



**Utah Division of Air Quality
New Source Review Section**

**Form 8
Electrostatic Precipitators**

Company _____

Site/Source _____

Date _____

Equipment Information			
1. Manufacturer: _____ Model No: _____	2. Attach assembly drawing (front and top view) of the control device dimensions and to scale showing the design, size and shape. If device has bypasses, safety valves, etc, include in drawing and specify when such bypasses are to be used and under what conditions.		
3. Type of particulate controlled:	4. Particulate size: _____ microns (mean geometric diameter)		
Gas Stream Characteristics			
5. Gas flow rate: Design maximum: _____ acfm at _____ °F Average expected: _____ acfm at _____ °F	6. Gas stream temperature (°F): Inlet _____ Outlet _____		
7. Particulate grain loading: Inlet: _____ grain/scf Outlet: _____ grain/scf	8. Pressure drop (in. H ₂ O):		
9. Water vapor content of effluent stream (lb water/lb dry air):	10. Fan requirements: hp _____ ft ³ /min _____		
Precipitator Characteristics			
11. Number of fields:	12. Number of plates:	13. Plate spacing:	14. Number of discharge electrodes:
15. Spacing between electrodes and plates:	16. Length of plates:	17. Width of plates:	18. Potential applied (KV/in):
19. Wires: Length: _____ Diameter: _____	20. Can isolate chambers? <input type="checkbox"/> Yes <input type="checkbox"/> No	21. Number of chambers:	22. Number of hoppers:
23. Discharge device:	24. Volume of hoppers:	25. Angle of hopper:	26. Level detector device: Type: Number:
27. Cross-sectional area of precipitator (ft ²):	28. Cross-sectional of inlet duct (ft ²):	29. Precipitator volume (ft ³):	30. Type: <input type="checkbox"/> Hot side <input type="checkbox"/> Cold side
31. Residence time in precipitator (sec):		32. Type of collecting electrode: <input type="checkbox"/> Tubular <input type="checkbox"/> Plate	

33. Plate cleaning system: <input type="checkbox"/> Rapping <input type="checkbox"/> Water spray washing <input type="checkbox"/> Other _____	34. Efficiency of electrical precipitator (%):
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Stack

35. Height: _____	36. Inside dimensions: _____	37. Exhaust gas flow: _____ acfm at _____ °F
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Monitoring Instrumentation

38. Type	Manufacturer	Model	Range	Units
Section 1:				
Primary voltage	_____	_____	_____	Volts
Secondary voltage	_____	_____	_____	Volts
Primary current	_____	_____	_____	Amperes
Secondary current	_____	_____	_____	Amperes
Section 2:				
Primary voltage	_____	_____	_____	Volts
Secondary voltage	_____	_____	_____	Volts
Primary current	_____	_____	_____	Amperes
Secondary current	_____	_____	_____	Amperes
Section 3:				
Primary voltage	_____	_____	_____	Volts
Secondary voltage	_____	_____	_____	Volts
Primary current	_____	_____	_____	Amperes
Secondary current	_____	_____	_____	Amperes
Section 4:				
Primary voltage	_____	_____	_____	Volts
Secondary voltage	_____	_____	_____	Volts
Primary current	_____	_____	_____	Amperes
Secondary current	_____	_____	_____	Amperes

Emissions Calculations (PTE)

23. Calculated emissions for this device

PM ₁₀ _____ Lbs/hr _____ Tons/yr	PM _{2.5} _____ Lbs/hr _____ Tons/yr
NO _x _____ Lbs/hr _____ Tons/yr	SO _x _____ Lbs/hr _____ Tons/yr
CO _____ Lbs/hr _____ Tons/yr	VOC _____ Lbs/hr _____ Tons/yr
HAPs _____ Lbs/hr (speciate) _____ Tons/yr (speciate)	

Submit calculations as an appendix.

Instructions – Form 8 Electrostatic Precipitators

- NOTE: 1. **Submit this form in conjunction with Form 1 and Form 2.**
2. Call the Division of Air Quality (DAQ) at **(801) 536-4000** if you have problems or questions in filling out this form. Ask to speak with a New Source Review engineer. We will be glad to help!

1. Indicate the manufacturer and model number of the equipment.
2. Supply an assembly drawing, dimensioned and to scale of the equipment.
3. Identify the type of particulate that is controlled.
4. Indicate the particle mean geometric diameter in microns.
5. Indicate the gas stream flow rate at design maximum and average expected rates.
6. Supply the ESP inlet and outlet temperatures of the gas stream.
7. Indicate the gas stream particulate grain loading at inlet and outlet.
8. Specify the pressure drop through the ESP.
9. Indicate the vapor content of the outlet gas stream.
10. Specify the fan requirement of the ESP.
11. Specify the number of fields in the ESP.
12. Specify the number of plates.
13. Indicate the plate spacing within the ESP.
14. Supply the number of discharge electrodes.
15. Indicate the spacing between electrodes and plates.
16. Specify the length of plates.
17. Specify the width of plates.
18. Specify what the kilovolt per inch of plate is.
19. Specify the length and diameter of the wires.
20. Indicate whether or not chambers can be isolated.
21. Indicate the number of chambers.
22. Specify the number of hoppers in the ESP.
23. Specify what type of discharge device is used with the hoppers.
24. Indicate what the volume of the hoppers is.
25. Indicate what the angle of the side of the hopper is.
26. Indicate the specifications of the level detector device.
27. Supply the cross-sectional area of the precipitator in square feet.
28. Indicate the area of the cross-sectional of the inlet duct in square feet.
29. Specify the volume of the precipitator in cubic feet.
30. Specify the type of ESP.
31. Indicate the residence time of the gas stream in the precipitator.
32. Specify the type of electrodes used in the ESP.
33. Specify how the plates are cleaned.
34. Supply the percentage of efficiency of the ESP.
35. Specify the height of the stack.
36. Specify the inside dimensions of the stack.
37. Indicate the exhaust gas flow rate in actual cubic feet per minute and temperature.
38. Supply the specifications of any monitoring instrumentation used in the process.
39. Supply calculations for all criteria pollutants and HAPs. Use AP42 or Manufacturers data to complete your calculations.