Duplicate this form for EACH RELEASE POINT

FORM INV-2 EMISSION POINT DESCRIPTION

1. Company/Facility Name	Grain Elevator Inc		2. Form INV-2 Page	2	of 8
3. Release Point Identifier	EP-2				
4. Is this release point used as an emergency bypass stack?	No ☒	Yes ☐			
If YES, for which release point(s)? List release point identifiers:					
5. Release Point Type					
Downward-facing Vent	☐		Indoor Vented	☐	
Fugitive (specify)	☐		Vertical	☐	
Goose Neck	☐		Vertical with Rain Cap	☐	
Horizontal	☒				
6. Release Point Description	Column Grain Dryer Emissions				
7. Operating Status	Operating	☒	Permanently Shutdown	☐	Temporarily Shutdown ☐
8. Operating Status Date (Please enter the date the shutdown occurred. The status date should be blank if the status above was entered as operating.)					
9. Stack Height Above Ground	60	feet			
10. Stack Shape and Dimensions: (interior dimensions at exit point)					
Circular Diameter:	☐		feet		
Rectangular Dimensions:	☒	10	feet x	12	feet

Composition Of Exhaust Stream

Exhaust Stream Characteristics	Release Point Composition of Exhaust Stream	Units of Measure
11. Temperature	200	Degree Fahrenheit
12. Flow Rate	50,000	☐ ACFM ☒ SCFM

13. Bypass Stacks	
Bypass Stack – Release Point Identifier	
Bypass Stack Description	
Bypass Stack – Release Point Identifier	
Bypass Stack Description	

14. List of Emission Unit Identifiers Venting Through This Release Point Identifier

Emission Unit Identifier	Emission Unit Identifier	Emission Unit Identifier	Emission Unit Identifier
EU-2			

Duplicate this form for EACH EMISSIONS PROCESS

FORM INV-4 PROCESS DESCRIPTION - ACTUAL EMISSIONS

1. Company/Facility Name	Grain Elevator Inc	2. Form INV-4 Page	2	of	10
3. Release Point Identifier	EP-2				
4. Release Point Description	Column Grain Drying Emissions				
5. Emission Year	20##				
6. Emission Unit Identifier	EU-2				
7. SCC Number	30200527				
8. Description of Process	Column Grain Drying				

Annual Throughput	
9. Annual Throughput	25,000
10. Throughput Unit of Measure	Tons
11. Throughput Type (Input, Output, or Existing)	Input
12. Throughput Material	Corn

Actual Operating Rate/Schedule	
13. Average Hours/Day	13.97
14. Average Days/Week	5.62
15. Average Weeks/Year	21
16. Actual Hours For Year	1,648

Seasonal Operations	
17. January, February & December (%)	33.3
18. March, April & May (%)	3.3
19. June, July & August (%)	6.7
20. September, October & November (%)	56.7

Associated Control Devices	
21. Control Device Identifier	
22. Control Device Description	
23. Control Device Identifier	
24. Control Device Description	

ACTUAL EMISSIONS

25. Air Pollutant	26. Emission Factor	27. Emission Factor Units of Measure	28. Source of Emission Factor	29. Ash or Sulfur %	30. Combined Control Efficiency	31. Transfer Efficiency	32. Actual Estimated Emissions (Tons)
PM-2.5	.0094	lbs/ton	AP-42				0.12
PM-10	0.055	lbs/ton	AP-42				0.69
SO_2							
NOX							
VOC							
CO							
Lead							
Ammonia							

ACTUAL EMISSIONS – Individual HAPs and additional regulated air pollutants – list each individual pollutant name in Column 25							

*Calculation Methods: CEMS – Engineering Judgment – Manufacturer's Specification – Material Balance – Other (Specify) – State or Local Speciation Profile – Site Specific – Stack Test – Trade Group – US EPA - Vendor

Duplicate this form for EACH EMISSIONS PROCESS

FORM INV-4 PROCESS DESCRIPTION - ACTUAL EMISSIONS

1. Company/Facility Name	Grain Elevator Inc	2. Form INV-4 Page	3	of	10
3. Release Point Identifier	EP-2				
4. Release Point Description	Column Grain Drying Emissions				
5. Emission Year	20##				
6. Emission Unit Identifier	EU-2				
7. SCC Number	10200602				
8. Description of Process	Natural Gas Combustion				

Annual Throughput	
9. Annual Throughput	17.75
10. Throughput Unit of Measure	MMcf
11. Throughput Type (Input, Output, or Existing)	Input
12. Throughput Material	Natural Gas

Actual Operating Rate/Schedule	
13. Average Hours/Day	13.97
14. Average Days/Week	5.62
15. Average Weeks/Year	21
16. Actual Hours For Year	1,648

Seasonal Operations	
17. January, February & December (%)	33.3
18. March, April & May (%)	3.3
19. June, July & August (%)	6.7
20. September, October & November (%)	56.7

Associated Control Devices	
21. Control Device Identifier	
22. Control Device Description	
23. Control Device Identifier	
24. Control Device Description	

ACTUAL EMISSIONS

25. Air Pollutant	26. Emission Factor	27. Emission Factor Units of Measure	28. Source of Emission Factor	29. Ash or Sulfur %	30. Combined Control Efficiency	31. Transfer Efficiency	32. Actual Estimated Emissions (Tons)
PM-2.5							
PM-10							
SO_2	0.6	lbs/MMcf	AP-42				0.01
NOX	100	lbs/MMcf	AP-42				0.89
VOC	5.5	lbs/MMcf	AP-42				0.05
CO	84	lbs/MMcf	AP-42				0.75
Lead							
Ammonia	3.2	lbs/MMcf	AP-42				0.03

ACTUAL EMISSIONS – Individual HAPs and additional regulated air pollutants – list each individual pollutant name in Column 25							
Hexane	1.8	lbs/MMcf	AP-42				0.02
Formaldehyd	0.075	lbs/MMcf	AP-42				0.00

*Calculation Methods: CEMS – Engineering Judgment – Manufacturer's Specification – Material Balance – Other (Specify) – State or Local Speciation Profile – Site Specific – Stack Test – Trade Group – US EPA - Vendor

FORM INV-5 CALCULATIONS

1. Company/Facility Name	Grain Elevator Inc	2. Form INV-5 Page	2	of	9
3. Release Point Identifier	EP-2				
4. Emission Unit Identifier	EU-2				
5. SCC Number:	30200527 & 10200602				

Calculations are provided in support of information reported on Form INV – 4 for the SCC Number listed above.

6. Emissions Calculations

This methodology should be followed for column grain dryers (grain drying process) at grain elevators:

Actual emissions from all processes at Group 2 Grain Elevators should be calculated using actual throughput data from the applicable emission year.

Actual Emissions:
To calculate actual emissions, multiply the actual grain throughput by the appropriate emission factor and divide by 2,000.

PM-2.5 = 25,000 tons * 0.0094 lbs/ton * 1 ton/2,000 lbs = 0.12 tons
PM-10 = 25,000 tons * 0.055 lbs/ton * 1 ton/2,000 lbs = 0.69 tons

This methodology should be followed for column grain dryers (natural gas combustion process) at grain elevators:

Actual emissions from all processes at Group 2 Grain Elevators should be calculated using actual throughput data from the applicable emission year.

Actual Emissions:
To calculate actual emissions, multiply the actual natural gas throughput by the appropriate emission factor and divide by 2,000.

SO2 = 17.75 MMcf * 0.6 lbs/MMcf * 1 ton/2,000 lbs = 0.01 tons
NOx= 17.75 MMcf * 100 lbs/MMcf * 1 ton/2,000 lbs = 0.89 tons
VOC = 17.75 MMcf * 5.5 lbs/MMcf * 1 ton/2,000 lbs = 0.05 tons
CO = 17.75 MMcf * 84 lbs/MMcf * 1 ton/2,000 lbs = 0.75 tons
NH3 = 17.75 MMcf * 3.2 lbs/MMcf * 1 ton/2,000 lbs = 0.03 tons
Hexane = 17.75 MMcf * 1.8 lbs/MMcf * 1 ton/2,000 lbs = 0.02 tons
Formaldehyde = 17.75 MMcf * 0.075 lbs/MMcf * 1 ton/2,000 lbs = 0.00 tons