Deseret
Generation & Transmission Co-operative
Bonanza Power Plant
12500 East 25500 South ☐ Vernal, Utah 84078-8525
(435) 789-9000 ☐ Fax (435) 781-5816

November 14, 2001

Mr. Richard R. Long
Director, Air program (Mail Code 8P2-A)
999 18th Street, Suite 500
Denver, Colorado 80202-2466

Re: Title V Permit Application Amendment

Dear Mr. Long:

This letter is an amendment to the Title V permit application for the Bonanza Power Plant. Since our original application, we have added an insignificant emissions source to the sludge conveyor system. We have added a small "grasshopper" conveyor system at the end of the regular sludge conveyor system.

The new conveyor system consists of three 100-foot long conveyors and one 80-foot long conveyor. The new conveyor system is uncovered. The purpose of these conveyors is to move the product from the end of the main sludge conveying system up to the top of the sludge pile closer to the disposal area. This system saves the front-end loaders from having to travel up and down the pile to move the product.

The emissions from this system are estimated to be .78 tons per year for TSP and .27 tons per year for PM-10. These emissions will be more than offset because the loaders will have to travel less on the pile. We have included an updated Title V spreadsheet for fugitive emissions with the new grasshopper conveyors added in.

If you have any questions about these conveyors, please contact Howard Vickers or Mike Goddard at the plant.

Sincerely,

Stanley J. Gordon
Plant Manager

CC: David Crabtree

THE PAGES OF THE ATTACHED SPREADSHEET ARE NUMBERED D-19 THROUGH D-37. EPA COULD NOT GET ITS COMPUTER TO PRINT D-34 AND D-35 FROM FLOPPY DISK SUPPLIED BY DESERET.

- MIKE OWENS
U.S. EPA

DESERET GENERATION AND TRANSMISSION COOPERATIVE

PLANT: Bonanza, Unit 1
SOURCE ID: COAL HANDLING & STORAGE OPERATIONS
SOURCE DESCRIPT: DOZER RECLAIM (p.1 of 10)

PROCESS DATA

YEAR: 1998		SILT CONTENT (%)	MEAN WIND SPEED (MPH)	MAXIMUM & ACTUAL PROCESS RATE		SCC UNITS	MOISTURE CONTENT (%)			
SCC CODE										
30501040		0.01	10.00	1,400,000	M	TON	6.00			
			(Average)	500,000	A					

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	CONTROL EQUIPMENT SECONDARY	OVERALL CONTROL EFFICIENCY (%)	EMISSION FACTOR (LBS/SCC UNIT)	ASH/SULFUR FLAG	EMISSIONS ESTIMATION METHOD	ACTUAL CONTROLLED (TONS/YEAR)	POTENTIAL CONTROLLED EMISSIONS (LBS/HR)	POTENTIAL CONTROLLED EMISSIONS (TONS/YEAR)
PM			0.00	0.03039		AP-42	7.60	4.86	21.27
PM10			0.00	0.00114		AP-42	0.28	0.18	0.79

NOTES:

AP-42 EQUATION - BATCH OR CONTINUOUS DROP OPERATIONS

$E = k(0.0032)(U/5)^{1.3}/(M/2)^{1.4}$ lbs/ton

where:

E = emission factor (lbs/ton)

k = particle size multiplier (dimensionless); PM = 1 and PM10 = 0.35

U = mean wind speed (mph); Estimated to be 10.9 mph based on climatology data from local airport

M = material moisture content (%); Estimated to be 4.5% based on AP-42 and EPRI data

ACTUAL 1998 EMISSIONS

1) Actual emissions based on calculated emissions factors using the above AP-42 equation for batch or continuous drop operations.

POTENTIAL CONTROLLED EMISSIONS

2) Maximum process rate based on 100% fuel delivery by truck, full load unlimited operation of combustion units, and a coal heat content of 8,200 Btu/lb.
3) Potential emissions based on calculated emissions factors using the above AP-42 equation for batch or continuous drop operations.

CONTROL EQUIPMENT AND ASSOCIATED EFFICIENCIES

4) No emissions control equipment.

DESERET GENERATION AND TRANSMISSION COOPERATIVE

PLANT: Bonanza, Unit 1
SOURCE ID: COAL HANDLING & STORAGE OPERATIONS
SOURCE DESCRIPT: RAILCAR AND TRUCK UNLOADING, (p.2 of 10)

PROCESS DATA

YEAR:	MEAN WIND SPEED (MPH)	MAXIMUM & ACTUAL PROCESS RATE		SCC UNITS	MOISTURE CONTENT (%)
1998					
SCC CODE					
	10.00	1,900,000	M	TON	6.00
	(Estimated)	1,722,593	A		(Recieved)

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	CONTROL EQUIPMENT SECONDARY	OVERALL CONTROL EFFICIENCY (%)	EMISSION FACTOR (LBS/SCC UNIT)	ASH/SULFUR FLAG	EMISSIONS ESTIMATION METHOD	ACTUAL CONTROLLED (TONS/YEAR)	POTENTIAL CONTROLLED EMISSIONS (LBS/HR)	POTENTIAL CONTROLLED EMISSIONS (TONS/YEAR)
PM	Dust Suppression		(Estimated) 95.00	0.00169		AP-42	0.073	0.018	0.080
PM10	Dust Suppression		(Estimated) 95.00	0.00059		AP-42	0.026	0.006	0.028

NOTES:

AP-42 EQUATION - BATCH OR CONTINUOUS DROP OPERATIONS

E = k(0.0032)(U/5)^1.3/(M/2)^1.4 lbs/ton

where:

E = emission factor (lbs/ton)

k = particle size multiplier (dimensionless); PM = 1 and PM10 = 0.35

U = mean wind speed (mph); Estimated to be 10 mph based on climatology data from PSD and NOI.

M = material moisture content (%); 6% recieved, based on plant data worse case.

ACTUAL 1998 EMISSIONS

1) Actual emissions based on calculated emissions factors using the above AP-42 equation for batch or continuous drop operations.

POTENTIAL CONTROLLED EMISSIONS

2) Maximum process rate based on 100% fuel delivery by train or truck, full load unlimited operation of combustion units, and a coal heat content of 9,381 Btu/lb.
3) Potential emissions based on calculated emissions factors using the above AP-42 equation for batch or continuous drop operations.

CONTROL EQUIPMENT AND ASSOCIATED EFFICIENCIES

4) Emissions control equipment consists of a fabric filter.
5) Control efficiency for PM based on data published in EPRI and supported by vendor information.
6) Control efficiency for PM10 calculated based on the assumption that all PM escaping control is PM10.

DESERET GENERATION AND TRANSMISSION COOPERATIVE

PLANT: Bonanza, Unit 1
SOURCE ID: COAL HANDLING & STORAGE OPERATIONS
SOURCE DESCRIPT: CONV. 1 AND 2 TO STORAGE, (p. 3 of 10)

PROCESS DATA

YEAR: 1998 / SCC CODE		NUMBER OF TRANSFER POINTS	MEAN WIND SPEED (MPH)	MAXIMUM & ACTUAL PROCESS RATE		SCC UNITS	MOISTURE CONTENT (%)			
30501011		3	10.00	1,900,000	M	TON	6.00			
			(Estimated)	1,722,593	A					

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	CONTROL EQUIPMENT SECONDARY	OVERALL CONTROL EFFICIENCY (%)	EMISSION FACTOR (LBS/SCC UNIT)	ASH/SULFUR FLAG	EMISSIONS ESTIMATION METHOD	ACTUAL CONTROLLED (TONS/YEAR)	POTENTIAL CONTROLLED EMISSIONS (LBS/HR)	POTENTIAL CONTROLLED EMISSIONS (TONS/YEAR)
PM	Fabric Filter	Dust Suppression	(EPRI: EPA) 99.70	0.00169		AP-42	0.01	0.00	0.01
PM10	Fabric Filter	Dust Suppression	(Calculated) 99.22	0.00059		AP-42	0.01	0.00	0.01

NOTES:

AP-42 EQUATION - BATCH OR CONTINUOUS DROP OPERATIONS

$E = k(0.0032)(U/5)^{1.3}/(M/2)^{1.4}$ lbs/ton

where:

E = emission factor (lbs/ton)

k = particle size multiplier (dimensionless); PM = 1 and PM10 = 0.35

U = mean wind speed (mph); Estimated to be 10 mph based on climatology data from PSD and NOI.

M = material moisture content (%); 6% recieved based on plant data worse case.

Actual 1998 Emissions

1) Actual emissions based on calculated emissions factors using the above AP-42 equation for batch or continuous drop operations.

POTENTIAL CONTROLLED EMISSIONS

2) Maximum process rate based on full load unlimited operation of combustion units, and a coal heat content of 9,381 Btu/lb.
3) Potential emissions based on calculated emissions factors using the above AP-42 equation for batch or continuous drop operations.

CONTROL EQUIPMENT AND ASSOCIATED EFFICIENCIES

4) Emissions control equipment consists of a fabric filter.
5) Control efficiency for PM based on data published in EPRI and supported by vendor information.
6) Control efficiency for PM10 calculated based on the assumption that all PM escaping control is PM10.

DESERET GENERATION AND TRANSMISSION COOPERATIVE

PLANT: Bonanza, Unit 1
SOURCE ID: COAL HANDLING & STORAGE OPERATIONS
SOURCE DESCRIPT: CONVs. 3,4, AND 5 TO PLANT, (p. 4 of 10)

PROCESS DATA

YEAR: 1998 SCC CODE		NUMBER OF TRANSFER POINTS	MEAN WIND SPEED (MPH)	MAXIMUM & ACTUAL PROCESS RATE		SCC UNITS	MOISTURE CONTENT (%)			
30501011		3	10.00	1,900,000	M	TON	6.00			
			(Estimated)	1,692,513	A					

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	SECONDARY	OVERALL CONTROL EFFICIENCY (%)	EMISSION FACTOR (LBS/SCC UNIT)	ASH/SULFUR FLAG	EMISSIONS ESTIMATION METHOD	ACTUAL CONTROLLED (TONS/YEAR)	POTENTIAL CONTROLLED EMISSIONS (LBS/HR)	(TONS/YEAR)
PM	Fabric Filter		(EPRI: EPA) 99.70	0.00169		AP-42	0.01	0.00	0.01
PM10	Fabric Filter		(Calculated) 99.24	0.00059		AP-42	0.01	0.00	0.01

NOTES:

AP-42 EQUATION - BATCH OR CONTINUOUS DROP OPERATIONS

E = k(0.0032)(U/5)^1.3/(M/2)^1.4 lbs/ton

where:

E = emission factor (lbs/ton)

k = particle size multiplier (dimensionless); PM = 1 and PM10 = 0.35

U = mean wind speed (mph); Estimated to be 10 mph based on climatology data from PSD and NOI.

M = material moisture content (%); 6% recieved based on plant data worse case.

ACTUAL 1998 EMISSIONS

1) Actual emissions based on calculated emissions factors using the above AP-42 equation for batch or continuous drop operations.

POTENTIAL CONTROLLED EMISSIONS

2) Maximum process rate based on full load unlimited operation of combustion units, and a coal heat content of 9,381 Btu/lb.
3) Potential emissions based on calculated emissions factors using the above AP-42 equation for batch or continuous drop operations.

CONTROL EQUIPMENT AND ASSOCIATED EFFICIENCIES

4) Emissions control equipment consists of a fabric filter.
5) Control efficiency for PM based on data published in EPRI and supported by vendor information.
6) Control efficiency for PM10 calculated based on the assumption that all PM escaping control is PM10.

DESERET GENERATION AND TRANSMISSION COOPERATIVE

PLANT: Bonanza, Unit 1
SOURCE ID: COAL HANDLING & STORAGE OPERATIONS
SOURCE DESCRIPT: COAL CRUSHING, (p. 5 of 10)

PROCESS DATA

YEAR: 1998 SCC CODE	MAXIMUM & ACTUAL PROCESS RATE		SCC UNITS
	1,900,000	M	TON
	1,692,513	A	

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	CONTROL EQUIPMENT SECONDARY	OVERALL CONTROL EFFICIENCY (%)	EMISSION FACTOR (LBS/SCC UNIT)	ASH/SULFUR FLAG	EMISSIONS ESTIMATION METHOD	ACTUAL CONTROLLED (TONS/YEAR)	POTENTIAL CONTROLLED EMISSIONS (LBS/HR)	POTENTIAL CONTROLLED EMISSIONS (TONS/YEAR)
PM	Fabric Filter		(EPRI: EPA) 99.70	0.1800		EPRI	0.46	0.12	0.51
PM10	Fabric Filter		(Calculated) 99.47	0.0900		ENGR JUDGMT	0.41	0.10	0.46

NOTES:

ACTUAL 1998 EMISSIONS

1) Actual emissions based on emissions factor published in EPRI and engineering judgement, as noted for each pollutant.

POTENTIAL CONTROLLED EMISSIONS

2) Maximum process rate based on full load unlimited operation of combustion units, and a coal heat content of 9,381 Btu/lb.
3) Potential emissions based on emissions factor published in EPRI and engineering judgement, as noted for each pollutant.

CONTROL EQUIPMENT AND ASSOCIATED EFFICIENCIES

4) Emissions control equipment consists of a fabric filter.
5) Control efficiency for PM based on data published in EPRI and supported by vendor information.
6) Control efficiency for PM10 calculated based on the assumption that all PM escaping control is PM10.

DESERET GENERATION AND TRANSMISSION COOPERATIVE

PLANT: **Bonanza, Unit 1**
SOURCE ID: COAL HANDLING & STORAGE OPERATIONS
SOURCE DESCRIPT: ACTIVE STORAGE - LOAD-IN BY CONVEYOR 1, (p. 6 of 10)

PROCESS DATA

YEAR: 1998			MEAN WIND SPEED (MPH)	MAXIMUM & ACTUAL PROCESS RATE		SCC UNITS	MOISTURE CONTENT (%)			
SCC CODE										
			10.00	1,400,000	M	TON	6.00			
			(Estimated)	750,000	A					

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	CONTROL EQUIPMENT SECONDARY	OVERALL CONTROL EFFICIENCY (%)	EMISSION FACTOR (LBS/SCC UNIT)	ASH/SULFUR FLAG	EMISSIONS ESTIMATION METHOD	ACTUAL CONTROLLED (TONS/YEAR)	POTENTIAL CONTROLLED EMISSIONS (LBS/HR)	POTENTIAL CONTROLLED EMISSIONS (TONS/YEAR)
			(AWMA)						
PM	Dust Suppression		75.00	0.00169		AP-42	0.16	0.07	0.30
PM10	Dust Suppression		75.00	0.00059		AP-42	0.06	0.02	0.10

NOTES:

AP-42 EQUATION - BATCH OR CONTINUOUS DROP OPERATIONS

E = k(0.0032)(U/5)^1.3/(M/2)^1.4 lbs/ton

where:

E = emission factor (lbs/ton)

k = particle size multiplier (dimensionless); PM = 1 and PM10 = 0.35

U = mean wind speed (mph); Estimated to be 10 mph based on climatology data from PSD and NOI.

M = material moisture content (%); 6% recieved based on plant data worse case.

ACTUAL 1998 EMISSIONS

1) Actual emissions based on calculated emissions factors using the above AP-42 equation for batch or continuous drop operations.

POTENTIAL CONTROLLED EMISSIONS

2) Maximum process rate based on full load unlimited operation of combustion units, and a coal heat content of 9,381 Btu/lb.
3) Potential emissions based on calculated emissions factors using the above AP-42 equation for batch or continuous drop operations.

CONTROL EQUIPMENT AND ASSOCIATED EFFICIENCIES

4) Emissions control equipment consists of a fabric filter.
5) Control efficiency for PM based on data published in EPRI and supported by vendor information.
6) Control efficiency for PM10 calculated based on the assumption that all PM escaping control is PM10.

DESERET GENERATION AND TRANSMISSION COOPERATIVE

PLANT: Bonanza, Unit 1
SOURCE ID: COAL HANDLING & STORAGE OPERATIONS
SOURCE DESCRIPT: ACTIVE STORAGE PILE - RECLAIM OPERATIONS, (p. 7 of 10)

PROCESS DATA

YEAR: 1998 SCC CODE		NUMBER OF TRANSFER POINTS	MEAN WIND SPEED (MPH)	MAXIMUM & ACTUAL PROCESS RATE		SCC UNITS	MOISTURE CONTENT (%)			
30501011		1	10.00	1,400,000	M	TON	6.00			
			(Estimated)	0	A					

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	CONTROL EQUIPMENT SECONDARY	OVERALL CONTROL EFFICIENCY (%)	EMISSION FACTOR (LBS/SCC UNIT)	ASH/SULFUR FLAG	EMISSIONS ESTIMATION METHOD	ACTUAL CONTROLLED (TONS/YEAR)	POTENTIAL CONTROLLED EMISSIONS (LBS/HR)	POTENTIAL CONTROLLED EMISSIONS (TONS/YEAR)
PM			(EPRI) 0.00	0.00169		AP-42	0.00	0.27	1.18
PM10			0.00	0.00059		AP-42	0.00	0.09	0.41

NOTES:

AP-42 EQUATION - BATCH OR CONTINUOUS DROP OPERATIONS

E = k(0.0032)(U/5)^1.3/(M/2)^1.4 lbs/ton

where:

E = emission factor (lbs/ton)

k = particle size multiplier (dimensionless); PM = 1 and PM10 = 0.35

U = mean wind speed (mph); Estimated to be 10 mph based on climatology data from PSD and NOI.

M = material moisture content (%); 6% recieved based on plant data worse case.

ACTUAL 1998 EMISSIONS

1) Actual emissions based on calculated emissions factors using the above AP-42 equation for batch or continuous drop operations.

POTENTIAL CONTROLLED EMISSIONS

2) Maximum process rate based on full load unlimited operation of combustion units, and a coal heat content of 8,200 Btu/lb.
3) Potential emissions based on calculated emissions factors using the above AP-42 equation for batch or continuous drop operations.

CONTROL EQUIPMENT AND ASSOCIATED EFFICIENCIES

4) Emissions control equipment consists of a fabric filter.
5) Control efficiency for PM based on data published in EPRI and supported by vendor information.
6) Control efficiency for PM10 calculated based on the assumption that all PM escaping control is PM10.

DESERET GENERATION AND TRANSMISSION COOPERATIVE

PLANT: Bonanza, Unit 1
SOURCE ID: COAL HANDLING & STORAGE OPERATIONS
SOURCE DESCRIPT: INACTIVE STORAGE - LOAD-IN BY CONVEYOR 1, (p. 8 of 10)

PROCESS DATA

YEAR: 1998			MEAN WIND SPEED (MPH)	MAXIMUM & ACTUAL PROCESS RATE		SCC UNITS	MOISTURE CONTENT (%)			
SCC CODE										
			10.00	1,400,000	M	TON	6.00			
			(Estimated)	0	A					

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	CONTROL EQUIPMENT SECONDARY	OVERALL CONTROL EFFICIENCY (%)	EMISSION FACTOR (LBS/SCC UNIT)	ASH/SULFUR FLAG	EMISSIONS ESTIMATION METHOD	ACTUAL CONTROLLED (TONS/YEAR)	POTENTIAL CONTROLLED EMISSIONS (LBS/HR)	POTENTIAL CONTROLLED EMISSIONS (TONS/YEAR)
			(AWMA)						
PM	Chemical	Watering	75.00	0.00169		AP-42	0.00	0.07	0.30
PM10	Chemical	Watering	75.00	0.00059		AP-42	0.00	0.02	0.10

NOTES:

AP-42 EQUATION - BATCH OR CONTINUOUS DROP OPERATIONS

E = k(0.0032)(U/5)^1.3/(M/2)^1.4 lbs/ton

where:

E = emission factor (lbs/ton)

k = particle size multiplier (dimensionless); PM = 1 and PM10 = 0.35

U = mean wind speed (mph); Estimated to be 10 mph based on climatology data from PSD and NOI.

M = material moisture content (%); 6% recieved based on plant data worse case.

ACTUAL 1998 EMISSIONS

1) Actual emissions based on calculated emissions factors using the above AP-42 equation for batch or continuous drop operations.

POTENTIAL CONTROLLED EMISSIONS

2) Maximum process rate based on full load unlimited operation of combustion units, and a coal heat content of 8,200 Btu/lb.
3) Potential emissions based on calculated emissions factors using the above AP-42 equation for batch or continuous drop operations.

CONTROL EQUIPMENT AND ASSOCIATED EFFICIENCIES

4) Emissions control equipment consists of a fabric filter.
5) Control efficiency for PM based on data published in EPRI and supported by vendor information.
6) Control efficiency for PM10 calculated based on the assumption that all PM escaping control is PM10.

DESERET GENERATION AND TRANSMISSION COOPERATIVE

PLANT: Bonanza, Unit 1
SOURCE ID: COAL HANDLING & STORAGE OPERATIONS
SOURCE DESCRIPT: ACTIVE STORAGE - WIND EROSION, (p. 9 of 10)

PROCESS DATA

YEAR: 1995 / SCC CODE	COAL SILT CONTENT (%)	TIME WINDSPEED EXCEEDS 12 MPH AT MEAN PILE HT (%)		MAXIMUM & ACTUAL PILE SIZE (ACRES)		SCC UNITS	NO. DAYS WITH >= 0.01" PRECIP PER YEAR			
	0.01	29.50		22.00	M	TON	60			
		(Estimated)		5.00	A					

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	CONTROL EQUIPMENT SECONDARY	OVERALL CONTROL EFFICIENCY (%)	EMISSION FACTOR (LBS/DAY/ACRE)	ASH/SULFUR FLAG	EMISSIONS ESTIMATION METHOD	ACTUAL CONTROLLED (TONS/YEAR)	POTENTIAL CONTROLLED EMISSIONS (LBS/HR)	POTENTIAL CONTROLLED EMISSIONS (TONS/YEAR)
PM			(EPRI) 0.00	0.0289		AP-42	0.12	0.03	0.12
PM10			0.00	0.0145		ENGR JUDGMT	0.06	0.01	0.06

NOTES:

AP-42 EQUATION - WIND EROSION OF STORAGE PILES

$E = 1.7\ (s/1.5)((365-p)/235)(f/15)$ lb/day/acre

where:

E = emission factor (lb/day/acre)

s = silt content of aggregate (%); Estimated to be 6.2% based on data published in AP-42 and EPRI for western coal.

p = number of days with >= 0.01 inch of precipitation per year; Estimated to be 85 based on AP-42 weather chart.

f = time unobstructed wind speed exceeds 12 mph at the mean pile height (%); Estimated to be 29.5% based on climatological summary from PSD and NOI.

ACTUAL 1998 EMISSIONS

1) Actual emissions based on calculated emissions factors using the above AP-42 equation for wind erosion of storage piles.

POTENTIAL CONTROLLED EMISSIONS

2) Potential emissions based on calculated emissions factors using the above AP-42 equation for wind erosion of storage piles.

CONTROL EQUIPMENT AND ASSOCIATED EFFICIENCIES

3) Emissions control consists of periodic watering.
4) Control efficiency for PM based on data published in EPRI.
5) Control efficiency for PM10 based on engineering judgement.

DESERET GENERATION AND TRANSMISSION COOPERATIVE

PLANT: Bonanza, Unit 1
SOURCE ID: COAL HANDLING & STORAGE OPERATIONS
SOURCE DESCRIPT: INACTIVE STORAGE - WIND EROSION, (p. 10 of 10)

PROCESS DATA

YEAR: 1998 SCC CODE	COAL SILT CONTENT (%)	TIME WINDSPEED EXCEEDS 12 MPH AT MEAN PILE HT (%)	MAXIMUM & ACTUAL PILE SIZE (ACRES)		SCC UNITS	NO. DAYS WITH >= 0.01" PRECIP PER YEAR
	0.01	29.50	22.00	M	TON	60
		(Estimated)	17.00	A		

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	CONTROL EQUIPMENT SECONDARY	OVERALL CONTROL EFFICIENCY (%)	EMISSION FACTOR (LBS/DAY/ACRE)	ASH/SULFUR FLAG	EMISSIONS ESTIMATION METHOD	ACTUAL CONTROLLED (TONS/YEAR)	POTENTIAL CONTROLLED EMISSIONS (LBS/HR)	POTENTIAL CONTROLLED EMISSIONS (TONS/YEAR)
PM	Chemical	Compaction	(EPRI) 50.00	0.0289		AP-42	0.04	0.01	0.06
PM10	Chemical	Compaction	50.00	0.0145		ENGR JUDGMT	0.02	0.01	0.03

NOTES:

AP-42 EQUATION - WIND EROSION OF STORAGE PILES

$E = 1.7\ (s/1.5)((365-p)/235)(f/15)$ lb/day/acre

where:

E = emission factor (lb/day/acre)

s = silt content of aggregate (%); Estimated to be 6.2% based on data published in AP-42 and EPRI for western coal.

p = number of days with >= 0.01 inch of precipitation per year; Estimated to be 85 based on AP-42 weather chart.

f = time unobstructed wind speed exceeds 12 mph at the mean pile height (%); Estimated to be 29.5% based on climatological summary for local airport

ACTUAL 1998 EMISSIONS

1) Actual emissions based on calculated emissions factors using the above AP-42 equation for wind erosion of storage piles.

POTENTIAL CONTROLLED EMISSIONS

2) Potential emissions based on calculated emissions factors using the above AP-42 equation for wind erosion of storage piles.

CONTROL EQUIPMENT AND ASSOCIATED EFFICIENCIES

3) Emissions control consists of periodic watering.
4) Control efficiency for PM based on data published in EPRI.
5) Control efficiency for PM10 based on engineering judgement.

DESERET GENERATION AND TRANSMISSION COOPERATIVE

PLANT: Bonanza, Unit 1
SOURCE ID: LIMESTONE HANDLING & STORAGE OPERATIONS
SOURCE DESCRIPT: CONVs. L1 AND L2 (p. 1 of 3)

PROCESS DATA

YEAR: 1998 SCC CODE		NUMBER OF TRANSFER POINTS	MEAN WIND SPEED (MPH)	MAXIMUM & ACTUAL PROCESS RATE		SCC UNITS	MOISTURE CONTENT (%)			
30501011		3	10.00	50,000	M	TON	3.00			
			(Estimated)	22,403	A					

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	CONTROL EQUIPMENT SECONDARY	OVERALL CONTROL EFFICIENCY (%)	EMISSION FACTOR (LBS/SCC UNIT)	ASH/SULFUR FLAG	EMISSIONS ESTIMATION METHOD	ACTUAL CONTROLLED (TONS/YEAR)	PROCESS CONTROLLED EMISSIONS (LBS/HR)	PROCESS CONTROLLED EMISSIONS (TONS/YEAR)
PM	Fabric Filter		(EPRI: EPA) 99.70	0.00447		AP-42	0.00	0.00	0.00
PM10	Fabric Filter		(Calculated) 99.62	0.00156		AP-42	0.00	0.00	0.00

NOTES:

AP-42 EQUATION - BATCH OR CONTINUOUS DROP OPERATIONS

E = k(0.0032)(U/5)^1.3/(M/2)^1.4 lbs/ton

where:

E = emission factor (lbs/ton)

k = particle size multiplier (dimensionless); PM = 1 and PM10 = 0.35

U = mean wind speed (mph); Estimated to be 10 mph based on climatology data from PSD and NOI.

M = material moisture content (%); 6% recieved based on plant data worse case.

ACTUAL 1998 EMISSIONS

1) Actual emissions based on calculated emissions factors using the above AP-42 equation for batch or continuous drop operations.

POTENTIAL CONTROLLED EMISSIONS

2) Maximum process rate based on full load unlimited operation of combustion units, and a coal heat content of 9,381 Btu/lb.
3) Potential emissions based on calculated emissions factors using the above AP-42 equation for batch or continuous drop operations.

CONTROL EQUIPMENT AND ASSOCIATED EFFICIENCIES

4) Emissions control equipment consists of a fabric filter.
5) Control efficiency for PM based on data published in EPRI and supported by vendor information.
6) Control efficiency for PM10 calculated based on the assumption that all PM escaping control is PM10.

DESERET GENERATION AND TRANSMISSION COOPERATIVE

PLANT: Bonanza, Unit 1
SOURCE ID: LIMESTONE HANDLING & STORAGE OPERATIONS
SOURCE DESCRIPT: DOZERS ON STORAGE PILE (p. 2 of 3)

PROCESS DATA

YEAR: 1998 SCC CODE	LIMESTONE SILT CONTENT (%)	MEAN VEHICLE SPEED (MPH)	MEAN VEHICLE WEIGHT (TONS)	MAXIMUM & ACTUAL MILES TRAVELED		SCC UNITS	MEAN NO. OF WHEELS	DAYS W/ > 0.01" RAIN PER YEAR
	1.50	5	10	200	M	TON	4	60
				100	A			

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	CONTROL EQUIPMENT SECONDARY	OVERALL CONTROL EFFICIENCY (%)	EMISSION FACTOR (LBS/VMT)	ASH/SULFUR FLAG	EMISSIONS ESTIMATION METHOD	ACTUAL CONTROLLED (TONS/YEAR)	POTENTIAL CONTROLLED EMISSIONS (LBS/HR)	POTENTIAL CONTROLLED EMISSIONS (TONS/YEAR)
PM			(EPRI) 0.00	0.2386		AP-42	0.01	0.01	0.02
PM10			0.00	0.0859		AP-42	0.00	0.00	0.01

NOTES:

AP-42 EQUATION - UNPAVED ROADS (PM & PM10)

E = k(5.9)(s/12)(S/30)(W/3)^0.7 (w/4)^0.5 ((365-p)/365) lbs/VMT

where:

E = emission factor (lbs/VMT)

k = particle size multiplier (dimensionless); PM = 1 and PM10 = 0.36

s = silt content of surface material (%); Estimated to be 6.2% based on information published in AP-42 and EPRI for western coal.

S = mean vehicle speed (mph); Estimated to be 5 mph

W = mean vehicle weight (ton); 10 tons

w = mean number of wheels; 4

p = number of days with >= 0.01 inches of precipitation per year; Estimated to be 85 based on AP-42 weather chart

VMT = vehicle miles traveled; Estimated based on an average of 8 dozer-hours on piles per day

ACTUAL 1998 EMISSIONS

1) Actual emissions based on calculated emissions factors using the above AP-42 equation for unpaved roads.

POTENTIAL CONTROLLED EMISSIONS

2) Maximum rate based on 16 dozer-hours on piles per day.
3) Potential emissions based on calculated emissions factors using the above AP-42 equation for unpaved roads.

CONTROL EQUIPMENT AND ASSOCIATED EFFICIENCIES

4) Emissions control equipment consists of periodic watering on an as-needed basis.
5) Control efficiency for watering based on information published in EPRI.

DESERET GENERATION AND TRANSMISSION COOPERATIVE

PLANT: Bonanza, Unit 1
SOURCE ID: LIMESTONE HANDLING & STORAGE OPERATIONS
SOURCE DESCRIPT: ACTIVE STORAGE - WIND EROSION (p. 3 of 3)

PROCESS DATA

YEAR: 1998 SCC CODE	LIMESTONE SILT CONTENT (%)	TIME WINDSPEED EXCEEDS 12 MPH AT MEAN PILE HT (%)	MAXIMUM & ACTUAL PILE SIZE (ACRES)		SCC UNITS	NO. DAYS WITH >= 0.01" PRECIP PER YEAR
	1.50	29.50	2.00	M	TON	60
		(Estimated)	1.00	A		

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	CONTROL EQUIPMENT SECONDARY	OVERALL CONTROL EFFICIENCY (%) (EPRI)	EMISSION FACTOR (LBS/DAY/ACRE)	ASH/SULFUR FLAG	EMISSIONS ESTIMATION METHOD	ACTUAL CONTROLLED (TONS/YEAR)	POTENTIAL CONTROLLED EMISSIONS (LBS/HR)	POTENTIAL CONTROLLED EMISSIONS (TONS/YEAR)
PM			0.00	4.3392		AP-42	0.79	0.36	1.58
PM10			0.00	2.1696		ENGR JUDGMT	0.40	0.18	0.79

NOTES:

AP-42 EQUATION - WIND EROSION OF STORAGE PILES

$E = 1.7\ (s/1.5)((365-p)/235)(f/15)$ lb/day/acre

where:

E = emission factor (lb/day/acre)

s = silt content of aggregate (%); Estimated to be 6.2% based on data published in AP-42 and EPRI for western coal.

p = number of days with >= 0.01 inch of precipitation per year; Estimated to be 85 based on AP-42 weather chart.

f = time unobstructed wind speed exceeds 12 mph at the mean pile height (%); Estimated to be 29.5% based on climatological summary from PSD and NOI.

ACTUAL 1998 EMISSIONS

1) Actual emissions based on calculated emissions factors using the above AP-42 equation for wind erosion of storage piles.

POTENTIAL CONTROLLED EMISSIONS

2) Potential emissions based on calculated emissions factors using the above AP-42 equation for wind erosion of storage piles.

CONTROL EQUIPMENT AND ASSOCIATED EFFICIENCIES

3) Emissions control consists of periodic watering.
4) Control efficiency for PM based on data published in EPRI.
5) Control efficiency for PM10 based on engineering judgement.

DESERET GENERATION AND TRANSMISSION COOPERATIVE

PLANT: Bonanza, Unit 1
SOURCE ID: SLUDGE HANDLING & STORAGE OPERATIONS
SOURCE DESCRIPT: INACTIVE STORAGE - WIND EROSION (p. 1 of 4)

PROCESS DATA

YEAR: 1998 SCC CODE	SLUDGE SILT CONTENT (%)	TIME WINDSPEED EXCEEDS 12 MPH AT MEAN PILE HT (%)	MAXIMUM & ACTUAL PILE SIZE (ACRES)		SCC UNITS	NO. DAYS WITH >= 0.01" PRECIP PER YEAR
	6.50	29.50	14.00	M	TON	60
		(Estimated)	7.35	A		

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	CONTROL EQUIPMENT SECONDARY	OVERALL CONTROL EFFICIENCY (%)	EMISSION FACTOR (LBS/DAY/ACRE)	ASH/SULFUR FLAG	EMISSIONS ESTIMATION METHOD	ACTUAL CONTROLLED (TONS/YEAR)	POTENTIAL CONTROLLED EMISSIONS (LBS/HR)	POTENTIAL CONTROLLED EMISSIONS (TONS/YEAR)
PM	Watering		(EPRI) 50.00	18.8033		AP-42	12.61	5.48	24.02
PM10	Watering		50.00	9.4016		ENGR JUDGMT	6.31	2.74	12.01

NOTES:

AP-42 EQUATION - WIND EROSION OF STORAGE PILES

$E = 1.7\ (s/1.5)((365-p)/235)(f/15)$ lb/day/acre

where:

E = emission factor (lb/day/acre)

s = silt content of aggregate (%); Estimated to be 6.2% based on data published in AP-42 and EPRI for western coal.

p = number of days with >= 0.01 inch of precipitation per year; Estimated to be 85 based on AP-42 weather chart.

f = time unobstructed wind speed exceeds 12 mph at the mean pile height (%); Estimated to be 29.5% based on climatological summary for local airport

ACTUAL 1998 EMISSIONS

1) Actual emissions based on calculated emissions factors using the above AP-42 equation for wind erosion of storage piles.

POTENTIAL CONTROLLED EMISSIONS

2) Potential emissions based on calculated emissions factors using the above AP-42 equation for wind erosion of storage piles.

CONTROL EQUIPMENT AND ASSOCIATED EFFICIENCIES

3) Emissions control consists of periodic watering.
4) Control efficiency for PM based on data published in EPRI.
5) Control efficiency for PM10 based on engineering judgement.

DESERET GENERATION AND TRANSMISSION COOPERATIVE

PLANT: Bonanza, Unit 1
SOURCE ID: SLUDGE HANDLING & STORAGE OPERATIONS
SOURCE DESCRIPT: CONVs. S1, S2, S3, S4, S5, S6, and RADIAL STACKER (p. 2 of 4)

PROCESS DATA

YEAR: 1998 SCC CODE		NUMBER OF TRANSFER POINTS	MEAN WIND SPEED (MPH)	MAXIMUM & ACTUAL PROCESS RATE		SCC UNITS	MOISTURE CONTENT (%)			
30501011		1	10.00	230,000	M	TON	6.00			
			(Estimated)	216,394	A					

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	CONTROL EQUIPMENT SECONDARY	OVERALL CONTROL EFFICIENCY (%)	EMISSION FACTOR (LBS/SCC UNIT)	ASH/SULFUR FLAG	EMISSIONS ESTIMATION METHOD	ACTUAL CONTROLLED (TONS/YEAR)	POTENTIAL CONTROLLED EMISSIONS (LBS/HR)	POTENTIAL CONTROLLED EMISSIONS (TONS/YEAR)
PM			0.00	0.00169		AP-42	0.18	0.04	0.19
PM10			0.00	0.00059		AP-42	0.06	0.02	0.07

NOTES:

AP-42 EQUATION - BATCH OR CONTINUOUS DROP OPERATIONS

E = k(0.0032)(U/5)^1.3/(M/2)^1.4 lbs/ton

where:

E = emission factor (lbs/ton)

k = particle size multiplier (dimensionless); PM = 1 and PM10 = 0.35

U = mean wind speed (mph); Estimated to be 10 mph based on climatology data from PSD and NOI.

M = material moisture content (%); 6% recieved based on plant data worse case.

AP-42, Section 11.2.3

ACTUAL 1998 EMISSIONS

1) Actual emissions based on calculated emissions factors using the above AP-42 equation for batch or continuous drop operations.

POTENTIAL CONTROLLED EMISSIONS

2) Maximum process rate based on full load unlimited operation of combustion units, and a coal heat content of 9,381 Btu/lb.
3) Potential emissions based on calculated emissions factors using the above AP-42 equation for batch or continuous drop operations.

CONTROL EQUIPMENT AND ASSOCIATED EFFICIENCIES

4) Emissions control equipment consists of a fabric filter.
5) Control efficiency for PM based on data published in EPRI and supported by vendor information.
6) Control efficiency for PM10 calculated based on the assumption that all PM escaping control is PM10.

DESERET GENERATION AND TRANSMISSION COOPERATIVE

PLANT: Bonanza, Unit 1
SOURCE ID: SECURITY OPERATIONS
SOURCE DESCRIPT: PERIMETER ROAD

PROCESS DATA

YEAR: 1998 SCC CODE	ROAD SILT CONTENT (%)	MEAN VEHICLE SPEED (MPH)	MEAN VEHICLE WEIGHT (TONS)	MAXIMUM & ACTUAL MILES TRAVELED		MEAN NO. OF WHEELS	DAYS W/ > 0.01" RAIN PER YEAR	HAUL DISTANCE ROUNDTRIP (MILES)
30300833	5.00	25	1	7,354	M	4	60	2
				1,000	A			

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	CONTROL EQUIPMENT SECONDARY	OVERALL CONTROL EFFICIENCY (%)	EMISSION FACTOR (LBS/VMT)	ASH/SULFUR FLAG	EMISSIONS ESTIMATION METHOD	ACTUAL CONTROLLED (TONS/YEAR)	POTENTIAL CONTROLLED EMISSIONS (LBS/HR)	POTENTIAL CONTROLLED EMISSIONS (TONS/YEAR)
PM			(EPRI) 0.00	0.7934		AP-42	0.40	0.67	2.92
PM10			0.00	0.2856		AP-42	0.14	0.24	1.05

NOTES:

AP-42 EQUATION - Section 13.2.2.2- UNPAVED ROADS (PM & PM10)

E = k(5.9)(s/12)(S/30)(W/3)^0.7 (w/4)^0.5 ((365-p)/365) lbs/VMT

where:

E = emission factor (lbs/VMT)

k = particle size multiplier (dimensionless); PM = 1 and PM10 = 0.36

s = silt content of road surface material (%); Estimated to be 5% based on information published in EPRI for gravel roads

S = mean vehicle speed (mph); Estimated to be 25

W = mean vehicle weight (ton); Estimated to be 10 tons (the wt. which gives an avg emissions factor to account for loaded and unloaded hauling wts)

w = mean number of wheels; Estimated to be 8

p = number of days with >= 0.01 inches of precipitation per year; Estimated to be 95 based on AP-42 weather chart

VMT = vehicle miles traveled; Estimated based on a roundtrip distance of 2 miles (measured) and an estimated average truck capacity of 10 tons

ACTUAL 1998 EMISSIONS

1) Actual emissions based on calculated emissions factors using the above AP-42 equation for unpaved roads.

POTENTIAL CONTROLLED EMISSIONS

2) Potential emissions based on calculated emissions factors using the above AP-42 equation for unpaved roads.

CONTROL EQUIPMENT AND ASSOCIATED EFFICIENCIES

4) Emissions control equipment consists of periodic watering or chemical addition on an as-needed basis.

5) Control efficiency for watering based on information published in EPRI.

DESERET GENERATION AND TRANSMISSION COOPERATIVE

PLANT: Bonanza, Unit 1
SOURCE ID: COAL & ASH HANDLING OPERATIONS
SOURCE DESCRIPT: ACCESS HAUL ROAD

PROCESS DATA

YEAR: 1998 SCC CODE	ROAD SILT CONTENT (%)	MEAN VEHICLE SPEED (MPH)	MEAN VEHICLE WEIGHT (TONS)	MAXIMUM & ACTUAL MILES TRAVELED		MEAN NO. OF WHEELS	DAYS W/ > 0.01" RAIN PER YEAR	HAUL DISTANCE ROUNDTRIP (MILES)	TRUCK CAPACITY (TONS)
30300833	5.00	25	10	7,000	M	8	60	2	10.00
				5,120	A				

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	CONTROL EQUIPMENT SECONDARY	OVERALL CONTROL EFFICIENCY (%)	EMISSION FACTOR (LBS/VMT)	ASH/SULFUR FLAG	EMISSIONS ESTIMATION METHOD	ACTUAL CONTROLLED (TONS/YEAR)	POTENTIAL CONTROLLED EMISSIONS (LBS/HR)	POTENTIAL CONTROLLED EMISSIONS (TONS/YEAR)
PM	Watering	Chemical	(EPRI) 75.00	5.6234		AP-42	3.60	1.12	4.92
PM10	Watering	Chemical	75.00	2.0244		AP-42	1.30	0.40	1.77

NOTES:

AP-42 EQUATION - Section 13.2.2.2- UNPAVED ROADS (PM & PM10)

E = k(5.9)(s/12)(S/30)(W/3)^0.7 (w/4)^0.5 ((365-p)/365) lbs/VMT

where:

E = emission factor (lbs/VMT)

k = particle size multiplier (dimensionless); PM = 1 and PM10 = 0.36

s = silt content of road surface material (%); Estimated to be 5% based on information published in EPRI for gravel roads

S = mean vehicle speed (mph); Estimated to be 25

W = mean vehicle weight (ton); Estimated to be 10 tons (the wt. which gives an avg emissions factor to account for loaded and unloaded hauling wts)

w = mean number of wheels; Estimated to be 8

p = number of days with >= 0.01 inches of precipitation per year; Estimated to be 95 based on AP-42 weather chart

VMT = vehicle miles traveled; Estimated based on a roundtrip distance of 2 miles (measured) and an estimated average truck capacity of 10 tons

AP-42, Section 11.2.1

ACTUAL 1998 EMISSIONS

1) Actual emissions based on calculated emissions factors using the above AP-42 equation for unpaved roads.

POTENTIAL CONTROLLED EMISSIONS

2) Potential emissions based on calculated emissions factors using the above AP-42 equation for unpaved roads.

CONTROL EQUIPMENT AND ASSOCIATED EFFICIENCIES

4) Emissions control equipment consists of periodic watering or chemical addition on an as-needed basis.

5) Control efficiency for watering based on information published in EPRI.