

**Oklahoma  
2011 NEI  
Oil & Gas  
Area Emissions**

**From:  
National Oil & Gas  
Emissions Tool v 2**

**Pneumatic devices  
are apparently  
the largest source  
of VOCs.**

Source Category	VOC (TPY)
Artificial Lift	87
Associated Gas	1,295
Condensate Tanks	20,944
Crude Oil Tanks	25,825
Dehydrators	5,829
Drill Rigs	162
Fugitives	32,633
Gas-Actuated Pumps	15,932
Heaters	558
Hydraulic Fracturing	16
Lateral/Gathering Compressors	484
Liquids Unloading	20,658
Loading Emissions	4,823
Mud Degassing	11,094
<b>Pneumatic Devices</b>	<b>86,614</b>
Produced Water	0
Well Completions	1,917
- Natural Gas well completions	334
Wellhead Compressor Engines	978
<b>Total</b>	<b>230,183</b>

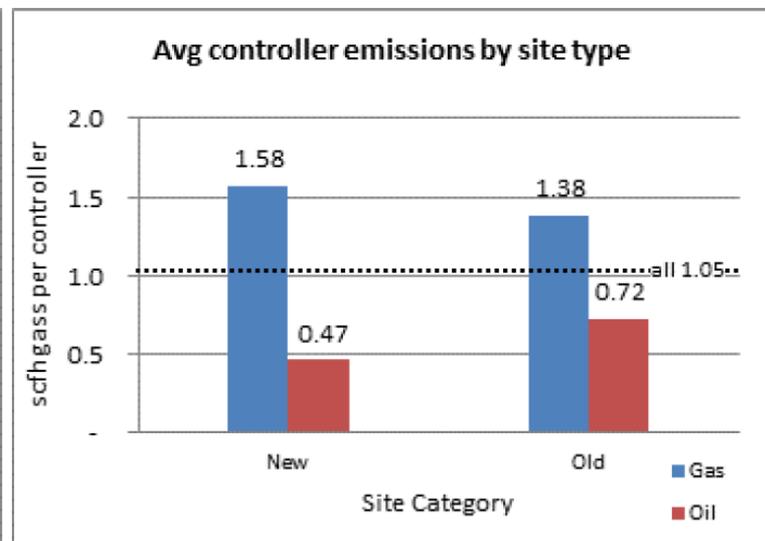
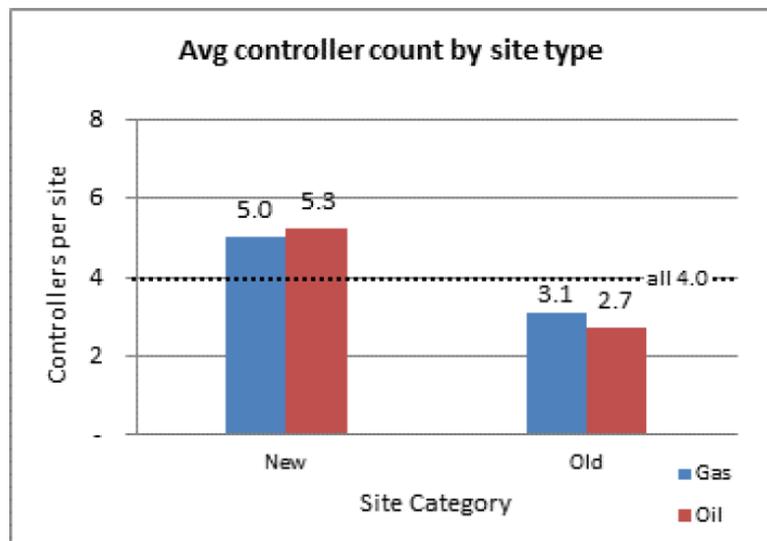
## CenSARA Device Counts and Bleed Rates

Element	Anadarko	Arkoma	Other
Low Bleed devices/well	1.11	0.99	0.94
High Bleed devices/well	1.01	0.99	1.20
Intermittent devices/well	0.95	1.20	0.86

	Low Bleed	Intermittent	High Bleed
Bleed Rate (scfh)	3.2	4.0 (Anadarko) 8.6 (Other Basins) 13.1 (Arkoma)	32.1

## OIPA Average Counts and Emissions by Site Type

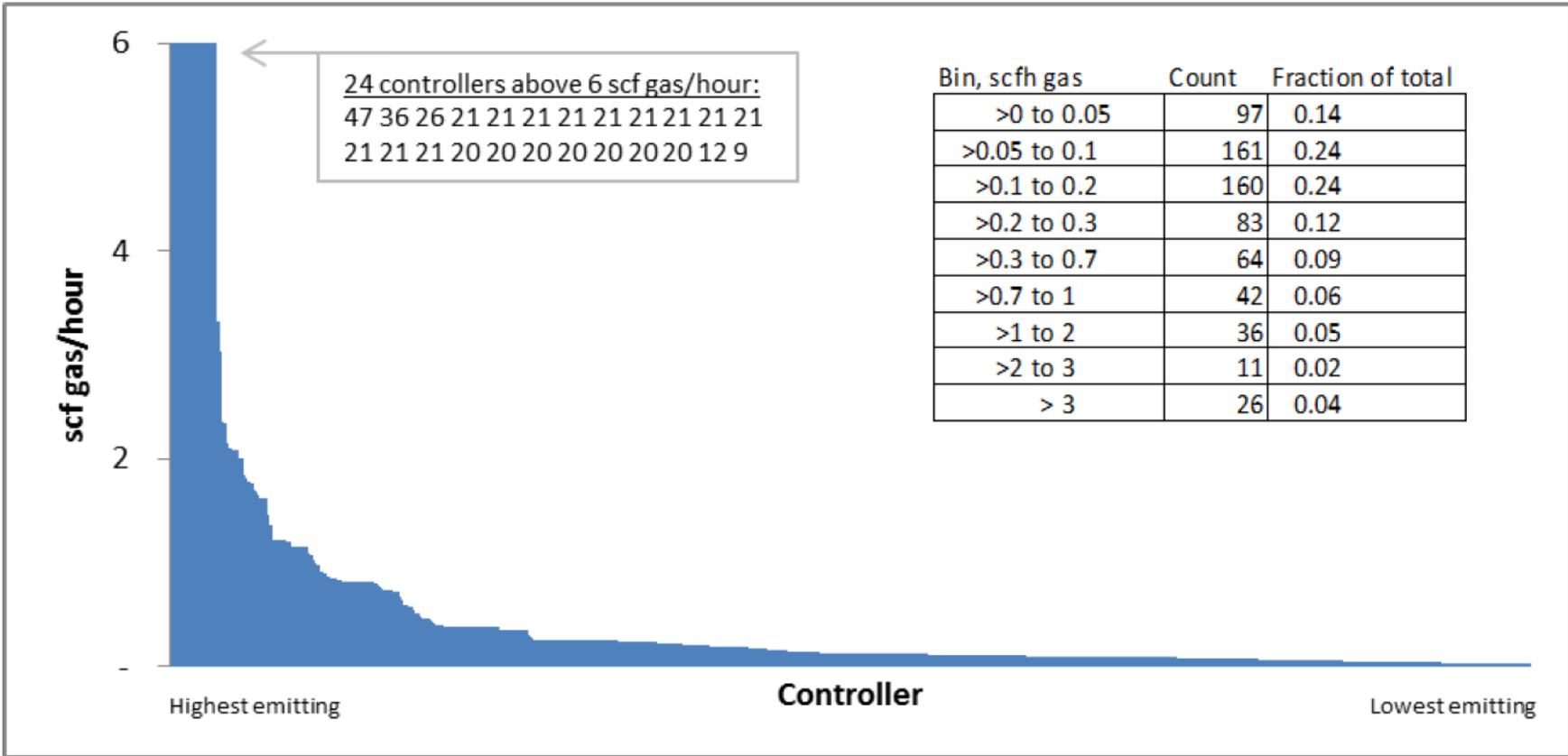
(680 natural gas pneumatic controllers: 659 intermittent vent controllers, 21 continuous bleed controllers)



OIPA, November 2014, Pneumatic Controller Emissions from a Sample of 172 Production Facilities

[http://www.oipa.com/page\\_images/1418911081.pdf](http://www.oipa.com/page_images/1418911081.pdf)

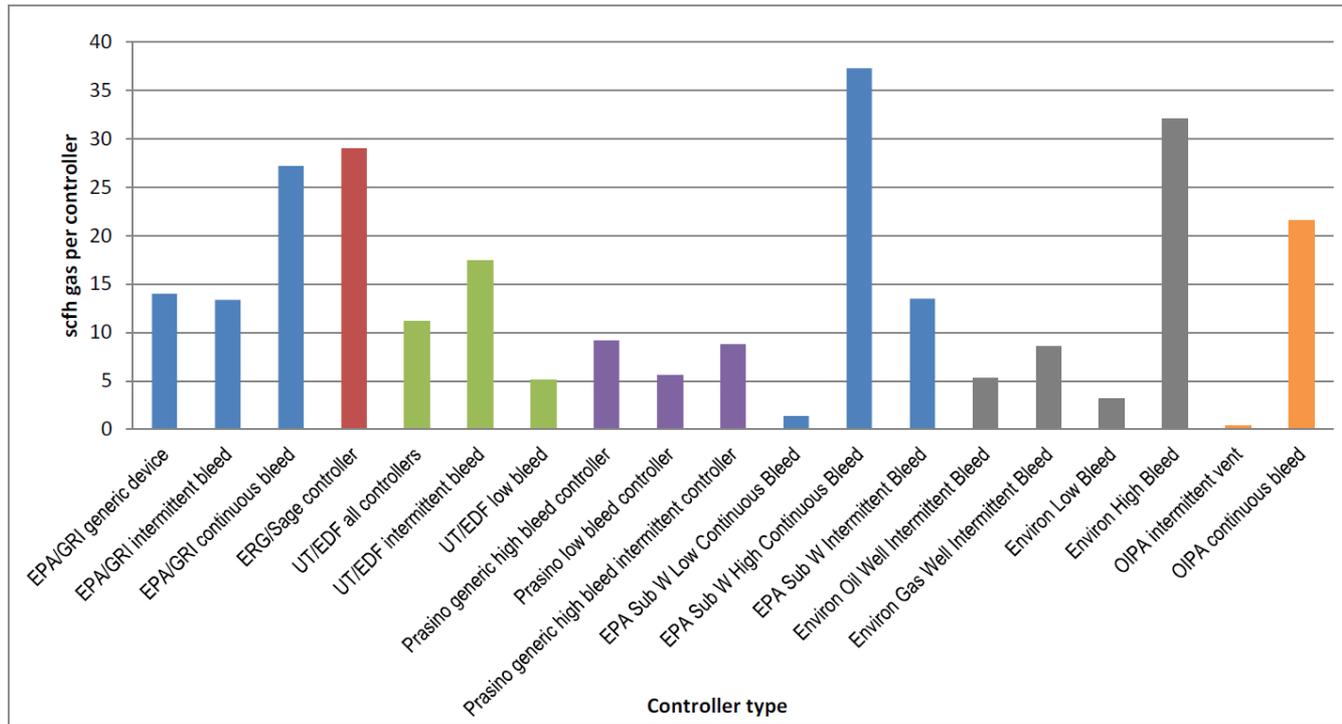
# OIPA Pneumatic Controller Emissions Histogram, 717 scfh gas in total



OIPA, November 2014, Pneumatic Controller Emissions from a Sample of 172 Production Facilities

[http://www.oipa.com/page\\_images/1418911081.pdf](http://www.oipa.com/page_images/1418911081.pdf)

## OIPA Comparison of Emission Factors



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### Next Steps:

- Account for malfunctioning devices
- Compare to GHGRP device counts