

DUST CONTROL PLAN

**Rawhide Energy Station
2700 East County Road 82
Wellington, Colorado 80549**



November 2015

REVISION HISTORY

Revision Number	Revision Date	Section Revised	Summary of Revisions
0	10/19/2015		Initial plan developed as draft, awaiting PE certification.
1	11/17/2015	various	Minor clarifications to dust control procedures, PE Certification by AECOM

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LIST OF ACRONYMS

- CCR Coal Combustion Residuals
- CDPHE Colorado Department of Public Health and Environment
- CFR Code of Federal Regulations
- EPRI Electric Power Research Institute
- FGD Flue Gas Desulfurization

SECTION 1

BACKGROUND

The purpose of this Dust Control Plan is to identify and describe the Coal Combustion Residuals (CCR) fugitive dust control procedures used to reduce the potential for CCR becoming airborne at the Rawhide Energy Station (Rawhide), located near Wellington, Colorado. The following sections provide background information on (1) coal combustion residuals and (2) regulatory requirements.

1.1 Coal Combustion Residuals

CCR materials are produced at coal-fired power plants when coal is burned to produce electricity. CCR materials are managed by coal-fired power plant sites, including on-site storage, processing (such as dewatering), and final disposal, typically in CCR landfills and impoundments. Types of CCR generated at Rawhide include fly ash, bottom ash, and flue gas desulfurization (FGD) materials. General characteristics of these CCR materials are described below.

- **Fly Ash** – Fly ash is captured from exhaust (flue) gas at Rawhide by a fabric filter baghouse. Fly ash is characterized by clay-sized and silt-sized fine grain materials, consisting primarily of silica, calcium, alumina, and iron, with minor amounts of sulfur, sodium, and potassium. Due to the small particle size and consistency, fly ash can be mobilized by windy conditions when it is dry.
- **FGD Materials** – FGD materials are produced by FGD emissions control systems, which are designed and operated to remove sulfur dioxide (SO₂) from exhaust (flue) gases. FGD materials at Rawhide come from the spray drier absorber and primarily consist of calcium sulfate and calcium sulfite. FGD materials are captured in the baghouse and handled along with the fly ash.
- **Bottom Ash** – Bottom ash is characterized by sand-sized and gravel-sized materials, which settle by gravity to the bottom of a coal-fired furnace. In general, bottom ash is less prone to dusting than fly ash due to its larger particle size. Under certain conditions, such as differential settling in a surface impoundment, it is possible for smaller-grained materials to be concentrated at the surface and be a potential source of dust issues.

1.2 Regulatory Requirements

This Dust Control Plan has been developed for the Rawhide Energy Station in accordance with applicable federal, state and local regulations, as discussed below.

1.2.1 CCR Rule Requirements

The CCR Rule (40 Code of Federal Regulations [CFR] Part 257, Subpart D) requires preparation of a Dust Control Plan for facilities including CCR landfills, CCR surface impoundments, and any lateral expansion of a CCR unit. Selected definitions from the CCR Rule are provided below.

CCR (coal combustion residuals) 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 fugitive dust means solid airborne particulate matter that contains or is derived from CCR, emitted from any source other than a stack or chimney.

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 this subpart, 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.

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.

The CCR Rule requires owners or operators of these CCR facilities to adopt and document “measures that will effectively minimize CCR from becoming airborne at the facility, including CCR fugitive dust originating from CCR units, roads, and other CCR management and material handling activities” (40 CFR 257.80).

1.2.2 Other Applicable Regulatory Requirements

Fugitive dust at this site is also regulated by the Colorado Department of Public Health and Environment (CDPHE) in accordance with a Title V Operating Permit and Regulation 3, Stationary Source Permitting and Air Pollutant Emission Notice Requirements (5 CCR 1001-5). This Dust Control Plan is limited to addressing the requirements of the CCR Rule; specific requirements of the Title V Operating Permit are not duplicated in this plan.

SECTION 2

FACILITY INFORMATION

Name of Facility: Rawhide Energy Station

Owner/Operator: Platte River Power Authority

Mailing Address: 2000 East Horsetooth Road, Fort Collins, Colorado 80525

Location: 40.860043, -105.026917

Facility Description: Rawhide Energy Station is located on 4,560 acres of land about 26 miles north of Fort Collins, Colorado. Six generating units are located on site, five fueled by natural gas and one fueled by coal.

The majority of CCR generated by the coal unit is currently disposed of in an onsite landfill; however, an increasing amount of CCR leaves the site for beneficial use.

The following CCR Units exist on site and are shown in Figure 1:

Ash Monofill - One CCR Landfill which is primarily used for disposal of CCR. Occasional inorganic construction-related material may also be managed in this landfill.

Bottom Ash Transfer Ponds – Two CCR Surface impoundments which are primarily used to dewater bottom ash from a sluicing system. Sluice water is circulated back to the plant and reused without discharge. When one pond is full it is dewatered and excavated while the other is in service. All excavated material is disposed of in the onsite Ash Monofill.

SECTION 3

DUST CONTROL PROCEDURES

The following sections discuss dust control procedures for (1) CCR short-term storage and management areas, (2) CCR surface impoundment units, (3) CCR landfill units, and (4) facility roads. Platte River Power Authority has implemented these dust control procedures, which are applicable and appropriate for site-specific conditions at Rawhide Energy Station in accordance with 40 CFR 257.80(b)(1).

3.1 CCR Short-Term Storage and Management Areas

The following dust control procedures will be implemented for CCR short-term storage and management areas.

- Dry fly ash is pneumatically conveyed to a storage silo in an enclosed system to prevent fugitive dust generation.
- Dry fly ash is temporarily stored in an enclosed silo structure prior to transport offsite for beneficial reuse or to the onsite CCR Landfill to prevent exposure to winds and reduce the potential for fugitive dust generation. The ash silo vent includes a pulse jet fabric filter dust collector which is operated and maintained according to the facility Title V Operating permit for controlling fugitive dust.
- During truck loading and unloading activities, sufficient moisture is added to condition the ash and reduce potential fugitive dust generation before it leaves the silo. In order to ensure consistent ash conditioning the silo unloading system utilizes a pin-paddle mixer/unloader with water spraying nozzles. Drop height is also controlled with a telescoping chute to reduce the potential for mobilization of dust. During high wind conditions (35mph or greater), loading and ash management operations are reduced or halted to prevent the generation of fugitive dust.
- Ash transported off site for beneficial reuse is enclosed in tanker trucks or otherwise covered sufficiently to control dust. Exposed truck surfaces are swept or washed as needed to prevent fugitive dust during transport.
- Areas where CCR is loaded and unloaded are kept tidy through good housekeeping measures, including sweeping as needed to minimize exposed CCR and reduce the potential for dust generation.

- In the unusual event that CCR material must be temporarily stored outside of the silo prior to transport, sufficient measures will be employed to control dust including maintaining a partial or complete enclosure to reduce the potential for winds to mobilize CCR, adding water to increase moisture content and bind the CCR to make it less susceptible to fugitive dust generation, etc.

3.2 Bottom Ash Transfer Ponds

CCR bottom ash is sluiced with water through a piping system to the Bottom Ash Transfer Ponds, which minimizes the potential for CCR fugitive dust generation. The bottom ash is stored in the Bottom Ash Transfer Ponds as a slurry mixture with high water content, which will prevent the generation of CCR fugitive dust. The wetted pond surface is at a lower elevation than its surroundings, which reduces the exposure to wind and potential for fugitive dust generation. However, as the ponds are being drained and excavated, ash may be stacked or exposed above the pond water level and possibly create dry conditions prone to dusting. If dry CCR areas are observed, moisture will be applied by spraying and operations adjusted as needed to control dust.

When material is dredged from a Bottom Ash Pond, additional dust control procedures are employed, as needed, including controlling moisture content by spraying water onto the material.

3.3 CCR Landfill Units

CCR will be conditioned prior to being hauled and being placed into the onsite landfill. Conditioning will involve wetting the CCR with water to prevent wind dispersal but not result in free liquids, in accordance with 40 CFR 257.80(a). Additional moisture may be added to the CCR materials at the landfill as needed to both reduce potential wind dispersal and improve compaction during CCR placement in landfill units.

The following additional dust control procedures will be implemented specific to the active CCR landfill unit.

- The area of the working face will be maintained as small as feasible (typically less than one acre in size) to minimize the exposed area and reduce the potential generation of fugitive dust. Active and inactive areas are clearly marked, and traffic controls have been implemented to properly direct unloading and

placement operations while minimizing road travel and potential fugitive dust generation.

- During truck unloading activities, drop height is minimized to reduce the potential for mobilization of CCR dust. This involves unloading ash directly from the haul trucks, rather than sending through another piece of equipment which would be higher off the ground or generate dust during transfer.
- Water is sprayed onto the exposed CCR, including on the working face, as needed to wet the CCR and minimize the potential for fugitive dust generation.

During high wind conditions (35mph or greater), or if increased dusting is observed for any reason, unloading operations at the working face are reduced or halted until conditions improve and the potential for CCR fugitive dust generation is reduced.

When active CCR operations are completed in a given area, two feet of topsoil cover is applied and a native seed mix is applied to stabilize the soil and create a vegetation cover that will minimize the potential generation of CCR fugitive dust.

Following installation, the final cap and cover, including vegetation, are maintained to reduce the potential for CCR becoming exposed and airborne.

3.4 Facility Roads

The following dust control procedures will be implemented for roads in active use for CCR management activities at the Facility, or that are being traveled by construction equipment employed in CCR management activities.

- Vehicle speed limit of 35 miles per hour (mph) are posted and enforced to reduce the potential for dust mobilization on the haul road. During high wind conditions (35mph or greater), operations and related traffic may also be reduced or halted to further reduce the potential for fugitive dust generation.
- To control dust while hauling, the load of ash will either be of sufficient moisture content or will be covered during transport.
- During non-freezing weather, haul roads at the Facility are sprayed as needed throughout the day using water trucks. Figure 1 illustrates the road that is primarily used for CCR hauling and is routinely watered. As activities progress at the Facility, the haul routes may change.
- During freezing weather, a solution of magnesium chloride (or equivalent hygroscopic product) or other dust suppression agent may be applied to roads as needed. Hygroscopic materials attract moisture from the atmosphere and its

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surroundings, so unpaved surfaces will remain damp and fugitive dusting will be reduced during freezing weather.

SECTION 4
INSPECTIONS

Visual inspections for fugitive emissions controls are conducted as required by the facility Title V Operating permit and during weekly CCR Unit inspections as required by the CCR Rule. If any additional inspection procedures are developed specifically related to CCR fugitive dust control, they will be described in this section.
(No additional inspections are currently required.)

SECTION 5

TRAINING

Annual employee training for fugitive dust control is administered as required by the facility Title V Operating permit. If any additional training procedures are developed specifically related to CCR fugitive dust control, they will be described in this section. (No additional routine employee training is currently required however all employees involved with CCR Rule compliance are qualified to perform their assigned tasks.)

SECTION 6

RECORDKEEPING AND REPORTING

The following sections provide details regarding: (1) Dust Control Plan preparation, (2) community involvement, (3) annual reporting, and (4) Dust Control Plan assessment and update process.

6.1 Dust Control Plan Preparation

Existing CCR surface impoundments and existing CCR landfills must prepare a Dust Control Plan if the owner or operator becomes subject to this subpart, as required by 40 CFR 257.80 (b)(5).

A complete, updated copy of this Dust Control Plan is maintained in the Facility operating record and on the Platte River Power Authority website (www.prpa.org) in accordance with 40 CFR 257.80(a), 257.105(g), and 257.107(g). Colorado Department of Public Health and Environment (CDPHE) is notified within 30 days of when this Dust Control Plan, or any subsequent amended version, is placed in the Facility operating record, in accordance with 40 CFR 257.106(g)(1).

6.2 Community Involvement

Platte River has implemented procedures for community involvement, including “logging citizen complaints involving CCR fugitive dust events at the facility,” as required by 40 CFR 257.80(b)(3). The Platte River Power Authority publicly accessible internet website provides contact information for stakeholders to contact Platte River with any questions or concerns regarding dust control or other CCR issues at the Rawhide Energy Station facility. Contact information for stakeholder communications regarding dust controls is listed below.

General Email Communications: CCRInquiries@prpa.org

Designated Point of Contact: Chris Wood, Environmental Services Manager
Phone: 970-266-7906

Platte River will maintain records of stakeholder correspondence regarding any concerns about dust controls at the Facility in accordance with 40 CFR 257.80(b)(3).

Appendix A provides an example stakeholder correspondence record form. Platte River Power Authority's designated point(s) of contact will evaluate stakeholder concerns and provide an initial response within two weeks of receipt. Platte River Power Authority's designated point(s) of contact will follow up, as needed, after any required corrective actions are implemented.

Section 6.3 presents annual dust control reporting requirements, including documentation of any stakeholder concerns about dust controls at the Facility, along with any required corrective actions.

6.3 Annual Reporting

Platte River Power Authority prepares annual dust control reports for Rawhide Energy Station in accordance with 40 CFR 257.80(c) to document the following information:

- Description of dust control procedures implemented at the following CCR units:
 - CCR Landfill
 - Bottom Ash Transfer Ponds (Surface Impoundments)
- Record of all citizen complaints
- Summary of any concerns raised by stakeholders
- Description of any corrective actions taken

Appendix B includes a template for the Annual Dust Control Report.

The first Annual Dust Control Report will be completed (placed in the operating record) on or before December 19th 2016. Subsequent Annual Dust Control Reports will be completed by December 19th of each calendar year thereafter. Each Annual Dust Control Report is completed and placed in the Facility operating record and on the Platte River Power internet site, as required by 40 CFR 257.80(c), 257.105(g), and 257.107(g), within the specified timeframes. CDPHE is notified within 30 days of when each Annual Dust Control Report has been placed in the Rawhide Energy Station Facility operating record, in accordance with 40 CFR 257.106(g).

6.4 Dust Control Plan Assessment and Update Process

Platte River Power Authority periodically assesses the effectiveness of this Dust Control Plan in accordance with 40 CFR 257.80(b). The Dust Control Plan is reviewed

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Rawhide Energy Station

at least once every five years from the date of the last review for adherence to the requirements of 40 CFR 257. If more effective prevention and control technology has been field-proven at the time of the review and will significantly improve dust controls, the Dust Control Plan will be amended to reflect changes. The amended Dust Control Plan will be implemented within six months of its completion. The designated person accountable for dust control at the Facility is responsible for documenting completion of each five-year review, signing a statement as to whether the Dust Control Plan is amended, and recording the results in Appendix C. Technical changes made to this Dust Control Plan will be certified by a qualified Professional Engineer as required by 40 CFR 257.80(b).

Platte River Power Authority will also amend this Dust Control Plan in accordance with 40 CFR 257.80(b) whenever there is a change in conditions that would substantially affect the written Rawhide Energy Station Dust Control Plan in effect, such as significant modification of a CCR unit or a significant change in the CCR material being managed. Technical changes made to this Dust Control Plan will be certified by a qualified Professional Engineer as required by 40 CFR 257.80(b).

CDPHE will be notified, in accordance with 40 CFR 257.106(g), within 30 days of when this Dust Control Plan has been amended and placed in the Facility operating record.

SECTION 7

ENGINEERING CERTIFICATION

Pursuant to 40 CFR 257.80 and by means of this certification, I attest that:

- (i) I am familiar with the air criteria requirements of the CCR Rule (40 CFR 257.80); and
- (ii) The Dust Control Plan meets the requirements of 40 CFR 257.80.

Printed Name of Qualified Professional Engineer: Gregg Somermeyer



Signature of Qualified Professional Engineer: Gregg Somermeyer

Registration/License No. 29224 State: Colorado

FIGURES

Figure 1 – Facility Layout

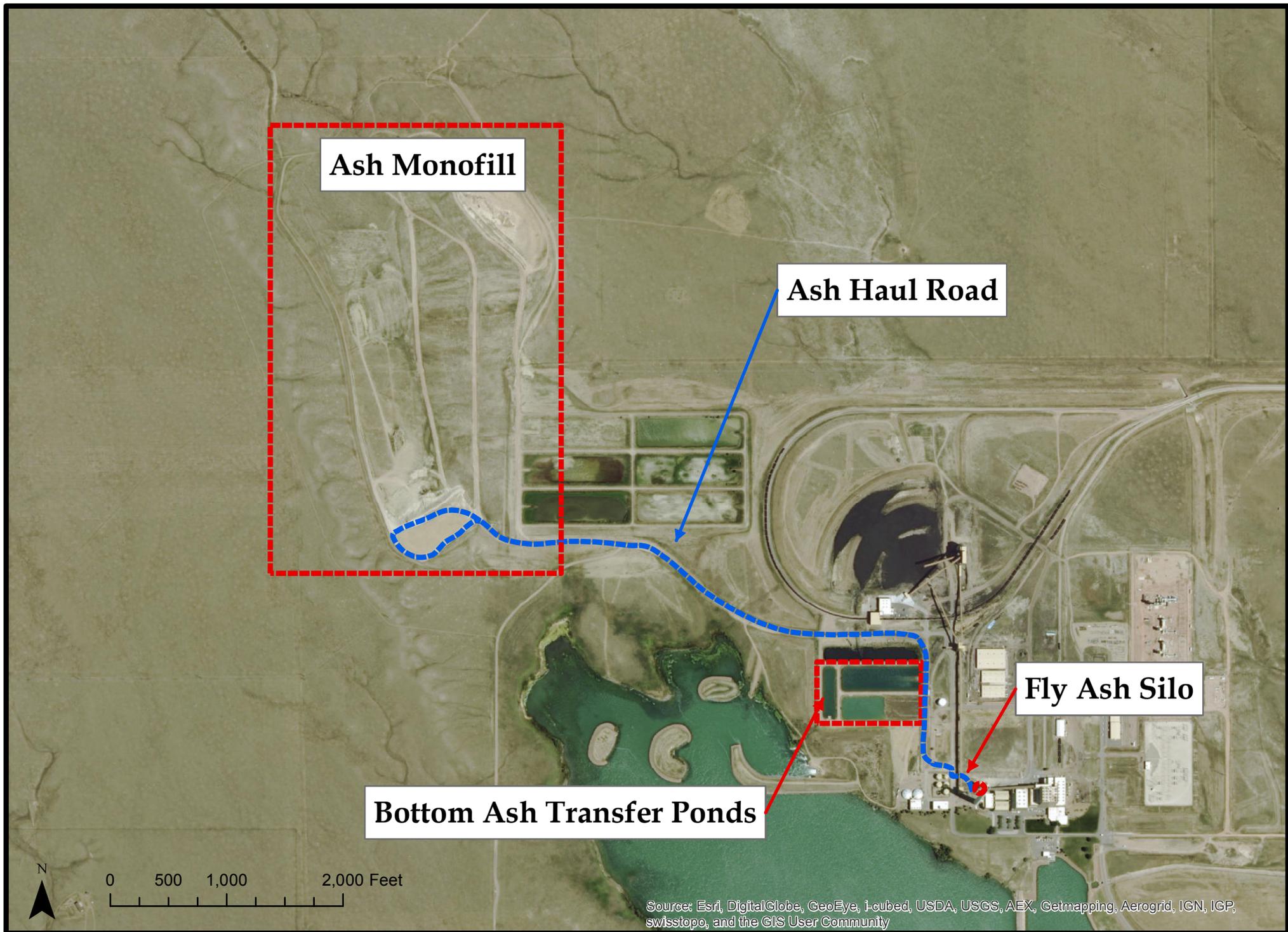


Figure 1: Rawhide Energy Station CCR Management Facilities Layout

APPENDIX A

Stakeholder Correspondence Records

RAWHIDE ENERGY STATION

Stakeholder Correspondence Record

Facility name Rawhide Energy Station
Facility type Coal Fueled Electric Generating Facility
Facility location 2700 East County Road 82, Wellington, Colorado 80549
Facility phone number (970) 266-7906

Time and date of
correspondence _____

Name of stakeholder _____

Phone number for
stakeholder _____

Mailing address / email
address for stakeholder _____

Topic of correspondence
(e.g., document question,
concern, or observation) _____

Describe observed event, if
applicable (include
date/time, weather
conditions, and any other
information provided) _____

Required corrective actions
or follow-up, if applicable _____

Note: Attach additional sheets or correspondence, as applicable.

APPENDIX B

Annual Dust Control Reports

ANNUAL DUST CONTROL REPORT
RAWHIDE ENERGY STATION
[DATE]

Introduction

Platte River Power Authority has prepared this Annual Dust Control Report in accordance with 40 CFR 257.80(c) to document the following information for the Rawhide Energy Station Facility located near Wellington, Colorado:

- Description of dust control procedures implemented at the CCR landfill/monofill and bottom ash ponds
- Summary of any concerns raised by stakeholders
- Description of any corrective actions taken

Implementation of Dust Control Procedures

During the last 12 months, dust control procedures have been implemented at [list CCR units], as discussed in the Dust Control Plan, dated Month DD, YYYY. A copy of the current Dust Control Plan is available in the Facility operating record and on the Platte River Power Authority internet site, as required by 40 CFR 257.105(g) and 257.107(g).

[If applicable, summarize any planned or recent deviations or revisions to the Dust Control Plan]

Stakeholder Correspondence

During the last [12 or 14] months, the following concerns or complaints have been received by Platte River Power Authority:

- [insert, or state that no concerns or complaints were received]
-

For each correspondence item, follow-up communications were completed, and records have been maintained by Platte River Power Authority. If needed, corrective actions have been implemented as discussed below.

Corrective Actions

Based on inspections and/or stakeholder correspondence during the last 12 months, corrective actions [have/ have not] been identified to improve dust control at Rawhide Energy Station. A summary of corrective actions, including completion date or status, is provided below.

- [insert]
- [insert]

Closing

A copy of the most recent Annual Dust Control Report is available in the Facility operating record and on the Platte River Power Authority internet site, as required by 40 CFR 257.105(g) and 257.107(g). The Platte River Power Authority internet site also provides contact information and requests that stakeholders contact Platte River Power Authority with any concerns regarding dust controls at the Rawhide Energy Station Facility.

APPENDIX C

RAWHIDE ENERGY STATION

Dust Control Plan Review Documentation

**RAWHIDE ENERGY STATION
DUST CONTROL PLAN REVIEW DOCUMENTATION**

This Dust Control Plan has been reviewed in accordance with 40 CFR 257.80(b) to assess if more effective control procedures are available to significantly reduce the likelihood of CCR from becoming airborne at the facility.

By means of this certification, I attest that I have completed a review and evaluation of this Dust Control Plan for the Rawhide Energy Station Facility located near Wellington, Colorado, and as a result

_____ Will

_____ Will Not

amend the Dust Control Plan. Technical amendments to the Dust Control Plan have been certified by a Qualified Professional Engineer.

Signature, Authorized Facility Representative

Date

Name (Printed)

Title

