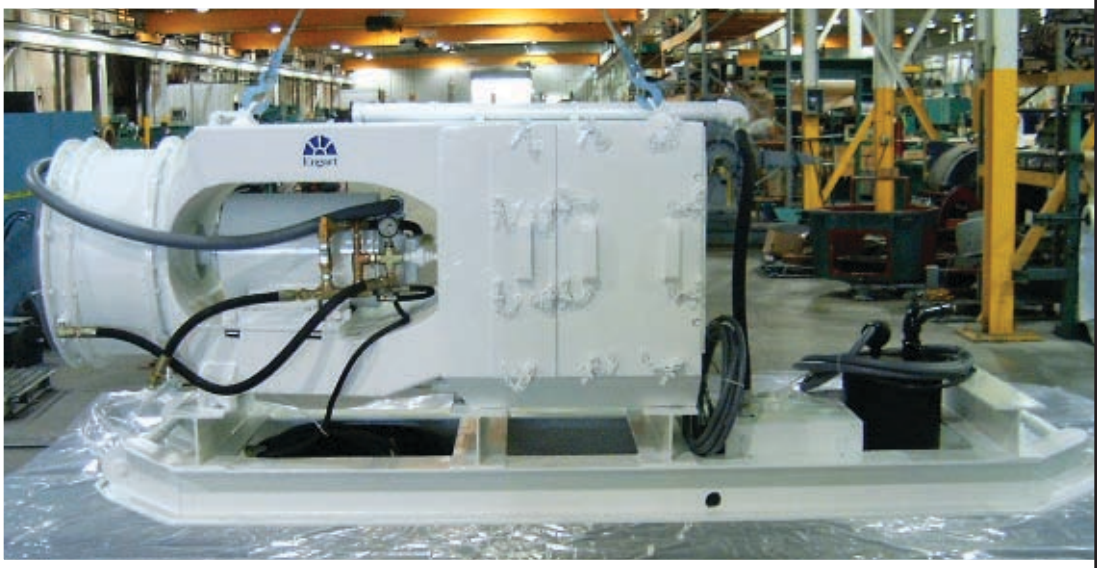
SPECIFICATION SHEETS

TYPE 24P DUST EXTRACTOR

Air Handling and Cleaning System



ENGART GLOBAL
DUST EXTRACTION TECHNOLOGY®

PO Box 1124
One White Oak Trace
Beckley, WV 25801

304.253.0777 *phone*
304.253.0719 *fax*

- **POWER UTILITY**
- **HEAVY PROCESS**
- **MINING**
- **TUNNELING**

SPEC SHEET

Spec. No: TS 1027 Rev. 0

"Cleaner and Greener for the Next Generation"

Each Engart Dust Extractor comes complete with motor, fan, demisters, extraction panel scrubber box, manual valve on main water supply and backflush, pressure gauge (psi or bar), pressure regulator and hose assembly for front sprays. The Internal and External housing is coated with two-part epoxy. Demisters are galvanized and the extraction panel is constructed of stainless steel. Motor is available in TEFC, U/L XP or MSHA rated Flameproof. A water automation package is recommended for plant installations.

APPLICATIONS

- Coal Tripper Rooms
- Crusher Buildings
- Conveyor Transfer Stations
- Coal Bunker Dust Extraction & Ventilation
- Portable Unit(s) Available

STANDARD FEATURES

Type 24 Fan	24" Steel Axial Flow
Volume	7,800cfm - 13,000cfm
Voltage	575v, 460v, or 1000v
Motor	60hp a/c, 3-ph., 2-pole
Construction	10mm Carbon Steel
Int./Ext. Finish	Two-Part Epoxy
Water Usage	7.0 gpm
Operating Water Pressure	23psi
Mounting	Skid or Fixed Frame
Sludge Collection	Total Loss
Water Mgmt.	Manual Controls - Std.
Weight	±2,100 lb
Maximum Width	38.5"
Maximum Height	31.5"
Maximum Length	69.5"

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- POWER UTILITY
- HEAVY PROCESS
- MINING
- TUNNELING

TYPE 33 DUST EXTRACTOR

Air Handling and Cleaning System

SPEC SHEET

Spec. No: TS 1057 Rev. 1

"Cleaner and Greener for the Next Generation"

Each Engart Dust Extractor comes complete with motor, fan, demisters, extraction panel scrubber box, manual valve on main water supply and backflush, pressure gauge (psi or bar), pressure regulator and hose assembly for front sprays. The Internal and External housing is coated with two-part epoxy. Demisters are galvanized and the extraction panel is constructed of stainless steel. Motor is available as standard four-pole (1780rpm) double shafted TEFC or U/L XP. A water automation package is recommended for plant installations. Noise reduction system is available.

APPLICATIONS

- Cascade Rooms
- Coal Reclaim Tunnels
- Conveyor Transfer Points
- Mine Tunnel Blast Dust Cleanup
- Truck Unloading Facilities
- Portable Unit(s) Available

STANDARD FEATURES

Type 33 Fan	33" 2-Stage Steel Axial Flow
Volume	13,500cfm - 21,250cfm
Voltage	575v, 460v, or 1000v
Motor	75hp a/c, 3-ph., 1780rpm
Construction	10mm Carbon Steel
Int./Ext. Finish	Two-Part Epoxy
Water Usage	8.0 gpm
Operating Water Pressure	23psi
Mounting	Skid or Fixed Frame
Sludge Collection	Total Loss
Water Mgmt.	Manual Controls - Std.
Weight	±9,800 lb
Maximum Width	40"
Maximum Height	51"
Maximum Length	130"

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- POWER UTILITY
- HEAVY PROCESS
- MINING
- TUNNELING

TYPE 36 DUST EXTRACTOR

Air Handling and Cleaning System

SPEC SHEET

Spec. No: TS 1030 Rev. 0

"Cleaner and Greener for the Next Generation"

Each Engart Dust Extractor comes complete with motor, fan, demisters, extraction panel scrubber box, manual valve on main water supply and backflush, pressure gauge (psi or bar), pressure regulator and hose assembly for front sprays. The Internal and External housing is coated with two-part epoxy. Demisters are galvanized and the extraction panel is constructed of stainless steel. Motor is available as standard four-pole (1780rpm) double shafted TEFC or U/L XP. A water automation package is recommended for plant installations. Noise reduction system is available.

APPLICATIONS

- Rotary Car Dumper Stations
- Truck Unloading Facilities
- Coal Reclaim Tunnels
- Portable Unit(s) Available

STANDARD FEATURES

Type 36 Fan	36" 2-Stage Steel Axial Flow
Volume	26,000cfm - 36,000cfm
Voltage	575v, 460v, or 1000v
Motor	200hp a/c, 3-ph., 1780rpm
Construction	10mm Carbon Steel
Int./Ext. Finish	Two-Part Epoxy
Water Usage	11.0 gpm
Operating Water Pressure	23psi
Mounting	Skid or Fixed Frame
Sludge Collection	Total Loss
Water Mgmt.	Manual Controls - Std.
Weight	±10,500 lb
Maximum Width	60"
Maximum Height	70"
Maximum Length	138"

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DUST EXTRACTION TECHNOLOGY®

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Beckley, WV 25801

304.253.0777 *phone*
304.253.0719 *fax*

- POWER UTILITY
- HEAVY PROCESS
- MINING
- TUNNELING

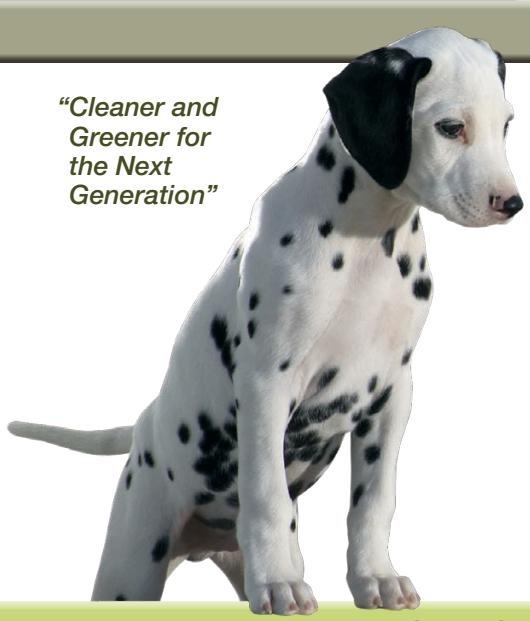
TYPE 46 DUST EXTRACTOR

Air Handling and Cleaning System

SPEC SHEET

Spec. No: TS 1058 Rev. 1

"Cleaner and Greener for the Next Generation"



Each Engart Dust Extractor comes complete with motor, fan, demisters, extraction panel scrubber box, manual valve on main water supply and backflush, pressure gauge (psi or bar), pressure regulator and hose assembly for front sprays. The Internal and External housing is coated with two-part epoxy. Demisters are galvanized and the extraction panel is constructed of stainless steel. Motor is available as standard four- pole (1780rpm) TEFC or U/L XP. A water automation package is recommended for plant installations. Noise reduction system is available.

APPLICATIONS

- Rail Unloading Facilities
- Boiler Ventilation Systems
- Truck Unloading Facilities
- Mine Tunnel Blast Dust Cleanup
- Portable Unit(s) Available

STANDARD FEATURES

Type 46 Fan	46" Steel Axial Flow
Volume	48,000cfm - 55,000cfm
Voltage	575v, 460v, or 1000v
Motor	200hp a/c, 3-ph., 1780rpm
Construction	10mm Carbon Steel
Int./Ext. Finish	Two-Part Epoxy
Water Usage	13.0 gpm
Operating Water Pressure	23psi
Mounting	Skid or Fixed Frame
Sludge Collection	Total Loss
Water Mgmt.	Manual Controls - Std.
Weight	±14,200 lb
Maximum Width	76"
Maximum Height	85"
Maximum Length	163"

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Technical Specification Sheet

Engart Dust Extractor
Particle extraction efficiency
(No Pre-Filter, Engart unit only)

An isokinetic sampling test based the Appendix to the Code of Federal Regulations, Title 40, Chapter 1, Part 60, Methods 1, 2, 3A, 4, and 5 was performed to determine the particle extraction efficiency of the Engart Dust Extractor.

The emission results are presented in grains per dry standard cubic feet (gr/dscf) and pounds per hour (lbs/hr). Powder River Basin (PRB) coal fines were used as the test particulate matter. Below is a summary of the test results.

SUMMARY OF RESULTS
Engart Dust Collector

Table 1

	Particulate Matter Emissions (gr/dscf)
Inlet	1.2083
Outlet	0.0037
Collection Efficiency	99.6938%

Graph 1

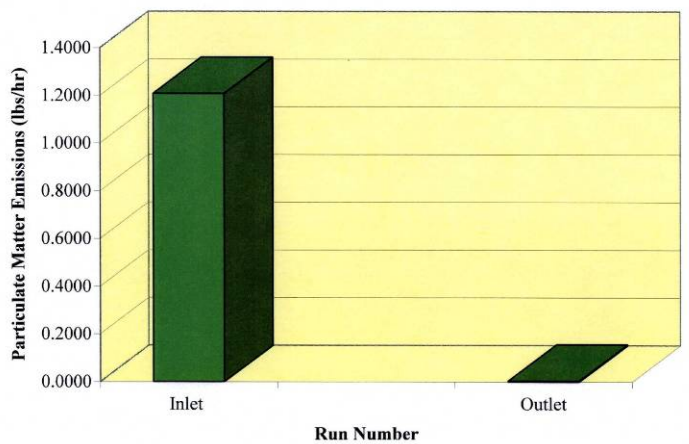

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Table 1
Particulate Sampling Data

	Inlet	Outlet
Date	10/24/06	10/24/06
Time	1110 -1220	1110 -1230
Carbon Dioxide Cone. -% Vol.	0.03	0.03
Oxygen Concentration -%Vol.	20.95	20.95
Stack Pressure -"Hg	31.00	31.00
Area of Stack -Sq. in.	254.50	452.40
Volume Dry Gas Sampled -dscf	22.628	37.033
Volume Dry Gas Sampled -dscm	0.641	1.049
Stack Temperature -Deg. F	59.90	60.70
Percent Moisture -%	2.44	1.99
Velocity in the Stack -FPS	32.18	20.70
Volumetric Flow Rate -ACFM	3,413	3,909
Volumetric Flow Rate -DSCFM	3,504	4,025
Isokinetic Sampling Rate -%	99.8	91.9
Particulate Matter Concentrations -gr/acf	1.2406	0.0038
Particulate Matter Concentrations -gr/dscf	1.2083	0.0037
Particulate Matter Emissions -lbs/hr	36.28	0.13

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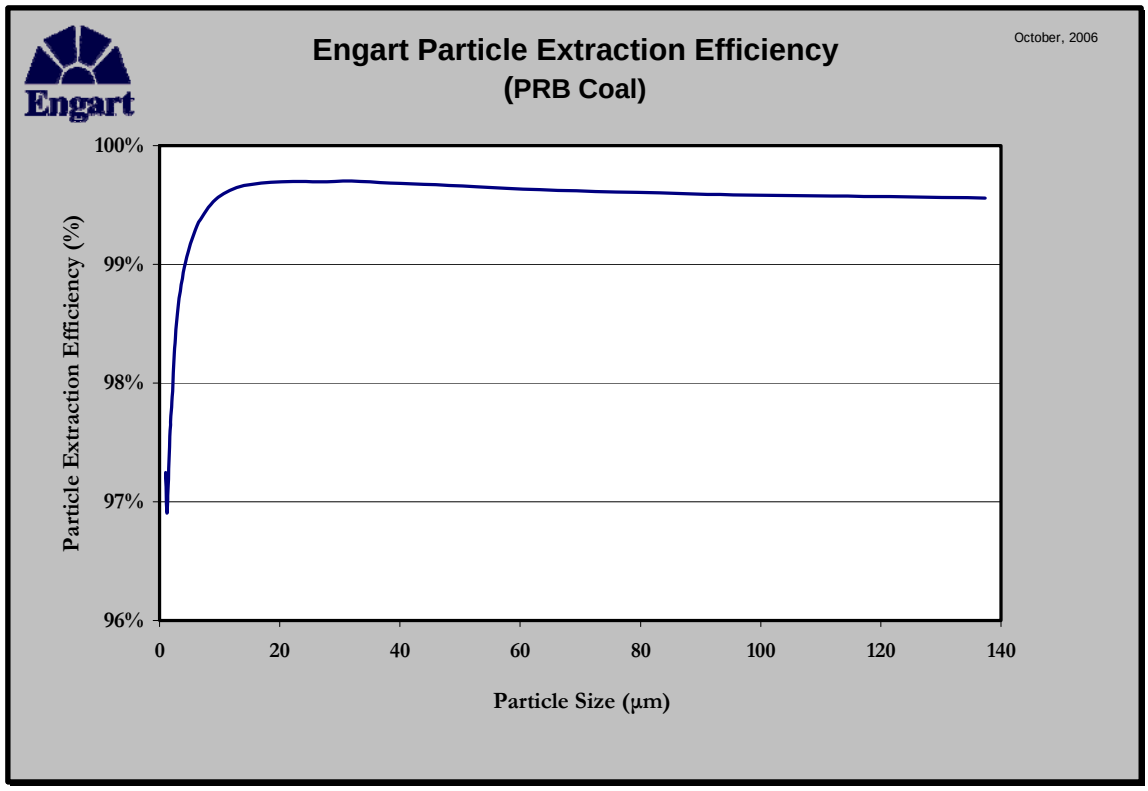
Graph 1: Particle extraction efficiency versus particle size.



Overall, PM10 and PM2.5 particle extraction efficiency:

Analysis of graph 1 above shows the following Total, PM10 and PM2.5 particle extraction efficiency results:

Overall particle extraction efficiency: 99.7 %

PM10 particle extraction efficiency: 98.4%

PM2.5 particle extraction efficiency: 94.99%

MARTIN® Dust Bags

Form No. L3298-07-3/06

TECHNICAL DATA

MARTIN® Dust Bags provide passive relief for positive air pressure produced at belt conveyor loading zones, preventing the escape of airborne dust. Properly applied, these bags can eliminate the need for "baghouse" dust collection systems.

Installed in the conveyor cover before the end of the transfer point's skirted area, MARTIN® Dust Bags vent air while collecting the dust from that air. When positive air pressure from material flow stops, MARTIN® Dust Bags collapse, dislodging collected material back onto the conveyor belt.

The MARTIN® Dust Bag System is available with a Standard Bag or a Static-Dissipating Bag for use in explosive environments.

Standard MARTIN® Dust Bag
Standard MARTIN® Dust Bags provide durable performance and effective dust control without needing a "baghouse" dust collector.

Static-Dissipating MARTIN® Dust Bag
Designed for use in combustible environments, this dust bag instantly dissipates static charges. The felt-like filter media is interwoven with carbonized fibers. Any static charge is carried to ground without generating a spark. Static-Dissipating MARTIN® Dust Bags have low electrical resistance in keeping with DIN Standard 54345 Parts 1 and 3.

MARTIN® Dust Bag Assembly
The MARTIN® Dust Bag Assembly includes a chute top cover, upright mounting frame, clamp, filter bag, installation hardware, and a rubber dust curtain. An assembly without a chute top cover is also available.

Specifications

Standard Size:	Diameter: 12 in. (300 mm) or 24 in. (600 mm) Height: 72 in. (1800 mm)	
Type	**Standard Bag**	**Static-Dissipating Bag**
Filtration:	12-in. Bag, 450 cfm (212 l/s) 24-in. Bag, 1000 cfm (472 l/s)	12-in. Bag, 230 cfm (108 l/s) 24-in. Bag, 450 cfm (212 l/s)
Fabric:	Satin Finish 100% Nylon	Polyester Needled Felt with 5% Carbonized Fiber (for static dissipation)
Weight:	5.4 oz/yard^2 (182 g/m^2)	14 oz/yard^2 (473 g/m^2)
Temperature Limit:	Continuous: 200°F (93°C) Intermittent: 250°F (121°C)	
Bag Cleaning:	Bag "self-cleans" by partially collapsing when positive air pressure is halted. For complete cleaning, remove and launder bag at 30- to 60-day intervals.	
Custom Sizes:	Available to fit air flow and clearances of specific transfer points.	

Note: Installation of one solid rubber curtain is recommended on each side of each pressure relief bag to direct air through filter.

Order Information

Assembly includes chute top cover, upright hanger support and dust curtain.
Extension Sleeve Kit does not include top cover.

Nomenclature

MARTIN® Dust Bag Assembly

P/N: XXXXX-XXXXX

12" Bag 34839
24" Bag 34840
Belt Width (in.)
Bag Type
***Blank**—Standard Bag or*
***SD**—Static-Dissipating Bag*
***K**—Extension Sleeve Kit*

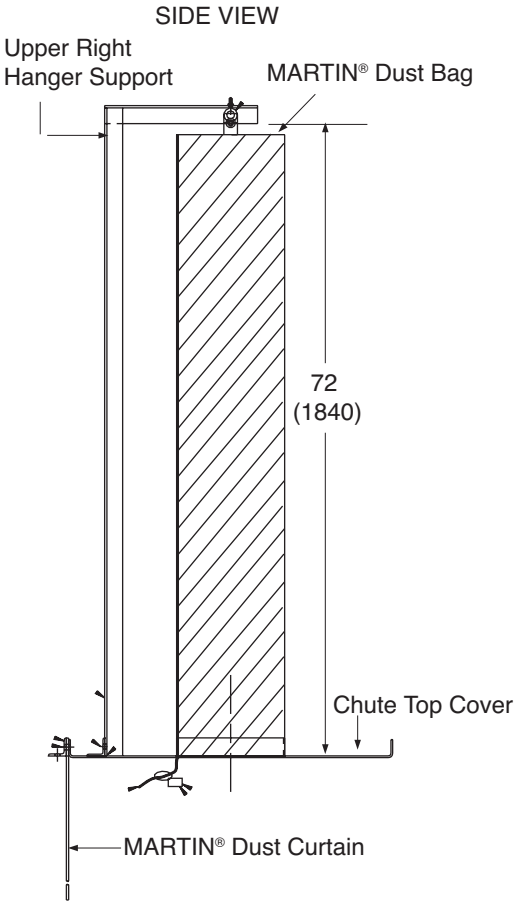
Replacement Bag

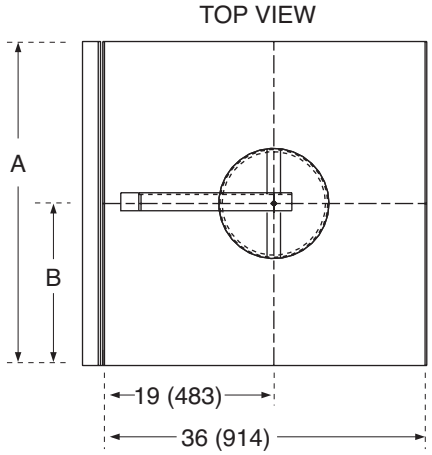
P/N: XXXXX-XX

12" Bag 34825
24" Bag 34826
Bag Type
***Blank**—Standard Bag or*
***SD**—Static-Dissipating Bag*

Dimensions

Belt Width *in*	Dimension A *in (mm)*	Dimension B *in (mm)*
18	18.50 (470)	8.25 (210)
24	24.50 (622)	11.25 (286)
30	30.50 (775)	14.25 (362)
36	36.50 (927)	17.25 (438)
42	42.50 (1080)	20.25 (514)
48	48.50 (1232)	23.25 (591)
54	54.50 (1384)	26.25 (667)
60	60.50 (1537)	29.25 (743)
72	72.50 (1842)	35.25 (895)
84	84.50 (2146)	41.25 (1048)
96	96.50 (2451)	47.25 (1200)





ISO-9001
DNV
CERTIFIED
QUALITY SYSTEM

Form No. L3298-07-3/06

MARTIN ENGINEERING

One Martin Place
Neponset, IL 61345-9766 USA
800-544-2947 or 309-594-2384
FAX: 309-594-2432
www.martin-eng.com

CUMMINS ENGINE COMPANY, INC Columbus, Indiana 47201 INDUSTRIAL PERFORMANCE CURVE	Basic Engine Model: NTA-855-P400		Curve Number: P-4754	
	Engine Family: D09	CPL Code: 0909	Date: 25MaR91	By: RMM

Displacement: **855** in.^{3} (**14.0** litre) Aspiration: **Turbocharged & Aftercooled**

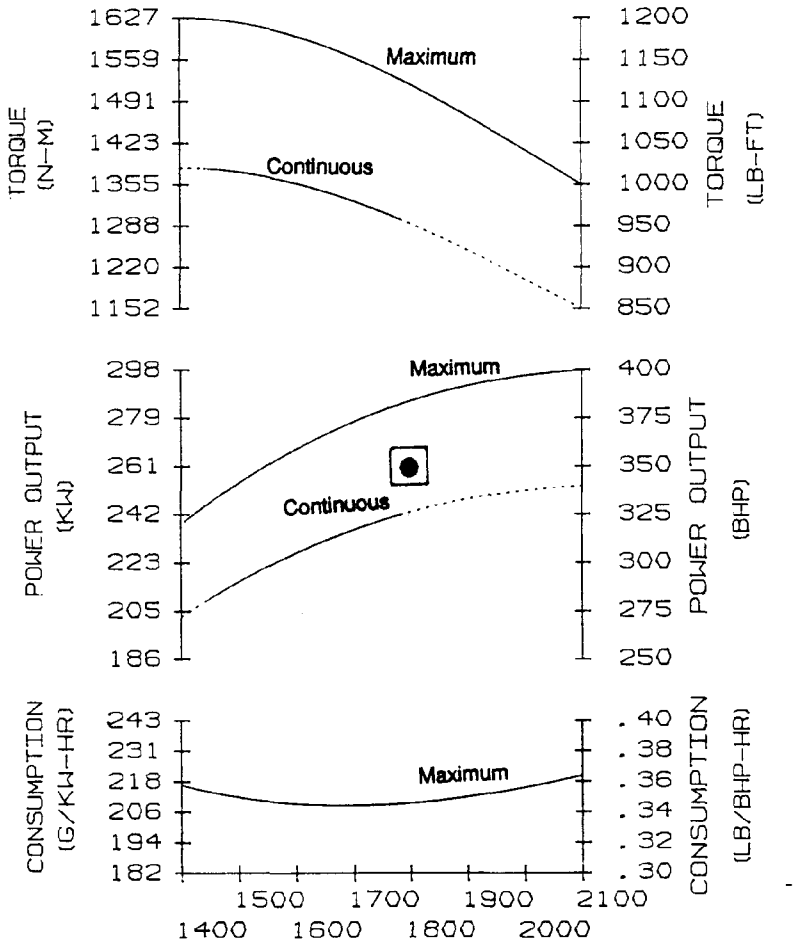
Bore: **5.50** in. (**140** mm) Stroke: **6.00** in. (**152** mm) No. of Cylinders: **6**

Emission Control: Fuel System:

BHP (kW) @ RPM
400 (298) @ 2100

All data is based on the engine operating with fuel system, water pump, lubricating oil pump, air compressor (unloaded), and 10 in H_2O (250 am) inlet air restriction and with 2.0 in Hg (50 mm) exhaust restriction; not included are alternator, fan, optional equipment and driven components.

PRELIMINARY



TORQUE		
RPM	lb.-ft.	N•m
1400	1200	1627
1500	1194	1619
1600	1178	1597
1700	1153	1563
1800	1120	1519
1900	1083	1469
2000	1042	1413
2100	1000	1384
Water Management Rating		
1800	1021	1384

POWER OUTPUT		
RPM	BHP	kW
1400	320	239
1500	341	254
1600	359	268
1700	373	278
1800	384	286
1900	392	292
2000	397	296
2100	400	298
Water Management Rating		
1800	350	261

FUEL CONSUMPTION		
RPM	lb/BHP-HR	g/kW•hr
1400	.357	217
1500	.350	213
1600	.345	210
1700	.344	209
1800	.346	210
1900	.350	213
2000	.356	217
2100	.364	221
Water Management Rating		
1800	.346	210
Water Management Fuel Rating		

FR9999

Curves shown above represent gross engine performance capabilities obtained and corrected in accordance with SAE J1349 conditions of 29.61 in Hg (100 kPa) barometric pressure [300 ft. (90 m) altitude], 77° (25°C) inlet air temperature, and 0.30in Hg (1 kPa) water vapor pressure with No.2 diesel fuel. The engine may be operated in a transient mode without changing the fuel setting up to 12,000 ft. (3 600 m) altitude and 100°F (38°C). For sustained operation at high altitude or temperature the fuel rate of the engine should be adjusted to limit performance by 2% per 1,000 ft. (300 m) above 6,000 ft. (1 830 m) and 1% per 10°F above 100° (2% per 11° above 38°C).

TECHNICAL DATA DEPT. **CERTIFIED WITHIN 5%** **CHIEF ENGINEER**

4.2 PULVERIZER (Continued)

The mill is driven by a constant speed motor through a gear reduction system. The ring gear is bolted to a supporting shoulder on one of the drum heads. The pinion is driven through reduction gearing to rotate the mill at the required speed specified on the data sheet at the beginning of this section.

4.3 CLASSIFIER

A classifier assembly (Figure 4-2 and Drawing L-795-48) consisting of the classifier, classifier trunnion tube, air tube assembly and air inlet chamber is located at each end of the mill and supported on its own pedestal. The purpose of the classifier is to separate the coarse particles from the mixture of primary air and fuel leaving the mill, thus allowing only fine particles to continue to the burners. The coarse particles are returned to the mill for further grinding. These are mixed with the entering raw fuel and are carried through the trunnion tube and into the mill by ribbon conveyors.

The air inlet chamber is bolted to the end of the classifier housing and primary air ducts. Air from the primary air duct enters this chamber passing through the air tube assembly and then into the pulverizer drum. The shaft of the air tube assembly is extended through the air inlet chamber and supported in a bearing fastened to the outside of the air inlet chamber. The air inlet chamber contains a cleanout opening for removal of any coal or other foreign material which may get into this space. A segmented seal plate is provided between the air inlet chamber and the classifier housing to minimize hot air from bypassing the pulverizer drum. Figure 4-2 shows the arrangement of this seal. On pressurized pulverizer installations, another seal is provided between the stationary classifier and the rotating pulverizer trunnion as shown on FWEC Drawing L-795-52.

The air tube assembly contains a centrally located air tube with air inlet ribs covered by a screen. In order to feed the fuel into the pulverizer drum, four conveyor ribbons are attached to the air tube by means of a circular seal plate at the outboard end and spring supported at the inboard end. This conveyor feeds both the raw fuel and classifier rejects along the bottom of the classifier assembly. The tumbling action of the ball charge will cause some balls to enter the air tube and in order to return them to the drum, a conveyor reject ribbon is installed in the air tube and rotates with the air tube. The screen at the outboard end of the air tube prevents the balls from entering the air inlet chamber. The air tube assembly is rotated with the pulverizer drum by the conveyor spokes which project radially outward from the drum end of the air tube assembly into holes in the drum ball rejector liners.

The hot primary air enters the drum, drying the fuel which is being ground in the drum. The partially ground fuel in suspension is carried out by the primary air in the annular space between the main conveyor ribbons and the air tube. The flow then enters the classifier and is forced around a baffle plate which causes the larger particles to be rejected and returned to the bottom of the classifier and and conveyed back into the drum for further grinding. The finer particles are carried out through the classifier outlet connections.

4.3 CLASSIFIER (Continued)

As a guide to mill output, pressure taps are provided at the inlets and outlets of the classifiers so that a pressure differential can be obtained. In order to provide reliable readings, a constant low pressure air purge design is used. These taps are connected to a pulverizer purge panel which is also connected to various sensing lines from the fuel level control system (Paragraph 4.9). This panel provides the means by which the taps are under a constant low pressure purge.

The classifier trunnion tube is that part of the classifier housing which extends through the mill trunnion and into the mill. A relatively close clearance is maintained between the trunnion tube and the trunnion. The lower portion of the inside of the trunnion tube is protected from wear by replaceable steel liner plates. The trunnion tube contains control lines which are used to control fuel level.

4.4 RAW COAL FEEDERS

Raw coal is fed to each classifier through the raw coal feeders, two per mill. The feeders regulate the rate of coal feed in response to signals from the pulverizer fuel level control system.

4.5 CONTROL AND ISOLATION DAMPERS (Refer to Figure 1-5)

The primary air fans usually have isolation and control dampers. The control dampers are provided on the inlet to the fans. Isolation dampers are provided at discharge of the fans.

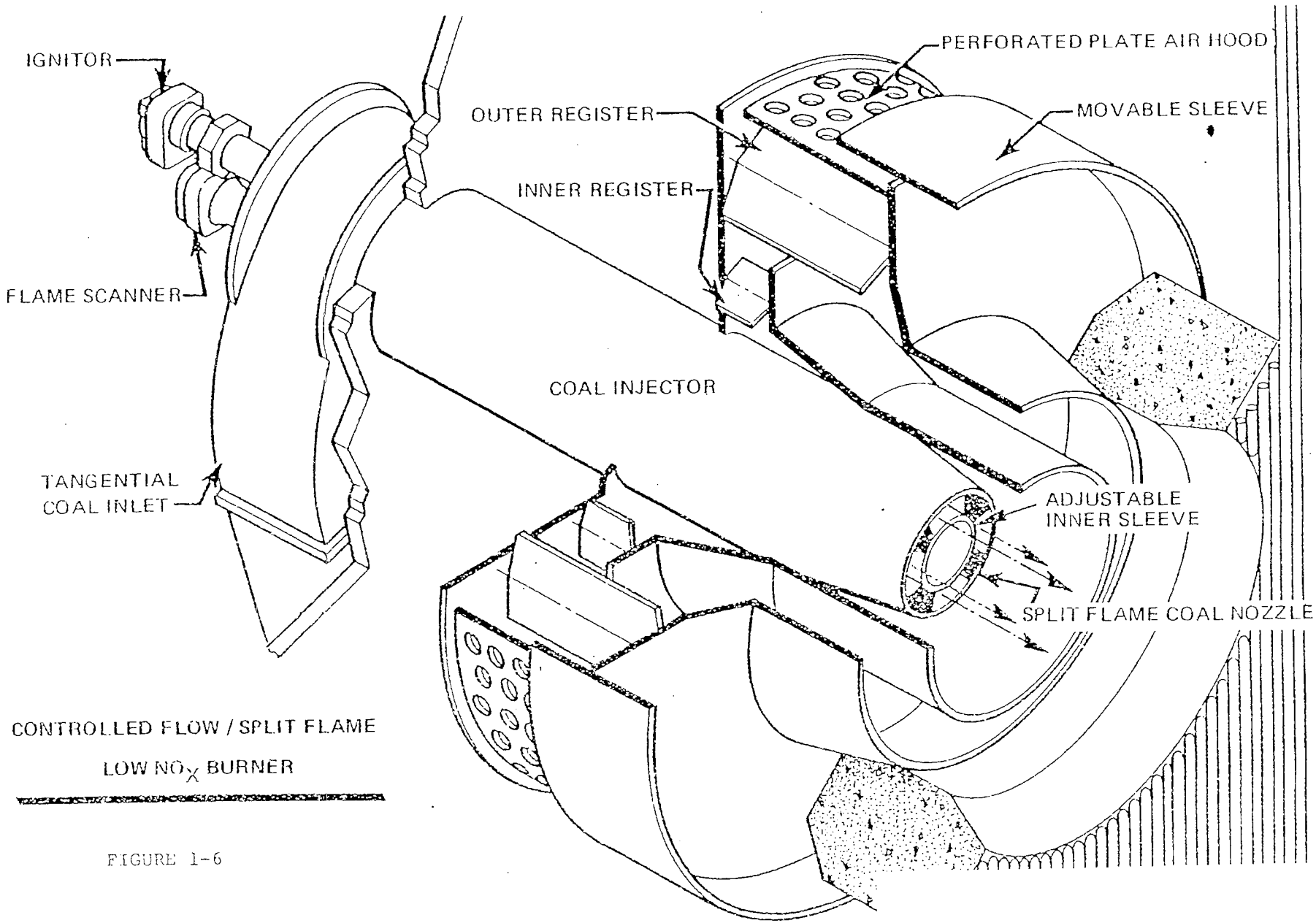
The primary air flow through each pulverizer is controlled by its own regulating damper. In the Foster Wheeler Ball Mill pulverizer system, the mill output is directly proportional to the air flow through the system.

The temperature of the primary air to the pulverizer is controlled by primary air temperature regulating and tempering air regulating dampers which are positioned by the pulverizer output coal-air temperatures.

The auxiliary air regulating damper is provided in the auxiliary air line to each coal-air conduit to provide flow for control of velocity in the burner conduits during normal operation and for purging.

Seal air to the pulverizer flows through the seal air shut-off damper and through the seal air regulating damper. The regulating damper is provided to maintain seal air pressure above mill pressure. The differential is usually set at 4" to 6" W.C. Seal air also flows to the auxiliary air regulating dampers. A seal air regulating damper is also provided to establish seal air at the coal feeder.

Burner shut-off valves are provided in the coal conduits above the classifier to take burners out of service during low load operation and isolate a mill from the system for maintenance.

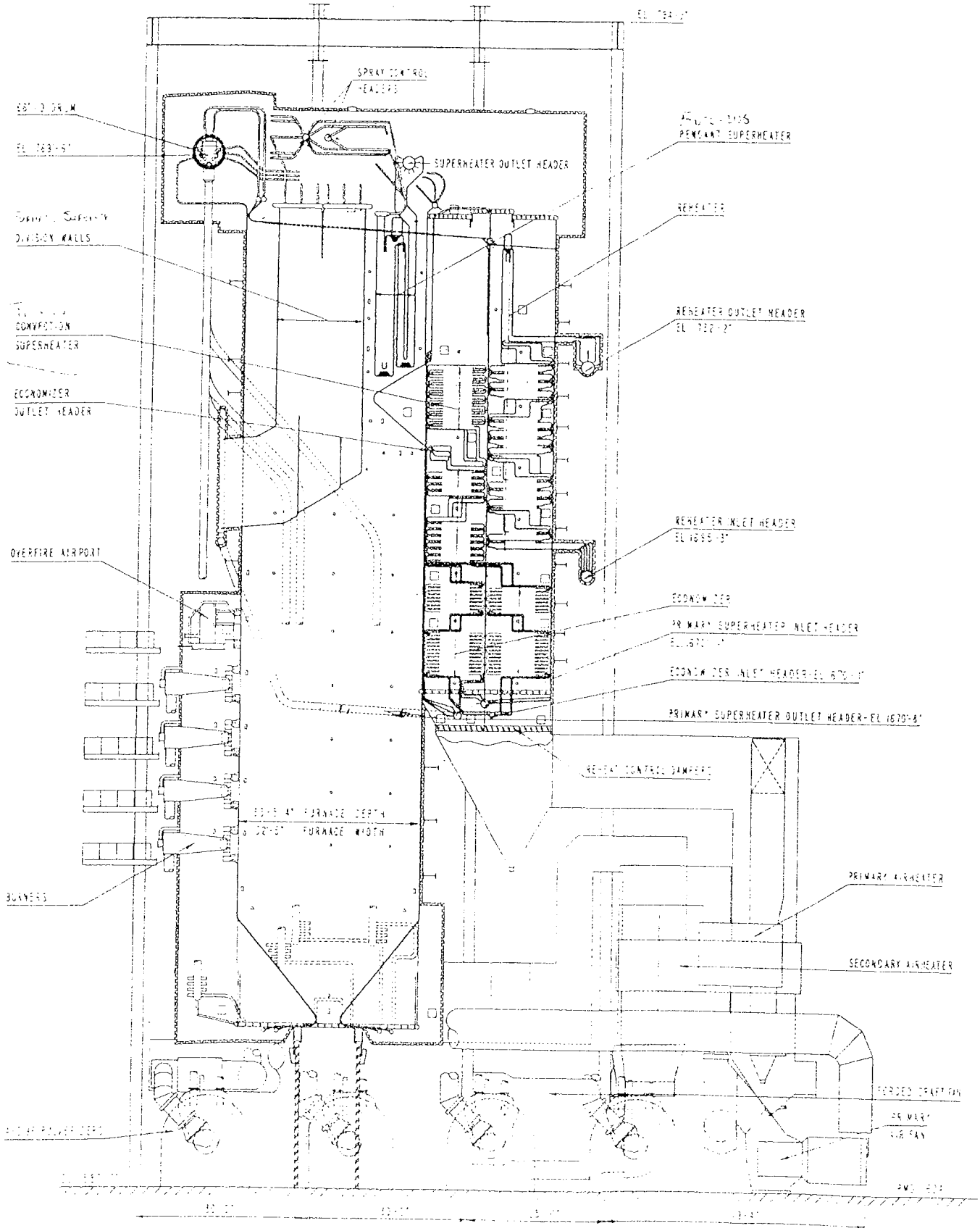


CONTROLLED FLOW / SPLIT FLAME

LOW NO_X BURNER

FIGURE 1-6

FOSTER WHEELER



Name . NEVADA POWER COMPANY

Location . REID GARDNER STATION UNIT NO. 4 MOAPA, NV.

Design Pressure . . 2900/775

Final Steam Temperature . 1005/1005F

JUAN ESTRADA
NEVADA POWER COMPANY
6226 W. SAHARA AVE.

LAS VEGAS,NV 89151

June 22, 1999
REQUEST NUMBER: 15908
LAB NUMBER: G1004
SAMPLE ID:

Sufco #54

REPORT OF ANALYSIS

	AS RECEIVED wt.%	MOISTURE FREE wt.%	MOISTURE & ASH FREE wt.%
PROXIMATE:			
MOISTURE	10.02		
ASH	8.08	8.98	
VOLATILE MATTER	34.30	38.12	41.88
FIXED CARBON	47.60	52.90	58.12
TOTAL	100.00	100.00	100.00
HEATING VALUE (Btu/lb.)	11,445	12,720	13,975
ULTIMATE:			
MOISTURE	10.02		
HYDROGEN	3.84	4.27	4.69
CARBON	64.96	72.19	79.31
NITROGEN	1.23	1.37	1.51
SULFUR	0.28	0.31	0.34
OXYGEN	11.59	12.88	14.15
ASH	8.08	8.98	
TOTAL	100.00	100.00	100.00

Hydrogen and oxygen values reported do not include hydrogen and oxygen in the free moisture associated with the sample.

Monte L. Ellis
Laboratory Manager

MLE:tab

WYOMING ANALYTICAL LABORATORIES, INC.
1660 Harrison St.
Laramie, WY 82070
wallaramie@aol.com
(307) 742-7995
Fax: (307) 721-8956
MEMBER ACIL

A
PORTEC inc.
Butler Division
PROPOSAL

TECHNICAL PROVISIONS

Proposal No. 6998-483

Item G STATION ROOF ACCESS

Ladder with cage from equipment section platform to station roof. Includes roof handrail with toe plate and necessary transfer platforms.

Ships detached for field assembly.

Density = 1.2 g/cc
Tons/hr = .184

Item H FEEDER

Volumetric screw feeder with adjustable capacity up to 24 cu.ft./hr., 1/2 HP TENV, DC motor, manually adjusted SCR drive, 30:1 output range, stainless steel auger and tube, Includes chute to slaker. Controller, NEMA 4, mounts adjacent to the main control panel.

Item I LIME SLAKER

Portec lime slaker, Model M-5S lime slaker capable of producing a 25% lime slurry at a 4:1 water-to-lime ratio from pebble quicklime in a continuous manner, slaker is of the detention type with a maximum capacity of 500# per hour of C_aO.

Slaker is capable of slaking all grades, free of foreign material, of 3/4" pebble quicklime at a controlled slaking temperature. Slaking occurs within a series of three chambers to incure complete washing of the lime. Flow is under the baffles of each chamber.

Agitation is achieved via a rotating all welded hardened steel breaker bar. Unit is equipped with a dial type thermometer to indicate temperature within the slaking chamber. Temperature activated water valve is provided to add water to slaking chamber should the slurry temperature exceed a predetermined set point limit. Lime feed will stop if excessive temperature is reached. An inspection port with handle is provided for observation and sampling purposes.

An oscillating, replaceable stainless steel wire mesh screen (#16 mesh) is provided for grit removal. Screen is washed with a warm water mist for cleaning the grit particles with the degritted slurry passing through the screen and flowing by gravity to the lime slurry collecting tank located beneath the screen.

A compartmentalized water warming jacket is provided. Entering tap water flows over weirs to enter each compartment of the warming jacket, water absorbs the heat of the exothermic reaction occuring within the slaking chamber. Drainage plugs are provided should jacket require drainage.

of the 24 pumps served and vent air and water until clear. When lines are clear and full, make firm connections to pump glands. Switch pumps as required to make all connections.

6. Repeat Item 5 for subsystem 2 and 3. CAUTION: Do not operate any pump without reasonable flow. Check alarm operation for high flow.

7.4 Water Soda Ash Preparation, Storage, and Distribution System

Ref. Section 2.4 and 2.4.2, Dwg. 41-000-003.

7.4.1 Truck Unloading and Initial System Charge.

Bulk Pneumatic Transports

Soda Ash is normally shipped in an aluminum pneumatic transport up to 22 tons capacity, depending on state road weight allowances. These transports are usually self-unloading by means of an air compressor mounted on the transport tractor.

Self-unloading pneumatic transports discharge through a hose connecting the transport to a permanent pipeline. The discharge point on this type of transport is usually located at the rear end. Adequate access for the tractor and trailer must be provided, near enough to the conveying pipe to require only a minimum of hose--say, eight feet. The conveying pipe should be vertical, usually terminating with a male 4-inch quick-disconnecting fitting, and located approximately four feet above the ground so that the transport's hose can be attached without tight bends.

Generally, the transport's driver is responsible for making the hose connections and conveying the product to storage. The transport comes equipped with suitable unloading hoses and lengths, usually up to 20 feet. A female 4-inch quick-disconnecting dust cap is attached to the inlet of the conveying pipe when not in use.

Tractor blowers are not standard but may range in capacity from 400 to 700 scfm with a maximum delivery pressure usually of 14 psig. Actual unloading pressure, however, is seldom over 4 psig. Unloading times of 45 and 75 minutes for 20 tons of light and 22 tons of dense soda ash respectively are typical with 650 scfm tractor blowers through 50 feet each of horizontal and vertical 4-inch pipe.

Carefully follow the considerations, cautions, and procedures listed below to safely and efficiently effect the initial charge of soda ash to the storage tank.

1. Normal operating level of the concentrated soda ash storage tank is 28 feet. Tank overflows at 31 feet to the dilute soda ash tank.

TOWER
COMPONENTS, INC.

OPTI-CEL 15/15 & 15/25
COOLING TOWER DRIFT MEDIA

OPTI-CEL DRIFT ELIMINATORS

Opti-Cel cellular drift eliminators are designed to remove entrained water droplets from the leaving air stream at minimum pressure losses in both crossflow and counterflow cooling towers.

The Opti-Cel drift modules are fabricated from rigid, corrugated PVC sheets that are U.V. inhibited. The drift modules are resistant to rot, fungi, bacteria, organic / inorganic acids and alkalis that are commonly found in cooling towers.

A detailed material specification for all properties with ASTM test methods is available upon request.

Opti-Cel drift eliminators are of the cellular multi-pass type with a modified sine wave sheet bonded between 1-1/2" wide corrugated spacer sheets. This design imparts structural strength for spanning capacity. The Opti-Cel 15/15 is designed to span 4'-0", and the Opti-Cel 15/25, 6'-0".

Opti-Cel modules are designed to nest together to insure a tight, uniform installation with no bypass of air or drift droplets.

Opti-Cel drift eliminators are designed with the spacer sheets oriented at approximately 30 degrees. This configuration insures that in crossflow tower applications, drift droplets are captured and drain back into the fill area of the tower and removed from the air stream. In addition, this configuration directs the exiting air flow towards the fan in order to minimize pressure drop.

Opti-Cel drift eliminators prevent drift in excess of .0005% of the inlet water flow rate, and are guaranteed for all operating conditions. Opti-Cel is suitable for continuous operation at the maximum discharge air temperature in all towers with PVC film fill.

Opti-Cel modules are manufactured in sizes 5-1/2" deep, 12" or 24" wide, and up to 12'-0" in length.

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www.towercomponentsinc.com

TOWER
COMPONENTS, INC.

OPTI-CEL 15/15 & 15/25
COOLING TOWER DRIFT MEDIA

Opti-Cel 15/15 cellular drift eliminator is manufactured from rigid PVC sheets for crossflow and counterflow cooling tower applications. The eliminator is fabricated from an alternating corrugated and modified sine wave PVC sheets that are resistant to UV, rot, fungus and organic and inorganic solvents, acids and alkalis and chemicals normally found in cooling tower waters.

Modules are fabricated in a 5-1/2" depth, 12" to 24" widths, and in lengths up to 12'-0" in 2' increments. Custom dimension modules and mil thickness are available upon request.

PVC sheets have the following properties:

Physical Property	ASTM Test	Units	Value
Density	D772	g/cm3	1.39 – 1.45
Tensile Strength (yield)	D882	lb/in2	6,000 min
Flexural Strength	D790	lb/in2	11,000
Flexural Modulus	D790	lb/in2	525,000
Stiffness in Flexure	D747	lb/in2	525,000 min
Gardner Impact Strength	D4226	in lb/mil	1.0 min
Tensile Impact Strength	D1822	ft lb/in2	255 min
Heat Deflection	D648	Deg F.	162 min
Flammability	D635		Self extinguishing Less than 5 seconds
Flame Spread Rate	E 84		Less than 15

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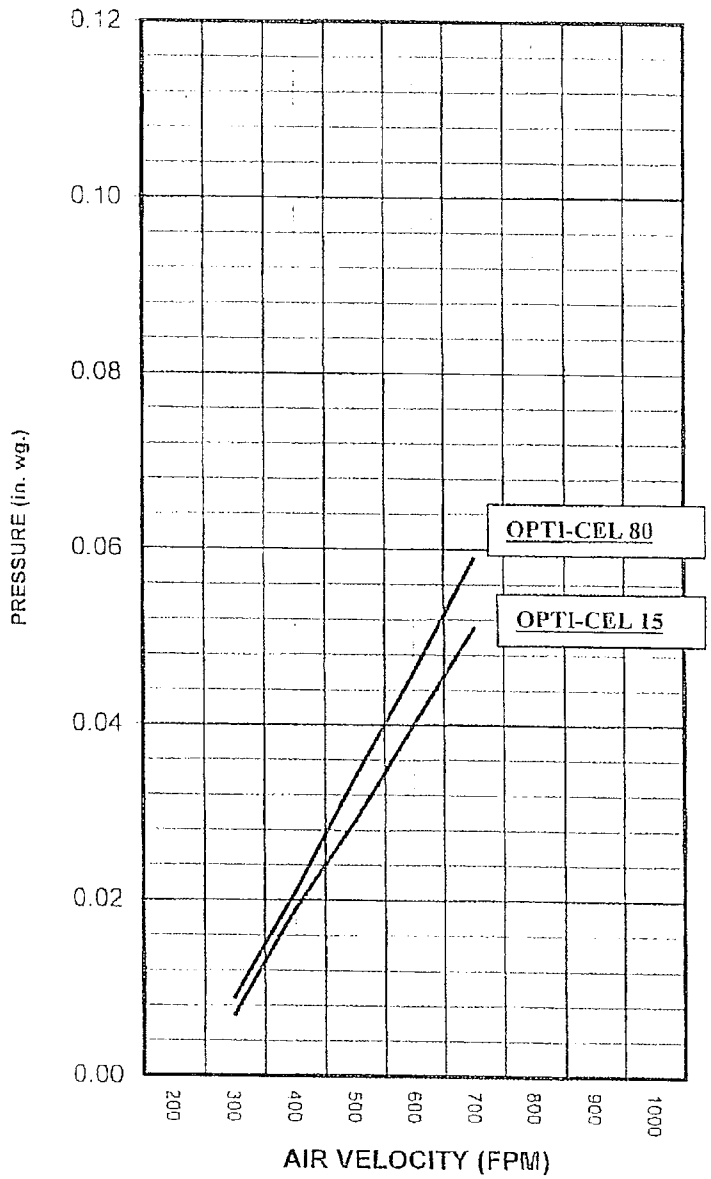
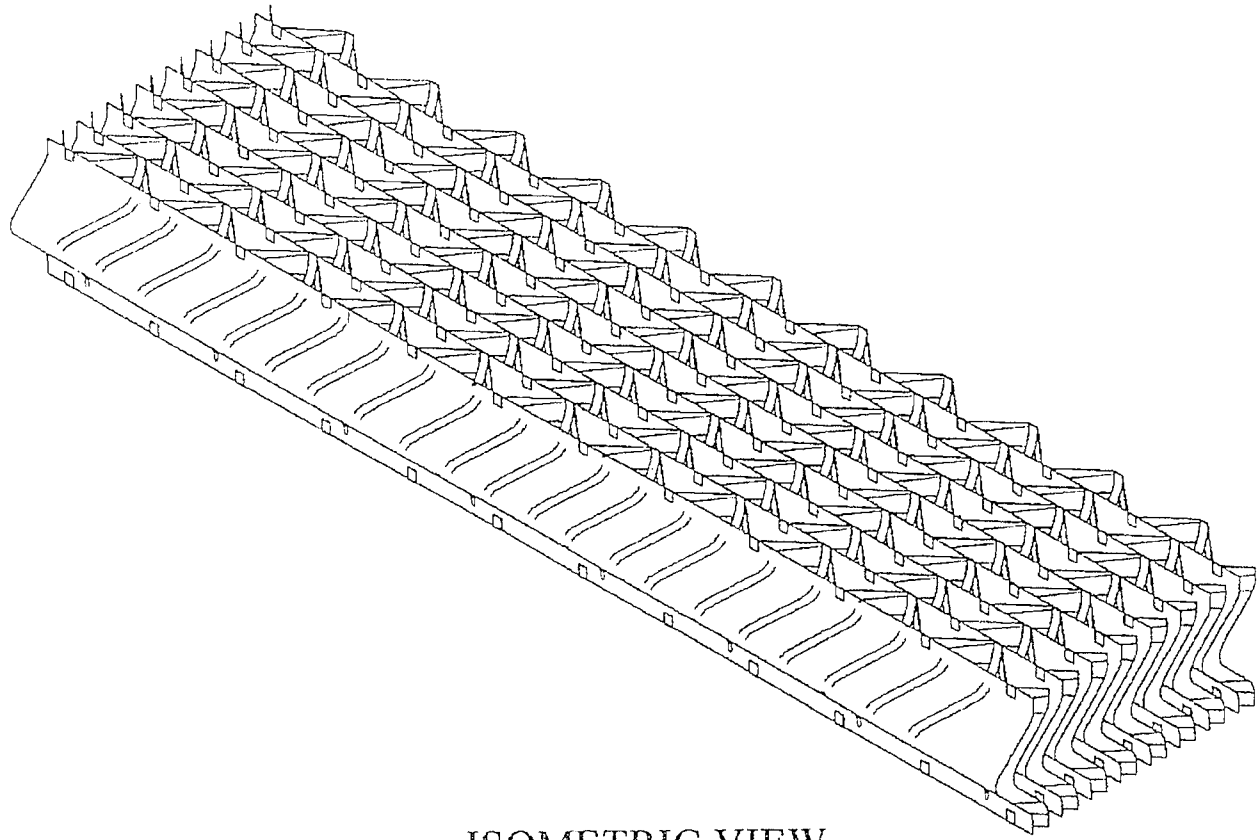
OPTI-CEL 15 / OPTI-CEL 80
COOLING TOWER DRIFT MEDIA

DRIFT ELIMINATOR PRESSURE DROP CURVES
(.075 lb/ft^3 Air Density)





ISOMETRIC VIEW

NOTES:

- 15/15 & 15/25 ARE THE MIL THICKNESS OF THE WAVE AND BUMP SHEETS.
- OPTI-CEL 15/15 & 15/25 STANDARD WIDTHS ARE 1' AND 2'.

PRODUCT: OPTI-CEL 15/15 & 15/25	
DRAWN BY: G.G.	DATE: 04/05/98
TOWER COMPONENTS INC. (306) 525-2102	DWG NO.: OC15151525.dwg

TOWER
COMPONENTS, INC.

OPTI-CEL 15/15 & 15/25
COOLING TOWER DRIFT MEDIA

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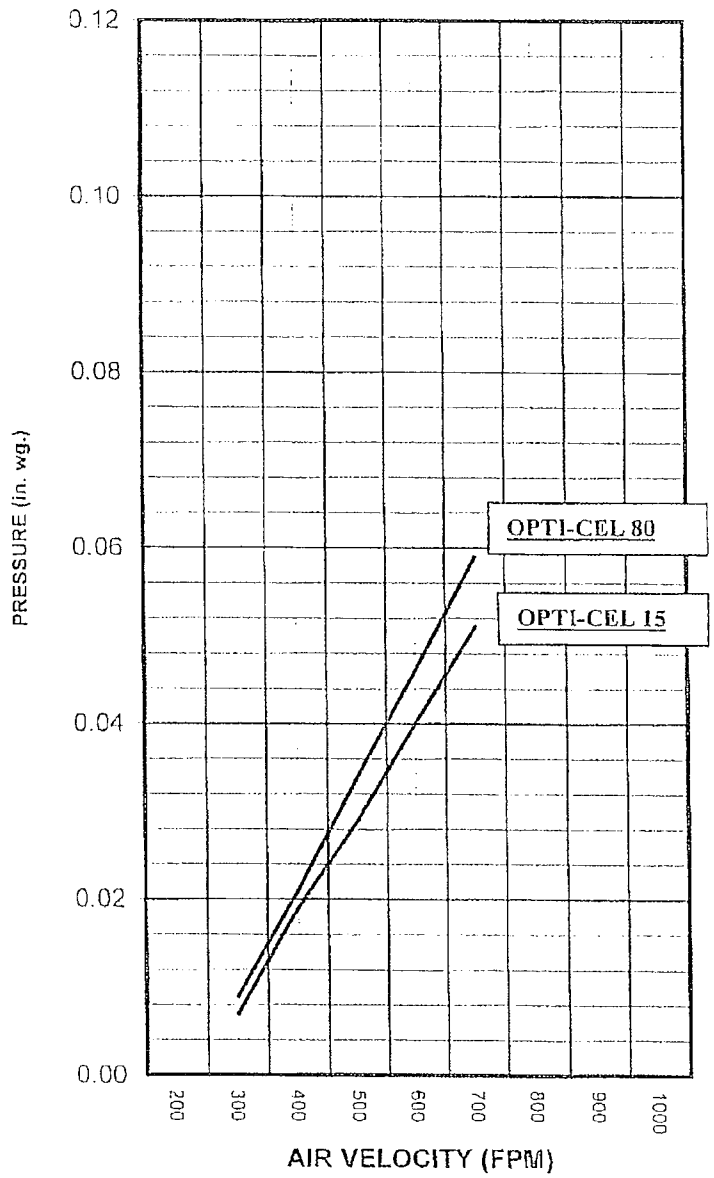

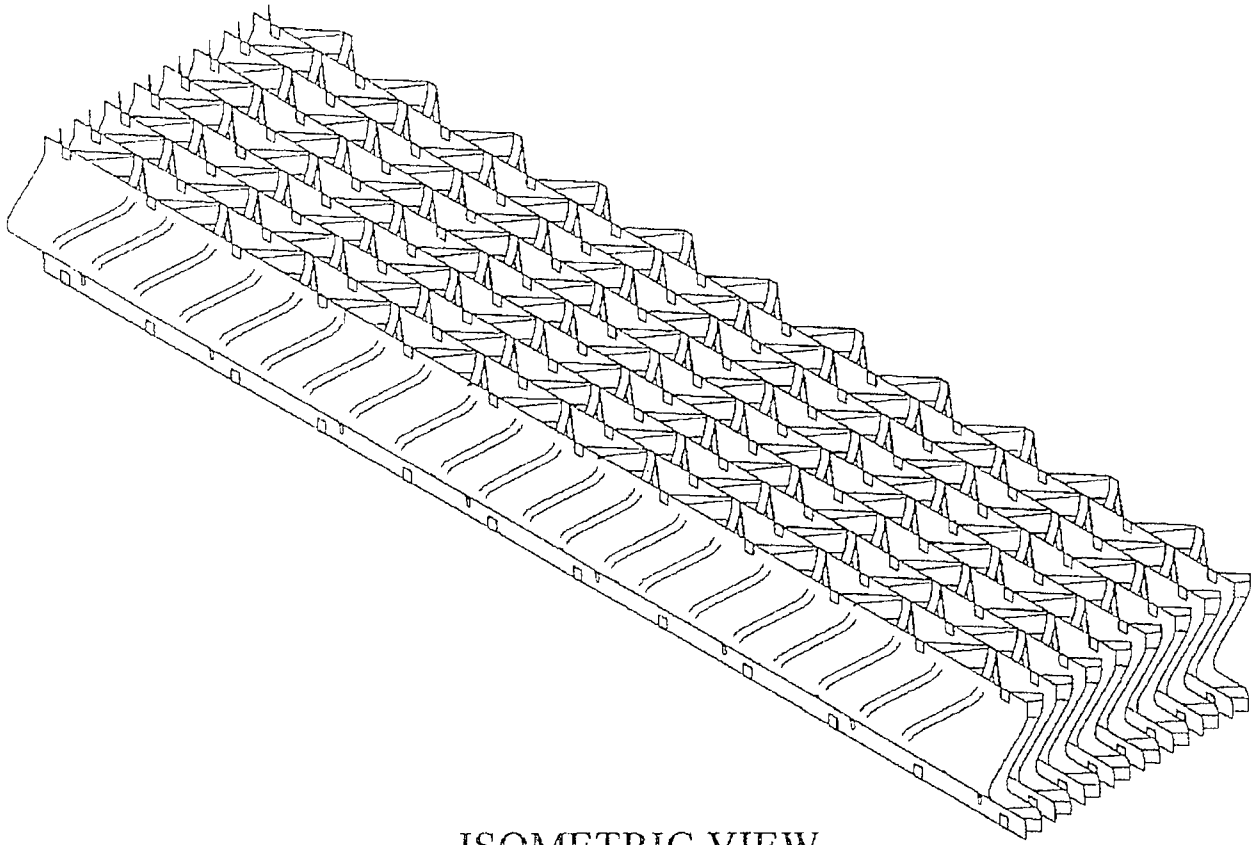

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DRAWN BY: G.G.	DATE: 04/05/98
TOWER COMPONENTS INC. (306) 933-3102	DWG NO.: OC15151525.dwg

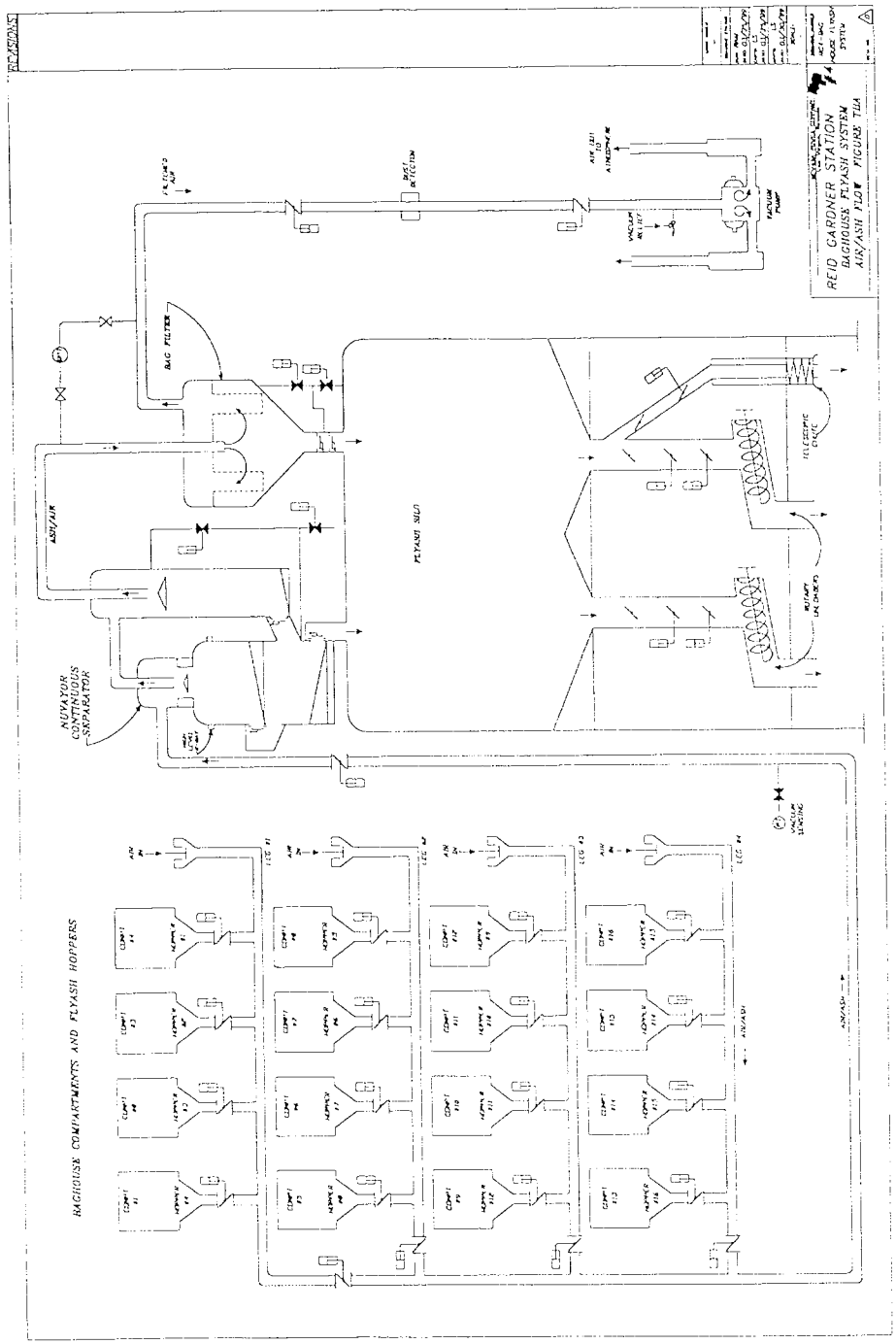
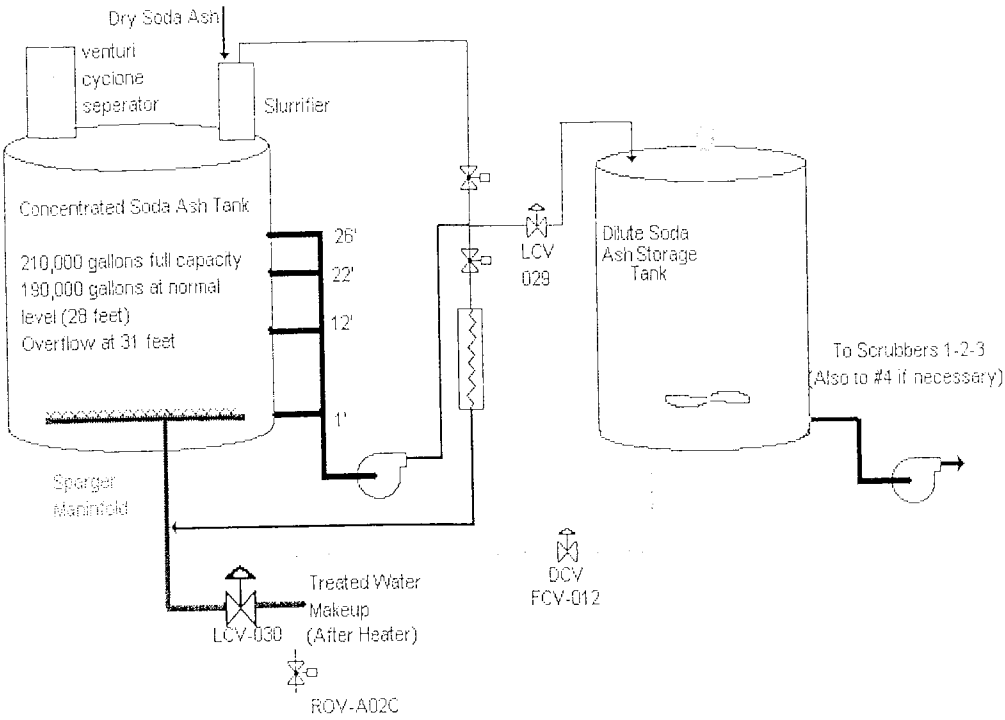

REID GARDNER STATION
BAGHOUSE FLYASH SYSTEM
AIR/ASH FLOW FIGURE TIA
BAG FILTER
FLYASH SILO
NUVAYOR CONTINUOUS SEPARATOR
BAGHOUSE COMPARTMENTS AND FLYASH HOPPERS
VACUUM PUMP
VACUUM SENSING

Figure 1.2



Soda Ash Preparation Area AMA

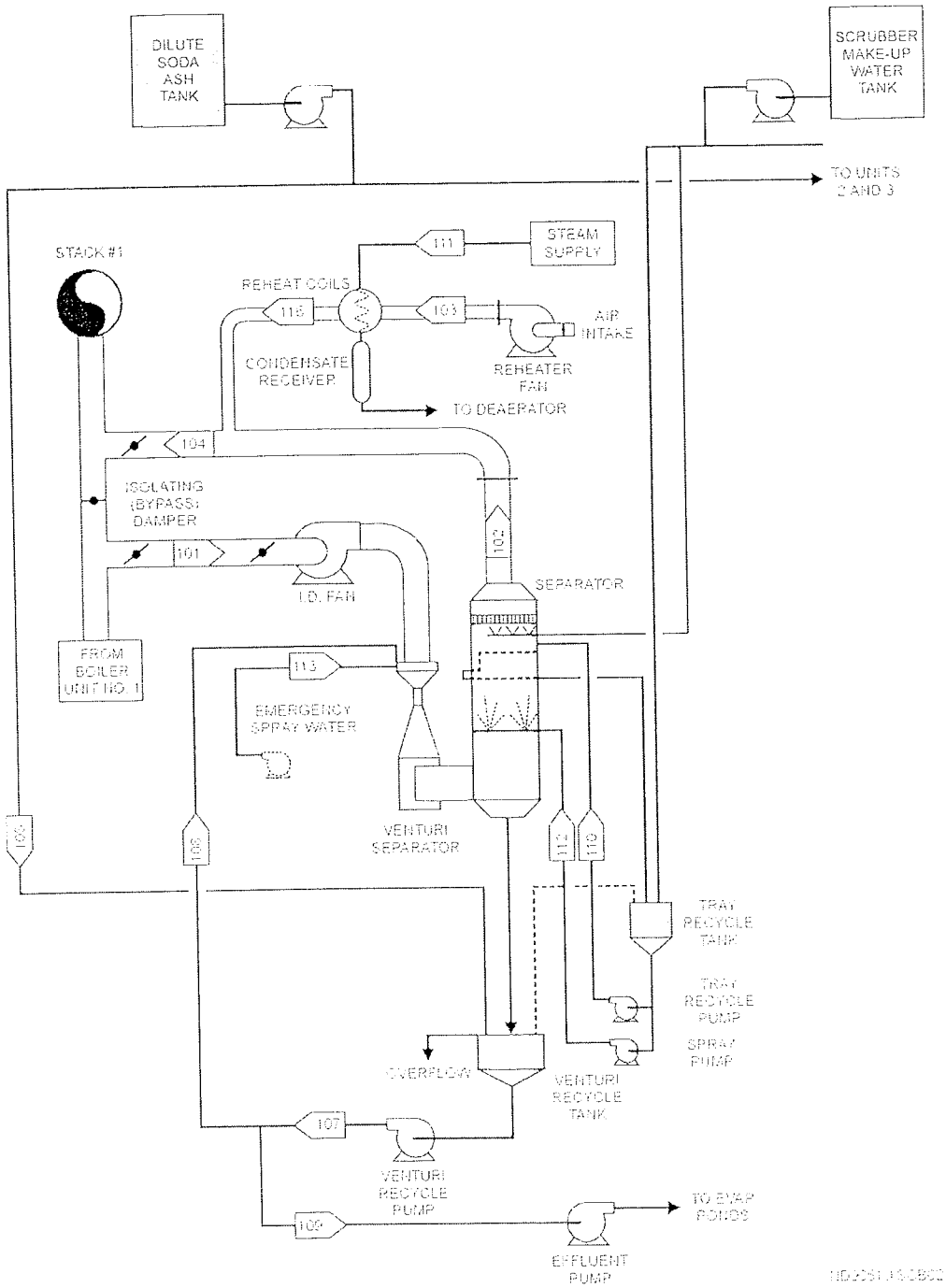


Figure 1.2 Scrubber Gas and Water Flowpath

DUST CONTROL PLAN

Reid Gardner Generating Station

Dust Control Plan

Prepared by:

NV Energy
6226 West Sahara Avenue
P.O. Box 230 MS 30
Las Vegas, Nevada 89151-0001

June 2009

DUST CONTROL PLAN

TABLE OF CONTENTS

LIST OF ATTACHMENTS

REID GARDNER STATION
DUST CONTROL PLAN

1.0 Introduction

NV Energy (NVE) has prepared this Dust Control Plan (DCP) following the outline provided in the NDEP-BAPC's *Surface Area Disturbance Permit, Dust Control Plan Preparation Guidelines,* dated October 2002. The DCP will be provided to appropriate RGS management, staff and contractors who will be expected to read the plan and implement the plan commitments.

2.0 Plan Requirements

2.1 Responsible Official

The Plan shall contain the Project's Responsible Official's (RO's) name, business address, mailing address and phone numbers. If the RO is not the project manager, list the name of the onsite project manager and his phone number.

The Responsible Official for this plan is the Executive- Generation, Mr. Kevin Geraghty. The alternate Responsible Official is the Plant Manager, Mr. Dave Sharp. The on-site "project manager" is Mr. Michael Rojo, the RGS Environmental Team Lead, while the coal yard team leader is Mr. Rick Whipple.

Dave Sharp *Plant Manager* *NV Energy* *Reid Gardner Station* *Moapa, Nevada 89025* *(702) 402-5164*	*Michael Rojo* *Team Lead, Env. Services* *NV Energy* *Reid Gardner Station* *Moapa, Nevada 89025* *(702) 402-1319*	*Rick Whipple* *Coal Yard Team Leader* *NV Energy* *Reid Gardner Station* *Moapa, Nevada 89025* *(702) 579-1343*

2.2 Physical Address

The PLAN shall contain the Physical address of the Project, including the County in which the Project is located. Major cross streets bordering the Project area shall be listed.

RGS is located in Clark County approximately 45 miles northeast of Las Vegas near Moapa, Nevada. The project is located two miles west of Interstate-15 off of the Hidden Valley exit, on Wally Kay Way, as shown on Plate 1. The mailing address is:

Reid Gardner Station
501 Wally Kay Way
P.O. Box 279
Moapa, Nevada 89025

2.3 Project Description

The PLAN shall include a description of the Project and the initial Project schedule.

RGS is a four-unit, coal-fired generating station that produces approximately 605 net megawatts of electricity. RGS uses natural gas to start up the boilers. Coal is delivered by rail and unloaded onto one of three separate stockpiles. The generating units and coal stockpiles are present on the north side of the Muddy River, while process water evaporation ponds and the coal ash landfill are present south of the river (see Plate 2).

RGS uses Muddy River water along with well water for cooling, steam generation, and air quality emission controls. Water is recycled from the cooling towers to the ash handling and flue gas desulfurization (FGD) systems. Scrubber blow-down effluent is discharged to a series of HDPE-lined evaporation ponds. Bottom ash and fly ash, along with evaporation pond sediment and salt precipitate, are collected and placed in an ash landfill located south of the ponds on the Mesa (see Plate 2).

The major potential sources of fugitive dust on the property include: the ash landfill haul road; the landfill, unpaved roads that access the ponds and other areas of the power plant; various coal yard activities including conveying, stacking, and scale calibration; and, seasonal drying of ponds resulting in windblown salt precipitate and pond sediment. Best Practical Methods (BPMs, as defined by NDEP-BAPC) or Best Management Practices (BMPs, as defined in the Clark County Dust Control Handbook) are used throughout the operation to minimize dust generation.

Additional descriptions of the major activities and potential dust sources are provided in the following sections, while specific dust control methods for each dust producing activity or area are described in Section 2.8.

2.3.1 Ash Handling System

Both bottom ash and fly ash are collected from the boilers in facilities located to the east of each respective operating unit (see Plate 3). A water-filled ash hopper beneath each boiler collects bottom ash, which is periodically emptied of water and accumulated ash using high-pressure water pumps at the hopper outlet. The bottom ash is sluiced to a dewatering system consisting of two dewatering bins, a settling tank, and a surge tank. Collected bottom ash is loaded into haul trucks for transport to the landfill via the ash haul road.

Fly ash is removed from the top of each boiler by either vacuum or forced draft technologies, and is collected in fabric (baghouse) systems. The fly ash is collected in storage bins and emptied through a rotary unloader into haul trucks for disposal in the landfill.

The ash handling system is not normally a source of fugitive dust. Water from the bottom ash settling tanks is applied during fly ash loading to minimize dust generation, and spillage around the storage silos is washed down to plant sumps.

2.3.2 Ash Haul Road

Haul trucks transport the fly ash and bottom ash to the ash landfill, located on the Mesa about 1.4 miles to the southwest of the generating complex, via the ash haul road (see Plate 2). Sediment and salt precipitate from dried evaporation ponds may also be excavated and disposed in the landfill using this road.

The haul road is unpaved, has heavy vehicle traffic, and must be watered daily for dust control. Typically, between 20 and 25 truckloads (25-ton capacity) per day of ash are transported to the Mesa, along with passenger and other vehicle traffic. The haul trucks are owned and operated by an independent contractor.

The haul road is susceptible to spillage of ash from overfilled haul trucks, which could become a source of fugitive dust.

2.3.3 Flue Gas Desulfurization (FGD) Salts

Units 1-3 have sodium carbonate wet scrubbing systems that remove sulfur dioxide from the flue gas. Unit 4 uses "absorbers". The reaction of sodium carbonate with sulfur dioxide in the flue gas produces a sodium sulfate salt solution that is piped to the ponds for settling and evaporation. The scrubbing system itself is not a source of dust, but on occasion dried pond salts, and transport of the salts to the ash landfill, may generate dust.

The Unit 4 FGD water treatment plant is a source of water for both systems. Sludge produced as a waste product of the water treatment process is transported by conveyor to a concrete storage basin on the south side of the building. The decanted sludge is loaded into trucks and transported to the ash landfill. Sludge spillage during loading and transporting can dry and become a dust source.

2.3.4 Evaporation Ponds

Wastewater from the FGD system is pumped to a series of evaporation ponds where fly ash and sodium sulfate salt accumulates. When wet the ponds are not a dust source, however, some ponds are subject to seasonal drying. When this occurs, the dry pond surface may be a source of fugitive dust during high wind events. Pond perimeter and access roads are also dirt surfaces that may be fugitive dust sources.

Two former ponds, 4A and D, have been closed. These ponds are not fugitive dust sources. Pond D has been converted to a stormwater retention basin and covered with coarse gravel to prevent dust generation, while Pond 4A was temporarily closed by covering with gravelly soil.

2.3.5 Landfill Areas, or Waste Management Units

The Mesa area is used for landfilling RGS's flyash, salt precipitate, sludge, and asbestos-containing building materials. The solid wastes typically consist of about 62 percent fly ash, 31 percent bottom ash, 7 percent decanted sludge and less than 1 percent asbestos containing building material. Each waste product has a designated disposal area. The fenced asbestos disposal area is seldom used.

Ash and pond sludge/salt are damp when transported, and after placement in the landfill generally dry with a crust that prevents dust generation. However, if dried material is driven on, the surface crust is broken up and dust generation is possible.

2.3.6 Other Unpaved Plant Area Roads

Many roads in the plant area are paved and are not dust sources. However, unpaved roads are present around the perimeter of the coal stockpiles, in the area of the railroad spur and vehicle repair warehouse, and around the ponds. These roads can be a source of fugitive dust due to vehicle traffic.

2.3.7 Coal Stockpiles

An average of 200,000 tons of coal is present on the east side of the generating complex in three separate, active stockpiles; two for Units 1-3, and a third for Unit 4 (see Plate 3). An area south of the central stockpile is designated as an "inactive" stockpile for emergency use. The coal is delivered by rail and transported to the selected stockpile by enclosed conveyors. A dozer is used to push stockpiled coal towards the collection point, located below the drop point, where it is transferred via other conveyors to the boilers. Coal unloading, stacking and redistribution activities are potential fugitive dust sources. Vehicle traffic around the stockpile perimeters and dozer activities on or around the stockpiles may also result in fugitive emissions.

2.3.7.1 Coal Conveyor System

Separate coal conveyor systems are present for the stockpiles, which take coal from the rail unloading hopper, deliver it to the stockpiles via stacking tubes, and deliver it from the stockpiles to the boilers (see Plate 3). The conveyors have multiple links with drop and transfer points at each connection, which are potential fugitive dust sources.

Pulverizers for fine-grinding of the coal are present inside buildings near the boilers. Dust generated during pulverizing is drawn into the boilers and combusted, and is therefore not a source of fugitive dust.

2.3.7.2 Coal Scale Calibration

Automatic scales are present on the coal conveyors that must be calibrated annually. The calibration requires weighing empty dump trucks on RGS's truck scales, loading the trucks with coal and re-weighing them, unloading the coal from the trucks onto the conveyor system, and then weighing the coal using the conveyor scales. Truck travel over dry roads can result in significant fugitive dust generation; however, excessive water application to the roads can result in mud accumulation on the trucks, which produces calibration errors. Consequently, to control dust and mud generation during calibration tests, water and/or palliatives must be carefully applied to area roads prior to the tests.

2.3.8 Construction Activities and Borrow Pits

RGS periodically has construction projects at the site, which typically utilize outside contractors. The number of workers, volume of traffic, and potential to generate fugitive dust depends on the scale of the project. Section 2.7 discusses contractor notification of dust control requirements.

Contractors may be required to obtain a separate Clark County *Dust Control Permit for Construction Activities* for specific construction projects and/or provide their own dust control equipment.

Two types of soil are periodically produced from borrow pits for use in pond construction, landfill cover or other site requirements. Borrow pits west of Pond B3 predominantly produce fine-grained material used in construction of pond liners and berms, while gravelly material produced from sources on the Mesa is used for cover soil. Both operations have the potential to generate fugitive dust.

2.4 Project Boundaries

The PLAN shall identify total physical boundaries of the Project (Sections/fractional Sections, Townships and Ranges). The PLAN shall also identify the UTM's of the project location.

RGS is located within the Moapa Valley, a relatively flat-bottomed valley occupied by the Muddy River, a spring-fed perennial stream. Physical features of the valley include the Muddy River, which flows northwest to southeast, and bluffs bounding the valley to the north and south. The site elevation ranges from 1,560 feet at the river to 1,720 feet on the Mesa south of the river.

The Property Boundary is shown in Plate 4. The plant, ponds and landfills are located within portions of Sections 5, 6 and 7 of Township 15 South, Range 66 East. The center of the power plant site has UTM 11 coordinates 711333E; 4059564N (WGS84/NAD83).

2.5 Maps

The PLAN shall include appropriately-sized maps of the Project with total project boundaries and facilities outlined (NDEP approved).

Site maps showing the project boundaries, labeled facilities, topography, roads, paved areas, and haul routes requiring watering and dust control are provided in Appendix D.

2.6 Certification Statement

The PLAN shall include a statement that the Project's Responsible Official has read the provisions of Nevada Administrative Code (NAC) Section 445B.22037 "Emissions of Particulate Matter; Fugitive Dust" and is aware that the Project is responsible for preventing controllable fugitive dust from the project's disturbed areas to become airborne on a 7-day/week, 24-hour/day basis.

The NAC section, along with the required certification signed by the Responsible Official, is provided in Attachment A.

2.7 Contractor Notification

The PLAN shall have provisions for notification of subcontractors and others accessing the disturbed areas of their responsibilities to control fugitive dust (i.e. observing onsite vehicle speed limits, track out, best practical methods of dust control being used onsite when working in disturbed areas, keeping off disturbed areas that have been stabilized, etc.). The PLAN shall

prohibit disturbing (driving over, grading or spreading dirt over) adjacent properties not covered by the permit.

An independent contractor hauls ash from the plant to the Mesa landfill. The contractor is required to maintain the haul road and apply water as needed for dust control using their water truck. They are also responsible for watering other active roads in the landfill area. RGS equipment maintains and provides dust control on remaining facility roads.

On occasion, other construction projects are completed on the site using contractors. Dust generation from these projects is usually the result of vehicle traffic or construction equipment. A notification page has been developed, which will be provided to all construction contractors prior to project start-up (see Attachment B).

2.8 Dust Control Methods

The PLAN shall address the type of best practical methods of fugitive dust control to be used by the permittee to control fugitive dust in detail. More than one type of fugitive dust control method may be necessary to prevent fugitive dust generation, and use of multiple fugitive dust methods must be addressed if applicable. The Project is responsible for adhering to the provisions contained in the PLAN. Failure to follow the PLAN required by a permit may result in a violation of the NAC Code Section 445B.275 "Violations; Acts constituting; notice". Failure to control fugitive dust generation at the Project site is a violation of NAC Section 445B.22037 "Emissions of Particulate Matter; Fugitive Dust". Regardless of the best practical method(s) of fugitive control selected, the permittee is responsible to prevent controllable fugitive dust from becoming airborne.

The major potential sources of fugitive dust at RGS were described in Section 2.3. These dust sources belong to one of two dust-generation categories: traffic related, or non-traffic related. Dust controls methods at RGS include general housekeeping procedures, and specific control methods for either traffic areas or non-traffic areas, using water sprays, dust palliatives ± surfactants, and other methods.

Best Practical Methods (BPMs) of dust control described in this DCP were obtained from the NDEP-BAPC *DCP Preparation Guidelines.* Normal RGS operations are not considered "Construction Activities", and do not require a separate Clark County "construction activities" dust control permit. However, the *Clark County Construction Activities Dust Control Handbook* was also referenced for this DCP. The handbook contains a list of *Best Management Practices* (BMPs) for dust control, along with a list of allowable palliatives in Clark County, which are summarized in Attachment C. Both BPMs and BMPs used at the facility are described below and listed in Table 1.

2.8.1 Good Housekeeping and Operating Practices

Good housekeeping and operating practices should be performed to maintain a clean and orderly work environment and good operating condition of dust control equipment. Procedures should include: proper operation and maintenance of dust control equipment, material storage practices, routine and regular cleanup schedules, sweeping and/or vacuuming of ash handling areas as necessary and educational programs for employees.

RGS personnel are expected to be alert for problems that could result in the generation of fugitive dust or other pollutants, and either correct the problem or notify the Shift Supervisor who may also communicate the problem to the Responsible Official.

2.8.2 Dust Control Methods - Traffic Areas

Traffic areas include any areas actively used by vehicles, haul trucks or heavy equipment. The main traffic areas that are potential dust sources at RGS include the ash landfill and ash landfill haul road, coal yard roads and coal stockpiles, pond access and perimeter roads, and borrow pits. Acceptable BPMs and BMPs for each area are shown in Table 1.

2.8.2.1 Palliatives for Traffic Areas

As discussed below in Sections 2.9 and 2.10, RGS currently applies a lignosulfonate solution to heavily-traveled roads to control dust. Lignosulfonate is a lignin-based, water soluble dust palliative derived from paper processing operations, which forms a hard, dust-free surface when dry. The solution is applied at the end of the winter storm season and usually remains effective throughout the summer months, unless washed off by precipitation. Water is applied at other times of the year as needed.

As discussed in the Clark County Dust Control Handbook, *Interim Policy on Dust Palliative Use*, fibers and mulches are ***NOT ALLOWED*** in traffic areas, including unpaved roads and parking areas. All other approved palliatives are allowed, although magnesium chloride is only allowed for short-term use (less than one year) in traffic areas. However, because lignosulfonate and magnesium chloride are water soluble, they **should not be used within 20 yards of a stream (Muddy River)**, natural wash or flood control channel.

2.8.2.2 Haul Road

A landfill contractor operates the ash landfill haul road, landfill, and associated watering operations, and is required to water the haul road on a daily basis to control dust. To minimize spillage from the trucks during hauling, overfilling with ash is prohibited, and trucks are required to maintain 3 to 6 inches of freeboard after filling. The haul trucks are inspected periodically and the contractor is also required to adjust and repair them as necessary. The road surface is bladed regularly to remove accumulated spillage. The windrowed material is picked up and disposed of in the landfill. A palliative shall be applied twice a year.

2.8.2.3 Coal Stockpiles

A series of conveyors are used to unload coal from rail cars, convey it to the stockpiles, and stack it onto the stockpiles (see Plate 3). Dust generated during the process is controlled through water sprays ± palliatives. Non-phosphate surfactants may also be used on the Unit 4 coal stockpile due to coal's "hydrophobic" or water repellent qualities.

Because dust generation is most likely to occur at the conveyor drop/transfer points, these areas are enclosed in chambers sealed with rubber stripping, and have water sprays/misters for dust control. The conveyors have automated water sprays controlled by paddle switches located under the conveyor belts. The switches activate solenoids on the water spray valves whenever coal is loaded on the conveyor belts. Other solenoid/water spray activation methods may be

employed, if effective. Regardless of the method used, the conveyors should not be operated unless the water spray system is functioning properly.

In addition to the drop/transfer point water sprays, rain bird sprinklers are utilized on top of the stacking tubes to wet the stockpile and control fugitive dust. Dozers are needed periodically to redistribute the coal on the stockpiles, which can generate dust. Wetting the coal with the rain birds helps control fugitive dust emissions that may be generated from dozer activities.

Fugitive dust from the inactive coal stockpile, present south of the central drop point, is controlled by compacting the surface using the dozer. Because the coal is relatively coarse and traffic is not normally present on the stockpile, it generates little dust. However, if necessary, water ± palliatives may also be applied.

Coal stockpile perimeter roads are kept watered throughout the year. Lignosulfonate or other palliative is also applied to these roads as necessary, in areas shown on Plate 3.

2.8.2.4 Landfill Face and Weekly Cover

The trucks dump the waste at the base of the active landfill area, and bulldozers spread the material. Because the material is moist when dumped, water application is not necessary at the face. The active area at any time totals approximately 2 acres.

After each portion of the landfill reaches its design thickness, it receives a cover of gravelly soil to prevent dust emissions. The weekly cover activities at the landfill include truck loading, cover dumping from the truck, and cover spreading. The cover is obtained from a nearby gravelly borrow source. Additional dust controls for the landfill should include posting signs that restricting traffic to existing roads, and limits travel speeds to 15 MPH.

2.8.3 Dust Control Methods - Non-traffic areas

Non-traffic areas that may require dust control include reclaimed areas such as closed ponds, landfills, or other disturbed but vacant sites not subject to continued vehicle travel. Stabilization of these areas requires that motor vehicle traffic be prohibited by signage and barriers. Other erosion and dust control methods used at these sites could include cover with gravelly soils, palliative application to form a visible surface crust, revegetation, and other methods described in Clark County Dust Control Handbook (CCDCH) BMP-11 (see Attachment C).

NVE typically reclaims disturbed areas, such as the completed landfill lifts and former pond sites, by slope regrading and/or coarse-grained cover soil application. At former Ponds 4A and D, a gravel cover was placed over the dried sediment to prevent dust generation. Seeding to reestablish vegetation has been found to have minimal effect at RGS due to the arid climate and natural low vegetation density. However, whatever vegetation can be established will help reduce erosion and dust generation. In select sensitive areas, spray mulch or fibers, or other topical vacant land palliatives may be applied to stabilize the soil and enhance revegetation success.

2.8.3.1 Palliatives for Non-traffic Areas

Fiber mulches, organic non-petroleum products and synthetic polymers are acceptable for non-traffic sites and may assist with site revegetation. Lignosulfonate or deliquescent/hygroscopic salts (magnesium chloride) and organic petroleum products (asphalt emulsions) are ***NOT***

ALLOWED on vacant or non-traffic land, as they can leach into the soil and impact groundwater, or runoff roads and impact surface water.

Some of the evaporation ponds dry seasonally and require dust control. Although they are not technically a "traffic area", they are active lined facilities, and any type of palliative may be used on them.

Dust control methods for all of the above sections, and other miscellaneous activities that may be conducted from time to time at the facility are summarized in Table 1.

Table 1: RGS Dust Control Methods

Fugitive Dust Sources	NDEP BPM	Clark County BMP	Specific Methods Used at RGS
Traffic Areas			
HAUL ROADS, POND ACCESS ROADS and UNPAVED PLANT ROADS (including coal stockpile area) Unpaved new, access/egress and haul roads Road shoulders and traffic control berms	a. Water Sprays b. Gravel (with or without palliatives) c. Palliatives ± Surfactants d. Vehicle speed control (10-15 MPH maximum speed, posted onsite) e. Paving f. Cessation of operations when winds make fugitive dust control difficult	BMP-13 Importing Soil and bulk material BMP-20 Track out BMP-21 Unpaved Routes	• Haul road and plant area roads watered regularly year-round. Twice per year or as needed during spring and early summer when hot temperatures and high wind conditions exist, the water is augmented with lignosulfonate or other dust palliative. • Other plant roads watered with lignosulfonate on as-needed basis. • Posted speed limit of 15 mph on untreated surfaces when dust generation is possible. • Maintain 3-6 inches of freeboard to minimize spillage.
LANDFILL Active portions of landfill. Inactive areas covered below.	a. Water/Palliatives b. Vehicle speed control (10-15 MPH maximum speed, posted onsite)		• Water sprays on active roads. • Posted speed limit of 15 mph on untreated surfaces when dust generation is possible. • Fencing or berming to prevent access to disturbed areas, and signage to restrict off-road driving.
GRADED AREAS • Building sites • Construction equipment staging sites • Parking lots • Regraded, reclaimed areas.	a. Water Sprays b. Revegetation c. Gravel (with or without palliatives) d. Palliatives f. Vehicle speed control (15 MPH maximum speed, posted onsite) e. Staged construction f. Wind fences h. Fencing or berming to prevent unauthorized access to disturbed areas) i. Cessation of operations when winds make fugitive dust control difficult	BMP-04 (clearing and grubbing) BMP-18 (staging areas)	• Water sprays on roads, with or without lignosulfonate palliative. • Gravel placement on parking areas. • Seeding reclaimed areas to establish vegetation for non-traffic areas • Use of palliatives or mulch on reclaimed non-traffic areas. • Fencing or berming to prevent access to disturbed areas, and signage to restrict off-road driving.

Fugitive Dust Sources	NDEP BPM	Clark County BMP	Specific Methods Used at RGS
MATERIAL STORAGE PILES Construction sand, gravel, base materials, rock, etc. Overburden material storage piles (dirt, sand, gravel, rock) Landscaping material storage piles (loose, not bagged materials)	a. Water Sprays b. Palliatives c. Covering with tarpaulin or geotextiles; tenting d. Wind fences e. Fencing or berming to prevent unauthorized access to storage areas) f. Cessation operations when winds make fugitive dust control difficult	BMP-19 (stockpiling of materials)	• Stabilize soils where support equipment and vehicles will operate. • Apply palliative where equipment and vehicles will operate. • Apply water when stacking, loading and unloading
COAL STOCKPILES Unloading coal trains, coal conveyance and coal stacking procedures.	a. Water sprays on conveyor drop points. b. Rain birds at top of stacking tubes to water coal c. Water sprays on crushers.	BMP-06 (crushing)	• Automated water spray system at conveyor drop/transfer points. System includes paddle switches that activate the sprays whenever conveyor belts are loaded with coal. Maintain paddle switches and sprays, and repair, operate manually, or shut down operations if any sprays fail to operate. • Maintain shields and enclosures at coal conveyor drop/transfer points to retain dust and prevent windblown dust. • Operate rain bird watering system from the coal drop chutes during dry weather. Run sprinkler continuously in summer months. • Maintain water sprays on crushers as per permit. • Apply water w/surfactant on coal piles and area roads as needed.
PAVED ROADS Trackout	a. Wash racks (to clean truck tires) b. Water hoses (to clean truck tires or wash down roads) c. Street sweeper (to clean roads) d. Other		• Trackout is not normally an issue at RGS, as haul trucks remain within the plant site during operations.

Fugitive Dust Sources	NDEP BPM	Clark County BMP	Specific Methods Used at RGS
BORROW PITS Earthmoving, loading and unloading of dusty materials	a. Reduce equipment travel speeds b. Water loads, then load or unload slowly c. Decrease drop height between bucket/ stacker and truck/storage pile d. Decrease drop height between silo and truck and/or use shrouding/ baghouse	BMP-13 (importing/ exporting soil and other bulk material) BMP-17 (screening of rock and soil) BMP-19 (stockpiling)	• Apply sufficient water to obtain optimum moisture prior to screening, and apply water during screening as needed to prevent dust. • Drop material through the screen slowly and minimize drop height. • Check haul truck belly dump seals regularly to minimize spillage. • Maintain 3-6 inches of freeboard in haul trucks to minimize spillage.
Non-Traffic Areas			
Reclaimed Areas Former ponds and landfills and other areas that will not have continuing activity.		BMP-11 (long term stabilization)	• Prevent traffic from accessing site with berm, signs, etc. • Apply non-traffic type palliative such as mulches and fibers, or apply gravel or gravelly soil cover. • Stabilize soil with vegetation. Apply water until germination occurs, and to generate crusted condition.
Ash Handling System water sprays on unloaders			• Bottom ash system water provided to fly ash rotary unloaders to wet ash and minimize dust generation during haul truck loading. • Spillage around the storage silos is washed down to plant sumps

2.9 Wind Fencing and/or Palliatives

The PLAN shall specify when wind fencing and other best practical methods of fugitive control are to be installed/implemented. Storage piles and disturbed area best practical methods selected for fugitive dust control should be implemented immediately as large disturbed areas and storage piles tend to be most affected by windy conditions. If wind fencing is to be used, the PLAN should specify that the top of the storage pile must not be taller than the wind fencing. If water or surfactants/palliatives are used to stabilize large disturbed areas, the PLAN should limit unauthorized vehicle access to the water or chemically stabilized areas using fencing, boulders or earth berming.

Wind fencing is not used at RGS. Dust palliatives are used on area dirt roads, especially during the late Spring after the winter storm season ends (lignosulfonate and deliquescent salts are water soluble and can be washed away by precipitation). Currently, RGS applies a sodium lignosulfonate solution; however, RGS may in the future use other approved palliatives if they are found to be effective. The lignosulfonate solution is mixed in supplier-recommended concentrations, stored in a tank at the power plant, and applied using water trucks. Non-phosphate surfactants may be used in conjunction with water and/or palliatives on the Unit 4 coal stockpile.

Palliatives are only used on large, non-traffic surfaces at the evaporation ponds when surface drying occurs. A lignosulfonate solution is applied with hoses and water trucks to form a surface crust. Vehicles are not allowed on the pond surfaces after palliative application.

2.10 Dust Control Application Timing and Schedule

The PLAN must address the application schedule and timing of the application of the best practical method(s) selected for fugitive dust control at the various locations within the project site if water, surfactants/palliatives, or similar best practical methods of fugitive dust control are to be used.

Grading -Water Application

- *It is highly recommended that the area to be disturbed be watered for several days prior to start of slash removal and grading. This does not mean flooding the area to be disturbed, which may make the area unworkable, or that the area should be allowed to dry out before beginning disturbance of the area, since that would prevent adequate dust control and impede proper grading.*
- *Water should be applied continuously in front of the scraper/grader/dozer. If the soil is dry, the scraper/grader/dozer must cease further disturbance when the water truck runs out of water and should not resume until the water truck is operational again.*

Road watering occurs routinely throughout the year. Use of lignosulfonate in the road water, however, typically occurs during the spring at the end of the winter storm season. During a typical season, between 3 and 4 tanker loads of concentrated lignosulfonate are purchased, mixed in a water tank at recommended concentrations, and applied to the haul road and other area dirt roads as necessary. As required in the Clark County Dust Control Handbook, to prevent

contaminating surface water runoff, **the lignosulfonate solution is not applied within 20 yards (60 feet) of the Muddy River, natural washes or flood channels.**

The coal conveyor dust control systems must be operational any time coal is being unloaded, while palliative application to stockpile-area roads should be conducted immediately prior to conveyor calibration testing.

2.11 Location of Water Supply and Trucks

If water is to be used for fugitive dust control, the PLAN shall include the location(s) of the water supply to be used, the number of water trucks to be used and the travel time between the water supply and the project site.

Water is used to control dust on the roads using water trucks. RGS is permitted to use up to 60,000 gallons of water per day, or approximately 12 truckloads, obtained from the boiler bottom ash removal tank, which has a constant supply of water. Also, RGS is permitted to use cooling tower blow down water for dust control purposes. During certain times of the year, additional water may be obtained from the fresh water ponds as necessary. One water truck is operated by a subcontractor responsible for hauling fly ash to the landfill on the Mesa. The second water truck is operated by RGS and used to water other plant roads as needed.

The water/palliative tank is located at the plant, and the travel time to areas of water application varies depending on distance from the source. The maximum travel distance, 1.4 miles, is from the tank to the Mesa landfill area. At a travel speed of 15 mph, the truck covers the distance in less than 6 minutes.

2.12 Water Truck Contingency Plan

If water is to be used for fugitive dust control, the PLAN shall include a contingency plan for leasing water trucks in the event that the project's water truck(s) breakdown or are insufficient to control the generation of fugitive dust at the project site.

Two water trucks are present on the property at all times, although dust control is not always required on all area roads all the time. Thus, in the event of a breakdown, one truck is always available. If additional trucks are required due to breakdowns or construction projects, RGS or the contractor will obtain additional equipment as required.

2.13 Operations Log

The PLAN shall include a provision for maintaining a daily operations log showing the operational hours of the scraper/grader/dozer, front loaders, backhoes, cranes/shovels, water truck(s), the amount of water used, the number of water trucks used, and when operations cease each day. When operations are ceased because of wind or other meteorological conditions, it should be noted in the daily operations log.

RGS operates equipment continuously throughout the year for road maintenance, coal stockpile operations, etc. Records of most project operations schedules are kept by the facility. A daily operations log book will be kept with each water truck to record:

a. the amount of water or dust palliatives applied (based on the number of water truck trips),

b. where water or dust palliatives are applied,

c. hours of operation, and

d. times of high wind events that shut down operations.

These records will be retained for one year. An example recording form is provided in Attachment D.

2.14 Training

The PLAN shall include training of the project supervisor and equipment operators to recognize when the dust controls being used are not preventing the generation of fugitive dust and to follow the requirements of the project's fugitive dust control plan. A log of such training shall be kept onsite with the daily operations log.

RGS staff receive internal fugitive dust control training, and in-house training on pollution prevention, stormwater controls, good housekeeping, safety and other issues. In addition to training sessions, information on specific palliative types and application rates is obtained from product suppliers

2.15 Supervisor Identification

The PLAN shall include identification of the Project onsite person(s) authorized to cease operations when wind or other meteorological conditions prevent the control of fugitive dust when employing the best practical methods specified in the PLAN.

Plant personnel visually monitor dust generation during coal stockpiling operations, road maintenance, ash hauling and other activities that have potential to generate fugitive dust. Should unusual fugitive dust generation occur, additional mitigation procedures, such as increased road watering, spray adjustment, etc., will be implemented.

The activity supervisor, plant management or site environmental representative will normally conduct the monitoring. Employees are required to report fugitive dust events immediately to their Shift Supervisor who, in turn, can notify either the Plant Manager (Dave Sharp), Environmental Team Lead (Michael Rojo), or Coal Yard Maintenance Team Leader (Rick Whipple) at the numbers shown in Section 2.1. These individuals have the authority to halt operations or redirect dust control activities during wind related dust events.

2.16 Plan Updates

The PLAN shall have provisions for updating the PLAN in the event material changes to the Project occur, and resubmittal of the PLAN to NDEP for evaluation.

In the event that plant modifications result in new dust sources, or if significant changes in dust control methods are enacted, this DCP will be revised and submitted to the NDEP for evaluation.

ATTACHMENT A - NEVADA ADMINISTRATIVE CODE 445B.22037 "EMISSION OF PARTICULATE MATTER: FUGITIVE DUST"

AND

CERTIFICATION BY RESPONSIBLE OFFICIAL

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION

CHAPTER 445B

AIR CONTROLS

AIR POLLUTION

NAC 445B.22037 Emission of Particulate Matter: Fugitive dust.

1. No person may cause or permit the handling, transporting or storing of any material in a manner which allows or may allow controllable particulate matter to become airborne.
2. Except as otherwise provided in subsection 4, no person may cause or permit the construction, repair, demolition, or use of unpaved or untreated areas without first putting into effect an ongoing program using the best practical methods to prevent particulate matter from becoming airborne. As used in this subsection, "best practical methods" includes, but is not limited to, paving, chemical stabilization, watering, phased construction and revegetation.
3. Except as otherwise provided in subsection 4, no person may disturb or cover 5 acres or more of land or its topsoil until he has obtained an operating permit for surface area disturbance to clear, excavate, or level the land or to deposit any foreign material to fill or cover the land.
4. The provisions of subsections 2 and 3 do not apply to:
   (a) Agricultural activities occurring on agricultural land; or
   (b) Surface disturbances authorized by a permit issued pursuant to NRS 519A.180 which occur on land which is not less than 5 acres or more than 20 acres.

[Environmental Comm'n, Air Quality Reg. §§ 7.3.1 & 7.3.2, eff. 11-7-75; § 7.3.3, eff. 11-7-75; A 12-15-77]—(NAC A 9-19-90; 12-26-91; 12-13-93; 10-30-95)

CERTIFICATION BY RESPONSIBLE OFFICIAL

Name: Title: Date:

I hereby certify that I have read the above provisions of Nevada Administrative Code "Emissions of Particulate Matter; Fugitive Dust" and am aware that the Project is responsible for preventing controllable fugitive dust from the project's disturbed areas to become airborne on a 7-day/week, 24-hour/day basis.

ATTACHMENT B - CONTRACTOR NOTIFICATION OF DUST CONTROL REQUIREMENTS

CONTRACTOR NOTIFICATION OF DUST CONTROL REQUIREMENTS

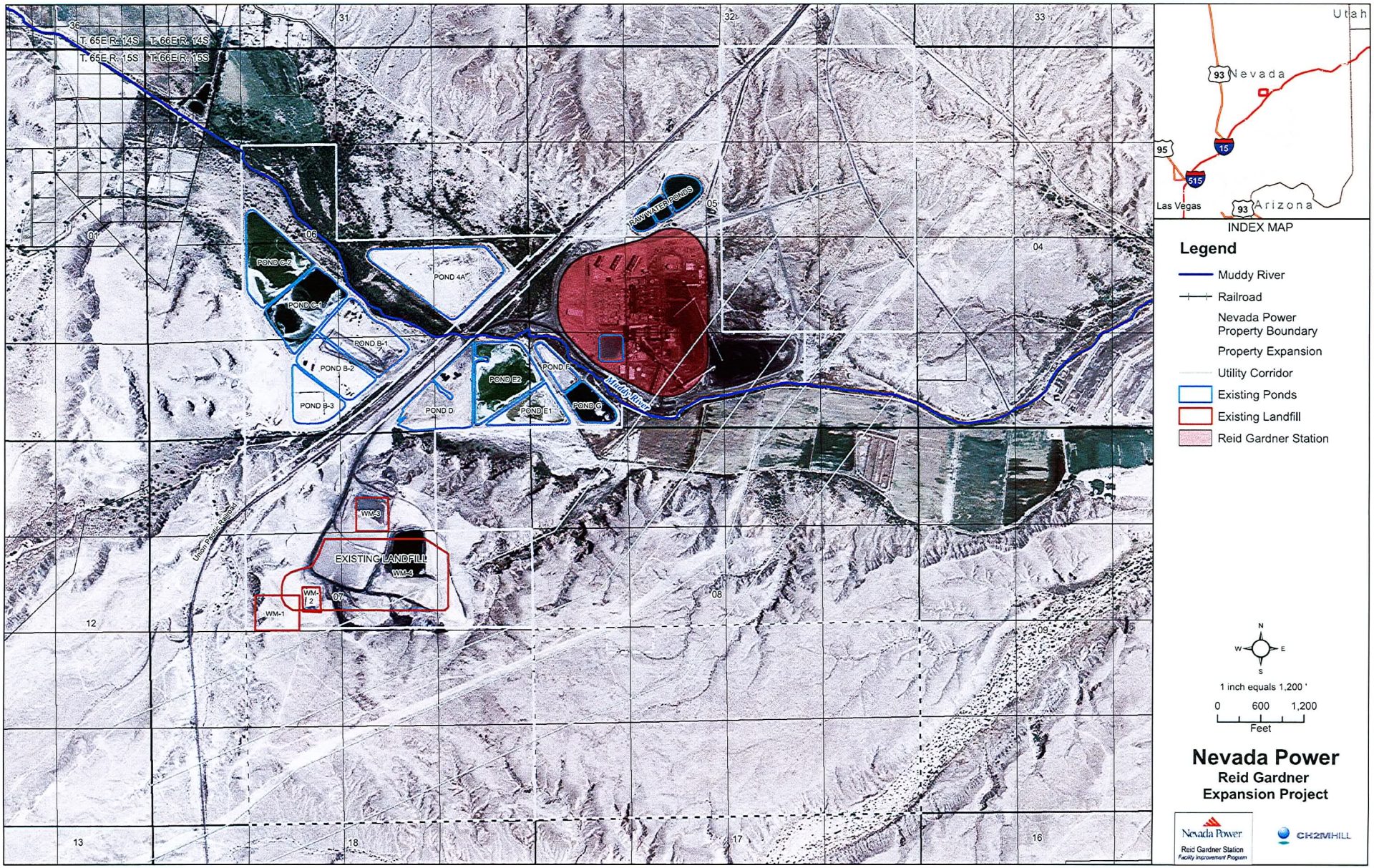
All Reid Gardner Contractors should be aware of the need to control fugitive dust emissions during their operations, and must obey the following general rules to minimize fugitive dust generation. Depending on the specific activity, control methods other than those described below may be required. If so, the contractor should develop and implement their own fugitive dust control plan, and implement activity-specific Best Management Practices, as provided in the Clark County, Department of Air Quality Management, Construction Activities Dust Control Handbook.

When traveling on the property:

1) Observe onsite vehicle speed limits. The speed limit is 25 mph on paved roads, and the haul road and other facility roads that are watered or treated with dust palliative. On untreated gravel roads, the speed limit is 15 mph when dusty conditions are present,
2) In areas where soil track out occurs – immediately clean trackout from paved surface to maintain dust control. Trackout onto paved surface must not extend 50 feet or more. If necessary, install trackout control devices.
3) Unnecessary driving over and disturbing dirt surfaces, undisturbed desert areas, or graded surfaces is prohibited.

ATTACHMENT C – RECORD OF DAILY DUST CONTROL EXAMPLE FORM

ATTACHMENT D – REID GARDNER SITE MAP



Nevada Power
Reid Gardner Expansion Project

Nevada Power
Reid Gardner Station
Facility Improvement Program

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