MISSOURI HOUSE OF REPRESENTATIVES

WITNESS APPEARANCE FORM

BILL NUMBER: **SB 37**	DATE: **3/23/2021**
COMMITTEE: **Agriculture Policy**	

TESTIFYING: ☑ IN SUPPORT OF ☐ IN OPPOSITION TO ☐ FOR INFORMATIONAL PURPOSES

WITNESS NAME

BUSINESS/ORGANIZATION:

WITNESS NAME: **CASEY WASSER**	PHONE NUMBER: **573-291-9809**	
BUSINESS/ORGANIZATION NAME: **MISSOURI SOYBEAN ASSOCIATION**	TITLE: **DIRECTOR OF POLICY**	
ADDRESS: **734 S COUNTRY CLUB DR**		
CITY: **JEFFERSON CITY**	STATE: **MO**	ZIP: **65109**
EMAIL: **cwasser@mosoy.org**	ATTENDANCE: **Written**	SUBMIT DATE: **3/23/2021 8:13 AM**

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WITNESS NAME

REGISTERED LOBBYIST:

WITNESS NAME: **DALE A. AMICK**		PHONE NUMBER: **573-680-7277**	
REPRESENTING: **MISSOURI CORN GROWERS ASSOCIATION**		TITLE:	
ADDRESS: **421 E. MCCARTY**			
CITY: **JEFFERSON CITY**		STATE: **MO**	ZIP: **65101**
EMAIL:	ATTENDANCE:	SUBMIT DATE: **3/23/2021 12:00 AM**	

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WITNESS NAME

BUSINESS/ORGANIZATION:

WITNESS NAME: **JOHN BRYAN**	PHONE NUMBER: **573-761-5610**	
BUSINESS/ORGANIZATION NAME: **MISSOURI POULTRY FEDERATION**	TITLE:	
ADDRESS: **225 EAST CAPITAL AVENUE**		
CITY: **JEFFERSON CITY**	STATE: **MO**	ZIP: **65102**
EMAIL: **poultry@socket.net**	ATTENDANCE: **Written**	SUBMIT DATE: **3/22/2021 9:44 AM**

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WITNESS NAME

REGISTERED LOBBYIST:

WITNESS NAME: **TONY BENZ**		PHONE NUMBER: **573-301-2747**	
REPRESENTING: **MISSOURI AGRICULTURE**		TITLE:	
ADDRESS:			
CITY:		STATE: **MO**	ZIP: **65063**
EMAIL:	ATTENDANCE:	SUBMIT DATE: **3/23/2021 12:00 AM**	

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WITNESS NAME

INDIVIDUAL:

WITNESS NAME: **ARNIE "HONEST-ABE" DIENOFF-STATE PUBLIC ADVOCATE**	PHONE NUMBER:	
BUSINESS/ORGANIZATION NAME:	TITLE:	
ADDRESS:		
CITY:	STATE:	ZIP:

EMAIL: **arniedienoff@yahoo.com**	ATTENDANCE: **Written**	SUBMIT DATE: **3/23/2021 4:07 PM**

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I am Opposed to this Bill. This is yet a another Tax on the Farmer, without a Vote of the People. Enough is Enough!

MISSOURI HOUSE OF REPRESENTATIVES

WITNESS APPEARANCE FORM

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TESTIFYING: ☐ IN SUPPORT OF ☐ IN OPPOSITION TO ☑ FOR INFORMATIONAL PURPOSES

WITNESS NAME

BUSINESS/ORGANIZATION:

WITNESS NAME: **JENNIFER BRATBURD**		PHONE NUMBER: **314-325-2537**	
BUSINESS/ORGANIZATION NAME: **MOST POLICY INITIATIVE**		TITLE: **POLICY FELLOW**	
ADDRESS: **238 E HIGH ST., 3RD FLOOR**			
CITY: **JEFFERSON CITY**		STATE: **WI**	ZIP: **65101**
EMAIL: **jenny@mostpolicyinitiative.org**	ATTENDANCE: **Written**	SUBMIT DATE: **3/23/2021 7:46 AM**	

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This science note was prepared by MOST Policy Initiative, Inc. a nonprofit organization aimed to improve the health, sustainability, and economic growth of Missouri communities by providing objective, non-partisan information to Missouri's decisionmakers. For more information, contact Dr. Jenny Bratburd, Energy, Environment & Transportation Fellow – jenny@mostpolicyinitiative.org. This was prepared on 1/7/2021. See PDF version: https://mostpolicyinitiative.org/wp-content/uploads/2021/01/AnhydrousAmmonia_1-7-20.pdf Anhydrous ammonia is a chemical commonly used as nitrogen fertilizer, that when handled improperly, can be dangerous. SB 37 and HB 440 give regulatory authority to the Missouri Air Conservation Commission rather than the Missouri Department of Agriculture and also establish registration and tonnage fees for facilities that store anhydrous ammonia. -Ammonia is a nitrogen fertilizer and important for food production. -Anhydrous ammonia can cause irritation of skin, eyes & throat in low doses; high doses can lead to suffocation and death. -Like other nitrogen fertilizers, ammonia can convert to nitrate in the soil and have environmental and health impacts. -Facilities storing anhydrous ammonia, especially those with over 10,000 lbs, fall under regulation by several federal agencies. Anhydrous Ammonia and Usage Anhydrous ammonia is a colorless gas that is one part nitrogen and three parts hydrogen (NH3), often stored under pressure as a liquid. "Anhydrous" refers to the chemical purification to remove water, in contrast to aqueous ammonia which is dissolved in water. Anhydrous ammonia is a commonly used fertilizer.1,2 Fertilizers provide essential elements for crop production, and nitrogen fertilizers are roughly estimated to support crop production for half the world's population.3,4 Anhydrous ammonia is also used as a refrigerant, as well as in textile and chemical manufacturing.5 Anhydrous ammonia may also be stolen to illegally make methamphetamine, a potential safety hazards to storage facilities.6 Health and Safety Risks If handled improperly, anhydrous ammonia is a toxic inhalation hazard.7 Anhydrous ammonia reacts rapidly with water to form ammonium hydroxide. The dehydration and alkalinity from this reaction can irritate the skin, eyes, and throat. Anhydrous ammonia has a distinctive smell detectable at concentrations as low as 5 parts per million (ppm), which can serve as a warning of release. Short exposures at 220 ppm can result in severe injury including chemical burns and lung damage, and short exposure to 2700 ppm can result in death.8 Environmental Risks All nitrogen fertilizers, including anhydrous ammonia, can ultimately convert to nitrate in the soil, particularly with warmer temperatures.9 Excess nitrate runoff can lead to eutrophication (also known as algae blooms), and is a primary driver for hypoxia (low oxygen) and dead zones, such as those in the Gulf of Mexico.9 Elevated nitrate levels (10 mg/L) in well water is a health concern for developing fetuses and infants, as nitrate interferes with acquisition of oxygen from the bloodstream, resulting in "blue baby syndrome.10" High nitrate levels in drinking water can also increase cancer risks.11,12 Nitrogen applications can affect air pollution, as ammonia can volatilize13; however, this is not

common in Missouri as the generally acidic soils tend to adsorb nitrogen.9 Good management practices for nitrogen fertilizer application can promote efficient use for maximizing crop yield while preventing nitrogen runoff.14,15 Regulation of Anhydrous Ammonia Federally, anhydrous ammonia is regulated by several agencies.16 The Environmental Protection Agency (EPA) Clean Air Action section 112 regulates facilities with greater than 10,000 lbs. The EPA Clean Air Act requires facilities to complete accident history, create a Risk Management Plan, analyze a worst-case scenario and coordinate with local emergency response. The EPA Emergency Planning and Community Right-to-Know Act also requires emergency planning and response procedures for facilities with over 500 lbs of anhydrous ammonia, and reporting chemical releases. The Department of Homeland Security requires risk assessment plans for certain facilities located on waterways or with greater than 10,000 lbs of anhydrous ammonia. Occupational Safety and Health Administration (OSHA) regulates storage and handling. Currently in Missouri, under Chapter 266.355 RSMo, anhydrous ammonia is regulated by the Missouri Department of Agriculture Division of Weights, Measures and Consumer Protection. Specifically, the division performs safety inspections of bulk storage facilities, nurse tanks (transportation vessels), and applicators.17References

1. USDA ERS - Fertilizer Use and Price. https://www.ers.usda.gov/data-products/fertilizer-use-and-price/. 2. Bierman, P. M., Rosen, C. J., Venterea, R. T. & Lamb, J. A. Survey of nitrogen fertilizer use on corn in Minnesota. Agric. Syst. 109, 43–52 (2012). 3. Roser, M. & Ritchie, H. Fertilizers. Our World Data (2013). 4. Kathy Mathers. Frequently Asked Questions about Anhydrous Ammonia. https://www.tfi.org/content/frequently-asked-questions-about-anhydrous-ammonia (2019). 5. National Research Council. Emergency and Continuous Exposure Guidance Levels for Selected Submarine Contaminants. vol. 2 (National Academies Press, 2008). 6. Centers for Disease Control and Prevention (CDC). Anhydrous ammonia thefts and releases associated with illicit methamphetamine production--16 states, January 2000-June 2004. MMWR Morb. Mortal. Wkly. Rep. 54, 359–361 (2005). 7. Baker, D. NASD - Using Agricultural Anhydrous Ammonia Safely. http://nasdonline.org (1993). 8. National Institute for Occupational Safety and Health (NIOSH). The Emergency Response Safety and Health Databasehttps://www.cdc.gov/niosh/ershdb/emergencyresponsecard_29750013.html (2011). 9. John Lory & Steve Cromley. Managing Nitrogen to Protect Water Quality. https://extension.missouri.edu/publications/g9218 (2018). 10. Johnson, S. F. Methemoglobinemia: Infants at risk. Curr. Probl. Pediatr. Adolesc. Health Care 49, 57–67 (2019). 11. Temkin, A., Evans, S., Manidis, T., Campbell, C. & Naidenko, O. V. Exposure-based assessment and economic valuation of adverse birth outcomes and cancer risk due to nitrate in United States drinking water. Environ. Res. 176, 108442 (2019). 12. Essien, E. E. et al. Drinking-water nitrate and cancer risk: A systematic review and meta-analysis. Arch. Environ. Occup. Health 0, 1–17 (2020). 13. Plautz, J. Ammonia, a poorly understood smog ingredient, could be key to limiting deadly pollution. Science (2018). 14. Scharf, P. & Lory, J. Best Management Practices for Nitrogen Fertilizer in Missouri. https://extension.missouri.edu/publications/ipm1027 (2006). 15. Singh, G. & Nelson, K. A. Pronitridine and Nitrapyrin With Anhydrous Ammonia for Corn. J. Agric. Sci. 11, p13 (2019). 16. Shea, D., Schierow, L.-J. & Szymendera, S. Regulation of Fertilizers: Ammonium Nitrate and Anhydrous Ammonia. (2013). 17. Petroleum/Propane/Anhydrous Ammonia Program. Missouri Department of Agriculture https://agriculture.mo.gov/weights/petroleum/.