

**PLATTE RIVER POWER AUTHORITY – RAWHIDE ENERGY STATION
BOTTOM ASH TRANSFER (BAT) IMPOUNDMENTS
LARIMER COUNTY, CO**

**ENGINEER'S CERTIFICATION OF WETLANDS LOCATION
DEMONSTRATION
(40 CFR §257.61)
FOR COAL COMBUSTION RESIDUALS (CCR)
EXISTING SURFACE IMPOUNDMENT**

Prepared for
Platte River Authority Energy



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1. INTRODUCTION

1.1 OBJECTIVE

The purpose of this demonstration is to document compliance of the subject existing CCR unit with 40 CFR §257.64 of the Environmental Protection Agency Final Coal Combustion Residual Rule (EPA Final CCR Rule). This Wetland Location Restriction Demonstration is based on existing documentation such as construction drawings, record drawings, and other pertinent data and/or investigations to support historic conditions and operations of the Bottom Ash Transfer (BAT) Impoundments at the Rawhide Energy Station.

1.1 RULE REQUIREMENTS

According to 40 CFR §257.61(a) of the EPA Final CCR Rule, any new CCR landfills, existing, and new CCR surface impoundments, and all lateral expansions of CCR units must not be located in wetlands, as defined in 40 CFR §232.2, unless the owner or operator demonstrates by the date specified in 40 CFR §257.61(c), October 17, 2018 that the CCR unit meets the requirements of paragraphs 40 CFR §257.61(a)(1) through (a)(5). The written demonstration must include, at a minimum, the information specified in paragraphs (a)(1) through (5) of this section.

- (1) Where applicable under section 404 of the Clean Water Act or applicable state wetland laws, a clear and objective rebuttal of the presumption that an alternative to the CCR unit is reasonably available that does not involve the wetlands.
- (2) The construction and operation of the CCR unit will not cause or contribute to any of the following:
 - (i) A violation of any applicable state or federal water quality standard;
 - (ii) A violation of any applicable toxic effluent standard or prohibition under section 307 of the Clean Water Act;
 - (iii) Jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat
 - (iv) A violation of any requirement under the Marine Protection, Research, and Sanctuaries Act of 1972 of the protection of a marine sanctuary.
- (3) The CCR unit will not cause or contribute to significant degradation of wetlands by addressing all of the following factors:
 - (i) Erosion, stability, and migration potential of native wetland soils, muds, and deposits used to support the CCR unit;
 - (ii) Erosion, stability, and migration potential of dredged and fill materials used to support the CCR unit;

- (iii) The volume and chemical nature of the CCR;
 - (iv) Impacts on fish, wildlife, and other aquatic resources and their habitat from release of CCR;
 - (v) The potential effects of catastrophic release of CCR to the wetland and the resulting impacts on the environment; and
 - (vi) Any additional factors, as necessary, to demonstrate that ecological resources in the wetland are sufficiently protected.
- (4) To the extent required under section 404 of the Clean Water Act or applicable wetlands laws, steps have been taken to attempt to achieve no net loss of wetlands laws, steps have been taken to attempt to achieve no net loss of wetlands (as defined by acreage and function) by first avoiding impacts to wetlands to the maximum extent reasonable as required by paragraphs (a)(1) through (3) of this section, then minimizing unavoidable impacts to the maximum extent reasonable and finally offsetting remaining unavoidable impacts to the maximum extent reasonable, and finally offsetting remaining unavoidable wetland impacts through all appropriate and reasonable compensatory mitigation actions (e.g., restoration of existing degraded wetlands or creation of man-made wetlands).
- (5) (c)(1) for an existing surface impoundment, the owner or operator must complete the demonstration no later than October 17, 2018.

1.2 SITE BACKGROUND

Rawhide Energy Station (Rawhide) is a 4,560 acre facility located at 2700 East County Road 82 in Wellington, CO. Construction of Rawhide began in 1979 and it has operated as a coal-fired power plant since. The primary land use on the Rawhide property is related to utility service electric generation. Power generation at Rawhide produces coal combustion residuals (CCR). Rawhide places these residuals in the Solid Waste Management Facility (the Monofill), located in the northwest corner of the Rawhide site.

The BAT Impoundments are located northwest of the main plant and north of the Cooling Pond. A site location plan of the Rawhide Energy Station is depicted on **Figure 1**. An overview of the impoundments is presented in **Figure 2**.

Bottom ash is produced during the coal combustion process and is hydraulically sluiced from the boiler to one of the two incised BAT impoundments located northwest of the plant. These impoundments also receive resin filter backwash water from the demineralizer at the wastewater treatment plant. The impoundments were constructed in the early 1980s by excavating below grade into the underlying Pierre Shale and then lining the bottom with 18 inches of compacted clay. Each of the two impoundments measure approximately 725 feet by 225 feet at the surface (approximately 7.5 acres total) with a bottom elevation of 5,660 feet above mean sea level (amsl), a normal water elevation of 5,674 feet amsl, and a dike crest elevation ranging between 5,678 and 5,679 feet amsl. It takes approximately one to two years to fill one of the ponds. Once the ponds are filled, the solids are excavated by an outside

contractor and disposed of in the on-site monofill. The bottom clay liner has been surveyed during the cleanout. The ponds are cleaned out in an alternating manner, approximately every three years, and the material is then transported to the Monofill.

A plant shutdown event at the Rawhide facility is planned to occur during Fall 2018. The existing BAT impoundments will be permanently taken out of service following this shutdown event.

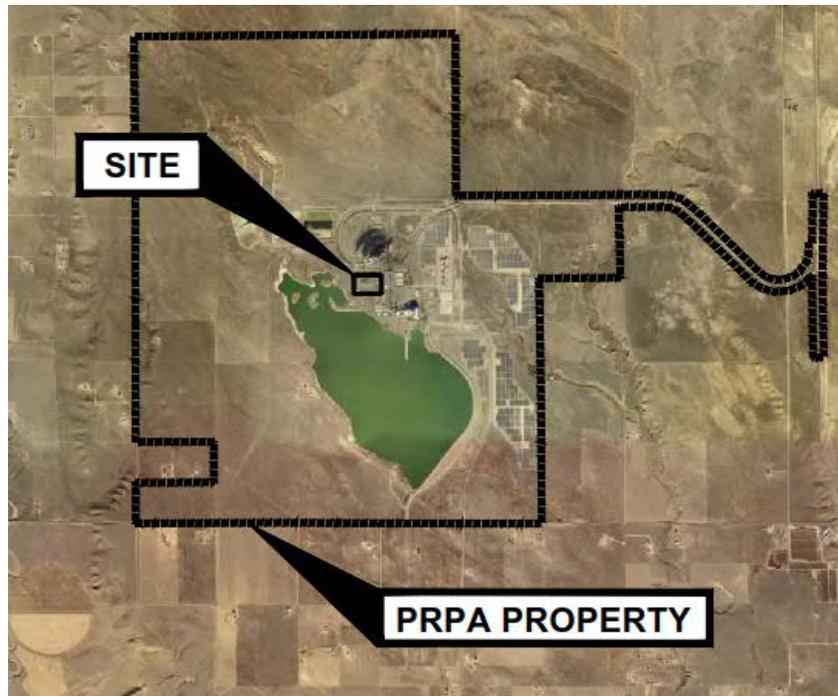


Figure 1: Site Location Map



Figure 2: CCR Unit Site Location

2. ASSESSMENT OF SITE WETLANDS

2.1 HISTORICAL AND PUBLIC AVAILABLE INFORMATION

Available historical information included desktop review of publicly available data and reports previously prepared.

The Black & Veatch Engineering Report and Operational Plan (1980) indicates that the BAT Impoundments at the Rawhide Energy Station are incised, meaning the overburden soils have been excavated and removed, and the bottom of each of the basins is located within the shale bedrock. No man-made dikes were constructed as a result, and as a result there is no breach zone downgradient of the BAT impoundments.

Information was obtained from the US Fish and Wildlife Service's Wetland Mapper (2018). The information provided in the Wetland Mapper was obtained by photo interpreting using 1:80,000 scale, black and white imagery from 1975. It should be noted that this information was interpreted prior to construction of the Rawhide Energy Station, and prior to construction of the Hamilton Reservoir. **Figure 3** shows the location of the BAT Impoundments with respect to the historical data.

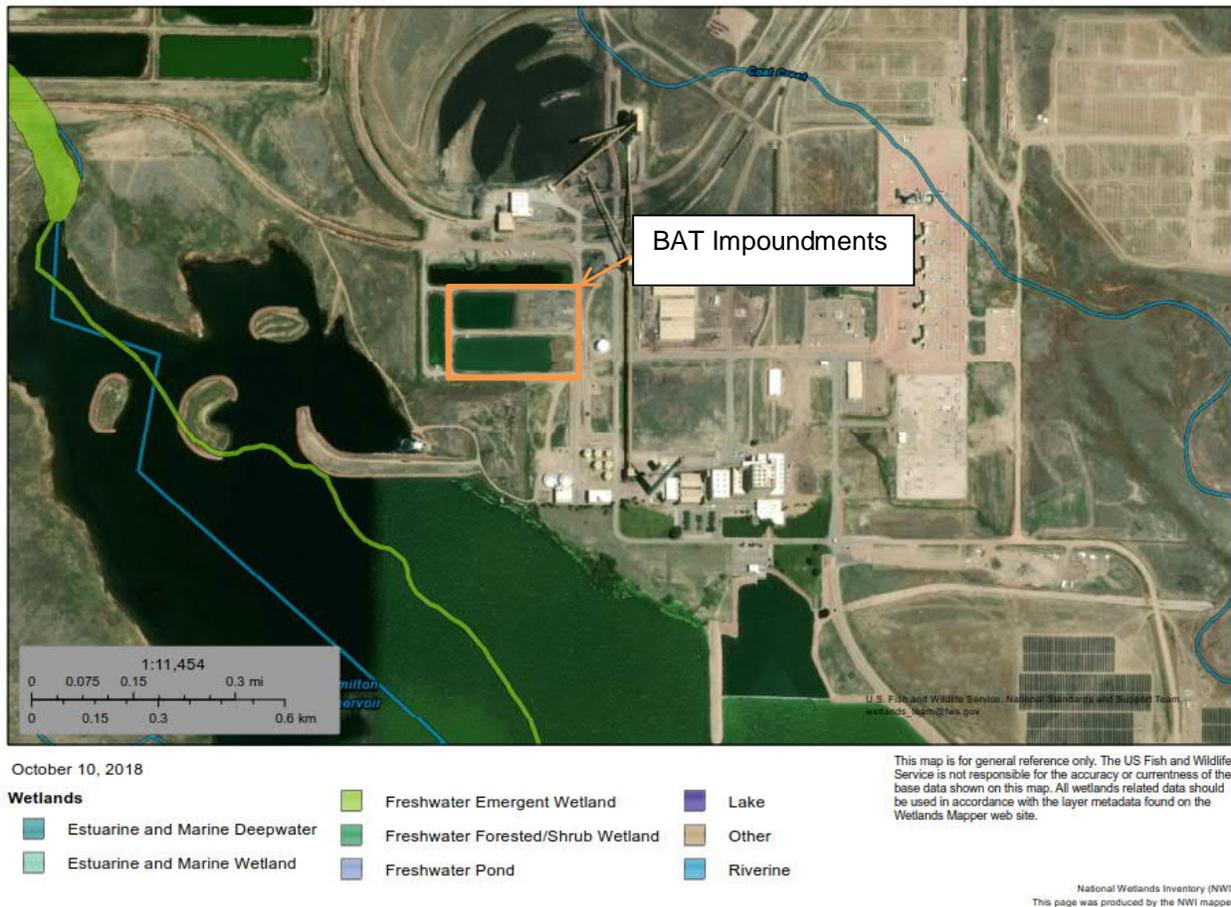


Figure 3: Wetland Mapper

Based on available information, the area itself is not a wetland, nor, are wetlands in the vicinity of the BAT impoundments.

2.2 40 CFR §257.61(A)(1) – LOCATION ALTERNATIVES

Per Rule 40 CFR §257.61(a)(1), Where applicable under section 404 of the Clean Water Act or applicable state wetland laws, a clear and objective rebuttal of the presumption that an alternative to the CCR unit is reasonably available that does not involve the wetlands.

Based on available information, the area itself is not a wetland, nor, are wetlands in the vicinity of the BAT impoundments.

2.3 40 CFR §257.61(A)(2) – CONSTRUCTION AND OPERATION

In accordance with the EPA CCR Rule all applicable impoundment that have the potential to impact wetlands, must comply with the regulatory standards set forth in all applicable governing documents.

Based on available information, the area itself is not a wetland, and there are no wetlands near the BAT impoundments. Furthermore, the impoundments are incised, and not subject to breaching or release of CCR materials. As a result, the operation of the CCR unit will not cause or contribute to any of the following:

- A violation of any applicable state or federal water quality standard;
- A violation of any applicable toxic effluent standard or prohibition under section 307 of the Clean Water Act;
- Jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat
- A violation of any requirement under the Marine Protection, Research, and Sanctuaries Act of 1972 of the protection of a marine sanctuary

2.3.1 40 CFR §257.61(A)(3) – POTENTIAL FOR SIGNIFICANT DEGRADATION

The BAT impoundments are incised, and not subject to breaching or release of CCR materials. As a result, there is no erosion, stability, and migration potential of native wetland soils, muds, dredged or fill materials, and deposits used to support the CCR unit.

The BAT impoundments contain bottom ash materials. Each impoundment has a capacity of approximately 140,000 cubic yards.

This CCR unit is subject to regular inspections. The inspection program includes scheduled formal, and informal inspections. Maintenance is performed on an as-needed basis.

2.3.2 40 CFR §257.61(A)(4) - WETLAND MITIGATION

No mitigation is expected during the closure/post closure of the BAT impoundments.

3. CONCLUSIONS

Review of available information indicates that the BAT impoundments are not subject to breach or release, nor are there existing wetlands in the vicinity of the impoundments.

4. REFERENCES

- US Fish and Wildlife Services, Wetland Mapper (2018)
<https://www.fws.gov/wetlands/data/mapper.html>
- Black & Veatch Consulting Engineers, Engineering Report and Operational Plan, Platte River Power Authority Rawhide Project: July 23, 1979.

APPENDIX A

ENGINEER'S CERTIFICATION

ENGINEER'S CERTIFICATION OF WETLANDS DEMONSTRATION
CCR SURFACE IMPOUNDMENT: RAWHIDE ENERGY STATION
CCR UNIT: BOTTOM ASH TRANSFER IMPOUNDMENTS

AECOM ("Consultant") has been retained by Platte River Power Authority to prepare the following assessment of whether the above-referenced existing coal combustion residuals ("CCR") surface impoundment meets the wetlands impacts requirements set out in 40 C.F.R. § 257.61(a). Presented below are the project background, summary of findings, limitations, and certification.

1.0 BACKGROUND

Pursuant to 40 C.F.R. § 257.61(a), new CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units must not be located in wetlands, as defined in 40 C.F.R. § 232.2, unless the owner or operator demonstrates that the CCR unit meets the following requirements:

- 1) *Where applicable under section 404 of the Clean Water Act or applicable state wetlands laws, a clear and objective rebuttal of the presumption that an alternative to the CCR unit is reasonably available that does not involve wetlands.*
- 2) *The construction and operation of the CCR unit will not cause or contribute to any of the following:*
 - i. *A violation of any applicable state or federal water quality standard;*
 - ii. *A violation of any applicable toxic effluent standard or prohibition under section 307 of the Clean Water Act;*
 - iii. *Jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat, protected under the Endangered Species Act of 1973; and*
 - iv. *A violation of any requirement under the Marine Protection, Research, and Sanctuaries Act of 1972 for the protection of a marine sanctuary.*
- 3) *The CCR unit will not cause or contribute to significant degradation of wetlands by addressing all of the following factors:*
 - i. *Erosion, stability, and migration potential of native wetland soils, muds and deposits used to support the CCR unit;*
 - ii. *Erosion, stability, and migration potential of dredged and fill materials used to support the CCR unit;*
 - iii. *The volume and chemical nature of the CCR;*
 - iv. *Impacts on fish, wildlife, and other aquatic resources and their habitat from release of CCR;*
 - v. *The potential effects of catastrophic release of CCR to the wetland and the resulting impacts on the environment; and*
 - vi. *Any additional factors, as necessary, to demonstrate that ecological resources in the wetland are sufficiently protected.*
- 4) *To the extent required under section 404 of the Clean Water Act or applicable state wetlands laws, steps have been taken to attempt to achieve no net loss of wetlands (as defined by acreage and function) by first avoiding impacts to wetlands to the maximum extent reasonable as required by paragraphs 1) through 3) above, then minimizing unavoidable impacts to the maximum extent reasonable, and finally offsetting remaining unavoidable wetland impacts through all appropriate and reasonable compensatory mitigation actions (e.g., restoration of existing degraded wetlands or creation of man-made wetlands); and*
- 5) *Sufficient information is available to make a reasoned determination with respect to the demonstrations in paragraphs 1) through 4) above.*

Pursuant to 40 C.F.R. § 257.61(b) and (c)(1), for an existing CCR surface impoundment, the owner or operator must obtain a certification from a qualified professional engineer stating that the owner or operator has demonstrated that the CCR unit meets the minimum requirements for wetlands impacts set out in paragraphs 1) through 5) above no later than October 17, 2018.

In support of Consultant's assessment, Consultant completed a desktop evaluation of the location of the CCR unit and determined that sufficient information is available to document the required wetlands demonstration.

2.0 ASSESSMENT

Based upon a review of applicable information, Consultant concludes as follows:

CCR Unit	Wetlands
BAT Impoundments	<i>Meets the requirements of 40 C.F.R. § 257.61(a)</i>

3.0 LIMITATIONS

The signature of Consultant's authorized representative on this document represents that to the best of Consultant's knowledge, information, and belief in the exercise of its professional judgment, it is Consultant's professional opinion that the aforementioned information is accurate as of the date of such signature. Any opinion or decisions by Consultant are made on the basis of Consultant's experience, qualifications, and professional judgment and are not to be construed as warranties or guaranties. In addition, opinions relating to environmental, geologic, and geotechnical conditions or other estimates are based on available data, and actual conditions may vary from those encountered at the times and locations where data are obtained, despite the use of due care.

4.0 CERTIFICATION

I, Sherry Bugg, being a Registered Professional Engineer, in accordance with the Colorado Professional Engineer's Registration, do hereby certify to the best of my knowledge, information, and belief, that the CCR unit that is the subject of this report dated October 16, 2018 meets the requirements for wetlands impacts pursuant to 40 C.F.R. § 257.61(a), and that this report is true and correct and has been prepared in accordance with generally accepted good engineering practices.

SIGNATURE




DATE 10/16/2018

