# Fugitive Dust Control Plan

## Sherburne County Generating Plant

**Original Publication: September 2015**
**Review No. 6: September 2020**
**Revision No. 2: September 2020**

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## Annual Review Log

| Review No. | Review Date | Any Revisions Needed?* | Notes |
|---|---|---|---|
| 1 | November 3, 2016 | No | There were no changes at the facility since the first publication on September 15, 2015 that would require a revision to the Plan. |
| 2 | October 2, 2017 | No | There were no changes since the last Plan review that would require a revision to the Plan. |
| 3 | October 4, 2018 | No | There were no changes since the last Plan review that would require a revision to the Plan. |
| 4 | October 22, 2019 | No | There were no changes since the last Plan review that would require a revision to the Plan. |
| 5 | June 12, 2020 | Yes | See Revision Log below. |
| 6 | September 25, 2020 | Yes | Updated the roads and active pond areas on facility map to include new Bottom Ash Pond. |
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** A revision to the Fugitive Dust Control Plan is required whenever there is a change in conditions at the facility that would substantially affect the Plan.*

## Revision Log

| Revision No. | Revision Date | Revised Sections | Notes |
|---|---|---|---|
| 0 | September 1, 2015 | NA | Original Publication |
| 1 | April 30, 2020 | 1, 2, 3, 4, 5, 7 | Plan updated to add the option to utilize chemicals for dust suppression, added foam/binder chemical use during frozen times, and other miscellaneous updates to reflect plant operation. |
| 2 | September 25, 2020 | Appendix A: Facility Map | *Updated the roads and active pond areas* on facility map to include new Bottom Ash Pond. |
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## Certification of Report

The report shall be prepared, signed and sealed by a professional engineer.

"I hereby certify that this plan meets the requirements of the Coal Combustion Residual Rules (40 CFR Subpart D 257.80)."

Print name: John R. McCain

Signature:

Date: 09/26/2020

License #: 21835 (MN)

# 1 Introduction

Controlling fugitive dust at the Sherburne Country Generating Plant (Sherco) is addressed through a fugitive dust control program. Sherco is required to establish a Fugitive Dust Control Plan (Plan) and follow it at all times. The Plan is required both by Sherco's Air Quality Permit No. 14100004-004 and also by the Coal Combustion Residual (CCR) Rules (40 CFR Subpart D 257.80). Each aspect of the Plan has been specifically designed to outline measures that will minimize airborne dust at the plant. The Plan includes activities such as the aggressive watering of roads and work areas, the application of a foam/binder to the coal piles during periods of frozen times, the following of processes and procedures intended to minimize dust and the tracking of changes in meteorological conditions, among many other measures. The Sherco staff is actively engaged in dust control on a continuous basis. The Plan is a formal statement of the activities and the methods employed which are specifically designed to minimize the creation of airborne dust and it meets all of the applicable requirements of both the Air Quality Permit and the CCR Rules.

All of the control measures in place have proven to be extremely effective in the prevention or control of airborne fugitive dust. Each measure has been carefully planned and executed based on site-specific operating conditions in order to receive the maximum benefit. These measures are outlined in the sections below. Watering is the main process that is conducted to control fugitive dust from the coal yard, CCR storage ponds (ponds), the Unit 3 Landfill (landfill) and the plant roads. Additional control measures are also in place for each of these areas and are also described in the sections below.

# 2 Fugitive Dust Control – Watering

## 2.1 Overview

One of the primary controls to minimize fugitive dust (emissions) is the aggressive watering of the coal yard, landfill and ponds which are exposed to inclement weather, specifically dry and windy conditions. Included in these areas are the plant roads which are potentially a large contributor to the generation of fugitive dust. Meteorological data is tracked by Sherco Supervisors and the watering process is triggered by certain criteria; however no water application is required when temperatures are below freezing as described in further detail below. No water is applied during frozen conditions due to significant safety issues this creates. The following explains the process of controlling dust in these areas by the use of water. The attached site map illustrates all of these areas of the facility.

## 2.2 Watering Equipment

Sherco owns two 12,000 and one 10,000 gallon water wagons equipped with front and rear spray nozzles. Additionally, Sherco owns a 5,000 gallon truck-mounted tank with side and rear spray nozzles, which is available should any of the main water wagons be out-of-service. The normal application rate is approximately 1,000 gallons per minute while travelling at a speed of approximately 12 miles per hour. The spray effectively waters a 30-foot wide strip. The application rate of the wagons and the truck is 3.2 gallons/100 square feet.

Maintenance records and hours of operation for dust control equipment are kept in the Mobile Equipment Record System. The system allows Sherco to monitor equipment operation and schedule preventative maintenance to avoid outages during critical periods.

## 2.3 Watering Areas

### 2.3.1 Plant Roads

As can be seen in the attached facility map, there are paved and unpaved roads at Sherco. There are numerous roads at the facility which handle routine vehicle traffic, which are outlined in the facility map. Routine vehicle traffic is defined as 10 or more trucks per day. These roads will be watered once every 24 hours when determined necessary based on the qualitative analysis to be completed each morning (qualitative analysis steps are outlined below in Section 2.4). There are also roads which do not receive routine vehicle traffic and roads which only receive routine traffic during special projects, which are also outlined on the map.

### 2.3.2 Coal Yard

The coal yard encompasses approximately 100 acres of land devoted to coal storage, unloading, processing and reclaiming. Within this area, approximately one third is actively traveled by trucks, scrapers and front-end loaders. About half of the total coal yard area is considered open to wind erosion. The remaining acreage is covered by buildings or is positioned in such a way that it is typically not subject to any, or very minimal, wind erosion.

### 2.3.3 CCR Storage Ponds

The active and future ponds receive material from three streams on a continuous basis: scrubber slurry from Units 1 and 2, bottom ash slurry from Units 1, 2 and 3 and trucks hauling CCR from outside sources during one-time special projects. Units 1 and 2 scrubber slurry is discharged directly into its final waste disposal pond, while bottom ash is continuously discharged into a separate pond for dewatering. Trucks carrying CCR from outside sources are unloaded into the active scrubber pond and the CCR can be used for dike erosion protection and pond cap development. On an intermittent basis the ponds may receive CCR contaminated debris such as air heater boxes and other ash contaminated debris generated through routine plant maintenance activities.

### 2.3.4 Unit 3 CCR Landfill

The landfill is located to the northwest of the generating units. CCR from Unit 3 is pneumatically conveyed to the Unit 3 Ash Storage Silo where it is mixed with water, loaded into end-dump trucks and hauled a short distance to the landfill over a paved access road. Some of the CCR is loaded dry into tanker trucks at the ash storage silo for utilization off-site.

## 2.4 Watering Procedure

Each morning, Sherco will complete a qualitative analysis to determine the need to water the routinely traveled unpaved roads, the Coal Yard area, the Pond area and the Landfill area. The only paved road at the facility that will be watered on a daily basis (if determined by the qualitative analysis) will be the main haul road to the Landfill area. All other paved roads at the facility have negligible fugitive emissions. The facility will comply with the following conditions.

- A rainfall event of at least 0.1 inch during the previous 24 hours shall eliminate that daily water application unless the storage pile moisture content is rated as “dry.”
- Water application is not required when there is infrequent vehicle traffic, which is defined as less than 10 trucks per day traveling on the road.

- Water application is not required when the daily qualitative analysis of the moisture content of the coal piles is "wet."
- If unpaved roads cannot be watered because the ambient temperature (as measured at the facility during daylight operating hours) is less than 25 degrees F, then watering shall be postponed and accomplished as soon as the conditions preventing water application have abated.
- Following any day when water is not applied based on the absence of traffic; water shall be applied within three hours of commencement of vehicle traffic, unless another criterion for not watering is met.
- The water application rate shall be at least 3 gallons for each 100 square feet every 24 hours. This is accomplished by limiting the speed of the water wagon and truck to 12 mph.

The number of water wagon fills, along with the total gallon per trip, the area watered, and the time watered are recorded in an electronic log. This log is reviewed each month and the proper records are kept on site at the facility.

## 2.5 Amount of Water Applied

The facility will apply water at a rate of at least 3 gallons of water per 100 square feet every 24 hours when determined necessary by the qualitative analysis. Watering is not conducted during precipitation events and is not reinitiated until drier conditions dictate that watering is necessary.

## 2.6 Subfreezing Temperatures

### 2.6.1 Natural Processes

Control of dust during periods of subfreezing temperatures is provided largely by natural processes. Snow cover controls dust during a large fraction of most winters. On some days without snow cover, adequate moisture often exists from past snowfall or liquid precipitation to prevent fugitive dust. Snow or frozen surfaces effectively control wind erosion and vehicle traffic emissions. Additionally, to the extent practical, snow is moved from coal yard areas where snow cover is not needed to areas of activity for control. Additionally, attempts are made to try and limit the area being worked.

### 2.6.2 Coal Treatment during Frozen Conditions

During frozen conditions, a coal foaming agent combined with a binder/anti-oxidant will be applied to all coal that is transferred out to the coal piles. This will provide residual dust control to the coal piles and minimize any coal pile oxidation (fires). These chemicals have been approved through the NPDES permit No. MN0002186 as required. Note that this treatment may also be applied during non-frozen conditions as needed as determined by the facility.

## 2.7 Record Keeping

Sherco will record the time spent by its staff on watering. Record keeping on watering includes the following information in a daily log:

- Date and Time of Each Water Wagon Fill
- Water Wagon ID Number
- Area Watered (Coal Yard, Landfill or Pond)

- Amount of Water Dispersed
- Total Daily Water Usage by Area

In addition, daily meteorological data will be recorded for temperature, wind speed and precipitation. The watering records and the meteorological data will be retained for at least five years as required by the air quality permit. The template for these records is included in Appendix C.

# 3 **Fugitive Dust Control – Plant Roads**

## 3.1 Plant Road Overview

As can be seen in the attached facility map, there are numerous paved and unpaved roads at Sherco. One section of paved road extends from the area where CCR from the Unit 3 Ash Storage Silo is loaded into trucks and hauled to the landfill for disposal. Another length of paved road extends from just north of the Recycle Basin, down past the landfill and to the plant exit. Lastly, one small section of the pond areas has been paved in order to minimize the creation of airborne dust as many trucks travel through this area. All of the paved roads are identified in green on the attached map. Also illustrated in blue are numerous unpaved roads at the facility. The majority of the roads on the plant site are watered. The frequency depends on the meteorological conditions and the traffic rate.

## 3.2 Watering

As described in the previous section, the most effective process in controlling fugitive dust from the plant roads is the aggressive watering that is conducted, especially during dry and windy conditions. The frequency of the watering is driven largely by the meteorological conditions (or anticipated conditions) at the facility, which is tracked by Sherco employees. The Plant can also pursue the option to add a surfactant chemical to the watering trucks. The chemical improves the wettability of water, it breaks the surface tension of the water and gives the ability of the water to more effectively wet the coal, allowing the water trucks to more efficiently reduce/eliminate fugitive dust.

## 3.3 Sweeping of Paved Roads

The tracking of dirt from unpaved areas and CCR spillage are not extensive. A sweeper is used as needed and as weather permits, especially to clean up CCR that has carried over from the landfill or is on the road around the CCR silo building.

## 3.4 Speed Control

The speed of all vehicles at Sherco is limited to a maximum of 25 miles-per-hour and even slower in some higher traffic areas. By limiting speed, the fugitive dust generation is reduced significantly, especially from some of the larger equipment used at the facility.

## 3.5 Dust Suppression Chemicals

Sherco has the approval for a number of dust suppression chemicals that can be applied to the plant roads as needed. These can be applied along with or in place of watering as determined necessary by the facility. These are approved through the NPDES permit No. MN0002186 to reduce fugitive dust emissions from roads.

# 4 Fugitive Dust Control – Coal Yard

## 4.1 Overview

In addition to the main fugitive dust control procedure of watering of the coal yard area, there are other processes in place that are used to minimize fugitive dust. These are outlined in the following sections.

## 4.2 Dust Suppression Chemicals

Approved dust suppression chemicals are utilized as needed, as determined by the facility in the coal yard and includes the following chemicals outlined below. Note that not all chemicals are used throughout the year; it is up to the discretion of the facility to determine when and if the following applications are needed.

### 4.2.1 Coal Foaming/Binder Agent Application

This includes an application of foam/binder to all coal sent to the piles during frozen conditions to reduce/eliminate fugitive dust.

### 4.2.2 Road Treatment

This includes the application of a chemical treatment to the roads prior to frozen conditions to reduce/eliminate fugitive dust.

### 4.2.3 Inactive Pile Treatment

This includes the application of a latex-based chemical to the inactive areas/slopes of the coal piles to reduce/eliminate fugitive dust.

### 4.2.4 Chemical Addition to Watering Trucks

This includes the addition of a surfactant chemical to the watering trucks. The chemical breaks the surface tension of the water and gives the ability of the water to penetrate deeper into the media, thereby increasing the dust control efficiency of the water to eliminate fugitive dust.

## 4.3 Coal Unloading

The process occurs inside the building and a dust suppressant is applied during the unloading process in order to minimize the generation of dust created by the dumping of the coal from the train cars. Additionally, a dust collector is used to capture the majority of the coal dust generated.

## 4.4 Coal Handling

Water sprays and chemicals are used to treat the coal at the track hopper feeders and at the head of major conveyors. Almost all coal is thoroughly treated after unloading from rail cars and prior to stacking. Additionally, dust is reduced through various operating practices such as lowering the boom on the stacker-reclaimer to minimize the free fall of the coal or using a dust collector to capture coal dust at coal handling transfer points.

## 4.5 Dust Collection Systems

Dust collection systems are in place at almost all processes within the coal yard. These systems control the processes and filter the dust through a series of bags in order to reduce/eliminate fugitive dust.

### 4.6 Speed Control

Similar to the speed limits in place on all of the plant roads, speed is kept to a minimum while transferring coal from one location to another in the coal yard, including on the coal pile.

## 5 Fugitive Dust Control – Scrubber Solids Ponds

### 5.1 Overview

In addition to the main fugitive dust control procedure of watering the pond areas, there are other processes in place that are used to minimize the formation of dust. These are outlined in the following sections.

### 5.2 CCR Transfer

The majority of the CCR that is transferred from Units 1, 2 and 3 is delivered wet by pipeline to the ash ponds. This eliminates almost all of the fugitive dust generation due to the shipment of the waste to the ponds. Transfer of bottom ash from the Bottom Ash Pond to the Scrubber Solids Pond can occur on an annual basis. During this project, bottom ash is loaded into trucks from the Bottom Ash Pond and transferred to the active Scrubber Solids Pond. The ash is very wet and has minimal emissions during the transfer process. The roads are watered as needed during this time to reduce/eliminate the dust generated from the haul trucks.

### 5.3 CCR Disposal

Every effort is made to dispose of the CCR as far from the property boundary as possible. A disposal pad located within the CCR pond is typically used as a staging area for miscellaneous CCR materials that will be disposed of in the pond. By placing the CCR in a centralized location, it minimizes any fugitive dust generated from reaching the facility boundary. Additionally, this ash is often utilized in construction projects such as the raising of the dike. The ash is typically wet; therefore any fugitive dust generated by the placement and compaction of the ash is minimized. The operation can be delayed during very windy conditions.

### 5.4 Pond Capping

As the ponds reach the end of their useful life, they are dewatered and an engineered cap is installed. During the dewatering process free liquids are transferred to the active pond. Conditioned CCRs, sand and topsoil are used to achieve final contours so that the final cap has a sufficient slope to promote positive drainage. The final cap is comprised of a screened barrier layer, a geomembrane liner, followed by approximately one foot of drainage sand and one foot of top soil. Grass is then planted over the capped area. By capping these areas, risk of fugitive dust generation is nearly eliminated.

### 5.5 Inactive Pond Areas

The Scrubber Solids Pond is actively changing as new ash is transferred for disposal. An inactive Pond area is defined as an area that has not received ash for a period of 24 hours or longer. The most effective method to prevent fugitive dust from these areas is to simply not drive over the inactive area. When ash is placed, there will be little to no fugitive dust generated as long as the areas are not disturbed by vehicle traffic. If the area becomes an active area, then watering will be completed to control dust. Other methods are available, such as flooding the areas not receiving ash for an extended period of time or vegetative cover being established. The facility will determine the need for this type of control based on the planned activity in those areas.

# 6 Fugitive Dust Control – Bottom Ash Ponds

## 6.1 Overview

In addition to the fugitive dust control procedure of watering, there are other handling processes in place that are used to minimize the formation of dust. It should be noted that most of the Bottom Ash Ponds area are wet and will not produce any fugitive dust. Watering if only completed as needed during ash transfer projects. These are outlined in the following section.

## 6.2 CCR Handling

All CCR that is transferred from Units 1, 2 and 3 is delivered wet by pipeline to the ponds. This eliminates almost all of the fugitive dust generation due to the shipment of the waste to the bottom ash ponds. Almost every year, the transfer of CCR from the bottom ash pond to the scrubber solids pond takes place as described above. This material is always wet and there is very minimal risk of fugitive dust, except for travel on the roads. The roads are watered in accordance with the procedures outlined above.

# 7 Fugitive Dust Control – Unit 3 Landfill

## 7.1 Overview

In addition to the main fugitive dust control procedure of watering of the landfill area and haul roads as described above, there are other processes in place that are used to minimize the generation of dust. The overall operational procedure is based on placing and compacting the conditioned CCR so that stability, drainage and dust generation are avoided. These are outlined in further detail in the following sections.

## 7.2 CCR Conditioning

One of the most effective dust control measures for the CCR collected from Unit 3 in the fabric filter bags is the addition of water to the CCR so that it has an optimum moisture content so as to not release fugitive dust from the haul trucks while being transferred to the landfill or as it is placed on the landfill for disposal. The CCR is temporarily stored in two storage silos prior to the permanent disposal in the landfill. The storage silos are located 200 feet to the north of the fabric filter building. Water is added to the CCR to minimize dusting during transportation and disposal and also, very importantly, to facilitate compaction in the landfill. The moisture content of the conditioned CCR varies from approximately 15% to 25%. By limiting the moisture content, this will ensure that the conditioned CCR will not result in any free liquids during transportation and disposal. Occasionally Sherco will receive dry CCRs in tanker trucks from other Xcel Energy coal fired plants. When these trucks are received the contents are pneumatically unloaded into one of the storage silos and the process described above is used to properly condition the ash before it is transported for proper disposal within the lined landfill.

## 7.3 CCR Loading and Unloading

The loading and unloading process of CCR takes place in a building to minimize the generation of fugitive dust. In addition to this, there is a dedicated dust collector that collects a large majority of any dust created during the loading or unloading process. Watering of the loading and unloading building wets the area and prevents the dispersion of any fugitive dust that has escaped the building or haul trucks.

### 7.4 CCR Compaction

From the loading and unloading area, the CCR is immediately transferred to the landfill. The dumping of the CCR creates virtually no dust as it is conditioned with water. After placement in the active cell, a smooth-drum roller slowly compacts the CCR to an in-place dry density of approximately 70 pounds/cubic foot. Water is added as necessary during this process to facilitate compaction and limit dust generation.

The exothermic reaction of CCR and water will aid in the placement and compaction of CCR. Placement is always in thin layers of approximately six inches to allow for rapid compaction of the material.

### 7.5 Intermittent Cover

There is no requirement for intermittent cover of the landfill due to the cementitious nature of the material, along with daily placement of CCR over previously-placed CCR. The daily placement and compaction satisfies the requirement for any intermittent cover.

### 7.6 Intermediate Cover

Again, due to the cementitious nature of CCR, areas of the landfill that are left undisturbed naturally develop a crust that is highly resistant to wind erosion and dust emissions. Once a crust is formed, Sherco staff will monitor the areas to ensure that the cementitious crust remains undisturbed and is functioning properly. If disturbed, the area will be watered to prevent dust emissions until a crust can reform. If the cementitious crusts do not perform as desired, Sherco has the option to use a chemical on inactive areas of the Landfill in order to seal these areas prior to freezing conditions and other times of the year, as deemed necessary by the plant.

### 7.7 Erosion Control

Erosion may result in the breakup of material containing CCR and can cause it to become airborne. This erosion shall be minimized during active cell operations by maintaining surface and side slopes and collecting and routing of storm water into lined drainage ditches and the retention basin. Additionally, the active area of the Landfill will be minimized on a daily basis. Upon closure of fill areas, the top and side slopes of the landfill are to be graded, sloped to drain, covered and vegetated to provide long-term erosion control. Additionally, routine maintenance is conducted and repair of all drainage structures is completed as needed.

### 7.8 Landfill Capping

As the active landfill cells are filled to grade, a final engineered cap system is installed. This cap system is comprised of a HDPE liner, followed by approximately one foot of drainage sand and one foot of top soil. Grass is then planted over the capped area. By capping these areas, risk of fugitive dust generation is nearly eliminated.

### 7.9 Inactive Landfill Areas

The Landfill is actively changing as new ash is transferred for disposal. An inactive Landfill area is defined as an area that has not received ash for a period of 24 hours or longer. The most effective method to prevent fugitive dust from these areas is to simply not drive over the inactive area. When ash is placed, there will be little to no fugitive dust generated as long as the areas are not disturbed by vehicle traffic. If the area becomes an active area, then watering will be completed to control dust.

Other methods are available, such as the application of dust suppression chemicals to the areas not receiving ash for an extended period of time or vegetative cover being established. The facility will determine the need for this type of control based on the planned activities in those areas.

# 8 **CCR Inspection**

In order to assure that all measures outlined in this Plan are in place, being followed and working effectively, they will be assessed in the weekly inspection that is required on all affected CCR facilities. If all procedures are being conducted as outlined in this Plan, this will be noted accordingly on the inspection form. If there is anything to repair or processes to improve upon, this will be noted on the inspection form as well and a timeline for improvements or equipment replacement will be outlined.

# 9 **Fugitive Dust Complaint Log**

Any citizen complaints of fugitive dust appearing to originate from the plant will be investigated immediately. An electronic log will be kept to record all of these occurrences. If the fugitive dust is found to have originated from the facility, follow-up and corrective actions will be taken as needed. The template for this log is included as an attachment to this Plan.

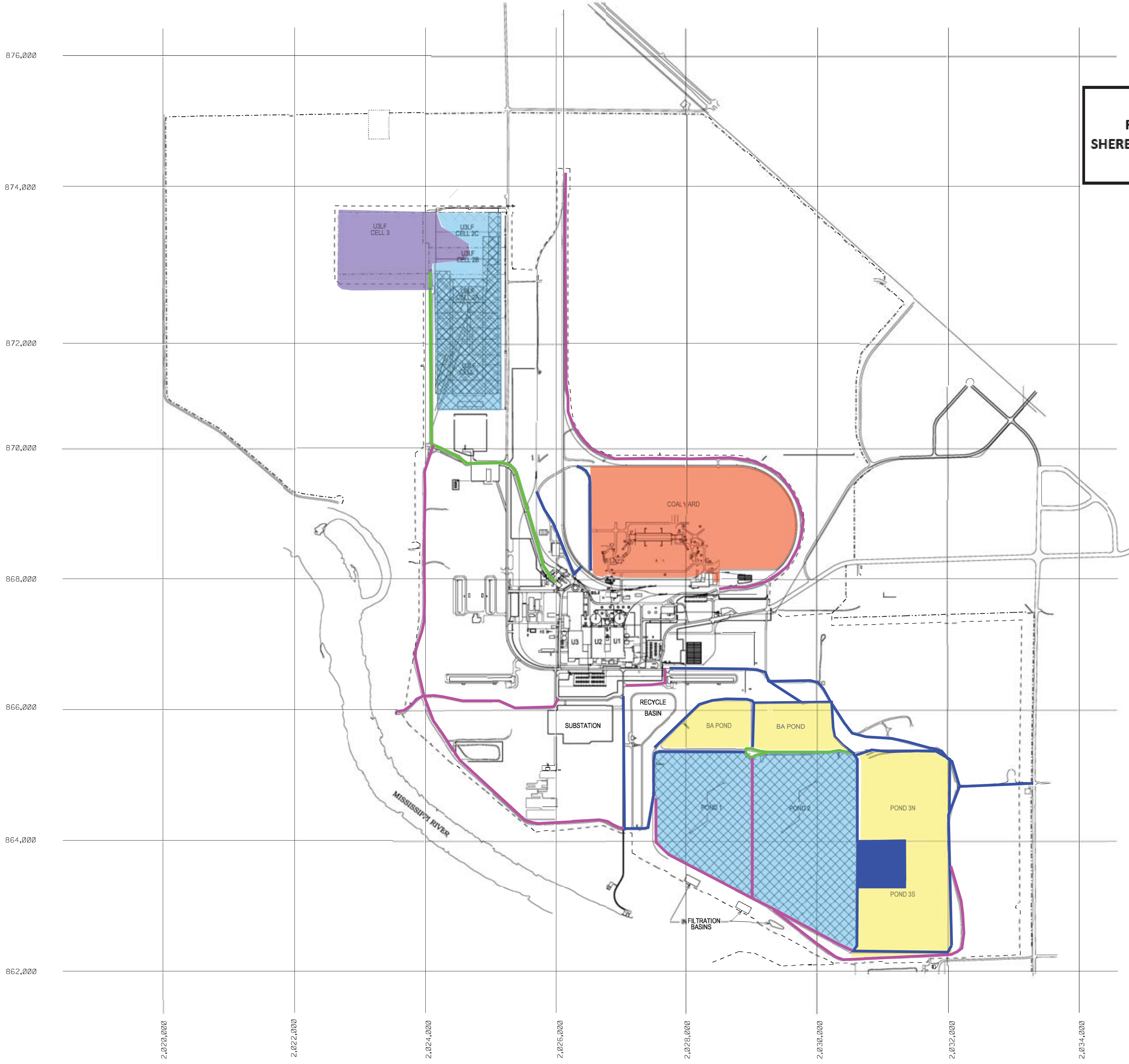
# 10 **Plan Updates**

This Fugitive Dust Control Plan will be assessed annually. As part of the assessment, all processes and procedures will be reviewed for their effectiveness and efficiency at minimizing or eliminating the generation of fugitive dust. If any new measures have been put into place at Sherco, these will be added into the plan. Lastly, the facility map will be updated with any changes to capped pond or landfill areas and plant roads.

# Appendix A

## Facility Site Map

# FACILITY SITE MAP
# FUGITIVE DUST CONTROL PLAN
# SHERBURNE COUNTY GENERATING PLANT
# SEPTEMBER 2020



This map / document is a tool to assist employees in the performance of their jobs. Your personal safety is provided for by using safety practices, procedures and equipment as described in safety training programs and manuals.

LEGEND

- 🟧 ACTIVE COAL YARD AREA
- 🟨 ACTIVE POND AREAS
- 🟪 ACTIVE LANDFILL AREA
- 🟦 POND DISPOSAL PAD
- ▨ CAPPED LANDFILL OR POND AREAS
- 🟩 WATERED PAVED ROAD
- NON-ROUTINE UNPAVED ROAD
- ROUTINE UNPAVED ROAD

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0 500 1000
SCALE IN FEET

Plotted: 11/18/2014
File: $FILE$

# Appendix B

## Fugitive Dust Complaint Log Template

## Fugitive Dust Complaint Log

| Reported | | Alleged Event Information | | | | Incident Evaluation | | |
|---|---|---|---|---|---|---|---|---|
| Date | Time | Date | Time | Location | Description | Type | Response | Follow Up |
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# Appendix C

## Daily Watering Assessment & Watering Logs

## Yard Watering/Operating Hours Documentation

| Date | Pile and Scraper Paths (Wyoming and Montana) Status | | | | | | Water Required? (5) | Unpaved Roads Status | | | | | | Water Required? (5) | Comments (6) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Time Scraper Reclaiming/Placing Begins | Time Watering Must Begin (1) | Precip Previous 24 Hours (inches) (2) | Average Daily Temp (Deg F) (3) | Any Scraper Traffic on Piles? (Yes or No) | Pile Dust Suppression Rating (Dry or Wet) (4) | NO If no Scraper Traffic<br>NO if T<35 degrees F<br>NO if Precipitation > 0.1"<br>NO If Dust Supp Rating Wet<br>YES if Dry and Traffic and T>35 and Precip<0.1" | Time Frequent (>10 Trucks) Vehicle Traffic Begins | Time Watering Must Begin (1) | Precip Previous 24 Hours (inches) (1) | Average Daily Temp (Deg F) (2) | Vehicle Traffic Frequency <10? (Yes or No) | Road Dust Suppression Rating (Dry or Wet)(3) | NO If no Vehicle Traffic<br>NO if T<35 degrees F<br>NO if Precipitation > 0.1"<br>NO If Dust Supp Rating Wet<br>YES if Dry and Traffic and T>35 and Precip<0.1" | |
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(1) Document time of required loads. **Note: If no watering on previous day due to no coal yard traffic, then must water within 3 hours of scraper or vehicle traffic start time!**

(2) From rain gauge, **If rain amounts > than 0.1" in previous 24 hours, No Watering Required, but can be done if deemed necessary.**

(3) **If the daytime block average (7 AM to 4 PM on previous day) is below 35'F then winter conditions exist & No Watering Required. If temp is > 35'F, but it is unsafe to water, state so in the comments box.**

(4) Qualitative Rating of **Dry** or **Wet Coal** on Storage Piles or Roads

(5) **You Must Water daily. Documentation will be collected in the water wagon tracking spreadsheet.**

(6) Add comments as deemed necessary to explain why or why not watering was/was not needed or performed.

## COAL YARD WAGON FILL STATION DATA

| Date and Time | Fill Complete? | Operator # | Fill Station | Destination | Vehicle ID | Vehicle Total (GAL) | Daily Total (GALS) | Annual Total (KGAL) |
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## Landfill Watering/Operating Hours Documentation

| Date | Ash Haul Roads (Paved and Unpaved) Status | | | | | | Water Required? (5) | Landfill Status | | | | | | Water Required? (5) | Comments (6) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Time Ash Truck Hauling Begins | Time Watering Must Begin (1) | Precip Previous 24 Hours (inches) (2) | Average Daily Temp (Deg F) (3) | Any Ash Hauling? (Yes or No) | Haul Roads Dust Suppression Rating (Dry or Wet) (4) | NO If no Ash Hauling<br>NO if T<35 degrees F<br>NO if Precipitation > 0.1"<br>NO If Dust Supp Rating Wet<br>YES if Dry and Traffic and T>35 and Precip<0.1" | Time Ash Truck Hauling Begins | Time Watering Must Begin (1) | Precip Previous 24 Hours (inches) (2) | Average Daily Temp (Deg F) (3) | Any Landfill Activity? (Yes or No) | Landfill Dust Suppression Rating (Dry or Wet) (4) | NO If no Landfill Activity<br>NO if T<35 degrees F<br>NO if Precipitation > 0.1"<br>NO If Dust Supp Rating Wet<br>YES if Dry and Traffic and T>35 and Precip<0.1" | |
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(1) Document time of required loads. **Note: If no watering on previous day due to no coal yard traffic, then must water within 3 hours of scraper or vehicle traffic start time!**

(2) From rain gauge, **If rain amounts > than 0.1" in previous 24 hours, No Watering Required, but can be done if deemed necessary.**

(3) **If the daytime block average (7 AM to 4 PM on previous day) is below 35'F then winter conditions exist & No Watering Required. If temp is > 35'F, but it is unsafe to water, state so in the comments box.**

(4) Qualitative Rating of **Dry** or **Wet Coal** on Storage Piles or Roads

(5) **You Must Water daily. Documentation will be collected in the water wagon tracking spreadsheet.**

(6) Add comments as deemed necessary to explain why or why not watering was/was not needed or performed.

## LANDFILL WAGON FILL STATION DATA

| Date and Time | Fill Complete? | Operator # | Fill Station | Destination | Vehicle ID | Vehicle Total (GAL) | Daily Total (GALS) | Annual Total (KGAL) |
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# Ponds Watering/Operating Hours Documentation

| | Pond Haul Roads (Paved and Unpaved) Status | | | | | | Water Required? (5) | Scrubber Solids Pond Status | | | | | | Water Required? (5) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | Time Hauling to Pond Begins | Time Watering Must Begin (1) | Precip Previous 24 Hours (inches) (2) | Average Daily Temp (Deg F) (3) | Any Hauling to Ponds? (Yes or No) | Haul Roads Dust Suppression Rating (Dry or Wet) (4) | NO If no Hauling to Ponds<br>NO if T<35 degrees F<br>NO if Precipitation > 0.1"<br>NO If Dust Supp Rating Wet<br>YES if Dry and Traffic and T>35 and Precip<0.1" | Time Hauling to Pond Begins | Time Watering Must Begin (1) | Precip Previous 24 Hours (inches) (2) | Average Daily Temp (Deg F) (3) | Any Pond Activity? (Yes or No) | Pond Dust Suppression Rating (Dry or Wet) (4) | NO If no Pond Activity<br>NO if T<35 degrees F<br>NO if Precipitation > 0.1"<br>NO If Dust Supp Rating Wet<br>YES if Dry and Traffic and T>35 and Precip<0.1" | Comments (6) |
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(1) Document time of required loads. **Note: If no watering on previous day due to no coal yard traffic, then must water within 3 hours of scraper or vehicle traffic start time!**

(2) From rain gauge, **If rain amounts > than 0.1" in previous 24 hours, No Watering Required, but can be done if deemed necessary.**

(3) **If the daytime block average (7 AM to 4 PM on previous day) is below 35'F then winter conditions exist & No Watering Required. If temp is > 35'F, but it is unsafe to water, state so in the comments box.**

(4) Qualitative Rating of **Dry** or **Wet Coal** on Storage Piles or Roads

(5) **You Must Water daily. Documentation will be collected in the water wagon tracking spreadsheet.**

(6) Add comments as deemed necessary to explain why or why not watering was/was not needed or performed.

## PONDS WAGON FILL STATION DATA

| Date and Time | Fill Complete? | Operator # | Fill Station | Destination | Vehicle ID | Vehicle Total (GAL) | Daily Total (GALS) | Annual Total (KGAL) |
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# Appendix D

## Meteorological Data

|  | SHERCO DAILY WEATHER REPORT |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|
| Date and Time | Wind Direction | Hourly Rain (Inches) | Daily Rain (Inches) | Monthly Rain (Inches) | Barometric Pressure (Inches Hg) | Wind Speed (MPH) | Dewpoint (Degrees F) | Ambient Air Temp (Degrees F) | Wind Chill (Degrees F) |
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