



Exposure Investigation Findings **Valley View Confined Animal Feeding Operation** **in Green Castle, Sullivan County, Missouri**

An Exposure Investigation (EI) was conducted by the Missouri Department of Health and Senior Services (DHSS) and the Agency for Toxic Substances and Disease Registry (ATSDR). The purpose of this EI was to determine a community's level of exposure to airborne ammonia from a swine Confined Animal Feeding Operation (CAFO) in northern Missouri. DHSS is releasing a document called a health consultation which contains information about how the EI was conducted and discusses the results of this investigation. Written comments about this document may be made to DHSS through 5:00 p.m. Central Standard Time (CST), Monday, December 2, 2002.

Background

Confined Animal Feeding Operations have existed in Missouri since the mid 1990's. This EI focused on the community living near the Valley View facility in Green Castle, Sullivan County. The Valley View CAFO is owned by Premium Standard Farms (PSF) and is a 4,597-acre grow/finish swine facility permitted to house 49,459 animal units. This equates to approximately 128,000 hogs. The Valley View CAFO was permitted for operation in June 1997.

During the operations of the CAFO, animal waste is collected from the animal housing units and stored in large lagoons. It is later taken from the lagoons and applied to land as fertilizer.

Citizens living near this facility expressed concerns that their quality of life has been adversely impacted and that they have experienced an increase in health problems since

the CAFOs began operation. Many residents reported smelling foul odors coming from the direction of the Valley View CAFO. Health problems reported most frequently to the DHSS included breathing problems, increased asthma attacks, sinus problems, headaches, burning/watering eyes, and a rash on the inside of the mouth and throat that resembles thrush.

Exposure Investigation

The Exposure Investigation focused on determining the community's level of exposure to contaminants in the air from the Valley View CAFO. During air monitoring conducted by the Environmental Protection Agency (EPA) and the Missouri Department of Natural Resources (MDNR) around the property line of a similar Northern Missouri CAFO in 1999 and 2000, elevated levels of ammonia were detected. Thus, DHSS determined the chemical of concern for the EI to be ammonia. Through further investigation, it was also determined that breathing air containing ammonia is the most likely way people are being exposed.

The Exposure Investigation consisted of:

- A door-to-door census of homes within two miles of the Valley View facility to gather demographic information;
- A survey of community households for potential sources of ammonia exposure. Questionnaires were completed on 77 homes within a one-mile radius of the boundary of the Valley View facility and 39 homes within the 1-2 mile radius;

- Air monitoring for ammonia at six houses over a 12-day period within or near individual households in the fall of 2001;
- Collaboration with MDNR and EPA on their collection of ambient air monitoring data for ammonia and hydrogen sulfide during the same time period; and
- Assurance of the community's awareness of the EI process.

The EI was designed to conduct the air sampling during a time when it was anticipated that the lagoons would be drawn down and the effluent applied on fields. It was anticipated that this would be the period of maximum potential residential exposure. However, during the 12 days of the EI, DHSS is not aware of any such effluent application taking place on or around the Valley View facility.

Results

The findings of the EI include the following:

- Adverse health effects are not expected based on levels of ammonia found in the air during this EI. Therefore, airborne ammonia exposures during the period of the EI are classified as a no apparent public health hazard.
- However, the EI occurred during a period that may not necessarily represent the period of maximum exposure. Thus, actual exposures could be greater during times when lagoon effluent is being land-applied. Accordingly, this site is classified as an indeterminate public health hazard for airborne ammonia exposures during these periods.
- Respondents to the DHSS survey feel that odors are at their worst in the evening and early morning hours. In general, air sampling confirmed the results of the community survey (i.e., ammonia levels in the air were higher in the evening and early morning hours than other times of the day).
- Ammonia levels were significantly higher when wind was blowing from the CAFO toward the monitors.

Future Actions

DHSS will continue to review data coming from the MDNR stationary air monitor, located in the nearby community of Green Castle, to determine if ammonia levels may be rising to levels of health concern. Further monitoring to capture airborne ammonia data during land application of lagoon contents is being considered.

Availability for Public Comment

The DHSS/ATSDR Health Consultation regarding the Valley View Confined Animal Feeding Operation is available for public comment until **5:00 p.m. CST, Monday, December 2, 2002.**

- The document is available for review in the public repository at the Adair County Public Library, 1 Library Lane, Kirksville, Missouri.
- It can also be viewed from the DHSS website at the following address: www.dhss.state.mo.us/PreventionAndWellness/EnvironHealth.html.
- In addition, a Public Availability Session (PAS) will be held on **November 12, 2002** from 3:30 p.m. to 7:30 p.m. at the Lions Club in Green Castle, Missouri. A PAS is a free-flowing meeting where you can speak with governmental agencies one-on-one. No formal presentation is given.

Only written comments will be accepted on this document and must be received by 5:00 p.m. CST, Monday, December 2, 2002.

Persons wishing to submit written comments should mail, fax or e-mail them to:

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Contact Information

For questions regarding this document, contact Scott Clardy or Lori Harris-Franklin of the Missouri Department of Health and Senior Services at (573) 751-6111.