

**FACT SHEET STATEMENT OF BASIS
SUNNYSIDE COGENERATION ASSOCIATES (SCA)
UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES)
PERMIT NUMBER: UT0024759
MINOR INDUSTRIAL RENEWAL**

FACILITY CONTACTS

Facility Contact:	Rusty Netz	Responsible Official:	Richard Carter
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DESCRIPTION OF FACILITY

Facility Name: Sunnyside Cogeneration Associates
Mailing Address: P.O. Box 10
East Carbon, Utah 84520
Physical Location: Just south of Highway 123 near the town of Sunnyside, Utah in Carbon County
Coordinates: Latitude: 39° 32' 49.78" N, Longitude: 110° 23' 27.63"
Standard Industrial Classification (SIC): 4911 – Fossil Fuel Electric Power Generation (NAICS 221112)

Sunnyside Cogeneration Associates (SCA) is a steam electric power generating facility, with approximately 51 net MW in generating capacity. SCA has a Standard Industrial Classification (SIC) code 4911, for electric power generation. The facility is located just south of State Highway 123 near the town of Sunnyside in Carbon County, Utah. SCA burns waste coal from coal refuse piles and utilizes nearby water supply sources for cooling water.

Cooling water is primarily obtained from ground water, but could also be obtained from Grassy Trail Creek if it were consistently flowing. Water is pumped and stored in two large reservoirs near the plant; one 20 million gallons in size and the other 40 million gallons in size. Cooling water from the reservoirs is treated with lime, soda ash and acid for pH control before use in the cooling system. The cooling water is recycled a number of times, which requires the addition of a phosphate based anti-scaling chemical, an oxygen scavenger, acid for pH control, and sodium hypochlorite (at 5mg/L) to prevent biological growth.

Cooling tower blow down is continually recirculated to a water clarifier for solids removal. These solids are pumped at a rate of 30 gpm to the water thickener. From the water thickener the solids are pumped to the ash silo and used for ash conditioning. All of the ash, such as the fly ash and bottom ash are transported to the ash silo. Material is trucked from the ash silo to the ash landfill site and no water is used in this transport.

Boiler blow down water is discharged at a rate of 30 gpm into a holding tank and eventually loaded into a water truck and used for dust suppression on the ash landfill sites. SCA is considered as a zero discharge facility because there are no direct discharges of cooling tower or boiler blow down water to any sedimentation ponds.

DESCRIPTION OF DISCHARGE

SCA has a total of ten discharge points in its present permit. In its permit application SCA asked that an additional discharge point called 018 be added to the permit. Outfall 018 is associated with SCA's #2 Ash Landfill. Discharges coming from the #2 Ash Landfill will report to the SCA #2 Sedimentation Pond

and any discharges from the SCA #2 Sedimentation pond will end up in the pond associated with Outfall 018. There was no discharge from any of the designated outfalls over the last permit cycle. There has only been three discharges from this facility in the last 20 years.

Description of UPDES Outfalls

UPDES Outfalls	Outfall Type	Latitude N	Longitude W	Outfall Receiving Stream
Water Supply Pipeline - 002	Water Supply	39° 35' 50"	110° 22' 42"	Grassy Trail Creek
Water Supply Pipeline - 003 (Proposed Outfall)	Water Supply	39° 32' 58"	110° 23' 32"	Grassy Trail Creek
Rail Cut Pond - 007	Coal Mining	39° 32' 14"	110° 23' 48"	Icelander Creek
Old Coarse Refuse Pond - 008	Coal Mining	39° 32' 20"	110° 23' 03"	Icelander Creek
Pasture Pond - 009	Coal Mining	39° 32' 36"	110° 23' 29"	Icelander Creek
Coarse Refuse Toe Pond - 012	Coal Mining	39° 32' 28"	110° 23' 58"	Icelander Creek
Facility Sed. Pond - 013	Electric Prod.	39° 32' 46"	110° 23' 49"	Icelander Creek
Coal Pile Sed. Pond - 014	Electric Prod.	39° 32' 45"	110° 23' 26"	Icelander Creek
Borrow Area Pond - 016	Coal Mining	39° 32' 25"	110° 23' 45"	Icelander Creek
#1 Ash Landfill Sed. Pond - 017	Electric Prod.	39° 32' 50"	110° 25' 10"	Icelander Creek
#2 Ash Landfill Sed. Pond -018	Electric Prod.	39° 32' 18.3"	110°23'10"	Icelander Creek

CLASSIFICATION OF RECEIVING WATER

Grassy Trail Creek and Icelander Creek are classified as 2B, 3C and 4 according to *Utah Administrative Code (UAC) R317-2-13*.

- 2B - Protected for secondary contact recreation such as boating, wading or similar uses.
- 3C - Protected for non-game fish and other aquatic life, including the necessary aquatic organisms in their food chain.
- 4 - Protected for agricultural uses including irrigation of crops and stock watering.

BASIS FOR EFFLUENT LIMITATIONS

In accordance with regulations promulgated in *40 Code of Federal Regulations (CFR) Part 122.44* and in *UAC R317-8-4.2*, effluent limitations are derived from technology-based effluent limitations guidelines, Utah Secondary Treatment Standards (*UAC R317-1-3.2*) or Utah Water Quality Standards (*UAC R317-2*). In most cases where multiple limits have been developed, those that are more stringent apply. In cases where no limits have been developed, Best Professional Judgment (BPJ) may be used where applicable. "Best Professional Judgment" refers to a discretionary, best professional decision made by the permit writer based upon precedent, prevailing regulatory standards or other relevant information.

Based on *UAC R317-1-3.2*, Utah Secondary Treatment Standards, pH shall be limited to a minimum of 6.5 S.U. and a maximum of 9.0 S.U. at all discharge points and total suspended solids (TSS) shall be limited to 25 mg/L as a thirty-day average and to 35 mg/L as a seven-day average at all discharge points except 002 and 003. Any discharges from Outfalls 002 and 003 would be composed of pumped groundwater and contain very little TSS.

Discharges from Outfalls 002 and 003 are expected to be very infrequent, if at all. Because this ground water is coming from a level similar to where mining occurred in the former Sunnyside Coal Mine (reclaimed in the late 1990's), there is still potential for contamination of long wall mining fluid. Therefore, based on Best Professional Judgment (BPJ) an oil and grease limitation of 10 mg/L will be included in the permit for Outfalls 002 and 003.

Dissolved oxygen (DO) shall meet a concentration of 5.0 mg/L as a thirty-day minimum average for all discharges. This is based on BPJ and is a continuation of the DO limits from the previous permit.

Based on *40 CFR 434, Subpart D (Alkaline Mine Drainage)*, TSS shall have a daily maximum of 70 mg/L at discharge points 007, 008, 009, 012 and 016. The limitation on total iron (T-Fe) in the previous permit was 1.0 mg/L. Based on water quality standards and BPJ, this limitation will be retained in the renewal permit at outfalls 002, 003, 007, 008, 009, 012 and 016. Also based on BPJ, oil and grease shall be limited visually at Outfalls 007, 008, 009 and 016. If an oil sheen or grease sheen is observed, then a sample must be taken and the concentration of oil and grease shall not exceed 10 mg/L.

Based on *40 CFR 434, Subpart D.*, special provisions are applicable to the coal mining discharge points (Outfalls 007, 008, 009, 012 and 016). Any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period less than or equal to the 10-year 24-hour precipitation event (or snowmelt of equivalent volume) may comply with the following limitation instead of the otherwise applicable limitations for TSS:

<u>Parameter</u>	<u>Effluent Limitations</u>
Settleable Solids	0.5 ml/L

Any discharge or increase in the volume of a discharge caused by precipitation within any 24 hour period greater than the 10 year 24 hour precipitation event (or snowmelt of equivalent volume) may comply with the following limitations instead of the otherwise applicable limitations:

<u>Parameter</u>	<u>Effluent Limitations</u>
pH	6.5 to 9.0 S.U.

The operator shall have the burden of proof that the discharge or increase in discharge was caused by the applicable precipitation event.

Based on *40 CFR 423.15 (New Source Performance Standards for Steam Electric Power Generating Point Source Category)* there shall be no discharge of polychlorinated biphenyl compounds (PCBs) such as those commonly used in transformer fluid at any of the discharge points directly associated with the steam electric power generation facility (Outfalls 013, 014, 017, and 018), or from any other areas associated with SCA.

For discharge points 013, 014, 017 and 018 the following additional limitations (along with those indicated above as applicable to all discharge points) may also apply:

Based on *40 CFR 423.15(j)(1)*, neither free available chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may

discharge free available or total residual chlorine at any one time unless the utility can demonstrate to the Director that the units in a particular location cannot operate at or below this level of chlorination. Outfalls 013 and 014 are from storm water run-off sedimentation ponds, which do not have a source of chlorine and have never discharged to date. Since no chlorine is directly discharged to any of the outfall locations, the only possibility of discharging trace amounts of chlorine is from the ash landfills (Outfalls 017 and 018). Cooling tower blow down is first mixed with a water clarifier, for solids removal, and the water is reused in the cooling tower. The solids are transported to the ash landfills. It is highly unlikely that any chlorine will leach from the ash landfill during a runoff event, fill the sedimentation pond and be discharged via Outfalls 017 or 018. Therefore based upon BPJ, the chlorine limitations in *40 CFR 423.15* have not been included for Outfalls 013, 014, 017 or 018.

At Outfalls 017 and 018, based upon *40 CFR 423.15(j)(1)*, there shall be no detectable amounts of the 126 priority pollutants in the effluent. Also, based on *40 CFR 423.15(j)(3)*, instead of monitoring for these pollutants directly, SCA may use engineering calculations which demonstrate that the regulated pollutants are not detectable in the final discharge by the analytical methods in *40 CFR 136*.

Based on *40 CFR 423.15 (j) (1)* total chromium and total zinc need to be included in the permit at Outfalls 017 and 018 because the discharge from these ponds is runoff from the ash landfills, which are recipients of clarified cooling tower blow down water (latent with solids). Since the State has no limit for total chromium and the previous permit had a limit of 0.03 mg/L which is more stringent than the limit contained in *40 CFR 423.15 (j) (1)*, the old permit number will be retained in this permit. Therefore, total chromium will be limited to 0.03 mg/L. The State does have a zinc water quality standard, which is lower than the limit contained in *40 CFR 423.1 (j) (1)*, but higher than the limit contained in the previous permit. Therefore the limit contained in the previous permit will be continued in this permit. Therefore, the limit in this renewal permit for total zinc will be 0.3 mg/L for Outfalls 017 and 018.

Based on *40 CFR 423.15*, discharge points 013, 014, 017, and 018 shall be limited to an oil and grease concentration of 15.0 mg/L as an average of daily values for 30 consecutive days. The maximum value for any one day shall not exceed 20 mg/L.

TSS shall be limited to a daily maximum of 100 mg/L at outfalls 013, 017 and 018 based on *40 CFR 423.15(c)*. TSS shall be limited to a daily maximum of 50 mg/L at outfall 014 based on *40 CFR 423.15(k)*. Based on *40 CFR 423.15(l)*, any untreated overflow from facilities designed, constructed, and operated to treat the coal pile runoff which results from a 10 Year, 24 hour rainfall event shall not be subject to the limitations in *40 CFR 423.15(k)*.

Carried over from the previous permit and based on BPJ, a special provision in this renewal permit is applicable to all the discharge points associated with the steam electric power generating facility (outfalls 013, 014, 017 and 018). Any untreated overflow from facilities designed, constructed, and operated to treat the runoff which results from a 10-year 24-hour runoff event may comply with the following limitation instead of the otherwise applicable limitations:

<u>Parameter</u>	<u>Effluent limitation</u>
pH	6.5 to 9.0 S.U.

Total dissolved solids (TDS) mass loading is limited according to policies established by the Colorado River Basin Salinity Control Forum (CRBSCF), as authorized in *UAC R317-2-4*. Based on the CRBSCF policies, the TDS shall be limited to one-ton per day as a sum of all discharge points. Based on the fact that over the last five years there have been no discharge events from this facility, SCA should be able to continue meeting the TDS mass loading limitation.

TDS concentrations are limited by Water Quality Standards in *UAC R317-2-14*. The previous permits

contained a TDS concentration limit of 1650 mg/L. This TDS concentration limit had been permitted from the former Sunnyside Coal Mine for many years before it closed down. Based upon its use for irrigation and the observance of no visual effect on irrigated crops and stock watering, it was felt that this discharge concentration limit of 1650 mg/L would protect the designated uses of irrigation and stock watering. Although a total maximum daily load (TMDL) has been established with a site specific standard TDS effluent limit of 3000 mg/L, as taken from the *Price River, San Rafael River and Muddy Creek TMDLs for Dissolved Solids –West Colorado Watershed Management Unit, Utah April 2004, p. A-25, Table A-12*, previous discharge TDS data from SCA indicates that the facility should be able to comply with the more stringent limitation of 1650 mg/L. Therefore based on BPJ, the TDS concentration limit of 1650 mg/L at all discharge points will be retained in this renewal permit.

Based on information submitted by Rusty Netz, Environmental Engineer with SCA the sum of the potential flow from all the discharge points is 1.76 million gallons per day (MGD) and the largest possible flow from any one outfall is 0.45 MGD (Outfall 016). The wasteload allocation indicated a design flow of 1.0 MGD and this will be included in the permit as a 30 day average flow. The list of maximum flows from each outfall is included as Addendum III to this Fact Sheet Statement of Basis.

WASTE LOAD ANALYSIS AND ANTIDegradation REVIEW

Effluent limitations may also be derived using a Waste Load Analysis (WLA), which is appended to this Statement of Basis as Addendum I. The WLA incorporates Secondary Treatment Standards, Water Quality Standards, Anti-degradation Reviews (ADR), as appropriate and designated uses into a water quality model that projects the effects of discharge concentrations on receiving water quality. Effluent limitations are those that the model demonstrates are sufficient to meet State water quality standards in the receiving waters. During this UPDES renewal permit development, a WLA and ADR were performed. An ADR Level I review was performed and concluded that an ADR Level II review was required (see pages 1 and 20 of the WLA for more details). The WLA indicates that the effluent limitations should be sufficiently protective of water quality, in order to meet State water quality standards in the receiving waters.

EFFLUENT LIMITATIONS, SELF-MONITORING, AND REPORTING REQUIREMENTS

Discharge monitoring report (DMR) forms shall be completed and submitted by the 28th of each month as required. The following table of effluent self-monitoring and reporting requirements are based on the *Utah Monitoring, Recording and Reporting Frequency Guidelines* as effective December 1, 1991:

The effluent requirements for Outfalls 002,003,007,008,009,012 and 016 are indicated below:

Effluent Characteristics	Effluent Limitations				Monitoring Requirements	
	30 Day Average	7 Day Average	Daily Minimum	Daily Maximum	Sample Frequency	Sample Type
Flow, ¹ MGD	1.0	² NA	NA	Report	Monthly	Measured
Oil & Grease, mg/L a/	NA	NA	NA	10	Monthly	Visual/Grab
TSS, mg/L b/	25	35	NA	70	Monthly	Grab
TDS, mg/L c/	NA	NA	NA	1650	Monthly	Grab
Total Iron, mg/L	NA	NA	NA	1.00	Monthly	Grab
pH, standard units	NA	NA	6.5	9.0	Monthly	Grab
DO, mg/L	>5.0	NA	NA	NA	Monthly	Grab
Sanitary Waste d/	NA	NA	NA	None	Monthly	Visual

¹ MGD: million gallons per day ² NA: not applicable

- a/ With the exception of Outfalls 002 and 003, monitoring for Oil & Grease shall be a visual test performed at least once per month. If any oil and/or grease sheens are observed visually, then a sample of the effluent shall be taken immediately and that sample shall not exceed 10 mg/L. In addition to the monthly sampling requirement for Oil & Grease at Outfalls 002 and 003, a sample for Oil & Grease shall also be immediately taken whenever a sheen is observed on the effluent or there is another reason to believe oil and/or grease is present.
- b/ The total suspended solids limitations are applicable to all outfalls listed in *Part I*, except for Outfalls 002 and 003.
- c/ In addition to the concentration limitation, the total amount of total dissolved solids shall not exceed a maximum of 1 ton (2000 lbs) per day as a sum of all outfalls.
- d/ There shall be no sanitary waste in the discharge.

The following requirements are applicable to Outfalls 007,008,009,012 and 016:

Any overflow, increase in volume of a discharge or discharge from a bypass system caused by precipitation within a 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snow-melt of equivalent volume) at Outfalls 007, 008, 009, 012 and 016 may comply with the following limitation instead of the otherwise applicable limitations for total suspended solids contained in *Part I.D.1*, provided the facility has been designed, constructed and operated to adequately treat up to 10-year, 24-hour precipitation event:

Effluent Characteristic
Settleable Solids

Daily Maximum
0.5 mg/L

In addition to the monitoring requirements specified under *Part I.D.1*, all effluent samples collected during storm water discharge events shall also be analyzed for settleable solids. Such analyses shall be conducted monthly by grab samples.

Any overflow, increase in volume of a discharge or discharge from a bypass system caused by precipitation within a 24-hour period greater than the 10-year, 24-hour precipitation event (or snow melt of equivalent volume) at Outfalls 007, 008, 009, 012 and 016 may comply with the following limitations instead of the otherwise applicable limitations:

<u>Parameter</u>	<u>Effluent Limitations</u>
pH	6.5 to 9.0 S.U.

However, as stated under *Part I.D.3*, all effluent samples collected during storm water discharge events shall be analyzed for settleable solids and parameters identified under *Part I.D.1*.

The operator shall have the burden of proof that the discharge or increase in discharge was caused by the applicable precipitation event described in Parts .

The effluent requirements for Outfalls 013, 014, 017 and 018 are indicated below:

Effluent Characteristics	Effluent Limitations				Monitoring Requirements	
	30 Day Average	7 Day Average	Daily Minimum	Daily Maximum	Sample Frequency	Sample Type
Flow, ¹ MGD	1.0	² NA	NA	Report	Monthly	Measured
Oil & Grease, mg/L a/	15	NA	NA	20	Monthly	Visual/Grab
TSS, mg/L b/	25	35	NA	100	Monthly	Grab
TDS, mg/L c/	NA	NA	NA	1650	Monthly	Grab
Total Chromium, mg/L d/	0.03	NA	NA	0.03	Monthly	Grab
Total Zinc, mg/L d/	0.3	NA	NA	0.3	Monthly	Grab
pH, standard units	NA	NA	6.5	9.0	Monthly	Grab
DO, mg/L	>5.0	NA	NA	NA	Monthly	Grab
Sanitary Waste	NA	NA	NA	None	Monthly	Visual

¹ MGD: million gallons per day ² NA: not applicable

The permittee shall once each year monitor the effluent at 017 and 018 for the 126 priority pollutants to assure no detectable amount present or determine by proper engineering calculations that the 126 priority pollutants are not detectable in the discharge. A letter shall be submitted at the end of each calendar year indicating the presence or absence of any detectable amount of the 126 priority pollutants.

There shall be no visible sheen or floating solids or visible foam in other than trace amounts.

There shall be no discharge of polychlorinated biphenyls.

There shall be no direct discharge of process water to Grassy Trail Creek or Iceland Creek.

- a/ In addition to the monthly sampling requirement for Oil & Grease, a sample for Oil & Grease shall also be immediately taken whenever a sheen is observed on the effluent or there is another reason to believe oil and/or grease is present.
- b/ Daily maximum total suspended solids shall not be greater than 50 mg/L at outfall 014. Any untreated overflow from facilities designed, constructed, and operated to treat the coal pile runoff which results from a 10-year 24-hour precipitation event shall not be subject to a daily maximum of 50 mg/L.
- c/ In addition to the concentration limitation, the total amount of total dissolved solids shall not exceed a maximum of 1 ton (2000 lbs) per day as a sum of all outfalls.
- d/ These limitations apply only to discharge points 017 and 018.

Samples taken in compliance with the monitoring requirements specified under *Part I.D.5* shall be taken at the following locations: at each of the outfalls prior to mixing with the receiving water.

Any untreated overflow from facilities designed, constructed, and operated to treat the runoff which results from a 10-year, 24-hour precipitation event at outfalls 013, 014, 017 and 018 may comply with the following limitation instead of the otherwise applicable limitations as contained in *Part I.D.5*:

The pH shall not be less than 6.5 nor greater than 9.0 S.U.

The operator has the burden of proof that the discharge or increase in discharge was caused by the applicable precipitation event described in *Part I.D.7*.

SIGNIFICANT CHANGES FROM PREVIOUS PERMIT

The significant changes from the existing permit are as follows: discharge point 018 associated with the new #2 ash landfill has been added. A flow limitation of 1.0 MGD has been added to the proposed renewal permit for each discharge point.

STORM WATER REQUIREMENTS

The storm water requirements are based on the UPDES Multi-Sector General Permit (MSGP) for Storm Water Discharges for Industrial Activity, General Permit No. UTR000000. All sections of the MSGP that pertain to discharges from wastewater treatment plants have been included and sections which are redundant or do not pertain have been deleted.

The permit requires the preparation and implementation of a storm water pollution prevention plan for all areas within the confines of the mine site. Required elements of this plan are:

- 1) Development of a pollution prevention team,
- 2) Development of drainage maps and material stockpiles,
- 3) An inventory of exposed material,

- 4) Spill reporting and response procedures,
- 5) A preventative maintenance program,
- 6) Employee training,
- 7) Certification that storm water discharges are not mixed with non-storm water discharges,
- 8) Compliance site evaluations and potential pollutant source identification, and
- 9) Visual examinations of storm water discharges.

This plan is required to be maintained on-site to reflect current site conditions and made available for review upon request and/or inspections.

PRETREATMENT REQUIREMENTS

This facility does not discharge process wastewater to a sanitary sewer system. Any process wastewater that the facility may discharge to the sanitary sewer, either as a direct discharge or as a hauled waste, is subject to federal, state, and local pretreatment regulations. Pursuant to section 307 of the Clean Water Act, the permittee shall comply with all applicable federal general pretreatment regulations promulgated, found in 40 CFR 403, the state's pretreatment requirements found in UAC R317-8-8, and any specific local discharge limitations developed by the Publicly Owned Treatment Works (POTW) accepting the waste.

BIOMONITORING REQUIREMENTS

As part of a nationwide effort to control toxic discharges, biomonitoring requirements are being included in permits for facilities where effluent toxicity is an existing or potential concern. In Utah, this is done in accordance with the *State of Utah Permitting and Enforcement Guidance Document for Whole Effluent Toxicity Control (Biomonitoring (2/1991))*. Authority to require effluent biomonitoring is provided in UAC R317-8, *Utah Pollutant Discharge Elimination System* and UAC R317-2, *Water Quality Standards*.

The SCA plant is categorized as a minor industrial facility. There is no discharge of process wastewater from this facility. SCA rarely discharges storm water runoff that is neither considered to be toxic, nor likely to be toxic. Therefore, WET limits and testing of the effluent will not be required. A toxicity reopener provision will be included in the permit so that WET testing and WET limitation requirements can be incorporated at any time if determined to be appropriate in the future.

PERMIT DURATION

As stated in UAC R317-8-5.1(1), UPDES permits shall be effective for a fixed term not to exceed five (5) years.

Drafted by Mike Herkimer
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Utah Division of Water Quality
June 6, 2012

ADDENDUMS

- I. Waste Load Analysis, Anti-Degradation Review (ADR)
- II. ADR II Submittal, Certification and Approval
- III. Sunnyside Flow Data