

US EPA ARCHIVE DOCUMENT

**EMISSIONS DATA FROM TWO DAIRY FREESTALL BARNs
IN CALIFORNIA**

Final Report for Site CA5B

of the

National Air Emissions Monitoring Study

submitted to

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1. INTRODUCTION AND OBJECTIVES

1.1. Overview of NAEMS

The primary goals of the National Air Emissions Monitoring Study (NAEMS) were to: 1) quantify aerial pollutant emissions from dairy, pork, egg, and broiler production facilities, 2) provide reliable data for developing and validating emissions models for livestock and poultry production and for comparison with government regulatory thresholds, and 3) promote a national consensus on methods and procedures for measuring emissions from livestock operations. Emissions measurements were conducted at a total of 15 different barn monitoring sites in the continental US.

The NAEMS was managed by Purdue University (Purdue), in its role as Independent Research Contractor (IRC) to the Agricultural Air Research Council. Purdue selected equipment and methodology in consultation with US EPA and subcontracted with other universities to operate the monitoring sites. The University of California installed, maintained and calibrated equipment, collected samples, and conducted all other on-site activities. Purdue provided rapid feedback (generally within 2-4 business days) designed to catch aberrations in the data, and later conducted final data processing of the data. Both California and Purdue participated in reviews of the analyzed data.

The overall objective of this report is to present the quality-assured measurements of ammonia (NH_3), hydrogen sulfide (H_2S), particulate matter (PM) and volatile organic compounds (VOC's) from a freestall barn at the California dairy farm. The specific objectives of the report are to:

1. Describe the farm, and the monitored buildings,
2. Describe the monitoring methods and quality assurance, and
3. Present tabulated daily averages of emissions.

2. CONFINED ANIMAL FEEDING OPERATION

2.1. Farm

This 1,200-cow Holstein dairy farm (CA5B) was located in California. The farmstead (Figure 1) was constructed in phases between 2001 and 2003, and was located in gently-rolling topography, most of which was farmland, with some grassy and wooded patches. Other livestock within a 1.6 km radius included two small farms that were 0.4 km to the south and southeast respectively, a farm 1.6 km to the west, and another farm 1.6 km to the north-northeast.

The farm had two naturally-ventilated freestall barns that were oriented north-south and located at the southeast corner of the overall facility. The milking center was on the north side, and the lagoon and settling ponds were on the west side. Exercise lots were located adjacent to each barn. Lactating cows were milked two times daily in a centrally located milking center. The on-site heifer program was held on the north end of the farm area. The on-site heifer program was held on the north end of the farm, separated from the study area.

The manure handling system included a barn flushing system, three settling ponds and a lagoon. Manure solids taken from the settling ponds were spread on nearby fields in the spring and fall.

2.2. Monitored Buildings

Aerial pollutant emissions were measured from two natural-ventilated free stall barns 1 and 2 (B1 and B2) (Figure 1). Each naturally-ventilated freestall barn was 187.5 m long x 31.4 m wide, with open 4.3 m high side-walls, and dry exercise lots on each side. The barn roofs had slopes of 3.5:12. Each barn's east and west sides were 4.3 m high, and their north and south ends were pentagon-shaped, each with a 31.4 m wide base, two vertical sides 4.3 m high, and a central vertical height of 10.1 m. Each barn had four freestall rows, two on each side of a central feed lane, housing 600 cows each. Barn 1 had an exercise pen to the east. On the north side, barns 1 and 2 had a channel that took the flushing effluent to the settling ponds. Between barns 1 and 2 were two separate exercise lots each 30.5 m wide. There were four or five lot gates on each barn sidewall. On the west side of barn 2 was an open area that extended to the lagoon/settling pond system. The south sides of the barns faced an open field.

Barn 1 had the fresher cows and served as the breeder barn, while barn 2 had pregnant lactating cows and the hard breeders. When it was very hot all the cows were inside the barn to be in the shade. Between November and April, the cows were generally kept inside the barns, depending on the weather. The manure, soil, and almond shell bedding was shaped with a bed-shaper machine weekly in winter and monthly in summer. The milking center was used to milk the cows two times per day. Lights were kept on all night. The feed was delivered using the Total Mixed Ration truck, with a mixture of corn silage, alfalfa, whole cottonseed, and (when available) wet brewer's grains.

Barns 1 and 2 were naturally ventilated. Ventilation air entered the naturally-ventilated freestall barns through the four open walls of the barn, and exited through a 0.8-m wide continuous open ridge. There was no mechanism to control the wind-induced ventilation rate, and there were no sources of artificial heat in winter, when the cows were kept inside the barns. Also, there were no cooling mechanisms such as fans, soakers, or misters.

Manure from the exercise lots was harrowed once or twice a week, scraped twice per year, and was used for bedding every two weeks or so in the freestalls. Manure from the freestall barns was automatically flushed with recycled lagoon water four times daily to three deep settling ponds and a storage lagoon. The flushing cycle was 80 min long because the four alleys in each of the two barns were flushed for 10 min each. Air valves were operated using timed solenoids. The flushing effluent was discharged by a ground-level channel to three 5.2 m deep settling ponds, starting with the south settling pond, and exiting the northern settling pond to enter the 7.6 m deep lagoon, where there was a floating pump that provided water to flush the barns.

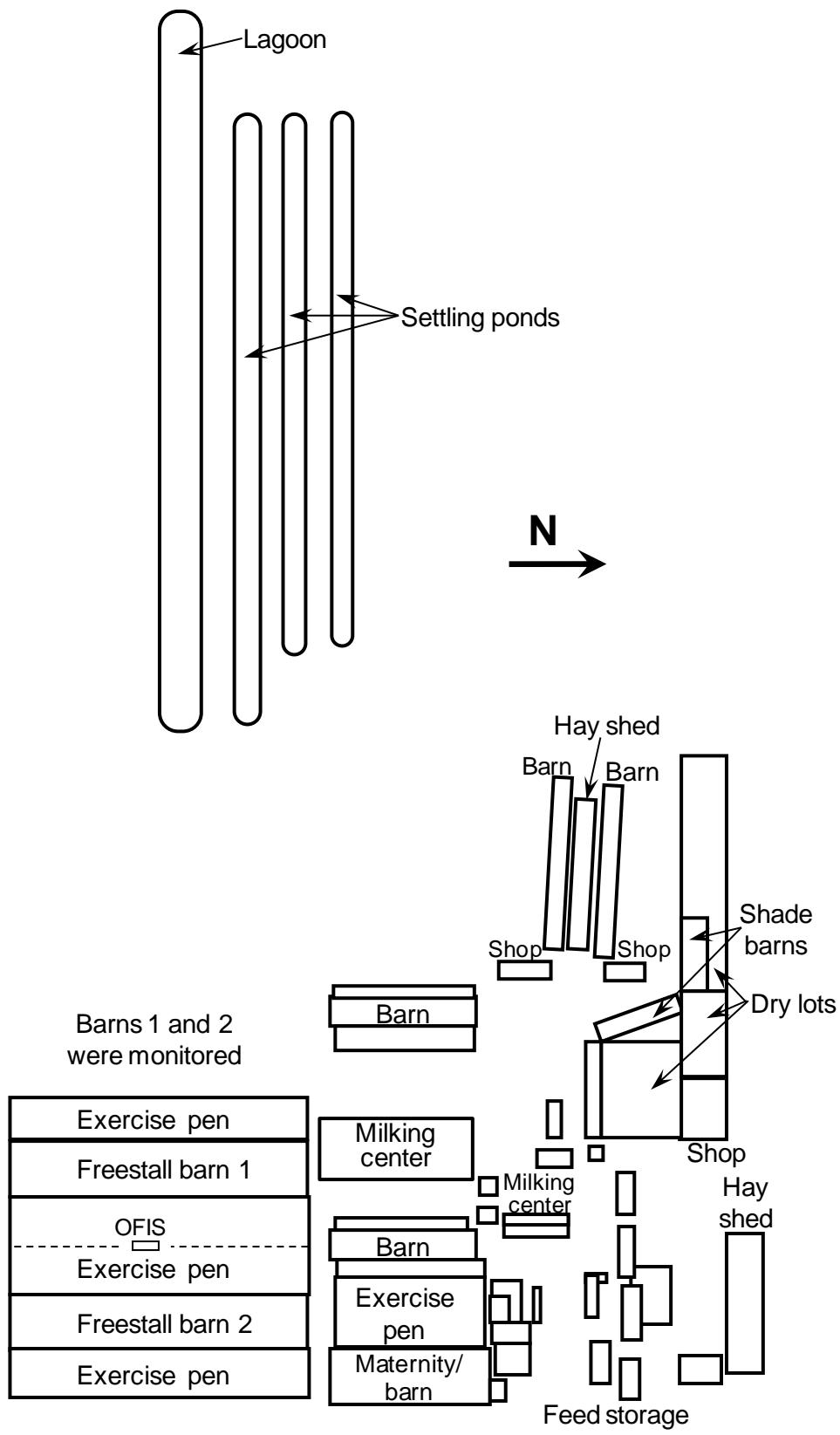


Figure 1. Layout of farm with locations of monitored buildings (freestall barns 1 and 2).

2.3. Significant Events and Modifications

There were some weather, measurement and instrument events that impacted the monitoring period. Rain storms in December, 2007 and January 2008 caused failure of most sonic anemometers, which had to be repaired over the next several months. A bedding change in barn 1 on 5/27/08 caused a significant amount of ambient PM. The animal management and genetics for barn 1 and 2 remained the same during the study. Feed trucks damaged sonic anemometers on 8/20/09 and 3/18/10. Rain caused a failure of three sonic anemometers on 1/7/09.

3. MONITORING AND SAMPLING METHODS

3.1. General Approach

Equipment installation and preliminary testing began on 5/31/07 and concluded on 9/26/07. The site setup and equipment installation followed an approved site monitoring plan, a quality assurance project plan, and instrument or method-specific standard operating procedures.

The monitoring period began on 9/26/07, and concluded on 2/1/10. Target pollutants were NH₃, H₂S, PM (PM₁₀, TSP, and PM_{2.5}), NMHC, and VOC. Appendix A lists the target pollutants, and all measured supporting variables. The monitoring schemes for the two structures are shown in Figures 2 and 3. Table 2 lists the major equipment.

Table 2. Major instrumentation.

Analyzer/Instrument	Serial number
INNOVA 1412 Multi-gas analyzer	710-202
TEI 450i H ₂ S analyzer	709220680
Environics 4040 Dilutor	3923
TEOM 1 (Barn1)	265060701
TEOM 2 (Barn2)	265070701
TEI FH 62C14 (Beta gauge)	E-1292
TEC Model 55C	0713121633
TEI 17C	17C-57419-313

Table 3 summarizes the sampling locations for the various analytes. There were eleven gas sampling location groups (GSLGs) for barns 1 and 2, each with one to six gas sampling probes (Figures 2 and 3). Sonic anemometers were positioned as indicated in Figure 4. Gas-sampling probes were placed at ventilation openings on north and south endwalls, east and west sidewalls and ridge of each barn. The outdoor ventilation inlet location was located at the 1.5 m above the roof of the OFIS.

3.2. Instrument Shelter

The on-farm instrument shelter (OFIS) was located in the exercise lot between barns 1 and 2, approximately halfway down the long axis of the barns (Figure 2). Heated raceways were used to connect the OFIS with each barn, to avoid condensation in the sampling lines during cold weather.

The OFIS was supplied with 3-wire, single-phase, mid-point neutral electric power (100 A at 240 V) by the farm. A copper ground rod was installed at the location of the OFIS, and connected to the OFIS ground. The HVAC system of the OFIS maintained inside temperatures within the operating range of the analyzers, and created a positive pressure with a filtered outside air intake to minimize entry of unfiltered outside air. One set of gas analyzers (Table 4) in the OFIS measured gas concentrations as the gas sampling system (GSS) sequenced through all the gas sampling locations (GSLs). Vacuum pumps and controllers for the PM monitors (Table 4) were located in the OFIS. A microcomputer collected all site monitoring data using a data acquisition and control program AirDAC.

Table 3. Analyte sampling locations.

Analyte(s)	Barn	Sampling location	# probes
Gas (NH ₃ , H ₂ S, NMHC, CO ₂)	2	GSLG 1: south end	2
	2	GSLG 2: ridge*	6
	2	GSLG 3: east side	6
	2	GSLG 4: west side	6
	2	GSLG 5: north end	2
	1	GSLG 6: south end	2
	1	GSLG 7: ridge*	6
	1	GSLG 8: east side	6
	1	GSLG 9: west side	6
	1	GSLG 10: north end	2
	1, 2	GSLG 11: Inlet 1.5 m above OFIS	1
PM _{2.5} , PM ₁₀ , TSP	1, 2	Ridge: Midlength, midwidth, 0.5 m below	2
	1, 2	Inlet: 1.8 m above OFIS roof	1
VOC	2	Ridge, east sidewall, and/or west sidewall	

*1/7, 2/7, 3/7, 4/7, 5/7 and 6/7 of the barn length, centered and 0.5 m below the opening

3.3. Data Acquisition and Control System

The data acquisition and control system consisted of a microcomputer, custom software (AirDAC) written in a commercial programming language (LabVIEW, National Instruments, Austin, TX), distributed I/O hardware (National Instruments FieldPoint modules), and Universal Serial Bus (USB) devices by National Instruments (NI). The NI FieldPoint (FP) modules (Table 4) were selected and configured to acquire data for all the on-line measurement variables (Appendix A).

The 16-channel NI FP-DO-401 digital output module was used to control: 1) sequential switching of multiple gas sampling lines, 2) the raceway heating system, and 3) the GSS cooling fan. Serial communication (RS232) was used to acquire data from the multi-gas monitor and calibration variables (calibration time, gas concentration, etc.) from the gas diluter. Voltage or current analog signals from various analyzers and sensors were connected to FP-AI-112 modules. Type T thermocouples were connected to FP-TC-120 modules. Serial communication (RS485) was used with NI USB to RS485 4-port converters to acquire the digital data from the ultrasonic anemometers during the second year of the study. During the first year, the data from the sonic anemometers was acquired using the analog signal of the sonics with the FP-AI-112 modules.

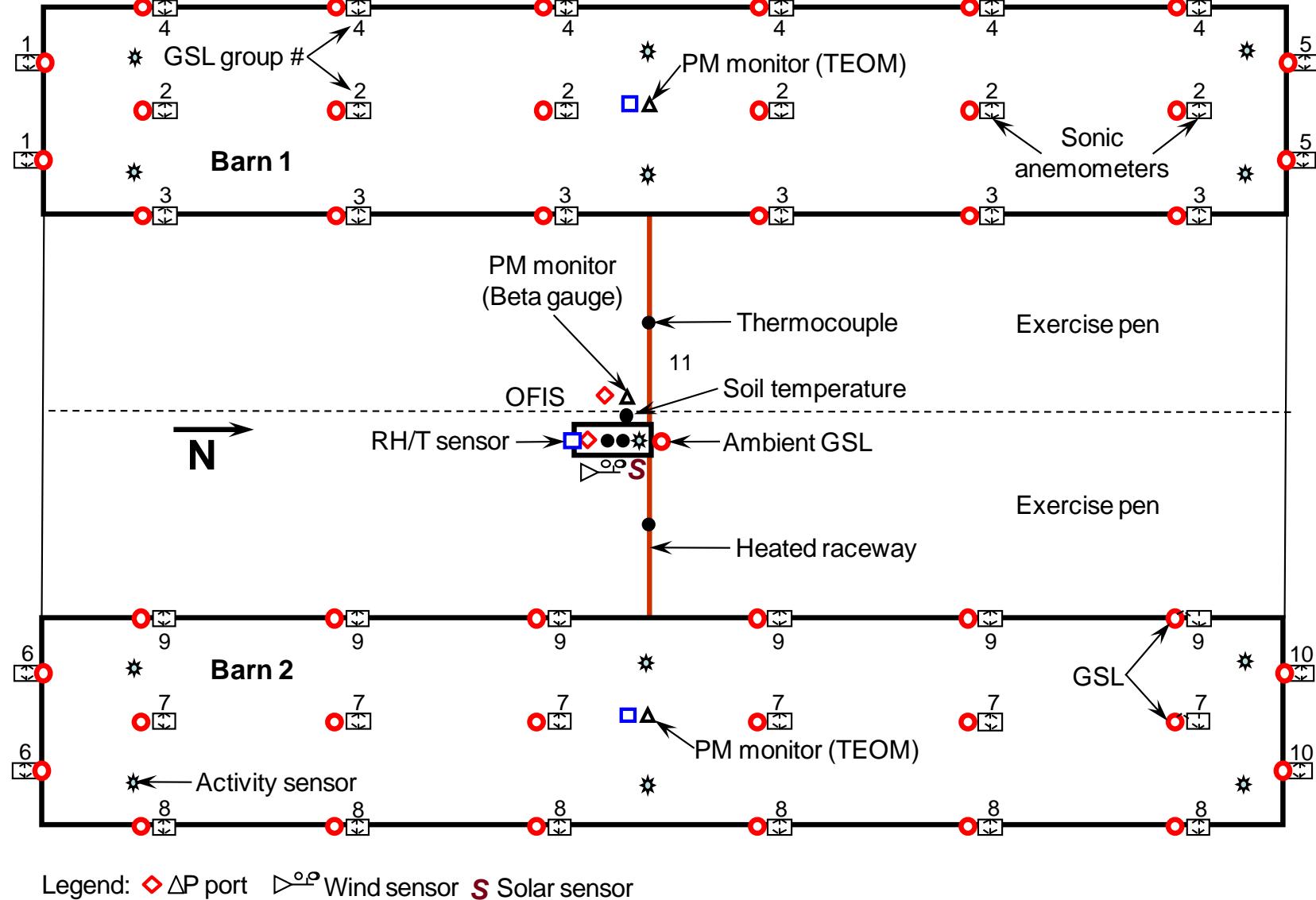


Figure 2. Overhead view of sensor and air sampling locations

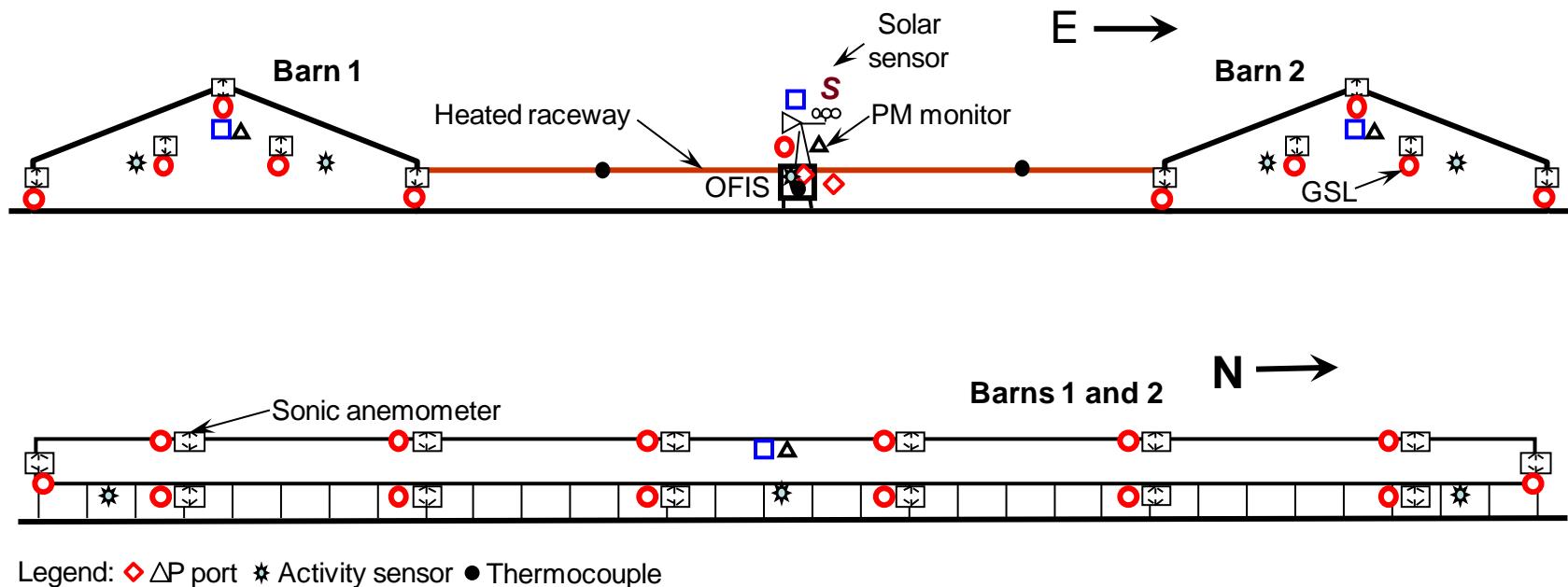


Figure 3. South end and east side view of sensor and air sampling locations.

Table 4. Data acquisition hardware configuration

Manufacturer, model	I/O type	Units	Channels	Notes
NI FP-AI-112	Analog input	3	16	Single-ended, 16-bit
NI FP-TC-120	Thermocouple	1	8	
NI FP-DO-401	Digital output	1	16	2 A at 10-30 VDC
NI USB/RS485 converter	Serial port	1	496	4 channels/sonic

AirDAC averaged the signals (after conversion to engineering units) over 15-s and 60-s intervals and recorded the means into two separate computer files. All real-time data were displayed in tabular and graphic forms for on-site or remote (pcAnywhere, Symantec, Mountain View, CA) viewing (Ni et al., 2009; Ni and Heber, 2010). Measurement alarms, data collection notifications, data files, graphs and statistics of the daily data sets, and modified configuration and fieldnote files were automatically emailed to several recipients after midnight.

3.4. Monitoring and Recording Farm and Building Operation

3.4.1. Animal Husbandry and Building Systems

Infrared motion detectors (activity sensors) were installed to monitor movement of cows and workers in the barn, with six sensors placed in the first, middle, and last frame lines on the middle of each freestall line in B1 and 2 (Figure 2). An activity sensor monitored researcher activity in the OFIS. The farm provided milk production, feed consumption, and pen inventories.

3.4.2. Thermal Environment

Weather data was collected using a solar radiation-shielded capacitance-type relative humidity and temperature probe (RH/T) (Model RHT-WMV, Novus Automation, Porto Alegre, Brazil), a pyranometer (Model LI-200SL, LI-COR, Lincoln, NE) and a cup anemometer (RM Young, Traverse City, MI), all of which were mounted on a 1-m aluminum tower on the roof of barn 2 (Figure 2).

RH/T sensors were located in ridge in B1 and 2, close to the sampling locations (Figure 2). An RH/T sensor (Humitter 50 Y) was also located in GSS to measure sample temperature and humidity.

Each sonic was used to measure temperatures in barns 1 and 2.

Four type T thermocouples were also located in the heated raceways between the barns and the OFIS. Also, two thermocouples were located in B1 and 2 raceways in OFIS. One TC was located in the OFIS to measure the temperatures of the OFIS and the air-conditioning system. Also, one RH/T sensor was located in roof tower of OFIS to monitor the temperature and relative humidity conditions in the ambient PM monitor enclosure.

3.4.3. Building Airflow

Building airflow was determined by multiplying the upwind speeds supplied by the weather station on the ridge of barn 2 by the upwind opening area. Since the barns were identical, the airflows were identical as well.

3.4.4. Biomaterials Sampling Methods and Schedule

All analyses of biomaterials were performed by an independent laboratory (Midwest Laboratories, Omaha, NE).

Daily records of feed consumption were manually recorded by the farm. The producer did not weigh refused/uneaten feed.

The daily milk production was recorded daily, and was copied electronically from the farm computer.

Representative manure samples were collected from the reception lane for the flushed manure in B1 and 2. Sampling was conducted approximately bimonthly during the second year of the study. Samples were sent overnight on ice in an insulated cooler to Midwest Labs for analysis. The samples were analyzed for solids content, total N, and ammonical N to provide data for the nitrogen balance of the barns.

Six samples of fresh bedding (scraped soil and manure solids blended with almond shells or rice hulls) were sampled from each barn at the same time as manure sampling. The frequency and amounts of bedding additions were obtained from the producer.

3.5. Particulate Matter Monitoring

Real-time PM monitors (TEOM Model 1400a, Thermo Fisher Scientific, Waltham, MA) continuously sampled exhaust PM. The TEOMs were on elevated platforms underneath the ridge openings at the center of the barn to sample exhaust air (Figures 2 and 3).

A beta attenuation PM monitor (Beta gauge Model FH62C-14, Thermo Fisher Scientific, Franklin, MA) continuously measured ambient air above the OFIS, and was assumed to represent the barn inlet PM concentration (Figures 2 and 3).

At any one time, the sampled PM size class at both TEOMs and the Beta Gauge was either PM₁₀, PM_{2.5} or TSP. The PM₁₀ inlet heads on the TEOMs and Beta Gauge were replaced with PM_{2.5} heads in February 08, October 08, January 09 and July 09 for 11, 9, 27 and 10 d, respectively (Table 5). The TSP inlet heads were placed on the TEOMs for five 8-29 d periods. The PM₁₀ concentration was measured at all other times.

3.6. Continuous Gas Sampling and Monitoring

Air samples for continuous gas measurements were collected from multiple gas sampling probes with a custom-designed GSS. Each probe was connected to the GSS with Teflon tubing. Tubular raceways between the OFIS and the monitored barns protected the sampling lines and data signal cables. The sampling lines were wrapped with insulation and heated inside the raceways and at other locations vulnerable to cold air to prevent condensation inside the tubes.

There were 22 gas sampling locations (GSLs) per barn (Table 1, Figures 2 and 3). Each GSL was located at a sonic anemometer; specifically, the six sonics in each barn ridge, the two in each endwall (four per barn), and the six in each sidewall opening (12 per barn) were paired with GSLs.

The 22 sampling locations were grouped into five GSL groups (GSLGs), such that the individual sampling lines of each sidewall (six lines), endwall (two lines), or ridge (six lines) fed into a single sample. This was accomplished through the use of a Teflon mixing manifold for each sidewall and ridge GSLG, and a Teflon tee for each endwall. Because the lines joining the sidewall and ridge GSLs to their respective mixing manifolds differed significantly in length, flow restrictors were used to equalize the flow rates in each line; otherwise, higher flow rates in some lines would cause the GSLG to be biased spatially towards the regions of the barn closest to the manifold (i.e. with the shortest lines). The outputs of the mixing manifolds were each drawn to the gas sampling system located in the OFIS.

The probe for sampling ambient air was placed on top of the OFIS. However, this measurement was not used to represent the incoming gas concentrations. Rather, gas concentrations in the wall GSL samples were treated as “inlet concentrations” when the flow was entering the barn. The exhaust concentration was represented by the ridge concentration.

The barn GSLG's were sampled sequentially for 10 min each. The ambient location was monitored at least twice daily, originally with a 20-min sampling period and then 10 min from 10/18/07 to 1/29/08. The ambient sampling period was increased to 30 min on 1/29/08. The ambient air sampling was abandoned in 1/26/09.

One set of gas analyzers in the OFIS was used to sequence through all the GSLs. Hydrogen sulfide was measured with a fluorescence H₂S analyzer (Model 450C, Thermo Fisher Scientific, Waltham, MA). Concentrations of NH₃ and CO₂ were measured with a photoacoustic infrared multi-gas monitor (INNOVA Model 1412, LumaSense Technologies, Ballerup, Denmark), which was configured to measure total non-methane hydrocarbons, methane, ethanol, and methanol. Concentrations of methane and non-methane hydrocarbons were also measured with the non-methane hydrocarbon analyzer (Model 55C, Thermo Fisher Scientific, Waltham, MA).

3.7. VOC Sampling

Grab samples of VOC were collected at barn 2's ridge and/or sidewalls (Table 3), using methodology based on methods TO-15 and TO-16. Sampling was conducted with 6-L stainless-steel canisters (TO-Can, Restek Corp, Bellefonte, PA), equipped with ¼" bellows valves (Swagelok SS4H) and 207-kPa vacuum gauges. Sampling trains contained flow controllers (Veriflo Model 423XL, Parker-Hannifin Corp., Richmond, CA) with 2- to 4-sccm critical orifices and 7-µm in-line stainless steel filters. Canisters evacuated to -30 psi in the laboratory, shipped to the site, opened at the sampling location, and allowed to fill. Thus, the same volume was collected in each sample, and the short grab period enabled selection of intervals during which the sampling location would represent an inlet to the barn. Sampling was conducted seven times between 5/26/09 and 2/22/10, with duplicate samples typically collected at each location. All canisters were cleaned and passed QC before sample collection.

Canister samples were analyzed at Purdue University's Trace Contaminant Laboratory. The canisters were pressurized to +207 kPa with ultrapure N₂, and transferred to TDS tubes (Carbotrap 300, Supelco, Bellefonte, PA). The pressurized canisters initially yielded sample

flows of 50 mL min⁻¹ during sample transfer to tubes. Canister heating was introduced when a canister pressure decreased to 13.8 kPa to ensure maximal transfer of nonvolatile components.

Table 5. Sampling schedule for PM₁₀, TSP, and PM_{2.5}.

Time and day, m/d/y		Test duration, d		
Start	Stop	PM10	TSP	PM2.5
9/26/07	1/20/08	116.5		
1/20/08	2/18/08		29.0	
2/18/08	2/29/08			11.0
2/29/08	6/4/08	95.9		
6/4/08	6/12/08		7.8	
6/12/08	6/23/08		10.9*	
6/12/08	6/23/08	10.9**		
6/23/08	9/11/08	80.1		
9/11/08	10/2/08		20.8	
10/2/08	10/11/08			8.8
10/11/08	1/14/09	95.6		
1/14/09	1/27/09		12.9	
1/27/09	2/23/09			26.7
2/23/09	6/15/09	112.2		
6/15/09	7/7/09	22.0†		
6/15/09	7/7/09		22.0‡	
7/7/09	7/17/09			9.8
7/17/09	7/22/09			5.1‡‡
7/17/09	7/22/09	5.0 ††		
7/22/09	9/26/09	66.0		
Totals		566	70	56

*All except ambient

**Only ambient

†Only UCD

††Only B1

‡All except UCD

‡‡All except B1

Samples were analyzed on a thermodesorption-gas chromatograph-mass spectrometer (TDS-GC-MS), consisting of a gas chromatograph (Model 6890, Agilent Technologies, Palo Alto, CA) coupled with a Model 5795 mass spectrometer detector (Agilent Model 5795) and equipped with a thermal desorption system (Model TDS-G, Gerstel, Baltimore, MD) and a cooled injection system (Gerstel CIS). The GC-MS passed a leak check prior to analyzing each set of samples. Compounds were separated on a 60 m x 0.25 mm x 1 μm column. The detector utilized the full scan mode covering masses from 27-270 Daltons in 8 scans s⁻¹. The MS quad hold temperature

was 150°C, and the MS source hold temperature was 230°C. The analytical results were analyzed by ChemStation, and all integrations were manually checked. This method used an external standard compound for instrument monitoring and QA to avoid losses of low-molecular-weight analytes that would occur when purging solvent used with internal standard(s). All TDS tubes were cleaned with a tube conditioning system (Gerstel TC-2 TDS) for 3.5 h at 350°C prior to each use.

Response curves were generated at both the beginning and the end of the VOC analysis period. The response curves of all chemical standards reach good linearity as 55% of the response curves had $R^2 > 99\%$ and over 98% had $R^2 > 95\%$. Toluene was used as an external standard that was analyzed during each batch of samples to assure quality. The relative bias and standard deviation of 97 toluene checks were -4.3% and 18.8%, respectively. The uncertainty of the mean of duplicate field samples was calculated as 27%, based on the toluene checks.

3.8. Documentation of Quality Assurance

3.8.1. Oversight, Maintenance, and Calibration

UCD personnel visited the site frequently during the first few months of the study; that frequency declined as the site operation became more routine, and then increased again as more troubleshooting was required on various equipment in the second year. A total of 112 and 66 visits were made during the first and second half of the monitoring period. Remote checking via the internet was conducted by UCD and/or Purdue on a near-daily basis.

The NAEMS Science Advisor audited the site on 9/6/07. The Environmental Protection Agency (EPA) conducted site audits on 6/5/08 and 10/1/09.

Various site maintenance and calibration activities were conducted by site personnel (Appendix B). Specific quality assurance tests of the GSS, gas analyzers, etc. are discussed below.

3.8.2. Gas Sampling System

Two types of GSS leak tests were conducted. The first test examined GSS integrity, by briefly creating a “dead head” against the pump by closing all solenoid valves, while measuring exhaust airflow with a portable rotameter, and recording the leakage flow with the GSS mass flow meter. The second test consisted of monitoring GSS flow and pressure after manually setting AirDAC to sample from a particular GSL and plugging that GSL’s gas sampling probe, which created a GSS manifold vacuum of about -70,000 Pa or 0.31 atm. Preliminary tests indicated that GSS flows under dead-head conditions that were 10% or less ($<0.45 \text{ L min}^{-1}$) of the normal GSS flow rate of 4.5 L min^{-1} were indicative of leak-free operation under normal GSS manifold vacuums of -5,000 to -8,000 Pa (0.93-0.96 atm). Leak tests of the GSS were conducted on 8/30/07, 9/6/07, 4/29/08 and 12/3/08. The dead-head leakage flows measured on 8/30/07 and 12/3/08 were 100 and 60 mL/min which were significantly less than the 0.45 L min^{-1} threshold. Automatic GSS leak checks were started on 5/22/09.

A systematic checking of individual sampling lines was conducted on 9/6/07 and a leak was observed above the GSS and was fixed.

3.8.3. Gas Analyzers

Gas measurements were evaluated (Appendix B) using multipoint calibrations and zero and span checks. The gas concentration data output by the analyzers was adjusted to correct for bias introduced by the gas sampling and measurement system.

3.8.3.1. Correction of Ammonia Concentrations

A multipoint calibration (MPC) was conducted through the challenge line seven times using purified air (Cat. # AI0.0CE-T, CEM zero-grade, Praxair, Indianapolis, IN) and four span concentrations of NH₃ (Cat. # NI-AM5MP-AS, Praxair Primary Standard). Each MPC was conducted with replication (Table 6). The NH₃ was delivered using a 6-port gas dilutor (Model 4040, Environics, Tolland, CT). The minimum and average R² values of the MPCs were 0.978 and 0.998, respectively, indicating linearity of the instrument response to standard gas between 1 and 37 ppm.

Table 6. Multipoint calibration record and results for the NH₃ measurements.

Date	# of points	Concentration, ppm		R ²
		Minimum	Maximum	
01/25/08	4	12	37	0.998
05/16/08	4	5	30	0.998
09/03/09	4	1	3	0.978

Precision checks were conducted periodically using zero and span gases (Z/S checks), delivered via the dilutor through the challenge line, and responses were recorded to monitor changes in system performance over time. Span checks were conducted with 20-40 ppm of NH₃ prior to February, 2009, and 3-15 ppm (most frequently 3 ppm) thereafter.

The average response of the analyzer to the zero and span gas applications was assessed (Appendix C), and the results were combined based on changes to the instrument or GSS to create linear correction models (Table 7). The models were used to correct instrument readout data. The measurement accuracy was assessed based on model-corrected zero and span checks (Table 7).

Table 7. Concentration correction and measurement accuracy for ammonia.

Start/end dates	# of checks		Linear model	Accuracy, % of span				
	Zero	Span		Bias		Precision		
				z	s	z	s	
9/26/07-1/4/08	6	6	y=1.0185x+0.211	1.1	1.3	0.3	1.8	
1/4/08-6/19/08	6	6	y=1.0585x-0.072	0.1	0.8	0.2	5.8	
6/19/08-2/10/09	10	10	y=1.1153x-0.036	-0.1	-0.4	0.6	2.5	
2/10/09-2/28/09	2	2	y=1.4290x-0.059	0.1	-0.1	1.8	2.1	
2/28/09-8/16/09	6	6	y=1.2937x-0.047	-0.3	-12.3	0.6	13.6	
8/20/09-1/23/10	10	10	y=0.9518x -0.031 to y=2.2629x + 0.102*					

* With linear interpolation of coefficients across the interval

3.8.3.2. Correction of Hydrogen Sulfide Concentrations

An MPC was conducted through the challenge line six times (Appendix B, Table 8) using purified air (Cat. # AIO.OCE-T, Praxair CEM zero air) and three span concentrations (Cat. # NI-HSR1E-AS, Praxair EPA Protocol Standard). Each MPC was conducted with replication. The H₂S was delivered using a 6-port dilutor (Model 040, Environics, Tolland, CT). The R² values of each MPC were 0.998 or above, indicating excellent linearity of instrument response to standard gas between 0 and 4000 ppb.

Table 8. Multipoint calibration record and results for the H₂S measurements.

Date	# points	Span concentration, ppb		R²
		Minimum	Maximum	
09/27/07	4	1,335	4,005	0.999
01/25/08	3	668	979	0.999
05/16/08	3	487	1,040	0.999
10/02/08	4	92	400	0.998
09/16/09	4	74	319	0.999
10/25/09	4	123	496	0.999

Precision checks were conducted periodically using zero and span gases (Z/S checks), delivered via the dilutor through the challenge line, and responses were recorded to monitor changes in system performance over time. Span checks were typically conducted with 1000 ppb H₂S prior to September, 2008. After 9/08, lower concentrations (100-400 ppb) were used for span checks. The average response of the analyzer to the zero and span gas applications was assessed and the results were combined based on changes to the instrument or GSS to create linear gas correction models (8), that were then used to correct instrument readout data. The H₂S/air blend used from April-September 2008 degraded significantly prior to the expiration date, and was replaced with H₂S/nitrogen blends by Praxair. Therefore, only span check data obtained from stable H₂S/nitrogen blends were included in the development of the gas correction models.

Measurement accuracy was assessed based on model-corrected zero and span checks (Table 9).

Table 9. Concentration correction and measurement accuracy for hydrogen sulfide.

Start/end dates	# of checks		Linear model	Accuracy, % of span				
	Zero	Span		Bias		Precision		
				Z	S	Z	S	
9/26/07-1/22/08	5	5	y=1.2712x-1.91	0.0	0.6	0.0	0.9	
1/22/08-5/12/08	5	5	y=1.0336x-0.14	0.0	-0.5	0.0	1.2	
5/12/08-9/12/08	5	5	y=0.9835x-5.01	0.0	-0.2	0.1	3.6	
9/12/08-2/5/09	5	5	y=1.1264x-4.47	0.0	0.7	0.1	0.4	
2/5/09-5/13/09	6	6	y=1.1903x-4.60	0.1	1.4	0.5	3.0	
5/13/09-8/6/09	2	2	y=1.1874x-5.34	0.0	0.3	0.0	0.3	
8/6/09-11/19/09	2	2	y=0.99x-2.54	0.0	0.3	0.2	2.5	
11/19/09-2/1/10	2	1	y=1.03x-1.09	-0.2	-0.4	0.3	-	

3.8.3.3. Noise Tests

Noise tests of the ammonia analyzer were conducted to assess the minimum detection limit (MDL) of ammonia measurements. The analyzers measured CEM zero air (Praxair Cat. # AIO.OCE-T CEM) continuously for 36 to 59 min after equilibrium of the instrument readout was reached. Tests were conducted with dry and humidified air. The MDL was calculated as three times the standard deviation of the data collected during the equilibrated period (Table 10).

Table 10. Noise test of ammonia analyzer with dry air on 6/28/10.

Condition	Statistical variable, ppm				Duration, min	T_{dew} , °C
	Min	Max	SD	MDL		
Dry air	-0.21	0.07	0.06	0.15	36	-157
Humidified air	0.20	0.47	0.06	0.15	59	11.1

3.8.4. Particulate Matter Analyzers

The quality of the exhaust PM data collected by the TEOMs was assessed through flow and leak checks (Tables 11 and 12). The criteria for total and main flows were 16.67 ± 1.0 and 3.0 ± 0.2 L min^{-1} , respectively. The leakage criteria were ≤ 0.62 and ≤ 0.15 L min^{-1} for total and main flows, respectively. Both TEOMs passed all leak and flow tests.

Table 11. Quality assurance tests of the Barn 1 TEOM.

Date	Time since last test, d	TEOM flows, L·min ⁻¹		Leak test flows, L·min ⁻¹	
		Main	Total	Main	Auxiliary
9/10/07	0	2.99	16.65	0.09	0.22
2/22/08	166	2.99	16.64	-	-
8/18/08	179	2.99	16.63	0.13	0.31
2/17/09	184	2.99	16.63	0.10	0.21
9/16/09	212	2.99	16.63	0.10	0.23
7/9/10	297	2.98	16.62	0.14	0.26

Table 12. Quality assurance tests of the Barn 2TEOM.

Date	Time since last test, d	TEOM flows, L min ⁻¹		Leak test flows, L min ⁻¹	
		Main	Total	Main	Auxiliary
9/10/07	0	3.00	16.66	0.09	0.28
2/22/08	166	2.99	16.64	-	-
8/18/08	179	2.99	16.63	0.09	0.22
2/17/09	184	2.99	16.63	0.12	0.19
9/16/09	212	2.99	16.63	0.13	0.28
7/9/10	297	2.99	16.63	0.10	0.15

Flow checks were also conducted periodically on the inlet PM monitor (Table 13). The total flow check criteria of $<4\%$ were met on all dates.

Table 13. Inlet PM monitoring quality assurance parameters.

Date	Time since last test, d	Mass verification, %	Total flow check, %
1/25/08		n/a	3.5
8/18/08	207	n/a	3.0
1/14/09	150	n/a	4.0
7/7/09	175	n/a	2.5
4/29/10	287	n/a	3.5

The TEOM measurements were also evaluated based on collocated measurements of all three PM types (Table 14) after 7/9/10. The relative percent difference between the hourly averages for each TEOM and their average measurement was calculated. The differences in average PM₁₀, TSP and PM_{2.5} concentrations over the collocation periods were 12.7, 6.8 and 64.3%, respectively.

Table 14. TEOM collocation test results.

PM type	Average concentration, $\mu\text{g}\cdot\text{m}^{-3}$		Difference, %
	Barn 1 TEOM	Barn 2 TEOM	
PM ₁₀	55	71	12.7
TSP	94	82	6.8
PM _{2.5}	23	5	64.3

3.9. Data Analysis

3.9.1. Software

All emission data processing was conducted using custom software (CAPECAB, Fibre Recovery Systems, Inc, Calgary, AB). Data was carefully inspected and validated. If a datum was invalid for a known reason, the datum was marked (flagged) invalid and all calculations dependent on that datum were also invalid unless a substitution datum was identified.

If the QA/QC checks described above indicated a measurement bias, the data was corrected prior to calculating emissions. The CAPECAB program provided a robust method to inspect data, invalidate if necessary, and implement various corrections over specified time periods.

3.9.2. Data substitution, validation, correction and uncertainty

3.9.2.1. Environmental Sensors

Exhaust air temperatures for each barn were those measured at the ridge in B1 and 2. Barn relative humidity (RH) was the average of the RH readings from the NOVUS sensors at ridge. The INNOVA T_{dew} readings for the ambient location were converted to RH, and RH was converted to humidity ratio using the standard conversion equations. Intervals of invalid data due to sensor failures or noise occurred with all three of the RH/T sensors at the exhaust locations, and with the roof-top ambient sensor.

Solar radiation data was corrected to account for a -103 W m^{-2} zero offset of the pyranometer based on nighttime readings.

The ultrasonic anemometers were used to measure the temperatures at each GSL.

3.9.2.2. Sonic Anemometers

The most commonly observed problem was noise on or failure of the sonic anemometers, generally due to water entering the anemometer housing, and damaging the electronics. For example, sonics 1W, 4B and 4F failed on 7/12/08. However, since the final airflow calculations utilized the wind direction data from the weather tower instead of the anemometers; this did not result in loss of emissions data.

3.9.2.3. Gas Concentrations

Times were specified in the data processing software for gas concentration measurements to stabilize based on gas and sampling location (Table 15). Linear interpolation of corrected gas concentrations was used to fill in concentrations for each minute between two valid concentration measurements at a sampling location, up to a specified maximum interpolation interval.

Table 15. Gas concentration data validation and interpolation requirements.

Gas	Exhaust sampling locations		Inlet sampling location	
	Equilibration period, min	Maximum interpolation interval, min	Equilibration period, min	Maximum interpolation interval, min
NH ₃	7	300	15	3000
H ₂ S	7	300	10	3000

Gas and water vapor concentrations, and sample relative humidity, temperature, pressure, flow rate, and flow direction were automatically invalidated during all gas analyzer MPCs and Z/S checks, and when sample $Q < 3.5 \text{ L min}^{-1}$. Gas and PM data were invalidated under conditions of calm wind conditions ($< 1 \text{ m/s}$). Gas concentration data was invalidated whenever the GSS failed leak tests.

Gas concentration data were invalidated due to service on the INNOVA 1412. The analyzer was returned to the vendor for installation of additional optical filters, and to the manufacturer in Denmark for full recalibration. Approximately 74 d of NH₃, and water-vapor concentration data were lost due to this downtime.

The 55C failed on 12/31/07 and 3/18/10 and was repaired.

Standard gas concentrations were calculated on dry and moist bases with Eqns. 3-1 and 3-2, respectively.

$$C'' = \frac{C'}{(1-W)} \quad (3-1)$$

and

$$C' = \frac{P' \cdot c \cdot M}{R \cdot (273 + T')} \quad (3-2)$$

Where:

- C'' Standard mass concentration, dry basis ($\text{mg d}^{-1}\text{sm}^{-3}$ or $\mu\text{g d}^{-1}\text{sm}^{-3}$)
- C' Standard mass concentration, moist-air basis (mg sm^{-3} or $\mu\text{g sm}^{-3}$)
- P' Standard pressure (1 atm)
- T' Standard temperature (20°C)
- c Volumetric concentration of gas (ppm or ppb)
- M Molecular weight of gas (g mol^{-1})
- R Universal Gas Constant ($0.08206 \text{ L atm mol}^{-1} \text{ }^\circ\text{K}^{-1}$)
- W Humidity ratio

3.9.2.4. PM concentrations

Prior to 2/22/08, the TEOM flow rates were erroneously internally adjusted to 16.7 L min^{-1} based on standard conditions (20°C and 1 atm). The majority of the PM data was acceptable, however, because the TEOM flow rates corrected for actual air density were almost always within the required 15.7 to 17.7 L min^{-1} range. Periods when the corrected flow was outside this range were invalidated. The TEOM settings were changed on 2/22/08 to adjust the flow to 16.7 L min^{-1} based on actual rather than standard air density.

The TEOMs were configured to output the PM concentration data at the surrounding temperature and atmospheric pressure until 2/18/08, at which time they were reconfigured to output the PM data at standard conditions (20°C , 1 atm). All PM concentration data prior to 2/18/08 was corrected to standard conditions.

Dry standard PM concentrations were obtained by dividing raw concentrations by the air humidity ratio.

3.9.3. Emission calculations

3.9.3.1. Particulate matter

PM emissions were calculated with Eqn. 3-3.

$$E = \left(Q_o \cdot P_o \cdot \left(\frac{273 + 20}{273 + T_o} \right) \right) \cdot (c'_o - c'_i) \quad (3-3)$$

Where:

- E Net PM emission rate ($\mu\text{g s}^{-1}$)
- Q_o Exhaust airflow rate at T_o ($\text{m}^3 \text{ s}^{-1}$)
- P_o Pressure of exhaust air (atm)
- c'_o PM concentration of exhaust air ($\mu\text{g m}^{-3}$)
- c'_i Ambient or inlet PM concentration ($\mu\text{g m}^{-3}$)
- T_o Temperature of exhaust air ($^\circ\text{C}$)

3.9.3.2. Gases

Stream-specific gas emissions were determined as follows:

$$E = Q_o \cdot \frac{P_o \cdot M}{R \cdot (273 + T_o)} \cdot (c_o - c_i) \quad (3-4)$$

Where:

E	Stream or barn emission rate (mg s^{-1} or $\mu\text{g s}^{-1}$)
Q_o	Stream or barn outlet moist airflow rate at T_o ($\text{m}^3 \text{s}^{-1}$)
P_o	Exhaust air pressure (atm)
M	Gas molecular weight (g mol^{-1})
R	Universal Gas Constant ($0.08206 \text{ L atm/mol}^{-1} \text{ K}^{-1}$)
T_o	Exhaust air temperature ($^{\circ}\text{C}$)
c_o	Exhaust air concentration (ppm or ppb)
c_i	Ambient or ventilation air inlet concentration (ppm or ppb)

Barn emissions were the summation of the stream emissions. Barn emission was divided by variables (barn inventory) or constants (floor area), to normalize emissions to site-specific characteristics.

3.9.3.3. Volatile organic compounds

The total VOC concentration was multiplied by average building airflow rate over the VOC sampling period to yield an average emission rate. If two samples were successfully collected for a building at one sampling event, the average concentration was used in the calculation.

4. RESULTS

4.1. Farm Production Information

The farm production information, including animal inventory and milk production are presented in Appendix E . Occupancies in barns 1 and 2 averaged 514 and 554 hd and milk yield averaged 30.2 and $37.3 \text{ kg d}^{-1} \text{ cow}^{-1}$, respectively.

4.2. Characteristics of Biomaterials

The characterization of the manure, incoming bedding and feed are presented in Appendix D. The solids content of the manure ranged from 12-15%, except for the 6/15/09 sampling event, which had a solids content of 30%. Nitrogen content of the manure ranged from 0.32 to 0.67% (wet-basis). Ammonical N contents ranged from 0.02 to 0.05%. The nitrogen content of the bedding ranged from 1.25 to 1.73% (wet-basis). Feed N content ranged from 0.97% to 1.30%.

4.3. Environmental Conditions

4.3.1. Ambient Conditions

Average monthly climatic data for the weather station nearest the site (the airport at Modesto, CA) is presented in Table 16. Historical average high temperatures ranged from 12°C in the winter to 35°C in the summer. Average overnight lows ranged from 3°C in winter to 16°C in

summer. Prevailing winds were from the southeast from November through February, and from west to west-northwest during the rest of the year.

Table 16. Monthly climate description (Modesto, CA).

Month	Temperature*, °C			Wind speed, km·h ⁻¹	Wind direction
	High	Low	Mean		
January	12	3	8	13	SE
February	16	5	12	13	SE
March	19	6	14	15	WNW
April	23	8	17	15	WNW
May	28	11	20	17	W
June	32	14	23	18	W
July	35	16	26	16	WNW
August	34	16	25	15	WNW
September	31	14	23	14	WNW
October	26	10	18	12	WNW
November	17	6	12	12	SE
December	12	3	8	13	SE
Annual Average	24	9	17.2	14.4	

Source: <http://www.weather.com/weather/wxclimatology/monthly/USCA0714>

Table E1 shows the daily average outdoor temperature, relative humidity, wind speed, wind direction, solar radiation and barometric pressure. The ADM temperature during the study was $16.3 \pm 6.5^\circ\text{C}$ ($n=776$), very close to the annual historical average of 17.1°C . The DM wind speed ranged from 0.3 to 10.1 m s^{-1} (1.1 to 36.4 km h^{-1}), and the ADM was 2.0 m/s (7.2 km h^{-1}), which lower than the historical annual average of 14.4 km h^{-1} .

The wind direction was from the NE, SE, S and NW for 4.5, 21.2, 4.7 and 69.6% of the time. Northerly winds (winds with a northerly component) occurred 74% of the time and southerly winds occurred 26% of the time.

4.3.2. Barn Conditions and Airflow

The daily average barn inside temperatures, RH and airflow rates are presented in Table E2, and the temperature and available barn airflow rate data are plotted in Figure 4. The ventilation rate ranged from approximately $225 \text{ dsm}^3 \text{ s}^{-1}$ to $6230 \text{ dsm}^3 \text{ s}^{-1}$. The overall average ventilation rates were $1152 \pm 695 \text{ dsm}^3 \text{ s}^{-1}$ for each barn, respectively.

4.4. Particulate Matter Concentration and Emission

4.4.1. PM₁₀

The DM inlet PM₁₀ concentration ranged from 6 to $162 \mu\text{g dsm}^{-3}$, whereas the DM B1 and B2 PM₁₀ exhaust concentrations ranged from -4 to 173 and -2 to $192 \mu\text{g dsm}^{-3}$, respectively (Table E3).

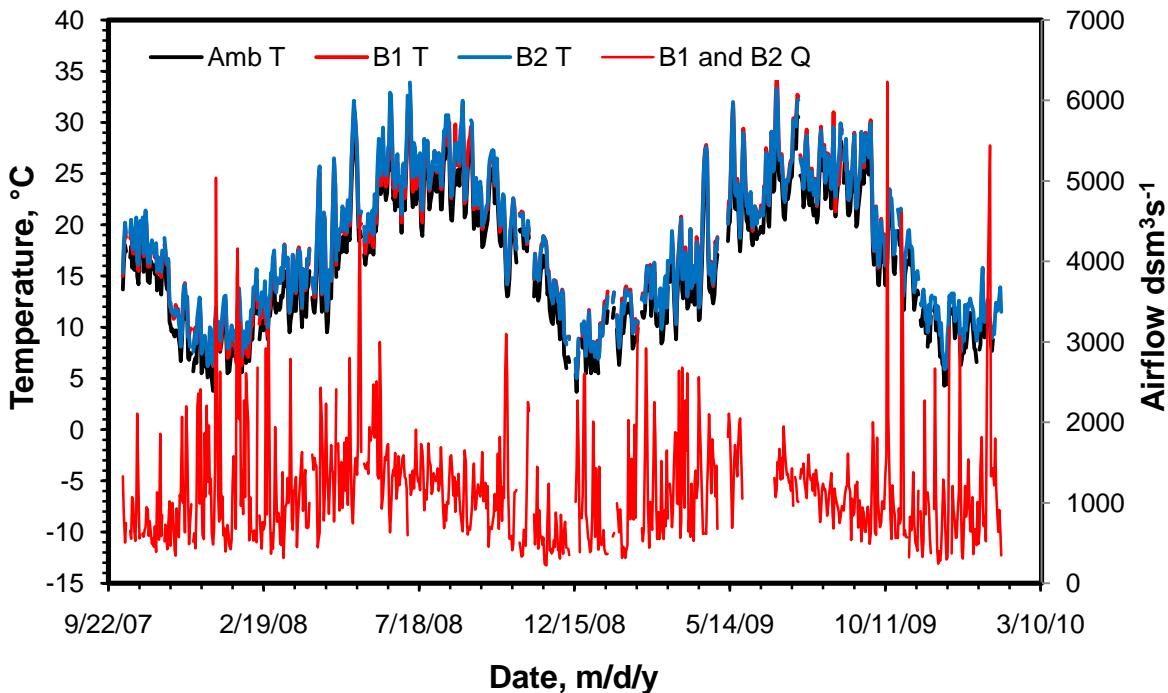


Figure 4. Inlet and barn temperatures (T) and dry standard airflow rates.

The ADM (\pm SD) inlet, B1, and B2 PM₁₀ concentrations were 48 ± 31 , 44 ± 34 , and 51 ± 38 $\mu\text{g dsm}^{-3}$, respectively, based on 586, 473 and 494 valid days of data, respectively.

The overall mean PM₁₀ emission rates (Table E4) were $-0.33\pm1.11 \text{ kg d}^{-1}$ ($-0.055\pm0.188 \text{ g d}^{-1}\text{cow}^{-1}$) from B1 ($n=520$) and $0.59\pm2.14 \text{ kg d}^{-1}$ ($0.101\pm0.363 \text{ g d}^{-1}\text{cow}^{-1}$) from B2 ($n=451$) (Figure 5).

4.4.2. PM_{2.5}

Daily mean PM_{2.5} concentrations during four sampling runs ranged from 4.4 to 25.3 $\mu\text{g dsm}^{-3}$ in the inlet air ($n=54$ d), -13.6 to 14.6 $\mu\text{g dsm}^{-3}$ in B1 exhaust air ($n=47$ d) and from -18.3 to 20.9 $\mu\text{g dsm}^{-3}$ in B2 exhaust air ($n=54$ d) (Table E3). The ADM inlet, and B1 and B2 exhaust PM_{2.5} concentrations were 11.8 ± 4.6 , 4.4 ± 4.9 and 7.8 ± 7.5 $\mu\text{g dsm}^{-3}$, respectively.

The overall mean PM_{2.5} emission rates (Table E5) were $-0.91\pm1.41 \text{ kg d}^{-1}$ ($-0.15\pm0.24 \text{ g d}^{-1}\text{cow}^{-1}$) from B1 ($n=47$) and $-0.61\pm1.56 \text{ kg d}^{-1}$ ($-0.10\pm0.27 \text{ g d}^{-1}\text{cow}^{-1}$) from B2 ($n=54$) (Figure 6).

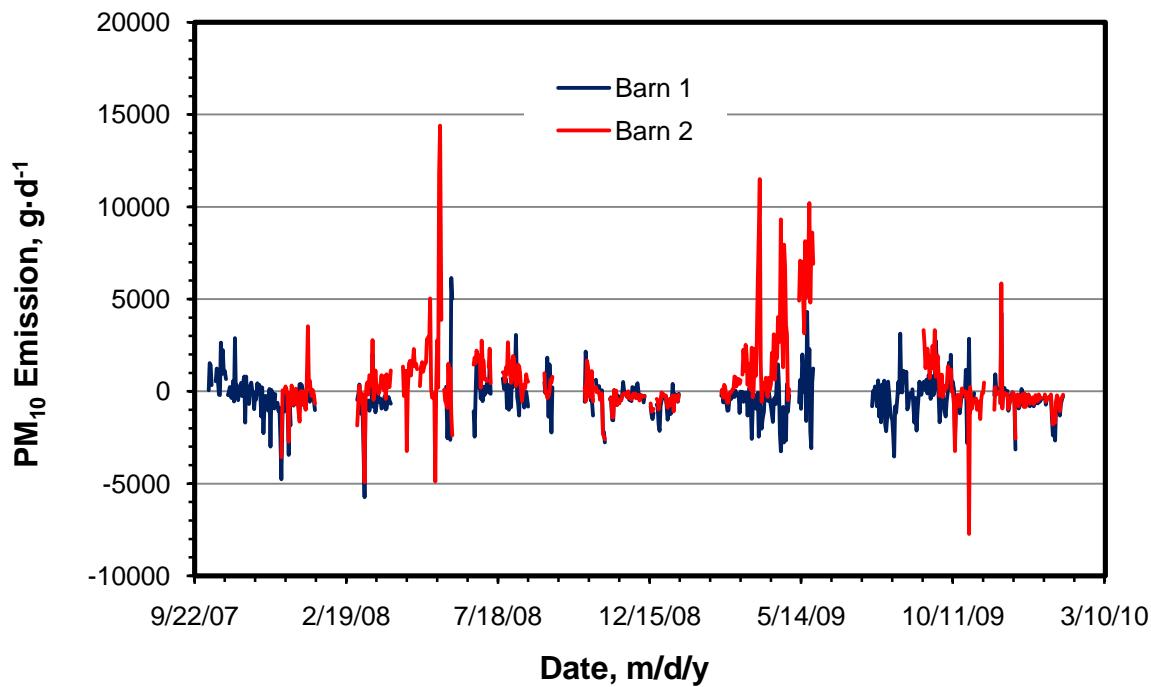


Figure 5. PM_{10} emissions for barns 1 and 2.

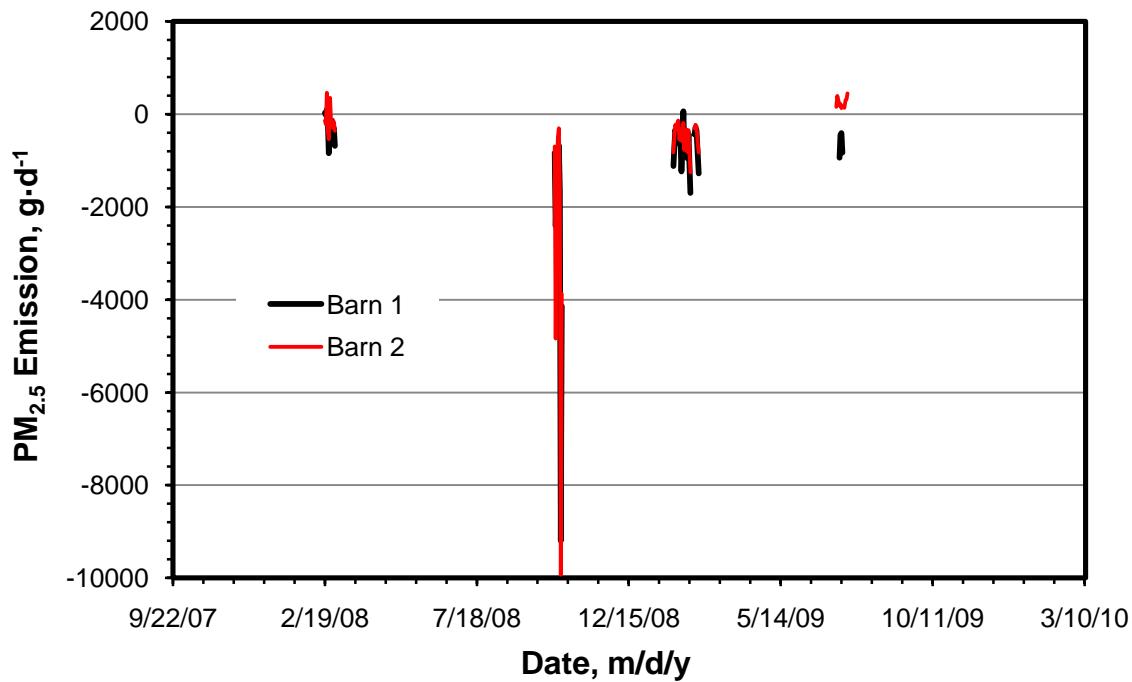


Figure 6. $\text{PM}_{2.5}$ emissions for barns 1 and 2.

4.4.3. TSP

Concentration data from the five TSP measurement periods are shown in Table E6. Daily mean TSP concentrations ranged from 1 to 198 $\mu\text{g dsm}^{-3}$ in the inlet air ($n=81$ d), 3 to 333 $\mu\text{g dsm}^{-3}$ in B1 exhaust air ($n=92$ d) and from 13 to 376 $\mu\text{g dsm}^{-3}$ in the B2 exhaust air ($n=79$ d).

The ADM inlet, B1 and B2 TSP exhaust concentrations were 65 ± 45 , 105 ± 68 and $132 \pm 81 \mu\text{g dsm}^{-3}$, respectively.

The overall mean TSP emission rates (Table E6) were $4.77 \pm 7.20 \text{ kg d}^{-1}$ ($0.81 \pm 1.22 \text{ g d}^{-1}\text{cow}^{-1}$) from B1 ($n=71$) and $8.13 \pm 8.63 \text{ kg d}^{-1}$ ($1.38 \pm 1.46 \text{ g d}^{-1}\text{cow}^{-1}$) from B2 ($n=59$) (Figure 7).

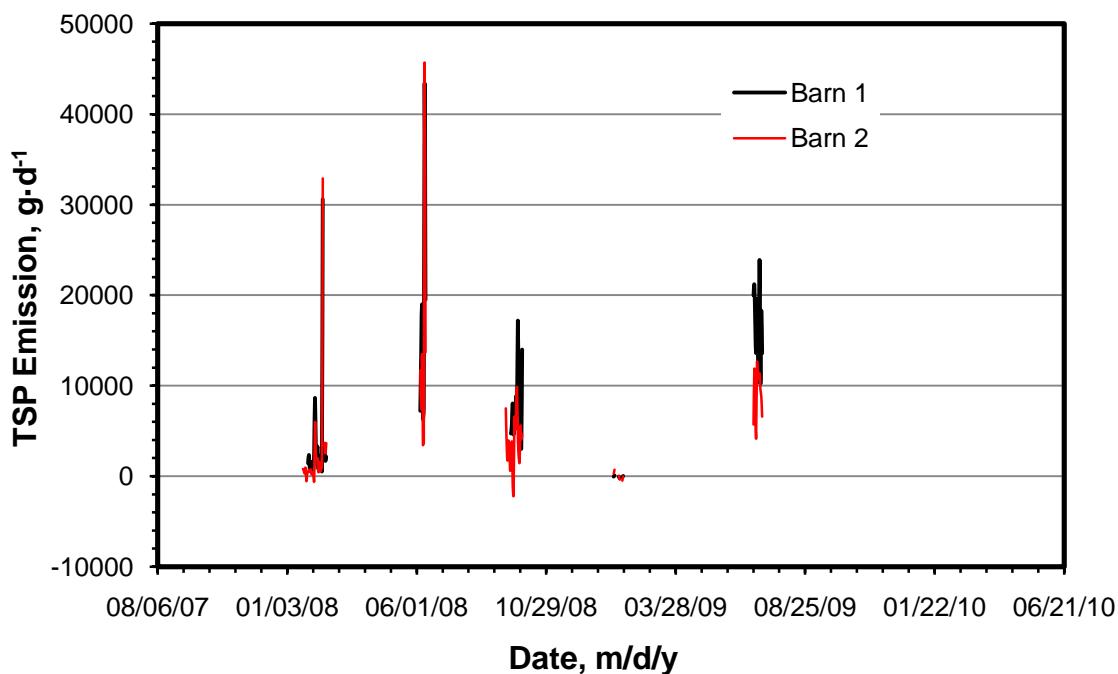


Figure 7. TSP emissions for barns 1 and 2.

4.5. VOC Concentration and Emission

All VOC sampling with canisters were conducted in barn 2. The 20 most prevalent VOCs detected in the canister samples of exhaust air accounted for 90.1% of the total quantified mass. The most prevalent compound was ethyl acetate, which was 18.2% of the total mass of measured VOC (Table 17).

Concentrations of total VOC in inlet and exhaust air ranged from 0.14 to 1.17 mg m^{-3} and from 0.29 to 1.16 mg m^{-3} , respectively (Table 18). The mean total VOC concentrations were 0.408 ± 0.347 and $0.594 \pm 0.352 \text{ mg m}^{-3}$ in inlet and exhaust air, respectively.

Gross and net total VOC emissions (ng s^{-1}) during each sampling period were determined by multiplying the mean building airflow rate ($\text{m}^3 \text{s}^{-1}$) by the total mass (ng m^{-3}) and converting to kg d^{-1} , and are given in Table 18. For gross VOC emissions, the total mass was the average of the exhaust air samples, whether from the ridge, the downwind sidewall, or both. In the case of net

VOC emissions, the total mass was the difference between the average exhaust air sample concentration and the average inlet air sample concentration. The gross and net VOC emission rate ranged from 13.0 to 88.8 kg d⁻¹, and from -33.4 to 32.3 kg d⁻¹, respectively. The overall mean net VOC emission rates were 7.1±22.8 kg d⁻¹, or 12±38.5 g cow⁻¹ d⁻¹ (Table 18).

Table 17. Average concentration of 20 most prevalent VOCs.

Compound	Concentration, ng·m ⁻³	% of total	Cumulative %
Ethyl acetate	114419	18.24%	18.2%
Pentane	76524	12.20%	30.4%
Acetic acid	73736	11.76%	42.2%
n-Propanol	68119	10.86%	53.1%
Acetaldehyde	59764	9.53%	62.6%
4-Methyl-phenol	24527	3.91%	66.5%
Propanoic acid	23872	3.81%	70.3%
Dimethyl sulfide	20647	3.29%	73.6%
2-Butanone	20569	3.28%	76.9%
Phenol	16108	2.57%	79.4%
Nonanal	11170	1.78%	81.2%
Toluene	8537	1.36%	82.6%
Decanal	7176	1.14%	83.7%
iso-Propanol	7079	1.13%	84.9%
Octanal	5751	0.92%	85.8%
1-Butanol	5744	0.92%	86.7%
2,3-Butanedione	5701	0.91%	87.6%
n-Propyl acetate	5505	0.88%	88.5%
2-Butanol	5143	0.82%	89.3%
Benzene	5046	0.80%	90.1%

Table 18. Emission of total VOC.

Date	# canisters			Concentration, mg·m ⁻³		Airflow, m ³ s ⁻¹	Emission, kg d ⁻¹	
	Ridge	East	West	Inlet	Outlet		Gross	Net
12/18/09	2	1	1*	0.400	0.292	768	19.4	-7.1
1/8/10	2	1*	1	0.328	0.924	628	50.1	32.3
1/23/10	0	2	2*	0.281	1.115	135	13.0	9.8
1/29/10	2	1*	1	0.191	0.234	1483	29.9	5.4
2/11/10	0	2*	2	0.352	0.400	2571	88.8	10.6
2/18/10	0	2	2*	1.166	0.826	1138	81.2	-33.4
2/22/10	0	2	2*	0.138	0.370	1605	51.4	32.2
Mean	0.86	1.75	1.33	0.408	0.594	1190	47.7	7.1

4.6. Hydrogen Sulfide Concentrations and Emissions

Daily mean inlet and exhaust H₂S concentrations for the entire test are provided in Table E7. The average daily mean H₂S concentrations were 16±10 (n=433) ppb, 19±15 (n=767) ppb, and 17±14 (n=753) ppb in the ambient air and the inlet air of barns 1 and 2, respectively. The ADM H₂S concentrations were 21±14 (n=488) and 17±11 ppb (n=569) in the exhaust air from B1 and B2, respectively.

Daily mean H₂S emissions from B1 and B2 are tabulated in Table E8 and plotted in Figure 8. The average daily mean H₂S emission rates from B1 and B2 were 487±741 g d⁻¹ (n=212) and 670±516 g d⁻¹ (n=269), respectively.

The ADM cow-specific H₂S emission rates from barns 1 and 2 were 964±1453 (n=212) mg d⁻¹ cow⁻¹, and 1209±942 mg d⁻¹ cow⁻¹ (n=269), respectively.

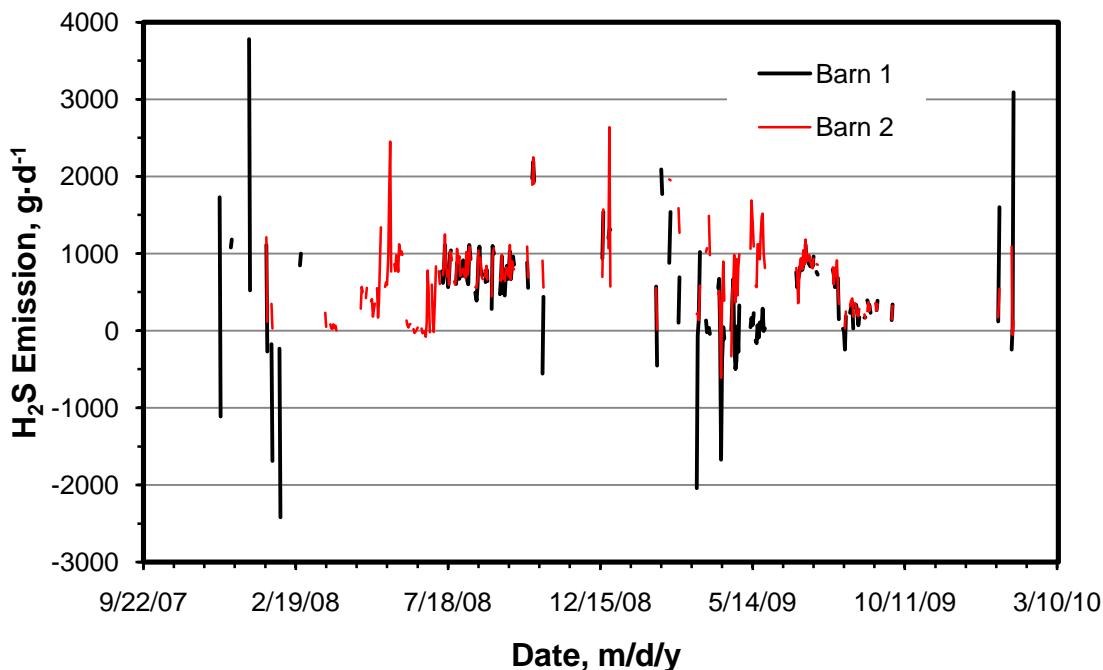


Figure 8. Daily mean H₂S emissions from Barns 1 and 2.

4.7. Ammonia Concentration and Emission

Daily mean inlet and exhaust NH₃ concentrations for the entire test are provided in Table E9.

The average daily mean NH₃ concentrations were 0.58 ±0.32 (n=428) ppm, 0.48 ±0.35 (n=528), and 0.47 ±0.31 (n=620) in the ambient air and in the inlet air of barns 1 and 2, respectively. The ADM NH₃ concentrations were 0.52±0.34 (n=477) and 0.52±0.31 (n=513) ppm in the exhaust air from barns 1 and 2, respectively.

Daily mean NH_3 emissions from barns 1 and 2 are tabulated in Table E10 and plotted in Figure 9. The ADM NH_3 emission rates from barns 1 and 2 were $2.95 \pm 4.11 \text{ kg d}^{-1}$ ($n=191$) and $2.76 \pm 3.76 \text{ kg d}^{-1}$ ($n=223$), respectively.

The ADM cow-specific NH_3 emission rates from barns 1 and 2 were 5.59 ± 7.76 ($n=191$) $\text{g d}^{-1} \text{ cow}^{-1}$, and $4.98 \pm 6.75 \text{ g d}^{-1} \text{ cow}$ ($n=223$).

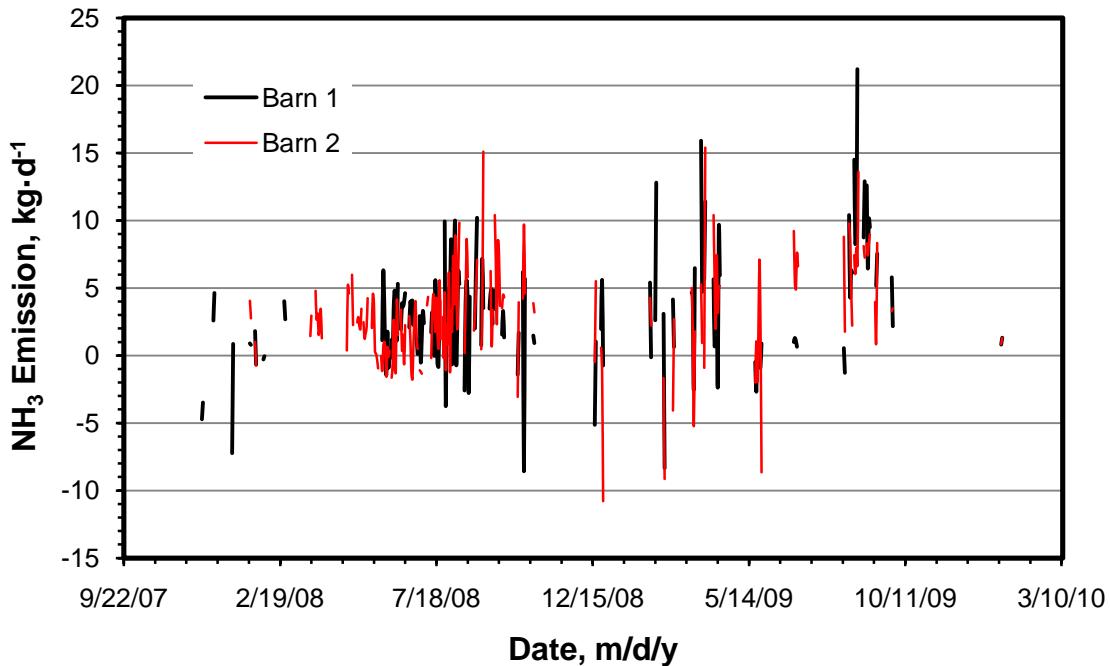


Figure 9. Average daily NH_3 emissions from B1 and B2.

4.8. Emission Data Completeness

Daily completeness data is given in Table E11. The number of complete data (>75% valid required for reporting a daily mean) were calculated for emission measurements conducted from 9/26/07 through 2/1/10 (Table E11).

Table 19. Emissions data completeness (days with >75% valid emission data collection).

Location	NH_3	H_2S	PM_{10}	$\text{PM}_{2.5}$	TSP
Barn 1	191	212	520	47	71
Barn 2	223	269	451	54	59

4.9. Reconciliation with Data Quality Objectives

The data quality objectives prior to executing the study were to measure gas and PM emissions from naturally-ventilated buildings with total relative uncertainties of 50% and 53%, respectively.

4.9.1. Airflow

The accuracy of the wind anemometer was ± 0.5 m/s for wind speed and $\pm 5^\circ$ for wind direction. Preliminary data from site CA5B comparing the weather station wind measurements with the barn sonics suggested that a positive bias of 20% results when using the wind anemometer instead of the sonic anemometers in the upwind sidewalls. The uncertainty in airflow associated with the anemometer accuracy was calculated as 22%.

4.9.2. Gas Emissions

The bias and precision of NH_3 concentration measurements were derived from the NH_3 zero/span checks as compared with the NH_3 correction models (Table 7). The bias and precision of NH_3 measurements were -2.35% and 7.98% for an overall uncertainty of 16.6%.

The bias and precision of H_2S concentration measurements were derived from the H_2S zero and span checks as compared with the H_2S correction models (Table 8). The bias and precision of H_2S measurements were 10.35% and 1.81% for an overall uncertainty of 3.64%.

Based on these measurement errors calculated for concentrations and airflows, the uncertainties of NH_3 and H_2S emissions from the barns were 27.5 and 22.5%, respectively.

4.9.3. PM Emissions

The precisions in PM_{10} , TSP and $\text{PM}_{2.5}$ exhaust concentrations were 18, 9.6 and 182%, respectively, based on collocation tests of identical TEOMs at Site CA5B. The time-weighted relative biases of the TEOMs were -0.38 and -0.31% for barns 1 and 2 based on the main flow checks. The uncertainties of PM_{10} , TSP and $\text{PM}_{2.5}$ emissions from barn 1 and barn 2 were 42.2, 29.4 and 182%, respectively.

5. SUMMARY

The emissions of NH_3 , H_2S , PM_{10} , TSP, $\text{PM}_{2.5}$ and VOCs from two naturally-ventilated freestall barns at a 1200-cow dairy farm in California were measured during a two-year monitoring study. Manure was flushed from the barns and stored in a lagoon after going through solids settling ponds. A mixture of manure, soil and almond shells was used as bedding in the freestalls.

The overall average emission rates from barn 1 were 2.95 kg d^{-1} of NH_3 , 0.487 kg d^{-1} of H_2S , -0.33 kg d^{-1} of PM_{10} , -0.91 kg d^{-1} of $\text{PM}_{2.5}$, and 4.77 kg d^{-1} of TSP. The overall average emission rates from barn 2 were 2.76 kg d^{-1} of NH_3 , 0.670 kg d^{-1} of H_2S , 0.59 kg d^{-1} of PM_{10} , -0.61 kg d^{-1} of $\text{PM}_{2.5}$, 8.13 kg d^{-1} of TSP, and 7.1 kg d^{-1} of total VOC.

6. REFERENCES

National Climatic Data Center. 1981. Comparative Climatic Data for the United States through 1980. National Oceanic and Atmospheric Administration, Department of Commerce.

National Climatic Data Center. 1998. Climatic wind data for the United States. National Oceanic and Atmospheric Administration, Department of Commerce.

¹<http://www.ncdc.noaa.gov/oa/documentlibrary/wind/wind1996.pdf>.

Ni, J.-Q., A.J. Heber, M.J. Darr, T. T. Lim, C.A. Diehl, and B.W. Bogan. 2009. Air quality monitoring and on-site computer system for livestock and poultry environment studies. Transactions of the ASABE 52(3): 937-947.

Ni, J.-Q. and A.J. Heber. 2010. An on-site computer system for comprehensive agricultural air quality research. Computers and Electronics in Agriculture 71(1):38-49.

7. DEFINITIONS AND ACRONYMS

AirDAC	Air Data Acquisition and Control – computer program
ADM	Average daily mean
B1	Barn 1 (Freestall barn)
B2	Barn 2 (Freestall barn)
CAPECAB	Calculations of Air Pollutant Emissions from Confined Animal Buildings
CO ₂	Carbon dioxide
DM	Daily mean
FANS	Fan Airflow Numeration System
GC-MS	Gas chromatograph mass spectrometer
GSL	Gas sampling location(s)
GSS	Gas sampling system
H ₂ S	Hydrogen sulfide
MDL	Minimum detection limit
MPC	Multipoint calibration
MS	Mass spectrometer
MUN	Milk urea nitrogen
n	Number or count
NAEMS	National Air Emissions Monitoring Study
NCDC	National Climatic Data Center
NH ₃	Ammonia
psi	Pounds per square inch
Q	Airflow
QA	Quality assurance
QC	Quality control
OFIS	On farm instrument shelter
PM	Particulate matter
RH/T	Relative humidity/temperature
RH	Relative humidity
SD	Standard deviation
TC	Thermocouple
T _{dew}	Dew point temperature
TDS	Thermal desorption system
TDS-GC-MS	Thermodesorption-gas chromatograph mass spectrometer
TEOM	Tapered element oscillating microbalance
TSP	Total suspended particulate
UCD	University of California-Davis
VOC	Volatile organic compounds
Z/S	Zero/span

APPENDIX A. MEASUREMENT VARIABLES.

Table A1. Site measurement variables, instruments and sensors.

Col#	Data heading	Instrument/sensor	Location	Monitoring/control location	Range/target	DAC item
1	Date & time	---				---
2	Smpl loc#	---				---
3	Cal gas #	Environics	Rack	Calibration gases	0-7	---
4	Cal gas, ppm	Environics	Rack	Calibration gases	From 0	---
5	NH3, ppm	Innova 1412, filter 976	Rack	11 GSLs	From 0.2	---
6	CH3OH, ppm	Innova 1412, filter 936	Rack	11 GSLs	From 0.08	---
7	C2H6O, ppm	Innova 1412, filter 974	Rack	11 GSLs	From 0.08	---
8	CH4, ppm	Innova 1412, filter 969	Rack	11 GSLs	From 0.4	---
9	THC, ppm	Innova 1412, filter 987	Rack	11 GSLs	From 0.02	---
10	WV, Tdew	Innova 1412, filter 527	Rack	11 GSLs	From 50	
11	CH4, ppm	TEC 55C	Rack	11 GSLs	0 - 2000	FP-AI-112-1
12	NMHC, ppm	TEC 55C	Rack	11 GSLs	0 - 2000	FP-AI-112-1
13	H2S, ppb	TEC 450i H2S analyzer	Rack	11 GSLs	0 - 2000	FP-AI-112-1
14	SO2, ppb	TEC 450i H2S analyzer	Rack	11 GSLs	0 - 2000	FP-AI-112-1
15	CO2, ppm	MSA CO2 monitor	Rack	11 GSLs	0 - 10000	FP-AI-112-1
16	Smpl P, Pa	Setra 209 ΔP sensor	GSS	11 GSLs	0 - 14.7 psiv	FP-AI-112-1
17	Smpl Q, L/m	McMillan flow meter	GSS	11 GSLs	0 - 10	FP-AI-112-1
18	Smpl RH, %	Humitter 50Y	GSS	11 GSLs	0 - 100	FP-AI-112-1
19	Smpl T, °C	Humitter 50Y	GSS	11 GSLs	-40 - 60	FP-AI-112-1
20	Smpl dir, %t	Flow direction	GSS	11 GSLs	0.065 - 0.065	FP-AI-112-1
21	GSS T, °C	AD 592D	GSS	GSS	0 - 70	FP-AI-112-1
22	B1 PM, µg/m3	TEOM #1	B1	B1 ridge	-1000 - 9000	FP-AI-112-1
23	B1 Filter, %	TEOM #1	B1	B1 ridge	0 - 140	FP-AI-112-1
24	B1 Atm P, Pa	TEOM #1	B1	B1 ridge	0.8 - 1.3	FP-AI-112-1
25	B2 PM, µg/m3	TEOM #2	B2	B2 ridge	-1000 - 9000	FP-AI-112-1
26	B2 Filter, %	TEOM #2	B2	B2 ridge	0 - 140	FP-AI-112-1
27	Amb PM, µg/m3	Beta Gauge	Amb	1.8 m above OFIS	0 - 5000	FP-AI-112-2
29	OFIS ΔP, Pa	Setra 260 ΔP sensor	OFIS	Inside and outside of OFIS	-100 - 100	FP-AI-112-2
30	Wind D, deg	03002VM Wind monitor	Roof	Roof tower	0 - 360	FP-AI-112-2
31	Wind V, m/s	03002VM Wind monitor	Roof	Roof tower	0 - 60	FP-AI-112-2
32	Solar, W/m2	Solar sensor	Roof	Roof tower	0 - 1000	FP-AI-112-2
33	Amb RH, %	NOVUS RHT-WM #1	Roof	Roof tower	0 - 100	FP-AI-112-2
34	Amb T, °C	NOVUS RHT-WM #1	Roof	Roof tower	-40 - 60	FP-AI-112-2
35	B1 RH, %	NOVUS RHT-WM #2	B1	B1 ridge	0 - 100	FP-AI-112-2
36	B1 T, °C	NOVUS RHT-WM #2	B1	B1 ridge	-40 - 60	FP-AI-112-2
37	B2 RH, %	NOVUS RHT-WM #3	B2	B2 ridge	0 - 100	FP-AI-112-2
38	B2 T, °C	NOVUS RHT-WM #3	B2	B2 ridge	-40 - 60	FP-AI-112-2
39	B1NW Act , V	Activity sensor #1	B1NW	B1 NW corner	0 - 2	FP-AI-112-2

Col#	Data heading	Instrument/sensor	Location	Monitoring/control location	Range/target	DAC item
40	B1N Act , V	Activity sensor #2	B1N	B1 N center (MW)	0 - 2	FP-AI-112-2
41	B1NE Act , V	Activity sensor #3	B1NE	B1 NE corner	0 - 2	FP-AI-112-2
42	B1SW Act , V	Activity sensor #4	B1SW	B1 SW corner	0 - 2	FP-AI-112-2
43	B1S Act , V	Activity sensor #5	B1S	B1 S center (ME)	0 - 2	FP-AI-112-3
44	B1SE Act , V	Activity sensor #6	B1SE	B1 SE corner	0 - 2	FP-AI-112-3
45	B2NW Act , V	Activity sensor #7	B2NW	B2 NW corner	0 - 2	FP-AI-112-3
46	B2N Act , V	Activity sensor #8	B2N	B2 N center (MW)	0 - 2	FP-AI-112-3
47	B2NE Act , V	Activity sensor #9	B2NE	B2 NE center	0 - 2	FP-AI-112-3
48	B2SW Act , V	Activity sensor #10	B2SW	B2 SW corner	0 - 2	FP-AI-112-3
49	B2S Act , V	Activity sensor #11	B2S	B2 S center (ME)	0 - 2	FP-AI-112-3
50	B2SE Act , V	Activity sensor #12	B2SE	B2 SE corner	0 - 2	FP-AI-112-3
51	OFIS Act , V	Activity sensor #13	OFIS	OFIS	0 - 2	FP-AI-112-3
52	Ele V, VAC	Adapter	OFIS	Power adapter voltage	0 - 150	FP-AI-112-3
59	B1 1W U, m/s	81000 sonic anem.	B1 1E	B1 E end of S wall	-25 - 25	RS485
60	B1 1W V, m/s	81000 sonic	B1 1E	B1 E end of S wall	-25 - 25	RS485
61	B1 1WW, m/s	81000 sonic	B1 1E	B1 E end of S wall	-25 - 25	RS485
62	B1 1W T, °C	81000 sonic	B1 1E	B1 E end of S wall	220 - 320	RS485
63	B1 1E U, m/s	81000 sonic	B1 1W	B1 W end of S wall	-25 - 25	RS485
64	B1 1E V, m/s	81000 sonic	B1 1W	B1 W end of S wall	-25 - 25	RS485
65	B1 1E W, m/s	81000 sonic	B1 1W	B1 W end of S wall	-25 - 25	RS485
66	B1 1E T, °C	81000 sonic	B1 1W	B1 W end of S wall	220 - 320	RS485
67	B1 2A U, m/s	81000 sonic	B1 2A	B1 S end of ridge	-25 - 25	RS485
68	B1 2A V, m/s	81000 sonic	B1 2A	B1 S end of ridge	-25 - 25	RS485
69	B1 2A W, m/s	81000 sonic	B1 2A	B1 S end of ridge	-25 - 25	RS485
70	B1 2A T, °C	81000 sonic	B1 2A	B1 S end of ridge	220 - 320	RS485
71	B1 2B U, m/s	81000 sonic	B1 2B	B1 center of S end of ridge	-25 - 25	RS485
72	B1 2B V, m/s	81000 sonic	B1 2B	B1 center of S end of ridge	-25 - 25	RS485
73	B1 2B W, m/s	81000 sonic	B1 2B	B1 center of S end of ridge	-25 - 25	RS485
74	B1 2B T, °C	81000 sonic	B1 2B	B1 center of S end of ridge	220 - 320	RS485
75	B1 2C U, m/s	81000 sonic	B1 2C	B1 S of center of ridge	-25 - 25	RS485
76	B1 2C V, m/s	81000 sonic	B1 2C	B1 S of center of ridge	-25 - 25	RS485
77	B1 2C W, m/s	81000 sonic	B1 2C	B1 S of center of ridge	-25 - 25	RS485
78	B1 2C T, °C	81000 sonic	B1 2C	B1 S of center of ridge	220 - 320	RS485
79	B1 2D U, m/s	81000 sonic	B1 2D	B1 N of center of ridge	-25 - 25	RS485
80	B1 2D V, m/s	81000 sonic	B1 2D	B1 N of center of ridge	-25 - 25	RS485
81	B1 2D W, m/s	81000 sonic	B1 2D	B1 N of center of ridge	-25 - 25	RS485
82	B1 2D T, °C	81000 sonic	B1 2D	B1 N of center of ridge	220 - 320	RS485
83	B1 2E U, m/s	81000 sonic	B1 2E	B1 center of N end of ridge	-25 - 25	RS485
84	B1 2E V, m/s	81000 sonic	B1 2E	B1 center of N end of ridge	-25 - 25	RS485
85	B1 2E W, m/s	81000 sonic	B1 2E	B1 center of N end of ridge	-25 - 25	RS485
86	B1 2E T, °C	81000 sonic	B1 2E	B1 center of N end of ridge	220 - 320	RS485
87	B1 2F U, m/s	81000 sonic	B1 2F	B1 N end of ridge	-25 - 25	RS485

Col#	Data heading	Instrument/sensor	Location	Monitoring/control location	Range/target	DAC item
88	B1 2F V, m/s	81000 sonic	B1 2F	B1 N end of ridge	-25 - 25	RS485
89	B1 2F W, m/s	81000 sonic	B1 2F	B1 N end of ridge	-25 - 25	RS485
90	B1 2F T, °C	81000 sonic	B1 2F	B1 N end of ridge	220 - 320	RS485
91	B1 3A U, m/s	81000 sonic	B1 3A	B1 S end of E wall	-25 - 25	RS485
92	B1 3A V, m/s	81000 sonic	B1 3A	B1 S end of E wall	-25 - 25	RS485
93	B1 3A W, m/s	81000 sonic	B1 3A	B1 S end of E wall	-25 - 25	RS485
94	B1 3A T, °C	81000 sonic	B1 3A	B1 S end of E wall	220 - 320	RS485
95	B1 3B U, m/s	81000 sonic	B1 3B	B1 center of S end of E wall	-25 - 25	RS485
96	B1 3B V, m/s	81000 sonic	B1 3B	B1 center of S end of E wall	-25 - 25	RS485
97	B1 3B W, m/s	81000 sonic	B1 3B	B1 center of S end of E wall	-25 - 25	RS485
98	B1 3B T, °C	81000 sonic	B1 3B	B1 center of S end of E wall	220 - 320	RS485
99	B1 3C U, m/s	81000 sonic	B1 3C	B1 S of center of E wall	-25 - 25	RS485
100	B1 3C V, m/s	81000 sonic	B1 3C	B1 S of center of E wall	-25 - 25	RS485
101	B1 3C W, m/s	81000 sonic	B1 3C	B1 S of center of E wall	-25 - 25	RS485
102	B1 3C T, °C	81000 sonic	B1 3C	B1 S of center of E wall	220 - 320	RS485
103	B1 3D U, m/s	81000 sonic	B1 3D	B1 N of center of E wall	-25 - 25	RS485
104	B1 3D V, m/s	81000 sonic	B1 3D	B1 N of center of E wall	-25 - 25	RS485
105	B1 3D W, m/s	81000 sonic	B1 3D	B1 N of center of E wall	-25 - 25	RS485
106	B1 3D T, °C	81000 sonic	B1 3D	B1 N of center of E wall	220 - 320	RS485
107	B1 3E U, m/s	81000 sonic	B1 3E	B1 center of S end of E wall	-25 - 25	RS485
108	B1 3E V, m/s	81000 sonic	B1 3E	B1 center of S end of E wall	-25 - 25	RS485
109	B1 3E W, m/s	81000 sonic	B1 3E	B1 center of S end of E wall	-25 - 25	RS485
110	B1 3E T, °C	81000 sonic	B1 3E	B1 center of S end of E wall	220 - 320	RS485
111	B1 3F U, m/s	81000 sonic	B1 3F	B1 N end of E wall	-25 - 25	RS485
112	B1 3F V, m/s	81000 sonic	B1 3F	B1 N end of E wall	-25 - 25	RS485
113	B1 3F W, m/s	81000 sonic	B1 3F	B1 N end of E wall	-25 - 25	RS485
114	B1 3F T, °C	81000 sonic	B1 3F	B1 N end of E wall	220 - 320	RS485
115	B1 4A U, m/s	81000 sonic	B1 4A	B1 S end of W wall	-25 - 25	RS485
116	B1 4A V, m/s	81000 sonic	B1 4A	B1 S end of W wall	-25 - 25	RS485
117	B1 4A W, m/s	81000 sonic	B1 4A	B1 S end of W wall	-25 - 25	RS485
118	B1 4A T, °C	81000 sonic	B1 4A	B1 S end of W wall	220 - 320	RS485
119	B1 4B U, m/s	81000 sonic	B1 4B	B1 center of S end of W wall	-25 - 25	RS485
120	B1 4B V, m/s	81000 sonic	B1 4B	B1 center of S end of W wall	-25 - 25	RS485
121	B1 4B W, m/s	81000 sonic	B1 4B	B1 center of S end of W wall	-25 - 25	RS485
122	B1 4B T, °C	81000 sonic	B1 4B	B1 center of S end of W wall	220 - 320	RS485
123	B1 4C U, m/s	81000 sonic	B1 4C	B1 S of center of W wall	-25 - 25	RS485
124	B1 4C V, m/s	81000 sonic	B1 4C	B1 S of center of W wall	-25 - 25	RS485
125	B1 4C W, m/s	81000 sonic	B1 4C	B1 S of center of W wall	-25 - 25	RS485
126	B1 4C T, °C	81000 sonic	B1 4C	B1 S of center of W wall	220 - 320	RS485
127	B1 4D U, m/s	81000 sonic	B1 4D	B1 N of center of W wall	-25 - 25	RS485
128	B1 4D V, m/s	81000 sonic	B1 4D	B1 N of center of W wall	-25 - 25	RS485
129	B1 4D W, m/s	81000 sonic	B1 4D	B1 N of center of W wall	-25 - 25	RS485

Col#	Data heading	Instrument/sensor	Location	Monitoring/control location	Range/target	DAC item
130	B1 4D T, °C	81000 sonic	B1 4D	B1 N of center of W wall	220 - 320	RS485
131	B1 4E U, m/s	81000 sonic	B1 4E	B1 center of N end of W wall	-25 - 25	RS485
132	B1 4E V, m/s	81000 sonic	B1 4E	B1 center of N end of W wall	-25 - 25	RS485
133	B1 4E W, m/s	81000 sonic	B1 4E	B1 center of N end of W wall	-25 - 25	RS485
134	B1 4E T, °C	81000 sonic	B1 4E	B1 center of N end of W wall	220 - 320	RS485
135	B1 4F U, m/s	81000 sonic	B1 4F	B1 N end of W wall	-25 - 25	RS485
136	B1 4F V, m/s	81000 sonic	B1 4F	B1 N end of W wall	-25 - 25	RS485
137	B1 4F W, m/s	81000 sonic	B1 4F	B1 N end of W wall	-25 - 25	RS485
138	B1 4F T, °C	81000 sonic	B1 4F	B1 N end of W wall	220 - 320	RS485
139	B1 5W U, m/s	81000 sonic	B1 5E	B1 E end of N wall	-25 - 25	RS485
140	B1 5W V, m/s	81000 sonic	B1 5E	B1 E end of N wall	-25 - 25	RS485
141	B1 5W W, m/s	81000 sonic	B1 5E	B1 E end of N wall	-25 - 25	RS485
142	B1 5W T, °C	81000 sonic	B1 5E	B1 E end of N wall	220 - 320	RS485
143	B1 5E U, m/s	81000 sonic	B1 5W	B1 W end of N wall	-25 - 25	RS485
144	B1 5E V, m/s	81000 sonic	B1 5W	B1 W end of N wall	-25 - 25	RS485
145	B1 5E W, m/s	81000 sonic	B1 5W	B1 W end of N wall	-25 - 25	RS485
146	B1 5E T, °C	81000 sonic	B1 5W	B1 W end of N wall	220 - 320	RS485
147	B2 6W U, m/s	81000 sonic	B2 6E	B2 E end of S wall	-25 - 25	RS485
148	B2 6W V, m/s	81000 sonic	B2 6E	B2 E end of S wall	-25 - 25	RS485
149	B2 6W W, m/s	81000 sonic	B2 6E	B2 E end of S wall	-25 - 25	RS485
150	B2 6W T, °C	81000 sonic	B2 6E	B2 E end of S wall	220 - 320	RS485
151	B2 6E U, m/s	81000 sonic	B2 6W	B2 W end of S wall	-25 - 25	RS485
152	B2 6E V, m/s	81000 sonic	B2 6W	B2 W end of S wall	-25 - 25	RS485
153	B2 6EW, m/s	81000 sonic	B2 6W	B2 W end of S wall	-25 - 25	RS485
154	B2 6E T, °C	81000 sonic	B2 6W	B2 W end of S wall	220 - 320	RS485
155	B2 7A U, m/s	81000 sonic	B2 7A	B2 S end of ridge	-25 - 25	RS485
156	B2 7A V, m/s	81000 sonic	B2 7A	B2 S end of ridge	-25 - 25	RS485
157	B2 7A W, m/s	81000 sonic	B2 7A	B2 S end of ridge	-25 - 25	RS485
158	B2 7A T, °C	81000 sonic	B2 7A	B2 S end of ridge	220 - 320	RS485
159	B2 7B U, m/s	81000 sonic	B2 7B	B2 center of S end of ridge	-25 - 25	RS485
160	B2 7B V, m/s	81000 sonic	B2 7B	B2 center of S end of ridge	-25 - 25	RS485
161	B2 7B W, m/s	81000 sonic	B2 7B	B2 center of S end of ridge	-25 - 25	RS485
162	B2 7B T, °C	81000 sonic	B2 7B	B2 center of S end of ridge	220 - 320	RS485
163	B2 7C U, m/s	81000 sonic	B2 7C	B2 S of center of ridge	-25 - 25	RS485
164	B2 7C V, m/s	81000 sonic	B2 7C	B2 S of center of ridge	-25 - 25	RS485
165	B2 7C W, m/s	81000 sonic	B2 7C	B2 S of center of ridge	-25 - 25	RS485
166	B2 7C T, °C	81000 sonic	B2 7C	B2 S of center of ridge	220 - 320	RS485
167	B2 7D U, m/s	81000 sonic	B2 7D	B2 N of center of ridge	-25 - 25	RS485
168	B2 7D V, m/s	81000 sonic	B2 7D	B2 N of center of ridge	-25 - 25	RS485
169	B2 7D W, m/s	81000 sonic	B2 7D	B2 N of center of ridge	-25 - 25	RS485
170	B2 7D T, °C	81000 sonic	B2 7D	B2 N of center of ridge	220 - 320	RS485
171	B2 7E U, m/s	81000 sonic	B2 7E	B2 center of N end of ridge	-25 - 25	RS485

Col#	Data heading	Instrument/sensor	Location	Monitoring/control location	Range/target	DAC item
172	B2 7E V, m/s	81000 sonic	B2 7E	B2 center of N end of ridge	-25 - 25	RS485
173	B2 7E W, m/s	81000 sonic	B2 7E	B2 center of N end of ridge	-25 - 25	RS485
174	B2 7E T, °C	81000 sonic	B2 7E	B2 center of N end of ridge	220 - 320	RS485
175	B2 7F U, m/s	81000 sonic	B2 7F	B2 N end of ridge	-25 - 25	RS485
176	B2 7F V, m/s	81000 sonic	B2 7F	B2 N end of ridge	-25 - 25	RS485
177	B2 7F W, m/s	81000 sonic	B2 7F	B2 N end of ridge	-25 - 25	RS485
178	B2 7F T, °C	81000 sonic	B2 7F	B2 N end of ridge	220 - 320	RS485
179	B2 8A U, m/s	81000 sonic	B2 8A	B2 S end of E wall	-25 - 25	RS485
180	B2 8A V, m/s	81000 sonic	B2 8A	B2 S end of E wall	-25 - 25	RS485
181	B2 8A W, m/s	81000 sonic	B2 8A	B2 S end of E wall	-25 - 25	RS485
182	B2 8A T, °C	81000 sonic	B2 8A	B2 S end of E wall	220 - 320	RS485
183	B2 8B U, m/s	81000 sonic	B2 8B	B2 center of S end of E wall	-25 - 25	RS485
184	B2 8B V, m/s	81000 sonic	B2 8B	B2 center of S end of E wall	-25 - 25	RS485
185	B2 8B W, m/s	81000 sonic	B2 8B	B2 center of S end of E wall	-25 - 25	RS485
186	B2 8B T, °C	81000 sonic	B2 8B	B2 center of S end of E wall	220 - 320	RS485
187	B2 8C U, m/s	81000 sonic	B2 8C	B2 S of center of E wall	-25 - 25	RS485
188	B2 8C V, m/s	81000 sonic	B2 8C	B2 S of center of E wall	-25 - 25	RS485
189	B2 8C W, m/s	81000 sonic	B2 8C	B2 S of center of E wall	-25 - 25	RS485
190	B2 8C T, °C	81000 sonic	B2 8C	B2 S of center of E wall	220 - 320	RS485
191	B2 8D U, m/s	81000 sonic	B2 8D	B2 N of center of E wall	-25 - 25	RS485
192	B2 8D V, m/s	81000 sonic	B2 8D	B2 N of center of E wall	-25 - 25	RS485
193	B2 8D W, m/s	81000 sonic	B2 8D	B2 N of center of E wall	-25 - 25	RS485
194	B2 8D T, °C	81000 sonic	B2 8D	B2 N of center of E wall	220 - 320	RS485
195	B2 8E U, m/s	81000 sonic	B2 8E	B2 center of S end of E wall	-25 - 25	RS485
196	B2 8E V, m/s	81000 sonic	B2 8E	B2 center of S end of E wall	-25 - 25	RS485
197	B2 8E W, m/s	81000 sonic	B2 8E	B2 center of S end of E wall	-25 - 25	RS485
198	B2 8E T, °C	81000 sonic	B2 8E	B2 center of S end of E wall	220 - 320	RS485
199	B2 8F U, m/s	81000 sonic	B2 8F	B2 N end of E wall	-25 - 25	RS485
200	B2 8F V, m/s	81000 sonic	B2 8F	B2 N end of E wall	-25 - 25	RS485
201	B2 8F W, m/s	81000 sonic	B2 8F	B2 N end of E wall	-25 - 25	RS485
202	B2 8F T, °C	81000 sonic	B2 8F	B2 N end of E wall	220 - 320	RS485
203	B2 9A U, m/s	81000 sonic	B2 9A	B2 S end of W wall	-25 - 25	RS485
204	B2 9A V, m/s	81000 sonic	B2 9A	B2 S end of W wall	-25 - 25	RS485
205	B2 9A W, m/s	81000 sonic	B2 9A	B2 S end of W wall	-25 - 25	RS485
206	B2 9A T, °C	81000 sonic	B2 9A	B2 S end of W wall	220 - 320	RS485
207	B2 9B U, m/s	81000 sonic	B2 9B	B2 center of S end of W wall	-25 - 25	RS485
208	B2 9B V, m/s	81000 sonic	B2 9B	B2 center of S end of W wall	-25 - 25	RS485
209	B2 9B W, m/s	81000 sonic	B2 9B	B2 center of S end of W wall	-25 - 25	RS485
210	B2 9B T, °C	81000 sonic	B2 9B	B2 center of S end of W wall	220 - 320	RS485
211	B2 9C U, m/s	81000 sonic	B2 9C	B2 S of center of W wall	-25 - 25	RS485
212	B2 9C V, m/s	81000 sonic	B2 9C	B2 S of center of W wall	-25 - 25	RS485
213	B2 9C W, m/s	81000 sonic	B2 9C	B2 S of center of W wall	-25 - 25	RS485

Col#	Data heading	Instrument/sensor	Location	Monitoring/control location	Range/target	DAC item
214	B2 9C T, °C	81000 sonic	B2 9C	B2 S of center of W wall	220 - 320	RS485
215	B2 9D U, m/s	81000 sonic	B2 9D	B2 N of center of W wall	-25 - 25	RS485
216	B2 9D V, m/s	81000 sonic	B2 9D	B2 N of center of W wall	-25 - 25	RS485
217	B2 9D W, m/s	81000 sonic	B2 9D	B2 N of center of W wall	-25 - 25	RS485
218	B2 9D T, °C	81000 sonic	B2 9D	B2 N of center of W wall	220 - 320	RS485
219	B2 9E U, m/s	81000 sonic	B2 9E	B2 center of N end of W wall	-25 - 25	RS485
220	B2 9E V, m/s	81000 sonic	B2 9E	B2 center of N end of W wall	-25 - 25	RS485
221	B2 9E W, m/s	81000 sonic	B2 9E	B2 center of N end of W wall	-25 - 25	RS485
222	B2 9E T, °C	81000 sonic	B2 9E	B2 center of N end of W wall	220 - 320	RS485
223	B2 9F U, m/s	81000 sonic	B2 9F	B2 N end of W wall	-25 - 25	RS485
224	B2 9F V, m/s	81000 sonic	B2 9F	B2 N end of W wall	-25 - 25	RS485
225	B2 9F W, m/s	81000 sonic	B2 9F	B2 N end of W wall	-25 - 25	RS485
226	B2 9F T, °C	81000 sonic	B2 9F	B2 N end of W wall	220 - 320	RS485
227	B2 10W U, m/s	81000 sonic	B2 10E	B2 E end of N wall	-25 - 25	RS485
228	B2 10W V, m/s	81000 sonic	B2 10E	B2 E end of N wall	-25 - 25	RS485
229	B2 10W W, m/s	81000 sonic	B2 10E	B2 E end of N wall	-25 - 25	RS485
230	B2 10W T, °C	81000 sonic	B2 10E	B2 E end of N wall	220 - 320	RS485
231	B2 10E U, m/s	81000 sonic	B2 10W	B2 W end of N wall	-25 - 25	RS485
232	B2 10E V, m/s	81000 sonic	B2 10W	B2 W end of N wall	-25 - 25	RS485
233	B2 10E W, m/s	81000 sonic	B2 10W	B2 W end of N wall	-25 - 25	RS485
234	B2 10E T, °C	81000 sonic	B2 10W	B2 W end of N wall	220 - 320	RS485
235	RwyB1 T, °C	TC T type	RwyB1	Rwy b/w OFIS & B1	-270 - 390	FP-TC-120-1
236	RwyB1 HT, °C	TC T type	RwyB1 HT	Rwy b/w OFIS & B1	-270 - 390	FP-TC-120-1
237	RwyB2 T, °C	TC T type	RwyB2	Rwy b/w OFIS & B2	-270 - 390	FP-TC-120-1
238	RwyB2 HT, °C	TC T type	RwyB2 HT	Rwy b/w OFIS & B2	-270 - 390	FP-TC-120-1
239	OFIS DAC T, °C	TC T type	OFIS	DAC panel	-270 - 390	FP-TC-120-1
240	SOIL T, °C	TC T type	Soil T	Soil T under the trailer	-270 - 390	FP-TC-120-1
241	RwyO1 T, °C	TC T type	Rwy B1 in OFIS	B1 rwy inside OFIS	-270 - 390	FP-TC-120-1
242	RwyO2 T, °C	TC T type	Rwy B2 in OFIS	B2 rwy inside OFIS	-270 - 390	FP-TC-120-1

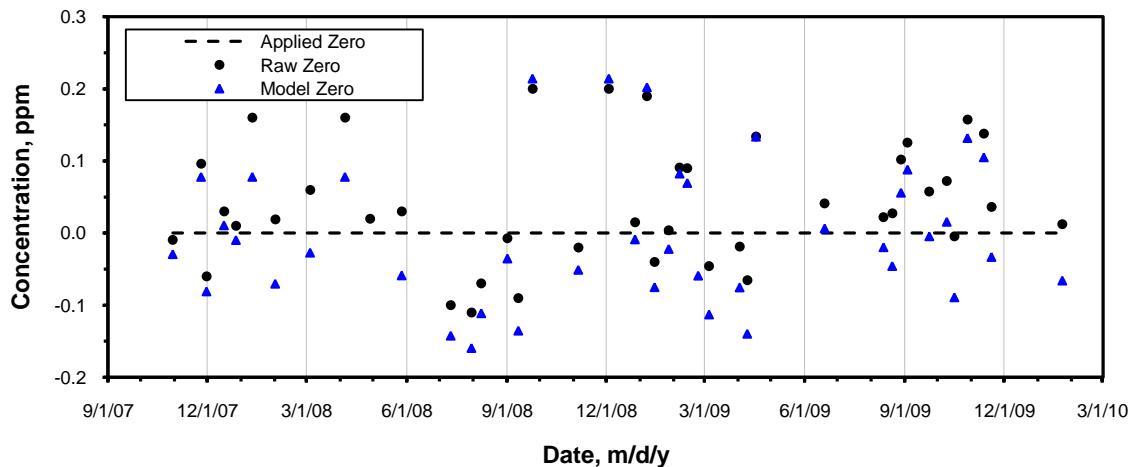
APPENDIX B. RECORD OF MAINTENANCE AND CALIBRATION.

Maintenance and Calibration Tasks	
Category	Times Completed
Environment Sensing and Other	
Clean RH/T probe	104
Calibration check of RH/T probe	11
Calibration check of thermocouples	3
Performance check of weather station	8
Direction verification of wind indicator	1
Clean solar sensor	26
Check solar sensor with collocated sensor	1
Clean motion sensors	26
Air Flow Measurement System	
Fan test events	0
Zero check of pressure sensors (ΔP)	0
Multipoint calibration of pressures sensors (ΔP)	0
Drift & accuracy check of anemometer(s)	8
Particulate Matter Measurement System	
Clean TOEM screens	106
Check/clean TEOM inlet head(s)	106
Replace TEOM filters	108
Verify TEOM mass transducer calibration	0
Leak test of TEOM	13
Verify TEOM flow rate & MFC accuracy	13
Change TEOM in-line filters	4
Check/clean Beta Gauge inlet head	52
Check Beta Gauge airflow	6
Validate Beta Gauge mass w/foil set	4
Calibrate Beta Gauge mass & airflow	1
Gas Measurement System	
Clean/replace GSS membrane filters	104
Leak check of GSS	9
Calibration check of all lines	0
Replace GSS filters	4
Calibrate GSS pressure and flow sensors	1
Flow calibration/check MFC flow of Environics Diluter	1
Precision check of Multigas Analyzer	114
Multipoint calibration of Multigas Analyzer	5
Precision check of TEC 450I	114
Multipoint calibration of TEC 450I	2

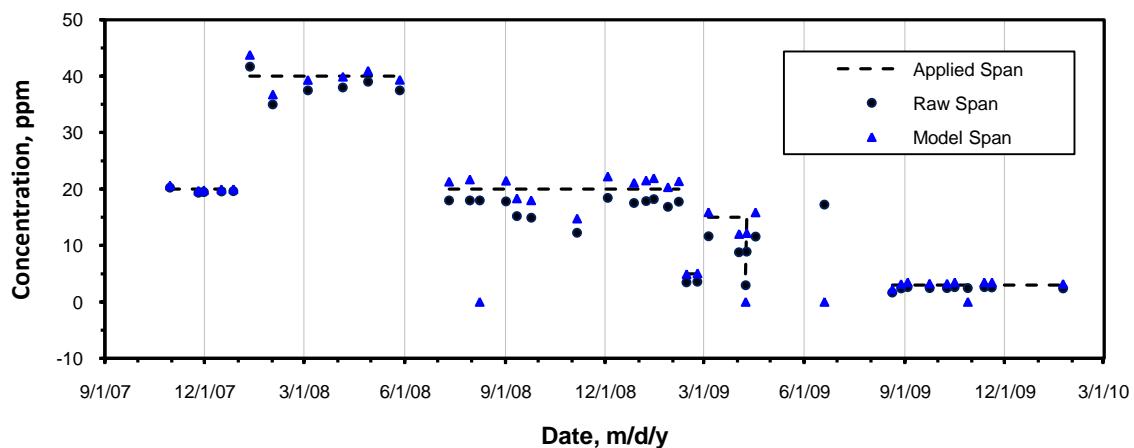
APPENDIX C. GAS ANALYZER CALIBRATIONS.

Ammonia

Calibration Data of NH₃ Zero Checks at CA5B Site (INNOVA)

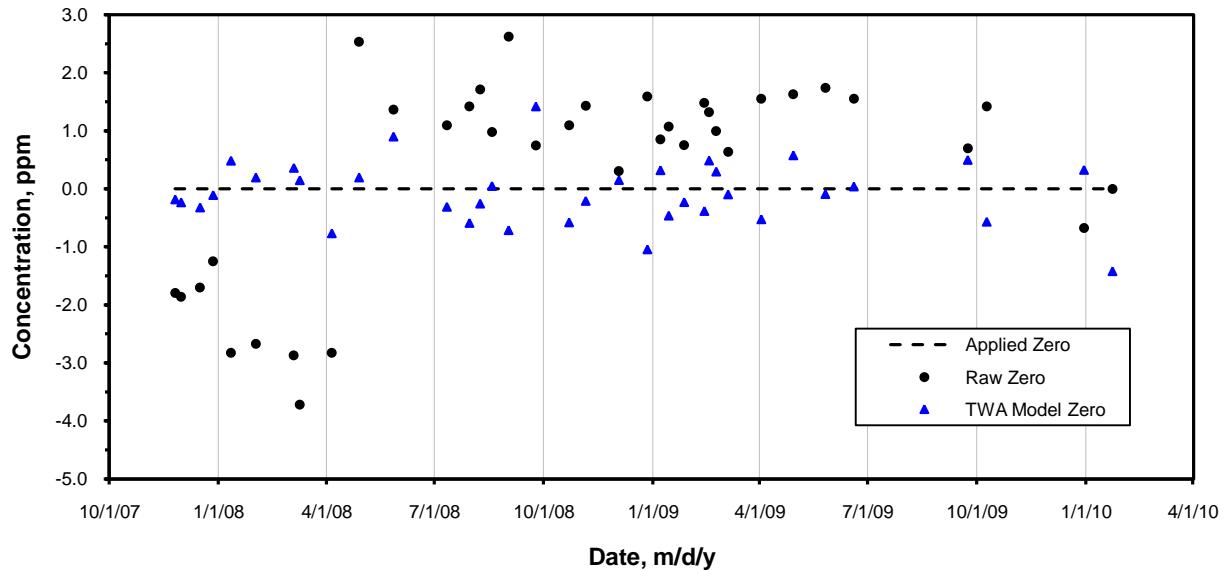


Calibration Data for CA5B INNOVA NH3 Span

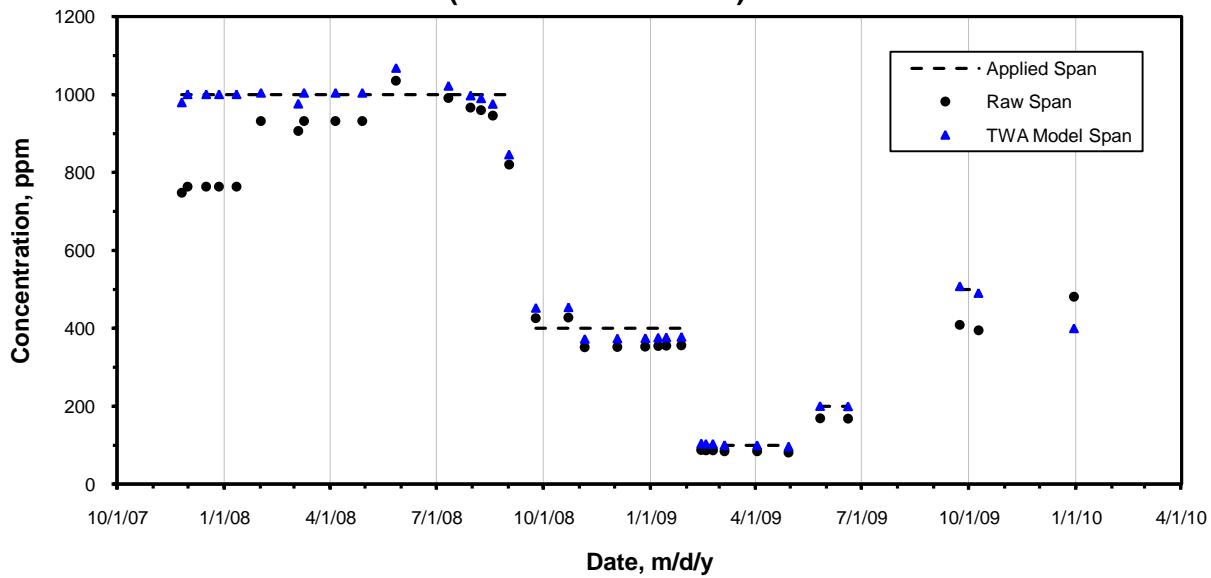


Hydrogen Sulfide

Calibration Data of H₂S Zero Checks at CA5B Site
(INNOVA SN 710-197)



Calibration Data of H₂S Span Checks at CA5B Site
(INNOVA SN 710-197)



APPENDIX D. BIOMATERIALS CHARACTERISTICS.

Table D1. Manure characteristics (mean ± SD)

Barn	Date	n	Percent (wet weight basis)			
			Nitrogen	Solids	Ammonia	Ash
1	9/5/08	6	0.32 ± 0.06	13.7 ± 4.16	0.03 ± 0.02	0.00 ± 0.00
1	1/5/09	8	0.41 ± 0.04	14.4 ± 0.84	0.02 ± 0.01	1.80 ± 0.24
1	4/5/09	8	0.41 ± 0.04	14.7 ± 1.62	0.03 ± 0.02	2.24 ± 0.96
1	6/15/09	8	0.67 ± 0.69	30.3 ± 31.4	0.05 ± 0.05	6.35 ± 8.03
2	9/5/08	7	0.35 ± 0.11	12.3 ± 2.12	0.03 ± 0.02	0.00 ± 0.00
2	1/5/09	8	0.38 ± 0.05	13.8 ± 1.21	0.02 ± 0.01	1.82 ± 0.15
2	4/5/09	8	0.45 ± 0.08	15.6 ± 2.28	0.05 ± 0.06	2.90 ± 1.47
2	6/15/09	8	0.41 ± 0.03	13.9 ± 1.22	0.02 ± 0.01	3.32 ± 3.97

Table D2. Bedding characteristics (mean ± SD)

Barn	Date	n	Percent (wet weight basis)		
			Nitrogen	Solids	Ash
1	9/5/08	6	1.51 ± 0.07	87.9 ± 5.11	
1	1/5/09	6	1.66 ± 0.13	72.7 ± 5.32	
1	4/5/09	6	1.25 ± 0.27	85.4 ± 3.59	27.0 ± 10.2
1	6/15/09	6	1.65 ± 0.26	89.5 ± 0.50	
2	9/5/08	8	1.51 ± 0.18	86.4 ± 5.12	
2	1/5/09	8	1.67 ± 0.16	73.5 ± 4.25	
2	4/5/09	6	1.73 ± 0.40	88.4 ± 1.39	34.3 ± 7.00
2	6/15/09	6	1.50 ± 0.74	89.6 ± 0.82	

Table F3. Feed characteristics (mean \pm SD).

Barn	Date	n	Percent (wet weight basis)		
			Nitrogen	Solids	Ash
1	9/5/08	5	1.18 \pm 0.04	47.6 \pm 1.52	
1	1/5/09	6	1.27 \pm 0.23	45.1 \pm 4.42	
1	1/5/09	8	1.08 \pm 0.18	41.6 \pm 3.07	
1	4/5/09	6	1.29 \pm 0.51	49.6 \pm 4.62	4.42 \pm 0.34
1	6/15/09	6	1.25 \pm 0.16	53.8 \pm 2.93	
2	9/5/08	6	1.15 \pm 0.07	46.7 \pm 3.43	
2	1/5/09	4	0.97 \pm 0.38	46.9 \pm 5.06	
2	1/5/09	6	1.23 \pm 0.18	48.0 \pm 5.86	
2	4/5/09	6	1.30 \pm 0.27	50.1 \pm 7.98	4.73 \pm 0.78
2	6/15/09	6	1.22 \pm 0.25	53.2 \pm 7.77	

APPENDIX E. DAILY MEANS

Table E1. Weather variables.

Table E1. Daily means (SD) of weather parameters at site CA5B for September, 2007.

Day	Temperature, °C	RH, %	Wind speed, m·s ⁻¹	Wind direction, °	Solar, W·m ⁻²	Atm P, kPa
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27	22.7 (6.3)	45.1 (16.7)	1.4 (1.1)	309 (116)	214.0 (253.0)	100.3 (0.2)
28	16.7 (3.5)	65.2 (14.0)	2.6 (0.8)	307 (117)	204.0 (261.0)	100.3 (0.1)
29						
30						
Avg	19.7	55.1	2.0	308.0	209.0	100.3
n	2	2	2	2	2	2
SD	3	10	0.58	1	5	0
Min	16.7	45.1	1.4	307.0	204.0	100.3
Max	22.7	65.2	2.59	309	214	100.3

Table E1. Daily means (SD) of weather parameters at site CA5B for October, 2007.

Day	Temperature, °C	RH, %	Wind speed, m·s ⁻¹	Wind direction, °	Solar, W·m ²	Atm P, kPa
1						
2						
3						
4						
5						
6	13.7 (5.5)	52.6 (22.0)	2.1 (1.9)	307 (84)	192.0 (262.0)	101.3 (0.1)
7	16.2 (6.1)	44.9 (14.8)	1.5 (1.4)	138 (68)	188.0 (258.0)	101.1 (0.2)
8	18.0 (6.8)	46.4 (17.0)	1.0 (0.9)	137 (73)	184.0 (255.0)	100.5 (0.2)
9	17.4 (4.9)	52.6 (12.7)	1.3 (1.1)	330 (115)	165.0 (246.0)	100.3 (0.1)
10						
11						
12						
13	16.8 (3.4)	74.2 (15.1)	1.0 (0.7)	295 (86)	152.0 (234.0)	100.6 (0.1)
14	17.9 (4.4)	70.1 (13.3)	1.0 (0.9)	139 (95)	154.0 (223.0)	100.7 (0.1)
15	15.8 (3.2)	73.7 (10.8)	2.1 (1.0)	331 (142)	118.0 (205.0)	100.6 (0.1)
16	16.0 (2.0)	66.7 (11.2)	1.5 (1.1)	226 (87)	100.0 (175.0)	100.6 (0.1)
17	15.6 (2.6)	66.9 (13.7)	1.1 (0.9)	296 (106)	128.0 (215.0)	101.0 (0.2)
18	16.9 (4.1)	61.9 (16.6)	1.1 (0.8)	354 (151)	144.0 (221.0)	101.2 (0.1)
19	18.5 (4.2)	68.9 (14.3)	1.4 (1.0)	286 (104)	159.0 (226.0)	100.9 (0.2)
20	15.0 (2.8)	60.2 (16.6)	3.7 (2.2)	318 (58)	167.0 (242.0)	101.2 (0.1)
21	14.2 (4.9)	51.9 (16.5)	2.0 (1.1)	319 (110)	187.0 (254.0)	101.5 (0.1)
22	17.3 (5.8)	52.0 (17.1)	1.0 (0.7)	140 (59)	171.0 (246.0)	101.8 (0.1)
23	18.6 (6.7)	54.0 (19.4)	0.9 (0.7)	295 (104)	158.0 (227.0)	101.5 (0.2)
24						
25	18.6 (6.1)	61.0 (17.3)	1.0 (0.7)	283 (86)	141.0 (210.0)	100.4 (0.2)
26	15.4 (4.0)	68.3 (12.2)	0.9 (0.7)	297 (66)		100.3 (0.1)
27	17.8 (5.1)	61.0 (17.1)	1.1 (0.8)	306 (112)	124.0 (185.0)	101.0 (0.3)
28	19.8 (4.8)	58.0 (13.8)	1.0 (0.8)	287 (57)	140.0 (206.0)	101.3 (0.2)
29	18.2 (4.3)	65.6 (14.2)	1.6 (1.3)	346 (120)	119.0 (193.0)	101.0 (0.1)
30	14.5 (3.1)	76.2 (10.5)	2.2 (1.1)	344 (150)		101.2 (0.1)
31	14.4 (3.7)	78.7 (10.9)	1.0 (0.7)	316 (117)	89.0 (160.0)	101.3 (0.1)
Avg	16.7	62.1	1.4	305.0	149.0	101.0
n	22	22	22	22	20	22
SD	1.7	9.5	0.65	70	29	0.4
Min	13.7	44.9	0.9	137.0	89.0	100.3
Max	19.8	78.7	3.72	354	192	101.8

Table E1. Daily means (SD) of weather parameters at site CA5B for November, 2007.

Day	Temperature, °C	RH, %	Wind speed, m·s⁻¹	Wind direction, °	Solar, W·m²	Atm P, kPa
1	14.3 (4.7)	76.3 (14.1)	1.2 (1.0)	315 (105)	96.0 (168.0)	101.1 (0.2)
2	16.5 (4.8)	68.5 (15.4)	1.0 (0.8)	146 (97)	131.0 (196.0)	101.0 (0.1)
3	16.2 (5.7)	62.2 (18.9)	0.9 (0.7)	138 (70)	131.0 (195.0)	101.1 (0.1)
4	15.7 (6.2)	61.4 (18.5)	0.8 (0.6)	276 (95)	130.0 (196.0)	101.0 (0.1)
5	16.0 (6.1)	57.7 (19.4)	0.7 (0.7)	328 (119)	132.0 (196.0)	100.8 (0.1)
6	15.2 (5.1)	64.3 (17.1)	1.3 (0.8)	323 (111)	119.0 (185.0)	100.7 (0.1)
7	16.2 (6.0)	62.2 (19.0)	0.7 (0.6)	335 (110)	124.0 (187.0)	100.8 (0.1)
8	13.6 (3.5)	75.5 (11.1)	2.4 (1.1)	339 (142)	100.0 (164.0)	100.8 (0.1)
9	14.8 (3.6)	68.6 (13.3)	1.4 (1.0)	337 (134)	111.0 (175.0)	100.8 (0.1)
10	14.8 (4.5)	71.8 (17.1)	1.1 (1.2)	43 (114)	83.0 (149.0)	100.8 (0.2)
11	14.2 (2.2)	78.6 (11.1)	3.0 (2.2)	316 (89)	59.0 (121.0)	100.7 (0.1)
12	13.2 (4.9)	66.9 (15.3)	0.9 (0.8)	179 (91)	118.0 (195.0)	101.3 (0.1)
13	15.6 (3.5)	73.1 (7.6)	1.3 (1.1)	304 (107)	107.0 (164.0)	101.4 (0.2)
14						
15	16.8 (4.3)	75.8 (12.2)	0.9 (0.7)	91 (106)	109.0 (171.0)	100.8 (0.1)
16	15.6 (2.8)	76.6 (11.7)	1.4 (1.0)	338 (137)	95.0 (166.0)	101.0 (0.1)
17	14.1 (4.1)	80.6 (11.3)	1.1 (1.1)	357 (146)	111.0 (178.0)	101.1 (0.1)
18	13.7 (4.0)	83.8 (10.1)	0.8 (0.6)	347 (130)	91.0 (156.0)	101.0 (0.1)
19	14.8 (3.5)	77.9 (11.4)	1.3 (0.9)	347 (141)	95.0 (160.0)	101.1 (0.1)
20	10.5 (3.5)	65.3 (17.0)	1.6 (1.4)	298 (43)	111.0 (176.0)	101.1 (0.1)
21	10.2 (4.7)	56.2 (15.7)	0.7 (0.5)	285 (94)	114.0 (175.0)	101.1 (0.1)
22	9.6 (4.7)	62.4 (15.2)	1.2 (1.2)	298 (96)	109.0 (168.0)	101.0 (0.1)
23	9.8 (6.0)	47.6 (17.8)	1.6 (1.6)	312 (101)	116.0 (177.0)	100.9 (0.1)
24	9.3 (4.6)	58.5 (17.3)	1.3 (1.1)	158 (68)	90.0 (153.0)	101.0 (0.1)
25	9.1 (3.1)	68.5 (9.1)	0.7 (0.6)	301 (107)	38.0 (63.0)	100.9 (0.1)
26	9.7 (5.4)	67.7 (16.4)	0.5 (0.5)	110 (84)	90.0 (147.0)	101.4 (0.1)
27	9.7 (4.0)	66.0 (11.9)	1.5 (1.2)	310 (101)	79.0 (137.0)	101.3 (0.1)
28	9.6 (3.9)	53.4 (12.7)	1.1 (0.9)	290 (94)	104.0 (161.0)	101.6 (0.1)
29	8.8 (4.4)	69.4 (13.2)	0.9 (0.8)	53 (101)	84.0 (142.0)	101.0 (0.3)
30	8.2 (2.9)	57.7 (16.2)	1.9 (1.8)	317 (99)	101.0 (162.0)	100.1 (0.3)
Avg	13.0	67.4	1.2	326.0	103.0	101.0
n	29	29	29	29	29	29
SD	2.9	8.6	0.52	96	21	0.3
Min	8.2	47.6	0.5	43.0	38.0	100.1
Max	16.8	83.8	2.99	357	132	101.6

Table E1. Daily means (SD) of weather parameters at site CA5B for December, 2007.

Day	Temperature, °C	RH, %	Wind speed, m·s⁻¹	Wind direction, °	Solar, W·m²	Atm P, kPa
1	6.7 (4.4)	62.7 (14.6)	1.7 (1.4)	130 (49)	95.0 (154.0)	100.4 (0.5)
2	8.8 (4.7)	52.8 (11.8)	3.5 (2.2)	141 (9)	88.0 (147.0)	101.8 (0.2)
3	11.3 (4.3)	46.6 (8.7)	1.6 (1.0)	133 (51)	99.0 (154.0)	102.2 (0.1)
4	12.5 (1.4)	75.8 (13.3)	1.9 (1.2)	303 (93)	33.0 (81.0)	101.9 (0.3)
5	12.2 (2.5)	82.0 (9.8)	1.1 (0.9)	321 (113)	66.0 (122.0)	100.9 (0.2)
6	10.8 (1.3)	90.2 (1.1)	3.6 (3.1)	136 (23)	4.0 (14.0)	100.2 (0.4)
7	11.7 (2.1)	78.3 (10.6)	2.6 (1.9)	272 (52)	69.0 (149.0)	100.1 (0.4)
8	7.0 (2.5)	75.8 (10.4)	1.8 (1.5)	319 (99)	106.0 (165.0)	100.7 (0.1)
9	6.8 (3.2)	69.0 (10.8)	0.7 (0.5)	261 (91)	105.0 (164.0)	101.2 (0.1)
10	7.5 (3.1)	75.3 (10.6)	1.3 (0.9)	323 (115)	99.0 (156.0)	100.7 (0.2)
11	7.4 (3.7)	55.9 (11.7)	1.8 (1.8)	303 (105)	106.0 (169.0)	101.2 (0.4)
12						
13	5.7 (4.0)	71.3 (12.1)	0.8 (0.7)	69 (103)	93.0 (149.0)	101.5 (0.1)
14	6.6 (4.2)	69.3 (11.8)	1.0 (0.8)	130 (29)	87.0 (139.0)	101.5 (0.1)
15	7.0 (3.6)	76.7 (9.6)	0.7 (0.7)	80 (105)	92.0 (147.0)	101.6 (0.2)
16	6.5 (3.9)	80.0 (8.6)	1.5 (1.4)	135 (44)	73.0 (127.0)	100.9 (0.2)
17	9.6 (1.6)	81.2 (3.9)	3.7 (1.2)	142 (11)	45.0 (96.0)	100.9 (0.1)
18	10.6 (1.4)	89.1 (1.6)	4.1 (2.3)	143 (43)	4.0 (15.0)	100.8 (0.2)
19	10.9 (3.0)	80.6 (8.8)	1.7 (1.5)	133 (90)	78.0 (132.0)	101.4 (0.1)
20	10.1 (2.5)	79.3 (11.3)	3.9 (2.3)	258 (73)	95.0 (161.0)	101.2 (0.2)
21	5.5 (2.6)	71.1 (11.2)	1.8 (1.1)	316 (94)	86.0 (143.0)	101.8 (0.2)
22	6.0 (3.9)	72.5 (13.9)	1.0 (0.8)	191 (71)	88.0 (147.0)	102.3 (0.1)
23	6.7 (4.1)	76.4 (13.6)	0.8 (0.5)	198 (89)	93.0 (149.0)	102.3 (0.1)
24	7.8 (2.6)	74.5 (14.2)	2.9 (1.7)	305 (89)	64.0 (123.0)	102.0 (0.1)
25	6.2 (2.9)	66.8 (11.4)	1.7 (0.9)	180 (79)	102.0 (160.0)	101.9 (0.1)
26	6.4 (2.7)	66.1 (18.7)	3.7 (2.7)	322 (85)	92.0 (158.0)	101.6 (0.1)
27	5.1 (2.8)	60.2 (11.9)	2.1 (1.5)	332 (103)	71.0 (119.0)	101.6 (0.1)
28	5.3 (1.1)	80.8 (5.6)	3.2 (2.1)	132 (60)	6.0 (13.0)	101.4 (0.1)
29	8.4 (2.5)	80.2 (5.6)	1.8 (1.3)	129 (32)	23.0 (53.0)	101.4 (0.1)
30	8.0 (2.4)	85.4 (3.8)	2.1 (1.5)	308 (63)	30.0 (53.0)	101.8 (0.1)
31	4.9 (3.2)	76.2 (11.5)	0.9 (0.7)	306 (102)	105.0 (165.0)	101.8 (0.1)
Avg	8.0	73.4	2.0	208.0	73.0	101.4
n	30	30	30	30	30	30
SD	2.2	10	1.04	87	32	0.6
Min	4.9	46.6	0.7	69.0	4.0	100.1
Max	12.5	90.2	4.06	332	106	102.3

Table E1. Daily means (SD) of weather parameters at site CA5B for January, 2008.

Day	Temperature, °C	RH, %	Wind speed, m·s⁻¹	Wind direction, °	Solar, W·m²	Atm P, kPa
1	3.8 (3.5)	86.8 (4.9)	0.8 (0.6)	175 (85)	51.0 (87.0)	101.6 (0.2)
2	5.7 (4.6)	79.0 (11.3)	1.1 (0.9)	130 (52)	79.0 (131.0)	101.0 (0.2)
3	9.1 (2.8)	74.4 (10.5)	2.4 (1.8)	131 (79)	11.0 (29.0)	100.6 (0.1)
4	11.1 (0.9)	79.0 (10.0)	8.2 (5.7)	140 (52)	0.0 (3.0)	99.5 (0.4)
5	8.0 (1.7)	85.8 (3.0)	3.5 (2.2)	147 (49)	21.0 (65.0)	100.0 (0.1)
6	8.5 (1.9)	79.0 (8.4)	1.9 (1.7)	142 (56)	62.0 (126.0)	100.3 (0.2)
7	8.4 (2.2)	75.9 (12.0)	1.3 (1.0)	318 (99)	89.0 (143.0)	101.0 (0.3)
8	7.6 (1.4)	82.3 (3.4)	4.3 (2.7)	137 (32)	13.0 (58.0)	101.2 (0.2)
9	8.4 (1.3)	87.7 (1.6)	1.3 (1.0)	268 (96)	17.0 (31.0)	101.6 (0.1)
10	9.6 (1.0)	88.1 (2.8)	1.8 (1.2)	122 (57)	19.0 (36.0)	101.6 (0.1)
11	10.0 (0.6)	88.2 (2.7)	1.2 (0.8)	321 (125)	6.0 (14.0)	101.6 (0.1)
12	10.6 (1.5)	82.1 (6.1)	1.4 (1.0)	311 (108)	74.0 (143.0)	101.7 (0.1)
13	10.6 (2.1)	81.4 (7.6)	0.7 (0.5)	136 (93)	39.0 (70.0)	101.8 (0.1)
14	8.3 (3.4)	85.1 (6.4)	0.8 (0.6)	60 (106)	93.0 (156.0)	101.8 (0.1)
15	5.5 (1.9)	90.3 (2.8)	1.2 (0.7)	309 (102)	30.0 (50.0)	101.5 (0.2)
16	5.7 (3.6)	72.4 (12.3)	1.0 (0.8)	272 (94)	96.0 (151.0)	101.1 (0.1)
17	5.7 (3.8)	69.9 (13.8)	0.8 (0.6)	122 (91)	105.0 (166.0)	101.3 (0.1)
18	7.0 (4.5)	75.2 (12.6)	0.7 (0.5)	93 (95)	106.0 (166.0)	101.4 (0.1)
19	7.9 (4.5)	74.9 (11.8)	0.9 (0.8)	113 (80)	105.0 (165.0)	101.5 (0.2)
20	7.2 (3.4)	75.9 (10.5)	1.8 (1.2)	193 (92)	114.0 (178.0)	100.5 (0.2)
21	7.5 (1.8)	78.4 (7.0)	2.8 (1.8)	138 (33)	63.0 (108.0)	100.6 (0.1)
22	8.1 (1.1)	84.4 (2.9)	2.0 (1.2)	132 (80)	41.0 (106.0)	100.8 (0.1)
23	7.2 (0.7)	90.0 (0.9)	1.1 (0.6)	262 (76)	4.0 (12.0)	100.4 (0.3)
24	6.5 (1.7)	83.0 (6.7)	6.2 (2.1)	140 (8)	23.0 (51.0)	100.0 (0.2)
25	11.8 (1.8)	67.9 (7.9)	6.5 (2.4)	136 (13)	30.0 (57.0)	100.2 (0.3)
26	12.7 (2.2)	63.5 (9.3)	3.3 (2.1)	126 (58)	69.0 (114.0)	100.5 (0.4)
27	11.4 (1.2)	81.6 (4.1)	5.4 (2.0)	147 (41)	23.0 (48.0)	99.4 (0.2)
28	7.7 (2.2)	69.9 (11.5)	1.5 (1.1)	264 (81)	117.0 (194.0)	100.8 (0.6)
29	5.6 (1.9)	78.5 (6.0)	2.3 (1.8)	130 (46)	36.0 (63.0)	101.5 (0.1)
30	7.5 (2.4)	72.5 (13.1)	1.4 (1.1)	275 (93)	132.0 (200.0)	101.8 (0.1)
31	8.2 (1.4)	75.9 (6.6)	3.7 (2.3)	141 (29)	39.0 (72.0)	101.7 (0.3)
Avg	8.2	79.3	2.4	149.0	55.0	101.0
n	31	31	31	31	31	31
SD	2	6.7	1.9	75	39	0.7
Min	3.8	63.5	0.7	60.0	0.0	99.4
Max	12.7	90.3	8.2	321	132	101.8

Table E1. Daily means (SD) of weather parameters at site CA5B for February, 2008.

Day	Temperature, °C	RH, %	Wind speed, m·s⁻¹	Wind direction, °	Solar, W·m²	Atm P, kPa
1	7.5 (2.2)	79.9 (8.9)	1.8 (1.2)	329 (107)	100.0 (163.0)	101.4 (0.1)
2	6.5 (2.0)	80.5 (6.9)	4.3 (3.6)	127 (44)	41.0 (75.0)	101.0 (0.5)
3	9.0 (2.0)	77.3 (9.3)	3.5 (2.7)	248 (73)	110.0 (188.0)	100.0 (0.3)
4	6.8 (2.9)	69.1 (15.0)	3.6 (2.7)	316 (68)	150.0 (217.0)	101.1 (0.2)
5	6.7 (4.1)	69.9 (12.4)	0.9 (0.6)	172 (101)	145.0 (211.0)	101.8 (0.2)
6	8.4 (4.0)	77.9 (7.5)	1.8 (1.7)	345 (114)	127.0 (194.0)	101.9 (0.1)
7	9.1 (4.5)	77.6 (11.9)	1.2 (1.0)	308 (108)	135.0 (198.0)	101.8 (0.1)
8	8.8 (4.2)	77.5 (13.7)	1.2 (0.9)	359 (129)	125.0 (198.0)	101.5 (0.1)
9	11.3 (4.7)	73.8 (13.9)	0.9 (0.6)	156 (78)	141.0 (209.0)	101.3 (0.1)
10	11.6 (4.8)	77.5 (11.7)	1.1 (0.9)	24 (106)	145.0 (218.0)	101.3 (0.1)
11	11.4 (5.3)	76.2 (11.7)	0.9 (0.7)	135 (97)	139.0 (204.0)	101.3 (0.1)
12	13.4 (4.7)	74.4 (12.4)	0.9 (0.6)	101 (92)	148.0 (220.0)	101.1 (0.2)
13	11.3 (2.9)	60.7 (26.7)	4.9 (4.0)	336 (103)	117.0 (185.0)	100.3 (0.2)
14						
15	8.8 (4.9)	59.0 (14.9)	1.5 (1.1)	138 (59)	166.0 (235.0)	101.1 (0.2)
16	10.1 (5.1)	61.3 (14.8)	0.9 (0.7)	324 (108)	150.0 (215.0)	101.4 (0.1)
17	10.6 (5.2)	67.9 (15.3)	0.7 (0.5)	75 (103)	146.0 (211.0)	101.1 (0.1)
18	10.4 (4.3)	78.0 (11.7)	1.4 (0.7)	320 (111)	130.0 (208.0)	100.8 (0.1)
19	9.7 (2.7)	83.6 (7.0)	1.6 (0.9)	1 (138)	47.0 (72.0)	101.0 (0.1)
20	11.9 (2.3)	76.8 (11.4)	1.3 (0.7)	183 (93)	144.0 (238.0)	100.9 (0.1)
21	9.9 (2.0)	81.7 (5.2)	4.7 (2.4)	135 (20)	38.0 (83.0)	100.3 (0.2)
22	10.4 (1.5)	80.7 (7.2)	1.4 (1.5)	348 (119)	74.0 (153.0)	100.3 (0.2)
23	8.8 (2.4)	82.2 (6.2)	4.4 (2.8)	135 (19)	28.0 (59.0)	100.4 (0.3)
24	11.5 (1.3)	80.6 (4.4)	5.3 (3.6)	150 (63)	56.0 (104.0)	100.6 (0.5)
25	11.1 (3.1)	78.7 (10.1)	1.5 (1.3)	315 (105)	144.0 (228.0)	101.7 (0.1)
26	12.1 (5.0)	76.5 (11.7)	0.6 (0.4)	256 (97)	177.0 (262.0)	101.6 (0.1)
27	12.8 (4.5)	75.5 (12.6)	1.0 (0.9)	308 (99)	155.0 (235.0)	101.1 (0.3)
28	13.8 (4.7)	73.4 (13.4)	0.7 (0.6)	132 (89)	186.0 (270.0)	100.6 (0.1)
29	15.2 (5.0)	72.9 (14.2)	1.4 (0.9)	170 (87)	183.0 (265.0)	100.8 (0.2)
Avg	10.3	75.0	2.0	14.0	123.0	101.1
n	28	28	28	28	28	28
SD	2.1	6.3	1.46	106	44	0.5
Min	6.5	59.0	0.6	1.0	28.0	100.0
Max	15.2	83.6	5.26	359	186	101.9

Table E1. Daily means (SD) of weather parameters at site CA5B for March, 2008.

Day	Temperature, °C	RH, %	Wind speed, m·s⁻¹	Wind direction, °	Solar, W·m²	Atm P, kPa
1	11.8 (2.5)	69.8 (15.3)	3.3 (1.8)	326 (89)	159.0 (240.0)	101.3 (0.1)
2	11.4 (4.0)	57.2 (12.1)	2.2 (1.7)	357 (116)	208.0 (281.0)	101.3 (0.1)
3	12.3 (5.6)	59.8 (15.9)	1.4 (0.9)	130 (56)	206.0 (277.0)	101.6 (0.1)
4	12.1 (5.1)	67.4 (15.6)	1.4 (1.1)	311 (107)	204.0 (284.0)	101.0 (0.3)
5	11.7 (5.3)	59.1 (19.7)	1.3 (1.1)	312 (105)	200.0 (287.0)	100.9 (0.2)
6	11.9 (4.6)	68.9 (10.4)	0.8 (0.7)	339 (106)	114.0 (199.0)	101.4 (0.1)
7	13.1 (4.9)	69.6 (11.9)	0.7 (0.5)	292 (92)	160.0 (242.0)	101.6 (0.1)
8	12.9 (4.3)	64.4 (14.2)	2.3 (1.6)	333 (126)	198.0 (277.0)	101.1 (0.2)
9	13.8 (5.6)	59.5 (17.7)	0.6 (0.4)	91 (98)	205.0 (287.0)	101.1 (0.1)
10	15.5 (5.4)	66.8 (16.7)	1.1 (0.8)	338 (106)	168.0 (261.0)	101.5 (0.1)
11	14.3 (4.2)	73.4 (10.6)	1.7 (1.3)	327 (124)	162.0 (239.0)	101.5 (0.2)
12	14.0 (3.8)	67.7 (11.8)	1.8 (1.4)	329 (104)	178.0 (269.0)	101.1 (0.1)
13	14.9 (3.3)	72.0 (12.1)	1.9 (1.3)	246 (87)	177.0 (272.0)	101.0 (0.1)
14	11.0 (3.5)	71.3 (13.5)	1.5 (1.1)	279 (101)	165.0 (267.0)	101.1 (0.1)
15	9.5 (2.8)	68.6 (12.8)	2.2 (1.6)	316 (104)	169.0 (285.0)	100.6 (0.2)
16	10.6 (4.9)	51.9 (18.9)	4.9 (2.8)	322 (32)	227.0 (301.0)	100.7 (0.2)
17	11.4 (5.9)	53.8 (15.6)	1.4 (1.0)	339 (119)	223.0 (298.0)	101.2 (0.1)
18	14.7 (5.6)	62.9 (12.1)	1.2 (0.9)	333 (109)	208.0 (289.0)	101.3 (0.2)
19	13.6 (4.0)	72.3 (12.0)	1.8 (0.7)	315 (118)	220.0 (297.0)	101.1 (0.1)
20	11.6 (4.0)	66.1 (18.6)	2.0 (1.1)	319 (100)	224.0 (300.0)	101.5 (0.2)
21	11.6 (5.3)	63.4 (18.4)	2.2 (1.7)	316 (76)	224.0 (301.0)	101.7 (0.2)
22	13.5 (6.4)	61.5 (18.2)	0.7 (0.5)	145 (96)	228.0 (305.0)	101.4 (0.1)
23	14.8 (6.7)	56.7 (19.6)	1.2 (0.7)	348 (124)	232.0 (309.0)	101.2 (0.2)
24	15.6 (5.9)	62.5 (14.5)	1.7 (0.9)	338 (144)	230.0 (305.0)	100.9 (0.1)
25	15.2 (4.6)	68.0 (15.5)	2.1 (0.9)	321 (111)	195.0 (279.0)	101.1 (0.1)
26	11.8 (4.0)	67.1 (17.3)	2.5 (1.5)	320 (107)	229.0 (303.0)	101.5 (0.1)
27	10.0 (4.1)	56.4 (21.1)	2.7 (1.9)	313 (64)	209.0 (278.0)	101.3 (0.3)
28	13.3 (4.1)	60.4 (15.9)	1.8 (0.7)	330 (137)	202.0 (300.0)	100.6 (0.2)
29	13.5 (2.4)	73.6 (11.7)	2.0 (1.0)	310 (77)	134.0 (194.0)	100.4 (0.1)
30	11.4 (4.0)	58.3 (14.5)	2.2 (0.9)	298 (65)	223.0 (320.0)	100.7 (0.2)
31	11.0 (5.2)	59.5 (16.8)	1.2 (0.9)	292 (99)	246.0 (320.0)	101.0 (0.2)
Avg	12.7	64.2	1.8	321.0	198.0	101.2
n	31	31	31	31	31	31
SD	1.6	5.9	0.84	62	31	0.3
Min	9.5	51.9	0.6	91.0	114.0	100.4
Max	15.6	73.6	4.92	357	246	101.7

Table E1. Daily means (SD) of weather parameters at site CA5B for April, 2008.

Day	Temperature, °C	RH, %	Wind speed, m·s⁻¹	Wind direction, °	Solar, W·m²	Atm P, kPa
1	13.7 (5.2)	53.4 (19.2)	1.1 (0.9)	315 (112)	226.0 (309.0)	100.7 (0.1)
2	14.1 (4.8)	60.2 (16.4)	1.3 (0.9)	298 (105)	149.0 (235.0)	100.6 (0.1)
3	15.5 (5.0)	55.4 (15.2)	1.7 (1.0)	334 (140)	246.0 (321.0)	101.1 (0.1)
4						
5						
6	12.9 (3.7)	60.9 (11.1)	2.3 (1.1)	298 (79)	254.0 (336.0)	101.2 (0.0)
7	11.7 (4.7)	60.3 (18.7)	2.4 (1.5)	324 (118)	273.0 (348.0)	101.2 (0.0)
8	11.4 (3.5)	61.6 (13.3)	2.4 (1.0)	297 (108)	225.0 (307.0)	101.2 (0.0)
9	12.5 (5.0)	62.9 (18.4)	2.5 (1.0)	324 (127)	278.0 (348.0)	101.2 (0.0)
10	15.2 (6.0)	57.4 (22.4)	2.4 (1.9)	316 (73)	281.0 (350.0)	101.2 (0.0)
11	18.2 (6.8)	51.3 (18.9)	0.8 (0.7)	161 (74)	283.0 (352.0)	101.2 (0.0)
12	21.9 (7.2)	46.4 (19.6)	1.0 (0.8)	190 (100)	283.0 (354.0)	101.2 (0.0)
13	23.0 (7.6)	45.1 (20.9)	1.3 (0.9)	179 (98)	286.0 (356.0)	101.2 (0.0)
14	14.6 (3.5)	53.5 (13.9)	3.7 (1.1)	299 (64)	267.0 (328.0)	101.4 (0.2)
15	11.5 (4.2)	51.3 (19.0)	3.3 (2.4)	313 (80)	297.0 (352.0)	102.0 (0.1)
16	14.5 (6.5)	48.4 (21.4)	2.5 (2.1)	313 (103)	301.0 (357.0)	101.8 (0.1)
17	18.4 (6.7)	45.1 (16.7)	1.4 (1.0)	149 (73)	302.0 (358.0)	101.8 (0.2)
18	18.0 (5.9)	50.2 (15.4)	1.8 (1.1)	318 (116)	274.0 (341.0)	101.2 (0.3)
19	11.7 (3.8)	52.9 (14.3)	3.1 (1.6)	288 (56)	302.0 (358.0)	101.2 (0.3)
20	9.5 (4.1)	52.0 (16.8)	2.1 (1.4)	294 (89)	303.0 (357.0)	102.1 (0.1)
21	10.4 (4.8)	55.8 (17.8)	1.8 (1.1)	325 (110)	296.0 (351.0)	102.1 (0.1)
22	13.4 (3.5)	58.8 (13.5)	1.4 (1.1)	315 (110)	201.0 (279.0)	101.7 (0.1)
23	13.4 (3.4)	63.6 (17.4)	2.0 (1.1)	306 (103)	207.0 (288.0)	101.8 (0.2)
24	12.8 (6.0)	53.2 (20.8)	2.9 (1.9)	319 (85)	300.0 (355.0)	102.3 (0.1)
25	17.1 (6.4)	46.1 (17.4)	2.3 (1.6)	325 (119)	304.0 (354.0)	102.2 (0.2)
26	20.8 (6.7)	47.6 (16.8)	2.3 (1.9)	319 (104)	307.0 (355.0)	101.8 (0.2)
27	23.9 (6.3)	43.5 (15.6)	1.4 (1.0)	347 (133)	314.0 (363.0)	101.7 (0.1)
28	21.8 (5.6)	44.8 (13.5)	2.4 (1.1)	332 (139)	276.0 (330.0)	101.5 (0.1)
29	14.9 (3.7)	54.9 (12.5)	3.4 (1.2)	288 (52)	307.0 (355.0)	101.5 (0.1)
30						
Avg	15.4	53.2	2.1	307.0	272.0	101.5
n	27	27	27	27	27	27
SD	4	6	0.75	53	39	0.4
Min	9.5	43.5	0.8	149.0	149.0	100.6
Max	23.9	63.6	3.65	347	314	102.3

Table E1. Daily means (SD) of weather parameters at site CA5B for May, 2008.

Day	Temperature, °C	RH, %	Wind speed, m·s⁻¹	Wind direction, °	Solar, W·m²	Atm P, kPa
1	15.7 (6.0)	43.5 (21.2)	2.9 (2.1)	316 (75)	321.0 (358.0)	101.6 (0.1)
2	17.3 (5.6)	46.1 (15.0)	1.5 (1.0)	309 (110)	244.0 (283.0)	101.6 (0.1)
3	17.3 (5.9)	55.7 (17.5)	2.4 (1.1)	320 (92)	315.0 (348.0)	101.3 (0.2)
4	17.3 (4.8)	57.7 (13.3)	2.4 (1.4)	314 (103)	321.0 (351.0)	100.7 (0.1)
5	18.7 (6.5)	56.0 (16.6)	1.8 (0.9)	322 (125)	320.0 (350.0)	100.9 (0.1)
6	18.9 (6.2)	59.4 (17.7)	2.4 (1.0)	326 (104)	323.0 (352.0)	101.1 (0.1)
7	17.4 (3.9)	55.2 (11.6)	2.8 (1.4)	308 (71)	326.0 (354.0)	101.3 (0.1)
8	18.6 (5.7)	51.4 (16.6)	1.8 (1.2)	305 (88)	321.0 (350.0)	101.2 (0.2)
9	17.3 (5.7)	51.8 (15.8)	3.0 (1.2)	318 (55)	317.0 (345.0)	101.2 (0.1)
10	19.6 (6.5)	48.6 (18.1)	1.8 (1.0)	321 (113)	318.0 (347.0)	101.4 (0.1)
11	18.9 (4.8)	53.9 (15.4)	2.4 (0.8)	308 (62)	305.0 (324.0)	101.2 (0.1)
12	18.5 (4.5)	40.9 (17.2)	4.6 (2.8)	315 (42)	326.0 (355.0)	101.1 (0.1)
13	21.4 (7.0)	38.4 (19.5)	2.7 (1.7)	312 (67)	338.0 (364.0)	101.4 (0.1)
14	24.3 (5.8)	44.8 (10.5)	1.8 (1.5)	300 (97)	295.0 (332.0)	101.4 (0.2)
15	27.3 (7.0)	48.7 (18.5)	1.2 (1.1)	291 (100)	319.0 (346.0)	101.1 (0.2)
16	29.6 (6.4)	42.7 (15.9)	2.0 (1.4)	79 (104)	331.0 (351.0)	101.4 (0.1)
17	29.1 (5.8)	36.0 (8.7)	2.5 (1.5)	341 (138)	336.0 (355.0)	101.5 (0.2)
18	27.6 (6.6)	31.0 (11.5)	2.9 (1.2)	341 (146)	340.0 (361.0)	101.3 (0.1)
19	25.2 (6.7)	40.9 (14.1)	2.4 (1.0)	325 (101)	328.0 (353.0)	101.1 (0.1)
20	20.8 (5.3)	52.1 (15.7)	2.8 (1.3)	301 (96)	323.0 (349.0)	101.2 (0.1)
21	18.4 (4.9)	44.0 (16.6)	6.1 (3.5)	314 (43)	337.0 (356.0)	101.0 (0.4)
22	19.4 (3.5)	32.2 (8.1)	7.8 (3.9)	319 (32)	337.0 (355.0)	99.8 (0.2)
23	18.8 (4.0)	45.6 (10.3)	2.3 (0.8)	284 (59)		99.7 (0.3)
24						
25						
26	17.1 (4.0)	55.9 (11.6)	2.4 (1.2)	294 (66)	337.0 (358.0)	101.4 (0.1)
27	16.1 (4.4)	61.3 (15.6)	2.4 (0.8)	307 (105)	247.0 (277.0)	100.9 (0.5)
28	16.9 (4.2)	57.6 (13.9)	2.3 (1.0)	309 (66)	337.0 (357.0)	100.7 (0.1)
29	17.3 (4.6)	56.9 (14.6)	2.4 (0.9)	312 (96)	357.0 (357.0)	100.9 (0.1)
30	18.3 (6.0)	58.6 (19.6)	2.6 (0.9)	327 (124)	353.0 (358.0)	100.7 (0.2)
31	17.3 (4.8)	60.9 (15.5)	3.1 (0.7)	312 (52)	355.0 (356.0)	100.8 (0.1)
Avg	20.0	49.2	2.7	315.0	322.0	101.1
n	29	29	29	29	28	29
SD	4	8.5	1.31	45	25	0.4
Min	15.7	31.0	1.2	79.0	244.0	99.7
Max	29.6	61.3	7.75	341	357	101.6

Table E1. Daily means (SD) of weather parameters at site CA5B for June, 2008.

Day	Temperature, °C	RH, %	Wind speed, m·s⁻¹	Wind direction, °	Solar, W·m²	Atm P, kPa
1	18.3 (5.5)	54.9 (16.8)	2.6 (0.9)	305 (42)	366.0 (361.0)	100.7 (0.1)
2	18.7 (6.3)	51.8 (16.3)	2.8 (1.1)	306 (47)	364.0 (361.0)	100.6 (0.1)
3	19.2 (4.8)	56.6 (8.9)	2.8 (0.9)	303 (59)	346.0 (340.0)	100.4 (0.2)
4	17.1 (3.8)	51.4 (16.6)	4.0 (3.1)	311 (43)		100.0 (0.1)
5	20.8 (5.9)	47.0 (17.4)	2.7 (1.5)	304 (66)	380.0 (377.0)	100.2 (0.1)
6	19.3 (5.0)	47.7 (16.8)	3.3 (2.0)	309 (72)	386.0 (378.0)	100.3 (0.2)
7	20.1 (6.2)	43.1 (19.6)	4.1 (2.5)	315 (26)	395.0 (386.0)	100.2 (0.1)
8	23.6 (6.9)	38.3 (17.3)	2.1 (1.2)	318 (103)	393.0 (385.0)	100.2 (0.1)
9	26.4 (6.9)	37.7 (14.4)	2.1 (1.3)	315 (102)	389.0 (382.0)	100.1 (0.2)
10	24.0 (4.0)	32.9 (18.4)	5.2 (3.3)	322 (77)	398.0 (391.0)	100.1 (0.1)
11	23.0 (5.1)	29.5 (8.3)	3.9 (2.5)	310 (31)	400.0 (389.0)	100.2 (0.2)
12	23.4 (6.1)	36.6 (11.4)	1.5 (1.1)	304 (82)		100.1 (0.1)
13	27.2 (6.8)	32.6 (12.0)	1.9 (1.2)	339 (132)	380.0 (374.0)	100.2 (0.1)
14	23.6 (6.4)	46.8 (14.6)	3.0 (0.7)	341 (142)	368.0 (360.0)	100.3 (0.1)
15	23.4 (6.8)	45.6 (17.4)	2.7 (1.0)	318 (83)	387.0 (379.0)	100.2 (0.1)
16	22.4 (6.5)	46.2 (15.4)	2.7 (0.9)	324 (72)	393.0 (382.0)	100.3 (0.1)
17	23.1 (7.4)	47.7 (19.1)	3.0 (1.1)	326 (87)	388.0 (379.0)	100.6 (0.1)
18	25.7 (6.1)	31.4 (11.9)	3.1 (1.5)	331 (113)	396.0 (383.0)	100.7 (0.1)
19	25.3 (6.2)	34.8 (10.7)	1.6 (1.1)	331 (122)		100.4 (0.1)
20	30.1 (7.3)	30.7 (12.7)	1.3 (0.9)	1 (141)	374.0 (360.0)	100.3 (0.1)
21	30.5 (5.9)	30.3 (12.1)	1.6 (1.5)	328 (124)	312.0 (320.0)	100.3 (0.1)
22	26.1 (5.2)	30.9 (8.4)	2.5 (1.0)	334 (135)	384.0 (373.0)	100.5 (0.1)
23	22.5 (5.8)	43.3 (11.5)	2.5 (1.1)	328 (125)	367.0 (355.0)	100.3 (0.1)
24	22.8 (6.5)	49.1 (15.4)	2.4 (0.8)	327 (115)	319.0 (303.0)	100.2 (0.1)
25	21.4 (5.6)	55.0 (12.4)	2.7 (0.8)	318 (58)	351.0 (342.0)	100.2 (0.1)
26	22.3 (6.0)	58.2 (13.8)	1.8 (0.8)	325 (96)	297.0 (307.0)	100.1 (0.2)
27	25.1 (5.3)	52.8 (12.5)	2.2 (1.1)	326 (119)	290.0 (315.0)	99.9 (0.1)
28	21.8 (5.2)	59.9 (14.3)	3.3 (0.8)	336 (83)	323.0 (331.0)	100.3 (0.1)
29	22.1 (6.5)	56.7 (19.2)	2.8 (0.7)	337 (124)	354.0 (359.0)	100.4 (0.1)
30	22.2 (5.7)	59.4 (15.3)	2.8 (0.8)	334 (111)	362.0 (360.0)	100.5 (0.1)
Avg	23.1	44.6	2.7	323.0	365.0	100.3
n	30	30	30	30	27	30
SD	3.1	9.8	0.82	59	31	0.2
Min	17.1	29.5	1.3	1.0	290.0	99.9
Max	30.5	59.9	5.16	341	400	100.7

Table E1. Daily means (SD) of weather parameters at site CA5B for July, 2008.

Day	Temperature, °C	RH, %	Wind speed, m·s⁻¹	Wind direction, °	Solar, W·m²	Atm P, kPa
1	19.2 (4.5)	66.7 (14.5)	2.8 (0.8)	331 (86)		100.4 (0.2)
2	23.6 (6.3)	48.6 (17.2)	2.9 (1.1)	332 (135)	326.0 (367.0)	100.1 (0.1)
3	24.2 (5.3)	51.5 (10.8)	2.6 (1.3)	325 (116)	326.0 (354.0)	100.2 (0.1)
4	21.4 (4.3)	60.8 (14.8)	2.1 (1.0)	313 (58)	308.0 (331.0)	100.4 (0.1)
5	24.0 (6.5)	57.9 (17.9)	2.2 (1.2)	323 (84)	349.0 (354.0)	100.1 (0.2)
6	26.7 (5.9)	54.4 (14.6)	2.0 (1.0)	327 (122)	372.0 (353.0)	99.8 (0.2)
7	30.0 (6.1)	46.3 (12.8)	1.0 (0.7)	328 (120)	368.0 (350.0)	99.6 (0.1)
8						
9	31.7 (5.4)	40.2 (7.2)	2.6 (1.0)	335 (123)		99.5 (0.1)
10	29.2 (5.3)	46.8 (10.0)	2.4 (1.0)	348 (145)	277.0 (297.0)	99.5 (0.1)
11	23.1 (4.0)	60.8 (10.4)	2.6 (0.7)	336 (113)		99.9 (0.2)
12	21.7 (4.3)	66.4 (13.2)	3.0 (0.8)	337 (108)		100.4 (0.1)
13	25.4 (5.8)	56.9 (14.4)	2.4 (0.8)	334 (135)	327.0 (329.0)	100.3 (0.2)
14	24.8 (4.9)	56.3 (12.2)	3.1 (1.0)	335 (117)	314.0 (329.0)	100.1 (0.1)
15	22.0 (4.8)	64.8 (13.1)	3.7 (0.9)	332 (59)	324.0 (343.0)	100.4 (0.1)
16	22.7 (6.4)	60.0 (16.5)	2.7 (1.0)	330 (105)	331.0 (352.0)	100.5 (0.1)
17	24.1 (6.0)	51.5 (14.9)	2.4 (0.9)	335 (138)	348.0 (368.0)	100.3 (0.1)
18	23.3 (6.8)	56.6 (16.6)	2.3 (0.9)	325 (95)	351.0 (370.0)	100.0 (0.2)
19	24.5 (6.6)	50.8 (14.2)	2.2 (0.7)	321 (109)	331.0 (355.0)	99.7 (0.1)
20	19.8 (5.4)	62.3 (14.5)	3.2 (0.8)	326 (55)	299.0 (329.0)	100.0 (0.2)
21	18.9 (5.0)	65.6 (15.1)	3.2 (0.9)	329 (66)	326.0 (356.0)	100.3 (0.2)
22	21.6 (7.3)	58.9 (20.3)	2.4 (1.0)	328 (85)	337.0 (362.0)	100.2 (0.1)
23	25.5 (6.5)	46.9 (16.1)	1.6 (0.9)	332 (131)	332.0 (350.0)	100.1 (0.1)
24	24.6 (6.3)	48.7 (13.5)	2.0 (0.9)	320 (76)	343.0 (365.0)	100.0 (0.1)
25	24.7 (6.1)	52.2 (13.5)	2.0 (0.9)	330 (117)	289.0 (333.0)	100.1 (0.1)
26	26.1 (6.4)	44.7 (12.3)	2.4 (0.7)	342 (145)	320.0 (346.0)	100.1 (0.1)
27	23.8 (5.8)	52.1 (16.2)	2.8 (0.7)	318 (87)	332.0 (358.0)	100.2 (0.1)
28	21.5 (5.9)	58.0 (16.6)	2.6 (1.0)	321 (64)	331.0 (357.0)	100.4 (0.1)
29	22.4 (5.8)	52.5 (15.3)	2.4 (0.9)	317 (80)	324.0 (354.0)	100.4 (0.1)
30	22.9 (6.1)	52.4 (14.4)	2.0 (0.7)	326 (113)	306.0 (356.0)	100.3 (0.2)
31	24.2 (6.5)	44.0 (16.0)	1.9 (0.9)	312 (102)	311.0 (346.0)	100.1 (0.1)
Avg	23.9	54.5	2.5	328.0	327.0	100.1
n	30	30	30	30	26	30
SD	2.8	7	0.53	8	21	0.3
Min	18.9	40.2	1.0	312.0	277.0	99.5
Max	31.7	66.7	3.71	348	372	100.5

Table E1. Daily means (SD) of weather parameters at site CA5B for August, 2008.

Day	Temperature, °C	RH, %	Wind speed, m·s⁻¹	Wind direction, °	Solar, W·m²	Atm P, kPa
1	23.7 (6.2)	47.5 (12.8)	2.5 (1.0)	328 (68)	325.0 (354.0)	100.1 (0.1)
2	25.3 (6.2)	49.7 (15.5)	2.3 (1.1)	335 (137)	322.0 (350.0)	100.0 (0.1)
3	23.3 (6.2)	46.1 (14.1)	2.3 (0.8)	327 (98)	329.0 (358.0)	100.0 (0.1)
4	23.2 (6.8)	53.4 (17.5)	2.4 (0.9)	326 (91)	325.0 (355.0)	100.1 (0.1)
5	23.4 (5.7)	51.4 (14.1)	2.7 (0.9)	329 (69)	301.0 (347.0)	100.2 (0.1)
6	25.0 (5.7)	49.3 (12.5)	2.1 (0.8)	330 (111)	310.0 (342.0)	100.2 (0.1)
7	24.3 (5.5)	46.9 (10.8)	2.5 (0.9)	332 (120)	311.0 (340.0)	100.1 (0.1)
8	21.5 (5.6)	60.2 (15.0)	3.0 (0.7)	326 (61)	320.0 (349.0)	100.2 (0.1)
9	21.5 (5.9)	56.9 (17.7)	2.4 (0.9)	324 (86)	325.0 (348.0)	100.4 (0.1)
10	24.0 (6.3)	52.0 (17.2)	1.7 (1.1)	318 (105)	313.0 (345.0)	100.3 (0.2)
11	26.7 (7.0)	48.0 (17.4)	1.1 (0.7)	312 (115)	311.0 (345.0)	100.0 (0.2)
12	26.4 (6.1)	49.8 (13.1)	1.6 (0.9)	317 (109)	305.0 (341.0)	99.8 (0.1)
13	28.3 (6.8)	51.2 (15.3)	1.2 (0.7)	304 (107)	292.0 (329.0)	99.7 (0.1)
14	28.3 (6.1)	49.4 (13.9)	1.7 (0.9)	323 (120)	287.0 (326.0)	99.9 (0.1)
15	28.3 (6.1)	43.0 (12.6)	2.1 (0.9)	338 (141)	288.0 (330.0)	99.9 (0.1)
16	27.0 (5.3)	48.1 (13.1)	2.7 (0.8)	331 (91)	286.0 (323.0)	99.8 (0.1)
17	22.3 (5.5)	63.4 (16.2)	3.0 (0.8)	329 (74)	282.0 (324.0)	100.0 (0.1)
18	20.5 (4.6)	65.6 (12.8)	3.0 (1.1)	326 (81)	266.0 (311.0)	100.2 (0.2)
19	20.4 (4.9)	65.3 (14.4)	2.6 (1.1)	330 (98)	252.0 (295.0)	100.3 (0.1)
20	22.7 (5.8)	65.4 (13.7)	1.9 (1.1)	329 (135)	279.0 (317.0)	100.1 (0.2)
21	24.3 (4.6)	61.0 (15.4)	2.1 (0.9)	312 (107)	281.0 (318.0)	99.9 (0.1)
22	25.1 (6.2)	57.2 (15.4)	1.5 (0.7)	308 (94)	285.0 (323.0)	99.9 (0.1)
23	23.9 (6.0)	60.4 (16.2)	2.2 (0.8)	326 (103)	281.0 (319.0)	100.0 (0.1)
24	25.3 (6.8)	56.3 (17.9)	1.9 (0.8)	318 (96)	284.0 (322.0)	100.0 (0.1)
25	25.4 (5.6)	44.1 (13.2)	2.5 (0.9)	325 (101)	282.0 (320.0)	99.8 (0.1)
26	23.8 (6.0)	49.1 (14.6)	1.8 (0.9)	327 (108)	279.0 (318.0)	99.8 (0.1)
27	27.2 (7.0)	45.2 (15.5)	1.3 (0.9)	310 (102)	277.0 (318.0)	99.8 (0.1)
28	28.2 (7.0)	46.9 (15.8)	1.1 (0.7)	286 (92)	239.0 (293.0)	99.7 (0.2)
29	29.8 (7.1)	40.7 (13.7)	1.2 (0.8)	357 (116)	259.0 (305.0)	99.5 (0.1)
30	26.6 (6.1)	40.5 (12.9)	1.7 (0.9)	303 (81)	282.0 (323.0)	99.3 (0.1)
31	20.7 (5.1)	46.4 (15.2)	2.7 (1.5)	318 (85)	279.0 (319.0)	99.6 (0.1)
Avg	24.7	52.0	2.1	323.0	292.0	100.0
n	31	31	31	31	31	31
SD	2.5	7.2	0.57	13	23	0.2
Min	20.4	40.5	1.1	286.0	239.0	99.3
Max	29.8	65.6	3.02	357	329	100.4

Table E1. Daily means (SD) of weather parameters at site CA5B for September, 2008.

Day	Temperature, °C	RH, %	Wind speed, m·s⁻¹	Wind direction, °	Solar, W·m²	Atm P, kPa
1	21.1 (5.6)	40.9 (14.6)	2.3 (1.5)	307 (72)	276.0 (316.0)	100.1 (0.1)
2	23.3 (7.0)	44.0 (17.0)	1.2 (0.7)	210 (83)	269.0 (311.0)	100.1 (0.1)
3	25.4 (7.2)	44.9 (18.0)	1.0 (0.8)	316 (127)	265.0 (306.0)	100.0 (0.1)
4	26.5 (6.9)	41.3 (16.6)	1.2 (0.9)	326 (117)	264.0 (306.0)	99.9 (0.2)
5	27.0 (6.8)	42.7 (13.8)	1.1 (0.8)	322 (113)	250.0 (290.0)	99.8 (0.1)
6	28.3 (6.7)	38.6 (12.0)	1.3 (0.7)	337 (125)	250.0 (288.0)	99.7 (0.1)
7	27.7 (7.1)	36.6 (13.1)	1.7 (0.9)	356 (121)	259.0 (302.0)	99.6 (0.1)
8	22.8 (6.8)	54.9 (18.6)	2.2 (0.8)	320 (65)	255.0 (296.0)	99.5 (0.1)
9	19.6 (5.1)	65.4 (15.9)	3.2 (0.9)	331 (98)	242.0 (284.0)	99.6 (0.1)
10	20.4 (5.9)	62.9 (15.6)	2.0 (0.8)	331 (137)	235.0 (274.0)	99.8 (0.1)
11	22.3 (6.1)	59.1 (17.0)	2.0 (0.8)	338 (140)	236.0 (282.0)	99.9 (0.1)
12	21.1 (5.9)	58.5 (17.9)	2.2 (0.9)	333 (118)	252.0 (292.0)	100.0 (0.1)
13	19.9 (6.5)	61.4 (17.2)	2.3 (1.0)	324 (84)	245.0 (286.0)	100.1 (0.1)
14	20.9 (6.3)	60.5 (17.2)	2.2 (0.8)	328 (98)	238.0 (281.0)	100.3 (0.1)
15	22.3 (6.3)	57.7 (17.0)	2.0 (0.9)	326 (117)	233.0 (277.0)	100.3 (0.2)
16	21.2 (5.8)	59.2 (16.7)	2.3 (0.8)	326 (70)	218.0 (269.0)	100.2 (0.1)
17	17.8 (4.3)	64.0 (14.6)	3.6 (0.9)	337 (102)	233.0 (275.0)	100.5 (0.1)
18	18.0 (5.6)	61.7 (16.8)	2.2 (0.8)	336 (136)	229.0 (271.0)	100.5 (0.1)
19	18.6 (4.6)	64.4 (16.6)	2.4 (1.2)	334 (133)	220.0 (268.0)	100.5 (0.1)
20	19.2 (4.1)	67.1 (12.7)	2.3 (0.9)	333 (138)	221.0 (267.0)	100.6 (0.1)
21	19.7 (5.1)	63.8 (15.9)	1.6 (0.8)	320 (120)	227.0 (270.0)	100.4 (0.1)
22	20.4 (5.9)	55.4 (20.9)	2.1 (1.7)	312 (68)	227.0 (269.0)	100.5 (0.1)
23	22.3 (6.6)	49.4 (19.5)	0.9 (0.8)	339 (121)	221.0 (263.0)	100.4 (0.1)
24	23.9 (6.6)	41.9 (15.2)	1.2 (0.8)	13 (126)	221.0 (264.0)	100.3 (0.1)
25	24.7 (6.1)	38.0 (14.4)	1.4 (1.0)	329 (127)	215.0 (258.0)	100.2 (0.1)
26	25.4 (6.4)	47.6 (15.3)	1.2 (0.7)	309 (102)	215.0 (260.0)	100.3 (0.1)
27	25.5 (6.4)	46.6 (16.5)	1.2 (0.9)	299 (56)	212.0 (255.0)	100.2 (0.1)
28	25.3 (6.4)	46.1 (16.6)	1.6 (0.9)	318 (119)	206.0 (250.0)	100.2 (0.1)
29	22.1 (5.4)	59.3 (16.1)	2.4 (0.7)	335 (116)	174.0 (229.0)	100.3 (0.5)
30	23.2 (6.0)	56.7 (16.9)	1.7 (0.9)	324 (92)	196.0 (239.0)	100.5 (0.1)
Avg	22.5	53.0	1.9	326.0	234.0	100.1
n	30	30	30	30	30	30
SD	2.9	9.5	0.63	60	22	0.3
Min	17.8	36.6	0.9	13.0	174.0	99.5
Max	28.3	67.1	3.61	356	276	100.6

Table E1. Daily means (SD) of weather parameters at site CA5B for October, 2008.

Day	Temperature, °C	RH, %	Wind speed, m·s⁻¹	Wind direction, °	Solar, W·m²	Atm P, kPa
1	24.9 (6.6)	43.5 (14.5)	1.7 (1.0)	307 (85)	187.0 (236.0)	100.4 (0.2)
2	21.7 (2.8)	62.4 (7.5)	2.9 (1.2)	327 (87)	181.0 (230.0)	100.3 (0.1)
3	19.8 (3.5)	63.6 (13.1)	1.3 (1.1)	355 (139)	123.0 (165.0)	100.0 (0.2)
4	18.4 (2.7)	70.0 (9.0)	2.9 (1.2)	233 (72)	128.0 (175.0)	100.0 (0.2)
5	17.9 (3.9)	64.1 (16.2)	1.9 (0.9)	326 (126)	221.0 (271.0)	100.5 (0.1)
6	19.1 (5.2)	60.8 (13.9)	1.4 (1.1)	330 (118)	223.0 (272.0)	100.8 (0.1)
7	21.2 (5.7)	57.9 (17.6)	1.9 (1.4)	315 (80)	222.0 (272.0)	100.9 (0.2)
8	21.3 (5.3)	55.5 (18.6)	1.7 (1.3)	317 (108)	220.0 (270.0)	100.4 (0.3)
9	17.4 (3.8)	41.3 (21.5)	4.7 (3.1)	325 (72)	217.0 (267.0)	100.3 (0.1)
10	14.0 (2.9)	34.7 (8.3)	5.3 (2.7)	321 (33)	210.0 (260.0)	100.2 (0.2)
11	13.0 (4.2)	35.1 (10.9)	4.8 (2.6)	326 (47)	213.0 (263.0)	100.3 (0.2)
12	13.1 (5.5)	33.7 (11.6)	2.2 (1.5)	317 (88)	213.0 (264.0)	101.0 (0.1)
13	14.7 (6.1)	40.2 (13.7)	1.0 (0.9)	144 (54)	208.0 (259.0)	101.4 (0.1)
14	17.5 (6.3)	39.0 (13.0)	0.9 (0.9)	150 (72)	204.0 (255.0)	101.0 (0.2)
15	18.7 (6.7)	42.8 (15.8)	0.9 (0.9)	296 (96)	200.0 (250.0)	100.7 (0.1)
16	19.5 (6.9)	50.4 (18.1)	0.6 (0.5)	155 (85)	198.0 (248.0)	100.7 (0.1)
17	21.1 (6.5)	44.3 (13.5)	0.8 (0.7)	125 (81)	177.0 (225.0)	100.7 (0.2)
18	20.3 (4.2)	45.3 (11.7)	2.2 (1.5)	327 (121)	131.0 (196.0)	100.6 (0.1)
19	17.4 (5.1)	55.3 (15.4)	2.1 (0.7)	324 (83)	190.0 (239.0)	100.6 (0.1)
20	16.3 (4.6)	59.7 (16.2)	2.1 (1.1)	325 (107)	191.0 (242.0)	101.0 (0.1)
21						
22						
23	19.5 (6.8)	48.7 (18.2)	0.8 (0.6)	327 (105)	183.0 (231.0)	100.7 (0.1)
24	19.3 (6.8)	47.1 (16.3)	0.6 (0.5)	83 (99)	180.0 (229.0)	100.6 (0.1)
25	19.6 (6.9)	48.4 (16.3)	0.5 (0.5)	119 (96)	177.0 (225.0)	100.7 (0.1)
26	19.3 (7.1)	50.2 (18.0)	0.5 (0.5)	111 (92)	179.0 (227.0)	100.8 (0.1)
27	17.7 (5.3)	56.7 (11.9)	1.1 (0.7)	318 (121)	141.0 (190.0)	101.0 (0.1)
28						
29	18.0 (5.9)	55.7 (15.0)	0.8 (0.7)	115 (70)	151.0 (192.0)	100.6 (0.2)
30	17.4 (2.5)	63.5 (13.0)	2.3 (1.3)	153 (78)	55.0 (68.0)	100.3 (0.2)
31	19.5 (2.0)	65.0 (9.7)	3.9 (2.7)	139 (20)	101.0 (155.0)	100.9 (0.1)
Avg	18.5	51.3	1.9	330.0	179.0	100.6
n	28	28	28	28	28	28
SD	2.6	10.2	1.32	93	41	0.3
Min	13.0	33.7	0.5	83.0	55.0	100.0
Max	24.9	70	5.34	355	223	101.4

Table E1. Daily means (SD) of weather parameters at site CA5B for November, 2008.

Day	Temperature, °C	RH, %	Wind speed, m·s⁻¹	Wind direction, °	Solar, W·m²	Atm P, kPa
1	18.7 (1.5)	66.0 (10.6)	3.6 (1.9)	143 (70)	35.0 (28.0)	100.5 (0.2)
2						
3						
4						
5						
6	13.0 (3.9)	70.5 (11.8)	1.3 (1.0)	289 (76)	164.0 (212.0)	101.6 (0.1)
7	15.1 (4.9)	68.8 (13.9)	0.7 (0.6)	163 (76)	163.0 (212.0)	101.2 (0.2)
8	13.9 (3.8)	75.1 (6.7)	1.2 (1.2)	195 (85)	78.0 (97.0)	100.5 (0.4)
9	13.3 (2.6)	71.3 (12.9)	2.4 (1.8)	310 (67)	151.0 (211.0)	100.0 (0.1)
10	12.6 (3.1)	73.5 (7.5)	0.9 (0.7)	16 (124)	126.0 (177.0)	100.8 (0.2)
11	12.9 (3.6)	75.9 (4.9)	1.7 (1.3)	340 (111)	124.0 (161.0)	101.3 (0.1)
12	15.0 (3.4)	71.8 (10.7)	1.0 (1.0)	305 (93)	155.0 (200.0)	101.4 (0.2)
13	16.0 (4.8)	69.8 (10.2)	1.5 (1.6)	326 (110)		101.1 (0.2)
14	15.8 (4.1)	72.7 (9.5)	0.8 (0.6)	129 (82)	143.0 (187.0)	101.0 (0.1)
15	17.0 (5.0)	69.4 (13.5)	0.9 (0.7)	141 (57)	145.0 (188.0)	101.0 (0.1)
16	16.5 (6.0)	67.0 (14.9)	0.4 (0.3)	131 (83)	145.0 (189.0)	100.9 (0.1)
17	16.2 (5.8)	68.1 (14.6)	0.3 (0.3)	184 (80)	146.0 (191.0)	101.1 (0.1)
18	15.6 (5.9)	68.5 (13.7)	0.4 (0.3)	165 (94)	141.0 (185.0)	101.0 (0.1)
19	13.2 (3.9)	71.7 (8.2)	1.5 (0.9)	333 (122)	124.0 (173.0)	100.9 (0.1)
20	13.9 (3.4)	76.3 (6.2)	2.0 (1.3)	333 (133)	115.0 (155.0)	101.2 (0.1)
21	11.7 (4.0)	68.1 (13.8)	0.6 (0.5)	313 (110)	142.0 (186.0)	101.0 (0.1)
22	11.0 (4.8)	72.1 (9.3)	0.8 (0.6)	258 (99)	124.0 (165.0)	100.9 (0.1)
23	10.5 (5.4)	72.0 (8.7)	0.6 (0.6)	150 (84)	123.0 (169.0)	100.8 (0.1)
24	10.3 (4.6)	70.7 (7.7)	0.7 (0.6)	311 (117)	95.0 (144.0)	100.7 (0.1)
25	13.0 (3.2)	73.9 (8.8)	0.9 (0.6)	186 (95)	70.0 (99.0)	100.6 (0.2)
26	12.6 (0.6)	79.4 (3.0)	0.8 (0.7)	291 (100)	35.0 (29.0)	100.3 (0.1)
27	12.6 (1.6)	77.0 (4.0)	1.6 (1.0)	327 (120)	58.0 (72.0)	100.9 (0.2)
28	11.8 (1.7)	80.6 (2.0)	1.3 (1.1)	335 (123)	53.0 (54.0)	101.4 (0.1)
29	10.4 (3.3)	77.0 (4.3)	0.7 (0.5)	151 (79)	97.0 (132.0)	101.2 (0.1)
30	10.6 (3.6)	77.8 (3.8)	0.7 (0.6)	143 (68)	114.0 (154.0)	101.2 (0.1)
Avg	13.6	72.5	1.1	256.0	115.0	100.9
n	26	26	26	26	25	26
SD	2.2	3.9	0.71	90	39	0.4
Min	10.3	66.0	0.3	16.0	35.0	100.0
Max	18.7	80.6	3.64	340	164	101.6

Table E1. Daily means (SD) of weather parameters at site CA5B for December, 2008.

Day	Temperature, °C	RH, %	Wind speed, m·s⁻¹	Wind direction, °	Solar, W·m²	Atm P, kPa
1	8.8 (1.5)	70.7 (1.1)	0.5 (0.4)	170 (80)	44.0 (41.0)	101.1 (0.1)
2	11.3 (0.9)	78.4 (5.2)	1.6 (1.4)	332 (115)	51.0 (67.0)	101.2 (0.1)
3	12.1 (1.0)	80.2 (3.7)	0.8 (0.6)	116 (55)	43.0 (42.0)	101.1 (0.2)
4	11.0 (2.2)	76.2 (5.8)	0.7 (0.5)	120 (96)	72.0 (98.0)	100.8 (0.1)
5	7.3 (2.9)	78.8 (4.7)	1.1 (1.3)	155 (72)	80.0 (103.0)	101.4 (0.1)
6	6.9 (0.6)	76.3 (6.4)	1.3 (1.0)	138 (65)	39.0 (33.0)	101.5 (0.1)
7	6.0 (0.7)	81.2 (2.9)	0.8 (0.6)	77 (107)	38.0 (35.0)	101.1 (0.2)
8						
9	7.1 (3.6)	75.3 (6.8)	1.1 (0.7)	136 (61)	96.0 (138.0)	101.5 (0.3)
10	6.6 (4.7)	76.2 (8.2)	0.6 (0.5)	133 (90)	104.0 (142.0)	101.8 (0.2)
11						
12	8.0 (3.9)	75.6 (5.4)	1.3 (0.9)	132 (99)	91.0 (122.0)	100.2 (0.2)
13						
14						
15						
16	5.4 (1.8)	80.3 (2.1)	1.6 (0.9)	341 (98)	62.0 (82.0)	100.5 (0.1)
17	3.7 (2.7)	72.3 (10.7)	2.2 (1.4)	308 (85)	131.0 (174.0)	100.4 (0.2)
18	6.1 (3.6)	70.3 (9.9)	3.7 (1.7)	139 (8)	108.0 (155.0)	100.9 (0.4)
19	7.6 (1.3)	76.0 (4.0)	2.8 (2.1)	151 (63)	60.0 (81.0)	101.6 (0.1)
20		77.0 (4.5)	0.7 (0.7)	319 (117)		
21						
22	8.9 (1.7)	73.6 (6.7)	1.3 (1.1)	171 (87)	102.0 (149.0)	100.1 (0.1)
23	8.0 (1.7)	75.3 (5.5)	1.8 (0.9)	135 (17)	93.0 (119.0)	100.3 (0.1)
24	9.8 (1.1)	74.8 (4.2)	4.1 (1.7)	136 (11)	42.0 (39.0)	100.1 (0.2)
25	8.7 (1.9)	72.0 (6.8)	4.0 (2.8)	243 (58)	101.0 (142.0)	99.7 (0.4)
26	5.5 (2.5)	71.9 (8.4)	1.4 (1.3)	315 (89)	132.0 (175.0)	101.2 (0.3)
27	6.6 (3.3)	71.0 (10.7)	1.3 (1.3)	133 (44)	123.0 (168.0)	101.9 (0.1)
28	8.2 (3.7)	71.4 (10.7)	1.0 (0.8)	122 (78)	128.0 (176.0)	101.8 (0.2)
29	9.6 (3.8)	74.8 (6.7)	0.8 (0.7)	154 (95)	124.0 (166.0)	101.4 (0.1)
30	6.9 (0.7)	68.3 (3.4)	0.7 (0.5)	194 (85)	42.0 (37.0)	101.3 (0.1)
31	5.5 (1.0)	66.0 (1.3)	0.7 (0.6)	137 (89)	40.0 (36.0)	101.3 (0.1)
Avg	7.7	74.6	1.5	143.0	81.0	101.0
n	24	25	25	25	24	24
SD	2	3.7	1.04	77	33	0.6
Min	3.7	66.0	0.5	77.0	38.0	99.7
Max	12.1	81.2	4.13	341	132	101.9

Table E1. Daily means (SD) of weather parameters at site CA5B for January, 2009.

Day	Temperature, °C	RH, %	Wind speed, m·s⁻¹	Wind direction, °	Solar, W·m²	Atm P, kPa
1	7.0 (0.5)	76.2 (4.9)	1.3 (0.9)	124 (33)	40.0 (35.0)	101.1 (0.2)
2	7.4 (0.8)	75.3 (3.4)	3.3 (1.8)	148 (44)	40.0 (37.0)	100.5 (0.2)
3	6.1 (2.2)	72.5 (5.8)	2.1 (1.4)	321 (100)	118.0 (173.0)	100.7 (0.1)
4	5.7 (3.0)	69.0 (7.8)	0.9 (0.6)	181 (68)	136.0 (180.0)	101.1 (0.2)
5	6.9 (1.2)	75.6 (2.3)	2.4 (1.3)	141 (86)	48.0 (46.0)	101.3 (0.1)
6	6.9 (1.4)	72.9 (2.8)	1.2 (0.8)	351 (110)	47.0 (49.0)	101.5 (0.1)
7	5.5 (2.5)	70.9 (4.1)	0.7 (0.5)	136 (80)	43.0 (38.0)	101.5 (0.2)
8			2.4 (2.0)	325 (95)	44.0 (45.0)	101.2 (0.1)
9			0.9 (0.7)	108 (92)	136.0 (180.0)	101.6 (0.2)
10			0.7 (0.5)	88 (94)	136.0 (179.0)	102.3 (0.1)
11			0.8 (0.5)	129 (69)	119.0 (163.0)	102.1 (0.3)
12			1.1 (0.8)	126 (45)	132.0 (173.0)	101.7 (0.1)
13			0.7 (0.6)	98 (71)	137.0 (182.0)	101.6 (0.2)
14			0.6 (0.5)	84 (87)	133.0 (176.0)	101.3 (0.1)
15	10.4 (6.0)	72.6 (15.0)	0.6 (0.5)	114 (80)	135.0 (180.0)	101.1 (0.1)
16	11.6 (6.1)	68.3 (16.2)	0.6 (0.5)	94 (76)	130.0 (181.0)	101.4 (0.1)
17						
18						
19						
20						
21	10.9 (2.5)	78.3 (7.5)	1.0 (0.7)	277 (99)	46.0 (46.0)	100.6 (0.1)
22	11.9 (1.3)	87.6 (2.8)	1.0 (0.8)	310 (102)	42.0 (40.0)	100.6 (0.1)
23						
24						
25	9.8 (1.8)	71.4 (8.2)	1.6 (1.1)	271 (91)	107.0 (171.0)	100.7 (0.2)
26	7.8 (2.9)	75.6 (11.2)	1.5 (1.3)	310 (86)	153.0 (201.0)	100.9 (0.3)
27	6.3 (4.1)	63.6 (17.0)	1.0 (0.7)	293 (101)	151.0 (204.0)	102.1 (0.3)
28	7.6 (4.5)	72.1 (15.2)	1.4 (1.2)	314 (96)	152.0 (198.0)	101.9 (0.3)
29	9.3 (4.7)	71.3 (13.6)	1.1 (0.7)	131 (37)	153.0 (198.0)	101.7 (0.1)
30	10.3 (5.6)	74.7 (14.9)	0.5 (0.5)	182 (98)	154.0 (200.0)	101.5 (0.2)
31	9.4 (5.8)	77.8 (14.6)	0.7 (0.5)	336 (112)	135.0 (187.0)	101.0 (0.1)
Avg	8.4	73.7	1.2	112.0	107.0	101.3
n	18	18	25	25	25	25
SD	2	4.9	0.68	95	45	0.5
Min	5.5	63.6	0.5	84.0	40.0	100.5
Max	11.9	87.6	3.27	351	154	102.3

Table E1. Daily means (SD) of weather parameters at site CA5B for February, 2009.

Day	Temperature, °C	RH, %	Wind speed, m·s⁻¹	Wind direction, °	Solar, W·m²	Atm P, kPa
1	10.3 (4.7)	76.4 (12.5)	0.7 (0.5)	67 (102)	153.0 (199.0)	101.2 (0.1)
2	11.4 (5.3)	75.3 (13.1)	0.6 (0.5)	58 (104)	154.0 (199.0)	101.3 (0.1)
3	12.0 (6.5)	73.2 (18.1)	0.6 (0.6)	97 (91)	159.0 (208.0)	100.8 (0.3)
4	11.4 (5.3)	78.2 (13.0)	0.7 (0.6)	89 (97)	117.0 (154.0)	100.4 (0.2)
5	12.3 (1.8)	75.2 (7.6)	3.4 (2.2)	139 (67)	104.0 (148.0)	100.3 (0.1)
6	12.1 (1.9)	80.6 (7.9)	1.9 (1.3)	121 (76)	78.0 (117.0)	100.0 (0.1)
7	11.7 (2.6)	81.3 (9.3)	1.2 (0.8)	316 (111)	157.0 (210.0)	100.0 (0.1)
8	10.8 (3.0)	76.4 (9.8)	2.9 (1.5)	159 (38)	126.0 (178.0)	100.0 (0.2)
9	7.9 (2.5)	69.6 (10.1)	2.0 (1.0)	273 (69)	148.0 (224.0)	100.3 (0.2)
10	8.1 (4.3)	67.1 (16.4)	1.4 (1.2)	87 (103)	173.0 (230.0)	101.1 (0.1)
11	9.0 (1.9)	76.6 (9.8)	3.4 (1.9)	133 (61)	138.0 (193.0)	101.0 (0.1)
12	9.0 (2.0)	76.1 (10.6)	1.4 (0.8)	137 (73)	102.0 (145.0)	101.0 (0.1)
13	8.6 (1.5)	76.7 (8.4)	3.7 (1.7)	145 (34)	109.0 (187.0)	100.5 (0.1)
14	9.9 (2.4)	70.5 (11.7)	5.4 (1.3)	143 (6)	164.0 (227.0)	100.6 (0.2)
15						
16						
17						
18	11.5 (3.4)	73.6 (12.1)	1.2 (0.9)	128 (47)	180.0 (236.0)	101.4 (0.1)
19	11.0 (5.1)	75.1 (17.3)	0.9 (0.8)	233 (92)	188.0 (252.0)	101.2 (0.1)
20	10.9 (4.9)	74.4 (14.8)	1.0 (0.8)	290 (93)	174.0 (228.0)	101.0 (0.2)
21	11.7 (3.6)	75.3 (7.8)	2.7 (1.7)	133 (21)	116.0 (150.0)	100.7 (0.1)
22	14.3 (1.1)	80.0 (3.3)	5.2 (2.1)	146 (15)	40.0 (37.0)	100.7 (0.1)
23	15.5 (1.8)	83.2 (3.8)	3.8 (2.2)	141 (37)	77.0 (109.0)	100.8 (0.1)
24	13.6 (2.9)	73.2 (12.4)	1.8 (0.9)	338 (123)	200.0 (268.0)	101.0 (0.2)
25	14.0 (3.0)	70.4 (11.6)	0.8 (0.6)	30 (124)	192.0 (265.0)	101.0 (0.1)
26	14.0 (3.4)	74.0 (11.4)	1.6 (0.8)	209 (95)	180.0 (242.0)	101.2 (0.1)
27	11.1 (3.8)	70.7 (14.2)	1.6 (1.1)	348 (137)	207.0 (268.0)	101.2 (0.1)
28	12.9 (3.9)	74.8 (9.9)	1.1 (0.8)	119 (54)	116.0 (149.0)	100.8 (0.2)
Avg	11.4	75.1	2.0	121.0	142.0	100.8
n	25	25	25	25	25	25
SD	2	3.7	1.38	87	42	0.4
Min	7.9	67.1	0.6	30.0	40.0	100.0
Max	15.5	83.2	5.43	348	207	101.4

Table E1. Daily means (SD) of weather parameters at site CA5B for March, 2009.

Day	Temperature, °C	RH, %	Wind speed, m·s⁻¹	Wind direction, °	Solar, W·m²	Atm P, kPa
1	14.3 (1.0)	82.0 (5.7)	2.3 (1.9)	135 (84)	27.0 (16.0)	100.6 (0.2)
2	15.4 (1.6)	74.9 (9.9)	4.6 (1.8)	157 (30)	106.0 (143.0)	100.4 (0.1)
3	12.5 (1.4)	74.8 (7.8)	3.4 (1.9)	152 (66)	63.0 (74.0)	100.3 (0.1)
4	10.3 (2.3)	74.1 (12.3)	1.5 (1.2)	139 (69)	164.0 (248.0)	100.6 (0.2)
5	10.1 (3.9)	72.1 (12.2)	0.9 (0.8)	323 (108)	219.0 (288.0)	101.0 (0.1)
6	10.3 (3.2)	71.3 (13.5)	1.4 (0.9)	309 (100)	175.0 (242.0)	100.9 (0.1)
7	10.5 (4.6)	69.2 (17.5)	0.9 (0.8)	354 (121)	228.0 (282.0)	100.9 (0.1)
8	11.5 (4.8)	66.9 (13.8)	1.0 (0.7)	261 (88)	228.0 (279.0)	100.5 (0.2)
9	8.4 (3.1)	56.5 (17.6)	2.5 (1.5)	307 (51)	236.0 (289.0)	100.8 (0.2)
10	8.7 (4.4)	60.6 (18.8)	1.2 (1.0)	314 (104)	239.0 (290.0)	101.0 (0.2)
11	10.0 (5.3)	59.8 (17.6)	0.9 (0.7)	316 (105)	210.0 (266.0)	100.7 (0.1)
12	12.3 (4.8)	63.3 (14.8)	1.5 (1.0)	322 (90)	234.0 (284.0)	100.8 (0.1)
13	12.7 (5.4)	66.5 (16.1)	1.2 (0.9)	338 (122)	237.0 (288.0)	100.8 (0.2)
14	10.4 (2.9)	71.5 (12.7)	2.6 (1.0)	311 (88)	208.0 (271.0)	100.6 (0.1)
15	14.0 (4.4)	67.4 (13.9)	1.4 (0.9)	84 (97)		100.8 (0.1)
16						
17	14.4 (3.8)	73.2 (14.8)	2.2 (1.4)	325 (101)	212.0 (263.0)	101.4 (0.2)
18	15.0 (5.0)	69.7 (17.5)	1.7 (1.2)	322 (99)	224.0 (278.0)	101.0 (0.3)
19	17.3 (5.2)	64.1 (16.4)	1.2 (0.8)	354 (124)	238.0 (291.0)	100.4 (0.2)
20	16.2 (4.8)	69.4 (13.6)	1.7 (0.8)	331 (136)	242.0 (290.0)	100.1 (0.1)
21	13.3 (2.5)	74.3 (8.3)	2.3 (1.0)	307 (64)	155.0 (203.0)	100.3 (0.1)
22	10.3 (2.6)	66.1 (13.9)	2.7 (1.5)	275 (72)	243.0 (316.0)	100.9 (0.4)
23	8.8 (4.6)	58.8 (20.1)	3.1 (2.4)	313 (54)	266.0 (316.0)	101.5 (0.1)
24	12.4 (5.3)	64.1 (16.5)	1.7 (1.5)	8 (112)	261.0 (312.0)	101.2 (0.2)
25	14.3 (5.3)	64.3 (17.7)	1.6 (1.4)	331 (101)	241.0 (293.0)	100.8 (0.2)
26	16.3 (5.4)	60.8 (20.9)	4.5 (2.8)	324 (70)	263.0 (311.0)	100.4 (0.2)
27	16.9 (5.5)	56.4 (18.7)	1.0 (0.7)	324 (119)	266.0 (314.0)	100.5 (0.1)
28	18.5 (6.0)	60.6 (17.8)	1.3 (0.9)	199 (77)	263.0 (312.0)	100.3 (0.2)
29	13.6 (3.3)	47.6 (23.2)	4.8 (2.7)	322 (41)	273.0 (321.0)	100.2 (0.1)
30	12.8 (4.5)	42.9 (13.2)	2.7 (1.9)	343 (123)	272.0 (320.0)	100.7 (0.2)
31	15.1 (5.8)	54.1 (18.6)	1.5 (1.2)	323 (105)	261.0 (305.0)	100.6 (0.3)
Avg	12.9	65.2	2.0	321.0	216.0	100.7
n	30	30	30	30	29	30
SD	2.7	8.4	1.09	89	60	0.3
Min	8.4	42.9	0.9	8.0	27.0	100.1
Max	18.5	82	4.8	354	273	101.5

Table E1. Daily means (SD) of weather parameters at site CA5B for April, 2009.

Day	Temperature, °C	RH, %	Wind speed, m·s⁻¹	Wind direction, °	Solar, W·m²	Atm P, kPa
1	16.2 (5.5)	57.1 (19.4)	3.8 (2.7)	324 (99)	265.0 (310.0)	100.2 (0.1)
2	14.0 (4.1)	63.0 (13.1)	2.6 (1.0)	296 (95)	252.0 (310.0)	100.1 (0.1)
3	11.8 (4.5)	52.8 (23.3)	4.2 (3.1)	311 (48)	282.0 (327.0)	100.2 (0.1)
4	12.1 (5.9)	45.6 (19.5)	1.1 (0.9)	309 (112)	289.0 (334.0)	100.6 (0.1)
5	15.1 (7.7)	46.8 (23.6)	1.6 (1.6)	124 (82)	283.0 (327.0)	100.8 (0.1)
6	17.4 (7.8)	46.1 (21.3)	0.9 (0.7)	15 (107)	279.0 (321.0)	100.4 (0.2)
7	12.5 (2.6)	71.4 (13.6)	2.1 (0.9)	67 (96)	135.0 (214.0)	100.2 (0.1)
8	13.8 (2.8)	68.3 (13.1)	1.4 (1.1)	105 (93)	204.0 (284.0)	100.7 (0.1)
9	12.7 (1.6)	79.1 (6.3)	1.1 (0.8)	127 (94)	108.0 (122.0)	100.4 (0.2)
10	12.2 (2.4)	77.5 (12.2)	2.2 (1.3)	326 (106)	165.0 (233.0)	100.0 (0.1)
11	12.8 (4.5)	68.0 (17.7)	2.5 (1.1)	329 (126)	291.0 (337.0)	100.7 (0.3)
12	15.8 (5.0)	66.8 (17.5)	2.0 (0.7)	328 (131)	298.0 (338.0)	101.2 (0.1)
13	15.2 (4.6)	66.8 (14.7)	2.1 (1.0)	320 (107)	255.0 (286.0)	100.6 (0.3)
14	10.7 (2.8)	51.2 (18.2)	3.8 (2.4)	300 (47)	270.0 (327.0)	100.1 (0.1)
15	10.8 (4.5)	50.0 (18.4)	3.2 (2.3)	304 (66)	305.0 (345.0)	100.7 (0.2)
16	13.1 (5.5)	59.0 (19.4)	2.7 (1.7)	323 (113)	305.0 (344.0)	101.2 (0.1)
17	16.4 (6.1)	53.7 (18.3)	1.8 (1.4)	326 (125)	304.0 (343.0)	101.1 (0.2)
18	19.8 (6.3)	56.6 (18.9)	1.1 (0.8)	358 (122)	305.0 (342.0)	100.8 (0.1)
19	23.2 (7.0)	51.8 (20.8)	1.2 (0.8)	95 (104)	309.0 (346.0)	100.7 (0.1)
20	24.3 (7.2)	52.2 (21.4)	1.3 (1.0)	341 (136)	304.0 (340.0)	100.5 (0.2)
21	25.2 (6.9)	51.0 (20.3)	1.2 (0.9)	13 (127)	280.0 (322.0)	100.2 (0.2)
22	24.7 (6.8)	44.0 (22.1)	2.1 (1.4)	322 (121)	321.0 (358.0)	99.9 (0.1)
23	17.5 (4.6)	51.2 (19.4)	2.5 (0.8)	308 (84)	283.0 (333.0)	100.1 (0.1)
24	13.8 (3.4)	44.9 (14.9)	3.1 (1.2)	292 (83)	274.0 (355.0)	100.5 (0.1)
25	13.4 (5.5)	58.3 (18.0)	2.5 (1.0)	317 (121)	323.0 (358.0)	100.8 (0.1)
26	14.0 (5.7)	56.6 (18.8)	1.9 (0.9)	322 (124)	321.0 (358.0)	100.6 (0.2)
27	12.9 (4.1)	58.7 (14.1)	2.7 (1.4)	298 (101)	319.0 (354.0)	100.4 (0.1)
28	12.3 (3.6)	54.7 (13.2)	2.2 (0.9)	273 (58)	286.0 (331.0)	100.9 (0.1)
29	13.2 (4.8)	56.2 (17.4)	2.4 (0.8)	316 (121)	324.0 (360.0)	101.0 (0.1)
30	15.5 (5.6)	51.0 (19.4)	2.2 (0.8)	338 (137)	289.0 (341.0)	100.9 (0.2)
Avg	15.4	57.0	2.2	329.0	274.0	100.6
n	30	30	30	30	30	30
SD	4.1	9.2	0.84	104	53	0.4
Min	10.7	44.0	0.9	13.0	108.0	99.9
Max	25.2	79.1	4.15	358	324	101.2

Table E1. Daily means (SD) of weather parameters at site CA5B for May, 2009.

Day	Temperature, °C	RH, %	Wind speed, m·s⁻¹	Wind direction, °	Solar, W·m²	Atm P, kPa
1	16.3 (2.0)	71.4 (15.4)	2.6 (1.8)	118 (92)	95.0 (119.0)	100.5 (0.1)
2	17.1 (1.9)	74.4 (10.6)	1.2 (0.7)	77 (104)	126.0 (140.0)	100.8 (0.2)
3						
4						
5						
6						
7						
8						
9						
10						
11						
12	18.4 (5.5)	45.3 (17.1)	3.1 (1.7)	326 (98)	341.0 (366.0)	100.5 (0.1)
13	20.2 (5.7)	41.7 (18.3)	3.6 (2.2)	319 (57)	317.0 (352.0)	100.5 (0.1)
14	20.2 (5.1)	52.1 (14.4)	3.3 (1.6)	324 (114)	330.0 (358.0)	100.5 (0.1)
15	23.0 (6.0)	54.1 (20.1)	2.7 (1.6)	336 (129)	339.0 (364.0)	100.1 (0.2)
16	27.2 (6.8)	43.6 (15.8)	1.4 (0.9)	319 (124)	342.0 (366.0)	100.0 (0.1)
17	29.5 (6.9)	39.7 (16.4)	1.9 (1.3)	313 (109)	344.0 (368.0)	100.0 (0.1)
18	26.5 (5.5)	39.4 (11.5)	2.9 (1.2)	336 (134)	297.0 (342.0)	99.9 (0.1)
19	21.6 (5.2)	47.0 (17.7)	3.3 (0.9)	327 (113)	316.0 (358.0)	100.1 (0.1)
20	21.5 (5.0)	37.8 (12.4)	2.8 (1.0)	328 (106)	349.0 (370.0)	100.1 (0.1)
21	22.5 (6.7)	42.8 (16.8)	2.4 (0.8)	322 (114)	345.0 (366.0)	100.0 (0.1)
22	21.9 (6.3)	51.3 (15.9)	3.1 (0.8)	327 (71)	345.0 (366.0)	100.0 (0.1)
23	18.8 (5.9)	59.7 (18.4)	3.1 (0.9)	309 (57)	345.0 (366.0)	100.1 (0.1)
24	17.4 (5.3)	61.3 (16.4)	3.1 (0.7)	307 (41)	349.0 (370.0)	100.2 (0.1)
25	19.6 (6.8)	57.0 (20.3)	2.7 (0.9)	323 (74)	346.0 (366.0)	100.1 (0.2)
26	24.5 (6.7)	47.2 (15.5)	1.9 (1.0)	318 (116)	340.0 (358.0)	99.9 (0.1)
27	27.6 (5.5)	43.2 (12.8)			346.0 (340.0)	99.8 (0.1)
28	26.1 (5.9)	43.6 (13.1)			406.0 (364.0)	99.9 (0.1)
29	22.4 (5.3)	55.0 (14.7)			376.0 (341.0)	100.2 (0.1)
30	20.4 (5.3)	63.5 (15.7)			388.0 (355.0)	100.3 (0.1)
31	20.2 (5.5)	58.7 (18.0)			397.0 (354.0)	100.1 (0.2)
Avg	22.0	51.4	2.6	328.0	326.0	100.2
n	22	22	17	17	22	22
SD	3.6	10.1	0.67	73	73	0.2
Min	16.3	37.8	1.2	77.0	95.0	99.8
Max	29.5	74.4	3.55	336	406	100.8

Table E1. Daily means (SD) of weather parameters at site CA5B for June, 2009.

Day	Temperature, °C	RH, %	Wind speed, m·s⁻¹	Wind direction, °	Solar, W·m²	Atm P, kPa
1	19.5 (4.9)	62.0 (14.6)			334.0 (285.0)	100.0 (0.1)
2	20.5 (4.5)	58.6 (15.0)			315.0 (295.0)	100.1 (0.1)
3	21.2 (4.7)	55.1 (13.3)			319.0 (287.0)	100.0 (0.1)
4	18.6 (3.9)	61.7 (14.6)			382.0 (359.0)	100.2 (0.1)
5	18.0 (2.6)	63.0 (10.2)			252.0 (287.0)	100.3 (0.1)
6	19.0 (4.3)	58.5 (15.7)			377.0 (356.0)	100.3 (0.1)
7	19.9 (5.1)	56.8 (16.3)			403.0 (359.0)	100.2 (0.1)
8	19.7 (5.1)	55.3 (18.1)			406.0 (363.0)	99.9 (0.1)
9	18.6 (4.5)	60.0 (15.8)			394.0 (357.0)	100.1 (0.1)
10	19.1 (3.4)	61.1 (12.9)			359.0 (346.0)	100.3 (0.1)
11	19.1 (4.4)	60.6 (14.2)			402.0 (355.0)	100.2 (0.1)
12	19.3 (4.2)	57.6 (14.2)			385.0 (333.0)	100.2 (0.1)
13	19.8 (3.7)	64.1 (14.6)			329.0 (329.0)	100.3 (0.1)
14	19.5 (4.8)	57.1 (16.6)			412.0 (369.0)	100.3 (0.1)
15	19.2 (4.1)	59.9 (14.7)			319.0 (310.0)	100.2 (0.1)
16	21.4 (5.6)	57.8 (18.1)		305 (67)	374.0 (346.0)	100.1 (0.1)
17	21.5 (5.1)	56.6 (14.7)		304 (50)	410.0 (365.0)	100.0 (0.1)
18	25.1 (6.7)	51.1 (17.6)		314 (88)	406.0 (361.0)	99.8 (0.2)
19	24.8 (5.3)	43.2 (12.3)		317 (127)	395.0 (353.0)	99.4 (0.1)
20	20.3 (5.1)	52.9 (13.1)		297 (87)	386.0 (344.0)	99.5 (0.1)
21	19.8 (4.9)	52.6 (12.8)		308 (86)	409.0 (365.0)	99.9 (0.1)
22	23.0 (5.9)	42.5 (18.3)		325 (111)	414.0 (372.0)	99.7 (0.2)
23	26.4 (6.2)	39.0 (14.3)		298 (109)	401.0 (367.0)	99.4 (0.1)
24	26.1 (6.1)	40.3 (14.3)		329 (122)	410.0 (368.0)	99.8 (0.1)
25	23.2 (6.3)	47.5 (17.9)		327 (130)	374.0 (371.0)	100.0 (0.1)
26	23.5 (6.5)	46.4 (16.5)	2.4 (1.1)	326 (104)	359.0 (370.0)	100.0 (0.1)
27	28.8 (7.0)	41.4 (16.6)	1.8 (1.1)	324 (122)	350.0 (364.0)	100.0 (0.1)
28	31.3 (6.5)	36.1 (11.2)	2.2 (1.4)	336 (133)	348.0 (360.0)	99.8 (0.2)
29	30.7 (6.5)	31.0 (12.3)	2.8 (0.8)	338 (139)	354.0 (366.0)	99.6 (0.1)
30	25.4 (6.7)	46.4 (18.4)	2.7 (0.9)	329 (116)	327.0 (348.0)	99.6 (0.1)
Avg	22.1	52.5	2.4	318.0	370.0	100.0
n	30	30	5	15	30	30
SD	3.6	8.8	0.37	13	39	0.3
Min	18.0	31.0	1.8	297.0	252.0	99.4
Max	31.3	64.1	2.79	338	414	100.3

Table E1. Daily means (SD) of weather parameters at site CA5B for July, 2009.

Day	Temperature, °C	RH, %	Wind speed, m·s⁻¹	Wind direction, °	Solar, W·m²	Atm P, kPa
1	24.4 (6.4)	52.5 (19.4)	3.2 (0.9)	331 (93)	333.0 (359.0)	99.7 (0.1)
2	24.3 (6.9)	52.2 (19.1)	2.9 (0.7)	339 (132)	344.0 (359.0)	99.9 (0.1)
3	24.6 (7.0)	48.5 (19.1)	2.9 (0.8)	328 (83)	350.0 (364.0)	100.1 (0.1)
4	22.6 (5.9)	55.0 (15.2)	3.0 (0.7)	337 (119)	342.0 (357.0)	100.2 (0.1)
5	20.8 (5.6)	60.2 (16.9)	3.6 (1.1)	327 (75)	341.0 (355.0)	100.3 (0.1)
6	20.5 (6.6)	52.0 (22.6)	3.1 (1.0)	327 (83)	349.0 (363.0)	100.3 (0.1)
7	22.2 (6.5)	46.7 (18.7)	2.4 (0.9)	309 (69)	350.0 (365.0)	100.1 (0.1)
8	23.0 (5.5)	47.6 (14.9)	2.2 (1.0)	318 (105)	342.0 (356.0)	100.1 (0.1)
9	22.5 (5.8)	47.9 (15.5)	2.3 (0.9)	318 (98)	343.0 (359.0)	100.2 (0.1)
10	23.2 (6.2)	45.3 (18.3)	2.1 (1.1)	327 (112)	344.0 (360.0)	100.3 (0.1)
11	24.3 (4.2)	41.2 (9.7)	2.3 (1.0)	327 (106)	256.0 (306.0)	100.3 (0.0)
12	24.6 (4.3)	36.8 (11.1)	2.1 (1.0)	325 (102)	228.0 (256.0)	100.5 (0.1)
13	24.7 (6.6)	42.4 (15.5)	2.3 (1.4)	310 (59)	342.0 (360.0)	100.3 (0.2)
14	28.3 (6.7)	39.7 (14.6)	1.6 (1.0)	303 (104)	337.0 (354.0)	99.9 (0.1)
15						
16	28.2 (6.6)	40.3 (14.0)	2.4 (0.9)	327 (101)	334.0 (352.0)	100.4 (0.1)
17	27.4 (7.5)	38.2 (13.0)	2.3 (1.1)	332 (133)	304.0 (333.0)	100.3 (0.1)
18	30.7 (5.5)	34.8 (10.1)	1.8 (1.2)	325 (99)	311.0 (333.0)	100.0 (0.1)
19	30.5 (6.4)	40.3 (12.7)	1.8 (0.7)	316 (103)	329.0 (353.0)	99.9 (0.1)
20						
21	24.8 (6.1)	47.8 (14.0)	2.2 (0.8)	319 (80)	318.0 (341.0)	100.1 (0.1)
22	24.8 (6.0)	49.8 (13.0)	2.4 (0.8)	321 (73)	329.0 (344.0)	100.0 (0.2)
23	24.1 (6.2)	55.6 (16.2)	2.3 (0.8)	319 (73)	325.0 (344.0)	99.9 (0.1)
24	21.7 (6.0)	63.2 (16.9)	2.8 (0.7)	327 (66)	317.0 (340.0)	100.1 (0.1)
25	22.6 (7.0)	61.2 (19.2)	2.3 (0.8)	329 (102)	329.0 (347.0)	100.2 (0.1)
26	26.0 (6.8)	52.4 (16.3)	2.0 (0.8)	325 (119)	326.0 (346.0)	100.2 (0.1)
27	27.2 (6.5)	49.4 (13.5)	2.0 (0.8)	333 (133)	286.0 (319.0)	100.0 (0.2)
28	25.0 (5.6)	57.1 (13.8)	2.6 (0.6)	325 (75)	311.0 (334.0)	99.7 (0.1)
29	22.6 (5.4)	65.6 (15.0)	3.1 (0.7)	330 (80)	305.0 (329.0)	99.8 (0.1)
30	21.9 (5.4)	67.9 (15.5)	2.7 (0.8)	331 (105)	253.0 (295.0)	100.0 (0.1)
31	23.1 (5.6)	60.4 (16.6)	2.5 (0.9)	329 (92)	306.0 (331.0)	100.1 (0.1)
Avg	24.5	50.1	2.4	325.0	320.0	100.1
n	29	29	29	29	29	29
SD	2.6	8.8	0.46	8	30	0.2
Min	20.5	34.8	1.6	303.0	228.0	99.7
Max	30.7	67.9	3.58	339	350	100.5

Table E1. Daily means (SD) of weather parameters at site CA5B for August, 2009.

Day	Temperature, °C	RH, %	Wind speed, m·s⁻¹	Wind direction, °	Solar, W·m²	Atm P, kPa
1	23.4 (5.9)	53.8 (16.8)	2.5 (0.9)	330 (120)	304.0 (328.0)	100.1 (0.1)
2	21.5 (6.0)	60.9 (17.3)	2.6 (0.8)	338 (137)		100.2 (0.1)
3	20.9 (5.3)	64.1 (17.3)	2.7 (0.7)	331 (108)	311.0 (335.0)	100.3 (0.1)
4	21.9 (5.6)	61.7 (18.5)	2.4 (0.7)	333 (121)	309.0 (335.0)	100.4 (0.1)
5	21.5 (5.2)	60.6 (16.7)	2.5 (0.9)	323 (107)	311.0 (335.0)	100.3 (0.1)
6	20.2 (3.9)	62.3 (15.0)	1.9 (1.0)	293 (84)	281.0 (313.0)	100.5 (0.1)
7	20.8 (4.9)	61.1 (16.0)	2.2 (0.8)	323 (87)	305.0 (321.0)	100.5 (0.1)
8	23.5 (5.7)	56.6 (15.3)	1.9 (1.3)	335 (123)	297.0 (324.0)	100.3 (0.2)
9	26.2 (5.9)	47.5 (14.3)	1.2 (0.8)	324 (118)	289.0 (319.0)	100.1 (0.2)
10	27.5 (6.1)	47.5 (15.0)	1.5 (0.9)	315 (113)	286.0 (306.0)	100.1 (0.1)
11	25.5 (5.3)	50.0 (12.6)	2.1 (1.0)	324 (101)	290.0 (313.0)	100.3 (0.1)
12	25.3 (6.2)	51.7 (14.8)	2.2 (1.1)	329 (123)	288.0 (311.0)	100.2 (0.1)
13	26.0 (5.8)	48.0 (14.9)	1.8 (1.0)	333 (129)	298.0 (321.0)	100.1 (0.1)
14	22.5 (4.8)	44.7 (12.9)	1.8 (0.8)	316 (114)	299.0 (323.0)	100.2 (0.1)
15	22.7 (6.5)	52.7 (16.9)	1.8 (1.2)	321 (99)	296.0 (318.0)	100.1 (0.1)
16	25.0 (6.3)	43.4 (15.2)	1.3 (0.9)	324 (122)	296.0 (319.0)	100.0 (0.1)
17	24.7 (6.1)	49.3 (14.9)	1.7 (1.0)	323 (118)	292.0 (312.0)	99.9 (0.1)
18	23.9 (6.4)	56.4 (14.8)	2.1 (0.7)	329 (123)	289.0 (310.0)	99.8 (0.1)
19	23.4 (5.7)	56.8 (13.6)	2.7 (0.7)	339 (141)	281.0 (307.0)	99.7 (0.1)
20	21.6 (5.5)	64.2 (16.2)	2.9 (0.8)	336 (108)	279.0 (306.0)	100.0 (0.1)
21	25.1 (7.3)	58.7 (17.4)	1.6 (0.7)	317 (92)	291.0 (307.0)	100.0 (0.2)
22	27.6 (5.3)	45.9 (15.0)	1.3 (0.6)	316 (115)	248.0 (269.0)	99.8 (0.1)
23	22.5 (4.8)	58.2 (13.9)	2.3 (0.7)	330 (88)	264.0 (302.0)	100.0 (0.1)
24	20.8 (6.4)	56.6 (19.4)	2.2 (0.7)	335 (126)	298.0 (308.0)	100.1 (0.1)
25	22.5 (6.5)	54.4 (17.7)	1.9 (0.8)	327 (101)	299.0 (308.0)	100.2 (0.1)
26	23.6 (6.3)	51.9 (16.1)	1.7 (0.7)	324 (114)	292.0 (307.0)	100.4 (0.1)
27	24.7 (6.5)	44.6 (13.3)	1.7 (0.9)	330 (125)	283.0 (311.0)	100.4 (0.1)
28	25.9 (6.7)	46.9 (16.2)	1.1 (0.8)	303 (104)	256.0 (304.0)	100.3 (0.1)
29	28.2 (6.7)	47.0 (16.2)	1.4 (1.1)	343 (127)	276.0 (292.0)	99.9 (0.2)
30	26.9 (5.4)	40.9 (14.3)	1.7 (0.9)	340 (134)	275.0 (293.0)	99.7 (0.1)
31						
Avg	23.8	53.3	2.0	326.0	289.0	100.1
n	30	30	30	30	29	30
SD	2.2	6.6	0.47	11	15	0.2
Min	20.2	40.9	1.1	293.0	248.0	99.7
Max	28.2	64.2	2.9	343	311	100.5

Table E1. Daily means (SD) of weather parameters at site CA5B for September, 2009.

Day	Temperature, °C	RH, %	Wind speed, m·s⁻¹	Wind direction, °	Solar, W·m²	Atm P, kPa
1	24.1 (6.2)	58.2 (19.2)	1.8 (0.7)	331 (122)	263.0 (289.0)	100.1 (0.1)
2	26.3 (5.4)	48.1 (12.0)	1.9 (1.0)	325 (99)	199.0 (220.0)	100.1 (0.1)
3	27.1 (6.3)	40.8 (13.8)	2.3 (0.9)	339 (145)	258.0 (288.0)	100.1 (0.1)
4	23.5 (6.1)	43.9 (16.7)	2.3 (0.9)	331 (123)	263.0 (294.0)	100.0 (0.1)
5	21.0 (5.5)	63.9 (14.2)	2.6 (0.9)	316 (67)	258.0 (290.0)	100.2 (0.1)
6	20.9 (4.3)	57.8 (17.8)	2.0 (1.2)	330 (126)	258.0 (285.0)	100.5 (0.1)
7	21.3 (5.2)	56.7 (16.9)	2.0 (1.2)	328 (118)	254.0 (284.0)	100.2 (0.2)
8	23.0 (6.3)	47.7 (18.5)	1.0 (0.7)	329 (136)	260.0 (286.0)	99.8 (0.1)
9	23.5 (5.8)	49.4 (15.7)	1.8 (1.3)	327 (121)	254.0 (277.0)	100.1 (0.1)
10	25.5 (6.3)	45.5 (15.0)	1.5 (1.0)	323 (111)	243.0 (267.0)	100.3 (0.1)
11	27.4 (5.9)	40.5 (11.6)	1.5 (0.9)	323 (112)	251.0 (268.0)	100.0 (0.2)
12	23.6 (3.5)	52.6 (11.4)	2.3 (1.2)	327 (123)	174.0 (214.0)	99.6 (0.1)
13	19.8 (3.9)	66.2 (14.9)	2.6 (0.8)	333 (124)	212.0 (268.0)	99.8 (0.1)
14	20.1 (3.0)	70.0 (15.8)	2.0 (1.0)	305 (77)	229.0 (289.0)	100.4 (0.2)
15	21.6 (5.0)	64.9 (17.2)	1.3 (0.8)	342 (140)	259.0 (299.0)	100.6 (0.1)
16	22.7 (5.0)	59.2 (16.6)	1.8 (0.9)	333 (136)	259.0 (298.0)	100.5 (0.1)
17	23.7 (5.4)	61.0 (17.5)	1.5 (1.0)	336 (136)	256.0 (298.0)	100.1 (0.2)
18	26.8 (6.6)	52.6 (18.9)	0.9 (0.7)	88 (101)	252.0 (293.0)	99.8 (0.1)
19	25.7 (5.2)	48.2 (14.0)	1.6 (0.8)	313 (112)	239.0 (288.0)	100.1 (0.1)
20	24.0 (5.6)	57.3 (16.3)	1.6 (1.0)	321 (116)	252.0 (292.0)	100.2 (0.1)
21	25.7 (5.7)	52.2 (16.9)	1.1 (0.8)	325 (123)	244.0 (286.0)	100.2 (0.1)
22	26.9 (6.4)	42.7 (17.6)	1.1 (0.8)	321 (127)	253.0 (298.0)	100.2 (0.1)
23	26.2 (6.4)	41.6 (12.8)	1.4 (0.8)	3 (139)	245.0 (286.0)	100.2 (0.1)
24	25.2 (6.1)	42.6 (15.6)	1.8 (1.1)	350 (146)	244.0 (286.0)	100.1 (0.1)
25	24.9 (6.9)	44.7 (18.2)	1.4 (1.0)	320 (115)	240.0 (285.0)	100.1 (0.1)
26	27.1 (6.7)	42.5 (15.7)	0.8 (0.7)	305 (109)	236.0 (281.0)	100.2 (0.2)
27	28.2 (6.1)	40.4 (12.2)	1.1 (0.7)	189 (103)	228.0 (273.0)	99.7 (0.3)
28	23.0 (4.4)	44.8 (11.8)	2.2 (1.0)	318 (100)	200.0 (252.0)	99.6 (0.1)
29	17.5 (2.4)	50.1 (10.3)	2.9 (1.1)	291 (42)	143.0 (191.0)	100.2 (0.2)
30	16.1 (4.8)	47.7 (19.7)	2.6 (2.0)	310 (71)	232.0 (273.0)	100.9 (0.2)
Avg	23.8	51.1	1.8	326.0	239.0	100.1
n	30	30	30	30	30	30
SD	2.9	8.4	0.55	74	27	0.3
Min	16.1	40.4	0.8	3.0	143.0	99.6
Max	28.2	70	2.9	350	263	100.9

Table E1. Daily means (SD) of weather parameters at site CA5B for October, 2009.

Day	Temperature, °C	RH, %	Wind speed, m·s⁻¹	Wind direction, °	Solar, W·m²	Atm P, kPa
1	17.8 (6.0)	40.4 (15.2)	1.0 (0.8)	288 (87)	230.0 (273.0)	100.7 (0.2)
2	19.6 (6.4)	41.6 (17.3)	0.9 (0.7)	280 (102)	221.0 (264.0)	100.1 (0.3)
3	17.6 (3.6)	45.8 (10.5)	2.7 (1.5)	298 (85)	212.0 (256.0)	99.4 (0.2)
4	14.2 (3.9)	50.7 (16.2)	1.5 (1.0)	293 (96)	214.0 (262.0)	99.7 (0.2)
5	14.1 (5.2)	51.8 (18.2)	1.4 (1.2)	314 (97)	213.0 (257.0)	100.3 (0.1)
6	15.9 (5.4)	47.8 (15.7)	1.2 (1.0)	282 (95)	210.0 (256.0)	100.2 (0.1)
7	18.6 (5.4)	41.6 (15.2)	1.3 (0.8)	341 (116)	210.0 (255.0)	100.1 (0.1)
8	16.4 (5.1)	60.2 (16.2)	2.1 (1.0)	334 (130)	204.0 (247.0)	100.6 (0.1)
9	16.6 (5.4)	62.8 (19.2)	1.8 (1.1)	324 (109)	199.0 (246.0)	100.5 (0.2)
10	16.9 (5.3)	62.3 (17.2)	1.8 (0.9)	324 (119)	199.0 (243.0)	99.9 (0.2)
11	14.1 (3.6)	71.9 (12.2)	3.0 (1.2)	341 (127)	189.0 (234.0)	99.8 (0.1)
12	16.0 (3.7)	65.3 (13.7)	2.8 (1.9)	93 (94)	136.0 (179.0)	99.6 (0.1)
13	16.2 (1.0)	79.7 (9.5)	10.1 (2.8)	141 (3)	36.0 (31.0)	99.1 (0.2)
14	20.1 (2.7)	77.4 (12.2)	3.5 (2.1)	139 (76)	148.0 (208.0)	100.4 (0.3)
15	21.5 (2.9)	76.2 (10.4)	2.1 (1.7)	305 (71)	209.0 (254.0)	100.9 (0.1)
16	20.4 (3.7)	78.7 (13.6)	1.3 (0.8)	306 (87)	168.0 (238.0)	100.6 (0.2)
17	20.8 (3.2)	80.7 (9.8)	0.9 (0.6)	92 (102)	127.0 (172.0)	100.3 (0.1)
18	19.4 (3.4)	67.9 (16.8)	1.9 (1.3)	326 (118)	158.0 (218.0)	100.3 (0.1)
19	15.5 (2.4)	73.8 (10.1)	1.6 (1.2)	26 (116)	120.0 (179.0)	100.4 (0.1)
20	15.2 (3.5)	75.1 (13.7)	1.6 (1.3)	324 (106)	197.0 (251.0)	100.5 (0.1)
21	16.9 (4.5)	70.9 (13.4)	1.0 (0.8)	322 (110)		100.6 (0.1)
22						
23	19.4 (4.5)	67.0 (15.8)	1.0 (0.9)	82 (103)	191.0 (238.0)	100.6 (0.1)
24	18.9 (4.5)	68.6 (14.6)	1.6 (1.5)	311 (98)	185.0 (233.0)	100.4 (0.1)
25	18.0 (4.4)	57.8 (17.3)	1.3 (1.2)	315 (104)	194.0 (241.0)	100.5 (0.1)
26	19.5 (5.1)	60.8 (19.7)	1.3 (0.8)	210 (75)	192.0 (239.0)	100.5 (0.2)
27	15.1 (1.8)	39.4 (14.3)	7.8 (3.6)	322 (19)	170.0 (196.0)	100.4 (0.1)
28	11.9 (3.1)	39.3 (11.1)	5.8 (3.1)	320 (45)	184.0 (232.0)	100.6 (0.1)
29	11.7 (4.7)	48.4 (15.0)	1.1 (0.8)	353 (115)	174.0 (223.0)	100.8 (0.1)
30	15.0 (5.2)	50.1 (15.2)	1.1 (0.9)	146 (66)	185.0 (224.0)	101.0 (0.1)
31	15.7 (4.9)	57.0 (13.1)	1.0 (0.9)	307 (102)	181.0 (221.0)	100.9 (0.1)
Avg	17.0	60.4	2.2	321.0	181.0	100.3
n	30	30	30	30	29	30
SD	2.5	13.3	2.08	93	39	0.4
Min	11.7	39.3	0.9	26.0	36.0	99.1
Max	21.5	80.7	10.1	353	230	101

Table E1. Daily means (SD) of weather parameters at site CA5B for November, 2009.

Day	Temperature, °C	RH, %	Wind speed, m·s⁻¹	Wind direction, °	Solar, W·m²	Atm P, kPa
1	16.5 (5.2)	66.0 (13.1)	0.8 (0.7)	48 (103)	176.0 (221.0)	100.8 (0.1)
2		68.0 (16.9)	0.7 (0.5)			
3	17.6 (5.7)	68.9 (15.9)	0.6 (0.5)	122 (78)	167.0 (212.0)	100.5 (0.2)
4	16.1 (4.8)	72.5 (12.8)	1.5 (1.3)	5 (110)	154.0 (194.0)	100.3 (0.1)
5	16.1 (4.3)	66.7 (15.1)	1.3 (0.9)	267 (110)	152.0 (203.0)	100.7 (0.1)
6	16.0 (4.3)	72.1 (14.3)	1.4 (1.2)	353 (112)	148.0 (191.0)	100.7 (0.2)
7	13.8 (3.1)	65.9 (16.7)	2.3 (2.2)	317 (83)	160.0 (202.0)	100.7 (0.1)
8	11.7 (4.0)	58.8 (14.2)	1.3 (1.0)	321 (99)	152.0 (191.0)	100.6 (0.1)
9	12.6 (4.2)	66.3 (11.4)	0.9 (0.6)	177 (88)	119.0 (135.0)	100.8 (0.1)
10	13.3 (3.9)	66.3 (13.0)	0.7 (0.5)	286 (74)	126.0 (146.0)	101.0 (0.1)
11	13.6 (2.9)	70.2 (10.0)	0.6 (0.6)	268 (98)	90.0 (101.0)	100.5 (0.2)
12	13.2 (2.4)	67.9 (13.1)	1.9 (1.4)	316 (85)	125.0 (173.0)	
13						
14	10.7 (3.8)	62.7 (12.4)	1.5 (1.4)	313 (104)	145.0 (187.0)	
15	10.1 (5.3)	55.7 (19.0)	0.8 (0.7)	143 (57)	153.0 (188.0)	
16	11.1 (5.8)	58.3 (18.0)	0.6 (0.6)	130 (69)	150.0 (188.0)	
17	11.8 (5.6)	62.2 (16.1)	0.9 (0.7)	339 (126)	147.0 (184.0)	
18	11.2 (2.9)	64.0 (18.6)	3.7 (2.3)	319 (61)	149.0 (188.0)	
19	9.4 (4.9)	66.5 (12.9)	1.4 (1.1)	131 (34)	135.0 (174.0)	
20		73.6 (10.0)	2.8 (2.3)			
21	8.1 (2.3)	79.7 (7.8)	1.8 (1.6)	309 (80)	122.0 (153.0)	100.9 (0.1)
22	10.4 (4.5)	74.7 (11.2)	1.7 (1.0)	35 (110)	94.0 (123.0)	101.0 (0.1)
23	8.6 (2.9)	80.6 (7.7)	1.0 (0.8)	28 (119)	141.0 (187.0)	101.2 (0.1)
24	11.1 (5.1)	72.3 (15.8)	0.6 (0.5)	134 (72)	148.0 (182.0)	101.1 (0.1)
25		70.4 (16.8)	0.6 (0.5)			
26						
27	11.6 (2.2)	79.0 (4.5)	1.5 (1.1)	330 (118)	60.0 (82.0)	100.5 (0.1)
28	12.1 (4.4)	50.1 (18.4)	5.5 (3.2)	327 (59)	138.0 (187.0)	100.2 (0.2)
29	9.7 (3.5)	54.9 (11.8)	1.9 (1.5)	122 (91)	145.0 (188.0)	100.7 (0.1)
30	10.4 (4.5)	68.9 (12.8)	0.7 (0.7)	188 (90)	141.0 (180.0)	100.9 (0.1)
Avg	12.3	67.3	1.5	338.0	137.0	100.7
n	25	28	28	25	25	18
SD	2.5	7.2	1.06	113	25	0.3
Min	8.1	50.1	0.6	5.0	60.0	100.2
Max	17.6	80.6	5.49	353	176	101.2

Table E1. Daily means (SD) of weather parameters at site CA5B for December, 2009.

Day	Temperature, °C	RH, %	Wind speed, m·s⁻¹	Wind direction, °	Solar, W·m²	Atm P, kPa
1	9.9 (5.3)	69.1 (14.9)	0.4 (0.4)	114 (93)	139.0 (176.0)	100.5 (0.2)
2	8.9 (4.4)	73.8 (11.9)	0.6 (0.6)	331 (109)	133.0 (172.0)	100.4 (0.1)
3	7.1 (4.3)	82.5 (9.9)	0.5 (0.4)	330 (116)	103.0 (142.0)	100.8 (0.1)
4	8.7 (4.5)	75.8 (11.8)	0.7 (0.6)	109 (101)	118.0 (162.0)	101.0 (0.2)
5	6.4 (2.4)	78.4 (9.9)	1.5 (1.7)	313 (102)	73.0 (101.0)	100.2 (0.2)
6	6.5 (2.9)	72.3 (8.6)	2.3 (2.3)	139 (57)	84.0 (125.0)	99.9 (0.1)
7	4.3 (1.5)	81.6 (6.6)	2.1 (1.7)	325 (109)	63.0 (92.0)	99.5 (0.2)
8	5.2 (3.0)	73.4 (12.6)	1.1 (1.1)	122 (57)	134.0 (178.0)	100.8 (0.3)
9	4.4 (2.5)	74.7 (9.7)	0.6 (0.5)	299 (107)	120.0 (164.0)	101.0 (0.1)
10	7.0 (2.4)	72.1 (9.6)	0.7 (0.6)	10 (126)	78.0 (102.0)	100.7 (0.2)
11	8.6 (1.6)	89.0 (1.3)	1.7 (1.7)	150 (86)	31.0 (26.0)	100.3 (0.1)
12	12.5 (0.7)	85.0 (3.6)	5.5 (1.6)	148 (17)	40.0 (46.0)	99.7 (0.3)
13		84.2 (2.2)	4.2 (2.5)			
14	11.3 (1.9)	84.5 (6.4)	0.7 (0.6)	341 (120)	100.0 (137.0)	101.1 (0.1)
15	11.4 (2.5)	81.3 (6.4)	1.9 (1.3)	128 (29)	89.0 (114.0)	101.2 (0.1)
16	11.9 (1.9)	80.1 (5.7)	1.4 (1.0)	254 (95)	62.0 (73.0)	101.3 (0.1)
17	8.9 (0.6)	91.2 (1.1)	1.3 (0.9)	343 (108)	41.0 (36.0)	101.4 (0.1)
18	9.7 (1.3)	87.2 (4.5)	0.9 (0.6)	126 (46)		101.2 (0.1)
19	10.3 (1.7)	81.6 (6.8)	0.9 (0.6)	104 (83)	77.0 (111.0)	101.0 (0.1)
20	9.9 (2.4)	85.6 (4.9)	1.5 (1.5)	115 (79)	78.0 (111.0)	100.8 (0.1)
21	11.3 (1.6)	85.8 (3.2)	1.7 (1.2)	162 (74)	69.0 (105.0)	100.4 (0.2)
22	8.0 (2.4)	64.5 (13.8)	5.0 (2.7)	314 (30)	138.0 (181.0)	100.5 (0.2)
23	6.3 (3.0)	65.5 (11.3)	1.7 (1.3)	30 (100)	138.0 (179.0)	101.1 (0.1)
24	6.9 (4.4)	73.8 (12.4)	0.7 (0.7)	113 (81)	129.0 (172.0)	101.1 (0.1)
25	7.9 (4.5)	74.8 (12.6)	0.5 (0.5)	97 (95)	135.0 (175.0)	100.7 (0.2)
26	7.5 (2.2)	82.2 (3.2)	1.3 (0.9)	131 (77)	50.0 (47.0)	100.6 (0.1)
27	10.7 (2.3)	82.4 (7.8)	2.1 (1.0)	209 (77)	117.0 (158.0)	101.1 (0.1)
28	8.0 (0.5)	89.5 (1.3)	1.3 (0.7)	303 (58)	38.0 (33.0)	101.0 (0.2)
29	9.0 (2.8)	84.9 (6.5)	1.5 (2.1)	143 (71)	83.0 (118.0)	101.0 (0.1)
30	10.7 (2.1)	81.6 (6.9)	2.6 (2.1)	161 (92)	108.0 (152.0)	101.3 (0.2)
31	10.7 (1.7)	84.0 (5.3)	1.9 (1.6)	142 (45)	87.0 (123.0)	101.7 (0.1)
Avg	8.7	79.8	1.6	113.0	92.0	100.8
n	30	31	31	30	29	30
SD	2.2	6.8	1.23	98	34	0.5
Min	4.3	64.5	0.4	10.0	31.0	99.5
Max	12.5	91.2	5.53	343	139	101.7

Table E1. Daily means (SD) of weather parameters at site CA5B for January, 2010.

Day	Temperature, °C	RH, %	Wind speed, m·s ⁻¹	Wind direction, °	Solar, W·m ⁻²	Atm P, kPa
1	11.4 (2.1)	81.3 (5.8)	1.1 (1.0)	121 (70)	61.0 (68.0)	
2	10.7 (2.6)	87.3 (2.1)	1.0 (1.0)	193 (85)	46.0 (42.0)	
3	10.5 (0.6)	85.5 (3.3)	1.8 (0.9)	136 (27)	51.0 (48.0)	
4	9.3 (2.0)	81.0 (5.6)	0.6 (0.5)	36 (108)	93.0 (126.0)	
5	7.9 (1.4)	85.7 (3.7)	1.2 (0.8)	145 (65)	55.0 (59.0)	
6	7.8 (0.8)	85.0 (2.8)	1.2 (0.9)	166 (84)	55.0 (61.0)	
7	6.6 (1.3)	88.6 (1.7)	0.8 (0.6)	125 (67)	40.0 (36.0)	
8		89.3 (1.0)	1.7 (1.1)	191 (83)		
9		88.8 (1.8)	0.9 (0.7)	189 (87)		
10	7.8 (0.4)	91.2 (0.8)	1.1 (0.8)	147 (89)	38.0 (31.0)	
11	8.3 (1.0)	90.5 (2.2)	2.5 (1.2)	145 (41)	42.0 (39.0)	
12	13.3 (3.3)	77.2 (9.7)	3.0 (1.7)	133 (52)	71.0 (87.0)	
13	14.2 (2.2)	76.5 (8.5)	1.7 (1.6)	284 (88)	113.0 (154.0)	
14	9.7 (3.0)	85.0 (7.3)	1.1 (0.8)	320 (105)	100.0 (145.0)	
15	9.0 (1.9)	87.3 (2.9)	1.4 (1.1)	142 (67)	72.0 (83.0)	
16	9.6 (1.0)	89.4 (3.2)	0.9 (0.8)	232 (100)	64.0 (84.0)	
17	10.8 (1.2)	85.6 (4.7)	3.8 (2.4)	134 (42)	51.0 (67.0)	
18	11.9 (1.3)	81.8 (5.7)	6.1 (2.6)	151 (35)	47.0 (56.0)	
19	10.5 (1.1)	79.7 (5.0)	7.5 (2.0)	143 (12)	64.0 (102.0)	
20	10.3 (1.0)	79.4 (3.6)	9.2 (3.2)	144 (7)	60.0 (105.0)	
21	8.3 (0.9)	83.8 (4.9)	2.3 (2.0)	19 (119)	35.0 (29.0)	
22	7.7 (1.6)	84.5 (4.9)	2.3 (1.3)	143 (36)	72.0 (113.0)	
23	8.8 (3.0)	80.2 (9.3)	2.3 (1.7)	132 (35)	141.0 (200.0)	
24			1.9 (1.2)	133 (12)	59.0 (64.0)	
25			3.0 (1.9)	137 (20)	48.0 (44.0)	
26			1.9 (1.2)	268 (96)	61.0 (75.0)	
27			1.7 (1.7)	340 (121)	141.0 (195.0)	
28			1.1 (1.0)	143 (76)	117.0 (162.0)	
29			1.5 (1.4)	118 (90)	123.0 (173.0)	
30			1.2 (0.8)	335 (125)	155.0 (205.0)	
31			0.5 (0.4)	290 (100)	102.0 (125.0)	
Avg	9.7	84.5	2.2	149.0	75.0	
n	21	23	31	31	29	0
SD	1.9	4.2	1.96	77	34	
Min	6.6	76.5	0.5	19.0	35.0	
Max	14.2	91.2	9.18	340	155	

Table E2. Barn environments and inventories.

Table E2. Daily means (SD) of environmental parameters at site CA5B for September, 2007.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27	24.2 (6.4)	42.2 (16.0)	745 (581)	514	24.7 (7.2)	42.3 (16.3)	745 (581)	555
28	17.8 (3.5)	61.8 (14.0)	1540 (769)	514	18.3 (3.8)	60.5 (13.6)	1540 (769)	555
29				514				555
30				514				555
Avg	21.0	52.0	1140	514	21.5	51.4	1140	555
n	2	2	2	5	2	2	2	5
SD	3.2	9.8	398	0	3.2	9.1	398	0
Min	17.8	42.2	745	514	18.3	42.3	745	555
Max	24.2	61.8	1540	514	24.7	60.5	1540	555

Table E2. Daily means (SD) of environmental parameters at site CA5B for October, 2007.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd
1				514				555
2				514				555
3				514				555
4				514				555
5				514				555
6	15.0 (5.5)	48.6 (20.7)	1330 (1100)	514	15.3 (5.6)	48.9 (20.4)	1330 (1100)	555
7	17.4 (6.4)	42.6 (14.1)	866 (777)	514	18.1 (7.4)	41.9 (14.9)	866 (777)	555
8	19.3 (6.7)	43.6 (15.7)	506 (494)	514	20.2 (7.8)	42.7 (16.7)	506 (494)	555
9	18.8 (5.2)	49.1 (13.1)	748 (678)	514	19.2 (5.8)	48.8 (12.9)	748 (678)	555
10				514				555
11				514				555
12				514				555
13	18.7 (3.6)	68.5 (14.4)	654 (455)	514	19.2 (4.4)	66.8 (15.8)	654 (455)	555
14	19.5 (4.7)	66.7 (12.7)	553 (516)	514	20.5 (5.7)	63.9 (14.7)	553 (516)	555
15	17.7 (3.5)	68.6 (11.3)	1070 (706)	514	18.4 (4.1)	66.6 (12.4)	1070 (706)	555
16	17.2 (2.1)	63.3 (11.4)	1010 (666)	514	17.6 (2.4)	62.0 (11.6)	1010 (666)	555
17	17.2 (2.8)	62.5 (13.7)	651 (532)	514	17.9 (3.4)	60.5 (14.5)	651 (532)	555
18	18.8 (4.2)	58.0 (16.1)	526 (456)	514	19.6 (4.9)	56.4 (16.5)	526 (456)	555
19	20.0 (4.4)	64.9 (13.8)	876 (749)	514	20.7 (5.1)	63.0 (15.1)	876 (749)	555
20	16.3 (3.0)	57.0 (16.2)	2110 (1110)	514	16.5 (3.1)	56.3 (15.7)	2110 (1110)	555
21	15.5 (5.2)	49.0 (16.1)	1140 (643)	514	16.1 (5.7)	48.3 (16.0)	1140 (643)	555
22	18.7 (6.1)	49.5 (16.2)	559 (411)	514	19.5 (7.1)	47.9 (17.1)	559 (411)	555
23	20.3 (6.5)	49.5 (17.7)	602 (471)	514	20.4 (7.3)	50.2 (18.5)	602 (471)	555
24				514				555
25	20.3 (6.1)	56.4 (16.4)	622 (400)	514	20.7 (6.9)	55.5 (16.6)	622 (400)	555
26	16.9 (4.0)	63.3 (11.4)	580 (503)	514	17.2 (4.6)	62.9 (12.5)	580 (503)	555
27	19.1 (5.1)	57.2 (16.1)	663 (479)	514	19.6 (5.8)	56.6 (16.9)	663 (479)	555
28	21.0 (4.8)	54.2 (13.6)	694 (522)	514	21.4 (5.2)	53.8 (13.6)	694 (522)	555
29	19.8 (4.5)	61.5 (13.9)	947 (876)	514	20.1 (5.0)	60.4 (14.1)	947 (876)	555
30	15.9 (3.4)	72.1 (11.4)	922 (620)	514	16.3 (3.7)	70.0 (11.4)	922 (620)	555
31	16.0 (3.8)	73.5 (11.6)	591 (438)	514	16.5 (4.2)	71.5 (11.7)	591 (438)	555
Avg	18.2	58.2	828	514	18.7	57.0	828	555
n	22	22	22	31	22	22	22	31
SD	1.7	8.9	355	0	1.7	8.3	355	0
Min	15.0	42.6	506	514	15.3	41.9	506	555
Max	21	73.5	2110	514	21.4	71.5	2110	555

Table E2. Daily means (SD) of environmental parameters at site CA5B for November, 2007.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd
1	15.9 (4.6)	72.3 (14.5)	774 (616)	514	16.2 (4.9)	70.7 (14.7)	774 (616)	555
2	18.0 (5.2)	64.5 (16.3)	647 (490)	514	17.9 (5.3)	64.2 (15.4)	647 (490)	555
3	17.7 (5.8)	58.8 (17.7)	492 (404)	514	18.5 (6.8)	56.9 (18.2)	492 (404)	555
4	17.3 (6.0)	56.4 (17.3)	553 (426)	514	17.5 (6.5)	55.9 (17.3)	553 (426)	555
5	17.8 (6.1)	53.4 (18.4)	455 (403)	514	18.0 (6.5)	53.0 (18.5)	455 (403)	555
6	16.8 (5.1)	59.4 (16.1)	709 (500)	514	17.1 (5.4)	58.8 (16.1)	709 (500)	555
7	17.8 (6.1)	58.5 (18.3)	392 (321)	514	18.2 (6.7)	57.0 (18.3)	392 (321)	555
8	15.3 (3.7)	70.6 (11.6)	1130 (707)	514	15.5 (3.7)	69.1 (11.1)	1130 (707)	555
9	16.5 (4.2)	64.4 (13.9)	663 (481)	514	16.8 (4.5)	63.2 (14.2)	663 (481)	555
10	16.2 (4.4)	67.6 (15.6)	544 (543)	514	16.8 (4.9)	65.9 (15.9)	544 (543)	555
11	15.2 (2.2)	75.8 (11.2)	1860 (1280)	514	15.6 (2.2)	73.3 (10.2)	1860 (1280)	555
12	14.9 (5.3)	63.3 (15.1)	585 (508)	514	15.4 (5.7)	60.8 (15.2)	585 (508)	555
13	17.2 (3.4)	68.5 (7.5)	847 (780)	514	17.5 (3.5)	67.5 (7.4)	847 (780)	555
14				514				555
15	18.1 (4.7)	72.3 (13.0)	521 (412)	514	18.7 (5.2)	69.6 (13.5)	521 (412)	555
16	17.5 (2.8)	71.5 (11.1)	728 (607)	514	17.7 (3.1)	70.2 (11.4)	728 (607)	555
17	16.1 (4.3)	74.9 (11.9)	567 (592)	514	16.3 (4.5)	73.5 (11.8)	567 (592)	555
18	16.1 (4.2)	76.3 (10.6)	422 (344)	514	16.4 (4.6)	74.2 (11.3)	422 (344)	555
19	16.5 (3.9)	72.6 (12.1)	716 (587)	514	16.7 (4.2)	71.6 (12.1)	716 (587)	555
20	12.0 (3.7)	60.5 (16.2)	1020 (803)	514	12.2 (3.7)	59.9 (16.3)	1020 (803)	555
21	12.0 (4.7)	51.6 (14.8)	468 (388)	514	12.4 (5.1)	51.0 (14.7)	468 (388)	555
22	11.5 (4.3)	57.1 (13.5)	775 (753)	514	11.5 (4.6)	56.8 (14.1)	775 (753)	555
23	11.3 (5.8)	44.4 (17.0)	998 (973)	514	11.5 (6.0)	43.9 (16.6)	998 (973)	555
24	10.8 (5.0)	55.9 (16.9)	699 (585)	514	11.3 (5.3)	54.2 (16.4)	699 (585)	555
25	11.0 (3.0)	63.1 (8.3)	409 (321)	514	11.2 (3.3)	62.3 (8.6)	409 (321)	555
26	12.2 (5.9)	61.2 (15.2)	342 (291)	514	11.8 (6.1)	61.9 (15.1)	342 (291)	555
27	11.5 (4.2)	60.4 (11.2)	932 (684)	514	11.4 (4.2)	60.7 (11.4)	932 (684)	555
28	11.8 (4.8)	48.6 (12.4)	696 (583)	514	11.6 (4.8)	48.8 (12.4)	696 (583)	555
29	10.8 (4.3)	62.9 (12.3)	574 (506)	514	10.5 (4.6)	63.6 (12.5)	574 (506)	555
30	10.0 (3.1)	52.8 (15.4)	1100 (1040)	514	9.8 (3.1)	53.9 (14.9)	1100 (1040)	555
Avg	14.7	62.7	711	514	14.9	61.8	711	555
n	29	29	29	30	29	29	29	30
SD	2.7	8.3	301	0	2.9	7.8	301	0
Min	10.0	44.4	342	514	9.8	43.9	342	555
Max	18.1	76.3	1860	514	18.7	74.2	1860	555

Table E2. Daily means (SD) of environmental parameters at site CA5B for December, 2007.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, $\text{dsm}^3\text{s}^{-1}$	Inv., hd	Temp., °C	RH, %	Airflow, $\text{dsm}^3\text{s}^{-1}$	Inv., hd
1	8.4 (4.4)	57.6 (13.5)	1030 (831)	514	8.1 (4.6)	58.4 (13.3)	1030 (831)	555
2	10.0 (4.6)	49.7 (11.1)	2070 (1330)	514	9.5 (4.6)	51.3 (10.9)	2070 (1330)	555
3	12.7 (4.9)	43.2 (8.5)	1000 (610)	514	12.5 (5.0)	44.5 (9.0)	1000 (610)	555
4	14.0 (1.6)	70.4 (12.5)	1220 (711)	514	14.0 (1.6)	70.9 (12.3)	1220 (711)	555
5	14.3 (2.9)	74.1 (10.5)	634 (502)	514	14.2 (2.8)	74.4 (10.1)	634 (502)	555
6	11.8 (1.2)	86.6 (1.9)	2200 (1930)	514	12.0 (1.3)	84.8 (1.7)	2200 (1930)	555
7	12.9 (2.1)	74.0 (11.1)	1770 (1090)	514	13.0 (2.1)	73.2 (10.6)	1770 (1090)	555
8	9.1 (2.8)	68.9 (10.6)	1040 (843)	514	9.0 (2.8)	69.1 (10.2)	1040 (843)	555
9	9.2 (4.6)	61.9 (13.0)	488 (320)	514	9.1 (4.1)	62.6 (11.7)	488 (320)	555
10	9.9 (3.5)	68.0 (10.6)	747 (554)	514	8.1 (2.4)	73.4 (5.8)	747 (554)	555
11	9.8 (4.9)	50.7 (11.5)	983 (944)	514			983 (944)	555
12				514				555
13	8.0 (4.2)	62.8 (11.7)	517 (405)	514	7.6 (4.4)	64.4 (12.0)	517 (405)	555
14	8.7 (4.8)	63.0 (11.9)	623 (479)	514	8.4 (5.0)	63.7 (12.0)	623 (479)	555
15	10.0 (4.3)	67.6 (10.2)	436 (361)	514	9.5 (4.3)	68.4 (9.8)	436 (361)	555
16	8.6 (4.1)	73.8 (9.6)	912 (856)	514	8.4 (4.4)	73.3 (9.4)	912 (856)	555
17	10.7 (1.6)	77.6 (3.8)	2210 (714)	514	11.0 (1.6)	76.1 (3.7)	2210 (714)	555
18	11.5 (1.0)	87.3 (2.5)	2360 (1440)	514	11.8 (1.4)	83.8 (1.8)	2360 (1440)	555
19	12.2 (3.6)	76.6 (9.0)	991 (936)	514	12.9 (3.5)	75.0 (9.7)	991 (936)	555
20	10.9 (2.5)	74.5 (11.8)	2410 (1410)	514	11.5 (2.5)	74.2 (11.5)	2410 (1410)	555
21	7.5 (3.3)	65.3 (11.8)	1200 (714)	514	7.4 (3.2)	65.3 (11.5)	1200 (714)	555
22	8.1 (4.5)	65.9 (13.9)	601 (413)	514	8.2 (4.7)	65.8 (14.1)	601 (413)	555
23	8.7 (5.0)	68.2 (14.0)	552 (354)	514	8.9 (4.9)	68.8 (14.4)	552 (354)	555
24	8.8 (2.9)	69.2 (12.8)	1870 (1070)	514	9.2 (2.6)	69.1 (13.0)	1870 (1070)	555
25	8.0 (3.5)	61.3 (11.8)	1080 (573)	514	8.2 (3.5)	61.4 (11.6)	1080 (573)	555
26	7.6 (2.8)	61.0 (17.0)	2210 (1540)	514	7.8 (2.6)	61.5 (17.2)	2210 (1540)	555
27	6.3 (3.9)	54.8 (12.2)	1260 (798)	514	6.2 (3.8)	55.8 (11.7)	1260 (798)	555
28	6.4 (1.9)	75.6 (5.7)	1960 (1330)	514	6.8 (1.6)	75.4 (5.8)	1960 (1330)	555
29	9.7 (2.8)	74.1 (5.2)	1110 (801)	514	10.0 (2.5)	74.4 (5.1)	1110 (801)	555
30	9.3 (2.6)	76.6 (3.2)	1300 (897)	514	9.8 (2.5)	78.8 (3.4)	1300 (897)	555
31	7.3 (4.5)	66.8 (12.0)	618 (428)	514	7.1 (4.2)	68.5 (12.2)	618 (428)	555
Avg	9.7	67.6	1250	514	9.7	68.5	1250	555
n	30	30	30	31	29	29	30	31
SD	2.1	9.9	624	0	2.2	8.8	624	0
Min	6.3	43.2	436	514	6.2	44.5	436	555
Max	14.3	87.3	2410	514	14.2	84.8	2410	555

Table E2. Daily means (SD) of environmental parameters at site CA5B for January, 2008.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd
1	6.2 (4.2)	71.7 (3.8)	482 (369)	514	6.3 (4.0)	78.9 (7.1)	482 (369)	555
2	7.1 (4.8)	65.6 (6.7)	670 (511)	514	7.2 (5.0)	73.7 (11.8)	670 (511)	555
3	10.4 (2.4)	68.0 (7.5)	1420 (1150)	514	10.5 (2.6)	70.4 (8.8)	1420 (1150)	555
4	11.0 (1.1)	63.7 (8.9)	5040 (3500)	514	11.9 (0.8)	75.7 (8.4)	5040 (3500)	555
5	7.7 (1.6)	55.6 (4.5)	2090 (1290)	514	9.1 (1.8)	81.5 (2.5)	2090 (1290)	555
6	9.1 (2.2)	62.7 (7.2)	1090 (913)	514	10.1 (2.1)	73.4 (8.2)	1090 (913)	555
7	9.3 (2.0)	63.5 (7.8)	769 (640)	514	10.5 (2.2)	69.1 (11.6)	769 (640)	555
8	7.8 (1.1)	69.2 (6.9)	2630 (1610)	514	8.7 (1.2)	77.7 (2.9)	2630 (1610)	555
9	9.0 (1.3)	57.4 (3.2)	808 (593)	514	10.2 (1.4)	80.6 (1.6)	808 (593)	555
10	10.2 (1.3)	58.9 (7.7)	1080 (728)	514	11.2 (1.1)	81.7 (2.8)	1080 (728)	555
11	11.4 (0.7)	67.9 (8.2)	600 (426)	514	12.2 (0.5)	80.6 (2.3)	600 (426)	555
12	12.3 (2.3)	77.3 (6.6)	690 (449)	514	13.0 (2.3)	74.0 (8.0)	690 (449)	555
13	12.7 (2.3)	78.6 (6.8)	397 (271)	514	13.1 (2.9)	73.1 (7.9)	397 (271)	555
14	10.0 (4.0)	81.2 (9.2)	564 (426)	514	10.2 (4.2)	77.7 (8.1)	564 (426)	555
15	7.0 (1.8)	73.8 (9.2)	724 (517)	514	7.9 (2.0)	82.2 (3.8)	724 (517)	555
16	7.1 (4.0)	68.6 (10.7)	627 (462)	514	7.9 (4.6)	65.1 (12.6)	627 (462)	555
17	7.5 (4.3)	67.0 (14.3)	468 (316)	514	8.2 (4.9)	62.9 (14.2)	468 (316)	555
18	9.0 (5.2)	71.2 (13.4)	422 (284)	514	9.3 (5.7)	67.9 (13.2)	422 (284)	555
19	9.8 (5.1)	71.9 (12.2)	545 (430)	514	10.2 (5.9)	67.5 (12.9)	545 (430)	555
20	8.3 (3.2)	73.4 (10.2)	1230 (942)	514	8.8 (3.5)	69.4 (10.3)	1230 (942)	555
21	8.2 (1.8)	76.9 (6.3)	1580 (959)	514	9.0 (2.0)	72.5 (6.8)	1580 (959)	555
22	8.3 (1.3)	69.8 (9.1)	1280 (806)	514	9.7 (1.2)	78.0 (2.8)	1280 (806)	555
23	7.6 (1.0)	52.3 (2.0)	679 (372)	514	9.3 (0.9)	81.9 (1.3)	679 (372)	555
24	6.4 (1.9)	59.7 (7.4)	3800 (1200)	514	7.5 (1.6)	79.0 (5.8)	3800 (1200)	555
25	12.2 (1.8)	66.6 (6.7)	4160 (1360)	514	12.5 (1.8)	65.6 (7.1)	4160 (1360)	555
26	13.4 (2.1)	62.2 (9.5)	2040 (1350)	514	13.8 (2.2)	60.5 (8.7)	2040 (1350)	555
27	11.2 (1.4)	67.1 (6.1)	3240 (1270)	514	12.4 (1.2)	77.7 (4.0)	3240 (1270)	555
28	8.6 (2.2)	64.8 (8.7)	963 (775)	514	9.8 (2.4)	63.6 (11.8)	963 (775)	555
29	6.3 (1.5)	69.7 (6.9)	1410 (1130)	514	7.2 (1.7)	72.5 (5.3)	1410 (1130)	555
30	8.5 (2.9)	61.5 (7.6)	861 (676)	514	9.6 (2.8)	66.2 (13.4)	861 (676)	555
31	8.6 (1.3)	68.6 (6.3)	2270 (1420)	514	9.6 (1.2)	71.2 (6.0)	2270 (1420)	555
Avg	9.1	67.3	1440	514	9.9	73.3	1440	555
n	31	31	31	31	31	31	31	31
SD	1.9	6.7	1180	0	1.9	6.2	1180	0
Min	6.2	52.3	397	514	6.3	60.5	397	555
Max	13.4	81.2	5040	514	13.8	82.2	5040	555

Table E2. Daily means (SD) of environmental parameters at site CA5B for February, 2008.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, $\text{dsm}^3\text{s}^{-1}$	Inv., hd	Temp., °C	RH, %	Airflow, $\text{dsm}^3\text{s}^{-1}$	Inv., hd
1	8.0 (2.5)	63.6 (10.8)	1070 (674)	514	9.2 (2.4)	73.1 (8.9)	1070 (674)	555
2	7.4 (1.6)	72.7 (5.1)	2610 (2150)	514	8.0 (1.7)	74.8 (5.5)	2610 (2150)	555
3	8.9 (2.2)	64.8 (9.4)	2220 (1650)	514	10.5 (2.1)	71.9 (9.8)	2220 (1650)	555
4	7.1 (3.3)	67.8 (14.0)	2000 (1350)	514	8.5 (3.1)	63.7 (14.0)	2000 (1350)	555
5	8.1 (4.7)	66.3 (12.7)	536 (398)	514	9.5 (5.1)	62.4 (13.7)	536 (398)	555
6	9.2 (4.3)	69.9 (4.3)	1070 (957)	514	10.3 (4.3)	70.8 (7.7)	1070 (957)	555
7	10.2 (5.3)	57.8 (6.1)	642 (539)	514	11.7 (5.3)	70.3 (14.1)	642 (539)	555
8	10.2 (4.6)	57.3 (7.2)	648 (495)	514	11.4 (4.5)	69.7 (14.3)	648 (495)	555
9	12.8 (5.8)	56.5 (6.5)	532 (384)	514	13.9 (6.1)	66.2 (15.6)	532 (384)	555
10	12.8 (5.5)	57.7 (6.1)	659 (522)	514	13.9 (5.5)	69.0 (12.8)	659 (522)	555
11	12.8 (5.6)	56.8 (6.2)	554 (451)	514	13.8 (5.8)	69.3 (13.9)	554 (451)	555
12	14.7 (5.5)	58.6 (5.8)	510 (315)	514	15.7 (6.0)	66.9 (14.3)	510 (315)	555
13	11.9 (3.0)	45.1 (11.8)	2680 (2090)	514	12.7 (2.9)	56.4 (23.8)	2680 (2090)	555
14				514				555
15	10.3 (5.6)	56.0 (14.6)	843 (621)	514	11.2 (6.2)	52.8 (14.8)	843 (621)	555
16	11.6 (5.3)	58.1 (14.5)	607 (444)	514	12.4 (6.0)	54.7 (15.4)	607 (444)	555
17	12.6 (5.8)	60.3 (13.2)	432 (337)	514	13.4 (6.6)	60.0 (15.9)	432 (337)	555
18	11.5 (4.7)	61.1 (8.5)	763 (398)	514	13.0 (5.1)	69.0 (13.7)	763 (398)	555
19	11.0 (3.0)	63.3 (5.7)	669 (422)	514	12.0 (3.1)	75.1 (8.0)	669 (422)	555
20	13.1 (3.2)	61.1 (9.5)	743 (476)	514	14.5 (3.4)	68.4 (13.9)	743 (476)	555
21	10.3 (1.9)	66.8 (7.2)	2920 (1430)	514	11.1 (1.9)	76.6 (4.2)	2920 (1430)	555
22	11.5 (1.6)	69.0 (4.9)	858 (892)	514	12.5 (2.0)	72.7 (8.2)	858 (892)	555
23	9.2 (2.5)	67.4 (7.6)	2740 (1670)	514	9.9 (2.3)	77.9 (6.1)	2740 (1670)	555
24	11.7 (1.3)	68.6 (5.9)	3160 (2160)	514	12.7 (1.5)	76.0 (4.0)	3160 (2160)	555
25	11.8 (3.4)	63.6 (6.9)	867 (803)	514	13.2 (3.5)	71.1 (11.7)	867 (803)	555
26	13.8 (6.2)	61.2 (6.9)	368 (299)	514	15.3 (6.5)	66.7 (14.9)	368 (299)	555
27	13.8 (4.7)	62.2 (7.6)	619 (585)	514	15.2 (4.7)	67.9 (13.7)	619 (585)	555
28	15.5 (5.7)	60.2 (8.7)	432 (342)	514	16.8 (6.3)	64.6 (16.1)	432 (342)	555
29	16.8 (6.1)	60.1 (10.2)	808 (518)	514	17.5 (6.6)	65.8 (16.8)	808 (518)	555
Avg	11.4	61.9	1160	514	12.5	68.0	1160	555
n	28	28	28	29	28	28	28	29
SD	2.4	5.6	876	0	2.4	6.3	876	0
Min	7.1	45.1	368	514	8.0	52.8	368	555
Max	16.8	72.7	3160	514	17.5	77.9	3160	555

Table E2. Daily means (SD) of environmental parameters at site CA5B for March, 2008.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, $\text{dsm}^3\text{s}^{-1}$	Inv., hd	Temp., °C	RH, %	Airflow, $\text{dsm}^3\text{s}^{-1}$	Inv., hd
1	13.8 (2.8)	63.4 (13.4)	1940 (1180)	514	13.6 (2.7)	63.6 (14.0)	1940 (1180)	555
2	13.4 (5.0)	52.2 (13.6)	1290 (958)	514	13.4 (5.1)	51.6 (12.2)	1290 (958)	555
3	14.7 (6.6)	54.3 (16.6)	764 (547)	514	14.8 (6.9)	53.8 (16.3)	764 (547)	555
4	14.3 (5.5)	61.0 (14.8)	878 (733)	514	14.3 (5.5)	59.9 (15.5)	878 (733)	555
5	14.4 (6.4)	53.2 (19.5)	802 (685)	514	14.3 (6.2)	52.3 (18.7)	802 (685)	555
6	14.3 (4.7)	62.6 (10.2)	491 (427)	514	14.3 (5.0)	60.9 (10.1)	491 (427)	555
7	15.6 (5.9)	62.5 (13.8)	473 (366)	514	15.8 (5.7)	61.3 (13.4)	473 (366)	555
8	14.6 (4.7)	59.6 (14.2)	1380 (997)	514	14.7 (4.7)	58.4 (13.7)	1380 (997)	555
9	17.1 (7.4)	52.3 (18.9)	317 (251)	514	16.7 (7.4)	52.6 (17.8)	317 (251)	555
10	18.1 (6.9)	60.7 (18.5)	629 (455)	514	18.0 (6.9)	60.2 (17.7)	629 (455)	555
11	16.2 (4.5)	67.4 (11.3)	950 (771)	514	16.2 (4.5)	66.3 (10.8)	950 (771)	555
12	16.1 (4.3)	61.9 (12.3)	997 (843)	514	15.9 (4.3)	61.4 (12.1)	997 (843)	555
13	16.3 (3.6)	67.3 (12.1)	1310 (999)	514	16.8 (3.7)	65.1 (12.2)	1310 (999)	555
14	12.7 (3.9)	66.0 (13.7)	999 (852)	514	13.0 (4.2)	64.4 (14.1)	999 (852)	555
15	11.4 (3.3)	63.1 (13.5)	1280 (892)	514	11.4 (3.3)	62.1 (13.0)	1280 (892)	555
16	12.1 (5.3)	48.9 (18.8)	2790 (1440)	514	12.1 (5.1)	48.3 (17.4)	2790 (1440)	555
17	13.8 (6.8)	48.4 (16.0)	789 (594)	514	13.5 (6.5)	48.3 (15.3)	789 (594)	555
18	17.0 (6.7)	57.1 (14.2)	664 (527)	514	17.1 (6.8)	56.3 (13.7)	664 (527)	555
19	15.6 (4.4)	66.1 (12.7)	1140 (653)	514	15.4 (4.8)	65.5 (13.1)	1140 (653)	555
20	13.7 (4.8)	60.5 (19.3)	1180 (699)	514	13.6 (4.7)	59.9 (18.8)	1180 (699)	555
21	13.3 (5.9)	58.3 (18.0)	1320 (989)	514	13.5 (5.6)	57.1 (17.7)	1320 (989)	555
22	16.2 (7.8)	55.1 (19.6)	452 (363)	514	16.1 (8.1)	54.6 (18.8)	452 (363)	555
23	17.5 (7.4)	50.5 (19.3)	769 (483)	514	17.1 (7.8)	50.7 (19.4)	769 (483)	555
24	17.8 (6.3)	56.5 (14.7)	1010 (671)	514	17.6 (6.6)	56.7 (14.8)	1010 (671)	555
25	17.2 (4.8)	62.0 (15.2)	1270 (715)	514	17.2 (5.0)	61.9 (15.1)	1270 (715)	555
26	13.8 (4.4)	61.3 (17.3)	1480 (1040)	515	13.6 (4.4)	61.3 (16.9)	1480 (1040)	555
27	11.8 (4.7)	52.2 (20.9)	1630 (1070)	516	11.9 (4.5)	51.4 (20.2)	1630 (1070)	555
28	15.7 (4.9)	54.3 (16.4)	901 (477)	518	15.7 (5.1)	54.3 (16.2)	901 (477)	555
29	15.4 (2.9)	67.0 (11.5)	1240 (684)	519	15.4 (2.7)	66.8 (11.9)	1240 (684)	555
30	13.6 (5.1)	52.7 (15.6)	1410 (700)	520	13.8 (5.3)	52.2 (15.4)	1410 (700)	555
31	13.8 (6.4)	52.4 (17.2)	698 (580)	522	13.9 (6.5)	51.8 (16.7)	698 (580)	555
Avg	14.9	58.4	1070	515	14.9	57.8	1070	555
n	31	31	31	31	31	31	31	31
SD	1.8	5.7	485	2	1.7	5.4	485	0
Min	11.4	48.4	317	514	11.4	48.3	317	555
Max	18.1	67.4	2790	522	18	66.8	2790	555

Table E2. Daily means (SD) of environmental parameters at site CA5B for April, 2008.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd
1	16.7 (6.6)	47.1 (19.0)	684 (534)	523	16.7 (6.6)	46.8 (18.5)	684 (534)	555
2	16.1 (5.3)	54.7 (16.2)	698 (466)	525	16.4 (5.5)	53.8 (15.9)	698 (466)	555
3	17.7 (5.7)	50.1 (15.7)	1000 (702)	526	17.6 (5.8)	50.4 (15.6)	1000 (702)	555
4				527				555
5				529				555
6	14.6 (4.3)	55.9 (11.7)	1600 (853)	530	14.8 (4.2)	55.5 (11.4)	1600 (853)	556
7	13.7 (5.4)	54.7 (18.6)	1410 (959)	531	13.7 (5.3)	54.4 (18.1)	1410 (959)	556
8	12.9 (3.8)	56.7 (13.0)	1560 (926)	533	13.3 (4.0)	55.8 (13.1)	1560 (926)	556
9	14.5 (5.4)	57.1 (18.4)	1480 (845)	534	14.5 (5.5)	57.1 (17.8)	1480 (845)	556
10	17.0 (6.6)	52.7 (21.8)	1450 (1110)	536	17.2 (6.6)	52.3 (21.2)	1450 (1110)	556
11	21.0 (8.1)	46.3 (19.4)	446 (393)	537	21.3 (8.5)	45.4 (19.1)	446 (393)	556
12	24.4 (8.8)	42.6 (20.1)	555 (470)	538	24.7 (9.1)	42.3 (19.6)	555 (470)	556
13	25.1 (8.5)	41.8 (20.5)	629 (492)	540	25.7 (9.1)	41.2 (20.2)	629 (492)	556
14	15.9 (3.7)	49.9 (13.4)	2430 (1090)	541	16.0 (3.7)	49.6 (13.2)	2430 (1090)	556
15	13.2 (4.7)	46.7 (18.5)	2010 (1400)	543	13.3 (4.5)	46.8 (17.7)	2010 (1400)	556
16	16.2 (7.0)	44.3 (20.6)	1530 (1240)	544	16.4 (6.9)	43.8 (19.7)	1530 (1240)	556
17	20.5 (7.8)	41.7 (17.1)	780 (550)	545	21.2 (8.5)	41.0 (17.2)	780 (550)	556
18	20.6 (7.1)	44.8 (15.9)	1090 (739)	547	20.7 (7.4)	45.3 (15.8)	1090 (739)	556
19	13.0 (4.2)	49.0 (14.4)	2230 (1220)	548	13.3 (4.3)	48.8 (14.1)	2230 (1220)	556
20	11.6 (5.1)	46.7 (17.4)	1370 (902)	549	11.7 (4.8)	46.5 (16.2)	1370 (902)	556
21	12.8 (5.6)	49.4 (17.7)	1200 (739)	551	12.7 (5.6)	49.9 (17.2)	1200 (739)	556
22	15.4 (4.1)	53.3 (14.1)	865 (730)	552	15.6 (4.1)	53.2 (13.8)	865 (730)	556
23	15.4 (4.0)	58.0 (17.9)	1260 (878)	554	15.6 (4.0)	57.5 (17.3)	1260 (878)	556
24	14.5 (6.5)	48.1 (19.9)	1720 (1160)	555	14.6 (6.3)	48.4 (19.3)	1720 (1160)	556
25	19.1 (7.0)	41.6 (17.2)	1410 (1000)	556	19.1 (7.1)	42.3 (16.8)	1410 (1000)	556
26	22.6 (7.4)	43.6 (17.0)	1380 (1130)	557	22.8 (7.4)	43.9 (16.3)	1380 (1130)	556
27	26.3 (7.6)	39.4 (16.3)	768 (615)	556	26.5 (7.8)	39.9 (16.0)	768 (615)	555
28	23.8 (6.1)	40.7 (13.8)	1370 (809)	556	23.8 (6.2)	41.6 (13.4)	1370 (809)	554
29	16.1 (4.0)	51.2 (12.8)	2410 (984)	555	16.5 (4.1)	51.0 (12.5)	2410 (984)	553
30			555					553
Avg	17.4	48.4	1310	542	17.6	48.3	1310	555
n	27	27	27	30	27	27	27	30
SD	4.1	5.5	535	11	4.2	5.3	535	1
Min	11.6	39.4	446	523	11.7	39.9	446	553
Max	26.3	58	2430	557	26.5	57.5	2430	556

Table E2. Daily means (SD) of environmental parameters at site CA5B for May, 2008.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, $\text{dsm}^3\text{s}^{-1}$	Inv., hd	Temp., °C	RH, %	Airflow, $\text{dsm}^3\text{s}^{-1}$	Inv., hd
1	17.5 (6.8)	39.8 (20.9)	1740 (1210)	554	17.6 (6.5)	39.9 (19.9)	1740 (1210)	552
2	19.4 (6.4)	41.9 (15.1)	906 (683)	554	19.6 (6.6)	41.8 (14.4)	906 (683)	551
3	19.3 (6.6)	50.2 (17.4)	1370 (795)	553	19.5 (6.8)	50.4 (16.8)	1370 (795)	551
4	19.4 (5.7)	52.1 (13.8)	1510 (1050)	553	19.7 (6.0)	52.4 (13.9)	1510 (1050)	550
5	21.3 (7.7)	49.9 (17.1)	936 (614)	552	21.8 (8.1)	49.9 (17.1)	936 (614)	549
6	21.2 (6.7)	52.8 (17.5)	1260 (723)	552	21.3 (6.8)	53.3 (17.0)	1260 (723)	548
7	19.1 (4.9)	50.3 (12.8)	1750 (959)	551	19.5 (4.7)	50.6 (12.0)	1750 (959)	548
8	21.0 (6.8)	46.2 (17.2)	1150 (790)	551	21.4 (6.9)	46.4 (16.5)	1150 (790)	547
9	19.1 (6.3)	47.2 (15.9)	1810 (829)	550	19.3 (6.3)	47.9 (15.4)	1810 (829)	546
10	22.2 (7.6)	43.3 (18.2)	974 (594)	550	22.4 (7.6)	43.6 (17.4)	974 (594)	545
11	20.6 (5.5)	49.0 (15.5)	1580 (651)	549	21.0 (5.7)	49.3 (15.2)	1580 (651)	545
12	19.9 (5.0)	37.9 (16.9)	2800 (1660)	549	20.3 (4.9)	38.4 (16.3)	2800 (1660)	544
13	22.9 (8.0)	36.0 (19.6)	1680 (1010)	548	23.4 (7.8)	35.6 (18.5)	1680 (1010)	543
14	26.3 (6.8)	41.3 (12.0)	971 (835)	547	26.7 (6.6)	40.9 (10.6)	971 (835)	543
15	29.4 (8.0)	44.9 (19.0)	747 (693)	547	30.0 (8.1)	44.1 (17.9)	747 (693)	542
16	31.3 (7.4)	39.7 (16.6)	1150 (840)	546	32.1 (7.9)	39.4 (16.3)	1150 (840)	541
17	30.9 (6.6)	33.1 (9.8)	1460 (946)	546	30.9 (6.7)	33.8 (9.6)	1460 (946)	540
18	29.6 (7.5)	28.1 (12.1)	1560 (891)	545	29.5 (7.6)	29.3 (12.2)	1560 (891)	540
19	27.2 (7.4)	37.1 (14.2)	1350 (673)	545	27.3 (7.5)	37.6 (13.6)	1350 (673)	539
20	22.3 (5.4)	47.9 (14.7)	1780 (1120)	544	22.8 (5.8)	47.7 (14.6)	1780 (1120)	538
21	19.7 (5.3)	41.2 (16.5)	3730 (1940)	544	19.9 (5.3)	41.7 (15.7)	3730 (1940)	537
22	20.1 (3.7)	30.8 (8.5)	4570 (2180)	543	20.8 (3.9)	30.8 (7.8)	4570 (2180)	537
23	20.1 (4.8)	43.3 (11.7)	1630 (620)	543	21.3 (5.4)	41.5 (11.5)	1630 (620)	536
24				542				535
25				542				535
26	18.5 (4.9)	52.8 (13.3)	1490 (751)	541	19.8 (5.4)	49.4 (13.3)	1490 (751)	534
27	17.2 (4.5)	58.3 (15.7)	1430 (717)	541	18.3 (4.8)	54.9 (14.9)	1430 (717)	533
28	18.2 (4.9)	54.5 (15.4)	1420 (703)	540	19.4 (5.4)	51.3 (14.8)	1420 (703)	532
29	18.5 (5.4)	54.1 (16.1)	1500 (801)	540	19.8 (6.1)	51.0 (15.7)	1500 (801)	532
30	19.9 (6.8)	55.1 (20.7)	1360 (843)	539	21.1 (7.4)	52.1 (19.6)	1360 (843)	532
31	18.3 (5.2)	58.3 (16.5)	1940 (584)	538	19.4 (5.7)	55.2 (15.9)	1940 (584)	532
Avg	21.7	45.4	1640	546	22.3	44.8	1640	541
n	29	29	29	31	29	29	29	31
SD	4.1	8	793	5	4	7.1	793	6
Min	17.2	28.1	747	538	17.6	29.3	747	532
Max	31.3	58.3	4570	554	32.1	55.2	4570	552

Table E2. Daily means (SD) of environmental parameters at site CA5B for June, 2008.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd
1	19.1 (6.1)	52.7 (17.8)	1770 (712)	537	20.5 (6.5)	50.0 (16.8)	1770 (712)	532
2	19.3 (6.6)	50.0 (17.1)	1870 (832)	536	20.8 (7.0)	47.8 (15.8)	1870 (832)	531
3	19.8 (5.2)	55.0 (9.9)	1860 (855)	535	21.4 (5.5)	52.4 (9.7)	1860 (855)	531
4	17.8 (4.2)	50.0 (17.2)	2470 (1790)	534	19.0 (3.9)	48.4 (15.9)	2470 (1790)	531
5	21.7 (6.4)	44.9 (18.0)	1810 (951)	533	23.0 (6.6)	43.6 (16.9)	1810 (951)	531
6	20.1 (5.4)	45.8 (17.4)	2130 (1350)	532	21.1 (5.4)	44.2 (15.8)	2130 (1350)	531
7	21.0 (6.7)	41.2 (19.8)	2510 (1450)	531	21.8 (6.6)	40.1 (18.2)	2510 (1450)	531
8	24.6 (7.6)	36.4 (18.3)	1340 (788)	531	25.8 (7.8)	35.3 (16.7)	1340 (788)	531
9	27.3 (7.4)	35.9 (15.3)	1300 (865)	530	28.4 (7.9)	35.0 (13.9)	1300 (865)	530
10	24.7 (4.5)	31.6 (18.7)	3000 (1850)	529	25.6 (4.5)	31.2 (17.2)	3000 (1850)	530
11	23.8 (5.7)	28.0 (9.1)	2360 (1370)	528	24.8 (5.7)	27.6 (8.0)	2360 (1370)	530
12	24.5 (7.1)	34.7 (12.7)	928 (664)	527	25.7 (7.5)	33.4 (11.4)	928 (664)	530
13	28.5 (7.5)	30.6 (13.2)	1100 (795)	526	29.5 (8.1)	30.5 (12.4)	1100 (795)	530
14	25.0 (7.0)	44.0 (15.3)	1330 (619)	525	26.1 (7.3)	42.3 (14.0)	1330 (619)	530
15	24.4 (7.3)	43.2 (17.8)	1570 (687)	524	25.5 (7.6)	41.7 (16.6)	1570 (687)	530
16	23.7 (7.3)	43.5 (16.4)	1530 (617)	523	24.8 (7.6)	41.7 (15.0)	1530 (617)	529
17	24.1 (7.8)	45.0 (19.2)	1700 (766)	523	25.1 (8.0)	43.6 (17.8)	1700 (766)	529
18	26.7 (6.6)	29.5 (12.7)	1730 (1030)	522	27.6 (7.0)	29.5 (11.6)	1730 (1030)	529
19	26.4 (6.9)	32.9 (11.4)	942 (634)	521	27.6 (7.3)	32.1 (10.6)	942 (634)	529
20	31.9 (8.5)	28.5 (13.4)	634 (447)	520	32.9 (9.2)	29.1 (13.7)	634 (447)	529
21	31.6 (7.0)	28.8 (13.0)	882 (947)	519	32.7 (7.5)	28.8 (12.4)	882 (947)	529
22	27.3 (5.9)	28.7 (9.3)	1330 (761)	518	28.2 (6.2)	28.6 (8.8)	1330 (761)	529
23	23.6 (6.1)	40.8 (11.9)	1410 (825)	517	24.5 (6.3)	39.6 (11.2)	1410 (825)	528
24	23.9 (6.9)	46.4 (15.9)	1340 (614)	516	24.7 (7.2)	44.9 (15.0)	1340 (614)	528
25	22.7 (6.2)	52.0 (13.8)	1620 (579)	515	23.6 (6.5)	49.9 (13.2)	1620 (579)	528
26	23.5 (6.4)	55.0 (14.6)	1050 (487)	514	24.4 (6.6)	52.7 (13.8)	1050 (487)	528
27	26.1 (5.9)	50.6 (13.8)	1170 (669)	514	26.9 (6.1)	48.7 (13.0)	1170 (669)	528
28	23.4 (5.9)	56.0 (15.1)	1580 (621)	513	24.2 (6.2)	53.4 (14.4)	1580 (621)	528
29	23.7 (7.7)	53.2 (20.7)	1220 (599)	512	24.7 (8.0)	50.7 (19.4)	1220 (599)	528
30	23.7 (6.5)	55.6 (16.4)	1360 (684)	511	24.6 (6.7)	52.8 (15.3)	1360 (684)	528
Avg	24.1	42.4	1560	524	25.2	41.0	1560	530
n	30	30	30	30	30	30	30	30
SD	3.3	9.4	526	8	3.2	8.5	526	1
Min	17.8	28.0	634	511	19.0	27.6	634	528
Max	31.9	56	3000	537	32.9	53.4	3000	532

Table E2. Daily means (SD) of environmental parameters at site CA5B for July, 2008.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, $\text{dsm}^3\text{s}^{-1}$	Inv., hd	Temp., °C	RH, %	Airflow, $\text{dsm}^3\text{s}^{-1}$	Inv., hd
1	20.2 (4.7)	64.6 (15.5)	1460 (606)	510	21.0 (4.9)	61.5 (14.7)	1460 (606)	528
2	24.6 (6.6)	45.9 (17.4)	1560 (1010)	510	25.5 (6.9)	44.5 (16.5)	1560 (1010)	528
3	25.3 (5.8)	49.0 (11.8)	1590 (949)	509	26.0 (6.1)	47.6 (11.6)	1590 (949)	528
4	22.6 (5.2)	57.8 (16.4)	1320 (583)	508	23.7 (5.5)	54.7 (15.7)	1320 (583)	528
5	24.9 (6.8)	55.4 (18.3)	1300 (817)	507	25.9 (7.1)	52.9 (17.4)	1300 (817)	528
6	27.5 (6.3)	51.7 (15.1)	1180 (733)	506	28.5 (6.6)	49.6 (14.5)	1180 (733)	528
7	31.1 (6.9)	43.8 (13.9)	597 (437)	506	32.6 (7.8)	42.1 (14.3)	597 (437)	528
8				505				528
9	32.5 (5.7)	38.5 (7.9)	1350 (763)	504	33.9 (6.2)	38.1 (7.8)	1350 (763)	528
10	30.2 (5.9)	45.1 (11.0)	1100 (700)	503	31.4 (6.4)	43.9 (10.5)	1100 (700)	528
11	24.5 (4.8)	57.6 (11.6)	1170 (520)	503	25.9 (5.3)	55.4 (10.9)	1170 (520)	528
12	23.2 (5.0)	63.3 (14.8)	1400 (618)	502	24.6 (5.1)	61.1 (14.2)	1400 (618)	527
13	26.6 (6.4)	53.8 (15.2)	1180 (680)	501	28.0 (6.8)	51.7 (14.1)	1180 (680)	527
14	26.1 (5.7)	53.0 (13.4)	1470 (802)	500	27.5 (6.1)	50.8 (12.6)	1470 (802)	527
15	23.5 (5.6)	61.0 (14.8)	1910 (576)	499	24.8 (6.1)	58.6 (14.0)	1910 (576)	527
16	24.0 (6.9)	57.5 (17.9)	1380 (643)	499	25.3 (7.4)	55.2 (16.8)	1380 (643)	527
17	25.4 (6.4)	48.7 (15.5)	1260 (698)	498	26.7 (7.0)	47.2 (15.2)	1260 (698)	527
18	24.5 (7.5)	53.7 (17.3)	1250 (655)	497	25.8 (7.9)	51.2 (16.2)	1250 (655)	527
19	25.5 (7.2)	48.3 (15.6)	1160 (547)	496	27.0 (7.8)	46.3 (14.5)	1160 (547)	527
20	21.2 (6.1)	58.7 (15.6)	1730 (536)	495	22.3 (6.4)	56.0 (14.8)	1730 (536)	527
21	20.2 (5.6)	62.1 (16.6)	1650 (592)	495	21.4 (5.9)	59.2 (15.9)	1650 (592)	527
22	22.7 (7.7)	56.5 (21.4)	1410 (603)	494	24.1 (8.4)	54.6 (20.3)	1410 (603)	527
23	26.8 (7.3)	44.6 (17.4)	909 (568)	493	28.4 (8.4)	44.3 (17.3)	909 (568)	527
24	25.7 (7.1)	46.5 (15.1)	1160 (527)	492	27.1 (7.3)	44.3 (13.8)	1160 (527)	527
25	26.1 (7.1)	49.3 (15.5)	1040 (618)	491	26.8 (6.9)	47.8 (13.6)	1040 (618)	527
26	28.0 (7.5)	41.1 (13.9)	1280 (572)	491	28.2 (7.8)	42.8 (13.9)	1280 (572)	527
27	25.3 (6.6)	48.0 (17.0)	1740 (744)	491	25.6 (6.7)	48.2 (16.1)	1740 (744)	527
28	23.3 (7.0)	52.7 (17.7)	1530 (668)	491	23.5 (6.8)	52.5 (16.6)	1530 (668)	527
29	24.1 (6.8)	47.9 (16.2)	1460 (730)	490	24.4 (6.6)	47.8 (15.2)	1460 (730)	527
30	24.8 (7.2)	47.2 (15.3)	1110 (550)	490	25.0 (7.1)	47.6 (14.9)	1110 (550)	527
31	25.8 (7.4)	40.4 (16.8)	1150 (690)	490	26.2 (7.5)	40.6 (16.1)	1150 (690)	527
Avg	25.2	51.5	1330	499	26.2	49.9	1330	527
n	30	30	30	31	30	30	30	31
SD	2.8	6.9	262	7	2.9	6	262	0
Min	20.2	38.5	597	490	21.0	38.1	597	527
Max	32.5	64.6	1910	510	33.9	61.5	1910	528

Table E2. Daily means (SD) of environmental parameters at site CA5B for August, 2008.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, $\text{dsm}^3\text{s}^{-1}$	Inv., hd	Temp., °C	RH, %	Airflow, $\text{dsm}^3\text{s}^{-1}$	Inv., hd
1	25.5 (7.4)	43.7 (14.3)	1370 (660)	490	25.7 (7.4)	43.6 (13.3)	1370 (660)	527
2	27.2 (7.2)	45.3 (15.9)	1330 (773)	490	27.2 (7.1)	45.8 (15.5)	1330 (773)	528
3	25.3 (7.5)	42.3 (15.5)	1270 (617)	489	25.3 (7.2)	42.2 (14.5)	1270 (617)	528
4	25.1 (7.8)	49.0 (18.3)	1310 (625)	489	25.3 (7.7)	48.8 (17.3)	1310 (625)	528
5	25.3 (6.5)	47.4 (15.0)	1430 (640)	489	25.4 (6.5)	47.2 (14.3)	1430 (640)	528
6	27.0 (6.7)	45.2 (13.7)	1150 (624)	489	27.0 (6.7)	45.0 (13.2)	1150 (624)	528
7	26.4 (6.6)	42.8 (12.2)	1260 (688)	489	26.4 (6.6)	42.9 (11.4)	1260 (688)	528
8	23.5 (6.6)	55.0 (16.1)	1690 (570)	489	23.8 (6.7)	54.6 (15.0)	1690 (570)	528
9	23.5 (7.0)	52.6 (19.1)	1380 (616)	488	23.8 (7.1)	52.4 (17.9)	1380 (616)	528
10	25.9 (7.5)	48.3 (18.2)	1010 (685)	488	26.3 (7.4)	47.5 (17.1)	1010 (685)	528
11	28.6 (8.4)	44.5 (18.6)	686 (454)	488	29.2 (8.8)	45.0 (18.4)	686 (454)	528
12	28.1 (7.4)	46.1 (14.9)	973 (586)	488	28.7 (7.6)	45.8 (13.4)	973 (586)	528
13	29.9 (7.9)	47.6 (16.4)	775 (480)	488	30.7 (8.4)	47.4 (15.7)	775 (480)	528
14	27.8 (5.8)	45.8 (14.8)	1010 (587)	488	30.5 (7.4)	46.2 (14.2)	1010 (587)	528
15	27.7 (7.0)	39.7 (13.9)	988 (586)	487	30.7 (7.5)	40.3 (12.8)	988 (586)	528
16	30.0 (7.3)	44.1 (14.2)	1300 (530)	487	29.4 (6.4)	44.3 (13.4)	1300 (530)	529
17	24.5 (6.7)	58.2 (18.5)	1570 (546)	487	24.7 (6.8)	58.4 (17.5)	1570 (546)	529
18	22.6 (5.8)	61.3 (16.0)	1590 (709)	487	22.8 (5.7)	61.6 (15.0)	1590 (709)	529
19	24.6 (8.2)	60.2 (16.6)	1420 (718)	487	22.8 (5.8)	60.5 (15.8)	1420 (718)	529
20	24.9 (6.5)	59.8 (15.3)	1090 (802)	486	25.0 (6.5)	60.5 (14.7)	1090 (802)	529
21	26.1 (5.2)	56.4 (16.4)	1320 (748)	486	26.5 (5.7)	56.8 (15.8)	1320 (748)	529
22	29.8 (9.2)	52.6 (16.7)	888 (459)	486	27.9 (7.7)	52.7 (16.1)	888 (459)	529
23	25.8 (6.9)	55.4 (17.3)	1260 (517)	486	26.6 (7.1)	56.1 (16.8)	1260 (517)	529
24	27.0 (7.6)	51.9 (18.6)	1090 (525)	485	28.0 (7.9)	52.5 (18.0)	1090 (525)	529
25	26.9 (6.7)	41.0 (14.4)	1360 (736)	485	27.8 (6.6)	41.7 (13.8)	1360 (736)	528
26	25.7 (7.1)	45.0 (15.4)	1050 (594)	484	26.0 (7.1)	45.3 (14.7)	1050 (594)	528
27	28.6 (8.0)	42.6 (16.5)	875 (599)	484	29.2 (8.4)	42.7 (15.6)	875 (599)	528
28	29.6 (8.0)	43.7 (16.2)	738 (481)	483	30.2 (8.4)	43.9 (15.5)	738 (481)	527
29	31.7 (8.2)	37.6 (14.6)	646 (422)	483	32.1 (8.8)	39.3 (14.7)	646 (422)	527
30	27.9 (6.9)	37.8 (14.0)	1120 (685)	482	28.7 (7.4)	38.4 (13.0)	1120 (685)	527
31	22.1 (5.9)	43.1 (15.7)	1650 (927)	482	22.4 (5.8)	43.0 (14.9)	1650 (927)	526
Avg	26.6	47.9	1180	487	27.0	48.1	1180	528
n	31	31	31	31	31	31	31	31
SD	2.3	6.6	276	2	2.5	6.5	276	1
Min	22.1	37.6	646	482	22.4	38.4	646	526
Max	31.7	61.3	1690	490	32.1	61.6	1690	529

Table E2. Daily means (SD) of environmental parameters at site CA5B for September, 2008.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd
1	22.4 (6.4)	38.3 (15.2)	1510 (866)	481	22.7 (6.3)	38.2 (14.4)	1510 (866)	526
2	24.8 (8.0)	41.4 (18.0)	773 (484)	481	25.5 (8.3)	41.1 (17.4)	773 (484)	526
3	27.0 (8.5)	41.8 (18.8)	607 (506)	480			607 (506)	525
4	28.1 (8.0)	38.2 (17.0)	702 (538)	480			702 (538)	525
5	28.6 (7.8)	39.9 (14.9)	667 (489)	479			667 (489)	525
6	29.6 (7.5)	36.2 (12.9)	780 (508)	479	30.2 (8.0)	36.9 (12.3)	780 (508)	524
7	29.5 (8.5)	34.2 (14.2)	952 (546)	478	30.0 (9.0)	35.9 (13.8)	952 (546)	524
8	24.5 (7.7)	50.6 (19.2)	1280 (526)	478	25.0 (7.6)	51.1 (18.4)	1280 (526)	524
9	21.5 (6.1)	61.8 (19.1)	1490 (639)	478	21.9 (6.1)	62.2 (18.7)	1490 (639)	523
10	22.2 (6.9)	60.2 (19.4)	915 (527)	477	22.6 (6.9)	60.3 (19.1)	915 (527)	523
11	24.0 (7.0)	55.0 (18.0)	965 (556)	477	24.6 (7.4)	55.4 (17.1)	965 (556)	523
12	23.1 (6.8)	53.7 (18.6)	1130 (599)	476	23.5 (6.5)	53.9 (18.1)	1130 (599)	522
13	21.6 (7.1)	58.2 (19.6)	1230 (589)	476	21.9 (7.1)	58.4 (19.2)	1230 (589)	522
14	22.6 (7.0)	56.7 (18.8)	1130 (522)	475	22.9 (7.0)	56.8 (18.5)	1130 (522)	522
15	23.8 (7.0)	53.9 (17.6)	1080 (618)	475	24.2 (6.9)	53.7 (17.1)	1080 (618)	521
16	23.0 (6.6)	54.6 (17.4)	1210 (476)	474	23.1 (6.4)	54.6 (16.8)	1210 (476)	521
17	19.6 (5.3)	59.2 (16.1)	1630 (731)	474	19.9 (5.3)	59.0 (15.6)	1630 (731)	521
18	20.1 (6.6)	56.5 (18.2)	1020 (561)	473	20.3 (6.5)	56.5 (17.8)	1020 (561)	520
19	20.4 (5.6)	58.9 (17.6)	1200 (829)	473	20.6 (5.5)	58.9 (17.2)	1200 (829)	520
20	20.9 (5.0)	64.0 (16.7)	1250 (669)	472	21.1 (4.9)	64.3 (16.5)	1250 (669)	520
21	21.4 (5.9)	59.2 (17.5)	931 (638)	472	21.8 (6.0)	59.5 (17.7)	931 (638)	519
22	21.5 (6.6)	52.0 (20.8)	1210 (955)	471	22.0 (6.4)	51.9 (20.4)	1210 (955)	519
23	24.2 (7.8)	46.0 (19.7)	455 (401)	471	24.6 (8.0)	46.1 (18.9)	455 (401)	519
24	25.7 (7.9)	39.7 (15.9)	663 (451)	470	26.2 (8.4)	40.2 (15.2)	663 (451)	518
25	26.4 (7.1)	35.0 (14.6)	703 (558)	470	26.7 (7.2)	35.6 (14.0)	703 (558)	518
26	26.8 (7.4)	44.6 (16.3)	672 (445)	470	27.2 (7.7)	44.5 (15.4)	672 (445)	517
27	26.7 (7.3)	43.9 (17.6)	765 (574)	470	27.3 (7.3)	43.6 (16.2)	765 (574)	517
28	26.6 (7.4)	43.4 (17.5)	844 (495)	470	27.2 (7.5)	43.4 (16.4)	844 (495)	517
29	23.8 (6.2)	54.4 (16.2)	1110 (509)	470	24.0 (6.2)	54.6 (15.7)	1110 (509)	516
30	24.9 (7.2)	52.4 (17.5)	904 (524)	471	25.3 (7.2)	52.5 (17.0)	904 (524)	516
Avg	24.2	49.5	992	475	24.2	50.7	992	521
n	30	30	30	30	27	27	30	30
SD	2.8	8.9	285	4	2.7	8.6	285	3
Min	19.6	34.2	455	470	19.9	35.6	455	516
Max	29.6	64	1630	481	30.2	64.3	1630	526

Table E2. Daily means (SD) of environmental parameters at site CA5B for October, 2008.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, $\text{dsm}^3\text{s}^{-1}$	Inv., hd	Temp., °C	RH, %	Airflow, $\text{dsm}^3\text{s}^{-1}$	Inv., hd
1	26.0 (7.3)	40.9 (15.5)	955 (553)	471	26.5 (7.3)	40.8 (14.0)	955 (553)	516
2	23.2 (3.7)	57.5 (8.9)	1610 (764)	471	23.2 (3.5)	57.5 (8.2)	1610 (764)	515
3	21.5 (4.2)	58.9 (13.4)	676 (624)	471	21.6 (4.2)	58.8 (13.6)	676 (624)	515
4	19.3 (3.1)	70.4 (13.5)	1820 (766)	471	19.9 (3.0)	68.4 (12.6)	1820 (766)	515
5	19.7 (4.8)	58.8 (17.4)	1040 (622)	471	20.0 (4.8)	59.2 (17.5)	1040 (622)	514
6	20.9 (5.9)	59.6 (18.6)	776 (622)	471	21.3 (5.9)	59.6 (18.3)	776 (622)	514
7	22.4 (6.2)	53.5 (17.5)	1200 (873)	471	23.0 (6.2)	53.9 (17.3)	1200 (873)	514
8	22.5 (5.8)	51.7 (18.7)	1060 (864)	471	22.8 (5.7)	51.9 (18.2)	1060 (864)	513
9	18.4 (4.2)	38.3 (20.3)	2620 (1770)	471	18.8 (4.2)	38.5 (19.5)	2620 (1770)	513
10	15.0 (3.4)	32.2 (8.5)	3100 (1510)	471	15.2 (3.2)	32.9 (8.0)	3100 (1510)	513
11	14.2 (4.6)	32.8 (11.1)	2600 (1350)	472	14.2 (4.5)	33.0 (10.7)	2600 (1350)	512
12	14.7 (6.3)	30.9 (11.7)	1180 (762)	472	14.8 (6.2)	30.7 (11.1)	1180 (762)	512
13	16.6 (6.9)	36.8 (13.6)	553 (451)	472	16.7 (7.3)	36.3 (13.5)	553 (451)	512
14	19.3 (7.4)	35.1 (13.1)	564 (522)	472	19.4 (7.7)	35.3 (13.3)	564 (522)	511
15	20.4 (7.1)	39.2 (15.3)	589 (583)	472	20.2 (7.2)	39.1 (14.6)	589 (583)	511
16	21.5 (7.8)	46.0 (18.0)	413 (354)	472	21.5 (8.0)	45.2 (17.4)	413 (354)	511
17	22.6 (7.2)	40.7 (13.2)	481 (408)	472	22.6 (7.4)	40.3 (13.1)	481 (408)	510
18	21.7 (4.7)	42.5 (11.9)	1130 (814)	472	21.5 (4.7)	42.1 (11.1)	1130 (814)	510
19	19.0 (5.5)	50.3 (15.3)	1140 (527)	472	18.9 (5.5)	50.0 (14.5)	1140 (527)	510
20	17.7 (5.1)	54.9 (16.3)	1160 (751)	472	17.6 (5.0)	54.8 (15.9)	1160 (751)	509
21				472				509
22				473				509
23	21.1 (7.3)	45.5 (17.8)	505 (393)	473	20.9 (7.4)	44.8 (17.2)	505 (393)	508
24	21.0 (7.4)	44.0 (16.1)	423 (368)	473	20.8 (7.6)	43.6 (15.9)	423 (368)	508
25	21.3 (7.4)	44.5 (15.6)	330 (315)	473	21.1 (7.7)	44.0 (15.4)	330 (315)	508
26	21.2 (7.7)	45.7 (17.0)	348 (304)	473	21.1 (7.9)	44.9 (16.5)	348 (304)	507
27	19.1 (5.5)	52.6 (11.9)	664 (455)	472	19.0 (5.5)	51.9 (11.4)	664 (455)	507
28				470				507
29	19.6 (6.3)	51.6 (14.1)	467 (378)	468	19.5 (6.7)	50.8 (14.4)	467 (378)	506
30	18.1 (2.6)	61.4 (12.7)	1340 (835)	466	18.3 (2.7)	59.9 (13.1)	1340 (835)	506
31	20.0 (2.1)	62.7 (9.3)	2250 (1580)	465	20.4 (2.3)	61.1 (9.6)	2250 (1580)	506
Avg	19.9	47.8	1110	471	20.0	47.5	1110	511
n	28	28	28	31	28	28	28	31
SD	2.6	10.2	740	2	2.7	9.9	740	3
Min	14.2	30.9	330	465	14.2	30.7	330	506
Max	26	70.4	3100	473	26.5	68.4	3100	516

Table E2. Daily means (SD) of environmental parameters at site CA5B for November, 2008.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd
1	19.3 (1.2)	64.0 (9.4)	2140 (1150)	463	19.5 (1.2)	63.1 (9.7)	2140 (1150)	506
2				461				506
3				459				505
4				457				505
5				455				505
6	14.7 (4.7)	65.4 (13.7)	858 (595)	453	14.8 (4.4)	64.8 (13.5)	858 (595)	505
7	17.2 (6.2)	64.4 (16.7)	483 (387)	452	17.2 (6.1)	63.1 (16.4)	483 (387)	505
8	15.7 (4.0)	72.7 (8.8)	777 (920)	450	15.6 (4.1)	71.5 (9.2)	777 (920)	504
9	14.9 (2.9)	66.7 (13.1)	1450 (1070)	448	14.7 (2.8)	66.8 (13.4)	1450 (1070)	504
10	15.3 (4.2)	69.6 (11.9)	431 (339)	446	14.7 (4.0)	69.5 (12.1)	431 (339)	504
11	15.0 (3.7)	72.6 (8.1)	912 (709)	444	14.6 (3.7)	72.6 (8.3)	912 (709)	504
12	17.2 (4.4)	67.8 (14.1)	568 (519)	442	17.0 (4.0)	67.5 (13.9)	568 (519)	504
13	18.1 (4.9)	67.1 (12.5)	581 (8210)	440	17.8 (4.9)	66.4 (12.5)	581 (8210)	503
14	18.0 (5.3)	69.3 (14.0)	477 (395)	439	17.9 (5.1)	68.1 (13.5)	477 (395)	503
15	18.9 (6.0)	67.7 (17.1)	569 (450)	437	18.9 (6.1)	65.7 (16.8)	569 (450)	503
16	18.7 (6.6)	64.2 (16.5)	243 (234)	435	18.6 (6.8)	63.3 (17.1)	243 (234)	503
17	18.5 (6.4)	64.8 (16.1)	230 (211)	433	18.4 (6.4)	63.4 (16.3)	230 (211)	503
18	18.0 (6.5)	65.6 (15.9)	225 (168)	431	17.6 (6.5)	64.6 (16.1)	225 (168)	502
19	15.6 (4.3)	71.6 (12.1)	795 (554)	429	15.2 (4.2)	69.9 (11.1)	795 (554)	502
20	15.5 (3.4)	73.2 (8.2)	1240 (875)	427	15.2 (3.4)	73.4 (8.2)	1240 (875)	502
21	14.2 (5.5)	64.4 (15.4)	409 (410)	426	14.1 (5.3)	62.7 (15.8)	409 (410)	502
22	13.4 (5.6)	71.9 (14.1)	437 (327)	424	13.3 (5.6)	69.7 (13.4)	437 (327)	502
23	12.8 (5.3)	71.8 (11.7)	372 (339)	422	12.8 (5.7)	69.9 (12.5)	372 (339)	501
24	12.5 (4.3)	72.0 (11.9)	403 (373)	420	12.3 (4.3)	70.3 (11.7)	403 (373)	501
25	14.6 (3.5)	70.0 (8.9)	536 (387)	419	14.6 (3.4)	68.7 (9.4)	536 (387)	502
26	14.6 (1.1)	81.4 (2.1)	450 (389)	419	14.5 (0.8)	80.3 (1.1)	450 (389)	503
27	14.5 (2.0)	81.1 (5.4)	882 (590)	419	14.2 (2.0)	78.3 (4.1)	882 (590)	505
28	13.9 (1.9)	79.5 (4.5)	726 (654)	419	13.6 (1.8)	79.3 (4.0)	726 (654)	507
29	12.5 (3.7)	79.0 (7.6)	413 (293)	419	12.5 (3.9)	76.9 (8.5)	413 (293)	508
30	12.7 (4.2)	79.4 (8.2)	437 (366)	419	12.5 (4.4)	77.6 (8.4)	437 (366)	510
Avg	15.6	70.7	656	437	15.5	69.5	656	504
n	26	26	26	30	26	26	26	30
SD	2.1	5.4	415	15	2.1	5.3	415	2
Min	12.5	64.0	225	419	12.3	62.7	225	501
Max	19.3	81.4	2140	463	19.5	80.3	2140	510

Table E2. Daily means (SD) of environmental parameters at site CA5B for December, 2008.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, $\text{dsm}^3\text{s}^{-1}$	Inv., hd	Temp., °C	RH, %	Airflow, $\text{dsm}^3\text{s}^{-1}$	Inv., hd
1	10.8 (1.8)	85.8 (1.4)	309 (225)	418	10.8 (1.8)	82.7 (0.5)	309 (225)	511
2	13.2 (1.1)	82.5 (2.9)	851 (840)	418	13.0 (1.2)	81.7 (2.4)	851 (840)	513
3	13.7 (1.2)	76.6 (5.9)	471 (348)	418	13.6 (0.9)	75.5 (5.8)	471 (348)	515
4	13.3 (3.0)	70.8 (7.9)	369 (287)	418	13.0 (3.1)	69.0 (8.2)	369 (287)	516
5	9.4 (3.7)	80.3 (8.3)	658 (769)	418	9.4 (3.6)	78.0 (7.9)	658 (769)	518
6	8.6 (1.1)	86.0 (3.9)	766 (620)	418	8.7 (1.0)	80.5 (2.6)	766 (620)	519
7	8.5 (1.2)	81.8 (3.9)	442 (340)	418	8.3 (1.1)	80.8 (3.6)	442 (340)	521
8				418				523
9	9.0 (4.2)	76.9 (11.7)	431 (7740)	418	9.1 (4.4)	73.8 (12.0)	431 (7740)	524
10	9.1 (5.3)	73.7 (11.8)	350 (282)	418	8.8 (5.4)	72.8 (12.7)	350 (282)	526
11				418				527
12	9.8 (4.5)	78.6 (9.7)	737 (558)	418	9.7 (4.5)	76.3 (9.7)	737 (558)	529
13				418				530
14				417				532
15				417				534
16	6.9 (2.8)	79.0 (6.3)	1010 (574)	417	6.9 (2.4)	78.7 (6.3)	1010 (574)	535
17	5.2 (3.0)	69.0 (11.9)	1420 (966)	417	5.0 (2.8)	68.4 (12.6)	1420 (966)	537
18	6.2 (4.1)	70.3 (12.0)	2270 (987)	417	6.4 (4.2)	67.9 (11.7)	2270 (987)	538
19	8.7 (1.5)	74.3 (4.3)	1710 (1270)	417	8.9 (1.5)	72.0 (5.0)	1710 (1270)	540
20		80.4 (3.8)	386 (385)	417		80.1 (4.1)	386 (385)	542
21				417				543
22	10.2 (2.1)	76.7 (11.4)	808 (680)	417	10.3 (2.0)	74.4 (10.9)	808 (680)	545
23	9.1 (1.9)	74.9 (8.9)	1090 (550)	417	9.4 (2.0)	73.0 (9.0)	1090 (550)	546
24	10.4 (1.2)	73.6 (4.1)	2580 (999)	417	10.6 (1.2)	71.2 (4.3)	2580 (999)	548
25	9.6 (1.9)	71.3 (9.5)	2610 (1800)	417	9.8 (1.8)	69.1 (9.1)	2610 (1800)	550
26	7.3 (2.7)	67.0 (9.1)	872 (826)	416	7.2 (2.6)	65.1 (9.1)	872 (826)	551
27	8.4 (3.8)	66.6 (11.4)	778 (802)	416	8.5 (3.9)	64.2 (11.1)	778 (802)	553
28	10.2 (4.7)	66.7 (13.1)	568 (494)	416	10.2 (4.8)	64.9 (12.8)	568 (494)	554
29	11.7 (4.5)	70.6 (10.4)	521 (438)	416	11.5 (4.4)	69.4 (10.0)	521 (438)	556
30	8.9 (1.2)	83.9 (1.6)	389 (298)	416	8.9 (1.2)	82.8 (1.3)	389 (298)	558
31	7.6 (1.1)	84.8 (1.5)	403 (319)	416	7.7 (1.1)	83.3 (1.2)	403 (319)	559
Avg	9.4	76.1	912	417	9.4	74.2	912	535
n	24	25	25	31	24	25	25	31
SD	2.1	6	673	1	2	5.9	673	14
Min	5.2	66.6	309	416	5.0	64.2	309	511
Max	13.7	86	2610	418	13.6	83.3	2610	559

Table E2. Daily means (SD) of environmental parameters at site CA5B for January, 2009.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, $\text{dsm}^3\text{s}^{-1}$	Inv., hd	Temp., °C	RH, %	Airflow, $\text{dsm}^3\text{s}^{-1}$	Inv., hd
1	8.2 (1.2)	81.7 (5.2)	840 (549)	417	8.5 (1.0)	79.2 (5.2)	840 (549)	560
2	8.2 (0.9)	85.6 (1.5)	2010 (1110)	420	8.6 (0.8)	83.6 (1.1)	2010 (1110)	560
3	7.8 (2.9)	75.4 (11.7)	1320 (878)	423	7.6 (2.6)	74.6 (11.2)	1320 (878)	559
4	7.3 (3.8)	70.3 (14.7)	580 (405)	426	7.1 (4.0)	67.8 (14.2)	580 (405)	559
5	8.1 (1.6)	80.9 (3.0)	1430 (816)	429	8.3 (1.5)	79.3 (3.5)	1430 (816)	559
6	8.7 (1.7)	79.7 (4.4)	688 (485)	432	8.5 (1.7)	79.2 (5.5)	688 (485)	559
7	7.0 (2.7)	82.9 (3.6)	420 (314)	434	6.9 (2.8)	81.6 (3.6)	420 (314)	558
8	7.7 (1.7)	82.9 (1.4)	1450 (1150)	437	7.5 (1.8)	83.4 (1.0)	1450 (1150)	558
9	10.4 (3.8)	71.3 (13.3)	515 (419)	440	10.2 (3.9)	70.9 (14.0)	515 (419)	558
10	9.5 (5.4)	72.8 (12.5)	476 (362)	443	9.1 (5.4)	72.6 (12.7)	476 (362)	557
11	9.4 (5.3)	75.1 (13.1)	506 (338)	446	9.2 (5.4)	73.6 (13.0)	506 (338)	557
12	10.9 (4.5)	71.4 (11.6)	661 (462)	449	10.8 (4.8)	71.0 (12.3)	661 (462)	557
13	12.5 (6.3)	67.1 (15.0)	422 (358)	451	12.0 (6.5)	67.0 (15.5)	422 (358)	557
14	12.6 (6.2)	69.2 (13.2)	365 (312)	454	12.0 (6.3)	69.1 (13.7)	365 (312)	556
15	12.5 (6.6)	70.0 (14.2)	364 (321)	457	11.9 (6.5)	70.0 (14.2)	364 (321)	556
16	13.5 (6.3)	65.7 (14.5)	369 (279)	460	13.0 (6.6)	65.3 (15.0)	369 (279)	556
17				463				556
18				466				555
19				468				555
20				471				555
21	12.5 (2.7)	74.5 (6.4)	581 (436)	474	12.4 (2.7)	73.6 (7.3)	581 (436)	555
22	13.4 (1.5)	82.3 (2.6)	626 (499)	477	13.4 (1.5)	82.2 (2.3)	626 (499)	554
23				480				554
24				483				554
25	11.2 (2.1)	68.4 (8.3)	994 (670)	485	11.2 (2.1)	66.3 (8.0)	994 (670)	553
26	9.6 (3.8)	70.5 (11.4)	873 (698)	488	9.5 (3.3)	70.2 (11.8)	873 (698)	553
27	8.1 (5.2)	60.8 (16.2)	633 (420)	491	8.0 (5.0)	58.9 (15.1)	633 (420)	553
28	9.2 (4.8)	67.5 (13.7)	919 (768)	494	8.8 (4.8)	67.2 (14.7)	919 (768)	553
29	10.6 (5.4)	69.1 (14.2)	710 (397)	497	10.5 (5.6)	68.0 (14.4)	710 (397)	552
30	12.8 (6.4)	68.6 (14.2)	315 (277)	500	12.3 (6.5)	69.0 (14.9)	315 (277)	552
31	11.6 (6.3)	71.4 (13.7)	454 (337)	501	11.3 (6.3)	71.5 (14.3)	454 (337)	552
Avg	10.1	73.4	741	460	9.9	72.6	741	556
n	25	25	25	31	25	25	25	31
SD	2.1	6.3	411	25	1.9	6.3	411	2
Min	7.0	60.8	315	417	6.9	58.9	315	552
Max	13.5	85.6	2010	501	13.4	83.6	2010	560

Table E2. Daily means (SD) of environmental parameters at site CA5B for February, 2009.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd
1	12.5 (5.6)	70.0 (13.0)	433 (373)	502	11.9 (5.5)	70.8 (13.3)	433 (373)	552
2	13.8 (6.4)	69.8 (14.0)	316 (279)	503	13.2 (6.4)	70.7 (14.3)	316 (279)	552
3	14.0 (6.9)	68.6 (15.8)	402 (381)	504	13.7 (7.1)	67.8 (16.7)	402 (381)	552
4	13.5 (5.6)	73.0 (11.4)	475 (379)	505	13.1 (5.6)	71.8 (12.0)	475 (379)	552
5	13.3 (1.6)	73.8 (6.0)	2030 (1290)	506	13.3 (1.7)	72.3 (6.9)	2030 (1290)	552
6	13.1 (2.1)	77.8 (7.0)	1090 (803)	507	13.2 (2.1)	76.7 (7.7)	1090 (803)	552
7	13.7 (3.1)	74.8 (9.6)	798 (593)	508	13.4 (3.1)	74.3 (10.3)	798 (593)	552
8	11.6 (3.1)	75.1 (9.1)	1550 (889)	509	11.8 (3.2)	72.8 (9.5)	1550 (889)	552
9	9.6 (3.0)	65.8 (10.7)	1250 (672)	510	9.4 (2.7)	64.1 (9.6)	1250 (672)	552
10	10.4 (5.2)	62.5 (16.3)	792 (736)	511	9.8 (5.2)	62.7 (16.5)	792 (736)	552
11	10.1 (2.3)	74.0 (8.7)	1970 (1130)	512	10.0 (2.4)	72.6 (9.7)	1970 (1130)	552
12	10.8 (3.1)	72.1 (11.4)	811 (509)	513	10.6 (2.9)	71.2 (11.7)	811 (509)	552
13	9.5 (1.8)	75.0 (8.2)	2210 (977)	514	9.6 (1.9)	73.3 (8.6)	2210 (977)	552
14	10.5 (2.5)	70.0 (11.1)	3210 (830)	514	10.6 (2.5)	68.4 (11.5)	3210 (830)	552
15			515					552
16			516					552
17			517					552
18	12.8 (3.9)	69.4 (11.7)	686 (515)	518	12.7 (4.2)	68.7 (13.1)	686 (515)	552
19	13.3 (5.4)	68.4 (15.3)	524 (485)	519	13.1 (5.7)	68.3 (16.2)	524 (485)	552
20	13.1 (5.1)	68.2 (14.1)	666 (542)	520	12.6 (5.0)	67.4 (14.4)	666 (542)	552
21	12.7 (3.5)	72.7 (7.0)	1710 (1030)	521	12.4 (3.9)	72.5 (8.1)	1710 (1030)	552
22	14.7 (1.1)	78.4 (2.9)	2920 (1280)	522	14.7 (1.2)	77.7 (3.9)	2920 (1280)	552
23	16.0 (1.6)	80.6 (3.6)	2190 (1340)	523	16.0 (1.7)	79.8 (4.2)	2190 (1340)	552
24	16.0 (4.0)	66.5 (13.9)	955 (522)	524	15.2 (3.8)	67.7 (14.2)	955 (522)	552
25	14.4 (2.5)	67.5 (9.5)	445 (307)	525	15.9 (4.3)	63.8 (13.3)	445 (307)	552
26	16.1 (4.5)	67.2 (13.1)	1010 (514)	526	15.6 (4.4)	67.3 (13.4)	1010 (514)	552
27			851 (585)	527	12.8 (4.5)	64.4 (14.5)	851 (585)	552
28			665 (463)	527	14.1 (4.3)	70.1 (10.0)	665 (463)	552
Avg	12.9	71.4	1200	515	12.7	70.3	1200	552
n	23	23	25	28	25	25	25	28
SD	2	4.4	794	7	1.9	4.2	794	0
Min	9.5	62.5	316	502	9.4	62.7	316	552
Max	16.1	80.6	3210	527	16	79.8	3210	552

Table E2. Daily means (SD) of environmental parameters at site CA5B for March, 2009.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, $\text{dsm}^3\text{s}^{-1}$	Inv., hd	Temp., °C	RH, %	Airflow, $\text{dsm}^3\text{s}^{-1}$	Inv., hd
1			1450 (1380)	528	15.0 (0.9)	78.4 (4.7)	1450 (1380)	553
2	16.1 (2.0)	72.8 (10.0)	2250 (1130)	529	16.3 (1.9)	71.5 (10.0)	2250 (1130)	554
3	13.2 (1.2)	72.7 (5.9)	1840 (991)	529	13.3 (1.3)	70.9 (6.6)	1840 (991)	554
4	11.7 (2.4)	69.4 (11.2)	939 (732)	530	11.6 (3.0)	68.4 (11.9)	939 (732)	555
5			549 (457)	530	12.2 (5.3)	64.8 (14.7)	549 (457)	555
6			884 (568)	531	12.1 (3.6)	64.1 (13.6)	884 (568)	556
7			550 (494)	532	12.7 (5.6)	62.3 (17.9)	550 (494)	557
8			651 (443)	532	13.8 (6.4)	59.4 (15.4)	651 (443)	557
9			1520 (828)	533	9.8 (3.8)	51.7 (16.7)	1520 (828)	558
10			715 (676)	534	10.8 (4.8)	54.4 (17.3)	715 (676)	559
11			551 (416)	534	12.4 (6.4)	53.1 (17.0)	551 (416)	559
12			903 (630)	535	14.3 (5.3)	57.0 (14.4)	903 (630)	560
13			710 (562)	536	15.0 (6.5)	59.5 (16.7)	710 (562)	561
14			1650 (817)	536	11.9 (3.1)	66.1 (12.7)	1650 (817)	561
15			805 (590)	537	16.5 (5.8)	60.8 (15.2)	805 (590)	562
16				537				562
17			1240 (829)	538	16.3 (4.1)	66.8 (14.7)	1240 (829)	563
18			1050 (750)	539	16.6 (5.3)	64.1 (16.9)	1050 (750)	564
19			697 (455)	539	19.4 (6.6)	58.1 (17.3)	697 (455)	564
20			904 (540)	540	18.1 (5.5)	63.1 (14.4)	904 (540)	565
21	14.9 (3.1)		1440 (749)	541	14.7 (3.0)	68.4 (9.2)	1440 (749)	566
22	11.4 (2.9)		1880 (1200)	541	11.6 (2.8)	60.5 (13.0)	1880 (1200)	566
23	10.3 (5.3)		1870 (1390)	542	10.3 (5.0)	53.8 (17.7)	1870 (1390)	567
24	15.0 (6.2)		994 (847)	543	14.3 (6.0)	57.9 (15.6)	994 (847)	568
25	16.7 (6.0)		983 (841)	543	16.0 (6.0)	58.5 (17.4)	983 (841)	568
26	18.0 (5.5)		2640 (1760)	544	17.3 (5.5)	57.4 (19.1)	2640 (1760)	569
27	19.9 (7.2)		568 (431)	544	19.3 (7.1)	50.9 (18.2)	568 (431)	569
28	20.8 (7.2)		769 (532)	545	20.6 (7.5)	55.5 (18.9)	769 (532)	570
29	15.3 (3.9)		2680 (1440)	546	14.7 (3.8)	45.4 (21.8)	2680 (1440)	571
30	15.4 (6.2)		1430 (1020)	546	14.7 (6.0)	39.3 (12.6)	1430 (1020)	571
31	17.3 (6.4)		940 (734)	545	16.6 (6.6)	50.0 (18.0)	940 (734)	572
Avg	15.4	71.6	1200	537	14.6	59.7	1200	562
n	14	3	30	31	30	30	30	31
SD	3	1.6	598	6	2.7	8.1	598	6
Min	10.3	69.4	549	528	9.8	39.3	549	553
Max	20.8	72.8	2680	546	20.6	78.4	2680	572

Table E2. Daily means (SD) of environmental parameters at site CA5B for April, 2009.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd
1	17.8 (5.9)		2270 (1610)	544	17.3 (5.8)	53.5 (17.9)	2270 (1610)	572
2	15.4 (4.4)		1650 (891)	543	15.4 (4.8)	58.4 (13.1)	1650 (891)	572
3	13.0 (4.9)		2610 (1810)	542	13.0 (4.7)	49.6 (21.0)	2610 (1810)	573
4	14.6 (7.6)		643 (549)	542	14.8 (7.7)	41.8 (18.0)	643 (549)	573
5	17.1 (7.8)		888 (899)	541	17.0 (8.5)	44.3 (21.0)	888 (899)	573
6	19.6 (8.7)		579 (460)	540	19.6 (8.9)	42.6 (19.1)	579 (460)	574
7	14.1 (3.2)		1240 (578)	539	13.8 (3.5)	67.6 (14.2)	1240 (578)	574
8	15.9 (3.7)		833 (627)	538	16.0 (3.9)	62.4 (13.7)	833 (627)	574
9	15.0 (1.6)		526 (413)	538	15.1 (1.9)	71.6 (7.1)	526 (413)	575
10	14.8 (2.9)		1270 (806)	537	14.4 (2.8)	70.4 (12.2)	1270 (806)	575
11	15.4 (4.9)		1400 (806)	536	14.9 (5.0)	62.0 (17.4)	1400 (806)	575
12	18.8 (5.9)		1060 (586)	535	18.3 (6.1)	60.1 (18.0)	1060 (586)	576
13	17.8 (4.9)		1250 (749)	534	17.2 (4.9)	60.8 (14.1)	1250 (749)	576
14	12.0 (3.0)		2560 (1480)	534	11.9 (3.0)	48.1 (16.5)	2560 (1480)	576
15	12.3 (5.1)		2010 (1350)	533	12.3 (4.9)	46.4 (16.5)	2010 (1350)	577
16	14.9 (6.0)		1620 (1080)	532	14.6 (6.0)	54.8 (18.4)	1620 (1080)	577
17	18.9 (6.9)		1040 (848)	531	18.6 (6.9)	49.2 (17.6)	1040 (848)	578
18	22.8 (7.8)		613 (489)	530	22.3 (7.9)	51.7 (19.6)	613 (489)	578
19	25.8 (8.5)		623 (450)	529	25.8 (8.9)	47.9 (20.7)	623 (450)	578
20	27.3 (8.9)		624 (473)	529	26.9 (8.9)	48.1 (20.8)	624 (473)	579
21	27.8 (8.3)		615 (473)	528	27.6 (8.5)	47.8 (20.0)	615 (473)	579
22	26.9 (7.5)		1200 (914)	527	26.5 (7.7)	41.8 (20.9)	1200 (914)	579
23	19.3 (5.1)		1550 (681)	526	19.2 (5.3)	47.5 (18.0)	1550 (681)	580
24	15.2 (3.5)		2100 (1010)	525	15.3 (3.9)	42.0 (13.7)	2100 (1010)	580
25	15.4 (6.0)		1590 (872)	525	15.1 (6.4)	53.5 (17.3)	1590 (872)	580
26	16.4 (6.7)		1120 (625)	524	16.2 (7.0)	51.2 (18.5)	1120 (625)	581
27	14.9 (4.9)		1790 (1190)	523	14.9 (5.3)	53.3 (14.3)	1790 (1190)	581
28	14.0 (4.8)		1560 (705)	522	14.2 (5.0)	49.8 (14.1)	1560 (705)	581
29	15.3 (5.7)		1450 (809)	521	15.1 (6.1)	51.4 (17.4)	1450 (809)	582
30	18.4 (7.0)		1080 (568)	521	17.9 (6.9)	46.5 (18.9)	1080 (568)	582
Avg	17.6		1310	532	17.4	52.5	1310	577
n	30	0	30	30	30	30	30	30
SD	4.3		581	7	4.3	8.1	581	3
Min	12.0		526	521	11.9	41.8	526	572
Max	27.8		2610	544	27.6	71.6	2610	582

Table E2. Daily means (SD) of environmental parameters at site CA5B for May, 2009.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, $\text{dsm}^3\text{s}^{-1}$	Inv., hd	Temp., °C	RH, %	Airflow, $\text{dsm}^3\text{s}^{-1}$	Inv., hd
1	17.4 (2.2)		1460 (1150)	522	17.5 (2.4)	67.0 (14.7)	1460 (1150)	582
2	18.8 (1.8)		676 (447)	523	18.7 (2.2)	69.9 (11.1)	676 (447)	583
3				524				583
4				524				583
5				525				584
6				526				584
7				527				584
8				527				584
9				528				585
10				529				585
11				529				585
12	20.6 (6.1)		1820 (1110)	530	20.1 (6.1)	42.5 (16.0)	1820 (1110)	585
13	22.3 (6.4)		2110 (1310)	531	21.7 (6.3)	39.7 (16.8)	2110 (1310)	586
14	22.5 (5.7)		1940 (1150)	532	21.7 (5.6)	48.8 (13.7)	1940 (1150)	586
15	25.5 (6.9)		1470 (916)	532	24.9 (6.9)	50.5 (19.6)	1470 (916)	586
16	30.3 (8.6)		688 (485)	533	29.9 (8.7)	40.4 (16.0)	688 (485)	587
17	31.9 (8.6)		971 (604)	534	32.0 (8.7)	37.3 (16.2)	971 (604)	587
18	29.0 (6.5)		1470 (866)	535	28.5 (6.5)	37.2 (11.4)	1470 (866)	587
19	23.8 (6.1)		1720 (829)	535	23.1 (6.2)	43.1 (16.7)	1720 (829)	587
20	23.4 (6.8)		1520 (685)	536	22.8 (6.8)	34.2 (11.9)	1520 (685)	588
21	24.5 (8.0)		1330 (718)	537	24.1 (8.0)	39.0 (16.0)	1330 (718)	588
22	23.8 (7.5)		1700 (642)	538	23.3 (7.4)	46.5 (15.5)	1700 (642)	588
23	20.4 (6.6)		1970 (650)	538	20.2 (6.9)	54.4 (18.1)	1970 (650)	588
24	18.8 (6.0)		2050 (534)	539	18.7 (6.2)	56.5 (17.0)	2050 (534)	589
25	22.0 (7.8)		1490 (605)	540	21.6 (7.7)	51.9 (19.5)	1490 (605)	589
26	26.4 (7.6)		1050 (638)	541	26.2 (7.7)	42.8 (15.1)	1050 (638)	589
27	29.4 (7.0)			541	29.0 (7.0)	39.4 (13.0)		590
28	28.1 (7.1)			542	27.2 (6.7)	40.1 (12.4)		590
29	24.1 (6.3)			543	23.4 (6.2)	49.8 (14.1)		590
30	22.2 (6.4)			543	21.8 (6.4)	57.3 (16.7)		590
31	22.2 (6.6)			544	22.0 (6.5)	53.6 (17.4)		591
Avg	24.0		1500	533	23.6	47.4	1500	587
n	22	0	17	31	22	22	17	31
SD	3.8		429	7	3.8	9.4	429	2
Min	17.4		676	522	17.5	34.2	676	582
Max	31.9		2110	544	32	69.9	2110	591

Table E2. Daily means (SD) of environmental parameters at site CA5B for June, 2009.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd
1	21.3 (5.5)			545	21.1 (5.6)	56.7 (14.4)		591
2	22.8 (5.6)			546	22.6 (5.5)	53.3 (15.0)		591
3	23.1 (5.4)			546	23.2 (5.8)	50.1 (13.2)		591
4	20.6 (5.0)			547	20.5 (4.9)	56.3 (15.2)		592
5	19.4 (3.0)			548	19.7 (3.2)	57.8 (10.1)		592
6	21.2 (5.2)			549	21.1 (5.2)	53.0 (15.6)		592
7	21.8 (6.0)			549	21.8 (6.2)	52.0 (16.1)		593
8	21.6 (6.4)			550	21.3 (6.0)	51.6 (17.9)		593
9	20.2 (5.1)			551	20.1 (5.3)	55.6 (16.0)		593
10	21.2 (4.3)			552	21.0 (4.4)	55.6 (13.5)		593
11	20.8 (5.2)			552	20.7 (5.4)	56.0 (14.5)		594
12	20.9 (5.0)			553	20.8 (5.1)	53.6 (14.6)		594
13	21.9 (4.7)			554	21.6 (4.7)	58.8 (15.1)		594
14	21.4 (5.6)			554	21.5 (6.0)	52.1 (16.8)		594
15	21.2 (5.0)			555	20.9 (4.8)	54.6 (14.5)		595
16	23.8 (6.5)	51.9 (18.4)		556	23.5 (6.8)	52.8 (18.0)		595
17	23.4 (6.0)	51.5 (15.5)		557	23.3 (6.0)	52.4 (15.0)		595
18	27.5 (7.5)	46.2 (17.2)		557	27.0 (7.5)	47.5 (16.5)		596
19	26.7 (6.2)	39.8 (12.1)		558	26.4 (6.3)	40.8 (12.3)		596
20	22.0 (6.2)	47.8 (14.0)		559	22.1 (6.7)	47.8 (13.9)		596
21	21.9 (6.0)	47.3 (14.3)		560	21.9 (6.0)	47.7 (13.2)		596
22	25.0 (6.9)	38.6 (18.0)		560	24.7 (6.8)	39.9 (17.2)		597
23	29.1 (7.9)	35.3 (14.8)		561	29.1 (8.3)	36.0 (14.6)		597
24	28.5 (7.2)	36.6 (14.4)		562	27.8 (6.9)	37.8 (13.4)		597
25	25.6 (7.2)	42.9 (17.5)		563	25.2 (7.0)	43.6 (16.6)		598
26	26.3 (7.9)	41.6 (16.6)	1310 (635)	563	25.8 (7.7)	42.6 (15.9)	1310 (635)	598
27	32.2 (9.2)	38.7 (16.0)	1070 (610)	564	30.9 (8.5)	39.3 (16.5)	1070 (610)	598
28	34.5 (8.4)	33.5 (11.0)	1160 (865)	565	33.3 (7.7)	34.2 (11.2)	1160 (865)	598
29	33.3 (7.9)	28.9 (12.1)	1510 (721)	566	32.2 (7.6)	30.4 (12.7)	1510 (721)	599
30	28.6 (8.4)	41.7 (18.4)	1420 (672)	566	27.9 (8.3)	42.5 (17.6)	1420 (672)	599
Avg	24.3	41.5	1290	556	24.0	48.4	1290	595
n	30	15	5	30	30	30	5	30
SD	4	6.4	163	6	3.7	7.7	163	2
Min	19.4	28.9	1070	545	19.7	30.4	1070	591
Max	34.5	51.9	1510	566	33.3	58.8	1510	599

Table E2. Daily means (SD) of environmental parameters at site CA5B for July, 2009.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd
1	26.6 (7.2)	47.1 (19.2)	1670 (788)	567	26.3 (7.1)	48.1 (18.1)	1670 (788)	599
2	26.7 (8.1)	46.6 (19.3)	1290 (628)	568	26.4 (8.0)	47.6 (18.3)	1290 (628)	599
3	26.9 (8.2)	43.4 (19.2)	1560 (575)	568	26.6 (8.1)	44.7 (18.3)	1560 (575)	600
4	25.1 (7.2)	48.6 (16.2)	1300 (617)	569	24.8 (7.1)	49.5 (15.3)	1300 (617)	600
5	22.8 (6.7)	54.1 (18.0)	1950 (761)	570	22.7 (6.6)	55.0 (17.1)	1950 (761)	600
6	22.4 (7.5)	46.8 (22.4)	1640 (756)	571	22.2 (7.5)	48.0 (21.6)	1640 (756)	601
7	23.8 (7.5)	42.3 (19.0)	1480 (653)	571	24.0 (7.7)	43.0 (18.3)	1480 (653)	601
8	24.4 (6.6)	42.5 (15.1)	1350 (710)	572	24.4 (6.6)	43.8 (14.5)	1350 (710)	601
9	24.3 (6.9)	43.0 (16.1)	1360 (691)	573	24.2 (6.9)	44.0 (15.3)	1360 (691)	601
10	25.1 (7.3)	40.9 (18.3)	1250 (759)	574	24.8 (7.2)	42.1 (17.6)	1250 (759)	602
11	26.0 (5.2)	37.4 (10.2)	1260 (683)	574	25.7 (5.1)	38.8 (10.0)	1260 (683)	602
12	26.3 (5.3)	33.6 (11.3)	1150 (656)	575	26.0 (5.2)	34.7 (10.7)	1150 (656)	602
13	26.4 (7.8)	38.9 (15.6)	1430 (903)	576	26.2 (7.5)	39.3 (14.7)	1430 (903)	602
14	30.4 (8.1)	36.1 (14.1)	962 (592)	577	30.2 (8.2)	37.0 (14.4)	962 (592)	603
15				577				603
16	30.4 (7.8)	36.7 (14.2)	1320 (632)	578	29.9 (7.7)	37.4 (13.4)	1320 (632)	603
17	30.6 (7.7)	35.3 (11.6)	1250 (714)	579	29.6 (7.4)	36.6 (12.2)	1250 (714)	604
18	32.7 (7.0)	31.6 (10.5)	1020 (734)	580	32.1 (6.8)	32.2 (9.8)	1020 (734)	604
19	32.5 (7.6)	36.5 (13.1)	1010 (474)	580	32.2 (7.8)	37.3 (12.8)	1010 (474)	604
20				581				604
21	26.8 (7.0)	42.8 (14.6)	1300 (593)	582	26.5 (7.0)	44.0 (13.9)	1300 (593)	605
22	26.4 (7.1)	44.5 (14.3)	1420 (592)	582	26.0 (6.8)	45.6 (13.5)	1420 (592)	605
23	25.9 (7.4)	49.6 (16.8)	1370 (519)	583	25.6 (7.4)	50.3 (15.8)	1370 (519)	605
24	23.7 (7.1)	56.6 (18.3)	1490 (537)	584	23.5 (7.1)	57.5 (17.5)	1490 (537)	605
25	24.7 (8.1)	55.1 (20.0)	1270 (522)	585	24.4 (8.0)	56.0 (19.4)	1270 (522)	606
26	28.1 (8.1)	47.8 (17.0)	1180 (555)	585	27.8 (8.1)	48.6 (16.9)	1180 (555)	606
27	29.3 (7.6)	45.2 (14.3)	1060 (596)	586	28.7 (7.6)	46.2 (14.1)	1060 (596)	606
28	27.2 (6.7)	51.3 (15.3)	1400 (480)	587	26.9 (6.7)	52.1 (14.5)	1400 (480)	607
29	25.0 (6.7)	58.6 (17.0)	1600 (518)	588	24.7 (6.5)	59.3 (16.3)	1600 (518)	607
30	23.8 (6.3)	61.6 (16.8)	1360 (645)	588	23.4 (6.2)	62.3 (16.0)	1360 (645)	607
31	25.3 (6.7)	54.2 (17.6)	1280 (640)	587	24.9 (6.6)	55.3 (17.1)	1280 (640)	606
Avg	26.5	45.1	1340	578	26.2	46.1	1340	603
n	29	29	29	31	29	29	29	31
SD	2.7	7.7	210	6	2.6	7.7	210	2
Min	22.4	31.6	962	567	22.2	32.2	962	599
Max	32.7	61.6	1950	588	32.2	62.3	1950	607

Table E2. Daily means (SD) of environmental parameters at site CA5B for August, 2009.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, $\text{dsm}^3\text{s}^{-1}$	Inv., hd	Temp., °C	RH, %	Airflow, $\text{dsm}^3\text{s}^{-1}$	Inv., hd
1	25.5 (7.0)	48.4 (17.2)	1300 (700)	587	25.2 (6.9)	49.4 (16.6)	1300 (700)	606
2	24.1 (7.5)	55.3 (18.8)	1150 (597)	586	23.7 (7.3)	55.9 (18.0)	1150 (597)	606
3	23.3 (6.5)	58.2 (18.8)	1360 (671)	586	22.9 (6.4)	58.9 (18.0)	1360 (671)	605
4	24.5 (7.1)	55.7 (19.9)	1090 (507)	585	24.3 (7.0)	56.3 (19.3)	1090 (507)	605
5	23.8 (6.6)	55.0 (18.3)	1410 (855)	585	23.6 (6.5)	55.8 (17.7)	1410 (855)	604
6	21.8 (4.6)	57.5 (16.1)	1290 (720)	584	22.0 (4.8)	57.7 (16.0)	1290 (720)	604
7	23.0 (6.2)	55.6 (18.0)	1230 (568)	584	22.7 (6.1)	56.5 (17.4)	1230 (568)	604
8	25.9 (6.7)	51.4 (16.0)	1100 (784)	583	25.4 (6.6)	52.7 (16.1)	1100 (784)	603
9	28.5 (7.3)	44.4 (15.6)	762 (510)	583	28.3 (7.4)	45.4 (16.2)	762 (510)	603
10	29.6 (7.2)	44.0 (15.4)	899 (566)	582	29.2 (7.3)	45.3 (15.5)	899 (566)	602
11	27.6 (6.4)	45.5 (13.3)	1170 (653)	582	27.1 (6.2)	46.6 (12.4)	1170 (653)	602
12	27.1 (7.2)	47.5 (15.4)	1240 (759)	581	26.7 (7.0)	48.8 (15.1)	1240 (759)	602
13	27.8 (6.4)	44.0 (14.9)	1160 (727)	581	27.5 (6.7)	46.2 (15.8)	1160 (727)	601
14	24.2 (5.5)	40.8 (13.3)	1170 (648)	580	24.1 (5.7)	42.5 (13.2)	1170 (648)	601
15	24.8 (7.6)	47.9 (17.3)	1030 (752)	580	24.5 (7.4)	48.8 (16.7)	1030 (752)	600
16	27.0 (7.3)	39.9 (15.6)	842 (584)	579	26.8 (7.4)	41.3 (15.8)	842 (584)	600
17	26.9 (7.5)	45.0 (16.0)	1000 (582)	579	26.5 (7.4)	46.4 (15.5)	1000 (582)	600
18	25.9 (6.5)	51.2 (16.1)	1140 (474)	578	25.9 (7.5)	52.2 (15.7)	1140 (474)	599
19	26.3 (5.5)	51.6 (14.9)	1240 (610)	578	25.3 (6.7)	52.9 (14.4)	1240 (610)	599
20	26.2 (7.1)	58.3 (17.6)	1370 (648)	577	23.5 (6.5)	59.0 (16.8)	1370 (648)	598
21	26.7 (7.5)	54.1 (18.3)	857 (461)	577	27.1 (8.3)	54.5 (18.1)	857 (461)	598
22	31.0 (5.1)	42.3 (15.2)	681 (424)	576	29.5 (6.4)	42.8 (14.7)	681 (424)	598
23	25.0 (6.2)	51.3 (14.7)	1180 (512)	576	24.9 (6.2)	52.1 (14.0)	1180 (512)	597
24	21.3 (6.0)	51.1 (20.0)	1070 (546)	575	22.7 (7.5)	52.5 (19.3)	1070 (546)	597
25	25.1 (7.6)	49.6 (18.6)	1000 (504)	575	24.5 (7.9)	50.5 (18.2)	1000 (504)	597
26	24.4 (6.9)	47.4 (17.1)	949 (485)	574	25.5 (7.7)	48.3 (16.8)	949 (485)	596
27	23.9 (5.2)	41.5 (14.4)	890 (611)	574	26.3 (7.6)	41.9 (13.7)	890 (611)	596
28	24.9 (5.0)	42.9 (15.5)	751 (568)	573	27.5 (7.6)	43.7 (15.8)	751 (568)	595
29	29.9 (7.7)	43.6 (16.8)	827 (663)	573	29.9 (7.9)	45.1 (16.6)	827 (663)	595
30	29.2 (6.9)	37.8 (15.0)	961 (590)	572	28.9 (7.1)	39.5 (14.7)	961 (590)	595
31				572				594
Avg	25.8	48.6	1070	579	25.7	49.7	1070	600
n	30	30	30	31	30	30	30	31
SD	2.3	5.8	194	4	2.1	5.6	194	4
Min	21.3	37.8	681	572	22.0	39.5	681	594
Max	31	58.3	1410	587	29.9	59	1410	606

Table E2. Daily means (SD) of environmental parameters at site CA5B for September, 2009.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd
1	26.4 (7.5)	53.1 (20.1)	905 (488)	571	26.3 (7.4)	53.7 (19.6)	905 (488)	594
2	27.5 (6.0)	45.2 (12.7)	1080 (649)	571	27.5 (6.0)	46.0 (12.2)	1080 (649)	593
3	25.3 (5.8)	37.7 (14.0)	1190 (739)	570	28.4 (7.1)	39.6 (14.1)	1190 (739)	593
4	26.1 (7.7)	40.3 (17.0)	1220 (678)	570	25.1 (7.2)	41.7 (16.5)	1220 (678)	593
5	22.6 (6.4)	59.1 (15.8)	1610 (634)	569	22.5 (6.3)	60.0 (15.3)	1610 (634)	592
6	22.5 (5.1)	53.5 (18.9)	1210 (840)	569	22.4 (5.2)	55.3 (18.8)	1210 (840)	592
7	23.0 (6.1)	52.1 (17.5)	1140 (803)	568	22.9 (6.1)	53.5 (17.3)	1140 (803)	591
8	25.2 (7.5)	44.3 (18.7)	540 (442)	568	25.2 (7.8)	45.3 (18.9)	540 (442)	591
9	24.9 (6.3)	45.7 (16.1)	1050 (800)	567	25.1 (6.9)	46.7 (15.7)	1050 (800)	591
10	27.2 (7.0)	41.7 (14.9)	841 (652)	567	27.1 (7.1)	42.7 (14.0)	841 (652)	590
11	29.0 (7.0)	38.0 (12.5)	882 (565)	566	28.8 (6.9)	39.0 (11.9)	882 (565)	590
12	25.0 (4.0)	48.3 (11.4)	1220 (772)	566	24.9 (3.9)	49.0 (10.7)	1220 (772)	589
13	21.8 (4.8)	60.7 (16.2)	1220 (629)	566	21.6 (4.7)	61.4 (16.0)	1220 (629)	589
14	22.1 (4.1)	64.3 (17.6)	1260 (656)	565	22.0 (4.0)	63.2 (15.9)	1260 (656)	589
15	24.3 (6.3)	58.6 (18.5)	695 (517)	565	24.3 (6.4)	58.8 (18.4)	695 (517)	588
16	24.6 (5.8)	54.2 (17.3)	1030 (671)	564	24.4 (5.8)	55.4 (17.0)	1030 (671)	588
17	25.9 (6.4)	55.8 (18.2)	871 (625)	564	25.7 (6.5)	56.6 (18.1)	871 (625)	587
18	29.0 (7.8)	49.0 (19.6)	523 (407)	563	29.1 (8.3)	49.5 (19.9)	523 (407)	587
19	27.3 (5.8)	44.1 (14.3)	944 (556)	563	27.4 (6.2)	45.2 (13.8)	944 (556)	587
20	25.6 (5.9)	52.2 (16.8)	880 (615)	562	26.1 (6.8)	52.6 (16.3)	880 (615)	586
21	27.7 (6.6)	48.2 (17.4)	651 (490)	562	27.8 (7.0)	48.9 (17.4)	651 (490)	586
22	29.0 (7.4)	39.1 (17.4)	639 (523)	561	28.8 (7.5)	40.1 (16.8)	639 (523)	585
23	28.4 (7.3)	37.7 (12.8)	780 (548)	561	27.9 (7.7)	40.7 (13.9)	780 (548)	585
24	27.4 (7.1)	38.9 (15.3)	952 (660)	560	26.9 (7.3)	41.3 (16.1)	952 (660)	585
25	26.8 (7.7)	40.8 (17.3)	823 (618)	560	26.6 (7.7)	42.0 (16.9)	823 (618)	584
26	29.4 (7.8)	39.1 (15.1)	492 (440)	559	29.1 (7.9)	40.2 (15.2)	492 (440)	584
27	30.2 (7.3)	37.5 (12.1)	611 (439)	559	29.9 (7.6)	38.7 (12.6)	611 (439)	583
28	24.6 (4.8)	41.2 (11.6)	1310 (721)	558	24.5 (4.9)	42.1 (11.0)	1310 (721)	583
29	18.6 (2.9)	46.6 (10.4)	2000 (734)	558	18.8 (2.9)	47.0 (9.9)	2000 (734)	583
30	17.4 (5.3)	43.5 (18.8)	1640 (1180)	557	17.5 (5.1)	44.5 (17.8)	1640 (1180)	582
Avg	25.5	47.0	1010	564	25.5	48.0	1010	588
n	30	30	30	30	30	30	30	30
SD	3	7.6	345	4	3	7.3	345	3
Min	17.4	37.5	492	557	17.5	38.7	492	582
Max	30.2	64.3	2000	571	29.9	63.2	2000	594

Table E2. Daily means (SD) of environmental parameters at site CA5B for October, 2009.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, $\text{dsm}^3\text{s}^{-1}$	Inv., hd	Temp., °C	RH, %	Airflow, $\text{dsm}^3\text{s}^{-1}$	Inv., hd
1	19.6 (7.1)	36.9 (15.0)	640 (528)	557	19.8 (7.1)	37.6 (14.5)	640 (528)	582
2	21.8 (7.5)	38.2 (16.6)	604 (493)	556	21.7 (7.7)	39.3 (16.8)	604 (493)	581
3	19.0 (4.4)	42.1 (10.7)	1810 (1150)	556	19.0 (4.2)	43.0 (10.2)	1810 (1150)	581
4	15.8 (4.6)	46.3 (16.1)	996 (683)	555	16.0 (4.6)	46.9 (15.5)	996 (683)	581
5	15.9 (6.0)	47.2 (17.9)	857 (731)	555	16.0 (5.8)	47.5 (16.8)	857 (731)	580
6	17.8 (6.5)	43.8 (15.7)	697 (567)	554	18.0 (6.4)	44.1 (15.1)	697 (567)	580
7	20.6 (6.5)	38.5 (14.7)	761 (506)	554	20.4 (6.5)	39.0 (14.5)	761 (506)	580
8	18.7 (5.9)	54.2 (16.1)	1020 (585)	553	18.4 (5.8)	54.8 (15.6)	1020 (585)	579
9	18.7 (6.0)	57.4 (18.6)	985 (653)	553	18.4 (6.0)	58.0 (18.4)	985 (653)	579
10	19.1 (6.1)	56.4 (17.1)	924 (473)	552	18.9 (6.2)	57.1 (16.9)	924 (473)	578
11	16.2 (4.3)	65.5 (12.9)	1360 (761)	552	16.0 (4.2)	65.9 (12.6)	1360 (761)	578
12	17.6 (4.0)	62.2 (13.4)	1570 (1250)	551	17.6 (4.1)	61.8 (14.1)	1570 (1250)	578
13		81.3 (10.3)	6230 (1780)	551	16.7 (1.1)	73.3 (7.0)	6230 (1780)	577
14		76.7 (13.4)	2070 (1340)	550	21.6 (3.4)	68.3 (9.1)	2070 (1340)	577
15		71.4 (12.8)	1270 (980)	550	23.5 (3.7)	70.4 (12.3)	1270 (980)	576
16		73.5 (15.7)	805 (512)	549	22.6 (4.9)	68.7 (13.2)	805 (512)	576
17		78.2 (12.2)	550 (415)	549	22.6 (4.0)	71.8 (9.2)	550 (415)	576
18		64.7 (17.1)	1220 (959)	548	20.9 (3.7)	64.3 (16.5)	1220 (959)	575
19		69.8 (9.2)	940 (758)	548	17.1 (2.5)	68.8 (10.3)	940 (758)	575
20		70.0 (15.5)	859 (674)	547	17.3 (4.4)	68.0 (14.0)	859 (674)	574
21		65.4 (15.7)	564 (493)	547	19.4 (5.6)	64.3 (15.5)	564 (493)	574
22			546					574
23		63.4 (17.3)	564 (439)	546	21.5 (5.7)	62.0 (17.0)	564 (439)	573
24		63.9 (15.3)	933 (868)	545	20.9 (4.9)	63.0 (14.4)	933 (868)	573
25		54.6 (17.8)	746 (635)	545	19.9 (5.2)	53.6 (16.1)	746 (635)	572
26		58.4 (20.7)	794 (497)	544	21.6 (6.4)	57.1 (19.9)	794 (497)	572
27		38.1 (14.2)	4600 (2150)	544	15.7 (2.0)	38.6 (13.2)	4600 (2150)	572
28		37.9 (11.0)	3080 (1540)	543	13.0 (3.4)	37.7 (10.1)	3080 (1540)	571
29		45.2 (15.2)	597 (416)	543	13.6 (5.5)	44.9 (13.7)	597 (416)	571
30		47.4 (15.8)	661 (521)	543	16.8 (6.7)	47.0 (15.5)	661 (521)	571
31		53.1 (13.8)	577 (524)	543	17.4 (5.7)	52.7 (12.8)	577 (524)	572
Avg	18.4	56.7	1310	549	18.7	55.7	1310	576
n	12	30	30	31	30	30	30	31
SD	1.8	13.2	1240	4	2.6	11.5	1240	3
Min	15.8	36.9	550	543	13.0	37.6	550	571
Max	21.8	81.3	6230	557	23.5	73.3	6230	582

Table E2. Daily means (SD) of environmental parameters at site CA5B for November, 2009.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd
1		61.2 (13.7)	569 (506)	544	18.3 (5.9)	60.5 (13.3)	569 (506)	572
2		63.4 (17.4)		544	19.4 (6.8)	62.1 (17.2)		572
3		64.3 (16.0)	322 (280)	544	19.5 (6.7)	63.3 (16.5)	322 (280)	572
4		67.9 (13.5)	830 (740)	544	17.8 (5.7)	66.8 (13.6)	830 (740)	572
5		63.0 (15.5)	659 (461)	544	17.9 (5.0)	61.6 (15.7)	659 (461)	573
6		67.7 (14.5)	866 (770)	544	17.6 (5.0)	66.7 (14.5)	866 (770)	573
7		62.0 (16.5)	1380 (1270)	544	15.2 (3.3)	61.5 (15.6)	1380 (1270)	573
8		55.1 (14.7)	750 (548)	545	13.4 (4.6)	53.9 (13.2)	750 (548)	573
9		62.9 (12.8)	504 (346)	545	14.3 (5.1)	61.1 (12.4)	504 (346)	574
10		62.2 (13.1)	461 (350)	545	15.1 (4.5)	61.0 (13.1)	461 (350)	574
11		66.3 (10.8)	402 (345)	545	15.5 (3.5)	63.6 (9.9)	402 (345)	574
12		63.6 (13.5)	1150 (833)	545	14.7 (2.7)	62.9 (12.8)	1150 (833)	574
13				545				575
14		58.1 (13.1)	897 (815)	545	12.3 (4.0)	57.0 (11.1)	897 (815)	575
15		52.4 (18.7)	501 (432)	546	12.1 (6.5)	50.6 (17.6)	501 (432)	575
16		54.5 (17.0)	326 (304)	546	13.0 (6.7)	52.9 (16.6)	326 (304)	575
17		57.7 (15.8)	524 (436)	546	13.7 (6.3)	56.6 (15.2)	524 (436)	575
18		61.1 (19.1)	2270 (1330)	546	12.3 (3.0)	60.3 (17.7)	2270 (1330)	576
19		63.4 (12.4)	855 (683)	546	10.7 (5.3)	61.1 (12.3)	855 (683)	576
20		72.1 (9.9)		546	11.2 (3.6)	69.5 (9.5)		576
21		75.2 (8.3)	1130 (1040)	546	9.5 (2.2)	73.6 (8.3)	1130 (1040)	576
22		70.6 (11.8)	949 (628)	547	12.2 (5.2)	68.7 (11.8)	949 (628)	577
23		74.9 (10.5)	557 (413)	547	10.3 (3.6)	73.6 (9.7)	557 (413)	577
24		70.1 (16.1)	376 (323)	547	12.9 (6.2)	66.4 (16.6)	376 (323)	577
25		64.9 (16.7)		547	13.1 (6.6)	63.9 (16.2)		577
26				547				577
27		75.2 (4.8)	925 (682)	547	12.8 (2.4)	73.7 (4.8)	925 (682)	578
28		51.1 (16.2)	2670 (1410)	547	12.9 (4.5)	47.7 (16.8)	2670 (1410)	578
29		54.8 (12.3)	1160 (873)	548	10.8 (4.2)	51.4 (11.9)	1160 (873)	578
30		65.4 (14.5)	415 (371)	548	12.1 (5.7)	63.9 (14.6)	415 (371)	578
Avg	0	63.6	858	546	14.0	62.0	858	575
n		28	25	30	28	28	25	30
SD		6.6	558	1	2.8	6.7	558	2
Min		51.1	322	544	9.5	47.7	322	572
Max		75.2	2670	548	19.5	73.7	2670	578

Table E2. Daily means (SD) of environmental parameters at site CA5B for December, 2009.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd
1	63.9 (15.1)	244 (228)	548	12.0 (6.1)	62.0 (14.8)	244 (228)	579	
2	69.4 (12.5)	400 (410)	548	10.6 (4.8)	67.0 (12.0)	400 (410)	579	
3	76.0 (10.7)	282 (276)	548	9.2 (5.0)	72.6 (11.1)	282 (276)	579	
4	72.4 (13.2)	398 (324)	548	10.4 (5.3)	69.8 (12.5)	398 (324)	579	
5	74.9 (8.6)	873 (1010)	549	7.7 (2.3)	72.1 (9.2)	873 (1010)	580	
6	70.2 (9.8)	1290 (1320)	549	7.2 (3.4)	66.3 (9.0)	1290 (1320)	580	
7	77.5 (7.0)	1140 (955)	549	5.9 (1.7)	74.7 (7.0)	1140 (955)	580	
8	69.7 (13.6)	706 (695)	549	5.9 (4.1)	66.8 (12.6)	706 (695)	580	
9	68.8 (10.2)	295 (262)	549	6.2 (3.5)	68.0 (10.3)	295 (262)	580	
10	67.5 (9.1)	320 (268)	549	9.2 (3.1)	65.2 (9.9)	320 (268)	581	
11	84.5 (3.3)	912 (1010)	549	10.3 (1.3)	80.8 (1.6)	912 (1010)	581	
12	86.0 (3.8)	3180 (1140)	550	13.1 (0.8)	80.9 (2.7)	3180 (1140)	581	
13	84.1 (2.3)		550	12.6 (1.3)	81.2 (1.8)		581	
14	79.7 (7.0)	370 (309)	550	13.3 (2.6)	77.1 (7.8)	370 (309)	582	
15	79.6 (6.1)	1210 (793)	550	12.4 (2.7)	76.8 (6.9)	1210 (793)	582	
16	76.2 (7.5)	917 (648)	550	13.3 (2.5)	74.8 (7.9)	917 (648)	582	
17	86.3 (2.8)	774 (528)	550	10.6 (1.1)	81.6 (1.3)	774 (528)	582	
18	84.5 (5.4)	568 (368)	550	11.2 (1.9)	78.4 (4.1)	568 (368)	582	
19	77.8 (8.1)	569 (386)	551	11.8 (2.6)	75.7 (9.0)	569 (386)	583	
20	81.8 (4.5)	881 (894)	551	11.3 (2.4)	79.3 (4.8)	881 (894)	583	
21	83.3 (2.7)	1150 (853)	551	12.6 (1.7)	80.4 (3.0)	1150 (853)	583	
22	62.2 (13.8)	3070 (1520)	551	8.7 (2.5)	61.2 (12.3)	3070 (1520)	583	
23	61.6 (12.8)	1060 (769)	551	7.6 (4.0)	60.4 (11.8)	1060 (769)	584	
24	68.9 (12.0)	401 (400)	551	8.7 (5.1)	67.0 (12.3)	401 (400)	584	
25	69.5 (12.9)	309 (298)	551	9.8 (5.4)	68.6 (12.8)	309 (298)	584	
26	78.5 (4.7)	797 (552)	552	8.7 (2.5)	76.9 (4.9)	797 (552)	584	
27	79.3 (9.7)	1210 (559)	552	12.2 (3.2)	76.4 (10.0)	1210 (559)	584	
28	84.0 (2.5)	828 (445)	552	9.7 (0.7)	81.7 (2.4)	828 (445)	585	
29	79.9 (7.7)	926 (1260)	552	11.0 (3.0)	77.2 (7.9)	926 (1260)	585	
30	77.4 (9.5)	1540 (1270)	552	12.3 (3.0)	75.5 (9.4)	1540 (1270)	585	
31	81.5 (5.5)	1130 (922)	552	12.1 (1.8)	78.1 (5.2)	1130 (922)	585	
Avg		76.0	925	550	10.2	73.4	925	582
n	0	31	30	31	31	30	31	
SD		7.1	684	1	2.2	6.4	684	2
Min		61.6	244	548	5.9	60.4	244	579
Max		86.3	3180	552	13.3	81.7	3180	585

Table E2. Daily means (SD) of environmental parameters at site CA5B for January, 2010.

Day	Barn 1				Barn 2			
	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd	Temp., °C	RH, %	Airflow, dsm ³ s ⁻¹	Inv., hd
1	78.0 (6.9)	649 (535)	552	12.8 (2.6)	75.8 (7.4)	649 (535)	586	
2	84.0 (2.4)	641 (611)	553	12.3 (2.6)	81.2 (1.3)	641 (611)	586	
3	83.3 (4.0)	1070 (542)	553	11.9 (0.9)	79.4 (3.6)	1070 (542)	586	
4	74.5 (8.0)	362 (269)	553	11.5 (2.9)	72.7 (8.2)	362 (269)	586	
5	81.5 (5.3)	657 (457)	553	9.8 (1.9)	77.9 (5.2)	657 (457)	587	
6	80.3 (5.1)	673 (507)	553	9.9 (1.4)	77.5 (5.2)	673 (507)	587	
7	83.7 (2.8)	475 (393)	553	8.7 (1.7)	80.3 (2.6)	475 (393)	587	
8	85.9 (2.8)	1010 (706)	554	9.3 (1.1)	82.4 (1.7)	1010 (706)	587	
9	84.2 (3.1)	492 (379)	554	10.8 (1.0)	81.2 (2.6)	492 (379)	587	
10	86.1 (2.5)	656 (488)	554	10.0 (1.0)	82.4 (1.1)	656 (488)	588	
11	88.4 (3.1)	1450 (741)	554	9.7 (1.2)	81.6 (1.2)	1450 (741)	588	
12	75.4 (9.0)	1820 (1090)	554	14.3 (3.4)	73.0 (9.1)	1820 (1090)	588	
13	72.8 (10.1)	1020 (963)	554	15.8 (2.7)	70.8 (10.4)	1020 (963)	588	
14	79.1 (8.7)	712 (517)	554	11.3 (3.4)	76.6 (7.5)	712 (517)	589	
15	83.9 (4.0)	836 (717)	555	10.5 (2.2)	80.6 (3.5)	836 (717)	589	
16	83.7 (4.1)	523 (454)	555	11.6 (1.3)	80.3 (3.0)	523 (454)	589	
17	83.7 (5.1)	2340 (1470)	555	11.9 (1.1)	80.4 (4.5)	2340 (1470)	589	
18	81.8 (6.3)	3670 (1600)	555	12.7 (1.5)	78.7 (6.2)	3670 (1600)	589	
19	79.9 (5.0)	4490 (1410)	555	11.1 (1.0)	77.7 (4.9)	4490 (1410)	590	
20	80.5 (4.0)	5440 (2050)	555	10.8 (1.0)	77.7 (4.4)	5440 (2050)	590	
21	81.2 (3.7)	1330 (1250)	555	9.7 (0.9)	78.9 (4.0)	1330 (1250)	590	
22	82.5 (5.9)	1370 (825)	556	8.9 (2.1)	79.5 (6.2)	1370 (825)	590	
23	78.4 (10.4)	1430 (1070)	556	10.0 (3.6)	75.2 (9.9)	1430 (1070)	591	
24	78.5 (4.1)	1220 (697)	556	9.3 (2.5)	76.4 (4.4)	1220 (697)	591	
25	80.3 (3.8)	1800 (1130)	556	11.2 (1.3)	78.2 (4.5)	1800 (1130)	591	
26	76.5 (7.8)	1200 (741)	556	12.4 (1.6)	74.7 (7.2)	1200 (741)	591	
27	78.6 (7.8)	918 (1000)	556	11.6 (2.3)	77.4 (7.7)	918 (1000)	592	
28	79.5 (10.4)	637 (550)	556	11.8 (4.0)	76.1 (10.0)	637 (550)	592	
29	79.7 (7.5)	911 (849)	557	13.0 (3.1)	77.5 (7.9)	911 (849)	592	
30	73.0 (11.7)	682 (507)	557	13.9 (2.9)	71.6 (12.0)	682 (507)	592	
31	78.5 (6.8)	346 (289)	557	11.5 (3.1)	76.5 (7.5)	346 (289)	592	
Avg	0	80.6	1320	555	11.3	77.7	1320	589
n		31	31	31	31	31	31	31
SD		3.7	1170	1	1.6	3	1170	2
Min		72.8	346	552	8.7	70.8	346	586
Max		88.4	5440	557	15.8	82.4	5440	592

Table E3. Particulate matter concentrations.

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for September, 2007.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27	78.4 (29.4)	92.8 (68.6)							
28	63.8 (48.6)	59.7 (73.4)							
29									
30									
Avg	71.1	76.3		0	0	0	0	0	0
n	2	2		0	0	0	0	0	0
SD	7.3	16.5							
Min	63.8	59.7							
Max	78.4	92.8							

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for October, 2007.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1									
2									
3									
4									
5									
6	69.9 (59.8)	65.1 (92.1)							
7	60.6 (33.4)	80.1 (71.6)							
8	103.0 (53.1)	129.0 (85.2)							
9	102.0 (36.0)	121.0 (83.8)							
10									
11									
12									
13	34.3 (20.8)	54.7 (71.0)							
14	42.4 (18.9)	79.7 (77.0)							
15	16.3 (9.7)	38.4 (48.6)							
16	24.0 (10.4)	31.0 (60.5)							
17	28.0 (9.7)	35.3 (53.6)							
18	34.3 (19.1)	89.0 (54.8)							
19	28.5 (16.0)	50.3 (33.9)							
20	19.2 (6.9)	30.2 (17.0)							
21	30.9 (18.2)	42.5 (34.2)							
22	52.9 (20.2)	72.8 (45.8)							
23	71.9 (44.3)	81.7 (85.4)							
24									
25	72.2 (27.2)	70.9 (40.9)							
26	48.1 (18.2)	46.4 (22.3)							
27	45.4 (19.0)	51.3 (32.3)							
28	50.2 (10.5)	44.1 (15.6)							
29	62.1 (22.3)	69.3 (43.4)							
30	33.4 (11.5)	41.5 (50.9)							
31	50.3 (13.0)	42.7 (18.1)							
Avg	49.1	62.1							
n	22	22	0	0	0	0	0	0	0
SD	23.5	26.3							
Min	16.3	30.2							
Max	103	129							

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for November, 2007.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1	55.7 (28.4)	87.5 (190.0)							
2	62.5 (15.9)	61.8 (37.3)							
3	55.7 (12.0)	71.2 (52.7)							
4	52.4 (11.2)	47.1 (25.9)							
5	67.2 (31.6)	75.3 (48.8)							
6	58.8 (12.1)	59.8 (24.5)							
7	78.5 (50.9)	97.9 (95.5)							
8	49.0 (15.2)	49.4 (30.6)							
9	37.9 (14.3)	53.3 (47.6)							
10	33.1 (13.4)	54.6 (45.6)							
11	17.4 (5.6)	9.6 (21.0)							
12	27.2 (11.2)	51.8 (51.2)							
13	32.6 (8.4)	40.1 (46.1)							
14									
15	51.0 (21.7)	40.7 (37.1)							
16	15.2 (7.4)	29.0 (39.5)							
17	24.6 (11.2)	34.1 (32.1)							
18	17.9 (10.6)	24.2 (30.1)							
19	13.5 (6.7)	15.8 (28.0)							
20	24.0 (10.8)	11.6 (17.7)							
21	35.5 (13.5)	42.4 (54.0)							
22	39.0 (14.5)	45.5 (45.5)							
23	38.1 (14.2)	50.3 (57.1)							
24	69.4 (26.8)	86.4 (79.9)							
25	74.5 (12.1)	90.4 (51.3)							
26	76.6 (19.8)	86.7 (51.4)							
27	56.5 (15.7)	45.1 (32.8)							
28	39.9 (23.3)	52.8 (44.7)							
29	98.2 (14.4)	59.4 (19.9)							
30	43.9 (26.1)	33.9 (31.2)							
Avg	46.4	52.0							
n	29	29	0	0	0	0	0	0	0
SD	21.1	23.1							
Min	13.5	9.6							
Max	98.2	97.9							

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for December, 2007.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1	36.5 (14.7)	31.1 (17.9)							
2	36.1 (11.8)	29.8 (14.9)							
3	51.3 (43.5)	47.2 (44.3)							
4	25.2 (11.7)	20.2 (24.5)							
5	18.7 (9.8)	20.2 (16.4)							
6	34.4 (19.3)	18.6 (16.3)							
7	7.1 (7.7)	7.7 (12.9)							
8	13.3 (8.0)	11.5 (11.8)							
9	16.4 (14.7)	14.1 (15.6)							
10	31.0 (8.7)	20.5 (15.8)							
11	20.9 (20.8)	22.1 (30.7)							
12									
13	41.1 (11.6)	29.1 (15.5)							
14	49.0 (15.9)	29.6 (17.1)							
15	56.2 (12.6)	35.7 (19.4)							
16	49.7 (12.8)	22.5 (17.0)							
17	34.7 (20.9)	10.5 (10.5)	16.3 (13.6)						
18	10.4 (9.5)	5.0 (7.1)	9.6 (8.6)						
19	14.1 (7.3)	14.7 (16.4)	20.0 (16.2)						
20	7.5 (5.6)	3.0 (9.0)	8.4 (7.7)						
21	10.6 (9.5)	9.8 (14.4)	14.1 (14.7)						
22	16.2 (7.3)	13.7 (13.4)	19.4 (14.2)						
23	23.1 (10.1)	16.0 (11.9)	20.4 (12.2)						
24	31.3 (19.1)	11.0 (15.4)	15.1 (15.2)						
25	15.2 (13.5)	12.7 (21.4)	16.3 (17.5)						
26	17.9 (10.1)	7.1 (8.7)	12.2 (9.5)						
27	12.1 (8.4)	11.4 (12.4)	14.4 (8.8)						
28	13.3 (10.0)	12.7 (12.7)	14.5 (15.0)						
29	25.1 (7.3)	18.1 (9.9)	18.4 (10.6)						
30	12.7 (8.4)	7.6 (10.8)	10.4 (11.5)						
31	9.8 (9.1)	12.3 (15.7)	13.0 (14.2)						
Avg	24.7	17.5	14.8						
n	30	30	15	0	0	0	0	0	0
SD	14.1	9.8	3.6						
Min	7.1	3.0	8.4						
Max	56.2	47.2	20.4						

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for January, 2008.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1	19.6 (11.4)	17.0 (14.3)	17.2 (13.9)						
2	40.7 (17.6)	38.3 (39.5)	31.1 (20.1)						
3	37.5 (15.0)	36.4 (15.5)	29.5 (19.6)						
4	11.4 (10.2)	12.8 (6.6)	7.7 (9.9)						
5	8.0 (6.1)	10.4 (5.9)	7.7 (10.0)						
6	7.5 (4.8)	11.2 (7.8)	9.0 (11.0)						
7	9.2 (5.3)	12.0 (8.9)	13.5 (16.9)						
8	14.1 (5.5)	10.8 (4.4)	10.7 (6.9)						
9	15.9 (7.7)	12.7 (7.5)	14.8 (11.5)						
10	23.8 (9.8)	14.4 (7.2)	14.2 (11.1)						
11	9.8 (8.2)	9.2 (7.1)	13.1 (15.4)						
12	15.4 (6.7)	11.3 (8.4)	73.2 (286.0)						
13	15.6 (7.8)	14.2 (8.1)	31.4 (41.4)						
14	20.8 (9.7)	12.9 (6.8)	24.9 (57.0)						
15	12.3 (8.6)	9.2 (5.7)	19.8 (35.5)						
16	15.1 (13.3)	14.3 (13.2)	21.4 (52.5)						
17	18.3 (10.2)	17.5 (10.5)	28.5 (62.8)						
18	39.9 (13.6)	27.1 (16.0)	46.4 (66.5)						
19	47.7 (22.7)	26.8 (15.2)	49.5 (69.6)						
20									
21							13.5 (9.8)	21.1 (21.7)	
22							6.1 (6.3)	15.3 (16.4)	
23							8.6 (8.2)	20.4 (25.0)	
24							0.5 (4.1)	2.9 (3.9)	
25							9.5 (14.7)	8.6 (6.0)	
26							14.5 (9.0)	23.0 (27.7)	
27							5.8 (6.8)	9.9 (21.0)	13.0 (20.5)
28							15.4 (14.5)	38.1 (40.1)	64.6 (70.1)
29							15.9 (7.5)	29.1 (34.4)	32.5 (51.1)
30							18.8 (8.5)	38.1 (38.6)	54.2 (52.7)
31							16.2 (8.4)	23.0 (26.5)	25.2 (25.8)
Avg	20.1	16.8	24.4				11.3	20.9	37.9
n	19	19	19	0	0	0	11	11	5
SD	11.9	8.6	16.4				5.4	10.8	18.9
Min	7.5	9.2	7.7				0.5	2.9	13.0
Max	47.7	38.3	73.2				18.8	38.1	64.6

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for February, 2008.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1							22.1 (23.0)	31.7 (34.7)	38.3 (44.6)
2							17.6 (11.5)	32.1 (44.3)	35.2 (57.2)
3							11.0 (6.5)	21.4 (45.2)	29.6 (24.3)
4							7.9 (5.0)	34.2 (45.5)	52.4 (47.3)
5							27.6 (21.1)	82.4 (79.6)	112.0 (115.0)
6							26.4 (16.0)	62.4 (68.0)	64.9 (77.6)
7							40.7 (40.7)	74.6 (67.0)	97.7 (87.4)
8							53.6 (58.3)	58.4 (58.0)	66.9 (65.1)
9							42.8 (16.5)	113.0 (140.0)	128.0 (167.0)
10							52.5 (15.5)	79.0 (86.1)	78.8 (82.2)
11							53.7 (20.3)	81.1 (103.0)	98.3 (112.0)
12							44.4 (12.6)	68.2 (76.1)	63.0 (82.8)
13							40.1 (24.0)	129.0 (149.0)	125.0 (124.0)
14									
15							41.3 (19.7)	108.0 (132.0)	94.9 (136.0)
16							49.5 (19.1)	122.0 (137.0)	89.9 (80.0)
17							65.9 (29.1)	189.0 (159.0)	147.0 (163.0)
18									
19				11.8 (7.5)	13.0 (6.8)	12.3 (12.7)			
20				6.6 (7.5)	7.4 (6.3)	4.2 (16.0)			
21				4.8 (7.6)	4.7 (4.9)	5.8 (8.4)			
22				6.7 (5.8)	4.9 (3.8)	4.0 (15.3)			
23				7.6 (4.8)	3.9 (4.5)	5.1 (9.5)			
24				7.1 (4.0)	6.3 (4.1)	6.0 (10.9)			
25				9.1 (5.5)	6.3 (3.6)	8.0 (13.6)			
26				13.2 (5.7)	8.7 (7.3)	11.9 (21.3)			
27				13.5 (7.5)	7.6 (7.9)	10.5 (19.9)			
28				18.8 (8.3)	9.8 (5.0)	12.9 (16.1)			
29				25.3 (11.6)	14.6 (10.0)	19.1 (15.9)			
Avg				11.3	7.9	9.1	37.3	80.4	82.6
n	0	0	0	11	11	11	16	16	16
SD				5.9	3.3	4.5	16.3	42.6	33.9
Min				4.8	3.9	4.0	7.9	21.4	29.6
Max				25.3	14.6	19.1	65.9	189	147

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for March, 2008.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1	17.7 (7.6)	16.9 (15.2)	12.1 (20.5)						
2	18.7 (9.4)	19.3 (17.4)	16.2 (18.2)						
3	31.5 (24.0)	38.8 (68.4)	32.7 (27.8)						
4	33.2 (7.5)	21.8 (15.2)	25.9 (15.1)						
5	25.6 (14.9)	22.3 (20.4)	25.5 (26.8)						
6	40.4 (13.1)	34.4 (26.2)	43.8 (31.8)						
7	91.6 (115.0)	26.9 (11.3)	49.4 (39.3)						
8	51.8 (102.0)	24.6 (20.9)	30.7 (27.9)						
9	47.3 (43.8)	35.6 (45.0)	30.3 (26.9)						
10	45.6 (21.3)	33.2 (22.5)	44.4 (36.0)						
11	29.6 (11.4)	21.5 (21.7)	33.3 (26.4)						
12	40.1 (18.3)	32.1 (21.8)	36.5 (27.0)						
13	17.2 (8.5)	9.3 (9.6)	19.1 (22.9)						
14	21.1 (7.8)	12.1 (10.1)	24.4 (22.3)						
15	19.2 (10.4)	15.1 (19.2)	19.6 (16.3)						
16	30.6 (25.0)	36.0 (43.6)	39.7 (38.0)						
17	42.1 (45.4)	29.1 (33.8)	29.0 (25.1)						
18	42.3 (25.1)	36.1 (34.5)	41.5 (29.5)						
19	26.6 (9.2)	18.3 (18.3)	34.4 (27.4)						
20	33.7 (15.8)	26.4 (22.8)	35.5 (23.5)						
21	40.1 (24.7)	37.3 (44.4)	41.7 (28.4)						
22	56.7 (47.8)	40.1 (37.2)	44.8 (32.5)						
23	46.8 (24.4)	39.6 (33.9)	47.8 (40.7)						
24	49.9 (31.8)	49.5 (49.4)	52.6 (38.4)						
25	23.8 (10.3)	17.9 (17.7)	32.1 (22.7)						
26	34.1 (16.2)	26.2 (23.6)	35.4 (22.7)						
27	39.3 (28.8)	30.5 (30.2)	38.5 (33.8)						
28	33.7 (13.0)	30.2 (20.1)	43.1 (28.9)						
29	17.6 (7.5)	9.3 (11.2)	15.1 (15.7)						
30	23.2 (7.9)	17.5 (13.1)	30.3 (20.8)						
31	47.4 (32.6)	38.3 (38.8)	51.6 (44.6)						
Avg	36.1	27.3	34.1						
n	31	31	31	0	0	0	0	0	0
SD	15	10	10.7						
Min	17.2	9.3	12.1						
Max	91.6	49.5	52.6						

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for April, 2008.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1	48.8 (21.3)	45.4 (38.9)	51.6 (39.4)						
2	41.3 (10.2)	32.9 (22.9)	46.6 (30.7)						
3	42.2 (12.6)	34.0 (24.9)	48.9 (34.1)						
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15	48.5 (24.8)		52.1 (48.2)						
16	84.7 (44.4)		87.7 (77.5)						
17	109.0 (172.0)		163.0 (560.0)						
18	69.9 (18.9)		81.8 (50.4)						
19	126.0 (121.0)		113.0 (131.0)						
20	36.7 (13.3)		32.4 (32.5)						
21	45.2 (20.7)		56.2 (54.3)						
22	59.7 (39.6)		85.4 (73.5)						
23	30.2 (15.0)		35.7 (14.9)						
24	41.8 (20.8)		52.4 (45.3)						
25	57.6 (48.6)		69.4 (58.0)						
26	60.5 (20.9)		75.5 (36.3)						
27	49.9 (25.3)		61.3 (44.6)						
28	59.3 (32.8)		68.6 (49.7)						
29	83.5 (61.1)		86.0 (72.2)						
30									
Avg	60.8	37.4	70.4						
n	18	3	18	0	0	0	0	0	0
SD	24.8	5.6	30						
Min	30.2	32.9	32.4						
Max	126	45.4	163						

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for May, 2008.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1			76.6 (63.3)						
2	92.7 (55.1)		94.9 (65.4)						
3	62.2 (16.5)		67.8 (33.8)						
4	54.4 (26.4)		64.7 (41.4)						
5	64.7 (18.9)		72.8 (37.5)						
6	60.9 (32.7)		69.5 (51.5)						
7	58.6 (22.8)		63.9 (41.9)						
8	65.5 (17.9)		76.7 (44.5)						
9	82.2 (29.5)		98.7 (64.5)						
10	67.9 (25.8)		93.8 (91.0)						
11	44.4 (20.5)		61.9 (55.6)						
12	136.0 (101.0)		152.0 (112.0)						
13	87.7 (57.8)		86.1 (72.3)						
14	136.0 (111.0)		127.0 (94.1)						
15	110.0 (68.5)		87.4 (66.9)						
16	88.4 (45.1)		87.8 (89.2)						
17	134.0 (91.4)		76.1 (50.8)						
18	61.0 (26.6)		57.9 (62.0)						
19	80.4 (36.4)		99.1 (93.9)						
20	103.0 (68.5)		100.0 (98.0)						
21	126.0 (91.3)		149.0 (141.0)						
22	162.0 (159.0)		192.0 (194.0)						
23	62.7 (35.5)		88.5 (108.0)						
24									
25									
26	33.4 (17.3)		33.7 (33.0)						
27	41.9 (22.2)		36.8 (45.1)						
28	33.0 (17.1)	35.3 (34.3)	27.9 (34.1)						
29	43.7 (35.3)	28.9 (26.0)	36.8 (47.3)						
30	42.6 (22.2)	36.8 (35.1)	51.2 (72.2)						
31	41.5 (20.0)	28.7 (16.1)	41.4 (46.2)						
Avg	77.8	32.4	81.8						
n	28	4	29	0	0	0	0	0	0
SD	34.8	3.6	36.6						
Min	33.0	28.7	27.9						
Max	162	36.8	192						

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for June, 2008.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1	39.7 (22.9)	24.2 (15.3)	42.2 (72.2)						
2	66.7 (44.1)	89.3 (121.0)	58.5 (57.7)						
3	89.7 (92.1)	112.0 (170.0)	76.5 (93.2)						
4									
5							57.8 (33.4)	120.0 (129.0)	102.0 (55.5)
6							44.5 (13.6)	75.4 (48.2)	105.0 (51.6)
7							53.0 (46.5)	98.7 (89.5)	126.0 (86.0)
8							63.6 (69.0)	94.4 (121.0)	111.0 (107.0)
9							72.2 (33.6)	105.0 (106.0)	143.0 (126.0)
10							87.0 (85.4)	200.0 (173.0)	198.0 (143.0)
11							63.5 (54.6)	110.0 (89.2)	150.0 (94.0)
12								105.0 (71.8)	132.0 (87.1)
13	70.1 (27.9)							140.0 (125.0)	146.0 (103.0)
14	61.3 (27.6)							101.0 (60.3)	116.0 (71.6)
15	43.9 (13.8)							53.6 (41.2)	85.5 (59.4)
16	61.3 (13.3)							94.6 (42.7)	118.0 (60.7)
17	65.7 (37.5)							110.0 (125.0)	115.0 (68.0)
18	66.9 (22.8)							121.0 (131.0)	137.0 (106.0)
19	78.6 (49.7)							152.0 (147.0)	178.0 (149.0)
20	76.1 (36.0)							153.0 (107.0)	
21	75.7 (34.7)							142.0 (181.0)	179.0 (170.0)
22	68.7 (31.3)							119.0 (124.0)	148.0 (139.0)
23	124.0 (35.3)								
24	132.0 (28.7)	126.0 (68.7)	142.0 (68.5)						
25	115.0 (28.3)	97.6 (56.9)	126.0 (58.9)						
26	154.0 (80.0)	149.0 (98.0)	166.0 (107.0)						
27	159.0 (32.0)	164.0 (65.5)	170.0 (64.9)						
28	62.2 (16.4)	69.5 (25.1)	76.4 (24.5)						
29	48.8 (13.3)	50.9 (20.3)	64.7 (33.1)						
30	37.8 (18.2)	44.3 (27.8)	50.9 (30.4)						
Avg	80.8	92.7	97.4				63.1	116.0	135.0
n	21	10	10	0	0	0	7	18	17
SD	34.6	43.7	46.4				12.7	31.9	29.1
Min	37.8	24.2	42.2				44.5	53.6	85.5
Max	159	164	170				87	200	198

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for July, 2008.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1	54.0 (59.2)	51.0 (64.3)	55.3 (45.3)						
2	50.0 (16.0)	52.7 (23.8)	69.3 (30.8)						
3	49.2 (24.4)	49.4 (35.0)	63.3 (42.4)						
4	37.3 (23.1)	36.0 (35.8)	48.3 (41.5)						
5	51.1 (22.0)	44.7 (22.2)	55.1 (26.4)						
6	74.8 (46.7)	74.1 (74.4)	75.6 (63.0)						
7	96.4 (39.3)	103.0 (58.6)	102.0 (61.7)						
8									
9	110.0 (21.9)	114.0 (65.0)	134.0 (60.8)						
10	121.0 (32.4)	131.0 (58.0)	141.0 (63.4)						
11	73.1 (25.7)	70.6 (43.8)	76.6 (34.0)						
12		42.8 (27.8)	55.3 (40.6)						
13		45.6 (40.6)	51.9 (33.6)						
14		46.3 (29.4)	57.4 (29.5)						
15		47.7 (35.2)	53.9 (33.9)						
16		56.0 (45.8)	69.6 (52.0)						
17		56.6 (39.4)	62.3 (42.0)						
18		62.3 (69.5)	68.1 (53.6)						
19		59.3 (41.0)	67.1 (41.5)						
20		55.9 (65.8)	52.8 (36.4)						
21		37.3 (36.4)	50.8 (41.2)						
22		72.5 (57.3)	68.3 (56.9)						
23	70.8 (34.0)	84.0 (40.7)	83.1 (41.3)						
24	89.5 (43.6)	85.1 (42.5)	96.3 (46.2)						
25	102.0 (42.0)	104.0 (65.0)	101.0 (43.2)						
26	57.0 (25.4)	65.1 (37.2)	70.3 (50.7)						
27	42.9 (23.5)	37.1 (29.2)	47.8 (32.4)						
28	46.6 (19.9)	46.4 (32.7)	62.6 (38.1)						
29	54.3 (29.4)	44.9 (22.6)	65.6 (44.6)						
30	60.1 (40.5)	56.1 (40.4)	73.3 (53.0)						
31	66.5 (29.0)	53.5 (35.8)	73.0 (51.3)						
Avg	68.8	62.9	71.7						
n	19	30	30	0	0	0	0	0	0
SD	23.7	23.6	22.5						
Min	37.3	36.0	47.8						
Max	121	131	141						

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for August, 2008.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1	62.9 (34.6)	69.6 (62.2)	76.3 (50.1)						
2	47.8 (19.7)	51.2 (35.2)	67.3 (50.6)						
3	66.5 (45.7)	71.6 (59.1)	81.0 (75.6)						
4	64.6 (34.5)	66.1 (44.4)	68.1 (41.1)						
5	64.6 (39.7)	86.5 (114.0)	62.3 (40.8)						
6	80.0 (85.3)	70.9 (107.0)	80.3 (86.6)						
7	70.2 (36.2)	65.9 (68.6)	80.2 (65.9)						
8	53.1 (31.0)	43.1 (29.2)	57.5 (59.6)						
9	44.7 (26.6)	44.8 (57.4)	51.6 (50.3)						
10	65.1 (66.7)	56.8 (77.2)	60.9 (70.9)						
11	76.8 (52.8)	68.4 (77.6)	69.4 (67.8)						
12	89.9 (75.1)	74.9 (64.7)	81.5 (75.3)						
13	91.7 (31.7)	77.4 (49.5)	92.2 (62.2)						
14	78.2 (40.1)	71.7 (72.0)	81.4 (69.6)						
15	79.2 (53.1)	73.4 (68.9)	94.2 (102.0)						
16	67.2 (36.8)	62.0 (47.1)	70.9 (46.2)						
17	38.4 (29.2)	32.1 (34.0)	41.4 (42.3)						
18		33.1 (33.8)	41.4 (39.1)						
19		40.2 (36.5)	47.3 (52.5)						
20		42.6 (42.9)	64.3 (103.0)						
21		24.3 (26.3)	36.8 (37.6)						
22		46.9 (43.9)	73.3 (78.3)						
23		51.9 (62.4)	55.2 (48.3)						
24		43.5 (69.1)	45.9 (66.3)						
25		48.0 (53.6)	66.8 (84.9)						
26		81.5 (86.5)	90.1 (121.0)						
27		85.5 (72.4)	96.3 (98.5)						
28		103.0 (87.1)	102.0 (94.7)						
29		81.5 (142.0)	81.1 (150.0)						
30		60.6 (71.7)	72.2 (85.9)						
31		72.9 (108.0)	80.0 (90.5)						
Avg	67.1	61.3	70.0						
n	17	31	31	0	0	0	0	0	0
SD	14.5	18.2	16.9						
Min	38.4	24.3	36.8						
Max	91.7	103	102						

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for September, 2008.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1		99.6 (94.1)	118.0 (106.0)						
2	118.0 (85.7)	126.0 (118.0)	132.0 (186.0)						
3	139.0 (106.0)	124.0 (124.0)							
4	108.0 (69.1)	115.0 (139.0)							
5	120.0 (75.4)	163.0 (182.0)							
6	88.9 (42.0)	97.3 (174.0)	91.4 (118.0)						
7	66.4 (31.3)	78.8 (160.0)	66.3 (91.0)						
8	71.3 (43.8)	87.8 (147.0)	76.8 (75.7)						
9	44.6 (25.1)	34.8 (86.2)	47.5 (47.6)						
10	63.9 (65.2)	60.0 (71.3)	72.1 (86.2)						
11									
12							115.0 (107.0)	193.0 (172.0)	
13							121.0 (149.0)	137.0 (162.0)	
14							94.7 (110.0)	100.0 (83.2)	
15							131.0 (96.6)	160.0 (105.0)	
16							110.0 (84.7)	133.0 (114.0)	
17							85.3 (50.3)	90.1 (61.4)	
18							99.3 (105.0)	114.0 (84.1)	136.0 (395.0)
19							67.7 (45.3)	111.0 (97.0)	110.0 (125.0)
20							76.9 (101.0)	74.8 (72.6)	128.0 (208.0)
21							75.4 (78.5)	76.6 (57.8)	137.0 (166.0)
22							120.0 (92.2)	151.0 (122.0)	175.0 (144.0)
23							190.0 (168.0)	333.0 (426.0)	360.0 (433.0)
24							181.0 (124.0)	299.0 (289.0)	302.0 (265.0)
25							198.0 (121.0)	320.0 (368.0)	277.0 (257.0)
26							135.0 (82.6)	198.0 (173.0)	376.0 (503.0)
27							151.0 (147.0)	166.0 (149.0)	255.0 (269.0)
28							109.0 (62.7)	148.0 (127.0)	210.0 (239.0)
29							121.0 (131.0)	211.0 (220.0)	210.0 (205.0)
30							115.0 (83.1)	191.0 (188.0)	175.0 (187.0)
Avg	91.2	98.6	86.3				121.0	169.0	219.0
n	9	10	7	0	0	0	19	19	13
SD	30	34.5	27.6				36.3	75.5	85.1
Min	44.6	34.8	47.5				67.7	74.8	110.0
Max	139	163	132				198	333	376

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for October, 2008.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1							125.0 (71.0)	173.0 (148.0)	269.0 (518.0)
2									
3				13.6 (5.8)	4.3 (75.0)	5.5 (89.3)			
4				9.6 (5.0)	-5.7 (36.7)	-18.3 (47.7)			
5				10.2 (6.7)	3.1 (54.6)	4.2 (71.2)			
6				12.6 (8.0)	6.2 (50.4)	10.0 (67.4)			
7				11.8 (10.6)	5.3 (52.6)	6.5 (58.8)			
8				14.0 (7.8)	3.2 (58.4)	4.4 (67.3)			
9				12.8 (5.7)	-13.6 (65.8)	-15.0 (76.2)			
10				8.1 (5.8)	-4.3 (32.3)	-3.8 (33.8)			
11									
12	92.9 (29.3)	85.1 (73.1)	97.7 (74.8)						
13	105.0 (40.9)	148.0 (145.0)	113.0 (122.0)						
14	98.0 (38.0)	118.0 (125.0)	118.0 (116.0)						
15	149.0 (72.5)	173.0 (139.0)	163.0 (148.0)						
16	129.0 (45.5)	148.0 (130.0)	155.0 (159.0)						
17	127.0 (48.5)	128.0 (115.0)	118.0 (128.0)						
18	103.0 (40.6)	105.0 (115.0)	110.0 (129.0)						
19	51.0 (24.3)	53.4 (69.0)	66.3 (72.9)						
20	63.9 (38.0)	61.0 (66.7)	67.5 (70.2)						
21									
22									
23	137.0 (46.5)	152.0 (87.5)	142.0 (62.0)						
24	149.0 (99.2)	156.0 (114.0)	155.0 (125.0)						
25	142.0 (77.3)	146.0 (92.1)	137.0 (104.0)						
26	102.0 (39.5)	115.0 (75.9)	100.0 (60.8)						
27	108.0 (40.2)	102.0 (51.4)	102.0 (41.9)						
28									
29	138.0 (54.2)	140.0 (71.7)	132.0 (69.6)						
30	143.0 (106.0)	126.0 (136.0)	132.0 (143.0)						
31	31.0 (11.5)	23.0 (29.4)	23.1 (23.5)						
Avg	110.0	116.0	114.0	11.6	-0.2	-0.8			
n	17	17	17	8	8	8	1	1	1
SD	34.2	39.7	35.2	2	6.5	9.9			
Min	31.0	23.0	23.1	8.1	-13.6	-18.3			
Max	149	173	163	14	6.2	10			

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for November, 2008.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1	28.9 (8.8)	19.6 (23.9)	20.4 (27.0)						
2									
3									
4									
5									
6	25.2 (11.1)	20.0 (24.6)	19.5 (16.6)						
7	37.0 (14.4)	35.9 (35.9)	33.1 (33.7)						
8	42.7 (30.3)	38.8 (46.8)	35.7 (39.6)						
9	16.1 (5.9)	7.7 (21.9)	10.1 (20.9)						
10	25.6 (11.1)	32.6 (29.0)	29.5 (27.1)						
11	21.5 (7.0)	21.1 (28.9)	22.5 (32.4)						
12	25.7 (9.0)	25.5 (30.6)	26.1 (35.9)						
13	23.9 (9.4)	15.4 (24.9)	14.8 (24.9)						
14	40.3 (14.7)	37.6 (30.9)	33.7 (29.3)						
15	42.1 (18.2)	31.4 (34.1)	28.5 (33.7)						
16	44.3 (21.6)	34.2 (33.5)	31.2 (27.4)						
17	56.5 (25.3)	39.6 (33.2)	37.9 (30.6)						
18	57.1 (19.5)	44.1 (34.2)	41.6 (30.0)						
19	42.6 (14.8)	45.0 (44.7)	34.9 (24.9)						
20	20.3 (10.5)	23.3 (20.4)	20.8 (11.3)						
21	28.7 (18.6)	32.0 (40.2)	27.6 (19.1)						
22	39.3 (16.1)	33.2 (19.6)	32.8 (13.1)						
23	43.6 (26.8)	35.8 (27.9)	33.5 (19.5)						
24	40.0 (18.0)	34.7 (23.9)	37.4 (18.2)						
25	47.2 (7.0)	40.6 (23.9)	40.8 (12.9)						
26	34.0 (10.5)	28.6 (20.0)	28.2 (11.5)						
27	20.4 (5.4)	15.1 (30.8)	15.9 (8.5)						
28	17.0 (5.9)	34.4 (65.8)	14.2 (10.7)						
29	16.3 (10.8)	21.3 (39.4)	13.2 (12.6)						
30	21.4 (10.1)	27.8 (55.5)	14.3 (12.9)						
Avg	33.0	29.8	26.9						
n	26	26	26	0	0	0	0	0	
SD	11.9	9.4	9.2						
Min	16.1	7.7	10.1						
Max	57.1	45	41.6						

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for December, 2008.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1	12.7 (5.1)	15.3 (24.2)	8.8 (6.1)						
2	17.1 (5.4)	20.2 (25.1)	14.4 (10.3)						
3	18.1 (7.6)	29.0 (22.2)	12.1 (11.3)						
4	23.0 (13.8)	24.4 (15.2)	19.3 (13.8)						
5	23.6 (14.9)	21.0 (15.7)	18.9 (14.5)						
6	16.4 (6.8)	11.9 (8.9)	10.6 (6.5)						
7	12.1 (5.6)	9.2 (9.2)	9.2 (9.0)						
8									
9	34.5 (47.6)	25.3 (33.6)	33.6 (67.9)						
10	30.3 (18.7)	24.7 (18.1)	23.3 (15.2)						
11									
12	41.7 (26.9)	28.5 (23.7)	26.5 (25.6)						
13									
14									
15									
16	11.1 (6.1)	3.0 (5.5)	4.4 (4.2)						
17	14.0 (5.3)	7.0 (8.3)	7.9 (6.4)						
18	17.8 (5.6)	10.5 (3.9)	12.8 (6.2)						
19	18.6 (7.8)	11.9 (9.7)	13.2 (9.3)						
20									
21									
22	12.9 (5.6)	4.9 (7.2)	8.2 (8.6)						
23	9.7 (6.0)	1.3 (4.6)	4.7 (5.3)						
24	7.5 (5.3)	-0.8 (2.9)	3.0 (5.0)						
25	11.0 (6.8)	2.1 (4.3)	8.1 (7.9)						
26	14.0 (5.8)	7.3 (8.9)	11.6 (10.8)						
27	21.5 (10.2)	15.7 (11.6)	20.2 (13.9)						
28	17.9 (8.5)	13.0 (9.8)	15.1 (8.1)						
29	18.2 (6.5)	14.1 (10.8)	15.5 (11.3)						
30	20.3 (10.7)	12.7 (12.4)	14.4 (13.3)						
31	15.8 (9.0)	10.3 (10.3)	10.8 (9.4)						
Avg	18.3	13.4	13.6						
n	24	24	24	0	0	0	0	0	0
SD	7.8	8.5	7.1						
Min	7.5	-0.8	3.0						
Max	41.7	29	33.6						

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for January, 2009.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1	12.3 (5.7)	4.2 (6.3)	5.5 (5.0)						
2	15.9 (9.7)	7.3 (6.1)	10.5 (5.2)						
3	11.1 (8.9)	3.4 (10.8)	5.3 (9.5)						
4	19.2 (9.1)	9.7 (16.5)	12.5 (11.4)						
5	14.3 (6.1)	6.8 (33.7)	9.1 (6.6)						
6	13.8 (8.0)	7.4 (12.2)	8.5 (7.7)						
7	14.3 (6.3)	24.0 (34.4)	8.9 (10.5)						
8		12.3 (10.0)	5.6 (3.7)						
9		15.4 (13.5)	12.8 (8.4)						
10		19.1 (13.4)	16.6 (9.9)						
11		18.3 (11.6)	17.7 (7.1)						
12		20.7 (9.0)	21.0 (6.9)						
13		26.1 (20.4)	25.2 (20.3)						
14									
15							45.2 (14.5)	78.4 (97.0)	54.9 (47.1)
16							46.4 (24.0)	87.6 (99.0)	62.7 (72.9)
17									
18									
19									
20									
21							40.7 (12.0)	51.9 (42.1)	46.8 (31.6)
22							20.3 (7.0)	18.5 (26.7)	20.8 (18.2)
23									
24									
25							14.7 (6.4)	17.4 (29.7)	17.5 (17.7)
26							14.2 (6.5)	15.3 (26.6)	16.6 (18.5)
27									
28			13.4 (7.2)	1.3 (17.1)	4.5 (9.0)				
29			17.2 (9.9)	6.2 (12.5)	8.7 (6.9)				
30			17.5 (8.2)	6.9 (19.8)	8.7 (11.7)				
31			15.4 (7.7)	6.2 (14.2)	9.0 (11.2)				
Avg	14.4	13.4	12.2	15.9	5.1	7.7	30.2	44.8	36.5
n	7	13	13	4	4	4	6	6	6
SD	2.4	7.4	6	1.7	2.2	1.9	14.1	29.8	18.9
Min	11.1	3.4	5.3	13.4	1.3	4.5	14.2	15.3	16.6
Max	19.2	26.1	25.2	17.5	6.9	9	46.4	87.6	62.7

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for February, 2009.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1				14.6 (7.5)	6.2 (18.1)	8.4 (9.8)			
2				19.0 (11.5)	9.4 (18.2)	12.0 (12.9)			
3				24.9 (14.4)	9.7 (27.2)	12.0 (18.4)			
4				18.4 (12.3)	7.6 (20.0)	12.0 (14.3)			
5				4.4 (10.5)	-3.7 (12.8)	1.2 (8.8)			
6				6.5 (6.6)	4.3 (18.7)	1.4 (6.9)			
7				7.9 (5.9)	8.2 (5.8)	4.6 (2.9)			
8				9.3 (5.3)	4.4 (4.9)	4.0 (3.1)			
9				6.4 (5.0)	2.2 (5.8)	2.8 (2.0)			
10				7.4 (4.9)	2.8 (3.9)	3.6 (3.7)			
11				7.4 (5.3)	1.9 (3.4)	2.8 (2.2)			
12				6.9 (5.0)	1.1 (3.1)	2.2 (2.4)			
13				5.8 (7.3)	0.1 (3.0)	1.4 (2.3)			
14				6.2 (4.5)	0.5 (3.0)	2.0 (1.7)			
15									
16									
17									
18				8.3 (4.8)	0.8 (6.4)	2.9 (2.7)			
19				10.0 (5.9)	4.2 (7.2)	5.3 (3.5)			
20				9.6 (5.4)	4.0 (5.6)	5.6 (3.8)			
21				11.6 (7.1)	5.6 (5.7)	7.2 (4.5)			
22				7.9 (7.2)	3.0 (5.2)	4.6 (3.9)			
23									
24	12.1 (11.7)	10.8 (16.5)	12.1 (16.5)						
25	15.0 (10.0)	14.2 (9.9)	16.9 (14.4)						
26	12.9 (8.4)	5.9 (9.0)	8.8 (18.7)						
27	16.5 (12.6)		21.4 (23.2)						
28	26.3 (11.4)		27.9 (18.9)						
Avg	16.5	10.3	17.4	10.1	3.8	5.1			
n	5	3	5	19	19	19	0	0	0
SD	5.1	3.4	6.8	5.2	3.4	3.5			
Min	12.1	5.9	8.8	4.4	-3.7	1.2			
Max	26.3	14.2	27.9	24.9	9.7	12			

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for March, 2009.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1	16.3 (9.6)		14.0 (10.4)						
2	10.9 (6.9)	5.9 (6.4)	7.8 (3.8)						
3	11.2 (6.3)	5.2 (7.6)	7.8 (6.4)						
4	10.4 (6.6)	4.8 (9.1)	8.1 (6.3)						
5	13.1 (5.5)		14.2 (12.8)						
6	13.7 (7.1)		14.7 (14.5)						
7	16.3 (9.9)		19.8 (18.2)						
8	19.5 (7.9)		26.7 (21.5)						
9	17.3 (8.8)		25.9 (24.5)						
10	25.2 (11.0)		53.0 (47.2)						
11	29.3 (12.1)		39.9 (36.5)						
12	26.4 (8.0)		42.8 (30.5)						
13	33.3 (11.9)		49.5 (41.2)						
14	20.5 (7.2)		27.4 (20.5)						
15	15.1 (7.2)		22.8 (28.8)						
16									
17	25.3 (11.0)		40.4 (39.6)						
18	33.3 (15.9)		50.7 (39.2)						
19	45.4 (14.1)		59.7 (36.1)						
20	33.8 (14.2)		63.6 (46.8)						
21	16.8 (7.5)		30.5 (26.8)						
22	14.4 (6.9)		19.7 (16.6)						
23	18.6 (9.8)		31.0 (28.5)						
24	26.4 (9.7)		35.6 (22.5)						
25	29.2 (9.4)		29.2 (19.1)						
26	35.0 (31.9)		41.3 (32.5)						
27	50.1 (45.5)		42.4 (27.7)						
28	49.4 (40.1)		54.9 (47.4)						
29	42.0 (23.4)		49.4 (36.2)						
30	74.1 (102.0)		57.9 (46.5)						
31	64.8 (58.4)		72.6 (65.8)						
Avg	27.9	5.3	35.1						
n	30	3	30	0	0	0	0	0	0
SD	15.8	0.4	17.6						
Min	10.4	4.8	7.8						
Max	74.1	5.9	72.6						

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for April, 2009.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1	56.8 (31.0)		80.3 (69.0)						
2	37.1 (15.6)		80.0 (79.8)						
3	64.7 (45.2)		108.0 (114.0)						
4	94.4 (132.0)		97.5 (112.0)						
5	102.0 (106.0)		68.7 (67.7)						
6	104.0 (108.0)		96.1 (129.0)						
7	42.0 (27.1)		37.5 (60.0)						
8	20.1 (8.1)		29.0 (33.4)						
9	18.8 (6.6)		44.9 (49.1)						
10	15.1 (6.2)		20.0 (21.7)						
11	21.4 (18.7)		26.2 (21.3)						
12	18.1 (8.9)		29.0 (27.5)						
13	28.9 (14.4)		37.6 (29.8)						
14	50.8 (41.8)		49.9 (61.5)						
15	34.4 (22.5)		46.4 (50.7)						
16	35.9 (14.2)		45.7 (38.1)						
17	45.1 (21.8)		69.1 (75.0)						
18	49.0 (28.8)		55.1 (47.6)						
19	60.1 (58.2)		79.2 (176.0)						
20	94.1 (73.6)		120.0 (141.0)						
21	95.1 (70.4)		141.0 (181.0)						
22	66.2 (24.5)		85.1 (91.1)						
23	61.4 (36.0)		86.6 (112.0)						
24	61.5 (30.9)		112.0 (138.0)						
25	49.2 (19.7)		70.6 (71.2)						
26	56.5 (29.4)		68.4 (76.9)						
27	66.6 (39.5)		101.0 (107.0)						
28	47.8 (26.8)		84.6 (118.0)						
29	45.0 (24.9)		65.9 (72.9)						
30	55.4 (28.2)		84.6 (88.9)						
Avg	53.2		70.6						
n	30	0	30	0	0	0	0	0	
SD	24.9		29.8						
Min	15.1		20.0						
Max	104		141						

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for May, 2009.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1	37.2 (22.0)		39.4 (55.1)						
2	20.5 (8.5)		28.9 (60.5)						
3									
4									
5									
6									
7									
8									
9									
10									
11									
12	64.8 (33.7)		91.2 (92.8)						
13	62.2 (30.6)		97.1 (95.4)						
14	55.5 (23.9)		86.9 (90.7)						
15	54.4 (28.2)		96.9 (125.0)						
16	76.3 (43.4)		165.0 (197.0)						
17	62.6 (24.9)		95.4 (117.0)						
18	103.0 (51.4)		155.0 (155.0)						
19	72.2 (46.3)		101.0 (117.0)						
20	76.4 (34.0)		131.0 (116.0)						
21	74.5 (36.7)		121.0 (150.0)						
22	65.3 (28.6)		127.0 (117.0)						
23	58.9 (32.5)		86.2 (81.3)						
24	49.8 (29.3)		93.6 (126.0)						
25	59.3 (25.5)		114.0 (154.0)						
26	71.1 (33.3)		130.0 (133.0)						
27	73.0 (19.0)		138.0 (135.0)						
28	68.2 (32.3)		137.0 (105.0)						
29	63.1 (26.0)		104.0 (86.2)						
30	53.0 (25.4)		85.3 (65.8)						
31	43.4 (18.4)		84.2 (115.0)						
Avg	62.0		105.0						
n	22	0	22	0	0	0	0	0	0
SD	16		31.9						
Min	20.5		28.9						
Max	103		165						

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for June, 2009.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1	47.4 (26.4)		88.5 (117.0)						
2	41.9 (25.1)		83.2 (84.9)						
3	46.2 (27.7)		73.7 (84.8)						
4	32.1 (16.6)		57.7 (67.7)						
5	32.4 (23.7)		62.2 (128.0)						
6	32.5 (20.6)		72.4 (97.2)						
7	36.7 (31.5)		70.0 (103.0)						
8	42.6 (26.4)		85.1 (129.0)						
9	32.4 (21.5)		60.4 (93.0)						
10	30.0 (18.7)		63.1 (83.6)						
11	32.7 (18.6)		70.2 (96.5)						
12	35.2 (24.9)		75.8 (96.8)						
13	20.2 (12.6)		36.9 (64.6)						
14	24.9 (15.3)		53.7 (77.1)						
15									
16							36.9 (23.3)	33.5 (48.4)	75.5 (109.0)
17							35.3 (17.1)	24.9 (24.4)	76.0 (89.3)
18							54.0 (27.2)	53.5 (47.4)	124.0 (196.0)
19							52.4 (18.0)	49.4 (64.2)	81.8 (126.0)
20							53.5 (40.2)	69.0 (74.1)	103.0 (147.0)
21							43.1 (24.8)	52.6 (63.9)	69.5 (79.2)
22							50.1 (22.7)	45.7 (55.4)	86.7 (130.0)
23							63.8 (32.7)	96.4 (117.0)	102.0 (139.0)
24							66.8 (22.4)	132.0 (174.0)	124.0 (130.0)
25							64.1 (49.2)	83.3 (115.0)	160.0 (234.0)
26							99.3 (101.0)	139.0 (115.0)	279.0 (410.0)
27							119.0 (74.8)	227.0 (280.0)	312.0 (534.0)
28							132.0 (104.0)	205.0 (200.0)	251.0 (345.0)
29							103.0 (39.8)	143.0 (137.0)	217.0 (250.0)
30							92.6 (28.7)	199.0 (225.0)	245.0 (261.0)
Avg	34.8		68.1				71.0	104.0	154.0
n	14	0	14	0	0	0	15	15	15
SD	7.4		13.3				29.4	64.5	81.1
Min	20.2		36.9				35.3	24.9	69.5
Max	47.4		88.5				132	227	312

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for July, 2009.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1							83.5 (26.1)	143.0 (127.0)	164.0 (171.0)
2							76.8 (36.6)	159.0 (164.0)	161.0 (204.0)
3							87.0 (35.4)	165.0 (202.0)	242.0 (332.0)
4							67.2 (32.8)	131.0 (148.0)	132.0 (157.0)
5							54.1 (22.4)	100.0 (98.9)	142.0 (181.0)
6							71.1 (51.1)	112.0 (183.0)	152.0 (260.0)
7									
8				17.0 (6.6)		17.0 (39.6)			
9				13.2 (6.8)		16.7 (26.2)			
10				12.5 (7.7)		14.9 (18.7)			
11				11.6 (5.9)	-3.5 (105.0)	12.4 (22.7)			
12				10.7 (6.8)	6.3 (5.6)	12.8 (14.0)			
13				12.3 (6.8)	7.8 (8.8)	15.8 (50.1)			
14				14.3 (7.7)	5.2 (44.2)	18.5 (40.4)			
15									
16				16.5 (5.8)	11.8 (11.7)	17.7 (25.1)			
17				13.5 (6.1)		16.9 (28.5)			
18		106.0 (95.9)		15.4 (8.7)		20.9 (26.6)			
19		63.1 (51.2)		15.6 (6.3)		20.6 (20.4)			
20									
21		75.5 (47.5)							
22		62.7 (46.6)							
23	70.0 (24.8)	65.0 (44.4)							
24	68.7 (33.9)	65.1 (57.2)							
25	63.0 (42.1)	62.8 (77.3)							
26	72.3 (49.2)	77.1 (101.0)							
27	78.0 (46.6)	74.6 (73.6)							
28	69.2 (33.3)	58.7 (48.3)							
29	55.2 (26.3)	60.7 (73.2)							
30	52.9 (27.6)	41.5 (37.5)							
31	58.2 (39.0)	48.0 (40.9)							
Avg	65.3	66.2		13.8	5.5	16.5	73.3	135.0	166.0
n	9	13	0	12	5	12	6	6	6
SD	8	15.1		1.9	5.1	2.6	10.9	23.3	36
Min	52.9	41.5		10.7	-3.5	12.4	54.1	100.0	132.0
Max	78	106		17	11.8	20.9	87	165	242

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for August, 2009.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1	59.9 (35.4)	45.2 (49.4)							
2	54.8 (30.8)	51.8 (52.7)							
3	47.4 (23.6)	39.6 (41.5)							
4	53.2 (40.6)	54.9 (76.2)							
5	56.2 (37.3)	47.4 (40.0)							
6	41.4 (22.7)	23.9 (32.5)							
7	59.5 (47.6)	44.4 (47.6)							
8	74.6 (39.2)	72.4 (63.4)							
9	86.3 (43.4)	84.5 (100.0)							
10	101.0 (36.7)	83.9 (67.8)							
11	66.7 (28.1)	55.8 (60.6)							
12	70.3 (35.8)	48.1 (64.1)							
13	67.2 (30.7)	44.6 (56.2)							
14	77.0 (30.3)	46.9 (58.5)							
15	80.7 (45.5)	64.4 (69.6)							
16	88.7 (78.3)	64.3 (94.7)							
17	78.3 (36.6)	73.5 (80.1)							
18	66.7 (35.8)	66.8 (66.9)							
19	60.3 (30.2)	55.6 (62.6)							
20	59.3 (37.7)	78.5 (70.2)							
21	84.4 (120.0)	87.6 (125.0)							
22	72.4 (38.3)	77.1 (81.7)							
23	53.3 (30.8)	64.4 (50.0)							
24	57.9 (24.8)	66.7 (46.4)							
25	67.8 (46.3)	72.1 (49.0)							
26	77.9 (35.3)	83.1 (74.1)							
27	82.0 (47.5)	70.7 (45.9)							
28	87.3 (37.8)	78.0 (65.5)							
29	67.8 (21.1)	63.2 (55.2)							
30	46.0 (20.0)	50.2 (51.8)							
31									
Avg	68.2	62.0		0	0	0	0	0	0
n	30	30		0	0	0	0	0	0
SD	14.1	15.5							
Min	41.4	23.9							
Max	101	87.6							

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for September, 2009.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1	52.3 (31.4)	51.4 (48.5)							
2	56.0 (18.7)	49.9 (46.1)							
3	56.8 (19.6)	44.8 (40.2)							
4	60.1 (23.9)	57.8 (57.8)							
5	39.9 (27.3)	26.5 (24.5)							
6	36.1 (20.6)	25.3 (30.5)							
7	44.3 (20.4)	39.7 (40.1)							
8	71.3 (34.9)	84.6 (76.2)							
9	78.7 (31.6)	74.2 (53.2)							
10	72.1 (32.6)	65.2 (56.6)							
11	80.0 (39.7)	87.2 (82.2)							
12	56.1 (23.2)	63.2 (45.8)	86.3 (51.4)						
13	28.7 (19.4)	35.3 (38.2)	54.4 (37.1)						
14	19.4 (8.3)	22.8 (27.6)	38.1 (47.3)						
15	32.0 (17.9)	42.2 (32.3)	57.9 (45.9)						
16	27.5 (14.0)	27.1 (28.9)	48.2 (38.3)						
17	37.6 (21.1)	44.0 (35.6)	53.9 (28.3)						
18	67.3 (34.2)	78.4 (58.6)	83.4 (55.1)						
19	41.0 (12.3)	36.3 (26.4)	54.9 (32.9)						
20	43.6 (42.2)	44.7 (53.8)	56.8 (42.6)						
21	94.5 (78.0)	105.0 (112.0)	124.0 (121.0)						
22	97.4 (67.5)	98.7 (107.0)	107.0 (91.4)						
23	77.9 (53.1)	85.4 (85.4)	118.0 (139.0)						
24	62.3 (31.3)	82.7 (154.0)	75.1 (64.9)						
25	72.0 (42.0)	85.5 (151.0)	91.0 (85.0)						
26	82.4 (40.4)	95.0 (79.2)	135.0 (199.0)						
27	78.9 (35.3)	76.5 (66.2)	91.3 (95.1)						
28	77.4 (24.7)	71.1 (111.0)	80.9 (45.6)						
29	60.9 (39.6)	53.9 (94.5)	62.9 (53.9)						
30	68.2 (36.9)	63.9 (81.2)	74.1 (76.8)						
Avg	59.1	60.6	78.6						
n	30	30	19	0	0	0	0	0	0
SD	20.2	23.5	26.7						
Min	19.4	22.8	38.1						
Max	97.4	105	135						

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for October, 2009.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1	91.1 (53.3)	90.7 (136.0)	102.0 (119.0)						
2	115.0 (91.9)	121.0 (146.0)	129.0 (148.0)						
3	84.5 (81.3)	81.9 (117.0)	87.2 (80.8)						
4	43.8 (25.0)	33.2 (43.3)	50.1 (64.6)						
5	74.6 (34.8)	74.6 (62.5)	82.9 (62.6)						
6	109.0 (65.1)	97.0 (68.2)	123.0 (148.0)						
7	78.3 (36.8)	111.0 (251.0)	118.0 (270.0)						
8	56.2 (30.1)	59.2 (44.1)	70.0 (58.2)						
9	59.8 (36.5)	74.4 (58.3)	73.2 (57.8)						
10	66.6 (54.1)	62.6 (35.5)	64.8 (57.7)						
11	44.5 (18.1)	45.6 (28.4)	45.2 (25.3)						
12	64.5 (40.8)	70.0 (49.8)	68.6 (48.6)						
13	33.9 (40.3)	28.9 (44.4)	27.4 (41.0)						
14	17.8 (6.8)	15.6 (14.5)	14.3 (8.3)						
15	18.8 (6.4)	18.6 (15.0)	16.6 (13.5)						
16	21.4 (14.5)	18.0 (24.1)	17.8 (24.4)						
17	22.4 (9.5)	16.6 (18.5)	17.7 (16.1)						
18	16.0 (7.8)	8.5 (13.8)	10.9 (11.9)						
19	15.0 (5.9)	9.9 (10.0)	13.4 (16.2)						
20	15.4 (8.2)	11.9 (13.8)	16.5 (15.6)						
21	25.2 (7.9)	21.7 (22.1)	25.6 (19.4)						
22									
23	31.6 (9.6)	26.7 (19.7)	29.4 (18.2)						
24	31.2 (8.1)	71.4 (256.0)	30.3 (19.3)						
25	29.2 (21.6)	6.2 (75.7)	31.2 (33.5)						
26	36.9 (17.3)	28.5 (40.0)	33.9 (32.4)						
27	74.4 (74.7)	73.3 (98.9)	57.5 (66.6)						
28	34.2 (17.7)	27.2 (21.6)	32.9 (22.6)						
29	46.7 (29.0)	42.7 (43.6)	42.7 (40.1)						
30	73.0 (37.1)	66.4 (52.2)	57.2 (41.4)						
31	55.9 (15.5)	50.5 (29.6)	49.1 (26.4)						
Avg	49.6	48.8	51.3						
n	30	30	30	0	0	0	0	0	0
SD	27.9	32.1	33.8						
Min	15.0	6.2	10.9						
Max	115	121	129						

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for November, 2009.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1	50.1 (17.5)	98.8 (290.0)	39.6 (22.3)						
2									
3	60.7 (30.3)		52.5 (42.1)						
4	43.5 (24.0)		35.7 (34.9)						
5	25.8 (11.5)		20.0 (24.6)						
6	25.0 (9.2)		16.4 (18.2)						
7	23.3 (11.5)		13.4 (16.2)						
8	27.6 (19.5)		20.9 (27.7)						
9	44.6 (17.1)		43.1 (31.5)						
10	51.7 (23.1)		50.8 (53.3)						
11	66.3 (26.2)		84.8 (221.0)						
12									
13									
14									
15									
16									
17									
18									
19									
20									
21	24.7 (9.7)	30.6 (28.8)	19.5 (16.6)						
22	19.4 (9.2)	39.3 (33.9)	26.1 (23.0)						
23	21.2 (9.9)	23.8 (24.1)	17.5 (12.7)						
24	32.4 (16.3)	38.7 (26.0)	29.3 (22.4)						
25									
26									
27	22.8 (23.7)	15.9 (22.2)	15.7 (21.4)						
28	18.5 (8.2)	30.0 (24.4)	35.0 (28.8)						
29	27.0 (9.7)	27.8 (44.5)	20.2 (13.2)						
30	34.5 (14.1)	39.6 (32.6)	33.2 (25.1)						
Avg	34.4	38.3	31.9						
n	18	9	18	0	0	0	0	0	0
SD	14.4	22.6	17.4						
Min	18.5	15.9	13.4						
Max	66.3	98.8	84.8						

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for December, 2009.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1	54.1 (25.6)	60.8 (35.4)	44.7 (21.1)						
2	40.9 (12.1)	45.2 (36.8)	36.9 (18.6)						
3	33.8 (14.3)	34.5 (27.4)	28.1 (16.8)						
4	48.2 (21.4)	50.2 (36.2)	46.3 (55.0)						
5	37.4 (24.8)	23.7 (30.4)	22.5 (21.5)						
6	28.0 (7.7)	26.2 (17.0)	22.2 (14.2)						
7	13.2 (9.4)	14.0 (21.9)	9.2 (13.6)						
8	25.7 (12.5)	24.1 (21.2)	17.8 (16.1)						
9	27.3 (7.6)	29.6 (22.8)	26.1 (15.5)						
10	26.0 (9.4)	22.7 (22.7)	23.1 (12.3)						
11	20.6 (11.1)	15.4 (21.8)	16.7 (13.6)						
12	6.1 (8.8)	-4.3 (11.9)	-2.2 (5.3)						
13									
14	12.8 (7.1)	6.5 (12.6)	8.4 (24.8)						
15	20.1 (8.6)	11.0 (10.8)	11.7 (24.8)						
16	18.7 (7.7)	10.5 (11.3)	12.9 (10.3)						
17	9.4 (6.0)	2.9 (7.5)	5.0 (7.3)						
18	13.6 (6.2)	17.0 (20.8)	11.1 (8.9)						
19	12.7 (6.0)	12.7 (6.5)	10.4 (5.9)						
20	25.3 (9.1)	14.5 (7.4)	14.1 (7.9)						
21	16.2 (17.8)	11.6 (13.0)	11.6 (10.3)						
22	6.6 (5.1)	5.1 (5.4)	4.4 (3.0)						
23	13.5 (9.7)	8.6 (7.7)	9.8 (6.5)						
24	26.0 (11.9)	20.2 (11.6)	20.3 (10.6)						
25	22.9 (10.0)	19.7 (11.8)	19.6 (11.0)						
26	26.9 (13.6)	16.6 (9.7)	17.9 (9.2)						
27	13.0 (9.1)	7.3 (10.5)	9.1 (5.6)						
28	13.1 (7.0)	7.0 (16.4)	8.4 (4.4)						
29	10.2 (6.0)	7.6 (12.0)	7.3 (4.6)						
30	16.2 (7.9)	8.9 (7.8)	10.3 (4.7)						
31	18.0 (5.5)	10.9 (6.7)	11.3 (5.5)						
Avg	21.9	18.0	16.5						
n	30	30	30	0	0	0	0	0	0
SD	11.6	14.1	11.1						
Min	6.1	-4.3	-2.2						
Max	54.1	60.8	46.3						

Table E3. Daily means (SD) of particulate matter concentrations at site CA5B for January, 2010.

Day	PM ₁₀ , mg·dsm ⁻³			PM _{2.5} , mg·dsm ⁻³			TSP, mg·dsm ⁻³		
	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2	Inlet	Barn 1	Barn 2
1	15.5 (7.9)	9.8 (8.9)	10.0 (6.5)						
2	12.6 (8.7)	8.1 (7.9)	8.9 (7.2)						
3	14.0 (6.6)	7.7 (5.3)	8.8 (5.6)						
4	18.3 (9.8)	11.8 (6.7)	12.6 (7.0)						
5	22.9 (10.5)	15.2 (14.4)	19.6 (37.5)						
6	18.3 (7.1)	11.2 (7.4)	13.2 (7.3)						
7	20.6 (7.9)	13.2 (8.2)	13.7 (8.2)						
8									
9									
10	12.0 (5.9)	8.5 (5.3)	9.6 (4.6)						
11	15.1 (6.3)	9.6 (5.9)	10.5 (4.9)						
12	14.6 (8.5)	11.8 (6.9)	12.0 (5.7)						
13	18.0 (8.3)	13.4 (6.2)	13.9 (5.5)						
14	16.0 (8.5)	9.3 (8.7)	10.1 (6.6)						
15	21.7 (8.5)	16.2 (9.5)	16.7 (8.2)						
16	23.4 (9.6)	18.7 (9.6)	20.5 (10.3)						
17	18.7 (13.5)	9.3 (9.5)	10.5 (8.4)						
18	8.1 (6.0)	1.0 (5.2)	2.8 (4.7)						
19	9.6 (6.1)	4.2 (5.0)	5.5 (3.7)						
20	7.7 (15.0)	1.8 (5.7)	3.8 (3.0)						
21	9.5 (7.3)	3.3 (6.4)	4.1 (4.1)						
22	6.5 (5.0)	3.1 (4.7)	4.5 (3.2)						
23	15.0 (27.9)	5.1 (8.5)	6.8 (6.7)						
		3.8 (4.6)	5.1 (4.2)						
		5.1 (4.0)	6.4 (3.7)						
		3.6 (4.0)	5.3 (3.5)						
		5.3 (5.5)	6.4 (5.6)						
28		11.0 (9.4)	12.6 (8.6)						
29									
30									
31									
Avg	15.2	8.5	9.8						
n	21	26	26	0	0	0	0	0	0
SD	4.9	4.6	4.7						
Min	6.5	1.0	2.8						
Max	23.4	18.7	20.5						

Table E4. PM10 emissions.

Table E4. Daily means (SD) of PM10 emissions at site CA5B for September, 2007.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27	-26 (6080)	-4 (1030)	-50 (11800)			
28	-824 (10700)	-140 (1820)	-1600 (20800)			
29						
30						
Avg	-425	-72	-826			
n	2	2	2	0	0	0
SD	399	67.8	776			
Min	-824	-140	-1600			
Max	-26	-4	-50			

Table E4. Daily means (SD) of PM10 emissions at site CA5B for October, 2007.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1						
2						
3						
4						
5						
6	56 (7430)	10 (1260)	109 (14500)			
7	1530 (5340)	259 (907)	2970 (10400)			
8	1430 (4630)	243 (786)	2780 (9000)			
9	335 (5010)	57 (852)	652 (9750)			
10						
11						
12						
13	550 (3170)	93 (539)	1070 (6170)			
14	1240 (3400)	211 (578)	2410 (6620)			
15	774 (4740)	131 (806)	1500 (9230)			
16	-178 (4320)	-30 (733)	-346 (8390)			
17	-202 (5090)	-34 (865)	-392 (9900)			
18	2640 (4530)	448 (770)	5130 (8820)			
19	935 (2230)	159 (378)	1820 (4330)			
20	2250 (3690)	382 (627)	4380 (7180)			
21	979 (3140)	166 (533)	1900 (6100)			
22	1110 (3210)	188 (545)	2160 (6240)			
23	664 (5160)	113 (877)	1290 (10000)			
24						
25	-194 (2200)	-33 (373)	-378 (4270)			
26	-33 (1100)	-6 (187)	-64 (2140)			
27	239 (1450)	41 (247)	464 (2820)			
28	-311 (1030)	-53 (175)	-604 (2000)			
29	-374 (3140)	-64 (534)	-727 (6120)			
30	563 (3640)	96 (619)	1100 (7080)			
31	-549 (1320)	-93 (224)	-1070 (2560)			
Avg	611	104	1190			
n	22	22	22	0	0	0
SD	833	141	1620			
Min	-549	-93	-1070			
Max	2640	448	5130			

Table E4. Daily means (SD) of PM10 emissions at site CA5B for November, 2007.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1	2890 (14600)	491 (2490)	5620 (28500)			
2	-287 (2260)	-49 (384)	-558 (4390)			
3	327 (2140)	56 (363)	636 (4150)			
4	-481 (1010)	-82 (171)	-935 (1960)			
5	155 (1480)	26 (252)	302 (2890)			
6	-83 (1780)	-14 (303)	-161 (3470)			
7	463 (2210)	79 (375)	901 (4300)			
8	-254 (2660)	-43 (452)	-494 (5180)			
9	421 (2670)	72 (454)	819 (5200)			
10	798 (2300)	136 (391)	1550 (4480)			
11	-1700 (4630)	-288 (786)	-3300 (8990)			
12	801 (2590)	136 (439)	1560 (5030)			
13	-630 (2300)	-107 (391)	-1220 (4480)			
14						
15	-694 (1790)	-118 (303)	-1350 (3470)			
16	282 (2320)	48 (394)	549 (4520)			
17	477 (1950)	81 (331)	927 (3790)			
18	59 (1230)	10 (210)	115 (2400)			
19	-52 (1820)	-9 (308)	-102 (3530)			
20	-959 (1890)	-163 (320)	-1870 (3670)			
21	-148 (1640)	-25 (279)	-288 (3200)			
22	-446 (2990)	-76 (509)	-867 (5820)			
23	435 (5000)	74 (849)	846 (9720)			
24	-129 (3390)	-22 (576)	-252 (6590)			
25	349 (2260)	59 (384)	680 (4390)			
26	29 (1660)	5 (282)	56 (3230)			
27	-1370 (2390)	-233 (405)	-2670 (4640)			
28	209 (2430)	36 (413)	406 (4730)			
29	-2270 (2590)	-385 (440)	-4410 (5040)			
30	-912 (2330)	-155 (396)	-1770 (4530)			
Avg	-94	-16	-182			
n	29	29	29	0	0	0
SD	904	154	1760			
Min	-2270	-385	-4410			
Max	2890	491	5620			

Table E4. Daily means (SD) of PM10 emissions at site CA5B for December, 2007.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1	-262 (1200)	-45 (204)	-510 (2330)			
2	-262 (3530)	-45 (599)	-509 (6860)			
3	-426 (3500)	-72 (594)	-828 (6810)			
4	-1060 (1560)	-180 (265)	-2060 (3040)			
5	135 (996)	23 (169)	262 (1940)			
6	-3000 (3710)	-510 (630)	-5840 (7220)			
7	71 (2100)	12 (357)	138 (4090)			
8	-233 (1010)	-40 (172)	-453 (1970)			
9	-141 (622)	-24 (106)	-274 (1210)			
10	-934 (1290)	-159 (218)	-1820 (2500)			
11	-151 (1620)	-26 (274)	-293 (3140)			
12						
13	-625 (992)	-106 (168)	-1220 (1930)			
14	-1070 (1210)	-182 (205)	-2080 (2340)			
15	-894 (1190)	-152 (202)	-1740 (2320)			
16	-2540 (3010)	-432 (512)	-4950 (5860)			
17	-4760 (3270)	-808 (555)	-9250 (6360)	-3560 (2810)	-605 (477)	-6410 (5060)
18	-852 (1790)	-145 (305)	-1660 (3490)	65 (1890)	11 (321)	117 (3410)
19	-553 (1590)	-94 (270)	-1070 (3100)	-27 (1430)	-5 (242)	-49 (2570)
20	-1090 (2110)	-185 (358)	-2120 (4100)	39 (1960)	7 (334)	71 (3540)
21	-221 (1120)	-38 (191)	-430 (2190)	258 (994)	44 (169)	465 (1790)
22	-205 (981)	-35 (167)	-399 (1910)	111 (946)	19 (161)	201 (1700)
23	-543 (984)	-92 (167)	-1060 (1910)	-313 (899)	-53 (153)	-564 (1620)
24	-3440 (3710)	-584 (631)	-6680 (7220)	-2730 (3310)	-464 (563)	-4920 (5970)
25	-488 (2130)	-83 (361)	-949 (4130)	-105 (1630)	-18 (277)	-189 (2940)
26	-1840 (2950)	-313 (501)	-3580 (5730)	-776 (3370)	-132 (573)	-1400 (6070)
27				316 (1540)	54 (262)	569 (2780)
28	-107 (1120)	-18 (191)	-208 (2190)	35 (1340)	6 (227)	62 (2410)
29	-777 (1090)	-132 (185)	-1510 (2120)	-731 (1140)	-124 (193)	-1320 (2050)
30	-661 (1040)	-112 (176)	-1290 (2020)	-419 (919)	-71 (156)	-754 (1660)
31	80 (719)	14 (122)	155 (1400)	140 (709)	24 (120)	252 (1280)
Avg	-926	-157	-1800	-513	-87	-924
n	29	29	29	15	15	15
SD	1130	192	2200	1090	185	1960
Min	-4760	-808	-9250	-3560	-605	-6410
Max	135	23	262	316	54	569

Table E4. Daily means (SD) of PM10 emissions at site CA5B for January, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1	-165 (673)	-28 (114)	-321 (1310)	-119 (709)	-20 (120)	-215 (1280)
2	-462 (1830)	-79 (311)	-898 (3560)	-601 (1710)	-102 (290)	-1080 (3080)
3	-147 (1270)	-25 (215)	-286 (2460)	-1130 (2040)	-192 (346)	-2040 (3670)
4	384 (5810)	65 (986)	747 (11300)	-1650 (7120)	-281 (1210)	-2980 (12800)
5	410 (1220)	70 (208)	797 (2380)	14 (2320)	2 (393)	25 (4170)
6	339 (1020)	58 (173)	660 (1980)	14 (1420)	2 (241)	25 (2550)
7	56 (850)	10 (144)	108 (1650)	-12 (1150)	-2 (195)	-21 (2070)
8	-754 (1790)	-128 (304)	-1470 (3480)	-727 (2140)	-123 (364)	-1310 (3860)
9	-371 (730)	-63 (124)	-721 (1420)	-272 (803)	-46 (136)	-490 (1450)
10	-965 (1300)	-164 (221)	-1880 (2530)	-1000 (1410)	-170 (240)	-1800 (2540)
11	13 (532)	2 (90)	25 (1030)	155 (911)	26 (155)	279 (1640)
12	-235 (758)	-40 (129)	-458 (1470)	3520 (18900)	598 (3200)	6350 (34000)
13	-65 (354)	-11 (60)	-127 (689)	294 (1490)	50 (252)	530 (2670)
14	-571 (929)	-97 (158)	-1110 (1810)	570 (4030)	97 (684)	1030 (7250)
15	-248 (549)	-42 (93)	-483 (1070)	-14 (3030)	-2 (514)	-25 (5450)
16	-68 (603)	-12 (102)	-133 (1170)	-251 (3480)	-43 (592)	-452 (6280)
17	9 (580)	2 (99)	17 (1130)	81 (3230)	14 (548)	145 (5810)
18	-555 (698)	-94 (119)	-1080 (1360)	-204 (3340)	-35 (568)	-367 (6020)
19	-1010 (1420)	-171 (241)	-1960 (2760)	-671 (3880)	-114 (660)	-1210 (6990)
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
Avg	-232	-39	-451	-105	-18	-190
n	19	19	19	19	19	19
SD	403	68.5	784	1010	171	1810
Min	-1010	-171	-1960	-1650	-281	-2980
Max	410	70	797	3520	598	6350

Table E4. Daily means (SD) of PM10 emissions at site CA5B for March, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1	-458 (2440)	-78 (414)	-892 (4740)	-1850 (4250)	-314 (721)	-3330 (7650)
2	-115 (1350)	-20 (230)	-223 (2630)	-473 (2120)	-80 (361)	-852 (3830)
3	371 (4050)	63 (687)	722 (7870)	305 (2380)	52 (404)	549 (4280)
4	-1200 (1700)	-203 (289)	-2330 (3300)	-635 (1740)	-108 (296)	-1140 (3130)
5	-144 (1420)	-24 (241)	-279 (2760)	-210 (2080)	-36 (354)	-378 (3750)
6	-472 (1530)	-80 (261)	-918 (2980)	-133 (1610)	-23 (273)	-239 (2890)
7	-2510 (5020)	-426 (853)	-4880 (9770)	-1410 (5150)	-239 (875)	-2540 (9280)
8	-5730 (25300)	-974 (4300)	-11100 (49300)	-4910 (26300)	-834 (4470)	-8840 (47400)
9	-472 (1700)	-80 (290)	-918 (3320)	-519 (2160)	-88 (368)	-935 (3900)
10	-562 (1750)	-96 (297)	-1090 (3410)	279 (2460)	48 (417)	503 (4420)
11	-754 (1390)	-128 (237)	-1470 (2710)	490 (2010)	83 (341)	882 (3620)
12	-495 (2110)	-84 (358)	-962 (4100)	-166 (3200)	-28 (543)	-299 (5760)
13	-1050 (1500)	-179 (255)	-2050 (2920)	873 (3850)	148 (653)	1570 (6930)
14	-763 (1410)	-130 (239)	-1480 (2740)	862 (2990)	146 (507)	1550 (5380)
15	-565 (1840)	-96 (313)	-1100 (3580)	292 (1670)	50 (283)	525 (3000)
16	2010 (9000)	342 (1530)	3910 (17500)	2780 (7610)	472 (1290)	5010 (13700)
17	-839 (2610)	-142 (444)	-1630 (5090)	-462 (2990)	-78 (508)	-831 (5380)
18	-415 (1320)	-71 (224)	-807 (2570)	174 (1480)	30 (251)	314 (2660)
19	-1140 (1440)	-193 (244)	-2210 (2800)	1130 (3510)	192 (597)	2040 (6330)
20	-789 (2040)	-134 (346)	-1530 (3960)	277 (1760)	47 (299)	499 (3170)
21	182 (7350)	31 (1250)	353 (14300)	148 (2770)	25 (471)	267 (5000)
22	-586 (973)	-100 (165)	-1140 (1890)	-137 (1470)	-23 (250)	-246 (2650)
23	-523 (1840)	-89 (312)	-1020 (3570)	291 (3670)	50 (624)	525 (6610)
24	-389 (2590)	-66 (440)	-757 (5030)	358 (2500)	61 (425)	645 (4510)
25	-939 (2280)	-160 (387)	-1830 (4430)	870 (2370)	148 (402)	1570 (4270)
26	-851 (3440)	-145 (584)	-1650 (6680)	193 (2590)	33 (441)	348 (4670)
27	-640 (2600)	-109 (442)	-1240 (5030)	69 (2370)	12 (403)	125 (4270)
28	-251 (1720)	-43 (293)	-486 (3330)	840 (2130)	143 (362)	1510 (3840)
29	-980 (1260)	-166 (214)	-1890 (2420)	-411 (1160)	-70 (196)	-740 (2080)
30	-938 (1890)	-159 (321)	-1800 (3630)	917 (2710)	156 (460)	1650 (4880)
31	-522 (1550)	-89 (263)	-1000 (2970)	183 (1680)	31 (285)	330 (3020)
Avg	-727	-123	-1410	1	0	1
n	31	31	31	31	31	31
SD	1140	193	2210	1200	204	2160
Min	-5730	-974	-11100	-4910	-834	-8840
Max	2010	342	3910	2780	472	5010

Table E4. Daily means (SD) of PM10 emissions at site CA5B for April, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1	-311 (2320)	-53 (394)	-595 (4440)	332 (2390)	56 (407)	598 (4310)
2	-497 (1640)	-85 (279)	-948 (3130)	234 (1800)	40 (307)	422 (3250)
3	-673 (2700)	-114 (459)	-1280 (5140)	1140 (4120)	194 (699)	2050 (7410)
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15				1340 (7530)	228 (1280)	2420 (13600)
16				-255 (6270)	-43 (1060)	-459 (11300)
17				1040 (10500)	176 (1780)	1870 (18800)
18				1110 (5060)	188 (860)	2000 (9110)
19				-3230 (22600)	-548 (3850)	-5800 (40700)
20				8 (4270)	1 (726)	14 (7690)
21				1520 (5660)	257 (962)	2730 (10200)
22				1660 (3240)	283 (551)	2990 (5830)
23				853 (1720)	145 (292)	1530 (3090)
24				1600 (3800)	272 (645)	2880 (6830)
25				1590 (4900)	270 (832)	2860 (8810)
26				2300 (4340)	390 (738)	4140 (7820)
27				1360 (3300)	230 (560)	2440 (5950)
28				1500 (4600)	255 (781)	2710 (8300)
29				1200 (8870)	204 (1510)	2170 (16000)
30						
Avg	-494	-84	-940	850	144	1530
n	3	3	3	18	18	18
SD	148	25.1	279	1170	199	2110
Min	-673	-114	-1280	-3230	-548	-5800
Max	-311	-53	-595	2300	390	4140

Table E4. Daily means (SD) of PM10 emissions at site CA5B for May, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1				283 (6450)	48 (1100)	513 (11700)
2				1290 (4290)	219 (728)	2340 (7790)
3				1580 (5400)	269 (917)	2880 (9820)
4				1060 (3910)	180 (664)	1930 (7120)
5				1300 (5130)	220 (872)	2360 (9360)
6				1510 (6310)	257 (1070)	2760 (11500)
7				1550 (5370)	264 (912)	2840 (9820)
8				2810 (8410)	477 (1430)	5150 (15400)
9				2930 (9030)	498 (1530)	5380 (16600)
10				2620 (7620)	445 (1290)	4810 (14000)
11				5030 (24400)	854 (4140)	9240 (44800)
12				170 (12000)	29 (2040)	314 (22100)
13				-342 (12100)	-58 (2060)	-630 (22300)
14				-331 (6560)	-56 (1110)	-610 (12100)
15				-117 (8690)	-20 (1480)	-216 (16100)
16				-4890 (10900)	-830 (1860)	-9040 (20200)
17				320 (9430)	54 (1600)	593 (17500)
18				2760 (10600)	469 (1800)	5120 (19700)
19				193 (15700)	33 (2660)	359 (29200)
20				11800 (37800)	2000 (6430)	21900 (70400)
21				14400 (50900)	2440 (8640)	26800 (94800)
22				3870 (13200)	657 (2240)	7220 (24600)
23						
24						
25						
26				84 (4790)	14 (814)	158 (8980)
27				-506 (7100)	-86 (1210)	-949 (13300)
28	241 (4710)	41 (800)	447 (8720)	-637 (4230)	-108 (718)	-1200 (7940)
29	-2550 (5440)	-433 (924)	-4730 (10100)	-894 (5980)	-152 (1020)	-1680 (11200)
30	-986 (5390)	-167 (915)	-1830 (10000)	1490 (8690)	252 (1480)	2790 (16300)
31	-2420 (4270)	-411 (725)	-4510 (7940)	206 (7220)	35 (1230)	388 (13600)
Avg	-1430	-243	-2650	1770	300	3270
n	4	4	4	28	28	28
SD	1140	194	2120	3630	616	6750
Min	-2550	-433	-4730	-4890	-830	-9040
Max	241	41	447	14400	2440	26800

Table E4. Daily means (SD) of PM10 emissions at site CA5B for June, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1	-2630 (4080)	-447 (692)	-4900 (7600)	1230 (12900)	209 (2190)	2310 (24300)
2	6140 (22000)	1040 (3730)	11400 (41000)	-1250 (12200)	-212 (2070)	-2350 (22900)
3	5010 (30000)	851 (5090)	9360 (56100)	-2380 (13100)	-404 (2220)	-4480 (24600)
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24	-1090 (9570)	-186 (1630)	-2120 (18600)	1440 (9410)	245 (1600)	2730 (17800)
25	-2460 (7410)	-418 (1260)	-4780 (14400)	1820 (7310)	309 (1240)	3440 (13800)
26	-184 (5320)	-31 (904)	-358 (10300)	1520 (6080)	258 (1030)	2870 (11500)
27	1680 (7510)	286 (1270)	3280 (14600)	2200 (7350)	374 (1250)	4170 (13900)
28	1160 (3250)	198 (552)	2270 (6340)	1940 (2930)	329 (498)	3670 (5560)
29	204 (2220)	35 (377)	399 (4340)	1950 (3820)	332 (649)	3700 (7240)
30	842 (2870)	143 (487)	1650 (5610)	1890 (3840)	320 (652)	3570 (7270)
Avg	867	147	1620	1040	176	1960
n	10	10	10	10	10	10
SD	2730	463	5120	1470	250	2780
Min	-2630	-447	-4900	-2380	-404	-4480
Max	6140	1040	11400	2200	374	4170

Table E4. Daily means (SD) of PM10 emissions at site CA5B for July, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1	-393 (6980)	-67 (1190)	-771 (13700)	194 (6480)	33 (1100)	368 (12300)
2	282 (3130)	48 (532)	553 (6150)	2750 (5340)	467 (906)	5200 (10100)
3	-538 (4130)	-91 (702)	-1060 (8130)	1670 (5320)	284 (904)	3160 (10100)
4	241 (3580)	41 (609)	474 (7060)	1660 (4620)	282 (785)	3150 (8760)
5	-210 (2990)	-36 (509)	-415 (5900)	644 (2340)	109 (398)	1220 (4440)
6	109 (3320)	18 (565)	215 (6570)	665 (3880)	113 (659)	1260 (7350)
7	418 (3270)	71 (555)	826 (6470)	556 (3630)	94 (616)	1050 (6870)
8						
9	-67 (5480)	-11 (931)	-134 (10900)	1300 (5010)	220 (850)	2460 (9490)
10	1370 (3920)	233 (666)	2720 (7790)	2320 (4630)	395 (786)	4410 (8770)
11	-139 (3470)	-24 (590)	-276 (6910)	443 (3600)	75 (611)	839 (6820)
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23	700 (2810)	119 (478)	1420 (5710)	1030 (2670)	175 (454)	1960 (5070)
24	124 (3660)	21 (621)	251 (7430)	1030 (3400)	175 (578)	1950 (6460)
25	718 (4950)	122 (840)	1460 (10100)	513 (2860)	87 (486)	973 (5430)
26	672 (4030)	114 (685)	1370 (8220)	1310 (4160)	223 (707)	2490 (7900)
27	-921 (3110)	-156 (527)	-1880 (6330)	930 (3890)	158 (661)	1760 (7380)
28	353 (4170)	60 (708)	720 (8500)	2660 (5240)	452 (891)	5050 (9950)
29	-1000 (4030)	-170 (685)	-2050 (8220)	1410 (4360)	240 (741)	2680 (8270)
30	-513 (5060)	-87 (859)	-1050 (10300)	1250 (6570)	212 (1120)	2360 (12500)
31	-865 (4210)	-147 (715)	-1770 (8590)	463 (4170)	79 (709)	877 (7910)
Avg	18	3	33	1200	204	2280
n	19	19	19	19	19	19
SD	614	104	1240	727	123	1380
Min	-1000	-170	-2050	194	33	368
Max	1370	233	2720	2750	467	5200

Table E4. Daily means (SD) of PM10 emissions at site CA5B for August, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1	1620 (6020)	275 (1020)	3300 (12300)	1410 (4080)	240 (693)	2680 (7730)
2	233 (3940)	40 (669)	475 (8050)	1920 (4790)	326 (813)	3630 (9070)
3	957 (6400)	163 (1090)	1950 (13100)	1810 (7180)	307 (1220)	3420 (13600)
4	753 (4380)	128 (745)	1540 (8960)	728 (3590)	124 (609)	1380 (6800)
5	3060 (14000)	520 (2370)	6260 (28500)	285 (5420)	48 (920)	540 (10300)
6	-331 (7800)	-56 (1320)	-676 (15900)	542 (6430)	92 (1090)	1030 (12200)
7	-651 (8050)	-111 (1370)	-1330 (16500)	1450 (8420)	247 (1430)	2760 (15900)
8	-1310 (4590)	-222 (779)	-2680 (9390)	1360 (9190)	231 (1560)	2580 (17400)
9	275 (8360)	47 (1420)	563 (17100)	989 (5910)	168 (1000)	1870 (11200)
10	241 (5140)	41 (873)	493 (10500)	105 (3910)	18 (665)	199 (7410)
11	-520 (4860)	-88 (826)	-1070 (9970)	-531 (3670)	-90 (623)	-1000 (6940)
12	-397 (4570)	-68 (776)	-814 (9360)	138 (4740)	23 (805)	261 (8980)
13	-875 (3800)	-149 (645)	-1790 (7790)	363 (4340)	62 (738)	687 (8220)
14	-355 (7860)	-60 (1330)	-729 (16100)	184 (5820)	31 (988)	348 (11000)
15	-32 (5820)	-5 (988)	-65 (11900)	933 (5660)	158 (962)	1770 (10700)
16	-390 (5130)	-66 (872)	-801 (10500)	623 (5610)	106 (952)	1180 (10600)
17	-830 (5840)	-141 (992)	-1700 (12000)	534 (5160)	91 (876)	1010 (9760)
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
Avg	85	14	172	756	128	1430
n	17	17	17	17	17	17
SD	1030	175	2100	646	110	1220
Min	-1310	-222	-2680	-531	-90	-1000
Max	3060	520	6260	1920	326	3630

Table E4. Daily means (SD) of PM10 emissions at site CA5B for September, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1						
2	487 (5400)	83 (917)	1010 (11200)	977 (13800)	166 (2340)	1860 (26300)
3	-106 (5350)	-18 (909)	-221 (11100)	-25 (6450)	-4 (1100)	-47 (12300)
4	498 (5770)	85 (979)	1040 (12000)	-4 (5920)	-1 (1000)	-8 (11300)
5	1830 (12400)	310 (2110)	3810 (26000)	-353 (7530)	-60 (1280)	-673 (14400)
6	-1380 (9280)	-234 (1580)	-2880 (19400)	-279 (7330)	-47 (1250)	-531 (14000)
7	1460 (11600)	248 (1980)	3050 (24300)	-29 (8060)	-5 (1370)	-55 (15400)
8	-51 (15700)	-9 (2670)	-105 (32900)	625 (8390)	106 (1420)	1190 (16000)
9	-2230 (12500)	-378 (2120)	-4660 (26200)	468 (6130)	80 (1040)	895 (11700)
10	211 (5070)	36 (862)	442 (10600)	787 (4880)	134 (829)	1500 (9340)
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
Avg	80	14	165	241	41	460
n	9	9	9	9	9	9
SD	1190	203	2490	455	77.3	868
Min	-2230	-378	-4660	-353	-60	-673
Max	1830	310	3810	977	166	1860

Table E4. Daily means (SD) of PM10 emissions at site CA5B for October, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12	-569 (9560)	-97 (1620)	-1210 (20300)	215 (8490)	37 (1440)	419 (16600)
13	2150 (8280)	366 (1410)	4560 (17600)	-549 (8400)	-93 (1430)	-1070 (16400)
14	754 (5430)	128 (923)	1600 (11500)	1670 (6830)	284 (1160)	3270 (13400)
15	1020 (6630)	174 (1130)	2170 (14000)	1370 (8120)	233 (1380)	2680 (15900)
16	634 (5240)	108 (891)	1340 (11100)	840 (8360)	143 (1420)	1640 (16400)
17	90 (5390)	15 (916)	190 (11400)	-301 (4930)	-51 (838)	-589 (9670)
18	-493 (13500)	-84 (2290)	-1040 (28600)	-325 (14700)	-55 (2490)	-638 (28700)
19	-354 (8320)	-60 (1410)	-749 (17600)	1090 (8010)	185 (1360)	2140 (15700)
20	-1320 (10600)	-225 (1800)	-2800 (22400)	-554 (10400)	-94 (1760)	-1090 (20400)
21						
22						
23	634 (5150)	108 (875)	1340 (10900)	224 (2800)	38 (476)	441 (5510)
24	-6 (3420)	-1 (581)	-14 (7240)	-52 (4020)	-9 (683)	-103 (7910)
25	141 (2980)	24 (507)	299 (6310)	21 (1720)	4 (292)	42 (3380)
26	276 (2400)	47 (407)	585 (5070)	-48 (2030)	-8 (345)	-95 (4000)
27	-406 (3380)	-69 (574)	-861 (7160)	-467 (2840)	-79 (483)	-921 (5610)
28						
29	59 (2800)	10 (475)	126 (5970)	-113 (3110)	-19 (528)	-224 (6130)
30	-2210 (16400)	-375 (2790)	-4730 (35200)	-2310 (12900)	-393 (2190)	-4570 (25500)
31	-2200 (7880)	-373 (1340)	-4720 (16900)	-2440 (5390)	-414 (915)	-4820 (10600)
Avg	-105	-18	-230	-102	-17	-205
n	17	17	17	17	17	17
SD	1060	181	2270	1050	179	2070
Min	-2210	-375	-4730	-2440	-414	-4820
Max	2150	366	4560	1670	284	3270

Table E4. Daily means (SD) of PM10 emissions at site CA5B for November, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1	-2760 (4370)	-469 (742)	-5960 (9440)	-2600 (4690)	-441 (797)	-5140 (9280)
2						
3						
4						
5						
6	-438 (1780)	-74 (302)	-965 (3920)	-413 (1280)	-70 (218)	-819 (2540)
7	-331 (1250)	-56 (213)	-732 (2780)	-367 (1240)	-62 (211)	-727 (2460)
8	-1550 (3980)	-264 (676)	-3460 (8860)	-1410 (3590)	-240 (610)	-2800 (7120)
9	-1580 (3070)	-268 (521)	-3520 (6850)	-1420 (3050)	-241 (517)	-2810 (6040)
10	61 (1180)	10 (201)	137 (2650)	71 (1440)	12 (244)	141 (2860)
11	-394 (1600)	-67 (273)	-887 (3610)	-286 (1280)	-49 (218)	-567 (2550)
12	-3 (1740)	-1 (296)	-6 (3940)	44 (1980)	7 (337)	87 (3940)
13	-733 (2370)	-124 (402)	-1660 (5380)	-741 (4070)	-126 (691)	-1470 (8090)
14	-250 (1680)	-42 (286)	-569 (3840)	-443 (1460)	-75 (248)	-881 (2900)
15	-573 (1680)	-97 (285)	-1310 (3850)	-658 (2010)	-112 (341)	-1310 (3990)
16	-337 (1660)	-57 (283)	-777 (3830)	-488 (1930)	-83 (328)	-970 (3850)
17	-478 (1560)	-81 (265)	-1110 (3610)	-486 (1530)	-83 (259)	-968 (3040)
18	-226 (998)	-38 (170)	-524 (2310)	-226 (1020)	-38 (174)	-449 (2040)
19	508 (2290)	86 (389)	1180 (5330)	-158 (972)	-27 (165)	-315 (1940)
20	-95 (2530)	-16 (430)	-224 (5920)	-106 (1110)	-18 (189)	-211 (2210)
21	-39 (1240)	-7 (211)	-92 (2920)	-140 (709)	-24 (120)	-280 (1410)
22	-256 (1040)	-44 (177)	-606 (2470)	-206 (603)	-35 (102)	-410 (1200)
23	-216 (1350)	-37 (229)	-512 (3200)	-331 (908)	-56 (154)	-661 (1810)
24	-96 (1080)	-16 (183)	-230 (2560)	6 (708)	1 (120)	13 (1410)
25	-467 (1380)	-79 (234)	-1120 (3290)	-381 (646)	-65 (110)	-760 (1290)
26	-411 (982)	-70 (167)	-982 (2350)	-309 (519)	-53 (88)	-614 (1030)
27	-526 (4210)	-89 (716)	-1260 (10100)	-449 (725)	-76 (123)	-890 (1430)
28	238 (2600)	41 (442)	569 (6210)	-261 (627)	-44 (107)	-516 (1240)
29	161 (1780)	27 (302)	384 (4250)	-118 (524)	-20 (89)	-232 (1030)
30	-328 (3090)	-56 (524)	-784 (7370)	-308 (773)	-52 (131)	-603 (1520)
Avg	-428	-73	-962	-469	-80	-929
n	26	26	26	26	26	26
SD	644	109	1420	554	94.1	1100
Min	-2760	-469	-5960	-2600	-441	-5140
Max	508	86	1180	71	12	141

Table E4. Daily means (SD) of PM10 emissions at site CA5B for December, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1	-21 (702)	-4 (119)	-50 (1680)	-111 (263)	-19 (45)	-217 (514)
2	233 (2990)	40 (507)	557 (7140)	-384 (1140)	-65 (194)	-748 (2230)
3	447 (1410)	76 (240)	1070 (3380)	-294 (666)	-50 (113)	-572 (1290)
4	-13 (683)	-2 (116)	-30 (1630)	-188 (591)	-32 (100)	-364 (1150)
5	-390 (1000)	-66 (171)	-934 (2400)	-489 (1190)	-83 (202)	-943 (2290)
6	-401 (663)	-68 (113)	-959 (1590)	-454 (702)	-77 (119)	-874 (1350)
7	-213 (533)	-36 (91)	-509 (1270)	-206 (519)	-35 (88)	-395 (997)
8						
9	-609 (2010)	-103 (341)	-1460 (4810)	-246 (1970)	-42 (334)	-469 (3750)
10	-243 (908)	-41 (154)	-582 (2170)	-283 (800)	-48 (136)	-538 (1520)
11						
12	-1090 (2190)	-185 (372)	-2610 (5250)	-1090 (2460)	-185 (418)	-2060 (4650)
13						
14						
15						
16	-817 (928)	-139 (158)	-1960 (2220)	-651 (836)	-111 (142)	-1220 (1560)
17	-1270 (1630)	-215 (277)	-3040 (3910)	-1100 (1480)	-187 (252)	-2050 (2760)
18	-1500 (1490)	-255 (253)	-3600 (3570)	-1060 (1690)	-180 (286)	-1960 (3130)
19	-1180 (1590)	-200 (270)	-2830 (3800)	-948 (1510)	-161 (256)	-1760 (2800)
20						
21						
22	-718 (1080)	-122 (184)	-1720 (2600)	-415 (1110)	-70 (188)	-761 (2030)
23	-837 (812)	-142 (138)	-2010 (1950)	-490 (895)	-83 (152)	-897 (1640)
24	-1820 (1440)	-309 (245)	-4370 (3470)	-985 (1850)	-167 (314)	-1800 (3370)
25	-2150 (2610)	-366 (443)	-5170 (6260)	-630 (2560)	-107 (435)	-1150 (4670)
26	-796 (1210)	-135 (205)	-1910 (2900)	-491 (1080)	-83 (184)	-890 (1960)
27	-508 (873)	-86 (148)	-1220 (2100)	-56 (938)	-10 (159)	-101 (1700)
28	-306 (678)	-52 (115)	-736 (1630)	-123 (640)	-21 (109)	-222 (1150)
29	-346 (696)	-59 (118)	-830 (1670)	-237 (735)	-40 (125)	-425 (1320)
30	-352 (563)	-60 (96)	-845 (1350)	-282 (569)	-48 (97)	-507 (1020)
31	-237 (421)	-40 (72)	-569 (1010)	-216 (396)	-37 (67)	-387 (708)
Avg	-631	-107	-1510	-476	-81	-888
n	24	24	24	24	24	24
SD	614	104	1470	325	55.2	603
Min	-2150	-366	-5170	-1100	-187	-2060
Max	447	76	1070	-56	-10	-101

Table E4. Daily means (SD) of PM10 emissions at site CA5B for January, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1	-773 (760)	-131 (129)	-1850 (1820)	-631 (665)	-107 (113)	-1130 (1190)
2	-1540 (2050)	-262 (349)	-3670 (4890)	-888 (2000)	-151 (339)	-1590 (3570)
3	-1100 (1300)	-187 (220)	-2610 (3070)	-722 (1150)	-123 (195)	-1290 (2050)
4	-594 (742)	-101 (126)	-1390 (1740)	-391 (666)	-67 (113)	-700 (1190)
5	-1220 (6950)	-207 (1180)	-2840 (16200)	-758 (998)	-129 (170)	-1360 (1790)
6	-480 (788)	-82 (134)	-1110 (1830)	-317 (634)	-54 (108)	-567 (1140)
7	408 (1900)	69 (324)	937 (4380)	-216 (485)	-37 (82)	-387 (869)
8	-577 (1690)	-98 (288)	-1320 (3870)	-1080 (1230)	-183 (208)	-1940 (2200)
9	-140 (697)	-24 (118)	-318 (1580)	-219 (552)	-37 (94)	-393 (990)
10	-194 (626)	-33 (106)	-438 (1410)	-277 (574)	-47 (98)	-497 (1030)
11	-250 (682)	-42 (116)	-560 (1530)	-280 (491)	-48 (83)	-502 (881)
12	-562 (834)	-95 (142)	-1250 (1860)	-534 (593)	-91 (101)	-959 (1060)
13	-140 (924)	-24 (157)	-310 (2040)	-193 (623)	-33 (106)	-347 (1120)
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
Avg	-551	-94	-1290	-501	-85	-896
n	13	13	13	13	13	13
SD	501	85.1	1190	280	47.5	501
Min	-1540	-262	-3670	-1080	-183	-1940
Max	408	69	937	-193	-33	-347

Table E4. Daily means (SD) of PM10 emissions at site CA5B for February, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24	-242 (1350)	-41 (229)	-463 (2580)	-107 (1300)	-18 (221)	-193 (2360)
25	-7 (483)	-1 (82)	-14 (921)	116 (609)	20 (103)	209 (1100)
26	-603 (1060)	-102 (180)	-1150 (2020)	-338 (1900)	-57 (322)	-613 (3440)
27	-199 (925)	-34 (157)	-378 (1760)	352 (1730)	60 (294)	637 (3140)
28	-254 (1540)	-43 (262)	-481 (2930)	209 (1430)	36 (243)	378 (2580)
Avg	-261	-44	-497	46	8	84
n	5	5	5	5	5	5
SD	193	32.7	367	243	41.3	441
Min	-603	-102	-1150	-338	-57	-613
Max	-7	-1	-14	352	60	637

Table E4. Daily means (SD) of PM10 emissions at site CA5B for March, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1	-640 (1730)	-109 (294)	-1210 (3280)	-428 (1430)	-73 (242)	-774 (2580)
2	-1060 (1920)	-180 (326)	-2000 (3630)	-626 (1660)	-106 (282)	-1130 (3000)
3	-1030 (1530)	-175 (261)	-1950 (2900)	-603 (1100)	-102 (188)	-1090 (1990)
4	-453 (992)	-77 (168)	-855 (1870)	-108 (1040)	-18 (177)	-195 (1880)
5	-232 (764)	-39 (130)	-437 (1440)	-54 (698)	-9 (119)	-96 (1260)
6	-416 (1130)	-71 (193)	-783 (2130)	-64 (1180)	-11 (201)	-115 (2130)
7	-73 (681)	-12 (116)	-136 (1280)	110 (728)	19 (124)	198 (1310)
8	-252 (1580)	-43 (268)	-473 (2970)	119 (1120)	20 (189)	213 (2000)
9	-298 (2260)	-51 (385)	-560 (4250)	802 (2710)	136 (461)	1440 (4860)
10	47 (1970)	8 (334)	89 (3690)	765 (1760)	130 (299)	1370 (3150)
11	-134 (1020)	-23 (174)	-252 (1920)	269 (1410)	46 (239)	481 (2510)
12	-241 (1380)	-41 (234)	-450 (2570)	675 (1740)	115 (296)	1210 (3110)
13	-141 (1170)	-24 (198)	-264 (2180)	670 (1800)	114 (306)	1200 (3220)
14	-1170 (2280)	-199 (387)	-2190 (4250)	408 (2470)	69 (419)	727 (4400)
15	-7 (1320)	-1 (224)	-13 (2460)	592 (2080)	101 (354)	1050 (3710)
16						
17	-37 (2300)	-6 (390)	-69 (4270)	905 (2950)	154 (501)	1610 (5240)
18	-574 (1670)	-98 (283)	-1070 (3100)	2260 (5540)	383 (940)	4000 (9820)
19	-132 (2720)	-23 (462)	-246 (5040)	1110 (2640)	189 (448)	1970 (4670)
20	-63 (1370)	-11 (233)	-117 (2540)	2520 (3920)	428 (666)	4460 (6940)
21	-85 (1430)	-15 (243)	-158 (2650)	1980 (4800)	336 (815)	3490 (8480)
22	-1310 (3040)	-223 (517)	-2430 (5630)	356 (1640)	61 (279)	628 (2900)
23	-263 (1980)	-45 (337)	-486 (3660)	1500 (2950)	255 (501)	2650 (5210)
24	219 (2110)	37 (358)	404 (3890)	631 (1740)	107 (295)	1110 (3060)
25	-220 (2060)	-37 (351)	-405 (3800)	97 (2080)	17 (353)	171 (3650)
26	-2580 (10000)	-438 (1710)	-4740 (18500)	2370 (10700)	402 (1820)	4160 (18900)
27	-891 (1860)	-151 (316)	-1640 (3410)	-326 (2290)	-55 (390)	-572 (4030)
28	-659 (4710)	-112 (800)	-1210 (8640)	166 (4530)	28 (769)	290 (7940)
29	-208 (7980)	-35 (1350)	-381 (14600)	2310 (7270)	392 (1240)	4050 (12700)
30	-932 (3650)	-158 (620)	-1710 (6690)	814 (5110)	138 (868)	1430 (8940)
31	-934 (3800)	-159 (645)	-1720 (6980)	2010 (6110)	341 (1040)	3510 (10700)
Avg	-492	-84	-914	708	120	1250
n	30	30	30	30	30	30
SD	556	94.5	1030	907	154	1600
Min	-2580	-438	-4740	-626	-106	-1130
Max	219	37	404	2520	428	4460

Table E4. Daily means (SD) of PM10 emissions at site CA5B for April, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1	-81 (8570)	-14 (1450)	-149 (15700)	6120 (13200)	1040 (2230)	10700 (23000)
2	-2450 (3150)	-416 (535)	-4510 (5800)	8500 (15500)	1440 (2630)	14900 (27100)
3	-100 (18700)	-17 (3180)	-185 (34500)	11500 (23700)	1950 (4020)	20000 (41300)
4	-1520 (3850)	-258 (654)	-2800 (7110)	1580 (9110)	269 (1550)	2770 (15900)
5	-2020 (4120)	-344 (699)	-3740 (7620)	-574 (5340)	-98 (906)	-1000 (9310)
6	-1490 (3710)	-253 (629)	-2760 (6860)	455 (10800)	77 (1830)	793 (18800)
7	-1110 (4270)	-188 (725)	-2060 (7910)	425 (9430)	72 (1600)	741 (16400)
8	-14 (2860)	-2 (486)	-25 (5310)	148 (2350)	25 (400)	258 (4100)
9	229 (1420)	39 (241)	425 (2640)	733 (1540)	125 (261)	1280 (2670)
10	-444 (2700)	-75 (458)	-827 (5030)	-172 (2620)	-29 (444)	-299 (4550)
11	-509 (5400)	-87 (917)	-951 (10100)	-305 (4820)	-52 (818)	-529 (8370)
12	-63 (2530)	-11 (430)	-117 (4730)	733 (2360)	125 (401)	1270 (4100)
13	-338 (4100)	-57 (696)	-633 (7670)	88 (3250)	15 (552)	154 (5640)
14	-832 (22000)	-141 (3740)	-1560 (41300)	381 (14900)	65 (2540)	660 (25900)
15	-1240 (6520)	-211 (1110)	-2330 (12200)	2080 (8250)	353 (1400)	3600 (14300)
16	-1660 (3430)	-282 (583)	-3130 (6450)	1310 (4790)	223 (813)	2280 (8300)
17	-428 (3380)	-73 (574)	-805 (6370)	3090 (8380)	524 (1420)	5350 (14500)
18	-339 (1880)	-58 (319)	-638 (3540)	636 (2950)	108 (502)	1100 (5110)
19	-681 (3500)	-116 (594)	-1290 (6600)	1680 (14600)	286 (2480)	2910 (25200)
20	919 (8870)	156 (1510)	1740 (16800)	1790 (8170)	304 (1390)	3090 (14100)
21	1460 (5660)	248 (961)	2770 (10700)	4020 (13000)	682 (2200)	6940 (22400)
22	285 (7320)	48 (1240)	541 (13900)	2650 (10300)	449 (1750)	4570 (17800)
23	-2300 (8840)	-391 (1500)	-4380 (16800)	3670 (15600)	623 (2650)	6330 (26900)
24	-3260 (9070)	-553 (1540)	-6200 (17300)	9320 (22400)	1580 (3810)	16100 (38600)
25	-2240 (7970)	-380 (1350)	-4260 (15200)	3990 (11300)	678 (1920)	6880 (19500)
26	-836 (4290)	-142 (728)	-1600 (8180)	1310 (7780)	222 (1320)	2250 (13400)
27	-2760 (7480)	-468 (1270)	-5270 (14300)	7950 (24700)	1350 (4200)	13700 (42500)
28	-2370 (5170)	-402 (878)	-4530 (9900)	6770 (23100)	1150 (3920)	11600 (39700)
29	-2670 (5090)	-453 (865)	-5120 (9770)	3600 (11100)	612 (1890)	6200 (19100)
30	387 (4820)	66 (819)	742 (9240)	3110 (11000)	529 (1870)	5350 (19000)
Avg	-949	-161	-1790	2890	490	5000
n	30	30	30	30	30	30
SD	1160	197	2200	3120	529	5410
Min	-3260	-553	-6200	-574	-98	-1000
Max	1460	248	2770	11500	1950	20000

Table E4. Daily means (SD) of PM10 emissions at site CA5B for May, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1	-1100 (3140)	-187 (534)	-2100 (6020)	-472 (4700)	-80 (798)	-811 (8060)
2	-208 (3020)	-35 (513)	-398 (5780)	116 (4210)	20 (714)	198 (7220)
3						
4						
5						
6						
7						
8						
9						
10						
11						
12	-599 (12400)	-102 (2100)	-1130 (23300)	4910 (15500)	833 (2620)	8380 (26400)
13	611 (15200)	104 (2580)	1150 (28600)	7080 (18500)	1200 (3140)	12100 (31600)
14	-941 (11900)	-160 (2020)	-1770 (22400)	6750 (16600)	1150 (2820)	11500 (28300)
15	2000 (10300)	339 (1740)	3750 (19300)	7020 (20200)	1190 (3430)	12000 (34500)
16	1150 (7750)	195 (1320)	2150 (14500)	4860 (11200)	825 (1900)	8280 (19100)
17	-55 (9650)	-9 (1640)	-102 (18100)	3140 (11300)	533 (1910)	5350 (19200)
18	1590 (13500)	271 (2290)	2980 (25200)	8140 (21300)	1380 (3610)	13900 (36200)
19	-1610 (22200)	-274 (3780)	-3010 (41500)	5100 (19600)	866 (3330)	8680 (33400)
20	4310 (14900)	733 (2530)	8050 (27800)	8030 (18000)	1360 (3050)	13700 (30600)
21	-332 (11300)	-56 (1920)	-617 (21000)	7460 (23300)	1270 (3960)	12700 (39600)
22	2290 (13300)	389 (2250)	4260 (24600)	10200 (18100)	1730 (3070)	17300 (30700)
23	-2200 (16300)	-374 (2770)	-4090 (30300)	4800 (13400)	815 (2280)	8160 (22800)
24	-3080 (11400)	-523 (1940)	-5710 (21200)	7620 (20000)	1290 (3400)	12900 (34000)
25	497 (11100)	85 (1880)	922 (20500)	8610 (23600)	1460 (4010)	14600 (40100)
26	1230 (7840)	210 (1330)	2280 (14500)	6910 (15800)	1170 (2690)	11700 (26900)
27						
28						
29						
30						
31						
Avg	209	36	388	5900	1000	10000
n	17	17	17	17	17	17
SD	1760	299	3280	2770	471	4720
Min	-3080	-523	-5710	-472	-80	-811
Max	4310	733	8050	10200	1730	17300

Table E4. Daily means (SD) of PM10 emissions at site CA5B for July, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23	-813 (5110)	-138 (867)	-1390 (8760)			
24	1 (5670)	0 (963)	1 (9710)			
25	-138 (5940)	-23 (1010)	-236 (10100)			
26	272 (6470)	46 (1100)	464 (11000)			
27	-188 (5430)	-32 (923)	-320 (9270)			
28	-801 (4950)	-136 (840)	-1370 (8430)			
29	602 (7840)	102 (1330)	1020 (13300)			
30	-1370 (5760)	-233 (978)	-2340 (9800)			
31	-549 (6290)	-93 (1070)	-934 (10700)			
Avg	-332	-56	-567			
n	9	9	9	0	0	0
SD	576	97.9	982			
Min	-1370	-233	-2340			
Max	602	102	1020			

Table E4. Daily means (SD) of PM10 emissions at site CA5B for August, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1	-1680 (7520)	-285 (1280)	-2860 (12800)			
2	362 (5630)	61 (956)	617 (9600)			
3	-838 (5340)	-142 (907)	-1430 (9120)			
4	578 (6890)	98 (1170)	988 (11800)			
5	-1820 (5780)	-309 (982)	-3110 (9890)			
6	-2170 (4290)	-368 (729)	-3710 (7350)			
7	-1450 (5510)	-246 (935)	-2480 (9430)			
8	526 (6470)	89 (1100)	903 (11100)			
9	-92 (6470)	-16 (1100)	-157 (11100)			
10	-865 (6330)	-147 (1080)	-1490 (10900)			
11	-1440 (7510)	-244 (1280)	-2470 (12900)			
12	-1500 (7480)	-256 (1270)	-2590 (12900)			
13	-2360 (6110)	-400 (1040)	-4060 (10500)			
14	-3530 (5520)	-599 (938)	-6080 (9520)			
15	-806 (6250)	-137 (1060)	-1390 (10800)			
16	-1180 (7730)	-201 (1310)	-2040 (13300)			
17	-346 (7990)	-59 (1360)	-599 (13800)			
18	504 (6000)	86 (1020)	872 (10400)			
19	-59 (6560)	-10 (1110)	-102 (11300)			
20	3130 (8230)	531 (1400)	5420 (14300)			
21	322 (5550)	55 (943)	558 (9630)			
22	-66 (4160)	-11 (706)	-114 (7210)			
23	1110 (3920)	188 (665)	1930 (6800)			
24	965 (4810)	164 (818)	1680 (8370)			
25	562 (4320)	96 (734)	978 (7510)			
26	1070 (6850)	182 (1160)	1870 (11900)			
27	-990 (4750)	-168 (807)	-1730 (8270)			
28	-847 (3980)	-144 (675)	-1480 (6930)			
29	-142 (3970)	-24 (674)	-248 (6930)			
30	-99 (3870)	-17 (658)	-173 (6760)			
31						
Avg	-438	-74	-750			
n	30	30	30	0	0	0
SD	1280	218	2210			
Min	-3530	-599	-6080			
Max	3130	531	5420			

Table E4. Daily means (SD) of PM10 emissions at site CA5B for September, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1	103 (3610)	18 (613)	180 (6320)			
2	-752 (5500)	-128 (934)	-1320 (9630)			
3	-1700 (5060)	-289 (859)	-2980 (8870)			
4	-361 (6300)	-61 (1070)	-634 (11100)			
5	-2120 (5010)	-360 (851)	-3720 (8800)			
6	-1090 (4030)	-185 (684)	-1910 (7080)			
7	-347 (3500)	-59 (594)	-611 (6150)			
8	527 (2960)	90 (503)	928 (5220)			
9	30 (4390)	5 (746)	53 (7740)			
10	-191 (3890)	-33 (661)	-338 (6860)			
11	405 (5890)	69 (1000)	716 (10400)			
12	513 (4320)	87 (734)	907 (7640)	3310 (4910)	562 (833)	5620 (8330)
13	519 (4410)	88 (750)	918 (7810)	2520 (3550)	428 (603)	4270 (6030)
14	55 (2590)	9 (440)	98 (4580)	1250 (2300)	213 (391)	2130 (3910)
15	635 (2000)	108 (340)	1130 (3550)	1890 (3620)	321 (615)	3220 (6150)
16	-112 (2510)	-19 (426)	-200 (4440)	2320 (4010)	393 (682)	3940 (6830)
17	891 (3170)	151 (539)	1580 (5630)	1750 (2630)	297 (446)	2980 (4470)
18	376 (2930)	64 (498)	667 (5200)	710 (2910)	121 (494)	1210 (4950)
19	-414 (2670)	-70 (454)	-736 (4750)	1330 (3480)	226 (591)	2270 (5930)
20	303 (2780)	51 (472)	539 (4940)	1460 (2590)	249 (441)	2500 (4420)
21	823 (4000)	140 (679)	1470 (7120)	2460 (5750)	417 (976)	4190 (9810)
22	-196 (4450)	-33 (756)	-349 (7940)	1230 (4960)	209 (842)	2100 (8470)
23	303 (3310)	51 (563)	540 (5910)	3320 (9900)	564 (1680)	5670 (16900)
24	2750 (14600)	466 (2480)	4900 (26000)	784 (5200)	133 (884)	1340 (8900)
25	1620 (9740)	276 (1650)	2900 (17400)	1420 (5270)	240 (895)	2420 (9020)
26	315 (3000)	53 (510)	563 (5370)	1930 (9640)	328 (1640)	3310 (16500)
27	-223 (3180)	-38 (540)	-399 (5690)	842 (4740)	143 (804)	1440 (8120)
28	-1680 (12800)	-286 (2170)	-3020 (22900)	-246 (4730)	-42 (804)	-422 (8120)
29	-1060 (17300)	-180 (2930)	-1900 (31000)	599 (7860)	102 (1330)	1030 (13500)
30	670 (9090)	114 (1540)	1200 (16300)	910 (7320)	155 (1240)	1560 (12600)
Avg	20	3	39	1570	266	2670
n	30	30	30	19	19	19
SD	958	163	1700	902	153	1530
Min	-2120	-360	-3720	-246	-42	-422
Max	2750	466	4900	3320	564	5670

Table E4. Daily means (SD) of PM10 emissions at site CA5B for October, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1	-548 (4640)	-93 (788)	-984 (8330)	-304 (3840)	-52 (652)	-523 (6600)
2	-423 (5990)	-72 (1020)	-762 (10800)	263 (5450)	45 (926)	452 (9380)
3	-1080 (16100)	-183 (2740)	-1940 (29000)	31 (10400)	5 (1760)	53 (17800)
4	-1370 (4460)	-233 (757)	-2470 (8030)	321 (5820)	55 (988)	553 (10000)
5	-544 (4760)	-92 (809)	-981 (8590)	187 (5370)	32 (912)	322 (9250)
6	24 (4610)	4 (784)	42 (8330)	1360 (9840)	230 (1670)	2340 (17000)
7	1550 (17300)	264 (2940)	2810 (31300)	875 (6670)	149 (1130)	1510 (11500)
8	263 (3740)	45 (636)	475 (6770)	750 (4610)	127 (784)	1300 (7970)
9	1990 (6050)	338 (1030)	3600 (11000)	1190 (3670)	202 (624)	2050 (6340)
10	201 (2810)	34 (478)	363 (5090)	-5 (2270)	-1 (385)	-9 (3920)
11	521 (3130)	89 (532)	944 (5680)	8 (3510)	1 (597)	13 (6080)
12	92 (6920)	16 (1180)	167 (12600)	-745 (6480)	-127 (1100)	-1290 (11200)
13	-2590 (13300)	-440 (2260)	-4710 (24100)	-3240 (12500)	-550 (2130)	-5610 (21700)
14	-840 (2250)	-143 (382)	-1530 (4090)	-809 (1380)	-137 (234)	-1400 (2390)
15	-215 (1870)	-36 (317)	-391 (3400)	-321 (1400)	-54 (238)	-556 (2430)
16	-279 (1320)	-47 (224)	-507 (2400)	-190 (1460)	-32 (247)	-330 (2530)
17	-353 (1020)	-60 (174)	-643 (1860)	-262 (762)	-45 (129)	-455 (1320)
18	-1190 (1960)	-202 (332)	-2170 (3570)	-824 (1550)	-140 (264)	-1430 (2700)
19	-501 (1040)	-85 (176)	-915 (1900)	-238 (1870)	-40 (318)	-414 (3260)
20	-101 (1160)	-17 (196)	-184 (2110)	168 (1130)	29 (192)	292 (1960)
21	-266 (858)	-45 (146)	-486 (1570)	12 (969)	2 (165)	20 (1690)
22						
23	-177 (1370)	-30 (233)	-324 (2520)	2 (1160)	0 (197)	4 (2020)
24	1160 (11600)	198 (1970)	2140 (21300)	-317 (1390)	-54 (236)	-553 (2420)
25	-2810 (7020)	-477 (1190)	-5150 (12900)	-48 (1840)	-8 (313)	-84 (3220)
26	-890 (2150)	-151 (364)	-1640 (3940)	-502 (2080)	-85 (353)	-878 (3630)
27	2850 (30500)	484 (5170)	5240 (56000)	-7730 (21400)	-1310 (3640)	-13500 (37500)
28	-1170 (5500)	-199 (935)	-2150 (10100)	226 (6080)	39 (1030)	396 (10600)
29	-338 (1680)	-57 (286)	-622 (3100)	-218 (2010)	-37 (342)	-382 (3530)
30	-424 (2410)	-72 (409)	-781 (4430)	-950 (1800)	-161 (306)	-1660 (3160)
31	-473 (1690)	-80 (287)	-871 (3110)	-436 (1400)	-74 (238)	-763 (2450)
Avg	-264	-45	-481	-392	-67	-686
n	30	30	30	30	30	30
SD	1120	191	2050	1570	267	2750
Min	-2810	-477	-5150	-7730	-1310	-13500
Max	2850	484	5240	1360	230	2340

Table E4. Daily means (SD) of PM10 emissions at site CA5B for November, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1	-104 (5740)	-18 (975)	-191 (10600)	-497 (1290)	-84 (220)	-869 (2260)
2						
3				-396 (1880)	-67 (319)	-692 (3280)
4				-992 (2210)	-169 (375)	-1730 (3860)
5				-552 (1520)	-94 (259)	-964 (2660)
6				-572 (1560)	-97 (266)	-999 (2730)
7				-1510 (3110)	-257 (528)	-2640 (5430)
8				-444 (1450)	-75 (247)	-774 (2530)
9				-56 (1510)	-10 (257)	-98 (2630)
10				-106 (2170)	-18 (368)	-185 (3780)
11				477 (8010)	81 (1360)	831 (14000)
12						
13						
14						
15						
16						
17						
18						
19						
20						
21	-212 (1850)	-36 (314)	-389 (3380)	-1000 (1710)	-170 (291)	-1740 (2970)
22	925 (2620)	157 (444)	1690 (4790)	234 (1670)	40 (284)	406 (2900)
23	82 (1270)	14 (216)	151 (2330)	-188 (876)	-32 (149)	-325 (1520)
24	156 (1200)	27 (203)	286 (2190)	-136 (1130)	-23 (192)	-236 (1960)
25						
26						
27	-638 (2070)	-108 (351)	-1160 (3780)	-630 (1540)	-107 (261)	-1090 (2660)
28	4240 (7060)	720 (1200)	7750 (12900)	5850 (9050)	993 (1540)	10100 (15700)
29	-142 (3160)	-24 (536)	-258 (5770)	-925 (2150)	-157 (365)	-1600 (3720)
30	116 (1450)	20 (246)	211 (2640)	-114 (1160)	-19 (196)	-198 (2000)
Avg	492	84	898	-87	-15	-155
n	9	9	9	18	18	18
SD	1380	235	2520	1510	257	2620
Min	-638	-108	-1160	-1510	-257	-2640
Max	4240	720	7750	5850	993	10100

Table E4. Daily means (SD) of PM10 emissions at site CA5B for December, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1	183 (1210)	31 (206)	334 (2210)	-79 (961)	-13 (163)	-136 (1660)
2	-68 (1410)	-12 (240)	-123 (2580)	-185 (954)	-32 (162)	-320 (1650)
3	-23 (713)	-4 (121)	-41 (1300)	-163 (677)	-28 (115)	-281 (1170)
4	27 (1260)	5 (215)	49 (2300)	-126 (1630)	-21 (278)	-217 (2820)
5	-1050 (2220)	-179 (378)	-1920 (4050)	-957 (2090)	-163 (355)	-1650 (3610)
6	-678 (2080)	-115 (354)	-1240 (3800)	-682 (1600)	-116 (272)	-1180 (2760)
7	-370 (1590)	-63 (270)	-675 (2900)	-522 (1260)	-89 (214)	-900 (2180)
8	-196 (1270)	-33 (215)	-357 (2310)	-380 (936)	-65 (159)	-654 (1610)
9	-49 (651)	-8 (111)	-88 (1190)	-71 (481)	-12 (82)	-122 (830)
10	-108 (778)	-18 (132)	-197 (1420)	-114 (531)	-19 (90)	-195 (915)
11	-671 (1560)	-114 (265)	-1220 (2840)	-404 (944)	-69 (160)	-695 (1630)
12	-3150 (4910)	-534 (835)	-5720 (8940)	-2560 (3460)	-435 (588)	-4410 (5950)
13						
14	-202 (515)	-34 (87)	-368 (936)	-176 (943)	-30 (160)	-303 (1620)
15	-933 (1130)	-158 (192)	-1700 (2050)	-814 (4950)	-138 (841)	-1400 (8510)
16	-804 (987)	-137 (168)	-1460 (1790)	-603 (918)	-102 (156)	-1040 (1580)
17	-496 (640)	-84 (109)	-902 (1160)	-338 (700)	-57 (119)	-580 (1200)
18	132 (1390)	22 (235)	239 (2520)	-218 (691)	-37 (117)	-373 (1190)
19	-18 (473)	-3 (80)	-33 (858)	-150 (438)	-26 (74)	-258 (752)
20	-813 (1310)	-138 (222)	-1480 (2380)	-837 (1290)	-142 (220)	-1440 (2220)
21	-266 (2310)	-45 (393)	-482 (4200)	-108 (1830)	-18 (311)	-185 (3140)
22	-463 (2050)	-79 (349)	-841 (3730)	-848 (2010)	-144 (342)	-1450 (3450)
23	-461 (844)	-78 (143)	-837 (1530)	-315 (754)	-54 (128)	-539 (1290)
24	-275 (595)	-47 (101)	-499 (1080)	-274 (661)	-47 (112)	-470 (1130)
25	-177 (472)	-30 (80)	-321 (856)	-161 (397)	-27 (67)	-275 (680)
26	-805 (1180)	-137 (200)	-1460 (2130)	-678 (1040)	-115 (176)	-1160 (1770)
27	-704 (1750)	-120 (297)	-1280 (3170)	-509 (1130)	-87 (192)	-871 (1930)
28	-583 (1940)	-99 (330)	-1060 (3520)	-432 (776)	-73 (132)	-738 (1330)
29	-356 (1280)	-60 (217)	-644 (2310)	-325 (952)	-55 (162)	-555 (1630)
30	-811 (1480)	-138 (252)	-1470 (2690)	-681 (1240)	-116 (211)	-1160 (2120)
31	-679 (899)	-115 (153)	-1230 (1630)	-576 (869)	-98 (148)	-983 (1480)
Avg	-495	-84	-900	-476	-81	-818
n	30	30	30	30	30	30
SD	594	101	1080	466	79.1	801
Min	-3150	-534	-5720	-2560	-435	-4410
Max	183	31	334	-71	-12	-122

Table E4. Daily means (SD) of PM10 emissions at site CA5B for January, 2010.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1	-275 (664)	-47 (113)	-498 (1200)	-208 (601)	-35 (102)	-356 (1030)
2	-376 (770)	-64 (131)	-680 (1390)	-301 (679)	-51 (115)	-513 (1160)
3	-645 (732)	-110 (124)	-1170 (1320)	-534 (752)	-91 (128)	-910 (1280)
4	-213 (391)	-36 (66)	-386 (707)	-175 (427)	-30 (73)	-298 (728)
5	-569 (779)	-97 (132)	-1030 (1410)	-402 (1070)	-68 (182)	-685 (1830)
6	-473 (740)	-80 (126)	-856 (1340)	-324 (691)	-55 (117)	-552 (1180)
7	-393 (631)	-67 (107)	-710 (1140)	-362 (600)	-61 (102)	-616 (1020)
8						
9						
10	-235 (494)	-40 (84)	-424 (892)	-163 (465)	-28 (79)	-278 (791)
11	-723 (732)	-123 (124)	-1310 (1320)	-565 (676)	-96 (115)	-961 (1150)
12	-452 (1420)	-77 (240)	-815 (2560)	-342 (1300)	-58 (221)	-581 (2210)
13	-374 (990)	-64 (168)	-675 (1790)	-350 (913)	-60 (155)	-595 (1550)
14	-353 (725)	-60 (123)	-637 (1310)	-312 (480)	-53 (82)	-529 (815)
15	-353 (768)	-60 (130)	-637 (1380)	-293 (592)	-50 (101)	-497 (1010)
16	-263 (688)	-45 (117)	-475 (1240)	-171 (533)	-29 (91)	-290 (905)
17	-1420 (1650)	-241 (280)	-2550 (2970)	-1040 (1570)	-177 (266)	-1770 (2660)
18	-2380 (2270)	-404 (385)	-4280 (4090)	-1800 (2090)	-305 (354)	-3050 (3540)
19	-2080 (2900)	-354 (493)	-3750 (5230)	-1670 (2620)	-283 (445)	-2830 (4440)
20	-2660 (8290)	-452 (1410)	-4790 (14900)	-1690 (7650)	-287 (1300)	-2860 (13000)
21	-714 (1420)	-121 (241)	-1290 (2560)	-530 (1220)	-90 (207)	-898 (2070)
22	-430 (869)	-73 (148)	-775 (1560)	-221 (732)	-38 (124)	-374 (1240)
23	-597 (1980)	-101 (337)	-1070 (3570)	-387 (815)	-66 (138)	-655 (1380)
24	-708 (815)	-120 (138)	-1270 (1470)	-547 (775)	-93 (132)	-926 (1310)
25	-1310 (1510)	-223 (257)	-2360 (2720)	-1070 (1340)	-181 (228)	-1810 (2270)
26	-691 (895)	-117 (152)	-1240 (1610)	-499 (823)	-85 (140)	-845 (1390)
27	-416 (877)	-71 (149)	-748 (1580)	-305 (880)	-52 (149)	-516 (1490)
28	-270 (609)	-46 (104)	-485 (1100)	-183 (526)	-31 (89)	-309 (889)
29						
30						
31						
Avg	-745	-127	-1340	-555	-94	-942
n	26	26	26	26	26	26
SD	658	112	1180	475	80.7	805
Min	-2660	-452	-4790	-1800	-305	-3050
Max	-213	-36	-386	-163	-28	-278

Table E5. PM2.5 emissions.

Table E5. Daily means (SD) of PM2.5 emissions at site CA5B for February, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
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13						
14						
15						
16						
17						
18						
19	27.9 (692.0)	4.7 (118.0)	54.3 (1350.0)	-140.0 (954.0)	-23.8 (162.0)	-252.0 (1720.0)
20	-23.1 (666.0)	-3.9 (113.0)	-45.0 (1290.0)	-225.0 (1420.0)	-38.3 (241.0)	-406.0 (2560.0)
21	101.0 (1220.0)	17.2 (207.0)	197.0 (2370.0)	458.0 (1920.0)	77.8 (327.0)	825.0 (3470.0)
22	-150.0 (715.0)	-25.6 (121.0)	-293.0 (1390.0)	-379.0 (1390.0)	-64.4 (236.0)	-683.0 (2510.0)
23	-844.0 (1550.0)	-143.0 (263.0)	-1640.0 (3010.0)	-542.0 (2650.0)	-92.0 (451.0)	-976.0 (4780.0)
24	-302.0 (1600.0)	-51.3 (272.0)	-587.0 (3110.0)	348.0 (3890.0)	59.1 (661.0)	626.0 (7010.0)
25	-247.0 (791.0)	-42.0 (134.0)	-481.0 (1540.0)	-172.0 (1690.0)	-29.1 (287.0)	-309.0 (3040.0)
26	-139.0 (486.0)	-23.6 (82.5)	-270.0 (944.0)	-133.0 (1050.0)	-22.6 (179.0)	-239.0 (1900.0)
27	-413.0 (830.0)	-70.2 (141.0)	-804.0 (1610.0)	-296.0 (1380.0)	-50.3 (234.0)	-534.0 (2480.0)
28	-306.0 (393.0)	-51.9 (66.8)	-594.0 (765.0)	-169.0 (926.0)	-28.6 (157.0)	-304.0 (1670.0)
29	-686.0 (909.0)	-116.0 (154.0)	-1330.0 (1770.0)	-362.0 (980.0)	-61.5 (166.0)	-653.0 (1760.0)
Avg	-271.0	-46.0	-527.0	-147.0	-24.9	-264.0
n	11	11	11	11	11	11
SD	277.0	47.1	539.0	286.0	48.5	514.0
Min	-844.0	-143.0	-1640.0	-542.0	-92.0	-976.0
Max	101.0	17.2	197.0	458.0	77.8	825.0

Table E5. Daily means (SD) of PM2.5 emissions at site CA5B for October, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1						
2						
3	-837.0 (7640.0)	-142.0 (1300.0)	-1780.0 (16200.0)	-698.0 (8170.0)	-119.0 (1390.0)	-1360.0 (15900.0)
4	-2420.0 (5790.0)	-411.0 (983.0)	-5140.0 (12300.0)	-4840.0 (9680.0)	-823.0 (1640.0)	-9410.0 (18800.0)
5	-1180.0 (7220.0)	-201.0 (1230.0)	-2510.0 (15300.0)	-1120.0 (9490.0)	-190.0 (1610.0)	-2170.0 (18400.0)
6	-899.0 (4240.0)	-153.0 (720.0)	-1910.0 (9000.0)	-499.0 (5800.0)	-84.7 (985.0)	-970.0 (11300.0)
7	-681.0 (7630.0)	-116.0 (1300.0)	-1440.0 (16200.0)	-303.0 (8700.0)	-51.5 (1480.0)	-590.0 (16900.0)
8	-1650.0 (7280.0)	-281.0 (1240.0)	-3510.0 (15500.0)	-1510.0 (8140.0)	-257.0 (1380.0)	-2940.0 (15900.0)
9	-9200.0 (23600.0)	-1560.0 (4010.0)	-19500.0 (50000.0)	-9930.0 (28600.0)	-1690.0 (4850.0)	-19400.0 (55700.0)
10	-4140.0 (10700.0)	-704.0 (1810.0)	-8790.0 (22700.0)	-3870.0 (11400.0)	-657.0 (1940.0)	-7540.0 (22300.0)
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17						
18						
19						
20						
21						
22						
23						
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27						
28						
29						
30						
31						
Avg	-2630.0	-446.0	-5570.0	-2850.0	-484.0	-5540.0
n	8	8	8	8	8	8
SD	2710.0	460.0	5740.0	3090.0	526.0	6030.0
Min	-9200.0	-1560.0	-19500.0	-9930.0	-1690.0	-19400.0
Max	-681.0	-116.0	-1440.0	-303.0	-51.5	-590.0

Table E5. Daily means (SD) of PM_{2.5} emissions at site CA5B for January, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1						
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23						
24						
25						
26						
27						
28	-1120.0 (2050.0)	-191.0 (349.0)	-2270.0 (4160.0)	-822.0 (1350.0)	-140.0 (229.0)	-1490.0 (2440.0)
29	-685.0 (1100.0)	-116.0 (187.0)	-1380.0 (2220.0)	-476.0 (741.0)	-80.8 (126.0)	-861.0 (1340.0)
30	-334.0 (856.0)	-56.7 (145.0)	-668.0 (1710.0)	-230.0 (687.0)	-39.0 (117.0)	-416.0 (1240.0)
31	-446.0 (902.0)	-75.7 (153.0)	-889.0 (1800.0)	-327.0 (703.0)	-55.5 (119.0)	-592.0 (1270.0)
Avg	-647.0	-110.0	-1300.0	-464.0	-78.7	-839.0
n	4	4	4	4	4	4
SD	303.0	51.4	617.0	225.0	38.2	407.0
Min	-1120.0	-191.0	-2270.0	-822.0	-140.0	-1490.0
Max	-334.0	-56.7	-668.0	-230.0	-39.0	-416.0

Table E5. Daily means (SD) of PM_{2.5} emissions at site CA5B for February, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1	-343.0 (914.0)	-58.2 (155.0)	-682.0 (1820.0)	-205.0 (534.0)	-34.8 (90.7)	-371.0 (967.0)
2	-228.0 (658.0)	-38.7 (112.0)	-452.0 (1310.0)	-140.0 (484.0)	-23.8 (82.2)	-253.0 (877.0)
3	-642.0 (1600.0)	-109.0 (272.0)	-1270.0 (3180.0)	-554.0 (1250.0)	-94.1 (212.0)	-1000.0 (2270.0)
4	-557.0 (1370.0)	-94.5 (233.0)	-1100.0 (2720.0)	-332.0 (1120.0)	-56.4 (190.0)	-602.0 (2030.0)
5	-1240.0 (2500.0)	-210.0 (424.0)	-2450.0 (4930.0)	-325.0 (1870.0)	-55.1 (318.0)	-588.0 (3390.0)
6	-792.0 (1930.0)	-134.0 (328.0)	-1560.0 (3810.0)	-593.0 (1050.0)	-101.0 (178.0)	-1080.0 (1890.0)
7	60.6 (649.0)	10.3 (110.0)	119.0 (1280.0)	-188.0 (478.0)	-31.9 (81.2)	-340.0 (866.0)
8	-761.0 (1180.0)	-129.0 (200.0)	-1500.0 (2310.0)	-778.0 (950.0)	-132.0 (161.0)	-1410.0 (1720.0)
9	-574.0 (908.0)	-97.4 (154.0)	-1130.0 (1780.0)	-456.0 (672.0)	-77.4 (114.0)	-825.0 (1220.0)
10	-401.0 (699.0)	-68.0 (119.0)	-784.0 (1370.0)	-336.0 (606.0)	-57.1 (103.0)	-609.0 (1100.0)
11	-957.0 (1280.0)	-163.0 (217.0)	-1870.0 (2500.0)	-820.0 (1110.0)	-139.0 (189.0)	-1490.0 (2010.0)
12	-432.0 (537.0)	-73.3 (91.3)	-842.0 (1050.0)	-346.0 (483.0)	-58.8 (82.0)	-627.0 (875.0)
13	-1070.0 (1440.0)	-182.0 (245.0)	-2090.0 (2810.0)	-804.0 (1420.0)	-137.0 (242.0)	-1460.0 (2580.0)
14	-1700.0 (1610.0)	-288.0 (274.0)	-3300.0 (3130.0)	-1260.0 (1480.0)	-214.0 (251.0)	-2280.0 (2680.0)
15						
16						
17						
18	-435.0 (502.0)	-73.8 (85.3)	-839.0 (970.0)	-303.0 (385.0)	-51.5 (65.4)	-549.0 (697.0)
19	-293.0 (547.0)	-49.7 (92.9)	-564.0 (1050.0)	-230.0 (372.0)	-39.1 (63.2)	-417.0 (674.0)
20	-349.0 (651.0)	-59.3 (111.0)	-672.0 (1250.0)	-264.0 (507.0)	-44.8 (86.1)	-478.0 (919.0)
21	-872.0 (1180.0)	-148.0 (200.0)	-1670.0 (2260.0)	-637.0 (932.0)	-108.0 (158.0)	-1150.0 (1690.0)
22	-1280.0 (2230.0)	-217.0 (379.0)	-2450.0 (4270.0)	-828.0 (2000.0)	-141.0 (339.0)	-1500.0 (3620.0)
23						
24						
25						
26						
27						
28						
Avg	-677.0	-115.0	-1320.0	-495.0	-84.0	-896.0
n	19	19	19	19	19	19
SD	420.0	71.3	815.0	289.0	49.0	523.0
Min	-1700.0	-288.0	-3300.0	-1260.0	-214.0	-2280.0
Max	60.6	10.3	119.0	-140.0	-23.8	-253.0

Table E5. Daily means (SD) of PM2.5 emissions at site CA5B for July, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1						
2						
3						
4						
5						
6						
7						
8				157.0 (4480.0)	26.6 (760.0)	261.0 (7450.0)
9				391.0 (2410.0)	66.4 (409.0)	650.0 (4000.0)
10				309.0 (2390.0)	52.6 (406.0)	514.0 (3970.0)
11	-940.0 (15000.0)	-160.0 (2560.0)	-1640.0 (26200.0)	185.0 (2760.0)	31.4 (468.0)	307.0 (4580.0)
12	-444.0 (884.0)	-75.5 (150.0)	-772.0 (1540.0)	217.0 (1390.0)	36.8 (236.0)	360.0 (2300.0)
13	-408.0 (1440.0)	-69.3 (245.0)	-708.0 (2510.0)	131.0 (8490.0)	22.2 (1440.0)	217.0 (14100.0)
14	-833.0 (4570.0)	-141.0 (775.0)	-1440.0 (7920.0)	166.0 (3870.0)	28.2 (657.0)	275.0 (6420.0)
15						
16	-472.0 (1570.0)	-80.1 (266.0)	-816.0 (2710.0)	138.0 (3690.0)	23.5 (627.0)	229.0 (6120.0)
17				304.0 (3560.0)	51.7 (605.0)	504.0 (5910.0)
18				321.0 (2260.0)	54.6 (385.0)	532.0 (3750.0)
19				444.0 (2190.0)	75.4 (372.0)	735.0 (3620.0)
20						
21				82.1 (1400.0)	13.9 (237.0)	136.0 (2310.0)
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
Avg	-619.0	-105.0	-1080.0	237.0	40.3	393.0
n	5	5	5	12	12	12
SD	222.0	37.7	386.0	109.0	18.5	181.0
Min	-940.0	-160.0	-1640.0	82.1	13.9	136.0
Max	-408.0	-69.3	-708.0	444.0	75.4	735.0

Table E6. TSP emissions.**Table E6. Daily means (SD) of TSP emissions at site CA5B for January, 2008.**

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1						
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16						
17						
18						
19						
20						
21	808 (2190)	137 (373)	1570 (4270)			
22	603 (1250)	102 (213)	1170 (2440)			
23	316 (1100)	54 (188)	614 (2150)			
24	955 (1960)	162 (333)	1860 (3820)			
25	-544 (6650)	-92 (1130)	-1060 (12900)			
26	309 (1770)	53 (301)	601 (3440)			
27	478 (2080)	81 (354)	929 (4050)	1440 (2460)	244 (417)	2590 (4420)
28	721 (1780)	122 (303)	1400 (3470)	2360 (2400)	400 (408)	4250 (4330)
29	469 (1600)	80 (272)	911 (3110)	707 (2050)	120 (348)	1270 (3690)
30	756 (1830)	128 (311)	1470 (3570)	1600 (2310)	272 (392)	2890 (4150)
31	198 (1770)	34 (301)	386 (3450)	791 (2150)	134 (366)	1420 (3880)
Avg	461	78	896	1380	234	2480
n	11	11	11	5	5	5
SD	389	66	756	601	102	1080
Min	-544	-92	-1060	707	120	1270
Max	955	162	1860	2360	400	4250

Table E6. Daily means (SD) of TSP emissions at site CA5B for February, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1	434 (2240)	74 (381)	845 (4360)	1050 (2060)	178 (350)	1890 (3710)
2	247 (2260)	42 (383)	480 (4390)	689 (2290)	117 (390)	1240 (4130)
3	-537 (2990)	-91 (509)	-1040 (5820)	2430 (4130)	413 (702)	4380 (7450)
4	6000 (10900)	1020 (1840)	11700 (21100)	8660 (12500)	1470 (2120)	15600 (22400)
5	2030 (3780)	345 (642)	3950 (7350)	3020 (5050)	514 (858)	5450 (9100)
6	1830 (3240)	312 (550)	3570 (6300)	2510 (4530)	426 (769)	4520 (8160)
7	1990 (4570)	339 (776)	3880 (8880)	3230 (5410)	548 (920)	5810 (9750)
8	441 (4880)	75 (829)	857 (9490)	776 (5120)	132 (869)	1400 (9220)
9	1590 (3350)	270 (568)	3090 (6510)	2200 (4780)	374 (811)	3960 (8600)
10	537 (4980)	91 (847)	1040 (9690)	825 (4480)	140 (761)	1490 (8070)
11	869 (3950)	148 (671)	1690 (7690)	1630 (4850)	276 (824)	2930 (8740)
12	963 (5030)	164 (854)	1870 (9780)	520 (3080)	88 (523)	937 (5550)
13	32900 (65400)	5590 (11100)	64000 (127000)	30600 (55700)	5190 (9460)	55100 (100000)
14						
15	3700 (6600)	629 (1120)	7200 (12800)	3190 (6420)	542 (1090)	5740 (11600)
16	2530 (5070)	429 (860)	4910 (9850)	1730 (4360)	293 (740)	3110 (7850)
17	3660 (6440)	622 (1090)	7120 (12500)	2170 (5540)	369 (941)	3910 (9980)
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
Avg	3700	628	7190	4070	692	7340
n	16	16	16	16	16	16
SD	7700	1310	15000	7090	1200	12800
Min	-537	-91	-1040	520	88	937
Max	32900	5590	64000	30600	5190	55100

Table E6. Daily means (SD) of TSP emissions at site CA5B for June, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1						
2						
3						
4						
5	11700 (23600)	1990 (4010)	21900 (44300)	7230 (9650)	1230 (1640)	13600 (18200)
6	7440 (10500)	1260 (1780)	14000 (19700)	13500 (14300)	2300 (2420)	25500 (26900)
7	13500 (18800)	2290 (3200)	25300 (35500)	19000 (21200)	3230 (3610)	35800 (40000)
8	3430 (8500)	583 (1440)	6470 (16000)	6320 (12200)	1070 (2070)	11900 (23000)
9	3870 (9150)	657 (1550)	7300 (17300)	7520 (13600)	1280 (2310)	14200 (25700)
10	45700 (68600)	7760 (11600)	86400 (130000)	43400 (64100)	7360 (10900)	81800 (121000)
11	13700 (20600)	2330 (3500)	26000 (39000)	19500 (19100)	3300 (3250)	36700 (36100)
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
Avg	14200	2410	26800	16600	2820	31400
n	7	7	7	7	7	7
SD	13500	2290	25500	12000	2050	22700
Min	3430	583	6470	6320	1070	11900
Max	45700	7760	86400	43400	7360	81800

Table E6. Daily means (SD) of TSP emissions at site CA5B for September, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12	7500 (16500)	1270 (2790)	15700 (34600)			
13	3590 (15100)	610 (2570)	7550 (31800)			
14	1730 (7150)	293 (1210)	3630 (15000)			
15	3930 (8880)	668 (1510)	8280 (18700)			
16	3280 (9830)	557 (1670)	6920 (20700)			
17	631 (9550)	107 (1620)	1330 (20200)			
18	782 (8850)	133 (1500)	1650 (18700)	4720 (53400)	801 (9070)	9070 (103000)
19	3860 (11100)	655 (1890)	8160 (23500)	5580 (15600)	948 (2650)	10700 (30000)
20	-973 (14500)	-165 (2460)	-2060 (30600)	8050 (34600)	1370 (5870)	15500 (66500)
21	-2060 (12500)	-349 (2120)	-4360 (26400)	4600 (18900)	781 (3200)	8860 (36300)
22	6470 (15200)	1100 (2580)	13700 (32200)	7600 (14100)	1290 (2400)	14700 (27200)
23	5140 (11600)	874 (1960)	10900 (24600)	5510 (10100)	935 (1720)	10600 (19600)
24	7630 (18700)	1300 (3180)	16200 (39800)	8870 (20300)	1510 (3460)	17100 (39300)
25	9870 (24800)	1680 (4210)	21000 (52800)	6920 (17400)	1180 (2950)	13400 (33600)
26	4180 (11200)	710 (1890)	8900 (23700)	17200 (42000)	2920 (7130)	33300 (81100)
27	2130 (7740)	361 (1310)	4530 (16400)	8300 (21400)	1410 (3630)	16100 (41300)
28	1530 (6920)	259 (1180)	3250 (14700)	6720 (19400)	1140 (3290)	13000 (37500)
29	5560 (16500)	945 (2800)	11800 (35100)	6460 (13500)	1100 (2300)	12500 (26200)
30	4110 (9530)	698 (1620)	8730 (20300)	3250 (10200)	551 (1740)	6290 (19800)
Avg	3630	616	7680	7210	1230	13900
n	19	19	19	13	13	13
SD	2950	502	6270	3280	557	6340
Min	-2060	-349	-4360	3250	551	6290
Max	9870	1680	21000	17200	2920	33300

Table E6. Daily means (SD) of TSP emissions at site CA5B for October, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1	4640 (14400)	788 (2450)	9860 (30700)	14000 (54200)	2380 (9210)	27100 (105000)
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
Avg						
n	1	1	1	1	1	1
SD						
Min						
Max						

Table E6. Daily means (SD) of TSP emissions at site CA5B for January, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15	317 (2090)	54 (355)	694 (4570)	-32 (1400)	-6 (238)	-58 (2520)
16	730 (2570)	124 (437)	1590 (5600)	106 (1800)	18 (305)	191 (3230)
17						
18						
19						
20						
21	45 (1730)	8 (294)	97 (3640)	-24 (1460)	-4 (249)	-43 (2640)
22	-360 (1290)	-61 (218)	-756 (2700)	-236 (915)	-40 (155)	-425 (1650)
23						
24						
25	-481 (2300)	-82 (391)	-993 (4750)	-90 (1430)	-15 (244)	-162 (2590)
26	-25 (2200)	-4 (374)	-52 (4500)	34 (1600)	6 (272)	62 (2900)
27						
28						
29						
30						
31						
Avg	38	6	96	-40	-7	-73
n	6	6	6	6	6	6
SD	406	68.9	868	106	18.1	192
Min	-481	-82	-993	-236	-40	-425
Max	730	124	1590	106	18	191

Table E6. Daily means (SD) of TSP emissions at site CA5B for June, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26	5720 (14300)	972 (2420)	10200 (25300)	20000 (38100)	3400 (6470)	33500 (63700)
27	11900 (26400)	2030 (4490)	21100 (46900)	21100 (52000)	3580 (8830)	35300 (87000)
28	8180 (21600)	1390 (3670)	14500 (38200)	16800 (40300)	2850 (6850)	28000 (67400)
29	4150 (17000)	705 (2880)	7340 (30000)	13600 (32200)	2310 (5460)	22700 (53700)
30	12500 (26800)	2130 (4550)	22100 (47300)	19600 (35200)	3330 (5980)	32800 (58800)
Avg	8500	1440	15100	18200	3090	30400
n	5	5	5	5	5	5
SD	3310	562	5850	2730	463	4570
Min	4150	705	7340	13600	2310	22700
Max	12500	2130	22100	21100	3580	35300

Table E6. Daily means (SD) of TSP emissions at site CA5B for July, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹
1	10800 (21600)	1830 (3670)	19000 (38100)	14400 (29800)	2440 (5060)	24000 (49700)
2	11400 (20700)	1930 (3510)	20100 (36400)	12200 (27200)	2070 (4610)	20300 (45300)
3	11400 (31000)	1940 (5260)	20100 (54500)	23900 (52200)	4050 (8870)	39800 (87100)
4	9570 (20700)	1630 (3520)	16800 (36400)	10200 (23000)	1730 (3900)	17000 (38300)
5	8830 (18400)	1500 (3130)	15500 (32300)	18300 (37400)	3100 (6350)	30400 (62300)
6	6590 (28900)	1120 (4910)	11600 (50600)	13600 (41400)	2310 (7020)	22700 (68900)
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
Avg	9770	1660	17200	15400	2620	25700
n	6	6	6	6	6	6
SD	1700	289	3020	4500	764	7500
Min	6590	1120	11600	10200	1730	17000
Max	11400	1940	20100	23900	4050	39800

Table E7. Hydrogen sulfide concentrations.

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for September, 2007.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	$\mu\text{g}\cdot\text{dsm}^{-3}$	ppb	$\mu\text{g}\cdot\text{dsm}^{-3}$
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27	14.5 (14.6)	17.9 (13.7)	13.2 (8.6)	16.1 (14.4)	23.0 (20.6)	11.1 (7.7)	15.9 (10.9)
28	5.1 (2.1)						
29							
30							
Avg	9.8						
n	2	1	1	1	1	1	1
SD	4.7						
Min	5.1						
Max	14.5						

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for October, 2007.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	$\mu\text{g}\cdot\text{dsm}^{-3}$	ppb	$\mu\text{g}\cdot\text{dsm}^{-3}$
1							
2							
3							
4							
5							
6	10.3 (13.2)						
7	7.5 (7.3)						
8	14.5 (13.2)						
9	10.6 (9.6)						
10							
11							
12							
13	3.0 (1.1)						
14	3.2 (2.6)						
15	2.7 (0.8)						
16	2.6 (0.7)						
17	3.1 (1.7)						
18	3.1 (1.6)						
19	3.7 (2.1)	5.1 (2.7)					
20	2.8 (0.8)	4.0 (1.0)					
21	2.9 (0.8)	4.3 (1.4)					
22	3.1 (1.3)	4.2 (1.1)					
23	5.0 (3.1)	6.8 (3.7)					
24	3.8 (2.2)						
25	3.8 (2.1)	5.7 (2.5)					
26	4.1 (2.4)						
27	3.3 (1.2)	4.7 (1.4)					
28	3.7 (1.5)	5.4 (1.7)					
29	3.5 (1.3)	4.8 (1.2)					
30	6.4 (8.6)	7.4 (7.4)					
31	19.3 (18.4)	18.8 (14.4)	20.5 (14.7)				
Avg	5.5	6.5					
n	23	11	1	0	0	0	0
SD	4.2	4					
Min	2.6	4.0					
Max	19.3	18.8					

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for November, 2007.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	µg·dsm ⁻³	ppb	µg·dsm ⁻³
1	16.9 (12.9)	20.1 (13.5)	22.6 (15.2)				
2	13.3 (12.3)	13.5 (7.0)	15.5 (7.5)				
3	16.5 (10.7)	19.9 (13.4)	22.6 (14.1)				
4	24.0 (19.6)	27.2 (22.7)	29.5 (24.8)				
5	27.9 (26.3)	30.1 (20.3)	33.6 (24.7)				
6	15.3 (9.4)	19.5 (13.4)	20.9 (12.7)				
7	24.7 (22.2)	23.0 (15.1)	25.0 (16.1)				
8	9.1 (6.7)	14.2 (9.5)	15.1 (9.4)				
9	16.2 (14.9)	16.0 (11.1)	17.5 (10.9)				
10	31.9 (40.4)	27.6 (26.4)	29.7 (29.0)				
11	7.5 (3.5)	10.1 (4.3)	10.9 (4.0)				
12	22.8 (27.5)	23.6 (22.2)	24.5 (18.9)				
13	17.1 (12.4)	21.9 (12.0)	23.3 (13.1)				
14	18.5 (10.9)						
15	18.1 (22.5)	19.7 (22.6)	20.9 (21.3)				
16	15.3 (12.1)	35.4 (48.7)	33.1 (35.8)				
17	41.8 (46.6)	38.1 (53.0)	41.8 (44.8)				
18	17.7 (10.4)	37.8 (43.7)	41.6 (41.6)				
19	22.6 (27.8)	23.5 (25.2)	25.8 (25.7)				
20	44.8 (32.2)	40.7 (26.3)	43.3 (26.6)				
21	35.2 (26.0)	40.6 (31.1)	41.1 (27.2)				
22	34.3 (28.9)	35.1 (24.5)	38.5 (23.0)				
23	22.4 (18.5)	30.8 (27.0)	30.3 (22.0)				
24	24.2 (18.6)	33.6 (36.8)	36.9 (40.6)				
25	26.2 (19.4)	60.5 (61.1)	44.5 (27.2)				
26	23.4 (13.8)	34.2 (35.8)	42.7 (63.0)				
27	22.0 (10.4)	29.8 (21.0)	35.0 (37.9)				
28	15.5 (6.8)	46.0 (39.9)	37.5 (37.1)				
29	30.4 (30.9)	24.4 (16.6)	28.1 (22.4)				
30	35.8 (37.1)	30.4 (19.5)	19.9 (12.0)				
Avg	23.0	28.5	29.4				
n	30	29	29	0	0	0	0
SD	8.9	10.7	9.5				
Min	7.5	10.1	10.9				
Max	44.8	60.5	44.5				

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for December, 2007.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	µg·dsm ⁻³	ppb	µg·dsm ⁻³
1	13.2 (20.6)	17.8 (26.6)	6.2 (7.1)	12.0 (7.0)	17.1 (9.9)		
2	7.0 (3.4)	4.6 (4.0)	3.7 (4.9)	7.0 (2.6)	9.9 (3.8)		
3	8.8 (5.3)	15.1 (25.9)	4.9 (4.7)	13.9 (13.2)	19.8 (18.8)		
4	10.2 (5.3)	15.0 (16.4)	12.8 (11.2)	11.6 (7.8)	16.5 (11.2)		
5	16.5 (12.4)	38.3 (39.3)	21.9 (20.5)	21.9 (24.6)	31.3 (35.2)		
6	15.4 (12.4)	5.4 (3.9)	3.5 (1.8)	9.8 (4.0)	14.0 (5.7)		
7	22.6 (17.5)	23.9 (20.2)	21.0 (19.8)	16.4 (7.4)	23.4 (10.6)		
8	20.5 (18.1)	41.2 (36.3)	29.2 (25.9)	25.2 (19.7)	35.9 (28.1)		
9	8.7 (4.2)	28.0 (22.4)	43.6 (50.1)	27.7 (27.2)	39.4 (38.7)		
10	22.8 (13.0)	31.8 (26.2)	36.8 (62.0)	38.7 (61.3)	55.2 (87.4)		
11	11.2 (4.6)	52.4 (72.9)	36.2 (42.0)	97.7 (187.0)	139.0 (266.0)		
12	18.6 (13.1)						
13	39.5 (44.6)	58.0 (51.0)	37.2 (28.8)	49.1 (56.9)	69.9 (81.0)		
14	16.5 (16.7)	18.9 (28.1)	11.2 (13.2)	20.2 (24.1)	28.8 (34.3)		
15	36.1 (29.1)	117.0 (113.0)	55.0 (40.6)	122.0 (169.0)	174.0 (241.0)		
16	21.4 (17.1)	16.0 (26.3)	9.1 (9.3)	15.8 (19.9)	22.4 (28.3)		
17	6.6 (1.2)	5.2 (3.9)	3.7 (2.6)	8.8 (2.8)	12.5 (3.9)		
18	7.7 (4.4)	7.1 (6.4)	9.8 (6.1)	9.9 (5.2)	14.2 (7.4)		
19	21.4 (11.4)	22.2 (29.8)	19.1 (26.2)	23.8 (26.3)	34.0 (37.6)		
20	21.2 (7.7)	34.2 (31.9)	16.9 (13.4)	21.7 (16.0)	30.9 (22.7)		
21	26.5 (25.3)	33.3 (46.1)	16.1 (10.1)	24.2 (15.0)	34.5 (21.3)		
22	26.4 (25.9)	27.7 (25.7)	24.7 (28.0)	25.2 (19.8)	35.8 (28.2)		
23	9.9 (2.0)	34.5 (32.4)	23.1 (21.7)	24.9 (27.8)	35.4 (39.6)		
24	18.2 (7.3)	9.7 (9.4)	7.9 (7.9)	14.0 (7.4)	20.0 (10.6)		
25	20.1 (16.3)	25.5 (17.7)	21.6 (21.2)	25.9 (28.6)	36.9 (40.8)		
26	8.5 (4.2)	17.8 (21.3)	9.6 (9.5)	21.1 (25.5)	30.1 (36.3)		
27	9.7 (5.1)	15.1 (11.5)	11.8 (15.5)				
28	13.4 (15.4)	3.6 (2.7)	6.0 (8.8)	9.0 (4.3)	12.8 (6.2)		
29	11.1 (10.5)	8.8 (7.9)	5.9 (3.0)	14.0 (12.9)	20.0 (18.5)		
30	14.6 (7.1)	25.1 (16.8)	20.5 (13.4)	24.8 (16.6)	35.4 (23.7)		
31	18.5 (10.8)	28.9 (17.6)	18.1 (10.1)	21.1 (10.2)	30.0 (14.4)		
Avg	16.9	26.1	18.2	26.1	37.2		
n	31	30	30	29	29	0	0
SD	8	21.6	12.9	24.7	35.2		
Min	6.6	3.6	3.5	7.0	9.9		
Max	39.5	117	55	122	174		

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for January, 2008.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	µg·dsm ⁻³	ppb	µg·dsm ⁻³
1	15.3 (5.4)	36.9 (37.1)	21.7 (21.1)	20.8 (14.2)	29.7 (20.2)		
2	23.7 (12.9)	48.2 (54.0)	25.0 (25.9)	26.6 (24.5)	37.9 (35.0)		
3	15.9 (4.1)	40.5 (34.2)	24.2 (16.9)	32.6 (28.8)	46.5 (41.0)		
4	7.4 (0.8)	4.6 (5.0)	4.3 (3.2)	9.8 (7.7)	13.9 (10.9)		
5	7.5 (1.9)	8.4 (10.5)	6.7 (8.2)	10.4 (7.0)	14.8 (10.0)		
6	7.7 (2.4)	29.6 (55.6)	14.0 (29.3)	35.5 (57.2)	50.6 (81.5)		
7	42.4 (41.8)	47.6 (31.4)	44.2 (32.9)	36.5 (24.6)	52.7 (35.2)		
8	8.9 (4.5)	7.2 (5.3)	5.8 (3.6)	9.6 (2.9)	13.7 (4.2)		
9	27.3 (15.2)	38.1 (32.4)	23.2 (19.8)	32.2 (25.8)	45.9 (36.7)		
10	16.2 (14.7)	14.5 (14.5)	9.8 (7.2)	16.3 (11.8)	23.2 (16.9)		
11	19.3 (13.1)						
12	23.5 (16.1)	31.0 (23.7)	24.6 (22.3)	28.0 (19.4)	39.9 (27.7)		
13	25.3 (18.8)	55.5 (62.2)	53.0 (67.8)	44.5 (53.1)	63.6 (75.8)		
14	15.0 (11.9)	31.9 (27.4)	22.9 (17.5)	25.9 (19.2)	37.0 (27.4)	30.0 (22.3)	42.6 (31.7)
15	16.8 (4.9)	37.9 (40.6)	31.3 (35.1)	32.9 (33.8)	49.3 (49.3)	25.9 (31.3)	36.9 (44.6)
16	31.1 (44.6)	61.6 (69.3)	39.6 (29.4)	43.9 (40.2)	62.5 (57.2)	34.7 (34.2)	49.5 (48.7)
17	31.9 (31.6)	36.8 (23.2)	34.5 (14.5)	34.2 (20.6)	48.6 (29.3)	27.4 (16.3)	39.0 (23.3)
18	29.8 (16.7)	38.4 (49.0)	25.0 (15.4)	32.8 (27.8)	46.8 (39.7)	21.5 (11.9)	30.7 (16.9)
19	17.8 (8.2)	38.5 (46.8)	16.9 (13.9)	31.2 (28.6)	44.5 (40.8)	16.7 (9.6)	23.8 (13.7)
20	45.0 (25.3)						
21	15.5 (7.2)	10.4 (7.1)	10.8 (8.5)	14.2 (7.1)	20.3 (10.0)	16.4 (14.6)	23.3 (20.8)
22	7.5 (3.8)	15.5 (21.6)	10.1 (7.4)	11.9 (10.6)	16.9 (15.1)	10.6 (10.7)	15.0 (15.3)
23	9.4 (3.7)	13.6 (9.6)	11.2 (6.0)	12.2 (6.3)	17.4 (9.0)	9.8 (4.5)	14.0 (6.5)
24	10.7 (6.0)	5.6 (1.7)	7.0 (3.0)	7.2 (1.9)	10.3 (2.7)	7.9 (2.9)	11.3 (4.1)
25	6.2 (1.8)						
26	6.6 (3.4)	13.2 (13.2)	6.9 (9.2)	11.3 (9.1)	16.2 (12.9)	7.3 (6.9)	10.4 (9.8)
27	6.0 (3.2)	20.3 (21.5)	9.5 (10.7)	14.9 (16.7)	21.3 (23.8)	8.7 (7.3)	12.5 (10.4)
28	8.6 (5.5)	53.1 (57.3)	66.3 (73.6)	39.4 (47.0)	56.0 (66.9)	37.8 (37.3)	53.9 (53.1)
29	12.9 (9.6)	17.3 (15.5)	24.5 (33.6)	18.7 (23.5)	26.7 (33.5)	14.6 (13.5)	20.7 (19.2)
30	16.4 (12.6)	52.4 (41.4)	40.9 (24.0)	33.7 (24.8)	48.1 (35.4)	32.5 (15.7)	46.4 (22.3)
31	20.5 (24.2)	17.0 (17.3)	11.6 (14.1)	14.1 (10.9)	20.1 (15.5)	10.0 (10.3)	14.2 (14.7)
Avg	17.7	29.5	22.3	24.3	34.8	19.5	27.8
n	31	28	28	28	28	16	16
SD	10.2	16.7	15.2	11.4	16.3	10.2	14.5
Min	6.0	4.6	4.3	7.2	10.3	7.3	10.4
Max	45	61.6	66.3	44.5	63.6	37.8	53.9

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for February, 2008.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	µg·dsm ⁻³	ppb	µg·dsm ⁻³
1	24.0 (20.9)	36.7 (29.1)	29.7 (24.2)	25.8 (20.3)	36.7 (28.9)	27.5 (15.2)	39.1 (21.7)
2	11.4 (7.4)	37.1 (59.6)	16.6 (16.3)	23.2 (37.8)	33.0 (53.9)	12.7 (8.8)	18.1 (12.5)
3	20.6 (10.8)	20.2 (17.7)	15.1 (10.6)	16.7 (11.4)	24.1 (16.3)	12.9 (6.0)	18.4 (8.5)
4	20.1 (17.3)	45.0 (59.3)	19.3 (16.1)	24.7 (28.1)	35.1 (39.9)	11.9 (11.3)	16.9 (16.1)
5	49.1 (38.0)	74.2 (62.3)	29.5 (24.7)	39.7 (38.9)	56.5 (55.3)	20.9 (15.3)	29.8 (21.8)
6	33.9 (19.1)	43.8 (36.2)	20.9 (16.6)	25.2 (21.2)	35.9 (30.2)	15.0 (10.9)	21.4 (15.5)
7	23.2 (25.2)	60.1 (77.8)	19.3 (15.9)	28.8 (38.3)	41.0 (54.5)	13.8 (7.5)	19.7 (10.7)
8	35.7 (28.2)	51.2 (38.8)	37.6 (48.4)	33.8 (33.7)	48.1 (48.0)	22.4 (21.2)	32.0 (30.3)
9	7.8 (5.0)	48.7 (57.8)	41.2 (50.6)	32.8 (44.3)	46.8 (63.1)	45.0 (84.2)	64.3 (120.0)
10	17.0 (12.4)	36.3 (32.7)	37.0 (28.8)	31.6 (29.0)	45.0 (41.3)	25.6 (24.7)	36.6 (35.2)
11	52.6 (42.1)	50.8 (32.5)	49.8 (42.0)	40.7 (33.4)	58.0 (47.6)	30.6 (30.8)	43.7 (43.9)
12	17.2 (9.2)	34.2 (28.1)	21.2 (20.0)	25.2 (20.2)	36.0 (28.9)	16.3 (13.5)	23.3 (19.3)
13	17.3 (15.3)	27.3 (45.4)	21.6 (33.8)	19.9 (27.3)	28.3 (38.8)	13.7 (15.2)	19.5 (21.7)
14	2.7 (1.2)						
15	24.8 (21.6)	23.3 (23.2)	15.3 (13.4)	18.5 (15.7)	26.3 (22.3)	12.0 (7.4)	17.0 (10.6)
16	24.8 (22.6)	59.2 (43.7)	38.9 (31.9)	34.5 (28.9)	49.1 (41.2)	33.2 (23.1)	47.3 (32.9)
17	27.5 (18.6)	62.5 (52.4)	53.1 (48.0)	41.8 (38.6)	59.6 (54.9)		
18	8.6 (4.4)		58.0 (88.6)	37.7 (44.2)	53.7 (62.9)		
19	17.4 (20.5)	18.0 (16.1)	38.5 (52.0)	21.5 (25.5)	30.6 (36.5)	39.0 (63.4)	55.7 (90.6)
20	11.6 (12.1)	34.5 (48.9)	37.7 (55.0)	26.4 (35.3)	37.6 (50.3)	42.7 (75.7)	60.9 (108.0)
21	6.9 (5.8)	7.6 (14.8)	11.7 (28.9)	8.4 (8.6)	12.0 (12.3)	14.5 (33.5)	20.6 (47.8)
22	18.3 (12.1)	36.7 (37.4)	24.6 (11.7)	22.1 (16.6)	32.7 (24.0)		
23	6.2 (7.5)	6.1 (8.1)	4.3 (5.7)	6.9 (4.8)	9.8 (6.9)		
24	7.5 (3.5)	8.5 (10.1)	7.2 (10.1)	8.7 (7.2)	12.6 (10.3)		
25	12.4 (15.5)	50.5 (52.1)	32.1 (27.7)	31.7 (32.4)	45.1 (46.2)		
26	54.1 (49.5)	65.2 (52.0)	34.9 (28.2)	39.3 (31.8)	56.0 (45.4)		
27	28.3 (21.3)	60.6 (54.9)	42.7 (28.0)	37.7 (32.2)	53.7 (45.9)	36.6 (32.1)	52.2 (45.8)
28	7.6 (6.6)	43.9 (45.9)	35.5 (38.4)	31.0 (31.5)	44.2 (44.9)	31.9 (36.4)	45.5 (52.0)
29	24.3 (34.3)	24.7 (37.4)	29.0 (46.3)	22.2 (34.6)	31.8 (49.5)	22.9 (36.4)	32.8 (52.0)
Avg	21.1	39.5	29.4	27.0	38.5	23.9	34.0
n	29	27	28	28	28	21	21
SD	13.4	18.1	13.3	9.6	13.6	10.6	15.2
Min	2.7	6.1	4.3	6.9	9.8	11.9	16.9
Max	54.1	74.2	58	41.8	59.6	45	64.3

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for March, 2008.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	µg·dsm ⁻³	ppb	µg·dsm ⁻³
1	5.5 (3.1)	8.7 (8.7)	9.1 (8.7)			8.5 (8.2)	12.2 (11.6)
2	25.6 (49.2)	10.2 (12.7)	9.0 (9.2)			11.9 (17.8)	16.9 (25.4)
3	18.3 (14.3)	17.5 (14.8)	17.0 (15.4)			18.1 (16.2)	25.8 (23.1)
4	30.0 (32.7)	24.5 (20.8)	22.7 (17.9)			27.6 (26.2)	39.4 (37.3)
5	27.1 (27.8)	29.0 (22.9)	29.7 (27.1)			27.9 (23.7)	39.8 (33.8)
6	27.2 (20.9)	31.7 (22.5)	33.7 (26.0)			34.7 (28.1)	49.5 (40.0)
7	25.0 (13.8)	28.3 (27.3)	30.1 (27.0)			27.4 (25.1)	39.1 (35.8)
8	17.0 (20.7)	19.2 (19.9)	21.0 (22.1)			19.3 (19.8)	27.5 (28.3)
9	30.9 (12.1)	24.9 (21.9)	28.2 (27.0)			26.1 (27.1)	37.2 (38.6)
10	18.0 (15.2)	17.2 (15.6)	18.0 (16.7)			17.8 (16.6)	25.3 (23.7)
11	19.8 (20.5)	26.2 (33.2)	28.0 (39.8)			28.0 (36.4)	40.0 (52.0)
12	7.1 (2.6)	14.7 (12.0)	15.5 (14.2)			13.5 (10.2)	19.3 (14.6)
13	14.1 (7.7)	11.2 (9.8)	11.1 (10.4)			11.8 (13.1)	16.9 (18.7)
14	4.9 (3.6)	11.1 (8.7)	10.0 (7.8)			12.4 (11.7)	17.6 (16.6)
15	6.2 (3.0)	9.3 (12.0)	8.3 (15.1)			8.7 (10.3)	12.4 (14.7)
16	2.2 (1.4)	3.1 (2.8)	0.7 (4.0)			3.5 (3.4)	4.9 (4.9)
17	31.9 (35.4)	12.3 (10.2)	10.7 (10.9)			13.9 (12.5)	19.8 (17.8)
18	17.2 (13.8)	8.8 (7.9)	7.7 (8.9)			9.2 (8.8)	13.1 (12.6)
19	5.7 (4.8)	5.4 (4.7)	3.8 (3.5)			6.1 (6.0)	8.7 (8.5)
20	6.7 (6.6)	5.2 (4.0)	5.2 (3.8)			5.6 (4.5)	7.9 (6.4)
21	9.1 (6.1)	7.0 (7.3)	7.9 (8.9)			7.4 (7.5)	10.5 (10.7)
22	14.0 (13.5)	13.8 (10.2)	16.8 (19.6)			15.3 (13.4)	21.8 (19.1)
23	17.4 (15.6)	20.4 (22.4)	19.3 (22.3)			20.9 (23.8)	29.8 (33.9)
24	5.9 (5.1)	8.2 (6.3)	7.8 (5.9)			8.7 (8.0)	12.5 (11.4)
25	2.3 (1.2)	6.8 (9.1)	7.1 (9.2)			7.3 (10.5)	10.4 (15.0)
26	5.3 (3.2)	5.7 (7.0)	5.7 (7.5)			5.5 (6.4)	7.9 (9.2)
27	10.7 (9.1)	6.4 (5.8)	6.3 (5.8)			7.4 (7.0)	10.5 (10.0)
28	3.6 (3.4)	5.4 (4.3)	5.5 (4.6)			5.9 (5.2)	8.4 (7.5)
29	5.0 (3.3)	5.0 (4.5)	5.1 (4.6)			5.4 (4.9)	7.8 (7.1)
30	3.2 (1.8)	4.2 (3.2)	4.2 (3.3)			4.2 (3.1)	6.0 (4.4)
31	3.9 (2.5)	10.2 (10.6)	11.0 (15.6)			11.3 (12.4)	16.1 (17.6)
Avg	13.6	13.3	13.4			13.9	19.8
n	31	31	31	0	0	31	31
SD	9.5	8.2	9			8.5	12.2
Min	2.2	3.1	0.7			3.5	4.9
Max	31.9	31.7	33.7			34.7	49.5

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for April, 2008.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	µg·dsm ⁻³	ppb	µg·dsm ⁻³
1	11.5 (10.7)	13.9 (15.9)	15.4 (20.6)			15.1 (19.7)	21.5 (28.1)
2	10.5 (8.0)	11.4 (14.1)	11.1 (13.8)			11.2 (13.9)	16.0 (19.8)
3	6.2 (4.9)	6.7 (6.4)	6.9 (7.3)			7.2 (6.8)	10.3 (9.7)
4	3.1 (0.8)						
5	2.3 (1.6)						
6	4.1 (2.9)	4.7 (3.1)	4.9 (3.0)			4.9 (3.1)	
7	16.0 (22.6)	6.1 (7.8)	5.5 (6.0)			6.8 (9.6)	
8	4.3 (2.4)	4.3 (1.5)	4.6 (1.8)			4.4 (2.0)	
9	3.6 (1.5)	4.4 (4.6)	4.6 (4.3)			4.9 (5.5)	
10	6.2 (6.2)	6.4 (5.5)	6.3 (5.3)			6.8 (5.8)	
11	20.0 (16.4)	15.7 (13.5)	15.2 (12.4)			17.0 (14.9)	
12	14.5 (21.4)	14.6 (18.6)	13.7 (17.5)			14.6 (19.4)	
13	20.7 (24.4)	11.6 (13.8)	11.7 (14.3)			11.3 (12.4)	
14	3.3 (1.6)	4.1 (2.0)	4.6 (2.6)			4.3 (1.9)	
15	4.4 (8.0)	3.3 (3.0)	1.9 (3.7)			3.6 (3.0)	5.1 (4.3)
16	27.0 (35.9)	7.3 (8.1)	5.1 (7.7)			8.5 (10.3)	12.1 (14.6)
17	4.5 (6.3)	7.3 (7.0)	8.8 (9.4)			7.7 (7.8)	11.0 (11.1)
18	7.1 (5.2)	6.8 (7.2)	6.3 (10.2)			7.8 (8.9)	11.1 (12.7)
19	5.1 (2.5)	4.4 (2.7)	2.9 (3.3)			4.8 (2.7)	6.8 (3.8)
20	2.9 (1.9)	3.9 (3.7)	3.1 (5.4)			4.1 (3.6)	5.8 (5.1)
21	4.0 (2.0)	3.3 (3.6)	1.5 (4.3)			3.5 (3.5)	5.0 (5.0)
22	3.1 (1.8)	6.9 (15.1)	3.8 (11.0)			7.3 (15.7)	10.4 (22.4)
23	5.5 (3.7)	4.5 (6.2)	3.4 (7.0)			4.9 (6.5)	7.0 (9.3)
24	7.1 (7.4)	3.5 (4.0)	2.5 (6.3)			4.1 (5.0)	5.8 (7.1)
25	3.9 (3.7)	4.7 (4.2)	2.9 (4.9)			5.2 (4.7)	7.5 (6.6)
26	23.5 (27.6)	7.1 (6.6)	3.7 (3.3)			8.2 (10.2)	11.7 (14.5)
27	12.0 (12.3)	8.1 (9.2)	4.2 (5.4)			8.2 (7.9)	11.7 (11.2)
28	2.8 (1.3)	4.1 (2.3)	2.3 (2.7)			4.5 (2.7)	6.4 (3.9)
29	6.5 (4.6)	4.3 (1.9)	2.7 (2.2)			4.7 (2.1)	6.6 (3.0)
30	4.3 (2.2)						
Avg	8.3	6.8	5.9			7.2	9.5
n	30	27	27	0	0	27	18
SD	6.7	3.5	4			3.6	4.2
Min	2.3	3.3	1.5			3.5	5.0
Max	27	15.7	15.4			17	21.5

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for May, 2008.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	µg·dsm ⁻³	ppb	µg·dsm ⁻³
1	3.4 (2.3)	4.1 (3.8)	2.5 (4.6)			4.4 (3.9)	6.3 (5.5)
2	7.6 (7.7)	5.7 (4.1)	4.4 (4.2)			6.2 (4.9)	8.8 (7.0)
3	4.3 (4.0)	3.0 (2.3)	1.9 (4.5)			3.5 (2.7)	5.1 (3.9)
4	3.2 (1.1)	3.4 (3.1)	1.7 (4.0)			3.6 (3.2)	5.1 (4.6)
5	2.1 (1.0)	4.0 (3.5)	2.5 (4.6)			4.2 (3.6)	6.0 (5.1)
6	3.4 (3.4)	3.5 (2.9)	2.2 (3.7)			3.7 (2.9)	5.3 (4.2)
7	1.6 (1.1)	3.9 (3.2)	3.5 (7.5)			4.4 (3.8)	6.3 (5.4)
8	6.7 (6.9)	4.2 (3.5)	2.4 (4.5)			4.5 (3.7)	6.4 (5.3)
9	3.3 (2.6)	2.3 (1.8)	0.4 (3.0)			2.6 (1.9)	3.7 (2.7)
10	3.2 (1.3)	4.0 (2.9)	3.4 (4.4)			4.4 (3.3)	6.2 (4.8)
11	4.3 (3.1)	3.8 (1.8)	2.1 (2.4)			4.0 (2.1)	5.7 (3.1)
12	1.9 (1.8)	2.1 (1.9)	0.7 (3.9)			2.9 (3.0)	4.1 (4.2)
13	9.8 (3.9)	-1.1 (2.7)	3.5 (3.2)			9.0 (3.0)	12.8 (4.2)
14	9.6 (2.7)	1.1 (4.7)	7.9 (8.1)			11.5 (5.7)	16.5 (8.1)
15	12.2 (5.3)	1.5 (4.6)	6.9 (5.9)			11.7 (4.9)	16.8 (7.0)
16	24.1 (19.2)						
17	15.8 (4.5)	4.1 (3.4)	12.3 (6.6)			14.3 (3.9)	20.5 (5.5)
18	12.3 (1.0)	2.9 (1.7)	9.6 (2.2)			12.9 (1.9)	18.4 (2.7)
19	13.4 (2.2)	3.3 (2.2)	10.3 (3.6)			13.3 (2.3)	19.0 (3.2)
20	13.2 (2.7)	3.1 (2.2)	9.7 (4.2)			13.0 (2.3)	18.6 (3.2)
21	13.1 (3.0)	2.1 (2.4)	8.2 (3.1)			12.0 (2.3)	17.2 (3.3)
22	11.0 (1.8)	1.3 (2.0)	7.2 (3.1)			11.3 (2.0)	16.1 (2.8)
23	14.7 (2.8)	3.1 (2.4)	9.4 (3.5)			13.1 (2.5)	18.7 (3.5)
24	14.5 (0.7)						
25	12.7 (1.0)						
26	10.9 (0.9)	1.4 (1.1)	7.2 (1.6)			11.4 (1.2)	16.3 (1.7)
27	12.2 (1.4)	11.6 (1.4)	7.9 (2.0)			12.2 (1.7)	17.5 (2.4)
28	14.9 (7.9)	7.2 (1.8)	6.6 (1.3)			11.9 (1.2)	16.9 (1.8)
29	11.6 (0.8)	8.2 (2.7)	7.6 (1.7)			12.4 (1.7)	17.8 (2.5)
30	12.0 (1.3)	6.7 (1.5)	7.2 (1.8)			11.9 (1.5)	17.0 (2.1)
31	12.3 (1.3)	6.9 (1.9)	7.1 (1.9)			11.9 (1.5)	17.0 (2.2)
Avg	9.5	3.8	5.6			8.7	12.4
n	31	28	28	0	0	28	28
SD	5.3	2.5	3.3			4.1	5.9
Min	1.6	-1.1	0.4			2.6	3.7
Max	24.1	11.6	12.3			14.3	20.5

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for June, 2008.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	µg·dsm ⁻³	ppb	µg·dsm ⁻³
1	12.3 (1.7)	7.5 (2.8)	7.6 (2.5)			12.2 (2.0)	17.5 (2.9)
2	11.4 (0.9)	7.4 (2.4)	8.1 (2.4)			12.4 (1.9)	17.6 (2.7)
3	11.9 (1.6)	7.7 (1.3)	7.9 (1.4)			12.3 (1.1)	17.6 (1.5)
4	15.1 (4.2)	8.1 (2.3)				12.7 (2.1)	18.1 (3.1)
5	12.9 (2.9)	8.1 (3.0)				13.2 (2.4)	18.9 (3.4)
6	13.6 (1.3)					14.8 (4.9)	21.1 (7.0)
7	12.1 (2.2)	10.3 (4.3)	12.2 (2.0)			13.0 (2.8)	18.5 (4.0)
8	16.9 (6.5)	10.7 (2.5)	13.4 (3.3)			13.7 (3.2)	19.5 (4.6)
9	12.1 (2.9)	13.8 (3.9)	13.3 (2.5)			14.6 (4.2)	20.8 (6.0)
10	11.2 (1.0)	13.1 (3.1)	12.2 (2.0)			12.8 (2.8)	18.3 (4.0)
11	12.2 (2.4)	13.4 (4.6)	13.1 (3.9)			13.6 (3.6)	19.3 (5.2)
12	21.6 (6.2)	16.6 (11.1)	14.7 (6.2)			17.5 (6.9)	26.0 (10.0)
13	15.8 (4.4)	13.2 (10.6)	18.2 (13.8)			15.7 (7.8)	22.5 (11.1)
14	11.1 (0.8)	8.9 (1.5)	11.9 (0.8)			12.0 (1.0)	17.2 (1.4)
15	11.9 (0.9)	11.6 (2.0)	13.4 (3.5)			13.2 (3.0)	18.8 (4.3)
16	12.8 (1.9)	12.9 (0.8)	12.6 (1.0)			12.6 (1.2)	17.9 (1.7)
17	12.0 (1.0)	13.1 (2.4)	12.8 (2.3)			12.8 (2.1)	18.2 (3.0)
18	11.8 (1.6)	13.0 (3.2)	12.0 (1.2)			13.1 (3.2)	18.6 (4.6)
19	15.8 (2.2)	14.6 (3.3)	14.0 (3.2)			15.7 (5.2)	23.1 (7.6)
20	13.0 (1.6)	18.8 (7.6)	18.5 (8.0)			17.5 (7.3)	25.1 (10.5)
21	16.2 (6.0)	24.1 (24.6)	18.6 (12.8)			21.8 (15.3)	31.2 (21.9)
22	11.9 (1.0)	13.2 (1.8)	12.8 (1.4)			13.2 (1.8)	18.9 (2.6)
23	12.3 (1.5)	13.9 (1.9)	13.7 (2.0)			13.6 (2.2)	19.4 (3.2)
24	14.1 (1.7)	14.2 (1.9)	13.4 (0.9)			13.3 (1.5)	19.1 (2.1)
25	12.0 (1.0)	14.0 (1.7)	13.0 (1.3)			13.0 (1.3)	18.6 (1.9)
26	13.1 (0.6)	14.5 (1.9)	14.1 (2.1)			13.5 (1.7)	19.3 (2.4)
27	15.9 (3.6)	13.7 (6.7)	13.5 (4.8)			15.0 (5.6)	21.5 (8.0)
28	11.3 (0.3)	6.6 (0.5)	7.4 (0.6)			11.6 (0.4)	16.5 (0.6)
29	11.2 (0.4)	7.6 (2.1)	7.8 (1.7)			11.3 (0.5)	16.2 (0.7)
30	11.4 (0.7)	11.6 (0.7)	11.6 (0.9)			11.5 (0.8)	16.4 (1.1)
Avg	13.2	12.3	12.7			13.8	19.7
n	30	29	27	0	0	30	30
SD	2.3	3.7	3			2.1	3.1
Min	11.1	6.6	7.4			11.3	16.2
Max	21.6	24.1	18.6			21.8	31.2

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for July, 2008.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	µg·dsm ⁻³	ppb	µg·dsm ⁻³
1	11.2 (0.7)					11.9 (1.1)	16.9 (1.6)
2	11.1 (0.5)	8.0 (2.1)	8.6 (1.5)			13.2 (2.1)	18.9 (3.0)
3	10.6 (0.4)	12.0 (2.7)	12.4 (2.1)			11.5 (0.8)	16.5 (1.1)
4	11.2 (1.1)	11.9 (1.5)	11.7 (1.1)			12.9 (3.0)	18.5 (4.3)
5	13.4 (2.5)	12.6 (5.3)	10.8 (2.7)			13.3 (2.3)	19.1 (3.2)
6	13.3 (1.4)	10.9 (5.0)	8.7 (2.8)				
7	12.8 (0.9)	14.6 (6.6)	17.5 (12.9)				
8	12.7 (0.7)						
9	12.3 (0.5)	11.7 (3.8)	9.6 (1.6)			14.2 (1.7)	20.4 (2.4)
10	17.0 (3.3)	13.2 (7.8)	9.3 (4.1)	15.8 (3.7)	22.6 (5.3)	12.9 (2.4)	18.5 (3.5)
11	11.9 (0.8)	9.5 (1.9)					
12	11.5 (0.6)	7.6 (0.7)		12.1 (0.6)	17.4 (0.9)		
13	11.3 (0.8)	7.1 (0.9)	6.5 (0.8)	11.4 (0.7)	16.4 (1.0)	11.5 (0.8)	16.5 (1.2)
14	11.6 (0.5)	7.2 (0.5)	6.4 (0.3)	11.6 (0.7)	16.7 (1.0)	11.5 (0.7)	16.4 (1.0)
15	11.1 (0.6)	7.1 (1.0)	6.6 (1.1)	11.9 (0.8)	17.0 (1.1)	12.0 (0.9)	17.1 (1.3)
16	14.8 (5.4)	9.1 (4.3)	9.0 (3.8)	12.4 (1.4)	17.7 (1.9)	13.8 (3.8)	19.8 (5.5)
17	16.8 (5.8)	9.7 (3.2)	8.3 (2.1)	14.2 (2.5)	20.4 (3.6)	12.5 (1.2)	17.9 (1.8)
18	15.6 (6.5)	9.4 (4.6)	8.8 (3.9)	12.2 (1.5)	17.4 (2.1)	13.4 (3.7)	19.2 (5.3)
19	12.9 (1.4)	9.5 (2.6)	8.4 (1.9)	14.2 (3.0)	20.4 (4.3)	12.6 (1.3)	18.1 (1.8)
20	11.7 (1.0)	7.0 (1.0)	6.4 (0.9)	11.8 (0.9)	16.9 (1.3)	11.3 (0.6)	16.2 (0.9)
21	11.2 (0.7)	6.3 (1.0)	6.7 (1.3)	11.5 (0.9)	16.4 (1.3)	11.6 (1.1)	16.5 (1.6)
22	17.6 (5.5)	10.6 (4.8)	8.3 (5.2)			12.6 (2.9)	18.0 (4.2)
23	21.7 (9.6)	18.0 (15.6)	12.2 (6.4)			15.1 (4.2)	21.7 (6.1)
24	12.2 (1.6)	12.4 (7.8)	8.9 (3.3)			12.5 (1.3)	17.9 (1.8)
25	12.4 (1.4)	15.2 (8.1)	10.0 (5.7)			13.5 (3.9)	19.5 (5.7)
26	13.9 (2.6)	9.0 (3.8)	9.1 (4.7)	12.7 (2.3)	18.2 (3.2)	13.4 (2.8)	19.1 (4.1)
27	13.8 (1.8)	9.2 (2.0)	8.0 (1.5)	13.1 (1.8)	18.8 (2.6)	12.9 (1.6)	18.5 (2.2)
28	11.6 (0.9)	8.0 (2.3)	7.6 (2.2)	12.4 (2.1)	17.7 (3.0)	12.3 (1.6)	17.5 (2.3)
29	12.8 (0.9)	10.2 (4.7)	8.9 (3.4)	13.1 (2.7)	18.8 (3.8)	14.5 (4.6)	20.7 (6.6)
30	14.2 (2.3)	9.7 (1.6)	8.5 (2.7)			13.5 (2.4)	19.6 (3.4)
31	24.6 (10.2)	10.2 (3.3)	10.6 (3.4)	14.7 (3.4)	21.1 (4.8)	14.0 (2.1)	20.1 (3.0)
Avg	13.6	10.2	9.2	12.8	18.4	12.9	18.4
n	31	29	27	16	16	26	26
SD	3.1	2.7	2.3	1.3	1.8	1	1.4
Min	10.6	6.3	6.4	11.4	16.4	11.3	16.2
Max	24.6	18	17.5	15.8	22.6	15.1	21.7

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for August, 2008.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	µg·dsm ⁻³	ppb	µg·dsm ⁻³
1	11.1 (0.8)	8.4 (3.0)	8.1 (2.5)	12.2 (1.6)	17.5 (2.3)	12.4 (1.7)	17.7 (2.4)
2	16.8 (2.8)	9.8 (4.0)	9.0 (3.2)	14.4 (3.6)	20.7 (5.1)	13.8 (3.8)	19.8 (5.5)
3	12.1 (0.7)	7.5 (2.2)	7.4 (1.9)	11.9 (1.4)	17.0 (1.9)	11.7 (1.1)	16.6 (1.5)
4	11.7 (1.2)	8.3 (3.3)	10.0 (7.3)	12.6 (1.5)	18.0 (2.2)	13.3 (5.0)	19.1 (7.1)
5	13.4 (2.8)	6.8 (1.2)	7.3 (1.9)	11.4 (0.7)	16.2 (1.0)	13.0 (2.4)	18.6 (3.5)
6	12.2 (1.2)	8.6 (3.5)	8.2 (2.7)	12.8 (2.4)	18.3 (3.4)	12.9 (1.9)	18.4 (2.7)
7	11.5 (0.8)	7.5 (2.0)	6.4 (0.9)	11.6 (0.9)	16.5 (1.3)	11.5 (1.3)	16.5 (1.9)
8	11.4 (0.5)	5.8 (0.7)	5.7 (0.8)	11.3 (0.9)	16.2 (1.2)	11.0 (0.5)	15.8 (0.7)
9	11.9 (1.5)	7.7 (3.0)	6.6 (1.4)	13.1 (3.6)	18.7 (5.1)	11.8 (0.9)	16.9 (1.3)
10	20.8 (12.6)	19.2 (14.8)	16.6 (12.8)	16.9 (5.8)	24.2 (8.3)	19.7 (11.5)	28.2 (16.5)
11	17.0 (8.8)	26.5 (23.5)	17.0 (10.0)	22.7 (14.4)	32.4 (20.6)	18.4 (6.9)	26.3 (9.8)
12	21.8 (9.1)	20.8 (18.6)	14.9 (9.2)	19.9 (11.1)	28.6 (15.9)	16.2 (5.1)	23.2 (7.3)
13	28.0 (17.7)	24.2 (24.8)	17.3 (13.0)	22.7 (17.1)	32.6 (24.5)	19.8 (9.1)	28.4 (13.0)
14	14.8 (3.6)	17.6 (11.4)	15.2 (11.5)	19.4 (7.5)	27.8 (10.8)	18.0 (10.0)	25.8 (14.4)
15	18.4 (4.8)	14.8 (9.8)	15.0 (14.3)	15.8 (2.6)	22.6 (3.8)	20.6 (18.3)	29.5 (26.2)
16	14.1 (1.6)	10.9 (3.3)	10.4 (2.9)	14.5 (1.9)	20.8 (2.8)	14.4 (2.2)	20.6 (3.2)
17	12.2 (1.9)	7.0 (0.7)	6.6 (0.5)	12.1 (0.7)	17.3 (1.0)	12.1 (0.7)	17.4 (1.0)
18	12.2 (0.6)	7.9 (3.1)	7.7 (5.0)	12.7 (1.7)	18.2 (2.5)	12.9 (4.2)	
19	11.7 (1.4)	7.6 (2.1)	7.3 (2.3)	12.2 (1.8)	17.5 (2.6)	12.6 (2.2)	18.0 (3.2)
20	13.6 (2.2)	9.5 (3.2)	9.6 (3.7)	13.4 (2.1)	19.2 (3.0)	13.3 (2.0)	19.1 (2.8)
21	16.0 (3.4)	10.5 (3.2)	11.0 (4.5)	15.0 (3.5)	21.5 (5.0)	14.1 (2.7)	20.2 (3.8)
22	12.6 (2.3)	12.0 (6.2)	11.2 (6.7)	13.8 (2.8)	19.8 (4.0)	14.5 (4.7)	20.8 (6.7)
23	12.5 (1.1)	8.0 (1.3)	6.8 (0.7)	12.4 (0.9)	17.8 (1.3)	11.7 (0.5)	16.8 (0.8)
24	15.1 (3.5)	10.3 (4.7)	7.7 (1.6)	14.4 (4.0)	20.6 (5.7)	12.2 (1.1)	17.5 (1.5)
25	12.9 (1.1)	9.4 (2.6)	7.9 (1.6)	13.8 (2.0)	19.7 (2.8)	12.9 (2.1)	18.5 (3.0)
26	15.4 (3.4)	9.8 (4.1)	11.0 (6.7)	13.7 (2.4)	19.5 (3.4)	14.6 (4.3)	20.9 (6.1)
27	18.8 (7.9)	20.6 (15.6)	21.6 (16.5)	21.3 (15.5)	30.5 (22.2)	21.6 (10.9)	30.9 (15.7)
28	15.5 (3.7)	18.0 (11.8)	14.6 (6.4)	22.5 (16.4)	33.3 (24.0)	16.8 (4.8)	24.5 (7.0)
29	17.0 (5.9)	16.1 (10.1)	13.6 (6.8)	17.4 (5.7)	24.9 (8.2)	17.7 (6.1)	25.4 (8.7)
30	16.8 (3.4)	29.0 (30.9)	21.0 (21.2)	28.2 (24.4)	40.3 (34.9)	20.8 (16.0)	29.8 (22.9)
31	12.3 (2.0)	9.3 (4.5)	9.7 (4.5)	14.1 (4.7)	20.1 (6.7)	13.1 (2.7)	18.8 (3.8)
Avg	14.9	12.6	11.1	15.5	22.2	14.8	21.3
n	31	31	31	31	31	31	30
SD	3.7	6.3	4.4	4.2	6.1	3.1	4.5
Min	11.1	5.8	5.7	11.3	16.2	11.0	15.8
Max	28	29	21.6	28.2	40.3	21.6	30.9

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for September, 2008.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	µg·dsm ⁻³	ppb	µg·dsm ⁻³
1	12.8 (2.0)	12.0 (6.5)	13.0 (9.7)	15.0 (4.3)	21.3 (6.1)	18.0 (10.3)	25.7 (14.7)
2	13.9 (3.4)	18.4 (21.8)	12.1 (7.4)	16.3 (8.5)	23.2 (12.1)	15.6 (5.2)	22.2 (7.5)
3	16.7 (4.2)	49.9 (56.1)	39.1 (37.8)	38.4 (42.7)	55.0 (61.0)	41.9 (42.9)	
4	45.1 (39.6)	47.3 (52.7)	18.4 (10.6)	43.3 (50.2)	61.9 (72.0)	18.7 (10.9)	
5	14.4 (4.7)	29.2 (23.6)	35.3 (42.0)	26.9 (20.1)	38.4 (28.7)	31.2 (32.4)	
6	15.2 (3.5)	22.4 (15.0)	16.7 (9.7)	24.4 (14.6)	34.9 (20.9)	20.3 (9.0)	29.1 (12.8)
7	25.0 (21.5)	14.0 (7.6)	14.1 (10.1)	17.1 (5.4)	24.4 (7.7)	19.5 (10.4)	27.8 (14.9)
8	12.1 (1.2)	10.5 (5.7)	9.9 (6.5)	13.7 (5.1)	19.6 (7.2)	13.2 (3.1)	18.9 (4.5)
9	11.1 (1.0)	6.1 (0.7)	5.9 (0.5)	11.3 (0.8)	16.2 (1.1)	11.2 (0.8)	16.1 (1.1)
10	15.5 (7.2)	12.2 (12.0)	8.8 (5.6)	15.2 (8.0)	21.8 (11.5)	14.9 (7.1)	21.3 (10.2)
11	13.0 (2.3)						
12	12.3 (1.1)	11.0 (6.7)	9.8 (4.6)	13.4 (2.1)	19.1 (3.1)	14.2 (5.1)	20.3 (7.4)
13	12.0 (1.2)	9.2 (4.6)	8.8 (5.6)	13.5 (2.6)	19.4 (3.7)	13.8 (6.3)	19.8 (9.0)
14	12.3 (1.1)	7.9 (2.7)	8.5 (4.8)	13.9 (3.4)	19.8 (4.9)	14.4 (6.5)	20.6 (9.3)
15	12.4 (1.8)	14.6 (15.2)	10.1 (5.2)	18.7 (14.0)	26.7 (20.1)	14.9 (4.5)	21.4 (6.5)
16	11.9 (1.4)	9.4 (4.3)	8.0 (2.5)	14.3 (3.1)	20.5 (4.4)	12.3 (0.9)	17.6 (1.2)
17	10.6 (0.6)	5.4 (0.3)	5.1 (0.3)	10.6 (0.7)	15.2 (1.0)	10.6 (0.6)	15.2 (0.9)
18	13.9 (3.6)	6.2 (0.8)	6.7 (2.1)	11.3 (1.2)	16.1 (1.7)	10.8 (0.6)	15.5 (0.8)
19	11.1 (0.7)	6.0 (1.5)	5.9 (2.5)	11.3 (1.2)	16.1 (1.7)	11.4 (1.9)	16.3 (2.8)
20	10.5 (1.2)	7.2 (3.2)	6.5 (3.3)	13.1 (3.7)	18.8 (5.2)	11.9 (2.7)	17.0 (3.9)
21	10.9 (1.5)	9.7 (4.9)	9.2 (4.6)	15.3 (5.0)	21.8 (7.1)	14.5 (4.2)	20.8 (6.0)
22	13.8 (3.7)	17.5 (14.7)	14.5 (9.9)	23.5 (18.4)	33.6 (26.3)	19.1 (9.7)	27.2 (13.9)
23	21.5 (7.8)	28.2 (25.5)	24.9 (21.8)	25.4 (14.4)	36.3 (20.6)	23.8 (14.3)	34.0 (20.4)
24	26.6 (20.7)	27.9 (23.7)	20.0 (14.2)	35.1 (25.1)	50.1 (35.9)	22.5 (13.3)	32.1 (19.0)
25	15.1 (5.1)	33.9 (37.3)	34.9 (45.6)	25.5 (17.0)	36.4 (24.2)	31.8 (50.7)	45.4 (72.4)
26	40.3 (23.4)	31.4 (31.9)	20.3 (18.6)				
27	22.0 (12.6)	26.3 (22.4)	25.7 (23.7)				
28	15.8 (4.8)	30.2 (31.1)	22.5 (15.9)				
29	19.4 (7.1)	14.7 (9.3)	12.3 (10.8)				
30	16.2 (9.4)	11.2 (4.0)	13.7 (9.7)	16.1 (6.5)	23.0 (9.3)	17.8 (10.4)	25.4 (14.9)
Avg	16.8	18.3	15.2	19.3	27.6	17.9	23.2
n	30	29	29	25	25	25	22
SD	8.1	12	9.2	8.7	12.5	7.4	7.2
Min	10.5	5.4	5.1	10.6	15.2	10.6	15.2
Max	45.1	49.9	39.1	43.3	61.9	41.9	45.4

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for October, 2008.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	µg·dsm ⁻³	ppb	µg·dsm ⁻³
1	21.9 (11.6)	22.3 (21.5)	19.7 (17.5)	23.5 (14.3)	33.5 (20.4)	25.6 (16.8)	36.6 (24.1)
2	11.8 (0.6)	9.5 (3.6)	9.7 (4.1)	13.4 (4.2)	19.2 (6.1)	12.9 (4.0)	18.5 (5.8)
3	12.1 (1.9)	16.5 (20.1)	11.2 (7.2)	21.9 (23.9)	31.3 (34.1)	13.7 (4.3)	19.5 (6.2)
4	11.5 (1.7)	8.3 (4.0)	7.3 (2.8)	12.1 (2.7)	17.3 (3.9)	12.2 (2.5)	17.5 (3.5)
5	20.2 (12.3)	9.5 (5.2)	9.0 (6.0)	12.7 (3.7)	18.1 (5.3)	14.0 (6.8)	20.1 (9.7)
6	24.2 (15.1)	24.4 (18.3)	20.2 (18.0)	23.1 (13.8)	33.1 (19.7)	22.0 (14.7)	31.4 (21.0)
7	16.5 (7.7)	34.1 (35.7)	29.5 (30.5)	32.9 (31.2)	47.0 (44.5)	28.6 (25.2)	40.8 (36.0)
8	20.9 (9.2)	18.5 (10.1)	17.2 (10.6)	21.0 (10.2)	30.0 (14.6)	19.7 (9.0)	28.1 (12.8)
9	10.7 (1.4)	10.7 (7.4)	7.5 (4.1)	15.1 (6.3)	21.4 (9.0)	12.3 (4.2)	17.6 (6.0)
10	8.9 (0.7)	4.5 (2.1)	5.3 (5.1)	9.5 (1.0)	13.5 (1.4)	10.5 (4.0)	14.9 (5.6)
11	9.7 (1.7)	4.2 (1.5)	4.6 (2.3)	9.9 (2.1)	14.0 (3.0)	9.9 (1.0)	14.0 (1.4)
12	11.8 (2.9)	7.7 (5.1)	9.1 (6.4)	11.9 (4.3)	16.9 (6.2)	11.6 (3.9)	16.5 (5.5)
13	14.7 (5.0)	11.2 (6.1)	15.0 (17.9)	12.8 (2.2)	18.1 (3.1)	20.6 (23.6)	29.3 (33.7)
14	19.0 (8.8)	12.7 (8.9)	10.6 (5.6)	15.6 (7.8)	22.2 (11.0)	13.4 (4.4)	19.1 (6.2)
15	46.1 (56.1)	30.7 (23.8)	52.1 (69.0)	28.5 (18.2)	40.7 (25.9)	51.7 (74.3)	73.6 (106.0)
16	49.6 (41.1)	44.3 (31.7)	34.5 (28.5)	41.5 (30.8)	59.3 (43.9)	34.5 (25.8)	49.3 (36.8)
17	24.5 (9.0)	46.6 (51.9)	20.0 (16.8)	38.5 (39.5)	54.9 (56.4)	21.2 (19.1)	30.3 (27.3)
18	17.0 (5.7)	22.8 (16.1)	17.3 (15.5)	21.4 (11.2)	30.5 (16.1)	22.4 (24.1)	31.9 (34.4)
19	18.2 (9.2)	25.4 (25.0)	11.2 (6.8)	20.0 (12.3)	28.6 (17.6)	17.7 (9.5)	25.2 (13.5)
20	14.5 (5.0)	15.9 (15.2)	12.2 (7.8)	16.1 (8.0)	23.0 (11.4)	14.5 (6.9)	20.7 (9.8)
21	11.9 (5.8)	11.0 (4.9)	6.8 (1.2)				
22	22.3 (12.2)	22.3 (31.9)	17.2 (20.1)				
23	18.4 (6.9)	30.5 (27.4)	40.1 (31.2)	33.2 (40.6)	47.3 (57.8)	26.7 (12.1)	38.0 (17.3)
24	63.5 (52.0)	59.9 (34.9)	33.6 (21.2)	28.8 (13.6)	41.1 (19.4)	27.8 (13.8)	39.7 (19.7)
25	29.9 (11.6)	51.9 (50.3)	48.9 (35.6)	45.2 (41.9)	64.5 (59.8)	48.2 (35.0)	68.7 (49.8)
26	32.6 (17.9)	43.8 (32.8)	35.8 (31.5)	59.9 (51.3)	85.5 (73.2)	26.4 (15.7)	37.7 (22.4)
27	51.9 (41.0)	50.9 (35.6)	30.3 (19.9)	65.2 (71.9)	93.1 (103.0)	32.2 (22.6)	46.0 (32.2)
28	19.0 (14.9)	24.9 (25.6)	21.2 (17.1)				
29		57.5 (50.9)	44.1 (49.3)				
30		17.1 (8.7)	16.7 (13.7)				
31		10.6 (6.9)	9.4 (10.2)				
Avg	22.6	24.5	20.2	25.3	36.2	22.0	31.4
n	28	31	31	25	25	25	
SD	13.8	16.2	13.3	14.7	21	10.8	15.4
Min	8.9	4.2	4.6	9.5	13.5	9.9	14.0
Max	63.5	59.9	52.1	65.2	93.1	51.7	73.6

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for November, 2008.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	µg·dsm ⁻³	ppb	µg·dsm ⁻³
1		16.3 (19.1)	16.8 (21.4)				
2							
3							
4							
5							
6		19.7 (12.5)	20.9 (11.5)				
7		37.0 (48.2)	40.2 (62.2)				
8		50.6 (40.3)	39.2 (40.7)				
9		24.1 (14.1)	16.6 (9.9)				
10		42.9 (29.4)	57.7 (54.8)				
11		41.6 (35.6)	31.2 (26.6)				
12		42.9 (61.4)	35.2 (33.4)				
13		34.9 (34.6)	73.6 (77.3)				
14		45.2 (38.6)	30.2 (28.5)				
15		29.8 (34.2)	46.5 (84.0)				
16		73.1 (50.9)	60.3 (34.3)				
17		51.5 (45.9)	28.3 (17.4)				
18		67.8 (70.9)	51.2 (45.7)				
19		70.7 (79.5)	45.8 (39.4)				
20		15.3 (8.2)	20.9 (15.8)				
21		43.7 (26.1)	28.7 (14.4)				
22		36.8 (33.9)	29.2 (14.7)				
23		33.3 (17.3)	39.3 (21.7)				
24		42.2 (35.2)	36.8 (17.4)				
25		28.1 (15.9)	17.6 (11.1)				
26		14.3 (7.5)	16.7 (15.8)				
27		14.6 (9.1)	10.5 (6.1)				
28		24.0 (18.6)	30.2 (34.5)				
29		18.0 (22.2)	13.2 (14.3)				
30		31.8 (26.7)	18.4 (14.3)				
Avg		36.5	32.9				
n	0	26	26	0	0	0	0
SD		16.5	15.6				
Min		14.3	10.5				
Max		73.1	73.6				

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for December, 2008.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	µg·dsm ⁻³	ppb	µg·dsm ⁻³
1		15.6 (9.0)	11.4 (7.8)				
2		19.0 (20.4)	24.5 (34.2)				
3		11.0 (8.7)	15.9 (17.0)				
4	16.1 (6.8)	32.8 (32.7)	17.2 (13.7)	35.9 (41.7)	51.2 (59.5)	24.5 (21.5)	35.0 (30.7)
5	18.5 (5.1)	23.5 (23.3)	32.7 (40.7)	34.8 (47.9)	49.7 (68.3)	47.4 (86.5)	67.5 (123.0)
6	12.1 (4.2)	16.7 (14.9)	10.3 (6.4)	28.0 (40.1)	40.0 (57.2)	13.9 (6.7)	19.8 (9.5)
7	14.8 (4.4)	23.4 (33.2)	31.8 (46.1)	24.7 (23.5)	35.2 (33.5)	57.9 (99.7)	82.6 (142.0)
8	22.6 (11.9)						
9	34.6 (30.5)	21.8 (16.9)	20.6 (21.0)	28.9 (22.6)	42.5 (32.6)	21.1 (15.7)	30.8 (22.8)
10	41.5 (48.0)	21.6 (10.0)	20.9 (10.3)	19.6 (7.3)	27.9 (10.4)	21.0 (5.9)	30.0 (8.4)
11	14.0 (0.9)						
12	21.0 (14.9)	29.0 (25.1)	19.9 (14.2)	37.4 (44.4)	53.4 (63.4)	24.5 (15.4)	34.9 (22.0)
13							
14							
15							
16	17.4 (6.6)	11.3 (5.6)	12.3 (7.8)	13.6 (3.6)	19.4 (5.2)	15.4 (6.5)	21.9 (9.2)
17	15.4 (3.7)	17.9 (12.7)	18.2 (22.0)	24.5 (20.3)	34.8 (28.8)	24.1 (33.8)	34.2 (48.1)
18	10.3 (0.6)	6.3 (4.3)	8.8 (13.5)	11.0 (3.0)	15.7 (4.2)	14.3 (17.8)	20.3 (25.4)
19	15.9 (6.7)	15.7 (13.2)	10.8 (9.1)	16.9 (12.1)	24.1 (17.2)	13.1 (5.4)	18.7 (7.6)
20	14.1 (4.9)	33.9 (35.2)	22.4 (11.5)	34.4 (37.0)		23.3 (11.7)	
21	10.2 (0.3)						
22	14.4 (5.9)	15.8 (10.1)	13.6 (5.6)	18.2 (9.4)	26.0 (13.4)	15.0 (3.2)	21.3 (4.5)
23	14.2 (7.0)	12.8 (10.7)	6.6 (3.5)	19.4 (16.1)	27.6 (22.9)	13.2 (6.9)	18.8 (9.8)
24	10.3 (1.4)	7.3 (2.5)	9.1 (9.7)	11.5 (2.0)	16.4 (2.9)	17.6 (20.8)	25.0 (29.6)
25	20.3 (7.1)	20.9 (11.0)	14.5 (6.1)	22.9 (15.4)	32.7 (22.0)	15.9 (6.0)	22.7 (8.5)
26	16.2 (4.7)	31.2 (19.7)	20.0 (15.0)	30.1 (16.7)	42.9 (23.8)	18.8 (7.0)	26.7 (9.9)
27	16.3 (8.2)	21.6 (13.1)	26.9 (27.7)	20.9 (9.8)	29.5 (13.8)	22.6 (16.3)	32.3 (23.3)
28	38.9 (33.5)	21.9 (14.9)	18.8 (16.0)	18.9 (9.7)	26.9 (13.8)	23.7 (15.4)	33.8 (22.0)
29	20.1 (8.9)	33.7 (18.6)	34.1 (30.2)	42.3 (25.3)	60.3 (36.1)	26.7 (15.9)	38.1 (22.7)
30	12.0 (2.5)	34.9 (31.5)	20.9 (16.2)	22.7 (16.9)	32.3 (24.2)	22.5 (19.2)	32.1 (27.4)
31	12.0 (2.2)	16.9 (13.1)	14.3 (15.1)	18.0 (6.8)	25.7 (9.7)	16.7 (11.4)	23.8 (16.2)
Avg	18.1	20.7	18.3	24.3	34.0	22.4	31.9
n	25	25	25	22	21	22	21
SD	8.2	8.1	7.4	8.5	12	10.5	15.4
Min	10.2	6.3	6.6	11.0	15.7	13.1	18.7
Max	41.5	34.9	34.1	42.3	60.3	57.9	82.6

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for January, 2009.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	µg·dsm ⁻³	ppb	µg·dsm ⁻³
1	10.8 (0.4)	9.5 (3.7)	7.5 (4.8)	11.8 (2.5)	16.8 (3.6)	14.0 (11.2)	20.0 (16.0)
2	12.2 (2.7)	14.2 (7.7)	13.6 (10.8)	13.9 (4.1)	19.8 (5.8)	22.2 (20.4)	31.6 (29.0)
3	37.8 (18.6)	24.3 (21.2)	16.6 (12.6)				
4	20.5 (10.8)	26.8 (18.7)	24.8 (20.4)	23.3 (11.6)	34.2 (16.5)	23.1 (12.9)	33.8 (19.2)
5	16.5 (11.6)	17.6 (11.2)	10.4 (7.5)	19.8 (14.3)	28.2 (20.4)	13.9 (5.9)	19.7 (8.4)
6	25.9 (12.7)	20.8 (19.4)	16.0 (10.7)	14.0 (3.5)	20.0 (5.0)	15.2 (3.6)	21.7 (5.2)
7	16.9 (8.7)	19.7 (17.7)	35.5 (36.4)				
8	20.3 (5.3)	18.4 (15.2)	16.7 (12.0)	20.9 (16.2)	29.8 (23.1)	18.8 (8.9)	26.8 (12.7)
9	17.0 (8.6)	32.4 (25.1)	39.2 (42.6)	17.2 (6.7)	24.5 (9.5)	25.1 (28.5)	35.8 (40.6)
10	32.1 (19.9)	37.0 (21.1)	28.2 (16.1)	38.6 (24.2)	55.1 (34.5)	26.0 (12.1)	37.1 (17.2)
11	32.0 (22.3)	16.9 (7.7)	12.5 (6.2)	19.7 (9.1)	28.1 (13.0)	18.6 (8.9)	26.4 (12.6)
12	21.1 (9.0)	16.3 (11.8)	16.1 (17.3)	19.7 (11.5)	28.1 (16.3)	21.3 (22.9)	30.4 (32.7)
13	32.3 (13.7)	33.1 (22.5)	26.2 (11.0)	33.6 (29.5)	47.9 (41.9)	31.4 (16.5)	44.8 (23.6)
14	18.8 (4.3)	63.4 (58.8)	33.3 (22.1)	59.4 (60.2)	84.7 (85.8)	30.6 (20.8)	43.6 (29.7)
15	29.1 (11.0)	33.9 (25.6)	49.9 (51.0)				
16	19.7 (7.6)	36.1 (26.3)	28.2 (14.9)				
17	64.3 (29.9)						
18							
19							
20							
21	24.6 (8.2)	52.2 (74.3)	41.2 (28.5)				
22	21.1 (18.3)	26.6 (18.5)	23.2 (14.3)	26.3 (16.9)	37.6 (24.2)		
23	38.5 (13.6)						
24	19.5 (6.0)						
25	63.3 (89.2)	34.9 (39.8)	44.9 (70.9)	28.3 (24.7)	40.4 (35.2)	33.2 (36.6)	47.4 (52.2)
26		73.8 (70.0)	122.0 (149.0)				
27		36.8 (32.7)	32.5 (30.0)	28.7 (13.6)	41.9 (19.2)	37.2 (32.0)	52.9 (45.5)
28		49.8 (38.7)	40.4 (36.1)	49.8 (42.8)	71.0 (60.9)	42.0 (44.5)	59.8 (63.5)
29		30.7 (29.2)	29.8 (45.3)	26.2 (20.8)	37.3 (29.7)	16.6 (7.3)	23.7 (10.4)
30		127.0 (147.0)	121.0 (158.0)	117.0 (160.0)	167.0 (229.0)	128.0 (190.0)	183.0 (271.0)
31		77.5 (60.0)	55.9 (63.8)	60.9 (60.4)	86.8 (86.2)	53.4 (65.0)	76.1 (92.5)
Avg	27.0	37.2	35.4	33.1	47.3	31.7	45.2
n	22	25	25	19	19	18	18
SD	13.8	25.4	28.2	24.2	34.5	25.5	36.4
Min	10.8	9.5	7.5	11.8	16.8	13.9	19.7
Max	64.3	127	122	117	167	128	183

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for February, 2009.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	µg·dsm ⁻³	ppb	µg·dsm ⁻³
1		50.7 (35.9)	61.6 (43.2)	43.2 (32.3)	61.5 (46.1)	48.6 (46.8)	69.3 (66.7)
2		89.2 (81.1)	90.7 (87.5)	68.4 (76.7)	97.7 (110.0)	61.9 (74.9)	88.3 (107.0)
3		79.4 (70.2)	90.0 (52.4)	45.9 (44.1)	65.4 (62.8)	47.7 (27.7)	68.1 (39.5)
4		68.1 (56.1)	44.5 (25.3)	88.3 (136.0)	126.0 (194.0)	25.7 (11.8)	36.7 (16.8)
5		21.0 (15.5)	35.3 (52.4)	19.9 (14.7)	28.5 (21.0)	54.5 (104.0)	77.8 (148.0)
6		14.6 (9.5)	14.4 (10.3)	15.3 (5.9)	21.9 (8.5)	21.9 (19.8)	31.3 (28.3)
7		52.4 (47.1)	56.7 (80.1)	32.7 (20.0)	46.6 (28.5)	50.5 (74.9)	72.1 (107.0)
8		14.2 (11.2)	11.7 (4.9)	14.5 (5.6)	20.7 (8.0)	14.0 (2.9)	19.9 (4.0)
9		29.6 (22.1)	22.7 (14.0)	25.7 (13.8)	36.7 (19.7)	22.0 (9.7)	31.3 (13.8)
10		31.9 (29.9)	33.2 (33.2)	45.0 (66.6)	64.1 (94.8)	40.2 (66.7)	57.3 (95.0)
11		10.5 (3.6)	8.4 (2.0)	17.5 (9.9)	25.0 (14.2)	13.2 (1.5)	18.8 (2.1)
12		25.3 (31.2)	18.3 (18.3)	35.6 (59.7)	50.8 (85.1)	19.5 (13.6)	27.8 (19.5)
13		12.2 (5.6)	9.6 (5.7)	18.4 (15.5)	26.2 (22.1)		
14		8.5 (2.0)	9.2 (2.7)	12.9 (2.3)	18.4 (3.2)	14.5 (5.2)	20.7 (7.5)
15							
16							
17							
18		22.9 (17.1)	44.1 (72.9)	24.5 (17.9)	34.9 (25.6)	48.4 (88.7)	69.1 (127.0)
19		42.1 (47.3)	41.8 (34.2)				
20		60.1 (62.2)	47.8 (30.7)				
21		13.3 (18.2)	13.3 (13.6)	16.1 (16.4)	23.0 (23.4)	18.2 (12.1)	26.0 (17.3)
22		11.6 (3.9)	11.3 (6.7)	16.6 (6.0)	23.8 (8.5)	16.7 (9.8)	23.8 (13.9)
23		11.7 (7.6)	9.5 (3.6)	20.7 (16.6)	29.6 (23.7)	14.0 (4.6)	20.1 (6.6)
24		26.1 (19.5)	27.7 (28.0)	25.5 (15.6)	36.4 (22.2)	22.2 (12.7)	31.7 (18.2)
25		38.0 (29.0)	50.3 (61.6)	35.5 (20.1)	57.7 (27.9)	51.0 (63.1)	72.8 (90.1)
26		22.1 (12.5)	39.5 (42.4)	22.8 (12.0)	31.8 (17.0)	37.2 (53.0)	53.1 (75.8)
27		52.8 (74.7)	62.8 (90.3)	32.2 (26.0)		62.0 (93.9)	88.3 (134.0)
28		18.9 (8.3)	17.0 (11.3)	23.2 (12.6)		20.0 (9.3)	28.5 (13.3)
Avg	0	33.1	34.8	30.5	44.1	32.9	47.0
n		25	25	23	21	22	22
SD		22.5	23.8	17.9	26.8	16.8	24
Min		8.5	8.4	12.9	18.4	13.2	18.8
Max		89.2	90.7	88.3	126	62	88.3

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for March, 2009.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	µg·dsm ⁻³	ppb	µg·dsm ⁻³
1		18.5 (10.0)	18.1 (12.1)	19.2 (7.6)		17.6 (7.5)	25.2 (10.7)
2		15.2 (8.7)	18.0 (20.3)	14.5 (2.7)	20.7 (3.9)	26.3 (45.0)	37.6 (64.2)
3		16.1 (11.5)	17.9 (19.8)	16.5 (5.1)	23.6 (7.3)	20.3 (20.5)	28.9 (29.2)
4		28.6 (35.5)	31.6 (44.9)	26.6 (18.8)	37.9 (26.9)	18.3 (8.7)	26.0 (12.4)
5		34.0 (27.4)					
6		33.6 (30.5)	32.6 (28.0)	39.5 (47.5)		32.4 (23.0)	46.2 (32.8)
7		25.3 (13.0)	42.2 (39.5)	36.8 (21.8)		23.7 (11.9)	33.8 (16.9)
8		25.6 (13.2)	34.2 (34.3)	31.1 (24.1)		24.2 (12.0)	34.5 (17.1)
9		21.4 (10.7)	23.2 (16.3)	22.3 (11.0)		21.6 (10.9)	30.7 (15.6)
10		31.6 (19.1)	43.4 (24.6)	31.8 (18.3)		30.9 (18.1)	44.0 (25.7)
11		37.6 (27.1)	41.2 (25.7)	41.6 (33.8)		42.0 (31.3)	60.3 (44.5)
12		46.8 (38.9)	46.6 (39.6)	43.5 (33.0)		42.9 (37.2)	61.2 (53.0)
13		40.4 (33.8)	40.0 (33.7)	36.8 (26.7)		42.2 (37.3)	60.1 (53.1)
14		18.4 (6.9)	17.3 (11.5)	18.8 (7.5)		17.4 (7.0)	24.8 (9.9)
15							
16							
17		63.5 (113.0)	40.9 (51.2)	46.7 (58.1)		56.4 (83.5)	80.6 (119.0)
18		33.2 (28.3)	25.6 (18.6)	49.6 (38.1)		21.7 (12.4)	31.0 (17.7)
19		25.5 (15.0)	34.4 (37.0)	59.3 (80.9)		27.6 (22.8)	39.4 (32.5)
20		48.5 (80.5)	35.8 (39.8)	24.8 (13.4)		36.4 (56.5)	52.0 (80.7)
21		20.5 (17.1)	18.1 (20.3)	23.6 (26.2)		20.3 (20.8)	28.9 (29.7)
22		18.6 (5.9)	17.0 (6.7)	21.1 (9.9)		16.0 (4.2)	22.8 (6.0)
23		22.5 (19.4)	22.3 (21.0)	27.0 (15.6)		21.8 (14.8)	31.0 (21.1)
24		38.1 (43.3)	32.8 (40.4)	64.5 (75.5)		42.1 (61.3)	60.1 (87.5)
25		22.6 (16.7)	18.7 (12.6)	30.2 (20.7)		18.4 (8.7)	26.3 (12.4)
26		16.3 (7.4)	11.2 (7.7)	17.7 (8.9)		14.4 (4.8)	20.6 (6.9)
27		32.8 (35.3)	41.3 (56.3)	28.7 (19.2)		21.9 (10.5)	31.2 (14.9)
28		26.4 (18.2)	25.3 (15.7)	24.1 (11.9)		22.9 (12.5)	32.8 (17.9)
29		14.4 (4.4)	11.9 (6.6)	15.2 (6.0)		15.1 (5.2)	21.5 (7.3)
30		17.4 (8.5)	15.2 (11.2)	14.7 (4.2)		20.9 (14.6)	29.8 (20.8)
31		20.1 (10.3)	16.5 (8.2)	21.8 (16.1)		18.9 (7.5)	27.0 (10.6)
Avg	0	28.1	27.6	30.3	27.4	26.2	37.4
n		29	28	28	3	28	28
SD		11.4	10.8	13.1	7.5	10.4	14.8
Min		14.4	11.2	14.5	20.7	14.4	20.6
Max		63.5	46.6	64.5	37.9	56.4	80.6

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for April, 2009.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	µg·dsm ⁻³	ppb	µg·dsm ⁻³
1		14.3 (4.4)	9.7 (5.4)	14.2 (4.5)		14.1 (4.3)	20.1 (6.2)
2		14.6 (4.1)	8.6 (4.0)	15.3 (5.9)		13.2 (4.0)	18.8 (5.7)
3		16.2 (7.1)	12.9 (9.9)				
4		29.7 (23.7)	30.1 (24.9)				
5		26.6 (20.9)	23.1 (16.6)				
6		40.9 (37.2)	41.3 (36.9)				
7		14.2 (5.4)	13.4 (9.2)				
8		21.4 (16.1)	19.3 (17.7)				
9		23.9 (24.5)	21.6 (26.0)				
10		16.3 (7.1)	16.4 (13.9)	28.3 (31.9)		18.2 (13.3)	26.0 (19.0)
11		17.5 (11.6)	19.5 (23.0)	26.7 (29.5)		20.9 (25.0)	29.8 (35.7)
12		19.7 (12.3)	16.4 (14.4)	19.6 (9.6)		18.1 (11.7)	25.8 (16.7)
13		46.6 (93.3)	40.5 (43.9)	27.8 (20.9)		28.0 (24.0)	38.6 (33.7)
14		17.7 (7.2)	17.9 (14.8)	17.0 (4.4)		17.7 (8.8)	25.2 (12.5)
15		16.0 (5.3)	13.5 (7.7)	16.9 (6.1)		15.3 (4.7)	21.8 (6.7)
16		18.0 (12.3)	13.7 (9.7)	16.5 (6.8)		12.8 (2.2)	18.2 (3.1)
17		20.6 (9.7)	18.0 (11.0)	24.4 (15.7)		19.5 (7.6)	27.8 (10.9)
18		30.0 (34.4)	35.2 (43.9)	23.4 (18.5)		41.0 (59.2)	58.6 (84.6)
19		28.3 (23.1)	27.2 (28.4)	28.5 (23.1)		30.0 (33.3)	42.9 (47.6)
20		34.9 (39.7)	31.4 (22.7)	22.5 (8.2)		28.0 (18.2)	40.0 (26.0)
21		32.2 (43.9)	33.8 (37.2)	24.8 (11.3)		20.9 (12.4)	30.0 (17.7)
22		22.3 (10.1)	19.0 (10.0)	24.6 (22.2)		22.2 (11.6)	31.7 (16.6)
23		20.7 (16.0)	22.8 (26.1)	22.8 (22.6)		19.3 (12.7)	27.6 (18.1)
24		18.9 (5.8)	14.1 (4.3)	21.2 (8.1)		16.1 (3.2)	22.9 (4.6)
25		15.5 (5.3)	15.2 (12.0)	20.4 (12.2)		15.6 (6.6)	22.2 (9.4)
26		18.7 (10.5)	16.7 (15.0)	17.1 (7.1)		22.6 (19.1)	32.2 (27.2)
27		19.8 (10.9)	14.6 (6.0)	19.6 (10.0)		15.9 (6.1)	22.6 (8.7)
28		20.2 (20.0)	15.7 (15.7)	16.1 (7.6)		21.3 (22.5)	30.3 (32.1)
29		14.7 (5.0)	10.6 (5.1)	13.6 (3.6)		13.3 (3.2)	18.9 (4.6)
30		16.7 (15.7)	15.8 (19.8)	13.3 (4.5)		23.1 (27.7)	32.9 (39.4)
Avg		22.2	20.3	20.6		20.3	28.9
n	0	30	30	23	0	23	23
SD		8	8.7	4.8		6.5	9.2
Min		14.2	8.6	13.3		12.8	18.2
Max		46.6	41.3	28.5		41	58.6

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for May, 2009.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	µg·dsm ⁻³	ppb	µg·dsm ⁻³
1		13.5 (4.1)	8.5 (3.0)	15.6 (4.2)		13.1 (3.4)	18.8 (4.8)
2		13.5 (3.3)	8.2 (2.9)	14.0 (3.6)		13.6 (3.3)	19.5 (4.7)
3							
4							
5							
6							
7							
8							
9							
10							
11							
12		12.6 (4.0)	7.7 (4.8)	13.2 (5.3)		11.9 (3.4)	16.9 (4.8)
13		12.2 (2.2)	5.9 (1.8)	13.1 (4.2)		11.7 (1.2)	16.7 (1.7)
14		12.8 (2.8)	7.0 (2.4)	13.2 (2.9)		12.7 (2.1)	18.1 (3.0)
15		13.4 (3.2)	7.4 (2.5)	15.6 (7.5)		12.9 (2.4)	18.4 (3.5)
16		18.7 (8.8)	13.6 (8.9)	28.0 (23.1)		18.4 (8.6)	26.3 (12.3)
17		18.1 (5.7)	13.2 (6.7)	17.2 (4.9)		17.3 (6.1)	24.7 (8.7)
18		17.2 (13.9)	19.1 (28.8)	13.5 (1.9)		19.1 (16.7)	27.3 (23.9)
19		13.1 (2.2)	6.0 (1.8)	13.1 (1.9)		12.1 (1.4)	17.2 (2.0)
20		12.2 (1.2)	7.0 (2.4)	11.5 (0.7)		13.0 (2.2)	18.5 (3.1)
21		12.9 (1.8)	7.0 (1.9)	13.4 (2.7)		12.7 (1.6)	18.1 (2.3)
22		12.0 (0.6)	6.0 (0.8)	12.0 (0.9)		12.2 (1.0)	17.4 (1.4)
23		12.5 (2.1)	6.4 (1.5)	12.8 (2.5)		12.5 (1.7)	17.8 (2.4)
24		11.7 (1.4)	5.5 (1.2)	12.9 (2.1)		11.6 (1.6)	16.6 (2.3)
25		11.7 (0.9)	5.8 (1.0)	11.6 (1.9)		11.3 (0.8)	16.1 (1.1)
26		15.1 (4.8)	8.4 (3.2)	17.5 (8.2)		13.2 (2.0)	18.9 (2.8)
27		16.7 (7.0)	13.1 (9.7)	18.6 (10.1)		17.7 (8.7)	25.5 (12.5)
28		12.5 (1.7)	7.2 (1.9)	14.1 (4.4)		12.2 (1.1)	17.5 (1.5)
29		12.2 (0.9)	7.1 (1.4)	12.3 (1.3)		12.2 (1.3)	17.4 (1.8)
30		11.5 (0.5)	5.9 (0.5)	11.5 (0.3)		11.4 (0.6)	16.3 (0.9)
31		11.8 (0.8)	6.8 (1.9)	11.8 (1.1)		11.6 (0.8)	16.6 (1.1)
Avg	0	13.5	8.3	14.4	0	13.4	19.1
n		22	22	22		22	22
SD		2.1	3.3	3.6		2.3	3.4
Min		11.5	5.5	11.5		11.3	16.1
Max		18.7	19.1	28		19.1	27.3

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for June, 2009.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	µg·dsm ⁻³	ppb	µg·dsm ⁻³
1		12.4 (1.2)	7.0 (1.4)	12.5 (1.6)		12.2 (1.2)	17.5 (1.7)
2		11.8 (0.7)	6.3 (0.9)	11.6 (0.6)		11.9 (0.9)	17.0 (1.3)
3		13.1 (1.9)	8.6 (2.7)	13.3 (2.6)		13.1 (2.1)	18.7 (2.9)
4		12.6 (1.9)	6.7 (1.3)	13.0 (2.0)		12.1 (1.6)	17.3 (2.2)
5		11.3 (0.4)	5.7 (0.5)	12.0 (1.2)		11.1 (0.4)	15.8 (0.6)
6		11.7 (1.1)	6.3 (1.3)	12.3 (1.5)		11.6 (0.8)	16.5 (1.2)
7		12.7 (1.8)	7.5 (1.7)	12.9 (1.9)		12.4 (1.4)	17.8 (2.0)
8		11.7 (1.1)	6.3 (1.2)	12.0 (1.6)		11.6 (1.1)	16.6 (1.5)
9		12.0 (1.6)	6.4 (1.2)	12.5 (1.7)		11.5 (1.0)	16.5 (1.5)
10		12.2 (1.8)	6.4 (1.2)	12.6 (1.7)		11.5 (1.0)	16.4 (1.5)
11		12.3 (1.7)	6.8 (1.3)	12.9 (2.0)		11.9 (1.1)	17.0 (1.6)
12		12.1 (1.6)	6.7 (2.0)	12.7 (2.2)		11.7 (1.9)	16.7 (2.7)
13		11.8 (1.0)	6.4 (0.6)	12.3 (1.4)		11.7 (0.7)	16.7 (1.0)
14		12.1 (1.3)	6.4 (1.0)	12.3 (1.3)		11.4 (0.6)	16.2 (0.9)
15		10.6 (2.3)	6.8 (1.3)	13.1 (1.4)		12.0 (1.3)	17.2 (1.8)
16		10.3 (7.3)	9.8 (6.7)	16.2 (9.7)	23.2 (13.9)	14.3 (5.4)	20.5 (7.7)
17		7.8 (2.4)	8.1 (4.0)	12.9 (2.3)	18.4 (3.2)	12.7 (2.0)	18.2 (2.9)
18		10.4 (4.9)	12.7 (7.1)	14.8 (3.3)	21.3 (4.8)	16.8 (6.5)	24.1 (9.3)
19		10.6 (3.2)	12.2 (7.5)				
20		13.7 (3.5)	9.3 (1.5)				
21		13.6 (3.8)	11.1 (4.7)				
22		14.1 (5.3)	12.3 (9.8)				
23		19.3 (18.3)	18.1 (16.3)				
24		19.1 (23.3)	12.8 (10.7)	23.0 (22.0)	32.9 (31.5)	17.3 (12.0)	24.7 (17.2)
25		10.9 (6.9)	8.3 (2.0)	15.5 (4.5)	22.1 (6.5)	13.9 (4.1)	19.9 (5.9)
26		11.4 (6.4)	11.4 (5.7)	15.5 (5.9)	22.2 (8.5)	16.2 (6.3)	23.2 (9.0)
27		17.8 (13.6)	14.7 (10.3)	17.4 (4.0)	24.9 (5.7)	17.7 (9.4)	25.4 (13.4)
28		16.4 (7.1)	18.0 (13.7)	21.6 (10.1)	31.0 (14.4)	17.5 (4.4)	25.1 (6.3)
29		11.0 (3.5)	10.2 (7.1)	15.2 (2.9)	21.7 (4.2)	13.5 (1.9)	19.4 (2.7)
30		9.1 (2.3)	7.8 (0.8)	14.3 (2.6)	20.5 (3.7)	13.1 (0.7)	18.8 (1.0)
Avg	0	12.5	9.2	14.2	23.8	13.2	18.9
n		30	30	25	10	25	25
SD		2.6	3.4	2.8	4.4	2.1	3
Min		7.8	5.7	11.6	18.4	11.1	15.8
Max		19.3	18.1	23	32.9	17.7	25.4

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for July, 2009.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	µg·dsm ⁻³	ppb	µg·dsm ⁻³
1		9.0 (4.0)	12.7 (12.2)	12.4 (1.5)	17.7 (2.2)	15.7 (10.3)	22.5 (14.7)
2		8.6 (2.3)	7.7 (4.4)	13.9 (3.1)	19.9 (4.4)	12.4 (1.0)	17.7 (1.4)
3		8.5 (2.8)	7.7 (1.3)	12.8 (0.8)	18.3 (1.2)	13.3 (2.3)	19.1 (3.2)
4		7.4 (0.8)	6.7 (0.4)			12.1 (0.8)	17.3 (1.1)
5		9.1 (2.5)	7.9 (0.9)	14.2 (2.3)	20.3 (3.3)	13.0 (1.1)	18.6 (1.5)
6		9.6 (3.2)	8.4 (1.3)	14.4 (3.1)	20.6 (4.5)	13.3 (1.0)	19.0 (1.4)
7		7.8 (1.6)	7.4 (1.3)	13.2 (1.7)	18.7 (2.4)	12.5 (1.1)	17.6 (1.2)
8		9.6 (5.5)	8.7 (3.6)	14.3 (4.2)	20.4 (6.0)	14.2 (3.9)	20.3 (5.5)
9		9.1 (3.6)	8.1 (2.6)	14.5 (4.7)	20.7 (6.8)	13.6 (2.7)	19.5 (3.9)
10		11.0 (8.9)	8.7 (4.4)	13.4 (2.9)	19.1 (4.1)	13.9 (4.4)	19.8 (6.4)
11		9.2 (2.1)	8.2 (2.6)	14.6 (1.8)	20.8 (2.6)	13.2 (2.2)	18.8 (3.2)
12		12.3 (5.7)	11.4 (4.6)	18.4 (8.0)	26.2 (11.4)	17.0 (6.5)	24.3 (9.3)
13		13.2 (6.6)	11.1 (4.0)	18.4 (8.9)	26.3 (12.8)	14.6 (2.7)	20.9 (3.8)
14		22.1 (22.4)	12.0 (4.8)	17.3 (7.8)	24.8 (11.1)	16.5 (5.1)	23.5 (7.3)
15							
16		12.2 (5.3)	10.1 (4.5)	16.5 (6.9)	23.6 (9.9)	15.3 (3.2)	21.8 (4.6)
17		15.2 (10.1)	10.9 (5.0)	17.6 (6.1)	25.3 (8.9)	16.0 (5.4)	23.0 (7.8)
18		16.4 (8.8)	12.3 (4.9)	18.3 (6.2)	26.2 (8.9)	15.1 (3.1)	21.7 (4.4)
19		13.4 (4.6)	12.0 (3.8)	15.1 (2.8)	21.6 (4.1)	17.7 (4.7)	25.3 (6.7)
20							
21		12.7 (3.7)	10.8 (4.0)				
22		9.6 (2.0)	8.5 (1.8)	14.4 (2.5)	20.6 (3.5)	13.2 (2.3)	18.8 (3.3)
23		11.8 (3.5)	10.5 (4.0)				
24		12.3 (2.2)	8.7 (1.2)				
25		12.6 (2.0)	9.6 (2.7)				
26		15.5 (5.8)	11.5 (4.0)				
27		12.1 (2.6)	9.6 (1.9)				
28		12.5 (3.8)	10.5 (3.9)				
29		10.0 (2.2)	8.2 (1.0)				
30		10.0 (3.7)	8.6 (2.9)				
31		11.1 (2.6)	9.5 (2.5)				
Avg		11.5	9.6	15.2	21.7	14.3	20.5
n	0	29	29	18	18	19	19
SD		3	1.6	2	2.8	1.6	2.3
Min		7.4	6.7	12.4	17.7	12.1	17.3
Max		22.1	12.7	18.4	26.3	17.7	25.3

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for August, 2009.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	µg·dsm ⁻³	ppb	µg·dsm ⁻³
1		9.5 (1.9)	8.2 (1.3)	14.6 (2.2)	20.8 (3.1)	13.3 (1.8)	19.0 (2.6)
2		10.1 (1.5)	9.5 (1.9)	15.2 (1.5)	21.8 (2.3)	13.6 (1.4)	19.1 (1.8)
3		10.1 (1.8)	9.1 (1.5)	13.7 (1.6)	19.6 (2.3)	13.9 (3.5)	19.9 (5.0)
4		11.5 (4.8)	8.2 (1.7)	16.3 (4.7)	23.4 (6.8)	13.5 (1.4)	19.3 (2.1)
5		10.1 (2.3)	9.4 (2.4)	14.1 (2.4)	20.2 (3.5)	14.6 (2.7)	20.8 (3.8)
6		8.4 (2.0)	7.8 (1.2)	12.4 (2.2)	17.7 (3.1)	11.7 (2.5)	16.8 (3.6)
7		8.9 (3.9)	9.2 (4.2)	10.3 (2.5)	14.7 (3.6)	11.5 (4.7)	16.4 (6.7)
8		10.8 (5.3)	11.4 (4.2)	11.6 (4.5)	16.6 (6.4)	13.0 (3.3)	18.7 (4.7)
9		18.4 (8.7)	16.2 (3.4)	18.4 (9.6)	26.4 (13.7)	14.1 (3.0)	20.1 (4.2)
10		25.5 (21.5)	18.6 (12.7)	20.3 (13.7)	29.1 (19.6)	16.4 (7.6)	23.5 (10.9)
11		14.0 (6.1)	11.9 (5.4)	13.8 (5.4)	19.8 (7.8)	13.0 (5.3)	18.6 (7.5)
12		17.2 (11.8)	13.1 (5.8)	15.5 (7.8)	22.3 (11.2)	15.4 (6.0)	22.1 (8.7)
13		14.7 (4.1)	13.6 (4.2)	14.8 (6.1)	21.1 (8.8)	13.9 (3.1)	19.8 (4.5)
14		10.4 (4.0)	9.1 (1.5)	11.6 (4.0)	16.5 (5.7)	10.5 (0.9)	15.0 (1.3)
15		11.1 (6.3)	11.4 (6.3)	11.5 (3.7)	16.4 (5.3)	12.5 (5.3)	17.9 (7.6)
16		18.1 (15.9)	16.4 (15.0)	15.8 (8.2)	22.6 (11.6)	17.3 (15.6)	24.8 (22.3)
17		18.3 (13.8)	15.8 (13.5)	16.5 (10.2)	23.6 (14.6)	14.7 (9.0)	21.0 (12.8)
18		10.0 (5.8)	6.9 (1.0)	11.5 (5.8)	16.5 (8.3)	9.1 (0.6)	13.0 (0.9)
19		6.4 (0.8)	5.8 (0.5)	8.5 (1.0)	12.2 (1.4)	8.5 (0.6)	12.1 (0.9)
20		6.1 (1.2)	5.9 (1.3)	8.3 (0.8)	11.8 (1.2)	8.3 (0.5)	11.9 (0.7)
21		12.5 (12.0)	9.9 (7.4)	10.8 (3.4)	15.5 (5.0)	12.6 (10.3)	18.1 (14.8)
22		8.6 (1.7)	9.2 (2.6)	10.1 (1.2)	14.5 (1.7)	10.2 (1.6)	14.5 (2.3)
23		7.3 (1.3)	6.8 (1.4)	9.4 (1.2)	13.4 (1.7)	9.3 (1.4)	13.3 (2.0)
24		6.2 (0.8)	5.8 (0.6)	8.7 (0.9)	12.4 (1.3)	8.2 (0.5)	11.7 (0.8)
25		8.2 (2.1)	8.4 (2.6)	9.9 (1.7)	14.2 (2.4)	9.9 (2.6)	14.2 (3.7)
26		13.0 (9.5)	8.3 (3.6)	12.7 (7.3)	18.5 (10.9)	9.3 (1.9)	13.3 (2.7)
27		18.4 (24.9)	11.0 (8.1)	14.6 (12.5)	20.9 (17.9)	11.6 (5.3)	16.6 (7.5)
28		23.3 (17.2)	19.5 (9.7)			16.8 (7.0)	24.1 (10.0)
29		22.1 (20.3)	17.1 (14.5)	18.3 (15.3)	26.2 (21.9)	18.0 (12.8)	25.8 (18.2)
30		12.4 (4.8)	9.8 (2.7)	13.0 (3.0)	18.6 (4.2)	11.2 (2.4)	16.0 (3.4)
31							
Avg		12.7	10.8	13.2	18.9	12.5	17.9
n	0	30	30	29	29	30	30
SD		5.1	3.8	3.1	4.4	2.7	3.9
Min		6.1	5.8	8.3	11.8	8.2	11.7
Max		25.5	19.5	20.3	29.1	18	25.8

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for September, 2009.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	µg·dsm ⁻³	ppb	µg·dsm ⁻³
1		8.7 (4.9)	7.7 (3.7)	9.3 (1.6)	13.3 (2.4)	9.0 (1.7)	12.9 (2.4)
2		13.7 (7.4)	9.7 (3.2)	14.0 (6.7)	20.0 (9.6)	9.9 (1.4)	14.2 (2.1)
3							
4		8.5 (2.0)	7.7 (1.6)	11.0 (2.6)	15.8 (3.7)	9.4 (1.2)	13.5 (1.7)
5		7.5 (2.4)	7.0 (2.2)	9.3 (2.3)	13.3 (3.2)	8.8 (1.5)	12.7 (2.1)
6		9.4 (6.4)	7.7 (3.0)	10.5 (3.4)	15.1 (4.9)	8.9 (1.4)	12.7 (2.0)
7		11.7 (7.7)	8.7 (4.8)	12.0 (5.0)	17.2 (7.2)	10.3 (5.0)	14.8 (7.2)
8		16.0 (11.8)	10.5 (4.4)	12.2 (4.4)	17.4 (6.3)	10.7 (1.9)	15.3 (2.7)
9		22.6 (17.6)	15.5 (15.9)	24.0 (22.0)	34.3 (31.4)	12.6 (7.5)	18.0 (10.8)
10		19.5 (14.5)	15.6 (11.1)	21.6 (17.4)	30.9 (24.9)	14.5 (8.8)	20.8 (12.6)
11		17.1 (12.4)	12.8 (6.7)	14.8 (6.7)	21.2 (9.6)	13.0 (6.4)	18.6 (9.2)
12		10.1 (4.4)	9.8 (5.5)	10.5 (2.8)	15.0 (4.0)	12.3 (7.1)	17.6 (10.1)
13		6.6 (1.0)	6.6 (1.8)	8.4 (0.9)	12.0 (1.3)	8.3 (1.7)	11.9 (2.4)
14		8.7 (2.8)	7.4 (1.4)	10.7 (3.2)	15.3 (4.6)	9.2 (1.2)	13.2 (1.7)
15		15.9 (13.6)	10.8 (5.4)	16.4 (14.2)	23.5 (20.4)	10.2 (1.5)	14.6 (2.2)
16							
17		16.1 (13.2)	18.3 (16.5)				
18		20.8 (14.3)	20.5 (11.3)				
19		15.2 (13.9)	13.6 (13.9)	14.5 (10.4)	20.7 (14.8)	16.2 (19.2)	23.2 (27.5)
20		18.3 (20.5)	13.9 (12.4)	12.8 (8.7)	18.3 (12.4)	12.0 (5.9)	17.2 (8.5)
21		21.1 (13.2)	18.8 (12.6)	18.3 (12.8)	26.3 (18.3)	15.0 (6.1)	21.5 (8.8)
22		30.8 (31.4)	18.2 (11.2)	21.3 (14.2)	30.8 (21.2)	17.5 (9.5)	25.5 (14.2)
23		20.1 (11.6)	16.8 (8.3)	19.6 (11.4)	28.1 (16.3)	17.7 (11.7)	25.4 (16.8)
24		20.2 (18.7)	16.3 (8.1)	25.7 (32.0)	36.8 (45.7)	14.9 (5.5)	21.2 (7.8)
25		19.0 (15.1)	15.2 (8.9)	17.6 (17.3)	25.1 (24.7)	13.7 (5.9)	19.6 (8.5)
26		29.3 (20.9)	21.5 (9.3)	18.1 (11.5)	25.9 (16.5)	16.5 (6.6)	23.7 (9.4)
27		15.0 (8.4)	17.8 (17.7)	12.9 (6.8)	18.5 (9.8)	18.4 (16.5)	26.3 (23.5)
28		11.0 (5.8)	9.1 (4.7)	10.4 (3.6)	14.8 (5.1)	9.5 (3.2)	13.6 (4.5)
29		7.8 (2.8)	6.6 (1.9)	8.9 (2.4)	12.6 (3.4)	7.7 (1.2)	11.0 (1.7)
30		11.2 (7.5)	10.0 (6.2)	13.5 (10.8)	19.3 (15.4)	10.6 (4.8)	15.0 (6.9)
Avg	0	15.4	12.6	14.5	20.8	12.2	17.5
n		28	28	26	26	26	26
SD		6.2	4.6	4.8	6.9	3.2	4.6
Min		6.6	6.6	8.4	12.0	7.7	11.0
Max		30.8	21.5	25.7	36.8	18.4	26.3

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for October, 2009.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	µg·dsm ⁻³	ppb	µg·dsm ⁻³
1		18.2 (12.1)	13.1 (9.0)	16.7 (11.3)	23.8 (16.1)	12.4 (7.1)	17.7 (10.1)
2		18.4 (15.6)	14.8 (9.0)	11.7 (4.7)	16.6 (6.7)	14.3 (9.5)	20.3 (13.5)
3		9.2 (5.5)	8.5 (4.1)	9.7 (4.8)	13.8 (6.9)	8.3 (2.1)	11.8 (3.0)
4		9.2 (4.4)	6.8 (2.4)	9.7 (4.3)	13.8 (6.1)	8.0 (2.0)	11.4 (2.9)
5		17.4 (12.0)	13.1 (8.1)	16.2 (9.9)	23.0 (14.1)	11.1 (4.7)	15.8 (6.7)
6		17.3 (12.7)	13.8 (10.7)	16.7 (11.2)	23.8 (16.0)	11.9 (8.1)	17.0 (11.5)
7		12.7 (6.9)	12.8 (6.4)	10.9 (4.5)	15.5 (6.5)	13.3 (7.5)	18.9 (10.7)
8		13.4 (12.0)	13.4 (12.2)	11.8 (5.7)	16.9 (8.2)	16.8 (18.5)	24.0 (26.4)
9		12.9 (10.8)	12.2 (10.3)				
10		11.2 (9.4)	12.5 (15.5)				
11		5.4 (1.2)	4.7 (0.8)				
12		4.7 (2.0)	4.9 (1.6)	6.9 (2.4)	9.9 (3.5)	6.8 (1.0)	9.6 (1.4)
13		5.5 (1.0)	3.9 (0.8)				
14		12.5 (18.6)	8.1 (3.9)				
15		17.0 (16.3)	14.8 (13.3)				
16							
17		8.5 (3.9)	6.8 (3.8)	8.0 (3.0)	11.5 (4.3)	8.9 (3.9)	12.7 (5.6)
18		10.2 (11.9)	8.4 (11.0)	10.4 (10.7)	14.9 (15.4)	9.5 (8.9)	13.6 (12.7)
19		7.7 (4.2)	5.9 (4.7)				
20		6.9 (3.6)	6.0 (4.2)				
21							
22							
23		7.6 (3.6)	7.1 (3.8)				
24		7.9 (4.4)	5.4 (2.9)				
25		11.9 (7.5)	10.5 (8.1)	12.0 (8.4)	17.1 (11.9)	12.4 (7.5)	17.7 (10.8)
26		8.5 (4.0)	6.3 (3.7)	8.6 (5.3)	12.2 (7.6)	8.2 (2.9)	11.7 (4.1)
27		5.5 (0.5)	2.9 (0.6)	5.1 (0.6)	7.3 (0.9)	5.8 (0.5)	8.3 (0.7)
28		5.4 (0.5)	3.4 (0.6)			5.7 (0.8)	8.2 (1.1)
29		5.9 (1.7)	3.5 (0.8)			5.8 (0.8)	8.3 (1.1)
30		8.1 (6.6)	5.8 (6.2)	6.5 (2.5)	9.3 (3.6)	7.6 (5.3)	10.8 (7.5)
31		10.6 (8.6)	9.7 (10.0)	10.6 (8.5)	15.1 (12.1)	9.8 (6.1)	14.0 (8.8)
Avg	0	10.3	8.5	10.7	15.3	9.8	14.0
n		28	28	16	16	18	18
SD		4.2	3.8	3.4	4.8	3.1	4.4
Min		4.7	2.9	5.1	7.3	5.7	8.2
Max		18.4	14.8	16.7	23.8	16.8	24

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for November, 2009.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	µg·dsm ⁻³	ppb	µg·dsm ⁻³
1		9.3 (5.4)	9.2 (6.1)	8.9 (4.4)	12.7 (6.3)	9.3 (5.5)	13.2 (7.9)
2		7.4 (2.5)	7.3 (2.3)				
3		10.0 (4.4)	10.3 (4.3)	9.6 (4.1)	13.7 (5.9)	10.6 (4.0)	15.2 (5.7)
4		7.5 (2.7)	7.4 (2.7)	6.8 (2.1)	9.7 (3.1)	7.9 (3.1)	11.3 (4.4)
5		6.9 (2.8)	6.4 (2.0)	6.8 (3.1)	9.7 (4.5)	6.7 (1.9)	9.6 (2.8)
6		6.7 (2.2)	6.5 (2.0)	6.1 (1.4)	8.8 (2.0)	6.7 (2.3)	9.6 (3.3)
7		5.4 (0.4)	5.4 (0.4)	5.1 (0.3)	7.3 (0.5)	5.6 (0.5)	7.9 (0.8)
8		5.7 (0.8)	5.7 (0.8)	5.5 (0.6)	7.9 (0.8)	6.2 (0.9)	8.8 (1.3)
9		7.1 (1.9)	6.8 (1.7)	6.6 (1.6)	9.4 (2.2)	7.0 (2.0)	10.0 (2.8)
10		7.9 (3.0)	7.9 (3.1)	7.4 (2.0)	10.6 (2.8)	7.9 (2.8)	11.2 (4.0)
11		10.7 (4.9)	10.0 (3.9)	10.1 (4.0)	14.4 (5.8)	10.1 (3.6)	14.4 (5.1)
12		6.1 (1.9)	5.7 (1.4)				
13							
14		8.0 (7.5)	7.9 (5.6)				
15		6.9 (3.1)	6.7 (2.5)	6.8 (3.3)		7.1 (2.8)	
16		7.5 (2.0)	7.2 (1.4)	8.2 (3.3)		7.5 (1.3)	
17		8.1 (4.3)	8.4 (5.0)				
18		5.1 (0.5)	5.2 (0.6)				
19		5.1 (1.5)	4.8 (1.3)				
20							
21							
22							
23							
24							
25							
26							
27		11.9 (8.4)	11.0 (8.4)				
28		6.0 (6.9)	5.5 (6.5)				
29		9.1 (13.6)	9.6 (12.3)	5.7 (4.1)	8.1 (5.8)	7.7 (8.3)	10.9 (11.8)
30		23.1 (28.1)	21.8 (26.3)				
Avg		8.3	8.0	7.2	10.2	7.7	11.1
n	0	22	22	13	11	13	11
SD		3.7	3.5	1.5	2.3	1.4	2.2
Min		5.1	4.8	5.1	7.3	5.6	7.9
Max		23.1	21.8	10.1	14.4	10.6	15.2

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for December, 2009.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	µg·dsm ⁻³	ppb	µg·dsm ⁻³
1		38.2 (39.5)	43.5 (45.8)				
2		21.7 (16.8)	22.7 (16.4)				
3		17.7 (16.7)	18.0 (15.0)				
4		28.2 (30.5)	24.9 (26.4)	19.3 (21.0)	27.4 (30.0)	33.2 (43.4)	47.4 (61.9)
5		28.5 (32.2)	26.0 (31.7)	33.5 (33.1)	47.8 (47.2)	38.4 (61.8)	54.7 (88.1)
6		5.0 (4.3)	5.3 (4.9)	6.1 (4.7)	8.5 (7.1)	4.9 (4.0)	7.2 (5.9)
7		9.8 (10.2)	8.0 (8.8)	11.4 (21.2)	16.2 (30.2)	8.8 (10.1)	12.5 (14.4)
8		6.9 (6.5)	8.8 (12.8)	10.3 (13.4)	15.6 (19.6)	7.1 (6.9)	10.7 (10.1)
9		20.6 (26.6)	18.3 (23.0)				
10		24.7 (46.7)	16.0 (23.7)				
11		12.3 (17.1)	13.9 (18.2)	11.7 (12.9)	16.7 (18.4)	20.8 (32.2)	29.7 (45.9)
12		2.5 (1.2)	2.3 (1.2)	4.9 (8.4)	7.0 (12.1)	2.1 (0.7)	3.0 (1.0)
13							
14		25.2 (29.4)	20.5 (16.8)				
15		14.3 (22.7)	10.6 (13.7)				
16		19.3 (24.0)	30.1 (59.1)	20.4 (25.0)	29.1 (35.6)	19.0 (19.6)	27.1 (27.9)
17		14.8 (14.6)	12.0 (10.6)			14.9 (13.6)	21.3 (19.4)
18		47.6 (85.6)	6.4 (9.4)				
19		40.9 (118.0)	10.3 (10.9)	58.4 (135.0)	83.4 (193.0)	9.8 (14.4)	13.9 (20.5)
20		23.7 (29.4)	23.4 (27.5)	28.4 (38.9)	40.5 (55.5)	29.8 (47.4)	42.5 (67.6)
21		13.9 (17.4)	12.1 (12.5)	13.5 (10.5)	19.2 (15.0)	13.4 (17.0)	19.1 (24.2)
22		13.3 (10.7)	11.5 (7.7)	9.4 (6.8)	13.4 (9.7)	14.0 (10.8)	20.0 (15.3)
23		20.2 (27.8)	10.9 (7.3)	16.9 (18.2)	24.1 (25.9)	15.2 (14.4)	21.7 (20.5)
24		45.4 (63.6)	43.5 (60.2)	61.0 (80.6)	87.0 (115.0)	68.0 (115.0)	96.9 (164.0)
25		41.3 (58.4)	35.1 (39.7)				
26		7.5 (4.8)	7.9 (4.6)	17.8 (31.2)	25.4 (44.5)	8.1 (4.8)	11.5 (6.9)
27		6.2 (5.2)	7.1 (6.0)	8.2 (9.9)	11.7 (14.1)	6.0 (4.8)	8.6 (6.8)
28		8.9 (4.6)	7.4 (4.8)	8.9 (4.7)	12.6 (6.7)	8.4 (6.0)	12.0 (8.6)
29		13.6 (8.8)	12.8 (7.9)	28.3 (32.0)	40.3 (45.6)	16.1 (11.2)	23.0 (16.0)
30							
31		8.4 (8.8)	9.0 (10.2)	11.5 (14.1)	16.4 (20.1)	12.7 (20.0)	18.2 (28.5)
Avg	0	20.0	16.5	20.0	28.5	17.5	25.0
n		29	29	19	19	20	20
SD		12.5	10.7	15.6	22.3	14.8	21.1
Min		2.5	2.3	4.9	7.0	2.1	3.0
Max		47.6	43.5	61	87	68	96.9

Table E7. Daily means (SD) of hydrogen sulfide concentrations at site CA5B for January, 2010.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppb	ppb	ppb	ppb	µg·dsm ⁻³	ppb	µg·dsm ⁻³
1		19.8 (23.9)	25.1 (26.5)	18.4 (16.0)	26.3 (22.8)	31.4 (44.6)	44.9 (63.7)
2		50.8 (106.0)	17.8 (16.7)	75.7 (98.4)	108.0 (140.0)	27.8 (33.4)	39.8 (47.8)
3		7.6 (18.4)	10.1 (24.0)	6.8 (6.0)	9.7 (8.6)	17.6 (49.3)	25.2 (70.4)
4		13.0 (17.1)	21.8 (33.5)	19.1 (24.2)	27.2 (34.5)	20.6 (30.8)	29.4 (43.9)
5		42.2 (82.5)	47.5 (83.5)	19.6 (24.3)	27.9 (34.7)	74.1 (129.0)	106.0 (184.0)
6		27.8 (59.2)	29.3 (55.8)	34.9 (49.6)	49.8 (70.7)	32.5 (76.2)	46.3 (109.0)
7		26.8 (48.5)	31.2 (54.7)	13.6 (12.9)	19.4 (18.3)	49.1 (106.0)	70.0 (151.0)
8							
9							
10		8.9 (9.9)	11.7 (25.5)	14.8 (21.7)	21.0 (31.0)	7.6 (6.6)	10.8 (9.4)
11		8.8 (12.4)	7.8 (10.3)	8.1 (8.1)	11.5 (11.6)	9.6 (15.5)	13.7 (22.1)
12		9.4 (11.3)	9.8 (13.1)	22.9 (38.8)	32.7 (55.5)	14.0 (25.1)	20.0 (35.9)
13		37.1 (68.4)	24.0 (28.7)	23.5 (26.0)	33.6 (37.2)	29.0 (46.4)	41.4 (66.3)
14		22.5 (29.3)	23.9 (25.3)	25.0 (24.0)	35.8 (34.3)	23.5 (26.8)	33.5 (38.3)
15		25.5 (40.5)	14.0 (13.3)				
16		19.1 (22.1)	16.7 (15.9)	19.1 (19.2)	27.3 (27.5)	15.7 (20.7)	22.3 (29.6)
17		12.7 (20.2)	15.7 (26.5)	14.9 (21.0)	21.3 (30.0)	19.1 (30.0)	27.4 (42.9)
18		7.6 (8.0)	7.1 (8.2)				
19		4.0 (3.2)	3.6 (3.5)				
20		3.9 (4.0)	3.3 (1.8)				
21		13.9 (19.4)	10.3 (8.7)	11.7 (7.8)	15.4 (10.8)	10.6 (9.1)	15.1 (12.9)
22		6.8 (10.1)	7.4 (11.1)	6.0 (4.5)	8.6 (6.5)	10.9 (21.2)	15.5 (30.2)
23		9.2 (9.8)	17.7 (28.0)	13.9 (18.4)	19.8 (26.2)	23.4 (33.7)	33.1 (47.8)
24		7.6 (14.5)	9.0 (17.5)	6.6 (6.1)	9.5 (8.6)	15.1 (33.9)	21.5 (48.1)
25		3.9 (1.4)	4.0 (1.5)	4.5 (2.6)	6.5 (3.7)	3.8 (1.2)	5.5 (1.7)
26		12.3 (9.8)	11.2 (9.2)	40.5 (45.3)	57.8 (64.6)	11.8 (9.4)	16.9 (13.4)
27		20.9 (20.2)	22.2 (21.9)	34.0 (23.5)	48.5 (33.6)	20.7 (17.8)	29.5 (25.3)
28		32.3 (52.7)	35.3 (50.0)	23.4 (27.9)	33.3 (39.8)	42.7 (81.7)	60.9 (117.0)
29		20.8 (34.7)	21.1 (39.8)				
30		1.3 (0.4)	1.3 (0.4)	1.1 (0.1)		1.2 (0.1)	
31		1.8 (0.7)	1.7 (0.6)				
Avg	0	16.5	15.9	19.9	29.6	22.3	33.1
n		29	29	23	22	23	22
SD		12.4	10.8	15.5	21.8	15.9	22.3
Min		1.3	1.3	1.1	6.5	1.2	5.5
Max		50.8	47.5	75.7	108	74.1	106

Table E8. Hydrogen sulfide emissions.

Table E8. Daily means (SD) of hydrogen sulfide emissions at site CA5B for December, 2007.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2	567 (1460)	97 (248)	1100 (2830)			
3						
4						
5						
6	1730 (1400)	294 (239)	3360 (2730)			
7	-1110 (3500)	-189 (596)	-2150 (6810)			
8						
9						
10						
11						
12						
13						
14						
15						
16						
17	1080 (954)	184 (162)	2110 (1850)			
18	1180 (719)	201 (122)	2290 (1400)			
19						
20	-2160 (4220)	-367 (718)	-4200 (8200)			
21						
22						
23						
24	995 (1770)	169 (301)	1930 (3440)			
25						
26	786 (2730)	134 (465)	1530 (5310)			
27						
28	1550 (634)	265 (108)	3020 (1230)			
29						
30						
31						
Avg	514	88	1000			
n	9	9	9	0	0	0
SD	1220	208	2370			
Min	-2160	-367	-4200			
Max	1730	294	3360			

Table E8. Daily means (SD) of hydrogen sulfide emissions at site CA5B for January, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2						
3						
4	3780 (2730)	643 (465)	7340 (5310)			
5	523 (1940)	89 (330)	1020 (3770)			
6						
7						
8	1390 (1050)	236 (178)	2690 (2040)			
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21	1110 (923)	189 (157)	2150 (1790)	1210 (1560)	206 (265)	2180 (2800)
22	-270 (1630)	-46 (277)	-525 (3160)	118 (716)	20 (122)	213 (1290)
23						
24	767 (597)	131 (102)	1490 (1160)	573 (919)	98 (157)	1030 (1660)
25						
26	-176 (1190)	-30 (202)	-341 (2310)	347 (536)	59 (91)	626 (966)
27	-1690 (4010)	-287 (683)	-3280 (7800)	29 (733)	5 (125)	52 (1320)
28						
29						
30						
31	240 (1520)	41 (259)	467 (2960)	39 (546)	7 (93)	69 (984)
Avg	630	107	1220	387	66	696
n	9	9	9	6	6	6
SD	1400	239	2730	416	71	750
Min	-1690	-287	-3280	29	5	52
Max	3780	643	7340	1210	206	2180

Table E8. Daily means (SD) of hydrogen sulfide emissions at site CA5B for February, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2						
3	-231 (2040)	-39 (347)	-449 (3960)	-288 (1930)	-49 (328)	-519 (3470)
4	-2420 (5260)	-412 (895)	-4700 (10200)			
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21	984 (1570)	168 (268)	1910 (3060)	909 (810)	155 (138)	1640 (1460)
22						
23	845 (945)	144 (161)	1640 (1840)			
24	998 (861)	170 (147)	1940 (1670)			
25						
26						
27						
28						
29						
Avg	36	6	69	310	53	559
n	5	5	5	2	2	2
SD	1310	223	2550	599	102	1080
Min	-2420	-412	-4700	-288	-49	-519
Max	998	170	1940	909	155	1640

Table E8. Daily means (SD) of hydrogen sulfide emissions at site CA5B for March, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1				-93 (685)	-16 (117)	-167 (1230)
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16				999 (621)	170 (106)	1800 (1120)
17						
18						
19				234 (333)	40 (57)	421 (600)
20				50 (310)	9 (53)	90 (559)
21						
22						
23						
24				84 (323)	14 (55)	151 (582)
25				27 (586)	5 (100)	48 (1060)
26				23 (211)	4 (36)	41 (381)
27				83 (341)	14 (58)	150 (615)
28				31 (214)	5 (37)	56 (386)
29				67 (339)	11 (58)	120 (610)
30				2 (279)	0 (47)	4 (502)
31						
Avg	0	0	0	137	23	247
n				11	11	11
SD				283	48	509
Min				-93	-16	-167
Max				999	170	1800

Table E8. Daily means (SD) of hydrogen sulfide emissions at site CA5B for April, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15				659 (544)	112 (93)	1190 (978)
16						
17						
18				545 (507)	93 (86)	981 (912)
19						
20						
21						
22				288 (262)	49 (45)	518 (471)
23				570 (391)	97 (67)	1030 (703)
24				503 (290)	86 (49)	905 (521)
25						
26						
27				424 (296)	72 (51)	765 (535)
28				557 (395)	95 (67)	1010 (713)
29						
30						
Avg				507	86	912
n	0	0	0	7	7	7
SD				111	19	199
Min				288	49	518
Max				659	112	1190

Table E8. Daily means (SD) of hydrogen sulfide emissions at site CA5B for May, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2						
3				380 (395)	65 (67)	690 (717)
4				411 (315)	70 (54)	748 (573)
5				182 (305)	31 (52)	332 (556)
6				275 (323)	47 (55)	502 (589)
7				354 (654)	60 (111)	646 (1190)
8						
9				553 (372)	94 (63)	1010 (681)
10				170 (302)	29 (52)	311 (554)
11				383 (354)	65 (60)	704 (650)
12				890 (720)	152 (123)	1640 (1320)
13				1340 (690)	228 (118)	2460 (1270)
14						
15						
16						
17				567 (597)	97 (102)	1050 (1100)
18				627 (393)	107 (67)	1160 (729)
19				592 (381)	101 (65)	1100 (707)
20				963 (699)	164 (119)	1790 (1300)
21				1820 (1150)	311 (195)	3390 (2130)
22				2450 (1310)	417 (223)	4560 (2440)
23				769 (433)	131 (74)	1430 (809)
24						
25						
26				862 (355)	147 (60)	1610 (665)
27				770 (396)	131 (67)	1440 (743)
28				978 (448)	167 (76)	1840 (843)
29				925 (490)	157 (83)	1740 (921)
30				761 (405)	130 (69)	1430 (761)
31				1120 (332)	191 (57)	2110 (624)
Avg	0	0	0	789	134	1470
n				23	23	23
SD				519	88	969
Min				170	29	311
Max				2450	417	4560

Table E8. Daily means (SD) of hydrogen sulfide emissions at site CA5B for June, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1				989 (336)	168 (57)	1860 (632)
2				1030 (455)	176 (78)	1950 (856)
3				983 (430)	167 (73)	1850 (809)
4						
5						
6						
7				131 (296)	22 (51)	246 (559)
8				66 (240)	11 (41)	123 (453)
9				42 (179)	7 (31)	79 (338)
10				77 (247)	13 (42)	145 (467)
11				87 (276)	15 (47)	164 (521)
12						
13						
14				21 (79)	4 (14)	40 (150)
15				-29 (186)	-5 (32)	-55 (352)
16				-12 (130)	-2 (22)	-22 (245)
17				3 (211)	1 (36)	6 (398)
18				43 (284)	7 (48)	82 (538)
19						
20						
21						
22				29 (198)	5 (34)	55 (375)
23				-32 (158)	-5 (27)	-61 (298)
24				-6 (220)	-1 (38)	-12 (416)
25				-9 (186)	-2 (32)	-18 (353)
26				-77 (179)	-13 (31)	-146 (339)
27				98 (277)	17 (47)	186 (525)
28				778 (325)	132 (55)	1470 (617)
29				519 (348)	88 (59)	983 (659)
30				-21 (89)	-4 (15)	-39 (169)
Avg				214	37	404
n	0	0	0	22	22	22
SD				365	62	688
Min				-77	-13	-146
Max				1030	176	1950

Table E8. Daily means (SD) of hydrogen sulfide emissions at site CA5B for July, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1				597 (382)	102 (65)	1130 (724)
2				128 (179)	22 (31)	242 (340)
3				-17 (140)	-3 (24)	-31 (264)
4				425 (526)	72 (90)	806 (997)
5				832 (456)	142 (78)	1580 (864)
6						
7						
8						
9				773 (447)	132 (76)	1460 (848)
10	594 (508)	101 (87)	1180 (1010)	604 (447)	103 (76)	1140 (848)
11						
12	771 (349)	131 (60)	1540 (696)			
13	619 (375)	105 (64)	1240 (749)	719 (419)	122 (71)	1360 (795)
14	777 (431)	132 (73)	1550 (861)	912 (504)	155 (86)	1730 (956)
15	1110 (361)	188 (62)	2220 (723)	1250 (407)	212 (69)	2360 (771)
16	733 (457)	125 (78)	1470 (917)	870 (416)	148 (71)	1650 (789)
17	769 (552)	131 (94)	1550 (1110)	699 (469)	119 (80)	1330 (890)
18	562 (563)	96 (96)	1130 (1130)	778 (453)	133 (77)	1480 (859)
19	696 (412)	118 (70)	1400 (831)	598 (302)	102 (51)	1130 (573)
20	1000 (318)	171 (54)	2020 (642)	1030 (357)	176 (61)	1960 (676)
21	1040 (404)	177 (69)	2110 (816)	995 (409)	169 (70)	1890 (775)
22				913 (401)	156 (68)	1730 (761)
23						
24				637 (444)	108 (76)	1210 (842)
25				599 (463)	102 (79)	1140 (879)
26	607 (416)	103 (71)	1240 (848)	703 (471)	120 (80)	1330 (893)
27	880 (499)	150 (85)	1790 (1020)	1060 (540)	180 (92)	2010 (1020)
28	820 (396)	140 (67)	1670 (807)	882 (447)	150 (76)	1670 (848)
29	672 (525)	114 (89)	1370 (1070)	968 (403)	165 (69)	1840 (765)
30				710 (358)	121 (61)	1350 (679)
31	705 (330)	120 (56)	1440 (673)	756 (466)	129 (79)	1430 (884)
Avg	772	131	1560	737	125	1400
n	16	16	16	25	25	25
SD	158	27	319	269	46	510
Min	562	96	1130	-17	-3	-31
Max	1110	188	2220	1250	212	2360

Table E8. Daily means (SD) of hydrogen sulfide emissions at site CA5B for August, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1	735 (534)	125 (91)	1500 (1090)	791 (467)	135 (80)	1500 (886)
2	911 (535)	155 (91)	1860 (1090)	802 (456)	137 (78)	1520 (864)
3	709 (413)	121 (70)	1450 (843)	720 (465)	123 (79)	1360 (882)
4	774 (483)	132 (82)	1580 (988)	685 (600)	117 (102)	1300 (1140)
5	818 (429)	139 (73)	1670 (878)	1020 (490)	174 (83)	1940 (928)
6	646 (406)	110 (69)	1320 (831)	722 (458)	123 (78)	1370 (867)
7	600 (437)	102 (74)	1230 (894)	788 (442)	134 (75)	1490 (838)
8	1110 (388)	189 (66)	2270 (794)	1090 (423)	186 (72)	2060 (801)
9	929 (447)	158 (76)	1900 (915)	911 (453)	155 (77)	1730 (858)
10						
11						
12						
13						
14	493 (570)	84 (97)	1010 (1170)	562 (408)	96 (70)	1060 (772)
15	389 (438)	66 (75)	798 (899)	556 (427)	95 (73)	1050 (807)
16	595 (446)	101 (76)	1220 (916)	655 (407)	111 (69)	1240 (770)
17	963 (336)	164 (57)	1980 (691)	1040 (347)	176 (59)	1960 (657)
18	1090 (538)	186 (92)	2240 (1110)			
19	805 (481)	137 (82)	1650 (987)	949 (523)	162 (89)	1800 (989)
20	754 (535)	128 (91)	1550 (1100)	714 (539)	122 (92)	1350 (1020)
21	720 (372)	123 (63)	1480 (766)	668 (491)	114 (84)	1260 (929)
22						
23				778 (354)	133 (60)	1470 (670)
24	631 (395)	107 (67)	1300 (815)	695 (364)	118 (62)	1320 (689)
25	798 (421)	136 (72)	1650 (869)	842 (507)	143 (86)	1590 (960)
26	641 (487)	109 (83)	1320 (1010)	663 (476)	113 (81)	1260 (902)
27						
28						
29						
30	280 (850)	48 (145)	580 (1760)	442 (778)	75 (133)	840 (1480)
31	1100 (662)	187 (113)	2280 (1370)	974 (781)	166 (133)	1850 (1480)
Avg	750	128	1540	776	132	1470
n	22	22	22	22	22	22
SD	212	36	435	164	28	310
Min	280	48	580	442	75	840
Max	1110	189	2280	1090	186	2060

Table E8. Daily means (SD) of hydrogen sulfide emissions at site CA5B for September, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1	1000 (732)	171 (125)	2080 (1520)	1070 (637)	182 (109)	2030 (1210)
2						
3						
4						
5						
6						
7	474 (503)	81 (86)	992 (1050)	680 (333)	116 (57)	1300 (636)
8	664 (822)	113 (140)	1390 (1720)	641 (552)	109 (94)	1220 (1050)
9	963 (399)	164 (68)	2020 (835)	983 (437)	167 (74)	1880 (836)
10	486 (515)	83 (88)	1020 (1080)	674 (359)	115 (61)	1290 (686)
11						
12	457 (738)	78 (126)	961 (1550)	642 (486)	109 (83)	1230 (930)
13	794 (423)	135 (72)	1670 (889)	819 (400)	140 (68)	1570 (767)
14	840 (362)	143 (62)	1770 (762)	796 (399)	136 (68)	1530 (765)
15	670 (358)	114 (61)	1410 (753)	748 (423)	127 (72)	1440 (811)
16	790 (425)	135 (72)	1670 (895)	699 (424)	119 (72)	1340 (815)
17	1030 (470)	176 (80)	2180 (992)	1110 (498)	189 (85)	2130 (957)
18	668 (362)	114 (62)	1410 (765)	663 (385)	113 (66)	1270 (739)
19	859 (661)	146 (113)	1820 (1400)	899 (657)	153 (112)	1730 (1260)
20	964 (578)	164 (99)	2040 (1230)	806 (407)	137 (69)	1550 (784)
21	853 (533)	145 (91)	1810 (1130)	797 (433)	136 (74)	1540 (835)
22						
23						
24						
25						
26						
27						
28						
29						
30	730 (831)	124 (142)	1550 (1770)	746 (969)	127 (165)	1450 (1880)
Avg	765	130	1610	798	136	1530
n	16	16	16	16	16	16
SD	180	31	379	143	24	272
Min	457	78	961	641	109	1220
Max	1030	176	2180	1110	189	2130

Table E8. Daily means (SD) of hydrogen sulfide emissions at site CA5B for October, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2				586 (538)	100 (92)	1140 (1040)
3						
4	885 (602)	151 (103)	1880 (1280)	1090 (571)	186 (97)	2120 (1110)
5	555 (543)	95 (93)	1180 (1150)	688 (446)	117 (76)	1340 (867)
6						
7						
8						
9	1970 (1490)	335 (253)	4180 (3150)	1890 (1210)	322 (207)	3680 (2370)
10	2190 (1080)	373 (183)	4640 (2280)	2250 (1130)	384 (192)	4400 (2200)
11	1940 (979)	331 (167)	4120 (2080)	1910 (1020)	324 (174)	3720 (1990)
12						
13						
14						
15						
16						
17						
18						
19	-557 (2090)	-95 (356)	-1180 (4430)	907 (584)	154 (100)	1780 (1150)
20	439 (1190)	75 (202)	930 (2520)	559 (807)	95 (138)	1100 (1590)
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
Avg	1060	181	2250	1240	210	2410
n	7	7	7	8	8	8
SD	939	160	1990	634	108	1240
Min	-557	-95	-1180	559	95	1100
Max	2190	373	4640	2250	384	4400

Table E8. Daily means (SD) of hydrogen sulfide emissions at site CA5B for December, 2008.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17	936 (1020)	159 (174)	2240 (2450)	695 (1310)	118 (224)	1290 (2440)
18	1540 (709)	262 (121)	3680 (1700)	1570 (987)	267 (168)	2910 (1840)
19						
20						
21						
22						
23	1200 (1830)	204 (311)	2880 (4380)	1070 (739)	182 (126)	1950 (1350)
24	1310 (1110)	222 (190)	3140 (2670)	2640 (3460)	450 (589)	4820 (6310)
25	1310 (2860)	223 (486)	3150 (6860)	572 (1340)	98 (229)	1040 (2440)
26						
27						
28						
29						
30						
31						
Avg	1260	214	3020	1310	223	2410
n	5	5	5	5	5	5
SD	195	33	467	752	128	1370
Min	936	159	2240	572	98	1040
Max	1540	262	3680	2640	450	4820

Table E8. Daily means (SD) of hydrogen sulfide emissions at site CA5B for January, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2	490 (2160)	83 (368)	1170 (5140)	2150 (2160)	367 (367)	3850 (3850)
3						
4						
5	140 (1860)	24 (317)	322 (4340)	702 (909)	120 (155)	1260 (1630)
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
Avg	315	54	746	1430	243	2550
n	2	2	2	2	2	2
SD	175	30	424	725	124	1300
Min	140	24	322	702	120	1260
Max	490	83	1170	2150	367	3850

Table E8. Daily means (SD) of hydrogen sulfide emissions at site CA5B for February, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2						
3						
4						
5	563 (1920)	96 (327)	1110 (3790)	2280 (6010)	389 (1020)	4140 (10900)
6						
7						
8	572 (1270)	98 (217)	1120 (2500)	552 (798)	94 (136)	999 (1450)
9	-453 (2030)	-77 (345)	-889 (3970)	15 (1180)	3 (201)	27 (2140)
10						
11	2160 (2740)	368 (467)	4230 (5350)	1470 (764)	250 (130)	2660 (1380)
12						
13	2090 (4130)	357 (703)	4070 (8030)			
14	1770 (583)	302 (99)	3440 (1130)	2170 (1360)	369 (231)	3930 (2460)
15						
16						
17						
18						
19						
20						
21	881 (776)	150 (132)	1690 (1490)	1960 (2030)	333 (346)	3540 (3680)
22	1540 (1220)	263 (208)	2960 (2340)	1950 (1360)	333 (232)	3540 (2470)
23						
24	-22 (1310)	-4 (223)	-41 (2500)	-589 (2210)	-100 (376)	-1070 (4000)
25						
26						
27						
28						
Avg	1010	172	1970	1230	209	2220
n	9	9	9	8	8	8
SD	881	150	1710	1020	174	1850
Min	-453	-77	-889	-589	-100	-1070
Max	2160	368	4230	2280	389	4140

Table E8. Daily means (SD) of hydrogen sulfide emissions at site CA5B for March, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2	105 (2150)	18 (366)	199 (4060)	1590 (4870)	271 (830)	2880 (8800)
3	694 (1430)	118 (244)	1310 (2710)	1270 (2070)	216 (353)	2290 (3740)
4						
5						
6						
7						
8						
9	170 (768)	29 (131)	319 (1440)	-320 (2220)	-55 (378)	-574 (3980)
10						
11						
12						
13						
14	-91 (1210)	-16 (205)	-170 (2250)	-152 (1710)	-26 (291)	-271 (3040)
15						
16						
17	-800 (8370)	-136 (1420)	-1490 (15500)	825 (2100)	140 (357)	1460 (3730)
18						
19						
20	-2040 (5960)	-347 (1010)	-3770 (11000)	218 (1950)	37 (331)	385 (3440)
21	-61 (3140)	-10 (535)	-113 (5810)	225 (1380)	38 (235)	398 (2440)
22	126 (1380)	21 (235)	232 (2550)	138 (930)	24 (158)	243 (1640)
23	1020 (2080)	173 (354)	1880 (3840)	583 (1230)	99 (210)	1030 (2170)
24						
25						
26	40 (1980)	7 (337)	74 (3640)	1510 (1630)	257 (277)	2650 (2860)
27						
28						
29	134 (1260)	23 (214)	245 (2310)	1020 (1640)	175 (279)	1800 (2870)
30	-20 (809)	-3 (138)	-36 (1480)	1070 (1190)	183 (203)	1880 (2090)
31						
Avg	-60	-10	-110	665	113	1180
n	12	12	12	12	12	12
SD	728	124	1350	617	105	1100
Min	-2040	-347	-3770	-320	-55	-574
Max	1020	173	1880	1590	271	2880

Table E8. Daily means (SD) of hydrogen sulfide emissions at site CA5B for April, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1	37 (479)	6 (82)	68 (881)	1490 (1190)	254 (203)	2610 (2080)
2	-43 (933)	-7 (159)	-79 (1720)	980 (488)	167 (83)	1710 (853)
3						
4						
5						
6						
7						
8						
9						
10	556 (1350)	95 (230)	1040 (2520)	476 (685)	81 (117)	827 (1190)
11	673 (2980)	115 (507)	1260 (5560)	514 (1040)	88 (177)	893 (1810)
12	-5 (1930)	-1 (329)	-10 (3610)	140 (1360)	24 (231)	243 (2360)
13	-1670 (6870)	-284 (1170)	-3120 (12900)	-609 (3290)	-104 (560)	-1060 (5710)
14	-402 (2110)	-69 (360)	-755 (3960)	340 (1770)	58 (301)	590 (3060)
15	45 (1200)	8 (204)	84 (2250)	895 (1300)	152 (221)	1550 (2250)
16	-102 (1300)	-17 (222)	-191 (2450)	388 (1340)	66 (228)	672 (2320)
17						
18						
19						
20						
21						
22						
23	7 (2950)	1 (503)	13 (5610)	-334 (2230)	-57 (380)	-577 (3850)
24	375 (1690)	64 (288)	715 (3220)	529 (952)	90 (162)	912 (1640)
25	668 (876)	114 (149)	1270 (1670)	596 (947)	102 (161)	1030 (1630)
26	-140 (1540)	-24 (262)	-268 (2940)	984 (873)	168 (149)	1690 (1500)
27	-499 (3420)	-85 (583)	-955 (6540)	371 (834)	63 (142)	638 (1440)
28	-391 (1640)	-67 (280)	-749 (3140)	927 (1020)	158 (174)	1590 (1750)
29	58 (1010)	10 (171)	111 (1930)	455 (675)	78 (115)	783 (1160)
30	-272 (1250)	-46 (212)	-521 (2390)	829 (990)	141 (169)	1420 (1700)
Avg	-65	-11	-123	528	90	914
n	17	17	17	17	17	17
SD	528	90	991	486	83	844
Min	-1670	-284	-3120	-609	-104	-1060
Max	673	115	1270	1490	254	2610

Table E8. Daily means (SD) of hydrogen sulfide emissions at site CA5B for May, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1	326 (467)	56 (80)	624 (894)	992 (663)	169 (113)	1700 (1140)
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12	46 (362)	8 (62)	87 (682)	1060 (813)	180 (138)	1810 (1390)
13	165 (484)	28 (83)	311 (912)	1690 (1040)	288 (177)	2890 (1780)
14	74 (419)	13 (71)	140 (788)	1390 (841)	236 (143)	2370 (1440)
15	229 (718)	39 (122)	431 (1350)	1090 (676)	186 (115)	1860 (1150)
16						
17	-129 (458)	-22 (78)	-241 (857)	581 (324)	99 (55)	990 (552)
18	-163 (797)	-28 (136)	-305 (1490)	566 (1250)	96 (213)	964 (2130)
19	70 (370)	12 (63)	131 (691)	1120 (619)	190 (105)	1900 (1050)
20	-86 (154)	-15 (26)	-161 (288)	1120 (506)	190 (86)	1900 (860)
21	108 (386)	18 (66)	201 (719)	924 (496)	157 (85)	1570 (844)
22	21 (139)	4 (24)	39 (258)	1260 (489)	215 (83)	2140 (832)
23	61 (504)	10 (86)	112 (936)	1480 (540)	251 (92)	2510 (917)
24	286 (399)	49 (68)	530 (740)	1520 (428)	260 (73)	2590 (726)
25	-4 (254)	-1 (43)	-8 (471)	1020 (427)	173 (73)	1730 (724)
26	28 (626)	5 (107)	52 (1160)	813 (479)	138 (82)	1380 (813)
27						
28						
29						
30						
31						
Avg	69	12	129	1110	189	1890
n	15	15	15	15	15	15
SD	136	23	256	313	53	533
Min	-163	-28	-305	566	96	964
Max	326	56	624	1690	288	2890

Table E8. Daily means (SD) of hydrogen sulfide emissions at site CA5B for June, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26	757 (530)	129 (90)	1340 (941)	812 (819)	138 (139)	1360 (1370)
27	558 (588)	95 (100)	990 (1040)	720 (465)	123 (79)	1200 (778)
28	673 (511)	115 (87)	1190 (905)	357 (1160)	61 (198)	597 (1940)
29	753 (452)	128 (77)	1330 (799)	755 (648)	129 (110)	1260 (1080)
30	838 (434)	143 (74)	1480 (766)	927 (462)	158 (79)	1550 (772)
Avg	716	122	1270	714	122	1190
n	5	5	5	5	5	5
SD	94	16	166	192	33	320
Min	558	95	990	357	61	597
Max	838	143	1480	927	158	1550

Table E8. Daily means (SD) of hydrogen sulfide emissions at site CA5B for July, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1	792 (849)	135 (145)	1400 (1500)	943 (1260)	161 (214)	1570 (2100)
2	787 (408)	134 (70)	1390 (719)	798 (615)	136 (105)	1330 (1030)
3	850 (663)	145 (113)	1490 (1170)	1040 (403)	177 (69)	1730 (672)
4				855 (416)	146 (71)	1420 (694)
5	1110 (820)	189 (140)	1950 (1440)	1180 (448)	201 (76)	1970 (746)
6	946 (566)	161 (96)	1660 (991)	1010 (553)	171 (94)	1670 (921)
7	962 (370)	164 (63)	1680 (648)	906 (393)	154 (67)	1510 (654)
8	876 (526)	149 (90)	1530 (919)	962 (455)	164 (78)	1600 (757)
9	859 (404)	146 (69)	1500 (706)	978 (511)	167 (87)	1630 (849)
10	834 (558)	142 (95)	1450 (973)	895 (464)	152 (79)	1490 (771)
11	884 (547)	151 (93)	1540 (951)	836 (478)	142 (81)	1390 (794)
12	830 (494)	141 (84)	1440 (859)	808 (471)	138 (80)	1340 (782)
13	962 (623)	164 (106)	1670 (1080)	932 (561)	159 (96)	1550 (931)
14						
15						
16	761 (690)	130 (118)	1320 (1190)	862 (476)	147 (81)	1430 (790)
17	725 (668)	124 (114)	1250 (1150)	856 (461)	146 (79)	1420 (764)
18						
19	292 (350)	50 (60)	504 (604)	714 (320)	122 (55)	1180 (529)
20						
21						
22	832 (396)	142 (68)	1430 (680)	788 (378)	134 (64)	1300 (625)
23						
24						
25						
26						
27						
28						
29						
30						
31						
Avg	832	142	1450	903	154	1500
n	16	16	16	17	17	17
SD	166	28	293	108	18	182
Min	292	50	504	714	122	1180
Max	1110	189	1950	1180	201	1970

Table E8. Daily means (SD) of hydrogen sulfide emissions at site CA5B for August, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1	794 (446)	135 (76)	1350 (760)	822 (478)	140 (81)	1360 (788)
2	739 (435)	126 (74)	1260 (742)	600 (339)	102 (58)	991 (559)
3	566 (324)	96 (55)	966 (552)	817 (629)	139 (107)	1350 (1040)
4	579 (466)	99 (79)	990 (795)	705 (377)	120 (64)	1170 (624)
5	684 (506)	116 (86)	1170 (865)	913 (565)	156 (96)	1510 (935)
6	683 (540)	116 (92)	1170 (924)	599 (332)	102 (57)	991 (549)
7	151 (315)	26 (54)	259 (539)	346 (306)	59 (52)	573 (508)
8						
9						
10						
11	25 (414)	4 (71)	43 (712)	204 (197)	35 (34)	339 (326)
12	-5 (521)	-1 (89)	-8 (897)			
13	-244 (528)	-42 (90)	-421 (910)	31 (347)	5 (59)	51 (578)
14	186 (342)	32 (58)	321 (590)	247 (164)	42 (28)	411 (272)
15						
16						
17						
18	232 (285)	40 (49)	401 (492)	318 (186)	54 (32)	530 (311)
19	289 (206)	49 (35)	501 (357)	387 (207)	66 (35)	646 (346)
20	370 (244)	63 (42)	640 (423)	420 (279)	72 (48)	701 (466)
21	30 (911)	5 (155)	52 (1580)	182 (222)	31 (38)	304 (372)
22						
23	305 (136)	52 (23)	530 (236)	357 (164)	61 (28)	598 (275)
24	336 (186)	57 (32)	584 (323)	315 (174)	54 (30)	528 (292)
25	259 (214)	44 (37)	451 (372)	204 (238)	35 (41)	341 (399)
26	72 (359)	12 (61)	126 (625)	187 (234)	32 (40)	314 (393)
27	174 (383)	30 (65)	304 (667)	282 (236)	48 (40)	473 (397)
28						
29						
30	153 (531)	26 (90)	267 (927)			
31						
Avg	304	52	522	418	71	693
n	21	21	21	19	19	19
SD	272	46	464	245	42	404
Min	-244	-42	-421	31	5	51
Max	794	135	1350	913	156	1510

Table E8. Daily means (SD) of hydrogen sulfide emissions at site CA5B for September, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1	171 (322)	29 (55)	300 (563)	211 (219)	36 (37)	355 (369)
2	174 (476)	30 (81)	305 (834)	162 (283)	28 (48)	273 (478)
3						
4	395 (290)	67 (49)	693 (508)	253 (180)	43 (31)	428 (303)
5	349 (255)	59 (43)	612 (448)	370 (240)	63 (41)	624 (405)
6	341 (429)	58 (73)	600 (755)	258 (457)	44 (78)	436 (772)
7	232 (436)	39 (74)	407 (767)	316 (263)	54 (45)	534 (444)
8						
9						
10						
11						
12				356 (252)	61 (43)	604 (427)
13	267 (177)	45 (30)	471 (312)	262 (170)	45 (29)	444 (288)
14	388 (303)	66 (52)	687 (537)	343 (232)	58 (39)	583 (393)
15						
16						
17						
18						
19	46 (371)	8 (63)	82 (659)	289 (417)	49 (71)	492 (711)
20						
21						
22						
23						
24						
25						
26						
27						
28	135 (372)	23 (63)	242 (666)	143 (286)	24 (49)	246 (490)
29	341 (296)	58 (50)	611 (531)	322 (322)	55 (55)	553 (552)
30						
Avg	258	44	456	274	47	464
n	11	11	11	12	12	12
SD	110	19	194	70	12	120
Min	46	8	82	143	24	246
Max	395	67	693	370	63	624

Table E8. Daily means (SD) of hydrogen sulfide emissions at site CA5B for October, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2						
3	276 (350)	47 (60)	496 (630)	346 (532)	59 (91)	595 (915)
4						
5						
6						
7						
8	-56 (1140)	-10 (194)	-101 (2050)	414 (678)	71 (116)	714 (1170)
9						
10						
11						
12	483 (282)	82 (48)	876 (513)	519 (303)	88 (52)	899 (526)
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27	-203 (321)	-35 (55)	-374 (590)	1650 (761)	281 (130)	2890 (1330)
28						
29						
30						
31						
Avg	125	21	224	733	125	1280
n	4	4	4	4	4	4
SD	270	46	491	535	91	939
Min	-203	-35	-374	346	59	595
Max	483	82	876	1650	281	2890

Table E8. Daily means (SD) of hydrogen sulfide emissions at site CA5B for December, 2009.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12	646 (2280)	110 (388)	1180 (4140)	-28 (186)	-5 (32)	-47 (319)
13						
14						
15						
16						
17						
18						
19						
20						
21						
22	-2340 (5520)	-398 (940)	-4240 (10000)	1030 (2120)	176 (362)	1770 (3640)
23						
24						
25						
26						
27	175 (749)	30 (128)	318 (1360)	-166 (479)	-28 (82)	-284 (819)
28						
29						
30						
31						
Avg	-505	-86	-916	280	48	481
n	3	3	3	3	3	3
SD	1310	223	2380	536	91	919
Min	-2340	-398	-4240	-166	-28	-284
Max	646	110	1180	1030	176	1770

Table E8. Daily means (SD) of hydrogen sulfide emissions at site CA5B for January, 2010.

Day	Barn 1			Barn 2		
	g·d ⁻¹	mg·d ⁻¹ m ⁻²	mg·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2						
3	-455 (3950)	-78 (672)	-823 (7140)	1590 (5430)	271 (925)	2710 (9260)
4						
5						
6						
7						
8						
9						
10						
11	121 (858)	21 (146)	218 (1550)	173 (328)	29 (56)	294 (558)
12	1600 (3480)	272 (593)	2880 (6280)	542 (1760)	92 (299)	922 (2990)
13						
14						
15						
16						
17	-54 (1130)	-9 (193)	-97 (2040)	592 (1080)	101 (184)	1000 (1830)
18						
19						
20						
21						
22	-128 (1210)	-22 (206)	-229 (2170)	410 (1280)	70 (218)	694 (2170)
23						
24	-243 (1960)	-41 (334)	-438 (3530)	1090 (2840)	185 (484)	1840 (4810)
25	56 (324)	10 (55)	100 (583)	-54 (305)	-9 (52)	-91 (516)
26	3090 (5740)	527 (977)	5560 (10300)	120 (605)	21 (103)	203 (1020)
27						
28						
29						
30						
31						
Avg	498	85	897	558	95	947
n	8	8	8	8	8	8
SD	1140	195	2060	510	87	869
Min	-455	-78	-823	-54	-9	-91
Max	3090	527	5560	1590	271	2710

Table E9. Ammonia concentrations.

Table E9. Daily means (SD) of ammonia concentrations at site CA5B for September, 2007.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppm	ppm	ppm	ppm	mg·dsm ⁻³	ppm	mg·dsm ⁻³
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27	1.0 (0.3)	1.2 (0.3)	1.1 (0.3)	1.3 (0.4)	0.9 (0.3)	1.2 (0.4)	0.9 (0.3)
28	0.6 (0.1)						
29							
30							
Avg	0.8						
n	2	1	1	1	1	1	1
SD	0.2						
Min	0.6						
Max	1						

Table E9. Daily means (SD) of ammonia concentrations at site CA5B for October, 2007.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppm	ppm	ppm	ppm	mg·dsm ⁻³	ppm	mg·dsm ⁻³
1							
2							
3							
4							
5							
6	0.7 (0.1)						
7	0.7 (0.4)						
8	1.1 (0.6)						
9	1.0 (0.3)						
10							
11							
12							
13							
14							
15							
16							
17							
18							
19	0.7 (0.2)	0.9 (0.3)					
20	0.5 (0.1)	0.5 (0.1)					
21	0.5 (0.1)	0.5 (0.2)					
22	0.8 (0.4)	0.9 (0.4)					
23	1.4 (0.5)	1.5 (0.5)					
24	1.4 (0.4)						
25	1.5 (0.8)	1.6 (0.8)					
26	1.0 (0.1)						
27	0.9 (0.1)	1.1 (0.3)					
28	0.9 (0.2)	0.8 (0.2)					
29	1.2 (0.6)	1.4 (0.6)					
30	0.8 (0.1)						
31	1.0 (0.2)		1.0 (0.1)				
Avg	0.9	1.0					
n	17	9	1	0	0	0	0
SD	0.3	0.4					
Min	0.5	0.5					
Max	1.5	1.6					

Table E9. Daily means (SD) of ammonia concentrations at site CA5B for November, 2007.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppm	ppm	ppm	ppm	mg·dsm ⁻³	ppm	mg·dsm ⁻³
1	1.2 (0.3)		1.2 (0.3)				
2	1.0 (0.2)		1.0 (0.4)				
3	1.0 (0.2)		1.2 (0.4)				
4	1.3 (0.3)		1.1 (0.4)				
5	1.4 (0.6)		1.2 (0.4)				
6	1.0 (0.2)		1.0 (0.2)				
7	1.1 (0.2)		1.3 (0.2)				
8	0.8 (0.2)		0.9 (0.2)				
9	0.8 (0.1)		0.9 (0.2)				
10	1.1 (0.4)		1.2 (0.3)				
11	0.5 (0.1)		0.6 (0.1)				
12	0.7 (0.2)		0.7 (0.2)				
13	0.8 (0.1)		0.8 (0.2)				
14	0.8 (0.1)						
15	0.8 (0.1)		0.7 (0.2)				
16	0.7 (0.1)		0.9 (0.1)				
17	0.8 (0.1)		0.9 (0.2)				
18	0.7 (0.1)		0.8 (0.1)				
19	0.7 (0.1)		0.7 (0.1)				
20	0.5 (0.1)		0.5 (0.1)				
21	0.6 (0.1)		0.5 (0.1)				
22	0.6 (0.1)		0.6 (0.1)				
23	0.5 (0.1)		0.5 (0.1)				
24	0.5 (0.2)		0.5 (0.1)				
25	0.6 (0.1)		0.7 (0.1)				
26	0.6 (0.1)	0.7 (0.2)	0.6 (0.2)				
27	0.5 (0.0)	0.6 (0.1)	0.5 (0.1)				
28	0.7 (0.3)	0.6 (0.2)	0.6 (0.2)				
29	0.7 (0.1)	0.7 (0.2)	0.7 (0.1)				
30	0.5 (0.1)						
Avg	0.8	0.7	0.8	0	0	0	0
n	30	4	28				
SD	0.2	0	0.2				
Min	0.5	0.6	0.5				
Max	1.4	0.7	1.3				

Table E9. Daily means (SD) of ammonia concentrations at site CA5B for December, 2007.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppm	ppm	ppm	ppm	mg·dsm ⁻³	ppm	mg·dsm ⁻³
1	0.5 (0.0)	0.5 (0.1)	0.5 (0.0)				
2	0.4 (0.0)	0.4 (0.0)	0.4 (0.1)	0.4 (0.1)	0.3 (0.0)		
3	0.6 (0.2)	0.6 (0.2)	0.5 (0.1)	0.6 (0.2)	0.4 (0.1)		
4	0.8 (0.1)	0.8 (0.2)	0.8 (0.2)	0.8 (0.1)	0.6 (0.1)		
5	0.8 (0.0)	0.9 (0.2)	0.9 (0.2)	1.0 (0.2)	0.7 (0.1)		
6	0.6 (0.1)	0.6 (0.1)	0.5 (0.1)	0.6 (0.2)	0.4 (0.1)		
7	0.4 (0.1)	0.4 (0.1)	0.4 (0.1)	0.4 (0.1)	0.3 (0.0)		
8	0.4 (0.1)	0.5 (0.1)	0.5 (0.1)	0.5 (0.1)	0.4 (0.1)		
9	0.5 (0.1)	0.5 (0.1)	0.4 (0.1)	0.5 (0.2)	0.4 (0.1)		
10	0.5 (0.1)	0.5 (0.1)	0.5 (0.1)	0.6 (0.1)	0.4 (0.1)		
11	0.5 (0.1)	0.5 (0.2)	0.5 (0.1)	0.6 (0.2)	0.4 (0.1)		
12	0.6 (0.1)						
13	0.6 (0.0)	0.5 (0.1)	0.5 (0.1)	0.6 (0.1)	0.4 (0.1)		
14	0.4 (0.1)	0.4 (0.1)	0.4 (0.0)	0.4 (0.1)	0.3 (0.1)		
15	0.5 (0.1)	0.6 (0.2)	0.6 (0.2)	0.8 (0.3)	0.6 (0.2)		
16	0.6 (0.1)	0.5 (0.1)	0.4 (0.1)	0.6 (0.2)	0.4 (0.2)		
17	0.4 (0.0)	0.4 (0.0)	0.4 (0.0)	0.4 (0.0)	0.3 (0.0)		
18	0.4 (0.0)	0.4 (0.1)	0.4 (0.1)	0.5 (0.1)	0.3 (0.1)		
19	0.6 (0.0)	0.7 (0.1)	0.7 (0.2)	0.8 (0.2)	0.6 (0.2)		
20	0.4 (0.1)	0.4 (0.1)	0.4 (0.1)	0.4 (0.1)	0.3 (0.1)		
21	0.4 (0.1)	0.4 (0.1)	0.4 (0.1)	0.4 (0.2)	0.3 (0.1)		
22	0.4 (0.0)	0.4 (0.1)	0.4 (0.0)	0.4 (0.1)	0.3 (0.0)		
23	0.4 (0.0)	0.5 (0.1)	0.5 (0.1)	0.4 (0.1)	0.3 (0.1)		
24	0.3 (0.1)	0.4 (0.1)	0.4 (0.1)	0.4 (0.1)	0.3 (0.1)		
25	0.3 (0.1)	0.3 (0.1)	0.3 (0.1)	0.3 (0.1)	0.2 (0.1)		
26	0.3 (0.1)	0.3 (0.1)	0.3 (0.1)	0.4 (0.0)	0.3 (0.0)		
27	0.3 (0.1)	0.3 (0.0)	0.3 (0.1)				
28	0.3 (0.1)	0.3 (0.1)	0.3 (0.1)	0.3 (0.1)	0.2 (0.1)		
29	0.4 (0.1)	0.4 (0.1)	0.4 (0.1)	0.4 (0.1)	0.3 (0.1)		
30	0.4 (0.1)	0.4 (0.1)	0.4 (0.1)	0.4 (0.1)	0.3 (0.1)		
31	0.3 (0.0)	0.4 (0.1)	0.4 (0.0)	0.3 (0.1)	0.2 (0.0)		
Avg	0.5	0.5	0.5	0.5	0.4		
n	31	30	30	28	28	0	0
SD	0.1	0.1	0.1	0.2	0.1		
Min	0.3	0.3	0.3	0.3	0.2		
Max	0.8	0.9	0.9	1	0.7		

Table E9. Daily means (SD) of ammonia concentrations at site CA5B for January, 2008.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppm	ppm	ppm	ppm	mg·dsm ⁻³	ppm	mg·dsm ⁻³
1	0.4 (0.1)	0.4 (0.1)	0.4 (0.1)	0.5 (0.1)	0.3 (0.1)		
2	0.5 (0.0)	0.4 (0.1)	0.5 (0.1)	0.5 (0.1)	0.3 (0.1)		
3	0.4 (0.1)	0.5 (0.1)	0.5 (0.0)	0.5 (0.1)	0.4 (0.1)		
4	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.0 (0.1)		
5	0.1 (0.0)	0.0 (0.1)	0.0 (0.1)	0.1 (0.1)	0.0 (0.1)		
6	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.2 (0.2)	0.1 (0.2)		
7	0.3 (0.1)	0.3 (0.2)	0.3 (0.1)	0.5 (0.3)	0.4 (0.2)		
8	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)		
9	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.1 (0.1)		
10	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)		
11	0.3 (0.1)						
12	0.3 (0.1)	0.3 (0.1)	0.3 (0.1)	0.4 (0.1)	0.3 (0.1)		
13	0.3 (0.1)	0.4 (0.1)	0.3 (0.1)	0.4 (0.1)	0.3 (0.1)		
14	0.3 (0.1)	0.2 (0.1)	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)
15	0.2 (0.1)	0.2 (0.0)	0.2 (0.1)	0.2 (0.1)	0.2 (0.0)	0.2 (0.1)	0.2 (0.1)
16	0.2 (0.0)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)
17	0.2 (0.1)	0.3 (0.0)	0.2 (0.0)	0.3 (0.1)	0.2 (0.0)	0.3 (0.1)	0.2 (0.1)
18	0.3 (0.2)	0.3 (0.1)	0.3 (0.1)	0.3 (0.1)	0.2 (0.1)	0.3 (0.2)	0.2 (0.1)
19	0.4 (0.2)	0.3 (0.2)	0.2 (0.1)	0.3 (0.2)	0.2 (0.1)	0.3 (0.2)	0.2 (0.1)
20	0.1 (0.1)						
21	0.1 (0.1)	0.1 (0.1)	0.1 (0.0)	0.1 (0.1)	0.1 (0.0)	0.1 (0.1)	0.1 (0.1)
22	0.0 (0.1)	0.1 (0.0)	0.1 (0.0)	0.1 (0.1)	0.0 (0.0)	0.1 (0.1)	0.1 (0.0)
23	0.1 (0.1)	0.1 (0.0)	0.1 (0.1)	0.1 (0.1)	0.1 (0.0)	0.1 (0.1)	0.1 (0.1)
24	0.1 (0.1)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.1)	0.0 (0.0)
25	0.0 (0.0)						
26	0.1 (0.1)	0.0 (0.1)	0.0 (0.1)	0.1 (0.1)	0.0 (0.0)	0.0 (0.1)	0.0 (0.0)
27	0.1 (0.0)	0.1 (0.0)	0.1 (0.1)	0.0 (0.1)	0.0 (0.0)	0.1 (0.1)	0.0 (0.1)
28	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.2 (0.2)	0.1 (0.1)
29	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.0 (0.1)
30	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.0)		
31	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)
Avg	0.2	0.2	0.2	0.2	0.2	0.1	0.1
n	31	28	28	28	28	15	15
SD	0.1	0.1	0.1	0.2	0.1	0.1	0.1
Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max	0.5	0.5	0.5	0.5	0.4	0.3	0.2

Table E9. Daily means (SD) of ammonia concentrations at site CA5B for February, 2008.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppm	ppm	ppm	ppm	mg·dsm ⁻³	ppm	mg·dsm ⁻³
1	0.1 (0.1)	0.1 (0.1)	0.2 (0.2)	0.2 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)
2	0.0 (0.0)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.2)	0.1 (0.1)
3	0.0 (0.1)	0.0 (0.1)	0.0 (0.1)	0.0 (0.1)	0.0 (0.0)	0.0 (0.1)	0.0 (0.1)
4	0.0 (0.1)	0.1 (0.0)	0.0 (0.1)	0.1 (0.1)	0.0 (0.0)	0.1 (0.1)	0.1 (0.1)
5	0.3 (0.2)	0.2 (0.1)	0.1 (0.1)	0.2 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)
6	0.3 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.1 (0.1)
7	0.3 (0.1)	0.4 (0.1)	0.3 (0.1)	0.4 (0.2)	0.3 (0.1)	0.5 (0.3)	0.3 (0.2)
8	0.3 (0.1)	0.3 (0.1)	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)
9	0.3 (0.1)	0.4 (0.2)	0.3 (0.2)	0.4 (0.3)	0.3 (0.2)	0.4 (0.3)	0.3 (0.2)
10	0.3 (0.1)	0.4 (0.1)	0.4 (0.1)	0.5 (0.2)	0.3 (0.1)	0.4 (0.2)	0.3 (0.1)
11	0.5 (0.1)	0.5 (0.1)	0.5 (0.1)	0.6 (0.2)	0.4 (0.1)	0.6 (0.2)	0.4 (0.1)
12	0.3 (0.1)	0.4 (0.2)	0.4 (0.2)	0.5 (0.2)	0.3 (0.1)	0.5 (0.2)	0.3 (0.1)
13	0.2 (0.2)	0.3 (0.2)	0.2 (0.2)	0.3 (0.2)	0.2 (0.2)	0.4 (0.3)	0.3 (0.2)
14	0.0 (0.1)						
15	0.1 (0.1)	0.1 (0.1)	0.2 (0.1)	0.2 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)
16	0.2 (0.1)	0.3 (0.2)	0.2 (0.2)	0.3 (0.2)	0.2 (0.1)	0.3 (0.3)	0.2 (0.2)
17	0.3 (0.1)	0.5 (0.1)	0.4 (0.1)	0.4 (0.1)	0.3 (0.1)		
18	0.2 (0.0)	0.4 (0.2)		0.4 (0.1)	0.3 (0.1)		
19	0.2 (0.1)	0.3 (0.1)	0.3 (0.1)	0.4 (0.1)	0.3 (0.1)	0.5 (0.2)	0.4 (0.1)
20	0.3 (0.1)	0.3 (0.1)	0.3 (0.1)	0.3 (0.1)	0.2 (0.1)	0.4 (0.2)	0.3 (0.1)
21	0.3 (0.1)	0.1 (0.1)	0.1 (0.1)	0.2 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)
22	0.2 (0.2)	0.4 (0.2)	0.4 (0.2)	0.5 (0.2)	0.3 (0.2)		
23	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)		
24	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)		
25	0.3 (0.1)	0.3 (0.1)	0.3 (0.1)	0.3 (0.1)	0.2 (0.1)		
26	0.6 (0.3)	0.5 (0.2)	0.5 (0.1)	0.6 (0.2)	0.4 (0.2)		
27	0.5 (0.2)	0.6 (0.2)	0.6 (0.2)	0.6 (0.2)	0.4 (0.1)	0.6 (0.2)	0.4 (0.1)
28	0.4 (0.1)	0.6 (0.1)	0.5 (0.1)	0.6 (0.2)	0.4 (0.1)	0.6 (0.2)	0.4 (0.1)
29	0.3 (0.1)	0.4 (0.2)	0.4 (0.1)	0.4 (0.1)	0.3 (0.1)	0.4 (0.2)	0.3 (0.1)
Avg	0.2	0.3	0.3	0.3	0.2	0.3	0.2
n	29	28	27	28	28	21	21
SD	0.1	0.2	0.2	0.2	0.1	0.2	0.1
Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max	0.6	0.6	0.6	0.6	0.4	0.6	0.4

Table E9. Daily means (SD) of ammonia concentrations at site CA5B for March, 2008.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppm	ppm	ppm	ppm	mg·dsm ⁻³	ppm	mg·dsm ⁻³
1	0.2 (0.1)		0.2 (0.1)			0.3 (0.2)	0.2 (0.1)
2	0.3 (0.3)		0.1 (0.1)			0.2 (0.2)	0.1 (0.1)
3	0.3 (0.2)		0.3 (0.1)			0.4 (0.3)	0.3 (0.2)
4	0.5 (0.1)		0.5 (0.2)			0.5 (0.2)	0.4 (0.2)
5	0.4 (0.3)		0.4 (0.3)			0.5 (0.3)	0.3 (0.2)
6	0.5 (0.1)		0.5 (0.1)			0.5 (0.1)	0.4 (0.1)
7	0.5 (0.1)		0.6 (0.1)			0.6 (0.1)	0.4 (0.1)
8	0.4 (0.1)		0.4 (0.1)			0.4 (0.1)	0.3 (0.1)
9	0.7 (0.2)		0.7 (0.2)			0.7 (0.3)	0.5 (0.2)
10	0.7 (0.1)		0.7 (0.2)			0.8 (0.2)	0.6 (0.2)
11	0.6 (0.1)		0.7 (0.1)			0.7 (0.1)	0.5 (0.1)
12	0.7 (0.1)		0.7 (0.1)			0.7 (0.2)	0.5 (0.1)
13	0.6 (0.2)		0.6 (0.2)			0.6 (0.2)	0.4 (0.1)
14	0.6 (0.2)		0.5 (0.2)			0.6 (0.2)	0.4 (0.1)
15	0.4 (0.1)		0.4 (0.1)			0.4 (0.1)	0.3 (0.1)
16	0.2 (0.0)		0.2 (0.1)			0.2 (0.1)	0.2 (0.0)
17	0.5 (0.2)		0.4 (0.2)			0.5 (0.2)	0.3 (0.1)
18	0.7 (0.2)		0.6 (0.2)			0.7 (0.3)	0.5 (0.2)
19	0.6 (0.1)		0.6 (0.2)			0.6 (0.2)	0.4 (0.1)
20	0.5 (0.1)		0.5 (0.1)			0.5 (0.1)	0.3 (0.1)
21	0.4 (0.1)		0.5 (0.1)			0.5 (0.1)	0.4 (0.1)
22	0.7 (0.2)		0.7 (0.2)			0.8 (0.2)	0.5 (0.1)
23	0.7 (0.2)		0.7 (0.2)			0.8 (0.2)	0.6 (0.1)
24	0.7 (0.2)		0.7 (0.2)			0.7 (0.2)	0.5 (0.1)
25	0.5 (0.1)		0.6 (0.1)			0.6 (0.1)	0.4 (0.1)
26	0.4 (0.1)		0.5 (0.1)			0.5 (0.1)	0.3 (0.1)
27	0.4 (0.1)		0.3 (0.1)			0.4 (0.1)	0.3 (0.0)
28	0.5 (0.1)		0.6 (0.1)			0.6 (0.1)	0.4 (0.1)
29	0.5 (0.1)		0.5 (0.1)			0.6 (0.1)	0.4 (0.1)
30	0.4 (0.1)		0.4 (0.1)			0.4 (0.1)	0.3 (0.1)
31	0.5 (0.2)		0.6 (0.2)			0.6 (0.2)	0.4 (0.2)
Avg	0.5		0.5			0.5	0.4
n	31	0	31	0	0	31	31
SD	0.1		0.2			0.2	0.1
Min	0.2		0.1			0.2	0.1
Max	0.7		0.7			0.8	0.6

Table E9. Daily means (SD) of ammonia concentrations at site CA5B for April, 2008.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppm	ppm	ppm	ppm	mg·dsm ⁻³	ppm	mg·dsm ⁻³
1	0.9 (0.3)		0.7 (0.2)			0.8 (0.2)	0.5 (0.1)
2	0.7 (0.1)		0.6 (0.1)			0.7 (0.1)	0.5 (0.1)
3	0.6 (0.1)		0.6 (0.1)			0.7 (0.1)	0.5 (0.1)
4	0.4 (0.0)						
5	0.5 (0.2)						
6	0.3 (0.1)		0.4 (0.1)			0.4 (0.1)	
7	0.4 (0.1)		0.5 (0.1)			0.5 (0.1)	
8	0.3 (0.1)		0.4 (0.1)			0.4 (0.1)	
9	0.4 (0.1)		0.4 (0.1)			0.4 (0.1)	
10	0.5 (0.1)		0.5 (0.1)			0.5 (0.1)	
11	1.1 (0.5)		0.8 (0.3)			0.9 (0.3)	
12	1.0 (0.3)		0.9 (0.2)			1.0 (0.2)	
13	0.8 (0.3)		0.8 (0.2)			0.9 (0.2)	
14	0.3 (0.1)		0.3 (0.1)			0.3 (0.1)	
15	0.2 (0.1)		0.3 (0.1)			0.3 (0.1)	0.2 (0.1)
16	0.6 (0.2)		0.5 (0.1)			0.5 (0.1)	0.3 (0.1)
17	0.7 (0.2)		0.6 (0.3)			0.7 (0.3)	0.5 (0.2)
18	0.7 (0.2)		0.7 (0.2)			0.8 (0.3)	0.6 (0.2)
19	0.3 (0.1)		0.3 (0.1)			0.3 (0.1)	0.2 (0.1)
20	0.4 (0.1)		0.4 (0.1)			0.4 (0.1)	0.3 (0.1)
21	0.3 (0.1)		0.5 (0.2)			0.5 (0.2)	0.4 (0.2)
22	0.6 (0.1)		0.6 (0.2)			0.7 (0.2)	0.5 (0.2)
23	0.6 (0.2)		0.6 (0.2)			0.6 (0.2)	0.4 (0.2)
24	0.4 (0.0)		0.4 (0.1)			0.4 (0.1)	0.3 (0.1)
25	0.6 (0.1)		0.5 (0.1)			0.6 (0.1)	0.4 (0.1)
26	0.9 (0.3)		0.7 (0.1)			0.7 (0.2)	0.5 (0.1)
27	0.8 (0.1)		0.8 (0.2)			0.9 (0.2)	0.6 (0.2)
28	0.6 (0.1)		0.7 (0.2)			0.7 (0.3)	0.5 (0.2)
29	0.4 (0.1)		0.4 (0.1)			0.4 (0.1)	0.3 (0.1)
30	0.3 (0.1)						
Avg	0.6		0.6			0.6	0.4
n	30	0	27	0	0	27	18
SD	0.2		0.2			0.2	0.1
Min	0.2		0.3			0.3	0.2
Max	1.1		0.9			1	0.6

Table E9. Daily means (SD) of ammonia concentrations at site CA5B for May, 2008.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppm	ppm	ppm	ppm	mg·dsm ⁻³	ppm	mg·dsm ⁻³
1	0.4 (0.1)		0.4 (0.1)			0.4 (0.1)	0.3 (0.1)
2	0.5 (0.1)		0.6 (0.2)			0.7 (0.2)	0.5 (0.1)
3	0.5 (0.1)		0.5 (0.1)			0.6 (0.1)	0.4 (0.1)
4	0.5 (0.1)		0.6 (0.2)			0.6 (0.2)	0.5 (0.2)
5	0.5 (0.1)		0.6 (0.2)			0.7 (0.2)	0.5 (0.1)
6	0.6 (0.1)		0.6 (0.2)			0.6 (0.2)	0.4 (0.1)
7	0.5 (0.1)		0.5 (0.1)			0.5 (0.1)	0.4 (0.1)
8	0.7 (0.2)		0.7 (0.2)			0.7 (0.3)	0.5 (0.2)
9	0.5 (0.1)		0.5 (0.1)			0.5 (0.1)	0.4 (0.1)
10	0.5 (0.1)		0.7 (0.1)			0.7 (0.1)	0.5 (0.1)
11	0.6 (0.2)		0.6 (0.1)			0.6 (0.1)	0.5 (0.1)
12	0.5 (0.1)		0.4 (0.1)			0.4 (0.1)	0.3 (0.1)
13	0.6 (0.2)		0.6 (0.1)			0.6 (0.1)	0.5 (0.1)
14	0.9 (0.2)		0.8 (0.1)			0.9 (0.1)	0.6 (0.1)
15	1.1 (0.1)		1.2 (0.1)			1.2 (0.1)	0.9 (0.1)
16	1.6 (0.7)						
17	0.7 (0.2)		0.8 (0.2)			0.8 (0.2)	0.6 (0.1)
18	0.6 (0.2)		0.6 (0.2)			0.7 (0.2)	0.5 (0.1)
19	0.7 (0.1)		0.7 (0.1)			0.7 (0.1)	0.5 (0.1)
20	0.5 (0.1)		0.6 (0.2)			0.6 (0.2)	0.4 (0.1)
21	0.2 (0.1)		0.3 (0.0)			0.3 (0.1)	0.2 (0.0)
22	0.1 (0.1)		0.2 (0.1)			0.2 (0.1)	0.1 (0.1)
23	0.4 (0.1)		0.5 (0.2)			0.5 (0.2)	0.3 (0.1)
24	0.4 (0.0)						
25	0.3 (0.1)						
26	0.3 (0.1)		0.4 (0.2)			0.4 (0.2)	0.3 (0.1)
27	0.5 (0.2)	0.6 (0.2)	0.6 (0.3)	0.6 (0.2)	0.4 (0.2)	0.6 (0.2)	0.4 (0.2)
28	0.6 (0.2)	0.6 (0.2)	0.6 (0.2)	0.6 (0.2)	0.4 (0.2)	0.6 (0.2)	0.4 (0.2)
29	0.6 (0.1)	0.6 (0.2)	0.6 (0.2)	0.6 (0.2)	0.4 (0.1)	0.6 (0.2)	0.5 (0.1)
30	0.7 (0.2)	0.7 (0.2)	0.7 (0.2)	0.7 (0.2)	0.5 (0.2)	0.7 (0.2)	0.5 (0.2)
31	0.4 (0.2)	0.5 (0.2)	0.5 (0.1)	0.4 (0.1)	0.3 (0.1)	0.4 (0.2)	0.3 (0.1)
Avg	0.6	0.6	0.6	0.6	0.4	0.6	0.4
n	31	5	28	5	5	28	28
SD	0.3	0.1	0.2	0.1	0.1	0.2	0.1
Min	0.1	0.5	0.2	0.4	0.3	0.2	0.1
Max	1.6	0.7	1.2	0.7	0.5	1.2	0.9

Table E9. Daily means (SD) of ammonia concentrations at site CA5B for June, 2008.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppm	ppm	ppm	ppm	mg·dsm ⁻³	ppm	mg·dsm ⁻³
1	0.5 (0.1)	0.4 (0.2)	0.5 (0.1)	0.5 (0.2)	0.3 (0.1)	0.5 (0.2)	0.3 (0.1)
2	0.4 (0.1)	0.4 (0.1)	0.4 (0.1)	0.4 (0.1)	0.3 (0.1)	0.4 (0.1)	0.3 (0.1)
3	0.6 (0.2)	0.6 (0.2)	0.6 (0.2)	0.6 (0.2)	0.4 (0.2)	0.6 (0.2)	0.4 (0.2)
4	0.5 (0.0)	0.5 (0.1)	0.5 (0.1)	0.5 (0.1)	0.3 (0.0)	0.5 (0.1)	0.3 (0.0)
5	0.8 (0.1)	0.6 (0.2)	0.7 (0.2)	0.7 (0.2)	0.5 (0.1)	0.6 (0.2)	0.5 (0.1)
6	0.7 (0.1)	0.6 (0.2)	0.6 (0.2)	0.6 (0.2)	0.4 (0.1)	0.6 (0.2)	0.4 (0.1)
7	0.5 (0.1)	0.5 (0.0)	0.5 (0.1)	0.5 (0.0)	0.4 (0.0)	0.5 (0.0)	0.4 (0.0)
8	0.8 (0.1)	0.8 (0.2)	0.8 (0.1)	0.8 (0.2)	0.6 (0.1)	0.8 (0.2)	0.6 (0.1)
9	0.9 (0.2)	1.0 (0.2)	1.0 (0.1)	1.0 (0.2)	0.7 (0.1)	1.0 (0.2)	0.7 (0.1)
10	0.4 (0.1)	0.5 (0.2)	0.5 (0.2)	0.6 (0.2)	0.4 (0.1)	0.6 (0.2)	0.4 (0.1)
11	0.4 (0.1)	0.4 (0.1)	0.4 (0.1)	0.5 (0.1)	0.3 (0.1)	0.5 (0.1)	0.3 (0.1)
12	0.7 (0.0)	0.8 (0.2)	0.8 (0.1)	0.8 (0.2)	0.6 (0.1)	0.8 (0.2)	0.6 (0.1)
13	1.0 (0.4)	0.9 (0.2)	0.8 (0.2)	0.9 (0.3)	0.7 (0.2)	0.9 (0.3)	0.7 (0.2)
14	0.7 (0.1)	0.7 (0.1)	0.7 (0.1)	0.7 (0.1)	0.5 (0.1)	0.7 (0.1)	0.5 (0.1)
15	0.6 (0.1)	0.6 (0.1)	0.6 (0.1)	0.6 (0.1)	0.5 (0.1)	0.6 (0.1)	0.5 (0.1)
16	0.6 (0.1)	0.6 (0.1)	0.6 (0.1)	0.7 (0.1)	0.5 (0.1)	0.7 (0.1)	0.5 (0.1)
17	0.6 (0.1)	0.6 (0.1)	0.6 (0.1)	0.6 (0.1)	0.5 (0.0)	0.6 (0.1)	0.5 (0.0)
18	0.5 (0.1)	0.6 (0.1)	0.6 (0.1)	0.6 (0.1)	0.4 (0.1)	0.6 (0.1)	0.4 (0.1)
19	0.8 (0.1)	1.0 (0.3)	1.0 (0.3)	1.0 (0.3)	0.7 (0.2)	1.0 (0.3)	0.7 (0.2)
20	1.0 (0.1)	1.3 (0.2)	1.2 (0.1)	1.3 (0.2)	0.9 (0.1)	1.3 (0.2)	0.9 (0.1)
21	1.2 (0.5)	1.4 (0.6)	1.3 (0.5)	1.4 (0.6)	1.0 (0.4)	1.4 (0.6)	1.0 (0.4)
22	0.8 (0.1)	0.9 (0.1)	0.8 (0.1)	0.9 (0.1)	0.6 (0.1)	0.9 (0.1)	0.6 (0.1)
23	0.7 (0.1)	0.7 (0.0)	0.8 (0.1)	0.8 (0.1)	0.6 (0.0)	0.8 (0.1)	0.6 (0.0)
24	0.7 (0.1)	0.8 (0.1)	0.9 (0.1)	0.9 (0.1)	0.6 (0.1)	0.9 (0.1)	0.6 (0.1)
25	0.7 (0.1)	0.7 (0.1)	0.8 (0.1)	0.8 (0.1)	0.5 (0.1)	0.8 (0.1)	0.5 (0.1)
26	0.9 (0.2)	0.9 (0.2)	0.9 (0.2)	0.9 (0.2)	0.7 (0.1)	0.9 (0.2)	0.7 (0.1)
27	0.9 (0.1)	1.0 (0.1)	1.1 (0.2)	1.1 (0.2)	0.8 (0.1)	1.1 (0.2)	0.8 (0.1)
28	0.6 (0.1)	0.7 (0.1)	0.7 (0.1)	0.7 (0.1)	0.5 (0.1)	0.7 (0.1)	0.5 (0.1)
29	0.7 (0.1)	0.7 (0.2)	0.7 (0.2)	0.8 (0.2)	0.5 (0.1)	0.8 (0.2)	0.5 (0.1)
30	1.0 (0.1)	1.1 (0.2)	1.1 (0.2)	1.1 (0.2)	0.8 (0.1)	1.1 (0.2)	0.8 (0.1)
Avg	0.7	0.8	0.8	0.8	0.6	0.8	0.6
n	30	30	30	30	30	30	30
SD	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Min	0.4	0.4	0.4	0.4	0.3	0.4	0.3
Max	1.2	1.4	1.3	1.4	1	1.4	1

Table E9. Daily means (SD) of ammonia concentrations at site CA5B for July, 2008.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppm	ppm	ppm	ppm	mg·dsm ⁻³	ppm	mg·dsm ⁻³
1	1.0 (0.1)						
2	0.7 (0.1)	0.7 (0.1)	0.7 (0.1)	0.7 (0.1)	0.5 (0.1)	0.7 (0.1)	0.5 (0.1)
3	0.6 (0.1)	0.7 (0.1)	0.7 (0.1)	0.7 (0.2)	0.5 (0.1)	0.7 (0.2)	0.5 (0.1)
4	0.6 (0.1)	0.6 (0.1)	0.7 (0.1)	0.7 (0.1)	0.5 (0.1)	0.7 (0.1)	0.5 (0.1)
5	0.8 (0.0)	0.8 (0.1)		0.8 (0.1)	0.6 (0.1)	0.8 (0.1)	0.6 (0.1)
6	1.0 (0.1)	0.9 (0.1)	0.9 (0.1)	1.0 (0.1)	0.7 (0.1)	1.0 (0.1)	0.7 (0.1)
7	1.1 (0.1)	1.3 (0.2)	1.3 (0.3)	1.3 (0.2)	1.0 (0.2)		
8	1.1 (0.1)	1.4 (0.3)		1.4 (0.4)			
9	0.9 (0.1)	1.0 (0.1)	1.0 (0.1)			1.0 (0.2)	0.7 (0.1)
10	1.0 (0.1)	1.1 (0.2)	1.1 (0.3)	1.2 (0.4)	0.9 (0.3)	1.1 (0.3)	0.8 (0.2)
11	0.6 (0.1)	0.7 (0.1)					
12	0.6 (0.1)			0.7 (0.2)	0.5 (0.1)		
13	0.7 (0.1)	0.7 (0.1)	0.8 (0.2)	0.8 (0.1)	0.5 (0.1)	0.8 (0.2)	0.6 (0.1)
14	0.6 (0.1)	0.6 (0.2)	0.6 (0.2)	0.7 (0.2)	0.5 (0.1)	0.7 (0.2)	0.5 (0.2)
15	0.5 (0.1)	0.6 (0.2)	0.6 (0.2)	0.6 (0.2)	0.4 (0.1)	0.6 (0.2)	0.4 (0.1)
16	0.6 (0.1)	0.6 (0.2)	0.6 (0.2)	0.6 (0.1)	0.4 (0.1)	0.6 (0.2)	0.5 (0.1)
17	0.6 (0.1)	0.6 (0.1)	0.7 (0.1)	0.7 (0.2)	0.5 (0.1)	0.7 (0.1)	0.5 (0.1)
18	0.7 (0.1)	0.6 (0.2)	0.7 (0.1)	0.7 (0.1)	0.5 (0.1)	0.7 (0.1)	0.5 (0.1)
19	0.7 (0.2)	0.7 (0.2)	0.7 (0.2)	0.7 (0.2)	0.5 (0.1)	0.7 (0.2)	0.5 (0.1)
20	0.5 (0.1)	0.5 (0.2)	0.5 (0.2)	0.5 (0.2)	0.4 (0.1)	0.5 (0.2)	0.4 (0.1)
21	0.6 (0.1)	0.5 (0.2)	0.5 (0.1)	0.5 (0.2)	0.4 (0.1)	0.5 (0.2)	0.4 (0.1)
22	0.5 (0.2)	0.6 (0.1)	0.6 (0.2)			0.6 (0.2)	0.4 (0.1)
23	1.0 (0.3)	1.0 (0.3)	0.9 (0.2)			1.0 (0.3)	0.7 (0.2)
24	0.7 (0.1)	0.7 (0.2)	0.7 (0.1)			0.7 (0.1)	0.5 (0.1)
25	0.8 (0.2)	0.8 (0.1)	0.8 (0.1)			0.8 (0.1)	0.6 (0.1)
26	0.8 (0.1)	0.7 (0.1)	0.7 (0.1)	0.9 (0.2)	0.6 (0.1)	0.8 (0.1)	0.6 (0.1)
27	0.6 (0.1)	0.6 (0.1)	0.6 (0.2)	0.6 (0.2)	0.4 (0.1)	0.6 (0.2)	0.4 (0.1)
28	0.6 (0.1)	0.6 (0.2)	0.6 (0.2)	0.6 (0.2)	0.5 (0.1)	0.6 (0.2)	0.4 (0.1)
29	0.6 (0.1)	0.6 (0.2)	0.6 (0.2)	0.6 (0.2)	0.5 (0.1)	0.6 (0.2)	0.5 (0.1)
30	0.8 (0.2)	0.7 (0.2)	0.7 (0.2)			0.8 (0.2)	0.6 (0.2)
31	0.6 (0.1)	0.7 (0.2)	0.7 (0.2)	0.7 (0.3)	0.5 (0.2)	0.8 (0.3)	0.6 (0.2)
Avg	0.7	0.7	0.7	0.8	0.5	0.7	0.5
n	31	29	26	23	22	26	26
SD	0.2	0.2	0.2	0.2	0.1	0.1	0.1
Min	0.5	0.5	0.5	0.5	0.4	0.5	0.4
Max	1.1	1.4	1.3	1.4	1	1.1	0.8

Table E9. Daily means (SD) of ammonia concentrations at site CA5B for August, 2008.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppm	ppm	ppm	ppm	mg·dsm ⁻³	ppm	mg·dsm ⁻³
1	0.7 (0.1)	0.7 (0.1)	0.7 (0.1)	0.8 (0.1)	0.5 (0.1)	0.7 (0.1)	0.5 (0.1)
2	0.6 (0.1)	0.8 (0.2)	0.8 (0.2)	0.8 (0.3)	0.6 (0.2)	0.8 (0.2)	0.6 (0.2)
3	0.7 (0.2)	0.6 (0.1)	0.7 (0.1)	0.7 (0.1)	0.5 (0.1)	0.8 (0.1)	0.5 (0.1)
4	0.8 (0.1)	0.7 (0.1)	0.8 (0.1)	0.8 (0.1)	0.6 (0.1)	0.8 (0.1)	0.6 (0.1)
5	0.8 (0.2)	0.7 (0.1)	0.8 (0.1)	0.9 (0.2)	0.6 (0.1)	0.9 (0.1)	0.6 (0.1)
6	0.9 (0.1)	0.8 (0.1)	0.8 (0.1)	0.8 (0.1)	0.6 (0.1)	0.9 (0.1)	0.7 (0.1)
7	0.8 (0.1)	0.8 (0.2)	0.8 (0.2)	0.8 (0.2)	0.6 (0.1)	0.8 (0.2)	0.6 (0.1)
8	0.7 (0.1)	0.6 (0.2)	0.6 (0.2)	0.7 (0.2)	0.5 (0.1)	0.7 (0.1)	0.5 (0.1)
9	0.7 (0.1)	0.7 (0.1)	0.7 (0.1)	0.7 (0.2)	0.5 (0.1)	0.8 (0.2)	0.5 (0.1)
10	0.9 (0.2)	0.8 (0.1)	0.9 (0.1)	0.8 (0.2)	0.6 (0.1)	1.0 (0.2)	0.7 (0.1)
11	0.9 (0.2)	1.1 (0.2)	1.1 (0.2)	1.1 (0.3)	0.8 (0.2)	1.2 (0.3)	0.8 (0.2)
12		1.1 (0.1)	1.2 (0.2)	1.1 (0.1)	0.8 (0.1)	1.2 (0.1)	0.9 (0.1)
13	1.2 (0.2)	1.4 (0.3)	1.3 (0.2)	1.4 (0.3)	1.0 (0.2)	1.5 (0.5)	1.1 (0.3)
14	1.2 (0.1)	1.3 (0.3)	1.3 (0.2)	1.3 (0.2)	0.9 (0.2)	1.3 (0.2)	0.9 (0.2)
15	1.5 (0.4)	1.2 (0.3)	1.3 (0.6)	1.3 (0.1)	0.9 (0.1)	1.3 (0.6)	1.0 (0.4)
16	0.9 (0.2)	1.0 (0.1)	0.9 (0.2)	1.0 (0.2)	0.7 (0.1)	1.0 (0.2)	0.7 (0.1)
17	0.7 (0.1)	0.8 (0.2)	0.7 (0.1)	0.8 (0.2)	0.6 (0.1)	0.8 (0.1)	0.6 (0.1)
18	0.7 (0.1)	0.7 (0.2)	0.7 (0.2)	0.7 (0.1)	0.5 (0.1)	0.7 (0.1)	
19	0.8 (0.1)	0.7 (0.2)	0.7 (0.1)	0.8 (0.2)	0.5 (0.1)	0.7 (0.1)	0.5 (0.1)
20	0.9 (0.1)	1.0 (0.2)	0.9 (0.2)	1.0 (0.3)	0.7 (0.2)	1.0 (0.2)	0.7 (0.1)
21	0.8 (0.2)	0.9 (0.3)	0.9 (0.2)	0.8 (0.3)	0.6 (0.2)	0.9 (0.3)	0.6 (0.2)
22	0.9 (0.1)	1.0 (0.2)	0.9 (0.2)	0.9 (0.1)	0.7 (0.1)	1.0 (0.2)	0.7 (0.1)
23	0.9 (0.1)	0.8 (0.1)	0.8 (0.2)	0.9 (0.1)	0.6 (0.1)	0.8 (0.1)	0.6 (0.1)
24	1.1 (0.2)	0.9 (0.2)	0.9 (0.2)	0.9 (0.1)	0.7 (0.1)	0.9 (0.2)	0.7 (0.1)
25	0.9 (0.1)	0.7 (0.2)	0.7 (0.2)	0.8 (0.3)	0.6 (0.2)	0.8 (0.2)	0.6 (0.1)
26	0.9 (0.3)	0.8 (0.2)	0.8 (0.1)	1.0 (0.3)	0.7 (0.2)	0.9 (0.2)	0.7 (0.1)
27	1.3 (0.3)	1.3 (0.3)	1.2 (0.2)	1.1 (0.2)	0.8 (0.1)	1.2 (0.2)	0.8 (0.1)
28	1.0 (0.1)	1.4 (0.4)	1.2 (0.2)	1.4 (0.4)	1.0 (0.3)	1.3 (0.3)	0.9 (0.2)
29	1.2 (0.2)	1.4 (0.4)	1.2 (0.3)	1.5 (0.4)	1.0 (0.3)	1.3 (0.3)	0.9 (0.2)
30	1.1 (0.5)	1.1 (0.4)	1.1 (0.4)	1.1 (0.4)	0.8 (0.3)	1.2 (0.5)	0.9 (0.4)
31	0.6 (0.0)	0.6 (0.1)	0.6 (0.1)	0.6 (0.1)	0.4 (0.1)	0.7 (0.1)	0.5 (0.1)
Avg	0.9	0.9	0.9	0.9	0.7	1.0	0.7
n	30	31	31	31	31	31	30
SD	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Min	0.6	0.6	0.6	0.6	0.4	0.7	0.5
Max	1.5	1.4	1.3	1.5	1	1.5	1.1

Table E9. Daily means (SD) of ammonia concentrations at site CA5B for September, 2008.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppm	ppm	ppm	ppm	mg·dsm ⁻³	ppm	mg·dsm ⁻³
1	0.6 (0.1)	0.6 (0.2)	0.6 (0.1)	0.6 (0.1)	0.4 (0.1)	0.7 (0.2)	0.5 (0.1)
2	1.3 (1.0)	0.9 (0.4)	0.9 (0.3)	0.8 (0.2)	0.6 (0.2)	0.9 (0.2)	0.6 (0.2)
3	1.3 (0.6)	2.4 (2.4)	1.4 (0.4)	1.5 (0.4)	1.0 (0.3)	1.5 (0.5)	
4	1.8 (0.7)	1.3 (0.3)	1.2 (0.2)	1.3 (0.2)	1.0 (0.2)	1.2 (0.2)	
5	1.3 (0.5)	1.4 (0.4)	1.3 (0.3)	1.5 (0.4)	1.1 (0.3)	1.2 (0.3)	
6	0.9 (0.1)	1.3 (0.2)	1.1 (0.3)	1.4 (0.5)	1.0 (0.4)	1.3 (0.4)	0.9 (0.3)
7	1.0 (0.1)	1.1 (0.2)	0.9 (0.2)	1.2 (0.3)	0.9 (0.2)	1.1 (0.3)	0.8 (0.2)
8	1.0 (0.1)	0.8 (0.1)	0.8 (0.1)	0.9 (0.1)	0.6 (0.1)	0.9 (0.2)	0.6 (0.1)
9	0.7 (0.2)	0.6 (0.2)	0.6 (0.2)	0.7 (0.2)	0.5 (0.1)	0.6 (0.1)	0.5 (0.1)
10	0.7 (0.2)	0.7 (0.2)	0.7 (0.2)	0.7 (0.2)	0.5 (0.2)	0.7 (0.2)	0.5 (0.1)
11	0.6 (0.1)	0.8 (0.2)					
12	0.7 (0.1)	0.8 (0.1)	0.7 (0.1)	0.9 (0.2)	0.6 (0.1)	0.9 (0.2)	0.6 (0.1)
13	0.7 (0.2)	0.7 (0.2)	0.7 (0.2)	0.7 (0.2)	0.5 (0.1)	0.8 (0.2)	0.5 (0.1)
14	0.7 (0.1)	0.8 (0.2)	0.8 (0.2)	0.8 (0.2)	0.6 (0.2)	0.8 (0.2)	0.6 (0.1)
15	0.8 (0.1)	0.9 (0.1)	0.9 (0.2)	0.9 (0.2)	0.7 (0.1)	1.0 (0.1)	0.7 (0.1)
16	0.8 (0.2)	0.8 (0.1)	0.7 (0.1)			0.8 (0.1)	0.6 (0.1)
17	0.6 (0.1)	0.6 (0.2)	0.5 (0.1)	0.6 (0.2)	0.4 (0.1)	0.6 (0.2)	0.4 (0.1)
18	0.6 (0.1)	0.6 (0.1)	0.6 (0.1)	0.7 (0.2)	0.5 (0.1)	0.7 (0.1)	0.5 (0.1)
19	0.6 (0.1)	0.7 (0.2)	0.7 (0.1)	0.7 (0.1)	0.5 (0.1)	0.7 (0.1)	0.5 (0.1)
20	0.7 (0.1)	0.7 (0.2)	0.7 (0.1)	0.8 (0.2)	0.6 (0.1)	0.8 (0.1)	0.6 (0.1)
21	0.8 (0.2)	0.8 (0.3)	0.8 (0.2)	0.9 (0.4)	0.7 (0.3)	0.9 (0.3)	0.7 (0.2)
22	0.7 (0.1)	0.7 (0.1)	0.7 (0.1)	0.7 (0.1)	0.5 (0.1)	0.8 (0.1)	0.6 (0.1)
23	1.0 (0.3)	1.3 (0.4)	1.0 (0.3)	1.5 (0.5)	1.1 (0.4)	1.2 (0.3)	0.8 (0.2)
24	1.0 (0.1)	1.3 (0.4)	1.0 (0.2)	1.3 (0.3)	1.0 (0.2)		
25	0.9 (0.2)	1.3 (0.5)	1.2 (0.4)	1.2 (0.3)	0.9 (0.2)	1.3 (0.3)	0.9 (0.2)
26	1.1 (0.1)	1.1 (0.2)	1.1 (0.3)				
27	0.9 (0.0)	0.9 (0.0)	0.9 (0.0)				
28	0.9 (0.0)	0.9 (0.0)	0.9 (0.0)				
29	0.9 (0.1)	0.9 (0.1)	0.9 (0.1)				
30	1.0 (0.1)	1.0 (0.2)	0.9 (0.2)	1.1 (0.3)	0.8 (0.2)	0.9 (0.2)	0.7 (0.1)
Avg	0.9	1.0	0.9	1.0	0.7	0.9	0.6
n	30	30	29	24	24	24	21
SD	0.3	0.4	0.2	0.3	0.2	0.2	0.1
Min	0.6	0.6	0.5	0.6	0.4	0.6	0.4
Max	1.8	2.4	1.4	1.5	1.1	1.5	0.9

Table E9. Daily means (SD) of ammonia concentrations at site CA5B for October, 2008.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppm	ppm	ppm	ppm	mg·dsm ⁻³	ppm	mg·dsm ⁻³
1	0.9 (0.2)	0.8 (0.1)	0.9 (0.1)	0.9 (0.2)	0.6 (0.1)	1.0 (0.2)	0.7 (0.1)
2	0.6 (0.1)	0.6 (0.2)	0.6 (0.2)	0.7 (0.2)	0.5 (0.2)	0.6 (0.2)	0.4 (0.2)
3	0.8 (0.1)	0.9 (0.2)	0.9 (0.2)	1.1 (0.2)	0.8 (0.2)	1.0 (0.2)	0.7 (0.1)
4	0.5 (0.1)	0.5 (0.1)	0.5 (0.1)	0.5 (0.1)	0.3 (0.1)	0.5 (0.1)	0.4 (0.1)
5	0.6 (0.1)	0.6 (0.1)	0.6 (0.1)	0.6 (0.2)	0.5 (0.1)	0.7 (0.2)	0.5 (0.1)
6	1.0 (0.1)	1.0 (0.2)	0.9 (0.2)	1.0 (0.2)	0.7 (0.2)	1.0 (0.2)	0.7 (0.2)
7	1.0 (0.1)	0.9 (0.1)	0.9 (0.2)	0.9 (0.2)	0.6 (0.1)	0.9 (0.2)	0.6 (0.1)
8	0.8 (0.1)	1.1 (0.4)	0.9 (0.2)	1.1 (0.4)	0.8 (0.3)	1.0 (0.2)	0.7 (0.2)
9	0.4 (0.1)	0.5 (0.1)	0.5 (0.2)	0.6 (0.2)	0.4 (0.2)	0.5 (0.2)	0.4 (0.2)
10	0.3 (0.1)	0.4 (0.1)	0.3 (0.1)	0.3 (0.1)	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)
11	0.3 (0.1)	0.3 (0.1)	0.3 (0.1)	0.3 (0.1)	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)
12	0.4 (0.1)	0.4 (0.1)	0.4 (0.1)	0.5 (0.1)	0.3 (0.1)	0.5 (0.1)	0.3 (0.1)
13	0.5 (0.1)	0.6 (0.1)	0.6 (0.1)	0.7 (0.2)	0.5 (0.2)	0.5 (0.2)	0.4 (0.1)
14	0.6 (0.1)	0.7 (0.2)	0.6 (0.2)	0.8 (0.3)	0.5 (0.2)	0.6 (0.2)	0.4 (0.2)
15	1.0 (0.4)	1.3 (0.4)	1.1 (0.7)	1.4 (0.6)	1.0 (0.5)	1.0 (0.5)	0.7 (0.3)
16	1.2 (0.3)	1.5 (0.5)	1.3 (0.5)	1.8 (0.5)	1.3 (0.3)	1.3 (0.6)	0.9 (0.4)
17	1.0 (0.4)	0.9 (0.2)	0.8 (0.2)	0.9 (0.2)	0.6 (0.2)	0.8 (0.2)	0.6 (0.1)
18	1.0 (0.5)	1.1 (0.3)	0.8 (0.2)	1.1 (0.5)	0.8 (0.4)	0.9 (0.3)	0.7 (0.2)
19	0.6 (0.1)	0.8 (0.1)	0.6 (0.1)	0.8 (0.1)	0.6 (0.1)	0.7 (0.1)	0.5 (0.1)
20	0.7 (0.1)	0.7 (0.1)	0.6 (0.1)	0.7 (0.1)	0.5 (0.1)	0.7 (0.1)	0.5 (0.1)
21	0.7 (0.1)						
22	1.0 (0.1)						
23	0.9 (0.1)	1.3 (0.2)	0.9 (0.1)	1.3 (0.3)	0.9 (0.2)	1.1 (0.2)	0.8 (0.1)
24	1.3 (0.3)	1.4 (0.6)	1.1 (0.2)	1.4 (0.4)	1.0 (0.3)	1.1 (0.3)	0.8 (0.2)
25	1.0 (0.1)	1.2 (0.3)	1.1 (0.1)	1.4 (0.3)	1.0 (0.2)	1.1 (0.3)	0.8 (0.2)
26	1.0 (0.2)	1.2 (0.2)	1.1 (0.2)	1.3 (0.4)	0.9 (0.3)	1.0 (0.2)	0.7 (0.1)
27	0.9 (0.1)	1.0 (0.1)	0.9 (0.1)	1.0 (0.2)	0.7 (0.2)	1.0 (0.2)	0.7 (0.1)
28	0.9 (0.1)						
29							
30							
31							
Avg	0.8	0.9	0.8	0.9	0.7	0.8	0.6
n	28	25	25	25	25	25	25
SD	0.3	0.3	0.3	0.4	0.3	0.3	0.2
Min	0.3	0.3	0.3	0.3	0.2	0.3	0.2
Max	1.3	1.5	1.3	1.8	1.3	1.3	0.9

Table E9. Daily means (SD) of ammonia concentrations at site CA5B for December, 2008.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppm	ppm	ppm	ppm	mg·dsm ⁻³	ppm	mg·dsm ⁻³
1							
2							
3							
4	0.4 (0.1)	0.4 (0.1)	0.4 (0.1)	0.5 (0.2)	0.3 (0.1)	0.5 (0.1)	0.3 (0.1)
5	0.3 (0.1)	0.3 (0.1)	0.3 (0.1)	0.3 (0.2)	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)
6	0.2 (0.0)	0.2 (0.1)	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)
7	0.3 (0.1)	0.3 (0.1)	0.3 (0.1)	0.3 (0.1)	0.2 (0.1)	0.4 (0.1)	0.3 (0.1)
8	0.2 (0.1)						
9	0.1 (0.1)	0.3 (0.1)	0.3 (0.1)	0.3 (0.1)	0.2 (0.1)	0.3 (0.2)	0.2 (0.1)
10	0.2 (0.1)	0.4 (0.2)	0.4 (0.1)	0.4 (0.2)	0.3 (0.1)	0.4 (0.2)	0.3 (0.1)
11	0.2 (0.0)						
12	0.3 (0.0)	0.4 (0.1)	0.3 (0.1)	0.4 (0.2)	0.3 (0.1)	0.4 (0.1)	0.3 (0.1)
13							
14							
15							
16	0.1 (0.0)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.1 (0.1)	0.2 (0.1)	0.1 (0.1)
17	0.1 (0.0)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)
18	0.1 (0.0)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.0)	0.2 (0.1)	0.1 (0.1)
19	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.1 (0.1)	0.2 (0.1)	0.1 (0.1)
20	0.2 (0.0)			0.5 (0.1)		0.4 (0.1)	
21	0.2 (0.0)						
22	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.1 (0.1)
23	0.2 (0.0)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.1 (0.0)	0.2 (0.1)	0.1 (0.1)
24	0.1 (0.1)	0.1 (0.0)	0.1 (0.0)	0.1 (0.0)	0.1 (0.0)	0.1 (0.0)	0.1 (0.0)
25	0.0 (0.0)	0.0 (0.1)	0.1 (0.0)	0.1 (0.1)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
26	0.1 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.1 (0.1)	0.2 (0.1)	0.1 (0.1)
27	0.2 (0.1)	0.2 (0.1)	0.3 (0.1)	0.3 (0.1)	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)
28	0.2 (0.0)	0.2 (0.0)	0.3 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)
29	0.3 (0.1)	0.3 (0.1)	0.4 (0.1)	0.4 (0.2)	0.3 (0.1)	0.4 (0.1)	0.3 (0.1)
30	0.2 (0.0)	0.3 (0.0)	0.3 (0.1)	0.3 (0.1)	0.2 (0.1)	0.3 (0.1)	0.2 (0.0)
31	0.2 (0.0)	0.3 (0.1)	0.3 (0.1)	0.3 (0.1)	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)
Avg	0.2	0.2	0.2	0.3	0.2	0.3	0.2
n	25	21	21	22	21	22	21
SD	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Min	0.0	0.0	0.1	0.1	0.0	0.0	0.0
Max	0.4	0.4	0.4	0.5	0.3	0.5	0.3

Table E9. Daily means (SD) of ammonia concentrations at site CA5B for January, 2009.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppm	ppm	ppm	ppm	mg·dsm ⁻³	ppm	mg·dsm ⁻³
1	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.1 (0.1)	0.2 (0.1)	0.1 (0.1)
2	0.1 (0.0)	0.1 (0.0)	0.1 (0.1)	0.1 (0.0)	0.1 (0.0)	0.2 (0.1)	0.1 (0.0)
3	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)				
4	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)
5	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.1 (0.1)	0.2 (0.1)	0.1 (0.0)
6	0.2 (0.0)	0.2 (0.0)	0.2 (0.0)	0.2 (0.1)	0.1 (0.0)	0.2 (0.1)	0.2 (0.1)
7	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)				
8	0.2 (0.1)	0.3 (0.1)	0.3 (0.1)	0.3 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)
9	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.3 (0.2)	0.2 (0.1)	0.2 (0.2)	0.2 (0.1)
10	0.3 (0.1)	0.3 (0.2)	0.3 (0.1)	0.3 (0.2)	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)
11	0.2 (0.1)	0.2 (0.1)	0.3 (0.1)	0.3 (0.1)	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)
12	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)	0.3 (0.2)	0.2 (0.1)	0.3 (0.2)	0.2 (0.1)
13	0.3 (0.1)	0.3 (0.1)	0.3 (0.1)	0.4 (0.2)	0.3 (0.1)	0.3 (0.1)	0.2 (0.1)
14	0.5 (0.3)	0.4 (0.2)	0.4 (0.1)	0.5 (0.2)	0.4 (0.1)	0.4 (0.2)	0.3 (0.1)
15	0.3 (0.1)	0.5 (0.3)	0.5 (0.2)				
16	0.4 (0.2)	0.5 (0.3)	0.5 (0.2)				
17	0.7 (0.1)						
18							
19							
20							
21	0.5 (0.1)	0.5 (0.2)	0.5 (0.1)				
22	0.4 (0.1)		0.4 (0.2)	0.3 (0.1)	0.2 (0.1)		
23	0.4 (0.0)						
24	0.2 (0.1)						
25	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.1 (0.1)	0.3 (0.1)	0.2 (0.0)
26		0.2 (0.1)	0.2 (0.1)				
27		0.4 (0.3)	0.3 (0.3)	0.4 (0.3)	0.3 (0.2)	0.3 (0.2)	0.2 (0.2)
28		0.4 (0.1)	0.4 (0.1)	0.4 (0.1)	0.3 (0.1)	0.4 (0.1)	0.3 (0.1)
29		0.2 (0.1)	0.2 (0.1)	0.2 (0.2)	0.1 (0.1)	0.2 (0.2)	0.2 (0.1)
30		0.5 (0.2)	0.5 (0.2)	0.5 (0.3)	0.4 (0.2)	0.5 (0.3)	0.4 (0.2)
31		0.4 (0.2)	0.5 (0.2)	0.5 (0.2)	0.3 (0.1)	0.5 (0.2)	0.4 (0.2)
Avg	0.3	0.3	0.3	0.3	0.2	0.3	0.2
n	22	24	25	19	19	18	18
SD	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Min	0.1	0.1	0.1	0.1	0.1	0.2	0.1
Max	0.7	0.5	0.5	0.5	0.4	0.5	0.4

Table E9. Daily means (SD) of ammonia concentrations at site CA5B for February, 2009.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppm	ppm	ppm	ppm	mg·dsm ⁻³	ppm	mg·dsm ⁻³
1		0.4 (0.1)	0.3 (0.2)	0.4 (0.2)	0.3 (0.1)	0.4 (0.2)	0.3 (0.1)
2		0.5 (0.2)	0.5 (0.2)	0.6 (0.3)	0.4 (0.2)	0.5 (0.2)	0.4 (0.2)
3		0.6 (0.1)	0.6 (0.1)	0.6 (0.2)	0.5 (0.2)	0.6 (0.1)	0.4 (0.1)
4		0.6 (0.1)	0.5 (0.1)	0.6 (0.1)	0.4 (0.1)	0.5 (0.1)	0.4 (0.1)
5		0.3 (0.2)	0.3 (0.1)	0.3 (0.1)	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)
6		0.2 (0.2)	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)	0.3 (0.2)	0.2 (0.1)
7		0.4 (0.1)	0.3 (0.1)	0.4 (0.1)	0.3 (0.1)	0.3 (0.1)	0.2 (0.1)
8		0.2 (0.1)	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)
9		0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)
10		0.3 (0.1)	0.2 (0.1)	0.3 (0.2)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)
11		0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.0)	0.1 (0.1)	0.1 (0.1)
12		0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)
13		0.2 (0.1)	0.1 (0.1)	0.2 (0.2)	0.2 (0.1)		
14		0.1 (0.0)	0.1 (0.1)	0.2 (0.1)	0.1 (0.0)	0.1 (0.1)	0.1 (0.1)
15							
16							
17							
18		0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.1 (0.1)	0.2 (0.1)	0.1 (0.1)
19		0.3 (0.1)	0.3 (0.1)				
20		0.4 (0.1)	0.4 (0.1)				
21		0.2 (0.1)	0.3 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.0)
22		0.2 (0.0)	0.2 (0.1)	0.2 (0.1)	0.1 (0.1)	0.2 (0.0)	0.1 (0.0)
23		0.2 (0.1)	0.3 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)
24		0.3 (0.1)	0.3 (0.1)	0.4 (0.2)	0.3 (0.2)	0.4 (0.1)	0.3 (0.1)
25		0.5 (0.1)	0.4 (0.1)	0.5 (0.1)	0.4 (0.1)	0.5 (0.1)	0.3 (0.1)
26		0.3 (0.1)	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)
27		0.4 (0.2)	0.3 (0.1)	0.3 (0.2)		0.4 (0.1)	0.3 (0.1)
28		0.3 (0.1)	0.3 (0.1)	0.4 (0.1)		0.3 (0.1)	0.2 (0.1)
Avg		0.3	0.3	0.3	0.2	0.3	0.2
n	0	25	25	23	21	22	22
SD		0.1	0.1	0.1	0.1	0.1	0.1
Min		0.1	0.1	0.1	0.1	0.1	0.1
Max		0.6	0.6	0.6	0.5	0.6	0.4

Table E9. Daily means (SD) of ammonia concentrations at site CA5B for March, 2009.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppm	ppm	ppm	ppm	mg·dsm ⁻³	ppm	mg·dsm ⁻³
1		0.3 (0.1)	0.3 (0.1)	0.3 (0.1)		0.3 (0.1)	0.2 (0.1)
2		0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.1 (0.1)
3		0.1 (0.0)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.0)
4		0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.0)	0.1 (0.1)	0.1 (0.1)
5			0.2 (0.1)				
6		0.2 (0.1)	0.2 (0.1)	0.2 (0.2)		0.2 (0.1)	0.2 (0.1)
7		0.3 (0.1)	0.3 (0.2)	0.3 (0.2)		0.3 (0.2)	0.2 (0.1)
8		0.4 (0.2)	0.3 (0.2)	0.4 (0.2)		0.4 (0.2)	0.3 (0.2)
9		0.1 (0.1)	0.1 (0.1)	0.1 (0.1)		0.1 (0.1)	0.1 (0.1)
10		0.3 (0.1)	0.2 (0.1)	0.4 (0.2)		0.3 (0.1)	0.2 (0.1)
11		0.4 (0.2)	0.3 (0.1)	0.5 (0.3)		0.4 (0.2)	0.3 (0.1)
12		0.4 (0.1)	0.4 (0.1)	0.4 (0.2)		0.4 (0.1)	0.3 (0.1)
13		0.5 (0.1)	0.5 (0.1)	0.5 (0.2)		0.5 (0.1)	0.4 (0.1)
14		0.3 (0.1)	0.3 (0.1)	0.3 (0.2)		0.3 (0.1)	0.2 (0.1)
15							
16							
17		0.4 (0.1)	0.4 (0.2)	0.5 (0.2)		0.5 (0.2)	0.3 (0.1)
18		0.4 (0.1)	0.4 (0.2)	0.4 (0.2)		0.4 (0.1)	0.3 (0.1)
19		0.6 (0.2)	0.6 (0.2)	0.7 (0.2)		0.7 (0.2)	0.5 (0.1)
20		0.6 (0.1)	0.6 (0.1)	0.7 (0.2)		0.7 (0.2)	0.5 (0.1)
21		0.4 (0.1)	0.4 (0.0)	0.4 (0.1)		0.4 (0.1)	0.3 (0.1)
22		0.2 (0.0)	0.2 (0.1)	0.2 (0.1)		0.2 (0.0)	0.1 (0.0)
23		0.1 (0.1)	0.1 (0.1)	0.1 (0.1)		0.2 (0.1)	0.1 (0.1)
24		0.4 (0.1)	0.3 (0.1)	0.4 (0.1)		0.4 (0.1)	0.3 (0.1)
25		0.4 (0.1)	0.4 (0.1)	0.4 (0.2)		0.3 (0.1)	0.2 (0.1)
26		0.3 (0.1)	0.3 (0.1)	0.3 (0.1)		0.3 (0.1)	0.2 (0.1)
27		0.7 (0.3)	0.6 (0.2)	0.8 (0.3)		0.7 (0.2)	0.5 (0.2)
28		0.8 (0.2)	0.7 (0.2)	0.9 (0.3)		0.8 (0.3)	0.5 (0.2)
29		0.3 (0.1)	0.2 (0.1)	0.3 (0.1)		0.3 (0.1)	0.2 (0.1)
30		0.4 (0.2)	0.3 (0.2)	0.4 (0.2)		0.3 (0.2)	0.2 (0.2)
31		0.6 (0.1)	0.5 (0.2)	0.6 (0.2)		0.6 (0.2)	0.4 (0.2)
Avg		0.4	0.3	0.4	0.1	0.4	0.3
n	0	28	29	28	3	28	28
SD		0.2	0.2	0.2	0	0.2	0.1
Min		0.1	0.1	0.1	0.1	0.1	0.1
Max		0.8	0.7	0.9	0.2	0.8	0.5

Table E9. Daily means (SD) of ammonia concentrations at site CA5B for April, 2009.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppm	ppm	ppm	ppm	mg·dsm ⁻³	ppm	mg·dsm ⁻³
1		0.4 (0.1)	0.4 (0.1)	0.4 (0.1)		0.4 (0.1)	0.3 (0.1)
2		0.3 (0.1)	0.4 (0.2)	0.4 (0.3)		0.5 (0.5)	0.4 (0.4)
3		0.2 (0.1)	0.2 (0.1)				
4		0.6 (0.4)	0.5 (0.3)				
5		0.4 (0.3)	0.4 (0.3)				
6		0.6 (0.2)	0.8 (0.2)				
7		0.4 (0.2)	0.4 (0.1)				
8		0.3 (0.1)	0.3 (0.1)				
9		0.5 (0.1)	0.5 (0.1)				
10		0.4 (0.2)	0.4 (0.1)	0.4 (0.2)		0.5 (0.2)	0.4 (0.2)
11		0.3 (0.1)	0.3 (0.1)	0.3 (0.1)		0.3 (0.1)	0.2 (0.1)
12		0.4 (0.1)	0.4 (0.1)	0.4 (0.1)		0.5 (0.1)	0.3 (0.1)
13		0.4 (0.2)	0.4 (0.2)	0.5 (0.2)		0.5 (0.2)	0.3 (0.1)
14		0.2 (0.0)	0.1 (0.0)	0.2 (0.1)		0.1 (0.1)	0.1 (0.0)
15		0.2 (0.1)	0.2 (0.1)	0.2 (0.1)		0.2 (0.1)	0.1 (0.1)
16		0.3 (0.1)	0.3 (0.1)	0.4 (0.2)		0.4 (0.1)	0.2 (0.1)
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
Avg		0.4	0.4	0.3		0.4	0.3
n	0	16	16	9	0	9	9
SD		0.1	0.1	0.1		0.1	0.1
Min		0.2	0.1	0.2		0.1	0.1
Max		0.6	0.8	0.5		0.5	0.4

Table E9. Daily means (SD) of ammonia concentrations at site CA5B for May, 2009.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppm	ppm	ppm	ppm	mg·dsm ⁻³	ppm	mg·dsm ⁻³
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20		0.5 (0.0)	0.5 (0.0)	0.5 (0.1)		0.5 (0.1)	0.3 (0.0)
21		0.5 (0.0)	0.5 (0.0)	0.4 (0.1)		0.5 (0.1)	0.3 (0.0)
22		0.5 (0.0)	0.5 (0.1)	0.5 (0.1)		0.4 (0.1)	0.3 (0.0)
23		0.4 (0.0)	0.4 (0.0)	0.4 (0.0)		0.4 (0.0)	0.3 (0.0)
24		0.4 (0.0)	0.4 (0.0)	0.4 (0.1)		0.4 (0.1)	0.3 (0.0)
25		0.4 (0.1)	0.4 (0.0)	0.4 (0.1)		0.4 (0.1)	0.3 (0.1)
26		0.5 (0.1)	0.6 (0.4)	0.5 (0.1)		0.6 (0.2)	0.4 (0.1)
27				0.7 (0.3)		0.6 (0.2)	0.5 (0.1)
28				0.4 (0.1)		0.4 (0.1)	0.3 (0.1)
29				0.3 (0.2)		0.3 (0.1)	0.2 (0.1)
30				0.3 (0.2)		0.3 (0.2)	0.2 (0.1)
31				0.2 (0.1)		0.2 (0.1)	0.2 (0.1)
Avg		0.4	0.5	0.4		0.4	0.3
n	0	7	7	12	0	12	12
SD		0	0.1	0.1		0.1	0.1
Min		0.4	0.4	0.2		0.2	0.2
Max		0.5	0.6	0.7		0.6	0.5

Table E9. Daily means (SD) of ammonia concentrations at site CA5B for June, 2009.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppm	ppm	ppm	ppm	mg·dsm ⁻³	ppm	mg·dsm ⁻³
1				0.3 (0.1)		0.3 (0.1)	0.2 (0.1)
2				0.4 (0.2)		0.4 (0.2)	0.3 (0.1)
3				0.4 (0.2)		0.4 (0.1)	0.3 (0.1)
4				0.2 (0.2)		0.3 (0.2)	0.2 (0.1)
5				0.3 (0.1)		0.3 (0.1)	0.2 (0.1)
6				0.4 (0.2)		0.4 (0.1)	0.3 (0.1)
7				0.4 (0.1)		0.4 (0.2)	0.3 (0.1)
8				0.3 (0.2)		0.4 (0.2)	0.3 (0.1)
9				0.2 (0.2)		0.3 (0.2)	0.2 (0.1)
10				0.3 (0.2)		0.3 (0.1)	0.2 (0.1)
11				0.3 (0.1)		0.3 (0.1)	0.2 (0.1)
12				0.3 (0.1)		0.3 (0.1)	0.2 (0.1)
13				0.4 (0.2)		0.4 (0.2)	0.3 (0.1)
14				0.4 (0.2)		0.4 (0.2)	0.3 (0.1)
15				0.4 (0.2)		0.4 (0.2)	0.3 (0.1)
16				0.5 (0.2)	0.3 (0.2)	0.5 (0.2)	0.3 (0.2)
17				0.3 (0.1)	0.2 (0.1)	0.4 (0.2)	0.3 (0.1)
18				0.6 (0.2)	0.4 (0.1)	0.6 (0.2)	0.4 (0.1)
19							
20							
21							
22							
23							
24				0.6 (0.2)	0.5 (0.1)	0.7 (0.2)	0.5 (0.1)
25				0.4 (0.2)	0.3 (0.1)	0.4 (0.1)	0.3 (0.1)
26		0.5 (0.2)	0.5 (0.2)	0.5 (0.2)	0.4 (0.1)	0.6 (0.2)	0.4 (0.2)
27		0.9 (0.2)	0.8 (0.2)	0.9 (0.2)	0.7 (0.1)	0.9 (0.2)	0.6 (0.2)
28		1.0 (0.4)	0.9 (0.2)	1.0 (0.4)	0.7 (0.3)	0.9 (0.3)	0.7 (0.2)
29		0.6 (0.2)	0.6 (0.2)	0.7 (0.2)	0.5 (0.1)	0.7 (0.2)	0.5 (0.1)
30		0.5 (0.3)	0.5 (0.3)	0.6 (0.3)	0.4 (0.2)	0.6 (0.3)	0.4 (0.2)
Avg	0	0.7	0.6	0.4	0.4	0.5	0.3
n		5	5	25	10	25	25
SD		0.2	0.2	0.2	0.1	0.2	0.1
Min		0.5	0.5	0.2	0.2	0.3	0.2
Max		1	0.9	1	0.7	0.9	0.7

Table E9. Daily means (SD) of ammonia concentrations at site CA5B for August, 2009.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppm	ppm	ppm	ppm	mg·dsm ⁻³	ppm	mg·dsm ⁻³
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13		0.5 (0.1)	0.5 (0.1)	0.6 (0.3)	0.5 (0.2)	0.6 (0.2)	0.4 (0.2)
14		0.4 (0.1)	0.4 (0.2)	0.5 (0.2)	0.3 (0.2)	0.5 (0.1)	0.4 (0.1)
15		0.4 (0.1)	0.4 (0.1)	0.5 (0.1)	0.4 (0.1)	0.6 (0.1)	0.4 (0.1)
16		0.6 (0.2)	0.6 (0.2)	0.7 (0.2)	0.5 (0.2)	0.7 (0.2)	0.5 (0.2)
17		0.5 (0.1)	0.5 (0.2)	0.6 (0.2)	0.4 (0.1)	0.6 (0.2)	0.4 (0.1)
18		0.4 (0.1)	0.4 (0.2)	0.5 (0.2)	0.4 (0.1)	0.5 (0.2)	0.4 (0.2)
19		0.4 (0.1)	0.3 (0.1)	0.4 (0.1)	0.3 (0.1)	0.4 (0.2)	0.3 (0.2)
20		0.3 (0.1)	0.3 (0.2)	0.3 (0.2)	0.9 (2.7)	0.3 (0.2)	0.2 (0.1)
21		0.5 (0.3)	0.6 (0.4)	0.6 (0.3)	0.4 (0.2)	0.6 (0.3)	0.4 (0.2)
22		0.5 (0.2)	0.7 (0.2)	0.6 (0.2)	0.4 (0.2)	0.7 (0.3)	0.5 (0.2)
23		0.4 (0.1)	0.4 (0.1)	0.6 (0.2)	0.4 (0.2)	0.5 (0.2)	0.3 (0.1)
24		0.3 (0.1)	0.3 (0.1)	0.4 (0.2)	0.3 (0.1)	0.4 (0.2)	0.3 (0.1)
25		0.4 (0.2)	0.4 (0.2)	0.6 (0.2)	0.4 (0.2)	0.5 (0.2)	0.4 (0.2)
26		0.5 (0.2)	0.5 (0.2)	0.7 (0.4)	0.5 (0.3)	0.6 (0.2)	0.4 (0.2)
27		0.5 (0.2)	0.7 (0.3)	0.8 (0.2)	0.5 (0.1)	0.8 (0.4)	0.5 (0.3)
28		1.0 (0.5)	0.8 (0.3)	1.1 (0.7)	0.8 (0.5)	1.1 (0.3)	0.8 (0.2)
29		1.0 (0.5)	1.0 (0.6)	1.2 (0.5)	0.9 (0.3)	1.0 (0.3)	0.7 (0.2)
30		0.7 (0.2)	0.6 (0.2)	1.0 (0.4)	0.7 (0.3)	0.8 (0.3)	0.6 (0.2)
31							
Avg		0.5	0.5	0.7	0.5	0.6	0.4
n	0	18	18	18	18	18	18
SD		0.2	0.2	0.2	0.2	0.2	0.1
Min		0.3	0.3	0.3	0.3	0.3	0.2
Max		1	1	1.2	0.9	1.1	0.8

Table E9. Daily means (SD) of ammonia concentrations at site CA5B for September, 2009.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppm	ppm	ppm	ppm	mg·dsm ⁻³	ppm	mg·dsm ⁻³
1		0.5 (0.1)	0.5 (0.2)	0.6 (0.2)	0.4 (0.2)	0.6 (0.2)	0.4 (0.2)
2		0.5 (0.1)	0.6 (0.1)	0.7 (0.1)	0.5 (0.1)	0.6 (0.1)	0.5 (0.1)
3							
4		0.5 (0.1)	0.5 (0.1)	0.7 (0.3)	0.5 (0.2)	0.6 (0.2)	0.4 (0.1)
5		0.3 (0.1)	0.4 (0.1)	0.4 (0.1)	0.3 (0.1)	0.4 (0.2)	0.3 (0.1)
6		0.4 (0.1)	0.4 (0.1)	0.5 (0.2)	0.4 (0.1)	0.5 (0.1)	0.3 (0.1)
7		0.4 (0.1)	0.4 (0.1)	0.5 (0.1)	0.4 (0.1)	0.5 (0.1)	0.4 (0.1)
8		0.7 (0.2)	0.7 (0.2)	1.0 (0.3)	0.7 (0.2)	0.8 (0.2)	0.5 (0.2)
9		0.7 (0.4)	0.7 (0.2)	0.9 (0.5)	0.7 (0.4)	0.7 (0.1)	0.5 (0.1)
10		0.6 (0.1)	0.6 (0.2)	0.7 (0.1)	0.5 (0.1)	0.8 (0.3)	0.5 (0.2)
11		0.7 (0.1)	0.7 (0.1)			0.8 (0.2)	0.5 (0.1)
12		0.5 (0.2)	0.5 (0.2)	0.5 (0.2)	0.4 (0.1)	0.5 (0.2)	0.4 (0.1)
13		0.4 (0.1)	0.4 (0.2)	0.5 (0.2)	0.3 (0.1)	0.5 (0.2)	0.3 (0.1)
14		0.4 (0.1)	0.5 (0.2)	0.5 (0.2)	0.3 (0.1)	0.6 (0.2)	0.4 (0.1)
15		0.8 (0.2)	0.7 (0.3)	1.0 (0.3)	0.7 (0.2)	0.9 (0.3)	0.6 (0.2)
16							
17		0.7 (0.1)	0.7 (0.2)				
18		0.6 (1.0)	0.6 (1.4)				
19		0.8 (0.2)	0.8 (0.3)	0.8 (0.3)	0.6 (0.2)	0.8 (0.3)	0.6 (0.2)
20		0.9 (0.6)	0.8 (0.4)	0.8 (0.3)	0.6 (0.2)	0.8 (0.3)	0.6 (0.2)
21		1.1 (0.3)	1.0 (0.2)	1.2 (0.2)	0.8 (0.1)	1.0 (0.2)	0.7 (0.2)
22		1.2 (0.6)	1.0 (0.2)	1.2 (0.5)	0.9 (0.3)	1.0 (0.3)	0.7 (0.3)
23		0.8 (0.3)	0.8 (0.3)	1.1 (0.5)	0.8 (0.4)	0.8 (0.3)	0.6 (0.2)
24		0.5 (0.1)	0.4 (0.1)	0.6 (0.1)	0.4 (0.1)	0.5 (0.1)	0.4 (0.1)
25		0.6 (0.1)	0.5 (0.1)	0.5 (0.2)	0.4 (0.1)	0.6 (0.2)	0.4 (0.1)
26		0.9 (0.3)	1.1 (0.3)	1.0 (0.3)	0.7 (0.2)	1.1 (0.5)	0.8 (0.4)
27		0.6 (0.2)	0.6 (0.2)	0.8 (0.2)	0.6 (0.1)	0.7 (0.2)	0.5 (0.1)
28		0.4 (0.1)	0.4 (0.1)	0.6 (0.3)	0.4 (0.2)	0.5 (0.2)	0.3 (0.1)
29		0.2 (0.0)	0.2 (0.0)	0.2 (0.1)	0.1 (0.0)	0.2 (0.1)	0.2 (0.0)
30		0.3 (0.0)	0.3 (0.1)	0.3 (0.1)	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)
Avg		0.6	0.6	0.7	0.5	0.7	0.5
n	0	28	28	25	25	26	26
SD		0.2	0.2	0.3	0.2	0.2	0.2
Min		0.2	0.2	0.2	0.1	0.2	0.2
Max		1.2	1.1	1.2	0.9	1.1	0.8

Table E9. Daily means (SD) of ammonia concentrations at site CA5B for October, 2009.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppm	ppm	ppm	ppm	mg·dsm ⁻³	ppm	mg·dsm ⁻³
1		0.4 (0.2)	0.4 (0.1)	0.5 (0.3)	0.4 (0.2)	0.4 (0.1)	0.3 (0.1)
2		0.6 (0.1)	0.5 (0.2)	0.7 (0.3)	0.5 (0.2)	0.6 (0.3)	0.4 (0.2)
3		0.3 (0.1)	0.3 (0.1)	0.4 (0.2)	0.3 (0.2)	0.4 (0.2)	0.3 (0.1)
4		0.3 (0.1)	0.3 (0.1)	0.3 (0.1)	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)
5		0.5 (0.1)	0.5 (0.1)	0.5 (0.2)	0.4 (0.2)	0.5 (0.1)	0.4 (0.1)
6		0.4 (0.1)	0.4 (0.2)	0.5 (0.2)	0.4 (0.1)	0.5 (0.2)	0.4 (0.1)
7		0.6 (0.2)	0.4 (0.1)	0.6 (0.2)	0.4 (0.2)	0.5 (0.1)	0.3 (0.1)
8		0.4 (0.1)	0.4 (0.1)	0.5 (0.2)	0.4 (0.1)	0.5 (0.1)	0.3 (0.1)
9		0.4 (0.2)					
10		0.4 (0.3)	0.4 (0.3)				
11		0.2 (0.1)	0.2 (0.2)				
12		0.3 (0.2)	0.3 (0.2)	0.4 (0.3)	0.3 (0.2)	0.4 (0.3)	0.3 (0.2)
13		0.1 (0.0)	0.1 (0.0)				
14		0.3 (0.2)	0.3 (0.2)				
15		0.3 (0.1)	0.3 (0.1)				
16							
17		0.4 (0.2)	0.4 (0.1)	0.6 (0.3)	0.4 (0.2)	0.4 (0.2)	0.3 (0.1)
18		0.4 (0.2)	0.4 (0.2)	0.5 (0.4)	0.4 (0.3)	0.4 (0.2)	0.3 (0.2)
19		0.3 (0.1)	0.3 (0.1)				
20		0.2 (0.2)	0.2 (0.1)				
21		0.3 (0.1)					
22							
23		0.4 (0.2)	0.3 (0.1)				
24		0.4 (0.2)	0.2 (0.1)				
25		0.3 (0.1)	0.2 (0.1)	0.3 (0.2)	0.2 (0.1)	0.4 (0.2)	0.3 (0.1)
26		0.3 (0.1)	0.2 (0.1)	0.4 (0.2)	0.3 (0.1)	0.4 (0.1)	0.3 (0.1)
27							
28							
29							
30							
31							
Avg		0.4	0.3	0.5	0.3	0.4	0.3
n	0	24	22	13	13	13	13
SD		0.1	0.1	0.1	0.1	0.1	0.1
Min		0.1	0.1	0.3	0.2	0.3	0.2
Max		0.6	0.5	0.7	0.5	0.6	0.4

Table E9. Daily means (SD) of ammonia concentrations at site CA5B for November, 2009.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppm	ppm	ppm	ppm	mg·dsm ⁻³	ppm	mg·dsm ⁻³
1		0.3 (0.1)	0.3 (0.1)	0.5 (0.2)	0.4 (0.1)	0.3 (0.1)	0.2 (0.1)
2							
3		0.4 (0.1)	0.3 (0.1)	0.5 (0.1)	0.3 (0.1)	0.4 (0.1)	0.3 (0.1)
4		0.3 (0.2)	0.2 (0.1)	0.5 (0.2)	0.3 (0.2)	0.3 (0.1)	0.2 (0.1)
5		0.2 (0.1)	0.2 (0.0)	0.3 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.0)
6		0.3 (0.1)	0.2 (0.1)	0.4 (0.2)	0.3 (0.1)	0.3 (0.1)	0.2 (0.1)
7		0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)
8		0.2 (0.1)	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)
9		0.2 (0.1)	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)
10		0.3 (0.1)	0.3 (0.0)	0.3 (0.1)	0.2 (0.1)	0.4 (0.1)	0.3 (0.1)
11		0.4 (0.1)	0.4 (0.1)	0.5 (0.1)	0.4 (0.1)	0.4 (0.1)	0.3 (0.0)
12		0.3 (0.2)	0.3 (0.1)				
13							
14		0.2 (0.1)	0.2 (0.1)				
15		0.2 (0.1)	0.2 (0.1)	0.3 (0.2)		0.2 (0.1)	
16		0.3 (0.1)	0.2 (0.1)	0.4 (0.1)		0.3 (0.1)	
17		0.4 (0.1)	0.3 (0.1)				
18		0.1 (0.0)	0.1 (0.1)				
19		0.1 (0.1)	0.1 (0.1)				
20							
21		0.1 (0.0)	0.1 (0.0)	0.1 (0.1)	0.1 (0.0)	0.1 (0.1)	0.1 (0.0)
22		0.1 (0.1)	0.1 (0.1)	0.2 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)
23		0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)
24		0.1 (0.1)	0.1 (0.1)	0.2 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)
25							
26							
27		0.3 (0.1)	0.2 (0.1)				
28							
29		0.1 (0.0)	0.0 (0.0)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.0 (0.0)
30		0.3 (0.2)	0.3 (0.2)				
Avg	0	0.2	0.2	0.3	0.2	0.2	0.2
n		24	24	17	15	17	15
SD		0.1	0.1	0.1	0.1	0.1	0.1
Min		0.1	0.0	0.1	0.1	0.1	0.0
Max		0.4	0.4	0.5	0.4	0.4	0.3

Table E9. Daily means (SD) of ammonia concentrations at site CA5B for December, 2009.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppm	ppm	ppm	ppm	mg·dsm ⁻³	ppm	mg·dsm ⁻³
1							
2		0.4 (0.2)	0.4 (0.2)				
3		0.4 (0.2)	0.4 (0.1)				
4		0.4 (0.1)	0.3 (0.1)	0.4 (0.2)	0.3 (0.1)	0.3 (0.2)	0.2 (0.1)
5		0.3 (0.1)	0.4 (0.1)	0.4 (0.2)	0.3 (0.1)	0.3 (0.1)	0.2 (0.1)
6		0.1 (0.1)	0.1 (0.0)	0.1 (0.1)	0.1 (0.0)	0.1 (0.0)	0.1 (0.0)
7		0.1 (0.1)	0.1 (0.0)	0.1 (0.1)	0.1 (0.1)	0.1 (0.0)	0.1 (0.0)
8		0.1 (0.0)	0.0 (0.0)	0.1 (0.0)	0.1 (0.0)	0.1 (0.0)	0.0 (0.0)
9		0.1 (0.1)	0.1 (0.1)				
10		0.2 (0.1)	0.1 (0.0)				
11		0.2 (0.1)	0.1 (0.0)	0.3 (0.2)	0.2 (0.1)	0.1 (0.0)	0.1 (0.0)
12		0.0 (0.0)	0.1 (0.0)	0.1 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
13							
14		0.2 (0.1)	0.1 (0.1)				
15		0.1 (0.0)	0.1 (0.0)				
16		0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.0)
17		0.1 (0.1)	0.1 (0.0)			0.2 (0.1)	0.1 (0.1)
18		0.1 (0.1)	0.1 (0.1)				
19		0.1 (0.1)	0.1 (0.1)	0.2 (0.1)	0.1 (0.1)	0.2 (0.1)	0.1 (0.1)
20		0.1 (0.1)	0.1 (0.0)	0.2 (0.1)	0.1 (0.1)	0.2 (0.1)	0.1 (0.0)
21		0.2 (0.1)	0.1 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.1 (0.1)
22		0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.1 (0.0)	0.0 (0.0)
23		0.0 (0.0)	0.0 (0.0)	0.0 (0.1)	0.0 (0.0)	0.0 (0.1)	0.0 (0.0)
24		0.1 (0.1)	0.1 (0.1)	0.2 (0.1)	0.2 (0.1)	0.2 (0.1)	0.1 (0.1)
25		0.2 (0.1)	0.2 (0.1)				
26		0.2 (0.1)	0.1 (0.1)	0.2 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.0)
27		0.2 (0.1)	0.1 (0.1)	0.2 (0.2)	0.1 (0.1)	0.2 (0.1)	0.1 (0.1)
28		0.1 (0.0)	0.1 (0.1)	0.3 (0.2)	0.2 (0.2)	0.2 (0.1)	0.2 (0.1)
29		0.3 (0.1)	0.2 (0.1)	0.4 (0.2)	0.3 (0.2)	0.4 (0.2)	0.3 (0.1)
30							
31		0.1 (0.0)	0.1 (0.0)	0.1 (0.1)	0.1 (0.0)	0.2 (0.1)	0.1 (0.1)
Avg		0.2	0.1	0.2	0.1	0.2	0.1
n	0	28	28	19	19	20	20
SD		0.1	0.1	0.1	0.1	0.1	0.1
Min		0.0	0.0	0.0	0.0	0.0	0.0
Max		0.4	0.4	0.4	0.3	0.4	0.3

Table E9. Daily means (SD) of ammonia concentrations at site CA5B for January, 2010.

Day	Ambient	B1 inlet	B2 inlet	Barn 1 exhaust		Barn 2 exhaust	
	ppm	ppm	ppm	ppm	mg·dsm ⁻³	ppm	mg·dsm ⁻³
1		0.2 (0.1)	0.1 (0.1)	0.2 (0.2)	0.2 (0.1)	0.2 (0.2)	0.2 (0.1)
2		0.2 (0.1)	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)
3		0.1 (0.0)	0.1 (0.0)	0.1 (0.0)	0.1 (0.0)	0.1 (0.0)	0.1 (0.0)
4		0.2 (0.1)	0.1 (0.0)	0.2 (0.1)	0.1 (0.1)	0.2 (0.1)	0.1 (0.1)
5		0.1 (0.0)	0.1 (0.0)	0.2 (0.0)	0.1 (0.0)	0.2 (0.0)	0.1 (0.0)
6		0.1 (0.0)	0.1 (0.0)	0.1 (0.0)	0.1 (0.0)	0.1 (0.0)	0.1 (0.0)
7		0.0 (0.0)	0.0 (0.0)	0.1 (0.0)	0.1 (0.0)	0.1 (0.0)	0.1 (0.0)
8		0.0 (0.0)	0.0 (0.0)	0.0 (0.0)		0.0 (0.0)	
9		0.0 (0.0)	0.0 (0.0)	0.1 (0.0)		0.1 (0.0)	
10		0.0 (0.0)	0.0 (0.0)	0.1 (0.0)	0.0 (0.0)	0.1 (0.0)	0.0 (0.0)
11		0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
12		0.0 (0.0)	0.0 (0.0)	0.1 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
13		0.0 (0.0)	0.0 (0.0)	0.0 (0.1)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
14		0.0 (0.0)	0.0 (0.1)	0.0 (0.0)	0.0 (0.0)	0.0 (0.1)	0.0 (0.0)
15		0.0 (0.0)	0.0 (0.0)				
16		0.0 (0.0)	0.0 (0.0)	0.1 (0.0)	0.1 (0.0)	0.0 (0.0)	0.0 (0.0)
17		0.0 (0.0)	0.0 (0.0)	0.1 (0.1)	0.0 (0.1)	0.0 (0.0)	0.0 (0.0)
18		0.0 (0.0)	0.0 (0.0)				
19		0.0 (0.0)	0.0 (0.0)				
20		-0.1 (0.0)	-0.1 (0.0)				
21		0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
22		0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
23		0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
24		0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
25							
26		0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
27		0.0 (0.0)	0.1 (0.0)	0.1 (0.0)	0.0 (0.0)	0.1 (0.0)	0.0 (0.0)
28		0.1 (0.0)	0.1 (0.0)	0.1 (0.0)	0.1 (0.0)	0.1 (0.0)	0.0 (0.0)
29		0.1 (0.0)	0.1 (0.0)				
30		0.0 (0.0)	0.0 (0.0)	0.0 (0.0)		0.0 (0.0)	
31		0.0 (0.0)	0.0 (0.0)				
Avg		0.0	0.0	0.1	0.1	0.1	0.1
n		30	30	24	21	24	21
SD		0.1	0.1	0.1	0.1	0.1	0.1
Min		-0.1	-0.1	0.0	0.0	0.0	0.0
Max		0.2	0.2	0.3	0.2	0.3	0.2

Table E10. Ammonia emissions.**Table E10. Daily means (SD) of ammonia emissions at site CA5B for December, 2007.**

Day	Barn 1			Barn 2		
	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2	-3.7 (9.1)	-0.6 (1.6)	-7.2 (17.7)			
3						
4						
5						
6	-4.7 (11.9)	-0.8 (2.0)	-9.2 (23.1)			
7	-3.5 (9.3)	-0.6 (1.6)	-6.8 (18.0)			
8						
9						
10						
11						
12						
13						
14						
15						
16						
17	2.6 (7.7)	0.4 (1.3)	5.0 (14.9)			
18	4.6 (9.9)	0.8 (1.7)	9.0 (19.3)			
19						
20	4.4 (9.1)	0.8 (1.5)	8.6 (17.6)			
21						
22						
23						
24	0.3 (10.8)	0.1 (1.8)	0.6 (21.0)			
25						
26	5.7 (13.0)	1.0 (2.2)	11.1 (25.2)			
27						
28	3.8 (11.1)	0.7 (1.9)	7.4 (21.7)			
29						
30						
31						
Avg	1.1	0.2	2.1			
n	9	9	9	0	0	0
SD	3.84	0.65	7.46			
Min	-4.7	-0.8	-9.2			
Max	5.72	0.97	11.1			

Table E10. Daily means (SD) of ammonia emissions at site CA5B for January, 2008.

Day	Barn 1			Barn 2		
	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2						
3						
4	-7.2 (30.6)	-1.2 (5.2)	-14.1 (59.6)			
5	0.9 (8.7)	0.2 (1.5)	1.7 (16.9)			
6						
7						
8	-1.5 (6.1)	-0.3 (1.0)	-2.9 (11.9)			
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21	0.9 (3.6)	0.2 (0.6)	1.7 (6.9)	4.1 (9.1)	0.7 (1.6)	7.3 (16.5)
22	0.8 (2.9)	0.1 (0.5)	1.5 (5.5)	2.8 (7.7)	0.5 (1.3)	5.0 (13.9)
23						
24	1.3 (6.0)	0.2 (1.0)	2.5 (11.6)	-5.8 (18.0)	-1.0 (3.1)	-10.4 (32.4)
25						
26	1.8 (4.7)	0.3 (0.8)	3.5 (9.1)	1.0 (9.9)	0.2 (1.7)	1.8 (17.7)
27	-0.7 (5.9)	-0.1 (1.0)	-1.3 (11.5)	-0.7 (18.6)	-0.1 (3.2)	-1.3 (33.5)
28						
29						
30						
31	0.2 (4.5)	0.0 (0.8)	0.3 (8.8)	2.7 (5.6)	0.5 (1.0)	4.8 (10.1)
Avg	-0.4	-0.1	-0.8	0.7	0.1	1.2
n	9	9	9	6	6	6
SD	2.6	0.44	5.05	3.25	0.55	5.86
Min	-7.2	-1.2	-14.1	-5.8	-1.0	-10.4
Max	1.81	0.31	3.51	4.05	0.69	7.29

Table E10. Daily means (SD) of ammonia emissions at site CA5B for February, 2008.

Day	Barn 1			Barn 2		
	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2						
3	-0.3 (4.4)	-0.1 (0.8)	-0.6 (8.6)	-7.2 (10.7)	-1.2 (1.8)	-12.9 (19.3)
4	-0.1 (4.3)	0.0 (0.7)	-0.1 (8.3)			
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21	3.4 (8.1)	0.6 (1.4)	6.6 (15.7)	4.2 (12.0)	0.7 (2.1)	7.5 (21.7)
22						
23	4.0 (6.1)	0.7 (1.0)	7.8 (11.9)			
24	2.7 (8.4)	0.5 (1.4)	5.2 (16.3)			
25						
26						
27						
28						
29						
Avg	2.0	0.3	3.8	-1.5	-0.3	-2.7
n	5	5	5	2	2	2
SD	1.79	0.31	3.48	5.67	0.97	10.2
Min	-0.3	-0.1	-0.6	-7.2	-1.2	-12.9
Max	4.02	0.68	7.82	4.18	0.71	7.53

Table E10. Daily means (SD) of ammonia emissions at site CA5B for March, 2008.

Day	Barn 1			Barn 2		
	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1				2.8 (4.8)	0.5 (0.8)	5.0 (8.6)
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16				2.5 (6.1)	0.4 (1.0)	4.5 (10.9)
17						
18						
19				1.4 (4.1)	0.2 (0.7)	2.6 (7.4)
20				3.0 (3.3)	0.5 (0.6)	5.3 (6.0)
21						
22						
23						
24				4.8 (3.7)	0.8 (0.6)	8.6 (6.7)
25				2.7 (3.6)	0.5 (0.6)	4.8 (6.4)
26				3.1 (4.2)	0.5 (0.7)	5.6 (7.5)
27				1.5 (3.4)	0.3 (0.6)	2.7 (6.2)
28				2.5 (2.4)	0.4 (0.4)	4.4 (4.4)
29				3.4 (3.0)	0.6 (0.5)	6.2 (5.4)
30				1.3 (4.5)	0.2 (0.8)	2.3 (8.1)
31						
Avg	0	0	0	2.6	0.5	4.7
n				11	11	11
SD				0.97	0.17	1.74
Min				1.3	0.2	2.3
Max				4.79	0.82	8.63

Table E10. Daily means (SD) of ammonia emissions at site CA5B for April, 2008.

Day	Barn 1			Barn 2		
	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15				2.9 (6.0)	0.5 (1.0)	5.2 (10.8)
16						
17						
18						
19				1.0 (5.0)	0.2 (0.9)	1.8 (9.0)
20						
21						
22						
23				0.4 (4.3)	0.1 (0.7)	0.7 (7.8)
24				5.2 (5.2)	0.9 (0.9)	9.3 (9.3)
25				4.6 (5.0)	0.8 (0.9)	8.3 (8.9)
26						
27						
28				6.0 (11.7)	1.0 (2.0)	10.8 (21.1)
29				2.3 (6.1)	0.4 (1.0)	4.1 (11.0)
30						
Avg				3.2	0.5	5.7
n	0	0	0	7	7	7
SD				1.98	0.34	3.56
Min				0.4	0.1	0.7
Max				5.98	1.02	10.8

Table E10. Daily means (SD) of ammonia emissions at site CA5B for May, 2008.

Day	Barn 1			Barn 2		
	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2						
3				2.5 (3.3)	0.4 (0.6)	4.5 (5.9)
4				2.9 (4.6)	0.5 (0.8)	5.2 (8.3)
5				2.2 (3.7)	0.4 (0.6)	4.0 (6.8)
6				2.0 (3.2)	0.3 (0.6)	3.6 (5.8)
7				3.5 (4.7)	0.6 (0.8)	6.3 (8.6)
8						
9				2.5 (4.4)	0.4 (0.8)	4.5 (8.1)
10				1.3 (5.1)	0.2 (0.9)	2.3 (9.3)
11				1.6 (4.0)	0.3 (0.7)	3.0 (7.3)
12				2.1 (6.1)	0.4 (1.0)	3.8 (11.2)
13				4.2 (6.3)	0.7 (1.1)	7.8 (11.6)
14						
15						
16						
17				2.0 (4.6)	0.4 (0.8)	3.8 (8.5)
18				4.6 (5.0)	0.8 (0.9)	8.4 (9.3)
19				3.9 (4.0)	0.7 (0.7)	7.2 (7.4)
20				0.3 (5.6)	0.1 (1.0)	0.5 (10.4)
21				0.1 (7.4)	0.0 (1.3)	0.3 (13.7)
22				-0.3 (8.2)	-0.1 (1.4)	-0.5 (15.3)
23				-1.0 (4.4)	-0.2 (0.8)	-1.8 (8.3)
24						
25						
26				-0.1 (4.2)	0.0 (0.7)	-0.1 (7.9)
27	1.1 (2.7)	0.2 (0.5)	2.1 (5.1)	-1.2 (4.1)	-0.2 (0.7)	-2.2 (7.7)
28	6.3 (6.0)	1.1 (1.0)	11.6 (11.1)	0.7 (4.4)	0.1 (0.8)	1.3 (8.2)
29	3.8 (4.4)	0.6 (0.7)	7.0 (8.1)	1.0 (5.9)	0.2 (1.0)	1.9 (11.0)
30	-0.3 (3.8)	-0.1 (0.7)	-0.5 (7.1)	0.5 (3.7)	0.1 (0.6)	1.0 (7.0)
31	-1.4 (3.2)	-0.2 (0.6)	-2.6 (6.0)	-1.6 (4.8)	-0.3 (0.8)	-3.0 (9.0)
Avg	1.9	0.3	3.5	1.5	0.3	2.7
n	5	5	5	23	23	23
SD	2.79	0.47	5.16	1.68	0.29	3.1
Min	-1.4	-0.2	-2.6	-1.6	-0.3	-3.0
Max	6.25	1.06	11.6	4.55	0.78	8.43

Table E10. Daily means (SD) of ammonia emissions at site CA5B for June, 2008.

Day	Barn 1			Barn 2		
	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1	1.8 (3.7)	0.3 (0.6)	3.3 (6.9)	0.6 (3.5)	0.1 (0.6)	1.1 (6.6)
2	-0.9 (4.0)	-0.2 (0.7)	-1.6 (7.4)	-0.1 (5.6)	0.0 (1.0)	-0.2 (10.6)
3	0.0 (3.5)	0.0 (0.6)	0.1 (6.6)	0.3 (3.2)	0.1 (0.6)	0.6 (6.0)
4						
5	1.2 (4.3)	0.2 (0.7)	2.2 (8.0)	-1.7 (3.5)	-0.3 (0.6)	-3.1 (6.5)
6	-0.1 (5.9)	0.0 (1.0)	-0.2 (11.1)	-0.6 (4.0)	-0.1 (0.7)	-1.2 (7.5)
7	3.4 (6.0)	0.6 (1.0)	6.5 (11.4)	2.7 (6.3)	0.5 (1.1)	5.0 (11.8)
8	4.8 (5.1)	0.8 (0.9)	9.1 (9.7)	-1.0 (5.9)	-0.2 (1.0)	-1.9 (11.0)
9	3.1 (7.7)	0.5 (1.3)	5.9 (14.5)	-1.3 (9.7)	-0.2 (1.7)	-2.4 (18.3)
10	1.1 (9.9)	0.2 (1.7)	2.2 (18.7)	4.1 (6.2)	0.7 (1.1)	7.7 (11.7)
11	5.3 (6.1)	0.9 (1.0)	10.1 (11.6)	1.5 (6.2)	0.3 (1.1)	2.9 (11.7)
12						
13						
14	1.9 (3.4)	0.3 (0.6)	3.7 (6.4)	3.4 (3.1)	0.6 (0.5)	6.4 (5.9)
15	3.9 (3.2)	0.7 (0.6)	7.3 (6.1)	0.3 (2.5)	0.1 (0.4)	0.6 (4.8)
16	3.6 (4.6)	0.6 (0.8)	6.9 (8.7)	1.5 (5.5)	0.3 (0.9)	2.9 (10.4)
17	4.0 (3.4)	0.7 (0.6)	7.6 (6.6)	-0.7 (4.4)	-0.1 (0.7)	-1.2 (8.2)
18	4.6 (4.1)	0.8 (0.7)	8.9 (7.9)	2.2 (4.7)	0.4 (0.8)	4.2 (8.9)
19						
20						
21						
22	2.1 (5.7)	0.4 (1.0)	4.0 (11.0)	2.9 (5.2)	0.5 (0.9)	5.6 (9.8)
23	4.0 (3.9)	0.7 (0.7)	7.7 (7.6)	1.2 (5.5)	0.2 (0.9)	2.2 (10.5)
24	3.6 (4.3)	0.6 (0.7)	6.9 (8.4)	-1.3 (9.0)	-0.2 (1.5)	-2.5 (17.0)
25	4.0 (2.5)	0.7 (0.4)	7.8 (4.8)	-1.8 (4.6)	-0.3 (0.8)	-3.3 (8.7)
26	2.3 (3.4)	0.4 (0.6)	4.4 (6.6)	1.0 (2.8)	0.2 (0.5)	1.8 (5.3)
27	3.3 (7.2)	0.6 (1.2)	6.4 (13.9)	2.9 (6.4)	0.5 (1.1)	5.4 (12.0)
28	1.3 (3.9)	0.2 (0.7)	2.6 (7.6)	4.0 (3.2)	0.7 (0.5)	7.5 (6.0)
29	1.2 (2.9)	0.2 (0.5)	2.3 (5.7)	1.2 (3.3)	0.2 (0.6)	2.2 (6.2)
30	0.1 (2.9)	0.0 (0.5)	0.2 (5.6)	0.5 (4.6)	0.1 (0.8)	0.9 (8.7)
Avg	2.5	0.4	4.8	0.9	0.2	1.7
n	24	24	24	24	24	24
SD	1.69	0.29	3.22	1.75	0.3	3.3
Min	-0.9	-0.2	-1.6	-1.8	-0.3	-3.3
Max	5.31	0.91	10.1	4.09	0.7	7.71

Table E10. Daily means (SD) of ammonia emissions at site CA5B for July, 2008.

Day	Barn 1			Barn 2		
	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2	2.9 (3.4)	0.5 (0.6)	5.7 (6.7)	-1.1 (6.1)	-0.2 (1.0)	-2.1 (11.5)
3	-0.5 (4.6)	-0.1 (0.8)	-1.0 (9.0)	-1.2 (8.8)	-0.2 (1.5)	-2.3 (16.6)
4	1.3 (2.5)	0.2 (0.4)	2.6 (4.9)	-1.4 (4.7)	-0.2 (0.8)	-2.6 (9.0)
5	3.3 (4.0)	0.6 (0.7)	6.5 (7.8)			
6	2.4 (3.0)	0.4 (0.5)	4.7 (6.0)	0.4 (7.7)	0.1 (1.3)	0.7 (14.6)
7						
8						
9				3.7 (8.5)	0.6 (1.4)	7.0 (16.1)
10	9.7 (12.5)	1.7 (2.1)	19.3 (24.8)	4.3 (7.7)	0.7 (1.3)	8.2 (14.7)
11						
12						
13	1.7 (5.1)	0.3 (0.9)	3.4 (10.2)	-0.2 (6.6)	0.0 (1.1)	-0.4 (12.4)
14	3.2 (4.9)	0.6 (0.8)	6.4 (9.8)	3.1 (7.5)	0.5 (1.3)	5.8 (14.3)
15	1.6 (4.3)	0.3 (0.7)	3.2 (8.6)	4.6 (6.5)	0.8 (1.1)	8.6 (12.3)
16	0.2 (7.6)	0.0 (1.3)	0.3 (15.3)	3.7 (6.9)	0.6 (1.2)	7.1 (13.1)
17	5.6 (7.7)	1.0 (1.3)	11.2 (15.5)	1.7 (5.7)	0.3 (1.0)	3.3 (10.8)
18	2.5 (4.7)	0.4 (0.8)	5.1 (9.4)	4.3 (5.6)	0.7 (1.0)	8.1 (10.7)
19	-0.6 (5.0)	-0.1 (0.9)	-1.2 (10.1)	1.6 (5.7)	0.3 (1.0)	3.0 (10.9)
20	-0.8 (7.7)	-0.1 (1.3)	-1.7 (15.6)	0.6 (4.4)	0.1 (0.8)	1.2 (8.4)
21	4.0 (6.3)	0.7 (1.1)	8.2 (12.7)	5.6 (8.3)	1.0 (1.4)	10.6 (15.7)
22				1.2 (5.4)	0.2 (0.9)	2.3 (10.2)
23						
24				2.9 (4.6)	0.5 (0.8)	5.4 (8.8)
25				-0.2 (4.4)	0.0 (0.8)	-0.4 (8.4)
26	9.9 (9.2)	1.7 (1.6)	20.2 (18.8)	4.7 (9.3)	0.8 (1.6)	8.9 (17.6)
27	-3.8 (12.0)	-0.6 (2.1)	-7.6 (24.5)	-1.1 (9.2)	-0.2 (1.6)	-2.1 (17.5)
28	4.9 (5.6)	0.8 (1.0)	10.0 (11.4)	2.3 (7.6)	0.4 (1.3)	4.3 (14.5)
29	5.0 (9.8)	0.8 (1.7)	10.1 (20.0)	0.9 (8.8)	0.2 (1.5)	1.8 (16.7)
30				6.2 (8.4)	1.1 (1.4)	11.7 (15.9)
31	1.9 (12.4)	0.3 (2.1)	3.8 (25.3)	-1.3 (9.3)	-0.2 (1.6)	-2.4 (17.6)
Avg	2.7	0.5	5.5	1.9	0.3	3.6
n	20	20	20	24	24	24
SD	3.23	0.55	6.51	2.32	0.4	4.4
Min	-3.8	-0.6	-7.6	-1.4	-0.2	-2.6
Max	9.93	1.69	20.2	6.16	1.05	11.7

Table E10. Daily means (SD) of ammonia emissions at site CA5B for August, 2008.

Day	Barn 1			Barn 2		
	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1	8.6 (8.6)	1.5 (1.5)	17.6 (17.6)	3.4 (5.5)	0.6 (0.9)	6.4 (10.4)
2	-0.7 (9.2)	-0.1 (1.6)	-1.3 (18.8)	1.8 (7.4)	0.3 (1.3)	3.5 (14.0)
3	4.4 (10.4)	0.8 (1.8)	8.9 (21.2)	7.4 (7.1)	1.3 (1.2)	14.0 (13.5)
4	7.2 (6.6)	1.2 (1.1)	14.8 (13.6)	3.8 (5.0)	0.6 (0.9)	7.2 (9.5)
5	9.7 (9.8)	1.7 (1.7)	19.8 (20.0)	8.8 (8.1)	1.5 (1.4)	16.7 (15.4)
6	-0.4 (7.6)	-0.1 (1.3)	-0.8 (15.4)	6.1 (6.3)	1.0 (1.1)	11.5 (11.9)
7	2.1 (7.8)	0.4 (1.3)	4.2 (16.0)	1.9 (8.1)	0.3 (1.4)	3.7 (15.3)
8	6.2 (7.0)	1.1 (1.2)	12.7 (14.4)	6.5 (5.0)	1.1 (0.8)	12.3 (9.4)
9	5.3 (6.4)	0.9 (1.1)	10.8 (13.0)	9.8 (8.8)	1.7 (1.5)	18.6 (16.7)
10						
11						
12						
13						
14	-2.6 (10.1)	-0.4 (1.7)	-5.3 (20.8)	0.2 (8.0)	0.0 (1.4)	0.3 (15.1)
15	3.9 (8.2)	0.7 (1.4)	7.9 (16.9)	3.8 (10.9)	0.7 (1.9)	7.3 (20.7)
16	5.6 (9.3)	1.0 (1.6)	11.4 (19.1)	8.6 (5.9)	1.5 (1.0)	16.3 (11.1)
17	4.2 (7.4)	0.7 (1.3)	8.7 (15.3)	5.8 (7.6)	1.0 (1.3)	11.0 (14.4)
18	-2.8 (7.8)	-0.5 (1.3)	-5.7 (16.1)			
19	4.4 (8.3)	0.7 (1.4)	8.9 (17.1)	5.2 (6.6)	0.9 (1.1)	9.8 (12.5)
20						
21	-4.0 (6.2)	-0.7 (1.1)	-8.2 (12.8)	-3.1 (10.9)	-0.5 (1.9)	-5.8 (20.5)
22						
23				1.8 (8.5)	0.3 (1.5)	3.5 (16.1)
24	2.0 (7.4)	0.3 (1.3)	4.1 (15.2)	3.1 (7.6)	0.5 (1.3)	5.8 (14.4)
25	6.7 (12.1)	1.1 (2.1)	13.7 (25.1)	4.9 (7.9)	0.8 (1.4)	9.2 (15.0)
26	10.2 (13.7)	1.7 (2.3)	21.1 (28.3)	7.1 (9.9)	1.2 (1.7)	13.4 (18.7)
27						
28						
29						
30	0.8 (8.6)	0.1 (1.5)	1.6 (17.8)	0.5 (7.9)	0.1 (1.3)	0.9 (14.9)
31	7.2 (12.8)	1.2 (2.2)	14.9 (26.5)	3.5 (8.0)	0.6 (1.4)	6.6 (15.3)
Avg	3.7	0.6	7.6	4.3	0.7	8.2
n	21	21	21	21	21	21
SD	4.02	0.68	8.25	3.13	0.53	5.93
Min	-4.0	-0.7	-8.2	-3.1	-0.5	-5.8
Max	10.2	1.74	21.1	9.83	1.67	18.6

Table E10. Daily means (SD) of ammonia emissions at site CA5B for September, 2008.

Day	Barn 1			Barn 2		
	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1	3.5 (11.5)	0.6 (2.0)	7.3 (23.8)	15.1 (19.1)	2.6 (3.3)	28.8 (36.4)
2						
3						
4						
5						
6						
7	3.5 (12.4)	0.6 (2.1)	7.3 (26.0)			
8	4.6 (9.3)	0.8 (1.6)	9.7 (19.4)	6.3 (7.1)	1.1 (1.2)	11.9 (13.6)
9	4.9 (7.6)	0.8 (1.3)	10.2 (15.9)	0.7 (12.6)	0.1 (2.1)	1.4 (24.0)
10	2.4 (7.8)	0.4 (1.3)	4.9 (16.3)	3.4 (5.5)	0.6 (0.9)	6.4 (10.5)
11						
12	4.8 (6.0)	0.8 (1.0)	10.1 (12.5)	10.4 (7.5)	1.8 (1.3)	19.9 (14.3)
13	3.4 (11.1)	0.6 (1.9)	7.2 (23.3)	6.9 (8.5)	1.2 (1.5)	13.2 (16.4)
14				2.3 (7.1)	0.4 (1.2)	4.4 (13.6)
15				8.4 (6.3)	1.4 (1.1)	16.2 (12.1)
16				7.6 (6.8)	1.3 (1.2)	14.6 (13.0)
17	1.1 (10.2)	0.2 (1.7)	2.4 (21.5)	3.7 (6.8)	0.6 (1.2)	7.0 (13.0)
18						
19	1.6 (7.8)	0.3 (1.3)	3.3 (16.5)	3.5 (12.0)	0.6 (2.0)	6.8 (23.0)
20	3.3 (6.2)	0.6 (1.1)	7.0 (13.1)	4.5 (11.4)	0.8 (1.9)	8.6 (21.9)
21	1.3 (8.5)	0.2 (1.4)	2.8 (17.9)	4.3 (8.8)	0.7 (1.5)	8.3 (17.0)
22						
23						
24						
25						
26						
27						
28						
29						
30				3.2 (5.8)	0.6 (1.0)	6.3 (11.3)
Avg	3.1	0.5	6.6	5.7	1.0	11.0
n	11	11	11	14	14	14
SD	1.31	0.22	2.74	3.62	0.62	6.9
Min	1.1	0.2	2.4	0.7	0.1	1.4
Max	4.89	0.83	10.2	15.1	2.58	28.8

Table E10. Daily means (SD) of ammonia emissions at site CA5B for October, 2008.

Day	Barn 1			Barn 2		
	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2				4.3 (14.6)	0.7 (2.5)	8.3 (28.4)
3						
4	-1.4 (8.9)	-0.2 (1.5)	-3.0 (19.0)	-3.1 (10.7)	-0.5 (1.8)	-6.0 (20.8)
5	1.7 (9.2)	0.3 (1.6)	3.6 (19.4)	3.9 (5.8)	0.7 (1.0)	7.7 (11.3)
6						
7						
8						
9	6.2 (8.8)	1.1 (1.5)	13.1 (18.6)	4.2 (24.2)	0.7 (4.1)	8.2 (47.1)
10	-8.6 (15.5)	-1.5 (2.6)	-18.2 (32.8)	9.7 (16.0)	1.7 (2.7)	18.9 (31.2)
11	5.7 (13.7)	1.0 (2.3)	12.1 (29.2)	4.6 (12.5)	0.8 (2.1)	9.0 (24.5)
12						
13						
14						
15						
16						
17						
18						
19	1.5 (6.9)	0.3 (1.2)	3.1 (14.5)	3.9 (4.8)	0.7 (0.8)	7.6 (9.5)
20	0.9 (5.4)	0.2 (0.9)	2.0 (11.4)	3.2 (7.0)	0.5 (1.2)	6.3 (13.8)
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
Avg	0.9	0.2	1.8	3.8	0.7	7.5
n	7	7	7	8	8	8
SD	4.58	0.78	9.71	3.23	0.55	6.29
Min	-8.6	-1.5	-18.2	-3.1	-0.5	-6.0
Max	6.18	1.05	13.1	9.7	1.65	18.9

Table E10. Daily means (SD) of ammonia emissions at site CA5B for December, 2008.

Day	Barn 1			Barn 2		
	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17	-5.1 (9.9)	-0.9 (1.7)	-12.3 (23.7)	-0.5 (6.0)	-0.1 (1.0)	-0.9 (11.2)
18	1.0 (10.0)	0.2 (1.7)	2.5 (24.0)	5.5 (11.3)	0.9 (1.9)	10.2 (21.0)
19						
20						
21						
22						
23	2.0 (5.1)	0.3 (0.9)	4.7 (12.2)	0.6 (5.5)	0.1 (0.9)	1.1 (10.1)
24	5.6 (8.4)	1.0 (1.4)	13.5 (20.1)	-1.2 (9.9)	-0.2 (1.7)	-2.1 (18.0)
25	-0.7 (14.5)	-0.1 (2.5)	-1.8 (34.9)	-10.8 (19.6)	-1.8 (3.3)	-19.6 (35.7)
26						
27						
28						
29						
30						
31						
Avg	0.6	0.1	1.3	-1.3	-0.2	-2.3
n	5	5	5	5	5	5
SD	3.52	0.6	8.43	5.3	0.9	9.69
Min	-5.1	-0.9	-12.3	-10.8	-1.8	-19.6
Max	5.6	0.96	13.5	5.5	0.94	10.2

Table E10. Daily means (SD) of ammonia emissions at site CA5B for January, 2009.

Day	Barn 1			Barn 2		
	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2	-2.4 (7.6)	-0.4 (1.3)	-5.7 (18.1)	5.4 (13.8)	0.9 (2.4)	9.7 (24.7)
3						
4						
5	1.8 (6.7)	0.3 (1.1)	4.3 (15.5)	1.4 (6.2)	0.2 (1.1)	2.5 (11.1)
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
Avg	-0.3	-0.1	-0.7	3.4	0.6	6.1
n	2	2	2	2	2	2
SD	2.12	0.36	4.99	2	0.34	3.58
Min	-2.4	-0.4	-5.7	1.4	0.2	2.5
Max	1.83	0.31	4.27	5.42	0.92	9.69

Table E10. Daily means (SD) of ammonia emissions at site CA5B for February, 2009.

Day	Barn 1			Barn 2		
	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2						
3						
4						
5	2.2 (11.1)	0.4 (1.9)	4.3 (22.0)	-0.7 (13.9)	-0.1 (2.4)	-1.2 (25.2)
6						
7						
8	5.4 (12.2)	0.9 (2.1)	10.6 (24.0)	4.3 (9.2)	0.7 (1.6)	7.7 (16.7)
9	-0.1 (5.4)	0.0 (0.9)	-0.3 (10.7)	2.2 (9.1)	0.4 (1.6)	4.0 (16.5)
10						
11	3.3 (9.9)	0.6 (1.7)	6.5 (19.4)	-2.6 (16.9)	-0.5 (2.9)	-4.8 (30.7)
12						
13	2.6 (11.2)	0.5 (1.9)	5.1 (21.7)			
14	12.8 (14.6)	2.2 (2.5)	24.8 (28.3)	-7.6 (19.6)	-1.3 (3.3)	-13.8 (35.6)
15						
16						
17						
18						
19						
20						
21	3.1 (9.8)	0.5 (1.7)	5.9 (18.8)	-1.7 (8.5)	-0.3 (1.4)	-3.0 (15.4)
22	-8.3 (20.5)	-1.4 (3.5)	-16.0 (39.3)	-9.2 (14.9)	-1.6 (2.5)	-16.6 (27.1)
23						
24	6.6 (8.2)	1.1 (1.4)	12.7 (15.7)	1.3 (5.2)	0.2 (0.9)	2.4 (9.5)
25						
26						
27						
28						
Avg	3.1	0.5	6.0	-1.7	-0.3	-3.2
n	9	9	9	8	8	8
SD	5.31	0.9	10.3	4.36	0.74	7.9
Min	-8.3	-1.4	-16.0	-9.2	-1.6	-16.6
Max	12.8	2.18	24.8	4.26	0.73	7.71

Table E10. Daily means (SD) of ammonia emissions at site CA5B for March, 2009.

Day	Barn 1			Barn 2		
	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2	4.2 (13.1)	0.7 (2.2)	7.9 (24.7)	-4.1 (12.8)	-0.7 (2.2)	-7.4 (23.1)
3	0.6 (10.9)	0.1 (1.9)	1.2 (20.5)	2.7 (11.8)	0.5 (2.0)	4.9 (21.2)
4						
5						
6						
7						
8						
9	2.2 (11.3)	0.4 (1.9)	4.2 (21.1)	1.1 (8.5)	0.2 (1.5)	2.0 (15.3)
10						
11						
12						
13						
14	-2.5 (6.7)	-0.4 (1.1)	-4.6 (12.5)	4.8 (5.4)	0.8 (0.9)	8.5 (9.6)
15						
16						
17	5.3 (10.5)	0.9 (1.8)	9.8 (19.4)	2.2 (8.1)	0.4 (1.4)	4.0 (14.4)
18						
19						
20	4.7 (6.3)	0.8 (1.1)	8.6 (11.6)	5.0 (4.9)	0.9 (0.8)	8.9 (8.6)
21	4.4 (5.5)	0.8 (0.9)	8.2 (10.1)	1.8 (6.9)	0.3 (1.2)	3.2 (12.2)
22	-2.6 (6.9)	-0.4 (1.2)	-4.7 (12.8)	-5.2 (8.6)	-0.9 (1.5)	-9.3 (15.2)
23	6.5 (7.9)	1.1 (1.4)	11.9 (14.6)	1.8 (10.0)	0.3 (1.7)	3.1 (17.6)
24						
25						
26	0.3 (13.6)	0.1 (2.3)	0.6 (24.9)	-0.6 (12.4)	-0.1 (2.1)	-1.1 (21.7)
27						
28						
29	15.9 (18.6)	2.7 (3.2)	29.0 (34.1)	5.3 (10.3)	0.9 (1.8)	9.2 (18.1)
30	4.7 (13.0)	0.8 (2.2)	8.6 (23.8)	0.9 (9.7)	0.2 (1.7)	1.6 (17.0)
31						
Avg	3.6	0.6	6.7	1.3	0.2	2.3
n	12	12	12	12	12	12
SD	4.66	0.79	8.56	3.16	0.54	5.62
Min	-2.6	-0.4	-4.7	-5.2	-0.9	-9.3
Max	15.9	2.7	29	5.27	0.9	9.23

Table E10. Daily means (SD) of ammonia emissions at site CA5B for April, 2009.

Day	Barn 1			Barn 2		
	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1	5.6 (10.1)	1.0 (1.7)	10.4 (18.7)	-0.9 (11.4)	-0.2 (1.9)	-1.6 (19.9)
2	11.4 (32.2)	2.0 (5.5)	21.1 (59.2)	15.4 (44.4)	2.6 (7.6)	26.9 (77.5)
3						
4						
5						
6						
7						
8						
9						
10	5.7 (11.7)	1.0 (2.0)	10.5 (21.7)	10.4 (12.3)	1.8 (2.1)	18.0 (21.4)
11	0.7 (5.7)	0.1 (1.0)	1.3 (10.6)	5.6 (7.9)	1.0 (1.4)	9.7 (13.7)
12	3.4 (8.4)	0.6 (1.4)	6.3 (15.7)	2.0 (6.6)	0.3 (1.1)	3.4 (11.4)
13	4.5 (11.2)	0.8 (1.9)	8.5 (21.0)	7.4 (6.9)	1.3 (1.2)	12.9 (11.9)
14	-2.4 (12.5)	-0.4 (2.1)	-4.5 (23.3)	3.2 (10.1)	0.6 (1.7)	5.6 (17.5)
15	9.4 (12.1)	1.6 (2.1)	17.7 (22.8)	5.1 (13.8)	0.9 (2.4)	8.9 (23.9)
16	5.9 (7.2)	1.0 (1.2)	11.2 (13.5)	5.2 (8.2)	0.9 (1.4)	8.9 (14.2)
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
Avg	4.9	0.8	9.2	5.9	1.0	10.3
n	9	9	9	9	9	9
SD	3.93	0.67	7.29	4.5	0.77	7.86
Min	-2.4	-0.4	-4.5	-0.9	-0.2	-1.6
Max	11.4	1.95	21.1	15.4	2.62	26.9

Table E10. Daily means (SD) of ammonia emissions at site CA5B for May, 2009.

Day	Barn 1			Barn 2		
	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20	-0.5 (5.3)	-0.1 (0.9)	-0.9 (9.9)	-2.0 (5.5)	-0.3 (0.9)	-3.4 (9.3)
21	-2.7 (3.4)	-0.5 (0.6)	-5.0 (6.4)	1.0 (5.0)	0.2 (0.9)	1.8 (8.5)
22	0.6 (5.5)	0.1 (0.9)	1.1 (10.2)	-2.0 (7.6)	-0.3 (1.3)	-3.3 (13.0)
23	0.5 (7.4)	0.1 (1.3)	0.9 (13.8)	1.6 (7.0)	0.3 (1.2)	2.8 (11.9)
24	-0.4 (6.8)	-0.1 (1.2)	-0.8 (12.6)	7.1 (9.5)	1.2 (1.6)	12.1 (16.1)
25	-0.9 (4.9)	-0.2 (0.8)	-1.6 (9.0)	2.0 (6.9)	0.3 (1.2)	3.4 (11.7)
26	0.9 (6.3)	0.2 (1.1)	1.6 (11.7)	-8.7 (25.9)	-1.5 (4.4)	-14.7 (44.0)
27						
28						
29						
30						
31						
Avg	-0.4	-0.1	-0.7	-0.1	0.0	-0.2
n	7	7	7	7	7	7
SD	1.12	0.19	2.09	4.49	0.77	7.62
Min	-2.7	-0.5	-5.0	-8.7	-1.5	-14.7
Max	0.89	0.15	1.63	7.1	1.21	12.1

Table E10. Daily means (SD) of ammonia emissions at site CA5B for June, 2009.

Day	Barn 1			Barn 2		
	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26	1.0 (8.8)	0.2 (1.5)	1.8 (15.5)	9.2 (7.1)	1.6 (1.2)	15.4 (11.9)
27	1.3 (8.3)	0.2 (1.4)	2.3 (14.6)	5.4 (6.6)	0.9 (1.1)	9.0 (11.0)
28	1.1 (10.0)	0.2 (1.7)	1.9 (17.6)	4.9 (5.8)	0.8 (1.0)	8.2 (9.8)
29	0.7 (7.9)	0.1 (1.4)	1.2 (14.0)	7.6 (5.4)	1.3 (0.9)	12.7 (9.0)
30				6.6 (4.7)	1.1 (0.8)	11.0 (7.8)
Avg	1.0	0.2	1.8	6.7	1.2	11.3
n	4	4	4	5	5	5
SD	0.23	0.04	0.41	1.55	0.26	2.6
Min	0.7	0.1	1.2	4.9	0.8	8.2
Max	1.3	0.22	2.31	9.22	1.57	15.4

Table E10. Daily means (SD) of ammonia emissions at site CA5B for August, 2009.

Day	Barn 1			Barn 2		
	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13	0.6 (20.5)	0.1 (3.5)	1.0 (35.3)	8.8 (11.8)	1.5 (2.0)	14.6 (19.6)
14	-1.3 (9.3)	-0.2 (1.6)	-2.2 (15.9)	1.8 (13.3)	0.3 (2.3)	2.9 (22.1)
15						
16						
17						
18	10.4 (8.6)	1.8 (1.5)	18.0 (14.9)	9.8 (8.3)	1.7 (1.4)	16.3 (13.9)
19	4.4 (6.5)	0.8 (1.1)	7.6 (11.2)	8.5 (8.7)	1.4 (1.5)	14.1 (14.6)
20	6.3 (6.6)	1.1 (1.1)	10.9 (11.4)	4.9 (8.0)	0.8 (1.4)	8.2 (13.3)
21	6.1 (7.7)	1.0 (1.3)	10.6 (13.4)	2.2 (4.2)	0.4 (0.7)	3.7 (7.0)
22						
23	14.5 (9.4)	2.5 (1.6)	25.2 (16.3)	7.4 (5.5)	1.3 (0.9)	12.4 (9.3)
24	8.3 (7.3)	1.4 (1.2)	14.4 (12.6)	6.0 (7.0)	1.0 (1.2)	10.1 (11.7)
25	8.8 (7.5)	1.5 (1.3)	15.3 (13.1)	8.0 (5.6)	1.4 (1.0)	13.4 (9.4)
26	21.2 (25.1)	3.6 (4.3)	36.8 (43.8)	6.7 (6.1)	1.1 (1.0)	11.3 (10.3)
27				13.6 (14.3)	2.3 (2.4)	22.9 (24.0)
28						
29						
30						
31						
Avg	7.9	1.4	13.8	7.1	1.2	11.8
n	10	10	10	11	11	11
SD	6.19	1.05	10.8	3.22	0.55	5.4
Min	-1.3	-0.2	-2.2	1.8	0.3	2.9
Max	21.2	3.6	36.8	13.6	2.32	22.9

Table E10. Daily means (SD) of ammonia emissions at site CA5B for September, 2009.

Day	Barn 1			Barn 2		
	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1	8.7 (9.0)	1.5 (1.5)	15.3 (15.7)	8.1 (7.8)	1.4 (1.3)	13.6 (13.0)
2	12.9 (6.9)	2.2 (1.2)	22.6 (12.0)	7.3 (6.7)	1.2 (1.1)	12.2 (11.3)
3						
4	12.6 (16.1)	2.1 (2.7)	22.1 (28.2)	8.3 (7.7)	1.4 (1.3)	14.0 (13.0)
5	6.4 (4.8)	1.1 (0.8)	11.3 (8.4)	7.4 (6.5)	1.3 (1.1)	12.5 (10.9)
6	10.1 (8.6)	1.7 (1.5)	17.8 (15.1)	8.3 (6.7)	1.4 (1.1)	14.1 (11.3)
7	9.5 (11.2)	1.6 (1.9)	16.7 (19.7)	9.0 (9.1)	1.5 (1.6)	15.2 (15.4)
8						
9						
10						
11						
12				4.0 (5.2)	0.7 (0.9)	6.7 (8.8)
13	5.2 (8.9)	0.9 (1.5)	9.1 (15.7)	0.9 (4.1)	0.2 (0.7)	1.6 (7.0)
14	7.5 (9.9)	1.3 (1.7)	13.3 (17.6)	8.3 (5.3)	1.4 (0.9)	14.2 (9.0)
15						
16						
17						
18						
19	-1.8 (19.9)	-0.3 (3.4)	-3.2 (35.4)	4.4 (5.0)	0.8 (0.9)	7.5 (8.5)
20						
21						
22						
23						
24						
25						
26						
27						
28	5.8 (13.1)	1.0 (2.2)	10.4 (23.5)	3.3 (5.1)	0.6 (0.9)	5.6 (8.7)
29	2.2 (6.0)	0.4 (1.0)	3.9 (10.7)	3.5 (4.5)	0.6 (0.8)	6.0 (7.7)
30						
Avg	7.2	1.2	12.7	6.1	1.0	10.3
n	11	11	11	12	12	12
SD	4.17	0.71	7.3	2.56	0.44	4.31
Min	-1.8	-0.3	-3.2	0.9	0.2	1.6
Max	12.9	2.2	22.6	8.97	1.53	15.2

Table E10. Daily means (SD) of ammonia emissions at site CA5B for October, 2009.

Day	Barn 1			Barn 2		
	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2						
3	5.2 (9.9)	0.9 (1.7)	9.3 (17.9)	0.0 (8.4)	0.0 (1.4)	0.0 (14.4)
4						
5						
6						
7						
8	7.6 (8.6)	1.3 (1.5)	13.7 (15.6)	6.9 (5.2)	1.2 (0.9)	11.8 (8.9)
9						
10						
11						
12	3.8 (2.9)	0.7 (0.5)	6.9 (5.3)	5.1 (8.8)	0.9 (1.5)	8.8 (15.3)
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
Avg	5.5	0.9	10.0	4.0	0.7	6.9
n	3	3	3	3	3	3
SD	1.56	0.27	2.82	2.9	0.49	5
Min	3.8	0.7	6.9	0.0	0.0	0.0
Max	7.58	1.29	13.7	6.86	1.17	11.8

Table E10. Daily means (SD) of ammonia emissions at site CA5B for December, 2009.

Day	Barn 1			Barn 2		
	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12	2.2 (2.0)	0.4 (0.3)	3.9 (3.6)	-0.9 (0.6)	-0.2 (0.1)	-1.6 (1.1)
13						
14						
15						
16						
17						
18						
19						
20						
21						
22	0.4 (2.9)	0.1 (0.5)	0.8 (5.3)	1.8 (3.7)	0.3 (0.6)	3.1 (6.4)
23						
24						
25						
26						
27	1.4 (5.9)	0.2 (1.0)	2.5 (10.8)	3.1 (3.1)	0.5 (0.5)	5.3 (5.3)
28						
29						
30						
31						
Avg	1.3	0.2	2.4	1.3	0.2	2.3
n	3	3	3	3	3	3
SD	0.71	0.12	1.28	1.67	0.29	2.87
Min	0.4	0.1	0.8	-0.9	-0.2	-1.6
Max	2.15	0.37	3.92	3.1	0.53	5.31

Table E10. Daily means (SD) of ammonia emissions at site CA5B for January, 2010.

Day	Barn 1			Barn 2		
	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹	kg·d ⁻¹	g·d ⁻¹ m ⁻²	g·d ⁻¹ hd ⁻¹
1						
2						
3	2.8 (0.9)	0.5 (0.2)	5.0 (1.6)	3.3 (1.8)	0.6 (0.3)	5.7 (3.2)
4						
5						
6						
7						
8						
9						
10						
11	0.8 (0.6)	0.1 (0.1)	1.5 (1.0)	0.8 (0.7)	0.1 (0.1)	1.4 (1.2)
12	1.3 (1.7)	0.2 (0.3)	2.4 (3.2)	1.3 (1.1)	0.2 (0.2)	2.2 (1.8)
13						
14						
15						
16						
17	2.3 (2.3)	0.4 (0.4)	4.1 (4.2)	0.5 (0.8)	0.1 (0.1)	0.9 (1.4)
18						
19						
20						
21						
22				-0.3 (0.4)	0.0 (0.1)	-0.4 (0.7)
23						
24	0.5 (0.5)	0.1 (0.1)	0.9 (0.9)	0.1 (0.1)	0.0 (0.0)	0.1 (0.2)
25						
26						
27						
28						
29						
30						
31						
Avg	1.5	0.3	2.8	1.0	0.2	1.6
n	5	5	5	6	6	6
SD	0.86	0.15	1.55	1.17	0.2	1.99
Min	0.5	0.1	0.9	-0.3	0.0	-0.4
Max	2.77	0.47	5.02	3.32	0.57	5.66

Table E11. Completeness of airflow and emission data.**Table E11. Airflow and emission data completeness (%) at site CA5B for September, 2007.**

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	100	100	54.7	54.7	54.7	54.7	100	0	0	0	0	0
28	99	99	27.4	30.8	27.4	30.8	99	0	0	0	0	0
29	60.6	60.6	0	0	0	0	58.8	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
Avg	8.7	8.7	2.7	2.9	2.7	2.9	8.6	0	0	0	0	0
n	30	30	30	30	30	30	30	30	30	30	30	30
SD	26.6	26.6	10.8	11.1	10.8	11.1	26.5	0	0	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Max	100	100	54.7	54.7	54.7	54.7	100	0	0	0	0	0

Table E11. Airflow and emission data completeness (%) at site CA5B for October, 2007.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	64.9	64.9	0	0	0	0	64.9	0	0	0	0	0
6	100	100	0	0	0	0	100	0	0	0	0	0
7	100	100	0	0	0	0	100	0	0	0	0	0
8	100	100	0	0	0	0	100	0	0	0	0	0
9	100	100	0	0	0	0	100	0	0	0	0	0
10	13	13	0	0	0	0	13	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	58.6	58.6	0	0	0	0	58.6	0	0	0	0	0
13	100	100	0	0	0	0	100	0	0	0	0	0
14	100	100	0	0	0	0	100	0	0	0	0	0
15	100	100	0	0	0	0	100	0	0	0	0	0
16	100	100	0	0	0	0	100	0	0	0	0	0
17	100	100	0	0	0	0	100	0	0	0	0	0
18	100	100	3.3	0	3.4	0	96.3	0	0	0	0	0
19	100	100	0	0	0	0	100	0	0	0	0	0
20	100	100	0	0	0	0	100	0	0	0	0	0
21	100	100	0	0	0	0	100	0	0	0	0	0
22	100	100	0	0	0	0	100	0	0	0	0	0
23	99.8	99.8	0	0	0	0	98.3	0	0	0	0	0
24	68.8	68.8	0	0	0	0	68.8	0	0	0	0	0
25	100	100	0	0	0	0	99.8	0	0	0	0	0
26	88.3	88.3	0	0	0	0	88.3	0	0	0	0	0
27	100	100	0	0	0	0	100	0	0	0	0	0
28	100	100	0	0	0	0	100	0	0	0	0	0
29	100	100	0	0	0	0	100	0	0	0	0	0
30	89.6	89.6	0	0	0	0	88.3	0	0	0	0	0
31	100	100	0	0	0	0	100	0	0	0	0	0
Avg	76.9	76.9	0.1	0	0.1	0	76.7	0	0	0	0	0
n	31	31	31	31	31	31	31	31	31	31	31	31
SD	38.2	38.2	0.6	0	0.6	0	38.1	0	0	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Max	100	100	3.3	0	3.4	0	100	0	0	0	0	0

Table E11. Airflow and emission data completeness (%) at site CA5B for November, 2007.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	100	100	0	0	0	0	100	0	0	0	0	0
2	100	100	0	0	0	0	100	0	0	0	0	0
3	100	100	0	0	0	0	100	0	0	0	0	0
4	100	100	0	0	0	0	100	0	0	0	0	0
5	100	100	0	0	0	0	100	0	0	0	0	0
6	100	100	0	0	0	0	100	0	0	0	0	0
7	100	100	0	0	0	0	100	0	0	0	0	0
8	100	100	0	0	0	0	100	0	0	0	0	0
9	99.8	99.8	0	0	0	0	99.8	0	0	0	0	0
10	100	100	0	0	0	0	100	0	0	0	0	0
11	100	100	0	0	0	0	100	0	0	0	0	0
12	100	100	0	0	0	0	100	0	0	0	0	0
13	100	100	0	0	0	0	100	0	0	0	0	0
14	52.4	52.4	0	0	0	0	52.4	0	0	0	0	0
15	100	100	0	0	0	0	100	0	0	0	0	0
16	100	100	0	0	0	0	100	0	0	0	0	0
17	100	100	0	0	0	0	100	0	0	0	0	0
18	100	100	0	0	0	0	100	0	0	0	0	0
19	100	100	0	0	0	0	100	0	0	0	0	0
20	97.3	97.3	0	0	0	0	97.3	0	0	0	0	0
21	100	100	0	0	0	0	100	0	0	0	0	0
22	100	100	0	0	0	0	100	0	0	0	0	0
23	99.9	99.9	0	0	0	0	99.9	0	0	0	0	0
24	100	100	0	0	0	0	100	0	0	0	0	0
25	99.7	99.7	0	0	0	0	97	0	0	0	0	0
26	100	100	0	0	0	0	100	0	0	0	0	0
27	100	100	0	0	0	0	100	0	0	0	0	0
28	100	100	0	0	0	0	100	0	0	0	0	0
29	100	100	0	0	0	0	100	0	0	0	0	0
30	100	100	0	0	6.5	0	100	0	0	0	0	0
Avg	98.3	98.3	0	0	0.2	0	98.2	0	0	0	0	0
n	30	30	30	30	30	30	30	30	30	30	30	30
SD	8.5	8.5	0	0	1.2	0	8.5	0	0	0	0	0
Min	52.4	52.4	0	0	0	0	52.4	0	0	0	0	0
Max	100	100	0	0	6.5	0	100	0	0	0	0	0

Table E11. Airflow and emission data completeness (%) at site CA5B for December, 2007.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	100	100	48.4	0	48.4	0	100	0	0	0	0	0
2	100	100	91	0	91	0	100	0	0	0	0	0
3	100	100	69.2	0	69.2	0	100	0	0	0	0	0
4	100	100	74.9	0	74.9	0	100	0	0	0	0	0
5	100	100	45.1	0	45.1	0	100	0	0	0	0	0
6	100	100	80.3	0	80.3	0	100	0	0	0	0	0
7	100	100	89.6	0	89.6	0	100	0	0	0	0	0
8	100	100	57.4	0	57.4	0	100	0	0	0	0	0
9	100	100	24.5	0	24.5	0	100	0	0	0	0	0
10	100	100	58.8	0	58.8	0	100	0	0	0	0	0
11	100	100	53.8	0	53.8	0	100	0	0	0	0	0
12	68.3	68.3	23.3	0	23.4	0	68.3	0	0	0	0	0
13	100	100	32.6	0	32.6	0	94.8	0	0	0	0	0
14	100	100	37.6	0	37.6	0	100	0	0	0	0	0
15	100	100	23.7	0	27.8	0	100	0	0	0	0	0
16	100	100	52.6	0	52.6	0	100	17.7	0	0	0	0
17	100	100	100	0	100	0	100	100	0	0	0	0
18	100	100	89	0	89	0	100	100	0	0	0	0
19	99.8	99.8	58.1	0	58.1	0	92.1	92.1	0	0	0	0
20	100	100	94.6	0	94.6	0	100	100	0	0	0	0
21	100	100	73.5	0	73.5	0	100	100	0	0	0	0
22	100	100	41.5	0	41.5	0	100	100	0	0	0	0
23	100	100	34.3	0	34.3	0	100	100	0	0	0	0
24	100	100	86.8	0	87.2	0	100	100	0	0	0	0
25	100	100	74.1	0	74.1	0	100	100	0	0	0	0
26	100	100	82.8	0	82.8	0	100	100	0	0	0	0
27	100	100	64.3	0	64.4	0	73.4	79	0	0	0	0
28	100	100	75.6	0	75.6	0	100	100	0	0	0	0
29	100	100	60.9	0	60.9	0	100	100	0	0	0	0
30	99.9	99.9	67.2	0	67.2	0	99.9	99.9	0	0	0	0
31	100	100	35.8	0	35.8	0	100	100	0	0	0	0
Avg	99	99	61.3	0	61.5	0	97.7	48	0	0	0	0
n	31	31	31	31	31	31	31	31	31	31	31	31
SD	5.6	5.6	22.2	0	22	0	7.3	48.7	0	0	0	0
Min	68.3	68.3	23.3	0	23.4	0	68.3	0	0	0	0	0
Max	100	100	100	0	100	0	100	100	0	0	0	0

Table E11. Airflow and emission data completeness (%) at site CA5B for January, 2008.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	100	100	26.3	0	26.3	0	100	100	0	0	0	0
2	99.7	99.7	44	0	44	0	89.3	92	0	0	0	0
3	100	100	69.5	0	69.5	0	100	100	0	0	0	0
4	100	100	85.1	0	85.1	0	100	100	0	0	0	0
5	100	100	92.1	0	92.1	0	100	100	0	0	0	0
6	100	100	57	0	57	0	100	100	0	0	0	0
7	97.6	97.6	52.9	0	53.3	0	97.6	97.6	0	0	0	0
8	100	100	86.2	0	86.3	0	100	100	0	0	0	0
9	100	100	50.3	0	50.3	0	100	100	0	0	0	0
10	100	100	68.6	0	68.6	0	100	100	0	0	0	0
11	100	100	22.2	0	21.7	0	100	100	0	0	0	0
12	100	100	54.2	0	54.2	0	100	100	0	0	0	0
13	100	100	19.3	18.1	19.3	18.1	100	100	0	0	0	0
14	99.7	99.7	28	24.7	28	28	99.7	99.7	0	0	0	0
15	100	100	53	52.3	53	53	92.8	100	0	0	0	0
16	99.9	99.9	35.6	35.6	35.6	35.6	99.9	99.9	0	0	0	0
17	100	100	34.9	34.9	34.9	34.9	98	98	0	0	0	0
18	100	100	24.3	24.3	24.3	24.3	100	100	0	0	0	0
19	100	100	31	31	31	31	100	100	0	0	0	0
20	100	100	36.8	34.3	36.9	34.4	50.3	48.7	0	0	29.9	0
21	100	100	81.5	81.5	81.5	81.5	0	0	0	0	100	0
22	100	100	77.1	77.1	77.1	77.1	0	0	0	0	100	0
23	100	100	55.7	55.7	55.7	55.7	0	0	0	0	100	0
24	100	100	100	100	100	100	0	0	0	0	100	0
25	99.4	99.4	55.9	49.5	55.4	49.7	0	0	0	0	99.4	0
26	100	100	85.7	85.7	85.7	85.7	0	0	0	0	100	66.3
27	100	100	96.5	96.5	96.5	96.5	0	0	0	0	100	100
28	100	100	61.5	61.5	61.5	61.5	0	0	0	0	100	100
29	100	100	66.3	66.3	66.3	66.3	0	0	0	0	100	100
30	99.7	99.7	54.4	45.7	54.4	54.4	0	0	0	0	99.7	99.7
31	100	100	78.5	78.5	78.5	78.5	0	0	0	0	100	100
Avg	99.9	99.9	57.6	34	57.5	34.4	62.2	62.4	0	0	36.4	18.3
n	31	31	31	31	31	31	31	31	31	31	31	31
SD	0.4	0.4	23.2	33.3	23.3	33.4	46.9	47.2	0	0	47.4	37.7
Min	97.6	97.6	19.3	0	19.3	0	0	0	0	0	0	0
Max	100	100	100	100	100	100	100	100	0	0	100	100

Table E11. Airflow and emission data completeness (%) at site CA5B for February, 2008.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	100	100	67.6	45.3	67.6	45.4	0	0	0	0	100	100
2	100	100	66	66	66	66	0	0	0	0	100	100
3	100	100	84.1	84.1	84.1	84.1	0	0	0	0	98.1	100
4	100	100	86.2	69.8	86.2	69.9	0	0	0	0	99.8	99.8
5	100	100	39.4	32.4	39.4	39.4	0	0	0	0	100	100
6	99.9	99.9	48.5	48.5	48.5	48.5	0	0	0	0	99.9	99.9
7	100	100	45.4	45.4	45.4	45.4	0	0	0	0	100	100
8	100	100	48.5	46.7	48.5	48.5	0	0	0	0	100	100
9	100	100	33.8	33.8	33.8	33.8	0	0	0	0	100	100
10	100	100	43.3	42.9	43.3	43.3	0	0	0	0	100	100
11	100	100	35.8	35.8	35.8	35.8	0	0	0	0	100	100
12	100	100	33.9	33.9	33.9	33.9	0	0	0	0	100	100
13	99.4	99.4	69	62.6	68.4	66.4	0	0	0	0	98.2	98.2
14	55.8	55.8	45.3	40.8	45	41.5	0	0	0	0	55.8	55.8
15	100	100	52.7	52.7	52.7	52.7	0	0	0	0	100	100
16	100	100	38.9	38.9	38.9	38.9	0	0	0	0	100	100
17	100	100	27.5	13.5	27.5	14.1	0	0	0	0	100	100
18	99.7	99.7	68.8	48.2	48.6	48.3	0	0	26.7	25	68.1	68.9
19	100	100	69.7	69.7	69.7	69.7	0	0	100	100	0	0
20	100	100	61.3	61.3	61.3	61.3	0	0	100	100	0	0
21	99.9	99.9	92.8	92.8	92.8	92.8	0	0	99.9	95.8	0	0
22	92.8	92.8	43.4	10.1	43.4	17	0	0	92.8	92.8	0	0
23	100	100	89.7	69.1	89.7	69.2	0	0	100	100	0	0
24	100	100	80.5	56.5	80.5	63.2	0	0	97.6	100	0	0
25	100	100	50.5	7.2	50.5	7.3	0	0	100	100	0	0
26	100	100	18.3	4	18.3	4.2	0	0	100	100	0	0
27	100	100	35.1	34.9	35.1	34.9	0	0	100	100	0	0
28	100	100	28.5	28.5	28.5	28.5	0	0	100	100	0	0
29	100	100	59.1	59.1	59.1	59.1	22.5	22.5	76.1	76.9	0	0
Avg	98.2	98.2	53.9	46	53.2	47	0.8	0.8	37.7	37.6	59.3	59.4
n	29	29	29	29	29	29	29	29	29	29	29	29
SD	8.1	8.1	19.9	21.4	19.8	21.1	4.1	4.1	46.8	46.7	47.3	47.4
Min	55.8	55.8	18.3	4	18.3	4.2	0	0	0	0	0	0
Max	100	100	92.8	92.8	92.8	92.8	22.5	22.5	100	100	100	100

Table E11. Airflow and emission data completeness (%) at site CA5B for March, 2008.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	99.9	99.9	57.6	96.9	57.8	96.9	99.9	99.9	0	0	0	0
2	100	100	0	71.1	0	71.1	100	100	0	0	0	0
3	100	100	0	61.6	0	61.6	94.7	94.7	0	0	0	0
4	100	100	0	51.9	0	51.9	100	100	0	0	0	0
5	100	100	0	51.6	0	51.6	100	100	0	0	0	0
6	99.7	99.7	0	32.5	0	32.5	99.7	99.7	0	0	0	0
7	100	100	0	29.6	0	29.6	100	100	0	0	0	0
8	100	100	0	71.6	0	71.6	100	100	0	0	0	0
9	100	100	0	16.3	0	16.3	100	100	0	0	0	0
10	100	100	0	49.9	0	49.9	100	100	0	0	0	0
11	100	100	0	63.9	0	63.9	100	100	0	0	0	0
12	100	100	0	64.5	0	64.5	100	100	0	0	0	0
13	100	100	0	68.2	0	68.2	100	100	0	0	0	0
14	100	100	0	55.8	0	55.8	100	96.8	0	0	0	0
15	100	100	0	67.8	0	67.8	99.8	99.8	0	0	0	0
16	100	100	0	98.5	0	98.5	100	100	0	0	0	0
17	100	100	0	53.4	0	53.4	100	100	0	0	0	0
18	100	100	0	47.8	0	47.8	100	100	0	0	0	0
19	100	100	0	87.4	0	87.4	100	100	0	0	0	0
20	99.9	99.9	0	80.6	0	80.6	99.9	99.9	0	0	0	0
21	100	100	0	68.3	0	68.3	100	100	0	0	0	0
22	100	100	0	26.7	0	26.7	100	100	0	0	0	0
23	100	100	0	58.5	0	58.5	100	100	0	0	0	0
24	100	100	0	78.7	0	78.7	100	100	0	0	0	0
25	100	100	0	94.2	0	94.2	100	100	0	0	0	0
26	100	100	0	84.2	0	84.2	100	100	0	0	0	0
27	99.7	99.7	0	78.3	0	78.3	99.7	99.7	0	0	0	0
28	100	100	0	87.1	0	87.1	100	100	0	0	0	0
29	100	100	0	80.6	0	80.6	100	100	0	0	0	0
30	100	100	0	86.5	0	86.5	100	100	0	0	0	0
31	100	100	0	53.7	0	53.7	100	100	0	0	0	0
Avg	100	100	1.9	65.1	1.9	65.1	99.8	99.7	0	0	0	0
n	31	31	31	31	31	31	31	31	31	31	31	31
SD	0.1	0.1	10.2	20.6	10.2	20.6	0.9	1.1	0	0	0	0
Min	99.7	99.7	0	16.3	0	16.3	94.7	94.7	0	0	0	0
Max	100	100	57.6	98.5	57.8	98.5	100	100	0	0	0	0

Table E11. Airflow and emission data completeness (%) at site CA5B for April, 2008.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	100	100	0	48.7	0	48.7	100	100	0	0	0	0
2	100	100	0	57.2	0	57.2	100	100	0	0	0	0
3	100	100	0	71.2	0	71.2	100	100	0	0	0	0
4	14.1	14.1	0	4.8	0	4.8	14.1	14.1	0	0	0	0
5	56.6	56.6	0	0	0	0	0	0	0	0	0	0
6	100	100	0	0	0	0	0	0	0	0	0	0
7	100	100	0	0	0	0	0	0	0	0	0	0
8	100	100	0	0	0	0	0	0	0	0	0	0
9	100	100	0	0	0	0	0	0	0	0	0	0
10	99.8	99.8	0	0	0	0	0	0	0	0	0	0
11	100	100	0	0	0	0	0	0	0	0	0	0
12	100	100	0	0	0	0	0	0	0	0	0	0
13	100	100	0	0	0	0	0	0	0	0	0	0
14	100	100	0	20.3	0	20.3	0	20.7	0	0	0	0
15	100	100	0	83	0	83	0	100	0	0	0	0
16	100	100	0	65.8	0	65.8	0	100	0	0	0	0
17	99.9	99.9	0	57.6	0	57.6	0	99.9	0	0	0	0
18	100	100	0	73	0	73	0	100	0	0	0	0
19	100	100	0	85.7	0	85.7	0	100	0	0	0	0
20	100	100	0	72.5	0	72.5	0	100	0	0	0	0
21	99.3	99.3	0	74.6	0	74.6	0	98.1	0	0	0	0
22	100	100	0	61.3	0	61.3	0	100	0	0	0	0
23	100	100	0	81	0	81	0	100	0	0	0	0
24	100	100	0	79.7	0	79.7	0	100	0	0	0	0
25	100	100	0	81.1	0	81.1	0	100	0	0	0	0
26	100	100	0	69.9	0	69.9	0	100	0	0	0	0
27	100	100	0	56.7	0	56.7	0	100	0	0	0	0
28	99.9	99.9	0	87.7	0	87.7	0	99.9	0	0	0	0
29	99.4	99.4	0	98.4	0	98.4	0	99.4	0	0	0	0
30	46.5	46.5	0	44.9	0	44.8	0	46.5	0	0	0	0
Avg	93.8	93.8	0	45.8	0	45.8	10.5	62.6	0	0	0	0
n	30	30	30	30	30	30	30	30	30	30	30	30
SD	19.1	19.1	0	35.1	0	35.1	30	46.4	0	0	0	0
Min	14.1	14.1	0	0	0	0	0	0	0	0	0	0
Max	100	100	0	98.4	0	98.4	100	100	0	0	0	0

Table E11. Airflow and emission data completeness (%) at site CA5B for May, 2008.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	99.6	99.6	0	70.2	0	69.7	0	57.8	0.1	0.1	0.1	0.1
2	100	100	0	63.8	0	63.8	0	100	0	0	0	0
3	100	100	0	95.3	0	95.3	0	100	0	0	0	0
4	100	100	0	89.5	0	89.5	0	100	0	0	0	0
5	100	100	0	80.6	0	80.6	0	100	0	0	0	0
6	100	100	0	93.6	0	93.6	0	100	0	0	0	0
7	99.6	99.6	0	91.2	0	91.2	0	99.6	0	0	0	0
8	100	100	0	71.5	0	71.5	0	100	0	0	0	0
9	100	100	0	97.2	0	97.2	0	100	0	0	0	0
10	100	100	0	78.8	0	78.8	0	100	0	0	0	0
11	100	100	0	97.7	0	97.7	0	100	0	0	0	0
12	100	100	0	93.3	0	93.3	0	100	0	0	0	0
13	100	100	0	81.4	0	81.4	0	100	0	0	0	0
14	99.8	99.8	0	55.2	0	55.2	0	99.8	0	0	0	0
15	100	100	0	44.8	0	44.8	0	94.6	0	0	0	0
16	100	100	0	44.7	0	44	0	88.3	0	0	0	0
17	100	100	0	90.4	0	90.4	0	100	0	0	0	0
18	100	100	0	97.5	0	97.5	0	99.9	0	0	0	0
19	100	100	0	92.7	0	92.7	0	100	0	0	0	0
20	100	100	0	91.5	0	91.5	0	100	0	0	0	0
21	100	100	0	99.5	0	99.5	0	100	0	0	0	0
22	100	100	0	99	0	99	0	100	0	0	0	0
23	85.2	85.2	0	79.7	0	79.7	0	85.2	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	59.9	59.9	0	58.3	0	58.2	0	59.9	0	0	0	0
26	100	100	0	85.6	0	85.6	0	100	0	0	0	0
27	100	100	96.3	96.3	0	96.3	56.3	100	0	0	0	0
28	99.8	99.8	90.3	90.3	0	90.3	99.8	99.8	0	0	0	0
29	99.9	99.9	95.8	95.8	0	95.8	99.9	99.9	0	0	0	0
30	100	100	96.7	96.7	0	96.7	100	100	0	0	0	0
31	100	100	99.9	99.9	0	99.9	100	100	0	0	0	0
Avg	95	95	15.5	81.4	0	81.3	14.7	93.1	0	0	0	0
n	31	31	31	31	31	31	31	31	31	31	31	31
SD	18.9	18.9	35.3	21.7	0	21.7	34.3	19.9	0	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Max	100	100	99.9	99.9	0	99.9	100	100	0.1	0.1	0.1	0.1

Table E11. Airflow and emission data completeness (%) at site CA5B for June, 2008.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	100	100	97	97	0	97	100	100	0	0	0	0
2	100	100	94	94	0	94	100	100	0	0	0	0
3	100	100	98.9	98.9	0	98.9	100	100	0	0	0	0
4	79.3	79.3	68	67.8	0	64.2	60	60	0	0	19.2	19.2
5	99	99	85.8	85.8	0	57.6	0	0	0	0	99	99
6	100	100	85.1	85.1	0	40.3	0	0	0	0	100	100
7	100	100	91.4	91.4	0	91.4	0	0	0	0	100	100
8	100	100	78.3	78.3	0	78.3	0	0	0	0	100	100
9	100	100	75.3	75.3	0	75.3	0	0	0	0	100	86.7
10	100	100	94.4	94.4	0	94.4	0	0	0	0	100	100
11	99.9	99.9	85.9	85.9	0	85.9	0	0	0	0	99.9	99.9
12	88.7	88.7	51	51	0	51	0	0	0	0	60.6	58.7
13	100	100	70.6	70.6	0	70.6	0	0	0	0	0	0
14	100	100	100	100	0	100	0	0	0	0	0	0
15	100	100	95.1	95.1	0	95.1	0	0	0	0	0	0
16	99.9	99.9	97.7	97.7	0	97.7	0	0	0	0	0	0
17	100	100	94	94	0	94	0	0	0	0	0	0
18	100	100	90.6	90.6	0	90.6	0	0	0	0	0	0
19	89	89	61.8	61.8	0	61.8	0	0	0	0	0	0
20	100	100	60.7	60.7	0	60.7	0	0	0	0	0	0
21	100	100	56.8	56.8	0	56.8	0	0	0	0	0	0
22	100	100	95.7	95.7	0	95.7	0	0	0	0	0	0
23	100	100	94.4	94.4	0	94.4	48.7	48.7	0	0	0	0
24	100	100	98.8	98.8	0	98.8	100	100	0	0	0	0
25	100	100	99	99	0	99	100	100	0	0	0	0
26	96.2	96.2	80.4	80.4	0	80.4	96.2	96.2	0	0	0	0
27	98.1	98.1	80.2	80.2	0	80.2	92.8	95.1	0	0	0	0
28	98.8	98.8	98.7	98.7	0	98.7	98.8	98.8	0	0	0	0
29	100	100	99.2	99.2	0	99.2	100	100	0	0	0	0
30	99.4	99.4	98.9	96.7	0	96.7	99.4	99.4	0	0	0	0
Avg	98.3	98.3	85.9	85.8	0	83.3	36.5	36.6	0	0	26	25.4
n	30	30	30	30	30	30	30	30	30	30	30	30
SD	4.5	4.5	14.2	14.1	0	17.1	46	46.1	0	0	42.3	41.5
Min	79.3	79.3	51	51	0	40.3	0	0	0	0	0	0
Max	100	100	100	100	0	100	100	100	0	0	100	100

Table E11. Airflow and emission data completeness (%) at site CA5B for July, 2008.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	76.6	76.6	72.8	18.3	0	18.9	76.6	76.6	0	0	0	0
2	99.9	99.9	99.1	99.1	0	99.1	99.9	99.9	0	0	0	0
3	97.7	97.7	90.4	90.4	0	90.4	97.7	97.7	0	0	0	0
4	100	100	90.8	90.8	0	90.8	100	100	0	0	0	0
5	96.7	96.7	78.6	49.4	0	78.6	96.7	96.7	0	0	0	0
6	100	100	81.9	81.9	0	81.9	100	100	0	0	0	0
7	100	100	46.9	34.4	0	34.4	100	100	0	0	0	0
8	54.2	54.2	32.4	0	0	0	54.2	54.2	0	0	0	0
9	81.3	81.3	39	75.6	44	76.3	81.3	81.3	0.1	0.1	0.1	0.1
10	100	100	77.2	89.8	77.4	89.8	100	100	0	0	0	0
11	87.4	87.4	51	59.9	58.1	60.9	87.4	87.4	0	0	0	0
12	84.1	84.1	72.8	70.8	84	72.3	58.4	58.4	0	0	0	0
13	100	100	98.1	98.1	98.1	98.1	0	0	0	0	0	0
14	100	100	98.8	98.8	98.8	98.8	0	0	0	0	0	0
15	100	100	100	100	100	100	0	0	0	0	0	0
16	100	100	92.4	92.4	92.4	92.4	0	0	0	0	0	0
17	100	100	94.6	94.6	94.6	94.6	0	0	0	0	0	0
18	100	100	91.9	91.9	91.9	91.9	0	0	0	0	0	0
19	100	100	98.4	98.4	98.4	98.4	0	0	0	0	0	0
20	100	100	99.9	99.9	99.9	99.9	0	0	0	0	0	0
21	100	100	100	100	100	100	0	0	0	0	0	0
22	98.3	98.3	31.8	86.3	31.8	86.3	30.8	30.8	0	0	0	0
23	99.9	99.9	0	73	0	73	99.9	99.9	0	0	0	0
24	100	100	0	86.3	0	86.3	100	100	0	0	0	0
25	94.2	94.2	18.5	79.7	18.6	79.7	94.2	94.2	0	0	0	0
26	100	100	99.4	99.4	99.4	99.4	100	100	0	0	0	0
27	100	100	99.9	99.9	99.9	99.9	100	100	0	0	0	0
28	100	100	99.2	99.2	99.2	99.2	100	100	0	0	0	0
29	100	100	93.1	93.1	93.1	93.1	99.9	99.9	0	0	0	0
30	93.9	93.9	56.7	86.5	56.9	86.5	93.9	93.9	0	0	0	0
31	97.6	97.6	77.6	77.6	77.6	77.6	97.6	97.6	0	0	0	0
Avg	95.5	95.5	73.6	81.1	55.3	82.2	63.5	63.5	0	0	0	0
n	31	31	31	31	31	31	31	31	31	31	31	31
SD	9.6	9.6	30.5	24.5	43.1	23.7	43.4	43.4	0	0	0	0
Min	54.2	54.2	0	0	0	0	0	0	0	0	0	0
Max	100	100	100	100	100	100	100	100	0.1	0.1	0.1	0.1

Table E11. Airflow and emission data completeness (%) at site CA5B for August, 2008.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	100	100	93.3	93.3	93.3	93.3	100	100	0	0	0	0
2	100	100	88.6	89	89	89	100	100	0	0	0	0
3	100	100	75	96.2	96.2	96.2	100	100	0	0	0	0
4	99.9	99.9	94.2	94.2	94.2	94.2	99.9	99.9	0	0	0	0
5	100	100	98.1	98.1	98.1	98.1	100	100	0	0	0	0
6	99.9	99.9	93.7	93.7	93.7	93.7	99.9	99.9	0	0	0	0
7	100	100	98.4	98.4	98.4	98.4	100	100	0	0	0	0
8	100	100	100	100	100	100	100	100	0	0	0	0
9	100	100	97.2	97.2	97.2	97.2	100	100	0	0	0	0
10	100	100	64.7	64.7	64.7	64.7	100	100	0	0	0	0
11	100	100	52.3	52.3	52.3	52.3	100	100	0	0	0	0
12	100	100	69.4	69.4	69.4	69.4	100	100	0	0	0	0
13	99.8	99.8	60.5	60.5	60.5	60.5	99.8	99.8	0	0	0	0
14	100	100	76.5	76.5	76.5	76.5	100	100	0	0	0	0
15	100	100	89.4	89.4	89.4	89.4	100	100	0	0	0	0
16	100	100	98.1	98.1	98.1	98.1	100	100	0	0	0	0
17	100	100	98.5	98.5	98.5	98.5	100	100	0	0	0	0
18	96.8	96.8	90.2	67.5	90.2	67.6	53.9	53.9	0	0	0	0
19	100	100	98.6	98.6	98.6	98.6	0	0	0	0	0	0
20	100	100	77.6	77.6	77.6	77.6	0	0	0	0	0	0
21	100	100	87.7	87.7	87.7	87.7	0	0	0	0	0	0
22	100	100	74.7	74.7	74.7	74.7	0	0	0	0	0	0
23	100	100	73.9	96	73.9	96	0	0	0	0	0	0
24	100	100	77.3	87.2	77.4	87.2	0	0	0	0	0	0
25	100	100	84.6	97.6	84.6	97.6	0	0	0	0	0	0
26	100	100	81.5	81.5	81.5	81.5	0	0	0	0	0	0
27	99.9	99.9	60.5	60.5	60.5	60.5	0	0	0	0	0	0
28	93.5	93.5	54.6	54.6	54.6	54.6	0	0	0	0	0	0
29	100	100	53.5	53.6	53.6	53.6	0	0	0	0	0	0
30	100	100	77.2	77.2	77.2	77.2	0	0	0	0	0	0
31	100	100	89.3	89.3	89.3	89.3	0	0	0	0	0	0
Avg	99.7	99.7	81.6	83	82.3	83	56.6	56.6	0	0	0	0
n	31	31	31	31	31	31	31	31	31	31	31	31
SD	1.3	1.3	14.6	15.3	14.8	15.3	48.7	48.7	0	0	0	0
Min	93.5	93.5	52.3	52.3	52.3	52.3	0	0	0	0	0	0
Max	100	100	100	100	100	100	100	100	0	0	0	0

Table E11. Airflow and emission data completeness (%) at site CA5B for September, 2008.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	100	100	82.5	82.5	82.5	82.5	51.5	51.5	0	0	0	0
2	100	100	59.8	61.3	59.8	61.3	100	100	0	0	0	0
3	100	100	42.4	42.4	42.4	42.4	100	100	0	0	0	0
4	99.9	99.9	51.8	51.8	51.8	51.8	99.9	99.9	0	0	0	0
5	100	100	48	48	48	48	100	100	0	0	0	0
6	100	100	62.9	62.9	62.9	62.9	100	100	0	0	0	0
7	100	100	76	74.4	76	76	100	100	0	0	0	0
8	100	100	93.8	93.8	93.8	93.8	100	100	0	0	0	0
9	100	100	97.3	97.3	97.3	97.3	98.7	100	0	0	0	0
10	100	100	86.7	86.7	86.7	86.7	100	100	0	0	0	0
11	98.1	98.1	52.3	57.4	52.3	58	56.8	45.7	0	0	35.3	0
12	99.7	99.7	90.8	90.8	90.8	90.8	0	0	0	0	99.7	0
13	100	100	89.9	89.9	89.9	89.9	0	0	0	0	100	0
14	100	100	72.1	91	91	91	0	0	0	0	100	0
15	100	100	67	84.3	84.3	84.3	0	0	0	0	100	0
16	100	100	67.7	94.9	94.9	94.9	0	0	0	0	100	0
17	100	100	100	100	100	100	0	0	0	0	100	4
18	99.2	99.2	73.7	74.4	75.8	75.8	0	0	0	0	99.2	98.4
19	100	100	92.4	92.4	92.4	92.4	0	0	0	0	100	100
20	100	100	96.7	96.7	96.7	96.7	0	0	0	0	100	100
21	100	100	75.1	75.1	75.1	75.1	0	0	0	0	100	100
22	99.9	99.9	63.8	63.8	63.8	63.8	0	0	0	0	99.9	99.9
23	99.9	99.9	34.7	36	36	36	0	0	0	0	99.9	99.9
24	100	100	36	30.6	37.6	48.3	0	0	0	0	100	100
25	99.9	99.9	54.6	54.1	60.3	54.1	0	0	0	0	99.9	99.9
26	100	100	23.9	21	23.9	21	0	0	0	0	100	100
27	100	100	0	0	0	0	0	0	0	0	100	100
28	100	100	0	0	0	0	0	0	0	0	100	100
29	96.5	96.5	44.2	41	44.3	41.2	0	0	0	0	96.5	96.5
30	100	100	60.3	79.9	79.9	79.9	0	0	0	0	100	100
Avg	99.8	99.8	63.2	65.8	66.3	66.5	33.6	33.2	0	0	64.3	43.3
n	30	30	30	30	30	30	30	30	30	30	30	30
SD	0.7	0.7	26.3	28	27.5	27.4	45.4	45.3	0	0	46.9	49.2
Min	96.5	96.5	0	0	0	0	0	0	0	0	0	0
Max	100	100	100	100	100	100	100	100	0	0	100	100

Table E11. Airflow and emission data completeness (%) at site CA5B for October, 2008.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	100	100	72.5	72.5	72.5	72.5	0	0	0	0	100	98.6
2	98.3	98.3	71.1	95.1	72.5	95.1	0	0	38.6	38.6	56.2	46.5
3	99.9	99.9	51	51	51	51	0	0	99.9	99.9	0	0
4	100	100	98.1	98.1	98.1	98.1	0	0	97.8	99.8	0	0
5	99.6	99.6	86.4	86.4	86.4	86.4	0	0	99.6	99.6	0	0
6	100	100	55	55	55	55	0	0	100	100	0	0
7	100	100	66.3	66.3	66.3	66.3	0	0	100	100	0	0
8	100	100	61.9	61.9	61.9	61.9	0	0	100	100	0	0
9	99.9	99.9	87.6	87.6	87.6	87.6	0	0	99.9	99.9	0	0
10	100	100	94.2	94.2	94.2	94.2	0	0	100	100	0	0
11	100	100	95.8	95.8	95.8	95.8	35.8	35.1	43.1	43.1	0	0
12	100	100	71.6	71.6	71.6	71.6	100	100	0	0	0	0
13	100	100	41.9	41.9	41.9	41.9	100	100	0	0	0	0
14	100	100	34.1	33.1	34.1	33.1	100	100	0	0	0	0
15	100	100	34.3	34.3	34.3	34.3	100	100	0	0	0	0
16	99.9	99.9	17.7	24.2	17.7	24.2	99.9	99.9	0	0	0	0
17	99.9	99.9	26.5	26.5	26.5	26.5	99.9	99.9	0	0	0	0
18	100	100	73.8	73.8	73.8	73.8	100	100	0	0	0	0
19	100	100	93.2	93.2	93.2	93.2	100	100	0	0	0	0
20	100	100	81.9	81.9	81.9	81.9	100	100	0	0	0	0
21	49.5	49.5	37.6	36.3	37.6	41.1	49.5	49.5	0	0	0	0
22	51	51	7.8	7.9	7.8	8	47.7	47.4	0	0	0	0
23	100	100	36.2	36.2	36.2	36.2	100	100	0	0	0	0
24	100	100	21.6	21.6	21.6	21.6	100	100	0	0	0	0
25	100	100	17	17	17	17	100	100	0	0	0	0
26	100	100	16.5	16.5	16.5	16.5	100	100	0	0	0	0
27	100	100	54.2	54.2	54.2	54.2	100	100	0	0	0	0
28	50.3	50.3	14	14.6	15.3	15.7	50.2	50.2	0	0	0	0
29	100	100	0	0	0	0	100	100	0	0	0	0
30	100	100	0	0	0	0	99.8	99.8	0	0	0	0
31	100	100	0	0	0	0	100	100	0	0	0	0
Avg	95.1	95.1	49	50	49.1	50.1	60.7	60.7	28.4	28.4	5	4.7
n	31	31	31	31	31	31	31	31	31	31	31	31
SD	14.7	14.7	31.4	32	31.3	31.9	45.5	45.5	43.2	43.3	20	19
Min	49.5	49.5	0	0	0	0	0	0	0	0	0	0
Max	100	100	98.1	98.1	98.1	98.1	100	100	100	100	100	98.6

Table E11. Airflow and emission data completeness (%) at site CA5B for November, 2008.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	92.9	92.9	0	0	0	0	92.9	92.9	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	52.7	52.8	0	0	0	0	52.5	52.5	0	0	0	0
6	100	100	0	0	0	0	99.8	99.8	0	0	0	0
7	100	100	0	0	0	0	99.3	99.3	0	0	0	0
8	100	100	0	0	0	0	100	100	0	0	0	0
9	100	100	0	0	0	0	100	100	0	0	0	0
10	100	100	0	0	0	0	100	100	0	0	0	0
11	99.7	99.7	0	0	0	0	99.7	99.7	0	0	0	0
12	100	100	0	0	0	0	97.8	100	0	0	0	0
13	85	85	0	0	0	0	84.9	84.9	0	0	0	0
14	100	100	0	0	0	0	100	100	0	0	0	0
15	100	100	0	0	0	0	100	100	0	0	0	0
16	100	100	0	0	0	0	100	100	0	0	0	0
17	100	100	0	0	0	0	100	100	0	0	0	0
18	99.9	99.9	0	0	0	0	99.9	99.9	0	0	0	0
19	100	100	0	0	0	0	96.7	96.5	0	0	0	0
20	100	100	0	0	0	0	100	100	0	0	0	0
21	100	100	0	0	0	0	100	100	0	0	0	0
22	100	100	0	0	0	0	100	100	0	0	0	0
23	100	100	0	0	0	0	100	100	0	0	0	0
24	100	100	0	0	0	0	100	100	0	0	0	0
25	100	100	0	0	0	0	100	100	0	0	0	0
26	100	100	0	0	0	0	100	100	0	0	0	0
27	100	100	0	0	0	0	100	100	0	0	0	0
28	100	100	0	0	0	0	97.9	100	0	0	0	0
29	100	100	0	0	0	0	100	100	0	0	0	0
30	100	100	0	0	0	0	100	100	0	0	0	0
Avg	87.7	87.7	0	0	0	0	87.4	87.5	0	0	0	0
n	30	30	30	30	30	30	30	30	30	30	30	30
SD	30.5	30.5	0	0	0	0	30.4	30.5	0	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Max	100	100	0	0	0	0	100	100	0	0	0	0

Table E11. Airflow and emission data completeness (%) at site CA5B for December, 2008.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	100	100	0	0	0	0	100	100	0	0	0	0
2	99.7	99.7	0	0	0	0	99.7	99.7	0	0	0	0
3	99.9	99.9	1.5	1.3	1.5	1.3	89.2	99.9	0	0	0	0
4	100	100	19.6	23.6	23.6	23.6	100	100	0	0	0	0
5	100	100	32.3	32.3	32.3	32.3	100	100	0	0	0	0
6	100	100	53	53	53	53	100	100	0	0	0	0
7	100	100	37.2	37.2	37.2	37.2	100	100	0	0	0	0
8	59.7	59.7	32.4	30.6	34	31.3	59.7	59.7	0	0	0	0
9	94.7	94.7	49.7	49.7	49.7	49.7	94.7	94.7	0	0	0	0
10	97	97	15.3	15.9	16.3	15.9	96.8	96.8	0	0	0	0
11	70.1	70.1	25.8	23.8	25.3	23.6	70.1	70.1	0	0	0	0
12	99.7	99.7	57.7	57.7	57.7	57.7	99.7	99.7	0	0	0	0
13	9.7	9.7	3.5	6.9	3.5	6.9	9.7	9.7	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	61.7	61.7	36.9	33.5	36.4	32.8	61.6	61.6	0	0	0	0
16	99.9	99.9	72.3	72.4	72.4	72.4	99.9	99.9	0	0	0	0
17	100	100	78.8	78.8	78.8	78.8	100	100	0	0	0	0
18	100	100	94.9	94.9	94.9	94.9	100	100	0	0	0	0
19	100	100	69.1	69.1	69.1	69.1	99.8	99.8	0	0	0	0
20	98.8	98.8	16.7	14.4	16.7	16.7	68.3	66.8	0	0	0	0
21	31.6	31.6	30.4	26.9	30.2	26.5	31.6	31.6	0	0	0	0
22	100	100	52.8	52.8	52.8	52.8	100	100	0	0	0	0
23	100	100	76.5	76.5	76.5	76.5	100	100	0	0	0	0
24	100	100	99.7	99.7	99.7	99.7	100	100	0	0	0	0
25	100	100	89.8	89.8	89.8	89.8	100	100	0	0	0	0
26	100	100	47.9	47.9	47.9	47.9	99.8	99.8	0	0	0	0
27	99.3	99.3	41.5	41.5	41.5	41.5	99.3	99.3	0	0	0	0
28	100	100	37.2	37.2	37.2	37.2	100	100	0	0	0	0
29	100	100	15.8	33.1	15.8	33.1	100	100	0	0	0	0
30	100	100	22.2	24	24	24	99.7	99.7	0	0	0	0
31	100	100	30.6	30.6	30.6	30.6	100	100	0	0	0	0
Avg	87.8	87.8	40	40.5	40.3	40.5	86.4	86.7	0	0	0	0
n	31	31	31	31	31	31	31	31	31	31	31	31
SD	26.8	26.8	28.5	28.1	28.4	28.1	26.8	26.9	0	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Max	100	100	99.7	99.7	99.7	99.7	100	100	0	0	0	0

Table E11. Airflow and emission data completeness (%) at site CA5B for January, 2009.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	100	100	58.6	58.6	58.6	58.6	100	100	0	0	0	0
2	100	100	83.4	86.1	83.4	86.1	100	100	0	0	0	0
3	98.5	98.5	4.8	4	4.8	4.2	98.3	98.3	0	0	0	0
4	100	100	39.4	39	39.4	39.4	89.7	89.7	0	0	0	0
5	100	100	84.2	83.6	84.2	84.2	100	100	0	0	0	0
6	100	100	52.4	54.1	52.4	54.1	100	100	0	0	0	0
7	99.8	99.8	6.1	6.1	6.1	6.1	97	88.3	0	0	0	0
8	100	100	65.3	65.3	65.3	65.3	99.7	99.7	0	0	0	0
9	100	100	36.5	36.5	36.5	36.5	100	100	0	0	0	0
10	100	100	27.6	27.6	27.6	27.6	100	100	0	0	0	0
11	100	100	33.1	33.1	33.1	33.1	99.7	99.7	0	0	0	0
12	100	100	50.3	50.3	50.3	50.3	100	100	0	0	0	0
13	100	100	29	29	29	29	100	100	0	0	0	0
14	100	100	13.3	14.4	15.8	15.8	69.2	69.2	0	0	26.6	26.6
15	99.4	99.4	1.9	0.8	1.9	0.9	0	0	0	0	99.4	99.4
16	96.5	96.5	11.2	7.9	11.3	7.9	0	0	0	0	96.5	96.5
17	52	52	0	0	0	0	0	0	0	0	52	52
18	61.1	61.1	0	0	0	0	0	0	0	0	61	61
19	0	0	0	0	0	0	0	0	0	0	0	0
20	54.2	54.2	3.3	3.8	3.6	3.9	0	0	0	0	54.2	54.2
21	98.3	98.3	19.4	17.3	28.8	17.3	0	0	0	0	98.3	98.3
22	100	100	20.3	34.7	34.7	34.7	0	0	0	0	100	100
23	0	0	0	0	0	0	0	0	0	0	0	0
24	55	55	0	0	0	0	0	0	0	0	55	55
25	100	100	65.8	62.9	66.9	63.5	0	0	0	0	99.8	99.8
26	94.9	94.9	6.5	3.3	7	3.4	0	0	0	0	94.9	94.9
27	95.6	95.6	42.9	39.2	43.1	39.2	0	0	29.2	29.2	62.5	62.5
28	100	100	51.6	51.5	51.6	51.6	0	0	100	100	0	0
29	100	100	50	50	50	50	0	0	99.8	99.8	0	0
30	100	100	16.9	16.9	16.9	16.9	0	0	100	100	0	0
31	100	100	27.7	25.3	27.7	27.7	0	0	100	100	0	0
Avg	87.3	87.3	29.1	29.1	30	29.3	43.7	43.4	13.8	13.8	29	29
n	31	31	31	31	31	31	31	31	31	31	31	31
SD	27.2	27.2	25.4	25.6	25.3	25.6	48.4	48.1	33.5	33.5	39.6	39.6
Min	0	0	0	0	0	0	0	0	0	0	0	0
Max	100	100	84.2	86.1	84.2	86.1	100	100	100	100	100	100

Table E11. Airflow and emission data completeness (%) at site CA5B for February, 2009.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	100	100	25.3	25.3	25.3	25.3	0	0	100	100	0	0
2	100	100	18.4	18.4	18.4	18.4	0	0	99.8	99.8	0	0
3	100	100	21.6	21.6	21.6	21.6	0	0	100	100	0	0
4	99.5	99.5	31	31	31	31	0	0	99.4	99.4	0	0
5	100	100	82.5	82.5	82.5	82.5	0	0	100	100	0	0
6	100	100	74.8	74.8	74.8	74.8	0	0	93.5	93.3	0	0
7	100	100	60.3	60.3	60.3	60.3	0	0	100	100	0	0
8	99.4	99.4	88.4	88.4	88.4	88.4	0	0	99.2	99.2	0	0
9	100	100	82.2	82.2	82.2	82.2	0	0	100	100	0	0
10	100	100	54	54	54	54	0	0	100	100	0	0
11	100	100	86.1	86.1	86.1	86.1	0	0	100	100	0	0
12	100	100	64.2	64.2	64.2	64.2	0	0	100	100	0	0
13	99.9	99.9	96.2	71.8	96.2	71.9	0	0	99.8	99.8	0	0
14	100	100	100	100	100	100	0	0	100	100	0	0
15	45.1	45.1	40.4	43.2	40.4	43.9	0	0	44.4	44.4	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0
17	43.5	43.5	28.1	31.5	28.2	31.1	0	0	32.2	32.2	0	0
18	99.9	99.9	45.6	46.4	45.6	46.4	0	0	99.9	99.9	0	0
19	98.1	98.1	0	0	0	0	0	0	98.1	98.1	0	0
20	98.8	98.8	41	39.9	42.2	39.9	0	0	98.8	98.8	0	0
21	99.3	99.3	80.9	80.9	80.9	80.9	0	0	99.2	99.2	0	0
22	100	100	96.9	96.9	96.9	96.9	0	0	100	100	0	0
23	95.1	95.1	67	67	67.2	66.9	52.6	52.6	42.4	42.4	0	0
24	100	100	79.8	79.8	79.8	79.8	100	100	0	0	0	0
25	100	100	38.5	38.5	38.5	38.5	99.8	99.8	0	0	0	0
26	100	100	72.4	72.4	72.4	72.4	100	100	0	0	0	0
27	100	100	68	68	68	68	100	100	0	0	0	0
28	100	100	45.8	45.8	45.8	45.8	100	100	0	0	0	0
Avg	92.1	92.1	56.8	56.1	56.8	56.1	19.7	19.7	71.7	71.7	0	0
n	28	28	28	28	28	28	28	28	28	28	28	28
SD	22.7	22.7	28.6	27.6	28.6	27.6	38.6	38.6	41.7	41.6	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Max	100	100	100	100	100	100	100	100	100	100	0	0

Table E11. Airflow and emission data completeness (%) at site CA5B for March, 2009.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	100	100	69.2	69.2	69.2	69.2	100	100	0	0	0	0
2	100	100	98.1	98.1	98.1	98.1	100	100	0	0	0	0
3	99.9	99.9	88	88	88	88	99.9	99.9	0	0	0	0
4	99.9	99.9	54.8	54.8	54.8	54.8	99.9	99.9	0	0	0	0
5	99.4	99.4	19.1	18.1	19.7	17.3	99.4	99.4	0	0	0	0
6	100	100	62.2	60.3	62.2	62.2	100	100	0	0	0	0
7	100	100	39.4	39.4	39.4	39.4	100	100	0	0	0	0
8	100	100	50.4	50.4	50.4	50.4	100	100	0	0	0	0
9	100	100	85.2	85.2	85.2	85.2	100	100	0	0	0	0
10	100	100	51.5	51.5	51.5	51.5	100	100	0	0	0	0
11	98.8	98.8	39	24.1	39	39	98.8	98.8	0	0	0	0
12	100	100	63.6	63.6	63.6	63.6	100	100	0	0	0	0
13	100	100	52.5	52.5	52.5	52.5	100	100	0	0	0	0
14	100	100	93.6	93.6	93.6	93.6	100	100	0	0	0	0
15	76	76	43	41.3	44.8	41.3	75	75	0	0	0	0
16	52	52	47.6	44.7	48	45.4	42.5	42.5	0	0	0	0
17	100	100	81.7	81.7	81.7	81.7	100	100	0	0	0	0
18	100	100	62.9	62.9	62.9	62.9	100	100	0	0	0	0
19	100	100	57.5	57.5	57.5	57.5	100	100	0	0	0	0
20	100	100	79.4	79.4	79.4	79.4	96.3	94.7	0	0	0	0
21	100	100	90	90	90	90	100	100	0	0	0	0
22	100	100	83.9	83.9	83.9	83.9	100	100	0	0	0	0
23	99.9	99.9	78.3	78.3	78.3	78.3	99.9	99.9	0	0	0	0
24	99.9	99.9	58.1	54.8	58.4	58.4	99.9	99.9	0	0	0	0
25	100	100	55.7	55.7	55.7	55.7	100	100	0	0	0	0
26	100	100	97.4	97.4	97.4	97.4	100	100	0	0	0	0
27	100	100	48	48	48	48	100	100	0	0	0	0
28	100	100	57.2	57.2	57.2	57.2	100	100	0	0	0	0
29	100	100	97	97	97	97	100	100	0	0	0	0
30	100	100	77.9	77.9	77.9	77.9	100	100	0	0	0	0
31	100	100	59.7	59.7	59.7	59.7	100	100	0	0	0	0
Avg	97.6	97.6	65.9	65	66	65.7	97.1	97.1	0	0	0	0
n	31	31	31	31	31	31	31	31	31	31	31	31
SD	9.3	9.3	19.8	20.9	19.7	20.1	10.9	10.9	0	0	0	0
Min	52	52	19.1	18.1	19.7	17.3	42.5	42.5	0	0	0	0
Max	100	100	98.1	98.1	98.1	98.1	100	100	0	0	0	0

Table E11. Airflow and emission data completeness (%) at site CA5B for April, 2009.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	100	100	87.7	87.7	87.7	87.7	100	100	0	0	0	0
2	98.7	98.7	92.2	92.2	92.2	92.2	98.7	98.7	0	0	0	0
3	100	100	32.2	35.6	32.2	35.6	100	100	0	0	0	0
4	100	100	0	0	0	0	100	100	0	0	0	0
5	100	100	0	0	0	0	100	100	0	0	0	0
6	99.4	99.4	0	0	0	0	99.4	99.4	0	0	0	0
7	99.9	99.9	0	0	0	0	99.9	99.9	0	0	0	0
8	100	100	0	0	0	0	100	100	0	0	0	0
9	99.7	99.7	12.2	9.9	12.3	9.9	99.6	99.6	0	0	0	0
10	100	100	83.4	83.4	83.4	83.4	100	100	0	0	0	0
11	100	100	97.4	97.4	97.4	97.4	100	100	0	0	0	0
12	100	100	93.9	93.9	93.9	93.9	100	100	0	0	0	0
13	97.2	97.2	84.3	84.3	84.3	84.3	97.2	97.2	0	0	0	0
14	100	100	91.3	91.3	91.3	91.3	100	100	0	0	0	0
15	100	100	82.8	82.8	82.8	82.8	100	100	0	0	0	0
16	100	100	86.5	86.5	86.5	86.5	100	100	0	0	0	0
17	99.8	99.8	39.9	29.4	68.8	48.3	99.8	99.8	0	0	0	0
18	100	100	0	0	46.5	46.5	100	100	0	0	0	0
19	99.9	99.9	0	0	54.9	54.9	99.9	98.8	0	0	0	0
20	99.9	99.9	0	0	56.5	56.5	99.9	99	0	0	0	0
21	100	100	0	0	56.7	56.7	100	100	0	0	0	0
22	100	100	0	0	73.3	73.3	100	100	0	0	0	0
23	100	100	0	0	96.1	96.1	100	100	0	0	0	0
24	100	100	0	0	97.8	97.8	100	100	0	0	0	0
25	100	100	0	0	92.5	92.5	100	100	0	0	0	0
26	100	100	0	0	82.2	82.2	100	100	0	0	0	0
27	99.9	99.9	0	0	84.9	84.9	99.9	99.9	0	0	0	0
28	100	100	0	0	90.5	90.5	100	100	0	0	0	0
29	100	100	0	0	97.3	97.3	100	100	0	0	0	0
30	100	100	0	0	94	94	100	100	0	0	0	0
Avg	99.8	99.8	29.5	29.2	64.5	63.9	99.8	99.7	0	0	0	0
n	30	30	30	30	30	30	30	30	30	30	30	30
SD	0.5	0.5	40	40	35.1	35.2	0.5	0.6	0	0	0	0
Min	97.2	97.2	0	0	0	0	97.2	97.2	0	0	0	0
Max	100	100	97.4	97.4	97.8	97.8	100	100	0	0	0	0

Table E11. Airflow and emission data completeness (%) at site CA5B for May, 2009.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	100	100	0	0	82.1	82.1	100	100	0	0	0	0
2	100	100	0	0	56.9	56.1	100	100	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0
11	38.5	38.5	0	0	35.1	31.9	21.9	35.3	0	0	0	0
12	100	100	0	0	93.6	93.6	100	100	0	0	0	0
13	100	100	0	0	90.8	90.8	100	100	0	0	0	0
14	100	100	0	0	97.7	97.7	100	100	0	0	0	0
15	100	100	0	0	89.2	89.2	100	100	0	0	0	0
16	100	100	0	0	61.5	61.5	100	99.4	0	0	0	0
17	100	100	0	0	75.2	75.2	100	100	0	0	0	0
18	99.9	99.9	0	0	96.9	96.9	99.9	99.9	0	0	0	0
19	95.3	95.3	12.9	10.8	95.1	78.5	95.3	95.3	0	0	0	0
20	100	100	98.7	98.7	98.7	98.7	100	100	0	0	0	0
21	100	100	97.1	97.1	97.1	97.1	100	100	0	0	0	0
22	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	0	0	0	0
23	100	100	99.9	99.9	99.9	99.9	100	100	0	0	0	0
24	100	100	100	100	100	100	100	100	0	0	0	0
25	100	100	98.4	98.4	98.4	98.4	100	94	0	0	0	0
26	100	100	81.2	81.2	81.2	81.2	94.8	89.5	0	0	0	0
27	56	56	29.6	26.9	29.9	29.9	56	56	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0
Avg	57.7	57.7	23.1	23	50.9	50.3	57	57.1	0	0	0	0
n	31	31	31	31	31	31	31	31	31	31	31	31
SD	47.6	47.6	40.1	40.1	43.8	43.4	47.8	47.2	0	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Max	100	100	100	100	100	100	100	100	0	0	0	0

Table E11. Airflow and emission data completeness (%) at site CA5B for June, 2009.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	41.1	41.1	40.8	35.3	41.1	41.1	0	0	0	0	41.1	41.1
26	100	100	91.1	91.1	91.1	91.1	0	0	0	0	100	100
27	100	100	75	75	75	75	0	0	0	0	100	99.3
28	100	100	83.4	83.4	83.4	83.4	0	0	0	0	100	100
29	99.9	99.9	99.7	99.7	99.7	99.7	0	0	0	0	99.9	99.9
30	100	100	73.8	77.2	97.8	97.8	0	0	0	0	100	100
Avg	18	18	15.5	15.4	16.3	16.3	0	0	0	0	18	18
n	30	30	30	30	30	30	30	30	30	30	30	30
SD	37.4	37.4	32	32.1	33.7	33.7	0	0	0	0	37.4	37.3
Min	0	0	0	0	0	0	0	0	0	0	0	0
Max	100	100	99.7	99.7	99.7	99.7	0	0	0	0	100	100

Table E11. Airflow and emission data completeness (%) at site CA5B for July, 2009.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	100	100	0	0	99.8	99.8	0	0	0	0	100	100
2	100	100	0	0	99.9	99.9	0	0	0	0	100	100
3	100	100	0	0	99.9	99.9	0	0	0	0	100	100
4	100	100	0	0	72.4	99.8	0	0	0	0	99.6	100
5	100	100	0	0	100	100	0	0	0	0	100	100
6	99.9	99.9	0	0	99.8	99.8	0	0	0	0	99.9	99.9
7	99.9	99.9	0	0	91.1	91.1	0	0	0	23.3	59.1	59.1
8	100	100	0	0	90.6	90.6	0	0	0	100	0	0
9	100	100	0	0	92.2	92.2	0	0	0.1	100	0	0
10	100	100	0	0	83.1	83.1	0	0	65.8	100	0	0
11	100	100	0	0	93.3	93.3	0	0	97.1	100	0	0
12	100	100	0	0	85.6	85.6	0	0	100	100	0	0
13	100	100	0	0	76	76	0	0	100	100	0	0
14	100	100	0	0	66	66	0	0	94.9	100	0	0
15	37.5	37.5	0	0	13.5	11.2	0	0	37.5	37.5	0	0
16	100	100	0	0	92.8	90.3	0	0	100	100	0	0
17	96.7	96.7	0	0	81.5	81.5	0	0	48.5	96.7	0	0
18	100	100	0	0	70	70	0	0	0	100	0	0
19	100	100	0	0	79.8	83.3	0	0	0	100	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	98.6	98.6	0	0	42.6	39.2	0	0	0	98.6	0	0
22	100	100	0	0	97	97	35.4	0	0	57.6	0	0
23	100	100	0	0	31	34.5	100	0	0	0	0	0
24	98.8	98.8	0	0	7.3	0.3	98.8	0	0	0	0	0
25	99.8	99.8	0	0	0	0	99.8	0	0	0	0	0
26	100	100	0	0	0	0	100	0	0	0	0	0
27	95	95	0	0	35.6	32.2	95	0	0	0	0	0
28	100	100	0	0	33.4	36.9	100	0	0	0	0	0
29	98.6	98.6	0	0	70.6	67.1	98.6	0	0	0	0	0
30	90.9	90.9	0	0	50.9	54.4	90.9	0	0	0	0	0
31	99.1	99.1	0	0	69.9	66.4	99.1	0	0	0	0	0
Avg	94	94	0	0	65.3	65.8	29.6	0	20.8	42.4	21.2	21.3
n	31	31	31	31	31	31	31	31	31	31	31	31
SD	20.4	20.4	0	0	33.4	34.4	44.2	0	37.3	47.1	39.9	39.9
Min	0	0	0	0	0	0	0	0	0	0	0	0
Max	100	100	0	0	100	100	100	0	100	100	100	100

Table E11. Airflow and emission data completeness (%) at site CA5B for August, 2009.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	100	100	0	0	96.9	96.9	100	1.5	0	0	0	0
2	87.2	87.2	0	0	86.7	86.7	87.2	0	0	0	0	0
3	99.9	99.9	0	0	99.9	99.9	99.9	0	0	0	0	0
4	99.5	99.5	0	0	98.4	98.4	99.5	0	0	0	0	0
5	100	100	0	0	95.8	95.8	100	0	0	0	0	0
6	100	100	0	0	80.1	80.1	100	0	0	0	0	0
7	100	100	0	0	75.6	96.2	100	0	0	0	0	0
8	100	100	0	0	70.2	70.2	100	0	0	0	0	0
9	100	100	0	0	55.6	55.6	100	0	0	0	0	0
10	100	100	0	0	64.3	64.3	100	0	0	0	0	0
11	100	100	0	0	83.2	83.2	100	0	0	0	0	0
12	98.4	98.4	35.5	19.2	84.7	61.4	98.4	0	0	0	0	0
13	99.9	99.9	76	76	76	76	99.9	0	0	0	0	0
14	99.9	99.9	82.1	82.1	82.1	82.1	99.9	0	0	0	0	0
15	99.9	99.9	66.9	66.9	66.9	66.9	99.9	0	0	0	0	0
16	100	100	61.5	61.5	61.5	61.5	100	0	0	0	0	0
17	100	100	73.2	73.2	73.2	73.2	100	0	0	0	0	0
18	100	100	96	96	96	96	100	0	0	0	0	0
19	100	100	99.9	99.9	99.9	99.9	100	0	0	0	0	0
20	99.6	99.6	99.6	99.6	99.6	99.6	96.7	0	0	0	0	0
21	100	100	80.4	80.4	80.4	80.4	100	0	0	0	0	0
22	100	100	65.1	65.1	65.1	65.1	100	0	0	0	0	0
23	100	100	96.1	96.1	96.1	96.1	100	0	0	0	0	0
24	100	100	88.4	98.2	98.2	98.2	100	0	0	0	0	0
25	100	100	77.2	86.9	86.9	86.9	100	0	0	0	0	0
26	100	100	83.8	83.8	83.8	83.8	100	0	0	0	0	0
27	100	100	60.8	76.1	76.1	76.1	100	0	0	0	0	0
28	99.2	99.2	51.2	30.1	21.2	29.1	99.2	0	0	0	0	0
29	99.9	99.9	56.9	56.9	56.9	56.9	99.9	0	0	0	0	0
30	100	100	72.8	73.7	76.9	73.7	100	0	0	0	0	0
31	69.1	69.1	0	0	65.8	62	69.1	0	0	0	0	0
Avg	98.5	98.5	45.9	45.9	79.2	79.1	98.4	0	0	0	0	0
n	31	31	31	31	31	31	31	31	31	31	31	31
SD	5.8	5.8	38.8	40.1	17	16.9	5.8	0.3	0	0	0	0
Min	69.1	69.1	0	0	21.2	29.1	69.1	0	0	0	0	0
Max	100	100	99.9	99.9	99.9	99.9	100	1.5	0	0	0	0

Table E11. Airflow and emission data completeness (%) at site CA5B for September, 2009.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	99.9	99.9	83.6	81.5	87.3	87.3	99.9	0	0	0	0	0
2	100	100	76.9	76.9	76.9	76.9	100	0	0	0	0	0
3	99	99	46.5	49.9	50.1	50.5	98.5	0	0	0	0	0
4	100	100	88.6	88.6	88.6	88.6	100	0	0	0	0	0
5	100	100	98.6	98.6	98.6	98.6	100	0	0	0	0	0
6	100	100	79.4	79.4	79.4	79.4	99.7	0	0	0	0	0
7	100	100	78.8	78.8	78.8	78.8	100	0	0	0	0	0
8	100	100	48.1	48.4	48.4	48.4	99.7	0	0	0	0	0
9	100	100	62	62	62	62	100	0	0	0	0	0
10	100	100	61.9	61.9	61.9	61.9	100	0	0	0	0	0
11	100	100	42.5	41.4	46.9	65.4	88.6	23.3	0	0	0	0
12	100	100	70.8	84	70.8	84	100	100	0	0	0	0
13	100	100	97.9	97.9	97.9	97.9	100	100	0	0	0	0
14	99.8	99.8	82.6	82.6	82.6	82.6	99.8	99.8	0	0	0	0
15	100	100	60.5	60.5	60.5	60.5	100	100	0	0	0	0
16	100	100	43.4	42.4	43.5	42.6	96.3	96	0	0	0	0
17	98.9	98.9	38.5	40.8	38.5	40.9	98.6	98.6	0	0	0	0
18	99.2	99.2	21.5	19.4	21.8	19.6	99.2	99.2	0	0	0	0
19	99.9	99.9	77.9	77.9	77.9	77.9	99.9	99.9	0	0	0	0
20	99.9	99.9	68.8	68.8	68.8	68.8	99.9	99.9	0	0	0	0
21	100	100	49.2	49.2	49.2	49.2	100	100	0	0	0	0
22	91.3	91.3	45.2	45.2	45.2	45.2	91.3	91.3	0	0	0	0
23	99	99	66	66	66	66	99	99	0	0	0	0
24	99.9	99.9	74.8	74.8	74.8	74.8	99.9	99.9	0	0	0	0
25	99.9	99.9	59.6	59.6	59.6	59.6	99.6	99.9	0	0	0	0
26	99.9	99.9	37.6	37.6	37.6	37.6	99.9	99.9	0	0	0	0
27	100	100	40.2	51	40.2	51	100	100	0	0	0	0
28	99.9	99.9	84.4	87	84.4	87	99.9	99.9	0	0	0	0
29	99.9	99.9	94.4	94.4	94.4	94.4	99.7	99.9	0	0	0	0
30	100	100	74.9	74.9	74.9	74.9	100	100	0	0	0	0
Avg	99.5	99.5	65.2	66	65.6	67.1	99	63.6	0	0	0	0
n	30	30	30	30	30	30	30	30	30	30	30	30
SD	1.6	1.6	19.9	19.9	19.7	19.5	2.6	46.9	0	0	0	0
Min	91.3	91.3	21.5	19.4	21.8	19.6	88.6	0	0	0	0	0
Max	100	100	98.6	98.6	98.6	98.6	100	100	0	0	0	0

Table E11. Airflow and emission data completeness (%) at site CA5B for October, 2009.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	100	100	42.1	42.1	42.1	42.1	100	100	0	0	0	0
2	100	100	40.1	40.1	40.1	40.1	100	100	0	0	0	0
3	100	100	81	81	81	81	100	100	0	0	0	0
4	100	100	65.3	65.3	65.3	65.3	100	100	0	0	0	0
5	100	100	50.6	50.6	50.6	50.6	100	100	0	0	0	0
6	99.9	99.9	45.1	45.3	45.3	45.3	99.9	99.9	0	0	0	0
7	100	100	62.2	62.2	62.2	62.2	100	100	0	0	0	0
8	100	100	89.9	89.9	89.9	89.9	100	100	0	0	0	0
9	99	99	39.2	26.2	39.3	27.8	95.7	95.2	0	0	0	0
10	99.9	99.9	0	0	0	0	99.9	99.9	0	0	0	0
11	99	99	68.5	65	68.6	65.1	99	99	0	0	0	0
12	100	100	77.8	77.8	77.8	77.8	100	100	0	0	0	0
13	100	100	67.9	64.4	67.9	64.4	100	100	0	0	0	0
14	100	100	0	0	0	0	100	100	0	0	0	0
15	100	100	0	0	0	0	100	100	0	0	0	0
16	97.2	97.2	0	0	1.4	1.2	97.2	97.2	0	0	0	0
17	99.9	99.9	34.9	34.8	34.9	34.9	99.9	99.9	0	0	0	0
18	99.9	99.9	66.9	66.9	66.9	66.9	99.9	99.9	0	0	0	0
19	99.9	99.9	22.6	22.8	22.6	22.8	99.9	99.9	0	0	0	0
20	99.4	99.4	8.7	4.2	8.8	4.4	99.4	99.4	0	0	0	0
21	84	84	0	0	0	0	83.8	83.8	0	0	0	0
22	71	71	0	0	43.5	42.9	71	71	0	0	0	0
23	99.9	99.9	0	0	0	0	99.9	99.9	0	0	0	0
24	97.9	97.9	40.3	38.3	41.9	38.4	97.9	97.9	0	0	0	0
25	99.9	99.9	44.8	44.8	44.8	44.8	98.1	99.9	0	0	0	0
26	99.9	99.9	61.2	57.7	63.1	63.1	99.9	99.9	0	0	0	0
27	99.9	99.9	0	0	99.9	99.9	99.9	99.9	0	0	0	0
28	95.6	95.6	0	0	51.2	71.6	95.6	95.6	0	0	0	0
29	99.1	99.1	0	0	29.1	43.4	99.1	99.1	0	0	0	0
30	100	100	0	0	42.8	42.8	100	100	0	0	0	0
31	100	100	0	0	34.8	34.8	100	100	0	0	0	0
Avg	98.1	98.1	32.5	31.6	42.4	42.7	97.9	98	0	0	0	0
n	31	31	31	31	31	31	31	31	31	31	31	31
SD	5.7	5.7	30.3	30	28	28.4	5.8	5.8	0	0	0	0
Min	71	71	0	0	0	0	71	71	0	0	0	0
Max	100	100	89.9	89.9	99.9	99.9	100	100	0	0	0	0

Table E11. Airflow and emission data completeness (%) at site CA5B for November, 2009.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	100	100	33.8	31.6	33.8	32.8	100	100	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	100	100	17.5	17	17.6	17	59.2	99.9	0	0	0	0
4	100	100	54.9	54.9	54.9	54.9	0	100	0	0	0	0
5	100	100	60.9	60.9	60.9	60.9	0	100	0	0	0	0
6	100	100	55.6	55.6	56.2	56.2	0	100	0	0	0	0
7	100	100	54.3	54.3	54.3	54.3	0	100	0	0	0	0
8	100	100	55.6	55.7	55.7	55.7	0	100	0	0	0	0
9	100	100	40.3	40.3	40.3	40.3	0	100	0	0	0	0
10	100	100	26.1	26.1	26.1	26.1	0	100	0	0	0	0
11	99.9	99.9	21.3	20.3	21.3	21.3	0	99.9	0	0	0	0
12	93.2	93.2	9	9.7	9.1	9.7	0	52.6	0	0	0	0
13	67.4	67.4	0	0	0	0	0	0.1	0	0	0	0
14	97.4	97.4	0	0	0	0	0	0	0	0	0	0
15	99.9	99.9	0	0	0	0	0	0	0	0	0	0
16	99.9	99.9	0	0	0	0	0	0	0	0	0	0
17	99.9	99.9	0	0	0	0	0	0	0	0	0	0
18	99.2	99.2	0	0	0	0	0	0	0	0	0	0
19	99.1	99.1	24.1	24.3	24.2	24.4	42.2	51.3	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	99.9	99.9	54.4	55.6	0	0	99.9	99.9	0	0	0	0
22	100	100	70.8	70.8	0	0	100	100	0	0	0	0
23	100	100	41.4	41.4	0	0	100	100	0	0	0	0
24	100	100	20.3	20.3	0	0	100	100	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0
26	26.2	26.2	8.9	5.9	8.6	5.8	26.2	26.2	0	0	0	0
27	99.9	99.9	26.4	23.4	26.4	23.4	99.9	99.9	0	0	0	0
28	98.8	98.8	0	0	59.3	55.8	98.8	98.8	0	0	0	0
29	99.9	99.9	69.4	68	72.4	73.1	99.9	99.9	0	0	0	0
30	99.9	99.9	0	2.2	0	2.2	99.9	99.9	0	0	0	0
Avg	86	86	24.8	24.6	20.7	20.5	34.2	64.3	0	0	0	0
n	30	30	30	30	30	30	30	30	30	30	30	30
SD	32	32	24.4	24.4	24.1	24	44.9	45.4	0	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Max	100	100	70.8	70.8	72.4	73.1	100	100	0	0	0	0

Table E11. Airflow and emission data completeness (%) at site CA5B for December, 2009.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	99	99	0	0	9.2	9.2	99	99	0	0	0	0
2	99.9	99.9	0	0	0	0	99.9	99.9	0	0	0	0
3	99.4	99.4	11.8	8.3	11.8	10.8	99.4	99.4	0	0	0	0
4	99.9	99.9	28.1	28.1	28.1	28.1	99.9	99.9	0	0	0	0
5	100	100	37.4	37.4	37.4	37.4	100	100	0	0	0	0
6	100	100	55.9	56	56	56	99.8	99.8	0	0	0	0
7	100	100	64.8	64.8	64.8	64.8	100	100	0	0	0	0
8	100	100	43.4	43.4	43.4	43.4	99.8	99.8	0	0	0	0
9	99.9	99.9	0	0	0	0	90.1	90.1	0	0	0	0
10	99	99	25.8	25.2	25.8	25.2	98.8	98.8	0	0	0	0
11	100	100	56.3	56.3	56.3	56.3	100	100	0	0	0	0
12	100	100	98.3	94.7	98.3	94.7	100	100	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0
14	100	100	23.8	24	23.8	24	99.8	99.8	0	0	0	0
15	90.5	90.5	47.2	43.7	47.3	43.8	90.5	90.5	0	0	0	0
16	99.9	99.9	53.5	53.5	53.5	53.5	99.9	99.9	0	0	0	0
17	99.9	99.9	30.5	31.9	30.5	31.9	99.9	99.9	0	0	0	0
18	84.7	84.7	17.5	17.5	17.5	17.5	79	80	0	0	0	0
19	100	100	39.2	39.2	39.2	39.2	100	100	0	0	0	0
20	100	100	47.6	47.6	47.6	47.6	99.8	99.8	0	0	0	0
21	100	100	62.2	62.3	62.3	62.3	100	100	0	0	0	0
22	100	100	99.9	99.9	99.9	99.9	100	100	0	0	0	0
23	100	100	61.2	61.2	61.2	61.2	100	100	0	0	0	0
24	100	100	21.9	22.6	21.9	22.6	99.8	99.8	0	0	0	0
25	98.5	98.5	9.7	9.7	9.7	9.7	98.5	98.5	0	0	0	0
26	100	100	56.5	56.5	56.5	56.5	99.8	99.8	0	0	0	0
27	99.9	99.9	85.1	85.1	85.1	85.1	99.9	99.9	0	0	0	0
28	99.9	99.9	63.8	63.8	63.8	63.8	99.9	99.9	0	0	0	0
29	100	100	31	31	31	31	100	100	0	0	0	0
30	100	100	43.6	44.9	44.2	45.6	99.8	99.8	0	0	0	0
31	100	100	56.2	56.2	56.2	56.2	100	100	0	0	0	0
Avg	95.8	95.8	41	40.8	41.4	41.2	95.3	95.3	0	0	0	0
n	31	31	31	31	31	31	31	31	31	31	31	31
SD	17.8	17.8	26.8	26.6	26.4	26.1	17.9	17.9	0	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Max	100	100	99.9	99.9	99.9	99.9	100	100	0	0	0	0

Table E11. Airflow and emission data completeness (%) at site CA5B for January, 2010.

Day	Airflow		Ammonia		Hydrogen		PM ₁₀		PM _{2.5}		TSP	
	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2	B1	B2
1	100	100	41.7	41.7	41.7	41.7	95	100	0	0	0	0
2	100	100	36.3	36.3	36.3	36.3	100	100	0	0	0	0
3	99.8	99.8	75.7	75.7	75.7	75.7	99.8	99.8	0	0	0	0
4	100	100	18.1	18.1	18.1	18.1	99.9	99.9	0	0	0	0
5	100	100	51.2	51.2	51.2	51.2	100	100	0	0	0	0
6	100	100	52.2	52.2	52.2	52.2	100	100	0	0	0	0
7	99.9	99.9	29.9	29.9	24	25	99.9	99.9	0	0	0	0
8	99.5	99.5	0	0	0	0	0	0	0	0	0	0
9	100	100	0	0	0	0	0	0	0	0	0	0
10	100	100	49.8	49.8	49.7	49.8	100	100	0	0	0	0
11	100	100	83.3	83.3	83.3	83.3	100	100	0	0	0	0
12	100	100	83.8	83.8	83.8	83.8	100	100	0	0	0	0
13	100	100	63.3	63.3	63.3	63.3	100	100	0	0	0	0
14	99.6	99.6	44.3	45	44.3	45	99.6	99.6	0	0	0	0
15	98.7	98.7	3.9	3.8	3.9	3.8	98.7	98.7	0	0	0	0
16	100	100	34	34	34	34	99.8	99.8	0	0	0	0
17	99.9	99.9	76.7	76.7	76.7	76.7	99.9	99.9	0	0	0	0
18	99.9	99.9	65.9	69.2	65.9	69.2	99.9	99.9	0	0	0	0
19	99.9	99.9	0	0	0	0	99.9	99.9	0	0	0	0
20	99.2	99.2	42	38.5	42.2	38.7	99.2	99.2	0	0	0	0
21	99.7	99.7	69.4	69.4	69.4	69.4	99.7	99.7	0	0	0	0
22	99.9	99.9	78.2	78.2	78.2	78.2	99.9	99.9	0	0	0	0
23	99.9	99.9	67.3	65.2	67.6	67.6	99.9	99.9	0	0	0	0
24	99.9	99.9	76.3	76.3	76.3	76.3	99.9	99.9	0	0	0	0
25	97.8	97.8	22.6	26	84.4	84.4	97.8	97.8	0	0	0	0
26	100	100	71.3	74.7	75.4	75.4	100	100	0	0	0	0
27	100	100	51.9	51.9	51.9	51.9	100	100	0	0	0	0
28	100	100	42.8	42.5	42.8	42.5	100	100	0	0	0	0
29	98.5	98.5	2.2	0	2.4	0	48.4	48.4	0	0	0	0
30	99.9	99.9	0	0	0	0	0	0	0	0	0	0
31	100	100	0	0	0	0	0	0	0	0	0	0
Avg	99.7	99.7	43	43.1	45	45	85.1	85.2	0	0	0	0
n	31	31	31	31	31	31	31	31	31	31	31	31
SD	0.5	0.5	28.4	28.6	29.3	29.5	34	34	0	0	0	0
Min	97.8	97.8	0	0	0	0	0	0	0	0	0	0
Max	100	100	83.8	83.8	84.4	84.4	100	100	0	0	0	0