



# National Air Quality Site Assessment Tool NAQSAT

## Dairy Case Study

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 National Air Quality Site Assessment Tool 

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## Dairy Case Study

- Purdue University Dairy
  - 200 cows
  - Free stall facilities
  - Slurrystore and 2 lagoons
  - Manure applied via injection



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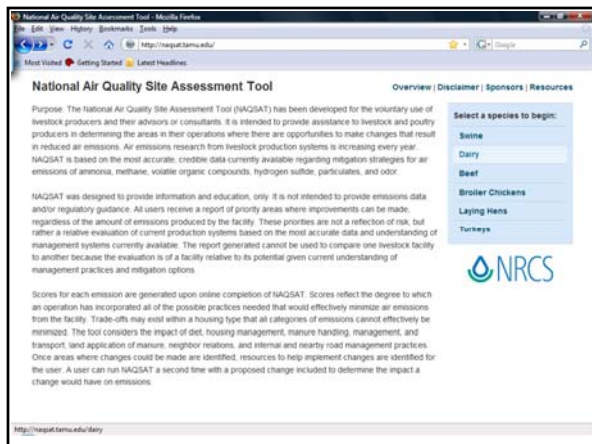
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The screenshot shows the web interface for the National Air Quality Site Assessment Tool. It includes a navigation menu with 'Overview', 'Disclaimer', 'Sponsors', and 'Resources'. A 'Select a species to begin:' dropdown menu is visible, with options for Swine, Dairy, Beef, Broiler Chickens, Laying Hens, and Turkeys. The main content area contains introductory text about the tool's purpose and how it is used to assess air quality at livestock operations.

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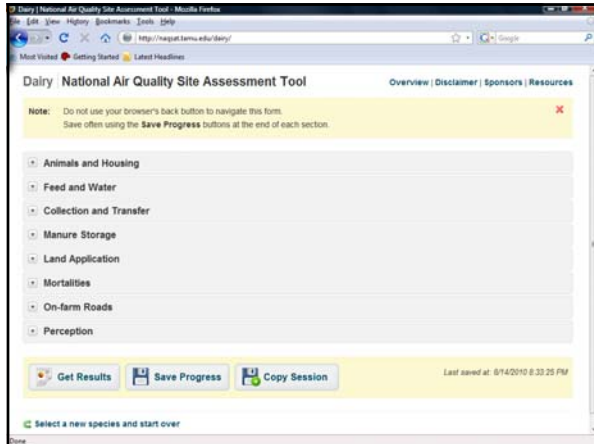
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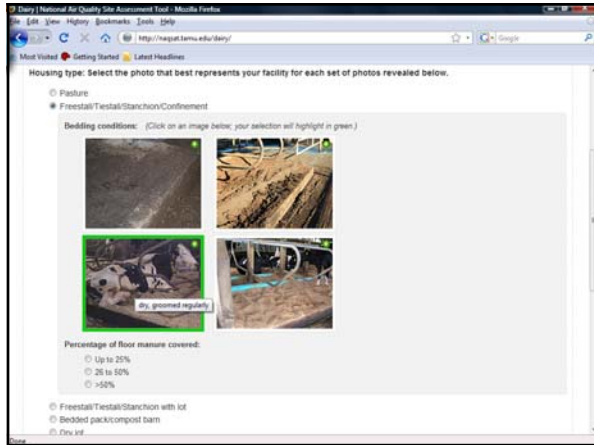
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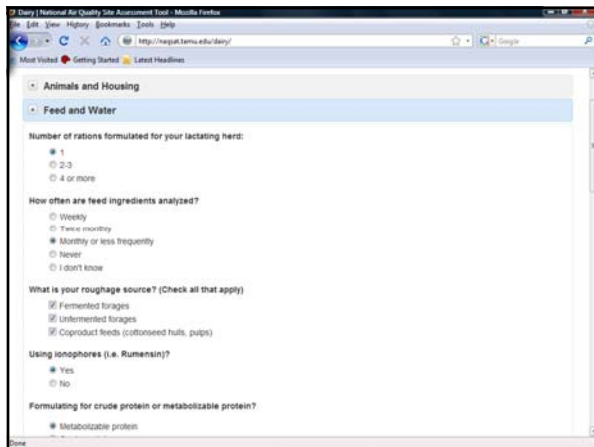
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**Manure Storage**

**Note to User:** Many farms may use more than one of the listed choices below. In order to allow the use of NAQSAT as a "What If" tool only one of the choices can be selected at a time. The user can click on "Get Results" for that selection and see how changing the answer will affect their results. If only a general overview is desired, identifying the predominant practice will accomplish that result.

Do you haul manure daily?

Yes  
 No

Is milkhouse washwater stored separate from manure?

Yes  
 No

What percent of your farm's manure is stored as a liquid or slurry (does not stack) in your predominant housing type?

Please slide to change value:  
[Slider bar] 90%

Do any of these processes occur onsite? (Check all that apply)

Storage/stockpile

How often is seepage noticed?

Rarely  
 Commonly

Does water pond around the base of compost piles (from rainfall events or leachate) for greater than 24 hours?

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**Stage 1**

Does your manure contain greater or less than 5 lb of nitrogen per 1000 gallons (600 mg/kg) or less than 4% solids?

Less than 5 lbs/1000 gallons or 600 mg/kg and be less than 4% total solids

Is your solids content less than 1%?

Yes  
 No

Do you aerate?

Yes  
 No

Do you use an anaerobic digester?

Yes  
 No

Pick the color that best describes your storage:

Black or brown  
 Reddish to purple

Greater than 5 lb N / 1000 gal and greater than 4% total solids  
 I don't know

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**Stage 2**

What percent of the surface is exposed or uncovered?

No cover  
 < 25%  
 26-40%  
 41-60%  
 61-80%  
 > 80%  
 Reddish to purple

Greater than 5 lb N / 1000 gal and greater than 4% total solids  
 I don't know

Does your manure contain greater or less than 5 lb of nitrogen per 1000 gallons (600 mg/kg) or less than 4% solids?

Less than 5 lbs/1000 gallons or 600 mg/kg and be less than 4% total solids  
 Greater than 5 lb N / 1000 gal and greater than 4% total solids  
 I don't know

**Land Application**

**Mortality**

**On-farm Reports**

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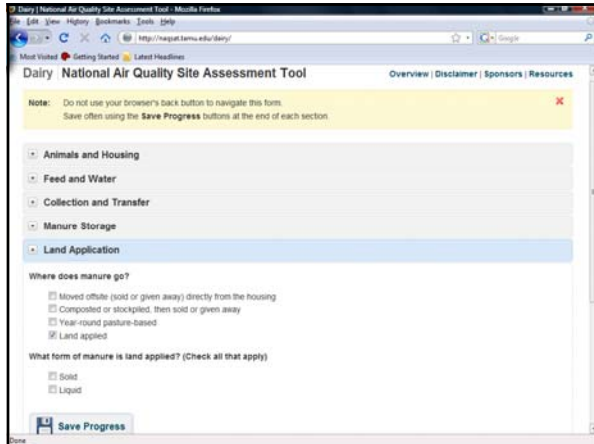
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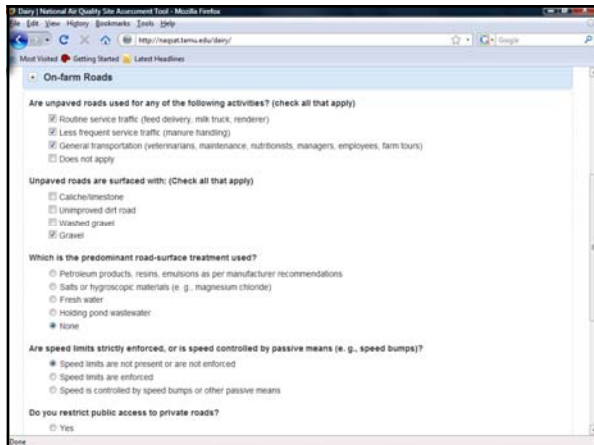
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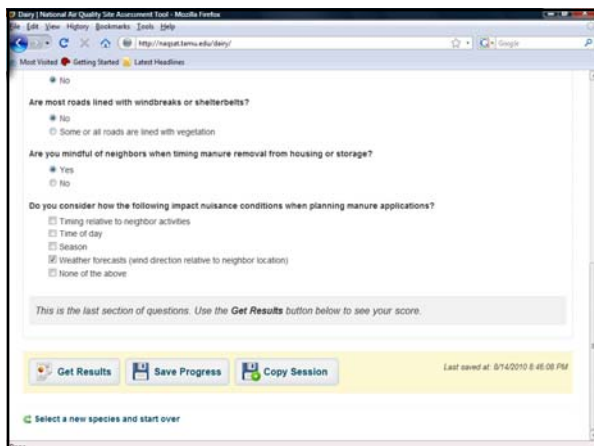
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**Effectiveness Results:** (Close / Go Back) ✖

Width of white box identifies room for improvement to reduce emissions within each constituent of concern. More white area signifies greater opportunities to make changes and reduce air emissions. Click on a section name to quickly modify your answers.

	Odor	Particulate Matter	Ammonia	Hydrogen sulfide	Methane	Volatile organic compounds (VOCs)
Animals and Housing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feed and Water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Collection and Transfer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Manure Storage</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Land Application	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mortalities	<input type="checkbox"/>	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Dairy National Air Quality Site Assessment Tool - Mozilla Firefox

http://naqsat.tennessee.edu/dairy/?key=22&state=

Most Visited: Getting Started | Latest Headlines

Do you use an anaerobic digester?  
 Yes  
 No

Pick the color that best describes your storage:  
 Black or brown

Regarding your manure storage structure, describe the material for any cover that you may have on it.  
 Natural crust  
 Permeable cover (such as straw, slats, geotextile material)  
 Impermeable cover (such as plastic)

How is vented air treated?  
 No treatment  
 Composted  
 Flared  
 Comented to pipeline quality gas

No cover

What percent of the surface is exposed or uncovered?  
 < 25%  
 26-40%  
 41-60%  
 61-80%  
 > 80%  
 Red/maroon to purple

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**Effectiveness Results:** (Close / Go Back) ✖

Width of white box identifies room for improvement to reduce emissions within each constituent of concern. More white area signifies greater opportunities to make changes and reduce air emissions. Click on a section name to quickly modify your answers.

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Feed and Water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Collection and Transfer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Manure Storage</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Land Application	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mortalities	<input type="checkbox"/>	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Effectiveness Results:** (Close / Go Back) ✖

Width of white box identifies room for improvement to reduce emissions within each constituent of concern. More white area signifies greater opportunities to make changes and reduce air emissions. Click on a section name to quickly modify your answers.

	Odor	Particulate Matter	Ammonia	Hydrogen sulfide	Methane	Volatile organic compounds (VOCs)
Animals and Housing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feed and Water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Collection and Transfer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Manure Storage</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Land Application	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mortalities	<input type="checkbox"/>	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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### Manure Handling – Changing from <1 time per day scraping to >3 times per day scraping

Effectiveness Results: (Close / Go Back)

Your effectiveness score was not calculated for one or more categories below because some questions were left blank. Close this window and complete any questions marked in red to get a score.

Width of white box identifies room for improvement to reduce emissions within each constituent of concern. More white area signifies greater opportunities to make changes and reduce air emissions. Click on a section name to quickly modify your answers.

	Odor	Particulate Matter	Ammonia	Hydrogen Sulfide	Methane	Volatile organic compound (VOC)
Animals and Housing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feed and Water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Collection and Transfer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Click on a section name to quickly modify your answers.

	Odor	Particulate Matter	Ammonia	Hydrogen Sulfide	Methane	Volatile organic compound (VOC)
Animals and Housing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feed and Water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Collection and Transfer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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## Dairy Case Study Practice

<http://naqsat.tamu.edu/dairy/?key=a1b735e7>

Note – This URL will be available until 9/16/2010



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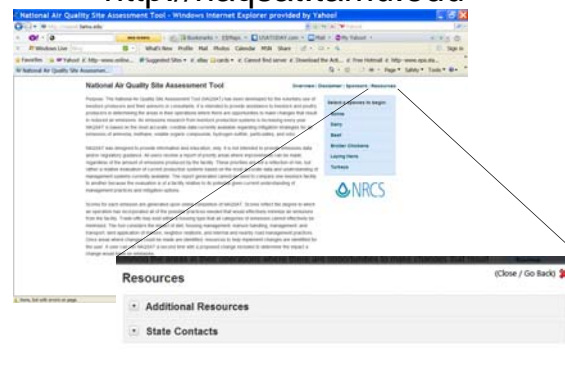
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<http://naqsat.tamu.edu>



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**NAQSAT Education**

**<http://naqsat.tamu.edu/>**

- LPE Learning Center Webcasts
  - August 20, 2010 – Beef and Dairy
  - October 15, 2010 – Swine and Poultry
  - Archived presentations
- Professional Development Session at ASABE Int. Symposium on Air Quality and Manure Management, Dallas, TX  
September 15, 2010

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Thank you

**<http://naqsat.tamu.edu/>**

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