



Wood Environment & Infrastructure Solutions, Inc.
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October 17, 2018
Project 6706180002

Mr. Craig York
Texas Municipal Power Agency
Gibbons Creek Steam Electric Station
12824 FM 244 Road
Anderson, Texas 77830

**Re: Demonstration of Compliance with CCR Siting Restrictions: 40 CFR §257.63 –
Seismic Impact Zones**

Dear Mr. York:

Wood Environment & Infrastructure Solutions, Inc. (Wood) has completed a demonstration of compliance with United States Environmental Protection Agency (USEPA) Coal Combustion Residuals (CCR) siting restrictions applicable to the Texas Municipal Power Agency (TMPA) Gibbons Creek Steam Electric Station (Plant) in Anderson, Texas.

The Plant currently operates one CCR landfill identified as the Site F Landfill (SFL), and two CCR surface impoundments: the Scrubber Sludge Pond (SSP) and the Ash Ponds (APs). These units are subject to regulation under 40 Code of Federal Regulations (CFR) §257 Subpart D. The specific demonstrations made in this document are related to the siting restrictions found in 40 CFR §257.63 – Seismic Impact Zones.

LIMITATIONS

Wood has relied upon information provided by others in the evaluation of environmental site conditions reported herein. We did not attempt to independently verify the accuracy or completeness of that information. To the extent that the opinion and conclusions in this report are based in whole or in part on such information, those conclusions are contingent on its accuracy and validity. We assume no responsibility for any consequence arising from any information or condition that was concealed, withheld, misrepresented, or otherwise not fully disclosed or available to us. This report does not constitute legal advice.

The opinions and conclusions presented in this report are based only on the information reviewed at the time of this assessment. No site visits were conducted as part of this evaluation. Information pertaining to site conditions or changes may exist of which we are not aware at the time of this report.



Within the limitations of the agreed upon scope, we have conducted our work in a professional manner in accordance with generally accepted practices, using the degree of skill and care ordinarily exercised by environmental consultants under similar circumstances. No other warranties, expressed or implied, are made.

This report has been prepared by Wood for the express use of TMPA. No other parties shall rely on this report without written consent from Wood.

DESCRIPTION OF CCR UNITS

The Plant is located in a rural area of Grimes County approximately 10 miles northwest of Anderson, Texas. As stated previously, the Plant operates three CCR units: a landfill identified as the Site F Landfill (SFL), and two CCR surface impoundments: the Scrubber Sludge Pond (SSP) and the Ash Ponds (APs). **Figure 1** presents the general Plant location and identifies the three CCR units.

Site F Landfill

The SFL was constructed in 1992 and is located northeast of the Plant, on the opposite side of the Gibbons Creek Reservoir, on property currently owned by TMPA. The active unit receives CCR waste generated by the Plant and occupies a footprint of approximately 114 acres. Outer dikes approximately 20 feet high were constructed and a compacted clay liner was installed at the base of the landfill, with toe drains. CCR materials are placed in 20-foot high sections with a 3:1 (horizontal to vertical) slope.

Scrubber Sludge Pond

The SSP was constructed in 1978 and began receiving material in 1983. The active unit is located west of the Ash Ponds, and south of the coal pile storage area. The SSP occupies approximately 7.4 acres and is 20 feet deep from the crest of the berm to the bottom of the pond. A Hypalon® flexible membrane liner was installed in February 1985.

Ash Ponds

The three APs were constructed in 1982, and are located east of the coal pile storage area and SSP. Gibbons Creek Reservoir is located just to the east. In aggregate, the three APs occupy a footprint of approximately 33.5 acres. Each pond is approximately 265 feet wide, 1,820 feet long, and 20 feet deep. The APs were constructed with flat bottoms and 3:1 (horizontal to vertical) slopes, with a berm separating each pond.

SEISMIC IMPACT ZONES DETERMINATION

Applicable Regulatory Citation: *40 CFR §257.63 Seismic impact zones.*

(a) New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units must not be located in seismic impact zones unless the owner or operator demonstrates by the dates specified in paragraph (c) of this section that all structural components including liners, leachate collection and removal systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site.



According to 40 CFR §257.53 (Definitions), *seismic impact zone* means an area having a 2% or greater probability that the maximum expected horizontal acceleration, expressed as a percentage of the earth's gravitational pull (g), will exceed 0.10 g in 50 years.

Based on a review of the United States Geological Survey (USGS) Seismic-Hazard Maps for the Conterminous United States, the Plant's CCR units are not located in an area having a 2% or greater probability that the maximum expected horizontal acceleration, expressed as a percentage of the earth's gravitational pull (g), will exceed 0.10 g in 50 years. **Figure 2** illustrates the Plant location relative to peak horizontal acceleration expressed as a percent of gravity (%g) with a 2% probability of exceedance in 50 years, as mapped by the USGS.

As described herein, based on the information obtained and reviewed as part of this determination, the three CCR units (Site F Landfill, Scrubber Sludge Pond, and Ash Ponds) at the Gibbons Creek Steam Electric Station meet the requirements specified in 40 CFR §257.63 *Seismic impact zones*.



CERTIFICATION

This Certification Statement documents that the Site F Landfill, Scrubber Sludge Pond, and Ash Ponds at the Texas Municipal Power Agency Gibbons Creek Steam Electric Station meet the Seismic Impact Zones siting requirements specified in 40 CFR §257.63. The Site F Landfill, Scrubber Sludge Pond, and Ash Ponds are existing CCR units as defined by 40 CFR §257.53. The CCR Rule requires that a Seismic Impact Zones Siting Certification be prepared for existing CCR units by October 17, 2018.

I, SETH GREEN being a Registered Professional Engineer in good standing in the State of Texas, do hereby certify, to the best of my knowledge, information, and belief that the information contained in this certification has been prepared in accordance with the accepted practice of engineering. I certify, for the above referenced CCR Units, that the Seismic Impact Zones Certification dated October 17, 2018, meets the requirements of 40 CFR §257.63.



SETH GREEN

Printed Name of Registered Professional Engineer

[Handwritten Signature]
Signature of Registered Professional Engineer

October 17, 2018
Date

Wood Environment & Infrastructure Solutions, Inc.
Company

F-00012
License Number

Texas
State of Registration



Mr. Craig York
Texas Municipal Power Agency
October 17, 2018
Page 5 of 5

We appreciate the opportunity to serve TMPA on this project. If you have any questions, feel free to contact us.

Sincerely,

Wood Environment & Infrastructure Solutions, Inc.



Brian Gieselman
Environmental Scientist

Reviewed by:



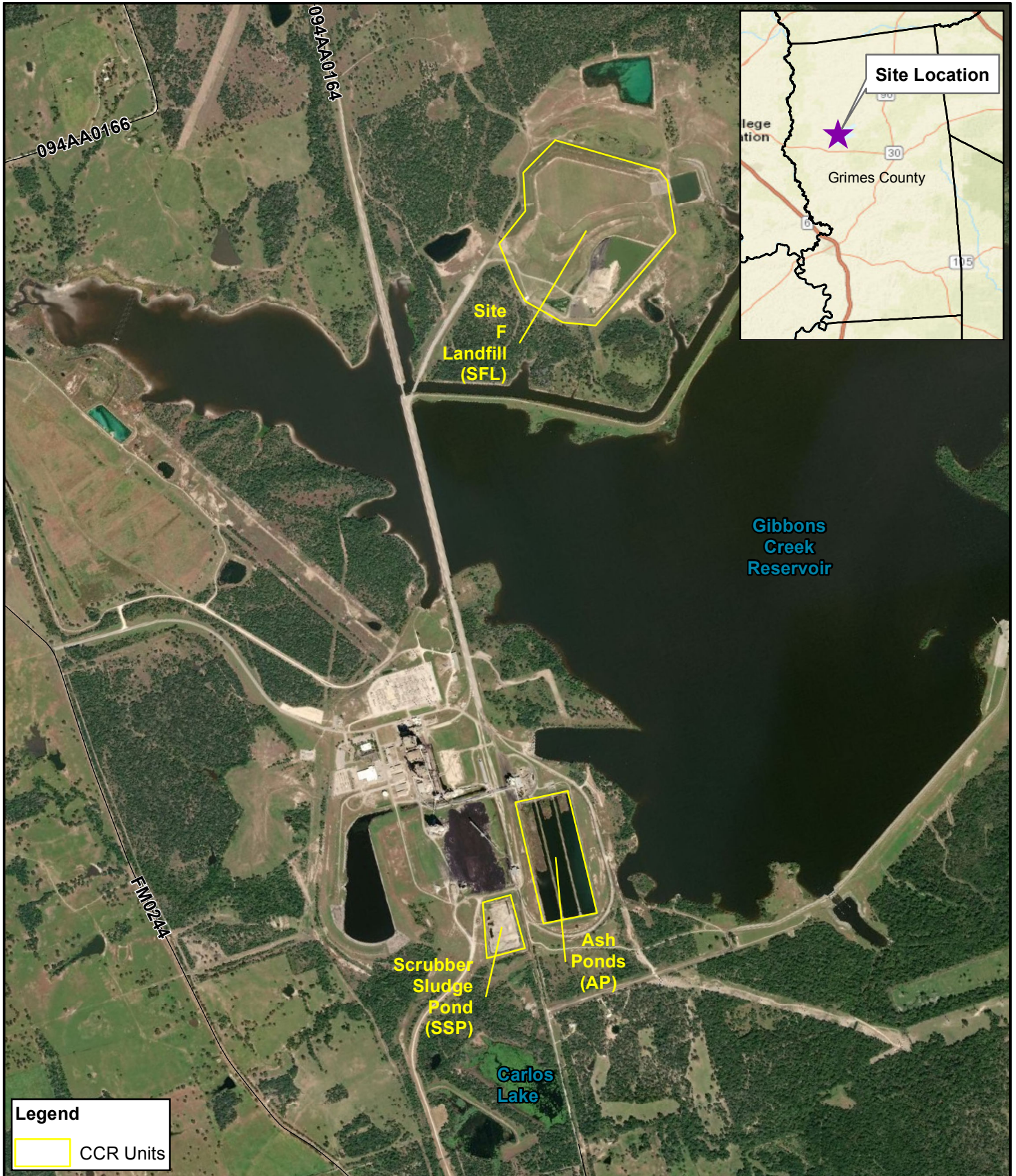
Greg Seifert, P.G.
Principal Geologist

Attachments:

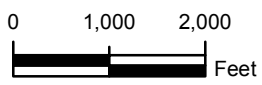
Figure 1 – Site Location Map and CCR Units

Figure 2 – Seismic Impact Zones





Texas Municipal Power Agency
 Gibbons Creek Steam Electric Station
 Grimes County, Texas



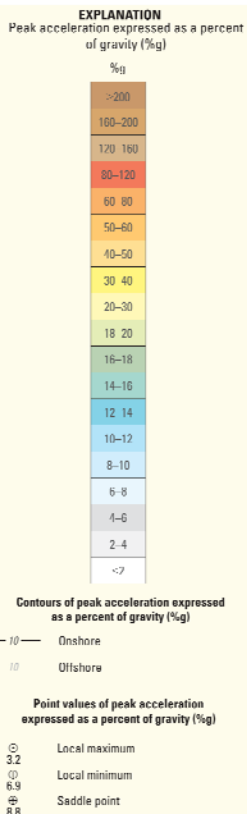
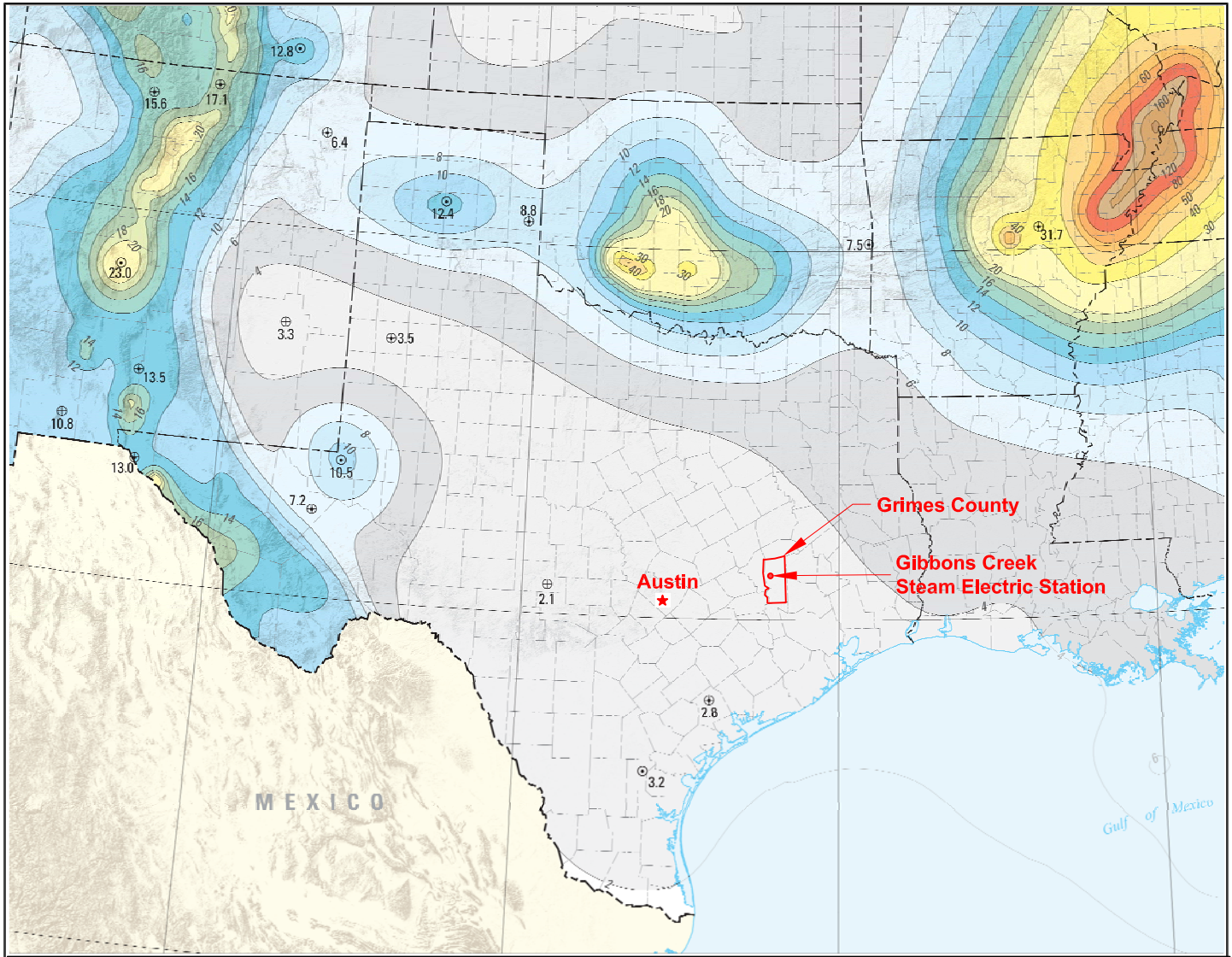
CCR Units

DATE	OCTOBER 2018
SCALE	1" = 2,000 feet
PROJECT NO.	6706180002
FIGURE	1

SITE LOCATION MAP

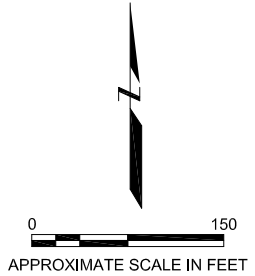


DRAWN BY: CJR CHECKED BY: GS



Seismic-Hazard Maps for the Coterminous United States, 2014:
 U.S. Geological Survey Scientific Investigations Map 3325
 Peak Horizontal Acceleration with 2 Percent Probability of
 Exceedance in 50 Years
<https://pubs.usgs.gov/sim/3325/>

Plot Date: 10/15/18 - 5:06pm. Plotted by: susan.l.brown
 Drawing Path: C:\Users\susan.l.brown\Desktop\Brian\ Drawing Name: TMPA Seismic Figure.dwg



 Environment & Infrastructure Solutions, Inc. TX Engineering Firm F-0012	SEISMIC IMPACT ZONES Texas Municipal Power Agency Gibbons Creek Steam Electric Station Grimes County, Texas	
	Project No. 6706180008 Date. 10/14/2018	By.