

## **Appendix E**

### ***Case Study 5: Swine***

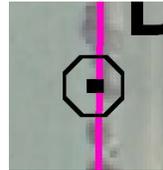
- a: Elements of the Figures**
- I: Four Week Passive Project Results, Complete**
- II: Passive Results, July 6 – July 16, 2010**
- III: Passive Results, July 16 – July 23, 2010**
- IV: Passive Results, July 23 – July 30, 2010**
- V: Passive Results, July 30 – August 10, 2010**
- VI: Active Sampling Site Locations**
- VII: Active Sampling Results, July 13, 2010**
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## Elements of the Figures

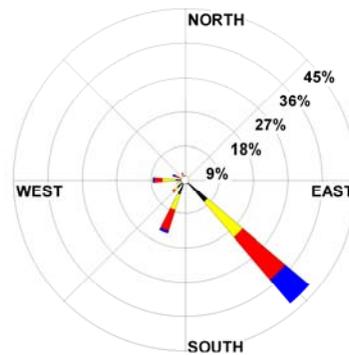
Proportional bars represent weekly passive ammonia concentrations in the summary figure, as well as the short term active ammonia (green) and hydrogen sulfide (pink) concentrations. The pink line in all of the figures represent the study boundary, which in most cases should be the property boundary of the farms.



Proportional symbols represent passive ammonia concentrations in the weekly figures. Each case study has its own concentration scale and can not be directly compared with other farms. Actual concentrations associated with the symbols are shown in the tables on each figure page.



Wind roses are a device to illustrate the direction and speed of the wind. The direction of the bar indicates where the wind is blowing **from**, with the colors indicating the speed of the wind and the length of the bar showing what percentage of the time the wind was coming from that direction. In the figure to the right, wind was coming from the southeast close to 45% of the time, with a wind speed of 11 – 17 knots about 9% of the time, a speed of 7 – 11 knots about 15% of the time, a speed of 4 – 7 knots about 11% of the time, and 1 – 4 knots about 8% of the time. In addition, winds were from the west 9% of the time, and from the southwest about 15% of the time, At the bottom of the wind speed scale to the right, the percentage of the time that the wind was calm is recorded, in this case, 16.67% of the time.

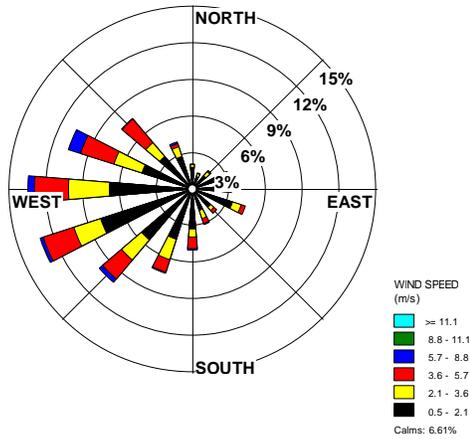
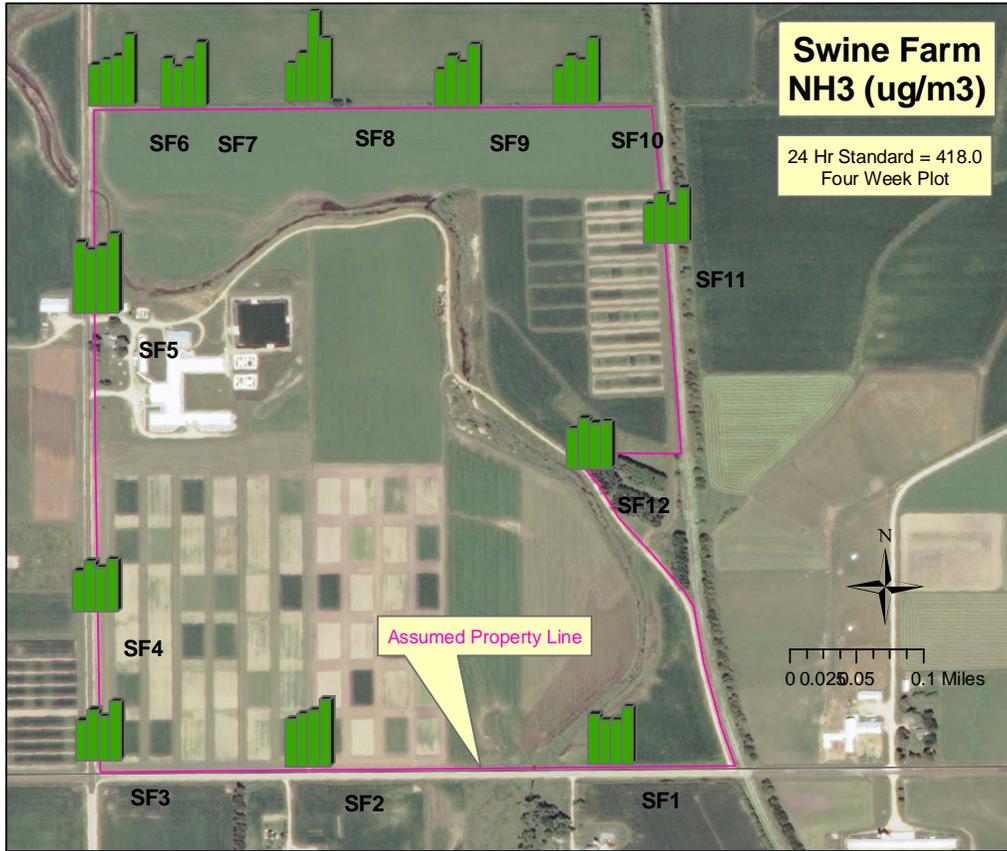


### WIND SPEED (Knots)



Calms: 16.67%

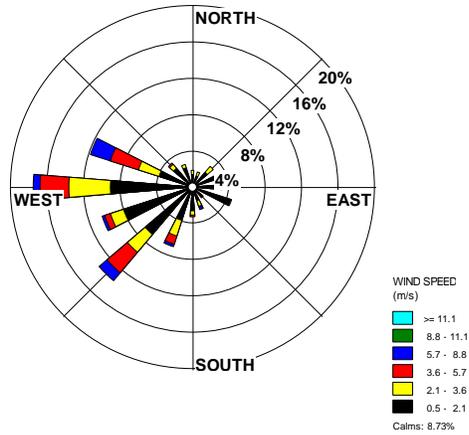
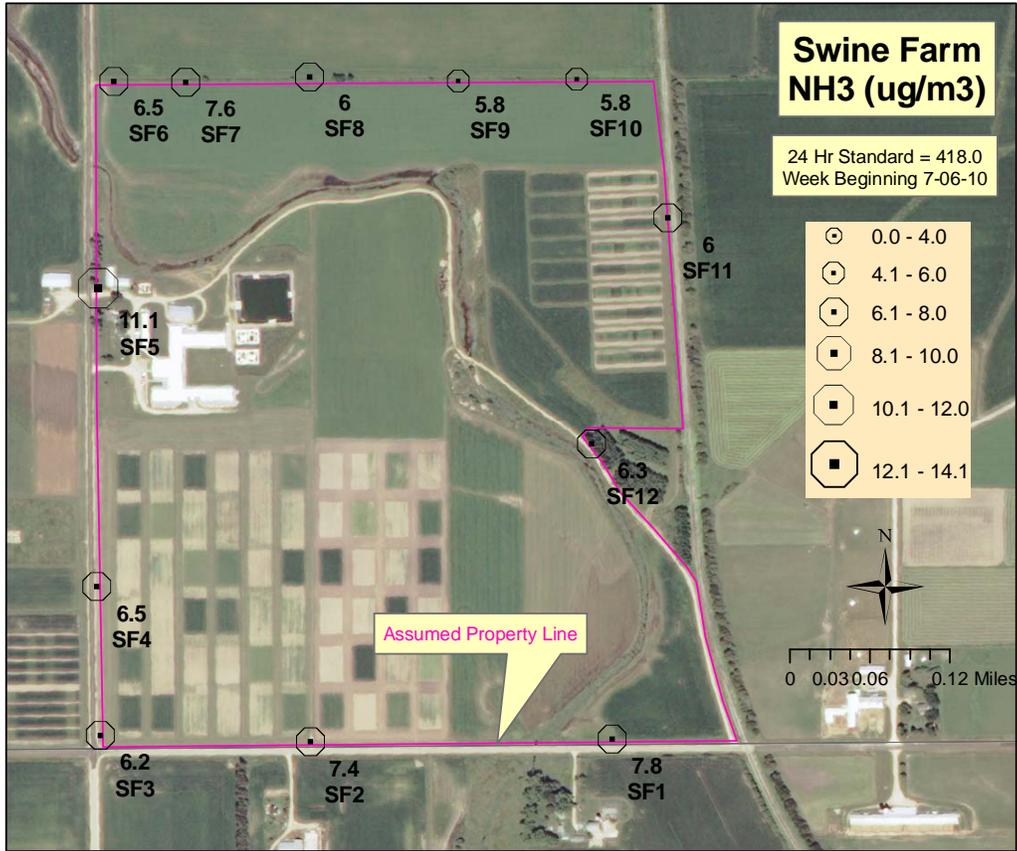
**Figure E-I: Four Week Passive Project Results, Complete**



**Swine Fenceline Passive Ammonia Samples, 7/6 – 8/10/2010**  
 Ambient Air Concentrations in Micrograms per Cubic Meter.  
 Asterisk denotes values calculated from results below lab reporting limit.

Location	07/06/2010	07/16/2010	07/23/2010	07/30/2010
SF1	7.8*	6.9*	6.9*	9.1*
SF2	7.4*	8.3*	8.9*	10.6
SF3	6.2*	7.9*	6.9*	9.3*
SF4	6.5*	7.9*	6.9*	8.2*
SF5	11.1*	9.9*	10.5*	12.5
SF6	6.5*	7.3*	7.9*	11.2
SF7	7.6*	6.3*	7.6*	10.1*
SF8	6.0*	7.6*	14.1*	9.9*
SF9	5.8*	7.9*	6.9*	9.7*
SF10	5.8*	7.6*	6.9*	10.4*
SF11	6.0*	7.6*	5.9*	8.7*
SF12	6.3*	7.9*	7.2*	7.4*

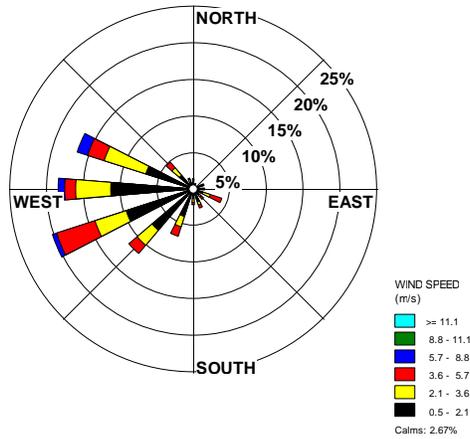
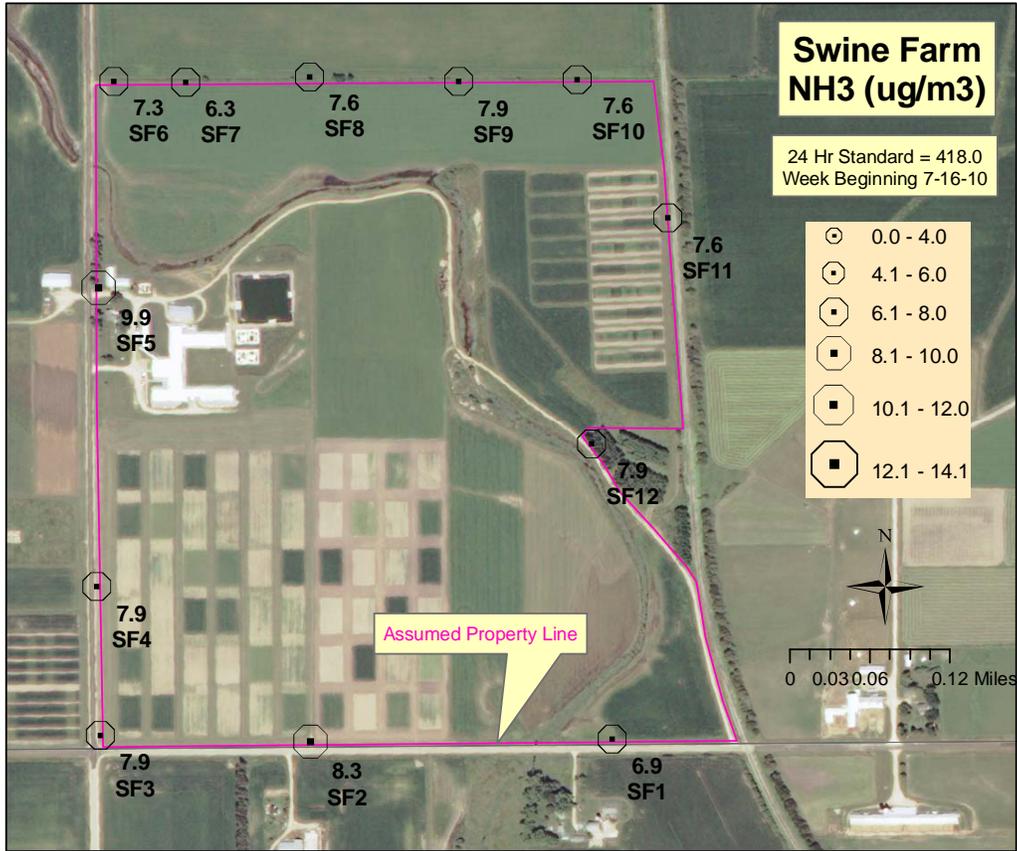
**Figure E-II: Passive Results, July 6 – July 16, 2010**



**Swine Fenceline Passive Ammonia Samples, 7/6 – 7/16/2010**  
Ambient Air Concentrations in Micrograms per Cubic Meter. An asterisk denotes values calculated from results below lab reporting limit.

Location	07/06/2010
SF1	7.8*
SF2	7.4*
SF3	6.2*
SF4	6.5*
SF5	11.1*
SF6	6.5*
SF7	7.6*
SF8	6.0*
SF9	5.8*
SF10	5.8*
SF11	6.0*
SF12	6.3*

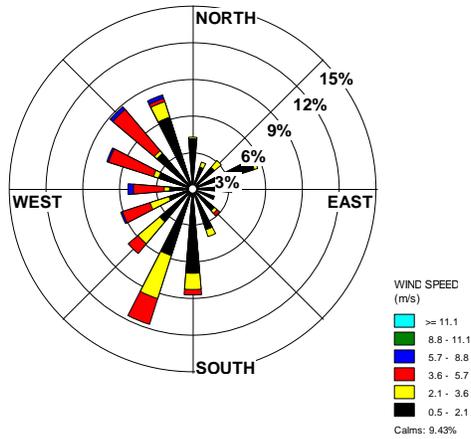
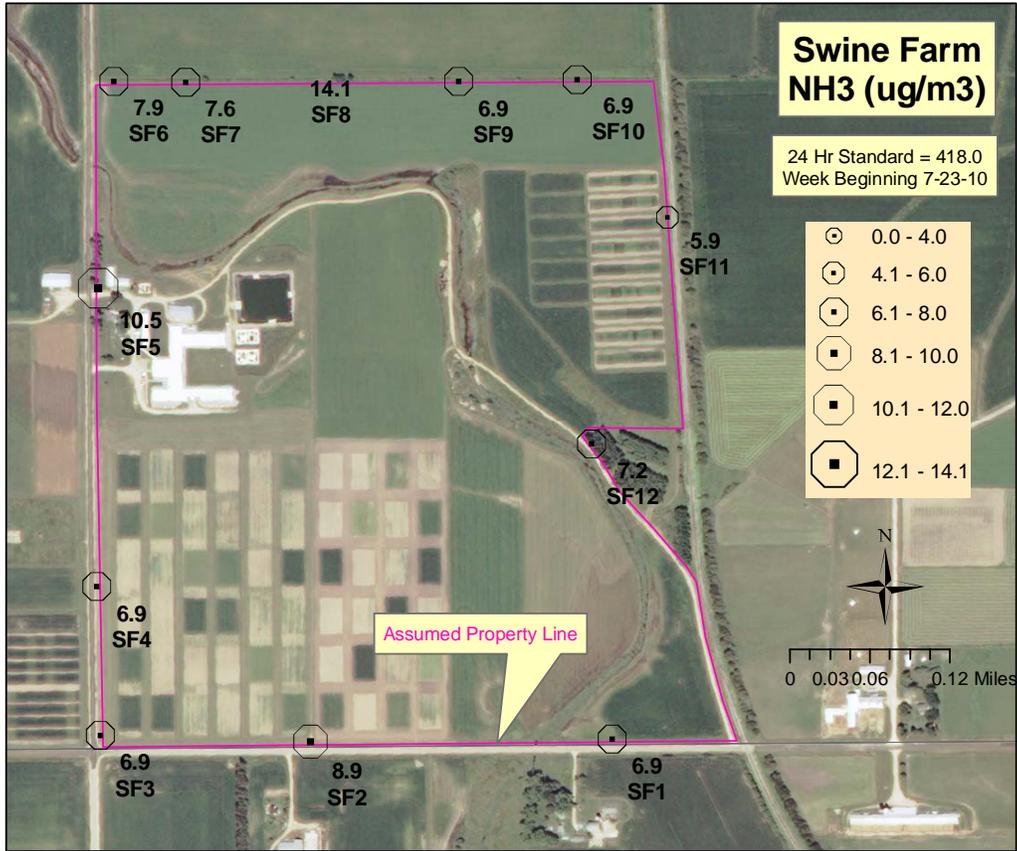
**Figure E-III: Passive Results, July 16 – July 23, 2010**



**Swine Fenceline Passive Ammonia Samples, 7/16 – 7/23/2010**  
Ambient Air Concentrations in Micrograms per Cubic Meter. An asterisk denotes values calculated from results below lab reporting limit.

Location	07/16/2010
SF1	6.9*
SF2	8.3*
SF3	7.9*
SF4	7.9*
SF5	9.9*
SF6	7.3*
SF7	6.3*
SF8	7.6*
SF9	7.9*
SF10	7.6*
SF11	7.6*
SF12	7.9*

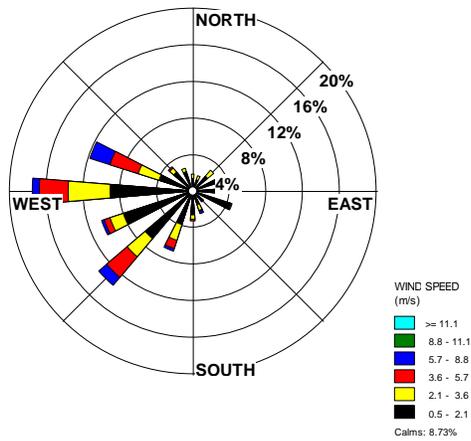
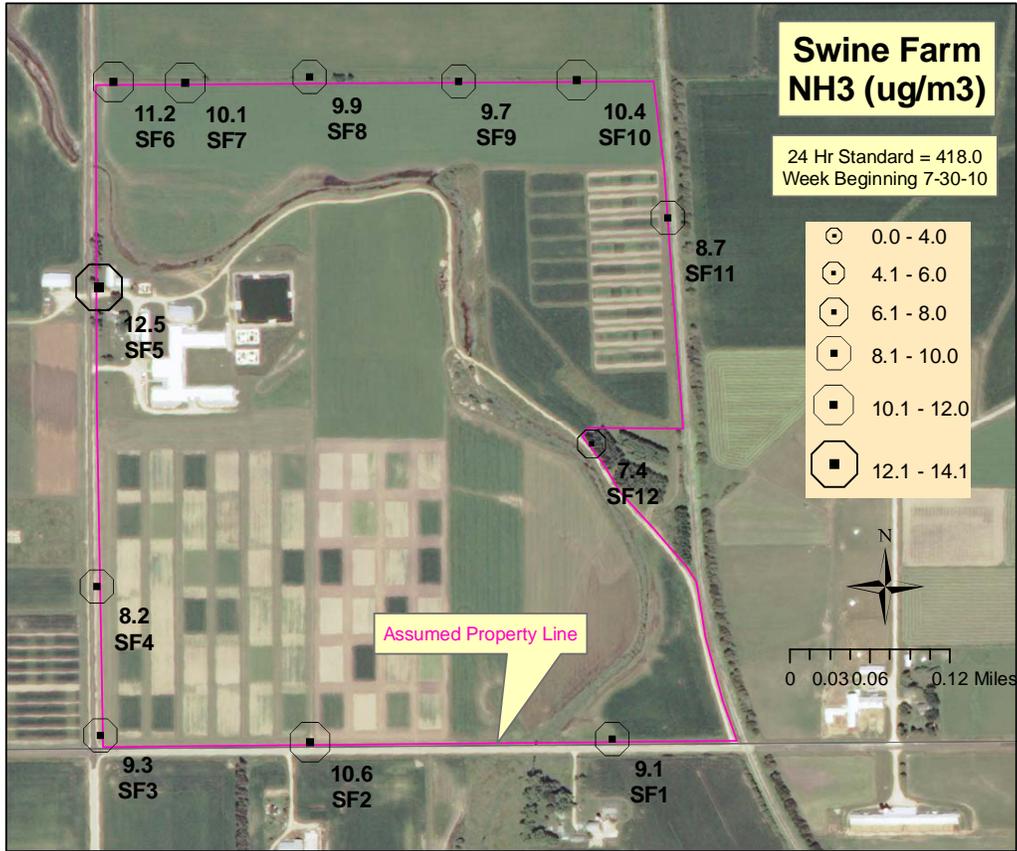
**Figure E-IV: Passive Results, July 23 – July 30, 2010**



**Swine Fenceline Passive Ammonia Samples, 7/23 – 7/30/2010**  
Ambient Air Concentrations in Micrograms per Cubic Meter. An asterisk denotes values calculated from results below lab reporting limit.

Location	07/23/2010
SF1	6.9*
SF2	8.9*
SF3	6.9*
SF4	6.9*
SF5	10.5*
SF6	7.9*
SF7	7.6*
SF8	14.1*
SF9	6.9*
SF10	6.9*
SF11	5.9*
SF12	7.2*

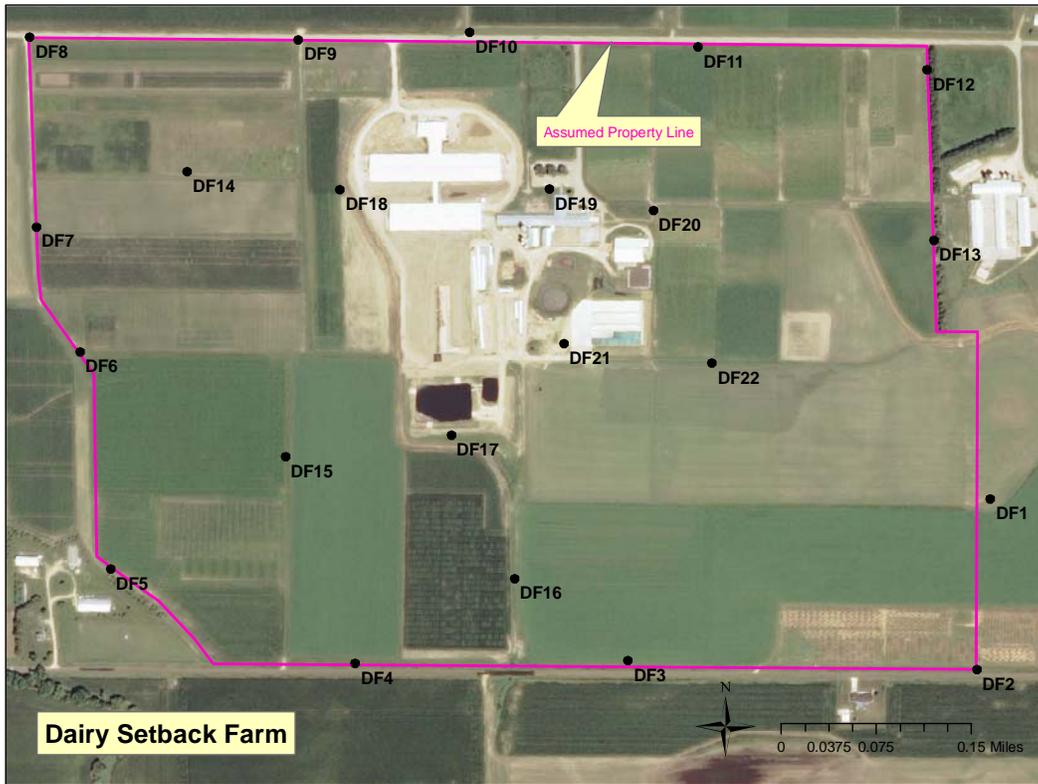
**Figure E-V: Passive Results, July 30 – August 10, 2010**



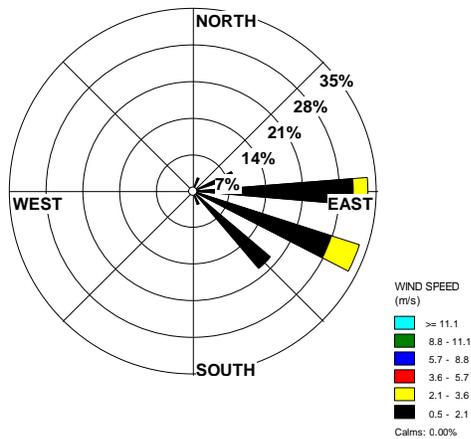
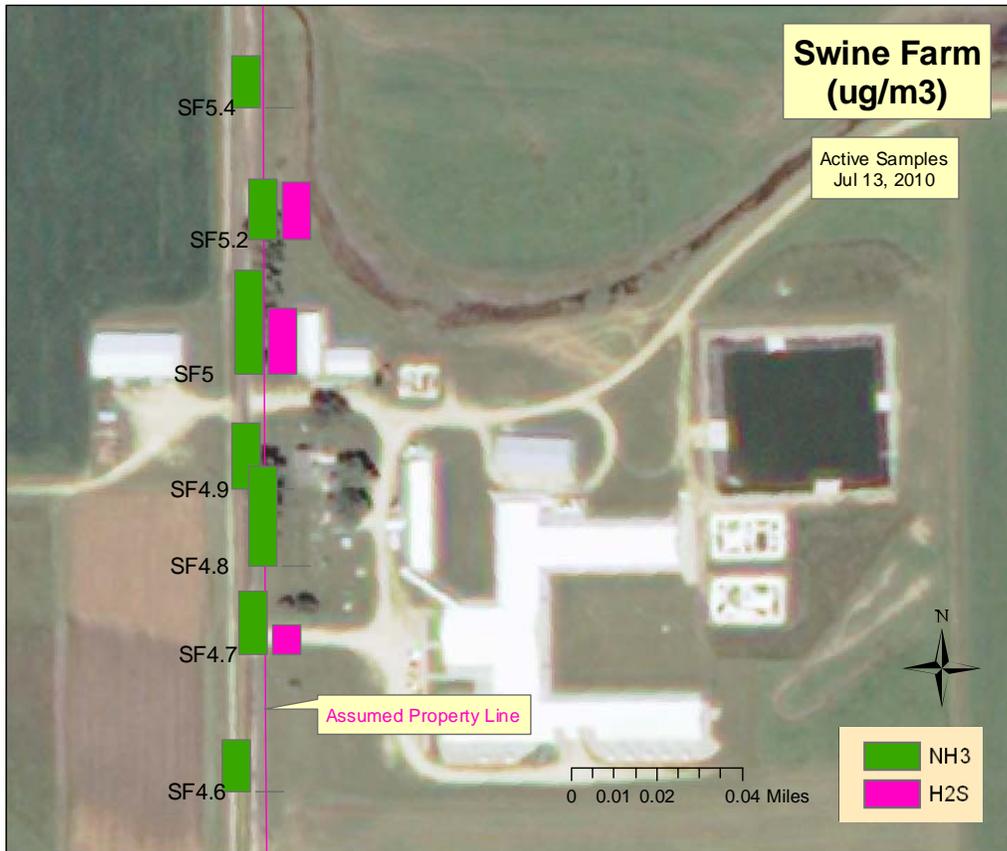
**Swine Fenceline Passive Ammonia Samples, 7/30 – 8/10/2010**  
Ambient Air Concentrations in Micrograms per Cubic Meter. An asterisk denotes values calculated from results below lab reporting limit.

Location	07/30/2010
SF1	9.1*
SF2	10.6
SF3	9.3*
SF4	8.2*
SF5	12.5
SF6	11.2
SF7	10.1*
SF8	9.9*
SF9	9.7*
SF10	10.4*
SF11	8.7*
SF12	7.4*

**Figure E-VI: Active Sampling Site Locations**



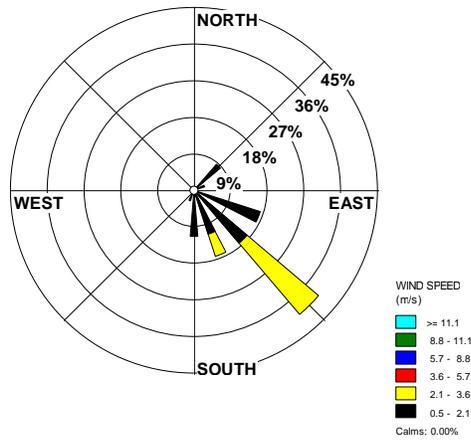
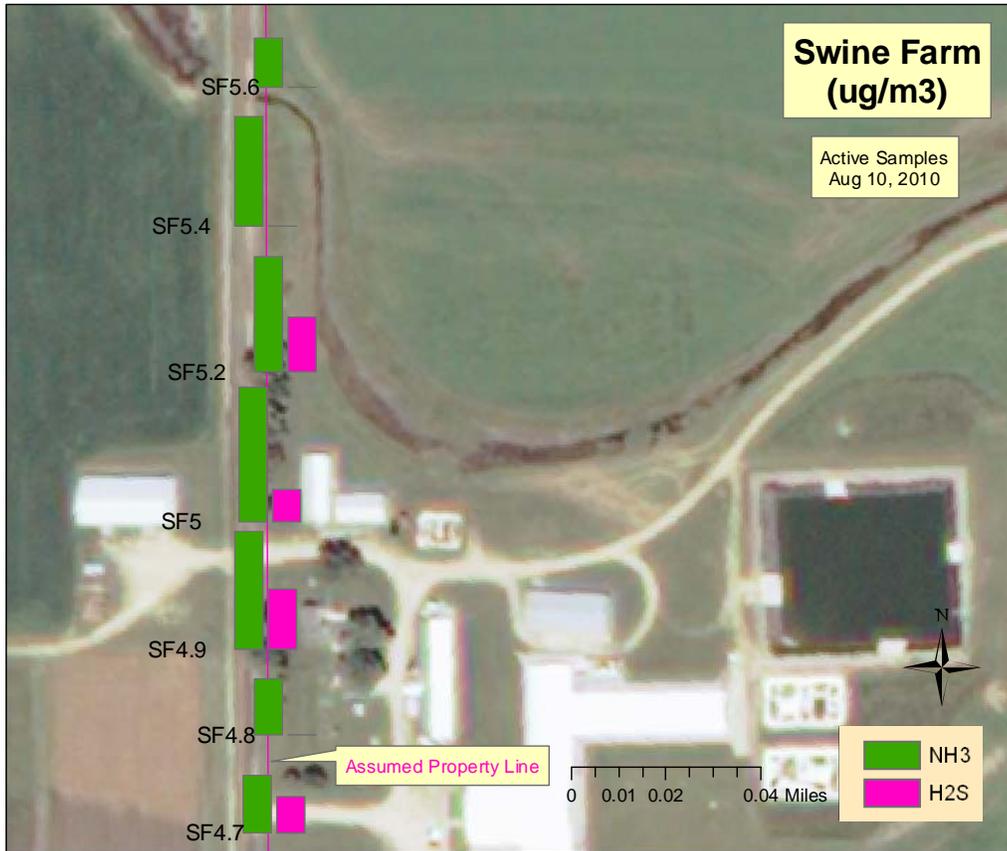
**Figure E-VII: Active Sampling Results, July 13, 2010**



**Swine Active Sample Results 07/13/2010**

Location	NH3	H2S
SF4.5	<7.8	
SF4.6	<8.4	
SF4.7	10.0	<4.7
SF4.8	16.1	
SF4.9	10.6	
SF5	16.6	<10.6
SF5.2	9.6	<9.2
SF5.4	<8.3	

**Figure E-VIII: Active Sampling Results, August 10, 2010**



**Swine Active Sample Results  
08/10/2010**

Location	NH3	H2S
SF4.7	9.2	<5.9
SF4.8	9.2	
SF4.9	18.9	9.8
SF5	21.7	<5.2
SF5.2	18.6	<8.9
SF5.4	17.6	
SF5.6	<8.0	