January 11, 2013

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

Subject: Naughton Power Plant January 11, 2012 Wind Event Report

Dear Mr. Murdock:

On January 11, 2012, the Naughton Power Plant PM_{10} monitoring location recorded an ambient 24-hour PM_{10} concentration that exceeded the 24-hour PM_{10} National Ambient Air Quality Standard (NAAQS) and Wyoming Ambient Air Quality Standard (WAAQS) of 150 $\mu g/m^3$. 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.

Monitoring Station

PacifiCorp operates an instrumented 50-meter meteorological tower and a continuous Met One Beta Attenuation Mass (BAM) PM_{10} 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_{10} monitoring location.

Figure 1 – Location of Naughton Power Plant Monitoring Stations

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The BAM is an EPA Federal Equivalent Method for measuring PM_{10}. Hourly concentrations of PM_{10} are output by the BAM. The BAM has an hourly measurement range of 0 to 1,000 $\mu g/m^3$. 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 $\mu g/m^3$, instead of 0 to 1,000 $\mu g/m^3$. 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 11, 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 9.0 meters per second (m/s) or 20.1 miles per hour (mph) with a maximum one-hour average wind speed of 13.4 m/s (30.0 mph) with gusts to 18.6 m/s (41.6 mph). Periods with the highest wind speeds during the day were recorded from 2:00 through 5:00, and from 10:00 through 18:00.

Winds were primarily out of the west-northwest and northwest with directions ranging from 280 to 335 degrees from true north. Concurrent with the wind event, PM_{10} concentrations measured by PacifiCorp's BAM at the Naughton Power Plant recorded a 24-hour average concentration of 313 $\mu g/m^3$. PM_{10} concentrations were highest from 3:00 through 5:00, and from 12:00 through 17:00. The maximum one-hour concentration for January 11 was 985 $\mu g/m^3$ which occurred at 3:00, 4:00, 12:00, 13:00, 15:00, and 16:00. Figures 2 and 3 present the wind speed and PM_{10} data leading up to and including the PM_{10} exceedance measured on January 11th.

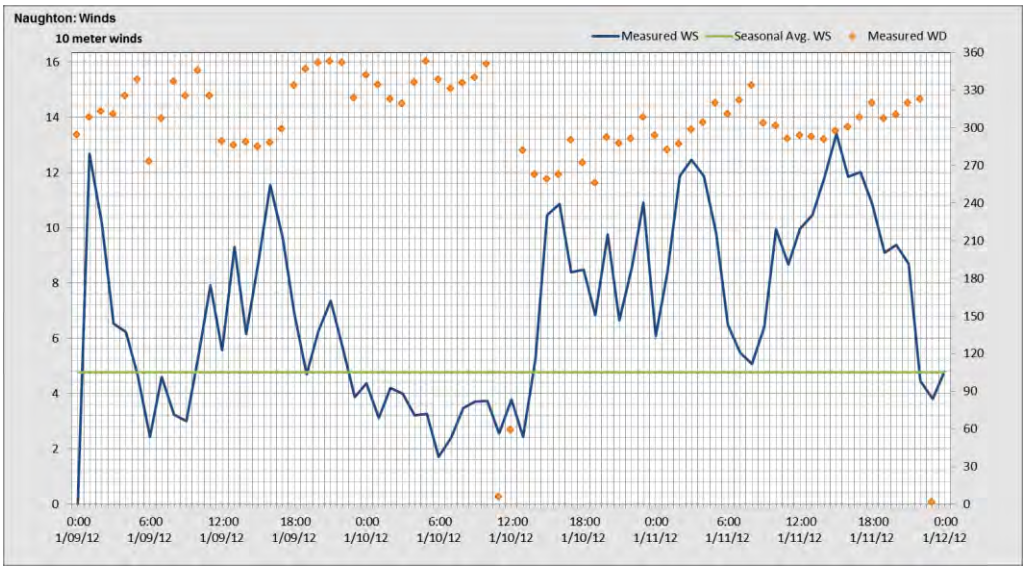

Figure 2 – Wind Speeds Leading Up To and Including January 11th PM_{10} Exceedance

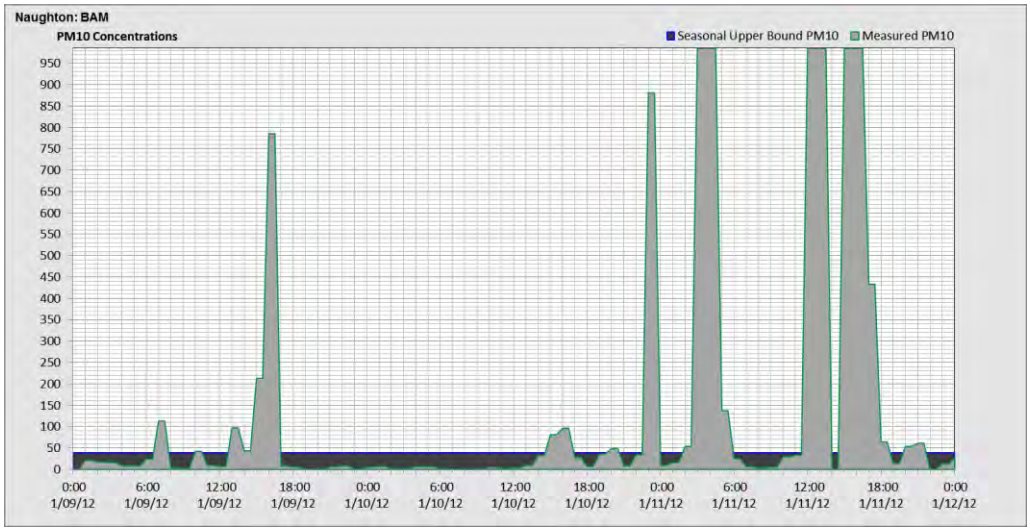

Figure 3 - PM_{10} Concentrations from January 9 through January 11, 2012

Figure 4 presents a comparison of the windrose for January 11 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 11, 2012 wind event were from the west-northwest and northwest. This corresponds to the predominant January wind direction.

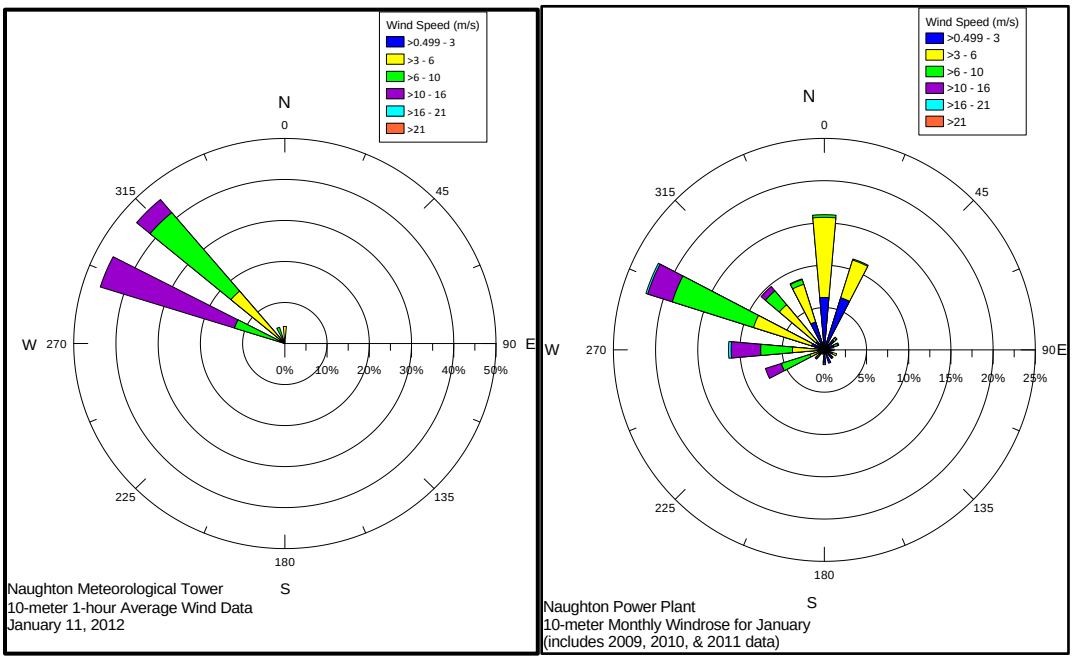

Figure 4 - Comparison of January 11 to Average January Windrose

To understand the source(s) that are possibly contributing to the PM_{10} exceedance, the wind rose for January 11 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.

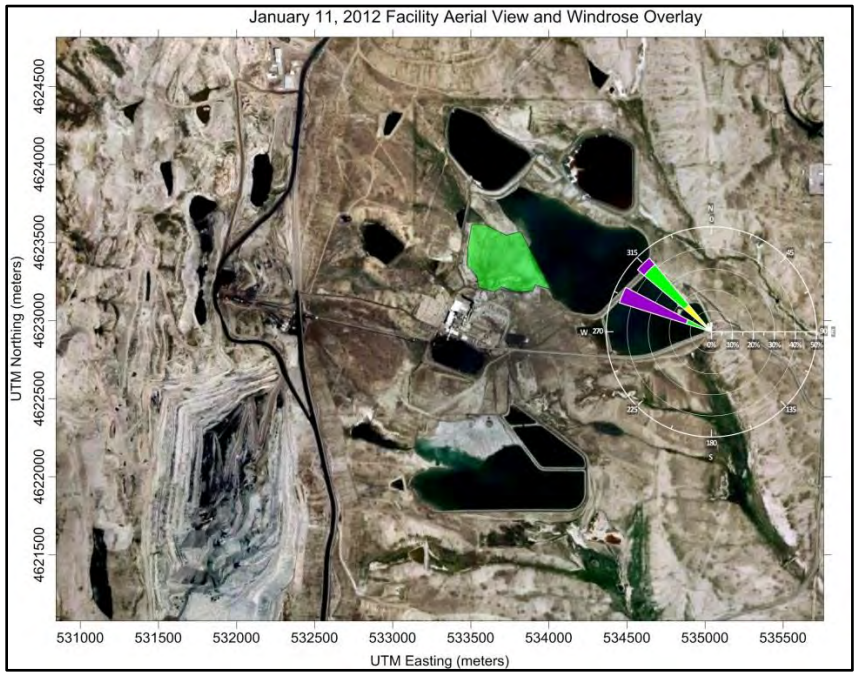

Figure 5 – Facility Map with January 11, 2012 Windrose Overlay

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

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 constructed of compacted clay (Figure 6). Water levels are maintained through decant, drop inlet structures, and reuse of the clear water for sluicing ash from the plant.

Figure 6 – Ash Pond Dike System

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 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 3,754acre-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 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 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 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_{10} 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 $\mu g/m^3$ for PM_{10}.

Table 1 presents hourly wind speed, wind gust, and PM_{10} data measured on January 11th. Based on Table 1, the average wind speed for January 11 was 9.0 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 11, 2012

Hour	Wind Speed (m/s)	Wind Gust (m/s)	PM_{10} ($\mu g/m^3$)
1:00	8.40	12.21	16
2:00	11.87	16.49	54
3:00	12.45	18.51	985
4:00	11.87	18.60	985
5:00	9.80	14.65	137
6:00	6.48	11.41	25
7:00	5.47	9.20	6
8:00	5.07	9.16	3
9:00	6.43	11.03	5
10:00	9.95	12.96	29
11:00	8.68	12.12	33
12:00	9.97	13.71	985
13:00	10.47	15.64	985
14:00	11.77	16.86	Missing
15:00	13.41	17.38	985
16:00	11.85	16.96	985
17:00	12.01	17.33	433
18:00	10.86	14.75	64
19:00	9.10	12.68	14
20:00	9.39	13.43	54
21:00	8.71	13.06	61
22:00	4.48	10.00	Missing
23:00	3.80	7.28	12
24:00	4.79	7.51	27

Two hours (14:00 and 22:00) of PM_{10} data were invalidated on January 11th. At 14:00, a site technician had stopped the sample to check on status codes output by the BAM. Status codes are output by the BAM if sensors inside the BAM detect an issue. A status code of P (Pressure Drop Excessive) was observed in the 13:00 sample and consequently the technician verified there wasn't a greater issue with the BAM. At 22:00, there was a power failure in the monitoring shelter which caused the sample to terminate.

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_{10} data collected at the Naughton PM_{10} monitor during the 2009 through 2011 winter air quality season (December, January and February). The upper bound of the standard deviation is 38.5 $\mu g/m^3$ and the mean concentration is 18.3 $\mu g/m^3$. The upper bound value is plotted in Figure 3 and shows elevated PM_{10} concentrations correlate well with the elevated wind speeds on January 11. This suggests that the wind event has a causal relationship between the specific event and the monitored concentration and shows the January 11 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 11 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 26075579) and water truck logs. The order form details documentation for dust suppression on Plant roads for the week of January 8, 2012 through January 14, 2012. The order form and water truck logs indicate road watering activities were conducted on January 11th from 8:00 to 11:00 on ponds for Unit 1 and Unit 3 as well as the coal pile and from 14:00 to 15:00 on the ash ponds. Watering was also conducted on January 12th from 8:00 to 9:30 on the ash ponds and dirt road and from 10:30 to 11:30 on the south ash pond and coal pile. On January 11th, water application logs show 20,000 gallons of water were applied to roads and ponds. 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 11, 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 operating normally and the coal pile transfer chute was in contact with the pile to limit fugitive dust. The operator that completed the checklist indicated that there was no observed fugitive dust from the coal pile, exposed aprons on ponds or other fugitive dust problems.

Documentation provided in Attachment E are two shift supervisor logs and the Naughton Control Room Operator Log from January 11, 2012. The operator logs documented that the PM_{10} concentrations exceeded 150 $\mu g/m^3$ at 3:00 (996 $\mu g/m^3$), with a PM_{10} alarm observed at 22:00. The control room obtains its PM_{10} 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 $\mu g/m^3$. The operator log includes a note on the 3:00 observation that the operator called the mine to stop coal pile activity which includes turning off the mine belt and removing the caterpillar from the coal pile.

As part of the Fugitive Dust Compliance Plan, dust sealants and suppressants were applied to the north and south ash pond aprons as a proactive measure for dust suppression within the past seven months. 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. 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 7 presents photographs showing WRR applying sealant to the ash pond aprons.

Figure 7 - ATV Sealant Application

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 which has caused access issues to certain areas of the ash pond aprons (Figures 8 & 9). 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. Even when smaller/lighter equipment is used (Figure 7) these is still a possibility of equipment to get stuck. The photograph on the right shows the ATV leaving ruts in the apron.

Figure 8 – Example of Excavator Access Issues (photo taken in 1990)

Figure 9 – Example of Water Truck Access Issues (May 2012)

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. 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 10 and 11 present an aerial view of the North and South Ash Ponds with an outline of the area accessible by water trucks. Figure 12 presents photos of cones marking the safe zone for water trucks.

Figure 10 – Accessible Area of North Ash Pond

Figure 11 – Accessible Area of South Ash Pond

Figure 12 – 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 13). 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 F).

Figure 13 – New PM Mitigation Equipment

Summary

On January 11, 2012, the 24-hour PM_{10} concentration measured at the PM_{10} monitor located on the eastern fenceline of the Naughton Power Plant was 313 $\mu g/m^3$ which is in exceedance of the NAAQS and WAAQS of 150 $\mu g/m^3$. Wind speeds measured on January 11th at the meteorological tower adjacent to the PM_{10} monitor shelter were above normal historical fluctuations. Consequently, high PM_{10} concentration measured by the BAM 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,

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Attachment A

Fugitive Dust Plan

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.

2.4 Chapter 2 of the WAQSR details the applicable ambient PM_{10} (respirable particulate) standards. The applicable PM_{10} 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_{10} 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.

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.

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.

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.

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_{10} monitoring system is conducted by the Control Emissions Process Team. System maintenance is detailed in the Environmental Monitoring QA/QC Plan. A PM_{10} signal (1EV100) is provided to the control room for data and alarming purposes. The Honeywell computer will initiate an alarm when the PM_{10} value exceeds 150 ug/m^3 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_{10} 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.

4.4 Reporting and Recordkeeping

Quarterly PM_{10} 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

PACIFICORP ENERGY
A PACIFICORP COMPANY

Order # 26075579
PM Preventive Maintenance
Priority # 3

T

Order Text: WEEKLY FUGITIVE DUST COMPLIANCE PM EOs

Func Loc:	T-1535-0-SS-RAG	**Equipment:**	GROUNDS/ROADS
Assembly:		**Tech ID #:**	N0GR
Plan Desc:	WEEKLY FUGITIVE DUST COMPLIANCE PM	**PM Plan #:**	N0GR001

Created Date:12/26/2011 Basic Start Date:01/12/2012

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

Oper **Operation Long Text**

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: 1-8 to 1-14

Area	Date Completed	Action Taken	Weather Condition	Operator Name
Dirt Roads	1-11-12	watered	windy	W. Stubbs
1ST time/week	1-11-12	watered	windy	W. Stubbs
2nd time/week	1-12-12	watered	windy	W. Stubbs
Paved Road	1-11-12	watered	windy	W. Stubbs

Envirio & Envirio

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.

PACIFICORP ENERGY
A PACIFICORP COMPANY

Order # 26075579

PM Preventive Maintenance

Completion Comments: _____

☐ Jobsite Cleaned Up

Completed By Wayne Stubbs Employee # 09207 Date 1-13-12

Reviewed By [signature] Date 1/18/12

Enviro & Enviro

Attachment A

Water Truck Log

(All dust suppression related activities must be logged)

Date	Start Time	End Time	Operator	Area Watered/Comments
1-11-12	1400	1500	W. Stubbs	Ash Ponds.
1-12-12	0800	0930	"	Ash Ponds + Dirt roads.
1-12-12	10:30	11:30	Sudonick	South Ash Pond + Coal Pile 3 Loads

When printed, this document is uncontrolled and for reference only

Attachment A

Water Truck Log

(All dust suppression related activities must be logged)

Date	Start Time	End Time	Operator	Area Watered/Comments
1-11-12	8:00	11:00	M Breese	Ponds Unit 1+3 Wind-Cold
/ \	/ \	—	/ /	Coal Pile

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: Hatch **Shifter Signature:** [illegible] **Date:** Jan/11/12

ITEM	STATUS	COMMENTS	W/O # - Corr. Action
Sewer Treatment Facility Aerators operating - See OPR-26 Sewage Aeration Sys Checks	Circle status Yes / No		
Ash Ponds			
Oil on ponds?	Yes / No		
Oil booms present?	Yes / No		
Oil booms in good condition?	Yes / No		
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.)	Yes / No		
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.)	Yes / No		
Seepage around weirs? (Check Outfalls 001 and 002 for any seepage around or under the weirs. Contact Environmental Department if any seepage identified.)	Yes / No		
North Ash pond aerators/floodlight functioning? (Winter only - If Summer, indicate in comments section.)	Yes / No / N/A		
FGD Ponds			
Bird Avert system normal? (System should activate when driving around pond, radar bar should be turning.)	Yes / No		
Birds on pond? (Notify Environmental Department of any rescued/dead/ rehabilitated birds (prior to release) - Provide detailed documentation in logbook.)	Yes / No		
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.)	Yes / No		
Liner in good shape? (Check for rips and tears. Notify Env. Department immediately if any identified.)	Yes / No		
Oil Vessels			
Leaks or spills on or around tanks / transformers?	Yes / No		

ITEM	STATUS	COMMENTS	W/O # - Corr. Action
Storm Water			
Secondary containment devices checked for oil sheen?	Yes / No		
Is there any potential for storm (runoff) water to be contaminated at the landfill, reclaimed pond, boneyard, switchyard (outside of fence) or scrap yard?	Yes / No		
Any signs of erosion? (Document location and notify Env. Department.)	Yes / No		
Is there an potential for leaks or spills to occur in the landfill, reclaimed pond, boneyard, scrapyard, or outside of swtichyard fence from stored equipment or parked vehicles that could leak oil or other fluid in these sensitive areas	Yes / No		
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		
Landfill			
Gate locked and secure?	Yes / No		
Litter outside fenced area?	Yes / No		
Fugitive Dust			
Ash silo operating normally? (No blowing/exhausting dust, fly ash on road, etc.)	Yes / No		
Coal pile transfer chute contacting pile? (Chute skirting should be in contact with coal pile.)	Yes / No		
Dust from coal pile?	Yes / No		
Dust from exposed aprons on ponds?	Yes / No		
Other fugitive dust problems? (Roads, soil piles, landfill, etc.)	Yes / No		

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

Start: 01/11/12 06:00 (Wed)
End: 01/11/12 18:00 (Wed)

Date: 1/11/12

Shift: Days

Shift Supervisor: Nishi

	Unit-1	Unit-2	Unit-3
CRO	Webster	Webster	Backmn
PO/JMO	Larsen	Halls	Haws
Outside	Hatch		
Scrubber	Anglen	Shift Mechanic :	Moretti
Lab	Barnes	Shift Electrician :	Bishop
Eq Op	Sudonick		

Employee's Absent & Coverage:

	Cover Person:	
	Cover Person:	
	Cover Person:	
	Cover Person:	
	Cover Person:	

Readings are at 06:00.

Condensate Tank Levels (inches):

Tank 1-1	247
Tank 1-2	247
Tank 2-1	227
Tank 2-2	232
Tank 3-1	252.2
Tank 3-2	252.5
Tank 3-3	156.8

Scrubber Readings:

A side diff psi	5.3
A side inlet psi	6.3
B side diff psi	4.3
B side inlet psi	5.0
SO2	0
Sulfur Tank Level	46

	Unit-1	Unit-2	Unit-3	
Load	156	202	346	Net MW's
Opacity	10.0	5.3		6-min
NOx	0.6	0.2	0.4	Instantaneous
Boiler pH	9.5	9.2	9.1	Drum
	Condensate Filter Diff. Pressure		1.5	

Environmental Log/Checks:

Air:		Other:	
Opacity Exceedances :	No	Spills Reported :	No
SO2 Exceedances :	No	FGD Pond pH Issues :	No
NOx Exceedances :	No	Bird Avert Issues :	No
CEM Issues :	No	Ash Pond Issues :	No
PM10 Alarms :	No	Stormwater Issues :	No
CAM Excursions :	No		
Fugitive Dust Issues :	No	Other Env Problems :	No
Baghouses Off/Issues :	No		
Benetech System Off :	No		

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

Restrictions/Outages

Unit #	Description/Notes	Net MW's Avail.	Time Off/On
1	valves wide open	157	
2	None	206	
3	None	330	

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
	****** 1/11/12 ******
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 sofa damper. Please leave these in hand per Kurt Ashworth..
07:00	Held daily tailboard meeting. Discussed Hazard Recognition. Discussed 1-2 APH coupling repairs.
08:50	Unit 1 boiler 2 & 3 dirty blew. A row ight buildup, B row spotty with thick buildup, C row clean. Unit 2 boiler C row light builup. Unit 3 2 & 3 dirty blew. Rest of boiler is clean.
09:00	Make sure to check the pay sampler buckets are not full when taking coal. Check the buckets at midnight to make sure.
09:15	3-3 CT fan is out to the mechanics to change the pitch of the blades because of the fan tripping out.
12:41	Started back 3-3 cooling tower fan
14:03	Burning gas on unit 1 from 0610 to 1403 due to high SO2
14:05	1-6 FWH emergency drain is open 30 % at 175 gross.
16:21	At 0812 unit 3 sulfur system was placed back in service p/Cartwright
16:24	JMO had to remove tube sheild from unit 1-1 bottom ash clinker grinder.

SHIFT SUPERVISOR LOG
NAUGHTON PLANT

Start: 01/11/12 18:00 (Wed)
End: 01/12/12 06:00 (Thu)

Date: 1/11/12 Shift: Nights

Shift Supervisor: Small

	Unit-1	Unit-2	Unit-3
CRO	Garrett	Garrett	Hillstead
PO/JMO	Jones/Burdess	Anderson	Sheets
Outside	Lewis		
Scrubber	Combs	Shift Mechanic :	Fonnesbeck
Lab		Shift Electrician :	
Eq Op	Liundell		

Employee's Absent & Coverage:

	Cover Person:	
	Cover Person:	
	Cover Person:	
	Cover Person:	
	Cover Person:	

Readings are at 18:00.

Condensate Tank Levels (inches):

Tank 1-1	247
Tank 1-2	247
Tank 2-1	244
Tank 2-2	248
Tank 3-1	264.2
Tank 3-2	264.5
Tank 3-3	163.6

Scrubber Readings:

A side diff psi	5.2
A side inlet psi	6.5
B side diff psi	4.4
B side inlet psi	5.4
SO2	0
Sulfur Tank Level	45

	Unit-1	Unit-2	Unit-3	
Load	158	207	348	Net MW's
Opacity	11.1	5.4		6-min
NOx	0.6	0.2	0.4	Instantaneous
Boiler pH	9.5	9.2	9.2	Drum
	Condensate Filter Diff. Pressure		1.5	

Environmental Log/Checks:

Air:		Other:	
Opacity Exceedances :	No	Spills Reported :	No
SO2 Exceedances :	No	FGD Pond pH Issues :	No
NOx Exceedances :	No	Bird Avert Issues :	No
CEM Issues :	No	Ash Pond Issues :	No
PM10 Alarms :	No	Stormwater Issues :	No
CAM Excursions :	No		
Fugitive Dust Issues :	No	Other Env Problems :	No
Baghouses Off/Issues :	No		
Benetech System Off :	No		

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

Restrictions/Outages

Unit #	Description/Notes	Net MW's Avail.	Time Off/On
1	valves wide open	158	
2	None	206	
3	None	330	

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
	****** 1/11/12 ******
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 Crew Meeting, discussed the 2-2 ID fan vibration and night orders that were put out while we were off.
21:00	3-5 mill exhauster has excessive vibration, I have called the Dispatcher and Val said we should be able to get it out tonight.
22:00	PM10 1 hour ave. alarm is in, I checked the web page and it looks like it will clear the next hour.
22:47	Val called, she is dispatching #3 Unit down 70 MW. We will take the restriction once the mill is tagged out. I have called Paul Stewart and he will come out and assist Bubba.
23:00	PM10 alarm has cleared
	****** 1/12/12 ******
00:25	#3 Unit is restricted 50 MW to balance the 3-5 exhauster.
03:40	3 -5 mill exhauster is balanced, some of the ceramic has came off the blades, the mechanics had to add over 6 lbs of weight.
03:45	1-6 emergency drain 40% open at 170 MW

Naughton Control Room Operator Log

Control Room Oper: Humpherys
Shift Supervisor: Cornia
Plant Operator : Cayland
Scrub. Operator:

Date: 1/10,11/12

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

Unit Load 160 MW Net CBD_____ Turns Cond. Tanks - 225 - 226 - ____ -
Environmental Exceedances: Drum pH 9.5
Restricitions:_____ MW Reasons:
Restricitions:_____ MW Reasons:
Equipment Problems: #1 Air Comp O/S
1-2 Cond Pump - emerg use
Aux steam v/o 8th floor

Shift Details: 21:20 drop load per/val disp
- taking 1-2 APH out to add oil to
- fluid coupling - 1-1 mill out 80 Net
- Hi OPACITY could not take out
22:15 - 1-2 APH has magnetic coupling Not fluid - Call disp
22:26 - 1-1 mill in service 1-4 mill out to
- fix coal leak raised load to 95 net
2300 - PM 10 in Alarm - wind 20mph
0300 - PM10 in Alarm 996 wind 40mph
- Called mine stopped coal pile activity
0130 - Raised to full load per disp
06:10 Gas Guns in Hi SO2

Tagouts Issued	Time Issue	Time Returned

Notifications Written: W/O #

Boiler Condition:
Superheat Section: OK
A OK
B OK
C OK

Unit 1 2 3 (Circle) Date: 1/10,11/12 CRO / PO Signature J Humphe

Naughton Control Room Operator Log

Control Room Oper: Webster
Shift Supervisor: Nishi
Plant Operator : Larsen
Scrub. Operator:

Date: 1/11/12

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

Unit Load 160 MW Net CBD_____ Turns Cond. Tanks - 247 - 247 - ____ -
Environmental Exceedances:
Drum pH 9.49
Restricitions:_____ MW Reasons:
Restricitions:_____ MW Reasons:
Equipment Problems: #1 air comp o/s
1-2 cond pump - emerg use
aux steam o/o 8th floor

Shift Details: 12:16 stopped taking coal to replace roller & update program
14:03 - gas guns out
16:37 - gas guns in Hi SO2

Tagouts Issued	Time Issue	Time Returned
Stacker	12:54	13:54

Notifications Written: W/O #

Boiler Condition:
Superheat Section: 2's, 3's retracts ran 2's, 3's, 8's, 9's, 10's, Aph's & rotarys
A light
B spotty to Thick layer
C light
D - ok

Unit 1 2 3 (Circle) Date: 1/11/12 CRO / PO Signature [illegible]

Attachment F

Ash Pond Expansion Application

PACIFICORP ENERGY
A MIDAMERICAN ENERGY HOLDINGS COMPANY
Naughton Power Plant

P.O. Box 191 * Kemmerer, Wyoming 83101

November 6, 2012

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,

Shawn Smith
Naughton Plant Managing Director

Attachment(s)

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

PACIFICORP ENERGY
A MIDAMERICAN ENERGY HOLDINGS COMPANY
Naughton Power Plant

P.O. Box 191 * Kemmerer, Wyoming 83101

November 6, 2012

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,

Shawn Smith
Naughton Plant Managing Director

Attachment(s)

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

PU*OGD45

FedEx Express NEW Package US Airbill

FedEx Tracking Number 8010 3513 8043

SLA2

Form ID No. 0215

Sender's Copy

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

Dept./Floor/Suite/Room

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

We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room

Address 510 MEADOWVIEW DRIVE

Use this line for the HOLD location address or for continuation of your shipping address.

City LANDER State WY ZIP 82520

☐ HOLD Weekday FedEx location address REQUIRED. NOT available for FedEx First Overnight.

☐ HOLD Saturday FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

0455254597

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

4 Express Package Service *To most locations.

NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs. For packages over 150 lbs., use the new FedEx Express Freight US Airbill.

Next Business Day

☐ FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☑ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

☐ NEW FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.

☐ FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging *Declared value limit $500.

☑ FedEx Envelope* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☐ Other

6 Special Handling and Delivery Signature Options

☐ SATURDAY Delivery — NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

☐ No Signature Required — Package may be left without obtaining a signature for delivery.

☐ Direct Signature — Someone at recipient's address may sign for delivery. *Fee applies.*

☐ Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. *Fee applies.*

Does this shipment contain dangerous goods? One box must be checked.

☑ No ☐ Yes — As per attached Shipper's Declaration. ☐ Yes — Shipper's Declaration not required. ☐ Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

☐ Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below:

☑ Sender — Acct. No. in Section 1 will be billed. ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check

FedEx Acct. No. Credit Card No. Exp. Date

Total Packages 1 Total Weight ____ lbs. Total Declared Value† $ ____ .00

†Our 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 terms that limit our liability.

611

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November 13,2012

Dear Customer:

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

Delivery Information:

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

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

Recipient:
US

Shipper:
US

Reference CC10013 CE530073

Thank you for choosing FedEx.

WYOMING WATER QUALITY APPLICATION FORM

WQD USE ONLY	
APP NO	
DATE	
PROG.	

Use for Construction, Groundwater Monitoring, Groundwater Remediation, Subdivisions, and Land Application of Wastewater

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

Submit to appropriate office	http://deq.state.wy.us/wqd/www/districts.pdf
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

NAME OF PROJECT

South Ash Pond (Units 1 and 2) Boundary, Naughton Power Plant, Kemmerer, Wyoming

DESCRIPTION OF PROJECT

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

LOCATION:	**County:** Lincoln	**Lat:** 41.751	**Long:** 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

SIGNATURES: All undersigned agree to comply with applicable Wyoming Statutes and Regulations and to allow the activities described in this application.

Real Estate Owner The real estate owner or the grantee of the applicable easement must sign this form

PacifiCorp

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

Operator or Developer If same as real estate owner, this space may be left blank

Naughton Power Plant

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

Engineer or Geologist

Printed Name: David J. Erickson	WY PE #	WY PG# 310
Firm Name: Water & Environmental Technologies		
Address: 480 East Park Street		**Please complete the second page or the back of this form**
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.

☑	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
☐	12	Design and construction standards for public water supplies, includes subdivision water supplies and water line extensions
☐	21	Standards for the Reuse of Treated Wastewater
☐	23	Minimum Standards for Subdivision Applications
☐	25	Design and construction standards for small wastewater systems includes septic tanks/leachfields
☐	26	Well construction standards
☐	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	
APP NO	
DATE	
PROG.	

Use for Construction, Groundwater Monitoring, Groundwater Remediation, Subdivisions, and Land Application of Wastewater

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

Submit to appropriate office	http://deq.state.wy.us/wqd/www/districts.pdf
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

NAME OF PROJECT

North Ash Pond (Unit 3) Boundary, Naughton Power Plant, Kemmerer, Wyoming

DESCRIPTION OF PROJECT

Boundary for North Ash Pond (Unit 3) to be extended to include areas where ash has been deposited outside of the current boundary

LOCATION:	**County:** Lincoln	**Lat:** 41.761	**Long:** 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

SIGNATURES: All undersigned agree to comply with applicable Wyoming Statutes and Regulations and to allow the activities described in this application.

Real Estate Owner The real estate owner or the grantee of the applicable easement must sign this form

PacifiCorp

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

Operator or Developer If same as real estate owner, this space may be left blank

Naughton Power Plant

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
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Engineer or Geologist

Printed Name: David J. Erickson	WY PE #	WY PG# 310
Firm Name: Water & Environmental Technologies		
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Phone: 406-782-5220	Email: derickson@wet-llc.com	

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☐	12	Design and construction standards for public water supplies, includes subdivision water supplies and water line extensions
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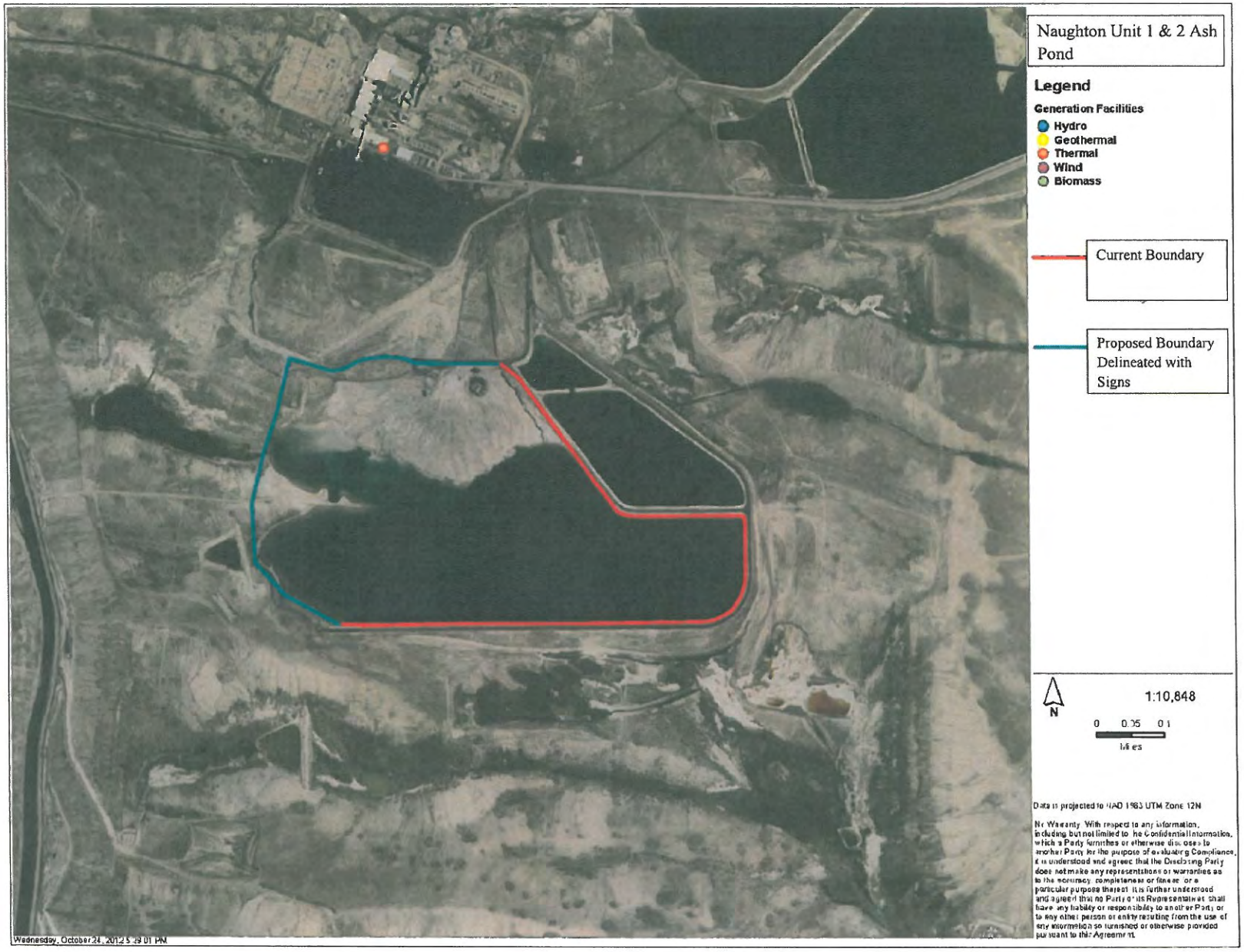
☐	26	Well construction standards
☐	other	Describe briefly

Previous or Associated State of Wyoming Permits	
WQD Permit to Construct	82-164R / 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	9908
WQD Underground Injection Control	
WYPDES (discharge permit)	WY0020311
US EPA Public Water Supply (PWS) Number	


Naughton Unit 1 & 2 Ash Pond
Legend
Generation Facilities
Hydro
Geothermal
Thermal
Wind
Biomass
Current Boundary
Proposed Boundary Delineated with Signs
N
1:10,848
0 0.05 0.1
Miles
Data is projected to NAD 1983 UTM Zone 12N
No Warranty. With respect to any information, including but not limited to the Confidential Information, which a Party furnishes or otherwise discloses to another Party for the purpose of evaluating Compliance, it is understood and agreed that the Disclosing Party does not make any representations or warranties as to the accuracy, completeness or fitness for a particular purpose thereof. It is further understood and agreed that no Party or its Representative shall have any liability or responsibility to another Party or to any other person or entity resulting from the use of any information so furnished or otherwise provided pursuant to this Agreement.
Wednesday, October 24, 2012 5:29:01 PM

Naughton Unit 3 Ash Pond

Legend

Generation Facilities

- Hydro
- Geothermal
- Thermal
- Wind
- Biomass

Current Boundary

Proposed Boundary Delineated with Signs

N

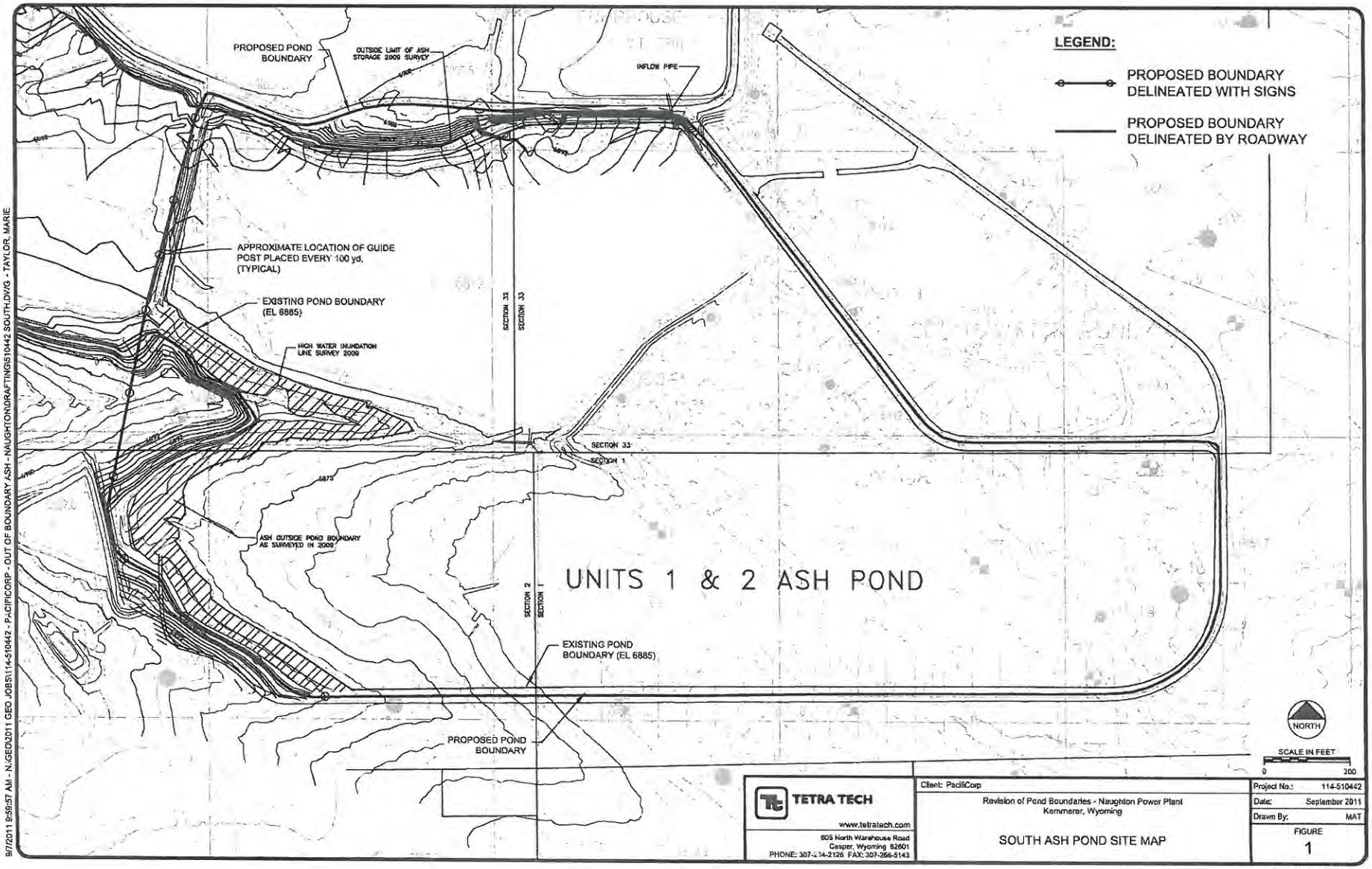
1:10,893

0 0.05 0.1

Miles

Data is projected to NAD 1983 UTM Zone 12N

No Warranty. With respect to any information, including but not limited to the Confidential Information, which a Party furnishes or otherwise discloses to another Party for the purpose of evaluating Compliance, it is understood and agreed that the Disclosing Party does not make any representations or warranties as to the accuracy, completeness or fitness for a particular purpose thereof. It is further understood and agreed that no Party or its Representatives shall have any liability or responsibility to another Party or to any other person or entity resulting from the use of any information so furnished or otherwise provided pursuant to this Agreement.



TETRA TECH
www.tetratech.com
605 North Warehouse Road
Casper, Wyoming 82601
PHONE: 307-234-2126 FAX: 307-266-5143

Client: PacifiCorp

Revision of Pond Boundaries - Naughton Power Plant
Kemmerer, Wyoming

SOUTH ASH POND SITE MAP

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

Copyright: Tetra Tech

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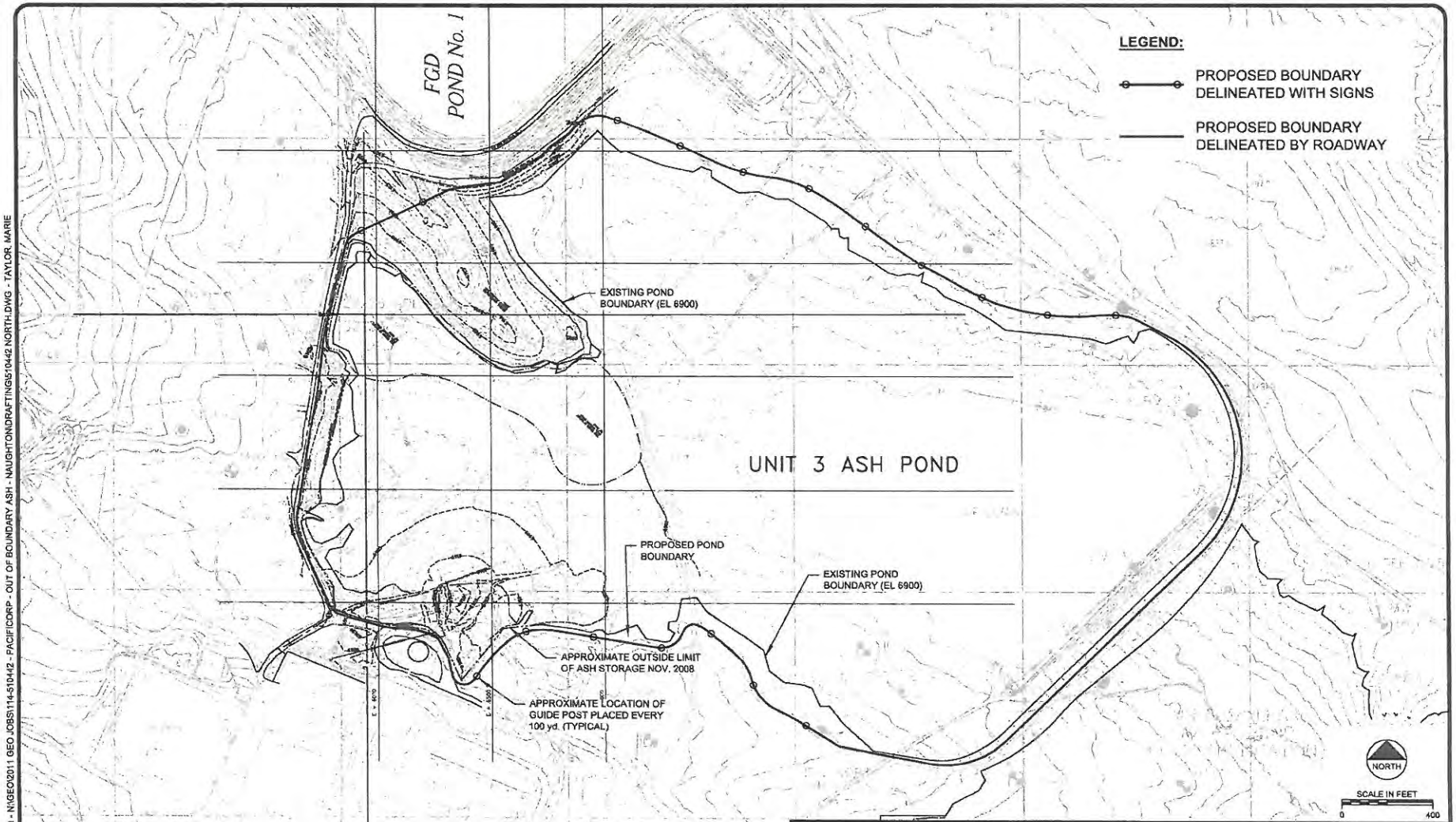

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Client: PacifiCorp

Revision of Pond Boundaries - Naughton Power Plant
Kemmerer, Wyoming

NORTH ASH POND SITE MAP

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

Copyright: Tetra Tech

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OPERATION PLAN
NAUGHTON POWER PLANT
NORTH AND SOUTH ASH PONDS

PREPARED FOR:

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

WATER & ENVIRONMENTAL TECHNOLOGIES

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
PO Box 191
Kemmerer, WY 83101

Prepared by:

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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^3 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^3 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^3 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^3 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^3 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^3. 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^3 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^3 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^3 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^3 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^3 of various CCR. The current surface area of exposed CCR is approximately 22 acres (958,000 ft^2), which includes approximately 19,400 yd^3 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^3 of various CCR. The current surface area of exposed CCR is approximately 52 acres (2,255,000 ft^2), which includes approximately 48,000 yd^3 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:

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

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

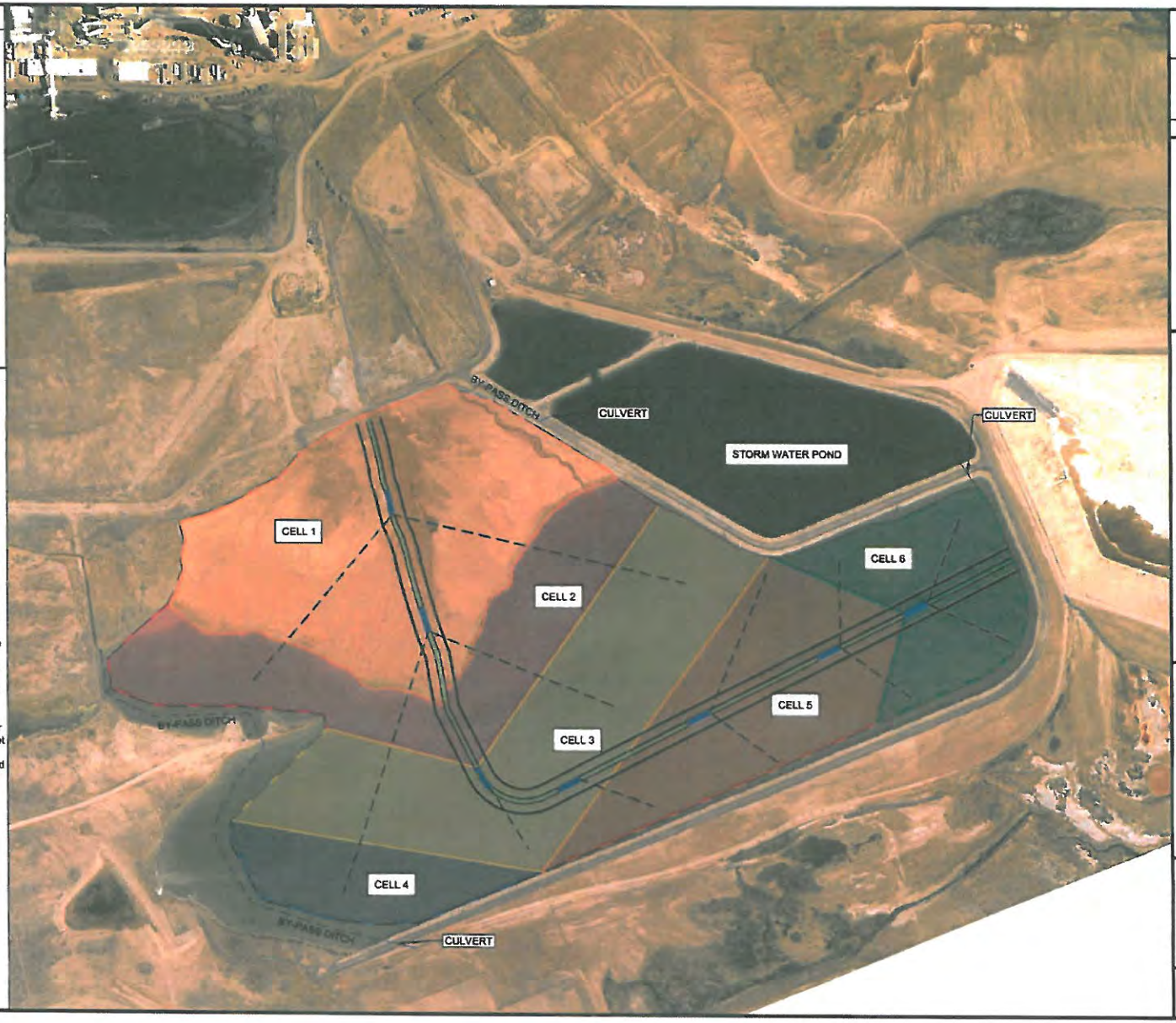
Bottom Ash Collection Areas

Runoff Collection Ditches

By-Pass Ditches

GENERAL NOTES

1. Cell life calculations assume a fill rate of 90,200 cubic yards per year.
2. Cell 2 is 19 acres with a capacity of 0.37 million BCY ±. Expected life is approximately 4 years.
3. Cell 3 is 23 acres with a capacity of 1.0 million BCY ±. Expected life is approximately 12 years.
4. Cell 4 is 7 acres with a capacity of 0.07 million BCY ±. Expected life is approximately 0.8 years.
5. Cell 5 is 17 acres with a capacity of 0.75 million BCY ±. Expected life is approximately 8 years.
6. Cell 6 is 11 acres with a capacity of 0.40 million BCY ±. Expected life is approximately 4 years.
7. Total life expectancy for Cells 2-6 is 28 years.
8. The slurry conveyance ditch is a 42" half section of HDPE pipe set at an average grade of 0.67%. Cleaning velocities in the HDPE channel are expected to be 6 ft/sec. See Detail D-2 for channel details.
9. Temporary ditches route ash slurry from bottom ash collection ditches to the pond where needed. See Detail D-3 for temporary channel details.
10. By-pass ditches route off-site storm water around the closed landfill cells and are not installed until cells are closed.
11. Collection ditches route runoff from closed landfill cells to the stormwater pond. See Detail D-1.



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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

Cross Section Line

By-Pass Ditch

GENERAL NOTES

1. Cell boundaries closest to the pond will 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 Caterpillar 627G tandem powered scrapers equipped with high flotation tires or equivalent as approved by engineer.
4. Cell boundary conditions are assumed to be as shown. Actual boundary conditions may vary due to equipment access. Volumes ranges are based off of the assumption that 6-12" of bottom ash is spread across the entire cell area.

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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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LEGEND

EG — EG — EG — EG

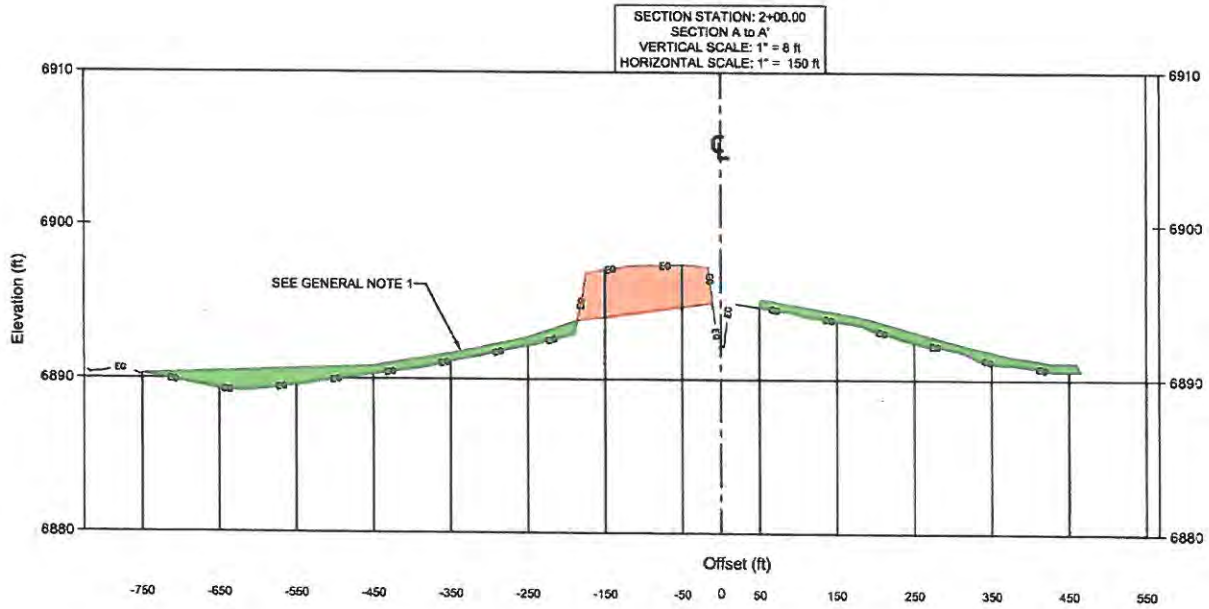
Existing Grade

- CUT AREA

- FILL AREA

GENERAL NOTES

1. Bottom ash cover varies between 6 and 12 inches thick.
2. A 1 to 2 - inch thick native soil layer will be added, if needed, to establish vegetation to minimize dust.



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NAUGHTON POWER PLANT
South Pond Dust Control Plan

TYPICAL SECTION

KEMMERER, WY

SHEET
3 of 12

SP-3

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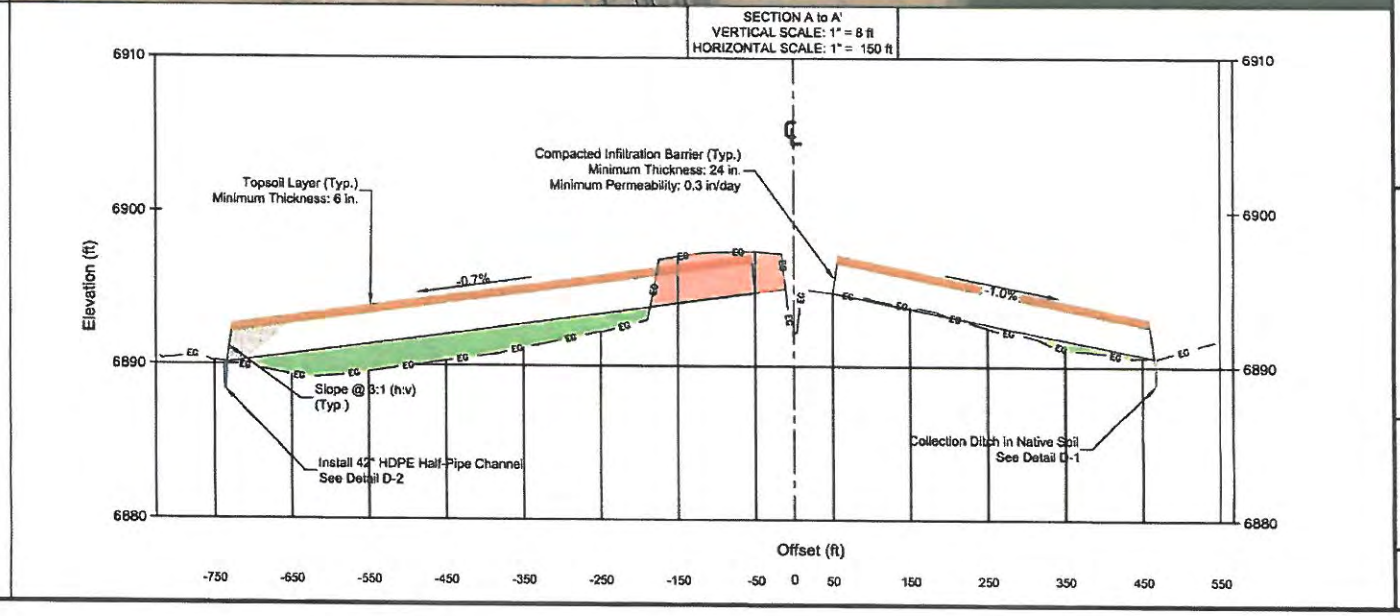
LEGEND

- Surface Water By-Pass Ditch
- Section Line
- Slurry Conveyance Channel
- EG — Existing Grade
- 24" CAP
- 6" Top Soil
- CUT AREA
- FILL AREA

GENERAL NOTES



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NAUGHTON POWER PLANT
South Pond Final Closure Section

SECTION 2+00

KEMMERER, WY

SHEET 4 of 12

SP-4

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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

GENERAL NOTES

1. Cell life calculations assume a fill rate of 77,000 cubic yards per year
2. Cell 1 is 52.7 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 0.48 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 o f0.38 million CY ±. Expected life is approximately 5 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

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NAUGHTON POWER PLANT
PRELIMINARY CCR PONDS CLOSURE PLAN

NORTH POND SITE PLAN

KEMMERER, WYOMING

SHEET 5 of 12

NP-1

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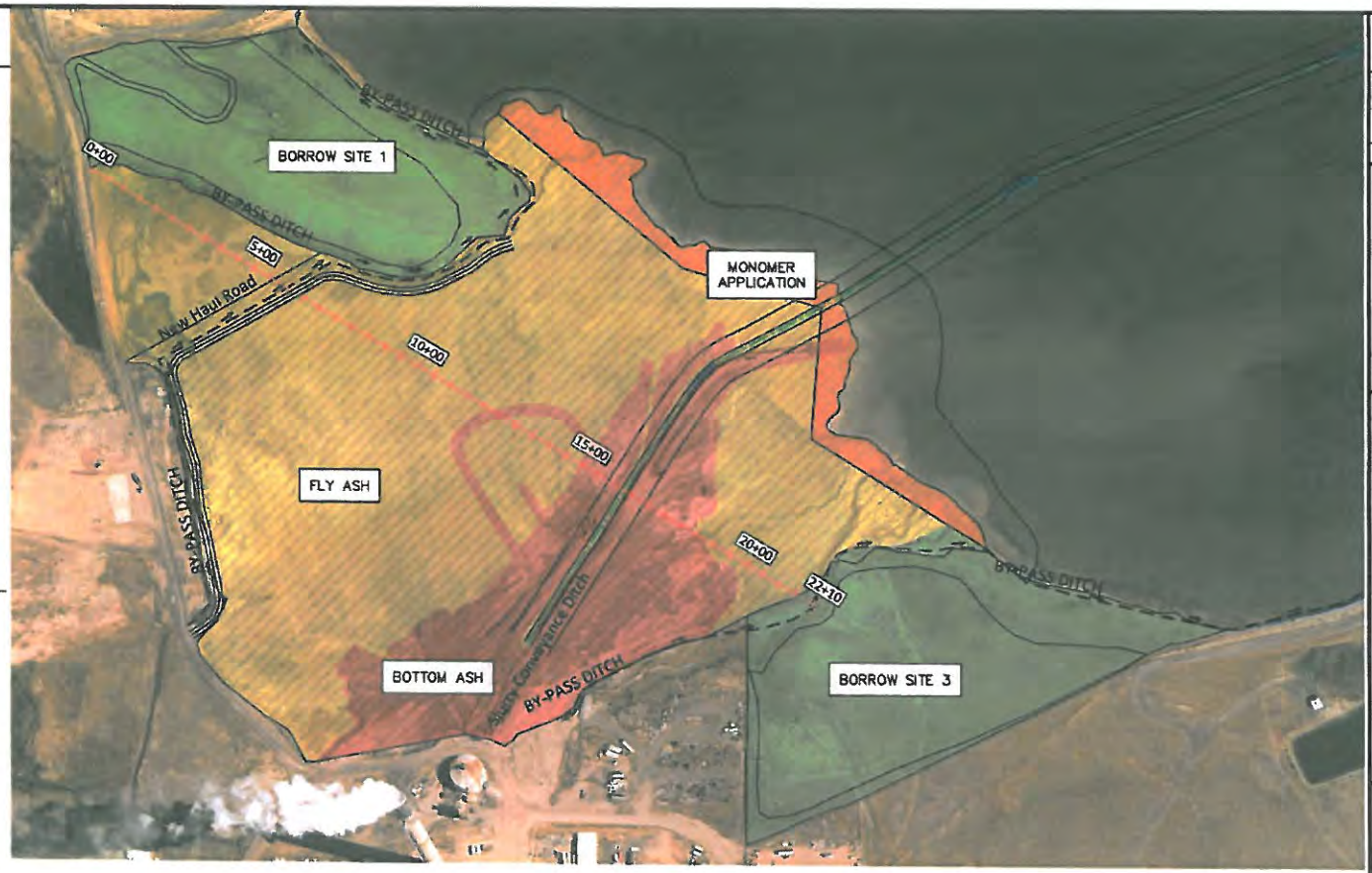
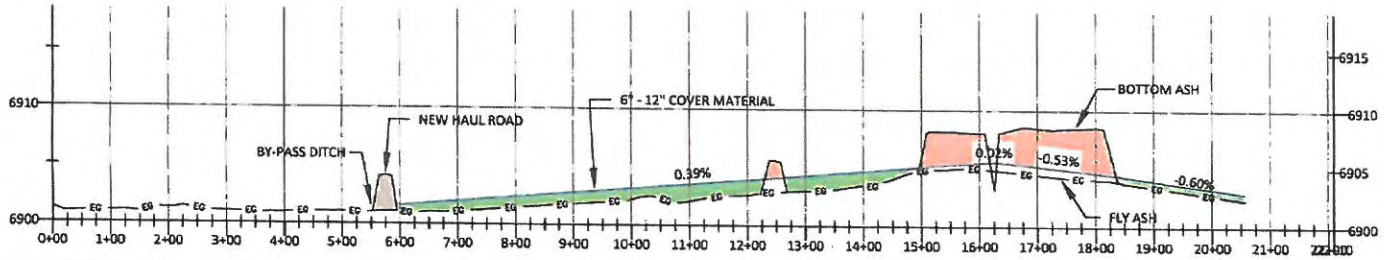
LEGEND

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

GENERAL NOTES

1. Fly Ash - 51.8 acres Approx. 0.59 million BCY
2. Bottom Ash - 12.3 acres Approx. 0.048 BCY
3. Interim Cover Area - 48 acres
4. Approximate Monomer Application area - 3.2 acres





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NAUGHTON POWER PLANT
PRELIMINARY CCR PONDS CLOSURE PLAN

NORTH POND INTERIM CLOSURE PLAN

KEMMERER, WYOMING

SHEET 6 of 12

NP-2

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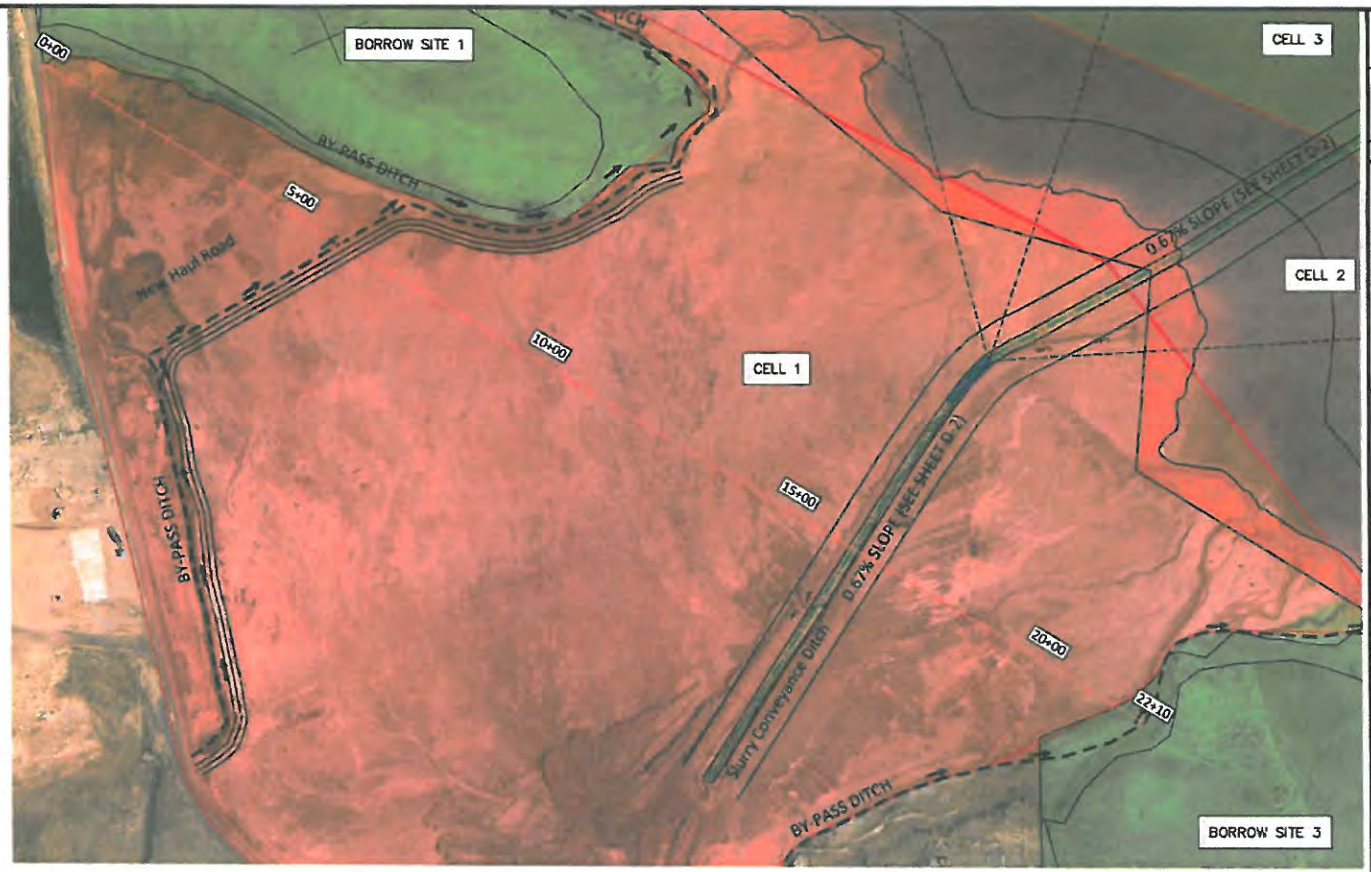
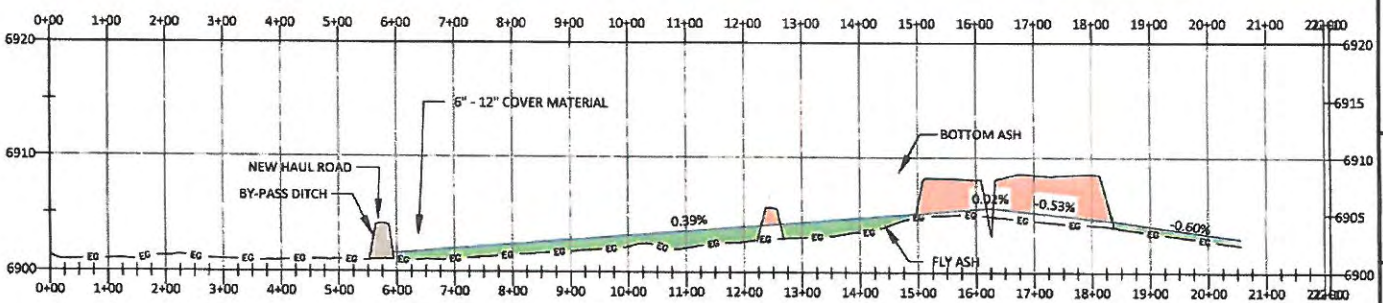
LEGEND

- 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.



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NAUGHTON POWER PLANT
PRELIMINARY CCR PONDS CLOSURE PLAN

NORTH POND FINAL CLOSURE PLAN

KEMMERER, WYOMING

SHEET 7 of 12

NP-3

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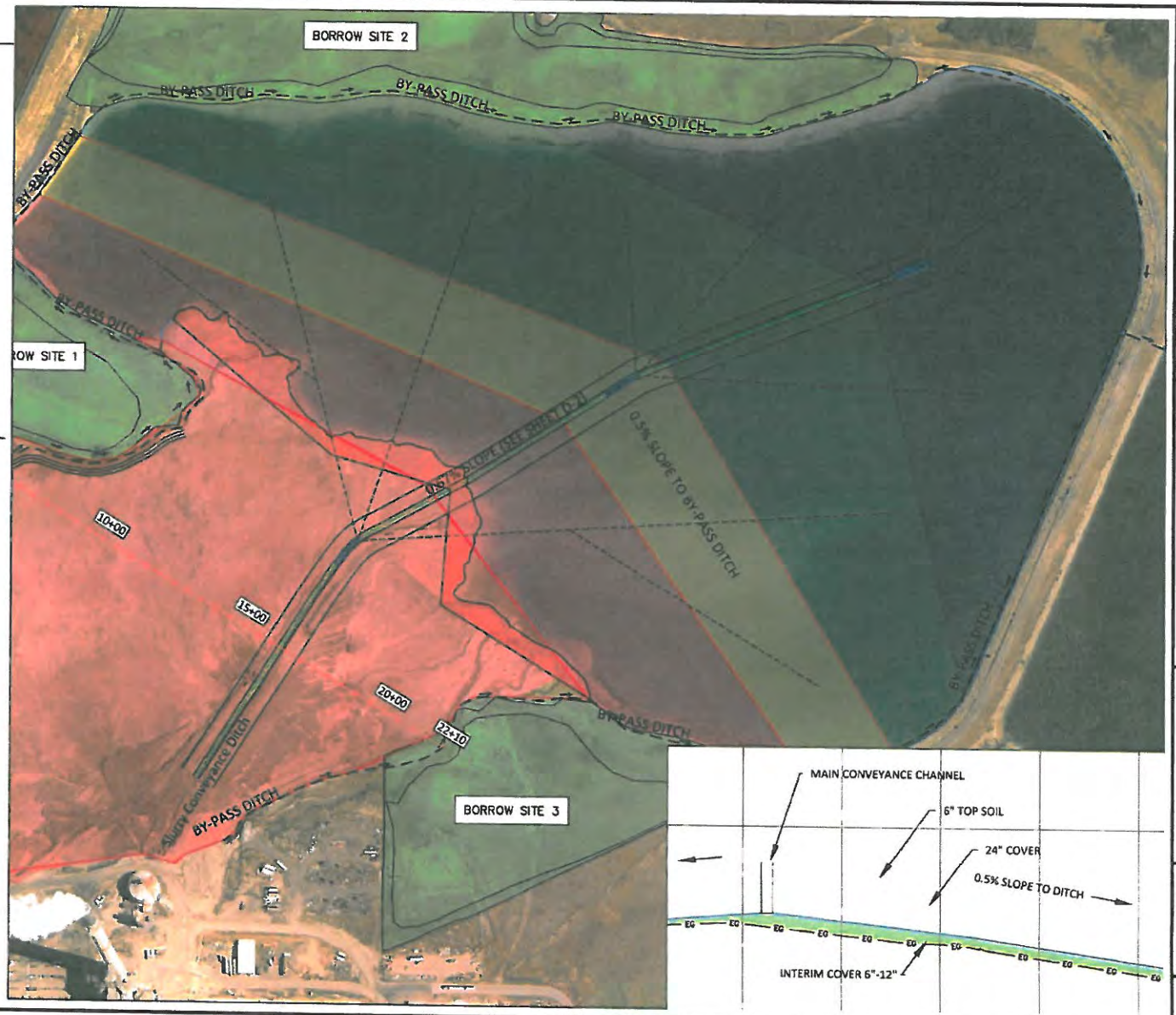
LEGEND

- 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



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

SHEET
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NP-4

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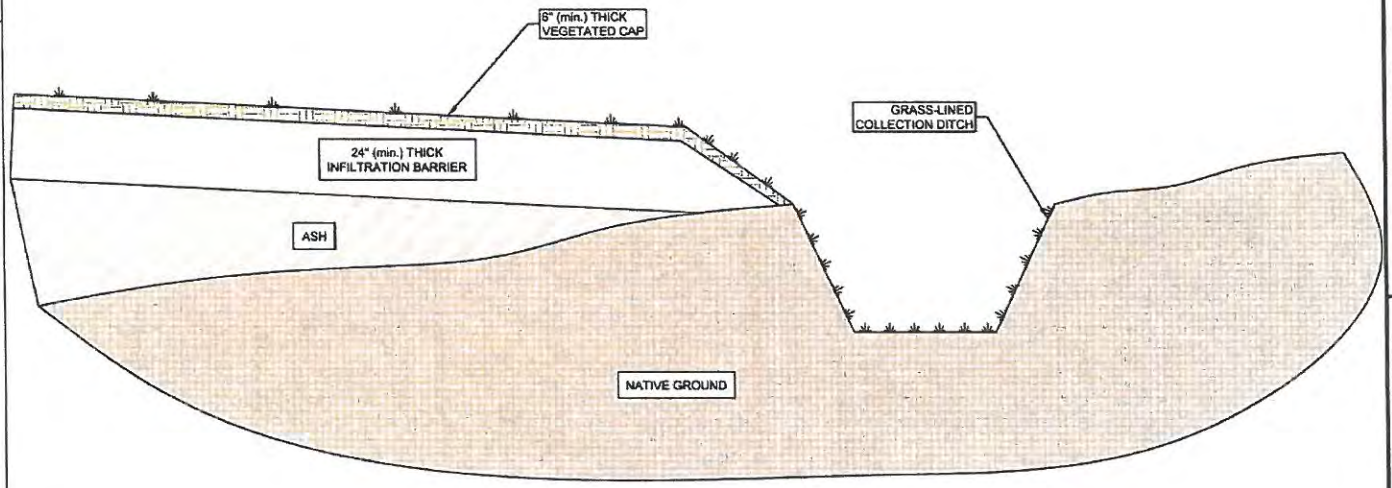
LEGEND

GENERAL NOTES

1. Ditch sizing to be determined by engineer prior to construction.



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NAUGHTON POWER PLANT
FINAL COVER PLAN

COLL. DITCH DETAIL

KEMMERER, WY

SHEET
9 of 12

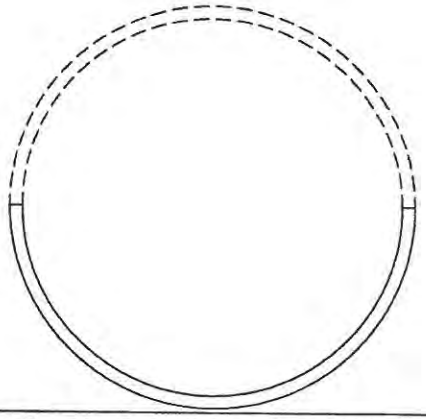
D-1

LEGEND

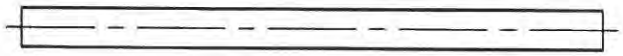
GENERAL NOTES

1. HDPE pipe shall be cut in half, length-wise, to make half channels.
2. 48" HDPE to be used as a connection fitting. Fitting length is 5 ft per connection.

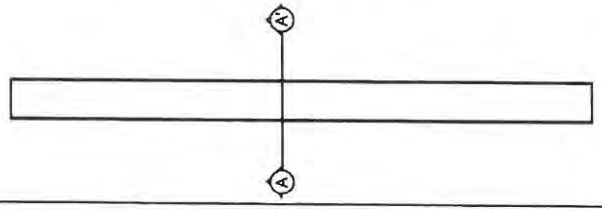
TYPICAL 42" HDPE PIPE - SDR 32.5
SECTION A-A'
SCALE: 1" = 1'



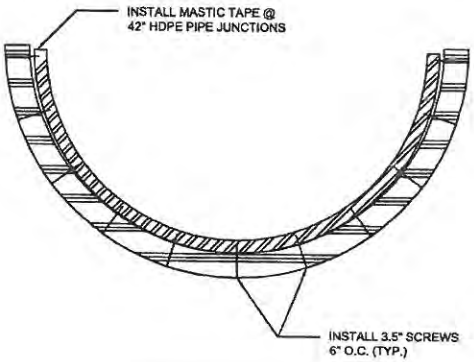
TYPICAL 42" HDPE PIPE - SDR 32.5
PROFILE VIEW - SCALE: 1" = 10'



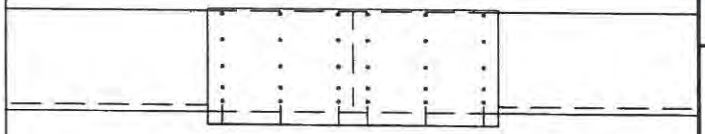
TYPICAL 42" HDPE PIPE - SDR 32.5
PLAN VIEW - SCALE: 1" = 10'



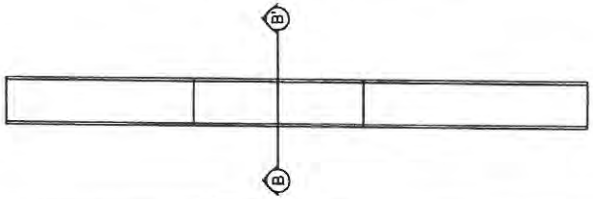
TYPICAL CHANNEL CONNECTION
SECTION B-B'
SCALE: 1" = 1'



TYPICAL CHANNEL CONNECTION
PROFILE VIEW - SCALE: 1" = 2'



TYPICAL CHANNEL CONNECTION
PLAN VIEW - SCALE: 1" = 10'



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NAUGHTON POWER PLANT
ASH TRANSPORT DETAIL

OPERATIONS PLAN
KEMMERER, WY

SHEET
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D-2

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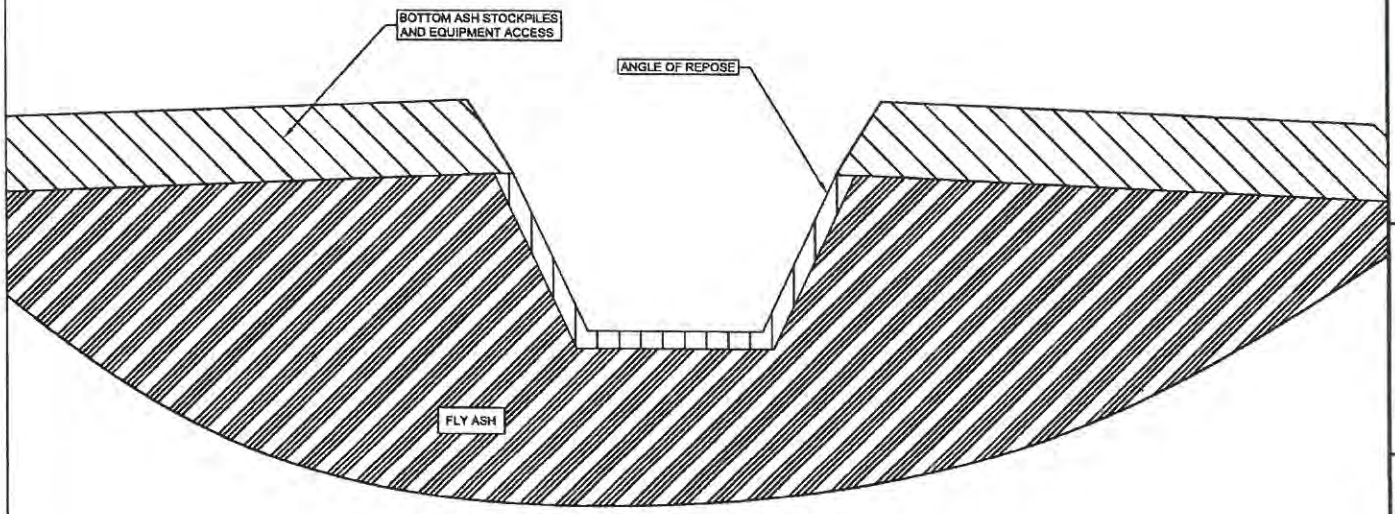
LEGEND

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.



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NAUGHTON POWER PLANT
TEMPORARY DITCH DETAIL

DITCH DETAIL

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D-3

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GENERAL NOTES

1. Install 350 ft of HDPE half pipe channel. Sizing to be determined by engineer and plant operations department.
2. Install 70 ft of CMP or equivalent culvert. Sizing to be determined by engineer.

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SCALE 1" = 40'

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NAUGHTON POWER PLANT
SOUTH POND BY-PASS DETAIL

BY-PASS DETAIL

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