



# Summary of Hydrogen Sulfide CAFO Data

Table 1. Annual 8th highest daily maximum sample values for daily Hydrogen Sulfide for 2002-2007 CAFO sites.  
Data is displayed in parts per billion (ppb).

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	West Union	Williams	Woodbine
2002				5.2											16.2	
2003	44.1		2.5	9.6	1.0				1.1			199			14.7	21.9
2004		5.8	4.2	7.0	4.6	4.8	3.3	6.5	1.0	10.5	6.4	22.4	7.0	0.6	6.0	12.8
2005		5.0		7.1	6.5	5.4	18.8	6.1		19.3	10.6		14.4	0.8		
2006		4.1		6.0	5.1	6.9	11.4	6.3		23.4	12.5		9.4	1.9		
2007		4.2		6.4	5.1	6.9	8.5	6.7		23.1	11.6		14.3	1.4		

 Location MEETS siting criteria  
 Location does NOT MEET siting criteria





 Over the standard  
 Under the standard and MEETS completeness criteria  
 Under the standard and does NOT MEET completeness criteria  
 No Data

Table 2. Annual percent completeness for daily Hydrogen Sulfide data (2002-2007).

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	West Union	Williams	Woodbine
2002				75%											67%	
2003	41%		21%	99%	7%				67%			66%			97%	58%
2004		51%	44%	100%	73%	67%	40%	48%	45%	47%	48%	31%	60%	50%	46%	31%
2005		90%		86%	93%	100%	99%	94%		95%	96%		100%	100%		
2006		99%		100%	96%	97%	92%	100%		96%	96%		99%	100%		
2007		99%		90%	100%	100%	96%	99%		100%	100%		99%	95%		

MEETS 90% annual completeness criteria  
 Does NOT MEET 90% annual completeness criteria  
 No Data

Table 3. Quarterly percent completeness for daily Hydrogen Sulfide data (2002 2007).

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	West Union	Williams	Woodbine
<b>2002</b>																
1																
2				99%											67%	
3				100%											99%	
4				100%											100%	
<b>2003</b>																
1				98%											100%	
2	74%			100%					67%			62%			100%	68%
3	90%			100%					100%			100%			88%	75%
4			85%	100%	28%				100%			100%			100%	87%
<b>2004</b>																
1			93%	100%	74%				98%			100%			100%	87%
2		1%	85%	100%	56%	67%			84%			23%	41%		84%	38%
3		100%		100%	62%	100%	67%	100%		87%	92%		99%	99%		
4		100%		100%	100%	100%	92%	90%		100%	100%		100%	100%		
<b>2005</b>																
1		100%		100%	100%	100%	100%	100%		100%	99%		100%	100%		
2		76%		100%	100%	100%	100%	100%		100%	100%		100%	100%		
3		100%		92%	86%	100%	99%	87%		100%	100%		100%	100%		
4		85%		53%	88%	100%	99%	88%		82%	84%		100%	100%		
<b>2006</b>																
1		100%		100%	100%	100%	100%	100%		89%	100%		98%	100%		
2		100%		100%	90%	100%	90%	100%		100%	100%		100%	100%		
3		98%		100%	96%	87%	78%	100%		95%	100%		99%	100%		
4		100%		100%	100%	100%	99%	100%		100%	85%		100%	100%		
<b>2007</b>																
1		99%		83%	99%	100%	93%	97%		100%	99%		96%	99%		
2		99%		100%	100%	100%	89%	100%		100%	100%		100%	100%		
3		100%		77%	100%	99%	100%	100%		100%	100%		100%	100%		
4		100%		100%	100%	100%	100%	100%		100%	100%		100%	83%		

MEETS 75% quarterly completeness criteria  
 Does NOT MEET 75% quarterly completeness criteria  
 No Data

Table 4. Statistical summary for daily Hydrogen Sulfide for 2002 2007 CAFO sites. Data is displayed in parts per billion.

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	West Union	Williams	Woodbine
<b>2002</b>																
Minimum				0.0											0.0	
Maximum				15.1											24.9	
Average				1.6											3.8	
<b>2003</b>																
Minimum	0.0		0.1	0.0	0.2			0.0				0.0			0.0	0.0
Maximum	101.8		4.8	20.1	2.3			3.6				330.3			29.9	36.8
Average	8.3		1.1	1.7	0.9			0.2				44.1			2.8	5.3
<b>2004</b>																
Minimum		0.1	0.1	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.1
Maximum		11.7	12.9	17.9	9.3	8.4	5.1	15.3	2.0	25.1	11.2	81.6	20.4	2.4	10.4	18.7
Average		1.8	1.4	2.2	1.4	1.0	0.7	2.1	0.3	2.5	1.7	6.4	1.9	0.1	2.1	3.6
<b>2005</b>																
Minimum		0.0		0.0	0.2	0.0	0.0	0.0		0.0	0.0		0.0	0.0		
Maximum		8.0		18.6	9.1	16.2	32.4	11.2		143.7	19.5		24.6	2.3		
Average		1.4		2.1	1.7	1.3	2.9	1.9		2.8	2.2		2.6	0.1		
<b>2006</b>																
Minimum		0.2		0.0	0.0	0.1	0.0	0.0		0.0	0.2		0.2	0.0		
Maximum		6.1		25.2	7.6	13.5	28.8	7.5		40.7	51.9		33.0	3.9		
Average		1.3		1.8	0.9	1.3	2.1	1.3		3.3	2.7		2.2	0.5		
<b>2007</b>																
Minimum		0.1		0.0	0.0	0.1	0.0	0.0		0.0	0.0		0.0	0.0		
Maximum		7.0		18.6	12.3	13.6	22.0	11.6		54.2	15.1		44.5	2.2		
Average		1.2		1.7	1.1	1.4	1.9	1.6		3.6	2.4		2.6	0.4		

Over the standard  
 Under the standard and MEETS completeness criteria  
 Under the standard and does NOT MEET completeness criteria  
 No Data

Table 5 a. Top ten maximum sample values for daily Hydrogen Sulfide for 2002 2004 CAFO sites, displayed in parts per billion.

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	West Union	Williams	Woodbine
<b>2002</b>																
1				15.1											24.9	
2				10.6											22.4	
3				6.5											21.7	
4				6.5											17.9	
5				6.4											17.0	
6				6.4											16.3	
7				5.4											16.2	
8				5.2											16.2	
9				5.1											16.2	
10				5.0											15.9	
<b>2003</b>																
1	101.8		4.8	20.1	2.3				3.6			330.3			29.9	36.8
2	81.4		3.8	12.0	2.2				1.9			296.2			28.9	34.2
3	69.6		3.2	11.9	1.7				1.7			277.9			27.3	31.4
4	64.5		2.8	11.6	1.5				1.5			255.3			23.2	27.9
5	57.8		2.8	11.1	1.4				1.5			249.2			16.5	23.7
6	46.7		2.7	10.5	1.3				1.1			238.0			16.4	23.1
7	46.0		2.6	10.4	1.2				1.1			200.0			15.3	22.2
8	44.1		2.5	9.6	1.0				1.1			199.0			14.7	21.9
9	40.6		2.5	7.9	1.0				1.0			197.0			14.0	21.9
10	38.4		2.4	7.8	0.9				1.0			195.0			12.6	21.6
<b>2004</b>																
1		11.7	12.9	17.9	9.3	8.4	5.1	15.3	2.0	25.1	11.2	81.6	20.4	2.4	10.4	18.7
2		9.4	11.5	12.0	8.2	7.5	4.5	7.7	1.6	25.1	9.2	34.2	16.5	1.2	9.1	16.7
3		7.4	7.9	10.6	6.9	6.4	4.4	7.7	1.3	25.0	9.0	27.8	12.7	1.1	9.0	16.2
4		6.5	7.7	9.6	5.9	5.5	4.2	7.6	1.3	18.1	8.6	23.6	8.6	0.7	8.9	15.6
5		6.4	6.0	8.7	5.7	5.5	3.9	7.4	1.3	16.3	8.5	23.5	8.1	0.7	8.7	14.8
6		6.0	5.4	7.9	5.3	5.1	3.8	7.0	1.2	13.4	8.2	23.5	7.6	0.6	8.6	14.3
7		6.0	5.1	7.2	4.7	5.0	3.4	6.9	1.2	11.8	7.2	22.4	7.6	0.6	7.9	13.3
8		5.8	4.2	7.0	4.6	4.8	3.3	6.5	1.0	10.5	6.4	22.4	7.0	0.6	6.0	12.8
9		5.7	4.2	6.9	4.5	4.6	3.3	6.4	0.9	10.4	6.2	20.2	6.8	0.5	5.0	11.9
10		4.9	4.2	6.6	4.1	4.6	2.6	6.0	0.9	9.9	5.1	19.8	6.0	0.5	4.8	11.7

Table 5 b. Top ten maximum sample values for daily Hydrogen Sulfide for 2005 2007 CAFO sites, displayed in parts per billion.

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	West Union	Williams	Woodbine
<b>2005</b>																
1		8.0		18.6	9.1	16.2	32.4	11.2		143.7	19.5		24.6	2.3		
2		7.7		14.7	8.9	12.9	31.2	7.2		47.8	15.9		23.8	2.2		
3		7.5		13.4	8.9	12.6	31.0	7.0		36.6	14.0		23.4	1.7		
4		6.5		10.2	7.8	10.2	24.8	6.6		27.5	13.2		19.1	1.4		
5		6.3		7.9	7.4	8.1	21.8	6.5		25.1	13.1		19.0	1.1		
6		6.0		7.3	7.1	7.0	20.0	6.4		23.7	11.5		15.5	0.9		
7		5.5		7.1	6.7	5.7	19.9	6.3		23.2	11.1		14.7	0.9		
8		5.0		7.1	6.5	5.4	18.8	6.1		19.3	10.6		14.4	0.8		
9		4.9		6.5	6.4	5.3	18.7	6.0		17.8	10.2		12.7	0.8		
10		4.7		6.5	6.1	5.3	18.1	5.9		17.5	10.2		12.7	0.7		
<b>2006</b>																
1		6.1		25.2	7.6	13.5	28.8	7.5		40.7	51.9		33.0	3.9		
2		5.2		16.2	6.4	12.9	24.5	7.1		29.4	23.9		25.0	2.8		
3		5.2		6.9	6.3	12.2	20.0	7.0		28.7	17.7		13.9	2.6		
4		5.0		6.8	5.5	11.4	19.4	6.8		28.5	16.7		12.3	2.5		
5		4.8		6.8	5.4	8.3	12.7	6.6		28.0	16.1		11.6	2.5		
6		4.5		6.3	5.4	8.1	12.4	6.5		26.1	16.0		10.2	2.1		
7		4.3		6.2	5.2	8.0	11.9	6.3		25.7	13.5		9.4	1.9		
8		4.1		6.0	5.1	6.9	11.4	6.3		23.4	12.5		9.4	1.9		
9		4.1		5.9	5.1	6.8	10.5	6.0		22.3	12.5		9.2	1.8		
10		4.0		5.3	4.9	5.8	9.0	6.0		21.7	12.5		8.6	1.7		
<b>2007</b>																
1		7.0		18.6	12.3	13.6	22.0	11.6		54.2	15.1		44.5	2.2		
2		5.6		15.2	8.3	10.1	15.4	8.3		35.7	12.8		27.3	1.8		
3		5.4		13.7	7.3	9.0	11.6	8.2		32.8	12.4		23.4	1.8		
4		4.8		9.4	7.1	8.7	11.4	8.2		29.5	12.3		22.9	1.7		
5		4.8		7.3	6.9	7.4	11.0	8.0		26.3	12.2		20.0	1.7		
6		4.6		7.1	5.9	7.3	9.9	7.1		24.5	12.0		17.6	1.6		
7		4.3		6.5	5.4	7.3	8.6	6.7		23.2	11.9		15.8	1.5		
8		4.2		6.4	5.1	6.9	8.5	6.7		23.1	11.6		14.3	1.4		
9		4.1		6.4	4.9	6.3	8.4	6.4		21.4	11.4		14.0	1.4		
10		4.1		6.3	4.7	5.4	7.7	6.3		20.6	9.5		13.1	1.3		

Table 6 a. Percentiles for daily Hydrogen Sulfide for 2002 2004 CAFO sites, displayed in parts per billion.

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	West Union	Williams	Woodbine
<b>2002</b>																
<b>100%</b>				15.1											24.9	
<b>90%</b>				3.5											11.5	
<b>80%</b>				2.4											6.5	
<b>70%</b>				1.8											4.1	
<b>60%</b>				1.5											2.6	
<b>50%</b>				1.1											1.6	
<b>40%</b>				0.9											1.1	
<b>30%</b>				0.6											0.7	
<b>20%</b>				0.4											0.5	
<b>10%</b>				0.2											0.0	
<b>2003</b>																
<b>100%</b>	101.8		4.8	20.1	2.3				3.6			330.3			29.9	36.8
<b>90%</b>	22.3		2.5	3.8	1.6				0.7			116.1			6.0	12.8
<b>80%</b>	9.6		1.9	2.2	1.3				0.4			74.2			4.2	8.2
<b>70%</b>	5.8		1.4	1.6	1.0				0.2			49.0			2.9	6.4
<b>60%</b>	3.2		1.0	1.2	0.8				0.0			32.7			2.1	4.1
<b>50%</b>	2.1		0.7	1.0	0.6				0.0			18.3			1.5	2.7
<b>40%</b>	1.4		0.6	0.8	0.6				0.0			10.8			1.1	2.1
<b>30%</b>	0.8		0.4	0.7	0.5				0.0			6.5			0.7	1.5
<b>20%</b>	0.4		0.3	0.6	0.5				0.0			3.4			0.5	0.8
<b>10%</b>	0.1		0.2	0.3	0.4				0.0			0.6			0.4	0.5
<b>2004</b>																
<b>100%</b>		11.7	12.9	17.9	9.3	8.4	5.1	15.3	2.0	25.1	11.2	81.6	20.4	2.4	10.4	18.7
<b>90%</b>		3.8	3.3	4.5	3.0	2.3	1.9	4.9	0.8	5.6	3.8	19.3	3.7	0.4	4.1	10.1
<b>80%</b>		2.7	2.0	3.0	2.0	1.5	1.2	3.7	0.6	3.0	2.7	9.4	2.6	0.2	2.7	6.8
<b>70%</b>		2.0	1.2	2.5	1.5	1.1	0.7	2.7	0.4	2.2	2.0	7.9	1.9	0.1	2.0	4.5
<b>60%</b>		1.6	0.9	2.0	1.1	0.7	0.5	1.8	0.3	1.5	1.5	4.7	1.5	0.0	1.8	2.6
<b>50%</b>		1.1	0.7	1.6	0.9	0.6	0.2	1.4	0.1	1.0	0.9	2.4	1.1	0.0	1.5	1.2
<b>40%</b>		0.9	0.5	1.3	0.8	0.4	0.1	1.0	0.0	0.8	0.6	1.7	1.0	0.0	1.3	0.7
<b>30%</b>		0.7	0.5	1.0	0.7	0.3	0.0	0.7	0.0	0.7	0.4	0.9	0.7	0.0	1.2	0.5
<b>20%</b>		0.6	0.4	0.9	0.6	0.2	0.0	0.5	0.0	0.5	0.3	0.5	0.6	0.0	1.0	0.4
<b>10%</b>		0.5	0.3	0.7	0.4	0.1	0.0	0.3	0.0	0.3	0.1	0.2	0.4	0.0	0.7	0.3

Table 6 b. Percentiles for daily Hydrogen Sulfide for 2005 2007 CAFO sites, displayed in parts per billion.

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	West Union	Williams	Woodbine
<b>2005</b>																
100%		8.0		18.6	9.1	16.2	32.4	11.2		143.7	19.5		24.6	2.3		
90%		3.2		4.0	4.0	3.6	5.7	4.2		5.2	5.8		6.0	0.4		
80%		1.9		2.8	2.5	1.6	3.9	2.8		2.7	3.6		3.9	0.2		
70%		1.5		2.2	1.8	1.2	2.9	2.1		1.7	2.3		2.7	0.1		
60%		1.2		2.0	1.4	0.8	1.9	1.7		1.2	1.6		1.8	0.0		
50%		0.9		1.6	1.2	0.7	1.5	1.5		1.0	1.1		1.4	0.0		
40%		0.7		1.4	0.9	0.5	1.2	1.1		0.8	0.8		1.0	0.0		
30%		0.6		1.1	0.8	0.4	0.8	0.9		0.6	0.5		0.8	0.0		
20%		0.5		0.9	0.7	0.3	0.5	0.7		0.4	0.4		0.6	0.0		
10%		0.4		0.6	0.6	0.1	0.2	0.5		0.3	0.2		0.4	0.0		
<b>2006</b>																
100%		6.1		25.2	7.6	13.5	28.8	7.5		40.7	51.9		33.0	3.9		
90%		2.7		3.6	2.3	2.8	4.7	3.1		7.6	6.1		4.3	1.0		
80%		1.9		2.6	1.3	1.7	2.8	2.0		3.5	3.9		2.8	0.7		
70%		1.3		2.1	0.9	1.3	1.9	1.4		2.2	2.9		2.2	0.6		
60%		1.1		1.7	0.7	0.9	1.4	1.2		1.8	2.0		1.7	0.5		
50%		0.9		1.4	0.5	0.7	1.1	1.0		1.6	1.4		1.4	0.4		
40%		0.8		1.1	0.4	0.6	0.9	0.8		1.3	1.1		1.1	0.3		
30%		0.7		0.8	0.3	0.5	0.8	0.6		1.1	0.7		0.9	0.3		
20%		0.6		0.6	0.2	0.4	0.6	0.3		0.9	0.6		0.7	0.2		
10%		0.4		0.4	0.2	0.3	0.4	0.0		0.6	0.4		0.5	0.0		
<b>2007</b>																
100%		7.0		18.6	12.3	13.6	22.0	11.6		54.2	15.1		44.5	2.2		
90%		2.4		3.3	2.9	3.0	4.6	3.8		8.2	5.9		5.6	1.0		
80%		1.7		2.2	2.1	2.0	2.7	2.1		4.5	3.8		3.0	0.7		
70%		1.3		1.8	1.1	1.4	1.9	1.6		2.8	2.7		2.2	0.5		
60%		1.0		1.5	0.8	1.1	1.4	1.4		2.2	2.0		1.7	0.4		
50%		0.8		1.2	0.6	0.8	1.1	1.1		1.8	1.5		1.3	0.3		
40%		0.6		0.9	0.3	0.6	0.8	0.9		1.5	1.2		1.0	0.3		
30%		0.6		0.8	0.2	0.5	0.6	0.7		1.3	0.8		0.8	0.2		
20%		0.4		0.6	0.1	0.4	0.5	0.4		1.1	0.5		0.6	0.1		
10%		0.3		0.3	0.0	0.3	0.3	0.3		0.8	0.2		0.4	0.0		

Table 7. Number of hours with levels over the Health Effects Value (HEV) for 2002-2007 CAFO sites.

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	West Union	Williams	Woodbine
2002				0											0	
2003	23		0	0	0				0			470			0	3
2004		0	0	0	0	0	0	0	0	0	0	9	0	0	0	0
2005		0		0	0	0	3	0		4	0		0	0		
2006		0		0	0	0	0	0		2	1		1	0		
2007		0		0	0	0	0	0		4	0		1	0		




 MEETS completeness  
 Does NOT MEET completeness  
 No Data

Table 8. Annual percent completeness for hourly Hydrogen Sulfide data for 2002-2007 CAFO sites.

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	West Union	Williams	Woodbine
2002				74%											66%	
2003	41%		21%	99%	7%				66%			65%			96%	62%
2004		50%	44%	99%	73%	66%	40%	48%	45%	47%	48%	30%	60%	50%	45%	32%
2005		90%		86%	93%	99%	99%	94%		95%	95%		99%	99%		
2006		99%		99%	96%	96%	92%	99%		96%	96%		99%	99%		
2007		99%		93%	99%	99%	97%	99%		99%	99%		98%	95%		



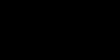
 MEETS 90% annual completeness  
 Does NOT MEET 90% annual completeness  
 No Data

Table 9. Quarterly percent completeness for hourly Hydrogen Sulfide data for 2002 2007 CAFO sites.

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	West Union	Williams	Woodbine
<b>2002</b>																
1																
2				98%											66%	
3				99%											99%	
4				99%											99%	
<b>2003</b>																
1				99%											99%	
2	73%			99%					66%			61%			99%	68%
3	91%			99%					99%			99%			88%	86%
4			85%	99%	28%				99%			99%			99%	92%
<b>2004</b>																
1			94%	99%	73%				98%			99%			99%	91%
2		2%	84%	99%	57%	67%		1%	83%			23%	43%		83%	38%
3		99%		99%	62%	99%	67%	99%		86%	92%		99%	99%		
4		99%		99%	99%	99%	92%	90%		99%	99%		99%	99%		
<b>2005</b>																
1		99%		99%	99%	99%	99%	99%		99%	98%		99%	99%		
2		76%		99%	99%	99%	99%	99%		99%	99%		99%	99%		
3		99%		92%	86%	99%	99%	88%		99%	99%		99%	99%		
4		85%		55%	89%	99%	99%	89%		82%	84%		99%	99%		
<b>2006</b>																
1		99%		99%	99%	99%	99%	99%		88%	99%		98%	99%		
2		99%		99%	91%	99%	90%	99%		99%	99%		99%	99%		
3		98%		99%	97%	87%	82%	99%		96%	99%		99%	99%		
4		99%		99%	99%	99%	99%	99%		99%	85%		99%	99%		
<b>2007</b>																
1		98%		84%	99%	99%	95%	97%		99%	99%		96%	99%		
2		98%		99%	99%	99%	94%	99%		99%	99%		99%	99%		
3		99%		88%	99%	98%	99%	99%		99%	99%		99%	99%		
4		99%		99%	99%	99%	99%	99%		99%	99%		99%	83%		

MEETS 75% quarterly completeness  
 Does NOT MEET 75% quarterly completeness  
 No Data

Table 10. Statistical summary for 2002 2007 hourly Hydrogen Sulfide data, displayed in parts per billion.

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	West Union	Williams	Woodbine
<b>2002</b>																
Minimum				0.0											0.0	
Maximum				15.1											24.9	
Average				0.4											1.0	
<b>2003</b>																
Minimum	0.0		0.0	0.0	0.0			0.0			0.0				0.0	0.0
Maximum	101.8		4.8	20.1	2.3			3.6			330.3				29.9	36.8
Average	1.0		0.3	0.4	0.3			0.1			8.9				0.6	1.1
<b>2004</b>																
Minimum		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum		11.7	12.9	17.9	9.3	8.4	5.1	15.3	2.0	25.1	11.2	81.6	20.4	2.4	10.4	18.7
Average		0.5	0.4	0.8	0.6	0.2	0.1	0.6	0.1	0.5	0.3	1.6	0.5	0.0	0.9	0.7
<b>2005</b>																
Minimum		0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0		
Maximum		8.0		18.6	9.1	16.2	32.4	11.2		143.7	19.5		24.6	2.3		
Average		0.4		0.7	0.7	0.3	0.7	0.7		0.6	0.4		0.6	0.0		
<b>2006</b>																
Minimum		0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0		
Maximum		6.1		25.2	7.6	13.5	28.8	7.5		40.7	51.9		33.0	3.9		
Average		0.5		0.6	0.3	0.4	0.6	0.4		0.9	0.5		0.6	0.2		
<b>2007</b>																
Minimum		0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0		
Maximum		7.0		18.6	12.3	13.6	22.0	11.6		54.2	15.1		44.5	2.2		
Average		0.4		0.5	0.2	0.4	0.5	0.5		1.1	0.6		0.6	0.1		

	MEETS completeness
	Does NOT MEET completeness
	No Data

**Table 11 a. Top ten maximum sample values for hourly Hydrogen Sulfide data for 2002 2004 CAFO sites. Data is displayed in parts per billion.**

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	West Union	Williams	Woodbine
<b>2002</b>																
1				15.1											24.9	
2				10.6											22.4	
3				9.8											21.7	
4				6.5											20.5	
5				6.5											17.9	
6				6.4											17.0	
7				6.4											16.3	
8				6.1											16.2	
9				5.4											16.2	
10				5.2											16.2	
<b>2003</b>																
1	101.8		4.8	20.1	2.3				3.6			330.3			29.9	36.8
2	81.4		4.7	18.5	2.2				1.9			296.2			28.9	34.2
3	71.3		3.8	16.6	1.7				1.7			277.9			27.3	31.4
4	69.6		3.2	14.8	1.6				1.5			255.3			23.2	28.4
5	64.5		3.0	12.0	1.6				1.5			249.2			18.2	27.9
6	57.8		3.0	11.9	1.5				1.4			238.0			16.5	27.4
7	46.7		2.9	11.6	1.4				1.4			227.0			16.4	23.7
8	46.0		2.8	11.1	1.3				1.3			200.0			16.4	23.6
9	45.8		2.8	10.8	1.3				1.1			199.0			15.3	23.1
10	44.1		2.8	10.5	1.2				1.1			197.0			15.0	22.2
<b>2004</b>																
1		11.7	12.9	17.9	9.3	8.4	5.1	15.3	2.0	25.1	11.2	81.6	20.4	2.4	10.4	18.7
2		9.4	12.6	14.6	9.2	7.5	4.5	7.7	1.8	25.1	9.2	79.9	16.5	1.2	9.1	16.7
3		9.3	11.5	14.2	8.5	6.4	4.4	7.7	1.7	25.0	9.0	70.2	13.5	1.1	9.0	16.2
4		7.4	11.5	13.5	8.2	5.7	4.2	7.6	1.6	18.1	8.6	51.3	12.7	0.7	8.9	15.6
5		6.5	10.8	12.5	7.1	5.6	3.9	7.4	1.5	16.3	8.6	49.5	11.1	0.7	8.7	15.3
6		6.4	10.6	12.0	6.9	5.6	3.9	7.0	1.5	15.7	8.5	41.2	10.4	0.6	8.6	15.3
7		6.0	7.9	10.6	5.9	5.5	3.8	6.9	1.4	13.6	8.2	38.4	8.6	0.6	7.9	14.8
8		6.0	7.7	10.4	5.7	5.5	3.4	6.5	1.4	13.4	7.5	35.7	8.1	0.6	7.4	14.3
9		5.8	7.5	9.6	5.5	5.2	3.3	6.4	1.4	12.5	7.2	34.2	7.7	0.6	6.8	13.9
10		5.8	7.1	9.2	5.3	5.1	3.3	6.4	1.3	12.3	7.2	28.7	7.6	0.6	6.8	13.3

**Table 11 b. Top ten maximum sample values for hourly Hydrogen Sulfide data for 2005 2007 CAFO sites. Data is displayed in parts per billion.**

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	West Union	Williams	Woodbine
<b>2005</b>																
1		8.0		18.6	9.1	16.2	32.4	11.2		143.7	19.5		24.6	2.3		
2		7.7		15.2	8.9	12.9	31.2	7.2		47.8	15.9		23.8	2.2		
3		7.5		14.8	8.9	12.6	31.0	7.0		45.2	14.0		23.4	1.8		
4		7.3		14.7	7.8	11.3	24.8	6.6		36.6	13.2		21.9	1.7		
5		7.0		13.8	7.5	10.2	22.0	6.5		27.7	13.1		20.1	1.4		
6		6.8		13.4	7.4	9.0	21.8	6.4		27.5	11.7		19.8	1.3		
7		6.7		12.3	7.1	8.1	20.0	6.3		25.1	11.5		19.8	1.3		
8		6.5		11.6	7.0	7.2	19.9	6.2		23.7	11.1		19.1	1.2		
9		6.4		11.2	6.7	7.0	18.8	6.1		23.2	10.6		19.0	1.2		
10		6.4		10.8	6.6	6.8	18.8	6.0		22.0	10.4		18.9	1.2		
<b>2006</b>																
1		6.1		25.2	7.6	13.5	28.8	7.5		40.7	51.9		33.0	3.9		
2		5.2		16.2	6.4	12.9	24.5	7.1		38.2	23.9		25.0	3.4		
3		5.2		11.9	6.3	12.2	20.0	7.0		29.4	18.0		21.2	3.1		
4		5.0		7.0	5.5	11.4	19.4	6.8		28.7	17.7		13.9	2.8		
5		4.8		6.9	5.5	8.3	19.4	6.7		28.5	16.7		12.5	2.6		
6		4.6		6.8	5.4	8.1	19.1	6.6		28.0	16.1		12.3	2.6		
7		4.6		6.8	5.4	8.1	17.9	6.5		26.1	16.0		11.6	2.5		
8		4.5		6.3	5.2	8.0	12.7	6.4		25.7	14.4		10.2	2.5		
9		4.5		6.2	5.1	7.7	12.7	6.3		25.4	13.5		9.4	2.1		
10		4.3		6.0	5.1	7.5	12.4	6.3		23.4	12.5		9.4	2.1		
<b>2007</b>																
1		7.0		18.6	12.3	13.6	22.0	11.6		54.2	15.1		44.5	2.2		
2		5.6		16.6	8.3	10.1	17.6	8.3		35.7	12.8		29.0	1.8		
3		5.4		16.1	7.3	9.0	15.8	8.2		32.8	12.4		27.3	1.8		
4		4.8		15.2	7.1	8.7	15.4	8.2		31.6	12.3		23.4	1.8		
5		4.8		14.2	6.9	8.7	12.7	8.1		29.5	12.2		22.9	1.8		
6		4.6		13.9	5.9	8.0	12.3	8.0		26.3	12.0		22.3	1.7		
7		4.3		13.7	5.8	7.4	11.6	8.0		24.5	11.9		21.3	1.7		
8		4.2		13.6	5.4	7.3	11.4	7.2		24.4	11.6		20.8	1.7		
9		4.2		11.4	5.3	7.3	11.0	7.1		23.4	11.4		20.4	1.6		
10		4.1		11.2	5.1	7.3	10.2	7.1		23.2	11.4		20.0	1.6		

Table 12 a. Percentiles for hourly Hydrogen Sulfide data for 2002 2004 CAFO sites. Data is displayed in parts per billion.

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	West Union	Williams	Woodbine
<b>2002</b>																
100%				15.1											24.9	
90%				1.2											2.6	
80%				0.7											1.1	
70%				0.4											0.6	
60%				0.2											0.4	
50%				0.0											0.2	
40%				0.0											0.1	
30%				0.0											0.0	
20%				0.0											0.0	
10%				0.0											0.0	
<b>2003</b>																
100%	101.8		4.8	20.1	2.3			3.6				330.3			29.9	36.8
90%	1.3		0.8	1.0	0.7			0.2				23.9			1.5	2.8
80%	0.5		0.4	0.6	0.5			0.0				7.4			0.9	1.3
70%	0.3		0.3	0.4	0.4			0.0				2.9			0.6	0.8
60%	0.2		0.2	0.3	0.3			0.0				1.2			0.3	0.5
50%	0.1		0.1	0.3	0.3			0.0				0.5			0.2	0.3
40%	0.1		0.1	0.2	0.2			0.0				0.2			0.1	0.2
30%	0.0		0.1	0.1	0.1			0.0				0.0			0.0	0.1
20%	0.0		0.0	0.0	0.1			0.0				0.0			0.0	0.0
10%	0.0		0.0	0.0	0.0			0.0				0.0			0.0	0.0
<b>2004</b>																
100%		11.7	12.9	17.9	9.3	8.4	5.1	15.3	2.0	25.1	11.2	81.6	20.4	2.4	10.4	18.7
90%		1.0	0.8	1.5	1.4	0.4	0.2	1.4	0.5	1.0	0.8	4.3	1.0	0.0	1.5	1.9
80%		0.6	0.5	1.1	0.8	0.2	0.0	0.9	0.3	0.5	0.3	1.5	0.6	0.0	1.1	0.6
70%		0.5	0.4	0.9	0.6	0.1	0.0	0.6	0.0	0.4	0.1	0.8	0.4	0.0	1.0	0.4
60%		0.4	0.3	0.8	0.6	0.0	0.0	0.4	0.0	0.3	0.0	0.5	0.3	0.0	0.9	0.3
50%		0.4	0.2	0.6	0.5	0.0	0.0	0.3	0.0	0.2	0.0	0.4	0.3	0.0	0.8	0.2
40%		0.3	0.2	0.5	0.4	0.0	0.0	0.2	0.0	0.2	0.0	0.1	0.2	0.0	0.7	0.1
30%		0.2	0.1	0.4	0.3	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.2	0.0	0.5	0.1
20%		0.2	0.1	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.4	0.0
10%		0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.0

Table 12 b. Percentiles for hourly Hydrogen Sulfide data for 2005 2007 CAFO sites. Data is displayed in parts per billion.

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	West Union	Williams	Woodbine
<b>2005</b>																
100%		8.0		18.6	9.1	16.2	32.4	11.2		143.7	19.5		24.6	2.3		
90%		0.9		1.4	1.1	0.7	1.5	1.4		1.1	1.0		1.3	0.0		
80%		0.6		1.0	0.8	0.4	0.9	1.1		0.6	0.5		0.7	0.0		
70%		0.4		0.8	0.7	0.3	0.6	0.8		0.5	0.3		0.5	0.0		
60%		0.3		0.7	0.6	0.2	0.4	0.6		0.4	0.2		0.3	0.0		
50%		0.3		0.6	0.5	0.1	0.3	0.5		0.3	0.1		0.3	0.0		
40%		0.2		0.5	0.4	0.1	0.2	0.4		0.2	0.1		0.2	0.0		
30%		0.1		0.3	0.4	0.0	0.1	0.2		0.1	0.0		0.1	0.0		
20%		0.1		0.1	0.3	0.0	0.0	0.1		0.1	0.0		0.1	0.0		
10%		0.0		0.0	0.2	0.0	0.0	0.0		0.0	0.0		0.0	0.0		
<b>2006</b>																
100%		6.1		25.2	7.6	13.5	28.8	7.5		40.7	51.9		33.0	3.9		
90%		0.9		1.2	0.6	0.8	1.3	1.0		1.6	1.3		1.1	0.4		
80%		0.6		0.8	0.4	0.5	0.9	0.7		1.2	0.6		0.7	0.3		
70%		0.5		0.6	0.3	0.4	0.7	0.5		1.0	0.4		0.5	0.2		
60%		0.4		0.5	0.2	0.3	0.5	0.3		0.8	0.3		0.4	0.1		
50%		0.4		0.4	0.1	0.3	0.4	0.2		0.7	0.2		0.3	0.1		
40%		0.3		0.3	0.1	0.2	0.3	0.0		0.6	0.2		0.3	0.1		
30%		0.3		0.2	0.0	0.2	0.2	0.0		0.4	0.1		0.2	0.0		
20%		0.2		0.2	0.0	0.1	0.1	0.0		0.3	0.1		0.2	0.0		
10%		0.2		0.1	0.0	0.1	0.0	0.0		0.0	0.0		0.1	0.0		
<b>2007</b>																
100%		7.0		18.6	12.3	13.6	22.0	11.6		54.2	15.1		44.5	2.2		
90%		0.8		1.1	0.7	0.8	1.0	1.2		1.8	1.4		1.1	0.4		
80%		0.5		0.7	0.3	0.5	0.6	0.9		1.3	0.9		0.6	0.3		
70%		0.4		0.5	0.1	0.4	0.4	0.7		1.1	0.6		0.4	0.2		
60%		0.3		0.3	0.0	0.3	0.3	0.5		0.9	0.4		0.3	0.1		
50%		0.3		0.2	0.0	0.2	0.2	0.3		0.8	0.2		0.2	0.0		
40%		0.2		0.2	0.0	0.2	0.2	0.1		0.7	0.1		0.2	0.0		
30%		0.2		0.1	0.0	0.2	0.1	0.0		0.6	0.0		0.1	0.0		
20%		0.1		0.1	0.0	0.1	0.0	0.0		0.5	0.0		0.0	0.0		
10%		0.1		0.0	0.0	0.1	0.0	0.0		0.2	0.0		0.0	0.0		

## Summary of Ammonia CAFO Data

Table 13. Annual highest daily maximum for daily Ammonia data for 2003 2007 CAFO sites. Numbers expressed in parts per billion (ppb).

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	Viking Lake	West Union	Williams	Woodbine
2003	650.6		150.7	1182.0	642.3				398.9			357.9		142.6		1104.0	696.8
2004		481.2	379.1	973.5	904.6	607.0	690.2	251.7	745.9	316.1	390.8	100.6	1751.0	198.1	588.6	199.5	135.3
2005		476.4		508.0	783.3	427.3	875.5	548.0		729.6	317.4		1045.0	109.8	453.5		
2006		181.1		550.7	538.5	285.8	995.7	314.9		278.8	395.9		1820.0	43.7	930.9		
2007		330.8		586.3	1996.0	174.9	459.6	877.4		161.0	251.2		596.3	114.6	732.8		

	MEETS 90% annual AND 75% quarterly completeness
	Does NOT MEET 90% annual or Does NOT MEET 75% quarterly completeness
	No Data

Table 14. Annual percent completeness for daily Ammonia data (2003 2007).

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	Viking Lake	West Union	Williams	Woodbine
2003	39%		21%	72%	6%				35%			48%		62%		60%	50%
2004		50%	46%	93%	85%	58%	42%	50%	40%	38%	52%	26%	49%	92%	48%	45%	31%
2005		99%		90%	95%	98%	99%	96%		100%	99%		100%	97%	99%		
2006		100%		100%	99%	100%	98%	99%		99%	99%		100%	88%	94%		
2007		99%		95%	97%	100%	98%	99%		94%	96%		95%	93%	92%		

	MEETS 90% annual completeness
	Does NOT MEET 90% completeness
	No Data

Table 15. Quarterly percent completeness for daily Ammonia data (2003 2007).

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	Viking Lake	West Union	Williams	Woodbine
<b>2003</b>																	
1				7%												18%	
2	65%			89%								47%		81%		77%	68%
3	90%			96%							41%	49%		71%		43%	53%
4			85%	95%	25%				96%			93%		97%		100%	76%
<b>2004</b>																	
1			99%	99%	82%				79%			95%		100%		99%	87%
2		1%	85%	100%	59%	36%			82%		32%	9%	26%	80%		82%	38%
3		99%		76%	99%	99%	71%	100%		83%	76%		73%	91%	90%		
4		99%		98%	99%	98%	98%	99%		67%	99%		97%	96%	99%		
<b>2005</b>																	
1		100%		99%	98%	91%	99%	99%		100%	98%		100%	89%	97%		
2		100%		100%	100%	100%	99%	100%		100%	100%		100%	100%	99%		
3		98%		91%	99%	100%	100%	84%		100%	100%		99%	99%	99%		
4		100%		71%	85%	100%	99%	100%		100%	100%		100%	100%	100%		
<b>2006</b>																	
1		99%		100%	100%	99%	100%	100%		99%	99%		100%	88%	100%		
2		100%		100%	100%	100%	100%	100%		100%	99%		100%	87%	100%		
3		100%		100%	98%	100%	93%	100%		99%	100%		99%	79%	99%		
4		100%		100%	100%	100%	99%	98%		100%	100%		100%	100%	78%		
<b>2007</b>																	
1		99%		89%	93%	100%	94%	97%		77%	86%		96%	100%	72%		
2		97%		100%	100%	99%	98%	100%		100%	100%		86%	76%	97%		
3		100%		90%	96%	100%	100%	100%		100%	100%		100%	97%	99%		
4		100%		100%	100%	100%	100%	100%		100%	100%		100%	100%	100%		

MEETS 75% quarterly completeness  
 Does NOT MEET 75% quarterly completeness  
 No Data

Table 16. Statistical summary, displayed in parts per billion, for daily Ammonia data (2003 2007).

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	Viking Lake	West Union	Williams	Woodbine
<b>2003</b>																	
Minimum	8.6		1.8	0.0	22.8			6.1				0.2		0.0		0.0	3.3
Maximum	650.6		150.7	1182.0	642.3			398.9				357.9		142.6		1104.0	696.8
Average	154.0		41.2	138.9	136.6			55.8				68.4		9.7		90.2	143.2
<b>2004</b>																	
Minimum		0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.8
Maximum		481.2	379.1	973.5	904.6	607.0	690.2	251.7	745.9	316.1	390.8	100.6	1751.0	198.1	588.6	199.5	135.3
Average		41.8	41.4	96.2	54.8	88.7	103.8	38.4	78.2	23.9	54.0	28.7	100.7	8.7	29.4	36.2	39.5
<b>2005</b>																	
Minimum		0.3		0.0	0.0	0.0	2.9	0.0		0.0	0.0		2.0	0.0	0.0		
Maximum		476.4		508.0	783.3	427.3	875.5	548.0		729.6	317.4		1045.0	109.8	453.5		
Average		31.0		71.3	38.1	51.7	52.8	40.0		31.3	29.8		64.5	7.2	45.3		
<b>2006</b>																	
Minimum		0.3		0.0	0.0	0.1	3.8	0.0		0.0	0.0		0.0	0.0	0.0		
Maximum		181.1		550.7	538.5	285.8	995.7	314.9		278.8	395.9		1820.0	43.7	930.9		
Average		25.2		67.1	31.2	31.5	44.6	30.2		26.1	27.0		46.7	6.6	64.7		
<b>2007</b>																	
Minimum		2.3		0.0	0.0	2.1	0.5	0.0		0.0	0.0		1.7	0.0	0.0		
Maximum		330.8		586.3	1996.0	174.9	459.6	877.4		161.0	251.2		596.3	114.6	732.8		
Average		25.5		59.4	27.0	26.2	41.6	33.6		21.3	26.4		37.1	8.4	54.8		

MEETS completeness  
 Does NOT MEET completeness  
 No Data

Table 17 a. Top ten maximum sample values for daily Ammonia data for 2003 2004. Data displayed in parts per billion.

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	Viking Lake	West Union	Williams	Woodbine
<b>2003</b>																	
1	650.6		150.7	1182.0	642.3				398.9			357.9		142.6		1104.0	696.8
2	423.6		123.8	949.5	290.6				364.2			345.2		75.6		819.4	547.9
3	419.1		112.4	859.1	229.5				264.9			319.9		67.5		743.5	480.5
4	379.3		110.0	757.2	185.9				254.5			315.0		54.4		672.4	453.0
5	368.3		97.5	729.8	176.6				233.7			309.0		46.7		661.8	443.3
6	364.6		97.0	696.3	171.9				193.6			289.4		41.2		535.3	419.4
7	319.1		87.9	691.4	154.0				152.4			277.3		40.2		522.1	403.1
8	316.7		81.7	596.6	126.6				152.0			260.8		39.1		444.1	395.0
9	312.5		75.6	521.4	111.5				135.8			236.8		37.6		443.8	377.0
10	305.1		69.6	494.5	109.9				130.0			234.7		34.7		393.2	375.8
<b>2004</b>																	
1		481.2	379.1	973.5	904.6	607.0	690.2	251.7	745.9	316.1	390.8	100.6	1751.0	198.1	588.6	199.5	135.3
2		329.4	311.8	609.5	404.9	431.5	587.1	250.3	641.0	244.8	343.6	100.2	797.2	65.5	232.8	185.5	129.4
3		269.7	271.4	603.7	334.1	414.9	401.9	199.7	511.2	225.9	240.9	83.8	745.7	62.8	187.9	178.2	123.1
4		251.0	180.6	568.7	308.9	407.9	366.0	190.4	485.2	138.9	204.2	82.5	622.2	61.1	123.3	160.7	117.5
5		227.2	160.0	564.8	216.7	312.7	363.1	185.3	472.7	103.9	196.3	82.0	507.5	44.8	106.4	155.3	108.0
6		201.8	145.4	538.7	200.9	302.4	332.1	177.3	460.2	80.9	191.9	72.6	330.9	42.5	98.9	150.9	97.9
7		165.2	117.6	516.4	195.1	282.0	323.3	145.8	407.3	74.0	170.2	69.7	256.6	32.7	93.5	140.9	91.8
8		164.9	116.5	466.3	179.9	266.4	280.1	136.9	402.5	71.0	150.1	68.9	253.9	31.1	91.6	135.0	90.9
9		161.0	100.2	440.5	176.7	243.8	247.7	134.5	394.1	64.2	146.6	63.9	224.5	28.9	85.9	130.6	85.7
10		154.2	98.4	415.4	173.6	217.0	237.8	124.3	384.7	57.3	134.9	63.8	219.4	28.5	81.6	122.9	84.2

Table 17 b. Top ten maximum sample values for daily Ammonia data for 2005 2007. Data displayed in parts per billion.

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	Viking Lake	West Union	Williams	Woodbine
<b>2005</b>																	
1		476.4		508.0	783.3	427.3	875.5	548.0		729.6	317.4		1045.0	109.8	453.5		
2		352.8		478.3	702.2	385.1	721.4	383.3		721.4	202.8		859.7	48.9	366.5		
3		269.6		466.3	374.7	318.5	705.3	363.1		296.6	180.6		787.4	38.9	329.2		
4		268.1		465.9	367.7	289.0	479.7	340.1		244.0	168.6		741.9	35.2	272.5		
5		255.2		437.9	246.7	280.1	387.2	278.1		207.2	167.6		558.8	34.0	261.8		
6		206.4		388.5	209.7	279.2	346.3	260.7		202.8	145.7		522.7	31.2	240.9		
7		194.4		369.7	207.6	271.6	297.9	242.1		190.4	144.5		519.6	25.8	234.6		
8		163.0		358.0	204.6	268.2	295.6	241.2		185.9	141.1		486.6	25.0	216.6		
9		153.7		321.5	200.4	243.3	265.7	222.3		183.8	110.4		458.8	22.3	208.7		
10		151.6		303.1	164.3	241.9	243.5	221.9		169.0	102.6		452.6	21.7	206.4		
<b>2006</b>																	
1		181.1		550.7	538.5	285.8	995.7	314.9		278.8	395.9		1820.0	43.7	930.9		
2		144.7		444.7	355.7	283.6	397.8	257.6		263.1	262.3		649.4	39.2	805.4		
3		127.4		429.3	317.0	258.9	332.9	236.4		159.3	246.7		424.4	38.5	800.1		
4		119.8		424.1	297.9	193.6	319.2	202.9		132.3	234.8		412.0	34.4	573.1		
5		117.5		406.5	243.9	193.4	251.5	196.5		132.0	181.8		374.9	33.4	382.6		
6		101.6		374.2	222.9	168.2	243.8	188.2		127.9	142.4		331.2	29.4	357.9		
7		95.7		336.4	217.2	135.3	226.6	144.5		111.2	134.0		310.0	28.1	354.9		
8		92.3		331.8	210.1	134.7	220.5	143.3		111.0	122.0		293.9	24.4	338.1		
9		90.9		301.2	175.7	120.9	198.2	141.4		108.6	119.0		270.9	23.0	319.7		
10		79.0		300.9	167.0	118.7	183.4	138.7		103.6	118.2		250.0	21.5	309.1		
<b>2007</b>																	
1		330.8		586.3	1996.0	174.9	459.6	877.4		161.0	251.2		596.3	114.6	732.8		
2		244.0		432.8	1137.0	153.4	398.1	681.7		130.1	158.1		520.0	47.6	622.5		
3		175.0		338.6	207.5	99.2	340.4	410.3		120.9	119.5		420.8	43.5	495.6		
4		128.6		336.2	177.3	90.5	326.9	366.3		119.6	90.0		399.3	43.4	492.4		
5		123.4		322.5	169.0	84.9	326.4	320.3		83.0	90.0		305.8	42.2	415.6		
6		101.8		321.1	158.6	79.7	261.1	269.3		82.2	89.1		298.6	32.9	358.0		
7		100.5		314.2	157.5	77.8	250.4	244.4		78.8	83.8		258.3	32.0	319.8		
8		100.0		305.9	120.4	76.9	220.7	223.2		76.5	81.8		228.4	31.2	275.8		
9		94.2		289.6	118.8	74.4	219.7	169.4		74.1	79.8		204.2	30.6	270.7		
10		94.2		280.7	97.4	74.4	202.0	162.7		66.6	79.7		149.3	27.5	268.3		

Table 18 a. Percentiles for daily Ammonia data for 2003 2004 CAFO sites. Data displayed in parts per billion.

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	Viking Lake	West Union	Williams	Woodbine
<b>2003</b>																	
100%	650.6		150.7	1182.0	642.3				398.9			357.9		142.6		1104.0	696.8
90%	257.4		77.4	322.4	220.8				98.8			169.1		20.4		227.6	307.0
80%	224.3		58.9	221.4	174.7				68.9			106.6		13.3		131.3	243.8
70%	191.9		46.8	159.7	137.6				57.3			75.3		10.1		88.0	197.0
60%	159.5		38.3	111.3	110.2				46.5			52.1		8.1		48.8	157.2
50%	141.5		34.1	86.1	97.0				38.7			39.2		6.3		33.9	119.0
40%	119.0		29.5	52.2	92.1				32.0			28.4		5.6		25.3	69.4
30%	100.7		23.3	31.6	76.0				25.9			21.9		3.3		18.2	40.5
20%	77.6		18.1	21.6	72.3				20.4			15.5		1.8		14.0	27.2
10%	42.4		13.9	13.4	51.2				14.2			11.8		0.0		9.1	19.8
<b>2004</b>																	
100%		481.2	379.1	973.5	904.6	607.0	690.2	251.7	745.9	316.1	390.8	100.6	1751.0	198.1	588.6	199.5	135.3
90%		88.9	74.3	252.2	98.5	155.6	214.2	98.7	188.4	44.6	99.8	62.6	170.0	18.0	49.5	91.0	81.8
80%		55.9	57.0	161.3	73.4	117.6	152.7	72.6	108.5	28.4	76.0	46.2	132.5	13.5	34.3	58.1	57.3
70%		40.4	43.7	108.8	59.0	96.4	117.0	44.3	48.5	20.8	64.3	37.8	94.2	10.2	25.2	33.9	46.1
60%		29.9	36.3	68.9	49.6	80.5	92.4	32.3	38.3	16.5	56.1	25.6	75.1	8.1	20.8	27.8	38.1
50%		22.6	31.1	45.9	40.9	73.0	79.4	18.6	25.0	13.9	43.9	22.5	63.2	6.1	18.6	21.7	32.9
40%		16.1	25.8	29.0	33.7	66.5	61.8	11.2	22.5	10.2	30.7	19.6	52.6	4.2	15.8	16.4	26.9
30%		11.8	18.5	20.5	27.9	55.3	51.6	6.8	18.5	7.5	24.2	14.9	43.0	2.1	14.2	13.4	22.7
20%		7.8	11.7	13.8	19.2	37.7	40.0	2.9	14.3	5.3	18.9	11.5	33.9	0.2	12.3	10.5	15.3
10%		5.1	5.9	6.5	10.4	25.6	13.3	0.9	10.1	1.5	11.9	4.0	24.7	0.0	9.1	5.6	9.1

Table 18 b. Percentiles for daily Ammonia data for 2005 2007 CAFO sites. Data displayed in parts per billion.

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	Viking Lake	West Union	Williams	Woodbine
<b>2005</b>																	
100%		476.4		508.0	783.3	427.3	875.5	548.0		729.6	317.4		1045.0	109.8	453.5		
90%		59.2		180.3	91.6	94.9	88.1	95.5		50.2	64.1		115.6	14.9	121.3		
80%		43.2		112.3	47.1	62.5	58.2	53.1		35.4	41.8		67.4	10.1	67.9		
70%		30.8		73.5	34.0	46.6	43.4	35.9		26.7	31.5		49.0	8.1	40.7		
60%		22.6		55.2	23.9	40.5	36.2	27.3		20.8	26.4		40.5	6.5	29.9		
50%		18.0		40.0	17.2	36.1	32.1	18.0		17.3	20.7		34.6	5.6	22.8		
40%		14.5		28.3	12.1	31.7	27.7	13.7		14.3	16.6		28.4	4.4	18.0		
30%		10.7		19.7	8.7	28.5	23.9	10.1		11.7	12.8		22.0	3.8	14.1		
20%		7.6		11.6	6.6	24.4	19.8	7.1		9.0	8.9		17.1	2.4	10.0		
10%		5.4		6.0	4.0	16.4	16.1	3.4		6.2	5.1		12.2	0.4	5.8		
<b>2006</b>																	
100%		181.1		550.7	538.5	285.8	995.7	314.9		278.8	395.9		1820.0	43.7	930.9		
90%		52.6		160.7	61.8	53.2	78.3	65.9		52.4	59.5		77.0	13.8	192.5		
80%		35.3		106.7	34.4	36.6	52.3	41.7		38.0	38.8		45.0	9.4	109.3		
70%		25.1		74.5	26.2	30.6	39.7	29.8		27.7	28.3		36.2	7.2	48.5		
60%		20.7		53.3	21.7	26.7	33.2	22.4		21.1	23.5		29.2	5.8	30.1		
50%		17.1		36.8	17.1	23.1	29.1	17.7		17.0	18.4		24.7	4.6	18.2		
40%		14.8		26.5	13.9	20.7	25.8	14.0		13.5	13.2		21.7	4.2	11.7		
30%		13.4		18.4	11.3	18.2	21.6	10.8		11.5	8.9		18.8	2.7	8.5		
20%		11.4		11.0	9.0	15.4	18.3	7.4		8.3	5.9		15.3	2.5	6.3		
10%		9.3		6.2	7.1	12.5	15.3	4.2		6.3	2.2		11.7	1.1	3.1		
<b>2007</b>																	
100%		330.8		586.3	1996.0	174.9	459.6	877.4		161.0	251.2		596.3	114.6	732.8		
90%		42.8		159.8	44.1	44.0	80.9	63.9		43.4	53.0		67.3	18.1	137.8		
80%		31.4		96.7	28.0	33.8	49.2	36.8		31.2	37.4		40.2	12.4	86.5		
70%		25.1		58.5	19.5	28.0	38.1	26.2		23.2	30.7		31.1	9.0	47.5		
60%		21.1		39.9	13.3	25.2	31.7	19.6		19.7	24.4		25.2	7.2	27.1		
50%		18.6		30.6	10.1	22.0	26.1	15.3		16.2	20.3		22.3	5.9	19.7		
40%		16.2		22.5	6.0	19.5	22.8	12.3		12.8	16.3		19.6	4.6	15.4		
30%		13.8		14.2	2.9	17.0	18.7	9.7		10.3	13.4		16.2	4.0	11.8		
20%		12.1		9.7	0.1	14.0	15.2	7.2		7.9	10.0		12.7	2.6	7.6		
10%		9.5		4.1	0.0	10.1	11.5	3.6		4.9	6.4		8.9	0.9	3.5		

Table 19. Annual percent completeness for hourly Ammonia data for 2003 2007 CAFO sites.

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	Viking Lake	West Union	Williams	Woodbine
2003	39%		21%	72%	7%				35%			48%		63%		61%	52%
2004		50%	45%	93%	86%	58%	42%	50%	40%	38%	51%	26%	50%	92%	47%	45%	32%
2005		98%		90%	95%	96%	98%	95%		98%	98%		98%	96%	98%		
2006		99%		99%	98%	98%	97%	98%		98%	98%		98%	88%	93%		
2007		98%		95%	96%	98%	97%	98%		93%	96%		94%	93%	91%		

	MEETS 90% annual completeness
	Does NOT MEET 90% annual completeness
	No Data

Table 20. Quarterly percent completeness for hourly Ammonia data for 2003 2007 CAFO sites.

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	Viking Lake	West Union	Williams	Woodbine
<b>2003</b>																	
1				8%												19%	
2	67%			90%								47%		81%		79%	68%
3	91%			94%					42%			51%		71%		45%	60%
4			84%	94%	26%				98%			93%		97%		99%	79%
<b>2004</b>																	
1			98%	99%	83%				80%			95%		99%		99%	91%
2		1%	84%	99%	62%	36%			82%		31%	9%	29%	80%		83%	38%
3		99%		77%	98%	98%	69%	99%		84%	76%		73%	91%	90%		
4		98%		98%	98%	98%	97%	98%		69%	98%		98%	96%	98%		
<b>2005</b>																	
1		98%		98%	98%	90%	98%	98%		99%	97%		98%	91%	98%		
2		98%		98%	98%	98%	98%	98%		98%	99%		98%	98%	97%		
3		98%		92%	99%	98%	98%	86%		98%	98%		98%	98%	98%		
4		98%		71%	84%	98%	98%	99%		98%	98%		99%	99%	98%		
<b>2006</b>																	
1		98%		98%	99%	98%	98%	99%		98%	98%		98%	87%	98%		
2		98%		99%	99%	98%	98%	99%		98%	98%		98%	86%	98%		
3		99%		99%	98%	98%	95%	99%		97%	98%		98%	79%	98%		
4		98%		99%	99%	98%	98%	97%		98%	98%		98%	99%	78%		
<b>2007</b>																	
1		98%		90%	93%	98%	95%	97%		76%	85%		95%	99%	73%		
2		97%		99%	99%	98%	97%	99%		99%	99%		85%	78%	96%		
3		99%		94%	95%	99%	99%	99%		98%	99%		98%	97%	98%		
4		99%		99%	99%	98%	98%	99%		99%	99%		99%	99%	98%		

MEETS 75% quarterly completeness  
 Does NOT MEET 75% quarterly completeness  
 No Data

Table 21. Statistical summary, in parts per billion, for hourly Ammonia data (2003 2007).

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	Viking Lake	West Union	Williams	Woodbine
<b>2003</b>																	
Minimum	0.0		0.0	0.0	0.2				0.0			0.0		0.0		0.0	0.0
Maximum	650.6		150.7	1182.0	642.3				398.9			357.9		142.6		1104.0	696.8
Average	67.4		19.6	30.1	63.1				22.9			23.1		2.8		26.5	62.9
<b>2004</b>																	
Minimum		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum		481.2	379.1	973.5	904.6	607.0	690.2	251.7	745.9	316.1	390.8	100.6	1751.0	283.6	588.6	230.3	154.7
Average		11.1	17.0	26.0	22.0	44.9	49.8	11.8	20.5	6.7	22.3	11.2	38.7	3.0	11.5	15.2	17.1
<b>2005</b>																	
Minimum		0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0		
Maximum		476.4		508.0	783.3	427.3	875.5	548.0		729.6	317.4		1045.0	109.8	453.5		
Average		11.9		21.1	11.4	26.3	20.0	15.2		11.9	11.3		21.3	3.2	15.2		
<b>2006</b>																	
Minimum		0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0		
Maximum		181.1		550.7	538.5	285.8	995.7	314.9		278.8	395.9		1820.0	43.7	930.9		
Average		10.8		20.4	12.0	15.7	19.4	12.4		11.4	9.6		15.7	2.9	15.0		
<b>2007</b>																	
Minimum		0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0		
Maximum		330.8		586.3	1996.0	174.9	459.6	877.4		161.0	251.2		596.3	114.6	732.8		
Average		12.3		20.4	12.3	14.4	16.4	14.2		10.3	12.6		13.8	3.9	13.4		

MEETS completeness  
 Does NOT MEET completeness  
 No Data

Table 22 a. Top ten maximum sample values for hourly Ammonia data for 2003 2004 CAFO sites. Data displayed in parts per billion.

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	Viking Lake	West Union	Williams	Woodbine
<b>2003</b>																	
1	650.6		150.7	1182.0	642.3				398.9			357.9		142.6		1104.0	696.8
2	423.6		123.8	949.5	591.5				364.2			345.2		75.6		819.4	547.9
3	419.1		119.7	897.7	477.3				334.6			321.0		67.5		743.5	542.4
4	379.3		115.1	892.8	402.9				323.0			319.9		60.5		672.4	480.5
5	368.3		112.4	859.1	310.0				266.5			315.0		54.4		661.8	453.0
6	364.6		110.1	757.2	290.6				264.9			314.0		47.8		617.9	443.3
7	319.1		110.0	732.1	254.2				254.5			309.0		46.7		611.3	419.4
8	316.7		103.4	729.8	238.9				241.2			289.4		41.2		578.8	412.7
9	312.5		99.0	696.3	238.2				233.7			284.4		40.2		576.4	403.1
10	305.6		97.5	691.4	235.8				193.6			277.3		39.3		558.5	396.6
<b>2004</b>																	
1		481.2	379.1	973.5	904.6	607.0	690.2	251.7	745.9	316.1	390.8	100.6	1751.0	283.6	588.6	230.3	154.7
2		427.1	311.8	609.5	635.8	481.3	587.1	250.3	641.0	264.1	343.6	100.2	949.6	221.5	451.4	199.5	144.8
3		329.4	271.4	603.7	507.5	474.5	401.9	248.2	601.3	244.8	240.9	83.8	797.2	214.5	232.8	196.3	135.3
4		269.7	263.7	568.7	420.7	431.5	366.0	236.7	511.2	227.9	240.5	82.5	760.4	198.1	229.1	185.5	129.4
5		251.0	214.5	564.8	404.9	414.9	363.1	222.2	485.2	225.9	204.2	82.0	745.7	188.2	187.9	178.2	128.3
6		239.8	180.6	561.2	396.3	407.9	332.1	216.2	472.7	212.8	196.3	77.9	622.2	160.4	160.0	160.7	123.1
7		227.2	160.0	538.7	392.0	382.2	323.3	202.1	460.2	204.8	191.9	77.8	613.5	65.5	123.3	155.3	121.5
8		203.9	157.6	516.4	343.5	367.2	315.7	199.7	451.9	197.7	181.8	72.6	507.5	62.8	106.4	150.9	119.5
9		201.8	153.9	500.0	334.1	326.1	304.8	190.4	441.2	174.9	170.2	69.7	448.3	61.7	98.9	140.9	117.8
10		177.5	145.6	466.3	308.9	317.1	296.2	185.3	417.0	156.8	165.9	68.9	364.6	61.1	93.5	140.1	117.5

Table 22 b. Top ten maximum sample values for hourly Ammonia data for 2005 2007 CAFO sites. Data displayed in parts per billion.

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	Viking Lake	West Union	Williams	Woodbine
<b>2005</b>																	
1		476.4		508.0	783.3	427.3	875.5	548.0		729.6	317.4		1045.0	109.8	453.5		
2		352.8		478.3	760.6	385.1	721.4	392.9		721.4	249.5		859.7	99.7	366.5		
3		274.0		466.3	702.2	318.5	705.3	383.3		707.2	202.8		787.4	59.6	329.2		
4		269.6		465.9	374.7	289.0	479.7	363.1		681.8	201.2		763.3	48.9	321.5		
5		268.1		437.9	367.7	280.1	387.2	340.1		636.0	180.6		753.5	38.9	303.3		
6		255.2		433.6	287.9	279.2	346.3	302.2		634.2	177.6		741.9	38.0	272.5		
7		253.3		430.3	254.7	271.6	297.9	289.9		623.6	170.1		604.2	35.2	261.8		
8		252.2		408.7	246.7	268.2	295.6	278.1		511.2	168.6		560.8	34.0	241.4		
9		229.3		402.7	209.7	259.7	275.9	260.7		495.1	167.6		558.8	31.5	240.9		
10		225.3		401.5	207.6	243.3	275.5	242.1		455.5	166.2		522.7	31.2	234.6		
<b>2006</b>																	
1		181.1		550.7	538.5	285.8	995.7	314.9		278.8	395.9		1820.0	43.7	930.9		
2		144.7		444.7	388.5	283.6	761.8	257.6		263.1	285.0		1178.0	39.6	805.4		
3		138.2		429.3	355.7	258.9	716.1	236.4		259.4	262.3		708.2	39.2	800.1		
4		127.4		424.1	317.0	212.6	712.9	202.9		159.3	246.7		649.4	38.5	765.0		
5		119.8		406.5	297.9	196.5	694.1	196.5		156.5	246.0		424.4	37.1	761.6		
6		117.5		374.2	296.4	193.6	673.1	188.2		139.5	239.4		412.0	36.8	588.7		
7		101.6		351.5	266.6	193.4	665.5	187.5		138.2	234.8		374.9	35.2	573.1		
8		95.7		344.5	263.5	169.5	397.8	186.5		132.3	212.1		366.5	34.4	459.4		
9		93.0		337.6	251.4	168.2	344.4	176.4		132.3	202.2		331.2	33.4	455.8		
10		92.5		336.4	243.9	158.8	332.9	171.0		132.0	183.0		310.0	32.0	409.5		
<b>2007</b>																	
1		330.8		586.3	1996.0	174.9	459.6	877.4		161.0	251.2		596.3	114.6	732.8		
2		244.9		432.8	1993.0	153.4	398.1	695.2		150.0	158.1		520.0	52.7	622.5		
3		244.0		357.7	1993.0	123.0	340.4	681.7		130.1	132.8		461.3	47.6	495.6		
4		236.2		338.6	1993.0	99.2	326.9	610.8		125.5	121.8		420.8	46.6	492.4		
5		231.2		336.2	1982.0	91.8	326.4	610.1		120.9	119.5		399.3	46.5	415.6		
6		218.9		331.4	1953.0	90.5	312.9	428.1		119.6	111.3		345.1	43.5	358.0		
7		215.3		326.9	1873.0	90.5	287.6	426.7		116.9	108.1		305.8	43.4	333.7		
8		214.3		322.5	1758.0	84.9	286.3	410.3		116.1	97.2		298.6	42.4	325.1		
9		194.3		322.0	1742.0	79.7	261.1	409.4		115.9	95.7		270.9	42.2	319.8		
10		186.6		321.1	1684.0	77.8	256.8	396.9		113.5	94.6		258.3	42.0	314.7		

Table 23 a. Percentiles for hourly Ammonia data for 2003 2004 CAFO sites. Data is displayed in parts per billion.

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	Viking Lake	West Union	Williams	Woodbine
<b>2003</b>																	
100%	650.6		150.7	1182.0	642.3				398.9			357.9		142.6		1104.0	696.8
90%	137.4		40.9	67.2	127.5				46.3			51.5		8.0		58.4	142.1
80%	108.3		29.7	35.5	86.7				33.6			30.6		4.9		29.9	111.1
70%	89.4		23.7	23.2	70.5				25.7			21.1		3.5		20.7	91.9
60%	73.9		19.0	17.4	59.8				20.5			16.1		2.1		15.6	71.8
50%	59.3		15.8	13.3	49.6				16.7			12.4		0.7		11.9	41.0
40%	43.7		12.2	10.2	38.7				13.7			9.4		0.0		9.2	22.7
30%	25.8		9.2	7.6	27.6				10.5			7.0		0.0		6.4	15.2
20%	15.3		6.2	4.2	21.3				8.0			4.4		0.0		4.0	9.8
10%	8.4		2.6	1.0	11.6				4.2			1.7		0.0		0.4	4.1
<b>2004</b>																	
100%		481.2	379.1	973.5	904.6	607.0	690.2	251.7	745.9	316.1	390.8	100.6	1751.0	283.6	588.6	230.3	154.7
90%		26.2	36.7	58.7	46.9	81.1	97.1	30.2	34.4	15.3	51.2	27.9	76.3	8.2	20.4	32.0	38.2
80%		15.1	26.7	33.8	34.0	66.2	70.8	17.2	21.7	9.2	37.3	19.2	56.5	5.4	16.4	21.0	27.9
70%		10.3	20.7	23.7	26.1	57.5	56.6	11.6	17.1	6.1	27.8	14.3	44.7	3.8	13.4	16.0	20.9
60%		7.1	16.3	17.2	20.6	49.4	48.2	8.0	14.3	4.0	21.4	10.6	36.3	2.1	11.5	12.5	16.4
50%		4.7	12.8	12.6	16.1	40.5	40.4	4.8	12.1	2.3	16.4	7.5	29.7	0.3	9.8	9.8	12.5
40%		3.1	9.1	9.1	12.0	31.1	34.0	2.5	10.0	1.5	12.1	4.2	23.0	0.0	8.1	7.5	8.5
30%		2.0	6.4	6.2	8.4	23.1	28.3	1.3	7.7	0.0	7.9	2.0	16.4	0.0	6.0	5.6	6.1
20%		0.3	3.5	3.7	5.0	15.9	21.8	0.1	4.8	0.0	3.4	0.1	10.8	0.0	4.0	2.9	4.0
10%		0.0	0.3	1.2	1.3	7.4	6.8	0.0	2.1	0.0	0.0	0.0	6.2	0.0	0.2	0.4	1.0

Table 23 b. Percentiles for hourly Ammonia data for 2005 2007 CAFO sites. Data displayed in parts per billion.

Site Name	Atlantic	Belmond New	Belmond Old	Clarion	Goldfield	Iowa Falls	Jewell	Kanawha	Malcom	Newkirk	Sac City	Sioux Center	Stanhope	Viking Lake	West Union	Williams	Woodbine
<b>2005</b>																	
100%		476.4		508.0	783.3	427.3	875.5	548.0		729.6	317.4		1045.0	109.8	453.5		
90%		23.3		44.0	24.0	46.2	34.7	33.5		22.1	25.9		37.3	7.3	28.8		
80%		15.8		28.0	15.3	34.5	25.3	21.5		15.3	17.3		27.9	5.1	19.7		
70%		12.9		21.0	10.9	29.3	21.3	15.0		11.7	13.0		22.4	4.4	15.5		
60%		10.4		16.0	8.2	25.8	18.3	11.1		9.2	10.1		18.6	3.0	12.5		
50%		8.3		11.9	6.3	22.7	15.8	8.2		7.6	7.4		15.4	2.4	10.1		
40%		6.3		8.8	4.7	20.0	13.5	6.2		6.0	5.3		12.4	2.1	8.0		
30%		4.6		6.1	3.6	16.7	11.2	4.2		4.4	3.1		9.8	0.5	6.1		
20%		3.4		3.9	2.2	12.4	8.7	2.2		3.3	1.0		7.3	0.2	4.0		
10%		1.9		1.5	0.2	8.0	6.0	0.2		1.5	0.0		4.1	0.0	1.8		
<b>2006</b>																	
100%		181.1		550.7	538.5	285.8	995.7	314.9		278.8	395.9		1820.0	43.7	930.9		
90%		19.2		45.3	23.2	25.6	33.9	26.9		22.9	22.8		26.6	6.5	29.2		
80%		14.6		27.3	15.5	20.6	24.1	18.5		15.6	15.6		20.0	4.5	15.3		
70%		12.3		19.6	11.9	17.9	19.8	13.9		12.1	11.1		16.7	3.5	10.3		
60%		10.6		14.6	9.6	15.8	17.0	10.8		9.9	7.7		14.2	2.5	8.1		
50%		9.1		11.1	7.9	13.9	14.7	8.0		8.1	5.3		12.2	2.4	6.2		
40%		7.7		8.3	6.5	12.3	12.8	6.0		6.5	3.3		10.4	1.3	4.6		
30%		6.3		6.1	5.2	10.7	10.9	4.2		4.8	2.0		8.5	0.5	3.4		
20%		4.7		4.1	3.8	8.8	8.7	2.3		4.0	0.1		6.4	0.4	2.0		
10%		2.4		1.8	2.0	5.7	5.9	0.2		2.4	0.0		4.1	0.0	0.0		
<b>2007</b>																	
100%		330.8		586.3	1996.0	174.9	459.6	877.4		161.0	251.2		596.3	114.6	732.8		
90%		21.0		43.7	23.2	24.8	30.1	27.9		21.1	26.5		25.0	8.6	25.1		
80%		16.1		28.0	13.0	20.1	22.1	17.2		15.3	18.8		18.9	6.1	15.4		
70%		13.7		20.5	7.8	17.2	17.7	12.8		11.9	14.9		15.5	4.6	12.0		
60%		11.9		15.9	4.2	15.0	14.7	9.8		9.4	11.8		12.8	3.9	9.8		
50%		10.3		12.3	1.4	13.0	12.3	7.9		7.5	9.3		10.7	2.6	7.6		
40%		8.8		9.1	0.0	11.2	10.3	6.0		6.4	7.5		8.8	2.5	5.9		
30%		7.1		5.9	0.0	9.3	8.3	4.2		4.5	5.8		7.2	1.3	4.3		
20%		5.3		3.0	0.0	7.0	6.3	2.3		3.0	4.0		5.0	0.6	2.4		
10%		2.8		0.3	0.0	4.1	4.0	0.2		1.5	2.0		2.2	0.0	0.4		

## **Additional Table Information**

**Listed below is additional information that may be useful in interpreting the tables found in this review**

### **Annual 8<sup>th</sup> Highest Daily Maximum for Hydrogen**

This table shows the 8<sup>th</sup> highest daily maximums for each hydrogen sulfide CAFO site for each year. The data is displayed in parts per billion. The values were determined from a list of the valid daily maximums. Days with at least 18 hours of continuous data or max values over the standard ( $\geq 31$  ppb) were considered valid and included in the study. Meeting completeness criteria requires both 90% annual and 75% quarterly completeness. Those monitoring sites within 100 meters of a separated location satisfy siting criteria. More information regarding siting criteria, completeness, or valid data can be seen in Appendix D.

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### **Annual Percent Completeness for Daily Hydrogen Sulfide**

This table shows the annual percent completeness for the daily hydrogen sulfide. The values were calculated by dividing the number of valid days by the total number of days in each year. At least 90% of the total days must be valid to meet annual completeness criteria.

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### **Quarterly Percent Completeness for Daily Hydrogen Sulfide**

This table shows the daily quarterly percent completeness for hydrogen sulfide. Each year is divided into four calendar quarters. Percent completeness was found by dividing the total number of valid days by the total number of days in each calendar quarter. To meet quarterly completeness criteria, at least 75% of the days in each quarter must be valid.

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### **Statistical Summary for Daily Hydrogen Sulfide**

This table shows the annual minimum, annual maximum, and annual average daily sample values of the hydrogen sulfide data for each CAFO site. Completeness criteria require at least 90% annual daily completeness and 75% quarterly daily completeness. The standard is exceeded at a site where the 8<sup>th</sup> highest daily maximum is greater than 30 ppb. Sites with days that exceed the standard are valid and are not required to meet the completeness criteria for those specific days.

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### **Top Ten Maximum Sample Values for Daily Hydrogen Sulfide**

This table shows the top ten maximum daily sample values for hydrogen sulfide. Daily values were determined from daily maximums of the 24 hour continuous data. Days with at least 18 hours of data or values greater than the standard (30 ppb) are considered valid.

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### **Percentiles for Daily Hydrogen Sulfide**

This table shows ten percentile ranks for the daily hydrogen sulfide data for each CAFO site. Daily values were calculated from the daily maximums of the 24 hour continuous data.

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### **Number of hours with levels over the Health Effects Value**

This table shows the total number of hours, for each year, in which levels over the Health Effects Value were recorded for each CAFO site. These totals were calculated by counting the number of sample values from each site which were greater than or equal to 31 parts per billion. Hourly data utilized every hour of continuous data collected.

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### **Annual Completeness for Hourly Hydrogen Sulfide**

This table shows the annual completeness for the hourly hydrogen sulfide data for each CAFO site. The annual completeness was calculated by dividing the number of hours sampled by the total number of hours in each year. Annual completeness is met when 90% of the total hours are sampled. Hourly data utilized every hour of continuous data collected.

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### **Quarterly Completeness for Hourly Hydrogen Sulfide**

This table shows the quarterly completeness for hourly hydrogen sulfide data. These percentages were calculated by dividing the number of hours sampled in each calendar quarter by the total number of hours in each quarter. Quarterly completeness is met when at least 75% of the hours in each quarter are sampled. Hourly data utilized every hour of continuous data collected.

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### **Statistical Summary for Hourly Hydrogen Sulfide**

This table shows a statistical summary for the hourly hydrogen sulfide data, including the annual minimum, annual maximum and annual average for hourly values. Meeting completeness requires both 90% annual and 75% quarterly completeness. Hourly data utilized every hour of continuous data collected. Sites do not meet the standard when the 8<sup>th</sup> highest Daily maximum is greater than or equal to 31 ppb.

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### **Top Ten Maximum Sample Values for Hourly Hydrogen Sulfide**

This table shows the top ten annual maximum values for hourly hydrogen sulfide for each CAFO site. Hourly data refers to every hour of continuous 24 hour data collected.

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### **Percentiles for Hourly Hydrogen Sulfide**

This table shows ten percentile ranks for the hourly hydrogen sulfide data for each CAFO site. Hourly values include every sample value of the 24 hour continuous data.

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### **Annual Highest Daily Maximum for Ammonia**

This table shows the highest annual daily maximums for hydrogen sulfide for each CAFO. The data is displayed in parts per billion. The values were determined from a list of the daily maximums of the 24 hour continuous data. Days with at least 18 hours of continuous were considered valid and included in the study. Meeting completeness requires both 90% annual and 75% quarterly completeness.

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### **Annual Percent Completeness for Daily Ammonia**

This table shows the annual percent completeness for daily ammonia. The values were calculated by dividing the number of valid days by the total number of days in each year. At least 90% of the total days must be valid to meet completeness.

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### **Quarterly Percent Completeness for Daily Ammonia**

This table shows the daily quarterly percent completeness for ammonia. Each year is divided into four calendar quarters. Percent completeness was found by dividing the total number of valid days by the total number of days in each calendar quarter. To meet completeness, at least 75% of the days in each quarter must be valid.

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### **Statistical Summary for Daily Ammonia**

This table shows the annual minimum, annual maximum and annual average daily sample values for each CAFO site for ammonia. To meet completeness both 90% annual daily completeness and 75% quarterly daily completeness are required.

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### **Top Ten Maximum Sample Values for Daily Ammonia**

This table shows the top ten maximum daily sample values for ammonia. Days with at least 18 hours of data are considered valid. Daily values were determined from daily maximums of the 24 hour continuous data.

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### **Percentiles for Daily Ammonia Data**

This table shows ten percentile ranks for the daily ammonia data for each CAFO site. Daily values were calculated from the daily maximums of the 24 hour continuous data.

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### **Annual Completeness for Hourly Ammonia**

This table shows the annual completeness for the hourly ammonia data for each CAFO site. The annual completeness was calculated by dividing the number of hours sampled by the total number of hours in each year. Annual completeness is met when 90% of the total hours are sampled. Hourly data utilized every hour of continuous data collected.

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### **Quarterly Completeness for Hourly Ammonia**

This table shows the quarterly completeness for hourly ammonia data. These percentages were calculated by dividing the number of hours sampled in each calendar quarter by the total number of hours in each quarter. Quarterly completeness is met when at least 75% of the hours in each quarter are sampled. Hourly data utilized every hour of continuous data collected.

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### **Statistical Summary for Hourly Ammonia**

This table shows a statistical summary for the hourly ammonia data, including the annual minimum, annual maximum and annual average for hourly values. Meeting completeness requires both 90% annual and 75% quarterly completeness. Hourly data utilized every hour of continuous data collected.

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### **Top Ten Maximum Sample Values for Hourly Ammonia**

This table shows the top ten annual maximum sample values for hourly ammonia for each CAFO site. Hourly data refers to every hour of continuous 24 hour data collected.

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### **Percentiles for Hourly Ammonia**

This table shows ten percentile ranks for the hourly ammonia data for each CAFO site. Hourly values include every sample value of the 24 hour continuous data.

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