Deseret
Generation & Transmission Co-operative
5295 South 300 West • Suite 500 • Murray, Utah 84107
801-892-6500 • FAX: 801-892-6599

Ursula Trueman
Utah Division of Air Quality
1950 West North Temple
Salt Lake City, UT 84004

Attn. J. Tim Blanchard

RE: Request for Approval Order for DG&T Bonanza Unit (1) [illegible]nt Emission Limits and Ruggedized Rotor Project, Uintah County

Dear Ms. Trueman:

Deseret Generation & Transmission Co-op[illegible] G&T) hereby respectfully submits its notice of intent (NOI) requesting revised emiss[illegible] for its Bonanza Unit (1) Power Plant and Ruggedized Rotor Project. Attachment 1 pr[illegible] description of the Ruggedized Rotor Project.

The Project will increase the [illegible]eat input capacity of the Turbine. The increased heat input has the potential to in[illegible] potential to emit for certain Bonanza 1 emissions. DG&T is voluntarily requesti[illegible]ingent emission limits for Bonanza 1 to reduce its NO_x emissions by 528.17 tons per [illegible] G&T is also requesting certain annual emission limits for other emissions, resulti[illegible]erall increase in the annual potential to emit (PTE) for the Project that is below th[illegible]hat might trigger additional review pursuant to new source review (NSR) and prever[illegible]ificant deterioration (PSD) requirements. The new emission limits are set forth in Attach[illegible]nt 2. A summary of the pre- and post-change emissions are summarized in Attachment 3. Detailed emission data and supporting calculations are set forth in Attachment 4. Also, included with this NOI is a summary of the emission control equipment upgrades completed or planned for Bonanza 1.

If you have any questions or comments regarding the enclosed, please contact Howard Vickers at (435) 781-5706.

Sincerely,

Stan Gordon
Plant Manager

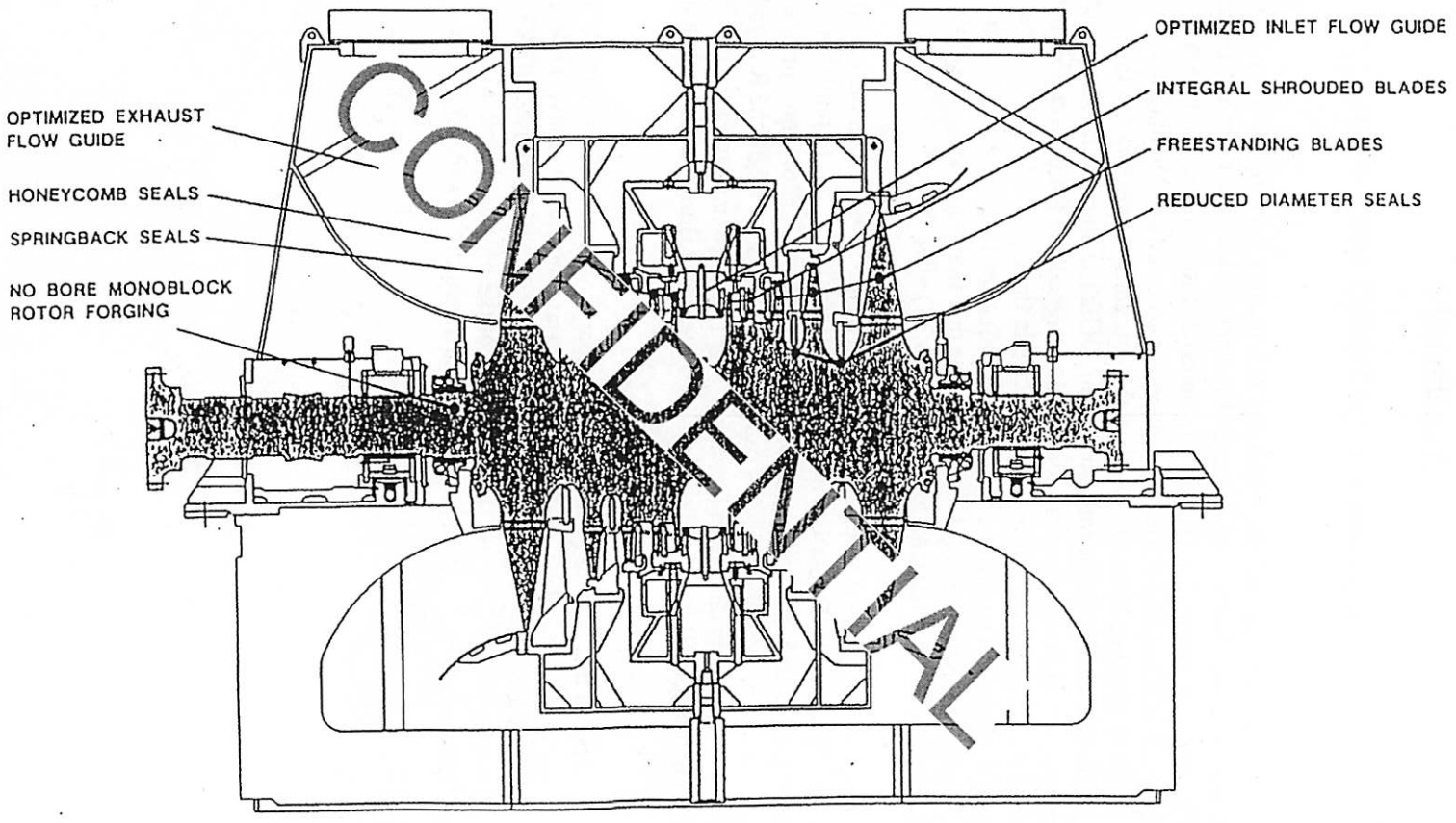
Attachment 1

Ruggedized Rotor Project Description

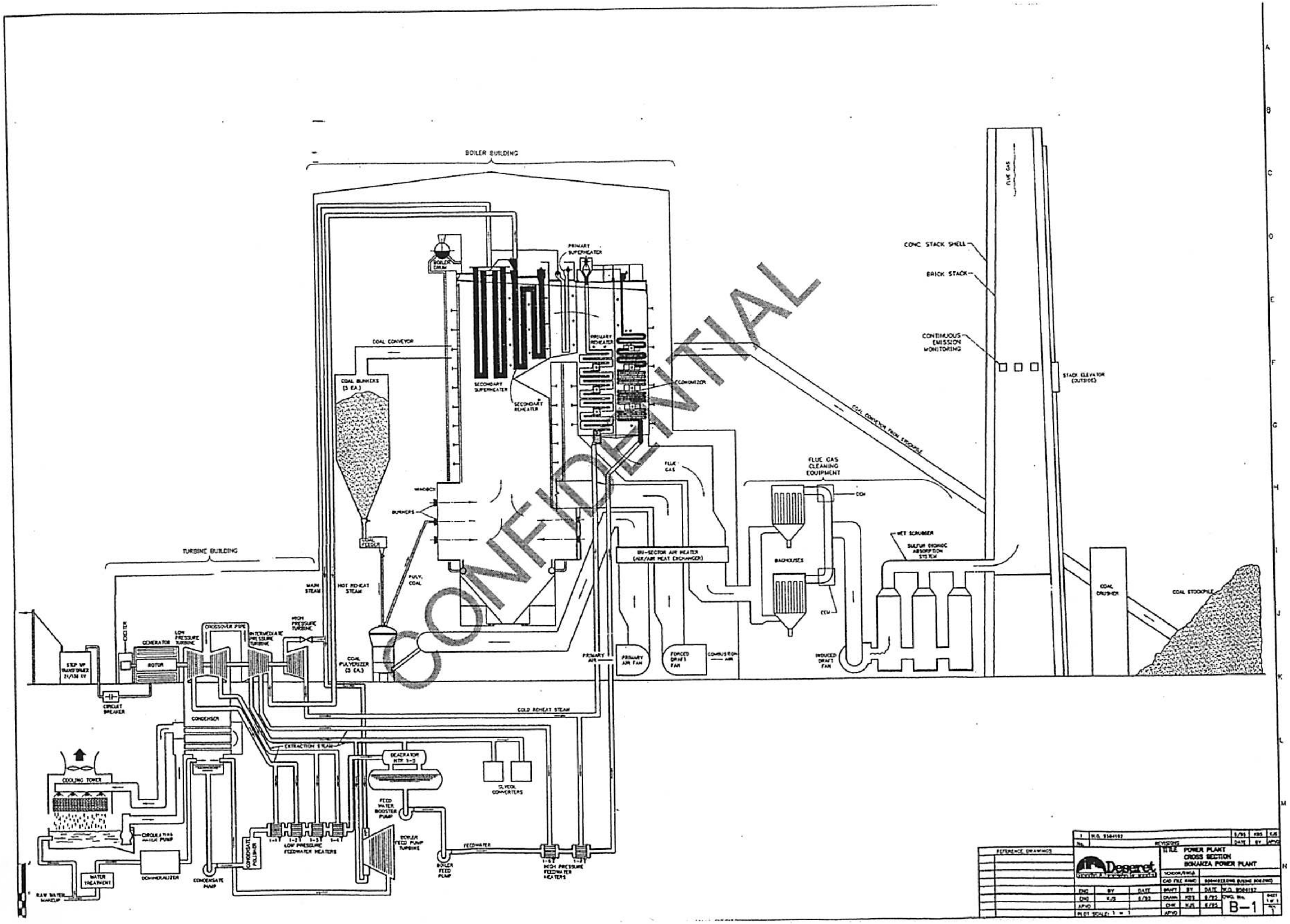
DG&T plans to upgrade the Turbine Generator at Bonanza 1 during the year 2000 or 2001 Unit Outage (A cross section diagram of Bonanza 1 indicating the location of the turbine is attached hereto). The upgrade–referred to as the "Ruggedized Rotor Project"–involves the replacement of the HP/IP and LP rotating and stationary equipment (A cross section diagram of the Ruggedized Rotor LP Rotor is attached hereto). Because the equipment necessary for the Project has a long lead time for design, construction and installation, DG&T is entering into contracts within the next few months to commence construction of the Ruggedized Rotor components. Final installation of the Ruggedized Rotor will take place in the 2000-2001 tim[illegible]rame and is expected to take about 6 weeks. The Project will increase Bonanza 1's gener[illegible]city by at least 28 MW (per vendor representations). DG&T believes that the gross [illegible] Bonanza 1 could be as much as 500 MW or more (referred to as 500 est. MW) after the [illegible]

Approximately 20 MW from the upgrade will result from [illegible] in the steam flow produced by the Boiler. To date, the Boiler has not been operat[illegible]ak potential due to limitations of steam flow at the existing Turbine Generator. The [illegible] will allow the Turbine Generator to accept all of the steam flow the Boiler is capable [illegible]ng. While the Ruggedized Rotor, by itself, will not result in any change in Bonanz[illegible]ions, the increased capacity of the Turbine Generator to handle the Boiler's peak capa[illegible]ncrease Bonanza 1's overall potential to emit (PTE).

DG&T has prepared this NOI to [illegible] necessary increases in Bonanza 1's overall PTE to allow operation of the Boiler a[illegible] Generator at their full capacity. DG&T also recently installed improved low-NO[illegible]technology at the boiler which allows DG&T to voluntarily significantly reduce NO[illegible]. The net effect of the proposed emission changes will be to significantly reduce o[illegible]wide emissions as a result of lower NO_x limits.



RUGGEDIZED LP ROTOR



BOILER BUILDING
TURBINE BUILDING
FLUE GAS
CONC. STACK SHELL
BRICK STACK
CONTINUOUS EMISSION MONITORING
STACK ELEVATOR (OUTSIDE)
COAL CONVEYOR FROM STOCKPILE
COAL CRUSHER
COAL STOCKPILE
BOILER DRUM
PRIMARY SUPERHEATER
PRIMARY REHEATER
ECONOMIZER
SECONDARY SUPERHEATER
SECONDARY REHEATER
COAL CONVEYOR
COAL BUNKERS (3 EA.)
COAL FEEDER
WINDBOX
BURNERS
PULV. COAL
COAL PULVERIZER (3 EA.)
FLUE GAS
FLUE GAS CLEANING EQUIPMENT
BAGHOUSES
CEM
WET SCRUBBER
SULFUR DIOXIDE ABSORPTION SYSTEM
INDUCED DRAFT FAN
TRI-SECTOR AIR HEATER (AIR/AIR HEAT EXCHANGER)
PRIMARY AIR
PRIMARY AIR FAN
FORCED DRAFT FAN
COMBUSTION AIR
MAIN STEAM
HOT REHEAT STEAM
COLD REHEAT STEAM
HIGH PRESSURE TURBINE
INTERMEDIATE PRESSURE TURBINE
CROSSOVER PIPE
LOW PRESSURE TURBINE
GENERATOR
ROTOR
EXCITER
STEP UP TRANSFORMER
CIRCUIT BREAKER
CONDENSER
EXTRACTION STEAM
DEAERATOR HTR 1-5
GLYCOL CONVERTERS
FEED WATER BOOSTER PUMP
BOILER FEED PUMP TURBINE
BOILER FEED PUMP
FEEDWATER
HIGH PRESSURE FEEDWATER HEATERS
LOW PRESSURE FEEDWATER HEATERS
CONDENSATE POLISHER
CONDENSATE PUMP
COOLING TOWER
CIRCULATING WATER PUMP
DEMINERALIZER
WATER TREATMENT
RAW WATER MAKEUP
CONFIDENTIAL
REFERENCE DRAWINGS
REVISIONS
Deseret
TITLE POWER PLANT
CROSS SECTION
BONANZA POWER PLANT
DWG. No. B-1
PLOT SCALE: 1 = 1

Attachment 2

Proposed New Emission Limits for Bonanza 1

1. Revise condition 7.A to read as follows:

7. Sulfur Emission Control

A. Bonanza 1 shall not discharge to the atmosphere sulfur as SO_2 at a rate exceeding 0.0976 lb/MM BTU heat input over a rolling 12-month average. Compliance with this emission limitation shall be based on CEM data and fuel heat input. Compliance shall be determined by calculating the roll[illegible] 12-month average. On the first day of each month a new 12-month average [illegible] calculated using data from the previous 12 months.

2. Revise condition 8.A to read as follows:

8. Nitrogen Oxides Emission Control

A. Bonanza 1 shall not discharg[illegible] atmosphere nitrogen oxide (NO_x) at a rate exceeding 0.50 lb/MM B[illegible] [illegible]put on an annual average. Compliance with this emission limitatio[illegible] based on CEM data and fuel heat input. Compliance shall [illegible]d in accordance with 40 CFR 76.5(b).

3. Revise condition 9.A [illegible] follows:

9. Particulate [illegible] Emission Control

A. [illegible] shall not discharge to the atmosphere particulate matter at a rate [illegible]ing 0.0297 lbs/MMBTU heat input as determined by 40 CFR 60, [illegible]ppendix A, Methods 1-5 and 19.

4. Revise condition 9.B to read as follows:

9.B Unit No. 1 shall not discharge to the atmosphere PM_{10} particulate matter at a rate exceeding 0.0286 lbs/MMBTU heat input as determined by 40 CFR 60, Appendix A, Methods 1, 2, 4, 201, 201a and 19.

5. Revise condition 13 to read as follows:

13. The coal pile shall not exceed 22 acres in total area. The active reclaim area shall not exceed 11 acres at any one time. The reclaim area may be moved to any location on the coal pile. The remainder of the coal pile shall be the long-term storage area. Emissions of particulate from the long-term storage area shall be

controlled by compaction of the coal pile surface and sealing with a surfactant initially and be subsequent application of sealing agent as warranted. A surfactant and spray mechanism to apply it shall be available and operative at all times. Conditions which warrant application of the surfactant are defined as any time the 20% opacity limitation is in jeopardy of being violated. To insure that the sprays are always operative, the equipment shall be tested at least once per month. A log of testing and operation shall be kept. The log shall include:

~~A.~~ Times of testing
B. Times of spray operation
C. Compaction operation
D. Weather conditions
E. Surface conditions (dry, crumbled, moist, etc.)

Attachment 3 cont.

PM_{10} Emission Source Summary

Emission Source	Pre Change Emissions	Post change Emissions	Net Change
Boiler- coal [a]	575.60	589.52	13.92
Boiler- fuel oil [a]	0.05	0.05	0.00
Auxiliary Boiler	0.03	0.03	0.00
Emergency Generator	0.06	0.06	0.00
Fire Pump	0.02	0.02	0.00
Construction Heaters	0.00	0.00	0.00
Access Road	1.77	1.77	0.00
Perimeter Road	1.05	0.29	<0.76>
Coal Reclaim	0.32	0.43	0.11
Coal Unloading [a]	0.01	0.01	0.00
Coal Conveyors 1&2 [a]	0.00	0.00	0.00
Coal Conveyors 3,4&5 [a]	0.00	0.00	0.00
Coal Crusher [a]	0.46	0.46	0.00
Coal Pile loadout [a]	0.04	0.04	0.00
Coal Pile wind Erosion	0.02	0.02	0.00
Limestone Conveyors 1&2 [a]	0.00	0.00	0.00
Dozers on the Limestone Piles	0.01	0.01	0.00
Limestone pile Wind Erosion	1.58	2.38	0.80
Sludge Pile Conveyors	0.13	0.14	0.01
Dozers on the Sludge Pile	0.09	0.11	0.02
Sludge Pile Wind Erosion	12.01	12.01	0.00
Cooling Tower Drift	318.40	318.40	0.00
Totals	911.65	925.76	14.11

Net change for fugitives	0.19
Net change for point sources	13.92

[a] Non fugitive sources

DESERET GENERATION AND TRANSMISSION COOPERATIVE

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

PROCESS DATA

YEAR: 1995 / 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	CONTROL EFFICIENCY (%) (EPRI)	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	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 - 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

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 accoun

loaded 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

tons

ACTUAL 1994 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: SECURITY OPERATIONS
SOURCE DESCRIPT: PERIMETER ROAD

PROCESS DATA

YEAR: 1995 / 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		2,000	M	4	60	2
				1,500	A			

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	CONTROL EQUIPMENT SECONDARY	EFFICIENCY (%) (EPRI)	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			0.00	0.7934		AP-42	0.60	0.18	0.79
PM10			0.00	0.2856		AP-42	0.21	0.07	0.29

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 road surface material (%); Estimated to be 5% based on information published in EPRI

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

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

ACTUAL 1994 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 HANDLING & STORAGE OPERATIONS
SOURCE DESCRIPT: INACTIVE STORAGE - WIND EROSION, (p. 8 of 8)
rev. 2

PROCESS DATA

YEAR: 1997 / SCC CODE	COAL SILT CONTENT (%)	TIME WINDSPEED EXCEEDS 12 MPH AT MEAN PILE H (%)	MAXIMUM & ACTUAL PILE SIZE (ACRES)		SCC UNITS	NO. DAYS WITH >= 0.01" PRECIP PER YEAR
	0.01	29.[illegible] (Estimated)	22.00	M	TON	60
			22.00	A		

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	SECONDARY	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	Chemical	Compaction	50.[illegible]	0.0289		AP-42	0.09	0.01	0.06
PM10	Chemical	Compaction	50.00	[illegible]0145		ENGR JUDGMT	0.03	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 [illegible] coal.

p = number of days with >= 0.01 inch of precipitation per year; Estimated to be 85 based on AP[illegible]

f = time unobstructed wind speed exceeds 12 mph at the mean pile height (%); Estimated to be 2[illegible] climatological summary for local airport

ACTUAL 1994 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: DOZER RECLAIM (p.1 of 8)
rev. 2

PROCESS DATA

YEAR: 1997		SILT CONTENT (%)	MEAN WIND SPEED (MPH)	MAXIMUM & ACTUAL PROCESS RATE		SCC UNITS	MOISTURE CONTENT (%)			
SCC CODE										
30501040		0.0	00	2,000,000	M	TON	12.00			
			00)	1,100,000	A					

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	SECONDARY	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			0.0	0.01234		AP-42	6.79	2.82	12.34
PM10			0.00	0.00243		AP-42	0.24	0.10	0.43

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 a...

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

ACTUAL 1994 EMISSIONS

1) Actual emissions based on calculated emissions factors using the above AP-42 equation for batch or contin... ...ons.

POTENTIAL CONTROLLED EMISSIONS

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

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 8)
rev. 2

PROCESS DATA

YEAR:		MEAN WIND SPEED (MPH)	MAXIMUM & ACTUAL PROCESS RATE	SCC UNITS	MOISTURE CONTENT (%)
1997	SCC CODE				
		...00	2,006,000	TON	12.00
		...ed)	1,700,000	A	(Recieved)

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	SECONDARY	EFF...IE... (%)	EMISSION FACTOR (LBS/SCC UNIT)	ASH/SULFUR FLAG	EMISSIONS ESTIMATION METHOD	ACTUAL CONTROLLED (TONS/YEAR)	POTENTIAL CONTROLLED EMISSIONS (LBS/HR)	(TONS/YEAR)
PM	Dust Suppression		(Estimated) 95....	0.00064		AP-42	0.027	0.007	0.032
PM10	Dust Suppression		(Estimated) 95.00	0.00022		AP-42	0.010	0.003	0.011

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 1994 EMISSIONS

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

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 co... ...,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 8)
rev. 2

PROCESS DATA

YEAR: 1997		NUMBER OF TRANSFER POINTS	MEAN WIND SPEED (MPH)	MAXIMUM & ACTUAL PROCESS RATE	SCC UNITS	MOISTURE CONTENT (%)
SCC CODE						
30501011		3	10.00	2,006,000	TON	12.00
			(Calculated)	1,700,000	A	

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	SECONDARY	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	Dust Suppression	99.[illegible] (EPRI: EP[illegible])	0.00064		AP-42	0.00	0.00	0.01
PM10	Fabric Filter	Dust Suppression	99.27 (Calculated)	0.00022		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 1994 EMISSIONS

1) Actual emissions based on calculated emissions factors using the above AP-42 equation for batch or continuous drop [illegible]er

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 8)
rev. 2

PROCESS DATA

YEAR:		NUMBER OF TRANSFER POINTS	MEAN WIND SPEED (MPH)	MAXIMUM & ACTUAL PROCESS RATE	SCC UNITS	MOISTURE CONTENT (%)
1997						
SCC CODE						
30501011		3	[illegible]	2,006,000	TON	12.00
			(Actual)	1,700,000	A	

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	CONTROL EQUIPMENT SECONDARY	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	0.00064		AP-42	0.00	0.00	0.00
PM10	Fabric Filter		(Calculated) 99.27	0.00022		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 1994 EMISSIONS

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

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 8)
rev. 2

YEAR: 1997

PROCESS DATA

SCC CODE	MAXIMUM & ACTUAL PROCESS RATE	SCC UNITS
	2,006,000	TON
	1,700,000	A

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	CONTROL EQUIPMENT SECONDARY	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: EF... 99..	0.1800		EPRI	0.46	0.12	0.54
PM10	Fabric Filter		(Calculated) 99.49	0.0900		ENGR JUDGMT	0.39	0.10	0.46

NOTES:

ACTUAL 1994 EMISSIONS

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

POTENTIAL CONTROLLED EMISSIONS

2) Maximum process rate based on full load unlimited operation of combustion units, and a coal heat co... dBtu/lb.
3) Potential emissions based on emissions factor published in EPRI and engineering judgement, as noted ...

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 8)
rev.2

PROCESS DATA

YEAR: 1997 / SCC CODE	MEAN WIND SPEED (MPH)	MAXIMUM & ACTUAL PROCESS RATE	SCC UNITS	MOISTURE CONTENT (%)
[illegible]	[illegible]	1,500,000	TON	12.00
[illegible]	[illegible]	550,000	A	

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	CONTROL EQUIPMENT SECONDARY	EFFICIENCY (%) (AWMA)	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		75.0	0.00064		AP-42	0.04	0.03	0.12
PM10	Dust Suppression		75.00	0.00022		AP-42	0.02	0.01	0.04

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 1994 EMISSIONS

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

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: CONVs. L1 AND L2 (p. 1 of 3)
rev. 2

PROCESS DATA

YEAR: 1997		NUMBER OF TRANSFER POINTS	MEAN WIND SPEED (MPH)	MAXIMUM & ACTUAL PROCESS RATE	SCC UNITS	MOISTURE CONTENT (%)			
SCC CODE									
30501011		3	[illegible]	60,000	TON	3.00			
			(Actual)	40,000	A				

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	SECONDARY	EFFICIENCY (%)	EMISSION FACTOR (LBS/SCC UNIT)	ASH/SULFUR FLAG	EMISSIONS ESTIMATION METHOD	ACTUAL CONTROLLED (TONS/YEAR)	PROCESS CONTROLLED EMISSIONS (LBS/HR)	(TONS/YEAR)
PM	Fabric Filter		(EPRI: EPA) 99.[illegible]	0.00447		AP-42	0.00	0.00	0.00
PM10	Fabric Filter		(Calculated) 99.43	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 1994 EMISSIONS

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

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)
rev. 2

PROCESS DATA

YEAR: 1997 / 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	300	TON	4	60
				150	A		

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	SECONDARY	EFFICIENCY (%) (EPRI)	EMISSION FACTOR (LBS/VMT)	ASH/SULFUR FLAG	EMISSIONS ESTIMATION METHOD	ACTUAL CONTROLLED (TONS/YEAR)	POTENTIAL CONTROLLED EMISSIONS (LBS/HR)	(TONS/YEAR)
PM			0.00	0.2386		AP-42	0.02	0.01	0.04
PM10			0.00	0.0859		AP-42	0.01	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 an[illegible] 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 1994 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)
rev. 2

PROCESS DATA

YEAR: 1997	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
SCC CODE					
	1.50	29.50	6.00	TON	60
		(Estimated)	2.00 A		

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	CONTROL EQUIPMENT SECONDARY	EFF. (%)	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			0.0 (EPRI)	4.3392		AP-42	1.58	1.08	4.75
PM10			0.00	1.1696		ENGR JUDGMT	0.79	0.54	2.38

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 similar

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

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

ACTUAL 1994 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)
rev. 2

YEAR: 1997				PROCESS DATA			
SCC CODE		NUMBER OF TRANSFER POINTS	MEAN WIND SPEED (MPH)	MAXIMUM & ACTUAL PROCESS RATE		SCC UNITS	MOISTURE CONTENT (%)
30501011		7	[illegible]0	245,000		TON	15.00
			([illegible]ted)	145,000	A		

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	SECONDARY	[illegible] EFF[illegible] (%)	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.[illegible]	0.00047		AP-42	0.24	0.09	0.40
PM10			0.00	0.00016		AP-42	0.08	0.03	0.14

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 1994 EMISSIONS

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

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: SLUDGE HANDLING & STORAGE OPERATIONS
SOURCE DESCRIPT: DOZERS ON STORAGE PILE (p. 3 of 4)
rev. 2

PROCESS DATA

YEAR: 1997	SLUDGE 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
SCC CODE							
	6.50	5	10	1,200	TON	4	60
				800	A		

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	CONTROL EQUIPMENT SECONDARY	EFFICIENCY (%) (EPRI)	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		50.00	1.0338		AP-42	0.21	0.07	0.31
PM10	Watering		50.00	0.3722		AP-42	0.07	0.03	0.11

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 = 0.38
s = silt content of surface material (%); Estimated to be 6.2% based on information published in AP-42 an[illegible] 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 1994 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: SLUDGE HANDLING & STORAGE OPERATIONS
SOURCE DESCRIPT: ACTIVE STORAGE - WIND EROSION (p. 4 of 4)
rev. 2

PROCESS DATA

YEAR:		TIME WINDSPEED	MAXIMUM &		
1997	SLUDGE	EXCEEDS 12 MPH	ACTUAL		NO. DAYS WITH
SCC CODE	SILT CONTENT (%)	AT MEAN PILE HT (%)	PILE SIZE (ACRES)	SCC UNITS	>= 0.01" PRECIP PER YEAR
	6.50	29.50 (Estimated)	14.00	TON	60
			14.00 A		

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	SECONDARY	EFF. (%) (EPRI)	EMISSION FACTOR (LBS/DAY/ACRE)	ASH/SULFUR FLAG	EMISSIONS ESTIMATION METHOD	ACTUAL CONTROLLED (TONS/YEAR)	POTENTIAL CONTROLLED EMISSIONS (LBS/HR)	(TONS/YEAR)
PM	Watering		50.00	18.8033		AP-42	24.02	5.48	24.02
PM10	Watering		50.00	2.4016		ENGR JUDGMT	12.01	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 [illegible]

p = number of days with >= 0.01 inch of precipitation per year; Estimated to be 85 based on AP-42 weath[illegible]

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

ACTUAL 1994 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: RAW LIMESTONE HANDLING & STORAGE OPERATIONS
SOURCE DESCRIPT: ACTIVE STORAGE - WIND EROSION (p. 3 of 3)
rev. 2

YEAR: 1997 / SCC CODE	LIMESTONE SILT CONTENT (%)	TIME WINDSPEED EXCEEDS 12 MPH AT MEAN PILE HT (%)	PROCESS DATA MAXIMUM & ACTUAL PILE SIZE (ACRES)	SCC UNITS	NO. DAYS WITH >= 0.01" PRECIP PER YEAR
	0.50	29.50 (Estimated)	3.00 / 2.00 A	TON	60

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	1.4464		AP-42	0.53	0.18	0.79
PM10			0.00	0.7232		ENGR JUDGMT	0.26	0.09	0.40

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 from AP-42 and EPRI for western coal.

p = number of days with >= 0.01 inch of precipitation per year; Estimated to be 125 days 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 1994 EMISSIONS

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

POTENTIAL CONTROLLED EMISSIONS

2) Potential emissions based on calculated emissions factors using the above AP-42 equation for 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: BALLAST LIMESTONE HANDLING & STORAGE OPERATIONS
SOURCE DESCRIPT: ACTIVE STORAGE - WIND EROSION (p. 3 of 3)
rev. 2

YEAR: 1997 / SCC CODE	LIMESTONE SILT CONTENT (%)	TIME WINDSPEED EXCEEDS 12 MPH AT MEAN PILE HT (%)	PROCESS DATA MAXIMUM & ACTUAL PILE SIZE (ACRES)	SCC UNITS	NO. DAYS WITH >= 0.01" PRECIP PER YEAR
	1.00	29.50 (Estimated)	2.00 / 2.00 A	TON	60

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	≈ 2.8928		AP-42	1.06	0.24	1.06
PM10			0.00	1.4464		ENGR JUDGMT	0.53	0.12	0.53

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 90 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 1994 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: FUEL OIL STORAGE TANK 1- 288,000 GALLONS
SOURCE DESCRIPT: No. 2 Fuel Oil Evaporation

YEAR: 1995

SCC CODE	PROCESS DATA MAXIMUM & ACTUAL PROCESS RATE	SCC UNITS
40400413	293,000	GAL
	168,809	A

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	SECONDARY	EFF. (%)	EMISSION FACTOR (LBS/SCC UNIT)		EMISSIONS ESTIMATION METHOD	ACTUAL CONTROLLED (TONS/YEAR)	POTENTIAL CONTROLLED EMISSIONS (LBS/HR)	(TONS/YEAR)
VOC			0.00	0.0036		AP-42	0.30	0.12	0.53
HAPs			0.00	0.0000		ENGR JUDGMT	0.00	0.00	0.00

NOTES:

ACTUAL 1994 EMISSIONS

1) The emissions factor is variable. See AP-42 Tanks 2.0 Emissions Report for actual VOC emissions. [illegible] data was used in the VOC calculations.
2) Actual 1995 HAPs emissions negligible.

POTENTIAL CONTROLLED EMISSIONS

3) The maximum potential throughput is based on the maximum (approximate) amount of fuel oil which could be [illegible] combustion units.
4) The emissions factor is variable. See AP-42 Tanks 2.0 Emissions Report for potential VOC emissions. Actual [illegible] in the VOC calculations.
5) Potential 1995 HAPs emissions insignificant.

CONTROL EQUIPMENT AND ASSOCIATED EFFICIENCIES

6) There is no emissions control equipment.

DESERET GENERATION AND TRANSMISSION COOPERATIVE

PLANT: Bonanza, Unit 1
SOURCE ID: FUEL OIL STORAGE TANK 2- 288,000 GALLONS
SOURCE DESCRIPT: No. 2 Fuel Oil Evaporation

YEAR:	PROCESS DATA MAQXIMUM & ACTUAL PROCESS RATE	SCC UNITS
SCC CODE		
40400413	0.00	GAL
	0.00	A

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	SECONDARY	EFFICIENCY (%)	EMISSION FACTOR (LBS/SCC UNIT)		EMISSIONS ESTIMATION METHOD	ACTUAL CONTROLLED (TONS/YEAR)	POTENTIAL CONTROLLED EMISSIONS (LBS/HR)	(TONS/YEAR)
VOC			0.0	0.2100		AP-42	0.00	0.00	0.00
HAPs			0.00	0.0000		ENGR JUDGMT	0.00	#DIV/0!	0.00

NOTES:

ACTUAL 1994 EMISSIONS

1) The emissions factor is variable. See AP-42 Tanks 2.0 Emissions Report for actual VOC emissions. Plant data was used in the VOC calculations.
2) Actual 1995 HAPs emissions negligible.

POTENTIAL CONTROLLED EMISSIONS

3) The maximum potential throughput is based on the maximum (approximate) amount of fuel oil which could be burned in the combustion units.
4) The emissions factor is variable. See AP-42 Tanks 2.0 Emissions Report for potential VOC emissions. Actual plant data was used in the VOC calculations.
5) Potential 1995 HAPs emissions insignificant.

CONTROL EQUIPMENT AND ASSOCIATED EFFICIENCIES

6) There is no emissions control equipment.

DESERET GENERATION AND TRANSMISSION COOPERATIVE

PLANT: Bonanza, Unit 1
SOURCE ID: COOLING TOWER
SOURCE DESCRIPT: Drift and Evaporation
rev. 2

YEAR: 1997 / SCC CODE	AVERAGE DRIFT RATE (SCC UNIT/HR)	AVERAGE EVAPORATION RATE (SCC UNIT/HR)	AVERAGE TEMPERATURE DIFFERENTIAL (F)	PROCESS RATE MAXIMUM & ACTUAL PROCESS RATE (GPM)	SCC UNITS	RECIRC RATE (SCC UNIT/HR)	CHLORINE RESIDUAL 3-HR SHOCK (ppm)	TDS IN CIRC WATER (ppm)	DRIFT % OF RECIRC (%)
	11.85	210		125,000	GALS^3	7,500	0.05	8,000	0.00158
				125,000	A		0.05		

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	CONTROL EQUIPMENT SECONDARY	OVERALL CONTROL EFFIC. (%)	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)
PM10	Drift Eliminators		(CALCULATED) 76.93	0.0126		AP-42, 13-4	318.42	72.70	318.42
Chlorine									

NOTES:

ACTUAL 1997 EMISSIONS

1) Actual PM and PM10 emissions calculated based on drift rate and total disolved solids (TDS) in recircul[illegible]
2) Actual chlorine emissions calculated based on a continuous Cl2 level of 0.0 ppm and a daily shock chlorina[illegible] ppm for three hours.

POTENTIAL CONTROLLED EMISSIONS

3) Potential controlled emissions are based on maximum capacity and unlimited hours of operation (8,760 hrs/yr).
4) Potential PM and PM10 emissions calculated based on drift rate and total disolved solids (TDS) in recirculation water.
5) Potential chlorine emissions calculated based on a continuous Cl2 level of 0.[illegible] [illegible]urs.

CONTROL EQUIPMENT AND ASSOCIATED EFFICIENCIES

6) Emissions control equipment consists of drift eliminators.
7) Control efficiencies for drift eliminators calculated based on comparing calculated controlled emissions to predicted uncontrolled emissions using AP-42 emissions factors.

DESERET GENERATION AND TRANSMISSION COOPERATIVE

PLANT: Bonanza, Unit 1
SOURCE ID: UNLEADED GASOLINE UST - 1,000 GALLONS
SOURCE DESCRIPT: Fuel Evaporation

YEAR:	SCC CODE	PROCESS DATA MAXIMUM & ACTUAL PROCESS RATE	SCC UNITS
1995		20,000	GAL
		17,000	A

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	SECONDARY	EFFICIENCY (%)	EMISSION FACTOR (LBS/SCC UNIT)		EMISSIONS ESTIMATION METHOD	ACTUAL CONTROLLED (TONS/YEAR)	POTENTIAL CONTROLLED EMISSIONS (LBS/HR)	(TONS/YEAR)
VOC			0.00	SEE NOTES (1) & (4)		AP-42	0.11	0.03	0.13
HAPs			0.00	SEE NOTES (2) & (4)		ENGR JUDGMT	5.50E-03	1.48E-03	6.50E-03

NOTES:

ACTUAL 1994 EMISSIONS

1) The emissions factor is variable. See AP-42 Tanks 2.0 Emissions Report for actual 1995 VOC e[illegible]
2) The unleaded gasoline was assumed to have a Reid Vapor Pressure of 13 (RVP 13).
3) Actual 1995 HAPs emissions calculated as a percentage of VOC emissions (5% by weight for typical [illegible] on EPA information. HAPs may include benzene, toluene, hexane, ethylbenzene, napthalene, cumene, xylenes, n-hexane, 2,2,4-trimethylpentane, MBTE, [illegible]

POTENTIAL CONTROLLED EMISSIONS

3) The maximum potential throughput is estimated.
4) The emissions factor is variable. See AP-42 Tanks 2.0 Emissions Report for potential VOC emissions.
5) The unleaded gasoline was assumed to have a Reid Vapor Pressure of 13 (RVP 13).
6) Potential 1995 HAPs emissions calculated as a percentage of VOC emissions (5% by weight for typical gasoline), based on [illegible] HAPs may include benzene, toluene, hexane, ethylbenzene, napthalene, cumene, xylenes, n-hexane, 2,2,4-trimethylpentane, MBTE, and others.

CONTROL EQUIPMENT AND ASSOCIATED EFFICIENCIES

7) There is no emissions control equipment.

DESERET GENERATION AND TRANSMISSION COOPERATIVE

PLANT: Bonanza, Unit 1
SOURCE ID: UNLEADED GASOLINE UST - 1,000 GALLONS
SOURCE DESCRIPT: Fuel Evaporation

YEAR:	PROCESS DATA MAXIMUM & ACTUAL PROCESS RATE	SCC UNITS
SCC CODE	20,000	GAL
	17,000 A	

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	SECONDARY	CONTROL EFFICIENCY (%)	EMISSION FACTOR (LBS/SCC UNIT)		EMISSIONS ESTIMATION METHOD	ACTUAL CONTROLLED (TONS/YEAR)	POTENTIAL CONTROLLED EMISSIONS (LBS/HR)	(TONS/YEAR)
VOC			0.[illegible]	[illegible]ES (1) & (4)		AP-42	0.11	0.03	0.13
HAPs			0.00	[illegible]ES (1) & (4)		ENGR JUDGMT	5.50E-03	1.48E-03	6.50E-03

NOTES:

ACTUAL 1994 EMISSIONS

1) The emissions factor is variable. See AP-42 Tanks 2.0 Emissions Report for actual 1995 VOC [illegible]
2) The unleaded gasoline was assumed to have a Reid Vapor Pressure of 13 (RVP 13).
3) Actual 1995 HAPs emissions calculated as a percentage of VOC emissions (5% by weight for typical [illegible] EPA information. HAPs may include benzene, toluene, hexane, ethylbenzene, napthalene, cumene, xylenes, n-hexane, 2,2,4-trimethylpentane, MBTE, [illegible]

POTENTIAL CONTROLLED EMISSIONS

3) The maximum potential throughput is estimated.
4) The emissions factor is variable. See AP-42 Tanks 2.0 Emissions Report for potential VOC emissions.
5) The unleaded gasoline was assumed to have a Reid Vapor Pressure of 13 (RVP 13).
6) Potential 1995 HAPs emissions calculated as a percentage of VOC emissions (5% by weight for typical gasoline), based on [illegible] HAPs may include benzene, toluene, hexane, ethylbenzene, napthalene, cumene, xylenes, n-hexane, 2,2,4-trimethylpentane, MBTE, and others.

CONTROL EQUIPMENT AND ASSOCIATED EFFICIENCIES

7) There is no emissions control equipment.

DESERET GENERATION AND TRANSMISSION COOPERATIVE

PLANT: Bonanza, Unit 1
SOURCE ID: FUEL OIL STORAGE TANK 1- 288,000 GALLONS
SOURCE DESCRIPT: No. 2 Fuel Oil Evaporation

YEAR:	PROCESS DATA MAXIMUM & ACTUAL PROCESS RATE	SCC UNITS
SCC CODE		
40400413	293,000	GAL
	168,809	A

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	SECONDARY	CONTROL EFF. (%)	EMISSION FACTOR (LBS/SCC UNIT)		EMISSIONS ESTIMATION METHOD	ACTUAL CONTROLLED (TONS/YEAR)	POTENTIAL CONTROLLED EMISSIONS (LBS/HR)	(TONS/YEAR)
VOC			0.0	0.0036		AP-42	0.30	0.12	0.53
HAPs			0.00	0.0000		ENGR JUDGMT	0.00	0.00	0.00

NOTES:

ACTUAL 1994 EMISSIONS

1) The emissions factor is variable. See AP-42 Tanks 2.0 Emissions Report for actual VOC emissions. [illegible] data was used in the VOC calculations.
2) Actual 1995 HAPs emissions negligible.

POTENTIAL CONTROLLED EMISSIONS

3) The maximum potential throughput is based on the maximum (approximate) amount of fuel oil which could be [illegible] combustion units.
4) The emissions factor is variable. See AP-42 Tanks 2.0 Emissions Report for potential VOC emissions. Actual [illegible] data was used in the VOC calculations.
5) Potential 1995 HAPs emissions insignificant.

CONTROL EQUIPMENT AND ASSOCIATED EFFICIENCIES

6) There is no emissions control equipment.

DESERET GENERATION AND TRANSMISSION COOPERATIVE

PLANT: Bonanza, Unit 1
SOURCE ID: FUEL OIL STORAGE TANK 2- 288,000 GALLONS
SOURCE DESCRIPT: No. 2 Fuel Oil Evaporation

YEAR:	PROCESS DATA MAQXIMUM & ACTUAL PROCESS RATE	SCC UNITS
SCC CODE		
40400413	0.00	GAL
	0.00	A

ESTIMATED EMISSIONS

POLLUTANT	CONTROL EQUIPMENT PRIMARY	CONTROL EQUIPMENT SECONDARY	CONTROL EFFICIENCY (%)	EMISSION FACTOR (LBS/SCC UNIT)		EMISSIONS ESTIMATION METHOD	ACTUAL CONTROLLED (TONS/YEAR)	POTENTIAL CONTROLLED EMISSIONS (LBS/HR)	POTENTIAL CONTROLLED EMISSIONS (TONS/YEAR)
VOC			0.00	0.2100		AP-42	0.00	0.00	0.00
HAPs			0.00	0.0000		ENGR JUDGMT	0.00	#DIV/0!	0.00

NOTES:

ACTUAL 1994 EMISSIONS

1) The emissions factor is variable. See AP-42 Tanks 2.0 Emissions Report for actual VOC emissions. [illegible] data was used in the VOC calculations.
2) Actual 1995 HAPs emissions negligible.

POTENTIAL CONTROLLED EMISSIONS

3) The maximum potential throughput is based on the maximum (approximate) amount of fuel oil which could be [illegible] the combustion units.
4) The emissions factor is variable. See AP-42 Tanks 2.0 Emissions Report for potential VOC emissions. Actual [illegible] used in the VOC calculations.
5) Potential 1995 HAPs emissions insignificant.

CONTROL EQUIPMENT AND ASSOCIATED EFFICIENCIES

6) There is no emissions control equipment.

ATTACHMENT 5

EMISSION CONTROL EQUIPMENT UPGRADE SUMMARY

The following is a brief summary of the emission Control Equipment upgrades completed or planned by D G & T for Bonanza 1.

1. **Low NOx Burners:**

During the May 1997 Outage, D G & T replaced all of its burners. The new Low NOx Burners have reduced actual NOx emissions the Bonanza 1.

2. **Replacement Bags for the Baghouse:**

The new fiberglass Bags are used to completely replace the e[illegible] bags. There are 450 Bags in each compartment, 24 compartments, for a to[illegible] Bags.

3. **Grasshopper Conveyors:**

These portable conveyors will be used to move [illegible]ndfill material from the Radial Stacker to the area being landfilled. This w[illegible] emissions by eliminating the need of heavy equipment hauling material fro[illegible]ker to the landfill area.

4. **New Bull Gear on the Ball Mi[illegible]**

D G & T is replacing the Bul[illegible] a redesigned model on a Ball Mill to improve efficiency of the Grinding[illegible]

5. **New Absorber [illegible]per Seals:**

During the Ma[illegible]age, D G & T upgraded the Absorber Inlet Damper seals. This new Seal design[illegible]s the flow of untreated Flue Gas.

6. **New Thickener Rake:**

D G & T has ordered a new Sludge Thickener Rake. This new rake will improve the efficiency of the original equipment.

7. **New Underflow Sludge Pump:**

D G & T has installed a new Underflow Sludge pump to upgrade the operation of the Sludge system.

8. New Bulk Entrainment/Mist Eliminator Section (BE/MES) in all three Absorbers:

D G & T is in the process of upgrading all of its Absorber Modules. New design BE/MES are being installed. Carryover and Differential Pressure are reduced in each Absorber improving operational efficiency.