



January 11, 2013

Jason Murdock  
Naughton Power Plant  
P.O. Box 191  
Highway 189 South  
Kemmerer, Wyoming 83101

Subject: Naughton Power Plant January 18, 2012 High Wind Event Report

Dear Mr. Murdock:

On January 18, 2012, the Naughton Power Plant PM<sub>10</sub> monitoring location recorded an ambient 24-hour PM<sub>10</sub> concentration that exceeded the 24-hour PM<sub>10</sub> National Ambient Air Quality Standard (NAAQS) and Wyoming Ambient Air Quality Standard (WAAQS) of 150  $\mu\text{g}/\text{m}^3$ . This report examines the exceptional event criteria as set forth in 40 CFR Part 50.14 and discusses whether the event can be classified as “exceptional” in accordance with the criteria.

## Background

PacifiCorp operates an instrumented 50-meter meteorological tower and a continuous Met One Beta Attenuation Mass (BAM) PM<sub>10</sub> monitor that is adjacent to the meteorological tower at the Naughton Power Plant. Figure 1 presents the location of the 50-meter tower and PM<sub>10</sub> monitoring location.



**Figure 1 – Location of Naughton Power Plant Monitoring Stations**



The BAM is an EPA Federal Equivalent Method for measuring PM<sub>10</sub>. Hourly concentrations of PM<sub>10</sub> are output by the BAM. The BAM has an hourly measurement range of 0 to 1,000 µg/m<sup>3</sup>. An offset is input into the BAM software to shift the entire range of the BAM down slightly so that will record from -15 to 985 µg/m<sup>3</sup>, instead of 0 to 1,000 µg/m<sup>3</sup>. The BAM was set in this manner to measure slightly negative concentration numbers near zero, which is helpful to differentiate between normal noise and a failure such as punctured filter tape.

### **Exceptional Event Requirements**

40 CFR Part 50.14 (c)(3)(iv) states: “The demonstration to justify data exclusion shall provide evidence that:

(A) The event satisfies the criteria set forth in 40 CFR 50.1(j);

(j) *Exceptional event* means an event that affects air quality, is not reasonably controllable or preventable, is an event caused by human activity that is unlikely to recur at a particular location or a natural event, and is determined by the Administrator in accordance with 40 CFR 50.14 to be an exceptional event. It does not include stagnation of air masses or meteorological inversions, a meteorological event involving high temperatures or lack of precipitation, or air pollution relating to source noncompliance.

(B) There is a clear causal relationship between the measurement under consideration and the event that is claimed to have affected the air quality in the area;

(C) The event is associated with a measured concentration in excess of normal historical fluctuations, including background; and

(D) There would have been no exceedance or violation but for the event.”

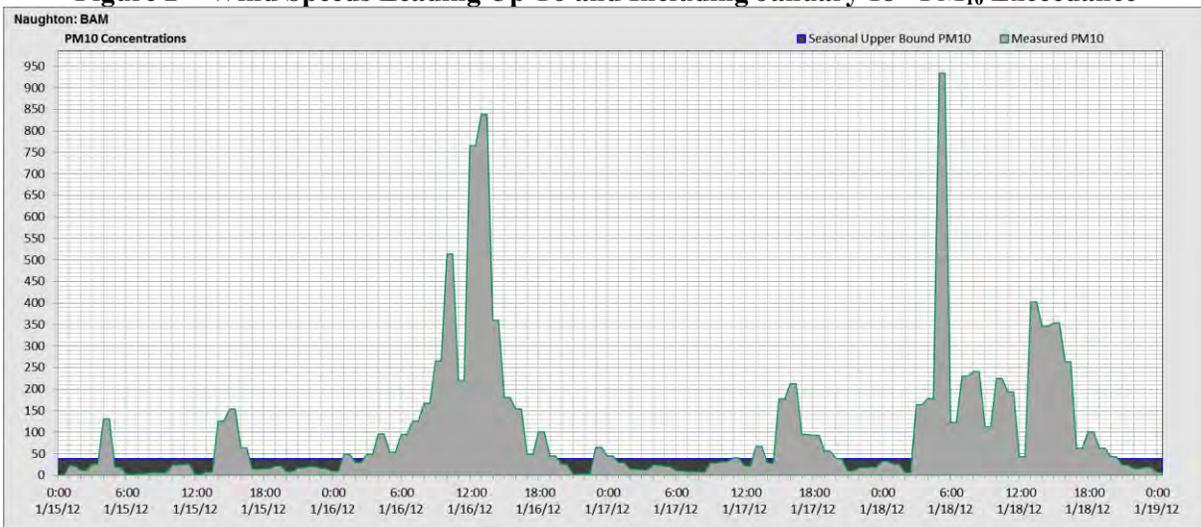
### **Clear and Casual Relationship**

On January 18, 2012, the Naughton Power Plant experienced a wind event. 10-meter wind speed data collected at the 50-meter meteorological tower showed an average 24-hour wind speed of 11.9 meters per second (m/s) or 26.6 miles per hour (mph) with a maximum one-hour average wind speed of 16.0 m/s (35.8 mph) with gusts to 25.8 m/s (57.7 mph). The highest wind speeds during the day started at 4:00 and continued throughout the remainder of the day.

Winds were primarily out of the west-southwest with directions ranging from 240 to 270 degrees from true north. Concurrent with the wind event, PM<sub>10</sub> concentrations measured by PacifiCorp's BAM at the Naughton Power Plant recorded a 24-hour average concentration of 174 µg/m<sup>3</sup>. PM<sub>10</sub> concentrations were highest during the periods 6:00 through 18:00. The maximum one-hour concentration for January 18 was 934 µg/m<sup>3</sup> which occurred at 5:00. Figures 2 and 3 present the wind speed and PM<sub>10</sub> data leading up to and including the PM<sub>10</sub> exceedance measured on January 18<sup>th</sup>.

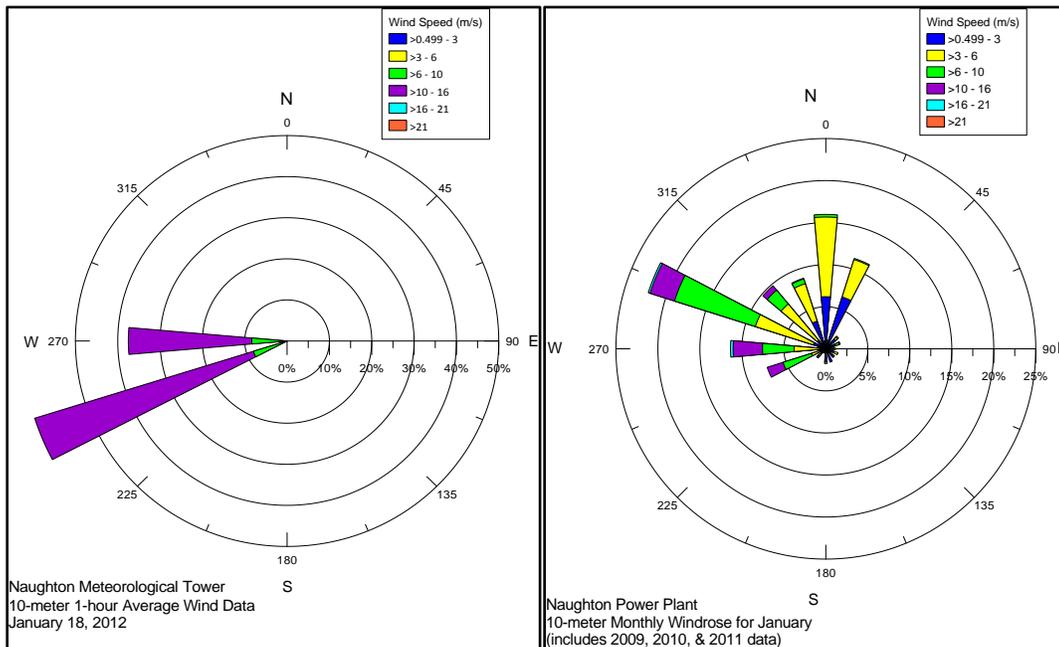


**Figure 2 – Wind Speeds Leading Up To and Including January 18<sup>th</sup> PM<sub>10</sub> Exceedance**



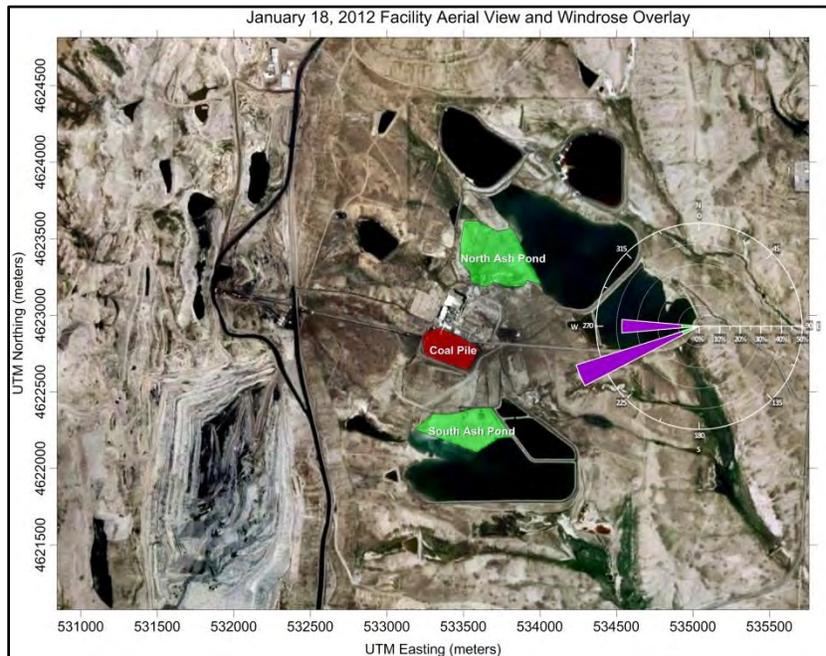
**Figure 3 - PM<sub>10</sub> Concentrations from January 15 through January 18, 2012**

Figure 4 presents a comparison of the windrose for January 18 to a monthly average windrose from January 2009, 2010, and 2011. As indicated by the windrose in Figure 4, the predominant wind directions for the January 18, 2012 wind event were from the west-southwest and west. This differs from the predominant January wind direction of west-northwest.



**Figure 4 - Comparison of January 18 to Average January Windrose**

To understand the source(s) that are possibly contributing to the PM<sub>10</sub> exceedance, the wind rose for January 18 was superimposed onto a Google Earth image (Figure 5). The location of the wind rose on the image represents the location of the meteorological tower.



**Figure 5 – Facility Map with January 18, 2012 Windrose Overlay**

From Figure 5, the closest upwind particulate sources to the BAM and meteorological tower are the South Ash Pond (highlighted in green), the coal pile (highlighted in red), an open pit coal mine located on Naughton’s western boundary, and sparsely vegetated land to the west and southwest of the plant site. It is likely that the elevated winds transported particulate matter in the  $PM_{10}$  size range from the South Ash Pond and coal pile to the Naughton particulate monitor where the exceedance was measured.

The South Ash Pond is located to the south of the power plant and is used to receive coal combustion byproducts from Units 1 & 2 boiler. Originally constructed in 1974, it was expanded in 1976, 1981, 1987 and most recently in 1994. There are two dikes associated with the South Ash Pond; the Intermediate Dike separates the primary settling pond from the clear water pond, while the Main Dike impounds south and east sides of the ash pond and clear water pond. The ash settling basin has a surface area of about 183 acres, with a storage capacity of 3,754 acre-feet. The clear water pond has a surface area of 23 acres and an approximate capacity of about 303 acre-feet. The north and west sides of the South Ash Pond is impounded by natural topography. The maximum embankment height of the Main Dike is 71 feet. There is an approximately 3-foot difference in water level between the ash pond and the clear water pond. These dikes are constructed of compacted clay (Figure 6).



**Figure 6 – Ash Pond Dike System**

The exposed apron located in the ash settling portion of the pond has an approximate surface area of 20 acres and is comprised of coal combustion byproducts (fly and bottom ash). The byproducts are slurred via trench from Units 1 & 2 boilers to an open trench on the surface of the previously deposited material in the pond. During the slurring process, the coarser fractions, mostly bottom ash, settles out first with the finer materials being further deposited into the pond. The coarse bottom ash material is periodically removed and deposited alongside the trench to allow flow to continue.

The North Ash Pond is located to the northeast of the power plant and is used to receive coal combustion byproducts from Unit 3 boiler. Originally commissioned in 1974, the North Ash Pond was expanded in 1982, 1987, and most recently modified to a two pond (ash settling and clear water) system in 1994. The ash settling portion has a surface area of 151.5 acres and an approximate storage capacity of 2,100 acre-feet. The clear water portion of the pond has a surface area of 63 acres and an approximate storage capacity of 1,270 acre-feet.



There are two dikes associated with the North Ash Pond; the first dike separates the primary settling pond from the clear water pond (Intermediate Dike), while the second dike impounds the clear water pond (Main Dike). The maximum embankment height of the Intermediate Dike is 56 feet and the Main Dike is 52 feet. These dikes are also constructed of compacted clay. Water levels are maintained through decant, drop inlet structures, and reuse of the clear water for sluicing ash from the plant.

The exposed apron located in the ash settling portion of the pond has an approximate surface area of 50 acres and is comprised of coal combustion byproducts (fly and bottom ash). The byproducts are slurred via pipe from Unit 3 boiler to an open trench on the surface of the previously deposited material in the pond. During the slurring process, the coarser fractions, mostly bottom ash, settles out first with the finer materials being further deposited into the pond. The coarse bottom ash material is periodically removed and deposited alongside the trench to allow flow to continue.

The information provided for both the north and south ash ponds were obtained from the December 9, 2009 *Assessment of Dam Safety Coal Combustion Surface Impoundments (Task 3) Final Report* (Lockheed Martin).

### **Measured Concentration in Exceedance of Normal Fluctuations**

Using 2009 through 2011 10-meter wind speed and PM<sub>10</sub> data collected at Naughton's monitoring station, the monthly arithmetic means were calculated for December, January, and February. This is statistically characteristic of the winter air quality season. The arithmetic mean wind speed for the winter air quality season is 4.76 m/s and 18.3 µg/m<sup>3</sup> for PM<sub>10</sub>.

Table 1 presents hourly wind speed, wind gust, and PM<sub>10</sub> data measured on January 18. Based on Table 1, the average wind speed for January 18 was 11.9 m/s which is significantly higher than the mean winter air quality season average.

**Table 1**  
**Hourly Data Measured at Naughton Meteorological Tower and BAM on**  
**January 18, 2012**

Hour	Wind Speed (m/s)	Wind Gust (m/s)	PM <sub>10</sub> (µg/m <sup>3</sup> )
1:00	6.12	9.62	26
2:00	6.03	11.50	7
3:00	9.12	16.91	164
4:00	11.03	18.27	178
5:00	12.72	21.37	934
6:00	11.79	18.93	123
7:00	13.12	19.26	231
8:00	12.52	19.35	241
9:00	12.14	19.45	113
10:00	12.32	17.71	225
11:00	11.76	19.21	194
12:00	8.76	17.00	43
13:00	12.86	23.77	403
14:00	14.89	23.44	346
15:00	15.97	25.84	354
16:00	15.23	23.02	264
17:00	14.15	21.75	63
18:00	14.03	20.90	101
19:00	12.86	19.49	63
20:00	12.03	18.27	43
21:00	11.35	19.26	24
22:00	11.83	19.96	16
23:00	11.91	19.45	19
24:00	11.43	19.07	7

Normal historical fluctuations can be described as one standard deviation above or below the arithmetic mean. The standard deviation and mean were calculated from PM<sub>10</sub> data collected at the Naughton PM<sub>10</sub> monitor during the 2009 through 2011 winter air quality season (December, January and February). The upper bound of the standard deviation is 38.5 µg/m<sup>3</sup> and the mean concentration is 18.3 µg/m<sup>3</sup>.



The upper bound value is plotted in Figure 3 and shows elevated PM<sub>10</sub> concentrations correlate well with the elevated wind speeds on January 18<sup>th</sup>. This suggests that the wind event has a causal relationship between the specific event and the monitored concentration and shows the January 18<sup>th</sup> event is associated with a measured concentration that is in excess of normal historical fluctuations.

### **Source Compliance**

Per the exceptional event rule, an event cannot be classified as “exceptional” due to a sources non-compliance. A Fugitive Dust Compliance Plan, which provides procedures and guidelines for mitigating fugitive dust at the Naughton Power Plant is available and is presented in Attachment A. In accordance with the fugitive dust compliance plan, plant operators document fugitive dust emissions from the coal pile, dry ash ponds, ash silo area and other areas of the plant during daily inspections. If malfunctions or emissions are observed, the plant operator should initiate appropriate notification, corrective action and provide documentation. Attachments B, C, D, and E provide the documentation of the dust mitigation measures taken for days leading up and on January 18 as required by the Fugitive Dust Compliance Plan.

The Naughton Plant Fugitive Dust Compliance Plan requires that the dirt roads around the plant be watered twice weekly and the paved roads once weekly, weather permitting. Attachment B is compilation of a PM Preventative Maintenance order form (Numbered 26077505) and water truck logs. The order form details documentation for dust suppression on Plant roads for the week of January 15, 2012 through January 21, 2012. The order form and water truck logs indicate that on dust suppression activities were being conducted at accessible areas of the ash ponds and all roads on January 18<sup>th</sup> from 1:00 to 3:30, 4:45 to 6:00, 12:45 to 17:00, 15:00 to 17:00, and from 17:00 to 18:30.

Water usage logs show that on January 18<sup>th</sup> 44,000 gallons of water were applied to roads, aprons, and ash ponds. This is in addition to the 20,000, 36,000, 88,000, and 12,000 gallons applied earlier in the month on January 11<sup>th</sup>, 12<sup>th</sup>, 13<sup>th</sup>, and 16<sup>th</sup>, respectively. Water application logs (Attachment C) also show that a total of 204,000 gallons of water were applied in January. For comparison, no water was applied in January for the years 2009, 2010, or 2011.



Attachment D is the Naughton Operations Environmental Checklist for January 18, 2012. The checklist is completed on a daily basis to document any environmental concerns. The Fugitive Dust section of the checklist points out that the ash silo was previously operating normally prior to the observation and was shut off and “selected for hydro when starting up”. The coal pile transfer chute was not contact with the pile; however, no coal was being delivered. The operator that completed the checklist indicated that there was no fugitive dust from the coal pile, exposed aprons on ponds and fugitive dust source.

Documentation provided in Attachment E are two shift supervisor logs and the Naughton Control Room Operator Log from January 18, 2012. The operator logs documented that the PM<sub>10</sub> concentrations exceeded 150 µg/m<sup>3</sup> at 3:00 (178 µg/m<sup>3</sup>), 4:00 (193 µg/m<sup>3</sup>), 5:00 (946 µg/m<sup>3</sup>), 7:05, and 10:00. The control room obtains its PM<sub>10</sub> readings from the BAM in the monitoring shelter. Discrepancies between the control room data display and the particulate monitoring site are due to a transmission conversion from the monitoring site and the control room. The higher data readings in the control room are more conservative than those officially recorded at the monitoring site. This unintentional consequence allows for a quicker response when particulate concentrations exceed 150 µg/m<sup>3</sup>. The operator log notes that when the PM<sub>10</sub> alarm sounded at 3:00, 4:00 and 5:00, the facility was not taking coal and the excavator was off the coal pile. A water truck was called for duty at 5:00 for dust suppression. At 7:05, the PM<sub>10</sub> alarm sounded and the coal pile activity was shut down. Later, the mine belt was shut down to reduce emissions. An update at 14:45 indicated that the water trucks will maintain operation on the north ash pond apron, dirt roads, and the coal pile apron until 19:00 unless otherwise directed. Figure 7 shows water trucks applying dust suppressant on the South ash pond.



**Figure 7 – Water Truck on North Ash Pond January 18, 2012**

As part of the Fugitive Dust Compliance Plan, dust sealants and suppressants were applied as a proactive measure for dust suppression. Discussions with the vendor indicated that most dust suppressant polymers have an expected life of at least 6 months. If applied in optimal conditions the expected life could be longer.

Dust suppressant was applied to the ponds on 1/14/2012 by WRR. Lignosite 458 (sodium lignosulfonate powder) and M-Binder (mulch tackifier – soil stabilizer) were used as the suppressant compounds. Before the suppressant was applied the vendor indicated due to the current temperatures and condition of the ash pond aprons the suppressant may or may not work properly. In order for it to work properly the ground must be warm enough to allow the chemical to bind to the soil. Figures 8 through 11 show pictures taken on January 14, 2012 of sealant being applied to the north ash pond. On 1/16/2012 it was observed that dust was blowing from the north ash pond along the northern side (Figures 12 & 13). WRR was notified of the blowing dust and sent out a crew on 1/17/12 (Figure 14) to apply additional dust suppressant. Attachment F provides documentation of the sealant application and the compound used.



**Figure 8 – Sealant Being Applied to North Ash Pond January 14, 2012**



**Figure 9 – Sealant Being Applied to North Ash Pond January 14, 2012**



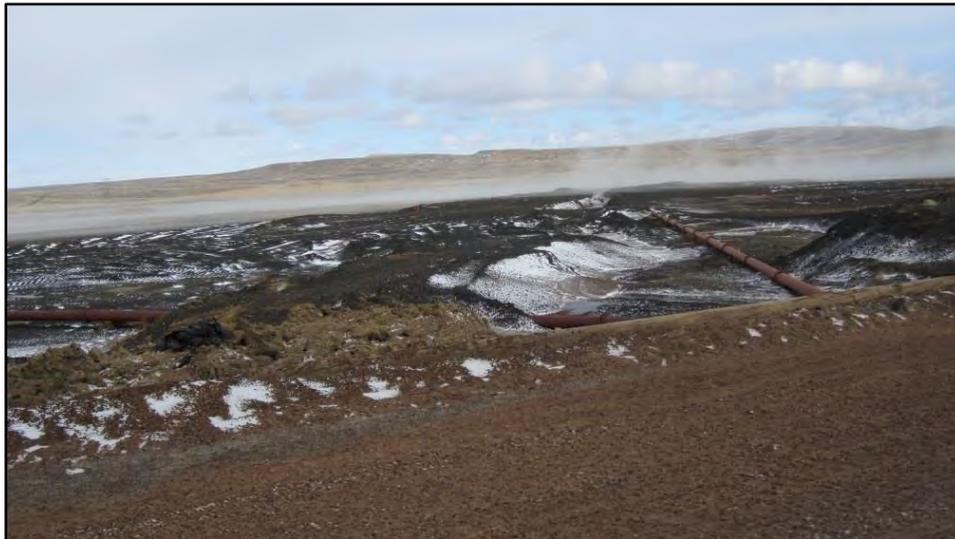
**Figure 10 – Sealant Being Applied to North Ash Pond January 14, 2012**



**Figure 11 – Sealant Being Applied to North Ash Pond January 14, 2012**



**Figure 12 – January 16 North Ash Pond**



**Figure 13 – January 16 North Ash Pond**



**Figure 14 – WRR Applying Additional Sealant**

While working on the ash pond apron it has been observed that the ash has the ability to “wick” water to the surface causing “soft” conditions to occur during warm weather which has caused access issues to certain areas of the ash pond aprons (Figures 15 & 16). During this time precautions need to be taken not to access these areas with larger equipment and only allow smaller/lighter equipment in these areas to conduct maintenance or dust control operations.



**Figure 15 – Example of Excavator Access Issues (photo taken in 1990)**



**Figure 16 – Example of Water Truck Access Issues (May 2012)**

During the spring/summer of 2011, WRR (the dust suppressant contractor) was able to apply dust control sealant to the entire 50 acres of the exposed apron by using a water cannon that was attached to an all-terrain vehicle (ATV). Figure 17 presents photographs showing WRR applying sealant to the ash pond aprons. Because of the “soft” conditions, the water truck was parked on the road with hoses running from the water truck to the water cannon. Even with smaller/lighter equipment there is still a problem with access to certain areas. The photograph on the right in Figure 17 shows the ATV leaving ruts in the apron.



**Figure 17 - ATV Sealant Application**

Even in January, conditions can exist where solar heating during the day and a lack of snow cover causes the ash pond apron to become “soft” which reduces the areas that could be accessed by the plant water trucks. The January 16<sup>th</sup> supervisor log notes these “soft” conditions existing at 13:00. During January 2012, only approximately 30 acres of the north ash pond apron and 4 acres of the south ash pond apron could be accessed due to these conditions. Figures 18 and 19 present an aerial view of the North and South Ash Ponds with an outline of the area accessible by water trucks. Figure 20 presents photos of cones marking the safe zone for water trucks.



**Figure 18 – Accessible Area of North Ash Pond**



**Figure 19 – Accessible Area of South Ash Pond**



**Figure 20 – Cones Mark the Safe Zone for Water Trucks**

Since January 2012, the plant has purchased a new ATV and attached a new water cannon to one of the water trucks that will allow for greater coverage of sealant application on the apron (Figure 21). In addition, the plant has built roads on the north ash pond to allow better access to the apron. Currently the plant has been in the process of working with the Wyoming Department of Water Quality to obtain a permit to cover the exposed aprons. A permit application was sent to the division on November 6, 2012 for their review (Attachment G).



**Figure 21 – New PM Mitigation Equipment**



## Summary

On January 18, 2012, high PM<sub>10</sub> concentrations were measured at the PM<sub>10</sub> monitor located on the eastern fenceline of the Naughton Power Plant as a result of high winds that were above normal historical fluctuations. Consequently, the event associated with the measured concentration of 174 µg/m<sup>3</sup> was in excess of normal historical fluctuations.

Dust from fugitive sources at the Naughton plant and from sources west of the plant was entrained in the wind and measured by the particulate monitor. Thus, this event did affect air quality, and is classified as human activity unlikely to be prevented and to recur. Corrective actions were implemented and documented in accordance with the Naughton Fugitive Dust Compliance Plan which meets the criteria set forth by the EPA as not reasonably controllable or preventable. Historical data collected at the Naughton facility show that non-event days are well below the applicable NAAQS/WAAQS and demonstrate that the exceedance would not have occurred but for the event.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Adamson", written in a cursive style.

Scott Adamson  
Meteorologist/Dispersion Modeler

Attachment A  
Fugitive Dust Plan

NAUGHTON PLANT

**PLANT POLICIES AND PROCEDURES MANUAL**

SUBJECT <b>Fugitive Dust Compliance Plan</b>	AUTH <b>Environmental</b>	CLASS <b>ENV</b>	NO <b>04</b>	PAGE <b>1 of 7</b>
AUTHORIZATION PROVISIONALLY AUTHORIZED BY ENV ENG FOR IMMEDIATE IMPLEMENTATION PENDING FORMAL APPROVAL PROCESS	October, 1996	August, 2007	June, 2012	
PLANT MANAGER	EFFECTIVE DATE	LAST REVIEW DATE	NEXT REVIEW DATE	

**1 PURPOSE:**

1.1 This document formalizes Plant fugitive dust mitigation efforts which serve as Appendix I in the Title V operating permit issued to the Naughton plant by the Wyoming Department of Environmental Quality. The purpose of this policy is to ensuring compliance with applicable State/Federal regulations. Deviation from the intent and provisions of this Plan may result in violations of regulatory limits and Air Quality Operating Permit provisions with associated penalty assessments as well as exposure of employees to health hazards. Deviation may also result in employee disciplinary action.

**2 SAFETY AND ENVIRONMENTAL CONSIDERATIONS:**

2.1 Fugitive dust emissions at Naughton Plant are subject to standards set forth in the Wyoming Air Quality Standards and Regulations (WAQSR) and the Naughton Plant Air Quality Operating Permit.

2.2 Following are areas/activities that have been historically identified with fugitive dust emissions:

2.2.1 Coal pile, coal delivery and other coal pile related operations.

2.2.2 Dry portions of ash ponds/bare earth areas.

2.2.3 Plant roads.

2.2.4 Ash unloading areas.

2.2.5 Landfill operations.

2.2.6 Miscellaneous activities, i.e. construction, hauling, etc.

2.2.7 Pollution control device malfunctions.

***Note: Emissions from baghouse vents are considered “point source emissions” and are addressed individually in the Air Quality Operating Permit.***

Mitigation efforts for each of these areas are addressed in this document.

2.3 Fugitive dust emissions are generally quantified in terms of opacity with an opacity limit of 40% (as read by a certified observer) being relevant to all areas of the plant with the exception of the following areas where lower limits apply: fly ash unloading silo area (20%), mine conveyor weigh scale baghouse (<20%), emergency diesel generators and emergency fire pump (30%), and Unit 3 coal conveyor/gallery baghouse (20%). There is also a permit requirement to limit fugitive dust emissions from general plant activities to 40% opacity, as determined by a certified observer.

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- 2.4 Chapter 2 of the WAQSR details the applicable ambient PM<sub>10</sub> (respirable particulate) standards. The applicable PM<sub>10</sub> standard (as measured at the monitoring site located east of the north ash pond) is 150 micrograms per cubic meter, averaged over 24 hours, and may not be exceeded more than once per calendar year.
- 2.5 Appropriate corrective action, as determined by the Shift Supervisor, will be initiated immediately to avoid an exceedance of the 24-hour standard. As the standard is based upon a 24-hour average, a short-term incident involving a large concentration of dust can cause a violation of the 24-hour average. All corrective action will be documented. If no corrective action is possible or practicable, this will also be documented.

**3 TRAINING AND RESPONSIBILITY:**

- 3.1 The Operations Shift Supervisor on duty is responsible for initiation of fugitive dust corrective measures and providing detailed documentation of all exceedances of the PM<sub>10</sub> and fugitive dust opacity standards and dust suppression activities to the environmental personnel.
- 3.2 The Operations Superintendent, under the direction of the Plant Manager, is responsible for ensuring that Plant operations are conducted such that fugitive dust emissions are mitigated in a proactive as well as reactive manner.
- 3.3 The Maintenance Superintendent is responsible for ensuring that all maintenance activities are conducted in accordance with the provisions of this document and other applicable regulatory requirements.
- 3.4 The Plant Manager bears ultimate responsibility for compliance with all regulatory requirements.
- 3.5 Plant environmental personnel provide regulatory guidance/oversight and administer the Plant Environmental Management System.
  - 3.5.1 A report documenting compliance or non-compliance with the provisions of this permit is prepared by the Environmental Engineer semi-annually and certified as being true and accurate, under penalty of law, by the Plant Manager.
- 3.6 Equipment Operators will operate the water truck as directed by the Shift Supervisor. Operations personnel are responsible for the operation of the dust suppression system and water cannons.
- 3.7 Maintenance personnel will maintain dust suppression related equipment (i.e., water cannons, dust suppression systems, baghouses, etc.) in accordance with the Naughton Air Quality Operating Permit and will provide documentation of related maintenance activities to the environmental personnel. Documentation of maintenance activities, equipment malfunctions, etc. is required by the Title V Air Quality Operating Permit.

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- 3.8 Various periodic inspections and observations, as required by the Title V Air Quality Operating Permit will be performed under the direction of the environmental personnel.
- 3.9 The day shift Operations Supervisor is responsible for ensuring that water truck use is properly documented and ensuring that suitable maintenance of the water truck is performed.

**4 GUIDELINES AND PROCEDURES:**

**4.1 Normal Operations**

Mitigation of fugitive dust emissions and associated corrective action is largely dependent upon the source of the dust. Appropriate and effective mitigation is contingent upon the discretion and judgment of the shift supervisor, particularly during low ambient temperature and/or high wind periods. All information regarding the fugitive emission source and reason for deviation from this Fugitive dust Compliance Plan as well as resulting corrective actions will be documented by the shift supervisor and forwarded to the environmental department.

The following sections give general guidelines to control fugitive emissions with respect to major plant sources.

**4.1.1 Coal Pile**

Persons observing fugitive dust emissions from the coal pile should initiate appropriate corrective action. At a minimum, the Shift Supervisor should be notified so that appropriate corrective action can be initiated, documented and reported to regulatory agencies, when necessary. Wyoming DEQ/Air Quality Division has specifically requested that heavy equipment operators operate coal pile equipment at a speed such that dust generated from this activity does not exceed regulatory limits. Depending upon conditions, coal pile activity may need to be reduced or terminated as determined by the Shift Supervisor.

**4.1.1.1 Sealants/Suppressants**

As the coal pile physical boundary is historically transient in nature, it is impractical to apply other than a periodic dust suppressant/sealant to the portions of the pile that remain relatively undisturbed, i.e. the sides, rear and aprons of the pile. Sealants will be applied to these areas when necessary.

**4.1.1.2 Water Cannons**

Stationary water cannons are mounted in positions designed to give coverage of the coal pile during prevailing west-to-east wind events. A portable, wheel mounted, cannon is also available for use when and where needed.

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During periods of winds exceeding 25 mph and when temperatures are above 40F, the coal pile water cannon system automatically activates. Additionally, the Control Room Operator may, as directed by the Shift Supervisor, activate the coal pile water cannon system during dusty conditions at any other time when temperatures are above 40F. Cannons should remain activated until winds and/or dusty conditions subside as determined by the Shift Supervisor.

**4.1.1.3 Surfactants/Wetting Agents**

Surfactants/wetting agents are routinely applied to the in-coming coal stream. During **normal operation** this system can remain in service when ambient temperatures are above 20F (per historical operating experience). During temperatures below 20F or if the dust suppression system malfunctions, these instances should be documented and reported to the environmental personnel and visual observations taken.

**4.1.1.4 Stacker Chute**

Fugitive emissions can occur during coal delivery when the stacker chute is elevated from the coal pile proper. During **normal operation**, the chute skirting should be in contact with the pile whenever coal is being delivered.

If fugitive dust emissions from stacker chute operations are observed, the Shift Supervisor or Control Room Operator should be contacted so that corrective actions can be initiated and documented.

**4.1.2 Ash Ponds/Bare Earth Areas**

Dry portions of ash ponds and bare earth areas should be reclaimed, kept covered with water, or treated with a sealant/surfactant.

Fugitive dust emissions from ash ponds and bare earth areas should be documented on the daily Operations Environmental Checklist and reported immediately to the Shift Supervisor so that corrective action and regulatory reporting can be initiated, as required by the Operating Permit.

Corrective action may include, but is not limited to, reclamation, water applications, termination of activities causing fugitive emissions, and application of sealants/suppressants. The Operations Superintendent is responsible for ensuring that Plant operations are conducted such that fugitive dust emissions are mitigated in a proactive as well as reactive manner as required by the Operating Permit.

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**PLANT POLICIES AND PROCEDURES MANUAL**

SUBJECT	AUTH	CLASS	NO	PAGE
<b>Fugitive Dust Compliance Plan</b>	<b>Environmental</b>	<b>ENV</b>	<b>04</b>	<b>5 of 7</b>
AUTHORIZATION PROVISIONALLY AUTHORIZED BY ENV ENG FOR IMMEDIATE IMPLEMENTATION PENDING FORMAL APPROVAL PROCESS	October, 1996	August, 2007	June, 2012	
PLANT MANAGER	EFFECTIVE DATE	LAST REVIEW DATE	NEXT REVIEW DATE	

**4.1.3 Plant Roads**

Unpaved roads will receive an application of a dust suppressant/sealant on an as-needed basis.

**4.1.4 Water Truck**

Plant roads will receive a water application with the water truck on an as-needed basis as determined by the Shift Supervisor, in order to mitigate dusting. During unusually dusty periods, and in areas where the potential for dusting may be severe, roads will be watered as needed to achieve appropriate dust abatement.

Logs of all water truck related dust suppression activities should be kept in the truck cab. Equipment Operators should document **any** use of the water truck with respect to dust suppression activities. The Station Support Supervisor is responsible for ensuring that the provisions of this paragraph are adhered to.

**4.1.5 Ash Unloading Operations**

Ash unloading activities should be conducted such that emissions from truck beds, silo chutes and vents, etc. are minimal and do not exceed the 20% opacity limit prescribed in the Operating Permit. Loading activities should be moderated or curtailed and truck speeds reduced, as necessary, in order to prevent exceedances of the emissions standard. Persons observing dust emissions resulting from ash loading activities should notify the Shift Supervisor immediately.

At no time should ash unloading related activities result in emissions exceeding 20% opacity. Provisions of the Naughton Air Quality Operating Permit require that any observed emissions from the ash unloading silo and/or baghouse be reported to the environmental personnel and Shift Supervisor and that corrective action/maintenance be initiated immediately.

Fugitive emissions observed from ash silo operations should be logged on the daily Operations Environmental Checklist and reported to the Shift Supervisor and environmental personnel so that corrective action and regulatory reporting can be initiated. Certain levels of fugitive dust emissions require immediate reporting to regulatory agencies; prompt reporting to environmental personnel is critical to maintaining regulatory compliance.

**4.1.6 Landfill Operations**

Landfill operations often result in fugitive emissions during hauling, compacting and covering activities. Operators should mitigate emissions by reducing equipment speed, curtailing activities during windy conditions, utilizing the water truck, etc.

**PLANT POLICIES AND PROCEDURES MANUAL**

SUBJECT	AUTH	CLASS	NO	PAGE
<b>Fugitive Dust Compliance Plan</b>	<b>Environmental</b>	<b>ENV</b>	<b>04</b>	<b>6 of 7</b>
AUTHORIZATION PROVISIONALLY AUTHORIZED BY ENV ENG FOR IMMEDIATE IMPLEMENTATION PENDING FORMAL APPROVAL PROCESS	October, 1996	August, 2007	June, 2012	
PLANT MANAGER	EFFECTIVE DATE	LAST REVIEW DATE	NEXT REVIEW DATE	

4.2 **Monitoring and Measurement**

Plant operators should document fugitive dust emissions from the coal pile, ash ponds, ash silo area, and other areas of the plant observed during their daily inspections on the Operations Daily Environmental Checklist. Upon observation of emissions/malfunctions, the operator should initiate appropriate notification (Shift Supervisor, environmental personnel, etc.), corrective action (work notifications, etc.) and provide documentation. Shift Supervisors should also provide documentation to plant environmental personnel.

As all employees share the responsibility for regulatory compliance and procedural conformance, any employee observing fugitive dust emissions or excessive dusting conditions should notify the Shift Supervisor and/or environmental personnel immediately.

Operation and maintenance of the continuous PM<sub>10</sub> monitoring system is conducted by the Control Emissions Process Team. System maintenance is detailed in the Environmental Monitoring QA/QC Plan. A PM<sub>10</sub> signal (1EV100) is provided to the control room for data and alarming purposes. The Honeywell computer will initiate an alarm when the PM<sub>10</sub> value exceeds 150 ug/m<sup>3</sup> on an hourly average. Although the applicable regulatory limit is based on a 24- hour average, it is imperative that appropriate corrective action is initiated, and documented, when the hourly average alarms so that the 24-hour average limit is not exceeded. If, during a fugitive dust incident, normal corrective action can not be implemented due to low ambient temperature, equipment malfunction, etc., such information should be documented in detail and provided to environmental personnel.

Opacity observations of the coal pile area, ash ponds area, baghouses and ash silo area are conducted, at least weekly, normally by environmental personnel in conjunction with the weekly Naughton Operating Permit inspection and are recorded on the Naughton Operating Permit inspection log.

4.3 **Maintenance and Preventive Action**

Breakdown/malfunction of any equipment used for fugitive dust suppression or fugitive dust emissions monitoring purposes (water truck, water cannons, dust suppression system, PM<sub>10</sub> monitoring system, baghouses, etc.) should initiate immediate corrective action via an emergency work notification and callout, if necessary. Malfunctions warrant regulatory reporting as mandated by the Operating permit. (See Sec. 4.4). All malfunctions must be communicated promptly to environmental personnel so that appropriate documentation/reporting can occur.

The station support supervisor should ensure that appropriate preventive maintenance is performed on the water truck, water cannons, dust suppression system, etc. and that malfunctions/breakdowns of such equipment is documented and provided to environmental personnel as required by the Operating Permit.

NAUGHTON PLANT

**PLANT POLICIES AND PROCEDURES MANUAL**

SUBJECT	AUTH	CLASS	NO	PAGE
<b>Fugitive Dust Compliance Plan</b>	<b>Environmental</b>	<b>ENV</b>	<b>04</b>	<b>7 of 7</b>
AUTHORIZATION PROVISIONALLY AUTHORIZED BY ENV ENG FOR IMMEDIATE IMPLEMENTATION PENDING FORMAL APPROVAL PROCESS	October, 1996	August, 2007	June, 2012	
PLANT MANAGER	EFFECTIVE DATE	LAST REVIEW DATE	NEXT REVIEW DATE	

4.4 **Reporting and Recordkeeping**

Quarterly PM<sub>10</sub> monitoring reports are prepared by environmental personnel and submitted to Wyoming DEQ, Air Quality Division, prior to the end of the first month following the completion of each quarter. The Naughton Air Quality Operating Permit mandates a semi-annual report detailing and certifying compliance with the requirements regarding visual observations, maintenance of dust collection/suppression systems and deviations from the provisions of the Operating Permit. Additionally, annual reporting is provided to the DEQ and EPA wherein the Plant Manager is required to certify compliance or non-compliance with all of the provisions of the Title V Air Quality Operating Permit. Environmental personnel normally prepare and submit these reports.

Prompt reporting of non-compliance episodes and immediate initiation of corrective action is essential to the successful implementation of this Procedure, compliance with the provisions of the Naughton Air Quality Operating Permit and conformance with the ISO14000 EMS. All records will be kept for a minimum of 5 years. Water truck logs to be retained for one year.

5 **REFERENCES**

- 5.1 Naughton Plant Title V/Section 30 Air Quality Operating Permit
- 5.2 Wyoming Air Quality Rules and Regulations

**Attachment A**

**Water Truck Log**

**(All dust suppression related activities must be logged)**

Date	Start Time	End Time	Operator	Area Watered/Comments

*When printed, this document is uncontrolled and for reference only*

Attachment B

Preventative Maintenance Order Form



**Order # 26077505**  
**PM Preventive Maintenance**  
**Priority # 3**

**Order Text: WEEKLY FUGITIVE DUST COMPLIANCE PM EOs**

<b>Func Loc:</b> T-1535-0-SS-RAG	<b>Equipment:</b> GROUNDS/ROADS
<b>Assembly:</b>	<b>Tech ID #:</b> NOGR
<b>Plan Desc:</b> WEEKLY FUGITIVE DUST COMPLIANCE PM	<b>PM Plan #:</b> NOGR001

Created Date:01/09/2012

Basic Start Date:01/17/2012

Oper	Work Center	Operation Description	No.	Total Hrs.	Compl.
0010	EQ-NA-EO	WEEKLY FUGITIVE DUST COMPLIANCE PM EOs	1	6.0	Y / N
<b>Oper</b>	<b>Operation Long Text</b>				

0010 WEEKLY FUGITIVE DUST COMPLIANCE PM EOs  
The Naughton Plant Fugitive Dust Compliance Plan requires that the dirt roads around the plant be watered twice weekly and the paved roads once weekly (ambient temperature permitting).

Please perform this work, document it on this form and in the log book and return this form to the Environmental Engineer upon completion.  
Thank you.

Week of: 1-15 to 1-21 2012

Area	Date Completed	Action Taken	Weather Condition	Operator Name
Dirt Roads	<u>1-16-12</u>	<u>watered</u>	<u>Windy</u>	<u>J. Foster</u>
1ST time/week	<u>1-16-12</u>	<u>watered</u>	<u>Windy</u>	<u>J. Foster</u>
2nd time/week	<u>1-18-12</u>	<u>watered</u>	<u>Windy</u>	<u>C. Landell</u>
Paved Road	<u>1-18-12</u>	<u>watered</u>	<u>Windy</u>	<u>C. Landell</u>

**Order Long Text:**

WEEKLY FUGITIVE DUST COMPLIANCE PM EOs  
The Naughton Plant Fugitive Dust Compliance Plan requires that the dirt roads around the plant be watered twice weekly and the paved roads once weekly (ambient temperature permitting).

Please perform this work, document it on this form and in the log book and return this form to the Environmental Engineer upon completion.  
Thank you.



**Order # 26077505**  
PM Preventive Maintenance

Completion Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Jobsite Cleaned Up

Completed By Wayne Stubbs Employee # 09207 Date 1-20-12  
Reviewed By [Signature] Date 1/25/12

Enviro & Enviro

# Attachment A

## Water Truck Log

(All dust suppression related activities must be logged)

Date	Start Time	End Time	Operator	Area Watered/Comments
1-13-12	0730	0900	W. Stubbs	Ash Ponds - Dirt Roads -
1-13-12	11:00 PM	2:30 PM	Sudonick	South Ash Pond Apron
1-13-12	16:00	23:00	Hunzel	South Ash Pond Apron
1-16-12	18:00	3:00	Foster	N ash Pond
1-17-12	13:00	5:00	Foster	N ash Pond ? Dirt Roads
1-18-12	4:45 AM	6:00 AM	Sudonick	N. & S. Ash Pond Aprons
1-18-12	12:45 PM	5:00 PM	Lundell	"
1-18-12	17:00 + 5:00	1830	W. Stubbs	"
1-19-12	1400	1500	"	Coal Pile -

When printed, this document is uncontrolled and for reference only

Water Truck Log

(All dust suppression related activities must be logged)

Date	Start Time	End Time	Operator	Area Watered/Comments
5-18-09	1230	1330	W. Stukas	inside dirt roads.
1-13-2012	2:30 PM	11:00 AM	<del>W. Stukas</del> Branter	Ash pond
1-18-2012	1:00	3:30	W. Stukas	Ash pond

Attachment A

Water Truck Log

(All dust suppression related activities must be logged)

Date	Start Time	End Time	Operator	Area Watered/Comments
1-18-12	1500	1700	W. Stebbins	Ash Roads

When printed, this document is uncontrolled and for reference only

Attachment C

Water Usage Log

2012		
Date	# Trucks	Total Gallons
1/7/2012	0	0
1/11/2012	5	20000
1/12/2012	9	36000
1/13/2012	22	88000
1/16/2012	3	12000
1/18/2012	11	44000
1/30/2012	1	4000
Total		204,000

2011		
Date	# Trucks	Total Gallons
1/1 - 31/2011	0	0

2010		
Date	# Trucks	Total Gallons
1/1 - 31/2010	0	0

2009		
Date	# Trucks	Total Gallons
1/1 - 31/2009	0	0

Attachment D

Naughton Operations Environmental Checklist

# NAUGHTON OPERATIONS ENVIRONMENTAL CHECKLIST

Must be completed daily and all questions must be answered.

Operator: Haylee Jones

Shifter Signature: [Signature]

Date: 1-18-12

ITEM	STATUS	COMMENTS	W/O # - Corr. Action
<p style="text-align: center;"><b>Sewer Treatment Facility</b></p> <p>Aerators operating - See OPR-26 Sewage Aeration Sys Checks</p>	<p style="text-align: center;">Circle status Yes / No</p>	<p>2 out of 6 on No flushing alarm</p>	
<p style="text-align: center;"><b>Ash Ponds</b></p> <p>Oil on ponds? Yes / No</p> <p>Oil booms present? Yes / No</p> <p>Oil booms in good condition? Yes / No</p> <p>Are there any floating solids or foam in other than trace amounts in the discharge? (Inspect for unusual signs that might indicate chemicals or high concentrations may have been discharged from the pond, notify Environmental Department.)</p> <p>Yes / No</p> <p>Indications of leakage/breaching/failure? (Inspect top, face and toe of dikes for signs of cracks, soil movement, erosion, rodent burrows and woody vegetation. Document location and notify Shift Supervisor and Environmental Department.)</p> <p>Yes / No</p> <p>Seepage around weirs? (Check Outfalls 001 and 002 for any seepage around or under the weirs. Contact Environmental Department if any seepage identified.)</p> <p>Yes / No</p> <p>North Ash pond aerators/floodlight functioning? (Winter only - If Summer, indicate in comments section.)</p> <p>Yes / No / N/A</p>		<p>Frozen</p>	
<p style="text-align: center;"><b>FGD Ponds</b></p> <p>Bird Avert system normal? (System should activate when driving around pond. radar bar should be turning.)</p> <p>Yes / No</p> <p>Birds on pond? (Notify Environmental Department of any rescued/dead/ rehabilitated birds (prior to release) - Provide detailed documentation in logbook.)</p> <p>Yes / No</p> <p>Indications of leakage/breaching/failure? (Inspect top, face and toe of dikes for signs of cracks, soil movement, erosion, rodent burrows and woody vegetation. Document location and notify Shift Supervisor and Environmental Department.)</p> <p>Yes / No</p> <p>Liner in good shape? (Check for rips and tears. Notify Env. Department immediately if any identified.)</p> <p>Yes / No</p>			
<p style="text-align: center;"><b>Oil Vessels</b></p> <p>Leaks or spills on or around tanks / transformers?</p>	<p>Yes / No</p>		

ITEM	STATUS	COMMENTS	W/O # - Corr. Action
<u>Storm Water</u> Secondary containment devices checked for oil sheen? Is there any potential for storm (runoff) water to be contaminated at the landfill, reclaimed pond, boneyard, switchyard (outside of fence) or scrap yard? Any signs of erosion? (Document location and notify Env. Department.) Is there an potential for leaks or spills to occur in the landfill, reclaimed pond, boneyard, scrapyard, or outside of switchyard fence from stored equipment or parked vehicles that could leak oil or other fluid in these sensitive areas? Do storm water transfers from the secondary containment devices need to be made? (i.e. unlocking drains / lifting drain plugs. Notify Environmental Department before any transfer made.)	Yes / No Yes / No Yes / No Yes / No Yes / No		
<u>Landfill</u> Gate locked and secure? Litter outside fenced area?	Yes / No Yes / No		
<u>Fugitive Dust</u> Ash silo operating normally? (No blowing/exhausting dust, fly ash on road, etc.) Coal pile transfer chute contacting pile? (Chute skirting should be in contact with coal pile.) Dust from coal pile? Dust from exposed aprons on ponds? Other fugitive dust problems? (Roads, soil piles, landfill, etc.)	Yes / No Yes / No Yes / No Yes / No Yes / No	Has been, #3 is off and selected for hydro when starting up No coal being delivered	

Other Environmental concerns?: \_\_\_\_\_

Any non-conformance must be addressed with work order/correction action. Please contact Env. Engineer (Ext. 4365) regarding abnormal conditions. In addition, please provide detailed comments and work order #s in spaces provided.

Environmental Dept. Review Initial:                      Date: 1/30/12

Attachment E

Shift Supervisor Log & Naughton Control Room Operator Log

## SHIFT SUPERVISOR LOG NAUGHTON PLANT

Date: 1/17/12

Shift: Nights

Start: 01/17/12 18:00 (Tue)  
End: 01/18/12 06:00 (Wed)

Shift Supervisor: Nishi

	Unit-1	Unit-2	Unit-3
CRO	Backman	Backman	Haws
PO/JMO	Halls	Slovemick	Hatch
Outside	Anglen		
Scrubber	Webster/Larsen	Shift Mechanic :	<span style="border: 1px solid black; padding: 2px;">Moretti</span>
Lab	<span style="background-color: #e0f0ff;">Sudonick</span>	Shift Electrician :	<span style="border: 1px solid black; padding: 2px;">Bishop</span>
Eq Op			

Employee's Absent & Coverage:

	Cover Person:	<span style="border: 1px solid black; padding: 2px;"></span>
	Cover Person:	<span style="border: 1px solid black; padding: 2px;"></span>
	Cover Person:	<span style="border: 1px solid black; padding: 2px;"></span>
	Cover Person:	<span style="border: 1px solid black; padding: 2px;"></span>
	Cover Person:	<span style="border: 1px solid black; padding: 2px;"></span>

Readings are at 18:00.

Condensate Tank Levels (inches):

Tank 1-1	231
Tank 1-2	231
Tank 2-1	180
Tank 2-2	186
Tank 3-1	255.3
Tank 3-2	264.5
Tank 3-3	95.0

Scrubber Readings:

A side diff psi	5.9
A side inlet psi	7.1
B side diff psi	4.5
B side inlet psi	5.5
SO2	0
Sulfur Tank Level	44

	Unit-1	Unit-2	Unit-3
Load	159	204	347
Opacity	7.1	5.9	
NOx	0.6	0.2	0.4
Boiler pH	9.6	9.2	9.1
	Condensate Filter Diff. Pressure		1.6

Net MW's  
6-min  
Instantaneous  
Drum

### Environmental Log/Checks:

Air:	Other:
Opacity Exceedances : <span style="border: 1px solid black; padding: 2px;">No</span>	Spills Reported : <span style="border: 1px solid black; padding: 2px;">No</span>
SO2 Exceedances : <span style="border: 1px solid black; padding: 2px;">No</span>	FGD Pond pH Issues : <span style="border: 1px solid black; padding: 2px;">No</span>
NOx Exceedances : <span style="border: 1px solid black; padding: 2px;">No</span>	Bird Avert Issues : <span style="border: 1px solid black; padding: 2px;">No</span>
CEM Issues : <span style="border: 1px solid black; padding: 2px;">No</span>	Ash Pond Issues : <span style="border: 1px solid black; padding: 2px;">No</span>
PM10 Alarms : <span style="border: 1px solid black; padding: 2px;">NO</span>	Stormwater Issues : <span style="border: 1px solid black; padding: 2px;">No</span>
CAM Excursions : <span style="border: 1px solid black; padding: 2px;">No</span>	
Fugitive Dust Issues : <span style="border: 1px solid black; padding: 2px;">No</span>	Other Env Problems : <span style="border: 1px solid black; padding: 2px;">No</span>
Baghouses Off/Issues : <span style="border: 1px solid black; padding: 2px;">No</span>	
Benetech System Off : <span style="border: 1px solid black; padding: 2px;">No</span>	

If any Env. checks are "Yes", please explain:

### Restrictions/Outages

Unit #	Description/Notes	Net MW's Avail.	Time Off/On
1		160	
2		206	
3		330	1800-2207
3	boiler tube leak	0	2207

### Operational Notes

Unit-1	1-1 APH guide bearing oil leak
Unit-2	2-1 ID fan inboard bearing oil leak

Unit-3	
Common	Hydros off line for repairs to the 54" & 18" valves, controlling river level with the east spillway gate

Time	Notes
	***** 1/17/12 *****
18:00	When a hydro trips, the person who goes up to put it back on line needs to check the AC breaker in the communication building. It has been tripping
18:01	#1 Aux steam root valve is throttled up on the 8th floor.
18:02	#2 Unit, the sofa dampers are in hand on the boiler as well as the top
19:00	Held daily tailboard meeting. Discussed MOC ENV 29. Discussed unit 3 bottom ash repairs.
22:07	Unit 3 off line due to economizer tube leak.
23:38	Took terminal clearance 12-9 for unit 3. 240A is open and tagged
23:55	Called grid ops John that Bob is entering switchyard for midnight reading
23:59	Called grid ops John that bob is leaving switchyard
	***** 1/18/12 *****
00:25	Unit 3 elevator is repaired.
00:26	Unit 1 boiler is clean. Unit 2 is clean.
00:29	1-6 FWH emergency drain is open 40%
00:45	214CB is out due to a bad disconnect on the line side middle. Appratus is aware of it. Came in last night and left should be back in the morning for repairs.
00:50	It appears that B absorber has a tray that his flipped up.
02:30	#6 economizer hopper is full of wet ash need to have it sucked out. The other hoppers look good but still should check them out before the doors are closed.
02:31	It appears that the tube leak is above #5 economizer hopper south side of boiler.
03:00	PM10 in alarm at 178. Not taking coal and cat is off the pile.
03:15	All boiler doors, vents, drains open and draining boiler and fanning down boiler at 75% on unit 3.
03:43	Called ISI for unit 3 boiler tube leak support. They will try to get welders here at 0700 today.
04:00	PM10 in alarm at 193. Not taking coal and cat is off the piler.
04:18	Pulled unit 3 bottom ash.
04:48	Starting to hang tagout for unit 3 bottom ash repairs
05:00	PM10 is in alarm at 946. Not taking coal and cat is off pile. Sending out water truck.

## SHIFT SUPERVISOR LOG NAUGHTON PLANT

Date: 1/18/12

Shift: Days

Start: 01/18/12 06:00 (Wed)

End: 01/18/12 18:00 (Wed)

Shift Supervisor: Small

	Unit-1	Unit-2	Unit-3
CRO	Anderson	Anderson	Hillstead
PO/JMO	Garrett	Sheets	Lewis/Burdess
Outside	Jones		
Scrubber	Auger/Combs	Shift Mechanic :	<span style="border: 1px solid black; padding: 2px;">Fonnesbeck</span>
Lab	<span style="background-color: #e0f0ff;"> </span>	Shift Electrician :	<span style="background-color: #e0f0ff;"> </span>
Eq Op	Lundell		

Employee's Absent & Coverage:

	Cover Person:	<span style="border: 1px solid black; height: 15px;"> </span>
	Cover Person:	<span style="border: 1px solid black; height: 15px;"> </span>
	Cover Person:	<span style="border: 1px solid black; height: 15px;"> </span>
	Cover Person:	<span style="border: 1px solid black; height: 15px;"> </span>
	Cover Person:	<span style="border: 1px solid black; height: 15px;"> </span>

Readings are at 06:00.

Condensate Tank Levels (inches):

Tank 1-1	200
Tank 1-2	201
Tank 2-1	151
Tank 2-2	158
Tank 3-1	147.8
Tank 3-2	124.9
Tank 3-3	111.8

Scrubber Readings:

A side diff psi	0.0
A side inlet psi	2.6
B side diff psi	0.1
B side inlet psi	3.2
SO2	1
Sulfur Tank Level	43

	Unit-1	Unit-2	Unit-3
Load	159	200	0
Opacity	11.1	5.7	
NOx	0.6	0.2	0.6
Boiler pH	9.5	9.2	9.2
	Condensate Filter Diff. Pressure		0.3

Net MW's  
6-min  
Instantaneous  
Drum

### Environmental Log/Checks:

Air:	Other:
Opacity Exceedances :	Spills Reported :
SO2 Exceedances :	FGD Pond pH Issues :
NOx Exceedances :	Bird Avert Issues :
CEM Issues :	Ash Pond Issues :
PM10 Alarms :	Stormwater Issues :
CAM Excursions :	Other Env Problems :
Fugitive Dust Issues :	
Baghouses Off/Issues :	
Benetech System Off :	

If any Env. checks are "Yes", please explain:

### Restrictions/Outages

Unit #	Description/Notes	Net MW's Avail.	Time Off/On
1	None	160	
2	Aux load to scrubber	206	
3		330	
3	boiler tube leak	0	

### Operational Notes

Unit-1	1-1 APH guide bearing oil leak
Unit-2	2-1 ID fan inboard bearing oil leak

Unit-3	
Common	Hydros off line for repairs to the 54" & 18" valves, controlling river level with the east spillway gate

Time	Notes
	***** 1/18/12 *****
06:00	When a hydro trips, the person who goes up to put it back on line needs to check the AC breaker in the communication building. It has been tripping
06:01	#1 Aux steam root valve is throttled up on the 8th floor.
06:02	#2 Unit, the sofa dampers are in hand on the boiler as well as the top
07:00	Held Crew Meeting, discussed Unit #3 short outage
07:05	PM10 is in alarm, we are shutting down coal pile activity.
08:56	Switched out Treasurton Line per Compass# 56389
09:00	Started mine belt, PM10 is out of alarm.
10:00	PM10 in alarm, shut down mine belt.
12:59	Haylee and Dennis opened 6 ash hoppers on the south side of the precip to check for moisture. No moisture was found, the hoppers were then closed up.
14:32	Swityched back CB 234 to Treasureton, CB 214 is still out per disptcher
14:45	Eo's are staying untill 19:00 unless otherwise directed. They are watering the north ash pond apron, dirt roads and the coal pile apron.
17:05	PM10 is out of alarm, we have started the mine belt
17:06	The #3 economizer tube leak repair is complete, mechanics should be done with all other misc. repairs by 18:00

# Naughton Control Room Operator Log

Control Room Oper: BACKMAN  
 Shift Supervisor: NISHI  
 Plant Operator: HALLS  
 Scrub. Operator: \_\_\_\_\_

Date: 1-17/18-12

Graveyards / Days (Circle)  
U-1 U-2 U-3

Unit Load 160 MW Net      CBD \_\_\_\_\_ Turns      Cond. Tanks 230 230

Environmental Exceedances: \_\_\_\_\_ Drum pH 9.59

Restrictions: ~~1000~~ MW Reasons: \_\_\_\_\_

Restrictions: \_\_\_\_\_ MW Reasons: \_\_\_\_\_

Equipment Problems: \_\_\_\_\_

- #1 AIR COMP O/S
- 1-2 COMP PUMP EMER USE
- AUX STEAM V/O

Shift Details: \_\_\_\_\_

2200 - RECEIVING LO SULTAN COAL

2354 - TOLD ROBERT IN GRIN OPS ABOUT RIDGS IN YARD.

0024 - TOLD " " " " OPERATOR OUT OF YARD.

0300 - AM-10 → 175 → <sup>2500</sup> 145. HI WINDS, TAKING NO COAL. WATER TRUCK ~~NO~~ USE.

0030 - TIPPLE OUT OF COAL.

0530 - TIPPLE SENDING COAL AGAIN (LO)

2115 X - UNIT 3 <sup>COMING</sup> OFF LINE = SHUT OFF COM.

Tagouts Issued	Time Issue	Time Returned

Notifications Written: \_\_\_\_\_ W/O # \_\_\_\_\_

Boiler Condition: \_\_\_\_\_  
 Superheat Section: BLEW 2, 3, 5, 10, ROTARIES  
 A \_\_\_\_\_  
 B Good  
 C \_\_\_\_\_

Unit 1 2 3 (Circle)      Date: \_\_\_\_\_      CRO / PO Signature \_\_\_\_\_

# Naughton Control Room Operator Log

Control Room Oper: Anderson  
 Shift Supervisor: Small  
 Plant Operator: Sanelli  
 Scrub. Operator: \_\_\_\_\_

Date: 01/18/12  
 Graveyards / Days (Circle)  
U-1 U-2 U-3

Unit Load 160 MW Net CBD \_\_\_\_\_ Turns Cond. Tanks - 203 - 204 - \_\_\_\_\_  
 Environmental Exceedances: \_\_\_\_\_ Drum pH 9.43

Restrictions: \_\_\_\_\_ MW Reasons: \_\_\_\_\_

Restrictions: \_\_\_\_\_ MW Reasons: \_\_\_\_\_

Equipment Problems: #1 air comp of 5  
1-2 sand pumps every week  
Asx steam vfo

Shift Details: 0730 Stopped taking low sulfur - Hi PM 10  
0930 - Started taking low sulfur - PM 10 out of alarm  
1015 - Stopped taking low sulfur - PM 10 in alarm  
1110 - Stopped #2 river line pump  
1225 - Started taking low again - PM 10 out of alarm  
1255 - Stopped taking low again - Per S-S  
1410 - Stopped #1 river line pump  
1725 - Started taking low again PM 10 out of alarm  
1730 <sup>thru</sup> closed cond tank MV CV bypass  
1755 - Stopped taking low sulfur - Per S-S  
1810 - Started #1 river pump

Tagouts Issued	Time Issue	Time Returned

Notifications Written: \_\_\_\_\_ WIO # \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Boiler Condition:  
 Superheat Section: Flow 4's, 5's, 8's,  
 A \_\_\_\_\_  
 B \_\_\_\_\_  
 C \_\_\_\_\_

Unit 2 3 (Circle) Date: 01/18/12 CRO / PO Signature Leola Anderson

**Attachment F**

**Sealant Application and Compound Documentation**

Unit-3	
Common	Hydros off line for repairs to the 54" & 18" valves, controlling river level with the east spillway gate

Time	Notes
***** 1/14/12 *****	
06:27	When a hydro trips, the person who goes up to put it back on line needs to check the AC breaker in the communication building. It has been tripping
06:28	#1 Aux steam root valve is throttled up on the 8th floor.
06:30	#2 Unit, the sofa dampers are in hand on the boiler as well as the top
07:20	Held crew meeting talked about PM-10 problems the last week. Lined up help for people that are sealing the ash ponds today. Talked about changing over ash blowers on #3 unit.
07:30	Lost #2-3 mill on loss of flame elect was checking LF flame scanners when it pulled it out showed no flame. Washed mill out and put back in service
09:29	#3 Boiler top has little ash buildup, A row has a thin layer of reflective ash, B row has build-up of thick reflective ash will not blow off. C row has popcorn ash that will not blow off.
09:31	#1-6 Feedwater heater emergency drain is at 40% at 176 MWs gross
13:38	Shut down one small river pump the basin level was 229".
15:53	changed ash blowers over on #3 unit. Now on #3-2 ash blower.
17:17	#1 & #2 boilers are cleaning up by blowing sootblowers.

Unit-3	
Common	Hydros off line for repairs to the 54" & 18" valves, controlling river level with the east spillway gate

Time	Notes
------	-------

\*\*\*\*\* 1/15/12 \*\*\*\*\*

- 06:05 When a hydro trips, the person who goes up to put it back on line needs to check the AC breaker in the communication building. It has been tripping
- 06:06 #1 Aux steam root valve is throttled up on the 8th floor.
- 06:07 #2 Unit, the sofa dampers are in hand on the boiler as well as the top
- 08:06 Held crew meeting at 1900hrs. Discussed taking #1-2 APH out and filling coupling with oil, also went over safety notice on glasses.
- 09:00 Started hydrogen usage test on all three units.
- 11:12 #1-6 Feedwater heater emergency drain open 50% at 174 MWs gross
- 12:25 #3 Boiler has no change still got buildup ob A&B rows C row may have more buildup that yesterday
- 16:02 PM-10 came in alarm at 1500-1600hrs at 160ppm had EO stop pushing on back of pile. Also had operator do a method 22 on the pile. Both ash ponds have been sealed over the week-end no ash comin from them.
- 16:05 Cleared at 1600hrs back down to 75ppm. Wind showed 20 mph during the alarm.
- 16:19 #1 & #2 boilers are staying clean by blowing sootblowers.
- 17:19 Gas guns in all day on #1 unit at min. due to high SO2.



**WRR Industries, Inc.**

Date: January 10, 2012  
Attn: Jason Murdock  
Company: Pacificorp  
EMAIL: [jason.murdock@pacificorp.com](mailto:jason.murdock@pacificorp.com)

.....  
*Naughton Power Plant*  
.....

*Quotation as follows*

*WRR Industries, Inc. agrees to furnish all manpower, equipment and materials to provide the following for the above mentioned project:*

***Dust Suppression***

*Furnish all manpower, equipment and materials for dust suppression on the 30 acres of pond aprons. Materials to include 800 pounds of organic lignin sulphonate with twenty five hundred gallons of water per acre and applied via hydroseeder.*

*Cost: \$1490.00 Per Acre*

*Pacificorp agrees to furnish WRR Industries, Inc with an adequate staging area and water source at or near the project.*

*If you have any questions or require additional information, please contact Roger Holtan:  
(801) 355-2279  
[wrrind@msn.com](mailto:wrrind@msn.com)*

*Thank you  
WRR Industries*

# Georgia-Pacific

## Georgia-Pacific West, Inc.



### MATERIAL SAFETY DATA SHEET

## LIGNOSITE® 458 SODIUM LIGNOSULFONATE POWDER

### SECTION 1 - PRODUCT IDENTIFICATION

**Product Name and Synonyms:**

LIGNOSITE® 458; Sodium Lignosulfonate.

**CAS Name and Number:**

Lignosulfonic Acid, Sodium Salt; CAS# 8061-51-6.

**Chemical Family:** Lignin.

**Chemical Formula:** Unknown.

**Manufacturer's Name and Address**

GEORGIA-PACIFIC WEST, INC.  
300 W. Laurel Street (98225)  
P.O. Box 1236  
Bellingham, WA 98227  
Telephone: 360-733-4410

**Emergency Telephone Number**

1-800-424-9300 CHEMTREC

### SECTION 2 - HAZARDOUS INGREDIENTS

<u>COMPONENT</u>	<u>% WEIGHT OR VOL</u>	<u>ACGIH TWA UNITS</u>	<u>ACGIH STEL UNITS</u>	<u>OSHA PEL UNITS</u>
None	—	—	—	—

### SECTION 3 - PHYSICAL PROPERTIES

**Appearance and Odor:** Brown powder with no appreciable odor.

**Molecular Weight:** Unknown.

**Boiling Point (Degrees Fahrenheit):** Solid.

**Melting Point (Degrees Fahrenheit):** Decomposes.

**Vapor Pressure (MM of Mercury):** Nil.

**Specific Gravity (Water = 1):** Approx. 0.5.

**Vapor Density (Air = 1):** Not applicable.

**Percent Volatile (By Weight):** 2-10% moisture.

**pH:** Approx. 6 - 8.

**Solubility in Water:** Soluble.

**Evaporation Rate (Butyl Acetate = 1):** Not applicable.

### SECTION 4 - FIRE AND EXPLOSION DATA

**Flash Point:** Not applicable.

**Fire Extinguishing Media:** Water or CO<sub>2</sub>.

**Flammable Limits (Percent by Volume):** **Lower:** Not applicable. **Upper:** Not applicable.

**Special Firefighting Procedures & Equipment:** Normal.

**Unusual Fire and Explosion Hazards:** Dust explosions may occur when finely divided particles are mixed with air in the presence of an ignition source. Avoid excessive accumulation of dust on floors, beams, or machinery. Ignition temperature is approximately 250-300°C.

---

**SECTION 5 - REACTIVITY DATA**

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**Stability:** Unstable \_\_\_ **Stable** X

**Conditions to Avoid:** None known.

**Incompatibility (Materials to Avoid):** Caution necessary with strong oxidizing agents.

**Hazardous Decomposition Products:** Sulfur dioxide (SO<sub>2</sub>) possible.

**Hazardous Polymerization:** Will Occur \_\_\_ **Will Not Occur** X

**Conditions to Avoid:** None known.

---

**SECTION 6 - HEALTH HAZARD INFORMATION**

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**Exposure from Routine Use:** None known.

**Effects of Overexposure:** Prolonged exposure to high levels of dust in air may cause sneezing, coughing, or other nuisance symptoms.

**Probable Routes of Exposure:** Skin, inhalation, eyes.

**Emergency First Aid Procedures**

**Eye Contact:** Rinse immediately with water. Remove contact lenses; flush eyes with water. Consult a physician if necessary.

**Skin Contact:** Wash skin with soap and water. Seek medical attention if irritation persists. Launder contaminated clothing before re-use.

**Inhalation:** Move to fresh air to relieve nuisance symptoms.

**Ingestion:** Rinse mouth. Immediately dilute by drinking large quantities of water. After dilution, induce vomiting. Seek immediate medical attention. Never give anything by mouth to an unconscious person.

---

**SECTION 7 - TOXICITY DATA**

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**Oral:** This material is not orally toxic when tested as described in 29 CFR 1910.1200, Appendix A.

**Dermal:** This material is not a primary irritant and is not dermally toxic when tested as described in 29 CFR

**Inhalation:** Four-hour exposure of rats to 198 mg/m<sup>3</sup> of dust has resulted in neither mortality nor observable signs of toxicity.

**Carcinogenicity:** Not listed as a carcinogen by IARC, NTP, OSHA, or ACGIH.

**Other Pertinent Data:** This material is not an eye irritant when tested as described in 29 CFR 1910.1200, Appendix A.

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**SECTION 8 - SPECIAL PROTECTION INFORMATION**

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**Personal Protective Equipment**

**Protective Gloves:** Rubber gloves recommended.

**Eye Protection:** Goggles recommended.

**Respiratory Protection (Specify Type):** Air purifying respirator recommended for prolonged exposure to high concentrations.

**Other Protective Equipment:** As appropriate to prevent contact with body.

**Ventilation**

**Local Exhaust:** Recommended. Because of the explosive potential of organic dust when suspended in air, precautions should be taken to prevent sparks or other ignition sources in ventilation equipment. Use of totally enclosed motors is recommended.

**Mechanical (General):** Recommended.

**Special:** Use explosion-proof equipment for dusty conditions.

**Other:** None.

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**SECTION 9 - SPILL, LEAK, AND DISPOSAL PROCEDURES**

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**Steps to be Taken in Case Material is Released or Spilled**

Wash area with water. Spills or releases of this material do not currently trigger the emergency release reporting requirements under the federal Superfund Amendments and Reauthorization Act of 1986 (SARA). State and local laws may differ from federal law. Consult counsel for further guidance on your responsibilities under these laws.

**Waste Disposal Methods:** Customary plant procedures for industrial waste treatment.

**Clean Water Act Requirements:** None known.

**Resource Conservation and Recovery Act (RCRA) Requirements:** None known.

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**SECTION 10 - REGULATORY INFORMATION**

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**FDA:** Sodium lignin sulfonate is regulated under 21 CFR 175.105 as a substance for use as a component of adhesives. Under 21 CFR 176.170, it may be safely used as a component of the uncoated or coated food-contact surface of paper and paperboard intended for use in producing, manufacturing, packaging, processing, preparing, treating, packing, transporting, or holding of aqueous and fatty foods. Unty foods. Under 21 CFR 176.210, it is also permitted for use in the formulation of defoaming agents used in the manufacture of paper and paperboard intended for use in packaging, transporting, or holding food. Using food. Under 21 CFR 573.600, lignin sulfonates are approved for use in animal feeds, either in liquid or powder form, up to 4% of finished feed.

**USDA:** USDA self-certified (9 CFR 317.20); is FDA approved.

**CPSC:** Not applicable.

**TSCA:** CAS# 8061-51-6, Lignosulfonic Acid, Sodium Salt.

**DOT:** Non-regulated.

**Proper Shipping Name:** None.

**Hazard Class:** None.

**Label Required:** None.

**Identification No.:** None.

**Other Pertinent Information:** None.

**EPA:** Superfund Amendments and Reauthorization Act (SARA) Title III: Section 313, Supplier Notification.  
Not applicable.

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## SECTION 11 - SPECIAL PRECAUTIONS AND COMMENTS

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### Precautions to be Taken in Handling and Storage

Store in a dry place and keep sealed until ready to use to prevent caking from moisture pickup. This material is biodegradable. Use caution when opening unvented containers of water solutions. Microbial activity may cause pressure accumulation.

Other Precautions: None known.

Registrations / Certifications: None.

**Effective Date:** 1/01/00

**Supersedes:** 5/27/98

**IMPORTANT:** The information and data herein are believed to be accurate and have been compiled from sources believed to be reliable. It is offered for your consideration, investigation and verification. Buyer assumes all risk of use, storage and handling of the product in compliance with applicable federal, state and local laws and regulations. GEORGIA-PACIFIC MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, CONCERNING THE ACCURACY OR COMPLETENESS OF THE INFORMATION AND DATA HEREIN. THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE SPECIFICALLY EXCLUDED. Georgia-Pacific will not be liable for claims relating to any party's use of or reliance on information and data contained herein regardless of whether it is claimed that the information and data are inaccurate, incomplete, or otherwise misleading.

The symbol "\*" indicates revision from previous issue.

## **M-BINDER MULCH TACKIFIER - SOIL STABILIZER**

Unlike other stabilizers, M-Binder is utilized for the exact purpose nature intended it. To hold seed and immediate surrounding soil in place until germination and growth is accomplished.

M-Binder's principal ingredient is an outer coating or husk taken from a seed. Vital to wild life and grazing animals, nature has designed this protective coating to perpetuate this particular species. Through the natural process the plant produces a seed head, and under normal conditions the seed drops to the ground, (unless otherwise harvested) morning dew or moisture dampens the muciloid covering enough to fasten or stick the seed in the area which it was initially produced.

### **TECHNICAL SPECIFICATIONS:**

Protein Content	1.62
Ash Content	2.7
Fiber	4.0
P H of 1% Solution	6.8
Settleable Solids	8.0

### **SHIPPING INFORMATION:**

Packed in 40 lb. plastic coated, fiber bags.  
Loading instruction on bags.  
All palletized shipments shrink wrapped.

### **APPLICATION RATE - PER ACRE**

M-Binder 60-140 lbs.	Wood or Paper Fiber as specified	Water as required for slurry flow
-------------------------	-------------------------------------	---

### **Equipment:**

Any hydromulch machine with agitation system

### **Features:**

Enhances germination, fastens seed to soil surface  
Reduces moisture loss, fertilizer leaching  
Forms a firm, resilient, rewettable membrane  
Improves application by stabilizing water and adhering to soil  
Improves slurry suspension and slurry flow  
Non toxic — non corrosive all organic powder

**WRR INDUSTRIES, INC.**

570 W. 400 S.

SALT LAKE CITY, UT 84101

(801) 255-3270 Toll Free 800-673-6005

**U.S. Patent No. 3696559**

A dry powder concentrate derived from certain plant and tree seeds, non-toxic, non-corrosive and non-crystalline.

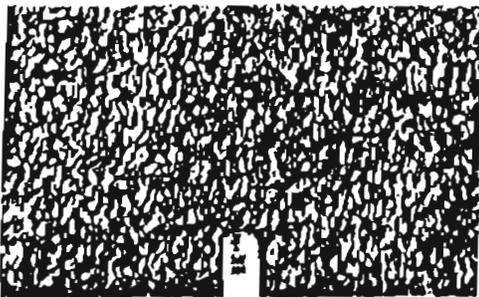
Primarily used in hydraulic seeding to hold seed in place, promote germination and control erosion. Specified and used on thousands of acres including Federal, State, County, City and numerous private projects during the past five years.

**Application:** M-Binder may be applied dry or wet (generally in hydraulic planting machines).

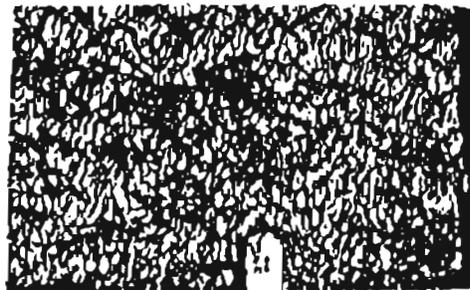
M-Binder may be applied during rain — on wet or dry surfaces it does not require set-up or drying time as it becomes a heavy muciloid when wetted allowing water penetration, a firm but re-wettable membrane when allowed to dry.

M-Binder proved to be superior in seed retention, promoting seed germination and controlling erosion of the seven stabilizers tested by the University of California at Davis. (Refer to Agronomy Progress Report No. 49, Agricultural Experiment Station).

Below tests conducted at University of California at Davis show outstanding performance by M-Binder. Photographs were taken by University personnel.



*Competitive Product*

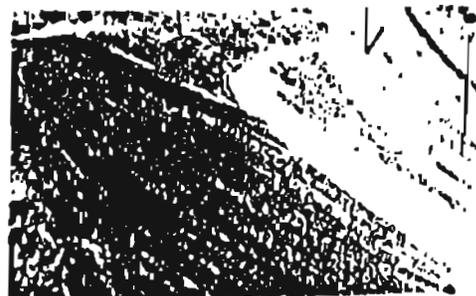


*M-Binder*



*Fiber only, 1,000 lbs. per acre*

**Note:** The above left and center illustrations soil has not cracked, fiber only has soil movement. Observe heaviest growth in the center photo M-Binder test. All treatments contained wood fiber.



***Ecology Controls  
c/o S&S SEEDS***

P.O. Box 1275  
Carpinteria, CA 93014-1275  
Ph: 805/684-0436 Fax: 805/684-2798

**Ecology Controls M-Binder  
Material Safety Data Sheet**

**I Product Identification**

1. Trade Name: Ecology Control M-Binder
2. Chemical Name, Common Names: Organic Plant and seed concentrate
3. Manufacturer or Distributor Name: *Ecology Controls c/o S&S SEEDS*
4. Address: *P.O. Box 1275, Carpinteria, CA 93013*
5. Business Phone: *805/684-0436*
6. Date this Materials Safety Data Sheet was prepared 2/11/02

**II Hazardous Ingredients: Chemical Name, Cas No., ACGIH (TLV) OSHA (PEL)**

No toxic chemicals subject to reporting requirements of the OSHA Hazard Communication Standard are present.

**III Physical Properties**

1. Vapor Density (air = 1): N/A
2. Specific Gravity: > 1
3. Solubility in Water: Negligible
4. Vapor Pressure, mmHg at 20° C: N/A
5. Evaporation Rate (Butyl Acetate = 1): N/A
6. Melting Point or Range, °F: Not Established
7. Boiling Point or Range, °F: N/A
8. Appearance and Odor: Tan, powdered material. No odor.
9. How to detect this substance (warning properties of substance as a gas, vapor, dust, or mist): Airborne dust may be irritating to eyes and respiratory tract.

**IV Fire and Explosion Hazard Data**

1. Flash Point, °F (method): N/A
2. Autoignition Temperature, °F: Not established
3. Flammable Limits in Air, volume %: Lower: N/A Upper: N/A
4. Fire Extinguishing Materials: Water and carbon dioxide
5. Special Fire Fighting Procedures: None
6. Unusual Fire and Explosion Hazards: This material is combustible. Airborne dust may explode when in contact with an ignition source.

**V Health Hazard Information**

1. Symptoms of Overexposure for Each Potential Route of Exposure:
  - a. Inhaled: Inhalation of this product's dust may cause irritation of upper respiratory tract
  - b. Contact with Skin and Eyes: None Known
  - c. Absorbed Through Skin: No

**Ecology Controls c/o S&S Seeds**

Effective Date: 2/11/02

Ecology Controls M-Binder

Page 2 of 2

- d. Swallowed: No available data
2. Health Effects or Risks from Exposure:
  - a. Acute: Irritation of upper respiratory tract
  - b. Chronic: Irritation of upper respiratory tract
3. First Aid: Emergency Procedures
  - a. Eye Contact: If product's dust gets into the eyes, flush with water for at least 15 minutes. If irritation persists, contact a physician.
  - b. Skin Contact: Wash and soap and water
  - c. Inhaled: Move exposed person to fresh air and perform artificial respiration. Call physician.
  - d. Swallowed: If symptoms arise, call physician.
4. Suspected Cancer Agent? X No: This product's ingredients are not found in the lists. Federal OSHANTP IARC CAL/OSHA
5. Medical Conditions Aggravated by Exposure: Respiratory conditions and eye conditions

**VI Reactivity Data**

1. Stability: Stable
2. Conditions to avoid: heat, flame, sparks, and other ignition sources. This product is combustible.
3. Incompatibility (Materials to Avoid): Strong oxidizing agents.
4. Hazardous Decomposition Products (Including combustion products): Carbon monoxide and partially oxygenated hydrocarbons.
5. Hazardous Polymerization: Will not occur.
6. Conditions to avoid: None

**VIII. Spill, Leak and Disposal Procedures**

1. Spill Response Procedures (Including Employee Protection Measures): Sweep up dust. Keep away from sources of heat, flame, sparks or other ignition sources.
2. Preparing Wastes for Disposal: Can be disposed with normal domestic waste.

**IX. Special Handling Information**

1. Ventilation and Engineering Controls: General ventilation should be adequate under normal use conditions.
2. Respiratory Protection: If airborne dust concentration causes irritation or discomfort, use a NIOSH approved respirator.
3. Eye Protection: Goggles
4. Gloves: Normal work gloves should be adequate
5. Other Clothing and Equipment: Normal work attire
6. Work Practices, Hygienic Practices: Avoid inhalation of dust.

**Ecology Controls c/o S&S Seeds**

Effective Date: 2/11/02

Ecology Controls M-Binder

Page 2 of 2

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7. **Other Handling and Storage Requirement:** Store in sealed containers. Keep away from sources of ignition.

8. **Protective Measures During Maintenance of Contaminated Equipment:** N/A

N/A = Not Applicable

Attachment G

Ash Pond Expansion Application



Naughton Power Plant

November 6, 2012

---

P.O. Box 191 \* Kemmerer, Wyoming 83101

Mark Baron  
Senior Environmental Analyst  
Wyoming Dept. of Environmental Quality  
Water Quality Division  
510 Meadowview Drive  
Lander, WY 82520

**RE: PacifiCorp – Naughton Plant – Kemmerer, WY: Permit Application for the Expansion of the North Ash Pond (Unit 3) Boundary**

Dear Mr. Baron:

In the spring of 2009, the plant determined that ash associated with the North Ash Pond had been deposited outside of the “area of inundation” boundary as defined by the isocontour lines listed on the 1993 construction application drawing. In a letter sent to you from Mr. Jeff Tucker on March 31, 2009 it explained that an estimated 55,000 cubic yards of ash was deposited outside of the inundation area. Since the time of this discovery the plant has extended the discharge line to ensure all ash is being deposited within the designated area indicated on the 1993 construction application.

Attached you will find an application to expand the boundary for the north ash pond, two drawings showing the proposed new boundary and an operation and closure plan. The boundary will be defined with signage attached to metal “T” - posts to delineate the boundary limits.

If you have any questions please contact Jason Murdock at (307) 828-4365 or Jeff Tucker at (307) 220-2989.

Sincerely,

---

A handwritten signature in black ink, appearing to read "Shawn Smith".

Shawn Smith  
Naughton Plant Managing Director

Attachment(s)

Cc: Brett Shakespear, PacifiCorp, NTO (w/attachments)  
Jeff Tucker, PacifiCorp, NTO (w/attachments)



Naughton Power Plant

November 6, 2012

---

P.O. Box 191 \* Kemmerer, Wyoming 83101

Mark Baron  
Senior Environmental Analyst  
Wyoming Dept. of Environmental Quality  
Water Quality Division  
510 Meadowview Drive  
Lander, WY 82520

**RE: PacifiCorp – Naughton Plant – Kemmerer, WY: Permit Application for the Expansion of the South Ash Pond (Units 1 & 2) Boundary**

Dear Mr. Baron:

In the spring of 2009, the plant determined that ash associated with the South Ash Pond had been deposited outside of the “area of inundation” boundary as defined by the isocontour lines listed on the 1993 construction application drawing. In a letter sent to you from Mr. Jeff Tucker on March 31, 2009 it explained that 0.9 acres of ash was deposited outside of the inundation area. Since the time of this discovery the plant has extended the discharge line to ensure all ash is being deposited within the designated area indicated on the 1993 construction application.

Attached you will find an application to expand the boundary for the south ash pond, two drawings showing the proposed new boundary and an operation and closure plan. The boundary will be defined with signage attached to metal “T” - posts to delineate the boundary limits.

If you have any questions please contact Jason Murdock at (307) 828-4365 or Jeff Tucker at (307) 220-2989.

Sincerely,

A handwritten signature in black ink, appearing to read "Shawn Smith".

Shawn Smith  
Naughton Plant Managing Director

Attachment(s)

Cc: Brett Shakespear, PacifiCorp, NTO (w/attachments)  
Jeff Tucker, PacifiCorp, NTO (w/attachments)



FedEx Tracking Number 8010 3513 8043

SL42 Sender's Copy 0215

1 From Please print and press hard.  
 Date 11/7/12 Sender's FedEx Account Number 1376-0183-4  
 Sender's Name SHAWN SMITH Phone (307) 828-4281  
 Company PACIFICORP/NAUGHTON  
 Address HWY 189/7 MILES S OF KEMMERER  
 City KEMMERER State WY ZIP 83101

2 Your Internal Billing Reference First 24 characters will appear on invoice. CC 10003 CE 530073  
 3 To Recipient's Name MARK BARON Phone ( )  
 SENIOR ENVIRONMENTAL ANALYST  
 Company WYOMING DEPT OF ENVIRONMENTAL QUALITY  
 Address WATER QUALITY DIVISION  
 Address 510 MEADOWVIEW DRIVE  
 City LANDER State WY ZIP 82520  
 0455254597

4 Express Package Service \*To meet load dates. Packages up to 150 lbs. For packages over 150 lbs, see also new FedEx Express Freight US Airbill.

Next Business Day  
 FedEx First Overnight  
 FedEx Priority Overnight  
 FedEx Standard Overnight  
 7 or 3 Business Days  
 NEW FedEx 2Day A.M.  
 FedEx 2Day  
 FedEx Express Saver

5 Packaging \*Declared value limit \$500.  
 FedEx Envelope  
 FedEx Box  
 FedEx Tube  
 Other

6 Special Handling and Delivery Signature Options  
 SATURDAY Delivery  
 No Signature Required  
 Direct Signature  
 Indirect Signature  
 Does this shipment contain dangerous goods?  
 No  
 Yes  
 Dry Ice  
 Cargo Aircraft Only

7 Payment Bill to:  
 Sender  
 Recipient  
 Third Party  
 Credit Card  
 Cash/Check

The FedEx US Airbill has changed. See Section 4. For shipments over 150 lbs, order the new FedEx Express Freight US Airbill.

Total Packages 1 Total Weight lbs. Total Declared Value \$ 00  
 Your liability is limited to \$100 unless you declare a higher value. See back for details. By using this Airbill you agree to the service conditions on the back of this Airbill and in the current FedEx Service Guide, including to meet our best rate today.  
 Rev. Date 11/10 - Part 1/05131 - ©1994-2010 FedEx - PRINTED IN U.S.A. SRS



November 13, 2012

Dear Customer:

The following is the proof-of-delivery for tracking number **801035138043**.

---

**Delivery Information:**

<b>Status:</b>	Delivered	<b>Delivered to:</b>	Receptionist/Front Desk
<b>Signed for by:</b>	R.DODGEON	<b>Delivery date:</b>	Nov 8, 2012 09:57
<b>Service type:</b>	FedEx Priority Overnight		
<b>Special Handling</b>	Deliver Weekday		

**NO SIGNATURE IS AVAILABLE**

FedEx Express proof-of-delivery details appear below; however, no signature is currently available for this shipment. Please check again later for a signature.

---

**Shipping Information:**

<b>Tracking number:</b>	801035138043	<b>Ship date:</b>	Nov 7, 2012
		<b>Weight:</b>	1.0 lbs/0.5 kg

<b>Recipient:</b>	<b>Shipper:</b>
US	US

<b>Reference</b>	CC10013 CE530073
------------------	------------------

Thank you for choosing FedEx.

WYOMING WATER QUALITY APPLICATION FORM			WQD USE ONLY		
Use for Construction, Groundwater Monitoring, Groundwater Remediation, Subdivisions, and Land Application of Wastewater			APP NO		
			DATE		
A complete application package must include three copies of each of the following: Application form, investigations, design reports, plans, specifications, and any other appropriate information			PROG.		
<b>Submit to appropriate office</b>		<a href="http://deq.state.wy.us/wqd/www/districts.pdf">http://deq.state.wy.us/wqd/www/districts.pdf</a>			
DEQ/Water Quality Division, 122 West 25th Street, Cheyenne, WY 82002			(307) 777.7781		
DEQ/Water Quality Division, 510 Meadowview Drive, Lander, WY 82520			(307) 332.3144		
DEQ/Water Quality Division, 2100 West 5th, Sheridan, WY 82801			(307) 673.9337		
DEQ/Water Quality Division, 152 North Durbin Street, Ste 100, Casper, WY 82601			(307) 473.3465		
<b>NAME OF PROJECT</b>					
South Ash Pond (Units 1 and 2) Boundary, Naughton Power Plant, Kemmerer, Wyoming					
<b>DESCRIPTION OF PROJECT</b>					
Boundary for South Ash Pond (Units 1 and 2) to be extended to include areas where ash has been deposited outside of the current boundary					
<b>LOCATION:</b>	<b>County:</b> Lincoln	<b>Lat:</b> 41.751	<b>Long:</b> 110.598		
Legal Description (1/4 Section, Section, Township, Range or Lot No. and Subdivision) Section 1 & 2, Township 20N, Range 117W; Section 32 & 33, Township 21N, Range 116W					
All undersigned agree to comply with applicable Wyoming Statutes and Regulations and to allow the activities described in this application.					
<b>SIGNATURES:</b>	<b>Real Estate Owner</b> The real estate owner or the grantee of the applicable easement must sign this form				
<b>PacifiCorp</b>					
 Sign Above		Address: P.O Box 191, 6 Miles South on Hwy 189			
		City: Kemmerer		State: Wyoming	
		Zip Code: 83101		Phone: 307-828-4281	
		Email: shawn.smith2@pacificorp.com			
		Printed Name: Shawn Smith		Title: Plant Managing Director	
If the owner or easement grantee is a public entity, partnership, or corporation, a legally binding authority must sign					
<b>Operator or Developer</b>		If same as real estate owner, this space may be left blank			
<b>Naughton Power Plant</b>					
 Sign Above		Address: P.O Box 191, 6 Miles South on Hwy 189			
		City: Kemmerer		State: Wyoming	
		Zip Code: 83101		Phone: 307-828-4281	
		Email: shawn.smith2@pacificorp.com			
		Printed Name: Shawn Smith		Title: Plant Managing Director	
If the operator or developer is a public entity, partnership, or corporation, a legally binding authority must sign					
<b>Engineer or Geologist</b>					
Printed Name: David J. Erickson		WY PE #		WY PG# 310	
Firm Name: Water & Environmental Technologies					
Address: 480 East Park Street			<b>Please complete the second page or the back of this form</b>		
City: Butte	State: Montana	Zip Code: 59701			
Phone: 406-782-5220		Email: derickson@wet-llc.com			

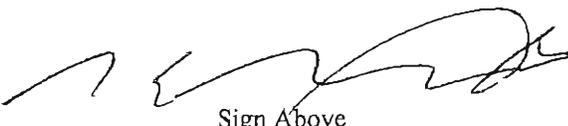
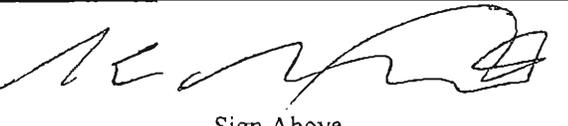
The Wyoming Environmental Quality Act, W.S. 35-11-101 and Wyoming Environmental Quality Act, Article 3, W.S. 35-11-301 mandates that permits are required for construction or modification of public water supplies, wastewater facilities, land application systems, and confined swine feeding operations. W.S. 18-5-306 requires review of the safety and adequacy of proposed sewage systems and water systems in new subdivisions by DEQ.

All Wyoming Water Quality Rules and Regulations are available at <http://deq.state.wy.us/wqd/WQDrules/index.asp>

Specific chapters of the Wyoming Water Quality Rules and Regulations have been developed for each area that requires a permit. The regulatory chapters for types of projects that this application is to be used for are listed below. Please check all that apply to your project.

<input checked="" type="checkbox"/>	11	Design and construction standards for sewerage systems, treatment works, disposal system of other facilities capable of causing or contributing to pollution, includes monitoring wells and road application of wastewater
<input type="checkbox"/>	12	Design and construction standards for public water supplies, includes subdivision water supplies and water line extensions
<input type="checkbox"/>	21	Standards for the Reuse of Treated Wastewater
<input type="checkbox"/>	23	Minimum Standards for Subdivision Applications
<input type="checkbox"/>	25	Design and construction standards for small wastewater systems includes septic tanks/leachfields
<input type="checkbox"/>	26	Well construction standards
<input type="checkbox"/>	other	Describe briefly

Previous or Associated State of Wyoming Permits	
WQD Permit to Construct	87-122R / 93-096
WQD Subdivision Recommendation to County	
Air Quality	
Land Quality	
Oil and Gas Commission	
Soild and Hazardous Waste	
State Engineers Surface Water Right or Well Permit	9907
WQD Underground Injection Control	
WYPDES (discharge permit)	WY0020311
US EPA Public Water Supply (PWS) Number	

WYOMING WATER QUALITY APPLICATION FORM		WQD USE ONLY		
Use for Construction, Groundwater Monitoring, Groundwater Remediation, Subdivisions, and Land Application of Wastewater		APP NO		
		DATE		
A complete application package must include three copies of each of the following: Application form, investigations, design reports, plans, specifications, and any other appropriate information		PROG.		
<b>Submit to appropriate office</b>		<a href="http://deq.state.wy.us/wqd/www/districts.pdf">http://deq.state.wy.us/wqd/www/districts.pdf</a>		
DEQ/Water Quality Division, 122 West 25th Street, Cheyenne, WY 82002		(307) 777.7781		
DEQ/Water Quality Division, 510 Meadowview Drive, Lander, WY 82520		(307) 332.3144		
DEQ/Water Quality Division, 2100 West 5th, Sheridan, WY 82801		(307) 673.9337		
DEQ/Water Quality Division, 152 North Durbin Street, Ste 100, Casper, WY 82601		(307) 473.3465		
<b>NAME OF PROJECT</b>				
North Ash Pond (Unit 3) Boundary, Naughton Power Plant, Kemmerer, Wyoming				
<b>DESCRIPTION OF PROJECT</b>				
Boundary for North Ash Pond (Unit 3) to be extended to include areas where ash has been deposited outside of the current boundary				
<b>LOCATION:</b>	<b>County:</b> Lincoln	<b>Lat:</b> 41.761	<b>Long:</b> 110.596	
Legal Description (1/4 Section, Section, Township, Range or Lot No. and Subdivision) Section 28, 29, 32 and 33, Township 21N, Range 116W				
All undersigned agree to comply with applicable Wyoming Statutes and Regulations and to allow the activities described in this application.				
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		Email: shawn.smith2@pacificorp.com		
Printed Name: Shawn Smith		Title: Plant Managing Director		
If the owner or easement grantee is a public entity, partnership, or corporation, a legally binding authority must sign				
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<b>Naughton Power Plant</b>				
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Printed Name: David J. Erickson		WY PE #	WY PG# 310	
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<input type="checkbox"/>	23	Minimum Standards for Subdivision Applications
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<input type="checkbox"/>	26	Well construction standards
<input type="checkbox"/>	other	Describe briefly

Previous or Associated State of Wyoming Permits	
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Soild and Hazardous Waste	
State Engineers Surface Water Right or Well Permit	9908
WQD Underground Injection Control	
WYPDES (discharge permit)	WY0020311
US EPA Public Water Supply (PWS) Number	



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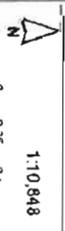
**Naughton Unit 1 & 2 Ash Pond**

**Legend**

- Generation Facilities
- Hydro
- Geothermal
- Thermal
- Wind
- Biomass

Current Boundary

Proposed Boundary Delineated with Signs



0.25 0.1  
1:10,848

Map created with ArcGIS Online. This map is intended for informational purposes only. It is not intended to be used for any other purpose. The information on this map is provided as a service and is not intended to be used for any other purpose. The information on this map is provided as a service and is not intended to be used for any other purpose.

# Naughton Unit 3 Ash Pond

## Legend

### Generation Facilities

- Hydro
- Geothermal
- Thermal
- Wind
- Biomass

Current Boundary

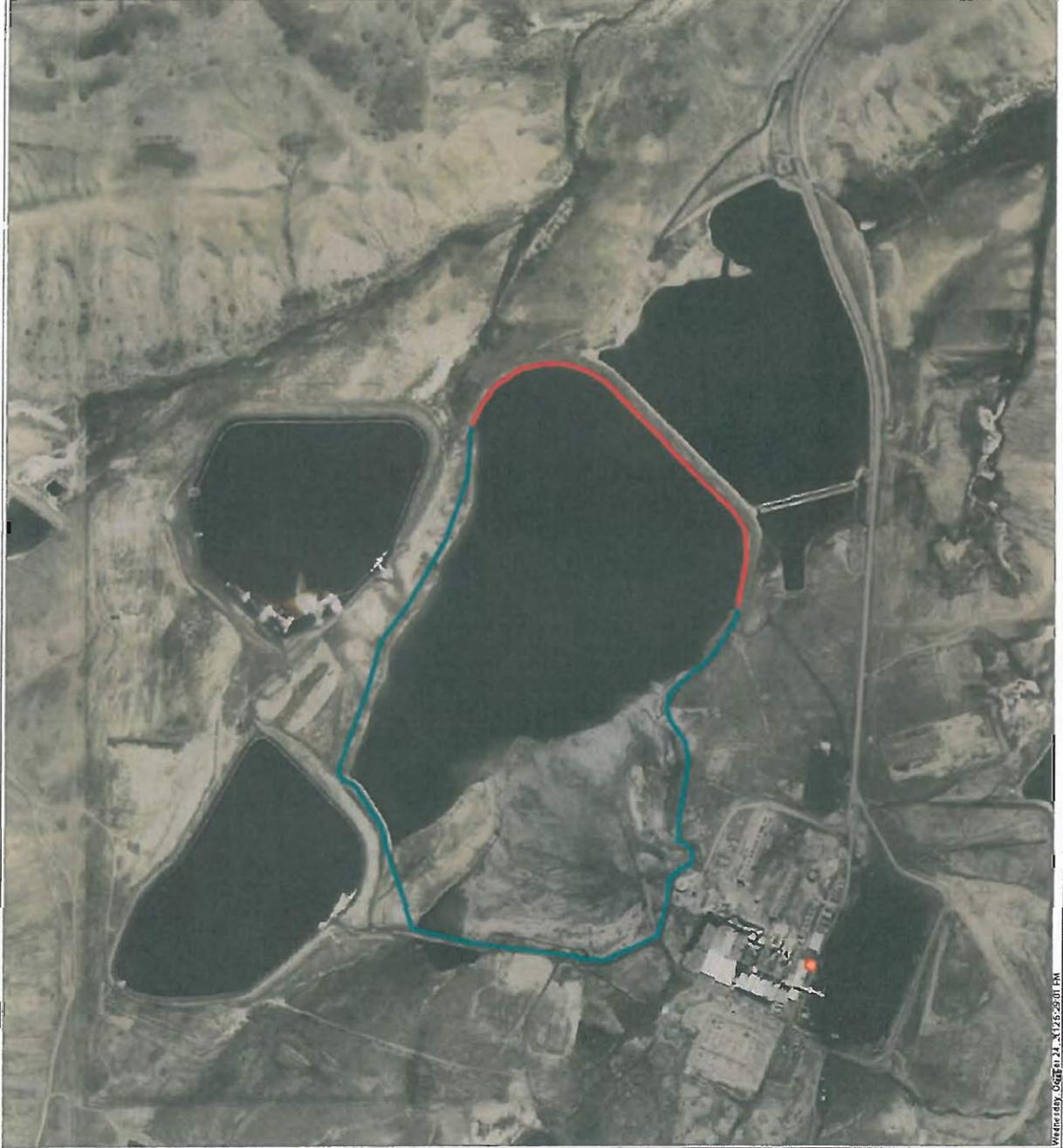
Proposed Boundary  
Delimited with  
Signs



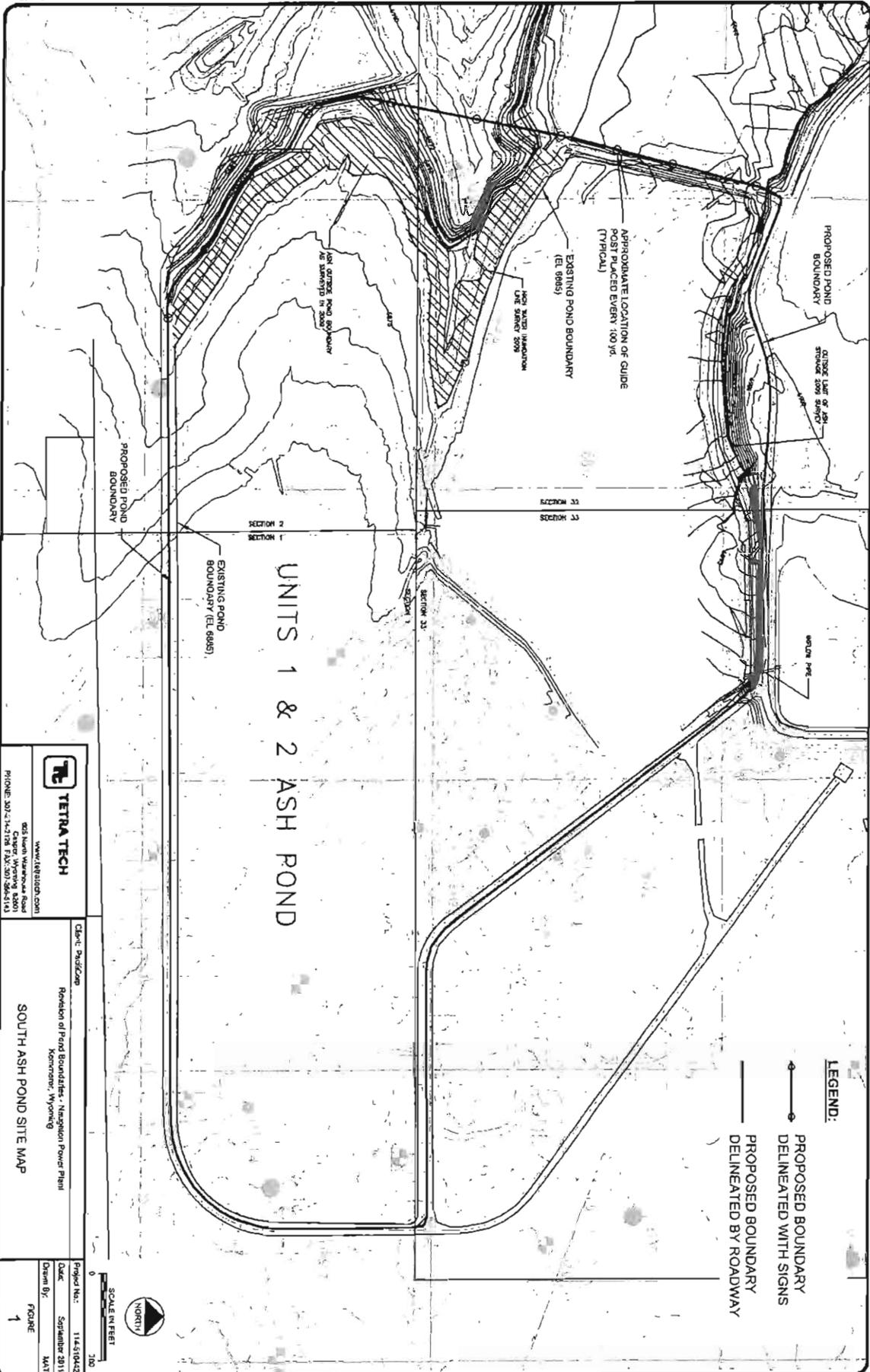
1:10,893



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No warranty with respect to any information  
including but not limited to the conditions information  
is provided for informational purposes only. The  
owner Party has provided the Ortho project  
data to make any representation or warranty to  
the accuracy of the data. The user of the data  
and agreed that the Party or its Representative shall  
be responsible for any and all consequences of  
any use of the data or any information provided  
herein in any agreement.



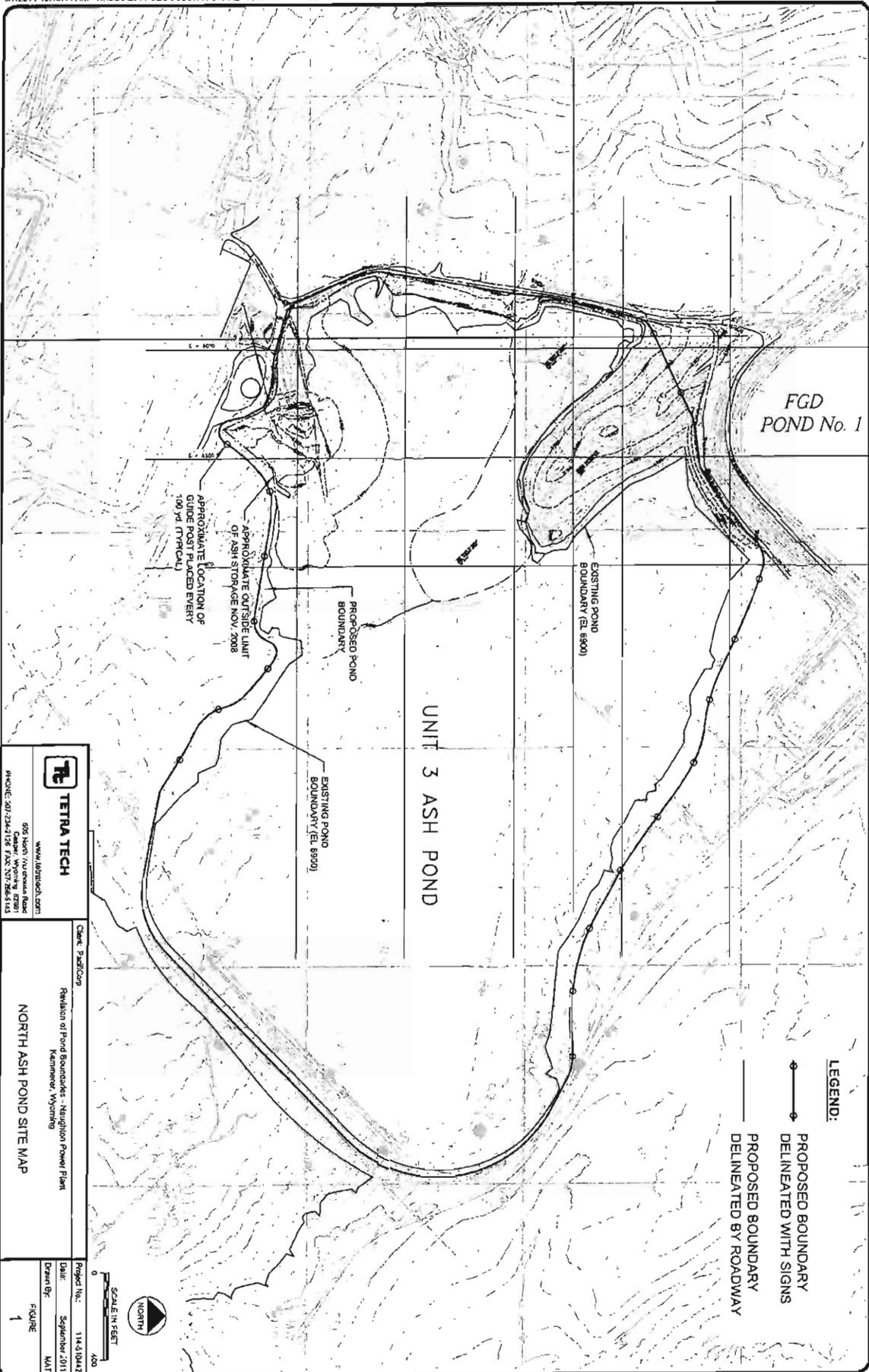
Wednesday, 05/07/2014 11:25:29 AM



**TETRA TECH**  
 855.346.7478  
 201.744.2718  
 201.284.4143

Client: Pacificorp  
 Revision of Pond Boundary - Naughton Power Plant  
 September, 2011  
 MPT

Project No.: 114-510442  
 Date: September 2011  
 Drawn By: MPT  
 FIGURE 1



**TETRA TECH**  
 www.tetra-tech.com  
 6150 Lakeside Drive  
 Chester, Wyoming 82201  
 PHONE: 307.234.2116 FAX: 307.265.5143

Client: PacifiCorp  
 Revision of Pond Boundaries - Naughton Power Plant  
 Kemmerer, Wyoming  
**NORTH ASH POND SITE MAP**

Project No.: 114-51042  
 Date: September 2011  
 Drawn By: MAT  
 FIGURE 1  
 Copyright: Tetra Tech

# OPERATION PLAN NAUGHTON POWER PLANT NORTH AND SOUTH ASH PONDS

PREPARED FOR:

PacifiCorp Energy  
Naughton Power Plant  
P.O. Box 191  
Kemmerer, WY 83101



SUBMITTED BY:

Water & Environmental Technologies  
480 East Park Street, Suite #200  
Butte, MT 59701  
406.782.5220

August 20, 2012

# Naughton Power Plant

## *North and South Ash Ponds Operation Plan*

Prepared for:

PacifiCorp Energy  
Naughton Power Plant  
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Kemmerer, WY 83101

Prepared by:

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Phone: (406) 782-5220  
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**August 20, 2012**

Project Reference: PERC M33

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## **1.0 INTRODUCTION**

The Coal Combustion Residue (CCR) Ponds at the Naughton Power Plant consist of the North Pond, which receives CCR from Unit 3; and the South Ash Pond, which receives CCR from Units 1 & 2. CCR is slurried to both ponds via open channels on the surface of the previously deposited material. The coarser fractions, mostly bottom ash, settle out first with the finer materials being transported further into the ponds. The coarse bottom ash has been periodically removed from the channels and deposited as a continuous dike alongside the slurry transport channels. The method of CCR deposition into the ponds has resulted in an alluvial fan of CCR with large areas of fine-grained material on or near the surface. The fine particles of CCR have the potential to become airborne during high wind events thus creating fugitive dust issues.

As part of this Operation Plan, an Interim and Final Closure Plan for the north and south CCR ponds is provided to:

- Reduce and/or eliminate fugitive dust from the dried CCR surface.
- Provide orderly filling of designed cells.
- Maximize CCR disposal volumes.
- Provide a timely solution to multiple closure issues.
- Provide un-interrupted Plant operation.
- Provide an orderly and effective closure of both CCR ponds.

It is important to note that the plans and drawings presented in this document are preliminary. Due to dynamic field conditions and anticipated regulatory changes, the actual construction may vary slightly from these plans. As-built drawings will be provided following completion of the project.

## **2.0 FUTURE CCR DEPOSITION**

General CCR deposition plans were created for both the North and South Ash Ponds to ensure adequate volumes are present to accommodate CCR past the anticipated end of plant life in 2029. The future deposition plans will also minimize surface area while maximizing storage volumes, thus minimizing final closure activities and future dust issues. Design specifics for both the North and South Ponds are included in the following sections.

### **2.1 South CCR Pond**

The future deposition of CCR into the South Ash Pond was designed assuming Units 1 & 2 will continue to deposit CCR at the current rates through 2029. However, the design also includes cells to accommodate CCR much past the 2029 date, should additional storage be required. Design details are located on Figure SP-1 in Appendix A.

The main slurry conveyance ditch will be constructed of polypropylene half-pipe and include a series of bottom ash collection areas. Temporary channels constructed of CCR will be constructed to direct deposition into specific areas of the cells. The collected bottom ash will be periodically spread to continually address fugitive dust issues. Design details are located on Figures D-2 and D-3 in Appendix A.

**Cell 1**

Cell 1 includes all of the current CCR deposited in the South Ash Pond. Cell 1 has a current area of approximately 22 acres. No additional CCR is planned for Cell 1. Details are provided in Figure SP-1 in Appendix A.

**Cell 2**

Cell 2 has a projected volume of 370,000 yd<sup>3</sup> and will provide approximately 4 years (2012-2015) of deposition. CCR will be transported to Cell 2 by re-directing the existing transport ditch across Cell 1 in a polypropylene half-pipe to a bottom ash collection area near the pond water edge. Details are provided on Figures SP-1, D-2, and D-3 in Appendix A.

**Cell 3**

Cell 3 has a volume of 1,000,000 yd<sup>3</sup> and will provide approximately 12 years (2016-2027) of deposition. CCR will be transported to Cell 3 by re-directing the existing transport ditch across Cell 1 and Cell 2 in a polypropylene half-pipe to a bottom ash collection area near the pond water edge. Details are provided on Figures SP-1, D-2, and D-3 in Appendix A.

**Cell 4**

Cell 4 has a volume of 70,000 yd<sup>3</sup> and will provide approximately 1 year (2028) of deposition. CCR will be transported to Cell 4 by re-directing the existing transport ditch across Cells 1, 2, and 3 in a polypropylene half-pipe to a bottom ash collection area near the pond water edge. Details are provided on Figures SP-1, D-2, and D-3 in Appendix A.

**Cell 5**

Cell 5 has a volume of 750,000 yd<sup>3</sup> and will provide approximately 8 years (2029-2036) of deposition. CCR will be transported to Cell 5 by re-directing the existing transport ditch across Cells 1, 2, 3, and 4 in a polypropylene half-pipe to a bottom ash collection area near the pond water edge. Details are provided on Figures SP-1, D-2, and D-3 in Appendix A.

**Cell 6**

Cell 6 has a volume of 400,000 yd<sup>3</sup> and will provide approximately 4 years (2037-2040) of deposition. CCR will be transported to Cell 5 by re-directing the existing transport ditch across Cells 1, 2, 3, 4, and 5 in a polypropylene half-pipe to a bottom ash collection area near the pond water edge. Details are provided on Figures SP-1, D-2, and D-3 in Appendix A.

**2.2 North CCR Pond**

The future deposition of CCR into the North Ash Pond was designed assuming Unit 3 will continue to deposit CCR at the current rates through 2029. However, the design also includes cells to accommodate CCR much past the 2029 date, should additional storage be required. Design details are located on Figure NP-1 in Appendix A.

The main slurry conveyance ditch will be constructed of polypropylene half-pipe and include a series of bottom ash collection areas. Temporary channels constructed of CCR will be constructed to direct deposition into specific areas of the cells. The collected bottom ash will be periodically spread to continually address fugitive dust issues. Design details are located on Figures D-2 and D-3 in Appendix A.

**Cell 1**

Cell 1 includes all of the current CCR deposited in the North Ash Pond. Cell 1 has a current area of approximately 53 acres and a volume of approximately 600,000 yd<sup>3</sup>. No additional CCR is planned for Cell 1. Final closure design details are located on Figures NP-2 through NP-4 in Appendix A.

**Cell 2**

Cell 2 has a projected volume of 400,000 yd<sup>3</sup> and will provide approximately 5 years (2012-2016) of deposition. CCR will be transported to Cell 2 by re-directing the existing transport ditch across Cell 1 in a polypropylene half-pipe to a bottom ash collection area near the pond water edge. Details are provided on Figures NP-1, D-2, and D-3 in Appendix A.

**Cell 3**

Cell 3 has a projected volume of 480,000 yd<sup>3</sup> and will provide approximately 6 years (2017-2022) of deposition. CCR will be transported to Cell 3 by re-directing the existing transport ditch across Cell 1 in a polypropylene half-pipe to a bottom ash collection area near the pond water edge. Details are provided on Figures NP-1, D-2, and D-3 in Appendix A.

**Cell 4**

Cell 4 has a volume of 860,000 yd<sup>3</sup> and could provide approximately 11 years (2023-2033) of deposition. CCR will be transported to Cell 4 by re-directing the existing transport ditch across Cell 1 in a polypropylene half-pipe to a bottom ash collection area near the pond water edge. Details are provided on Figures NP-1, D-2, and D-3 in Appendix A.

**Cell 5**

Cell 5 has a volume of 380,000 yd<sup>3</sup> and could provide approximately 5 years (2034-2038) of deposition. CCR will be transported to Cell 5 by re-directing the existing transport ditch across Cell 1 in a polypropylene half-pipe to a bottom ash collection area near the pond water edge. Details are provided on Figures NP-1, D-2, and D-3 in Appendix A.

### **3.0 FUGITIVE DUST CONTROL/INTERIM COVER**

Fugitive dust resulting from the natural drying of the CCR slurry may become an issue for the Naughton Plant. As the CCR is deposited into the pond, the coarser, heavier bottom ash material settles first, resulting in finer, light ash particles being deposited further out into the pond. Currently, the bottom ash material is being periodically excavated from the slurry channel and placed alongside in piles of various lengths and heights. With the heavy, coarse materials concentrated in a relatively small area, the finer, lighter materials are more prone to wind transport. To control fugitive dust, approximately 6 inches of bottom ash will be placed over the existing CCR surface. Approximately 1 to 3 inches of native soil will be placed over the bottom ash as an interim vegetative layer.

Prior to bottom ash spreading, a pilot study will be conducted to determine equipment capabilities and actual preliminary cover boundaries. The pilot study will include the following:

1. Determine the areas that can be traversed by equipment:
  - a. ATV/UTV to spread monomer for dust control;
  - b. Caterpillar D6T LCP Dozer or equivalent with a ground contact pressure of approximately 5 psi; and

- c. Caterpillar 627G scraper with floatation tires.
2. Determine the minimum thickness of bottom ash needed to support scrapers and dump trucks near the water edge.
3. Determine the minimum thickness of bottom ash needed to support low pressure dozers near the water edge.
4. Determine if lowering water level increases equipment coverage.

By slightly modifying existing operational procedures regarding the heavier bottom ash, fugitive dust issues will be controlled. As the CCR expands into the future cells, it becomes increasingly important to separate and stockpile as much bottom ash as possible. Construction of a basin to more rapidly settle out the bottom ash will accommodate the future needs of the project. The native soil will come from locations on Naughton Plant property. The following sections address specific fugitive dust control plans for each CCR pond.

### 3.1 South Ash Pond

The South Ash Pond currently holds approximately 1,100,000 yd<sup>3</sup> of various CCR. The current surface area of exposed CCR is approximately 22 acres (958,000 ft<sup>2</sup>), which includes approximately 19,400 yd<sup>3</sup> of bottom ash which has been removed from the slurry channel. Based on the available volumes, a 6-inch to 8-inch layer of the bottom ash can be placed over the existing CCR surface, creating a surface much less likely to produce fugitive dust. Prior to final design, a grain size analysis will be done on samples of the bottom ash piles to determine if a screening step will be necessary prior to placing the bottom ash. Details are provided in figures SP-1 thru SP-3 in Appendix A.

Slight operational changes incorporated during this preliminary cover phase will allow for more efficient separation of the heavier bottom ash, which will be deposited over the finer material as the surface expands. The following outlines the process for placing the interim bottom ash cover:

1. Construct polypropylene half-pipe conveyance ditch (see Figure SP-1).
2. Construct bottom ash collection areas at the ends of the half-pipe, closer to the edge of the pond to mitigate continuous fugitive dust issues.
3. Re-route the current surface water flow in the northeast corner of Cell 1 into the adjacent pond using half-pipe (see Figure D-4).
4. Lower water level to the optimum level determined in the Pilot Study.
5. Apply dust control monomer as soon after lowering the pond level as possible.
6. Begin transporting bottom ash to construct access route to water's edge.
7. Begin spreading bottom ash to approximately 6 inches.
8. Cover bottom ash with approximately 1-3 inches of native soil, if necessary.
9. Raise water level back to current level.

### 3.2 North Ash Pond

The North Ash Pond currently holds approximately 1,000,000 yd<sup>3</sup> of various CCR. The current surface area of exposed CCR is approximately 52 acres (2,255,000 ft<sup>2</sup>), which includes approximately 48,000 yd<sup>3</sup> of bottom ash which has been removed from the slurry channel. Based on the available volumes, a 6-inch to 8-inch layer of the bottom ash can be placed over the existing CCR surface, creating a surface much less likely to produce fugitive dust. Prior to

final design, a grain size analysis will be done on samples of the bottom ash piles to determine if a screening step will be necessary prior to placing the bottom ash. Design details are provided on Figure NP-2 in Appendix A.

Slight operational changes incorporated during this preliminary cover phase will allow for more efficient separation of the heavier bottom ash, which will be deposited over the finer material as the surface expands. The following outlines the basic process for placing the interim bottom ash cover:

1. Construct polypropylene half-pipe conveyance ditch (see Figure NP-1).
2. Construct bottom ash collection areas at the ends of the half-pipe, closer to the edge of the pond to facilitate continuous fugitive dust issues.
3. Divert water from existing settling pond to a by-pass ditch on the northwest side of Cell 1 (See Figures NP-2 & D-1).
4. Construct a haul road adjacent to the above mentioned by-pass ditch (See Figure NP-2).
5. Lower existing pond water level by approximately 3 feet (if deemed necessary based on the pilot study results).
6. Begin transporting and spreading bottom ash.
7. Cover bottom ash with approximately 1-3 inches of native soil, if necessary for dust control/re-vegetation.

#### **4.0 CCR POND FINAL COVER**

As per Wyoming Department of Environmental Quality (WDEQ) regulations, the final cover for the Naughton Ash Ponds will have a minimum permeability less than or equal to the permeability of the underlying natural sub-soils. Final cover design documents will be provided immediately prior to final cover construction activities. Construction of the final cover will begin within 5 years of reaching the design footprint for each cell defined in Section 2 of this document. The time lag is necessary to allow for the dewatering of the upper surfaces of the CCR. The cover will minimize infiltration into the CCR material and provide adequate moisture storage for long-term vegetation success. Preliminary design specifications are provided in Figures NP-3, NP-4, and SP-4 in Appendix A. Comprehensive soil testing of potential on-site cover material will be conducted prior to Final Cover design.

#### **5.0 EROSION AND STORM WATER RUNOFF**

The key to long-term success of any landfill cover is controlling erosion. Storm water is the major component of erosion and must be addressed for the cover to be successful. Features such as contour channels and conveyance channels along with rapid establishment of vegetation are essential to controlling erosion resulting from storm water.

##### **5.1 Design Storm Events**

The design storms used for this plan are the 10-year, 24-hour and the 100-year, 24-hour events. Based on data provided by the NOAA Atlas 2: Precipitation Frequency of the Western United States (1973), the following storm events and amounts will be used to calculate the rainfall intensities that will be used in the runoff calculations:

- 10-year, 24-hour storm = 1.8 inches.

- 100-year, 24-hour storm = 2.4 inches.

Precipitation events in Wyoming follow the SCS Type II Storm Distribution Curve. According to this curve, for a 24-hour storm event, the maximum intensity (in/hr) will occur over a 1.5 hour period from hour 11 to hour 12.5 of the storm event. Based on the SCS Type II precipitation distribution and the time of concentrations for the small sub-areas associated with the landfill cover, the following maximum intensities will be used to calculate runoff flow rates and/or volumes:

- $i_{100-yr} = 0.8$  in/hr.
- $i_{10-yr} = 0.6$  in/hr.

## 5.2 Storm Water Peak Flow Equations

Based on the small drainage areas of the potential sub- areas associated with the landfill cover, the rational method was used to determine the peak discharge of the design storm events. The following equation represents the Rational Formula:

$$Q_p = CiA \quad (5)$$

Where:

- $Q_p$  = peak discharge in cubic feet per second (cfs)
- $C$  = runoff coefficient (dimensionless)
- $i$  = rainfall intensity (in/hr)
- $A$  = watershed area (acres)

Use of the Rational Method is limited to drainage areas less than 200 acres. The following are the basic assumptions for using the Rational Equation:

- The rainfall intensity must be constant for a time interval at least equal to the time of concentration for the drainage basin. The intensities stated in Section 2.1 will be used in all calculations.
- The runoff is a maximum when the rainfall intensity lasts as long as the time of concentration.
- The runoff coefficient ( $C$ ) is constant during the storm volume. The runoff coefficient used for the rational equation is based on factors including type of soil, slope, and vegetation.
- The watershed area ( $A$ ) does not change during the storm.

## 5.3 Erosion Control Features and Construction Practices

### 5.3.1 Conveyance Channels

Conveyance channels will be constructed to convey the storm water to the sediment catch basins in as little time as possible. Conveyance channels will convey the 100-year storm event in the main channel. Conveyance ditches will be rip-rap lined at all locations where the slope exceeds 10%. Maximum allowable velocities for rip rap-lined

channels on steep slopes range between 9 ft/s and 11 ft/s. Maximum allowable velocities for grass-lined channels on flat to moderate slopes range from 4 ft/s to 6 ft/s.

### **5.3.2 Revegetation**

An important component of erosion control is establishing vegetation as quickly as possible. The seed mix will include native species as well as strong-establishing, introduced species, primarily crested wheatgrass, and sheep fescue. Broadcast seeding followed by a chain harrow to loosen the topsoil and lightly cover the seeds is recommended. Seeding will be done in the fall or spring, to take advantage of cooler temperatures and increased precipitation.

## **6.0 CONCLUSION**

This Preliminary Operations Plan for the CCR ponds at Naughton Power Plant details the layout, CCR deposition, construction, and waste material re-use for the projected life of the Plant. The phased approach outlined in this plan provide logical and cost effective methods for disposing of the CCR generated during daily operations.

A major component of the Operations Plan is the interim cover for both the North and South CCR Ponds. The interim covers are important and necessary features that are designed to minimize fugitive dust, create access for construction and maintenance, and provide an adequate base for the final ET cover construction. By implementing the Operations Plan, the following goals can be achieved:

1. Reduce and/or eliminate fugitive dust from the dried CCR surface.
2. Provide orderly filling of designed cells.
3. Maximize CCR disposal volumes.
4. Provide a timely solution to multiple closure issues.
5. Provide uninterrupted Plant operation.
6. Provide an orderly and effective closure of both CCR ponds.
7. Minimize infiltration of precipitation.
8. Minimize long-term maintenance.
9. Establish a cover that looks and functions like surrounding landscapes including slopes, rocks, and vegetation.

This Operations Plan is designed to serve as a guidance document for the future activities planned for the Naughton Power Plant. The plans, designs, and calculations presented in this plan are based on the best available data, and should be amended when/if better data becomes available as required by regulatory changes. The Figures presented are for planning purposes and not intended to be used as construction documents.

## **APPENDIX A**

### **Figures**

**Figure SP-1 – South Pond Site Plan**

**Figure SP-2 – South Pond, Dust Control Plan**

**Figure SP-3 – South Pond, Typical Section**

**Figure SP-4 – South Pond, Section 2+00**

**Figure NP-1 – North Pond Site Plan**

**Figure NP-2 – North Pond, Interim Closure Plan**

**Figure NP-3 – North Pond, Final Closure Plan**

**Figure NP-4 – North Pond, Final Closure Plan**

**Figure D-1 – Collection Ditch Detail**

**Figure D-2 – Operations Plan**

**Figure D-3 – Ditch Detail**

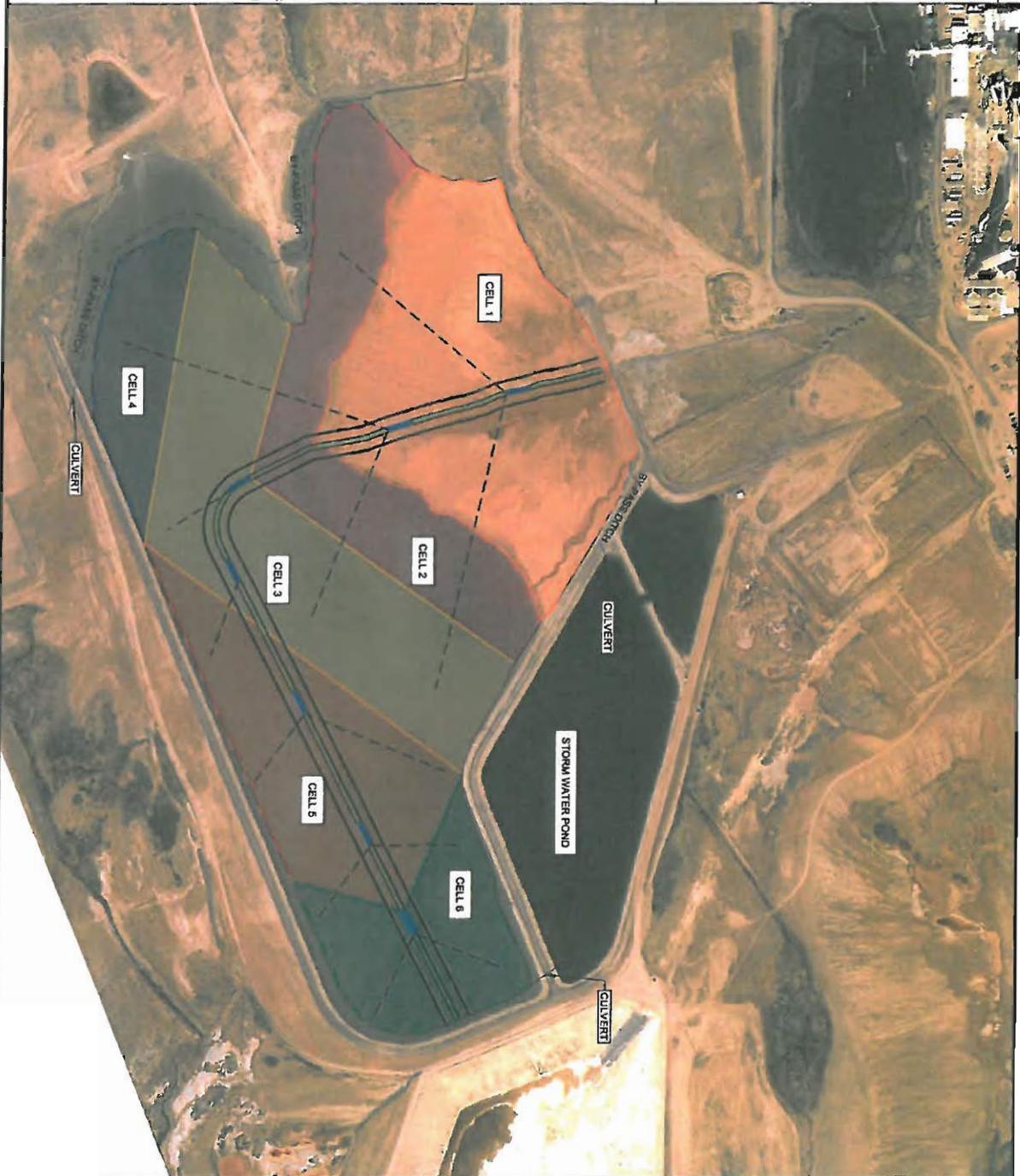
**Figure D-4 – By-Pass Detail**

LEGEND

- Temporary Slurry Ditches
- Slurry Conveyance Ditch
- Golden Ash Collection Areas
- Runoff Collection Ditches
- By-Pass Ditches

GENERAL NOTES

1. Cell life calculations assume a fill rate of 80,000 cubic yards per year.
2. Cell 1 is 19 acres with a capacity of 0.37 million BCY ±. Expected life is approximately 12 years.
3. Cell 2 is 23 acres with a capacity of 1.0 million BCY ±. Expected life is approximately 8 years.
4. Cell 3 is 7 acres with a capacity of 0.07 million BCY ±. Expected life is approximately 0.8 years.
5. Cell 4 is 17 acres with a capacity of 0.17 million BCY ±. Expected life is approximately 0.8 years.
6. Cell 5 is 17 acres with a capacity of 0.40 million BCY ±. Expected life is approximately 4 years.
7. Total life expectancy for Cells 2-5 is 28 years.
8. The slurry conveyance ditch is a 42" half section of HDPE pipe set at an average grade of 0.07%. Clearing vehicles in the HDPE channels are expected to be 6' wide. See Detail D-2 for channel details. Temporary ditches could span slurry from the pond to the stormwater pond where needed. See Detail D-3 for temporary channel details.
9. Bypass ditches route off-site storm water around the closed landfill cells and are not installed until cells are closed.
10. Collection ditches route runoff from closed landfill cells to the stormwater pond. See Detail D-1.



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 DATE: 6/20/12  
 DESIGNER: BAS  
 CHKD BY: SA

SCALE 1" = 400'

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PRELIMINARY CCR PONDS CLOSURE PLAN  
 SOUTH POND OPERATIONS PLAN

**SOUTH POND SITE PLAN**

KEMMERER, WY

SHEET 1 of 12  
**SP-1**

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LEGEND

Class Section Line  
 BY-PASS DITCH

GENERAL NOTES

1. Cell boundaries depend on the point with vary and are dependent upon equipment access.
2. Monomer will be applied as a temporary fugitive dust control measure where bottom ash cannot be spread.
3. Bottom ash will be transported by conveyor to the bottom powered scrapers equipped with high traction tires or other devices by equipment.
4. Cell boundary conditions may vary due to equipment access. Volumes are based off of the assumption that 8-12" of bottom ash is spread across the entire cell area.



May 2012 W.E.  
 6385.00

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SCALE 1" = 150'

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NAUGHTON POWER PLANT  
 CELL 1 DUST CONTROL PLAN

**DUST CONTROL PLAN**

KEMMERER, WY

SHEET  
 2 of 12

**SP-2**

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W. Revision/Issue Date

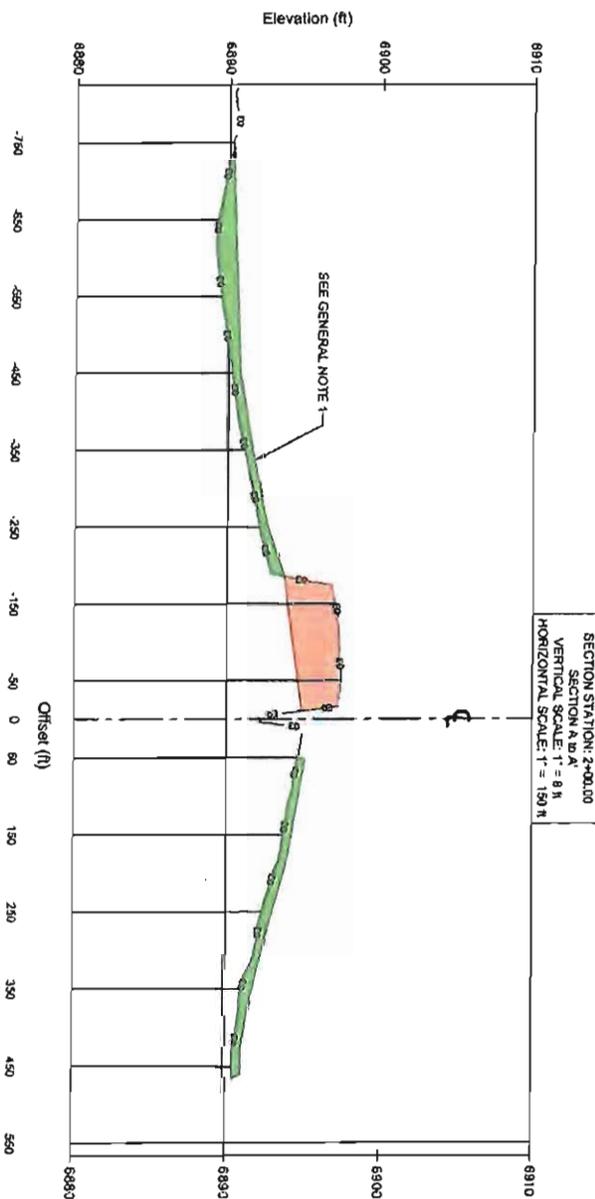
**PRELIMINARY NOT FOR CONSTRUCTION**

LEGEND

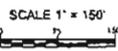
-  Existing Grade
-  - CUT AREA
-  - FILL AREA

GENERAL NOTES

1. Bottom ash cover values between 6 and 12 inches thick.
2. As to 2-inch thick rebar and layer will be added as needed, to establish vegetation to minimize dust.



JOB # PERC33  
 DATE: 6/20/2012  
 DESIGNER: BAS  
 CHK'D BY: SA



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NAUGHTON POWER PLANT  
 South Pond Dust Control Plan

TYPICAL SECTION

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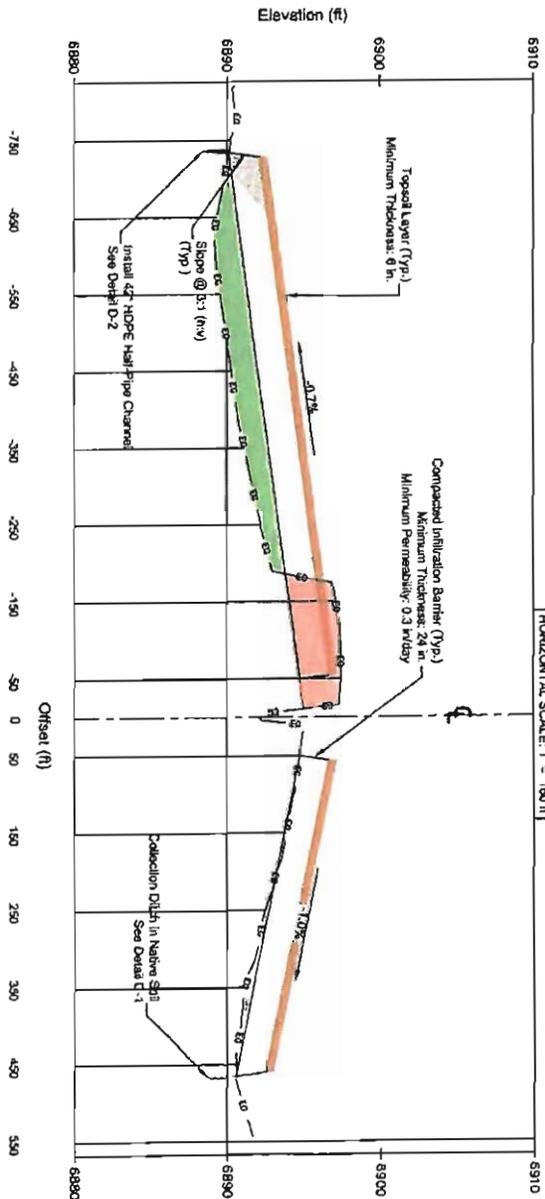
SHEET  
 3 of 12

SP-3

**LEGEND**

-  Sinks Water Bypass Ditch
-  Station Line
-  Slurry Conveyance Channel
-  Existing Grade
-  24" CAP
-  6" Top Soil
-  CUT AREA
-  FILL AREA

**GENERAL NOTES**



JOB # PERCM33  
DATE: 6/20/2012  
DESIGNER: BAS  
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SCALE 1" = 150'

**SP-4**  
SHEET 4 of 12  
NAUGHTON POWER PLANT  
South Pond Final Closure Section  
**SECTION 2+00**  
KEMMERER, WY



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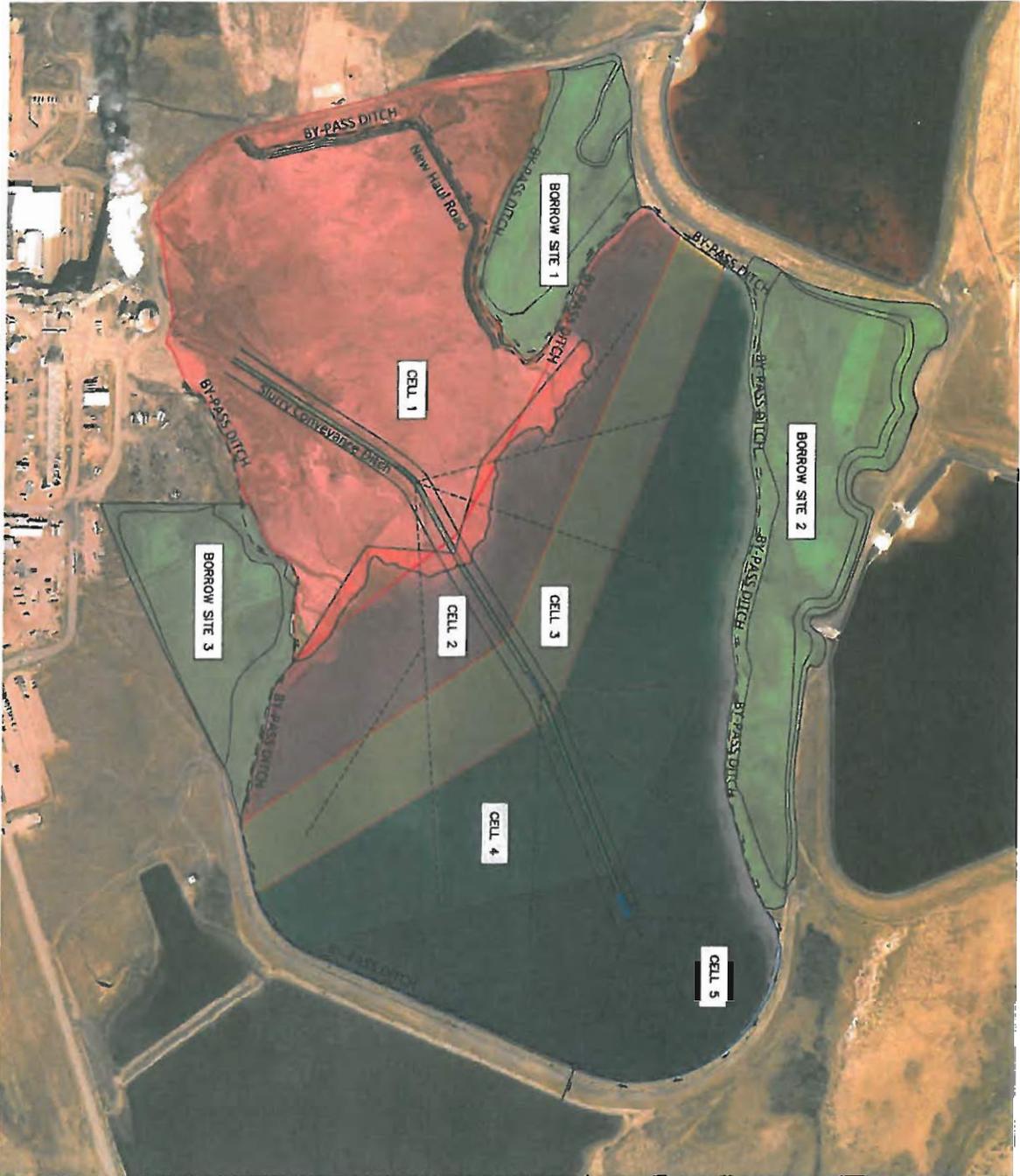
<b>PRELIMINARY NOT FOR CONSTRUCTION</b>		
No.	Revision/Issue	Date

LEGEND

- Sturry Conveyance Channel  
(See detail Sheet D-2)
- Temporary Ditch  
(See detail Sheet D-1)
- Surface Water By-Pass Ditch
- Bottom Ash Collection Area

GENERAL NOTES

1. Cell life calculations assume a fill rate of 77,000 cubic yards per year.
2. Cell 1 is 82.7 acres with approx. 0.59 million BCY.
3. Cell 2 is 21.6 acres with a capacity of 0.40 million CY & expected life is approximately 5 years.
4. Cell 3 is 20.0 acres with a capacity of 0.46 million CY & expected life is approximately 6 years.
5. Cell 4 is 34.5 acres with a capacity of 0.86 million CY & expected life is approximately 11 years.
6. Cell 5 is 28.4 acres with a capacity of 0.26 million CY & expected life is approximately 6 years.
7. Total life expectancy for Cells 2-5 is 27 years total.
8. Borrow Site 1 is 10.4 acres
9. Borrow Site 2 is 24.0 acres
10. Borrow Site 3 is 11.5 acres



JOB # PERC33  
 DATE: 8/1/2012  
 DESIGNER: KP  
 CHK'D BY: SA

SCALE 1" = 400'

NAUGHTON POWER PLANT  
 PRELIMINARY CCR PONDS CLOSURE PLAN  
 NORTH POND SITE PLAN  
 KEMMERER, WYOMING

NP-1  
 SHEET 5 of 12

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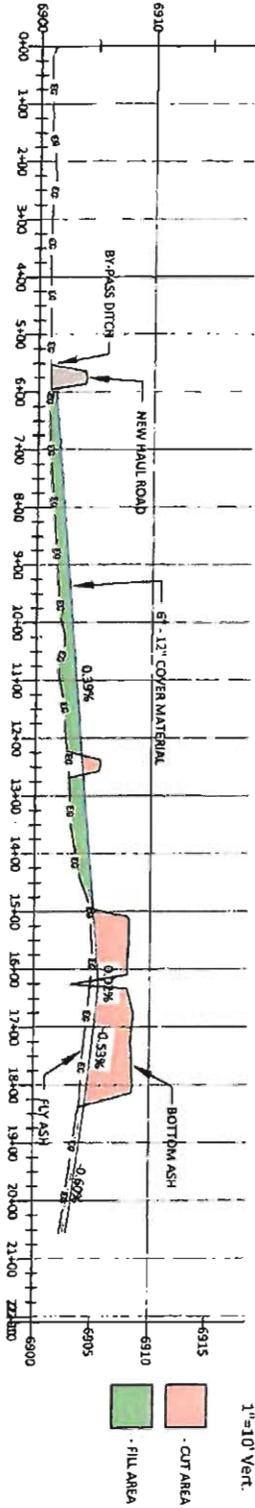
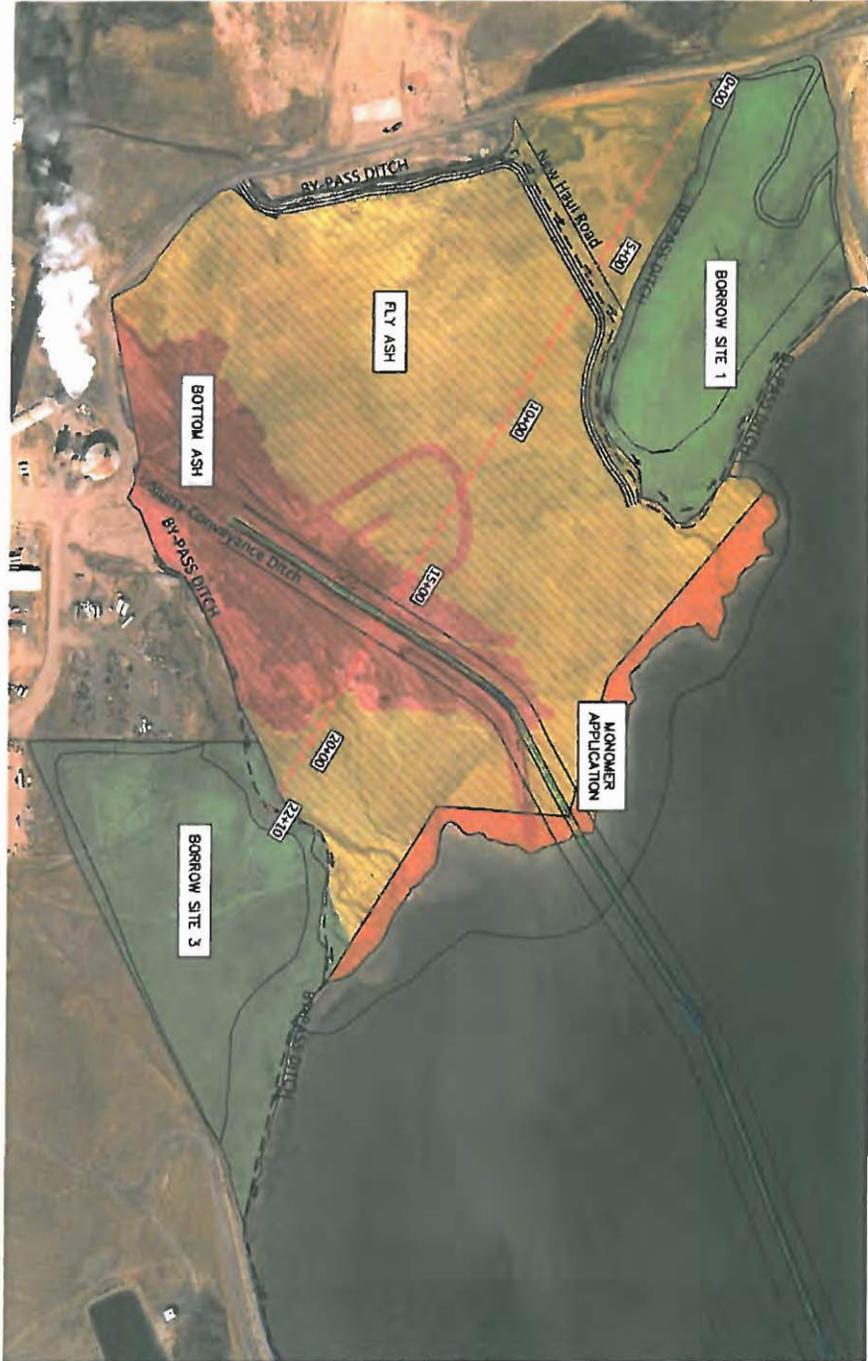
No.	Revision/Issue	Date

**LEGEND**

- Slurry Convergence Channel  
(See detail Sheet D-2)
- - - Temporary Ditch  
(See detail Sheet D-1)
- - - Surface Water By-Pass Ditch
- Bottom Ash Collection Area
- INTERIM COVER AREA
- FLY ASH
- BOTTOM ASH
- BORROW AREA
- MONOMER AREA

**GENERAL NOTES**

1. Fly Ash - 51.8 acres, Approx. 0.58 million BCY
2. Bottom Ash - 12.3 acres, Approx. 0.048 BCY
3. Interim Cover Area - 4.8 acres
4. Approximate Monomer Application area - 3.7 acres



Profile Scale  
1"=200' HOR.  
1"=10' VERT.

SHEET  
8 of 12

**NP-2**

JOB # PERC33  
DATE: 8/1/2012  
DESIGNER: KP  
CHKD BY: SA

SCALE 1"=300'



NAUGHTON POWER PLANT  
PRELIMINARY CCR PONDS CLOSURE PLAN  
**NORTH POND  
INTERIM CLOSURE PLAN**  
KEMMERER, WYOMING

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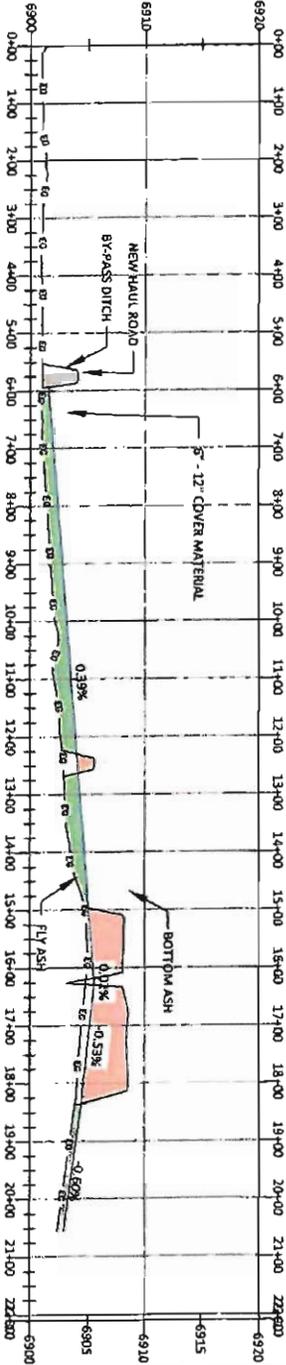
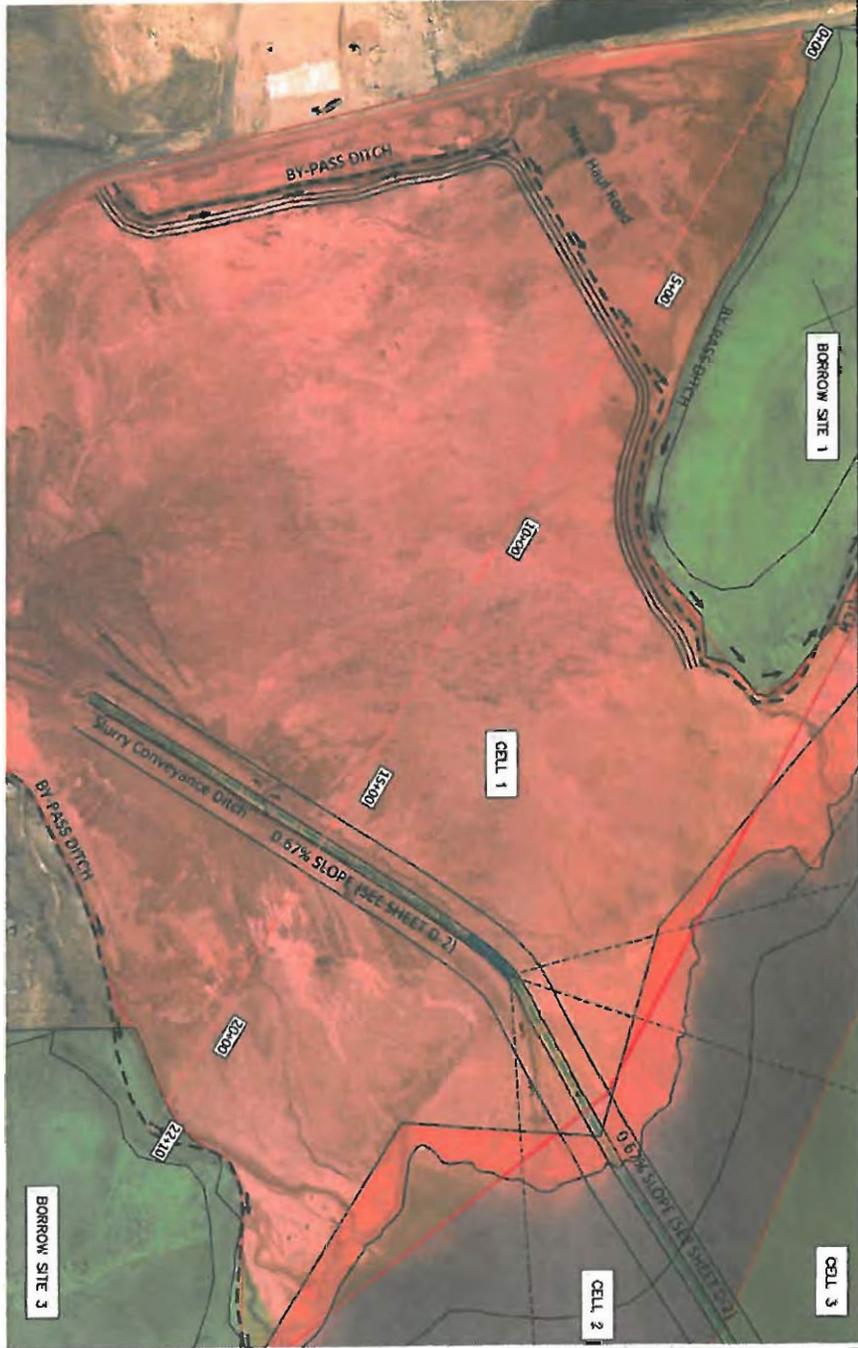
No.	Revision/Issue	Date

**LEGEND**

- Slurry Conveyance Channel (See detail Sheet D-2)
- Temporary Ditch (See detail Sheet D-1)
- Surface Water By-Pass Ditch
- Bottom Ash Collection Area
- CUT AREA
- FILL AREA

**GENERAL NOTES**

Profile Scale  
 1" = 200' Hor.  
 1" = 10' Vert.



**JOB # PERCMA3**  
 DATE: 8/1/2012  
 DESIGNER: KP  
 CHKD BY: SA

SCALE 1" = 200'

**NP-3**

NAUGHTON POWER PLANT  
 PRELIMINARY CCR PONDS CLOSURE PLAN  
 NORTH POND  
 FINAL CLOSURE PLAN  
 KEMMERER, WYOMING

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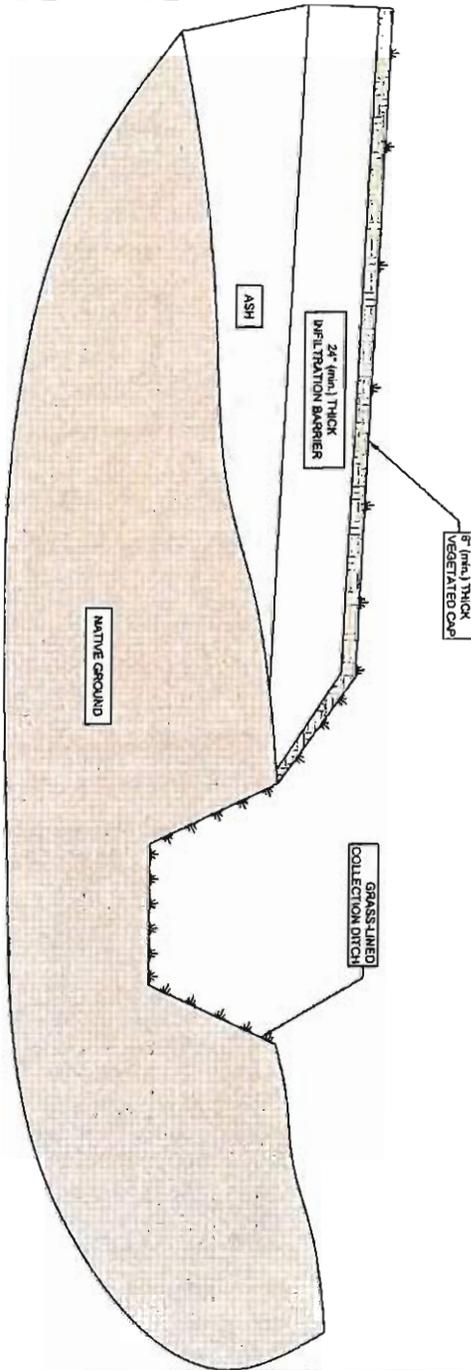
No.	Revision/Issue	Date
<b>PRELIMINARY NOT FOR CONSTRUCTION</b>		



LEGEND

GENERAL NOTES

1. Chain staking to be determined by engineer prior to construction.



JOB # PERC/M33  
 DATE: 6/20/2012  
 DESIGNER: BAS  
 CHKD BY: SA

NOT TO SCALE

9 of 12 SHEET

**D-1**

NAUGHTON POWER PLANT  
 FINAL COVER PLAN  
**COLL. DITCH DETAIL**  
 KEMMERER, WY

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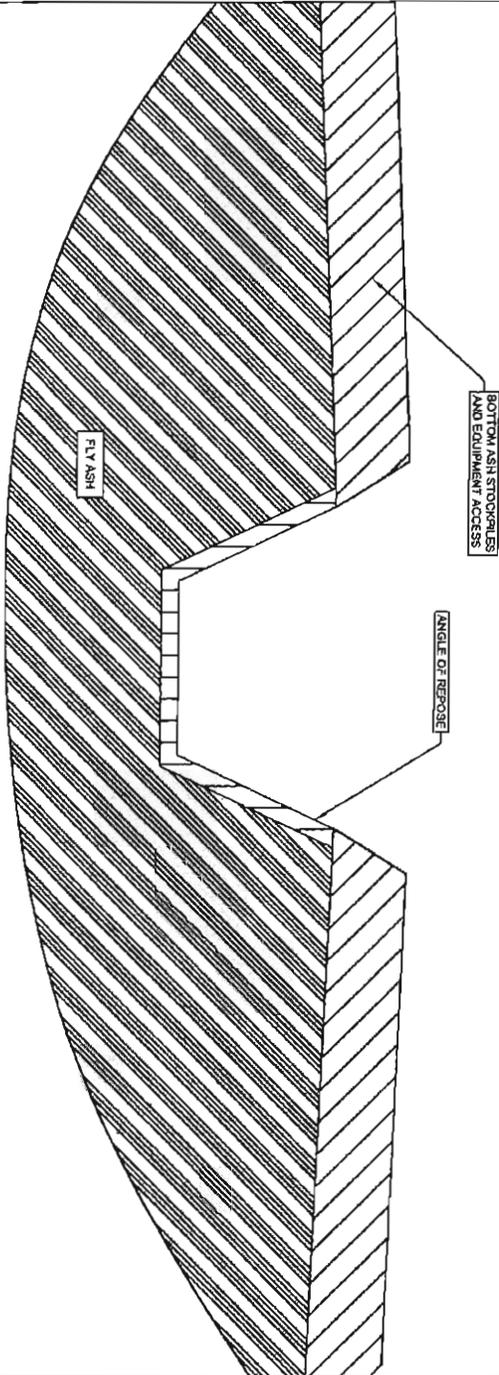
No.	Revision/Issue	Date



LEGEND

GENERAL NOTES

1. Push bottom ash from bottom ash collection areas to the desired location at the pond edge.
2. Dig temporary ditch back to bottom ash collection area from pond edge.
3. Bottom ash thickness will vary as needed.



JOB # PERC/M33  
 DATE: 6/20/2012  
 DESIGNER: BAS  
 CHK'D BY: SMA

NOT TO SCALE

11 OF 12 SHEET

**D-3**

NAUGHTON POWER PLANT  
 TEMPORARY DITCH DETAIL

**DITCH DETAIL**

KEMMERER, WY

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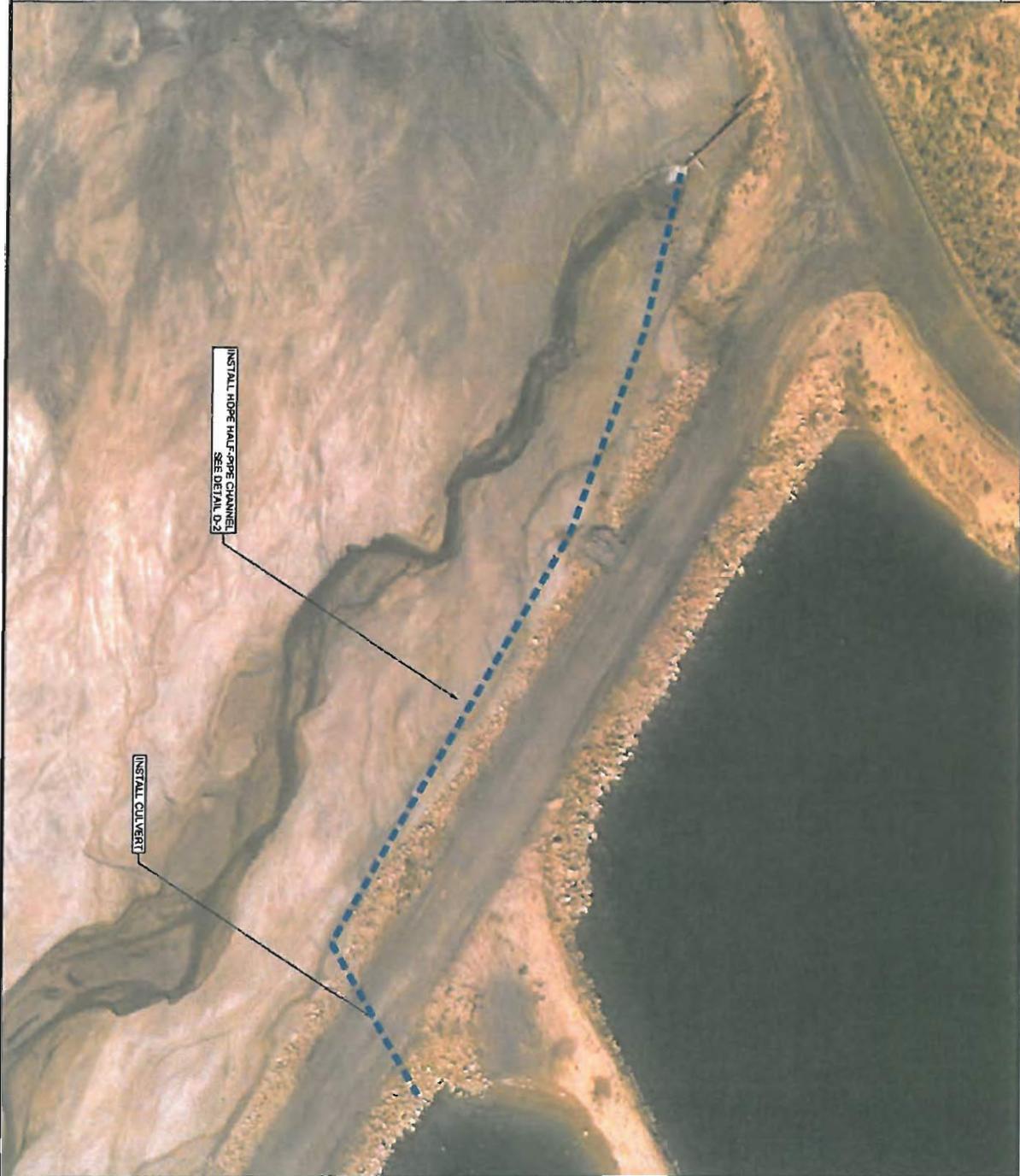
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PRELIMINARY  
 NOT FOR  
 CONSTRUCTION

GENERAL NOTES

1. Install 360 ft of HDPE half pipe channel. String to be determined by engineer and plant operations department.
2. Install 70 ft of C&P or equivalent culvert. String to be determined by engineer.



JOB # PERCM33  
 DATE: 6/20/2012  
 DESIGNER: BAS  
 CHKO BY: SMA

SCALE 1" = 40'

SHEET 12 OF 12

**D-4**

NAUGHTON POWER PLANT  
 SOUTH POND BY-PASS DETAIL  
**BY-PASS DETAIL**  
 KEMMERER, WY

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