum of 18 inches of earthen material].
- *The design of the final cover system must include an erosion layer that provides equivalent protection from wind or water erosion as the erosion layer specified in [40 CFR*

§257.102](d)(3)(i)(C) [i.e. the erosion of the final cover system must be minimized by the use of an erosion layer that contains a minimum of six inches of earthen material that is capable of sustaining native plant growth].

- *The disruption of the integrity of the final cover system must be minimized through a design that accommodates settling and subsidence.*

~~Additional final cover system design criteria specified in a RAP prepared by TMPA for closure of that CCR unit and approved by the TCEQ in accordance with rules in 30 TAC §350 will also apply.~~

3.5 Methods and Procedures Used to Install the Final Cover System

If GCERG chooses to implement the final cover system design criteria in 40 CFR §257.102(d)(3)(i) for closure of the SFL, the final cover system will be as described below.

Cap Topsoil Layer: The Cap Topsoil layer will be a 6-inch thick layer of topsoil suitable for seeding and establishment of cover vegetation and support of each stage of related cap construction and maintenance equipment and materials, with a surface slope of 3% to 5% graded to drain to relief, and with a substantially continuous stand of erosion-resistant native or adapted perennial shortgrass cover vegetation in accordance with 40 CFR §257.102(d)(3)(i)(C).

Cap Soil Fill Layer: The Cap Soil Fill layer will be an 18-inch thick layer of soil fill suitable for supporting the Cap Topsoil layer and related cap construction and maintenance equipment and materials in accordance with 40 CFR §257.102(d)(3)(i)(B).

Cap Barrier: The Cap Barrier will be 60-mil HDPE or 40-mil LLDPE FML supported on a 12-inch thick layer of compacted clay rich soil with a hydraulic conductivity of 1 x 10^{-5} cm/sec, resulting in a permeability equal to or less than the permeability of the 3-foot thick compacted clay bottom liner, with a hydraulic conductivity of 1 x 10^{-7} cm/sec; has a top surface slope of 3% to 5% that is graded to drain to perimeter relief; is suitable for supporting each stage of overlying cap layers and related cap construction and maintenance equipment and materials in accordance with 40 CFR §257.102(d)(3)(i)(A); and is supported by stable CCR, which is solidified if necessary, and stable compacted soil fill in accordance with 40 CFR §257.102(d)(3)(i)(D).

Alternate final cover systems that achieve the alternate final cover system performance requirements in 40 CFR §257.102(d)(3)(ii) may be substituted for the final cover systems described above.

~~Additional final cover system requirements specified in a RAP prepared by TMPA for closure of that CCR unit and approved by the TCEQ in accordance with rules in 30 TAC §350 will also apply.~~

3.5 CCR VOLUME ESTIMATE

As required in 40 CFR §257.102(b)(1)(iv), following are estimates of the maximum volume of CCR ever on-site during the active life of each of the CCR units.

Site F Landfill: 7,398,346 cubic yards of CCR, based on the total volume between the current surface inside the interior top of bank of the perimeter dikes and the original ground surface, less the volume occupied by the 3-foot thick bottom liner and the 4-foot thick cap.

Ash Ponds: 360,000 cubic yards of CCR, based on 50% of the storage capacity of the APs below the dike crest.

Scrubber Sludge Pond: 95,000 cubic yards of CCR, based on 50% of the storage capacity of the SSP below the dike crest.

3.6 FINAL COVER AREA

As required in 40 CFR §257.102(b)(1)(v), the largest area ever requiring a final cover in accordance with 40 CFR §257.102(d) (i.e. closure in place) at any time during the CCR unit active life is stated below.

Site F Landfill: 95 acres, based on the total area inside the interior top of bank of the SFL perimeter dike.

3.7 CLOSURE SCHEDULE

As required in 40 CFR §257.102(b)(1)(vi), the estimated schedules for closure of the APs and SSP (CCR Surface Impoundments) and SFL (CCR Landfill) are shown in Attachment 1 – Schedule. In accordance with 40 CFR§ 257.102(b)(1)(vi), the schedule includes the sequential steps necessary to close the CCR unit, major milestones, and an estimate of the year in which closure activities will be completed.

Due to the size of the SFL and expected permitting and construction schedule, GCERG expects to extend the closure period beyond the six-month timeframe for completing closure of a CCR landfill specified in 40 CFR§ 257.102(f)(1)(i). At the time of closure GCERG will submit extension(s) when and if appropriate.

Owners/operators must commence closure within 30 days of either 1) final receipt of CCR or non-CCR waste or 2) removes the known final volume of CCR for beneficial use. According to 40 CFR §257.102(e)(3) closure activities have commenced if the CCR unit has ceased receiving waste and owners/operators have:

- *Taken any steps necessary to implement the written closure plan required by paragraph (b) of [40 CFR§ 257.102];*
- *Submitted a completed application for any required state or agency permit or permit modification; or*
- *Taken any steps necessary to comply with any state or other agency standards that are a prerequisite, or are otherwise applicable, to initiating or completing the closure of a CCR unit.*

4.0 CCR UNIT POST-CLOSURE CARE

GCERG will implement post-closure care after closure of the SFL in accordance with 40 CFR §257.104. Goals of the post-closure care are as follows.

- Maintain the integrity and effectiveness of the SFL final cover system, including making repairs as necessary to correct the effects of settling, subsidence, erosion, or other events (re: 40 CFR §257.104(b));
- Maintain the groundwater monitoring system and implement each applicable monitoring requirements in 40 CFR §257.90 through 98; and,
- Prevent storm water run-on and runoff from eroding or otherwise damaging the final cover (re: 40 CFR §257.104(b)).

The APs and SSP will be closed by removing CCR material as provided by 40 CFR §257.102(c). As such, these CCR units are not subject to the post-closure care criteria under 40 CFR §257.104.

GCERG will implement the following SFL post-closure activities:

- Inspection and maintenance of the SFL final cover system and associated groundwater monitoring wells;
- Groundwater monitoring sampling, analysis, and reporting;
- Facility Operating Record recordkeeping and reporting posted on the internet site available to the public; and,
- Deed recordation.

~~Additional post-closure care specified in a RAP prepared by TMPA for closure of that CCR unit and approved by the TCEQ in accordance with rules in 30 TAC §350 will also be implemented.~~

According to 40 CFR 257.104 (d)(3)(i), GCERG **may** amend this initial or any subsequent written post-closure plan at any time.

Per 40 CFR 257.102 (d)(3)(ii), GCERG **must** amend the closure plan whenever:

- there is a change in operation of the CCR unit that would substantially affect the written post-closure plan in effect; or,
- After post- closure activities have commenced, unanticipated events necessitate a revision of the written post-closure plan.

4.1 POST-CLOSURE PERIOD

In accordance with 40 CFR §257.104(c) and 30 TAC §352.1241, the post-closure care period for the SFL will be a period of 30 years following GCERG certification of completion of closure. If at the end of the post-closure care period the SFL is operating under assessment monitoring in accordance with 40 CFR §257.95, GCERG will continue post-closure care until the SFL unit returns to detection monitoring.

~~Additional post-closure period specified in a RAP prepared by TMPA for closure of that CCR unit and approved by the TCEQ in accordance with rules in 30 TAC §350 will also be implemented.~~

4.2 POST-CLOSURE INSPECTION AND MAINTENANCE

GCERG will inspect and maintain the final cover system at the SFL, associated groundwater monitoring wells, and associated permanent benchmark throughout the post-closure period. The SFL unit post-closure care inspection and maintenance requirements are described below with typical types of problems each component may have:

- The final cover system will be inspected for damage resulting from natural or unnatural causes. Maintenance activities may include repairing damage caused by settling or erosion; draining and filling areas collecting ponded water; and re-seeding areas with inadequate or inappropriate erosion- resistant cover vegetation as necessary to maintain the effectiveness of the final cover system.
- Storm water run-on and runoff control systems will be inspected for damage resulting from natural causes and non-routine facility operations. Storm water run-on and runoff control berms and drainage channels that drain the SFL will be maintained and, as necessary to maintain effectiveness, repaired.
- The groundwater monitoring wells that are part of the SFL monitor well network will be inspected for condition necessary to provide adequate and representative ground water samples. Maintenance may include the repair or replacement of damaged, degraded, or missing well caps, identification signs, locking devices, perimeter grading, protective barriers, surface casing, surface pads, and, if necessary, the entire well.

SFL unit post-closure inspection and maintenance tasks, and the frequency of accomplishing those tasks, are listed in Appendix B.

GCERG will implement groundwater monitoring during the SFL post- closure care period in accordance with 40 CFR §257.90 through 257.98.

~~Additional post-closure inspection and maintenance specified in a RAP prepared by TMPA for closure of that CCR unit and approved by the TCEQ in accordance with rules in 30 TAC §350 will also be implemented.~~

4.3 CONTACT INFORMATION

The name, address, telephone number, and email address of the person to contact about the CCR units at the Gibbons Creek Steam Electric Station during the post-closure care period is:

Norman Divers
Gibbons Creek Environmental Redevelopment Group, LLC
12601 Plantside Drive
Louisville, KY 40299
(704) 731-2203
ndivers@charah.com

4.4 PLANNED CCR UNIT POST-CLOSURE PROPERTY USE

The GCERG plan for the use of the SFL during the post-closure care period will be limited access for inspections and maintenance to reduce potential for damage of the final cover system and the associated ground water monitoring wells.

If the post-closure period of the SFL extends past the date the GCSES plant is decommissioned, the SFL will remain closed to the public or limited to compatible commercial or industrial use.

5.0 CCR UNIT CLOSURE AND POST-CLOSURE PLAN AMENDMENT

As specified in 40 CFR §257.102(b)(3)(ii), GCERG must amend this CCR Unit Closure and Post Closure Plan for any of the following reasons:

- when there is a change in operation of the CCR unit that would substantially affect the written CCR Unit Closure and Post-Closure plan then in effect; or,
- when an unanticipated event necessitates revision of the CCR Unit Closure and Post-Closure plan before or during CCR unit closure activities, or after the CCR unit post-closure care period has commenced.

In addition, as specified in 40 CFR §257.102(b)(3)(iii), GCERG must amend this CCR Unit Closure and Post Closure Plan within 60 days prior to a GCERG planned change in CCR unit operation or within 60 days after an unplanned CCR unit event (if the change occurs after CCR unit closure activities have been initiated, the CCR Unit Closure and Post-Closure Plan must be amended within 30 days following the triggering event).

GCERG will provide written certification by a professional engineer that states that the amended GCERG Unit Closure and Post-Closure Plan meets the requirements of closure and post-closure care required in 40 CFR §257.102(b)(4) and 30 TAC §352.1221.

6.0 NOTIFICATION AND RECORD KEEPING

GCERG will issue notifications and implement recordkeeping in accordance with 40 CFR §257.105, 40 CFR §257.106, and 30 TAC §352.1311 .

6.1 NOTIFICATIONS

GCERG will notify the Executive Director of TCEQ, the State Director as defined in 40 CFR §257,105(d), and in accordance with 40 CFR §257.106(i) and 30 TAC §352.1311, when the following documents are made available in the GCERG GCSES Operating Record:

- each amendment to the CCR Unit Closure and Post-Closure Plan;
- written demonstration for a time extension for initiating closure;
- each notice of intent to initiate CCR unit closure;
- each notice of completion of CCR unit closure;
- intent to comply with alternative closure requirements;
- annual progress reports under alternative closure requirements;
- each notification of completion of the CCR unit post-closure care period; and,
- each CCR unit deed notation.

In accordance with TCEQ instructions related to CCR units in Texas, GCERG will send each notification to the TCEQ via internet electronic mail to:

CCRNotify@tceq.texas.gov

6.2 GCERG CCR INTERNET SITE

GCERG will post the following documents on the GCERG internet site (www.gcerg-ccrrule.com) accessible to the public in accordance with 40 CFR §257.107(i) and 30 TAC §352.1321 within 30 days of placing the document in the Operating Record and for a period of five years thereafter:

- the initial CCR Unit Closure and Post-Closure Plan;
- each amendment to the CCR Unit Closure and Post-Closure Plan;
- written demonstration for a time extension for initiating closure;
- each notice of intent to initiate CCR unit closure;
- each notice of completion of CCR unit closure;
- intent to comply with alternative closure requirements;
- annual progress reports under alternative closure requirements;
- each notification of completion of the CCR unit post-closure care period; and,
- each CCR unit deed notation.

6.3 DEED NOTATION

In accordance with requirements specified in 30 TAC §350.111, Institutional Controls, and in 40 CFR §257.102(i), Deed Notations, GCERG will record in the permanent deed records of Grimes County, Texas the following information regarding each CCR unit closure:

- A metes and bounds description and a plat map sealed by Registered Professional Land Surveyor licensed by the Texas Board of Professional Land Surveyors of the portion(s) of the tract(s) of land on which a CCR unit has been closed in place;

- A statement describing the appropriate future land use and documenting any property use limitations;
- The class(es) of waste that was disposed and the corresponding waste description(s); and,
- The name or permanent address of the person or persons operating the facility where more specific information on the wastes can be obtained.

Within 30 days of recording each deed notation, GCERG will place a corresponding notification that the notation has been recorded in the GCERG GCSES Operating Record and the GCERG CCR Internet Site.

7.0 PROFESSIONAL ENGINEER CERTIFICATION

40 CFR Part 257.102, 40 CFR Part 257.104, and 30 TAC §352, Subchapter J, require that this CCR Unit Closure and Post-Closure Plan meet the requirements of those rules. In addition, a professional engineer must certify that any amendments to the CCR Unit Closure and Post-Closure Plan meet requirements of those rules, and that closure of the CCR unit has been achieved in accordance with those rules. Certification for this revised CCR Unit Closure and Post Closure Plan is provided below.

"Pursuant to 40 C.F.R. § 257.102(b)(4), I hereby certify that this Amended Closure and Post Closure Plan for the CCR Units at the Gibbons Creek Steam Electric Station meets the requirements of the Coal Combustion Residuals Rule 40 C.F.R. § 257.102(c) for closure by removal of CCR, 40 C.F.R. § 257.102(d) for closure by leaving CCR materials in place, *40 CFR Part 257.104(d)(4), and 30 TAC §352, Subchapter J, and attest that this CCR Unit Closure and Post-Closure Plan has been prepared in accordance with good engineering practices."*

David C. Vogt, PE

P.E. License #93905
Project Manager
HDR Engineering, Inc.
17111 Preston Road, Suite 300
Dallas, TX 75248
Texas Engineering Firm No. 754

ATTACHMENT 1 – SCHEDULE

Scrubber Sludge Pond

Event/Activity	Estimated Start Date	Estimated Duration
Notice of Intent to Initiate Closure of CCR Units, per 40 CFR 257.106	April, 2021	1 Day
Engineering Design and Preparation of Construction Plans and Specifications	April, 2021	4 Months
Obtain Necessary Local and State Permits	April, 2021	8 Months
Dewater Scrubber Sludge Pond	April 2021	10 Months
Remove CCR Material from Scrubber Sludge Pond	3rd Quarter 2021	7 Months
Regrade and Stabilize Scrubber Sludge Pond	2nd Quarter 2022	2 Months
Prepare and Submit Closure Certification	3rd Quarter 2022	2 Months

Ash Ponds

Event/Activity	Estimated Start Date	Estimated Duration
Notice of Intent to Initiate Closure of CCR Units, per 40 CFR 257.106	April, 2021	1 Day
Engineering Design and Preparation of Construction Plans and Specifications	April, 2021	4 Months
Obtain Necessary Local and State Permits	April, 2021	8 Months
Dewater Scrubber Ash Ponds	April 2021	12 Months
Remove CCR Material from Ash Ponds	4th Quarter 2021	14 Months
Regrade and Stabilize Ash Ponds	1st Quarter 2023	2 Months
Prepare and Submit Closure Certification	2nd Quarter 2023	2 Months

Site F Landfill

Event/Activity	Estimated Start Date	Estimated Duration
Notice of Intent to Initiate Closure of CCR Units, per 40 CFR 257.106	April, 2021	1 Day
Engineering Design and Preparation of Construction Plans and Specifications	April, 2021	4 Months
Obtain Necessary Local and State Permits	April, 2021	8 Months
Strip Topsoil and Regrade Landfill	2nd Quarter 2022	12 Months
Install Final Cover and Storm Water Controls	2nd Quarter 2023	8 Months
Prepare and Submit Closure Certification	1st Quarter 2024	2 Months

ATTACHMENT 2 – FIGURES

hdrinc.com
17111 Preston Road
Suite 300
Dallas, TX 75248-1232
(972) 960-4400

N

GCERG

Gibbons Creek Environmental Redevelopment Group, LLC

STATE OF TEXAS
DAVID C. VOGT
93905
LICENSED
PROFESSIONAL ENGINEER
4-8-21

HDR

Gibbons Creek Electric Station

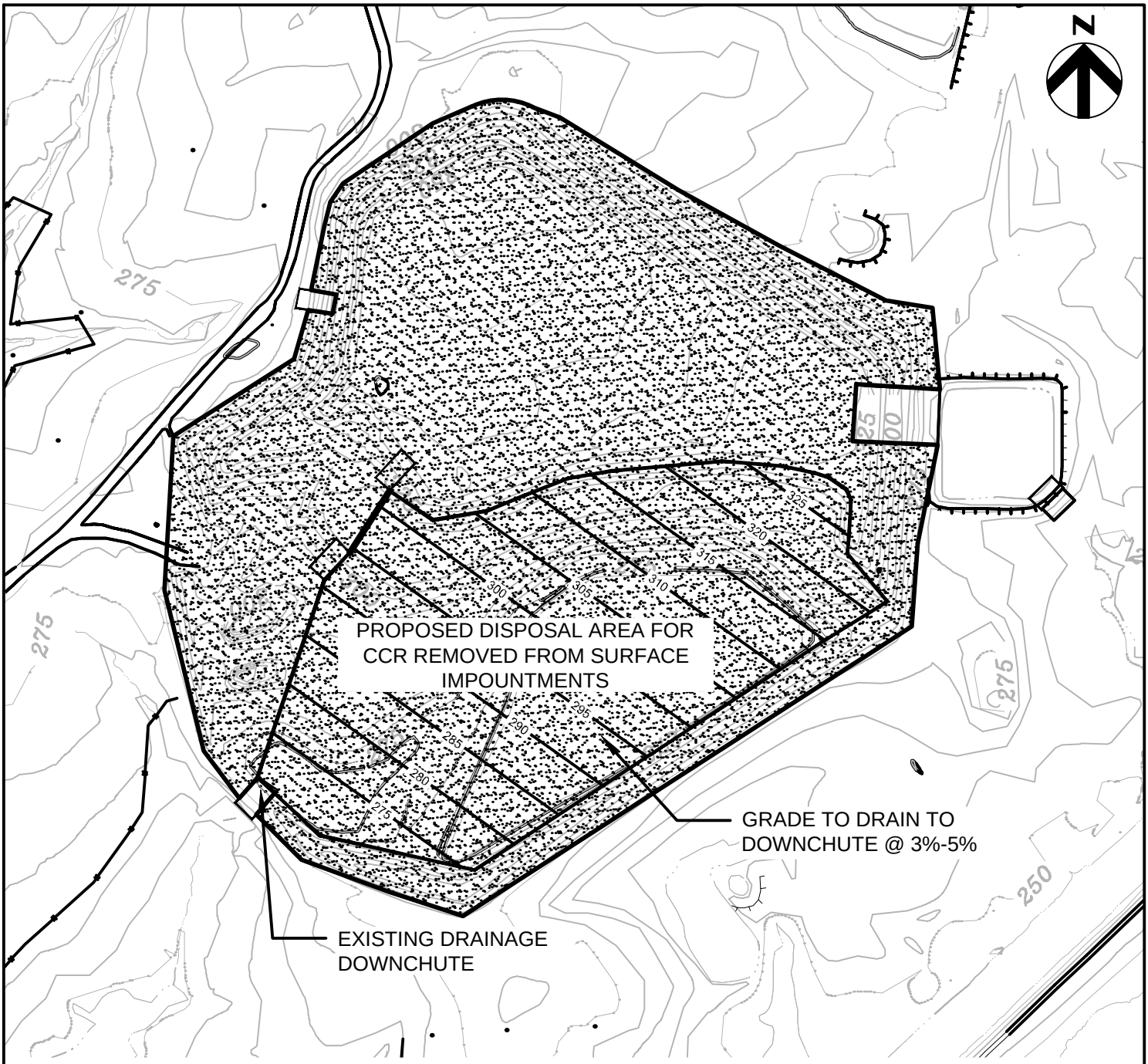
OVERALL SITE MAP

DATE

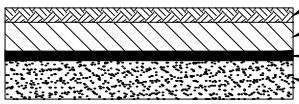
04/2021

FIGURE

1



Gibbons Creek Environmental Redevelopment Group, LLC



FINAL COVER DETAIL

LIMITS OF FINAL COVER

STATE OF TEXAS
DAVID C. VOGT
93905
LICENSED
PROFESSIONAL ENGINEER
4-8-21

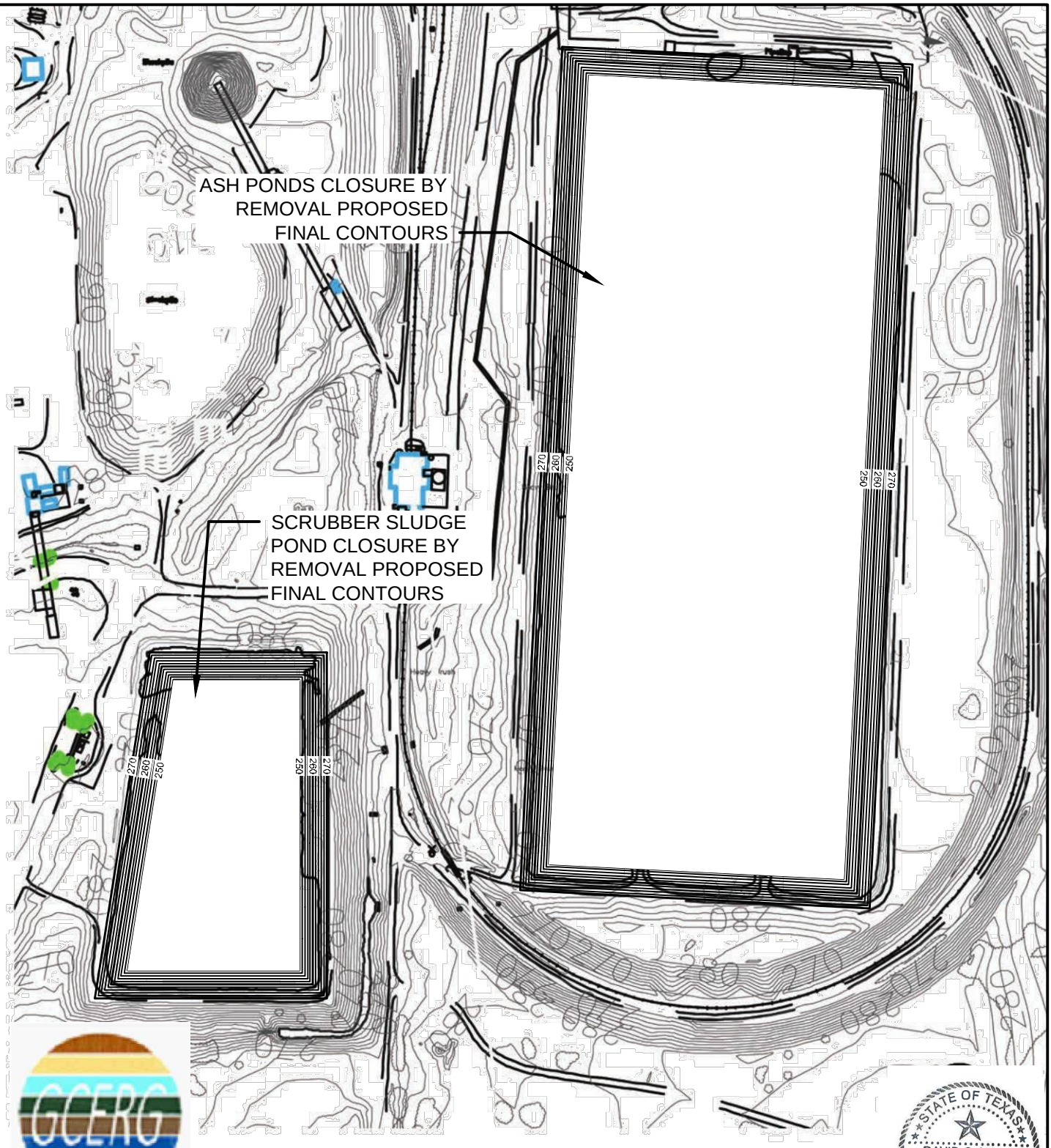
HDR

Gibbons Creek Electric Station

SITE "F" LANDFILL

DATE 04/2021

FIGURE 2



Gibbons Creek Environmental Redevelopment Group, LLC

Gibbons Creek Electric Station

SCRUBBER SLUDGE POND AND ASH PONDS

DATE

04/2021

FIGURE

3