

ILLINOIS POLLUTION CONTROL BOARD
November 7, 2013

IN THE MATTER OF:)
)
CONCENTRATED ANIMAL FEEDING) R12-23
OPERATIONS (CAFOs): PROPOSED) (Rulemaking - Water)
AMENDMENTS TO 35 ILL. ADM. CODE)
PARTS 501, 502, AND 504)

Proposed Rule. First Notice.

OPINION AND ORDER OF THE BOARD (by J.A. Burke):

On March 1, 2012, the Illinois Environmental Protection Agency (Agency or Illinois EPA or IEPA) filed a proposal to amend Parts 501, 502, and 504 of the Board’s agriculture related pollution regulations applying to Concentrated Animal Feeding Operations (CAFOs). *See* 35 Ill. Adm. Code 501, 502, 504. The Agency stated that the rulemaking proposal had two chief purposes. First, the Agency sought to amend Parts 501 and 502 “so that they are consistent with, and as stringent as, the current federal CAFO regulations.” Statement of Reasons (SR) at 32. The Agency argued that failure to adopt these proposed amendments could result in withdrawal of federal delegation to Illinois of the National Pollutant Discharge Elimination System (NPDES) permit program under the Clean Water Act. *Id.* Second, the Agency sought to establish state technical standards mandated by the federal rule. *Id.* at 33. The United States Environmental Protection Agency (USEPA) directed that “Illinois still needs to establish standards that address the rate at which manure, litter, and process wastewater may be applied on crop or forage land where the risk of phosphorus transport is high, as well as standards for land application on frozen soil and snow.” *Id.*, citing 40 C.F.R. 412.4(c)(1), (c)(2); SR, Attachment H (USEPA correspondence).

After conducting public hearings in five locations throughout the state and considering the entire record, the Board proposes for first-notice publication the amendments to Parts 501, 502, and 504 of its agriculture related pollution regulations set forth in its order below. Publication of these proposed amendments in the *Illinois Register* will begin a 45-day public comment period. *See* 5 ILCS 100/5-40(b) (2012). On pages 255-57, the Board provides information on submitting comments and specifically requests comments on five issues. The Board appreciates any comments on these proposed rules.

GUIDE TO TODAY’S OPINION AND ORDER

The Board’s opinion begins by providing the procedural history of this rulemaking at pages 2-6. The opinion then summarizes the Agency’s background of the issues raised in the proceeding at pages 6-8. At pages 8-22, the Board next reviews the Agency’s discussion of statutes and regulations applicable to CAFOs. Next, the opinion at pages 22-106 provides a section-by-section summary of the Agency’s proposal, including testimony on its behalf by the

Agency's witnesses at hearing. The Board then summarizes the testimony of witnesses on behalf of participants other than the Agency at pages 106-33.

Next, at pages 133-36, the opinion summarizes the Agricultural Coalition's motion to amend the Agency's original rulemaking proposal and responses to the motion. The opinion then summarizes the Environmental Groups' proposed amendments to the Agency's rulemaking proposal and responses to the amendments at pages 136-42.

At pages 142-49, the opinion then summarizes the post-hearing comments. In the next section, the Board addresses responses to the post-hearing comments at pages 149-54.

At pages 154-246, the opinion then discusses the contested issues raised in this proceeding and makes its determination on them. Having addressed those issues, the Board discusses the economic reasonableness and technical feasibility of its first-notice proposal at pages 246-55. Following its conclusion at pages 257 to submit a proposal to first-notice publication in the *Illinois Register*, the Board sets forth the proposed amendments to Parts 501, 502, and 504 of its agriculture related pollution regulations in its order at pages 257-329.

PROCEDURAL HISTORY

On March 1, 2012, the Agency filed a proposal to amend Parts 501, 502, and 504 of the Board's agriculture related pollution regulations (Prop. 501, 502, and 504, respectively), accompanied by a motion for waiver of specified copy requirements. *See* 35 Ill. Adm. Code 501, 502, 504. The Agency's proposal included its Statement of Reasons, attached to which were 40 attachments (Att. A – Att. NN).

In an order dated March 15, 2012, the Board accepted the Agency's proposal for hearing and granted the Agency's motion for waiver of specified copy requirements.

In an order dated March 22, 2012, the hearing officer scheduled four hearings: the first in Springfield on Tuesday, August 21, 2012; the second in Belleville on Tuesday, October 16, 2012; the third in Urbana on Tuesday, October 23, 2012; and the fourth in DeKalb on Tuesday, October 30, 2012.

The Board received requests to schedule an additional hearing in Jo Daviess County from the following: Representative Jim Sacia of the 89th District (PC 1); Senator Tim Bivins of the 45th District (PC 2); Mr. Ronald Lawfer, President of the Jo Daviess County Farm Bureau (PC 3); Representative Don Manzullo (PC 4); and Ms. Esther Lieberman of the Executive Board of The League of Women Voters of Jo Daviess County (PC 5). In an order dated April 23, 2012, the hearing officer scheduled a fifth hearing to take place in Elizabeth, Jo Daviess County, on Wednesday, November 14, 2012.

On June 18, 2012, the Agency filed the testimony of Mr. Bruce Yurdin (Yurdin Test.), Mr. Sanjay Sofat (Sofat Test.), and Mr. Dan Heacock (Heacock Test.). On June 19, 2012, the Board received pre-filed testimony by Mr. Jim Kaitschuk (Kaitschuk Test.) on behalf of the Illinois Pork Producers Association (IPPA) and the Illinois Agricultural Coalition, which also

includes the Illinois Beef Association, the Illinois Milk Producers' Association, and the Illinois Farm Bureau.

On July 17, 2012, the Agricultural Coalition filed questions for the Agency's witnesses (Agri. Questions). Also on July 17, 2012, the Board received questions (Env. Questions) for the Agency's witnesses from the Prairie Rivers Network, Illinois Citizens for Clean Air and Water, the Natural Resources Defense Council, and the Environmental Law and Policy Center (collectively, Environmental Groups). In an order dated July 17, 2012, the hearing officer directed the Agency to address questions posed by the Board by August 14, 2012.

On August 14, 2012, the Board received the Agency's answers, including "Illinois EPA's Answers to the Prefiled Questions of the Illinois Pollution Control Board (Agency Att. 1); "Illinois EPA's Answers to the Prefiled Questions of the Illinois Agricultural Coalition" (Agency Att. 2); "Illinois EPA's Answers to the Prefiled Questions of Environmental Groups Directed to Sanjay Sofat" (Agency Att. 3); "Illinois EPA's Answers to Prefiled Questions of Environmental Groups Directed to Bruce Yurdin" (Agency Att. 4); and "Illinois EPA's Answers to the Prefiled Questions of Environmental Groups Directed to Daniel Heacock" (Agency Att. 5). In response to questions posed to Mr. Sofat by the Environmental Groups, the Agency also submitted a December 1, 2010 draft of proposed revisions to Parts 501 and 502 submitted to USEPA (Agency Att. 6a); USEPA comments dated January 14, 2011, responding to the Agency's December 1, 2010 submission (Agency Att. 6b); a May 17, 2011 draft of proposed revisions to Parts 501 and 502 submitted to USEPA (Agency Att. 7a); and USEPA comments dated June 3, 2011, responding to the Agency's May 17, 2011 submission (Agency Att. 7b).

The first hearing took place as scheduled on August 21, 2012, in Springfield, and the Board received the transcript (Tr.1) on August 28, 2012. During the first hearing, Mr. Yurdin, Mr. Sofat, and Mr. Heacock testified on behalf of the Agency, and Mr. Kaitschuk testified on behalf of the Agricultural Coalition. During the first hearing, the hearing officer admitted into the record 21 exhibits (Exhs. 1-21).

Also during the first hearing, the Board heard comments by Mr. Dereke Dunkirk, President of the Illinois Pork Producers Association (Tr.1 at 12-14); Mr. Dale Hadden (Tr.1 at 14-18); Mr. Christos Gegas, representing Rural Residents for Responsible Agriculture (Tr.1 at 18-21); Mr. Jim Braun (Tr.1 at 21-25); Mr. Paul Rice (Tr.1 at 25-27); and Senator Sam McCann of the 49th Senate District (Tr.1 at 49-53).

On September 17, 2012, the Agency filed a motion to correct the transcript of the first hearing.

On September 25, 2012, the Agricultural Coalition filed a motion proposing changes to the Agency's original rulemaking proposal (Agri. Mot.).

On October 9, 2012, the Agency filed its post-hearing comments addressing questions raised during the first hearing on August 21, 2012 (PC 6); an affidavit of Mr. Yurdin (Yurdin Aff.); and a memorandum of law regarding authority for an Illinois CAFO registration requirement (Agency Memo.).

On October 9, 2012, the Environmental Groups filed a motion for an extension of the time to respond to the Agricultural Coalition's motion proposing changes to the Agency's original rulemaking proposal.

Also on October 9, 2012, the Board received pre-filed testimony by Dr. Ted. L. Funk (Funk Test.) on behalf of University of Illinois Extension for the third hearing.

The second hearing took place as scheduled on October 16, 2012, in Belleville, and the Board received the transcript (Tr.2) on October 22, 2012. During the second hearing, Mr. Kaitschuk testified on behalf of the Agricultural Coalition (Tr.2 at 18-21, 32-34), and the Board received a comment by Mr. Darryl Brinkmann (Tr.2 at 35-38). Also during the second hearing, the hearing officer granted the Agency's September 17, 2012 motion to correct the transcript of the first hearing. Tr.2 at 4.

On October 16, 2012, the Board received pre-filed testimony on behalf of the Environmental Groups from Mr. Arnold Leder (Leder Test.), Dr. Kendall Thu (Thu Test.), and Dr. Stacy James (James Test.). Four attachments accompanied Mr. Leder's pre-filed testimony (Leder Att. 1 – Leder Att. 4). Seven attachments accompanied Dr. Thu's pre-filed testimony (Thu Att. 1 – Thu Att. 7). Forty-five attachments accompanied Dr. James' pre-filed testimony (James Att. 1 – James Att. 45). The Board received the Environmental Groups' proposed amendments to Parts 501 and 502 of the Agency's original rulemaking proposal on October 17, 2012.

Also on October 16, 2012, the Board received pre-filed testimony of Mr. Samuel V. Panno. Mr. Panno submitted an updated version of his testimony on October 24, 2012 (Panno Test.).

The third hearing took place as scheduled on October 23, 2012, in Urbana, and the Board received the transcript (Tr.3) on October 30, 2012. During the third hearing, Dr. Funk testified on behalf of University of Illinois Extension, and Ms. Claire Manning testified on behalf of the Agricultural Coalition. Also during the third hearing, the Board accepted comments by Senator Mike Frerichs (Tr.3 at 3-6); Mr. Chris Hausman (Tr.3 at 66-70); Mr. Scott Hays, President of the Upper Sangamon River Conservancy (Tr.3 at 71-74); Mr. Leland Ponton (Tr.3 at 74-77); Mr. Joseph Culkin (Tr.3 at 77-78); Ms. Dianne Ward (Tr.3 at 78-82); and Mr. Jim Smith (Tr.3 at 82-85). Also during the third hearing, the hearing officer granted the Environmental Groups' unopposed motion to extend the deadline to respond to the Agricultural Coalition's motion to amend the Agency's original proposal. Tr.3 at 8-9. The hearing officer stated that "there will be a subsequent board order at the time we receive the final transcript that clarifies the precise date on which that response would become due with the final post-hearing comments." *Id.* at 8.

The fourth hearing took place as scheduled on October 30, 2012, in DeKalb, and the Board received the transcript (Tr.4) on November 13, 2012. During the fourth hearing, Mr. Panno testified, and Mr. Leder, Dr. Thu, and Dr. James testified on behalf of the Environmental Groups. Also during the fourth hearing, the hearing officer admitted into the record two exhibits (Exhs. 22, 23). Tr.4 at 113-14.

Also during the fourth hearing, the Board accepted comments by Mr. Howard Hudson (Tr.4 at 11-12); Ms. Susan Turner (Tr.4 at 12-17; *see* PC 9); Mr. Philip Nelson (Tr.4 at 17-21); Mr. Doug Block (Tr.4 at 21-24); Mr. Bill Deutsch (Tr.4 at 24-26); Ms. Karen Hudson (Tr.4 at 26-32; *see* PC 10); Mr. Jesse Sheehan on behalf of Representative Robert Pritchard (Tr.4 at 32-36; *see* PC 7); Mr. Matthew Alschuler, President of HOMES (Tr.4 at 36-40); and Mr. Eric Sterling (Tr.4 at 40-45; *see* PC 8).

Also during the fourth hearing, the hearing officer granted an unopposed oral motion by the Agricultural Coalition to extend the deadline to file testimony for the fifth hearing to Wednesday, November 7, 2012. Tr.4 at 267-69. On November 7, 2012, the Board received pre-filed supplemental testimony from Dr. Stacy James on behalf of the Environmental Groups (James Supp. Test.); from Dr. Peter Goldsmith and Mr. David Trainor (Trainor Test.) on behalf of the Agricultural Coalition; and from Mr. Donald Keefer (Keefer Test.) of the Illinois State Geological Survey. On November 8, 2012, the Board received the Agency's answers to questions posed by the Board during the second hearing (Agency Ans.).

The fifth hearing took place as scheduled on November 14, 2012, in Elizabeth, and the Board received the transcript (Tr.5) on November 28, 2012. During the fifth hearing, Dr. James testified on behalf of the Environmental Groups. Mr. Trainor testified on behalf of the Agricultural Coalition, and Mr. Keefer also testified. Dr. Goldsmith was not available to testify at the fifth hearing, and the Agricultural Coalition submitted a document identical to his pre-filed testimony for filing as a public comment (PC 11). Tr.5 at 115-117. Also during the fifth hearing, the hearing officer admitted into the record a single exhibit, a July 30, 2012 update of NPDES rules submitted by the Agency (Exh. 24). Tr.5 at 209-11. Also during the fifth hearing, the hearing officer clarified that, pursuant to the Environmental Groups' motion for extension of the deadline granted during the third hearing (*see* Tr.3 at 8-9), responses to the Agricultural Coalition's motion to amend the Agency's original proposal would be due with final post-hearing comments on January 16, 2013. Tr. 5 at 214.

During the fifth hearing, the Board accepted comments by Representative Jim Sacia (Tr.5 at 6-8); Senator Tim Bivins (Tr.5 at 8-10); Mr. I. Ron Lawfer (Tr.5 at 16-19); Ms. Cindy Bonnet (Tr.5 at 19-24); Mr. Matthew Alschuler, the President of HOMES (Tr.5 at 24-34; *see* PC 12); Ms. Esther Lieberman of the League of Women Voters of Jo Daviess County (Tr.5 at 35-37); Ms. Beth Baranski (Tr.5 at 37-40); Ms. Joan Wallace (Tr.5 at 41-45); Ms. Kathy Hicks (Tr.5 at 45-47); Mr. Ray Ruthenberg (Tr.5 at 47-50); Mr. Douglas Scheider (Tr.5 at 50-53); Mr. Ken Turner (Tr.5 at 53-61; *see* PC 14); Ms. Theresa Westaby (Tr.5 at 61-66); Ms. Susan Turner of ICCAW (Tr.5 at 66-71; *see* PC 13); Mr. Ronald Lee Lawfer, President of the Jo Daviess County Farm Bureau (Tr.5 at 72-75); Mr. Brian Duncan (Tr.5 at 75-77); Mr. Matt Ohloff of Food and Water Watch (Tr.5 at 78-81); and Ms. Lynn Werner (Tr. 5 at 81-86). On November 19, 2012, the Board received a comment from Mr. Dan Bonnett (PC 15).

On November 30, 2012, the hearing officer issued an order setting a deadline of January 16, 2013, to file post-hearing comments. The order also restated that responses to the Agricultural Coalition's September 25, 2012 motion to amend the Agency's original proposal would also be due on January 16, 2013. The order also set a deadline of January 30, 2013, to file responses to post-hearing comments.

On January 8, 2013, Dr. John E. Ikerd filed a comment on behalf of the Environmental Groups (PC 16). On January 16, 2013, the Board received post-hearing comments from the Agency (PC 17); Maurer-Stutz, a consulting engineering and surveying firm (PC 18); the Agricultural Coalition (PC 19); and the Environmental Groups (PC 20). Nine attachments accompanied the Environmental Groups' post-hearing comments, including the Environmental Groups' updated version of proposed rule (Env. Prop. or Cmt. Att. 2). The Environmental Groups stated that "[t]he revisions to our proposal do not raise any new issues, but seek to remedy formatting issues and clarify language in light of questions and testimony presented at the Board's hearing." PC 20 at 7.

On January 18, 2013, the Board received a comment signed by Tarah Heinzen of the Environmental Integrity Project, in which joined Scott Edwards and Michele Merkel, Co-Directors of Food and Water Justice of Food and Water Watch; Karen Hudson, Socially Responsible Agriculture Project, Illinois Citizens for Clean Air & Water; Matthew Alschuler, President, Helping Others Maintain Environmental Standards; Barbara Ashwood-Gegas, President, Rural Residents for Responsible Agriculture; Dave Leifheit, President, Concerned Residents Against Pig Confinements; and Max Muller of Environment Illinois (PC 22). On January 18, 2013, the Board also received comments from Mr. Panno (PC 21); Jim Francis of Warren, Illinois (PC 23); Jane Alexander of Chicago, Illinois (PC 24); Tom Bergstrom of Stephenson County, Illinois (PC 25); and Betty Ann Gahm of Pearl City, Illinois (PC 26). On January 28, 2013, the Board received comments from Mr. I. Ronald Lawfer of Stockton, Illinois (PC 27).

On January 16, 2013, the Board also received the Environmental Groups' response to the Agricultural Coalition's motion to amend the Agency's original proposal (Env. Resp.).

On January 30, 2013, the Board received the Agricultural Coalition's response to post-hearing comments (PC 28) and the Environmental Groups' response to post-hearing comments (PC 29). The Environmental Groups' response included three attachments (Resp. Att. 1 – Resp. Att. 3).

As required by Section 27(b) of the Act (415 ILCS 5/27(b) (2012)), the Board in a letter dated March 22, 2012, requested that the Department of Commerce and Economic Opportunity (DCEO) conduct an economic impact study of the Agency's rulemaking proposal. The Board asked that DCEO determine by May 1, 2012, whether it would conduct such a study. The Board has received no response to this request from DCEO. During each hearing, the hearing officer afforded those present an opportunity to address the Board's request for a study and DCEO's lack of response. Tr.1 at 200-01; Tr.2 at 40-41; Tr.3 at 169-70; Tr.4 at 266-67; Tr.5 at 212-13. No participant offered testimony or comment on the request or response. *See* Tr.1 at 201; Tr.2 at 41; Tr.3 at 170; Tr.4 at 267; Tr.5 at 213.

AGENCY DISCUSSION OF FACTUAL BACKGROUND OF PROPOSAL

The Agency reported that USEPA has found that pollutants most often associated with livestock waste "include nutrients, organic matter, solids, pathogens, and odorous compounds."

SR at 2; *see* Att. B at 7181, 7235. In responding to a question pre-filed by the Environmental Groups, Mr. Yurdin stated that

pollutants associated with livestock waste are generally those attributable to all warm blooded animals: bacteria, viruses, nutrients such as nitrogen and phosphorus, and oxygen demanding materials that deplete affected waters and result in the loss of dissolved oxygen. In addition, veterinary pharmaceuticals, disinfectants used in washing the surfaces of walls and floors where animals are housed and in dairy lines and tanks are also present. Agency Att. 4 at 1 (¶2).

The Agency referred to USEPA's statement that "[m]ore than 150 pathogens found in livestock manure are associated with risks in humans, including the six pathogens that account for more than 90% of food and waterborne human illness:" *Campylobacter spp.*, *Salmonella spp.* (non-typhoid), *Listeria monocytogenes*, *Escherichia coli* O157:H7, *Cryptosporidium parvum*, and *Giardia lamblia*. SR at 2, citing Att. B at 7236. The Agency added that "[n]utrient pollution includes phosphorus and various forms of nitrogen including ammonia and nitrate." SR at 2, citing Att. B at 7235. The Agency named agricultural livestock activities as one of "[t]he primary sources of nitrogen and phosphorus pollution." SR at 3, citing Exh. 19 at 12.

The Agency cited USEPA to state that "[t]hese pollutants can be released into the environment through discharge or runoff if manure and wastewater are not properly handled and managed." SR at 2, citing Att. B at 7181. Specifically, the Agency claimed that these pollutants may enter the environment through pathways including "surface runoff and erosion, direct discharges to surface water, spills and other dry-weather discharges, leaching into soil and groundwater, and volatilization of compounds with redeposition to the landscape." SR at 2, citing Att. B at 7236.

The Agency cited an August 2009 report of the State-EPA Nutrient Innovations Task Group to state that, "[i]n contrast to the 18 million tons of human fecal material treated annually at [publicly-owned treatment works], animal agriculture production results in the generation of more than 1 billion tons of manure each year." SR at 3, citing Exh. 19 at 16. The Agency further claimed that "[t]his manure results in over 8 million pounds per day of nitrogen and 3 million pounds per day of phosphorus." SR at 3; *see* Exh. 19 at 16. In responding to a question pre-filed by the Environmental Groups, Mr. Yurdin stated that the Agency is "unaware of any reliable, current estimates for the total amount of livestock waste generated in Illinois on an annual basis. Therefore, we are unable to compare the amount of livestock waste to human waste that is generated each year." Agency Att. 4 at 1 (¶1). Although the Agency acknowledged that much of this manure is applied to farmland and is taken up into plant tissue, "significant portions end up in the waters of the United States." *Id.*; *see* Exh. 19 at 16.

The Agency claimed that "[n]utrient pollution is a significant problem in Illinois and across the United States" and that it affects drinking water supplies, recreational water quality, and aquatic life. SR at 2, citing Exh. 19 at 2. In responding to a question pre-filed by the Environmental Groups, Mr. Yurdin elaborated that

the over abundance of nutrients can cause eutrophication and the depletion of oxygen of sufficient concentration to support aquatic life. Oxygen demanding materials have similar impact to aquatic life, limiting the usable habitat. Algal blooms may occur due to eutrophication, adversely affecting recreational opportunities and drinking water taste and odor, and increasing the presence of harmful trihalomethane precursors. Agency Att. 4 at 1 (¶2).

The Agency claimed that “[n]utrient pollution is directly linked to 20% of impaired river and stream miles, 22% of impaired lake acres and 8% of impaired bay and estuarine square miles in the United States.” SR at 3, citing Exh. 19 at 5-6; *see* Exh. 11 at 104 (Table C-32: Statewide Summary of Potential Sources of All Use Impairments in Streams); Tr.1 at 79-81. The Agency also cited indirect links between nutrients and “additional listed impairments related to low dissolved oxygen, impaired habitat, algal growth and noxious aquatic plants.” *Id.*, citing Exh. 19 at 5-6. Mr. Yurdin stated that livestock annual summaries reveal “a total of 36 fish kills related to livestock waste in the years 1999 through 2009. The least number per year was 0 and the largest number per year was 8.” Agency Att. 4 at 2 (¶5), citing <http://www.epa.state.il.us/water/cafo/reports/index.html>.

The Agency stated that indicator organisms, including *Escherichia coli*, enterococci, and fecal coliform, measure pathogen pollution stemming from CAFOs and other sources. SR at 3. The Agency argued that “[t]hese pollutants often result in recreational use impairments.” *Id.* The Agency indicated that a 2010 draft report assessed 4,009 stream miles for their support of primary contact use. *Id.*, citing Exh. 11 at 102 (Table C-30). The Agency stated that this assessment relied on fecal coliform bacteria levels to find that 3,265 stream miles did not support primary contact use. SR at 3, citing Exh. 11 at 102.

The Agency stated that USEPA’s issuance of the 2003 rules included an estimate that adoption of the rules would result in annual pollutant reductions of 56 million pounds of phosphorus, 110 million pounds of nitrogen, and two billion pounds of sediment. SR at 4, citing Att. D at 70468-69 (Environmental Impacts). USEPA also estimated “that pathogen loadings would be reduced by 46 percent as a result of the 2003 rule.” SR at 4, citing Att. B at 7239. The Agency noted USEPA’s conclusion that “the same level of benefits would be achieved by the 2008 amendments except that growth in the industry would increase the total amount of pollutant reductions achieved.” SR at 4, citing Att. D at 70468-69.

AGENCY DISCUSSION OF STATUTORY AND REGULATORY BACKGROUND

Clean Water Act

The Agency stated that the Federal Water Pollution Control Act, known as the Clean Water Act or CWA, prohibits the discharge of any pollutant unless the discharge meets CWA requirements. SR at 4, citing 33 U.S.C. § 1311(a). The term “discharge of a pollutant” includes “any addition of any pollutant to navigable water from any point source.” SR at 4, citing 33 U.S.C. § 1362(12). The Agency added that “point source” is defined in the CWA to mean “any discernible, confined and discrete conveyance . . . from which pollutants are or may be discharged,” specifically including CAFOs. SR at 4, citing 33 U.S.C. § 1362(14). The Agency

noted that, although “agricultural stormwater” is not defined in the CWA, it “is specifically excluded from the definition of a point source.” SR at 4, citing 33 U.S.C. § 1362(14); *see* Sofat Test. at 8.

The Agency stated that the CWA allows a discharge of a pollutant from a point source if the owner or operator of the point source has obtained an NPDES permit. SR at 4-5, citing 33 U.S.C. § 1342(a)(1). The Agency further stated that permitted discharges are required to meet applicable technology-based and water quality-based effluent limits. SR at 5, citing 33 U.S.C. §§ 1311, 1312. The Agency elaborated that “technology based effluent limitations require the application of the best practicable control technology currently available (BPT) and the best available technology economically achievable (BAT). SR at 5, citing 33 U.S.C. §§ 1311(b), 1311(e). The Agency added that the CWA authorizes USEPA to determine BPT and BAT. SR at 5, citing 33 U.S.C. § 1311(b).

The Agency stated that “water quality based effluent limitations may be imposed when the discharges of pollutants after the application of technology based effluent limitations fails to assure the protection of public health, water supplies, fish and wildlife, and designated recreational, industrial or agricultural uses.” SR at 5, citing 33 U.S.C. § 1312(a). The Agency added that the CWA also requires permitted new sources to meet new source performance standards (NSPS). SR at 5, citing 33 U.S.C. § 1316. “Feedlots are specifically included as a category of sources subject to new source standards of performance.” SR at 5, citing 33 U.S.C. § 1316(b)(1)(A).

Delegation of NPDES Program

The Agency noted that the federal NPDES program requires delegated states to have adequate authority to issue permits ensuring compliance with all applicable requirements of sections 301, 302, 306, 307 and 403 of the CWA. SR at 5, citing 33 U.S.C. § 1342(b)(1)(A). Specifically, under 40 C.F.R. § 123.25(a), state programs must implement CAFO rules regarding NPDES permit requirements for new and existing CAFOs. SR at 6 n.1, n.2, citing 40 C.F.R. §§ 122.21(a), 122.21(i), 122.23. Under 40 C.F.R. § 123.25(a)(13), state programs must have authority to implement NPDES conditions required in CAFO permits, including elements of the nutrient management plan (NMP), recordkeeping, sampling, and annual reporting. SR at 6 n.3, citing 40 C.F.R. § 122.42.

Under 40 C.F.R. § 123.25(a)(15), state programs must have the authority to implement requirements regarding the establishment of limitations, standards, and other permit conditions for CAFOs. SR at 6 n.4, citing 40 C.F.R. § 122.44. The Agency noted that 40 C.F.R. § 122.44(a)(1) requires “that each NPDES permit must contain conditions implementing technology-based effluent limitations and standards based on ‘effluent limitations and standards for CAFOs promulgated under sections 301 of the CWA, or new source performance standards promulgated under section 306 of the CWA.’” SR at 6. The Agency stated that Part 412 of the federal rules, which addresses the CAFO point source category, contains the effluent limitations and standards for CAFOs. *Id.*; *see* 40 C.F.R. 412. The Agency concluded that a state program must also have the legal authority to implement the remaining elements of the federal CAFO rule found in 40 C.F.R. Part 412. SR at 6.

On October 23, 1977, Illinois received approval to administer its own NPDES program. SR at 7, citing 42 Fed. Reg. 58566 (Nov. 10, 1977). The Agency stated that, when a state obtains approval to administer its own program, the federal NPDES program is suspended. SR at 7; *see* 33 U.S.C. § 1342(c)(1). The Agency noted that USEPA may withdraw that approval if USEPA determines that the state is not properly administering its program. SR at 7, citing 33 U.S.C. § 1342(c); *see* *Sofat Test.* at 1. The Agency cited 40 C.F.R. § 123.62(e), which requires revision of state programs within one year of a change in federal regulations impacting state program elements. SR at 7.

Federal CAFO Regulation

The Agency stated that, “[o]ther than in the definition of a point source, the CWA does not specifically address CAFOs.” SR at 7. Federal regulations address CAFOs, and the following discussion summarizes the development of and the requirements in those provisions. *See* SR at 7, citing 40 C.F.R. 122, 412.

1974 Federal CAFO Rules

The Agency stated that effluent limits and performance standards for CAFOs were first proposed on September 7, 1973, and adopted on February 14, 1974. SR at 8, citing 39 Fed. Reg. 5704, 38 Fed. Reg. 24466. The Agency further stated that this rulemaking divided the industry “into 18 subcategories based on animal type, production systems and waste characteristics.” SR at 8; *see id.* n.7, citing 38 Fed. Reg. 24467. The Agency noted that Part 412 of the federal rules included two subparts. *Id.* Subpart A addressed all subcategories except ducks and enacted requirements for feed lots, defined as “‘a concentrated, confined animal or poultry growing operation’ where the animals are fed but crops or forage are not sustained at the place of confinement.” SR at 8, citing 40 C.F.R. § 412.11 (1974). Subpart B addressed ducks. SR at 8.

Under these first CAFO rules, Subpart A provided that “the effluent limitation after the application of the BPT and BAT was no discharge.” SR at 8, citing 40 C.F.R. §§ 412.12(a), 412.13(a) (1974). However, these BPT and BAT effluent limits included exceptions. SR at 8. The BPT effluent limitation established an exception “whenever rainfall events, either chronic or catastrophic, caused an overflow from a facility designed, constructed, and operated to contain all process generated wastewaters plus the runoff from a 10-year, 24-hour rainfall event.” *Id.*, citing 40 C.F.R. § 412.12 (1974); 39 Fed. Reg. 5707. The BAT effluent limitation provided that “a feed lot could discharge in the event of a chronic or catastrophic rainfall event, if the facility was designed, constructed and operated to contain all process generated wastewater plus the runoff from a 25-year, 24-hour rainfall event.” SR at 8, citing 40 C.F.R. § 412.13 (1974). The Agency added that “[t]he new source performance standards under subpart A were the same as the effluent limitations after application of BAT.” SR at 8, citing 40 C.F.R. § 412.15 (1974).

Subpart B of these first CAFO rules addressed ducks and established effluent limitations based on daily maximums and 30-day averages after application of BPT. SR at 8, citing 40

C.F.R. § 412.22 (1974). Specifically, the Agency stated that “[t]he daily maximum for BOD₅¹ was 3.66 pounds per 1000 ducks. The average of daily values for 30 consecutive days could not exceed 2.0 pounds per 1000 ducks. Fecal coliform was not to exceed MPN [most probable number] of 400/100 ml at any time.” SR at 9; citing 40 C.F.R. § 412.22 (1974). The Agency added that “[t]he effluent limitation after application of the BAT and the NSPS were the same as for all other subcategories of CAFOs in Subpart A: no discharge allowed except in the event of a chronic or catastrophic rainfall event, if the facility is designed to contain all generated wastewater plus the runoff from a 25-year, 24-hour rainfall event.” SR at 9, citing 40 C.F.R. §§ 412.23, 412.25 (1974).

The Agency stated that, when USEPA first proposed to regulate feedlots, it specifically excluded certain animal confinement facilities from NPDES permit requirements. SR at 9, citing 40 C.F.R. § 124.11 (1974); 38 Fed. Reg. 18000 (July 5, 1973). Specifically, the permit requirements excluded “[s]maller animal confinement facilities containing less than 1,000 slaughter cattle, 700 dairy cattle, 2,500 swine, 10,000 sheep, 55,000 turkeys, 100,000 hens if the facility had continuous overflow watering, 30,000 if the facility had a liquid manure system or 5,000 ducks for more than 30 days in a 12-month period.” SR at 9, citing 40 C.F.R. §§ 124.11(1), 125.4 (1974). The Agency stated that, in Natural Res. Def. Council v. Train, 396 F.Supp. 1386, 1391 (D.D.C. 1975), *aff’d. sub nom. Natural Res. Def. Council v. Costle*, 568 F.2d 1369 (D.C. Cir. 1977), the Court “held that under the CWA, USEPA could not exclude discharging point sources from the NPDES requirements.” SR at 9. The Agency stated that “[a]ll point sources were potentially subject to regulation under the CWA, and USEPA could not exempt entire classes of point sources that discharge from the NPDES permit requirements.” SR at 9, citing Natural Res. Def. Council v. Train, 396 F.Supp. 1386 (D.D.C. 1975).

The Agency stated that USEPA responded to Train by adopting rules that eliminated the permitting exemption described in the preceding paragraph and also defined both AFO and CAFO. SR at 9, citing 40 C.F.R. § 124.82 (1976). These rules defined “AFO” as “a lot or facility where animals were stabled or confined and fed for at least 45 days a year, and no crops, vegetation, forage growth or post-harvest residue were sustained.” SR at 10, citing 40 C.F.R. § 124.82a(1) (1976).

Next, the amended rules defined “CAFO” in two ways. SR at 10, citing 40 C.F.R. § 124.82(a)(2) (1976). Under the first alternative, “an AFO was a CAFO if it had specific concentrations of animals: 1,000 slaughter and feeder cattle, 700 mature dairy cattle, 2,500 swine weighing over 55 pounds, 500 horses, 10,000 sheep or lambs, 55,000 turkeys, 100,000 laying hens if the facility has continuous overflow watering, 30,000 hens if the facility has a liquid manure handling system, 5,000 ducks or 1,000 animal units. SR at 10, citing 40 C.F.R. § 124.82(a)(2)(i) (1976).

Under the second alternative, an AFO was a CAFO if it met two conditions. First, the AFO was a CAFO if it had fewer animals than specified under the first alternative described above but confined “at least 300 slaughter and feeder cattle, 200 mature dairy cattle, 750 swine weighing over 55 pounds, 150 horses, 3,000 sheep or lambs, 16,500 turkeys, 30,000 laying hens

¹ “BOD₅ means 5-day biochemical oxygen demand.” 40 C.F.R. § 412.2(j)(2).

if the facility has continuous overflow watering, 9,000 hens if the facility has a liquid manure handling system, 1,500 ducks or 300 animal units.” SR at 10 n.10; *see* 40 C.F.R. § 124.82(a)(2). Second, the AFO was a CAFO if it met either of two discharge conditions: “(1) discharge of pollutants through a man-made ditch, flushing system or other man-made device, or (2) discharge directly into navigable waters which originated outside of and passed over, across, through or otherwise came into direct contact with the animals contained in the operation.” SR at 10, citing 40 C.F.R. § 124.82(a)(2)(ii) (1976).

The Agency noted an exception to these definitions of “CAFO.” Under the amended rules, an AFO meeting either of the two alternative definitions of CAFO “would not be considered a CAFO if the facility discharged only in the event of a 25-year, 24-hour storm event.” SR at 10, citing 40 C.F.R. § 124.82(a)(2) (1976). The Agency stated that “[t]his exception relieved non-discharging AFOs otherwise having the number of animals specified above from obtaining an NPDES permit because these facilities were not considered CAFOs.” SR at 10.

Under the amended rules, the Agency stated that “[f]acilities with fewer animals than specified above were not CAFOs, and were not considered point sources; as non-point sources, these facilities could discharge without an NPDES permit, unless designated as a CAFO.” SR at 10, citing 40 C.F.R. § 124.82(c) (1976). The Agency added that, in order for an AFO to be designated as a CAFO, “the AFO had to discharge to navigable waters, either directly or indirectly, and the permitting authority had to determine after an onsite inspection that the AFO should be regulated under the CAFO permit program.” SR at 10, citing 40 C.F.R. § 124.82(c) (1976). To make this determination, the permitting authority considered “the AFO’s size, location, slope, vegetation, amount of rainfall, means of conveyances of animal wastes, and the amount of waste reaching navigable waters.” SR at 10, citing 40 C.F.R. § 124.82 (1976).

The Agency stated that, “[o]n June 7, 1979, the USEPA extensively revised the NPDES permit program, creating 40 C.F.R. Part 122,” although effluent limitations applicable to CAFOs remained in Part 412. SR at 11, n.11. The Agency added that “Section 124.82(b), the regulation containing the CAFO permit requirement, was renumbered to section 122.42(a).” SR at 11, n.11, citing 40 C.F.R. § 122.42(a) (1979), 44 Fed. Reg. 32870 (June 7, 1979).

In 1980, NPDES regulations applicable to CAFOs moved to 40 C.F.R. § 122.54. SR at 11, n.11, citing 45 Fed. Reg. 33445 (May 19, 1980). The Agency added that, “[a]t this time, the detailed criteria for determining whether facilities are CAFOs were then moved to Appendix B of 40 C.F.R. Part 122.” SR at 11, n.11. In 1983, USEPA recodified NPDES program requirements from Section 122.54 to Section 122.23. SR at 11, n.11, citing 48 Fed. Reg. 14163 (Apr. 1, 1983). The Agency stated that “[t]hese regulations remained substantively unchanged until 2003, when USEPA amended the CAFO rules.” SR at 11; *see* Att. B.

Current Federal CAFO Rules

The Agency stated that the 2003 amendments to NPDES permit requirements were challenged and vacated in part in Waterkeeper Alliance v. U.S. Env’tl. Prot. Agency, 399 F.3d 486 (2nd Cir. 2005). *See* Att. C. USEPA responded by amending the CAFO rules in 2008. *See*

Att. D (73 Fed. Reg. 70418-86 (Nov. 20, 2008)). The Agency further stated that the 2008 rules were challenged and vacated in part in Nat'l. Pork Producers Council, et al. v. U.S. Env'tl. Prot. Agency, 635 F.3d 738 (5th Cir. 2011). See Att. E. The following subsections of the Board's opinion discuss these authorities as they have shaped the current federal rules (see Att. F; Exh. 24).

Designation of CAFOs.

Size Thresholds. The Agency stated that the 2003 rule did not modify the definition of AFO. SR at 12, see Att. B at 7188-89 (What Is an AFO?), 7265. The Agency further stated that the 2003 rule also maintained three tiers to define a CAFO, two tiers based on size thresholds and one tier based on a designation process. SR at 12, citing Att. B. at 7189-90 (What Is a CAFO?), 7265-66. The tier that had comprised 1,000 or more animal units became a "Large CAFO." SR at 12, citing 40 C.F.R. § 122.23(b)(4); see Att. B. at 7265-66. The Agency added that, "[u]nlike the 1976 rule, the presence of a discharge was no longer required to be considered a large CAFO because the concept of the 25-year, 24-hour rainfall event exception was removed." SR at 12; see Att. B at 7195-96 (Is My AFO a CAFO If It Discharges Only During Large Storm Events?). The tier that had comprised 300-999 animal units became a "Medium CAFO." SR at 12; see Att. B at 7266. The Agency added that "[t]he 2003 rule still required AFOs to meet one of two discharge conditions to be considered a medium CAFO." SR at 12; see Att. B. at 7266. Finally, the 2003 rule also added the category of "Small CAFO" consisting "of those AFOs that do not meet the numerical criteria for either a medium or large CAFO, but are designated as CAFOs pursuant to section 122.23(c)." SR at 12; see Att. B at 7189, 7191 (Table 4.1), 7266.

The Agency stated that size thresholds for large and medium CAFOs "remained unchanged for the following categories: mature dairy cows, cattle, swine weighing over 55 pounds, horse, sheep or lambs, and turkeys." SR at 12. The Agency noted that the 2003 rule added the category of veal calves: "a large CAFO confined at least 1,000 veal calves and a medium CAFO confined 300 to 999." *Id.*; see Att. B. at 7265-66. The Agency also noted that the 2003 rule added the category of swine weighing less than 55 pounds: "a large CAFO confined at least 10,000 swine each weighing less than 55 pounds, and a medium CAFO confined 3,000 to 9,999 swine [each] weighing less than 55 pounds." SR at 12; see Att. B at 7192, 7265-66.

In addition, the Agency stated that, for ducks and chickens, "[t]he 2003 rule distinguished between wet and dry handling systems." SR at 12. Under that rule, "[l]arge chicken CAFOs confined 30,000 or more laying hens or broilers if the AFO used a liquid manure handling system, and 125,000 or more chickens and 82,000 or more laying hens if the AFO did not use a liquid manure handling system." *Id.*; see Att. B. at 7191-92 (Chickens), 7266. The 2003 rule provided that "[m]edium chicken CAFOs confined 9,000 to 29,999 laying hens or broilers if the AFO used a liquid manure handling system, and 37,500 to 124,999 chickens and 25,000 to 81,999 laying hens if the AFO did not use a liquid manure handling system." SR at 12-13; see Att. B at 7266. The rule also provided that "[l]arge duck CAFOs confined 5,000 or more ducks if the AFO used a liquid manure handling system, and 30,000 or more ducks if the AFO did not use a liquid manure handling system." SR at 13; see Att. B at 7193-94 (Ducks), 7266. "Medium

duck CAFOs confined 1,500 to 4,999 ducks if the AFO used a liquid manure handling system and 10,000 to 29,999 ducks if the AFO did not use a liquid manure handling system.” SR at 13; *see* Att. B. at 7266.

Animal Units. The Agency stated that “[t]he concept of animal units was eliminated in the 2003 rule.” SR at 13; *see* Att. B at 7194-95 (Eliminate the mixed animal calculation). The Agency noted that an AFO that had not previously met “the size threshold for any one animal type could still be considered a CAFO if the total animal population was 300 to 999 (medium CAFO) or 1,000 or more (large CAFO) animal units.” SR at 13. The Agency added that, with the elimination of the mixed animal calculation, “these AFOs will not be CAFOs by definition, and not subject to regulation.” *Id.* The Agency noted that, “should these AFOs significantly contribute to water pollution, they could be designated as a CAFO.” *Id.*; *see* Att. B at 7295.

CAFO Designation Process. The Agency stated that the 2003 rule did not change the CAFO designation process: “[a]ny AFO may be designated as a CAFO if the AFO is a significant contributor of pollutants to waters of the United States.” SR at 13, citing 40 C.F.R. § 122.23(e); *see* Att. B at 7198-99 (When and How is an AFO Designated as a CAFO?), 7266. The Agency stated that these CAFO designations “were not affected by subsequent court rulings or regulatory amendments” and are now codified at 40 C.F.R. §§ 122.23(b)(2) (CAFO), 122.23(b)(4) (Large CAFO), 122.23(b)(6) (Medium CAFO), and 122.23(b)(9) (Small CAFO). SR at 14.

Permit Requirements.

The Agency stated that, “[u]nder the 2003 rule, all CAFOs were required to obtain NPDES permits if they have a discharge or they have the potential to discharge.” SR at 14; *see* Att. B at 7265 (§ 122.23(a)). The Agency described this as a “duty on all CAFOs to seek an NPDES permit, regardless of whether the CAFOs actually discharge.” SR at 14; *see* Att. B at 7265, 7266-67 (§§ 122.21(a)(1), 122.23(d)). The Agency noted that the 2003 rule provided for relief from the permitting obligation if the CAFO obtained a determination that the CAFO had no potential to discharge. SR at 14, citing 40 C.F.R. § 122.23(d)(2) (2003).

The Agency stated that, in Waterkeeper, “the court held that USEPA exceeded its statutory jurisdiction by requiring all CAFOs to apply for an NPDES permit, or demonstrate no potential to discharge.” SR at 14, citing Waterkeeper, 399 F.3d at 504. The Agency cited the court in stating that “[t]he CWA only grants USEPA authority to regulate discharges of pollutants, not point sources themselves.” SR at 14, citing Waterkeeper, 399 F.3d at 505.

The Agency stated that USEPA responded to the Waterkeeper decision by removing “the permit requirement for all CAFOs.” SR at 14, citing 40 C.F.R. §§ 122.21, 122.23 (2009); *see* Att. D at 70421-22. USEPA proposed to require that a CAFO “seek coverage under an NPDES permit if the CAFO discharges or ‘proposes’ to discharge.” SR at 14, citing 40 C.F.R. § 122.23(d)(1) (2009); *see* Att. D at 70421-22. USEPA sought to provide that “[a] CAFO proposes to discharge if it is designed, constructed, operated or maintained such that a discharge will occur.” SR at 14; *see* Att. D at 70480-81. (§ 122.23(d)(1)). The Agency stated that USEPA replaced provisions establishing a “determination of no potential discharge” with the option of

obtaining a “no discharge certification” option. SR at 15, citing 40 C.F.R. § 122.23(i, j) (2009); *see* Att. D at 70422, 70481-83. The Agency added that, under this option, “[a] CAFO owner could voluntarily certify that the CAFO does not discharge or propose to discharge, and be relieved from liability for violating the duty to apply provisions of the rule.” SR at 15, citing 40 C.F.R. § 122.23(i, j) (2009); *see* Att. D at 70426-34 (Voluntary No Discharge Certification).

The Agency stated that, in Pork Producers, the court struck down the revised “duty to apply” provisions. SR at 15, citing Pork Producers, 635 F.3d at 738. The Agency added that the “court held that there must be an actual discharge into navigable waters to trigger the CWA’s requirements and the USEPA’s authority, and therefore the permit requirement for those which ‘propose to discharge’ is *ultra vires*.” SR at 15, citing Pork Producers, 635 F.3d at 751. The Agency stated that, “[a]fter Pork Producers, USEPA can only impose a duty to obtain a permit on those CAFOs that are discharging.” SR at 15; citing Pork Producers, 635 F.3d at 751.

Agricultural Stormwater Discharge.

The Agency stated that the CWA specifically excludes agricultural stormwater discharges from the definition of “point source.” SR at 15, citing 33 U.S.C. § 1362(14). The 2003 rule added a new Section 122.23(e), which sought to distinguish agricultural stormwater from a discharge. SR at 15; *see* Att. B at 7197-98, 7267. That section provided that “a precipitation related discharge would be considered agricultural runoff if the manure, litter or process wastewater was applied in accordance with site specific *nutrient management practices*. SR at 15 (emphasis in original); *see* Att. B at 7267. The Agency elaborated that the agricultural stormwater exemption referred to practices listed in Section 122.42(e)(1)(vi-ix). SR at 15, n.13; *see* Att. B. at 7267 (§122.23(e)). Section 122.42(e)(1) listed requirements for implementing a nutrient management plan, so “site-specific nutrient management practices must contain some of the same elements of a nutrient management plan.” SR at 15, n.13; *see* Att. B at 7268 (§ 122.42(e)(1)). The Agency stated “discharges resulting from land application in contravention of nutrient management practices were considered a discharge from a CAFO and subject to NPDES permit requirements.” SR at 15.

The Agency stated that Waterkeeper upheld this agricultural stormwater exemption. SR at 15, citing Waterkeeper, 399 F.3d at 507-09. The Agency added that, when USEPA amended the rules in 2008, it modified the agricultural stormwater exemption “to apply to *large unpermitted CAFOs* that have applied manure, litter or process wastewater in accordance with site-specific nutrient management practices.” SR at 16 (emphasis in original), citing 40 C.F.R. § 122.23(d) (2009); *see* Att. D at 70434-37, 70481.

Effluent Limitations.

The Agency stated that, when USEPA adopted the 2003 rule, it “explained that the national effluent limitation guidelines (ELGs) established in Part 412 applied only to large CAFOs.” SR at 16, citing Att. B at 7207 (To which CAFOs do the effluent guidelines apply?); *see* 40 C.F.R. 412. The Agency added that, “[f]or medium and small CAFOs, the best professional judgment (BPJ) of the permitting authority is used to determine the effluent

limitations.” SR at 16; *see* Att. B at 7207. The Agency clarified that the discussion of the effluent limitations in Part 412 “applies only to large CAFOs.” SR at 16; *see* 40 C.F.R. 412.

Production Area Effluent Limitations.

Subpart A: Horses and Sheep. Subpart A addressed Horses and Sheep and did not change the 1974 effluent limitations for the production area. SR at 16, citing 40 C.F.R. §§ 412.10-412.15 (2003). Specifically,

[t]he effluent limitation after application of BPT was no discharge, unless rainfall events caused an overflow of wastewater from a facility designed, constructed, and operated to contain all the waste generated by the facility in addition to any runoff from a 10-year, 24-hour storm event. The BAT effluent limitation was no discharge except those caused by a rainfall event from a facility designed, constructed and operated to contain its own wastewater and any runoff from a 25-year, 24-hour storm event. SR at 16, n.14; *see* 40 C.F.R. §§ 412.12, 412.13, 412.15.

Subpart B: Ducks. Subpart B addressed Ducks and did not change the effluent limitation for the production area after the application of BPT: “a daily maximum for BOD₅ of 3.66 pounds per 1000 ducks. The maximum monthly average for BOD₅ is 2.0 pounds per 1000 ducks. Fecal coliform is not to exceed MPN of 400 per 100 ml at any time.” SR at 16, n.15; *see* 40 C.F.R. § 412.22. The NSPS also remained unchanged: “no discharge, unless rainfall events caused an overflow of wastewater from a facility designed, constructed, and operated to contain all the waste generated by the facility in addition to any runoff from a 10-year, 24-hour storm event.” SR at 16, n.15; *see* 40 C.F.R. § 412.25; Att. B. at 7271. The Agency noted, however, that the 2003 rule removed the BAT effluent limitation from Subpart B. SR at 16.

Subpart C: Dairy Cows and Cattle Other than Veal Calves. Subpart C addressed dairy cows and cattle other than veal calves and established the effluent limitation attainable through application of BPT, BAT, and best conventional pollutant control technology (BCT) for the production area: “no discharge of manure, litter, or process wastewater pollutants into waters of the U.S.” SR at 17; *see* 40 C.F.R. §§ 412.31(a), 412.32(a), 412.33(a).

The Agency noted that the limitation includes two exceptions. SR at 17. “The first exception arises when a rainfall event causes an overflow of wastewater, manure, or litter, and the CAFO’s production area is designed, constructed, operated, and maintained to contain all the manure, litter, and process wastewater including the runoff and the direct precipitation from a 25-year, 24-hour rain fall event.” SR at 17; *see* 40 C.F.R. §§ 412.31(a)(1), 412.32(a), 412.33(a). To claim this first exception, the CAFO must conduct regular visual inspections of the production area, correct identified deficiencies as soon as possible, employ a depth marker in all open surface liquid impoundments, properly handle animal mortalities, maintain records documenting compliance with these requirements, and keep records regarding the design of storage structures and any overflows. SR at 17-18, citing 40 C.F.R. § 412.37(a), (b).

The second exception to the production area effluent limitation provides for a voluntary alternative performance standard. SR at 18, citing 40 C.F.R. § 412.31(a)(2). In order to establish such a standard, “the CAFO owner must submit a technical analysis showing that the application of site-specific technologies result[s] in a quantity of pollutants discharged from the production area equal [to] or less than the quantity of pollutants that would be discharged under the BPT option. . . .” SR at 18; *see* 40 C.F.R. §§ 412.31(a)(2), 412.32 (a), 412.33(a); Att. B. at 7271-72. The technical analysis must include such information as daily inputs to and outputs from the storage system, predicted annual overflow volume, site-specific pollutant data based on representative sampling and analysis, and the predicted annual average discharge of pollutants. SR at 18, citing 40 C.F.R. § 412.31(a)(2)(i); *see* 40 C.F.R. §§ 412.32 (a), 412.33(a); Att. B. at 7272.

Under Subpart C, the NSPS for the production area “is the same as BPT, BCT, and BAT.” SR at 18, citing 40 C.F.R. § 412.35(a); *see* Att. B at 7272.

Subpart D: Swine, Poultry, and Veal Calves. Subpart D addressed swine, poultry, and veal calves and established the effluent limitation attainable through application of BPT, BCT, and BAT for the production area: “no discharge of manure, litter, or process wastewater pollutants into waters of the U.S.” SR at 17; *see* 40 C.F.R. §§ 412.43(a)(1), 412.44(a), 412.45(a).

The Agency noted that the limitation includes two exceptions. SR at 17. “The first exception arises when a rainfall event causes an overflow of wastewater, manure, or litter, and the CAFO’s production area is designed, constructed, operated, and maintained to contain all the manure, litter, and process wastewater including the runoff and the direct precipitation from a 25-year, 24-hour rain fall event.” SR at 17; *see* 40 C.F.R. §§ 412.43(a)(1), 412.44(a), 412.45(a). To claim this first exception, the CAFO must conduct regular visual inspections of the production area, correct identified deficiencies as soon as possible, employ a depth marker in all open surface liquid impoundments, properly handle animal mortalities, maintain records documenting compliance with these requirements, and keep records regarding the design of storage structures and any overflows. SR at 17-18, citing 40 C.F.R. § 412.37(a), (b).

The second exception to the production area effluent limitation provides for a voluntary alternative performance standard. SR at 18, citing 40 C.F.R. § 412.31(a)(2). In order to establish such a standard, “the CAFO owner must submit a technical analysis showing that the application of site-specific technologies result[s] in a quantity of pollutants discharged from the production area equal [to] or less than the quantity of pollutants that would be discharged under the BPT option. . . .” SR at 18; *see* 40 C.F.R. §§ 412.31(a)(2), 412.43(a)(1), 412.44(a), 412.45(a); Att. B. at 7273. The technical analysis must include such information as daily inputs to and outputs from the storage system, predicted annual overflow volume, site-specific pollutant data based on representative sampling and analysis, and the predicted annual average discharge of pollutants. SR at 18, citing 40 C.F.R. § 412.31(a)(2)(i); *see* 40 C.F.R. §§ 412.43(a)(1), 412.44(a), 412.45(a); Att. B. at 7273.

The Agency stated that, although Subpart C establishes an NSPS for the production area that “is the same as BPT, BCT, and BAT,” Subpart D establishes an NSPS that differs from

those standards. SR at 18. Under the 2003 rule, “the production area NSPS effluent limitation for Subpart D CAFOs was no discharge.” SR at 18; *see* Att. B. at 7273. A facility fulfilled the “no discharge” requirement if it was “designed, constructed, operated, and maintained to contain all manure, litter, and process wastewater including the runoff and direct precipitation from a 100-year, 24-hour rainfall event” and also complies the same additional measures applicable under Subpart C. SR at 18-19; *see* Att. B at 7273-74 (§§ 412.46(a), 412.47 (2003)).

The Agency stated that the Subpart D NSPS “was successfully challenged in Waterkeeper on the grounds that it did not contain adequate support for the 100-year, 24-hour rainfall event option and the alternative performance standards.” SR at 19, citing Waterkeeper, 399 F.3d at 520-21. In 2008, USEPA amended the NSPS for Subpart D CAFOs in response to the Waterkeeper decision. SR at 19; *see* Att. D at 70459-60 (New Source Performance Standards for Subpart D Facilities). Although the effluent limitation remained “no discharge,” the amended rule provided that “subpart D CAFOs no longer have the alternative performance standard or 100-year, 24-hour rainfall event options.” SR at 19; *see* Att. D. at 70459-60, 70485 (§ 412.46(a)(1)). However, the 2008 rule added language “that allows CAFOs using an open surface manure storage structure to request site specific BMP effluent limitations that incorporate the no discharge requirement.” SR at 19, citing Att. D at 70459, 70485 (§ 412.46(a)(1)). This site-specific limitation must be based on a technical evaluation of the storage structure addressing specified elements. SR at 19; *see* Att. D at 70485-86 (§ 412.46(a)(1)(i-vi)). “Facilities designed, constructed and maintained consistent with the results of the technical evaluation, that maintain the necessary records, conduct the required visual inspections, implement necessary corrective action, and properly handle mortalities will be in compliance with the effluent limitation of no discharge.” SR at 19-20, citing 40 C.F.R. §§ 412.37(a, b), 412.47(a, b); *see* Att. D at 70485-86.

Land Application Area Effluent Limitations. Part 412 does not establish effluent limitations for the land application area of horse and sheep CAFOs under Subpart A or duck CAFOs under Subpart B. SR at 20, n.16.

For all Subpart C and D CAFOs, however, “[t]he effluent limitations and NSPS for the land application area are the same. . . .” SR at 20. Part 412 requires that CAFOs performing land application of manure, litter, and process wastewater must develop and implement best management practices (BMP) for doing so. SR at 20, citing 40 C.F.R. § 412.4(c). Chief among BMPs is developing and implementing an NMP “that achieves realistic crop production goals while minimizing nitrogen and phosphorus movement to surface waters.” SR at 20; *see* 40 C.F.R. § 412.4(c)(1) (Nutrient Management Plan). The Agency stated that, in effect, “meeting the effluent limitation for the land application area requires CAFOs to develop adequate NMPs.” SR at 20. Specified elements of an NMP include determination of application rates in compliance with technical standards, sampling and analysis of manure and soil, equipment inspection, and setbacks. SR at 20-21, citing 40 C.F.R. § 412.4(c)(2-5).

Nutrient Management Plans (NMPs).

The 2003 rule added Section 122.42(e), which established CAFO permit requirements including developing and implementing an NMP addressing nine specified elements, creating

and maintaining records, establishing conditions on transferring manure or wastewater, and annual reporting. SR at 21; *see* Att. B at 7268-69 (§ 122.42(e)(1-4)). The Agency noted that, although NMPs are the basis of a CAFO's effluent limitations for land application areas, these provisions "address discharges that can originate either from production areas or from land application areas." Att. D at 70438; *see* SR at 22. The Agency stated that "USEPA has required that all permitted facilities develop an NMP, even if these facilities do not land apply." SR at 22.

The 2003 rule provided that CAFOs must submit "certification that a nutrient management plan has been completed and will be implemented upon the date of permit coverage." Att. B at 7265 (§ 122.21(i)(1)(x)); *see* SR at 22. The court in Waterkeeper "held that the regulations violated the CWA because they failed to provide the permitting authority review of NMPs, failed to require that the terms of the NMP be included in the permit, and violated the CWA's public participation requirement." SR at 22, citing Waterkeeper, 399 F.3d at 498-504. The court determined that "the 2003 rule did nothing to ensure that CAFOs developed satisfactory NMPs or to ensure compliance with effluent limitations associated with land application." SR at 22, citing Waterkeeper, 399 F.3d at 502-03. The Agency stated that USEPA responded to the Waterkeeper decision by amending the rule to require that all CAFOs applying for a permit submit an NMP. SR at 22-23; *see* Att. D at 70480 (§ 122.21(i)(1)(x)). The Agency stated that this submission allowed the public an opportunity to comment on the NMP and the permitting authority an opportunity to review the effluent limitations in it. SR at 23.

The Agency stated that USEPA also responded to the Waterkeeper decision by adding general permitting provisions in section 122.23(h). SR at 23; *see* Att. D at 70481. The Agency noted that the CAFO general permit does not contain an NMP because the general permit covers multiple facilities and the NMP is a facility specific plan. Under Section 122.23(h), when a CAFO submits a notice of intent (NOI) to discharge under a general permit, the permitting authority is required to review the notice to ensure that it contains an NMP meeting the requirements of section 122.42(e) and Part 412. SR at 23; *see* Att. D at 70481 (§ 122.23(h)(1)). If the NOI is complete, a second notice and comment period begins. SR at 23; *see* Att. D at 70481. After addressing all significant comments, if coverage is granted, the terms of the NMP must be incorporated into the general permit." SR at 23; *see* Att. D at 70481 (§ 122.23(h)(1)).

Terms of NMPs. The Agency stated that, after USEPA's 2008 amendments, "all CAFO NPDES permits must require compliance with all the terms of the CAFO's NMP." SR at 23, citing 40 C.F.R. § 122.42(e)(5). USEPA stated that it promulgated Section 122.42(e)(5) "to identify the minimum terms of an NMP to be included in a CAFO's NPDES permit as enforceable requirements of the permit." Att. D at 70443 (Terms of the NMP To Be Included in the Permit); *see* SR at 23. Specifically, the NMP includes information, protocols, best management practices, and other necessary conditions such as "what the CAFO operator would be required to do to properly implement its NMP and determinative conditions upon which such actions are based." Att. D at 70443; *see* SR at 24. Under Section 122.42(e)(5), NMP terms must include fields available for land application, properly-developed field-specific rates of application, and any timing limitations on land application. Att. D at 70444, 70483; *see* SR at 34. USEPA explained that each field available for land application is a term of the NMP "because the field-specific information must be reviewed by the permitting authority and the

public to determine the appropriate conservation practices and rates of application.” SR at 24, citing Att. D at 70444.

Application Rates. The 2008 rule amendments provide CAFO owners and operators with the option of a linear approach or a narrative approach for determining proper land application rates. SR at 24, citing 40 C.F.R. § 122.42(e)(5)(i, ii). Under either approach, the owner or operator for each field and for every year of the permit must make projections including “the crops planted, the crop rotation, amount of nitrogen and phosphorus the crops needs, expected yields, amounts of nitrogen and phosphorus to be land applied, and the amounts of manure, litter and process wastewater that will be applied.” SR at 25, citing Att. D at 70444. The Agency noted that the projected amount of livestock waste to be land applied is not a term of the permit under either approach “because these projected amounts must be adjusted at least once a year.” Att. D at 7044; *see* SR at 25, n.17.

NMP Modifications. The Agency stated that “[t]he Waterkeeper court held that the NPDES permit must incorporate the terms of the NMP” so that modification of the NMP could trigger permit modification. SR at 27, citing Waterkeeper, 399 F.3d at 502. The Agency stated that USEPA promulgated Section 122.42(e)(6) in 2008 to explain when NMP modification requires permit modification. SR at 28; *see* Att. D at 70484-85. Under Section 122.42(e)(6), CAFO owners or operators first submit proposed changes in their NMPs and the permitting authority determines whether the change modifies the NMP. SR at 28; *see* 40 C.F.R. § 122.42(e)(6)(ii). If the proposed modification substantially changes an NMP term, the permit must be modified by following the same process as when first incorporating the terms of the NMP into the permit. SR at 28, citing 40 C.F.R. § 122.42(e)(6)(ii)(B).

Illinois Environmental Protection Act

The Agency stated that “[t]he General Assembly acknowledged that federal law regulates the discharge of contaminants, and that it would be inappropriate and misleading to issue permits which are contrary to the conditions and terms required by federal law.” SR at 30, citing 415 ILCS 5/11(a)(4) (2012). The Agency also noted the legislative finding “that it was in the interest of the People of the State of Illinois to secure federal approval to implement the NPDES program, to give the Board authority to adopt such regulations, and to give the Agency authority to adopt such procedures as would enable the State to secure federal approval to issue NPDES permits.” SR at 30, citing 415 ILCS 5/11(a)(7), (b) (2012).

The Agency stated that that Act prohibits the “discharge of any contaminants into the environment in any State so as to cause . . . water pollution in Illinois.” SR at 30, citing 415 ILCS 5/12(a) (2012). The Agency further stated that the Act “prohibits any person from causing, threatening or allowing the discharge of any contaminant into the waters of the State, into waters to any sewage works, into any well, or from any point source without an NPDES permit or in violation of the terms or conditions of the NPDES permit.” SR at 30, citing 415 ILCS 5/12(f) (2012). The Agency also noted that Section 12(f) of the Act prohibits “a discharge that violates any Board regulation or order.” SR at 30, citing 415 ILCS 5/12(f) (2012). The Agency stated that “[a] permit under section 12(f) will not be required for discharges that do not require a permit under the CWA.” SR at 30, citing 415 ILCS 5/12(f) (2012).

The Agency stated that, under Section 13(a) of the Act, the Board has “authority to adopt regulations to promote the purposes of the Act and implementing an NPDES program.” SR at 30, citing 415 ILCS 5/13(a) (2012). The Agency further stated that “[t]he Board is required to adopt requirements, standards, and procedures necessary or appropriate to enable the State to implement and participate in the NPDES permit program.” SR at 30-31, citing 415 ILCS 5/13(b)(1) (2012). The Agency indicated that “[t]he regulations adopted by the Board must be consistent with the CWA and federal regulations.” SR at 31, citing 415 ILCS 5/13(b)(1) (2012).

Agency’s Development of Proposal

The Agency stated that “[t]he Board first adopted agriculture-related pollution regulations in 1974.” SR at 31, n. 18, citing In re Chapter 5: Agriculture-Related Pollution, Section 1: Livestock Waste Regulations, R 72-9 (Nov. 14, 1974). These regulations are now codified in Parts 501-504 of Title 35 of the Illinois Administrative Code. The Agency sought to amend only Parts 501 and 502 and to repeal Part 504. SR at 31, n.19.

The Agency stated that, although “the Board’s current regulations require that all livestock management or waste-handling facilities comply with the CWA, the rules have not been updated to incorporate the changes made to the federal rule in 2003 and 2008.” SR at 32, citing 35 Ill. Adm. Code 501.401. The Agency added that it “did not immediately propose a rulemaking to incorporate the 2003 and 2008 changes because of the pending litigation after both federal rulemakings.” SR at 32; *see id.* at 91-92 (Outreach).

The Agency stated that, in order to conform Illinois’ regulations to the 2003 and 2008 federal rules, it convened a work group of various affected entities to assist in drafting a rulemaking proposal. SR at 91. The work group first met on December 22, 2009, and it held at least five additional meetings during 2010. *Id.*, citing Att. N (work group attendance records); *see Sofat Test.* at 5. The Agency submitted a draft proposal to the work group and received a number of responsive comments. SR at 91-92. On December 1, 2010, the Agency submitted a draft rulemaking proposal to USEPA. SR at 92; Agency Att. 3 at 1 (¶2); *see* Agency Att. 6a. On January 14, 2011, the Agency received USEPA’s comments on the draft proposal. SR at 92; Agency Att. 3 at 1 (¶2); *see* Agency Att. 6b. The Agency then re-convened the work group to discuss changes to the proposal necessitated by USEPA’s comments. SR at 92. On May 17, 2011, the Agency submitted a revised draft rulemaking proposal to USEPA and the members of the work group. SR at 92; Agency Att. 3 at 1 (¶2); *see* Agency Att. 7a. On June 3, 2011, the Agency received USEPA’s comments on the revised draft proposal. Agency Att. 3 at 1 (¶2); *see* Agency Att. 7b. The Agency reported that, during the summer of 2011, it met with affected entities “to attempt to resolve any remaining issues with the draft regulations.” SR at 92. The Agency reported that “[w]hile consensus could not be achieved on all issues, this proposal to the Board is the culmination of those efforts.” *Id.*; *see Sofat Test.* at 5. The Agency also reported that it met with USEPA regarding USEPA’s remaining comments. *Id.* The Agency noted that it has not accepted “all of USEPA’s initial recommendations, but USEPA has indicated that the Agency’s proposal is federally approvable.” Agency Att. 3 at 1 (¶2); *see* Tr.1 at 74.

The Agency stated that its proposal intends to make the Board's rules "conform to the revised federal NPDES regulations and to adopt the technical standards necessary to complete the Illinois CAFO NPDES program." SR at 32. The Agency claimed that the "amendments are necessary to maintain federal delegation of the NPDES program." *Id.*

The Agency stated that its proposal first intends "to update the existing regulations so that they are consistent with, and as stringent as, the current federal CAFO regulations." SR at 32. The Agency claimed that failing "to update the Board's CAFO regulations could result in withdrawal of federal delegation of the NPDES program itself to the State of Illinois." *Id.* The Agency noted that, "[w]hen a change in USEPA's regulations requires a change in state law to maintain consistency, federal law gives delegated states one year to update their NPDES regulations to be consistent with the federal changes, unless a statutory change is required, in which case a state is given two years to comply." *Id.*, citing 40 C.F.R. § 123.62(e). The Agency states that, "[o]n December 22, 2008, USEPA Region 5 notified Illinois EPA that Illinois' CAFO regulations provide 'exemptions from NPDES permit requirements which were eliminated from federal law in February 2003.'" SR at 32-33, citing Att. H (USEPA letter). The Agency further stated that, "[o]n March 27, 2008, Illinois Citizens for Clean Air & Water submitted a petition to the USEPA Administrator, asking USEPA to initiate proceedings to withdraw Illinois' NPDES permit program." SR at 33. The Agency added that, "[i]n September 2010, USEPA completed its initial investigation, finding among other things that Illinois EPA failed to revise its rules to be consistent with federal CAFO rules." *Id.*

The Agency stated that the second purpose of its proposal "is to establish the state technical standards which are mandated by the federal rules, but not prescribed for the states." SR at 33; *see Heacock Test.* at 5. The Agency further stated that, in December 2008, "USEPA indicated that 'Illinois still needs to establish standards that address the rate at which manure, litter, and process wastewater may be applied on crop or forage land where the risk of phosphorus transport is high, as well as standards for land application on frozen soil and snow.'" SR at 33, citing 40 C.F.R. § 412.4(c)(1), (c)(2), Att. H. The Agency indicated that its proposed amendments "develop the required technical standards that were mandated in the 2003 and 2008 CAFO rule, but that have been left to Illinois to develop and implement." SR at 33. The Agency claimed that the proposed standards "tailor the federal requirements to the unique environmental, water quality, and land use conditions in Illinois" and also allow "the Board to take into account unique factors related to the types, sizes and characteristics of Illinois CAFOs." *Id.*

The Agency reported that it "did not perform any new studies, nor did the Agency contract with any outside entities to perform any studies for the development of this rulemaking proposal." SR at 94. Because there was no performance of such studies, the Agency stated that "there is no underlying data" required to be made available to members of the public under applicable requirements of the Illinois Administrative Procedure Act. *Id.*, citing 5 ILCS 100/5-40(b)(3.5) (2012).

SECTION-BY SECTION SUMMARY OF AGENCY'S ORIGINAL PROPOSAL

As noted above under "Procedural History," on June 18, 2012, the Agency pre-filed testimony in support of its rulemaking proposal by three witnesses, Mr. Sofat, Mr. Yurdin, and

Mr. Heacock, each of whom responded during the first hearing to pre-filed questions elicited by his testimony. Mr. Sofat manages the Agency's Division of Water Pollution Control. SR at 92. This duty "includes supervision of the Field Operations, Permitting, Compliance Assurance, Surface Water, and Water Quality Standards Sections." *Id.* at 92-93. Mr. Yurdin "manages the field staff in the Division of Water Pollution Control's seven Field Offices, five of which house CAFO inspectors." *Id.* at 93. Mr. Heacock "supervises the unit within the Division of Water Pollution Control Permits Section that reviews and issues permits for CAFOs and coverage under the CAFO general permit to individual CAFOs." *Id.*

Part 501: General Provisions

The Agency stated that, "[u]nless specified otherwise in the Part, Part 501 applies to all livestock facilities regardless of whether they must obtain an NPDES permit." TSD at 1; *see* 35 Ill. Adm. Code 501. The Agency's "revisions are intended to meet the federal rule requirements and clarify provisions adopted under 40 CFR Part 122 that affect all livestock operations." TSD at 1.

Subpart A: Authority and Policy

Subpart A now consists of two sections. Section 501.101 addresses the Board's authority to adopt rules, and Section 501.102 states the policy and purpose underlying those rules. 35 Ill. Adm. Code 501.101, 501.102; *see* SR at 34. The Agency did not propose to amend either of these two sections. *See* Prop. 501 at 3-4.

Section 501.103: Organization of this Chapter.

The Agency proposed to add Section 501.103, which "explains the organization of Parts 501-503 and 506" and briefly summarizes the substance of those Parts. SR at 34; *see* Prop. 501 at 3-4. The Agency had proposed undesignated paragraphs corresponding to those Parts, but the Board has designated them as subsections (a) – (d) for clarification.

Section 501.104: Severability.

The Agency proposed to add a Section 501.104 regarding the severability of any provision found invalid. The Agency noted that this language is now codified at Section 504.102, which the Agency proposed to repeal. SR at 34; *see* Prop. 504 at 1.

Subpart B: Definitions and Incorporations.

Subpart B now consists of definitions and incorporations by reference. SR at 34; *see* 35 Ill. Adm. Code 501.200-501.380. The Agency proposed a number of amendments to this subpart. *See* Prop. 501 at 4-12.

Section 501.200: Incorporations by Reference.

Subsection (a). Section 501.200(a) now incorporates by reference two sets of materials available from the American Society of Agricultural Engineers (ASAE). 35 Ill. Adm. Code 501.200(a). The Agency first proposed to update information for ASAE. Prop. 501 at 4; *see* SR at 34; Atts. P, Q.

The Agency also proposed to incorporate by reference six additional sets of materials. SR at 34. The Board has added contact information to a number of these incorporations to comply with the APA. *See* 5 ILCS 100/5-75 (2012). In a pre-filed question to the Agency, the Board noted that the proposed incorporation of Bulletin 811 “notes a revision on January 15 without referring to a year.” Agency Att. 1 at 5 (¶13). The Board asked whether to include a reference to 2011, and the Agency concurred. *Id.* In its order below, the Board modifies the Agency’s proposal by including the year 2011 in the reference to the revision in the incorporation of Bulletin 811.

The Board also has proposed to incorporate three other sets of materials: first, the precipitation frequency atlas relied upon in two definitions of precipitation events; second, the federal regulation on which the Board bases its proposed definition of “Revised Universal Soil Loss Equation;” and third, the field handbook addressing design of storage structures under Section 502.840. The Board has added these incorporations to clarify the rules and to comply with the APA. *See* 5 ILCS 100/5-75 (2012).

Subsection (b). Section 501.200(b) now establishes that “[t]his Section incorporates no later editions or amendments” of materials incorporated by reference, and the Agency did not propose to amend the provision. 35 Ill. Adm. Code 501.200(b); *see* Prop. 501 at 5.

Section 501.201: Definitions.

Subsection (a). Section 501.201 now provides in its entirety that, “[e]xcept as hereinafter stated and unless a different meaning is clear from its context, the definitions of terms used in this Chapter [Subtitle E, Chapter I] shall be the same as those used in the Act and 35 Ill. Adm. Code: Subtitle C, Chapter I.” 35 Ill. Adm. Code 501.201; *see* 35 Ill. Adm. Code 301-312 (Board Subtitle C, Chapter I water pollution regulations). The Agency’s proposal sought to designate this provision as subsection (a). Prop. 501 at 5.

Subsection (b). The Agency proposed to add a new subsection (b) providing in its entirety that “[t]he definitions contained in this Subpart are applicable to 35 Ill. Adm. Code Parts 501, 502 and 503.” Prop. 501 at 5; *see* SR at 34.

Section 501.223: Animal Confinement Area.

The Agency proposed the same definition of “animal confinement area” as that included in the federal definition of “production area.” *See* SR at 35. Specifically, the Agency proposed that the term “[a]nimal confinement area includes but is not limited to open lots, housed lots, feedlots, confinement houses, stall barns, free stall barns, milkrooms, milking centers, cowyards,

barnyards, medication pens, walkers, animal walkways and stables.” Prop. 501 at 6; *see* 40 C.F.R. § 122.23(b)(8).

Section 501.236: Chemicals and Other Contaminants.

Stating that this term is employed in technical standards proposed in Part 502, the Agency sought to define “chemicals and other contaminants.” Although the language is not derived from the federal rules (SR at 35), the Agency proposed a definition providing in its entirety “[a]ntibiotics, hormones, feed additives, pesticides, hazardous and toxic chemicals, petroleum products and by-products, other chemical products and by-products, and the residues and containers thereof.” Prop. 501 at 6.

Section 501.238: Concentrated Animal Feeding Operation (CAFO).

The Agency proposed to add a definition of “concentrated animal feeding operation (CAFO)” that is “consistent with the federal rule.” SR at 34. Specifically, the Agency proposed that a “CAFO” is “[a]n AFO that is defined as a Large CAFO pursuant to Section 502.103 or as a Medium CAFO pursuant to Section 502.104, or that is designated as a CAFO pursuant to Section 502.106.” Prop. 501 at 6; *see* 40 C.F.R. § 122.23(b)(2) (defining CAFO).

In a pre-filed question to the Agency, the Board noted that the federal definition also includes language providing that “[t]wo or more AFOs under common ownership are considered to be a single AFO for the purposes of determining the number of animals at an operation, if they adjoin each other or if they use a common area or system for the disposal of wastes.” Agency Att. 1 at 5 (¶14). The Board further noted that “language similar to this is now included as subsection (b) of the definition of ‘AFO’ at Section 501.225.” *Id.* The Board sought the Agency’s comment on the difference between the federal definitions and its own proposal. *Id.* The Agency responded that

[t]he language that the Board quotes above explains how to count the number of animals at AFOs. Initially, when the federal rules were adopted in the 1970s, the federal definition of AFO included language virtually identical to the language the Board now points out. Shortly after the federal rule was adopted, the Board included this language in the definition of AFO in section 501.222. In preparing its regulatory proposal, the Agency did not see a need to modify the definition of AFO by moving the language from the AFO definition to the CAFO definition. Such a change is not necessary and would not have a substantive affect (sic) on the proposed rule. *Id.*

Accordingly, in its order below, the Board does not modify the definition of CAFO originally proposed by the Agency.

Section 501.241: CWA.

Section 501.241 now defines “CWA” as “Federal Water Pollution Control Act (also known as the Clean Water Act), as amended, 33 U.S.C. 1251 et seq., Public Law 92-500, enacted

by the Congress October 18, 1972, as amended by Public Law 95-217, enacted December 27, 1977, as amended.” 35 Ill. Adm. Code 501.241. The Agency proposed to replace the reference to the Federal Water Pollution Control Act “to clean up the definition.” SR at 35. Specifically, the Agency proposed to strike the entire definition and replace it with “[t]he Clean Water Act, as amended, 33 U.S.C. 1251 *et seq.*” Prop. 501 at 6.

Section 501.242: Dry Lot.

The Agency proposed to add a definition of “dry lot” that is “consistent with the federal rule.” SR at 34. Specifically, the Agency proposed that a “dry lot” is “[a] facility for growing ducks with a dry litter floor cover and no access to swimming areas.” Prop. 501 at 6; *see* 40 C.F.R. 412.21(a).

Section 501.244: Erosion Factor T.

The Agency sought to define “Erosion Factor T” as an estimate of the maximum average annual rate of soil erosion by water in tons per acre per year. Prop. 501 at 6. Erosion Factor T is provided in United States Department of Agriculture Natural Resources Conservation Service (NRCS) soil surveys. Prop. 501 at 6; *see* TSD at 61.

In a pre-filed question to the Agency, the Board noted that this proposed definition and the TSD refer to USDA soil surveys listing Erosion Factor T by soil types. Agency Att. 1 at 5 (¶15); *see* TSD at 61. The Board sought the Agency’s comment on whether the surveys should be incorporated by reference in Section 501.200. Agency Att. 1 at 5 (¶15). The Agency responded that county soil survey information is available at the USDA-NRCS Soil Data Mart website at <http://soildatamart.nrcs.usda.gov/> for Illinois counties. *Id.* at 5-6. However, that website reported that “Soil Data Mart downloads have been deactivated as of July 16, 2013. Soil Survey data may now be downloaded from Web Soil Survey <http://websoilsurvey.sc.egov.usda.gov/app/HomePage.htm>. Complete deactivation of this Soil Data Mart site, including reports, will occur around September, 2013.”

The Board proposes revisions to this definition for clarity and adds a Board Note as to where information can be obtained. The Illinois Administrative Procedure Act (APA) requires that, in incorporating by reference, the Board “shall maintain a copy of the referenced rule, regulation, standard, or guideline. . . .” 5 ILCS 100/5-75(c) (2012). The Board requests that the Agency and other participants comment on this proposal and whether the Web Soil Survey or any other material that may be named as an alternative is capable of incorporation by reference under the APA.

Section 501.252: Frozen Ground.

The Agency sought to define “frozen ground” as “[s]oil that is frozen anywhere between the first 1/2 inch to 8 inches of soil as measured from the ground surface.” Prop. 501 at 7. The Agency intended “to provide clarity and specificity to the requirements for surface application in winter. . . .” TSD at 62. The Agency further argued that limits of 1/2 inch to eight inches from the soil surface “are proposed such that the application zone and no other soil layer

is considered.” *Id.* The Agency claimed that other Midwestern states have enacted similar requirements and that its proposed definition is similar to the restriction adopted in Wisconsin. *Id.*, citing WIS. ADMIN. CODE § NR 243.14(6-8); *see also* WIS. ADMIN. CODE § NR 243.03(24) (defining “frozen ground”); Tr.1 at 63-64.

The Agricultural Coalition pre-filed a question asking the Agency why it opted to base this definition on Wisconsin regulations rather than those of a state such as Iowa with a “more similar climate and agricultural environment.” Agency Att. 2 at 13 (¶14). The Agency first expressed the belief that “the rationale for using a 1/2 to 8 inch depth for measuring frozen ground is reasonable and practical. This depth matches the crop root zone and application depth of most equipment that would be used in winter application. Further, the frozen soil condition at this depth can be readily determined by a producer.” *Id.* at 13-14; *see* Tr.1 at 64. The Agency also argued that, because Iowa regulations “severely restrict application to frozen ground,” the proposed definition is consistent with Iowa requirements. Agency Att. 2 at 14, citing IOWA ADMIN. CODE r. 567-65.3(4) (2012) (Surface application of liquid manure on frozen or snow-covered ground).

Section 501.253: Grassed Waterway.

The Agency sought to define “grassed waterway” as “[a] natural or constructed waterway or outlet shaped or graded and established in suitable vegetation as needed for the conveyance of runoff from a field, diversion or other structure.” Prop. 501 at 7. The Agency argued that a definition of this term “clarifies those areas of a field that are subject to setbacks or other prohibitions in the proposed Subtitle E regulations.” TSD at 64. The Agency added that the proposed definition is based on NRCS Standard 412. *Id.*; *see* Att. O at 4.

Section 501.254: Groundwater.

The Agency sought to define “groundwater” as “[u]nderground water which occurs within the saturated zone and geologic materials where the fluid pressure in the pore space is equal or greater than atmospheric pressure.” Prop. 510 at 7; *see* 415 ILCS 5/3.210 (2012).

Section 501.261: Incorporation.

The Agency sought to define “incorporation” as “[a] method of land application of livestock waste in which the livestock waste is thoroughly mixed or completely covered with the soil within 24 hours. Any ponded liquid livestock waste remaining on the site after application is not considered to be thoroughly mixed or completely covered with the soil.” Prop. 501 at 7. The Agency elaborated that it proposed to define this term in order to specify this method and distinguish it “from those methods that do not mix the manure with the soil at the time of application.” TSD at 60. The Agency argued that “[i]ncorporation provides for protection from runoff primarily and secondarily inhibits the escape of volatile compounds of the manure to the atmosphere that may cause objectionable odor.” *Id.* The Agency further argued that, compared to other methods and considering timing, incorporation substantially reduces phosphorus loss from application fields. *Id.*, citing B.L. Allen & A.P. Mallarino, *Effect of Liquid Swine Manure*

Rate, Incorporation, and Timing of Rainfall on Phosphorus Loss with Surface Runoff, 37 J. ENVTL. QUALITY 125 (2008).

Section 501.263: Injection.

The Agency sought to define “injection” as “the placement of livestock waste 4 to 12 inches below the soil surface in the crop root zone using equipment specifically designed for that purpose and where the applied material is retained by the soil.” Prop. 501 at 7. The Agency elaborated that, like incorporation, it proposed to define this term in order to specify this method and distinguish it “from those methods that do not mix the manure with the soil at the time of application.” TSD at 61. The Agency added that “injection is one method of application that provides a simultaneous and proper coverage of the manure with soil.” *Id.* The Agency claimed that injection to the root zone benefits the crop and reduces the possibility of runoff. *Id.*, citing B.L. Allen & A.P. Mallarino, *Effect of Liquid Swine Manure Rate, Incorporation, and Timing of Rainfall on Phosphorus Loss with Surface Runoff*, 37 J. ENVTL. QUALITY 125 (2008).

Section 501.267: Land Application Area.

The Agency proposed to add a definition of “land application area” that is “consistent with the federal rule.” SR at 34. Specifically, the Agency proposed that “land application area” is “[l]and under the control of an Animal Feeding Operation owner or operator, whether it is owned, rented, or leased, to which livestock waste from the production area is or may be applied.” Prop. 501 at 7; *see* 40 C.F.R. § 122.23(b)(3) (definition). The Agency noted that, “[w]hen incorporating federal requirements in the proposed rule, the Agency used the phrase ‘livestock waste’ where the federal rules used [the] phrase ‘manure, litter, and process wastewater.’” SR at 35-36.

Section 501.295: Livestock Waste.

The Agency stated that the Agency uses the phrase ‘livestock waste’ where “the federal rule uses [the] phrase ‘manure, litter, and process wastewater.’” SR at 35-36. The Agency sought “to combine the federal terminology into the existing term ‘livestock waste.’” Agency Att. 2 at 15 (¶16); *see* Tr.1 at 65-66. During the first hearing, Mr. Sofat testified that the Agency proposed this definition “for the ease so that people who read it can understand and people who are implementing it can understand.” Tr.1 at 65-66. The Agency did not intend to either expand or narrow the scope of the federal definition. Tr.1 at 66. The Agency did not intend to bring producers under the authority of the Agency’s Bureau of Land pursuant to land pollution regulations. *Id.*

The Agricultural Coalition pre-filed a question asking the Agency how it intended to “interpret ‘contaminated soils’ in the context of this definition and its regulation of CAFOs.” Agency Att. 2 at 15 (¶16). The Agency responded that

[t]he phrase ‘sludge and contaminated soils from storage structures’ in the proposal does not expand the current definition of livestock waste under Subtitle E but clarifies its meaning by providing a non-exhaustive list of examples of the

meaning of the phrase ‘other materials polluted by livestock’ in the existing definition. The phrase ‘contaminated soils from storage structures’ generally refers to soils in earthen lagoons which may be removed from the lagoon along with manure, litter and process wastewater and should be disposed of in the same manner as other livestock waste. *Id.* at 15-16.

Section 501.305: Man-made.

The Agency proposed to amend this definition to provide in its entirety “[c]onstructed by man.” Prop. 501 at 8. The Agency claimed that, in order to be consistent with federal regulations, it proposed to strike the requirement that the Agency determine the original use or purpose of the structure. SR at 35; TSD at 1. The Agency cited USEPA guidance that “[m]an-made device means a conveyance constructed by humans through which manure, litter, or process wastewater is transported. Man-made device includes, among other things, pipes, ditches, and channels. If human action as involved in creation of the conveyance, it is man-made even if natural materials were used to form the conveyance.” TSD at 1.

Section 501.310: Man-made Ditch.

The Agency proposed to amend this definition to provide in its entirety “[a] discrete channel or fissure excavated in the earth.” Prop. 501 at 8. The Agency claimed that, in order to be consistent with federal regulations, it proposed to strike the requirement that the Agency determine the original purpose of the structure. SR at 35; TSD at 1. The proposed amendments also sought “to eliminate the exclusion of vegetative filters and disposal areas from the definition. . . .” TSD at 1.

Section 501.312: Manure.

The Agency proposed to add a definition of “manure” that is “consistent with the federal rule.” SR at 34. Specifically, the Agency proposed a definition providing in its entirety that “[m]anure includes animal excreta, bedding, compost and raw materials or other materials commingled with manure or set aside for disposal.” Prop. 501 at 8; *see* 40 C.F.R. § 122.23(b)(5) (defining “manure”).

Section 501.313: Manure Storage Area.

The Agency proposed the same definition of “manure storage area” as that included in the federal definition of “production area.” *See* SR at 35. Specifically, the Agency proposed that “[m]anure storage area includes but is not limited to lagoons, runoff ponds, storage sheds, stockpiles, under the house or pit storages, liquid impoundments, static piles, and composting piles.” Prop. 501 at 8; *see* 40 C.F.R. § 122.23(b)(8).

Section 501.325: Navigable Waters.

The Agency proposed to repeal the entire definition of “navigable waters” because the federal CAFO rule does not use the term. SR at 36; *see* Prop. 501 at 8-9. The Agency added that

the existing definition refers to “a federal definition of waters of the United States which has been repealed.” SR at 36. The Agency stated that “[t]he federal rule has changed ‘navigable waters’ to waters of the United States to refer to jurisdictional waters.” Agency Att. 1 at 3 (¶7). The Agency stated that its proposed amendments to Part 502 would employ the term “waters of the United States” in the place of “navigable waters” in order to be consistent with the federal rule. SR at 36; *see* Agency Att. 1 at 2-3 (¶7). In response to a question pre-filed by the Board, Mr. Yurdin stated that, because the two terms both “refer to the same jurisdictional waters under the CWA, there will be no implication from this change.” Agency Att. 1 at 3 (¶7).

Section 501.333: New Source.

The Agency proposed to add a definition of “new source” matching the definition in the federal rules. SR at 34, citing 40 C.F.R. § 122.2.

Section 501.343: Overflow.

The Agency proposed to add a definition of “overflow” that is “consistent with the federal rule.” SR at 34. Specifically, the Agency proposed a definition providing in its entirety that “overflow” refers to “[t]he discharge of livestock waste resulting from the filling of livestock waste storage structures beyond the point at which livestock waste or stormwater can no longer be contained by the structure.” Prop. 501 at 9.

Section 501.345: Owner/Operator

Section 501.345 now provides that “owner or operator” refers to “[a]ny person who owns, leases, controls, or supervises a livestock management facility or livestock waste-handling facility.” 35 Ill. Adm. Code 501.345. The Agency proposed to amend this definition “to include any person who operates a livestock management facility or livestock waste-handling facility.” SR at 35; Prop. 501 at 9-10. In addition, the Agency proposed to amend the section heading to “Owner / Operator.” Prop. 501 at 9.

Section 501.355: Pollutant.

The Agency proposed to amend the definition to refer also to “filter backwash” because that term is found in the federal definition. SR at 34-35, citing 40 C.F.R. § 122.2.; Prop. 501 at 10.

Section 501.357: Process Wastewater.

The Agency proposed to add a definition of “process wastewater” that is “consistent with the federal rule.” SR at 34.

Section 501.358: Production Area.

The Agency proposed to add a definition of “production area” encompassing the elements of the federal definition. SR at 35.

Section 501.359: Raw Materials Storage Area.

The Agency proposed the same definition of “raw materials storage area” as that included in the federal definition of “production area.” *See* SR at 35. Specifically, the Agency proposed that “[r]aw materials storage area includes, but is not limited to, feed silos, silage bunkers, and bedding materials stacks.” Prop. 501 at 10; *see* 40 C.F.R. § 122.23(b)(8).

Section 501.360: Revised Universal Soil Loss Equation.

The Agency proposed to repeal the definition of “settling basin” because the federal CAFO rules do not use the term. SR at 36; *see* Prop. 501 at 10.

The Board proposes in this section to add a definition of the term “Revised Universal Soil Loss Equation,” which calculates soil loss due to water erosion and is employed in the Board’s first-notice proposal. The Board based its proposed definition on the federal regulations and incorporated that source by reference in Section 501.200. The Board intends these amendments to clarify the rules and comply with the Illinois Administrative Procedure Act. The Board invites comment on both this proposed definition and its incorporation by reference.

Section 501.361: Saturated

As an initial matter, the Agency proposed adding this definition as Section 501.360. The Board proposes to add this definition as Section 501.361 to accommodate the definition of “Revised Universal Soil Loss Equation” above. The Agency proposed to define “saturated” as “soils where pore spaces are occupied by liquid such that additional inputs of water or liquid waste cannot infiltrate into the soil.” Prop. 501 at 10. The Agency stated that “[t]he definition describes soil conditions when infiltration of livestock waste into the soil is restricted. When infiltration of the liquid livestock waste into the soil is restricted, runoff of livestock waste from the land application area is expected to occur.” TSD at 61.

Section 501.363: Setbacks.

The Agency proposed to add a definition of “setbacks” that is “consistent with the federal rule.” SR at 34. Specifically, the Agency proposed a definition providing in its entirety that “setbacks” refer to “[a] specified distance from surface waters or potential conduits to surface waters where livestock waste may not be applied. Examples of conduits to surface waters include, but are not limited to, open tile intake structures, sinkholes, and agriculture well heads.” Prop. 501 at 11. The Agency claimed that the proposed definition is based on a need to establish distances “from land application areas to Surface Waters or those features that may act as conduits to those waters.” TSD at 60.

Section 501.373: Surface Land Application.

The Agency defined “surface land application” as “[a]pplication of livestock waste to the ground surface that is not incorporated or injected.” Prop. 501 at 11.

Section 501.377: Vegetative Buffer.

The Agency proposed to add a definition of “vegetative buffer” that is “consistent with the federal rule.” SR at 34. Specifically, the Agency proposed a definition providing in its entirety that “vegetative buffer” refers to a “narrow, permanent strip of dense perennial vegetation established parallel to the contours of the land and perpendicular to the dominant slope of the field for the purposes of slowing water runoff, enhancing water infiltration, and minimizing the risk of any potential nutrients or pollutants from leaving the field and reaching surface waters.” Prop. 501 at 11.

Section 501.378: Vegetative Fence Row.

The Agency proposed that “vegetative fence row” means a “[n]arrow, permanent strip of perennial vegetation established at the edge of a field that is a minimum of 15 feet wide. The vegetative fence row slows water runoff and enhances water infiltration thereby reducing the risk of pollutants leaving the field.” Prop. 501 at 11; *see* TSD at 62-63.

The Agency stated that it conducted a review of literature addressing the effectiveness of vegetative buffers. TSD at 63. The Agency determined that, “[b]ased on the review of this literature a 15 feet vegetative buffer zone provides significant load reduction of total suspended solids, total nitrogen and total phosphorus to surface waters of approximately 50 percent or greater.” TSD at 63, citing X.Y. Zhang, *et al.*, *A Review of Vegetated Buffers and a Meta-analysis of Their Mitigation Efficiency in Reducing Nonpoint Source Pollution*, 39(1) J. ENVTL. QUALITY 76-84 (2010); P.M. Mayer, S.K. Reynolds, M.D. McCutchen & T.J. Canfield, *Meta-Analysis of Nitrogen Removal in Riparian Buffers*, 36 J. ENVTL. QUALITY 1172-80 (2007); T.A. Dillaha, R.B. Reneau, S. Mostaghimi & D. Lee, *Vegetative filter strips for agricultural nonpoint source pollution control*, 32 TRANS. ASAE 513-19 (1989). The Agency argued that vegetative fence rows provide “protection of surface waters from livestock waste runoff from a winter (*i.e.*, frozen, ice or snow covered land) land application area.” TSD at 63. The Agency further argued that, when combined with other winter application practices, vegetative fence rows “will provide control and protection of surface water quality and aquatic life.” *Id.*

Section 501.379: Waste Containment Area.

In proposed new Section 501.358, the Agency sought to add a definition of “production area” based on the federal definition of the term and encompassing the part of an animal feeding operation that includes the waste containment area. Prop. 501 at 10; *see* 40 C.F.R. § 122.23(b)(8); *see also* 35 Ill. Adm. Code 501.225 (defining “animal feeding operation”). The Agency indicated that it proposed the same definition of “waste containment area” as that included in the federal definition of “production area.” *See* SR at 35. Specifically, the Agency proposed that “[w]aste containment area includes, but is not limited to, settling basins, and areas within berms and diversions which separate uncontaminated stormwater from livestock waste.” Prop. 501 at 11; *see* 40 C.F.R. § 122.23(b)(8).

Section 501.385: Wet Lot.

The Agency proposed to add a definition of “wet lot” that is “consistent with the federal rule.” SR at 34. Specifically, the Agency proposed that a “wet lot” is “[a] confinement facility for raising ducks which is open to the environment, has a small number of sheltered areas, and with open water runs and swimming areas to which ducks have free access.” Prop. 501 at 11-12; *see* 40 C.F.R. 412.21(a).

Section 501.390: 25-Year, 24-Hour Precipitation Event.

The Agency proposed to add a definition of “25-year, 24-hour precipitation event” that is “consistent with the federal rule.” SR at 34. Specifically, the Agency proposed that the term means “[t]he maximum 24-hour precipitation event with a probable recurrence interval of once in 25 years, as defined by the National Weather Service in NOAA [National Oceanic and Atmospheric Administration] Atlas 14 - Precipitation Frequency Atlas of the United States, Volume 2, Version 3.0 (2004), found at http://hdsc.nws.noaa.gov/hdsc/pfds/orb/il_pfds.html.” Prop. 501 at 12; *see* 40 C.F.R. 412.2(i); TSD at 61-62. The Agency indicated that the federal regulations refer to a 1961 National Weather Service (NWS) rainfall frequency atlas or “equivalent rainfall probability information” developed from it. *Id.*; *see* 40 C.F.R. § 412.2(i). The Agency argued that its proposed reference to a 2004 electronic NWS source “includes more recent data and is expected to be a more accurate representation of future precipitation trends. . . .” TSD at 62.

In a pre-filed question, the Board sought the Agency’s comment on whether this NOAA atlas should be incorporated by reference in Section 501.200. Agency Att. 1 at 6 (¶16). The Agency responded that it

did not include this source in the list of incorporations by reference, because rather than being a single document that could be reproduced in hard copy, it is an electronic tool for determining the storm event values at a particular location which requires the user to input a particular location. The Agency would have no objection if the Board felt it was appropriate to include this source in the list of incorporations by reference. *Id.*

The APA requires that, when incorporating by reference, the Board “shall maintain a copy of the referenced rule, regulation, standard, or guideline. . . .” 5 ILCS 100/5-75(c) (2012). Accordingly, the Board in its order below proposes to change this definition and to incorporate the actual document by reference in Section 501.200.

Section 501.395: 100-Year, 24-Hour Precipitation Event.

The Agency proposed to add a definition of “100-year, 24-hour precipitation event” that is “consistent with the federal rule.” SR at 34. Specifically, the Agency proposed that the term means “[t]he maximum 24-hour precipitation event with a probable recurrence interval of once in 100 years, as defined by the National Weather Service in NOAA Atlas 14 - Precipitation

Frequency Atlas of the United States, Volume 2, Version 3.0 (2004), found at http://hdsc.nws.noaa.gov/hdsc/pfds/orb/il_pfds.html.” Prop. 501 at 12; *see* 40 C.F.R. 412.2(i).

As noted above in the summary of the proposed definition of “25-year, 24-hour precipitation event,” the Board proposes to change this definition and to incorporate the actual document by reference in Section 501.200.

Subpart C: Operational Rules for All Livestock Management Facilities and Livestock Waste Handling Facilities.

The Agency proposed to expand the title of this subpart to “Operational Rules for All Livestock Management Facilities and Livestock Waste-Handling Facilities” in order “to reflect the applicability of the rule.” SR at 36; *see* Prop. 501 at 12; TSD at 1.

Section 501.401: Purpose and Scope of Operation Rules for Livestock Management Facilities and Livestock Waste-Handling Facilities.

Subsection (b). The Agency proposed to amend this subsection by adding an obligation that all facilities “determine whether they must obtain an NPDES permit.” SR at 36; *see* TSD at 2. The Agency elaborated that “[t]he obligation on the facility owner or operator is to determine if his or her operation performs so as to discharge and therefore needs an NPDES permit.” TSD at 2; *see* Tr.1 at 95. The Agency stated that this determination necessitates “a case-by-case evaluation by the CAFO owner or operator as to whether the CAFO discharges or proposes to discharge from its production area or land application area based on actual design, construction, operation, and maintenance.” *Id.*, citing 73 Fed. Reg. 70423 (Nov. 20, 2008); *see* 40 C.F.R. § 122.23(d)(1); Agency Att. 2 at 16 (¶17). The Agency argued that this evaluation should also consider factors such as past discharges and the occurrence of intermittent discharges. TSD at 2, citing 73 Fed. Reg. 70423 (Nov. 20, 2008).

The Agricultural Coalition pre-filed a question asking whether a producer will be a charged with a violation of this proposed rule if the producer’s determination concerning the need for a permit differs from the Agency’s. Agency Att. 2 at 16 (¶17). The Agency responded that,

[i]f the Agency arrives at a different conclusion, the producer may discuss this with the Agency prior to submitting an application to clarify why an application is required, what constituted a discharge at this location and whether corrective actions would be useful in legitimately precluding the requirement to obtain a permit. Failing that, the producer could appeal the permit before the Illinois Pollution Control Board once it is issued. *Id.*

Subsection (c). The Agency proposed what it characterized as “non-substantive, clean-up changes” to this subsection. SR at 36; *see* Prop. 501 at 12.

Subsection (e). The Agency proposed to add a subsection (e) prohibiting runoff from livestock facilities that violates Board regulations. SR at 36; TSD at 2. Specifically, the

proposed subsection provides in its entirety that “[a]ny runoff or overflow from a livestock management facility or a livestock waste handling facility shall not cause a water quality violation pursuant to the Act or 35 Ill. Adm. Code Subtitle C: Water Pollution.” Prop. 501 at 13.

The Agricultural Coalition pre-filed a question asking how the Agency would determine whether runoff or overflow causes a water quality violation. Agency Att. 2 at 16 (¶17). Specifically, the Agricultural Coalition questioned how the Agency would obtain accurate sampling results from a non-point source. *Id.* The Agency responded that

[t]he receiving stream can be sampled and the chemical constituents determined relative to existing water quality standards. Some of the indicators of contamination from livestock waste are ammonia, bacteria, suspended solids, and dissolved oxygen. In most cases of livestock waste discharge, the concentration of these constituents downstream violate the water quality standards and are also elevated relative to upstream sites on the same waterway. *Id.* at 16-17.

The Agricultural Coalition also pre-filed a questions asking how the agricultural stormwater exemption might relate to this prohibition. Agency Att. 2 at 16 (¶17). The Agency responded that the exemption “may apply if the discharge is from land application fields and if the application rate was consistent with agronomic rates set forth in the facility’s NMP. The runoff in that case would have been caused by an unforeseen precipitation event, not by over-application or a mechanical failure, such as a pipeline break.” *Id.* at 17.

Section 501.402: Location of New Livestock Management Facilities and New Livestock Waste-Handling Facilities.

The Agency proposed to amend only subsection (d)(1) to update a reference to the Agricultural Areas Conservation and Protection Act to reflect current codification of Illinois statutes. Prop. 501 at 14; *see* 505 ILCS 5/1. The Agency characterized this proposed amendment as “non-substantive.” SR at 36.

Section 501.404: Handling and Storage of Livestock Waste.

Although existing Section 501.404 addresses the handling and storage of livestock waste generally, the Agency proposed amendments focusing on temporary manure stacks. SR at 37; *see* 35 Ill. Adm. Code 501.404.

Subsection (b)(1). Subsection (b)(1) now provides in its entirety that “[t]emporary manure stacks shall be constructed or established and maintained in a manner to prevent runoff and leachate from entering surface or groundwaters.” 35 Ill. Adm. Code 501.404(b)(1); *see* Prop. 501 at 15. The Agency proposed to move this language to a new subsection (b)(3). SR at 37; Prop. 501 at 14.

The Agency proposed new language providing that “[a] temporary manure stack is a potential secondary source, as defined by the Act.” Prop. 501 at 15; *see* SR at 37, citing 415 ILCS 5/3.355(6) (2012) (defining “potential secondary source”). The proposed new subsection

continues by providing that, “[a]s a potential secondary source, a temporary manure stack is subject to the minimum setback zones established in Title IV of the Act.” Prop. 501 at 15; *see* 415 ILCS 5/14-19 (2012) (Title IV: Public Water Supplies).

Under Section 14.1(a) of the Act, “[n]o new community water supply well can be located within 200 feet of any . . . potential secondary source. . . .” 415 ILCS 5/14.1(a) (2012); *see* SR at 37. The Act increases this 200-foot setback to 400 feet if the community water supply well derives water “from fractured or highly permeable bedrock or from an unconsolidated and unconfined sand and gravel formation. . . .” 415 ILCS 5/14.1(b) (2012); *see* SR at 37 n.23. Similarly, under Section 14.2(a) of the Act, no new potential secondary source “may be placed within 200 feet of any existing or permitted community water supply well or other potable water supply well.” 415 ILCS 5/14.2(a) (2012); *see* SR at 37. Again, the Act increases this 200-foot setback to 400 feet if the community water supply well derives water “from an unconfined shallow fractured or highly permeable bedrock formation or from an unconsolidated and unconfined sand and gravel formation.” 415 ILCS 5/14.2(d) (2012); *see* SR at 37 n.24.

Subsection (b)(2). Subsection (b)(2) now provides in its entirety that “[n]o temporary manure stack shall be constructed within 100 feet of a water well.” 35 Ill. Adm. Code 501.404(b)(2); *see* Prop. 501 at 15. The Agency proposed to strike this language and insert a new subsection (b)(2) providing in its entirety that “[a] temporary manure stack shall not be located within 75 feet from any water well, except monitoring wells.” Prop. 501 at 15; *see* SR at 37; Tr.1 at 130. The Agency stated that this proposed amendment intends “to make the Board’s rule consistent with rules promulgated by the Illinois Department of Public Health [IDPH]. . . .” SR at 37, citing 415 ILCS 55 (Illinois Groundwater Protection Act); 77 Ill. Adm. Code 920.50(b)(1) (Illinois Water Well Construction Code); *see* Tr.1 at 130-31.

The Environmental Groups pre-filed a question asking the Agency what evidence there was “that a 75-foot setback will prevent the discharge of waste from temporary manure stacks into water wells.” Agency Att. 5 at 3 (¶5). The Agency responded by citing consistency with IDPH rules and the establishment of setback zones for potable water supply wells. *Id.*, citing 415 ICLS 5/14.2 (2012); *see* Tr.1 at 130. The Agency also noted that “[a]dditional measures proposed in Section 501.404(b)(3) are required to prevent runoff and leachate from entering groundwaters.” Agency Att. 5 at 3 (¶5).

Subsection (b)(3). As noted above, the Agency proposed to strike subsection (b)(1) and insert it as part of this new subsection. Accordingly, subsection (b)(3) provides in part that “[a] temporary manure stack shall be constructed or established and maintained in a manner to prevent runoff and leachate from entering surface waters or groundwaters.” Prop. 501 at 15; *see* SR at 37; TSD at 3. However, the Agency noted that, “[i]n some cases, such as during heavy rainfall events or due to the proximity of these manure stacks to surface and groundwater, the existing requirement alone will be inadequate to protect these waters.” TSD at 3. The Agency proposed to add to this new subsection language requiring that “[a] cover and pad or other control must be provided when needed to prevent runoff and leachate from entering surface waters and groundwater.” Prop. 501 at 15. The Agency stated that use of a cover will reduce or eliminate the contact of stormwater with the manure, which reduces runoff of livestock waste to surface waters. TSD at 3. The Agency further stated that use of a pad will reduce or eliminate

leachate from moving into groundwater. *Id.* The Agency asserted that “[t]he floor of manure stacks should be constructed of compacted clay, concrete or other materials with low permeability. . . .” *Id.* The Agency suggested that its proposed language acknowledges that “there could be other controls that might exist for a given site that accomplish the same objective of minimizing the threat to surface and ground waters.” *Id.*

The Environmental Groups pre-filed a question asking the Agency how producers are to “determine whether a cover or pad for temporary manure stacks is ‘needed to prevent runoff and leachate from entering surface waters and groundwater.’” Agency Att. 5 at 3 (¶6). The Agency responded that “[t]he producer will make this determination based on the conditions at the storage site such as soil type, vegetative buffers, and proximity to surface waters, the temporary nature of the manure storage site and expected weather conditions during the temporary storage period.” *Id.*

Subsection (c). Subsection (c)(3) now provides in its entirety that “[t]he contents of livestock waste-handling facilities shall be kept at levels such that there is adequate storage capacity so that an overflow does not occur except in the case of precipitation in excess of a 25-year 24-hour storm.” 35 Ill. Adm. Code 501.404(c)(3); *see* Prop. 501 at 15. The Agency proposed to add to this subsection language clarifying “that the requirements of this subsection only apply to livestock management facilities and livestock waste handling facilities that are not required to obtain an NPDES permit.” SR at 38; *see* Prop. 501 at 15. The Agency added that “[f]acilities required to obtain an NPDES permit must follow the proposed effluent limitations and technical standards in Part 502.” SR at 38.

The Agricultural Coalition pre-filed a question asking “whether the proposed change would include chronic storm events or only those meeting the 25-year standard in a 24-hour period.” Agency Att. 2 at 17 (¶18). The Agency responded that “[t]he proposed change simply clarifies that the requirements of this Section only apply to non-discharging, unpermitted CAFOs. Permitted CAFOs must follow the requirements in Part 502.” *Id.* The Agency elaborated that “this change is intended to conform the current regulations to the federal CAFO rules by applying the comparable requirements from the federal rule to permitted facilities.” *Id.*

Subsection (d). This subsection now provides in its entirety that

[a]ny livestock management facility may construct and operate a runoff field application system for the treatment of livestock waste from fewer than 300 animal units, meeting the requirements of 35 Ill. Adm. Code 570, in lieu of utilizing liquid manure-holding tanks, holding ponds, or lagoons in compliance with subsection (c), or other livestock waste-handling systems which would assure compliance with the Act and 35 Ill. Adm. Code.Subtitle E. 35 Ill. Adm. Code 501.404(d); *see* 35 Ill. Adm. Code 570 (Design and Maintenance Criteria Regarding Runoff Field Application Systems).

The Agency proposed to add language clarifying “that large, medium, or designated CAFOs cannot construct and operate a runoff field application system.” SR at 38; *see* TSD at 3; Prop. 501 at 16 (citing proposed definition of “CAFO”). The Agency stated that it sought “to limit the

range of facilities that can use the runoff field application system to non-CAFOs because CAFOs have different production area and land application requirements.” SR at 38. The Agency added that, “[a]s point sources, CAFOs that discharge are subject to NPDES permit requirements, including land application best management practices found in Part 502.” *Id.*; *see* TSD at 3. The Agency stated that “CAFOs that do not discharge, but have agricultural stormwater runoff, must show that livestock waste has been applied in accordance with the land application best management practices found in Part 502.” SR at 38, citing TSD at 3. The Agency argues that this proposed language ensures “that Illinois CAFOs are subject to handling and storage requirements that are consistent with federal CAFO regulations.” TSD at 3.

Subsection (e). The Agency proposed to amend subsection (e) only to update three references to the Act to reflect current codification of Illinois statutes. Prop. 501 at 14; *see* 415 ILCS 5/12 (2012); Prop. 501 at 16-17. The Agency characterized these proposed amendments as “non-substantive, clean-up changes.” SR at 36.

Section 501.405: Field Application of Livestock Waste.

Subsection (a). The Agency first proposed to add language limiting its “applicability to facilities not required to obtain an NPDES permit.” SR at 38; *see* Prop. 501 at 17; TSD at 3. The Agency stated that, “[b]ecause proposed Part 502 contains specific land application requirements for permitted facilities, the Agency proposes limiting the applicability of proposed Section 501.405 to avoid being less stringent than the federal rule.” SR at 38; *see* TSD at 3-4. The Agency also sought to add language clarifying that “[f]acilities required to obtain an NPDES permit are subject to the requirements in Subpart F of Part 502.” Prop. 501 at 17. The Agency stated that “[o]nly when permitted CAFOs land apply livestock waste consistent with the requirements of Subpart F can they claim that discharges from the land application area qualify for the exemption provided for agricultural stormwater.” TSD at 3.

In addition, the Agency proposed to add to subsection (a) language providing that “[l]arge unpermitted CAFOs must comply with Sections 502.102 and 502.510(b).” Prop. 501 at 17; *see* SR at 38-39; TSD at 4. The Agency stated that “the land application requirements in Part 502 are also applicable to unpermitted large CAFOs seeking to claim an agricultural stormwater exemption.” SR at 38; *see* TSD at 4; Yurdin Test. at 7; Agency Att. 1 at 2 (¶6). The Agency claimed that, “[u]nder the federal CAFO rule, large unpermitted CAFOs must develop site specific nutrient management practices that encourage appropriate agricultural use of nutrients in the livestock waste as proposed in Section 502.102(b).” TSD at 4; *see* 40 C.F.R. § 122.23(e)(1).

Subsection (b). The Agency proposed only to update a cross-reference to material by the American Society of Agricultural and Biological Engineers that is incorporated by reference in Section 501.200. Prop. 501 at 17; *see* Prop. 501 at 4 (proposing to update title).

Subpart D: Submittal of Information

In proposing to add this Subpart consisting of a single section, the Agency characterized it as a “place-holder.” TSD at 1; *see* Sofat Test. at 11-12. The Agency stated that proposed

Section 501.505 would incorporate “additional regulations that could be based on currently proposed federal registration” of CAFOs. TSD at 1; *see* SR at 39.

Section 501.505: Requirements for Certain CAFOs to Submit Information.

In this single section comprising Subpart D, the Agency intended “that all facilities required to report under a federal rule must also submit the same information to Illinois EPA.” SR at 39; *see* TSD at 1 (“place-holder”); Sofat Test. at 11-12; *see also* Att. G.

Subsection (a). The Agency proposed that subsection (a) provide in its entirety that “[t]he requirements of this Section must be met if the United States Environmental Protection Agency adopts a regulation pursuant [to] Section 308 of the Clean Water Act [33 U.S.C. 1318] that requires submittal of information from one or more categories of CAFOs.” Prop. 501 at 18; *see* Sofat Test. at 11-12.

Subsection (b). The Agency proposed that subsection (b) provide in its entirety that “[a]ny CAFO required to submit information under a final rulemaking pursuant to Section 308 of the Clean Water Act described in subsection (a) of this Section, must comply with the requirements of that regulation unless such requirements are overturned or stayed by a court.” Prop. 501 at 18; *see* SR at 39.

Subsection (c). The Agency proposed that subsection (c) provide in its entirety that

[a]ny CAFO required to submit information to the United States Environmental Protection Agency pursuant to a final action under Section 308 of the Clean Water Act must submit the same information to Illinois EPA. The submission must occur simultaneously with the submittal to the United States Environmental Protection Agency or within 90 days following the effective date of this Section, whichever is later. Prop. 501 at 18; *see* Sofat Test. at 11-12.

Subsection (d). The Agency proposed that subsection (d) establish the Agency address to which any information required to be submitted by this section “should be sent.” Prop. 501 at 18.

Part 502: Permits

The Agency sought with its proposed revisions to Part 502 to address “which facilities are required to obtain an NPDES permit, the permit application procedures, permit issuance and conditions, and effluent limitations and technical standards.” SR at 39; *see* TSD at 6; *see also* Prop. 501 at 4 (providing organization of Board agriculture related pollution regulations).

Subpart A: Permits Required

The Agency stated that its proposed Subpart A “incorporates the 2008 federal rules’ obligation on all discharging CAFOs to apply for a permit and codifies the agricultural stormwater exception.” SR at 39; *see* TSD at 6. The Agency elaborated that its proposal sought

to amend “all of the [six] existing sections” of this subpart, including replacement of the entire Sections 502.101, 502.102, and 502.105. SR at 39; *see* 35 Ill. Adm. Code 502.101 - 502.106.

Section 502.101: NPDES Permit Requirement and Duty to Maintain Permit Coverage.

Subsection (a). The Agency proposed to strike and replace this entire section and replace it with provisions establishing an NPDES permit requirement. SR at 39-40; *see* 35 Ill. Adm. Code 502.101; Prop. 502 at 3-4.

The Environmental Groups pre-filed a question asking the Agency the percentage of Illinois livestock operations that will require an NPDES permit under the proposed rule. Agency Att. 4 at 4 (¶14). The Agency responded that, “[s]ince any determination regarding actual discharges must be based on on-site inspections at any given facility, knowing the total number of livestock farms in the state does not assist in making an estimate of those that might need an NPDES permit. . . . In short, there is no reasonable and reliably accurate method to make an estimate of the number of permits that must be issued.” *Id.* The Agency noted that it had issued 35 NPDES permits to CAFOs. *Id.* (¶¶12, 13); *see* Tr.1 at 93-94.

Subsection (b). The Agency proposed in this subsection that “[t]he owner or operator of a CAFO must seek coverage under an NPDES permit if the CAFO discharges. . . .” Prop. 502 at 3; *see* SR at 40, citing 40 C.F.R. § 122.23(d)(1). The Agency clarified that it had not sought to “require CAFOs that propose to discharge to obtain an NPDES permit.” SR at 40.

Subsection (b)(1). The Agency proposed in a new subsection (b)(1) that “[a] past discharge from a CAFO does not trigger a duty to apply for a permit if the conditions that gave rise to the discharge have been corrected and the CAFO modified its design, construction, operation or maintenance in such a way as to prevent discharges from occurring in the future.” Prop. 502 at 3; *see* SR at 40-41. The Agency argued that this qualification “clarifies the extent of this obligation after the Pork Producers case” and intends “to eliminate confusion as to which facilities need to apply for a permit.” SR at 40, citing 73 Fed. Reg. 70423 (Nov. 20, 2008); Att. I (USEPA memorandum regarding Pork Producers).

Subsection (b)(2). The Agency proposed in a new subsection (b)(2) that “[n]o permit shall be required under this Part for any discharge for which a permit is not required under the CWA, and regulations pursuant thereto (Section 12(f) of the Act).” Prop. 502 at 3, citing 415 ILCS 5/12(f) (2012); *see* SR at 41. The Agency stated that, under this proposed provision, “discharges to waters that are not waters of the United States will not result in a duty to obtain an NPDES permit.” SR at 41.

Subsection (c). The Agency proposed to address permit application procedure in this subsection. In response to a question pre-filed by the Board, the Agency accounted for differences between individual and general permits:

[a]n individual NPDES permit is issued to an individual permittee. A general permit is applicable to multiple permittees. An individual NPDES permit is

issued with terms and conditions that are specific to the individual facility owner or operator. A general permit has terms and conditions that are developed for similar sources or facilities no matter where they are located. Individual facility owners or operators are issued coverage under the general permit either concurrent with or following issuance of the general permit. Agency Att. 1 at 8 (¶23).

Subsection (d). The Agency proposed to address renewal of NPDES permits in this subsection, which provides in its entirety that “[a]ny permitted CAFO shall apply for reissuance of the NPDES permit not less than 180 days prior to the expiration date of the permit unless the CAFO will not discharge after the expiration date of the NPDES permit.” Prop. 502 at 4; *see* 40 C.F.R. § 122.23(g) (Duty to Maintain Permit Coverage); SR at 41.

In response to a pre-filed question by the Board, the Agency responded that, when renewal is due, a CAFO “may seek to terminate its permit by providing appropriate documentation for any and all sources of wastewater discharge from its facility, noting any changes in operation, such as the number of animals present, and in the construction of any new wastewater facilities that have been added to the CAFO since the permit was last issued.” Agency Att.1 at 8.

Subsection (e). The Agency proposed to address new CAFOs in this subsection, which provides in its entirety that “[t]h owner or operator of a new CAFO that will discharge must apply for NPDES coverage at least 180 days prior to the time that the CAFO commences operation.” Prop. 502 at 4; *see* SR at 41, citing 40 C.F.R. § 122.23(f)

Subsection (f). The Agency proposed a new subsection (f) providing in its entirety that, “[o]nce an animal feeding operation is defined as a CAFO for at least one type of animal, the NPDES permit requirements for CAFOs apply with respect to all animals in confinement at the animal feeding operation and all livestock waste generated by those animals or the production of those animals.” Prop. 502 at 4; *see* SR at 41, citing 40 C.F.R. § 122.23(a) (Scope).

In a pre-filed question, the Agricultural Coalition asked the Agency whether it is correct to interpret this proposed subsection as requiring a facility to have a permit “for all types of livestock production, not just that production which results in a discharge.” Agency Att. 2 at 18 (¶20). The Agency confirmed this interpretation, stating that that “all livestock waste at a CAFO must be addressed by the permittee regardless of which livestock species were the basis for determining that an NPDES permit was required.” *Id.* Asked to illustrate a case in which this proposed subsection might apply, the Agency cited a producer with “a small dairy operation at the same location as a large swine confinement facility. While the decision to require an NPDES permit was based on a discharge from the swine operation, the livestock waste from the dairy operation is also subject to the permit.” *Id.*

Section 502.102: Land Application Discharges and Agricultural Stormwater.

The Agency proposed to strike this entire section and replace it. SR at 39, 42; *see* Prop. 502 at 4-5. The Agency noted that the current permitting exemption “was removed from the

federal rule in 2003,” and the Agency sought to strike the exemption from the Board’s regulations. SR at 42, citing 40 C.F.R. § 122.23(e). The Agency further noted that federal rules had added an agricultural stormwater exemption. SR at 42, citing 40 C.F.R. § 122.23(e). The Agency proposed to amend the heading of this section to “Land Application Discharges and Agricultural Stormwater.” Prop. 502 at 4.

Subsection (a). The Agency proposed a subsection (a) providing in its entirety that

[t]he discharge of livestock waste to waters of the United States from a CAFO as a result of the livestock waste application by the CAFO to land application areas is a discharge from that CAFO subject to NPDES permit requirements, except where it is an agricultural stormwater discharge and therefore exempt from the definition of a point source under Section 502 of the Clean Water Act. Prop. 502 at 4; *see* 40 C.F.R. § 122.23(e); SR at 42; Sofat Test. at 8; Tr.1 at 54-56.

Subsection (b). The Agency sought to clarify “what is an agricultural stormwater discharge.” SR at 42. Specifically, the agency proposed a new subsection (b) providing in its entirety that

[w]here livestock waste has been land applied in accordance with site specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the livestock waste and in compliance with Section 502.510 for permitted CAFOs and Section 502.510(b) for unpermitted Large CAFOs, a precipitation-related discharge of livestock waste from land application areas of an unpermitted large CAFO or a permitted CAFO, is an agricultural stormwater discharge. Prop. 502 at 4-5; *see* SR at 42, TSD at 4-5, Yurdin Test. at 6-7, Sofat Test. at 8-9; Tr.1 at 55-56.

The Agency argued that development of these site-specific practices “ensures that nutrient levels in the applied livestock waste are not in excessive levels for crop uptake.” TSD at 4. The Agency further argued that, without such practices, “nutrient levels in the applied livestock waste that are more than the agronomic crop need can lead to accumulation of nutrients in soil.” *Id.* The Agency claimed that excessive soil levels of these nutrients “increase the threat of water pollution as they can, under severe weather conditions, contribute pollutants to runoff from fields into streams, lakes and other surface waters.” *Id.*

The Agency stressed that its proposal requires these site-specific practices for unpermitted large CAFOs. TSD at 4; *see* Sofat Test. at 10. In his testimony pre-filed for the first hearing on behalf of the Agency, Mr. Yurdin argued that the criteria in proposed Section 502.510(b) should apply to both permitted and unpermitted large CAFOs “when it comes to documenting and justifying how a land application may have occurred.” Yurdin Test. at 7. Mr. Yurdin stated that “[t]he intent of establishing criteria by which an unpermitted facility could claim the exemption is to avoid situations where discharges occur and no information is available concerning the management practices at the livestock facility, and more properly, at the land application site that gave rise to the discharge.” Yurdin Test. at 7. The Agency claimed that requiring development of these plans “[p]rovides large unpermitted facilities clear criteria if they

later claim that a discharge from a land application area was an agricultural stormwater discharge, and consequently exempt from the Clean Water Act.” TSD at 4-5. The Agency argued that, “[g]iven the size of these facilities, and thus the potential threat to surface waters from these facilities, the Agency believes it is prudent for large unpermitted facilities to follow the same nutrient management plan requirements. . . .” TSD at 4-5, citing 40 C.F.R. §§ 122.23(e), 122.42(e)(1)(viii); *see* Yurdin Test. at 7, Sofat Test. at 10.

In his testimony pre-filed for the first hearing on behalf of the Agency, Mr. Sofat noted “that unpermitted large CAFOs under the Agency’s proposal are subject to some specific requirements that are not otherwise listed in the federal CAFO rule.” Sofat Test. at 9. He argued that both permitted and unpermitted large facilities “must comply with all of the practices and protocols specified in Section 502.510(b)” in order to satisfy the basic intent of the agricultural stormwater exemption. *Id.* He further argued that the Agency’s proposal merely supplies “more specific practices where the federal rule, while requiring general nutrient management compliance, is silent on how to accomplish the basic objectives specified in 40 CFR 122.42(e)(1)(vi) through (ix).” *Id.* at 10.

Subsection (c). The Agency proposed to address documentation of proper livestock waste application by adding a subsection (c) providing in its entirety that “[u]npermitted Large CAFOs must maintain the documentation specified in 35 Ill. Adm. Code 502.510(b)(15) either on site or at a nearby office, or otherwise make such documentation readily available to the Agency upon request.” Prop. 502 at 5; *see* SR at 42; Sofat Test. at 8. The Agency stated that “[p]ermitted facilities, as a condition of their permit, must maintain these records.” SR at 42 n.26 (noting requirement of proposed Section 502.320: Recordkeeping Requirements).

Subsection (d). The Agency proposed to add a subsection (d) providing in its entirety that “[t]he nutrient management practices to be implemented shall be reviewed annually by the CAFO and the nutrient management plan updated when there is a change in the nutrient management practices.” Prop. 502 at 5; *see* SR at 42.

In a pre-filed question, the Board asked the Agency to comment on “whether this provision would be more appropriately placed under the NMP provisions of Subpart E.” Agency Att. 1 at 9 (¶24). The Board also asked “whether the findings of the annual review should be included in the annual report under proposed Section 502.325.” *Id.* The Agency responded that it had “no objection to either suggestion.” *Id.* Accordingly, the Board strikes this proposed subsection (d) from the Agency’s proposal and inserts language requiring this annual review of nutrient management practices under the NMP requirements at proposed Section 502.510(b)(15) and under the annual report requirements at proposed Section 502.325(b)(14). The Board’s order below reflects these amendments to the Agency’s original proposal.

Section 502.103: Large CAFOs.

The Agency first proposed to re-name this section “Large CAFOs.” Prop. 502 at 5-6; *see* SR at 43. The Agency then sought to amend the specified kinds and numbers of animals so that this definition contains “the same size restrictions as the federal definition. . . .” SR at 42-43, citing 40 C.F.R. § 122.23(b)(4); *see* TSD at 6.

Section 502.104: Medium CAFOs.

The Agency first proposed to re-name this section “Medium CAFOs.” Prop. 502 at 6; *see* SR at 43.

Subsection (a). The Agency sought to amend the specified kinds and numbers of animals so that this definition contains “the same size restrictions as the federal definition. . . .” SR at 42-43, citing 40 C.F.R § 122.23(b)(4); *see* TSD at 6. Mr. Yurdin elaborated that “[a] medium CAFO is defined not only by the number of animals but by circumstances deemed by the federal rule to be a discharge. . . .” Agency Att. 1 at 2 (¶5). Mr. Yurdin stated that “Medium CAFOs by definition have a discharge and therefore must be permitted.” *Id.* at 2 (¶5). He added that, since this permit includes an approved NMP, the Agency did not consider special provisions applicable to Medium CAFOs. *Id.*

Subsection (b). This subsection provides one of the two discharge conditions on which an AFO of the specified size be classified as a Medium CAFO and required to obtain an NPDES permit. 35 Ill. Adm. Code 502.104(b). Specifically, subsection (b) provides that “[p]ollutants are discharged into navigable waters through a man-made ditch, flushing system or other similar man-made device. . . .” Prop. 502 at 7; *see* 40 C.F.R § 122.23(c)(3)(i); SR at 42.

Subsection (c). This subsection provides the second of two discharge conditions on which an AFO of the specified size may be classified as a Medium CAFO and required to obtain an NPDES permit. 35 Ill. Adm. Code 502.104(c). Specifically, subsection (c) provides that “[p]ollutants are discharged directly into navigable waters which originate outside of and pass over, across, through or otherwise come into direct contact with the animals confined in the operation. . . .” Prop. 502 at 7; *see* 40 C.F.R. § 122.23(c)(3)(ii); SR at 42.

Subsection (d). The Agency sought to clarify “that medium CAFOs include those facilities designated as CAFOs pursuant to section 502.106.” SR at 43; *see* Prop. 502 at 7.

Section 502.105: Small CAFOs.

The Agency proposed that this section provide that “[a]n AFO is a Small CAFO if it is designated as a CAFO by the Agency pursuant to Section 502.106 of this Part, and it is not a Medium CAFO.” Prop. 502 at 7; *see* SR at 43. The Agency also proposed to amend the title of this section to “Small CAFOs.” Prop. 502 at 7.

Section 502.106: Case-By-Case Designation Requiring NPDES Permits.

The Agency proposed to update this case-by-case designation procedure “to match the federal rule.” SR at 43; *see* 40 C.F.R. 122.23(c); TSD at 6.

Subsection (a). The Agency proposed to incorporate the language of the federal rule by amending this subsection. Prop. 502 at 8; *see* 40 C.F.R. § 122.23(c); Yurdin Test. at 8; Agency Att. 1 at 9-10 (¶27). Subsection (a) establishes five factors the Agency must consider in

determining whether to require a permit. 35 Ill. Adm. Code 502.106(a). Although the Agency proposed a number of changes to these factors, it characterized them as “non-substantive, clean-up amendments intended to promote consistency throughout the rule.” SR at 43; *see* Prop. 502 at 8.

Subsection (b). Section 502.106(b) generally provides that the Agency may not require a permit for AFOs having fewer animals than established by the definition of “Medium CAFO” unless it meets one of two discharge-related conditions. 35 Ill. Adm. Code 502.106(b); *see* 40 C.F.R. § 122.23(c)(3). Although the Agency proposed a number of changes to this subsection, it characterized them as “non-substantive, clean-up amendments intended to promote consistency throughout the rule.” SR at 43; *see* Prop. 502 at 8.

Subsection (c). The Agency proposed to amend this subsection by striking the second sentence requiring written notification of the owner or operator. SR at 43-44; *see* Prop. 502 at 9; Yurdin Test. at 8. The Agency stated that it had proposed removing this requirement “to ensure consistency with the federal rule.” SR at 44; *see* 40 C.F.R. § 122.23(c)(3); *see also* Agency Att. 2 at 9 (¶7). In his testimony pre-filed on behalf of the Agency for the first hearing, Mr. Yurdin expressed the belief that “the criterion in Section 502.106(d) clearly identifies the Illinois EPA duty to properly notify the owner or operator of the designation. . . .” Yurdin Test. at 8. During the first hearing, he testified that the Agency had no intention not to notify the producer and will continue to provide that notification. Tr.1 at 59.

Subsection (d). Section 502.106(d) now provides in pertinent part that, “[u]pon receipt of the Agency’s notification that an NPDES permit is required pursuant to paragraph (b) the operator shall make application to the Agency within 60 days.” 35 Ill. Adm. Code 502.106(d); *see* Prop. 502 at 9; SR at 44; Yurdin Test. at 8. The Agency first proposed to replace the reference to “paragraph (b)” with a reference to “this Section.” Prop. 502 at 9. The Agency also stated that the federal rule now requires that a designated CAFO must apply for a permit within 90 days, and the Agency proposed to extend the existing deadline to 90 days. SR at 44; *see* 40 C.F.R. § 122.23(f)(5); Prop. 502 at 9.

Subsection (e). Subsection (e) provides in its entirety that “[n]o animal feeding operation may be required to have a permit if it discharges only in the event of a 25-year 24-hour storm event.” 35 Ill. Adm. Code 502.106(e). The Agency noted that the current permitting exemption “was removed from the federal rule in 2003,” and the Agency sought to remove the exemption from the Board’s regulations. SR at 42, citing 40 C.F.R. § 122.23(e). *see* Yurdin Test. at 8.

Subpart B: Permit Applications

The Agency stated that its proposed amendments to Subpart B include updated permit application requirements, including the requirement of an NMP. SR at 39; *see* 35 Ill. Adm. Code 502.201-502.207. The Agency stated that its “proposal makes minor changes to Subpart B.” SR at 44; *see* Prop. 502. at 9-12

Section 502.201: Permit Application.

The Agency proposed to amend the heading of this section to “Permit Applications.” Prop. 502 at 9. The Agency stated that it sought to amend this provision “to comply with the federal rule, and to require additional information necessary for the Agency to evaluate the permit application.” SR at 44. The Agency added that “[t]his proposed section sets forth the application requirements for all existing and new CAFOs seeking coverage under either a general or individual permit.” *Id.*; *see* Heacock Test. at 2.

In a pre-filed question, the Board asked the Agency to “clarify whether CAFOs seeking individual permits must comply only with the requirements of Section 502.201 and Part 309. Agency Att. 1 at 10 (¶30). The Agency responded that “CAFOs seeking coverage under an individual permit or required to obtain coverage under an individual permit by the Agency would be obligated to follow all applicable provisions in Subtitle E and Part 309. Only Section 502.310 [CAFOs Seeking Coverage Under NPDES General Permits] would not apply to these facilities.” *Id.*

Subsection (a). The Agency proposed to amend this introduction to provide that “[a]ll applications from a new or existing CAFO for any permit, including an individual permit or a general permit, required under this Chapter shall contain, where appropriate,” specified information and documents. Prop. 502 at 9. Subsection (a) list fourteen items to be included in a permit application, as appropriate.

Subsection (b). Section 502.201(b) allows that the Agency may adopt procedures requiring such additional information as is necessary to determine whether the livestock management facility or livestock waste handling facility will meet the requirements of the Act and applicable Board regulations. The Agency proposed amendments to “update and clarify the existing rule.” SR at 44.

Section 502.202: Permit Application Submissions.

The Agency first sought to change the title of this section to “Permit Application Submissions.” Prop. 502 at 11; *see* SR at 46. The Agency also proposed to amend this section “to no longer require registered or certified mail, return receipt requested.” SR at 46; *see* Prop. 502 at 11. The Agency sought instead “to accept applications that are mailed, delivered, or electronically submitted.” SR at 46; *see* Prop. 502 at 11. The Agency stated that these proposed amendments “update and clarify the existing rule.” SR at 44.

Section 502.203: New Applications (Repealed).

The Agency proposed to repeal this entire section because it had met its objective of facilitating “a smooth transition from a federal to a state program.” SR at 44, 46, citing Chapter 5: Agriculture Related Pollution, Section 1: Livestock Waste Regulations, R72-9, slip op. at 26 (Nov. 14, 1974) (Part 206: Applications -- Time To Apply).

Section 502.204: Renewal.

The Agency proposed to amend the first sentence of this section to refer to permittees “seeking reissuance of their NPDES permit pursuant to [Section] 502.101(d)” as those who must apply for reissuance. Prop. 502 at 11. The Agency stated that this proposed revision clarifies that CAFOs needing to apply for permit renewal are “those seeking reissuance of their NPDES permit pursuant to section 502.101(d).” SR at 46.

Section 502.205: New Operations (Repealed).

The Agency proposed to repeal this entire section (Prop. 502 at 11-12) and move this requirement to proposed new Section 502.101(e). SR at 44, 46.

Section 502.207: Disclosure Required for Land Trusts.

The Agency proposed to update the statutory title and citation to refer to “the ‘Land Trust Beneficial Interest Disclosure Act’ [735 ILCS 405 et seq.]” Prop. 502 at 11; *see* SR at 46.

Subpart C: Permit Issuance and Conditions

The Agency stated that its proposed revision of Subpart C “includes the federal permit requirements and the general permit procedures.” SR at 39. Specifically, “Subpart C contains provisions regarding issuance and conditions of NPDES permits.” *Id.* at 47; *see* 35 Ill. Adm. Code 502.301-502.305 (existing Subpart C).

Section 502.304: Issuance and Conditions.

The Agency sought to add the direction that “[s]pecific provisions applicable to CAFOs seeking coverage under NPDES general permits are found in Section 502.310 of this Subpart.” Prop. 502 at 12.

Section 502.310: CAFOs Seeking Coverage Under NPDES General Permits.

The Agency stated that “[p]roposed section 502.310 incorporates the federal requirements for general permits” and establishes procedures for the Agency to process general permit applications. SR at 47, citing 40 C.F.R. § 122.23(h); *see* TSD at 7. The Agency stated that it “expects most CAFOs to be covered by general permits.” TSD at 7; *see* Agency Att. 2 at 10 (¶9); Tr.1 at 62-63. The Agency further stated that the procedures established in the section “allow the Agency to utilize its limited resources efficiently as well as provide the public a full opportunity to comment on the development, revision, and enforcement of the nutrient management plans.” TSD at 7.

In a pre-filed question, the Agricultural Coalition asked how the Agency would distinguish CAFOs requiring a general permit from those requiring an individual permit. Agency Att. 2 at 10 (¶9). The Agency responded that,

[i]f a CAFO is eligible for coverage by the general permit for CAFOs, then the Agency will review the application and NMP for coverage under the general permit. If the CAFO can meet the conditions of the general permit then the Illinois EPA would likely propose coverage under the general permit. An individual permit may be issued if the applicant requests coverage under an individual permit and provides reasons for the requested individual permit. If the Agency determines that different or additional permit conditions other than the conditions in the general permit are needed, then an individual permit could be issued to include those conditions. These conditions may be needed to carry out requirements of a Board order or court order or to address alternative plans for design, construction, operation or maintenance of the CAFO that do not meet the conditions of the general permit. *Id.*

Asked to identify circumstances under which it expected to issue or would allow issuance of an individual permit, the Agency responded with the example that “the current general permit for CAFOs does not cover duck CAFOs and if such a CAFO required an NPDES permit an individual permit would likely be issued to the duck CAFO.” *Id.* at 10-11.

The Agricultural Coalition also asked the Agency to describe the relationship between the Agency’s general permit and its proposed rules. Agency Att. 2 at 11 (¶9). The Agency responded that “Permit Conditions in the general NPDES permit are based on existing Subtitle E and Subtitle C regulations and federal CAFO regulations. The proposed rules update Subtitle E to include the revised federal CAFO regulations and provide technical standards developed in accordance with the federal regulations. . . .” *Id.* The Agency indicated that, upon adoption of amended Subtitle E regulations, it expects to modify the general permit. *Id.*; see Exh. 9 (General NPDES Permit for CAFOs effective Oct. 20, 2009); Tr.1 at 62.

The Agricultural Coalition also asked the Agency how a producer might appeal a condition in the general permit. Agency Att. 2 at 11 (¶9), citing 415 ILCS 5/39 (2012). The Agency responded that it “anticipates that any producer who comments on the CAFO General Permit during the public notice period may appeal conditions in that permit to the Board under Section 40 of the Environmental Protection Act within 35 days after the permit is issued or renewed.” Agency Att. 2 at 11, citing 415 ILCS 5/40 (2012). The Agency added that, if a producer applies for an individual permit, “[c]onditions of the individual permit could also be appealed to the Board under Section 40 of the Act.” Agency Att. 2 at 11 (¶9), citing 415 ILCS 5/40 (2012).

In a pre-filed question, the Board asked whether facilities seeking an NPDES General Permit must meet the requirements of Section 502.310 and all of the requirements of Part 309 “or only those provisions of Part 309 for which there are cross references in Section 502.310.” Agency Att. 1 at 10 (¶31). The Agency responded that “CAFOs seeking NPDES General Permits must meet the requirements of Section 502.310 and only those requirements of Part 309 specifically cross referenced in that Section.” *Id.*

Subsection (a). The Agency proposed a new subsection providing in its entirety that “CAFO owners or operators must submit a notice of intent that meets the requirements of

Section 502.201 and Subpart E of this Part when seeking authorization to discharge under a general permit.” Prop. 502 at 12; *see* 40 C.F.R. § 122.23(h)(1), citing 40 C.F.R. § 122.28(b). The Agency indicated that this proposed language specifies the permit applicant’s obligation to provide information consistent with the cited requirements. TSD at 7; *see* Heacock Test. at 2-3.

Subsection (b). The Agency proposed a new subsection providing in its entirety that, “[w]hen additional information is necessary to complete the notice of intent or to clarify, modify, or supplement previously submitted material, the Agency may request such information from the owner or operator as provided in 35 Ill. Adm. Code 309.106.” Prop. 502 at 12-13; *see* 40 C.F.R. § 122.23(h)(1); SR at 47 n.29; Heacock Test. at 2. Section 309.106 of the Board’s water pollution regulations addresses additional information by providing that,

[i]f the Agency determines that . . . further information . . . is necessary for the Agency to evaluate an NPDES Permit application, it shall notify the applicant and make arrangements to secure the additional information. . . . If adequate information is not received within the period of time specified by the Agency, the permit shall either be issued on the basis of the information currently before the Agency or be denied, and the applicant so notified. 35 Ill. Adm. Code 309.106.

The Agency indicated that these provisions specify an opportunity for the Agency to obtain data required to be submitted by the proposed regulations. *See* TSD at 7.

Subsection (c). The Agency proposed a new subsection providing in its entirety that “[t]he Agency must notify the public of its proposal to grant coverage under the general permit to the CAFO. This public notice must include the CAFO’s nutrient management plan.” Prop. 502 at 13; *see* 40 C.F.R. § 122.23(h)(1); SR at 23; TSD at 7; Heacock Test. at 2-3; Agency Att. 2 at 13 (¶12). The Agency added that it “will publish the complete application and NMP, which includes the terms of the NMP, on its website.” TSD at 7; Heacock Test. at 3.

The Agency stated that this public notice “must include the CAFO’s entire NMP, not just a draft list of terms that will be incorporated into the permit.” SR at 47. The Agency noted that this proposed requirement differs from the federal rule, which separates draft terms of the nutrient management plan from the NMP. TSD at 8; *see* 40 C.F.R. § 122.23(h)(1). The Agency expressed the belief that “providing the complete NMP, rather than separating and publishing only limited terms of the NMP, is a complete way of providing public notice.” TSD at 8. The Agency argued that its approach provides the public with the context needed for meaningful review and simplifies the process of obtaining information necessary for submitting comment. *Id.*; *see* Heacock Test. at 3.

Subsection (d). The Agency proposed a new subsection providing in its entirety that “[t]he process for submitting public comments and hearing requests, and the hearing process if a request for a hearing is granted, will follow the procedures applicable to draft individual permits found in 35 Ill. Adm. Code 309.109(b) and 309.115 through 309.118.” Prop. 502 at 13; *see* 40 C.F.R. § 122.23(h)(1); SR at 47 n.29, citing 40 C.F.R. 124 (Procedures for Decisionmaking); TSD at 7; Heacock Test. at 2.

The Agency indicated that it proposed to apply existing NPDES permitting procedures “to the second notice and comment period for CAFO general permits.” SR at 47. Specifically, Section 309.109(b) establishes a 30-day comment period and procedures for submission and Agency consideration of written comments. 35 Ill. Adm. Code 309.109(b); *see* Heacock Test. at 3. Section 309.115 provides procedures for requesting and holding public hearings on NPDES permit applications. 35 Ill. Adm. Code 309.115. Section 309.116 addresses the timing and substance of notices of Agency hearings. 35 Ill. Adm. Code 309.116. Finally, Section 309.117 provides for submission of statements and data at hearing, and Section 309.118 addresses the contents and availability of the Agency’s hearing file. 35 Ill. Adm. Code 309.117, 309.118.

Subsection (e). The Agency proposed a new subsection providing in its entirety that “[t]he time period for the public to comment and request a hearing is 30 days following the date of the notice issued pursuant to subsection (c).” Prop. 502 at 13; *see* 40 C.F.R. § 124.10; TSD at 8; Heacock Test. at 3. The Agency argued that this 30-day period is appropriate, “as review of complex and detailed NMPs can be time consuming.” TSD at 8; *see* Heacock Test. at 3. The Agency also argued that this 30-day period is consistent with existing NPDES regulations. TSD at 8, citing 35 Ill. Adm. Code 309; *see* Heacock Test. at 3.

In a pre-filed question, the Agricultural Coalition asked the Agency to describe its review of NMPs and applications for coverage under a general permit. Agency Att. 2 at 13 (¶13). The Agency responded that its procedure

would involve review and determination of whether the CAFO permit application can be covered by the general NPDES permit and review of the NMP to determine if it is sufficient to meet the regulations and the general NPDES permit. Upon determination that the CAFO permit application and NMP can be covered by the general NPDES permit the Agency will publish the NMP on the Agency’s website. *Id.*, citing TSD at 7-8.

Subsection (f). The Agency proposed a new subsection providing first that, “[w]hen a public hearing is held, the Agency must respond to significant comments received during the comment period as provided in 35 Ill. Adm. Code 309.119 and 309.120, except that notice and transmission to the U.S. EPA Regional administrator is not required.” Prop. 502 at 13; *see* 40 C.F.R. § 122.23(h)(1); SR at 47 n.29. Section 309.119 addresses Agency action after hearing to modify the terms and conditions of a proposed permit, and Section 309.120 provides for re-opening the Agency record to receive additional written comment. 35 Ill. Adm. Code 309.119, 309.120.

Next, the Agency proposed that, “[i]f no hearing is held, the Agency shall follow the procedures in 35 Ill. Adm. Code 309.112 and 309.120 for Agency action after the comment period.” Prop. 502 at 13. Section 309.112 provides in its entirety that, “[s]ubject to Section 309.120, if, after the comment period provided, no public hearing is held with respect to the permit, the Agency shall, after evaluation of any comments which may have been received, either issue or deny the permit.” 35 Ill. Adm. Code 309.112. As noted above, Section 309.120 provides for re-opening the Agency record to receive additional written comment. 35 Ill. Adm. Code 309.120.

Finally, the Agency also proposed in subsection (f) that, “[i]f necessary, the Agency will require the CAFO owner or operator to revise the nutrient management plan in order to be granted permit coverage.” Prop. 502 at 13; *see* 40 C.F.R. § 122.23(h)(1); SR at 47 n.29.

Subsection (g). The Agency proposed a new subsection providing in its entirety that, “[w]hen the Agency authorizes coverage for the CAFO owner or operator under the general permit, the terms of the nutrient management plan shall become incorporated as terms and conditions of the permit for the CAFO. This incorporation of terms and conditions does not require a modification of the general permit.” Prop. 502 at 13; *see* 40 C.F.R. § 122.23(h)(1); SR at 47; TSD at 7; Heacock Test. at 3.

Subsection (h). The Agency proposed a new subsection providing in its entirety that “[t]he Agency shall notify the CAFO owner or operator and inform the public that coverage has been authorized and of the terms of the nutrient management plan incorporated as terms and conditions of the permit applicable to the CAFO.” Prop. 502 at 13; *see* 40 C.F.R. § 122.23(h)(1); SR at 47-48; Heacock Test. at 3. The Agency specified that a cover letter and copy of the general permit will provide this information to the owner or operator. TSD at 8; *see* Heacock Test. at 3. The Agency added that, “[t]o inform the public that coverage has been authorized to the owner or operator of the CAFO, the Agency will publish the final version of the NMP on its website.” TSD at 8; *see* Heacock Test at 3. Responding to a question pre-filed by the Agricultural Coalition, the Agency stated that it expects to issue a determination in 180 days on an application for coverage under the general NPDES CAFO permit. Agency Att. 2 at 13 (¶13).

Subsection (i). The Agency proposed a new subsection providing in its entirety that “[n]othing in this section shall limit the Agency’s authority to require an individual NPDES permit pursuant to Section 39(b) of the Act.” Prop. 502 at 13; *see* 40 C.F.R. § 122.23(h)(3); SR at 48; *see also* 415 ILCS 5/39(b) (2012) (issuance of NPDES permits).

Section 502.315: CAFO Permit Requirements.

The Agency stated that its proposed Section 502.315 incorporates federal permit requirements. SR at 48, citing 40 C.F.R. § 122.42(e). Specifically, the proposed section “sets forth what must be included in each permit” issued to a CAFO. SR at 47; *see* Prop. 502 at 13.

Subsection (a). The Agency proposed that an NPDES permit issued to a CAFO must include “[r]equirements to implement a nutrient management plan that meets the provisions of Subpart E of this Part.” Prop. 502 at 13-14; *see* 40 C.F.R. § 122.42(e)(1); SR at 48.

Subsection (b). The Agency proposed that an NPDES permit issued to a CAFO must include “[r]equirements for the permittee to create, maintain for five years from creation on site, and make available to the Agency upon request, a complete copy of the records required in Section 502.320 of this Part.” Prop. 502 at 13-14; *see* 40 C.F.R. § 122.42(e)(2); SR at 48.

Subsection (c). The Agency proposed reporting requirements for permitted CAFOs. Specifically, the Agency sought to require that, under an NPDES permit issued to a CAFO,

“[t]he permittee must submit an annual report to the Agency. The annual report must include the information specified in Section 502.325 of this Part.” Prop. 502 at 13-14; *see* 40 C.F.R. §122.42(e)(4); SR at 48.

Subsection (d). The Agency also proposed that an NPDES permit issued to a CAFO must include “[r]equirements to comply with the livestock waste discharge limitations in Subparts F, G, and H of this Part, if applicable.” Prop. 502 at 13-14; *see* 40 C.F.R. § 122.42(e)(5); SR at 48. Proposed new Subpart F addresses livestock waste discharge limitations and technical standards, proposed new Subpart G contains additional livestock waste discharge limitations, and Subpart H establishes new source performance standards for new large swine, poultry, and veal CAFOs.

Section 502.320: Recordkeeping Requirements.

The Agency stated that 2003 amendments to the federal rule added CAFO recordkeeping requirements. SR at 48, citing 40 C.F.R. § 122.42(e)(2); *see* Yurdin Test. at 9. The Agency further stated that the federal rule required permitted facilities to “create and maintain for five years records of NMP implementation and management, records of the production area, and records of the land application area.” SR at 48. The Agency sought to adopt “all of the federal recordkeeping requirements” in this section. *Id.*; *see id.* at 47 (intending consistency). The Agency stated that these records are necessary “[i]n order to track progress and verify that certain specific actions had been taken as prescribed in the permit. . . .” TSD at 58. The Agency added that it may rely on these records “when inspections are made and when renewal of permit coverage is necessary.” *Id.*

Subsection (a). The Agency proposed to require that permittees must create and maintain “[a] copy of all applicable records identified pursuant to Section 502.510(b)(15).”² Prop. 502 at 14; *see* SR at 49 n.32, citing 40 C.F.R. § 122.42(e)(2)(i)(A). Proposed Section 502.510(b)(16) provides that an NMP must include specific records documenting implementation and management of the minimum elements of the plan. Prop. 502 at 22; *see* SR at 49 n.31 (listing records).

Subsection (b). The Agency proposed to require that permittees must create and maintain “[a] copy of the information required under Section 502.201.” Prop. 502 at 14. Proposed Section 502.201 lists information and documents that a CAFO permit application must contain. *See* Prop. 502 at 9-11; SR at 51.

Subsection (c). The Agency proposed to require that permittees must create and maintain “[r]ecords documenting the visual inspections required under Section 502.610(c).” Prop. 502 at 14; *see* 40 C.F.R. §§ 122.42(e)(2)(i)(B), 412.37(b)(1); SR at 49. Proposed Section 502.610(c) prescribes routine visual inspection of the production area for CAFOs subject to proposed Subpart F. *See* Prop. 502 at 31. The Agency characterized this as a federal recordkeeping

² In addressing the Agency’s proposed Section 502.102, the Board determined to add annual review of an NMP as an element of the plan as proposed Section 502.510(b)(15). This addition triggered limited re-numbering of proposed Section 502.510(b) and cross-references such as this one, which the Board includes in its order below.

requirement for the production area of permitted CAFOs. SR at 49, n.33, citing 40 C.F.R. § 412.37(b).

Subsection (d). The Agency proposed to require that permittees must create and maintain “[w]eekly records of the depth of manure and process wastewater in the liquid livestock waste storage as indicated by the depth marker under Section 502.610(d).” Prop. 502 at 14; *see* 40 C.F.R. §§ 122.42(e)(2)(i)(B), 412.37(b)(2). Proposed Section 502.610(d) prescribes depth markers for open surface livestock waste storage structures. *See* Prop. 502 at 31. The Agency characterized this as a federal recordkeeping requirement for the production area of permitted CAFOs. SR at 49, n.33, citing 40 C.F.R. § 412.37(b).

Subsection (e). The Agency proposed to require that permittees must create and maintain “[r]ecords documenting any actions taken to correct deficiencies required under Sections 502.610(e) and (f). Deficiencies not corrected within 30 days must be accompanied by an explanation of the factors preventing immediate correction.” Prop. 502 at 14; *see* 40 C.F.R. §§ 122.42(e)(2)(i)(B), 412.37(b)(3); TSD at 47. Proposed Sections 502.610(e) and (f) address correction of deficiencies revealed by inspections of production areas and explanation of uncorrected deficiencies, respectively. *See* Prop. 502 at 31-32. The Agency characterized this as a federal recordkeeping requirement for the production area of permitted CAFOs. SR at 49, n.33, citing 40 C.F.R. § 412.37(b). The Agency added that this proposed subsection reflects federal intent “regarding deficiencies found during inspections and the need to take corrective action.” TSD at 47.

Subsection (f). The Agency proposed to require that permittees must create and maintain “[r]ecords of mortalities management and practices used by the facility to meet the requirements of Section 502.610(g).” Prop. 502 at 14; *see* 40 C.F.R. §§ 122.42(e)(2)(i)(B), 412.37(b)(4). Proposed Section 502.610(g) addresses disposal of dead livestock and water contaminated by dead livestock. *See* Prop. 502 at 32. The Agency characterized this as a federal recordkeeping requirement for the production area of permitted CAFOs. SR at 49, n.33, citing 40 C.F.R. § 412.37(b).

Subsection (g). The Agency proposed to require that permittees must create and maintain “[r]ecords documenting the current design of any livestock waste storage structures, including volume for solids accumulation, design treatment volume, total design volume, and approximate number of days of storage capacity.” Prop. 502 at 14; *see* 40 C.F.R. §§ 122.42(e)(2)(i)(B), 412.37(b)(5). The Agency characterized this as a federal recordkeeping requirement for the production area of permitted CAFOs. SR at 49, n.33, citing 40 C.F.R. § 412.37(b).

Subsection (h). The Agency proposed to require that permittees must create and maintain “[r]ecords of the date, time, and estimated volume of any overflow.” Prop. 502 at 15; *see* 40 C.F.R. §§ 122.42(e)(2)(i)(B), 412.37(b)(6). The Agency characterized this as a federal recordkeeping requirement for the production area of permitted CAFOs. SR at 49, n.33, citing 40 C.F.R. § 412.37(b).

Subsection (i). The Agency proposed to require that permittees must create and keep records including “[a] copy of the facility’s site-specific nutrient management plan.” Prop. 502 at 15. The Agency stated that this proposal corresponds with a federal recordkeeping requirement. SR at 48 n.30, citing 40 C.F.R. § 122.42(e)(2)(ii).

Subsection (j). The Agency proposed to require that permittees must create and maintain records including “[e]xpected crop yields for land application areas.” Prop. 502 at 15; *see* 40 C.F.R. §§ 122.42(e)(2)(i)(B), 412.37(c)(1).

Subsection (k). The Agency proposed to require that permittees must create and maintain records including “[t]he date(s) livestock waste is applied to each land application area.” Prop. 502 at 15; *see* 40 C.F.R. §§ 122.42(e)(2)(i)(B), 412.37(c)(2).

Subsection (l). The Agency proposed to require that permittees must create and maintain “[r]ecords documenting subsurface drainage inspections conducted according to the plan developed pursuant to Section 502.510(b)(13).” Prop. 502 at 15; *see* TSD at 58. The Agency added that “the interest in keeping these records is to verify that the inspection -- that may reduce or eliminate water pollution due to discharge from a field tile -- was actually conducted, that observations were made and, where appropriate, that necessary corrective action was conducted.” TSD at 58; *see id.* at 20 (Consideration of Subsurface Drainage Systems on the Transport of Nutrients); Agency Att. 2 at 9 (¶8). Responding to a question pre-filed by the Agricultural Coalition, the Agency expressed the belief that this additional element is “important enough to require records in the event that discharges occur and in those cases when a discharge may not have occurred but case-specific, third party questions are raised before the Agency.” Agency Att. 2 at 10 (¶8).

Subsection (m). The Agency proposed to require that permittees must create and maintain records including “[r]esults from livestock waste and soil sampling.” Prop. 502 at 15; *see* 40 C.F.R. §§ 122.42(e)(2)(i)(B), 412.37(c)(5). The Agency stated that this proposal reflects “federal record keeping requirements for the land application areas of permitted CAFOs.” SR at 50.

Subsection (n). The Agency proposed to require that permittees must create and maintain records including an “[e]xplanation of the basis for determining livestock waste application rates.” Prop. 502 at 15; *see* 40 C.F.R. §§ 122.42(e)(2)(i)(B), 412.37(c)(6). The Agency stated that this proposal reflects “federal record keeping requirements for the land application areas of permitted CAFOs.” SR at 50.

Subsection (o). The Agency proposed to require that permittees must create and maintain records including “[c]alculations showing the total nitrogen and phosphorus to be applied to each field, including sources other than livestock waste.” Prop. 502 at 15; *see* 40 C.F.R. §§ 122.42(e)(2)(i)(B), 412.37(c)(7). The Agency stated that this proposal reflects “federal record keeping requirements for the land application areas of permitted CAFOs.” SR at 50.

Subsection (p). The Agency proposed to require that permittees must create and maintain records including the “[t]otal amount of nitrogen and phosphorus actually applied to each field, including documentation of calculations for the total amount applied.” Prop. 502 at 15; *see* 40 C.F.R. §§ 122.42(e)(2)(i)(B), 412.37(c)(8). The Agency stated that this proposal reflects “federal record keeping requirements for the land application areas of permitted CAFOs.” SR at 50.

Subsection (q). The Agency proposed to require that permittees must create and maintain records including “[t]he method used to apply livestock waste.” Prop. 502 at 15; *see* 40 C.F.R. §§ 122.42(e)(2)(i)(B), 412.37(c)(9). The Agency stated that this proposal reflects “federal record keeping requirements for the land application areas of permitted CAFOs.” SR at 50.

Subsection (r). The Agency proposed to require that permittees must create and maintain records including the “[d]ate of livestock waste application equipment inspection.” Prop. 502 at 15; *see* 40 C.F.R. §§ 122.42(e)(2)(i)(B), 412.37(c)(10). The Agency stated that this proposal reflects “federal record keeping requirements for the land application areas of permitted CAFOs.” SR at 50.

Subsection (s). The Agency proposed to require that permittees must create and maintain records including the “[m]aximum number and type of animals, whether in open confinement or housed under roof by the following types: beef cattle, broilers, layers, swine weighing 55 pounds or more, swine weighing less than 55 pounds, mature dairy cows, dairy heifers, veal calves, sheep and lambs, horses, turkeys, ducks, other.” Prop. 502 at 15. The Agency indicated that this proposal is an addition to the federal record keeping requirements. SR at 49.

Subsection (t). The Agency proposed to require that permittees must create and maintain “[a]ll records necessary to prepare the annual report required by Section 502.325.” Prop. 502 at 15. The Agency indicated that this proposal is an addition to the federal record keeping requirements. SR at 51.

Subsection (u). The Agency proposed to require that permittees must create and maintain records including the “[t]otal number of acres of land application area covered by the nutrient management plan.” Prop. 502 at 15. The Agency indicated that this proposal is an addition to the federal record keeping requirements for land application areas. SR at 50.

Subsection (v). The Agency proposed to require that permittees must create and maintain records including “[t]he quantity of livestock waste removed when a manure storage area or waste containment area is dewatered.” Prop. 502 at 15; *see* SR at 49; TSD at 58; Yurdin Test. at 9. The Agency stated that the federal regulations require adequate storage with volume sufficient for livestock waste and storm water but that this recordkeeping requirement is in addition to those regulations. TSD at 58. The Agency expressed the belief that this record keeping proposal “is useful and practical given the various other storage area requirements, such as those relating to maintenance of the structure and installation of a depth marker, all intended to ensure positive retention and adequate volume available at any time.” *Id.*; *see* Yurdin Test. at 9. The Agency further justified this recordkeeping requirement “as a means of protecting water

quality.” Agency Att. 2 at 9 (¶8). Responding to a question pre-filed by the Agricultural Coalition, the Agency expressed the belief that this additional element is “important enough to require records in the event that discharges occur and in those cases when a discharge may not have occurred but case-specific, third party questions are raised before the Agency.” *Id.* at 10.

Subsection (w). The Agency proposed to require that permittees must create and maintain records including nine specified items of “information for each day during which livestock wastes are applied to land.” Prop. 502 at 15. The Agency indicated that most elements of this proposed subsection are additions to the federal record keeping requirements. SR at 48, 50. Responding to a question pre-filed by the Board, Mr. Sofat stated that these requirements apply to each land application including winter application. Agency Att. 1 at 4 (¶12).

Subsection (x). The Agency proposed to require that permittees must create and maintain records of “[t]he laboratory analysis sheets reporting the analysis of the livestock waste samples shall be kept on file at the facility for the term of this permit and for 5 years after the expiration of the permit.” Prop. 502 at 16; *see* SR at 49. The Agency indicated that this proposal is an addition to the federal recordkeeping requirements for land application areas. SR at 50.

Subsection (y). The Agency proposed to require that permittees must create and maintain “[r]ecords documenting the test methods and sampling protocols for manure, litter and process wastewater and soil analyses.” Prop. 502 at 16. The Agency stated that this proposed requirement is consistent with the federal requirement. SR at 50 n.34, citing 40 C.F.R. § 412.37(c)(4).

Section 502.325: Annual Report.

In its proposed Section 502.325, the Agency lists “the minimum elements of the annual report that must be submitted by all permitted CAFOs.” SR at 51. The Agency stated that its proposed requirement is “consistent with the federal rule.” *Id.* at 47; *see* 40 C.F.R. § 122.42(e)(4); TSD at 8. The Agency indicated that the elements of the annual report include information necessary to evaluate operation of the CAFO and compliance with NPDES permit requirements. *See* SR at 51, citing 73 Fed. Reg. 70455-56 (Nov. 20, 2008); 68 Fed. Reg. 7231 (Feb. 12, 2003).

Subsection (a). The Agency first proposed to require that “[t]he NPDES permit must specify annual reporting requirements for the CAFO. The annual report must be submitted to the Agency.” Prop. 502 at 16; *see* 40 C.F.R. § 122.42(e)(4).

Subsection (b). The Agency proposed to require that the annual report contain 13 elements, all but one of which is based on corresponding federal requirements. SR at 51, n.36, citing 40 C.F.R. § 122.42(e)(4). As discussed above under Section 502.102(d), the Board added subsection (14) to address annual review of nutrient management practices.

Subpart E: Requirements for Developing and Implementing Nutrient Management Plans

The Agency's proposed new Subpart E "contains both federal and state requirements pertaining to NMPs." SR at 76. The Agency elaborated that "[a]ll CAFOs seeking to be permitted must provide an NMP consistent with the requirements in Subpart E of Part 502." TSD at 7; *see* SR at 76. In his testimony pre-filed for the first hearing, Mr. Yurdin characterized the NMP as "the backbone of the NPDES permit for all CAFOs." Yurdin Test. at 2. He further stated that the Agency's proposal requires that the plan include "the basic information we believe the producer will need to operate the waste management system and the Illinois EPA would need in order to complete a review during an inspection." *Id.* He added that these inspections "should be conducted to determine compliance with the state and federal regulations for the design, construction, operation and maintenance of the production and land application areas, including the livestock waste-handling facilities, with particular attention to the presence or absence of any wastewater discharges." *Id.* at 1-2; *see* Yurdin Test. at 2.

Proposed Subpart E specifies the requirements applicable to these NMPs, which the Board summarizes in the following subsections of the opinion. *See* TSD at 9; Prop. 502 at 18-28 (proposed Sections 502.500 - 502.520); Heacock Test. at 7.

Section 502.500: Purpose, Scope and Applicability.

The Agency stated that Section 502.500 "contains the scope of the NMP requirement." SR at 77. The Agency proposed an introduction to this section providing in its entirety that "[t]he requirements of this Subpart are intended to minimize the transport of nitrogen and phosphorus to waters of the United States in compliance with the nutrient management plan." Prop. 502 at 18.

Subsection (a). The Agency proposed to add a subsection (a) providing first that "[t]he requirements in this Subpart apply to CAFOs required to obtain an NPDES permit." Prop. 502 at 18; *see* SR at 77; TSD at 9. The Agency also sought to add language providing that "[u]npermitted Large CAFOs, claiming an agricultural stormwater exemption consistent with Section 502.102, are subject to the requirements in Section 502.510(b)." Prop. 502 at 18; *see* SR at 77. Proposed Section 502.510(b) lists "nutrient management practices intended to minimize nitrogen and phosphorus runoff. . . ." TSD at 77; *see* Prop. 502 at 20-22.

Subsection (b). The Agency also proposed to add a subsection (b) providing in its entirety that "[t]he CAFO owner or operator shall develop, submit and implement a site specific nutrient management plan. This plan shall specifically identify and describe practices that will be implemented to assure compliance with this Subpart and the livestock waste discharge limitations and technical standards of Subparts F, G, and H." Prop. 502 at 18; *see* SR at 77; TSD at 9. The Agency added that, "[l]ike the federal rule, this includes CAFOs which do not land apply livestock waste." SR at 77.

Section 502.505: Nutrient Management Plan Information.

The Agency proposed in this section to list the information that an NMP must, at a minimum, contain. SR at 77; *see* Prop. 502 at 18; Heacock Test. at 7. The Agency stated that, "[w]hile this section is not specifically included in the federal rule, the Agency proposes

including this information to help reduce confusion when formulating an NMP, as NMPs are often complex.” SR at 77. The Agency added that “the information required by this section is necessary for the CAFO and the Agency to determine whether the practices described in the proposed NMP will minimize nutrient transport to waters of the United States.” *Id.*; *see* Yurdin Test. at 3.

Responding to a question pre-filed by the Agricultural Coalition, Mr. Yurdin indicated that proposed Section 502.505 is not taken exactly from the corresponding federal rule but is necessary to implement it. Agency Att. 2 at 2 (¶2). He added that proposed Section 502.505 is not derived from existing regulations adopted under the LMFA. *Id.* During the first hearing, Mr. Heacock testified that the Agency was aware of the LMFA regulations when drafting its proposed rules and “used it as guidance for part of the requirements, but the main emphasis was the federal regulations as to what we need to include in the NMP.” Tr.1 at 44.

Subsection (a). The Agency proposed to require that the NMP contain the “[n]ame, address, and phone number of the owners of the CAFO.” Prop. 502 at 18. The Agency characterized this contact information as “background” about the CAFO. SR at 77.

Subsection (b). The Agency proposed to require that the NMP contain the “[n]ame, address, and phone number of the managers or operators if different than the owners.” Prop. 502 at 18. The Agency characterized this contact information as “background” about the CAFO. SR at 77.

Subsection (c). The Agency proposed to require that the NMP contain the “[a]ddress, phone number, and plat location of the CAFO production area.” Prop. 502 at 18; *see* Yurdin Test. at 3. The Agency sought the “location and contact information for the production area, as this may differ from the owner and manager’s information.” SR at 77.

Subsection (d). The Agency proposed to require that the NMP contain the “[n]ame of the person who developed the nutrient management plan and a statement indicating whether it was developed or approved by a certified nutrient management planner, and by whom the certification was issued.” Prop. 502 at 19; *see* SR at 77. The Agency stated that “[t]his information is also required under the federal rule and the Agency’s proposal in section 502.325 to be submitted as part of the CAFO’s annual report.” SR at 77-78; *see* Prop. 502 at 17 (proposed Section 502.325(b)(6)); *see also* 40 C.F.R. 122.42(e)(4)(vii); SR at 51.

In a pre-filed question, the Board asked the Agency to provide information about entities that certify nutrient management planners and the certification requirements. Agency Att. 1 at 12 (¶35). The Agency responded that certification for nutrient management planning specifically applicable to livestock facilities is available through the United States Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS) Technical Service Provider (TSP) program and the Certified Livestock Manager Program under the LMFA. *Id.* The Agency indicated that, under the USDA-NRCS program, “[q]ualifications are based upon the category and option” under which the TSP opts to be certified. *Id.* at 12-13. The Agency reports that the Illinois Department of Agriculture administers a certification program and that the LMFA “requires that livestock facilities with 300 or more animal units must be supervised by a certified

livestock manager.” *Id.* at 13. The Agency states that “[m]anagers of facilities with 300 to 999 animal units can become certified in one of two ways: by attending an approved training course or passing a proficiency exam. Managers of facilities with 1,000 or more animal units must attend the training course and pass an exam. Topics of the training and exam include development of nutrient management plans.” *Id.*

During the first hearing, Mr. Heacock acknowledged that the Agency’s proposal does not require an NMP to be prepared by a certified planner. Tr.1 at 189. He clarified that, under the proposed rules, a facility is “just required to tell us in an NMP whether they used a certified planner.” *Id.* Asked why the Agency had not required preparation by a certified planner, Mr. Heacock responded that the proposal generally follows the federal requirement. *Id.* He noted that the LMFA requires supervision of larger facilities by a certified livestock manager trained and examined in matters including NMP requirements. *Id.* at 190.

Subsection (e). The Agency proposed to require that the NMP contain the “[t]ype of waste storage for the CAFO.” Prop. 502 at 19; *see* SR at 78. The Agency characterized this information as “background” about the CAFO. SR at 78.

Subsection (f). The Agency proposed to require that the NMP contain the “[s]pecies, size and maximum number of animals at the CAFO.” Prop. 502 at 19; *see* SR at 78; Yurdin Test. at 3. The Agency characterized this information as “background” about the CAFO. SR at 78.

Subsection (g). The Agency proposed to require that the NMP contain

[s]caled aerial photos or maps depicting each field available and intended for livestock waste application with available acreage listed and indicating residences, non-farm businesses, common places of assembly, streams, wells, waterways, lakes, ponds, rivers, drainage ditches, subsurface drainage systems, other water sources, 10-year flood plain, buffers, slope, locations of structural BMPs, setbacks and areas restricted from application by this Subpart E. Prop. 502 at 19; *see* SR at 78; TSD at 9; Yurdin Test. at 3; Heacock Test. at 8.

The Agency noted that “[t]he federal CAFO rule requires the identification and setbacks for each land application field. The federal rule also requires the identification of site-specific conservation practices.” TSD at 9, citing 40 C.F.R. § 122.42(e)(1)(vi). The Agency stated that Illinois rules implementing the Livestock Management Facilities Act include requirements similar to those proposed in this subsection. TSD at 9, citing 8 Ill. Adm. Code 900.803(f) (Waste Management Plan Contents); Heacock Test. at 8. The Agency added that USDA NRCS standards require similar information. TSD at 9, citing Att. II at 6 (Nutrient Management Code 590); Att. JJ at 4 (Waste Utilization Code 633); Heacock Test. at 8. The Agency indicated that information of this nature is “already part of a livestock producer’s plan when they participate or must comply with USDA-NRCS programs or LMFA regulations.” TSD at 9.

In a pre-filed question, the Board asked the Agency to describe the kinds of places encompassed within the term “common places of assembly.” Agency Att. 1 at 13 (¶36). The

Agency explained that it intended that term to have the same meaning as provided under the LMFA regulations. *Id.*; *see* Agency Att. 2 at 12 (¶10). Section 900.103 of those regulations defines the term “populated area” to include “common places of assembly,” which it describes as follows:

common places of assembly or non-farm businesses include but are not limited to churches, hospitals, schools, day care centers, manufacturing companies, land managed for recreational or conservation purposes, museums, camps, parks, retail and wholesale facilities, and shopping centers. A common place of assembly or a non-farm business includes places that operate less than 52 weeks per year, such as schools with seasonal vacation periods and businesses or other places which experience seasonal shutdowns, and parks, camps, and recreational areas which experience seasonal shutdowns or reduced attendance during a portion of the calendar year, provided that such places are frequented by at least 50 persons at least once per week during the portions of the year when seasonal shutdowns or reductions in attendance do not occur. 8 Ill. Adm. Code 900.103; *see* Agency Att. 1 at 13 (¶36).

In a pre-filed question, the Environmental Groups asked the Agency whether this proposed rule required “off-site land application areas not owned or rented by the operator to be included in the scaled aerial photos or maps.” Agency Att. 5 at 7 (¶19). The Agency responded that an NMP “must include maps of the proposed land application areas. Maps of off-site land application areas that are not part of the nutrient management plan are not required to be submitted in the nutrient management plan.” *Id.*; *see* Tr.1 at 180. However, the Agency added that records must include the location of land application by off-site recipients of livestock waste. Agency Att. 5 at 7 (¶19); *see* Tr.1 at 180.

Subsection (h). The Agency proposed to require that the NMP contain, “[f]or land application areas not owned or rented, copies of statement of consent between the owner or operator of the livestock facilities and the owner of the land where livestock waste will be applied.” Prop. 502 at 19; *see* SR at 78; Heacock Test. at 8. The Board pre-filed a question asking the Agency whether it would clarify this provision to refer to “land application areas not owned or rented by the owner or operator of the CAFO.” Agency Att. 1 at 13 (¶37). The Agency agreed that subsection (h) would be clearer with this additional language. *Id.* Accordingly, the Board will revise the Agency’s original proposal to include it in the order below.

The Agency claimed that federal regulations require CAFOs to have land application areas sufficient to prevent discharges of waste and avoid inappropriate application. TSD at 15, citing 40 C.F.R. §§ 122.42(e)(1), 412. The Agency noted that its proposed Section 502.510(b)(2) requires an NMP “to specify and demonstrate adequate land area for its livestock waste.” TSD at 15. The Agency stated that “the CAFO owner may own, rent, or have available by a consent agreement with another party such land as may be necessary to fulfill this obligation.” TSD at 15. The Agency further stated that, by requiring submission of a consent agreement, it provides CAFO owners a means of demonstrating “that they have access to sufficient area for land application.” *Id.*; Heacock Test. at 8.

The Agricultural Coalition pre-filed a question asking the Agency what it expects “of a producer who contracts with a grain farmer, or other person not associated with the CAFO, as it relates to the proper application of manure to lands not controlled by the CAFO owner or operator.” Agency Att. 2 at 6 (¶5). The Agency responded that, in addition to accounting for land application arrangements in an NMP, “[t]he permittee is also responsible to identify the recipient of the livestock waste and other details, under Section 502.320(w)(7) and 502.505(h) in the CAFO’s records, and under Section 502.325(b)(3) the permittee must list the amount transferred in the annual report.” *Id.*; see Tr.1 at 171.

The Environmental Groups pre-filed a question asking the Agency whether, when livestock waste is transferred to a third party, the proposed rules require that land areas where the third party applies that waste are considered part of the permittee’s NMP. Agency Att. 5 at 7 (¶18). The Agency responded that “[o]ff-site land application of livestock waste not under the control of the CAFO owner or operator is not part of the permittee’s nutrient management plan, unless specified to be part of the CAFO owners or operator’s approved nutrient management plan in the permit application.” *Id.*; see Tr.1 at 170-72. During the first hearing, Mr. Heacock testified that factors such as determining livestock waste application rates or the method of application or actually applying the waste may indicate that a CAFO owner or operator exercises control, even if it does not own the land on which the livestock waste is applied. Tr.1 at 172-73. He elaborated that “[t]hey have to get consent under these proposed rules to take it there, and it has to be part of the nutrient management plan in that case.” *Id.* at 173, 174. He further elaborated that, if livestock waste is applied by a third party to land owned, rented, or leased by the CAFO, then that land must also be included in the NMP. *Id.* at 175. However, he added that “[t]here is an opportunity for off-site recipients of the waste, which could be a third party, to come in and take the waste off-site. . . .” *Id.* at 171. While the CAFO would be required to keep records of that transfer, he acknowledged that the site of land application of that waste is “not actually a part of the full nutrient management plan.” *Id.* at 171, 174.

The Environmental Groups also asked the Agency whether fields to which third-parties apply livestock waste are subject to technical requirements under Subpart F of the proposed rules. Agency Att. 5 at 8 (¶21). The Agency responded that “[o]ff-site land application of livestock waste not under the control of the CAFO owner or operator is not subject to subpart F unless the land application area is part of the NPDES permittee’s approved nutrient management plan.” *Id.* The Agency added that these third-party applicators are not “required to register their land application sites with IEPA.” *Id.* (¶20). The Agency also added that, in drafting its rulemaking proposal, it “did not consider any livestock waste manifest program. . . .” *Id.* (¶23).

In addition, the Environmental Groups stated that subsection (h) “doesn’t require statements of consent with owners of land accepting livestock waste to include the duration of time that waste will be accepted.” Agency Att. 5 at 8 (¶22). If a transferee consented to accept waste only for one year, the Environmental Groups asked how the Agency would “be able to verify that the CAFO has adequate land for waste disposal at alternate sites for the duration of the permit.” *Id.* The Agency responded that “Section 502.510(b)(2) requires each nutrient management plan to specify and demonstrate adequate land application area for land application of livestock waste. . . . In the example given the applicant would need to obtain additional land for its land application area to complete its nutrient management plan.” *Id.*

Subsection (i). The Agency proposed to require that the NMP contain the “[c]ropping schedule for each field for the past year, anticipated crops for the current year, and anticipated crops for the five year term of the permit.” Prop. 502 at 19; *see* SR at 78; Yurdin Test. at 3; Heacock Test. at 8. The Agency indicated that it evaluates proposed application rates in the NMP in part on the basis of these crop rotation schedules. SR at 78, citing TSD at 17-18.

Subsection (j). The Agency proposed to require that the NMP contain the “[r]ealistic crop yield goal for each crop in each field.” Prop. 502 at 19; *see* SR at 78; Yurdin Test. at 3; Heacock Test. at 8. The Agency indicated that it evaluates proposed application rates in the NMP in part on the basis of these crop yield goals. SR at 78, *see* TSD at 17.

Subsection (k). The Agency proposed to require that the NMP contain “[a]n estimate of the nutrient value of the livestock waste or results of livestock waste analysis determined pursuant to Section 502.625(c).” Prop. 502 at 19; *see* SR at 78; Yurdin Test. at 3; Heacock Test. at 8. The Agency indicated that it evaluates proposed application rates in the NMP in part on the basis of this estimated nutrient value. SR at 78.

Subsection (l). The Agency proposed to require that the NMP contain “[l]ivestock waste application methods.” Prop. 502 at 19; *see* SR at 78; Heacock Test. at 8.

Subsection (m). The Agency proposed to require that the NMP contain “[r]esults of the Bray P1 or Mehlich 3 test for soil phosphorus reported in pounds of elemental phosphorus per acre.” Prop. 502 at 19; *see* SR at 79; Yurdin Test. at 3; Heacock Test. at 8. The Agency stated that federal regulations require NMPs to contain “protocols for site specific nutrient management practices that ensure appropriate agronomic use of the nutrients in the livestock waste.” TSD at 15, citing 40 C.F.R. §§ 122.42(e)(1)(viii), 122.42(e)(5); *see* Heacock Test. at 16. The Agency further stated that the heart of any NMP is the determination of land application rates based on nitrogen and phosphorus for any given field. TSD at 15; *see* Heacock Test. at 8. The Agency indicated that this proposed subsection implements this federal requirement. *Id.*

The Agency also proposed that, “[i]f livestock waste is to be land applied based on a single year or multi-year phosphorus application on the land application area,” four specific calculations must be provided in the NMP. Prop. 502 at 19; *see* SR at 79. The Agency stated that “[t]hese data and calculations are intended to show the maximum rate of application based on phosphorus.” TSD at 16; *see* Heacock Test. at 16-17.

Subsection (n). The Agency proposed to require that the NMP “contain the calculations that will enable the CAFO to determine the maximum application rate based on nitrogen.” SR at 79; *see* TSD at 16-17; Yurdin Test. at 3; Heacock Test. at 8, 17. Specifically, “[t]he calculations must show the land area required for application rates that do not exceed the nitrogen demand of the crop grown. . . .” TSD at 16. The Agency stated that, “[t]o make these calculations, the livestock waste must be analyzed or estimates from published sources of livestock waste data must be used to determine PAN [plant available nitrogen].” TSD at 16. The Agency proposed to list the required calculations in subsections (n)(1) through (n)(9).

Subsection (o). The Agency proposed to require that the NMP contain “[a] listing of fields and the planned livestock waste application amounts for each field.” Prop. 502 at 20; *see* SR at 78; TSD at 17, citing 40 C.F.R. § 122.42(e); Heacock Test. at 8; *see also* 8 Ill. Adm. Code 908.803(n).

Section 502.510: Nutrient Management Plan Requirements.

In his testimony pre-filed for the first hearing, Mr. Yurdin stated that the Agency’s proposal regarding the elements of the NMP intends to “1) comply with the mandates under the federal CAFO rule and 2) provide a comprehensive basis for the decisions made by the livestock producer that result in the management of the livestock waste storage facilities and the land application of the waste.” Yurdin Test. at 3; *see* Heacock Test. at 7. Mr. Yurdin further stated that provisions of Section 502.510 are “either taken exactly from the federal rule or are necessary to implement the federal rule in the state of Illinois.” Agency Att. 2 at 2 (¶2). He listed Sections 502.510(b)(1-2), (11-14), and (16) as necessary to implement the federal rule and stated that the remainder of the section is taken from the federal rule. *Id.*, citing SR at 77-82. He added that Section 502.510 is “not derived from existing livestock management regulations” under the LMFA. Agency Att. 2 at 2 (¶2); *see* Tr.1 at 42-44. The Board addresses the Agency’s proposed requirements for the NMP in the following subsections of the opinion.

Subsection (a). The Agency proposed in subsection (a) that “[a]ny permit issued to a CAFO must include a requirement to implement a nutrient management plan by the date of permit coverage that, at a minimum, contains best management practices necessary to meet the requirements of this Section and the applicable livestock discharge limitations and technical standards in 35 Ill. Adm. Code Parts 501 and 502.” Prop. 502 at 20; *see* SR at 76, citing 40 C.F.R. § 412.4(c)(2); Heacock Test. at 7. The Agency elaborated that these management practices “minimize phosphorus and nitrogen transport from the field to surface water in compliance with the Agency’s technical standards.” SR at 76.

Subsection (b). The Agency proposed in subsection (b) to require that the NMP “must specify and demonstrate” that it has satisfied 16 elements. Prop. 502 at 20-22; *see* SR at 79, citing 40 C.F.R. § 122.42(e)(1); TSD at 18; Sofat Test. at 9; Heacock Test. at 7. The Board notes, as discussed under Section 502.102(d), that the Board added subsection (15) to address annual review of nutrient management practices so that an NMP must satisfy 17 elements. The Agency stated that “[a]ll unpermitted large CAFOs seeking to claim that a discharge from its land application area is an agricultural stormwater discharge must meet the NMP requirements” applicable to permitted facilities. SR at 79; *see* TSD at 4, citing 40 C.F.R. § 122.23(e)(1, 2); Yurdin Test. at 7. Based on the size of these unpermitted facilities and the risk of pollution they may pose, the Agency proposed that they “develop the controls and best management practices” listed in this subsection. TSD at 4. The Agency claimed that this requirement gives these facilities “clear criteria if they later claim that a discharge from a land application area was an agricultural stormwater discharge, and consequently exempt from the Clean Water Act.” *Id.* at 4-5; *see* Agency Att. 2 at 7 (¶6). The Agency also claimed that this requirement is “equitable as it requires all CAFOs seeking the agricultural stormwater exemption to comply with the same set of requirements.” *Id.* In addition, the Agency argued that its proposal “imposes necessary

requirements on unpermitted large CAFOs to ensure that contribution of pollutants from these facilities into waters of the U.S. is minimal.” *Id.*

Subsection (1). The Agency proposed to require that the NMP specify and demonstrate “[t]he livestock waste application rate of nitrogen in a single year and phosphorus in a single year or multiple years, not to exceed the single year crop nitrogen and single year or multi-year phosphorus requirements for realistic crop yield goals in the rotation.” Prop. 502 at 21; *see* SR at 80; TSD at 4-5, 18.

Responding to a question pre-filed by the Agricultural Coalition, Mr. Yurdin stated that proposed Section 502.510(b)(1) is not taken exactly from the federal rule but is necessary to implement it. Agency Att. 2 at 2 (¶2). He added that proposed Section 502.510(b)(1) is not derived from existing regulations adopted under the LMFA. *Id.* During the first hearing, Mr. Heacock testified that the Agency was aware of the LMFA regulations when drafting its proposed rules and “used it as guidance for part of the requirements, but the main emphasis was the federal regulations as to what we need to include in the NMP.” Tr.1 at 44.

The Agency stated that this proposed subsection addresses the federal requirement that NMPs “specify the appropriate agricultural utilization of nutrients.” TSD at 18, citing 40 C.F.R. § 122.42(e)(5). The Agency added that the proposal also meets the federal requirement that NMPs “include a field specific assessment of the potential for nitrogen and phosphorus transport” and address “the form, source, amount, timing and method of application of nutrients on each field to achieve realistic production goals, while minimizing nitrogen and phosphorus movement to surface waters.” TSD at 18, citing 40 C.F.R. § 412.4(c)(1).

The Board pre-filed a question noting the requirement of subsection (b)(1) and asking the Agency to clarify “whether the procedures of Subpart F must be followed to make the nutrient application rate demonstration” and, if so, whether those procedures “should apply to Unpermitted Large CAFOs.” Agency Att. 1 at 14 (¶38). The Agency responded that “[t]he procedures in Subpart F must be followed for permitted CAFOs and for development of the NMP for submission in a NPDES permit application.” *Id.* The Agency further stated that the procedures “are not required to be followed to make the nutrient application rate demonstration for unpermitted large CAFOs that are not applying for an NPDES permit.” *Id.*

Subsection (2). The Agency proposed to require that the NMP specify and demonstrate “[a]dequate land application area for livestock waste application.” Prop. 502 at 21; *see* SR at 80; TSD at 4-5, 17; Yurdin Test. at 3; Sofat Test. at 9.

Responding to a question pre-filed by the Agricultural Coalition, Mr. Yurdin stated that proposed Section 502.510(b)(2) is not taken exactly from the federal rule but is necessary to implement it. Agency Att. 2 at 2 (¶2). He added that proposed Section 502.510(b)(2) is not derived from existing regulations adopted under the LMFA. *Id.* During the first hearing, Mr. Heacock testified that the Agency was aware of the LMFA regulations when drafting its proposed rules and “used it as guidance for part of the requirements, but the main emphasis was the federal regulations as to what we need to include in the NMP.” Tr.1 at 44.

The Agency stated that large unpermitted CAFOs and permitted CAFOs claiming the agricultural stormwater exemption must meet federal requirements “for the land application area by ensuring appropriate agricultural utilization of the nutrients in the livestock waste.” TSD at 5. The Agency further stated that lacking “adequate land application area may cause the CAFO to discharge” and fail to meet those requirements. *Id.*, citing 40 C.F.R. § 122.23(e). The Agency added that large unpermitted CAFOs and permitted CAFOs must also have means to “prevent discharge of livestock waste from the production area.” TSD at 5.

Subsection (3). The Agency proposed to require that the NMP specify and demonstrate “[a]dequate storage of livestock waste, including procedures to ensure proper operation and maintenance of the storage facilities.” Prop. 502 at 21; *see* 40 C.F.R. § 122.42(e)(1)(i); SR at 79; TSD at 4-5; Yurdin Test. at 3; Sofat Test. at 9. The Agency stated that, “[s]ince the land application operations are tied directly to proper operation and maintenance of the livestock waste storage facilities,” it proposed that “large unpermitted CAFOs and permitted CAFOs that would potentially claim an agricultural stormwater exemption must demonstrate the adequacy of their operation and maintenance of the storage facilities. . . .” TSD at 5. The Agency added that adequate storage helps satisfy federal requirements to ensure appropriate agricultural utilization. *Id.* at 5-6, citing 40 C.F.R. § 122.42(e)(1)(viii).

Subsection (4). The Agency proposed to require that the NMP specify and demonstrate “[p]roper management of mortalities to ensure that they are not disposed of in a liquid livestock waste or stormwater storage or treatment system that is not specifically designed to treat animal mortalities.” Prop. 502 at 21; *see* SR at 79, citing 40 C.F.R. § 122.42(e)(1)(ii); TSD at 4-5, 9; Yurdin Test. at 3; Sofat Test. at 9; Heacock Test. at 7, 8. The Agency stated that “[l]and application of improperly managed mortalities from a CAFO may not meet” federal requirements. TSD at 9, citing 40 C.F.R. § 122.42(e)(1)(viii). In his testimony pre-filed for the first hearing, Mr. Heacock stated that “[i]mproper management of mortalities . . . may result in the CAFO not being able to claim the agricultural storm water exemption under the federal CAFO regulations for land application of livestock waste.” Heacock Test. at 8-9. The Agency added that it may also be “inconsistent with the Illinois Dead Animal Disposal Act administered by the Illinois Department of Agriculture.” TSD at 9; *see* 225 ILCS 610/1.1 *et seq.* (2012).

Subsection (5). The Agency proposed to require that the NMP specify and demonstrate “[t]hat clean water is diverted, as appropriate, from the production area.” Prop. 502 at 21; *see* SR at 79, citing 40 C.F.R. § 122.42(e)(1)(iii); TSD at 4-5, 10; Heacock Test. at 8. The Agency stated that, “[b]y accounting for and diverting clean water from the production area, unpermitted large CAFOs and permitted CAFOs reduce the likelihood of discharge.” TSD at 10. The Agency further stated that “[r]educing the volume and minimizing dilution of livestock waste produced by the CAFO reduces the risk of runoff of livestock waste from the land application area.” *Id.*, citing 40 C.F.R. §§ 122.23(e), 122.42(e)(1)(viii); *see* Yurdin Test. at 3-4. In his testimony pre-filed for the first hearing, Mr. Sofat elaborated that, “when clean water is diverted from the production area, this practice reduces the volume of the livestock waste produced by the CAFO, which in turn reduces the land application area necessary for application of the livestock waste consistent with proper agricultural utilization of nutrients.” Sofat Test. at 9. The Agency added that, “[i]n cases where it is appropriate to divert clean water from the production area but no attempts were made to divert such water by the CAFO owner, unpermitted large CAFOs and

permitted CAFOs that might land apply unplanned large volumes of livestock waste may not be fully justifiable in claiming the agricultural stormwater exemption.” TSD at 10; *see* Heacock Test. at 8-9.

Subsection (6). The Agency proposed to require that the NMP specify and demonstrate “[p]revention of direct contact of confined animals with waters of the United States.” Prop. 502 at 21; *see* SR at 79-80, citing 40 C.F.R. § 122.42(e)(1)(iv); TSD at 4-5, 10; Sofat Test. at 9; Heacock Test. at 8. The Agency stated that unpermitted discharges of this nature would be prohibited by federal regulations requiring an NPDES permit for discharges from CAFO production areas. TSD at 10, citing 40 C.F.R. § 122.23. The Agency further stated that, if an unpermitted large CAFO or permitted CAFO relocates animals or its production area to conform with this requirement, it “may find it needs more land application area to provide appropriate agricultural utilization of nutrients.” TSD at 10, citing 40 C.F.R. §§ 122.23(e), 122.42(e)(1)(viii). In his testimony pre-filed for the first hearing, Mr. Heacock added that “contact of livestock with waters of the United States may result in the CAFO not being able to claim the agricultural storm water exemption under the federal CAFO regulations for land application of livestock waste.” Heacock Test. at 8-9.

Subsection (7). The Agency proposed to require that the NMP specify and demonstrate “[t]hat chemicals and other contaminants handled on-site are not disposed of in any livestock waste or stormwater storage or treatment system unless specifically designed to treat such chemicals and other contaminants.” Prop. 502 at 21; *see* SR at 79, citing 40 C.F.R. § 122.42(e)(1)(v); TSD at 4-5, 10-11; Yurdin Test. at 3; Heacock Test. at 8, 12-13. The Agency stated that “[i]mproperly handling or disposing of chemicals from an unpermitted large CAFO or permitted CAFO may interfere with proper operation of the CAFO livestock waste storage structures by upsetting biological activity in lagoons and other storage structures.” TSD at 11; *see* Heacock Test. at 9. The Agency further stated that contaminated livestock wastes may be unsuitable for land application because of the risk of crop damage and may also harm aquatic life if runoff occurs. TSD at 11; *see* Heacock Test. at 9. The Agency added that including this requirement for unpermitted large CAFOs “prevents the improper land application of chemicals and other contaminants from a CAFO when discharge of these pollutants from the CAFO would require an NPDES permit.” TSD at 11; *see* Heacock Test. at 9.

Subsection (8). The Agency proposed to require that the NMP specify and demonstrate “[a]ppropriate site specific conservation practices to be implemented, including as appropriate buffers or equivalent practices, to control runoff of pollutants to waters of the United States.” Prop. 502 at 21; *see* SR at 80, citing 40 C.F.R. § 122.42(e)(1)(vi); Heacock Test. at 9.

Subsection (9). The Agency proposed to require that the NMP specify and demonstrate “[p]rotocols for appropriate testing of livestock waste and soil. Livestock waste must be analyzed a minimum of once annually for nitrogen and phosphorus content and soils analyzed a minimum of twice every five years for phosphorus content. The results of these analyses are to be used in determining application rates for livestock wastes.” Prop. 502 at 21; *see* SR at 80, citing 40 C.F.R. §§ 122.42(e)(1)(vii), 412.2(c)(3); TSD at 11, citing 40 C.F.R. §§ 122.23(e); Heacock Test. at 9. The Agency stated that sampling generates data that may support claiming

an agricultural stormwater exemption under federal regulations. TSD at 11, citing 40 C.F.R. §§ 122.23(e), 122.42(e)(1)(vii).

The Agency stated that “allowing sampling twice in five years provides flexibility in the soil testing frequency so that soil samples would be taken at the same period of the crop or livestock waste application cycle and thus provide a more effective comparison of soil phosphorus levels across a multi-year period.” TSD at 19; *see* Heacock Test. at 9. The Agency proposed technical criteria and sampling protocols in Section 502.635(a). *See* TSD at 51-54.

During the first hearing, Ms. Knowles noted that proposed Section 502.635 establishes sampling requirements for permitted facilities and asked the Agency what requirements are appropriate for unpermitted CAFOs. Tr.1 at 164-65. Mr. Heacock indicated that unpermitted facilities could follow proposed Section 502.635 but also “may have alternative ways that they may do the sampling and/or analysis to make their determinations that they’re providing agricultural utilization of the nutrients. . . .” *Id.* at 165. Mr. Heacock acknowledged that soil sampling requirements may not differ between permitted and unpermitted facilities, but he indicated that there may be ways other than the proposed Subpart F regulations to deal with phosphorus application rates. *Id.*

Subsection (10). The Agency proposed to require that the NMP specify and demonstrate “[p]rotocols to land apply livestock waste in accordance with site-specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the livestock waste.” Prop. 502 at 21; *see* SR at 80, citing 40 C.F.R. § 122.42(e)(1)(viii); Heacock Test. at 9.

The Agency stated that an unpermitted CAFO claiming an agricultural stormwater exemption can demonstrate compliance with this provision “by following the land application effluent limitations and technical standards” in Subpart F. TSD at 62. The Agency argued that “[t]his is the same interpretation under the federal rule.” *Id.* n.45, citing 73 Fed. Reg. 70435 (Nov. 20, 2008).

Subsection (11). The Agency proposed to require that the NMP specify and demonstrate that “[l]ivestock waste shall not be applied within the distance from residences provided in Section 502.645(a) and within the areas prohibited from land application by this Part.” Prop. 502 at 21; *see* SR at 80; TSD at 11-12, 19; Yurdin Test. at 10; Heacock Test. at 9, 11; Agency Att. 5 at 7 (¶16); Tr.1 at 150. The Agency proposed that the same setback provisions and prohibitions apply to “all permitted and unpermitted large CAFOs.” TSD at 11.

The Agency noted that its proposed residential setback is the same as that established under the LMFA. *Id.*; *see* 8 Ill. Adm. Code 900.803(o), citing 510 ILCS 77/20(f)(5) (2012). In his testimony pre-filed for the first hearing, Mr. Heacock stated that “prohibiting surface application of livestock waste that originates from large unpermitted CAFOs and permitted CAFOs and that will take place within 1/4 mile from a residence will provide protection of those residences from runoff of livestock waste and reduce the potential of odor to those residences.” Heacock Test. at 11. The Agency added that other setbacks and prohibitions, including those applicable to surface water and conduits to surface waters, help prevent land application of

livestock waste from causing a discharge. TSD at 11-12, citing 40 C.F.R. §§ 122.23(e), 122.42(e)(1)(vi, viii).

Responding to a question pre-filed by the Agricultural Coalition, Mr. Yurdin stated that proposed Section 502.510(b)(11) is not taken exactly from the federal rule but is necessary to implement it. Agency Att. 2 at 2 (¶2). He added that proposed Section 502.510(b)(11) is not derived from existing regulations adopted under the LMFA. *Id.* During the first hearing, Mr. Heacock testified that the Agency was aware of the LMFA regulations when drafting its proposed rules and “used it as guidance for part of the requirements, but the main emphasis was the federal regulations as to what we need to include in the NMP.” Tr.1 at 44.

Subsection (12). The Agency proposed to require that the NMP specify and demonstrate “[a] winter time land application plan that meets the requirements of Section 502.630 of this Part.” Prop. 502 at 22; *see* SR at 81; TSD at 12, 41; Yurdin Test. at 10; Sofat Test. at 9; Heacock Test. at 9, 11; Agency Att. 5 at 7 (¶16); Tr.1 at 150. The Agency proposed that the same requirements apply to unpermitted Large CAFOs and permitted CAFOs. TSD at 12, citing 40 C.F.R. §§ 122.23(e), 122.42(e)(1)(vi, viii). In his testimony pre-filed for the first hearing, Mr. Heacock expressed the Agency’s belief that land application prohibited by its proposal, including “land application under winter conditions where little attenuation and retention of nutrients is provided, will result in runoff of livestock waste to surface waters.” Heacock Test. at 11.

Responding to a question pre-filed by the Agricultural Coalition, Mr. Yurdin stated that proposed Section 502.510(b)(12) is not taken exactly from the federal rule but is necessary to implement it. Agency Att. 2 at 2 (¶2). He added that proposed Section 502.510(b)(12) is not derived from existing regulations adopted under the LMFA. *Id.* During the first hearing, Mr. Heacock testified that the Agency was aware of the LMFA regulations when drafting its proposed rules and “used it as guidance for part of the requirements, but the main emphasis was the federal regulations as to what we need to include in the NMP.” Tr.1 at 44.

Subsection (13). The Agency proposed to require that the NMP specify and document “[t]he plan for the inspection, monitoring, management and repair of subsurface drainage systems at the livestock waste application site. Inspection of subsurface drainage systems shall include visual inspection prior to land application to determine failures that may cause discharges and visual inspection after land application to identify discharges.” Prop. 502 at 22; *see* SR at 81; TSD at 12-13, citing 40 C.F.R. §§ 122.23(e), 122.42(e)(1)(vi, viii); Yurdin Test. at 9, 10; Heacock Test. at 9.

Responding to a question pre-filed by the Agricultural Coalition, Mr. Yurdin stated that proposed Section 502.510(b)(13) is not taken exactly from the federal rule but is necessary to implement it. Agency Att. 2 at 2 (¶2). He added that proposed Section 502.510(b)(13) is not derived from existing regulations adopted under the LMFA. *Id.* During the first hearing, Mr. Heacock testified that the Agency was aware of the LMFA regulations when drafting its proposed rules and “used it as guidance for part of the requirements, but the main emphasis was the federal regulations as to what we need to include in the NMP.” Tr.1 at 44. The Agency specified that this proposed subsection addresses federal requirements “that nutrient management plans have site specific conservation practices such as setbacks and buffers to control runoff of

pollutants to surface waters and establish protocols to land apply livestock waste in accordance with site specific nutrient management practices that will provide for appropriate agricultural utilization of nutrients in the livestock waste.” *Id.*, citing 40 C.F.R. §§ 122.42(e)(1)(vi, viii). The Agency proposed to require “all CAFOs whether unpermitted large or permitted CAFOs to have the same subsurface drainage system plan.” TSD at 13.

The Agency stated that “[m]any of the fields in Illinois contain these subsurface drainage systems[,] which can fail.” SR at 81; *see* TSD at 20. These failures can cause a direct connection “between the surface of the field and the subsurface drainage system,” which a buffer zone or setback would not necessarily protect. TSD at 20. In his testimony pre-filed for the first hearing, Mr. Yurdin stated that “[t]he intent of these observations and records of the drainage system is to verify that land application related discharges did not occur or, if they did, that a record was kept and corrective action was taken and recorded.” Yurdin Test. at 9.

The Agricultural Coalition pre-filed a question asking the Agency to “explain how a producer records a visual observation of a subsurface drainage system.” Agency Att. 2 at 10 (¶8). The Agency responded that “[t]he producer’s observations should include but are not limited to recording the presence of or absence of flow in the tile outlets and whether the flow, if present, had an unnatural or unusual color or odor. Photos of the outlet discharge may also be useful. Any repairs made by the producer to the field tiles should also be recorded.” *Id.*

Subsection (14). The Agency proposed to require that the NMP specify and demonstrate “[a] spill prevention and control plan.” Prop. 502 at 22; *see* SR at 80; TSD at 13, 20-21; Yurdin Test. at 10; Sofat Test. at 9; Heacock Test. at 10. Responding to a question pre-filed by the Agricultural Coalition, Mr. Yurdin stated that proposed Section 502.510(b)(14) is not taken exactly from the federal rule but is necessary to implement it. Agency Att. 2 at 2 (¶2). He added that proposed Section 502.510(b)(14) is not derived from existing regulations adopted under the LMFA. *Id.* During the first hearing, Mr. Heacock testified that the Agency was aware of the LMFA regulations when drafting its proposed rules and “used it as guidance for part of the requirements, but the main emphasis was the federal regulations as to what we need to include in the NMP.” Tr.1 at 44.

The Agency stated that this prevention and control plan “applies to spills that may occur at the production area, land application area or other areas where livestock waste or other materials of the CAFO are handled or transported.” TSD at 20, 21; SR at 80. The Agency indicated that preventing and controlling spills will “help ensure the appropriate agricultural utilization of livestock waste at the land application area.” TSD at 13, citing 40 C.F.R. §§ 122.23(e), 122.42(e)(1)(viii). In his testimony pre-filed for the first hearing, Mr. Heacock stated that these plans will prevent discharges and protect water quality and aquatic life. Heacock Test. at 10.

Subsection (15). The Agency proposed to require that the NMP specify and demonstrate that “[s]pecific records will be maintained to document the implementation and management of the minimum elements described in subsections (2) through (14) of this Section.” Prop. 502 at 22; *see* SR at 79, 81; TSD at 13-14, citing 40 C.F.R. §§ 122.23(e), 122.42(e)(1)(ix); Heacock

Test. at 10. The Agency noted that its proposed Section 502.510 includes elements not specifically listed in federal requirements. TSD at 14. The Agency added, however, that,

[i]n most cases these additional elements are practices that are important to the proper management and handling of livestock waste at the CAFO. Keeping appropriate records of implementation and management of the elements of the NMP is important to document that the CAFO is complying with its permit, or in the case of unpermitted large CAFOs, to adequately and justifiably claim an agricultural stormwater exemption. TSD at 14.

The Board notes that it has renumbered this provision as subsection (16).

Subsection (16). The Agency proposed to require that the NMP specify and demonstrate “[a] description of the storage provisions and schedules provided for livestock waste when cropping practices, soil conditions, weather conditions or other conditions prevent the application of livestock waste to land or prevent other methods of livestock waste disposal.” Prop. 502 at 22; *see* SR at 80; TSD at 14, citing 40 C.F.R § 122.42(e)(1); Heacock Test. at 10. Responding to a question pre-filed by the Agricultural Coalition, Mr. Yurdin stated that proposed Section 502.510(b)(16) is not taken exactly from the federal rule but is necessary to implement it. Agency Att. 2 at 2 (¶2). He added that proposed Section 502.510(b)(16) is not derived from existing regulations adopted under the LMFA. *Id.* During the first hearing, Mr. Heacock testified that the Agency was aware of the LMFA regulations when drafting its proposed rules and “used it as guidance for part of the requirements, but the main emphasis was the federal regulations as to what we need to include in the NMP.” Tr.1 at 44.

The Agency emphasized “the proper planning and design of the livestock waste handling system in a manner that accounts for all factors that will prevent inappropriate land application or disposal of livestock waste.” TSD at 14. The Agency concluded that “[p]ermitted CAFOs must have adequate livestock management facilities for storage of livestock waste to prevent land application during periods when livestock waste application is not allowed under its permit and these proposed regulations due to conditions cited above.” *Id.*

The Board notes that it has renumbered this provision as subsection (17).

Section 502.515: Terms of Nutrient Management Plan.

The Agency proposed this new section to list the required terms of an NMP. *See* Prop. 502 at 22-26; Yurdin Test. at 4; Heacock Test. at 7-8. Responding to a question pre-filed by the Agricultural Coalition, Mr. Yurdin stated that proposed Section 502.515 is taken from the federal rule. Agency Att. 2 at 2 (¶2). He added that proposed Section 502.515 is not derived from existing regulations adopted under the LMFA. *Id.* During the first hearing, Mr. Heacock testified that the Agency was aware of the LMFA regulations when drafting its proposed rules and “used it as guidance for part of the requirements, but the main emphasis was the federal regulations as to what we need to include in the NMP.” Tr.1 at 44.

Subsection (a). The Agency’s proposed subsection (a) provides in its entirety that “[t]he terms of the nutrient management plan are the information, protocols, best management practices, and other conditions in the nutrient management plan determined by the Agency to be necessary to meet the requirements of Sections 502.505 and 502.510.” Prop. 502 at 22; *see* Yurdin Test. at 4. The Agency stated that this is “the same standard as contained in the federal rules for determining the terms of the NMP.” SR at 81, citing 40 C.F.R. § 122.42(e)(5). The Agency clarified that “[t]his standard does not require that all provisions in section 502.505 and 502.510 are terms. Instead, the terms are what the Agency determines are necessary to meet the requirements of the NMP.” SR at 81. The Agency added that “the information listed in Section 502.505 is required, but is not necessarily a term of the NMP.” *Id.*

Subsection (b). The Agency proposed to require that the terms of the nutrient management plan include three specified elements relating to land application of livestock waste. Prop. 502 at 22; *see* SR at 82, citing 40 C.F.R. § 122.42(e)(5); TSD at 19.

Subsection (c). The Agency’s proposed subsection (c) provides that the terms of the nutrient management plan must address rates of application using either the linear approach or the narrative rate approach. Prop. 502 at 23; *see* Yurdin Test. at 4. The Agency stated that this requirement reflects the federal approach. SR at 82; *see* 40 C.F.R. § 122.42(e)(5).

Subsection (d). The Agency set forth the linear approach to express rate of land application. SR at 82, citing 40 C.F.R. § 122.42(e)(5)(i); Prop. 502 at 23; *see* SR at 24, citing 73 Fed. Reg. 70444 (Nov. 20, 2008); Yurdin Test. at 4.

Subsection (e). The Agency set forth the narrative approach to express rate of land application. SR at 82, citing 40 C.F.R. § 122.42(e)(5)(ii); Prop. 502 at 24; *see* 40 C.F.R. § 122.42(e)(5)(ii); Yurdin Test. at 4.

Section 502.520: Changes to the Nutrient Management Plan.

The Agency stated that the Waterkeeper decision “held that the NPDES permit must incorporate the terms of the NMP.” SR at 27; *see* Att. C. The Agency further stated that, “[a]fter Waterkeeper, modification to the NMP could require a modification of the permit.” SR at 27. The Agency indicated that USEPA promulgated rules to clarify when the modification of an NMP requires modification of a permit. *Id.* at 28, citing 40 C.F.R. § 122.42(e)(6). The Agency stated that its proposal “contains the same restrictions on changing the NMP as found in the federal rule.” SR at 82, citing 40 C.F.R. § 122.42(e)(6).

Subsection (a). The Agency proposed subsection (a) providing the CAFO owner or operator must identify changes to the nutrient management plan, except for calculations of land application rates. Prop. 502 at 27; *see* 40 C.F.R. § 122.42(e)(6)(i). The Agency stated that, as in the federal rule, calculation under the linear and narrative approaches of the maximum amount of livestock waste to be land applied is not subject to the requirements of this section. SR at 82 n.64; *see* 40 C.F.R. § 122.42(e)(6)(i).

Subsection (b). The Agency proposed that it “must determine whether the changes to the nutrient management plan necessitate revision to the terms of the nutrient management plan incorporated into the permit issued to the CAFO.” Prop. 502 at 27; *see* 40 C.F.R. § 122.42(e)(6)(ii). Subsections (1)-(3) further describe this process.

Subsection (c). The Agency proposed that, if it “determines that the changes to the terms of the nutrient management plan are substantial, the Agency must notify the public and make the proposed changes and the information submitted by the CAFO owner or operator available for public review and comment.” Prop. 502 at 27; *see* 40 C.F.R. § 122.42(e)(6)(ii)(B); SR at 28, 82. Subsection (1)-(3) further describe this process.

Subsection (d). The Agency proposed to list examples of “substantial changes to the terms of the nutrient management plan incorporated as terms and conditions of a permit. . . .” Prop. 502 at 28; *see* 40 C.F.R. § 122.42(e)(6)(iii); SR at 28, 82-83. These changes include, but are not limited to, those named in subsection (1-4). Prop. 502 at 28.

Subpart F: Livestock Waste Discharge Limitations and Technical Standards

The Agency proposed effluent limitations for production areas as set forth in Part 412 of the federal rules, which includes four subparts. SR at 52, citing 40 C.F.R. § 412. The Agency noted that, “except for NSPS, the effluent limitation for all dairy cows, cattle, veal, swine and poultry CAFOs are the same.” SR at 52; *see* Prop. 502 at 29-33. Consequently, the Agency concluded to place all of these effluent limitations in this Subpart F and proposed to reorganize and codify these federal requirements in only three subparts. SR at 52 (noting NSPS and other requirements proposed in Subparts G and H); *see* Sofat Test. at 2.

In addition, the Agency noted that federal land application effluent limitations consist of various BMPs, including determination of proper application rates. SR at 60, citing 40 C.F.R. § 412.4. The Agency stated that “determination of application rates in compliance with the technical standards established by the permitting authority is a key component to the federal rule.” SR at 60. The Agency proposed these technical standards in Section 502.615 through 502.645 of Subpart F. SR at 60; *see* Prop. 502 at 33-48.

Section 502.600: Applicability.

The Agency noted that, “[u]nder the federal rule, the effluent limitations in Part 412 apply only to large CAFOs.” SR at 53; *see* 40 C.F.R. 412. The Agency stated that its proposal differs from the federal rule because its proposed Subpart F effluent limitations “for both the production area and the land application area apply to all permitted cattle, dairy cows, swine, poultry, and veal CAFOs that are not subject to the NSPS in subparts G and H.” SR at 53; *see* Agency Att. 1 at 3 (¶8). The Agency elaborated that “small and medium cattle, dairy cows, swine, poultry, and veal CAFOs are also subject to the effluent limitations in Subpart F.” *Id.*, citing TSD at 21; *see* SR at 61; Sofat Test. at 3-5; Heacock Test. at 5; Agency Att. 1 at 3 (¶8).

In support of this proposal, the Agency stated that the waste generated by medium and small CAFOs has the same characteristics as waste generated by large CAFOs. TSD at 21; *see*

Heacock Test. at 4, 5. Although the Agency acknowledged that smaller operations generate less waste than larger ones, “smaller CAFOs can store large quantities of livestock waste.” TSD at 21. The Agency claimed that release or discharge of these wastes from small CAFOs is expected to have the same effect on water quality and aquatic life as releases or discharges from large CAFOs. *Id.*; *see* Heacock Test. at 4. The Agency concluded that “discharge of these wastes should be controlled in the same manner regardless of their size.” TSD at 21; *see* Sofat Test. at 5.

In his testimony pre-filed for the first hearing, Mr. Sofat argued that this approach provides CAFO owners and operators with “business certainty” and less confusion. Sofat Test. at 5. He argued that, “[b]y including applicable effluent limitations and technical standards in the Agency proposal, instead of making a case-by-case determination, the Agency is providing these CAFOs upfront notice of the applicable requirements so that these facilities can design, construct, operate and maintain their facilities in the most cost effective manner to comply with applicable requirements.” *Id.* He further argued that the proposal provides “more business flexibility to go from one size to another, as dairy cows, cattle, swine, poultry, and veal CAFOs of all sizes are subject to the same production and land application area requirements.” *Id.*

In addition, the Agency stated that CAFOs of various sizes generally use the same equipment and practices for livestock waste application. TSD at 21; *see* Heacock Test. at 4, 5. The Agency expected that stormwater runoff resulting from land application of livestock waste would have the same effects on surface water whether the waste originated from larger or smaller CAFOs. *Id.* The Agency noted that the federal rules require NMPs “to contain production area and land application area best management practices for all CAFOs.” *Id.*, citing 40 C.F.R. § 122.42. Stating that permits and NMPs must include terms and conditions necessary to protect water quality, the Agency proposed that large, medium, and small CAFOs should be subject to the same technical standards and effluent limitations with regard to their production and land application areas. TSD at 21; *see* Sofat Test. at 4-5; Heacock Test. at 5.

The Agency noted that its proposed Subpart F does not apply to horse, sheep or duck CAFOs. SR at 61. Consequently, these “horse, sheep and duck CAFOs do not have effluent limitations for land application areas. *Id.* The Agency claimed that “this is consistent with the federal rule.” *Id.*

The Agency added that the land application effluent limitations in Subpart F “apply to new sources because the land application NSPS found in proposed section 502.710(c) and proposed section 502.820” include a cross-reference to the technical standards of Subpart F. *Id.*

In addition, the Agency indicated that portions of the land application effluent limitations apply to unpermitted large CAFOs, whether they are new or existing sources. SR at 61. The Agency proposed to require “that unpermitted large CAFOs claiming an agricultural stormwater exemption consistent with section 502.102 are subject to portions of Subpart F.” *Id.*; *see* Agency Att. 1 at 15 (¶40). The Agency stated that its “[p]roposed section 502.102 provides that unpermitted large CAFOs must comply with the NMP requirements at section 502.510(b) to claim that runoff from a land application area is agricultural stormwater.” *Id.*; *see* Agency Att. 1 at 14 (¶40). The Agency noted two cross-references to Subpart F: “proposed section

502.510(b)(12) requires CAFOs to develop a wintertime land application plan meeting the requirements of proposed section 502.630,” and, under “proposed section 502.510(b)(11), a CAFO cannot land apply within the setback distances in proposed section 502.645(a). . . .” SR at 61; *see* Agency Att. 1 at 14 (¶40). The Agency stated, however, that “Section 502.600 does not expand the requirements applicable to unpermitted CAFOs beyond those in 502.510(b).” Agency Att. 1 at 14 (¶40).

The Agency clarified that, “[i]f an unpermitted Large CAFO seeking to claim the agricultural stormwater exemption chooses to comply with the provisions of 502.615 through 502.645, then it will have also met the requirements of Section 502.510(b)(10).” Agency Att. 1 at 15 (¶40); *see* Tr.1 at 154. The Agency added that proposed Sections 502.605 and 502.610 “are applicable to the production area only and would not apply to unpermitted Large CAFOs seeking to claim the agricultural stormwater exemption.” Agency Att. 1 at 15 (¶40).

Section 502.605: Livestock Waste Discharge Limitations for the Production Area for Permitted CAFOs.

In this new section, the Agency proposed “the federal BPT, BAT, and BCT for the production area of dairy cows, cattle, veal, swine and poultry CAFOs.” SR at 53, citing 40 C.F.R. §§ 412.31 (BPT), 412.32 (BCT), 412.33 (BAT), 412.43 (BPT), 412.44 (BCT), 412.45 (BAT).

Subsection (a). The Agency proposed first to establish that, “[e]xcept as provided in subsections (a)(1), (a)(2), and (c) of this Section, there must be no discharge of livestock wastes into waters of the United States from the CAFO production area.” Prop. 502 at 29; *see* SR at 53. Proposed subsection (a) continues by providing that, “[w]henver precipitation causes an overflow of livestock waste from the containment or storage structure, such waste in the overflow may be discharged into waters of the United States” provided that the production area meets two conditions in subsections (a)(1) and (a)(2). Prop. 502 at 29.

Subsection (b). The Agency proposed a subsection (b) providing in its entirety that “[a]ny point source subject to this Subpart must achieve the livestock waste discharge limitations in this Section as of the date of the permit coverage.” Prop. 502 at 29; *see* SR at 53, citing 40 C.F.R. § 412.31(a)(3).

Subsection (c). The Agency incorporated “the language of the federal rule’s voluntary alternative performance standards, making only non-substantive changes.” SR at 57, citing 40 C.F.R. § 412.31(a)(2); SR at 18.

The Board asked the Agency to clarify “whether a CAFO must request alternative performance standards as a part of the initial NPDES permit application under Subpart E or such a request can be made during operation of the facility after a permit has been issued by the Agency.” Agency Att. 1 at 15 (¶41). The Agency responded that, although this request may be made either in an original application or after commencing operation, “any request to change the limitations of an NPDES permit, made after the permit has been issued would be a modification

to the NMP and NPDES permit and would need to be submitted in an NPDES permit application to the Agency.” *Id.*

The Board also asked the Agency to “clarify the basis on which the Agency can either grant or deny a request for alternate performance standard, and whether an Agency denial is appealable to the Board.” Agency Att. 1 at 15 (¶41). The Agency responded that, when considering a permit application, it “would review the alternative performance standard and the data or other information available to determine if the standard will meet the proposed Section 502.605(c) regulation that requires a technical analysis of the discharge of the pollutants.” *Id.* The Agency added that it would also determine whether the proposed alternative “would meet other provisions of the CAFO regulations in accordance with Section 502.301.” *Id.*; see 35 Ill. Adm. Code 502.301 (Standards for Issuance). The Agency further stated that, if it “determines that the requested alternative performance standard does not meet the standards for issuance of an NPDES permit, the Agency may issue denial of the NPDES permit.” Agency Att. 1 at 15-16 (¶41).

Section 502.610: Additional Measures for CAFO Production Areas.

The Agency stated that proposed Section 502.610 contains “additional measures” applicable to CAFOs subject to Subpart F and containing all of the requirements in the corresponding federal rule. SR at 54, citing 40 C.F.R. § 412.37; see Prop. 502 at 31-33. The Agency stated that, “[t]o have a permissible discharge from the production area, the CAFO must be operated in accordance with the ‘additional measures’ and keep additional records as required under” this section. SR at 53.

Subsection (a). The Agency proposed a requirement providing in its entirety that “[t]he CAFO owner or operator must at all times properly operate and maintain all structural and operational aspects of the facilities including all systems for livestock waste treatment, storage, management, monitoring and testing.” Prop. 502 at 31; see Heacock Test. at 11-12. The Agency stated that, although this proposed requirement is not specifically found in the federal rules, it is tied to them. The Agency noted that proposed Section 502.510(b)(3) requires CAFOs to ensure adequate livestock waste storage and proper operation and maintenance of storage facilities. SR at 55, citing 40 C.F.R. § 122.42(e)(1)(i). The Agency stated that this proposed subsection “extends this NMP requirement to the entire production area: the facility must be properly operated and maintained to have a permissible wet weather discharge.” SR at 55.

Subsection (b). The Agency proposed a requirement providing in its entirety that “[l]ivestock within a CAFO production area shall not come into contact with waters of the United States.” Prop. 502 at 31. The Agency noted that proposed Section 502.510(b)(6) requires that the NMP include the same restriction. SR at 55, citing 40 C.F.R. § 122.42(e)(1)(iv). The Agency added that this proposed subsection “requires this condition to be met to allow a discharge under the permit.” SR at 55.

Subsection (c). The Agency proposed a requirement that “[t]here must be routine visual inspections of the CAFO production area” including, at a minimum, three elements. Prop. 502 at 31. The Agency stated that this proposed requirement is “identical to the federal requirements.”

SR at 54, citing 40 C.F.R. § 412.37(a)(1); *see* Heacock Test. at 12. In a pre-filed question, the Board noted that proposed Section 502.320(c) requires maintenance of records documenting visual inspections required by this proposed subsection. Agency Att. 1 at 16 (¶43). The Board asked whether “it would be appropriate to add to Section 502.610(c) language requiring documentation of the visual inspection.” *Id.* The Agency responded that such additional language is not necessary, “as Section 502.310(c) is applicable to all CAFOs subject to Section 502.610.” *Id.* Consequently, the Board declines to add language of this nature to its first-notice proposal in the order below.

Subsection (d). The Agency proposed requirements for a depth marker “identical to the federal requirements.” SR at 54; *see* Prop. 502 at 31.

Subsection (e). The Agency proposed a requirement regarding corrective action providing in its entirety that “[a]ny deficiencies found as a result of these inspections must be corrected as soon as possible.” Prop. 502 at 31. The Agency stated that this proposed requirements is “identical to the federal requirements.” SR at 54; *see* 40 C.F.R. § 412.37(a)(3); Heacock Test. at 12.

Subsection (f). The Agency proposed a requirement providing in its entirety that, “[i]n addition to the requirements in subsection (e) of this Section, deficiencies not corrected within 30 days must be accompanied by an explanation of the factors preventing immediate correction.” Prop. 502 at 32. The Agency indicated that this proposed subsection reflects a federal requirement. SR at 54, citing 40 C.F.R. § 412.37(b)(3); *see* TSD at 47; Heacock Test. at 12. The Agency noted that “proposed Section 502.320(e) specified the recordkeeping required to document the actions required in the proposal for this action. . . .” TSD at 47.

Subsection (g). The Agency proposed to modify the federal requirements regarding mortalities, noting that “[t]he federal rule does not prohibit discharges from dead animals or from dead animal disposal facilities.” SR at 54; *see* 40 C.F.R. § 412.37(a)(4). The Agency first sought to require that “[d]ischarge to waters of the United States of pollutants from dead livestock or dead animal disposal facilities are prohibited.” Prop. 502 at 32; *see* Heacock Test. at 12. The Agency also “proposed expanding the federal ban on disposing animals in liquid manure or process wastewater systems. . . .” SR at 54; *see* 40 C.F.R. § 412.37(a)(4); Heacock Test. at 12.

The Board pre-filed a question asking the Agency whether this proposed subsection “should be amended to require disposal of dead livestock and flows from facilities used solely for disposal of dead livestock to be managed in accordance with the Dead Animal Disposal Act.” Agency Att. 1 at 16 (¶44); *see* 225 ILCS 610/17 (2012). The Agency responded by noting that “dead livestock handling areas of the CAFO and flows are required to meet proposed Section 502.610(g) and areas where these materials are handled or disposed may also be subject to the Dead Animal Disposal Act.” *Id.* The Agency noted that

[t]he Illinois Dead Animal Disposal Act provides administrative authority to the Illinois Department of Agriculture for development of regulations, implementation and enforcement of said Act. . . . The Agency and Board have

authority under the proposed CAFO regulations and the Illinois Environmental Protection Act to address the improper management and disposal of dead livestock and flows from dead livestock but the Agency and Board have no authority under the Dead Animal Disposal Act. The requirements of the Dead Animal Disposal Act already apply, when applicable, to these dead animal facilities. *Id.*

The Agency argued on these grounds that it did “not believe it is necessary that the requirement to follow the Illinois Dead Animal Disposal Act should be added to the proposed CAFO regulations.” *Id.*

Subsection (h). The Agency proposed a requirement providing in its entirety that “[c]hemicals and other contaminants shall not be disposed of in any livestock waste or stormwater storage or treatment system unless specifically designed to treat such chemicals and other contaminants.” Prop. 502 at 32; *see* SR at 55; TSD at 10; Heacock Test. at 12-13. The Agency stated that, although this proposed requirement is not specifically found in the federal rules, it is tied to them. SR at 55. The Agency noted that proposed Section 502.510(b)(7) contains a similar requirement. SR at 55.

Subsection (i). The Agency proposed a requirement providing in its entirety that “[a] CAFO owner or operator utilizing an earthen lagoon or other earthen manure storage area or waste containment area shall inspect all berm tops, exterior berm sides, and non-submerged interior berm sides for evidence of erosion, burrowing animal activity, and other indications of berm degradation on a frequency of not less than once every week.” Prop. 502 at 32; *see* Heacock Test. at 13. The Agency stated that these inspections help ensure “the structural integrity and condition of materials used in construction.” TSD at 49; *see* Heacock Test. at 13. The Agency added that this proposal is consistent with, although more detailed than, the corresponding federal requirement. SR at 56, citing 40 C.F.R. § 412.37(a)(1)(iii); *see* TSD at 49.

Subsection (j). The Agency proposed a requirement providing in its entirety that “[t]he CAFO owner or operator shall perform periodic removal of livestock waste solids from liquid manure storage areas and the waste containment area to maintain proper operation of the storage structures. Soils that are contaminated with livestock waste removed from earthen manure storage structures shall be considered livestock waste.” Prop. 502 at 32; *see* TSD at 49; Heacock Test. at 13. The Agency stated that “[s]olid waste that accumulates in these area affects the operation and biological condition of the stored manure.” SR at 57; *see* TSD at 49. The Agency stated that the proposed requirement seeks “to ensure proper operation of the waste containment areas.” SR at 57; *see* Heacock Test. at 13. The Agency added that the proposed requirement reflects the federal rule and is consistent with LMFA regulations. TSD at 49, citing 40 C.F.R. § 122.42(e)(1)(i), 8 Ill Adm. Code 900.608(a)(2).

Subsection (k). The Agency proposed “[r]equirements relating to transfer of livestock waste to other persons” and containing three elements. Prop. 502 at 32.

Subsection (l). The Agency first proposed to require that, “[p]rior to transferring livestock waste to other persons, CAFOs must provide the recipient of the livestock waste with

the most current nutrient analysis.” Prop. 502 at 32. The Agency indicated that this proposal reflects the federal requirement. *See* SR at 54, citing 40 C.F.R. § 122.42(e)(3).

Subsection (2). The Agency next proposed to require that “[t]he analysis provided must be consistent with applicable requirements to sample livestock wastes in Section 502.635(b).” Prop. 502 at 32; *see* 40 C.F.R. § 122.42(e)(3).

Subsection (3). The Agency also propose to require that “CAFOs must retain for five years records of the date, recipient name and address, and approximate amount of livestock waste transferred to another person.” Prop. 502 at 32; *see* 40 C.F.R. § 122.42 (e)(3); SR at 54.

Subsection (l). The Agency proposed requirements relating to livestock waste storage. Prop, 502 at 32-33; *see* SR at 55-56; TSD at 50-51.

Subsection (1). The Agency proposed to require that “[l]ivestock waste storage structures at the CAFO production area shall be designed to contain a volume equal or greater than the sum of” the specified volumes. Prop. 502 at 33.

Subsection (2). The Agency also proposed this subsection providing in its entirety that “[t]he storage volume requirements in this subsection (l) do not apply to pump stations, settling tanks, pumps, piping or other components of the CAFO production area that temporarily hold or transport waste to a storage facility meeting the requirements of this subsection.” Prop. 502 at 33; *see* SR at 56.

Section 502.615: Nutrient Transport Potential.

The Agency stated that “[t]he first step in developing the land application portions of an NMP is to determine the nutrient transport potential.” SR at 65; *see* TSD at 19, citing 40 C.F.R. §§ 122.42(e)(5)(i)(A), 122.42(e)(5)(ii)(A), 412.4(c)(1); TSD at 22; Sofat Test. at 3; Heacock Test. at 19. In his testimony pre-filed for the first hearing, Mr. Sofat stated that the Agency drafted this section of its proposal in cooperation with and based on suggestions by a work group consisting of interested participants. Sofat Test. at 5-6; *see* Agency Att. 2 at 19 (¶21).

Mr. Sofat’s pre-filed testimony indicates that, unlike other states relying on a phosphorus index (P-index) to quantify nutrient transport potential,

the Agency’s proposal in Section 502.615 depends on several site specific physical factors and conservation practices to address the issue of nutrient transport from a field to the waters of the U.S. To determine the suitability of a field for land application of livestock waste, each field is assessed based on several factors to determine runoff and erosion potential of that field. The field assessment then allows the applicant to determine the appropriate application rate – nitrogen based or phosphorus based – for the assessed field. Both the nitrogen based application and phosphorus based application of livestock waste are then subject to their own set of requirements to ensure that transport for nutrients from the assessed field is minimal. Sofat Test at 6.

The Agricultural Coalition pre-filed a question asking the Agency to explain how its proposal differed from existing requirements under the LMFA and how it legally reconciled any differences. Agency Att. 2 at 18 (¶21). The Agency responded that the proposal and the LMFA regulations are the same as or similar to one another. *Id.*, citing TSD at 22-26. The Agency added that it “is not aware of any situation where the two separate requirements would prevent compliance with the other; therefore a CAFO operation should be able to comply with both requirements legally.” Agency Att. 2 at 18 (¶21). The Agency argued that the LMFA cannot limit the provisions to be adopted under this Subtitle E. *Id.* The Agency noted that Section 100 of the LMFA states in its entirety that “[n]othing in this Act shall be construed as a limitation of any statutory or regulatory authority under the Illinois Environmental Protection Act.” *Id.*, citing 510 ILCS 77/100 (2012).

The Agricultural Coalition also asked the Agency to compare its proposal to the nutrient standards adopted in other states. Agency Att. 2 at 19 (¶21). The Agency responded that its drafting work group reviewed nutrient standards for land application of livestock waste from states including Wisconsin, Iowa, Michigan, Minnesota, Ohio, Indiana, Oregon, and Missouri. *Id.* The Agency added that it reviewed use of a P-index by the States of Kentucky, Colorado, and North Carolina. *Id.* The Agency stated that Iowa, Wisconsin, Kentucky, Ohio, Minnesota, Missouri, Oregon, Colorado, and North Carolina “use a P index to determine application rates and practices for land application of livestock waste from permitted CAFOs. . . .” *Id.* The Agency reported that Indiana and Michigan “do not have a P-index in their permitted CAFO technical standards but use other methods to assess for phosphorus at land application sites.” *Id.* The Agency added that a number of the states cited above “have screening criteria to screen sites to determine if the P-index must be used. Indiana and Michigan have screening criteria to determine if indexes must be used for assessing manure, nutrient or sediment transport from fields.” *Id.*

Subsection (a). The Agency proposed to require that “[a]n individual field assessment of the potential for nitrogen and phosphorus transport from the field to surface waters must be conducted and the results contained in the nutrient management plan.” Prop. 502 at 33; *see* SR at 65; TSD at 19; Sofat Test. at 6; Heacock Test. at 19. The proposed subsection lists nine factors that “must be identified for each field to determine nitrogen and phosphorus transport potential to waters of the United States.” Prop. 502 at 33. Those factors are soil type, slope, conservation practices, soil erodibility or potential for soil erosion, soil test phosphorus, tile inlet locations, distance to surface waters, proximity to wells, and location of conduits to surface water including preferential flow paths. Prop. 502 at 33-34; *see* SR at 65; TSD at 22; Heacock Test. at 19. During the first hearing, Mr. Heacock indicated that the requirement to conduct this field assessment does not apply to unpermitted large CAFOs. Tr.1 at 151. He added that an unpermitted large CAFO can follow that requirement to determine agronomic rates of application and comply with proposed Section 502.510(b). *Id.* at 152.

Subsection (b). The Agency proposed to require applicants to use the field assessment information obtained in subsection (a) to determine the appropriate phosphorus-based or nitrogen-based application rate for each field. Prop. 502 at 34; *see* SR at 65; Sofat Test. at 6; Heacock Test. at 19.

Subsection (c). The Agency proposed to require that “[n]itrogen-based application of livestock waste must be conducted” according to the following seven listed requirements. Prop. 502 at 34; *see* TSD at 22; Sofat Test. at 6; Heacock Test. at 19.

Subsection (1). The Agency proposed to require that nitrogen-based application must be conducted so that “livestock waste is applied consistent with the setback requirements in Section 502.645.” Prop. 502 at 34; *see* SR at 65-66; TSD at 22, 55-56; Heacock Test. at 20.

Subsection (2). The Agency proposed to require that nitrogen-based application must be conducted where “available soil phosphorus (Bray P1 or Mehlich 3) is equal to or less than 300 pounds per acre.” Prop. 502 at 34; Heacock Test. at 21. The Agency characterized Bray P1 and Mehlich 3 as “widely used and accepted soils test methods to determine plant available phosphorus in soils.” TSD at 23.

In a pre-filed question, the Environmental Groups first noted that the Illinois Agronomy Handbook states that “[t]here is no agronomic advantage in applying [phosphorus] when P1 values are higher than 60, 65, and 70 for soils in the high, medium and low [phosphorus]-supplying regions, respectively.” Agency Att. 5 at 6 (¶13), citing Att. R at 102. The Environmental Groups asked the Agency to reconcile this recommendation with the threshold in its proposal. Agency Att. 5 at 6 (¶13). The Agency responded that the land application rates in the Agronomy Handbook are based on economic considerations and recommend against application of commercial phosphorus fertilizer when soil test levels exceed 60, 65, or 70 pounds per acre because it will not increase crop yields. *Id.* The Agency added that land application of livestock waste to provide nitrogen

will result in application of phosphorus to the land. The usual ratios of phosphorus and nitrogen in livestock waste and agronomic uptake of these nutrients by the crop will result in multi-year application of phosphorus. Based on review of the data and technical literature it was determined that available soil test phosphorus levels could increase to 300 pounds per acre and be protective of surface water quality. *Id.* at 5-6, citing TSD at 24-26; *see* Tr.1 at 139-43, citing Att. GG.

The Agency argued that its proposed threshold reconciles agronomic nitrogen needs of crops and surface water quality. Agency Att. 5 at 6 (¶13).

During the first hearing, Ms. Knowles noted that, “[u]nder the phosphorus-based application, the rule now states that if you measure [phosphorus] and you’ve got more than 50 pounds, you have to apply the waste at a neutral rate, but we notice that under the nitrogen-based application section, there is no requirement. Phosphorus can be up to 300 pounds, and there’s still no requirement to apply it at a neutral rate.” Tr.1 at 143-44. She asked the Agency why, under this nitrogen-based application, there is no requirement to apply livestock waste at a neutral rate for phosphorus. *Id.* Mr. Heacock responded by noting “several factors under nitrogen-based application that will be more restrictive to the amount of phosphorus runoff. . . .” *Id.* at 144. These factors include calculation of a soil erosion factor, increased setbacks, and

requirements for incorporation or injection under certain conditions, none of which apply to phosphorus-based application. *Id.* at 144-45. He added that, “with those additional controls, we don’t think that it’s necessary to impose those additional requirements of the neutral phosphorus application rate. . . .” *Id.* at 145; *see* Agency Att. 5 at 5 (¶12).

The Board asked the Agency to explain use of the term “median Bray P1 or Mehlich 3” values in proposed subsection 502.630(c)(4). Agency Att. 1 at 20 (¶57). The Agency explained that

[t]he median Bray P1 or Mehlich 3 value of results from soil samples taken in a field is recommended in the Illinois Agronomy Handbook to determine appropriate land application rates of phosphorus fertilizer on a field. The median value is used because it provides the most representative value of the available soil test phosphorus on a field and provides a consistent application rate on the field for the application of livestock waste under winter conditions. In the same manner the median soil test phosphorus can be used according to the Illinois Agronomy Handbook to determine application rates of livestock waste during other periods when the land is not frozen, ice or snow-covered. *Id.*

The Agency stated that it also intended to use the median amount in this subsection (*id.*), and the Board in its order below will amend the Agency’s original proposal to reflect this intent.

The Board asked the Agency whether the Bray P1 or Mehlich 3 methods are included in any of the documents incorporated by reference in Section 501.200 and, if so, whether this proposed subsection should include a cross reference. Agency Att. 1 at 17 (¶46). The Agency responded that “Recommended Chemical Soil Test Procedures for the North Central Region,” published by the University of Missouri, includes both procedures and is proposed for incorporation by reference. *Id.*; *see* Prop. 501 at 5 (proposed incorporation). The Agency indicated that a cross reference would be “acceptable” (Agency Att. 1 at 17 (¶46)), and the Board includes such a cross reference in its order below.

Subsection (3). The Agency proposed to require that nitrogen-based application must be conducted where “the soil loss is less than the erosion factor T calculated using the Revised Universal Soil Loss Equation 2 (RUSLE2),” found at a specified Website. Prop. 502 at 34; *see* Heacock Test. at 20, 22. The Agency stated that USDA developed RUSLE2 for “land owners to predict the amount of soil that could be lost in a given land area. . . .” TSD at 32. During the first hearing, Mr. Heacock characterized this as one requirement applicable to nitrogen-based application that will restrict phosphorus runoff. Tr.1 at 144.

In a pre-filed question, the Board asked the Agency to comment whether it would be appropriate to include this soil loss equation in the rule. Agency Att. 1 at 17 (¶47). The Agency responded that it “did not include RUSLE2 in the incorporations by reference because it is a software tool that uses inputs from the user to determine the output of the equation and because it was not possible to include a hard copy of a document for the record.” *Id.* The Agency added that it would nonetheless not object to incorporating this equation by reference. *Id.*

The APA requires that, when incorporating by reference, the Board “shall maintain a copy of the referenced rule, regulation, standard, or guideline. . . .” 5 ILCS 100/5-75(c) (2012). As suggested by the Agency, it is not clear to the Board that RUSLE2 soil loss equation is capable of incorporation by reference. Accordingly, the Board in its order below declines to amend the Agency’s proposal by incorporating the equation by reference in Section 501.200. However, to clarify the rule and comply with the APA, the Board in Section 501.360 has proposed to define “Revised Universal Soil Loss Equation” and has also proposed in Section 501.200 to incorporate by reference the federal regulation on which it is based. Below, the Board seeks comment on the proposed definition and incorporation.

Subsection (4). The Agency proposed to require that nitrogen-based application must be conducted so that, “if conduits on the field are less than 400 feet from surface waters, the setback requirements in 502.645(b)(2) do not apply.” Prop. 502 at 34; *see* Heacock Test. at 22; Tr.1 at 144. In those instances, the Agency proposed the following setbacks. First, under proposed subsection (4)(A), “[I]ivestock waste application shall be conducted no closer than 150 feet from a tile inlet, agricultural well head, sinkhole, or edge of a ditch that has no vegetative buffer.” Prop. 502 at 35. Second, under proposed subsection (4)(B), “[I]ivestock waste application shall be conducted no closer than 50 feet from a tile inlet, agricultural well head, sinkhole, or edge of a ditch that has a 50 foot vegetative buffer or 50 feet from the center of a grass waterway.” *Id.*; *see* SR at 66.

The Agency also proposed in an undesignated paragraph following subsection (4)(B) that “[t]hese setbacks do not apply if the CAFO is able to demonstrate to the Agency that a setback or buffer is not necessary because implementation of alternative conservation practices (including, but not limited to, injection and incorporation) or field-specific conditions will provide pollutant reductions equivalent or better than the reductions that would be achieved by the 150-foot setback.” Prop. 502 at 35; *see* Tr.1 at 144. The Board asked the Agency to clarify whether the demonstration also addresses the 50-foot setback. Agency Att. 1 at 17 (¶48). The Agency responded that it intended this demonstration to apply to both the 150-foot setback under subsection (c)(4)(A) and the 50-foot vegetative buffer under subsection (c)(4)(B). Also, the Agency concurred with the Board’s suggestion that designating the undesignated paragraph as subsection (c)(4)(C) would clarify that application. *See id.* Accordingly, the Board will add this designation to its first-notice proposal in the order below and clarify that the demonstration applies to both subsections (A) and (B).

Subsection (5). The Agency proposed to require that, “if conduits on the field are greater than 400 feet from surface waters, the setback requirements in Section (c)(4) do not apply.” Prop. 502 at 35; *see* SR at 66.

In a pre-filed question, the Board noted that this subsection provides that setback requirements “will not apply if conduits on the field are greater than 400 feet from surface waters.” Agency Att. 1 at 17 (¶49). The Board asked the Agency to “clarify whether the CAFO would be subject to setback requirements of Section 502.645, including Section 502.645(b)(2).” *Id.* The Agency responded that this provision intends to establish that,

if conduits are greater than 400 feet from surface waters, then setback requirements in (c)(4) do not apply. In other words, the 150-foot setback or 50-foot vegetative buffer setback requirements in subsections (c)(4)(A) or (c)(4)(B) do not apply if the conduits are greater than 400 feet from surface waters. However, the requirements of subsection (c)(1), which includes the requirements of Section 502.645, still do apply. *Id.* at 18.

Subsection (6). The Agency proposed to require that nitrogen-based application must be conducted so that, “where surface waters are on the assessed field or within 200 feet of the field, the livestock waste applied to the field shall be injected or incorporated within 24 hours of the application or equivalent conservation practices must be installed and maintained on the field pursuant to the United States Department of Agriculture Natural Resources Conservation Service practice standards.” Prop. 502 at 35; *see* Heacock Test. at 22; Tr.1 at 144.

Subsection (7). Finally, the Agency proposed to require that, “if nitrogen-based application cannot be conducted in accordance with this Section, then phosphorus-based application must be conducted as specified in Section 502.615(d).” Prop. 502 at 35; *see* SR at 66. In testimony pre-filed for the first hearing, Mr. Heacock expected “that phosphorus based application rates will result in lower application rates of livestock waste, due to the ratio of phosphorus to nitrogen in livestock waste and the ratio of plant uptake of these nutrients.” Heacock Test. at 22, citing TSD at 16. He added that “[l]ower livestock waste application rates based on phosphorus are expected to reduce the amount of nitrogen and phosphorus in runoff to surface water as compared to applying the same waste at nitrogen application rates.” Heacock Test. at 22, citing TSD at 23-24.

Subsection (d). The Agency proposed to require that “[p]hosphorus-based application of livestock waste must be conducted” according to five listed requirements. Prop. 502 at 35; *see* TSD at 22; Sofat Test. at 6; Heacock Test. at 19. The Agency followed “the Soil Test Phosphorus Level approach, which establishes the protocols for determining practices and phosphorus application rates.” TSD at 22-23, citing 68 Fed Reg. 7209 (Feb. 12, 2003); Atts. MM, II, JJ; *see* Heacock Test. at 20.

Subsection (1). The Agency proposed to require that phosphorus-based application must be conducted so that livestock waste is applied “consistent with the setback requirements of Section 502.645.” Prop. 502 at 35; *see* SR at 66; TSD at 22, 55-56; Heacock Test. at 20.

Subsection (2). The Agency proposed to require that phosphorus-based application must be conducted so that “the livestock waste application rate must not exceed the annual agronomic nitrogen demand of the next crop grown as provided in Section 502.625(a).” Prop. 502 at 35. The Agency noted that, even “when using phosphorus-based application, the CAFO must still consider the amount [of] nitrogen being applied to the field.” SR at 66, citing TSD at 35.

Subsection (3). The Agency proposed to require that phosphorus-based application must be conducted so that, “if the soil contains greater than 50 pounds of available soil phosphorus per acre (Bray P1 or Mehlich 3), phosphorus-based application rates must be neutral during the

nutrient management plan period.” Prop. 502 at 35; *see* SR at 66; TSD at 23; Heacock Test. at 20.

The Agency elaborated that, “[i]f the soil contains more than 50 pounds per acre, but less than 300 pounds per acre, the CAFO may use a multi-year phosphorus application rate.” SR at 66; *see* TSD at 23. The Agency stated that the CAFO owner or operator “may apply livestock waste at the agronomic nitrogen rates for the next crop to be grown,” which typically will “provide phosphorus amounts equivalent to the phosphorus that will be removed by crop uptake over the next two or three years.” TSD at 23, citing Att. R at 101-02. The Agency stated that the effect of this proposal is to restrict application “to only the amount that can be used by the crops grown during the nutrient plan period.” TSD at 23, citing 40 C.F.R. § 412.4(c)(2); *see* Heacock Test. at 20-21; Agency Att. 5 at 5 (¶12); Tr.1 at 143-45.

As discussed above, the Board asked the Agency to explain use of the term “median Bray P1 or Mehlich 3,” and the Board in its order below will amend the Agency’s proposal to reflect the Agency’s intent. Also as discussed above, the Board includes a cross reference to documents incorporated by reference in this section in its order below.

Subsection (4). The Agency proposed to require that phosphorus-based application must be conducted so that, “if the soil contains greater than 300 pounds of available soil phosphorus per acre (Bray P1 or Mehlich 3), the amount of phosphorus applied in the livestock waste must not exceed the amount of phosphorus removed by the next year’s crop grown and harvested.” Prop. 502 at 36; *see* TSD at 24 (noting similarity to LMFA regulations); Heacock Test. at 21.

The Agency stated that it had “reviewed the available peer-reviewed literature regarding soil phosphorus test levels and the potential for runoff of phosphorus from land application areas.” TSD at 24, citing Atts. AA, BB, GG; *see* Heacock Test. at 21. Accordingly, the Agency proposed that, when the soil contains more than 300 but less than 400 pounds of available soil phosphorus per acre, the CAFO be restricted “to using a lower, single-year phosphorus application rate.” TSD at 66. The Agency stated that it proposed “this requirement to limit and reduce the phosphorus runoff to surface waters.” SR at 67; *see* TSD at 25.

As discussed above, the Board asked the Agency to explain the use of the term “median Bray P1 or Mehlich 3,” and the Board in its order below will amend the Agency’s proposal to reflect the Agency’s intent. Also as discussed above, the Board includes a cross reference to documents incorporated by reference in this section in its order below.

Subsection (5). The Agency proposed to require that “livestock waste shall not be applied to fields with available soil phosphorus (Bray P1 or Mehlich 3) greater than 400 pounds per acre.” Prop. 502 at 36; *see* SR at 67; Heacock Test. at 21.

The Agency stated that “[s]tudies on this issue, relating available soil phosphorus levels and potential runoff, indicate available soil phosphorus levels above 400 pounds per acre may produce runoff concentrations in excess of 1 mg/L total phosphorus.” TSD at 25-26, citing Atts. AA, HH; *see* Heacock Test. at 21.

As discussed above, the Board asked the Agency to explain the use of the term “median Bray P1 or Mehlich 3,” and the Board in its order below will amend the Agency’s proposal to reflect the Agency’s intent. Also as discussed above, the Board includes a cross reference to documents incorporated by reference in this section in its order below.

Section 502.620: Protocols to Land Apply Livestock Waste.

The Agency proposed protocols for land application of livestock waste. Prop. 502 at 36-37; *see* Sofat Test. at 3. The Agency stated that land application must be conducted according to well-established best management practices that minimize the release of nutrients and pathogens into surface water and groundwater. TSD at 26-27, citing Atts. II, JJ, MM; *see* SR at 71; Heacock Test. at 23. During the first hearing, Mr. Heacock testified that, “if an unpermitted large CAFO were to land apply manure in contravention with what is stated in 620,” the facility may not be able to claim the exemption for agricultural stormwater. Tr.1 at 161. He also agreed that “because something is not specifically prohibited in Section 502.620 for unpermitted large CAFOs does not mean that the Agency is advocating for unpermitted large CAFOs to do these things.” *Id.*

Subsection (a). The Agency proposed to require that “[l]ivestock wastes shall not be applied to waters of the United States.” Prop. 502 at 36. In order to prevent runoff during dry weather, the Agency proposed to require that “[l]ivestock waste application shall not cause runoff to water of the United States during non-precipitation events. Livestock waste application shall not occur on land that is saturated at the time of application. Livestock waste shall not be applied onto land with ponded water.” *Id.*; *see* SR at 71; TSD at 27; Heacock Test. at 24.

Subsection (b). The Agency proposed to require that “[d]ischarge of livestock waste to waters of the United States or off-site during dry weather through subsurface drains is prohibited.” Prop.502 at 36; *see* SR at 71; TSD at 27.

Subsection (c). The Agency proposed to require that “[l]ivestock waste shall not be applied during precipitation when runoff of livestock waste will be produced.” Prop. 502 at 36; *see* SR at 71.

Subsection (d). The Agency proposed to require that “[s]urface land application of livestock waste shall not occur within 24 hours preceding a forecast of 0.5 inches or more of precipitation in a 24-hour period as measured in liquid form.” Prop. 502 at 36; *see* SR at 72; TSD at 27; Heacock Test. at 23-25. The Agency’s proposal establishes two methods through which a CAFO owner or operator can determine whether these conditions exist. *See* Prop. 502 at 36; SR at 72-73; TSD at 27; Heacock Test. at 25. The CAFO owner or operator is also required to “maintain a copy of the forecast from the source used.” Prop. 502 at 36; *see* SR at 73; TSD at 27.

The first method proposed by the Agency lists “[a] prediction of a 60 percent or greater chance of 0.5 inches or more of precipitation in a 24 hour period as measured in liquid form by the National Weather Service at [a Website address] for the location nearest to the land application area.” Prop. 502 at 36; *see* SR at 73 n.57; TSD at 27; Heacock Test. at 23. The

second method proposed by the Agency lists “[a] prediction of 0.5 inches or more of precipitation in a 24 hour period as measured in liquid form and identified as higher than QPF category 3 by the National Weather Service at [a Website address] for the land application area location.” Prop. 502 at 36; *see* SR at 73 n.57; TSD at 27; Heacock Test. at 23. The Agency noted that “quantitative precipitation forecasts (QPF) are forecasts of the quantity of precipitation in a specified time period. There are seven categories of ranges of precipitation amounts for the 24-hour period.” TSD at 27. QPF category 3 refers to 0.25 to 0.49 inches, so that QPF categories higher than 3 refer to forecasted precipitation quantities of at least 0.5 inches. *Id.*

The Agency stated that it had based this proposed subsection on federal rules regarding requirements for the NMP. TSD at 28, citing 40 C.F.R. §§ 122.42(e)(1)(i), 412.4(c)(1). The Agency indicated that it sought to address “the timing of land application with respect to forecasted precipitation events such that nitrogen and phosphorus movement from the field are minimized by reducing the time when livestock waste is applied to a field prior to runoff producing precipitation events.” TSD at 28, citing Att. BB. The Agency added that, in developing the criteria in subsection (d), it considered various criteria:

the method provide a tool for the producer to plan land application considering forecasted weather conditions; the method apply to all land application sites without interpretation of site conditions, and that site condition criteria are found elsewhere in the Subpart E regulations; the forecast method is readily accessible for the CAFO owner; the forecast can be kept in the CAFO owner’s records; a single forecasted amount of precipitation is used; the amount of precipitation forecasted for the criteria correspond to an estimated amount of precipitation that will cause runoff from a site; and the site conditions used to determine the amount of precipitation that will cause runoff apply to most land application sites in Illinois. TSD at 28; *see* Heacock Test. at 24.

During the first hearing, Mr. Heacock acknowledged that this requirements applied to permitted CAFOs so that an unpermitted CAFO could conceivably land apply livestock waste within 24 hours of a specific precipitation forecast. Tr.1 at 157-58. He added that land application under those circumstances may cause runoff and might be a practice that prevents them from complying with proposed Section 502.510(b). *Id.* at 158.

Subsection (d) cites two web sites at which data may be obtained from the National Weather Service. To clarify the rule and comply with the APA, the Board has provided contact information for the National Weather Service. The Board has also added two Board Notes listing online sources through which this data can be obtained.

Subsection (e). The Agency proposed to require that “[d]etermination of soil loss must be made for each field using a Revised Universal Soil Loss Equation 2 at [a website address] that accounts for changes in factors affecting runoff, soil erodibility, slope length, slope steepness, cover management and supporting practices.” Prop. 502 at 37; *see* SR at 71; Heacock Test. at 25-26. The Agency stated that “[k]nowing the amount of soil loss helps CAFOs develop appropriate site-specific conservation practices to control runoff.” SR at 71-72; *see* TSD at 32;

Heacock Test. at 26. The Agency stated that this proposed requirement addresses a number of federal requirements. TSD at 32, citing 40 C.F.R. §§ 122.42(e)(1)(vi, viii), 412.4(c)(1).

Subsections (e) and (f) both cite a web site at which soil loss must be determined. To clarify the rule and comply with the APA, the Board has proposed a definition of “Revised Universal Soil Loss Equation” in Section 501.360 and also proposed to incorporate by reference the federal rules on which it is based. To both subsections, the Board has added a Board Note listing online sources for data regarding soil loss. Below, the Board seeks comment on this definition and incorporation.

Subsection (f). The Agency proposed to require that “[s]urface land application may be used when the land slope is no greater than 5% or when the yearly average soil loss is equal to or less than 5 tons per acre per year or erosion factor T, whichever is less, regardless of slope, as determined by Revised Universal Soil Loss Equation 2 at [a website address].” Prop. 502 at 37; *see* SR at 72; TSD at 33. The Agency also proposed to require that “[i]njection or incorporation within 24 hours shall be used when the land slope is greater than 5% and the yearly average soil loss is greater than 5 tons per acre per year or erosion factor T, whichever is less.” Prop. 502 at 37; *see* SR at 72; TSD at 34; Heacock Test. at 26. In a pre-filed question, the Board asked the Agency to “clarify whether the 24-hour period refers to the ‘24-hours preceding a forecast’ of precipitation specified in subsection (d).” Agency Att. 1 at 18 (¶50). The Agency responded that “[i]njection or incorporation on slopes greater than 5% is intended to occur within 24 hours from the time of land application of the livestock waste, regardless of weather conditions.” *Id.*

The Agency stated that it proposed these requirements “since runoff of livestock waste is expected to be higher as slopes increase. Increased soil erosion rates mean that increased amounts of livestock waste are likely to reach surface waters.” TSD at 34. The Agency added that requiring incorporation or injection “reduces the runoff potential.” *Id.*, citing Atts. BB, FF.

Subsection (g). The Agency proposed to require that “[l]and application of livestock waste is prohibited on slopes greater than 15%.” Prop. 502 at 37; *see* SR at 71; TSD at 31; Heacock Test. at 25. The Agency stated that, “[a]s the slope increases, so does the potential of runoff from fields where the livestock waste was applied.” TSD at 31, citing Att. JJ; *see* Tr.1 at 159. The Agency argued that this proposal is “essential to minimize nutrient runoff potential.” TSD at 31. Nonetheless, Mr. Heacock acknowledged during the first hearing that “large unpermitted CAFOs can land apply on slopes greater than 15 percent.” Tr.1 at 159.

Subsection (h). The Agency proposed to require that “[l]ivestock waste shall not be applied to land with less than 10 inches of soil covering fractured bedrock, sand or gravel.” Prop. 502 at 37; *see* SR at 72; TSD at 31. The Agency stated that “[s]oil properties such as depth, texture, and permeability are keys in determining the potential for groundwater contamination. Deep, medium and fine textured soils are the best, whereas coarse textured materials are worse in terms of contaminant removal.” TSD at 31; *see* Heacock Test. at 25. The Agency added that “liquid livestock waste applied directly on bedrock, sand or gravel soils will reach ground water quickly without the natural filtering effect of soil cover. Also, without an adequate soil cover, water will move rapidly through soil particles, and nutrients present in the

livestock waste would not be available for crop uptake.” TSD at 31, citing Att. JJ; *see* Heacock Test. at 25; Agency Att. 1 at 18 (¶51).

During the first hearing, Mr. Heacock acknowledged that unpermitted CAFOs may conceivably be able to land apply waste in geologically sensitive areas such as these. Tr.1 at 159-60. He added that “that CAFO has an opportunity to develop practices to deal with these issues on their own as an unpermitted large CAFO” and also could follow this restriction. *Id.*

Subsection (i). The Agency proposed to require that “[l]ivestock waste shall not be applied to bedrock outcrops.” Prop. 502 at 37; *see* SR at 72; TSD at 31-32; Heacock Test. at 25. The Agency stated that this proposal intends “[t]o minimize impact to ground water from livestock waste applied directly to bedrock outcrops. . . .” TSD at 31-32, citing Att. JJ; *see* Agency Att. 1 at 18 (¶51).

During the first hearing, Mr. Heacock acknowledged that unpermitted CAFOs may conceivably be able to land apply waste in geologically sensitive areas such as these. Tr.1 at 159-60. He noted, however, that such an application may not constitute agricultural utilization and may not comply with proposed Section 502.510(b). *Id.* at 160. He added that “that CAFO has an opportunity to develop practices to deal with these issues on their own as an unpermitted large CAFO” and also could follow this restriction. *Id.*

Subsection (j). The Agency proposed to require that “[l]ivestock waste shall be applied at no greater than 50% of the agronomic nitrogen rate determined pursuant to Section 502.625 when there is less than 20 inches of unconsolidated material over bedrock.” Prop. 502 at 37; *see* SR at 72, TSD at 34-35; Heacock Test. at 26-27. The Agency stated that, without adequate soil depth over bedrock, “livestock waste contaminants will more quickly reach groundwater.” TSD at 34; *see* Heacock Test. at 26-27. The Agency characterized this proposed subsection as “a common sense conservative approach that the application rates should be halved when the potential to cause groundwater contamination is heightened due to less than 20 inches of unconsolidated material over bedrock. . . .” TSD at 34.

During the first hearing, Mr. Heacock acknowledged that unpermitted CAFOs may conceivably be able to land apply waste in geologically sensitive areas such as these. Tr.1 at 159-60. He added that “that CAFO has an opportunity to develop practices to deal with these issues on their own as an unpermitted large CAFO” and also could follow this restriction. *Id.*

Subsection (k). The Agency proposed to require that “[l]ivestock waste shall be applied a no greater than 50 percent of the agronomic nitrogen rate determined pursuant to Section 502.625 when the minimum soil depth to seasonal high water table is less than or equal to 2 feet.” Prop. 502 at 37; *see* SR at 72; TSD at 35; Heacock Test. at 26-27. The Agency stated that “soils with limited water holding capacity are more likely to promote runoff than soils that absorb and retain large quantities of water.” TSD at 35, citing Att. JJ. The Agency further stated that, in the absence of adequate soil depth over the water table, “livestock waste contaminants will more quickly reach groundwater.” TSD at 34; Heacock Test. at 26-27. The Agency characterized this proposed subsection as “a common sense conservative approach that the

application rates should be halved when the potential to cause groundwater contamination is heightened” because the water table is less than 2 feet from the surface. TSD at 34.

During the first hearing, Mr. Heacock acknowledged that unpermitted CAFOs may conceivably be able to land apply waste in geologically sensitive areas such as these. Tr.1 at 159-60. He added that “that CAFO has an opportunity to develop practices to deal with these issues on their own as an unpermitted large CAFO” and also could follow this restriction. *Id.*

Subsection (l). The Agency proposed to require that “[l]ivestock waste shall not be applied at rates that exceed the infiltration rates of the soil.” Prop. 502 at 37; *see* SR at 71; TSD at 34; Heacock Test. at 27, citing Att. JJ. The Agency stated that it sought to restrict the volume of livestock waste that may be applied to soils with low infiltration rates “to prevent runoff of livestock waste from the land application area.” TSD at 35.

Section 502.625: Determination of Livestock Waste Application Rates.

The Agency stated that the selected livestock waste application rate must account for various factors. TSD at 35; SR at 67; *see* Sofat Test. at 3-4. Proposed Section 502.625 addresses those factors and indicates “how the Illinois EPA intends the rule to affect the development of the NMP in that regard.” TSD at 35.

Subsection (a). The Agency first proposed to require that “[l]ivestock waste application shall not exceed the agronomic nitrogen rate, which is defined as the annual application rate of nitrogen that can be expected to be required for a realistic crop yield goal.” Prop. 502 at 37; *see* SR at 67; TSD 35. The Agency stated that this restriction applies “regardless of whether the application is nitrogen or phosphorus-based. Therefore, the agronomic nitrogen rate is the upper limit for both nitrogen and phosphorus based application.” SR at 67.

Subsection (b). The Agency stated that the next factor in the application rate is calculation of annual livestock waste volume. SR at 70; *see* TSD at 36. Specifically, the Agency proposed to require that “[t]he estimate of the annual volume of available livestock waste for application shall be obtained by multiplying the number of animals constituting the maximum design capacity of the facility by the appropriate amount of waste generated by the animals.” Prop. 502 at 38; *see* SR at 70.

Subsection (c). The Agency also sought to require that the application rate must address the nutrient value of livestock waste. *See* SR at 68; TSD at 36. The Agency stated that sources of manure data include those listed in the LMFA regulations. TSD at 36; *see* 8 Ill. Adm. Code 900.805(a) (Nutrient Value of Livestock Waste).

Subsection (d). The Agency proposed to require adjusting nitrogen availability to account for nitrogen loss and first-year mineralization. Prop. 52 at 38; *see* SR at 69; TSD at 36; Heacock Test. at 18.

Subsection (e). The Agency next addressed realistic crop yield goal as a factor in determining application rates. *See* SR at 67; TSD at 36-38. The Agency provided methods for

determining the realistic crop yield goal. Prop. 502 at 39; *see* SR at 67; TSD at 36; Heacock Test. at 18; *see also* 8 Ill. Adm. Code 900.807(a)(1) (Targeted Crop Yield Goal).

Subsection (f). The Agency stated that, “[s]ince not all of the organic nitrogen in the livestock waste will mineralize during the first years, the CAFO must consider the amount of organic nitrogen in the soil from previous livestock applications that will mineralize during the cropping season.” SR at 69; *see* Heacock Test. at 18. The Agency addressed nitrogen credits in this subsection. Prop. 502 at 40; *see* SR at 69; TSD at 17, 36.

In a pre-filed question, the Board asked the Agency to “explain how nitrogen credits calculated pursuant to subsection (f) will be accounted for in determining the livestock waste application rates.” Agency Att. 1 at 18 (¶52). The Agency responded that,

[f]or crops with nitrogen fixation in previous years, the Illinois Agronomy Handbook referenced in Section 502.625(h) provides nitrogen credits for these crops. Other sources of nitrogen (not from the CAFO’s livestock waste) applied during the growing season must be accounted for by determining the amount of plant available nitrogen expected to be applied from all sources. For example, the amount of nitrogen in commercial sources of fertilizer nitrogen would be added to the amount of plant available nitrogen applied with the livestock waste to determine the total amount of plant available nitrogen applied for the crop. For previous years application of livestock waste organic nitrogen carryover using the factors in proposed Section 502.625(f)(2) will be determined from the previous year’s application of livestock waste. Agency Att. 1 at 18-19 (¶52).

The Agency added that “[l]ivestock waste application rates under these rules cannot exceed the agronomic nitrogen rate which is the annual amount of nitrogen required for the realistic crop yield goal.” *Id.* at 19 (¶52).

Subsection (g). The Agency sought to require that CAFOs “consider factors affecting the amounts of phosphorus in the soil when determining application rates.” SR at 70; *see* TSD at 37-38; Heacock Test. at 19. Specifically, the Agency proposed that “[t]he plan shall be developed or amended by the CAFO owner or operator to determine the maximum livestock waste application rate for each field.” Prop. 502 at 40. The Agency proposed that the plan for each field must contain six provisions. Prop. 502 at 41; *see* SR at 70; TSD at 38.

Subsection (h). The Agency proposed to provide that “[n]itrogen and phosphorus fertilization rates for the realistic crop yield goal may be obtained from the Illinois Agronomy Handbook, 24th Edition, incorporated by reference at Section 501.200, or 35 Ill. Adm. Code 560, Appendix A.” Prop. 502 at 41; *see* SR at 67; TSD at 18, 38; Heacock Test. at 19; Att. R at 91-112. The Agency noted that LMFA regulations also rely on these sources to determine these fertilization rates. TSD at 38; *see* 8 Ill. Adm. Code 900.807(c) (Targeted Crop Yield Goal); Heacock Test. at 19.

Section 502.630: Protocols to Land Apply Livestock Waste During Winter.

The Agency stated that improper application of livestock waste to ground that is frozen or covered with snow or ice “can severely contaminate surface water. . . .” TSD at 39; *see* Yurdin Test. at 5; Sofat Test. at 7. The Agency added that “[t]his risk of livestock waste runoff to surface water is further heightened if the air temperatures become warmer.” TSD at 39. The Agency explained that “quick snow melt would flush the recently applied livestock waste to surface waters.” *Id.* The Agency stated that, because “frozen soils have limited or no infiltration, there will be an immediate runoff upon rainfall.” *Id.* The Agency indicated that winter application can also affect groundwater. Agency Att. 4 at 5 (¶21).

Responding to a question pre-filed by the Environmental Groups, the Agency elaborated on “the potential environmental risks of winter land application of manure.” Agency Att. 4 at 6 (¶21). The Agency stated that, as a result of such application, “[n]utrients and bacteria can be released in significant quantities. The very high oxygen demand of the waste can lower dissolved oxygen in surface waters.” *Id.* The Agency acknowledged that, to the extent conditions allow it, either injection or incorporation of waste into the soil can reduce these risks. *Id.*

The Environmental Groups also pre-filed a question asking the Agency whether winter land application of manure provides agronomic benefit. Agency Att. 4 at 6 (¶20). The Agency responded that any such benefit is less than that

which would occur later in the plant schedule (*e.g.*, April through May). Nutrient losses from early winter into late spring, depending on the planting date, would be appreciable when 1) weather conditions result in high temperatures in the soil application zone and 2) excessive rainfall results in either nitrogen loss by way of percolation and removal through drainage tiles or in nitrogen and phosphorus loss due to surface erosion across the application field. *Id.*

Responding to a question pre-filed by the Environmental Groups, the Agency stated that it “has observed several instances of livestock waste pollution that occurred following winter application.” Agency Att. 4 at 6 (¶22). The Agency traced many of these instances “to runoff from surface application to frozen, snow or ice covered ground caused by changes in air and ground temperature.” *Id.* The Agency indicated that it is aware of livestock operations cited for water quality violations due to runoff from winter application, although it does not have data showing the number of those facilities following an NMP or winter application plan. *Id.* The Agency also indicated that it does not have data showing the number of operations land applying on frozen or snow or ice covered ground. *Id.* at 5 (¶19).

The Agency stated that its proposed Section 502.630 “largely restricts but does not completely prohibit land application on frozen, ice covered or snow covered ground.” SR at 73; *see* Sofat Test. at 7. In his testimony pre-filed for the first hearing, Mr. Sofat stated that “[t]he Agency recognizes that even a well designed, operated, and maintained facility could find itself in a situation where application of livestock waste during winter months becomes necessary to avoid greater harm to surface waters from an overflow.” Sofat Test. at 7; *see* Yurdin Test. at 5. The Agency claimed that this proposed provision seeks “to determine when land application is allowed under these high risk conditions, linking the waste generation and storage operations at

the facility to the need for and timing of land application.” TSD at 39; *see* Sofat Test. at 7; Yurdin Test. at 5. Mr. Sofat testified that the Agency believes its winter application proposal “contains proper controls to ensure that runoff of livestock waste to surface waters is minimized, while fulfilling a need to manage livestock waste during winter months in emergency situations.” Sofat Test. at 7; *see* Agency Att. 4 at 7 (¶24). Responding to a question pre-filed by the Environmental Groups, Mr. Heacock stated that, under proposed Section 502.510(b), the requirements of proposed Section 502.630 apply to unpermitted large CAFOs seeking to claim the agricultural stormwater exemption. Agency Att. 5 at 7 (¶16); *see* Tr.1 at 150.

Mr. Sofat’s testimony indicated that the Agency’s proposal includes limitations similar to those of other states. Sofat Test. at 7. In a pre-filed question, the Board asked the Agency to comment on “whether any Midwestern states prohibit winter application of livestock waste.” Agency Att. 1 at 4 (¶11). The Agency responded that it had

researched the states surrounding Illinois (Indiana, Iowa, Kentucky, Missouri, and Wisconsin) as well as other USEPA R5 states (Ohio, Minnesota, and Michigan) to find out if any of these states prohibit winter application of livestock waste. The Agency’s understanding is that only Missouri and Kentucky prohibit the application of livestock waste on frozen or snow covered land. *Id.*

The Environmental Groups pre-filed a question asking the Agency whether it was “aware of regulations in other Midwestern states that restrict winter application rates.” Agency Att. 4 at 7 (¶24). The Agency responded that Indiana and Iowa restrict winter application in a manner similar to the Agency’s own proposal “but do not contain [] rate restrictions.” *Id.*, citing IND. ADMIN. CODE tit. 327, r. 19-14-4 (Manure Application Activities); IOWA ADMIN. CODE r. 567-65.3(4) (Surface application of liquid manure on frozen or snow-covered ground). The Agency also reported that Michigan “requires application to fields that will not create runoff but does not restrict application rates specifically.” Agency Att. 4 at 7 (¶24) (citation omitted). The Agency added that Wisconsin restricts winter application rates for liquid manures:

[a]pplication is allowed only under defined emergencies and is otherwise prohibited. In the case of an emergency, application rates are restricted based on field slope – a maximum rate of 7000 cumulative gallons per acre for fields with 0 to 2% slopes, 3500 cumulative gallons for fields with 2 to 6% slopes and no application can occur for fields with more than 6% slopes. Additional limitations based on phosphorus (as P₂O₅) also apply. *Id.*, citing WIS. ADMIN. CODE § NR 243.14(7) (Liquid manure winter restrictions).

Subsection (a)(1). The Agency proposed to establish that “[s]urface land application of livestock waste on frozen, ice covered or snow covered ground is prohibited” unless the CAFO meets a number of conditions. Prop. 502 at 41; *see* SR at 73, TSD at 39; Yurdin Test. at 5.

Subsection (A). The Agency first proposed to prohibit winter surface land application unless “[n]o practical alternative measures are available to handle the livestock waste within storage facilities or to dispose of the livestock waste at other sites.” Prop. 502 at 41; *see* SR at 73; TSD at 39; Yurdin Test. at 5; Sofat Test. at 7.

The Environmental Groups pre-filed a question asking the Agency what might constitute “practical alternative measures” under this proposed subsection. Agency Att. 4 at 8 (¶26). The Agency responded these measures for avoiding winter application “could include, but are not limited to, removing livestock waste to storage units at another site, reducing other sources of flow (*e.g.* stormwater runoff) to the existing storage units and reducing the volume of manure that would be produced by reducing the size of the herd.” *Id.*; *see* Tr.1 at 115.

The Environmental Groups also asked the Agency how it would “ensure that, where practical alternatives do not exist, unpermitted Large CAFOs have appropriate land available for winter manure application.” Agency Att. 4 at 9 (¶32). The Agency stated that its proposal does not intend for the Agency to review and approve plans for unpermitted large CAFOs. *Id.* The Agency added that, “unless and until an unpermitted large CAFO is determined to need a permit, plans will not be reviewed unless those plans are reviewed 1) as part of an Agency inspection or 2) following a release from the unpermitted CAFO as a result of which the facility claims the discharge was exempt because of the agricultural stormwater exemption.” *Id.*

Subsection (B). The Agency next proposed to prohibit winter surface land application unless “[l]iquid livestock waste cannot be injected or incorporated within 24 hours due to soil conditions.” Prop. 502 at 41; *see* SR at 73; TSD at 39; Yurdin Test. at 5. The Agency stated that “injection and incorporation are the preferred methods” for winter application where conditions and equipment allow. TSD at 40; *see* SR at 73.

Subsection (C). The Agency next proposed to prohibit winter surface land application unless, “[p]rior to December 1, the owner or operator has taken steps to provide 120 days of available storage capacity of manure storage areas.” Prop. 502 at 41; *see* SR at 73; TSD at 39. The Environmental Groups pre-filed a question asking the Agency to describe what is required to demonstrate having taken the steps required by this subsection. Agency Att. 4 at 8 (¶28). The Agency responded that “we mean that the producer must have conducted livestock waste removal, by means of land application or transfer to another party, in accordance with their NMP.” *Id.* During the first hearing, Mr. Yurdin indicated that the Agency had stated this requirement in general terms because it “did not want to limit or specify” the compliance options. Tr.1 at 114.

The Agency stated that this proposed provision refers to “the critical winter spreading period in Illinois, between December 1 and April 1, when ground is frozen or snow and ice covered.” TSD at 39. The Agency added that, “[i]f winter storage is available, winter spreading is prohibited because it is not necessary.” *Id.*; *see* Yurdin Test. at 5. The Environmental Groups pre-filed a question asking the Agency to identify its basis for setting December 1 as the deadline to provide storage capacity. Agency Att. 4 at 8 (¶27). The Agency responded that

the 120 days from December 1 through April 1 is the critical winter period when soil condition would favor frozen and snow or ice covered conditions. Since most fall livestock waste application concludes in November following harvest, the calculation of available storage should be done at that time. That calculation provides the producer with an estimate of the capacity on hand and the volume

that will need to be stored over the following four months (although there is no reason the calculation could not be done earlier in the season, say on November 1 or 15, with dates and volume adjusted accordingly). Calculating the volumes after December 1 might suggest a reliance on favorable weather conditions after that time that we believe should not be relied upon. *Id.*

Subsection (D). The Agency next proposed to prohibit winter surface land application unless “[t]he owner or operator has complied with subsection (a)(1)(C) and yet the storage volume available on December 1 of that winter season is less than 120 days of storage.” Prop. 502 at 41; *see* SR at 73; TSD at 39; Yurdin Test. at 5. The Agency states that this determination indicates that “the CAFO will risk discharging during that period.” TSD at 39.

Subsection (E). The Agency next proposed to prohibit winter surface land application unless “[t]he owner or operator has notified the Agency in writing on December 1 of that winter season that the CAFO has less than 120 days storage available.” Prop. 502 at 41; *see* SR at 73; TSD at 39. The Agency states that this notification indicates that the CAFO owner or operator “had made the necessary prior calculations and analysis.” TSD at 39.

Subsection (F). Finally, the Agency proposed to prohibit winter surface land application unless “[t]he discharge of livestock waste from the structure to surface waters is expected to occur due to shortage in storage capacity.” Prop. 502 at 41; *see* SR at 73-74; TSD at 39-40. The Agency explained that “[a] CAFO which has notified the Agency of inadequate storage in writing on December 1 may surface apply without incorporating or injecting only when the storage structure will overflow without winter application.” SR at 73-74.

Subsection (a)(2). The Agency proposed to require that “[t]he storage volume calculation in subsection (a)(1)(C) must include runoff and direct precipitation plus the volume of livestock excreta, wash water and other process wastewater generated and expected to enter the storage structure during the period of December 1 to April 1.” Prop. 502 at 41-42; *see* SR at 74; TSD at 40; Yurdin Test. at 5. The Agency also proposed that runoff volume calculations must also meet five specified requirements. Prop. 502 at 42; *see* SR at 74; TSD at 40.

Subsection (A). The Agency first proposed to require that “[r]unoff calculations must be based on the runoff transferred into the storage structure under frozen ground conditions.” Prop. 502 at 42; *see* SR at 74.

Subsection (B). The Agency next proposed to require that, in calculating runoff, “[d]irect precipitation that will reduce the available storage volume must be based on normal precipitation for the December 1 to April 1 period for the nearest weather station and for facilities exposed to precipitation, the 25-year, 24-hour storm event volume or the design storm event volume determined under Subpart H for Large swine, poultry and veal CAFOs that are new sources.” Prop. 502 at 42; *see* SR at 74; TSD at 40; Yurdin Test. at 5. The Agency clarified that this proposed subsection requires that “facilities that are not new source swine, poultry or veal CAFOs must consider the 25-year, 24-hour storm event, while new source swine, poultry or veal CAFOs must consider the storm event volume determined under Subpart H.” SR at 74 n.61. The Agency noted that “[t]he 25-year, 24 hour storm event definition requires use of a web based

NOAA tool called NOAA Atlas 14-Precipitation Frequency Atlas of the United States, Volume 2, Version 3.0 (2004) found at http://hdsc.nws.noaa.gov/hdsc/pfds/orb/il_pfds.html. *Id.*

Subsection (C). The Agency proposed to list two sources that “may be used to determine normal precipitation.” Prop. 502 at 31; *see* SR at 74; TSD at 40. First, subsection (a)(2)(C)(i) lists “<http://www.isws.illinois.edu/atmos/statecli/newnormals/newnormals.htm>”. Prop. 502 at 42. The Agency described this source as “a web-based tool from the Illinois State Water Survey.” SR at 74 n.62 (listing different address); *see* Agency Att. 1 at 20 (¶55) (identifying correct address). Second, subsection (a)(2)(C)(ii) lists “<http://cdo.ncdc.noaa.gov/cgi-bin/climatenormals/climatenormals.pl>”. Prop. 502 at 42. The Agency described this source as “a National Weather Service tool called U.S. Climate Normals.” SR at 74 n.62; *see* SR at 40.

To clarify the rule and comply with the APA, the Board has placed these online sources in a Board Note explaining that the sources may be used to obtain this precipitation data. The revision necessitated the redesignation of subsections (D) and (E).

Subsection (D). The Agency also proposed to require that “[t]he owner or operator shall keep a record of the precipitation value used and the source from which the value was obtained.” Prop. 502 at 42; *see* SR at 74.

In a pre-filed question, the Board asked the Agency whether a winter application plan requires keeping records only of these precipitation values and sources. Agency Att. 1 at 4 (¶12). The Agency responded that “Section 502.320(w)(1) through (9) requires a variety of records to be maintained for each land application. These recordkeeping requirements also apply to winter application.” *Id.*

Subsection (E). Finally, the Agency proposed to require that “calculations must allow for a freeboard of two feet.” Prop. 502 at 42. The Agency stated that “[f]reeboard is the height between the maximum design surface elevation of the storage contents and the lowest elevation of the overflow point for the structure.” TSD at 40. The Agency proposed this requirement “to prevent overtopping the storage structure.” *Id.*

In a pre-filed question, the Board asked the Agency whether the calculation of storage volume under this proposed subsection should include a safety factor. Agency Att. 1 at 19 (¶53). The Agency responded that the volume calculation must consider factors such as runoff and direct precipitation that effectively reduce storage volume. *Id.* The Agency added that, “[s]ince these calculations are only estimates of the volume remaining to store livestock waste (as opposed to actual volumes based on measurements, which by nature of timing cannot be made prior to December 1), some reliable and effective means of providing a safety factor is needed if miscalculations occur or unforeseen conditions arise.” *Id.* The Agency stated that it proposed that the calculation “allow for 2 feet of freeboard. This open volume should provide adequate and observable (*i.e.*, measurable) storage capacity and a safety factor commensurate with the original volume of the storage unit.” *Id.*

Subsection (a)(3). The Agency proposed to require that, “[i]n the event winter land application is necessary, it must be conducted pursuant to a winter application plan described in

subsection (b) of this Section and according to the conditions of subsection (c) of this Section.” Prop. 502 at 42.

Subsection (b). The Agency proposed to require that CAFOs must follow a winter application plan containing specified requirements to conduct surface land application on frozen, ice-covered, or snow-covered ground. Prop. 502 at 42; *see* SR at 74. In his testimony pre-filed for the first hearing, Mr. Yurdin stated that, “[s]ince contaminated runoff is the critical factor to reduce or eliminate when applying livestock waste in the winter, and since surface application results in a greater potential for runoff than does injection of the waste, we have proposed technical criteria for surface land application.” Yurdin Test. at 5.

In a pre-filed question, the Environmental Groups asked the Agency what benefits it anticipates “will result from the requirement that CAFOs develop and follow a winter manure application plan.” Agency Att. 4 at 7 (¶25). The Agency first noted the required calculation of storage volume. The Agency then stated that, “[w]ith this information and the understanding that winter spreading via surface land application is prohibited without that calculation and unless certain other conditions are met, the producer is placed in a better position to avoid winter spreading unless unforeseen circumstances arise.” *Id.* As a second benefit, the Agency stated that “the winter spreading provisions proposed in this rule specify reasonable and practical best practices that must be followed in the event that winter spreading could not be avoided.” *Id.*

The Environmental Groups also pre-filed a question asking the Agency whether its proposal requires unpermitted large CAFOs to submit winter application plans to the Agency. Agency Att. 4 at 8 (¶29). The Agency responded that they would not be required to do so, but “[a]n unpermitted large CAFO will need to maintain a winter application plan and keep other records in order to claim the agricultural stormwater exemption.” *Id.* The Agency elaborated that unpermitted large CAFOs must comply with requirements including development of a winter application plan under Section 502.510(b)(12) to claim this exemption. *Id.* The Environmental Groups also asked whether the Agency will “review and approve winter application plans for unpermitted large CAFOs prior to surface applying on frozen, ice-covered or snow-covered ground.” *Id.* at 9 (¶30). The Agency responded that it will not do so. *Id.* The Agency stated that “[o]nly permitted CAFO applications in their entirety and the facility’s winter plan will be reviewed and approved, prior to permitting and prior to winter application.” *Id.* The Agency clarified that its proposal “does not allow for the review of the winter land application plan from unpermitted large CAFOs.” *Id.* (¶31). The Agency added, however, that, “[i]f an unpermitted CAFO had a discharge from a land application field and claimed the agricultural stormwater exemption, the facility’s winter plan would then be reviewed by the Agency.” *Id.*

Subsections (b)(3) and (4) cite two web sites at which data may be obtained from the National Weather Service. To clarify the rule and comply with the APA, the Board has provided contact information for the National Weather Service. The Board has also added two Board Notes listing online sources through which this data can be obtained.

Subsection (b)(5) lists online tools through which weather predictions may be obtained. To clarify the rule and comply with the APA, the Board has placed these online sources in a Board Note explaining that the sources may be used to obtain this precipitation data.

Subsection (c). The Agency proposed to address availability of fields for winter application by requiring that, “[i]f livestock waste is to be surface applied on frozen ground, ice covered land or snow covered land, the land application may only be conducted on land that meets” six specified requirements. Prop. 502 at 45; *see* SR at 75-76; TSD at 43-44, citing Att. MM at L-16; Yurdin Test. at 6. The Agency stated that these criteria “further reduce the likelihood of runoff during the winter months.” SR at 75; *see* TSD at 44.

In a pre-filed question, the Agricultural Coalition asked the Agency to explain the source of these six requirements in the corresponding federal rule. Agency Att. 2 at 5 (¶5). The Agency responded that “[t]he federal CAFO rule does not specify winter application criteria. The federal rule requires that states’ standards account for the timing of application found in 40 CFR 412.4(c) and 40 CFR 122.42(e)(5).” *Id.* The Agricultural Coalition also asked the Agency whether it expects “that each of these six criteria must be met prior to each and every application of manure.” Agency Att. 2 at 5 (¶5). The Agency responded that it proposed “that all six criteria must be met when land application is undertaken during the winter when the fields are frozen or ice or snow covered. The six criteria were proposed so that when application does occur under these unfavorable conditions that the action would be conducted to minimize the potential for contaminated runoff.” *Id.* Regarding the issue of winter application, the Agricultural Coalition also asked the Agency what it expects “of a producer who contracts with a grain farmer, or other person not associated with the CAFO, as it relates to the proper application of manure to lands not controlled by the CAFO owner or operator.” *Id.* The Agency stated that a “CAFO owner’s obligation includes properly accounting for the land application arrangement in the NMP. The permittee is also responsible to identify the recipient of livestock waste and other details, under Section 502.320(w)(7) and 505.505(h) in the CAFO’s records, and under Section 502.325(b)(3) the permittee must list the amount transferred in the annual report.”

Subsections (c) refers to the Revised Universal Soil Loss Equation and Erosion Factor T. To clarify the rule and comply with the APA, the Board has proposed a definition of “Revised Universal Soil Loss Equation” in Section 501.360 and also proposed to incorporate by reference the federal rules on which it is based. Below, the Board seeks comment on this definition and incorporation. The Board has also added a Board Note listing online sources for both sets of data.

Section 502.635: Manure and Soil Sampling and Analysis.

The Agency noted that its proposal requires the NMP to “contain protocols for appropriate testing of livestock waste and soil.” SR at 62. In this section, the Agency proposed technical standards for this sampling and analysis. SR at 62-63, citing 40 C.F.R. § 412.4(c)(3); TSD at 51; *see* Sofat Test. at 4; Heacock Test. at 15. During the first hearing, Mr. Heacock testified that the proper application rates under proposed Section 502.615 depend upon proper sampling, which must be specified in the NMP for permitted CAFOs. Tr.1 at 163-64. He added that unpermitted CAFOs could follow this proposed section to satisfy the requirement that they establish protocols for appropriate testing. *Id.* at 164-65. He indicated, however, that “they may have alternative ways that they may do the sampling and/or analysis to make their determinations that they’re providing agricultural utilization of the nutrients. . . .” *Id.* at 165.

Subsection (a). The Agency first addressed soil phosphorus sampling. Prop. 502 at 45-46; *see* SR at 63; TSD at 51, citing 40 C.F.R. § 122.42(e)(1)(vii). The Agency noted that its proposal would require “more frequent testing than the federal rule, which only requires one soil test during the five-year term of the permit.” SR at 63; *see* TSD at 52, citing 40 C.F.R. § 412.4(c)(3). The Agency stated that “[t]his more frequent soil sampling is proposed so that more data are available for review when the permit must be modified or reviewed.” TSD at 52. The Agency proposed to require that soil testing must satisfy three specified requirements.

In a pre-filed question, the Environmental Groups questioned the Agency’s reliance on the Illinois Agronomy Handbook to determine soil sampling depth. Agency Att. 5 at 5 (¶11). The Agency responded that, to comply with this subsection and the Illinois Agronomy Handbook, “[t]he required soil depth for soil sampling for phosphorus is 7 inches. . . .” *Id.*, citing Att. R at 93 (Estimating Nutrient Availability). During the first hearing, Ms. Knowles stated that the Illinois Agronomy Handbook recommends a sampling depth of seven inches for agronomic purposes and a depth of one to two inches for water quality purposes. Tr.1 at 132-33, 135, citing Att. R at 110. She asked the Agency why its proposal did not require sampling closer to the surface. Tr.1 at 133, 135. Mr. Heacock responded that, in developing its criteria, it relied on the seven-inch sampling depth, “a typical test used by producers or crop growers to determine soil phosphorus levels.” *Id.* at 135-36. He added that, “[i]n looking at the resources and literature that we looked at, many of the studies were conducted based on typical sampling depths for phosphorus for the purposes of determining agronomic rates.” *Id.* at 137. “[W]e use that rather than some alternative depth that is not as well studied or established. . . .” *Id.*

Subsection (b). The Agency stated that “[b]oth the narrative and linear approach to determining application rates require the livestock waste to be sampled every year.” SR at 63. The Agency proposed in this section “the technical criteria that must be followed when sampling and testing livestock waste.” *Id.*, citing 40 C.F.R. §§ 122.42(e)(5)(i)(B), 122.42(e)(5)(ii)(D)(2), 412.4(c)(3).

Section 502.640: Inspection of Land Application Equipment for Leaks.

The Agency proposed requirements for inspection of application equipment in order “to prevent unintentional discharges and to ensure that the equipment is properly calibrated.” TSD at 54, citing 40 C.F.R. § 412.4(c)(4); *see* SR at 62; Sofat Test. at 4; Heacock Test. at 15. Responding to a question pre-filed by the Environmental Groups, the Agency stated that it proposed this requirement to reflect the federal regulations requiring such inspections. Agency Att. 5 at 7 (¶17), citing 40 C.F.R. § 412.4(c)(4).

During the first hearing, the Environmental Groups asked the Agency how it would “ensure that an unpermitted facility is applying at agronomic rates as it’s required to do so by 502.510(b)(10) if the facility is not also required to calibrate its land application equipment in 502.640.” Tr.1 at 168. Mr. Heacock responded that “the unpermitted large CAFO could choose to follow these calibration procedures in the rule, but they also may have alternatives to the way they would do that for their land application practices.” *Id.* Mr. Sofat added that unpermitted

CAFOs “still have to show us that the land application was consistent with the ag[ricultural] stormwater exemption.” *Id.* at 169.

Section 502.645: Land Application Setback Requirements.

The Agency proposed additional technical standards in the form of land application setback requirements. SR at 64; *see* Sofat Test. at 4. The Agency stated that it sought to incorporate and expand upon “the federal BMP setback requirement from waters.” *Id.*, citing 40 C.F.R. § 412.2(c). The Agency claimed that these setbacks are needed to “prevent contaminated runoff to surface waters.” TSD at 56.

Subsection (a). The Agency first proposed to require that “[l]ivestock waste shall not be land applied within 1/4 mile of any residence not part of the CAFO, unless it is injected or incorporated on the day of application.” Prop. 502 at 47; *see* SR at 64; TSD at 55. The Agency stated that this proposal is consistent with requirements under the LMFA. SR at 65, citing 510 ILCS 77/20(f)(5) (2012); *see* TSD at 55; Agency Att. 2 at 12 (¶10). Responding to a question pre-filed by the Environmental Groups, the Agency named this as a requirement that unpermitted large CAFOs must meet to claim the agricultural stormwater exemption. Agency Att. 5 at 7 (¶16); *see* Tr.1 at 150.

Subsection (b). The Agency next sought to establish specific setbacks of land application from waters. Prop. 502 at 47; SR at 64; TSD at 55-56; *see* Heacock Test. at 15-16.

Subsection (1). In a pre-filed question, the Board asked the Agency to comment on whether to define “adequate diking” for clarification. Agency Att. 1 at 21 (¶58). During the first hearing, the Agency agreed it “it would be acceptable for the Agency to use the definition in the TSD as an example of what adequate diking means in the context of these rules.” Tr.1 at 190. Consequently, the Board in its order below will amend the Agency’s proposal to include this descriptive language as an example of the term.

Subsection (c). The Agency proposed to require that “[l]ivestock waste shall not be applied in a 10-year flood plain unless the injection or incorporation method of application is used.” Prop. 502 at 47; *see* SR at 64-65. The Agency stated that this proposed setback is “not explicitly found in the federal rule” but is consistent with requirements of the LMFA. SR at 64-65; *see* 510 ILCS 77/(f)(7) (2012); Agency Att. 2 at 12 (¶10).

Subsection (d). The Agency proposed to require that “[l]ivestock waste shall not be land applied to waters of the United States, grassed waterways or other conduits to surface waters.” Prop. 502 at 48; *see* SR at 64; Heacock Test. at 15. The Agency stated that this proposed setback is “not explicitly found in the federal rule” but is consistent with requirements of the LMFA. SR at 64-65; *see* 510 ILCS 77/20(f)(8) (2012); Heacock Test. at 16; Agency Att. 2 at 12 (¶10).

Subsection (e). The Agency also proposed to require that “[l]ivestock waste shall not be land applied within 200 feet of potable water supply wells.” Prop. 502 at 48; *see* SR at 64. The Agency stated that this proposed setback is “not explicitly found in the federal rule” but is consistent with requirements of the LMFA. SR at 64-65; *see* 510 ILCS 77/20(f)(6) (2012) (150

feet); Heacock Test. at 16; Agency Att. 2 at 12 (¶10). The Agency also stated that the setback in this proposed subsection “does not apply to all water wells because not all water wells are used for human consumption.” Agency Att. 5 at 4 (¶8).

In a pre-filed question, the Environmental Groups asked the Agency to explain its “basis for electing 200 feet as the proposed land application setback from potable water supply wells.” Agency Att. 5 at 3 (¶7). The Agency responded that it used “the same setback from potable supply wells as is used in the existing NRCS standard 633 which prohibits livestock waste application within 200 feet of water wells.” *Id.*, see Att. JJ; Tr.1 at 131. The Agency indicated that it had not reviewed Indiana or Wisconsin setback regulations. Agency Att. 5 at 4 (¶7), citing IND. ADM. CODE tit. 327 § 16-10-4; WIS. ADMIN. CODE § 243.14(2)(b)(9). During the first hearing, Mr. Heacock indicated that the Agency also had not considered “requiring livestock waste handling facilities to monitor groundwater if the facility is located or land applying within a certain distance of potable water supply wells.” Tr.1 at 132. He added that the Agency’s proposal was “relying on the setback distance to provide that function.” *Id.*

The Environmental Groups also asked whether the Agency had “documented any instances where discharges to surface waters have results from land application of livestock waste further than 200 feet from that surface water” and, if so, how that waste reaches surface water. Agency Att. 5 at 4 (¶9). The Agency responded that “[o]verland flow of livestock waste has been observed entering surface waters several hundred feet from the edge of a field where land application occurred.” *Id.* The Agency stated that this flow may result from a number of factors,

including the slope of the ground, soil type, application amount and method, weather conditions prior to, during and shortly after land application, the presence of frozen or snow and ice covered ground, thawing of frozen soil conditions and the occurrence of rainfall. The presence of field tiles has also served to transport livestock waste greater than 200 feet from the point of land application. *Id.*

The Agency also indicated that it was “aware of at least one case in which a potable well was contaminated by livestock waste,” although it was not aware of the precise distance separating the well from the land application area from which the Agency had documented the discharge. *Id.* (¶7).

Subpart G: Additional Livestock Waste Discharge Limitations

The Agency proposed effluent limitations for production areas as set forth in Part 412 of the federal rules. SR at 52, citing 40 C.F.R. § 412. The Agency noted that, “except for NSPS, the effluent limitation for all dairy cows, cattle, veal, swine and poultry CAFOs are the same.” SR at 52; see Prop. 502 at 29-33. After proposing to codify these effluent limitations in Subpart F, the Agency proposed only two other subparts addressing these issues. SR at 52. Subpart G includes proposed NSPS for dairy cows and cattle CAFOs and effluent limitations for horse, sheep and duck CAFOs. *Id.* at 52, 57; see Prop. 502 at 48-50; Sofat Test. at 3.

Section 502.710: New Source Performance Standards for Dairy Cows and Cattle Other Than Veal Calves.

The Agency stated that the proposed federal NSPS for dairy cows and cattle CAFOs “is the same as the effluent limitation for existing [] dairy cows and cattle CAFOs.” SR at 57; *see* Sofat Test. at 3; Heacock Test. at 6. The Agency added that the “discussion for production area effluent limitations in subpart F is applicable to large dairy cow and cattle CAFOs that are new sources as well.” *Id.*; *see* Prop. 502 at 29-33.

Subsection (a). The Agency proposed the following language addressing applicability of NSPS: “[a]ny CAFO with the capacity to stable or confine 700 or more mature dairy cows whether milked or dry or 1,000 or more cattle other than mature dairy cows or veal calves that is a new source must achieve the livestock waste limitations representing the application of NSPS as of the date of permit coverage or within the timelines provided in Section 502.303.” Prop. 502 at 48; *see* 35 Ill. Adm. Code 502.303 (New Source Standards).

Subsection (b). The Agency sought to require that “[t]he livestock waste discharge limitations representing NSPS for the CAFO production area for CAFOs subject to this Section are the livestock waste discharge limitations found in Sections 502.605 and 502.610.” Prop. 502 at 48; *see* SR at 57; TSD at 56. The Agency stated that the federal regulations require the same discharge limitations and effluent standards for new and existing dairy cow and cattle other than veal calves CAFOs. TSD at 56, citing 40 C.F.R. § 412.35 (NSPS); *see* Heacock Test. at 6. The Agency further stated that “[n]ew sources and existing CAFOs are expected to have production areas, livestock waste systems and livestock management systems that are similar to each other in design, construction, operation and maintenance.” SR at 56. The Agency concluded to propose the same controls and standards for both categories in order “to provide equivalent protection of surface water quality and aquatic life.” *Id.*; *see* Heacock Test. at 6.

Subsection (c). The Agency sought to require that “[t]he livestock waste discharge limitations representing NSPS for the CAFO land application area are the livestock waste discharge limitations and requirements found in Sections 502.615 through 502.645.” Prop. 502 at 48; *see* SR at 57; TSD at 56; Heacock Test. at 6. The Agency stated that this proposal is consistent with federal regulations requiring the same standards. TSD at 56, citing 40 C.F.R. §§ 412.4(c)(2), 412.35. The Agency further stated that “operation and management of livestock waste application onto land is expected to be the same for existing and new source CAFOs in this category.” TSD at 56-57. The Agency added that “[t]he effect on surface waters of stormwater runoff from land application of livestock waste is expected to be the same for new source and existing” CAFOs in this category. *Id.* at 57; *see* Heacock Test. at 6.

Subsection (d). The Agency also sought to require that “CAFOs subject to this Section shall attain the limitations and requirements in Subpart F as of the date of permit coverage or within the timelines provided in Section 502.303.” Prop. 502 at 48; *see* 35 Ill. Adm. Code 502.303 (New Source Standards).

Section 502.720: Horse and Sheep CAFOs: BPT, BAT and NSPS for Production Areas.

The Agency sought to apply “federal production area effluent limitations for large horse and sheep CAFOs.” SR at 57; *see* Sofat Test. at 3. The Agency noted that, consistent with federal rules, its proposal does not include effluent limitations for land application areas for horse and sheep CAFOs. SR at 61. The Agency noted that its proposal followed “the federal size limitation for all effluent limitations” in Subpart G. SR at 53. The Agency added that effluent limitations were first adopted in 1974. *Id.* at 57, citing *id.* at 8, 16 n.14.

Subsection (a) (BPT). The Agency first proposed the “[e]ffluent limitations attainable by the application of the best practicable technology currently available (BPT) for Horse and Sheep CAFOs.” Prop. 502 at 49; *see* SR at 57, citing 40 C.F.R. § 412.12 (BPT).

Subsection (b) (BAT). The Agency next proposed “[e]ffluent limitations attainable by the application of the best available technology economically achievable (BAT) for Horse and Sheep CAFOs.” Prop. 502 at 49; *see* SR at 57, citing 40 C.F.R. § 412.13.

Subsection (c) (NSPS). Finally, the Agency proposed NSPS for Horse and Sheep CAFOs. Prop. 502 at 49-50; *see* SR at 57, citing 40 C.F.R. § 412.15 (NSPS). The Agency clarified that “[t]he NSPS for new horse and sheep is the same as the BAT for existing horse and sheep CAFOs.” Agency Att. 1 at 22 (¶63).

Section 502.730: Duck CAFOs: BPT and NSPS for Production Areas.

The Agency also proposed production area effluent limitations based on federal requirements for duck CAFOs. SR at 57-58, citing 40 C.F.R. §§ 412.22, 412.25; *see* Sofat Test. at 3; Prop. 502 at 50; 40 C.F.R. § 412.20 (Applicability). The Agency noted that its proposal followed “the federal size limitation for all effluent limitations” in Subpart G. SR at 53. The Agency added that, “[l]ike the limitations for horses and sheep, these effluent limitations have been in place since 1974.” SR at 57-58.

Subsection (a) (BPT). The Agency first proposed “[e]ffluent limitations attainable by the application of the best practicable control technology currently available (BPT) for Wet Lot and Dry Lot Duck CAFOs.” Prop. 502 at 50. The Agency sought to require that existing point sources subject to this section must achieve “effluent limitations representing the degree of effluent reductions attainable by application of BPT.” *Id.*; *see* 40 C.F.R. § 412.22(a); SR at 58.

Subsection (b) (NSPS). In addition, the Agency proposed NSPS for Wet Lot and Dry Lot Duck CAFOs. Prop. 502 at 50; *see* 40 C.F.R. § 412.25; SR at 58.

Subpart H: New Source Performance Standards for New Large Swine, Poultry and Veal CAFOs

The Agency proposed effluent limitations for production areas as set forth in Part 412 of the federal rules. SR at 52, citing 40 C.F.R. § 412. The Agency noted that, “except for NSPS, the effluent limitation for all dairy cows, cattle, veal, swine and poultry CAFOs are the same.” SR at 52; *see* Prop. 502 at 29-33. After proposing to codify all of these effluent limitations in

Subpart F, the Agency proposed only two other subparts addressing these issues. SR at 52. Subpart H includes proposed NSPS for swine, poultry, and veal CAFOs. *Id.* at 52, 58; *see* 40 C.F.R. § 412.46; Prop. 502 at 51-54; Sofat Test. at 3; Heacock Test. at 6.

Section 502.800: Applicability.

Subsection (a). The Agency first proposed to require that “[t]his Subpart applies to all New Swine, Poultry and Veal CAFOs with the capacity to stable or confine the numbers of animals of the types provided for in the definition of large CAFOs in Section 502.103.” Prop. 502 at 51; *see* Agency Att. 1 at 21 (¶60) (veal calves). The Agency stated that its proposed definition of “new source” mirrors the federal rule. SR at 58, citing 40 C.F.R. § 122.2.

The Agency noted that its proposed NSPS “will not apply to all new sources.” SR at 58. The Agency stated that, “[i]f the new source was constructed to meet the applicable federal standards of performance at the time of construction, then the new source is exempt from a more stringent federal standard of performance for the ten-year period after construction is complete or during the period of depreciation or amortization, whichever is shorter.” *Id.*, citing 35 Ill. Adm. Code 502.303 (New Source Standards). The Agency added that it had not proposed in this rulemaking to amend existing new source standards, which are based on federal regulations and codified at Section 502.303. SR at 58 n. 42, citing 40 C.F.R. § 122.29(d); 35 Ill. Adm. Code 502.303 (New Source Standards).

Subsection (b). The Agency also proposed to require that “[t]he requirements of this Subpart H are in addition to the livestock waste discharge limitations and technical standards in Subpart F of this Part, except Section 502.605.” Prop. 502 at 51; *see* SR at 59; TSD at 57. The Agency stated that “[t]he ‘additional measures’ found in proposed Section 502.610 are therefore applicable to the production area of swine, poultry and veal CAFOs which are new sources.” SR at 59. The Agency further stated that “new source and existing CAFOs are expected to have production areas, livestock waste and livestock management systems that are similar to each other in design, construction, operation and maintenance.” TSD at 57; *see* Heacock Test. at 6. The Agency indicated that it proposed to apply the same requirements “to provide equivalent protection to surface water quality and aquatic life.” TSD at 57. The Agency added that “[r]equiring new sources to follow the same additional measures as existing sources is a federal requirement. . . .” SR at 59, citing 40 C.F.R. § 412.46(a)(2); *see* TSD at 57, citing 40 C.F.R. § 412.37.

Subsection (c). Finally, the Agency proposed to require that “[t]hese limitations and requirements must be attained as of the date of NPDES permit coverage or within the timelines provided in Section 502.303.” Prop. 502 at 51.

In a pre-filed question, the Board asked the Agency whether it would accept additional language clarifying that this subsection refers to “[t]he limitations and requirements of this Subpart.” Agency Att. 1 at 22 (¶64). The Agency responded that it would accept such a change (*id.*), which is reflected below in the Board’s order.

Section 502.810: Production Area Requirements.

The Agency proposed to require that “[t]here must be no discharge of livestock waste pollutants to waters of the United States from the production area unless the CAFO complies with the alternative livestock waste discharge limitations provided in Section 502.830 of this Part.” Prop. 502 at 51; *see* Heacock Test. at 6. The Agency stated that “[t]his alternative approach is the same as the BMP alternative under the federal rule. . . .” SR at 59, citing 40 C.F.R. § 412.46(a)(1).

Section 502.820: Land Application Area Requirements.

The Agency proposed to require that, “[f]or CAFOs subject to this Subpart, the land application areas shall attain the same limitations and requirements as specified in Sections 502.615 through 502.645” for existing CAFOs. Prop. 502 at 51; *see* SR at 59; Sofat Test. at 3; Heacock Test. at 6.

Section 502.830: Alternative Best Management Practice Livestock Waste Discharge Limitations.

Subsection (a). The Agency first proposed that “[a]ny CAFO subject to this Subpart may request that the Agency establish NPDES permit best management practice livestock waste discharge limitations designed to ensure no discharge of livestock waste based upon a site-specific evaluation of the CAFO’s open surface livestock storage structure.” Prop. 502 at 51; *see* 40 C.F.R. § 412.46(a)(1); SR at 59.

In a pre-filed question, the Board asked the Agency whether it “will require CAFOs seeking to comply with alternative limitations to demonstrate ‘no discharge’ under Section 502.830(a).” Agency Att. 1 at 22 (¶65). The Agency responded that

[t]he alternative performance standards approach was established by EPA to provide compliance flexibility for CAFOs and to encourage them to adopt innovative technologies for handling livestock waste. Under the alternative approach, CAFOs are required to demonstrate that the innovative technologies will achieve equivalent or greater reductions of the pollutants. Thus, this Section requires that CAFOs, at the minimum, must demonstrate ‘no discharge.’ *Id.*

The Board also asked the Agency to explain how it would determine that a CAFO relying on an alternative approach is not discharging waste. *Id.* The Agency stated that,

[t]o show that the alternative approach would achieve equivalent or greater pollutant reductions, the CAFO must submit a technical analysis that satisfies all the elements outlined in Section 502.840. As part of this showing, the CAFO will provide information that will describe how the innovative technologies will generate equivalent or greater pollutant reductions. Based on this technical analysis and other information provided by the CAFO, the Agency will incorporate the specific performance standards. *Id.* at 22-23.

Subsection (b). The Agency next proposed that NPDES permit best management practice livestock waste discharge limitations must address the CAFO's production area. Prop. 50 at 51-52; *see* 40 C.F.R. § 412.46(a)(1); SR at 59.

Subsection (c). The Agency also proposed that “[t]he technical evaluation must address the elements listed in Section 502.840.” Prop. 502 at 52; *see* 40 C.F.R. § 412.46(a)(1); SR at 59.

Section 502.840: Technical Evaluation.

The Agency proposed that technical evaluations conducted pursuant to Subpart H must address certain minimum requirements. Prop. 502 at 52; *see* 40 C.F.R. § 412.46(a)(1)(viii); SR at 59.

Subsection (a). The Agency first proposed to require that the evaluation address “[i]nformation to be used in the design of the open manure storage structure including, but not limited to” six specified items. Prop. 502 at 52; *see* 40 C.F.R. § 412.46(a)(1)(i); SR at 59; Heacock Test. at 14.

Subsection (b). The Agency proposed that the evaluation include design of the open livestock waste storage structure as determined by the most recent version of the National Resource Conservation Service's Animal Waste Management (AWM) software found at a website. CAFOs may use equivalent design software or procedures as approved by the Agency. Prop. 502 at 52-53; *see* 40 C.F.R. § 412.46(a)(1)(ii); SR at 59-60 n.43.

To clarify the rules and comply with the APA, the Board has proposed to incorporate by reference the USDA field handbook providing the AWM design information named in subsection (b). The Board has also added a Board Note listing the online source for this data.

Subsection (c). The Agency also proposed that the technical evaluation include “[a]ll inputs used in the open livestock waste storage structure design including” six listed elements. Prop. 502 at 53; *see* 40 C.F.R. § 412.46(a)(iii).

Subsection (d). The Agency proposed to require that the technical evaluation include “[t]he planned minimum period of storage in months including, but not limited to, the factors for designing an open livestock waste storage structure listed in subsection (a) of this Section. Alternatively, the CAFO may determine the minimum period of storage by specifying times the storage pond will be emptied consistent with the CAFO's nutrient management plan.” Prop. 502 at 53; *see* 40 C.F.R. § 412.46(a)(1)(iv).

Subsection (e). The Agency proposed to require that the technical evaluation include “[s]ite-specific predicted design specifications including” four specific elements. Prop. 502 at 53; *see* 40 C.F.R. § 412.46(a)(1)(v); SR at 60.

Subsection (f). The Agency proposed to require that the technical evaluation include “[a]n evaluation of the adequacy of the designed manure storage structure using the most recent

version of the Soil Plant Air Water (SPAW) Hydrology Tool” found at a web site. Prop. 502 at 53; *see* 40 C.F.R. § 412.46(a)(1)(vi); SR at 60 n.44.

To clarify the rules and comply with the APA, the Board has proposed to incorporate by reference the USDA field handbook providing the hydrology tool listed in subsection (f). The Board has also added a Board Note listing the online source for this data.

Subsection (g). The Agency proposed to provide that “[t]he Agency may waive the requirement in subsection (f) of this Section for a site-specific evaluation of the designed livestock waste storage structure and instead authorize a CAFO to use a technical evaluation developed for a class of specific facilities within a specified geographical area.” Prop. 502 at 54; *see* 40 C.F.R. § 412.46(a)(1)(vii).

Subsection (h). The Agency also proposed to provide that “[t]he Agency may request additional information to support a request for livestock waste discharge limitations based on a site-specific open surface livestock waste storage structure.” Prop. 502 at 54; *see* 40 C.F.R. § 412.46(a)(1)(ix).

Part 504: Implementation Program

Section 504.101: Compliance Dates

Existing Section 504.101 is one of two sections comprising this Part, and it establishes dates by which facilities must comply with the limitations in Part 501. 35 Ill. Adm. Code 504.101. The Agency proposed to repeal this section. Prop. 504 at 1; *see* SR at 34.

Section 504.102: Severability

Section 504.102 is the other of the two sections comprising this Part, and it now provides in its entirety that, “[i]f any provision of these rules or regulations is adjudged invalid, or if the application thereof to any person or in any circumstance is adjudged invalid, such invalidity shall not affect the validity of this chapter as a whole, or of any part, subpart, sentence or clause thereof not adjudged invalid.” 35 Ill. Adm. Code 504.102. Although the Agency proposed to repeal this section (Prop. 504 at 1; *see* SR at 34), it proposed to adopt the same severability language as new Section 501.104. Prop. 501 at 4; *see* SR at 34.

Section 504.APPENDIX A: References to Previous Rules

Existing Appendix A to Section 504 cross-references former Board rule numbers and the current section number codification. 35 Ill. Adm. Code 504.Appendix A. The Agency proposed to repeal this appendix. Prop. 504 at 1; *see* SR at 34.

SUMMARY OF TESTIMONY ON BEHALF OF OTHER PARTICIPANTS

Dr. Ted Funk

Dr. Funk stated that he is “a licensed professional engineer employed by the University of Illinois at Urbana-Champaign as an Extension Specialist in Agricultural Engineering, and as a member of the faculty of the Department of Agricultural and Biological Engineering.” Funk Test. at 1. He testified “[o]n behalf of University of Illinois Extension,” particularly regarding development of NMPs. *Id.* He stated that he has “been involved in every aspect of nutrient management planning” and has “worked closely with producers and agencies as waste management regulations and practices have evolved over the last three decades.” *Id.*; *see* Tr.3 at 13. He added that his “Extension team is responsible for offering nutrient management plan-writing training programs to livestock producers and their consultants throughout Illinois.” Funk Test. at 1. Dr. Funk testified in support of specified revisions to the Agency’s original rulemaking proposal.

Estimating Livestock Waste Volumes

Dr. Funk first addressed the estimate under proposed Section 502.625(b) of the annual volume of livestock waste available for land application. Funk Test. at 1. The Agency’s proposal lists two sources for determining amounts of waste generated by various species of animals. Prop. 502 at 38, citing 35 Ill. Adm. Code 560, Table 1 (Approximate Quantities of Total Manure, Nitrogen, Phosphorus and Potassium Excreted by Different Livestock Species); Att. S at 2.1 (Table 2-1: Manure production and characteristics as produced).

Dr. Funk suggested that the Board refer to other data, “as the sources listed are outdated and may no longer be appropriate for planning purposes.” Funk Test. at 1; *see* Tr.3 at 14-15. He stated that alternative sources may be superior because the industry has experienced changes in areas such as the diet provided to animals and production phases. Tr.3 at 108-09. As alternative sources, he first listed “tables contained in MWPS-18 Section 1, Manure Characteristics, Second Edition, 2004 and NRCS Agricultural Waste Management Field Handbook Chapter 4, Agricultural Waste Characteristics.” Funk Test. at 1; *see* Att. T; Tr.3 at 110. He characterized the NRCS data as “more widely accepted across the US among writers of nutrient management plans.” Funk Test. at 1. Responding to a question during the third hearing, Dr. Funk indicated that the NRCS data are available electronically to the public free of charge. Tr.3 at 112. He also indicated that the MWPS document is available through Iowa State University for a small fee. *Id.* As a third alternative source of this estimate, Dr. Funk listed ASABE Standard Data ASAE D384.2MAR 2005 (R2010), Manure Production and Characteristics. Funk Test. at 1. He added that these data are available through the ASABE with a small charge to non-members of that organization. Tr.3 at 112. Dr. Funk argued that, “[b]y adding these other sources, the Agency will be aligned with other entities involved in nutrient management planning, such as the National Resources Conservation Service (NRCS), and thus cause less confusion on the part of producers and their consultants who are preparing and implementing those plans.” Funk Test. at 1.

Responding to a question during the third hearing, Dr. Funk suggested that adding these three additional sources to proposed Section 502.625 would avoid conflicting with requirements under the LMFA. Tr.3 at 107, 108. He further suggested that replacing the Agency’s two proposed sources with his three alternative sources “would reflect the updated numbers that are being recognized more by the industry.” *Id.* at 107; *see id.* at 108-111.

Winter Land Application

Dr. Funk concurred “with the Agency’s emphasis on maintenance of storage capacity so that winter spreading of manure and wastewater on land application fields can be avoided.” Funk Test. at 2; *see* Tr.3 at 15, 53. Responding to a question during the third hearing, he distinguished the minimum capacity required prior to December and a facility’s entire storage capacity. Dr. Funk indicated that “the 120-day storage is probably reasonable going into winter, but that’s recognized that that’s not necessarily the entire storage capacity, but it’s what’s available and it’s the minimum available.” Tr.3 at 54.

However, Dr. Funk argued that some requirements “pertaining to surface application of manure in winter conditions – for example, the multiplication of setback distances required in 502.630.c)4) and 5) – is arbitrary and burdensome to implement.” *Id.*; *see* Prop. 502 at 45; Tr.3 at 15, 62-63. He urged that the Board remove those two subsections from the Agency’s proposed rules. Funk Test. at 2. Dr. Funk questioned the reliance of proposed subsection (c)(4) on RUSLE 2, which includes various soil factors and soil tests to address runoff from snow or ice-covered fields “where the soil is not being affected at all.” Tr.3 at 64. Regarding proposed subsection (c)(5), he stated that an increased setback based upon the slope of the field is overly prescriptive because slope is not consistent across an entire field. *Id.* at 86. He elaborated that developing “one or two more sets of setbacks for different weather conditions makes it very confusing to an operator. . . .” *Id.* at 35.

Responding to a question during the third hearing, Dr. Funk acknowledged that research “showing what alternative setback distances will protect against water pollution or discharge when manure is spread on snow-covered or ice-covered land” is “very scant.” Tr.3 at 33. However, he argued that planning such as that used by NRCS in the CNMP process “is a better overall process using a site-specific, field-by-field assessment rather than to just come up with a blanket setback number from surface water.” *Id.* at 36.

Responding to a question during the third hearing, Dr. Funk addressed the Agency’s proposed definition of “frozen ground” as it relates to application of livestock waste. He agreed that one-half inch of frost is “so easy to penetrate” and “should not be a restriction in the amount of frost depth that would keep an injection system from applying manure.” Tr.3 at 20. He also agreed that two inches of frost depth “would be difficult to penetrate with our normal injection equipment.” *Id.*; *see id.* at 61 Dr. Funk also testified that it would be difficult to determine the average frost depth across an entire field. *Id.* at 20-21. He added that frost depth “can change very quickly over the course of the day.” *Id.* at 21. He indicated that it may be easier to determine a frost depth of two inches because it results from a duration of cold temperatures that makes that depth more consistent across a field. *Id.* at 23.

Nutrient Management Plans

Dr. Funk also urged the Board to avoid duplication and “recognize existing manure management plans, thereby qualifying unpermitted Large CAFOs maintaining those plans for the agricultural stormwater exclusion for any pollutant transport to waters of the state that occur as a

result of precipitation.” Funk Test. at 2. He provided four reasons for this recommendation. First, Dr. Funk stated that the LMFA requires operations with a design capacity greater than 1,000 animal units to develop a manure management plan and to notify the Department of Agriculture of the existence of the plan. *Id.*, citing 8 Ill. Adm. Code 900.Subpart H; *see* Tr.3 at 15-16, 26, 114. He added that operations with more than 5,000 animal units must develop a plan and submit it to the department for approval. Funk Test. at 2; Tr. 3 at 25-26, 113; *see* 8 Ill. Adm. Code 900.802(d). He argued that “the LMFA plan requirement includes virtually all the universe of Large CAFOs in Illinois as defined in the federal CAFO regulation.” Funk Test. at 2.

Second, Dr. Funk stated that “[m]anure management plan development has been a recurring topic for many years at the annual Certified Livestock Manager Training workshop series,” which he manages. Funk Test. at 2. He further stated that “[p]roducers managing more than 300 animal units are required by state law to participate in the CLM program; thus, livestock producers are routinely educated about the purpose of manure nutrient management planning and are updated about the practices that go into good quality plans.” *Id.*

Third, Dr. Funk argued that the Agency’s proposed Section 502.505, Nutrient Management Plan Information, corresponds to Section 900.803, Waste Management Plan Contents, adopted under the LMFA. Funk Test at 2. He claimed that “[i]t is appropriate and fitting that that the NPDES General Permit for CAFOs and the LMFA Waste Management Plan be congruent, as the intentions for environmental protection are the same. Creating two separate sets of state regulatory requirements for the same purpose is confusing and burdensome.” *Id.*; *see* Tr.3 at 47.

Fourth, Dr. Funk suggested that the Board amend the Agency’s proposal “to ensure that an unpermitted Large CAFO already having a manure management plan under the LMFA would be allowed to operate under its existing plan, *and continue to be allowed to assert the agricultural stormwater exclusion,*” provided the CAFO annually updates its plan and provides appropriate notifications regarding substantial changes to the plan. Funk Test. at 2 (emphasis in original); *see* Tr.3 at 48, 128-29. He argued that “LMFA rules already require the same protocols for manure and soil analyses, determination of manure application rates, and recordkeeping.” Funk Test. at 2. He specifically disagreed with the Agency’s position that an unpermitted large CAFO operating under an LMFA manure management plan “is unable to assert the statutory agricultural stormwater exclusion.” *Id.*

Finally, Dr. Funk testified that

[m]any facilities in our state have had nutrient management plans developed by Technical Service Providers who are registered by NRCS to perform that service. Those nutrient management plans (CNMPs) – developed under the IL NRCS Comprehensive Nutrient Management Plan Criteria Practice/Activity Code 102 – address even more rigorously than the LMFA the components listed in Section 502.615, Nutrient Transport Potential. Funk Test. at 2; *see* Tr.3 at 17, 37-39 (CNMP background), 41-42 (provider training).

He testified that the CNMP process is “more rigorous because it asks for accountability for producers who are then going to use, for instance, public money to help them reach certain goals.” Tr.3 at 39. He testified that a facility that has opted to go through the CNMP process will “in almost every case” meet the requirements of the LMFA. *Id.* at 97.

Dr. Funk expressed hope “that the Agency would recognize the nutrient management planning efforts already in place for many facilities, accept the LMFA and CNMP plans as valid, *qualifying those unpermitted facilities for the agricultural stormwater exclusion*, and would require no duplication or more detail than specified in the federal CAFO regulation.” Funk Test. at 2-3 (emphasis in original); *see* Tr.3 at 17, 118. He cited the Agency’s proposed Section 502.615, arguing that it includes setbacks from surface waters more restrictive than those required under either the LMFA or NRCS. He further argued that, in this respect, the Agency’s proposal “may constitute an unnecessary burden on compliance efforts by producers, with no verifiable impact on water quality.” Funk Test. at 3; *see* Tr.3 at 45.

Mr. Samuel V. Panno

Mr. Panno stated that he is “a Senior Geochemist with the Illinois State Geological Survey, Prairie Research Institute, University of Illinois.” Panno Test. at 1; *see* Tr.4 at 47, 48. He further stated that he is “a certified Ground Water Professional with The Association of Ground Water Scientists and Engineers, a division of the National Ground Water Association.” Panno Test. at 1; *see* Tr.4 at 48. He added that he has “extensive expertise in karst geology, karst hydrology and groundwater chemistry. . . .” *Id.*; Tr.4 at 47. Mr. Panno has authored or co-authored more than “100 peer-reviewed original research articles in a variety of areas of geology, hydrogeology and groundwater chemistry.” Panno Test. at 1; *see* Tr.3 at 47, 48. He listed representative publications, which describe “the location and extent of karstified carbonate rock throughout Illinois and its potential for groundwater contamination.” Panno Test at 2; *see* Tr.4 at 49. He stated that he testified “as an expert witness on karst” regarding proposed amendments to Parts 501, 502, and 504 and not on behalf of the Illinois State Geological Society. Panno Test. at 1; Tr.4 at 47, 48, 65.

Mr. Panno testified that “[c]arbonate rock comprises approximately 25% of the bedrock surface of Illinois.” Panno Test. at 3, citing C.P. Weibel and S.V. Panno, Karst terrains and carbonate bedrock of Illinois, Illinois State Geological Survey, *Illinois Map Series* 8, 1:500,000 scale (1997); Tr.4 at 50. He further testified that “[s]ediments overlying carbonate bedrock in Illinois range from zero to more than 100 m of glacial till and loess.” Panno Test. at 3; *see* Tr.4 at 505-51. He stated that “[c]arbonate rock is a major source of groundwater in Illinois and throughout the world with the most productive aquifers having secondary porosity (fractures and bedding plane partings) that permits the transport of water into and through the rock.” Panno Test. at 3; *see* Tr.4 at 51. He added that “movement of surface waters (rainwater and snowmelt), through the soil, and into fractures in soluble carbonate bedrock is responsible for the development of karst terrains.” Panno Test. at 3; *see* Tr.4 at 51.

Mr. Panno cited a definition of “karst” as “terrain with distinctive hydrology and landforms arising from a combination of high rock solubility and well developed secondary porosity.” Panno Test. at 3, citing D. Ford and P. Williams, Karst geomorphology and

hydrology (1992); Tr.4 at 52, 92. Responding to a question during the fourth hearing, Mr. Panno agreed that “a karst terrain or a karst area would have to have karst features such as a sinkhole or enlarged crevices or joint caves.” Tr.4 at 92. He indicated that this definition did not hinge on the depth of unconsolidated materials overlaying the formation, but that overburden does pertain to protection against the formation of sinkholes. *Id.* He described formation of a sinkhole as the collapse of overburden into a crevice. *Id.* at 94-95.

Mr. Panno also cited a definition of “karst aquifer” stated in terms of hydraulics as “an aquifer in which flow of water is or can be appreciable through one or more of the following: joints, faults, bedding planes, and cavities – any or all of which have been enlarged by dissolution of bedrock.” Panno Test. at 3, citing J.F. Quinlan, *et al.*, Recommended administrative/regulatory definition of karst aquifer, principles of classification of carbonate aquifers, practical evaluation of vulnerability of karst aquifers, and determination of optimum sampling at springs; Proceedings of the Third Conference on Hydrogeology, Ecology, Monitoring, and Management of Ground Water in Karst Terranes, at 573-635 (1991); Tr.4 at 52. Mr. Panno testified that,

[o]f those areas within Illinois that are underlain by carbonate rock, about 35% of that area or 9% of the state are close enough to the surface to show exposures and be part of the freshwater aquifers currently being used by residents and municipalities. These areas are included in five regions that contain karst feature at or near the surface. Panno Test. at 3 (citations omitted); Tr.4 at 53; *see* Panno Test. at 4 (Figure 1: Map of the karst areas of Illinois); Tr.4 at 66-67, 79.

Mr. Panno testified that “[t]he relatively large pathways present in fissured or karstified carbonate rock allow rapid movement of water into and through the rock bodies.” Panno Test. at 5; Tr.4 at 55. He stated that “[r]echarge to the karst aquifers often is rapid, can be analogous to water movement to and through agricultural drainage tiles, and carries with it materials (often macroscopic) from the land surface that can include human and animal wastes, agricultural chemicals, urban runoff, and other waste products associated with the human culture of a region.” Panno Test. at 5 (citation omitted); *see* Tr.4 at 56. He compared this to recharge of non-karst aquifers, which “typically undergoes a slow migration through fine, granular materials (*e.g.*, thick, clay-rich glacial diamicton) that generally provide sufficient time and an environment for chemical, biological and physical degradation and retardation of pollutants.” Panno Test. at 5; *see* Tr.4 at 56.

Mr. Panno testified that karst terrain typically features sinkholes, caves, large springs, fluted rock outcrops, blind valleys, swallow holes, lineaments, and recently discovered crop lines. Panno Test. at 3 (citations omitted); Tr.4 at 54, 114-15; Exh. 23 (drought-induced crop lines). Mr. Panno stated, however, that “the apparent absence of karst features on the ground surface (*e.g.*, sinkholes) does in no way preclude the presence of an underlying karst aquifer. This is because sinkholes are part of a continuum that extends from large-scale sinkhole drains down to nano-scale macropores.” Panno Test. at 3-4 (citation omitted); *see* Tr.4 at 54. Mr. Panno testified that “not all sinkholes are static entities; that is, sinkholes can be filled in by human activities such as plowing.” Panno Test. at 5 (citation omitted); Tr.4 at 58. He added that, even when filled in, “the pathway to the bedrock aquifer can still be present, but not

obvious.” Panno Test. at 5; Tr.4 at 58. Mr. Panno also testified that “sinkholes are not the only vector for infiltration into a karst aquifer. Macropores (*e.g.*, desiccation cracks, worm holes, root channels) within the unconsolidated sediment extend several meters into the soil zone and can allow contaminated surface water to quickly bypass the soil zone and rapidly enter the underlying aquifer with little or no change.” Panno Test. at 5; Tr.4 at 58, 96-97. He added that, “in areas with very thin soils (less than 25 feet) or thick clay-rich soils, sinkholes may not be obvious or present; however, the underlying carbonate bedrock can be (and usually is) replete with solution-enlarged crevices that constitute a karst aquifer.” Panno Test at 6; *see* Tr.4 at 59. He argues that, “[c]onsequently, any portion of Illinois underlain by carbonate rock and with less than 50 feet of overburden may qualify as karst terrain.” Panno Test. at 6; Tr.4 at 60.

On the basis of his testimony summarized above, Mr. Panno recommended that “Very Large to Large CAFOs should not be permitted in karst areas of the state as defined by carbonate bedrock where the thickness of unconsolidated materials is less than 50 feet, particularly in those areas lacking in clay-rich glacial till (*i.e.* Driftless Areas of Illinois).” Panno Test. at 6; *see* Tr.4 at 60-61. He argued that “areas potentially suitable for siting of large and very large CAFOs should be identified based on the absence of all indicators of karst terrain and a minimum of 50 feet of unconsolidated materials overlying karst bedrock.” Panno Test. at 7; *see* Tr.4 at 63, 74-75. He elaborated that, “[i]f you have at least 50 feet of unconsolidated material overlying a karst aquifer, it’s unlikely you’re going to get sinkhole formation.” Tr.4 at 104. Responding to a question during the fourth hearing, he also agreed that “manure stock piles without an impermeable pad and cover should be prohibited in these areas.” Tr.4 at 129.

Mr. Panno argued that the Agency’s rulemaking proposal inappropriately relies upon sinkholes as the single indicator of the presence of karst. Panno Test. at 6; *see* Tr.4 at 61; *see also* Prop. 502 at 35 (proposed Section 502.615(c)(4)). He added that there are a number of other indicators of karst terrain, including creviced terrain, caves, trellised stream patterns, lineaments, and recently discovered crop lines. Panno Test. at 6-7; *see* Tr.4 at 62. He stated that incipient sinkholes and macropores may be present and remain undetected. Panno Test. at 7; *see* Tr.4 at 62. Mr. Panno testified that previous publications and site-specific investigation should be used to identify karst areas. Panno Test. at 6 (citations omitted); *see* Tr.4 at 61, 71. He indicated that one also “would have to look at the thickness of the soils in the areas where you are going to land apply” to determine whether that application would be on karst terrain. Tr.4 at 109. He claimed that “[u]nconsolidated materials of less than 25 feet provide insufficient protection to groundwater from land application of liquid manure. . . .” Panno Test. at 7; *see* Tr.4 at 62-63.

Mr. Panno expressed the professional opinion that the Agency’s proposed Sections 502.620(h) and (j) “are not sufficiently protective of groundwater and nearby surface water quality.” Panno Test. at 5; Tr.4 at 57, 76, 107-08 (distinguishing karst and non-karst bedrock). He claims that these provisions are based on the position that “less than one foot to two feet of soil cover over a karst aquifer would be acceptable for land applied liquid manure.” Panno Test. at 5; Tr.4 at 57. He argues that, “[i]n a karst terrain, two feet of unconsolidated sediment provides little protection for the underlying karst aquifer from surface-borne contaminants like nitrate and enteric bacteria.” Panno Test. at 5; Tr.4 at 57. Because macropores may extend six feet into the soil zone and can allow recharge water to pass quickly through it, “[f]ifty feet of

unconsolidated material overlaying a karst aquifer is the thickness necessary for protection.” Panno Test. at 5 (citation omitted); Tr.4 at 57, 128.

Mr. Panno expressed doubt that prohibiting land application of livestock waste within 100 feet of a sinkhole would provide adequate protection of groundwater. Tr.4 at 110. He explained that, while sinkholes are vectors for aquifer recharge, they are “not the only means by which recharge can get into the aquifer.” *Id.* He added that, although this 100-foot setback may reduce the amount of pollutants reaching a karst aquifer, any reduction would depend on the type and thickness of soil at that location and the size of the sinkhole. *Id.* at 111. He indicated that this setback may overlook such pathways as macropores and covered sinkholes that remain more permeable than surrounding soil. *Id.*

Mr. Donald A. Keefer

Mr. Keefer stated that is “a Senior Hydrogeologist and the Head of the Hydrogeology and Geophysics Section at the Illinois State Geological Survey (ISGS).” Keefer Test. at 1. Mr. Keefer further stated that, during his 27-year tenure with the ISGS, he has “been involved with research related to understanding the movement of water and agricultural chemicals through soil and geologic deposits, and the characterization and mapping of aquifers to aid in management and protection of groundwater resources.” *Id.*; see Tr.5 at 144. Mr. Keefer stated that he provided testimony in the Board rulemaking pursuant to the LMFA “regarding the vulnerability of aquifers to contamination from potential sources of contamination such as CAFOs and related activities.” Keefer Test. at 1. He added that he is a Licensed Professional Geologist. *Id.*; see Tr.5 at 144. He clarified that he testified in response to a request by a Board member and not as an advocate for either the Agricultural Coalition or the Environmental Groups. Tr.5 at 144-45.

Macropores

Mr. Keefer testified that “[s]oil is a mixture of mineral particles and organic matter,” which often coalesce into aggregates. Keefer Test. at 1. He stated that pore spaces between these aggregates influence infiltration of water in the soil and the flow of water through it. *Id.* at 1-2. These pore spaces can be classified as either smaller micropores or larger macropores. *Id.* at 2. He stated that “[t]he USDA has assigned the size of 0.08mm as the threshold between these categories.” *Id.* at 2. Mr. Keefer described micropores as being “typically the spaces between the mineral and organic particles.” *Id.* He added that, through micropores, water flow and constituent transport will generally follow a tortuous path at a relatively slow rate. *Id.*

Mr. Keefer distinguished macropores, which “are formed by a range of processes and have different shapes, sizes and lengths.” Keefer Test. at 2. He stated that

[t]he most common type of macropore includes the fractures or opening between individual soil aggregates. These inter-aggregate pores are typically planar and, together, form a vast network of macropores that extend from land surface to the maximum depth of weathering. If the underlying geologic deposits are jointed or fractured, the soil aggregate macropores can eventually connect with this larger

joint network, increasing the reach of the macropore network. *Id.*; *see* Tr.5 at 163-64.

Mr. Keefer further stated that, because macropores are larger than micropores and follow a less tortuous path, water flow and constituent transport through them “can be very rapid.” Keefer Test. at 2.; *see* Tr.5 at 147.

Mr. Keefer stated that he has “conducted research using fluorescent dyes that showed rapid movement from land surface to depths of 4 to 5 feet within minutes and with less than 1” of irrigation.” Keefer Test. at 2; *see* Tr.5 at 157, 167-68. Based on staining from the dye, he attributed most of the transport to inter-aggregate macropores. Keefer Test. at 2. Mr. Keefer noted research showing that “chemicals can be detected in shallow sand and gravel aquifers that are buried by between 20-50 feet of fine-grained clayey deposits. This suggests macropores are common below soils in many Illinois clayey glacial tills to depths of 20-50 feet.” *Id.* He concluded, however, that “[i]n areas where there are no aquifers within 50 ft of land surface and where there are no private large-diameter water supply wells within 800 ft, it appears unlikely that macropores will facilitate any significant contamination to surface water or groundwater supply well from properly-managed livestock waste application.” *Id.* at 3; *see* Tr.5 at 148, 192-93.

He concluded that macropores can generally be “considered as ubiquitous in soils with the primary inter-aggregate networks related to the depth of the soil weathering profile. In much of the Midwestern US, this is often in the 5-6’ depth range.” Keefer Test. at 2; *see* Tr.5 at 147. Although macropores attributable to plant roots or joints and fractures in geologic deposits are common and can extend to greater depths, they occur at much lower densities. Keefer Test. at 2.

Water and Constituent Movement in Tile-Drained Soils

Mr. Keefer testified that, in agricultural fields, subsurface drainage tiles are typically installed at a depth of approximately three feet and that they lower water tables relatively quickly. Keefer Test. at 2-3; *see* Tr.5 at 148, 184. He added that drainage tiles “are used to ensure that crop roots have sufficient oxygen to maintain crop health during wet periods.” Keefer Test. at 3. Mr. Keefer stated that water in saturated soil will be found mostly in micropores, which comprise of to 30% of soil volume. *Id.* He further stated that, “[w]hen drainage tiles are present, most of the water flow during a rainfall event can occur in the macropores. These may only comprise 1-2% of the volume of the soil, but they can dominate the water and constituent movement in tile-drained soils.” *Id.*

Mr. Keefer stated that, “[i]n my research and the research of others, herbicides, nutrients, bacteria, hormones, and antibiotics applied to the land surface through normal agricultural methods, are commonly detected in tile effluent with signatures attributed to rapid transport through macropores.” Keefer Test. at 3; *see* Tr.5 at 148. He added that these constituents “can be rapidly discharged to surface water through tile drainage systems.” Keefer Test. at 3. He argued that “[t]here does not appear to be any way to ensure discharge of pollutants at acceptable levels without monitoring. Significant concern needs to be given to the risk of pathogen,

hormone or antibiotic transport to surface waters through subsurface drainage tiles due to land application of livestock waste.” *Id.* at 4; *see* Tr.5 at 149, 191.

Mr. Keefer clarified that he did not testify in support of a prohibition of land application on a field with macropores, even if the field has subsurface drainage. Tr.5 at 176. He agreed that adjusting application rates on such fields can make the application protective. *Id.* at 176-77. He further suggested that tilling the field before land application would not consistently decrease transport through subsurface drainage. *Id.* at 177-78.

Karst

Mr. Keefer noted that the LMFA “allows for point characterization on a site to identify karst. . . .” Tr.5 at 179. He indicated that this is “not logical” because karst occurs “systematically across a landscape, and it isn’t the kind of situation where you can have a little carved out niche that doesn’t get karstified. . . .” *Id.*; *see id.* at 208. He stated that the Illinois State Geological Survey has prepared a map defining the major karst regions in the state. *Id.* at 180. He acknowledged that the map may not be precise enough for the purpose of locating a facility. *Id.* He also acknowledged that site characterization could be helpful “not to identify whether there is karst or not, but to look at the hydrology locally within that karst aquifer.” *Id.* at 187. He added that such a characterization is “hard to do, and a farmer, an individual landowner, probably can’t do that reliably. A consulting firm might be able to do it, and it could be very expensive.” *Id.* at 188.

Mr. Keefer’s Comments on Agency’s Proposed Language

Section 501.254. The Agency proposed to define “groundwater” as “[u]nderground water which occurs within the saturated zone and geologic materials where the fluid pressure in the pore space is equal or greater than atmospheric pressure.” Prop. 501 at 7; *see* 415 ICLS 5/3.210 (2012); . Mr. Keefer suggested that the Board amend that proposed definition as follows: “[u]nderground water which occurs within the saturated zone ~~and~~ of geologic materials where the fluid pressure in the pore spaces is equal or greater than atmospheric pressure, as demonstrated by the water level in a shallow well. Keefer Test. at 4.

Section 502.106(b)(1). Proposed Section 501.106(b) generally provides that the Agency may not require a permit for AFOs having fewer animals than established by the definition of “Medium CAFO” unless it meets one of two discharge-related conditions. Prop. 502 at 8. Mr. Keefer noted that that first of these proposed conditions that may trigger a designation is that “[p]ollutants are discharged into waters of the United States through a man-made ditch, flushing system or other similar man-made device.” Prop. 502 at 8.

Mr. Keefer suggested that the Board include subsurface drainage tiles in this condition. Keefer Test. at 4; Tr.5 at 150-51. He argued that “[t]here are many published studies of drainage tile discharge with high concentrations of pollutants from livestock waste application. Given all the variables associated with implementation of a successful livestock management plan, it seems that monitoring would be needed to ensure a given waste application was not resulting in contamination of surface waters.” *Id.*; *see* Tr.5 at 151.

Section 502.615(a)(6). The Agency proposed to require before land application of livestock waste that “[a]n individual field assessment of the potential for nitrogen and phosphorus transport from the field to surface waters must be conducted and the results contained in the nutrient management plan.” Prop. 502 at 33. Proposed subsection (a) lists nine factors that must be identified for each field, the sixth of which is “[t]ile inlet locations.” *Id.* at 34; *see* Tr.5 at 151.

Mr. Keefer states that “[t]ile drainage research has shown that land-applied chemicals can be rapidly transported to subsurface drainage tiles, through macropore flow, not through tile inlets.” Keefer Test. at 4. He suggested “that subsurface tile drains be considered as potential routes for contamination of surface waters.” *Id.*; *see* Tr.5 at 151.

Section 502.620(k). Proposed Section 502.620 establishes protocols for land application of livestock waste, and subsection (k) provides that “[l]ivestock waste shall be applied at no greater than 50 percent of the agronomic nitrogen rate determined pursuant to Section 502.625 when the minimum soil depth to seasonal high water table is less than or equal to 2 feet.” Prop. 502 at 37; *see* Tr.5 at 151.

Mr. Keefer states that this proposed language does not provide how that two-foot depth is to be determined. Keefer Test. at 4; *see* Tr.5 at 151. He argued that “[t]he USDA Soil Surveys are a reliable predictor of soil characteristics, including the seasonal high water table depth. The most recent USDA NRCS Soil Survey could be used to determine” that depth. Keefer Test. at 4. He suggested that “[t]his information could be ignored, if the field was found to be underlain by a systematic drainage tile network.” *Id.*; *see* Tr.5 at 151-52.

Section 502.630(a)(1)(A). Proposed Section 502.630 establishes protocols for land application of livestock waste during winter. Prop. 502 at 41-45. Subsection (a) prohibits that application unless it meets six conditions, the first of which is that “[n]o practical alternative measures are available to handle the livestock waste within storage facilities or to dispose the livestock waste at other sites.” *Id.* at 41.

Mr. Keefer expressed the concern that “this approach may be insufficient to protect surface water quality.” Keefer Test. at 4; Tr.5 at 153. He explained that “[l]iquid components of the waste cannot infiltrate the soil until the soil is thawed and drained. During warm spells, the soil will thaw from the top down. The livestock waste will be frozen to the surficial ice or snow and will be included in runoff at any melting event.” *Id.*; *see* Tr.5 at 153-54

Testimony on Behalf of Environmental Groups

Mr. Arnold Leder

Mr. Leder testified that he retired after working from 1974 to 2006 for USEPA’s water enforcement program. Leder Test. at 1; *see* Tr.4 at 140, 154. He further testified that, during the last ten years of that time, he worked as CAFO enforcement program manager. Leder Test. at 1. That position included involvement with “national workgroups helping to develop updated

USEPA CAFO regulations and guidance,” assistance with “developing and implementing CAFO inspection programs,” and participation “in most Region 5 CAFO inspections.” *Id.*; *see* Tr.4 at 155. He added that he “was also responsible for initiating federal enforcement when violations were found.” *Id.* Mr. Leder testified on behalf of the Environmental Groups. Leder Test. at 1; *see* Tr.4 at 140, 154

Land Application

Mr. Leder first addressed land application of waste and stated that “[w]aste discharges from land application fields are a particularly significant problem.” Leder Test. at 1; *see* Tr.4 at 141. He stated that such discharges may result from “bad waste application practices.” Leder Test. at 1. He reported that “[o]ver-application of waste in amounts far in excess of crop needs and university recommendations also occurs.” *Id.* at 2. He added that failure to calibrate land application equipment can lead to over-application. *Id.* He stated that the failure of equipment such as pumps and pipes can also result in a discharge. He indicated that, even when waste is applied in moderate amounts during dry weather, “discharges still occur because of cracks and wormholes in the soil.” *Id.*

Mr. Leder testified that “waste applied to fields can reach water via dry weather discharges (typically due to over-application or application too close to a waterway or conduit to a waterway), as runoff during storms or snowmelt, and via field drain tiles.” Leder Test. at 2. He concluded that “it is essential for the regulations to require that there be adequate land application setbacks from streams, wells, and water conveyances, appropriate application rates, and that the soil not contain cracks before application if the field is tiled.” *Id.* During the fourth hearing, Mr. Leder indicated that the Agency’s proposed setback of 200 feet from surface waters, unless there is adequate diking, would be consistent with federal requirements but may not be adequately protective. Tr.4 at 197. He recommended monitoring of tile outlets and referred to plugging tile outlets as “a best management practice.” Leder Test. at 2.

Application on Frozen, Ice-Covered, and Snow-Covered Ground

Mr. Leder testified that land application of waste to crop land typically occurs in the fall or spring. Leder Test. at 2. He stated that, in order to have adequate waste storage between land application periods, operators should maintain at least six months of storage capacity. *Id.* Responding to a question during the fourth hearing, he indicated that the Agency’s proposed requirement of 120 days of available storage may be insufficient. Tr.4 at 210-11. He added that 180 days of storage helps to account for factors such as the type of livestock and actual precipitation. *Id.* at 211-12. He claimed that, if an operation does not maintain adequate capacity, it may become necessary to apply waste to frozen, ice-covered, or snow-covered ground. Leder Test. at 3.

Mr. Leder testified that frozen soil cannot effectively absorb applied waste. Leder Test. at 3. Precipitation events and snowmelt will result in waste leaving the field, resulting in loss of the nutrient value. *Id.* He indicated that this may be a particular problem in Illinois, where corn and soybean fields “are harvested before winter and the fields usually have no living cover in winter except weeds. Therefore, there is little if any vegetation taking up nutrients during

Illinois winters, rendering waste more susceptible to runoff.” *Id.*, citing Leder Att. 1 at L-1 (Winter Spreading Technical Guidance); *see* Tr.4 at 141. Mr. Leder stated that waste applied to snow-covered ground “will move down gradient with the snow when it melts.” Leder Test. at 3. He added that, because ice forms a relatively impermeable surface, waste applied to ice-covered ground “can move off the field more easily than if it were incorporated into the soil. *Id.*; *see* Tr.4 at 141.

Based on these factors, Mr. Leder argued that “CAFOs should be required to have at least six months of storage and there should be strict restrictions on surface-application of waste during winter.” Leder Test. at 3. He stated that winter surface application should be allowed only “if incorporation and injection are not possible.” *Id.*; *see* Tr.4 at 253-55. He further stated that operators should “have to prove they had taken responsible steps to create adequate waste storage capacity to get through the winter. . . .” Leder Test. at 3. He added that operators should also be required to protect waste storage structures from infiltration by precipitation and clean stormwater runoff. *Id.* As another proposed restriction, he claimed that “[t]he amount of waste applied to fields during winter should represent the minimum amount necessary to free up enough storage to get through the winter without a production area discharge.” *Id.*

Mr. Leder also proposed to require Agency pre-approval of winter application, as “the Agency can ensure that weather conditions are conducive to application and the appropriate fields will be used, and the Agency can go inspect the application if they feel it is important to do so.” Leder Test. at 3; *see* Tr.4 at 181, 183. Responding to a question during the fourth hearing, he suggested that an operation could initiate this approval through media including telephone, mail, or electronic mail. Tr.4 at 183. He added that the review and approval of these requests should “be a priority. . . . You would want to have a system in place for looking at it right away, because you’re trying to help a guy prevent a discharge.” *Id.* at 193. He suggested that, if the operations had an NMP on file, the Agency could rely upon it to determine whether to approve winter application. *Id.* at 209. Mr. Leder clarified that, if the livestock waste is incorporated or injected, winter application should not require Agency pre-approval. *Id.* at 181-82.

Production Area Setbacks from Surface Waters

Mr. Leder testified that on-site waste storage facilities at livestock operations may include “subterranean concrete pits, above-ground storage tanks, waste-holding ponds, and lagoons” and may also involve manure stacks. Leder Test. at 4. He further testified that “[t]hese structures are not leak-proof or spill-proof, and are not always protected from precipitation or runoff.” *Id.* He stated that there are a number of avenues through which waste in production areas may come to contaminate surface water. First, in some cases, operators have discharged waste “to surface waters via man-made conveyances such as ditches or tile drains.” *Id.* In other cases, waste may overflow from “waste storage structures that were not properly operated and maintained.” *Id.* Accidental discharges can also result from equipment failure. *Id.* at 5. He also stated that polluted discharges can result if clean storm water is not appropriately diverted from a production areas. *Id.* at 4. He added that, if manure stacks are not protected from rainfall and overland runoff, runoff from them can result in discharges having a high concentration of waste. *Id.* Mr. Leder also cited “instances where production areas have been flooded by nearby creeks.” *Id.* at 5.

Mr. Leder further testified that groundwater contamination may result if storage structures develop cracks, “allowing waste to seep into the surrounding groundwater.” Leder Test. at 4. He further testified that wells near production areas “are also at risk from contamination from polluted runoff.” *Id.*

Based on his enforcement experience, Mr. Leder testified that “production areas should be set back and isolated from surface waters and should not be in floodplains.” Leder Test. at 5; *see* Tr.4 at 141, 214. He argued that “[t]he further away from surface waters, the better, because there is less of a chance of discharge.” Leder Test. at 5; *see* Tr.4 at 198. He elaborated that “adequate setbacks will allow more room for CAFO operators to dam up waste that escapes the production area before it discharges. Having adequate land and vegetated buffers between the production area and surface waters will also allow some of the spilled waste to infiltrate into the ground or otherwise be stopped or soaked up before reaching the water.” Leder Test. at 5.

NMPs and Technical Standards for Unpermitted Large CAFOs

Mr. Leder testified that permitted Large CAFOs and unpermitted Large CAFOs “are essentially the same.” Leder Test. at 5. He argued that, regardless of their permit status, Large CAFOs “produce large quantities of waste that must be managed responsibly,” “have tile drainage and get cracks in their fields,” and also “have to deal with snow and rain and streams and slope and various other variables.” *Id.* Mr. Leder testified that requiring permitted and unpermitted operations to follow separate regulations would generate “inconsistency and confusion.” Leder Test. at 5; *see* Tr.4 at 156. He argued that “[g]ood management practices should apply across the board, not just to operations subject to NPDES permits.” Leder Test. at 5; *see* Tr.4 at 141.

Mr. Leder noted that, “[i]n order for unpermitted large CAFOs to qualify for the agricultural stormwater exemption when land-applying waste, waste must be applied using practices that ensure appropriate agricultural utilization of the nutrients.” Leder Test. at 5; *see* Tr.4 at 202-03. He argued that Agency technical standards “provide an objective basis for determining whether stormwater discharges are exempt from NPDES permit requirements.” Leder Test. at 5-6. He further argued that USEPA requires land application based on other standards “to demonstrate that such practices ensure appropriate agricultural utilization of the nutrients.” *Id.* at 5, citing Leder Att. 2 (73 Fed. Reg. 70435 (Nov. 20, 2008)); *see* Tr.4 at 205-06. He concluded that, for the purposes of clarity and consistency, both permitted and unpermitted large CAFOs “should have to follow the same technical standards for land application of waste. . .” Leder Test. at 6.

Mr. Leder testified that an NMP benefits a livestock operation in a number of ways. He argued that an NMP requires operators to evaluate their entire operation and plan land application of wastes to prevent discharges. Leder Test. at 6. A plan also guides any employees who manage and apply wastes. *Id.* A plan also includes sampling to help determine land application rates and recordkeeping to demonstrate that those rates have been followed. *Id.* “[T]hese records can be used to defend a livestock operator should there be a future discharge.” *Id.* Mr. Leder argued that, because “these plans are considered a best management practice,

unpermitted and permitted large CAFOs should both be required to develop and implement them. *Id.*, citing Leder Att. 3 (Unified National AFO Strategy Executive Summary); *see* Tr.4 at 208.

Inventory of Large CAFOs

Mr. Leder testified that, during his time at USEPA, he found that many livestock operations discharged without recognizing that they did so and that many state inspectors did not recognize a CAFO discharge requiring an NPDES permit. Leder Test. at 6. He further testified that “[a]ll of the facilities where we inspected and found problems were unpermitted facilities.” *Id.*

Mr. Leder testified that “[t]he current system of CAFOs doing self-determinations of whether they need a permit or not is not working.” Leder Test. at 7; *see* Tr.4 at 160. He added that most permits issued in Illinois result from a discharge and not in response to an application. Leder Test. at 7; *see* Tr.4 at 160. Mr. Leder argued that federal and state CAFO programs face a significant problem knowing where CAFOs are and which CAFOs need an NPDES permit. Leder Test. at 7. He further testified that, “[i]n order for agencies to carry out the objectives of (and determine compliance with) the Clean Water Act, they need information about all existing CAFOs.” He argued that “the Agency should be able to prevent some discharges by developing a comprehensive inventory of all CAFOs. . .” *Id.*; *see* Tr.4 at 142. He further argued that an inventory will assist “efforts to identify dischargers and bring them into compliance.” Leder Test. at 7.

Mr. Leder testified that a useful CAFO inventory should include specific information. *Id.*, citing Leder Att. 4 at 2-3 (settlement agreement). Mr. Leder claimed that “[a]n Agency effort to collect this information on its own without surveying the CAFOs will result in time-consuming, piecemeal, inaccurate, and incomplete data collection.” Leder Test. at 7. He further claimed that requiring operations to submit data to the Agency “will be far more resource-efficient and the inventory will be more accurate and complete.” *Id.* at 8. He concluded that “information needed for a good inventory is quite basic and should already be known to the livestock operators, and their time investment in submitting information to the Agency should be relatively minimal.” *Id.*

Dr. Kendall Thu

Dr. Thu testified that he is “a Professor of Anthropology at Northern Illinois University and a co-founder of Illinois Citizens for Clean Air & Water [ICCAW].” Thu Test. at 1; *see* Tr.4 at 142, 191. He further testified that he has “approximately 20 years of experience conducting and publishing scientific research on Concentrated Animal Feeding Operations (CAFOs), with particular attention to their environmental, social, and economic impacts.” Thu Test. at 1, citing Thu Att. 1 (curriculum vitae); *see* Tr.4 at 142. He stated that he testified on behalf of the Environmental Groups. Thu Test. at 1; Tr.4 at 142. He elaborated that he testified specifically “on the need for a registration program for large CAFOs in Illinois to identify how many there are, where they’re located and whether they should be prioritized for investigation or subject to NPDES requirements.” Tr.4 at 142-43.

Dr. Thu testified that the United States Government Accountability Office in 2008 released a report based on its investigation of CAFO regulation by USEPA. Thu Test. at 1, citing Thu Att. 2; *see* Tr.4 at 143. The report states that data on the number of permitted CAFOs nationwide “are inconsistent and inaccurate and do not provide necessary information on the characteristics of these CAFOs.” Thu Test. at 1, citing Thu Att. 2 at 5; *see* Tr.4 at 143. Dr. Thu argued that this status is reflected at the state level in Illinois. Thu Test. at 2; Tr.4 at 143. He noted Mr. Yurdin’s affidavit, which relies on Illinois Department of Agriculture design and construction permitting data that includes duplications and possible omissions. Thu Test. at 2; *see* Yurdin Aff. at 1-2. Dr. Thu cited Mr. Yurdin’s estimate that there are 350-400 Large CAFOs in the state as “evidence that the state does not have adequate data on CAFOs to carry out its responsibilities to administer a regulatory program.” Thu Test. at 2. Dr. Thu argued that, “[b]ecause Illinois does not know how many Large CAFOs there are, or the locations of such, citizens lack basic information about CAFOs in their neighborhoods and potential NPDES compliance issues should they observe a discharge.” *Id.*

Dr. Thu stated that ICCAW members largely reside near CAFOs and that many of them have difficulty obtaining CAFO information from and pursuing potential discharges with authorities including the Agency. Thu Test. at 2. He further stated that ICCAW has performed aerial photography of CAFOs in order to assist members’ monitoring activities. *Id.*, citing Thu. Att. 3; *see* Tr.4 at 221. Dr. Thu argued that an adequate Agency registry of large CAFOs would make this aerial photography less necessary and would make it “easier to identify problematic facilities.” Thu Test. at 2; Tr.4 at 144; *see id.* at 223. He further that the absence of such a registry makes its less likely that livestock waste discharges will be detected. Thu Test. at 3.

Dr. Thu claimed that a lack of resources hampers Agency enforcement of the CWA. Thu Test. at 3. He further claimed that this causes citizens to be “essential sources of information to detect and report actual or potential discharges” and an important element of the Agency’s enforcement program. *Id.*, citing 33 U.S.C. § 1251(e) (2003). He argued that a registry including NMPs and off-site waste transfers is necessary for members of the public to participate in enforcement. Thu Test. at 3. Without access to this information, he further argued, “it is impossible to ensure adequate cropland is available to dispose of livestock waste to avoid discharges and to prevent water quality impairment from runoff.” *Id.* He added that requiring submission of this data provides members of the public with “the information needed to understand what constitutes appropriate waste management practices and to identify when those practices are not being abided by.” *Id.*

Although the Agency’s proposal would have required certain Illinois CAFOs to submit information to the Agency if USEPA adopted reporting regulations, Dr. Thu noted that USEPA withdrew a proposed rule that would have triggered this state requirement. Thu Test. at 4, citing 77 Fed. Reg. 42679-82 (July 20, 2012); *see* Tr.4 at 166. However, he claims that the Agency had previously committed to adopt reporting requirements. Thu Test. at 4; *see* Tr.4 at 167-68, 170.

Dr. Thu testified that the USEPA Administrator is required to withdraw approval of a state’s approved NPDES program “if it is determined that the state is not administering the program with applicable elements and the state fails to take corrective action. Thu Test. at 5; *see*

Tr.4 at 145. He further testified that, on March 27, 2008, ICCAW filed a petition to withdraw Illinois' delegated authority under the NPDES program. Thu Test. at 5, citing Thu Atts. 4, 5; *see* Tr.4 at 144. He stated that USEPA's ensuing investigation concluded that "the Illinois EPA NPDES program for CAFOs does not meet minimum thresholds for an adequate program." Thu Test. at 4, citing Exh. 14 at 34; *see* Tr.4 at 144. He further stated that, among other findings, USEPA determined that the Agency "does not have a statewide comprehensive inventory of CAFOs." Thu Test. at 4, citing Exh. 14 at 16.

Dr. Thu testified that the Agency responded to the pending petition by committing "to a registration program to populate a statewide CAFO inventory and prioritize inspections and permitting decisions." Thu Test. at 4, citing Thu Att. 6 at 5, Thu Att. 7 at 5; *see* Tr.4 at 144. He stated that the Agency committed to "propose a revision in the state livestock regulations . . . so that livestock producers are required to file basic information with the Illinois EPA." Thu Test. at 5, citing Thu Att. 6 at 3. He added that the Agency "entered into a Work Plan Agreement with USEPA for the 2011/2012 fiscal year. Under the Agreement, the Illinois EPA was to 'develop and maintain a comprehensive inventory of CAFOs and evaluate their regulatory status.'" Thu Test. at 5, citing Thu Att. 6 at 3; *see* Tr.4 at 172-73, 177-78.

Dr. Thu argued that this commitment "was unrelated to and not contingent upon the enactment of a federal CAFO Reporting Rule." Thu Test. at 4; *see* Tr.4 at 170. He argued that USEPA elected not to promulgate a federal CAFO reporting rule because it opted to employ "federal, state, and local partners to obtain existing information rather than asking CAFOs to resubmit information that they have already submitted to another governmental entity." Thu Test. at 6, citing 77 Fed. Reg. 42679-82 (July 20, 2012); *see* Tr.4 at 166. Responding to a question during the fourth hearing, Dr. Thu stated that that the basis for USEPA's withdrawal "was that the states would provide in lieu of the federal inventory state based inventory data that they could rely on." Tr.4 at 166. He also acknowledged that an inventory and a reporting requirement are not identical to one another and that USEPA does not require states to have a reporting rule. *Id.* at 167, 168.

Dr. Thu further argued that the Agency responded to a petition for withdrawal of delegated authority by committing "to develop an interim list of CAFOs using currently available resources. . . ." Thu Test. at 6, citing Thu Att. 6 at 3; *see* Tr.4 at 144. He claimed that Mr. Yurdin's affidavit estimating the number of large CAFOs in Illinois shows that the Agency's current sources of information do not allow it to develop a comprehensive inventory of CAFOs. Thu Test. at 6, citing Yurdin Aff. at 2. He concludes that, "[b]ecause the USEPA withdrew its proposed CAFO Reporting Rule, the regulatory proposal now before the Board clearly fails to meet commitments made by the Illinois EPA to avoid dedelegation of the state's NPDES program." Thu Test. at 6; *see* Tr.4 at 145. He recommended that the Board adopt the Environmental Groups' proposed Section 501.505, "which would require Large CAFOs to register with the Illinois EPA and provide vital information about their operations. . . ." Thu Test. at 6; *see* Tr.4 at 146, 175. He stated that, "[i]n order to have a comprehensive inventory, our position is that you'd need to have the registration process, because the existing sources of data are inadequate and incomplete." Tr.4 at 175; *see id.* at 176, 177, 220.

Dr. Stacy James

Dr. James testified that she earned a Ph.D. in Conservation Biology and has been employed since 2006 by Prairie Rivers Network, a statewide river conservation organization that is Illinois' state affiliate of the National Wildlife Federation. James Test. at 1. She now serves as a Water Resources Scientist for the organization. *Id.*; *see* Tr.4 at 147; Tr.5 at 87. She further testified that, since 2008, she has focused on water quality issues presented by CAFOs, which “has included commenting on NPDES permits issued to CAFOs, evaluating construction applications for new CAFOs, reviewing peer-reviewed scientific literature on CAFOs, and participating in the stakeholder workgroup assembled by Illinois EPA to provide input on the technical standards contained in this proposed rule.” James Test. at 1; *see* Tr.4 at 147-48; Tr.5 at 87. Dr. James stated that testified on behalf of the Environmental Groups. James Test. at 1; Tr.4 at 147.

Location of Facilities

Dr. James testified that production areas “should have a minimum siting setback from surface waters to minimize the potential for polluted discharges,” without regard to their size or whether they require a permit. James Test. at 1. She acknowledged that existing authorities establish setbacks from surface waters. Board rules establish that “new production areas cannot have surface waters within their boundaries.” James Test. at 1-2, citing 35 Ill. Adm. Code 501.402(a). Board rules also provide that “new production areas located within a 10-year flood height must be protected against such floods.” James Test. at 2, citing 35 Ill. Adm. Code 501.402(b). Part 501 defines “new livestock management facility and new livestock waste-handling facility” as “[a]ny livestock management facility or livestock waste-handling facility the construction or modification of which is commenced on or after January 1, 1978.” 35 Ill. Adm. Code 501.330; *see* Tr.4 at 236-37. In addition, LMFA rules provide that “new production areas may not be constructed within the floodway of 100-year floodplains but can be constructed within the flood fringe outside the floodway provided certain conditions are met.” James Test. at 2, citing 8 Ill. Adm. Code 900.502(a); *see* 510 ILCS 77/13(b)(1) (2012). Dr. James argues that, although these rules help protect surface waters from production area discharges, “they have not proven sufficient to stop production area discharges to waters of the state.” James Test. at 2.

Dr. James first supported siting setbacks with her own observation of “several livestock production areas that are located just a few hundred feet from surface waters.” James Test. at 2; *see* Tr.4 at 148-49. She first noted cases in which “livestock are allowed free access to the streams,” where they may cause stream bank erosion and defecate in or near the water. James Test. at 2. She also cited cases in which “the livestock are confined away from the stream but polluted runoff can discharge from the production area because the area is not covered or otherwise protected from precipitation.” *Id.* Where livestock are kept indoors, waste may be stored outdoors in stacks or ponds. *Id.* Dr. James argued that manure stacks may lack appropriate protection from precipitation and ensuing runoff, and “waste holding ponds and other structures may overflow if they are not properly maintained.” *Id.* She stated that, at still other facilities, an operator “constructed a conveyance from the production area to a drainage or stream so that runoff could be discharged.” *Id.* Finally, Dr. James stated that “livestock operations located in floodplains face the risk of being flooded by nearby streams during heavy rainfall events; receding floodwaters can carry livestock waste into streams.” *Id.*

Dr. James also supported setbacks from production areas by noting the Agency's documentation of discharges from them. James Test. at 2; *see* Tr.4 at 149. She noted that Mr. Heacock indicated that Agency inspections reveal discharges including feedlot runoff, pit discharges, and lagoon or holding pond overflows. James Test. at 2, citing Agency Att. 5 at 1 (¶1). She also noted Mr. Heacock's observation that "flooding of production areas has occurred." James Test. at 2, citing Agency Att. 5 at 1 (¶1). In addition, she cited Mr. Yurdin's statement that the Agency had investigated and confirmed "tile drain discharges of livestock waste from production areas." Agency Att. 4 at 2 (¶6); *see* James Test. at 2. Dr. James also reviewed the Agency's annual reports of livestock facility investigations. James Test. at 2. She noted that in 2008, the Agency determined that 46% of the 188 facilities it inspected had one or more regulatory violations. *Id.*, citing Exh. 16. She further noted that complaints filed by the Illinois Attorney General's Office have alleged discharges from production areas to surface water. James Test. at 3 (citations omitted).

Dr. James also testified that she had examined peer-reviewed articles pertaining to these issues. James Test. at 3. She suggested that one article supported setbacks by stating that "[c]onstruction away from streams and rivers will avoid the problem of immediate stream discharge should a relatively minor problem arise. In addition, by having lagoons out of the flood plane [sic], erosion damage to the outside of the dike will be reduced." *Id.*, citing James Att. 10 at 442. Dr. James added that other studies "evaluated the pollutant removal efficiency of vegetated filter strips or buffers receiving livestock waste in a manner simulating a production area discharge." James Test. at 4. She reported that these articles support the conclusion that "filter strips help reduce pollutants in livestock waste but removal is incomplete." *Id.*, citing James Atts. 12, 13, 14.

Dr. James concluded by recommending "that the Board consider at least a 750-foot production area siting setback from surface waters and an even greater setback from surface waters used as drinking water supplies." James Test. at 4; *see* Tr.4 at 149, 236. She stated that "[e]stablishing a siting setback would not be without precedent in the Midwest," where states "have siting restrictions relative to water resources that vary from 300 to 2500 feet." James Test. at 4, citing MINN. R. 7020.0300 Subp. 21 (definition of "shoreland"); IOWA CODE § 459.310 (Distance Requirements); OHIO ADMIN. CODE §§ 901:10-2-02(B)(1) (Public water wells), (B)(2) (Surface water intake); IND. ADMIN. CODE tit. 327 § 16-8-2 (repealed effective July 1, 2012); *see* IND. ADMIN. CODE tit. 327 § 19-12-3 (Setbacks). Dr. James added that a minimum setback of production areas from surface waters would also ease public worries that livestock waste will enter those waters and compromise downstream uses. James Test. at 4.

Land Application Setbacks

Dr. James stated that "[l]ivestock waste may be transported from application fields into surface waters via overland flow and through subsurface tile drainage systems." James Test. at 5. She noted that the Agency's proposal "prohibits the land application of livestock waste within 200 feet of surface water (unless there is adequate diking or the water is upgrade)." *Id.*; *see* Tr.4 at 149. She described this proposal as "a vast improvement" over current rules providing that such application should not occur. James Test. at 5, citing 35 Ill. Adm. Code 560.203.

Dr. James argued, however, that this 200-foot setback may not be adequate in every case and that “pristine waters and drinking water supplies need to be specially protected from land application area discharges.” James Test. at 5; *see* Tr.4 at 149. She noted Mr. Heacock’s response that “[o]verland flow of livestock waste has been observed entering surface waters several hundred feet from the edge of a field where land application occurred. . . . The presence of field tiles has also served to transport livestock waste greater than 200 feet from the point of land application.” James Test. at 5, citing Agency Att. 5 at 4 (¶9); *see* Tr.4 at 240. Dr. James also cited the Agency’s annual reports of livestock facility investigations and noted that the 2008 report showed 13 facilities “in violation of the field application criteria. . . .” James Test. at 5, citing Exh. 16 at 4. She further noted that complaints by the Illinois Attorney General’s Office have alleged discharges from land application areas. James Test. at 5 (citations omitted).

Dr. James also referred to “several scientific studies that have examined water pollution in areas where livestock waste is land-applied.” *Id.*, citing James Atts. 17, 18, 19. She also argued that “[s]everal states have adopted larger land application setbacks to protect high quality water resources.” James Test. at 5, citing, *e.g.*, IOWA CODE § 459.314(2) (2008); IOWA ADMIN. CODE r. 65.3(3)(g). She added that “University of Missouri Extension characterizes land application of waste at a distance greater than 300 feet from surface waters as ‘low risk.’” James Test. at 5, citing James Att. 20 at 6 (Land application of animal waste).

On these grounds, Dr. James suggested that, for the protection of pristine surface waters and drinking water supplies, “the land application setback be increased to 500 feet to protect Biologically Significant Streams (classified by Illinois Department of Natural Resources), Outstanding Resource Waters (designated by Illinois Pollution Control Board), and surface drinking water supplies (designated by Illinois EPA).” James Test. at 6; *see* Tr.4 at 149, 238. She further argued, however, that this 500-foot setback may not be sufficient protection if livestock waste enters field tiles and moves some distance to surface water. James Test. at 6. She noted Mr. Yurdin’s response that “livestock waste applied to fields has reached surface waters via tile drainage.” *Id.*; *see* Agency Att. 4 at 2 (¶6). She claimed that cracks and macropores can increase movement through subsurface drainage. She further claimed that “[t]illage before liquid waste application is recommended to reduce the chance of waste reaching tiles via macropores.” James Test. at 6, citing James Att. 22 at O-10 – O-11. She concluded that “the rule should also prohibit land application of liquid waste when deep (*e.g.* ≥ 6 inches) macropores are present in fields with subsurface tile drainage, unless prior tillage or immediate incorporation occurs.” James Test. at 6-7.

Responding to a question during the fourth hearing, Dr. James concurred that this 500-foot setback could be decreased if there is vegetative buffer between the land application area and the biologically significant stream, outstanding water resource, or designated surface drinking water supply. Tr.4 at 238. She clarified that the soil and vegetation in a buffer allow the nutrients in overland flow to be sequestered. *Id.* She added, however, that “a buffer can be compromised if there is some sort of channelization of storm water runoff through it such that you get less treatment.” *Id.* at 238-39.

Temporary Manure Stacks

Dr. James stated that “[t]emporary manure stacks can pose a significant threat to both surface and groundwater quality.” James Test. at 7; *see* Tr.4 at 150. She further stated that, “[s]ince at least 1991, Illinois has had a regulation requiring that temporary manure stacks be established and maintained to prevent runoff and leachate from entering surface or groundwater.” James Test. at 7; *see* Tr.4 at 150. Dr. James cited the Agency’s annual reports of livestock facility investigations and noted that the 2008 report “indicated there were 28 cases of manure stacks as sources of water pollution.” James Test. at 5, citing Exh. 16 at 7; *see* Tr.4 at 150. She further noted that complaints filed by the Illinois Attorney General’s Office have alleged discharges from manure stacks. James Test. at 7-8 (citations omitted).

Dr. James noted “evidence from the scientific literature that polluted runoff from manure stacks can be managed with vegetative filter strips,” although she also noted that the strips may be less effective in reducing bacteria concentrations than nutrients. James Test. at 8, citing James Atts. 13, 31. She also stated that the stack can leach pollutants into the soil beneath them. James Test. at 8, citing James Att. 32. She claimed that, based on risks of this nature, “many states recommend that stacks be managed to reduce the chance of leaching and runoff.” James Test. at 8, citing James Atts. 20, 33, 34. She added that “[a] number of Midwestern states regulate the siting of manure stacks relative to water resources, karst features, and/or water table depth. . . .” James Test. at 8, citing WIS. ADMIN. CODE § NR 243.141(3) (Stacking Conditions); IND. ADMIN. CODE tit. 327 r. 19-12-3 (Setbacks); MINN. R. 7020.2125 (Manure Stockpiling Sites); IOWA CODE § 459 (Animal Agriculture Compliance Act).

Dr. James concludes that “[p]ollution from manure stacks can be reduced if stacks are covered and placed on pads that prevent clean stormwater from entering the stack and prevent polluted stormwater from leaving the stack.” James Test. at 9. As an alternative, she argued that the Board could require “vegetative filter strips of adequate size to capture pollutants leaving the stack, and/or setbacks from water resources such as surface waters, wells, and karst features.” *Id.* She added that the setback should be an alternative “should a cover and pad be infeasible for a livestock operator. But when a shallow water table or highly permeable soils are present, stacks should be prohibited if there is not a cover and pad.” *Id.*; *see* Tr.4 at 150

Nitrogen-Based and Phosphorus-Based Application Rates

Dr. James testified that, when land applying livestock waste “at a nitrogen-based rate, the plants get an appropriate amount of nitrogen but often an excess of phosphorus. In contrast, applying at a phosphorus-based rate often provides adequate phosphorus but a shortfall of nitrogen. . . .” James Test at 9. She argued that “[p]hosphorus-based application is the more protective approach with respect to preserving water quality, so that nutrients are not over-applied and therefore available for leaching and runoff.” *Id.*; *see* Tr.4 at 150-51.

Dr. James noted that the Illinois Agronomy Handbook states that “[n]ear-maximal yields of corn and soybeans are obtained when levels of available P are maintained at 30, 40, and 45 pounds per acre for soils in the high, medium, and low P-supplying regions, respectively.” James Test. at 9, citing Att. R at 101, James Att. 35 at 101. She further noted the handbook’s statement that “[t]here is not agronomic advantage in applying P when P₁ values are higher than

60, 65, and 70 for soils in the high, medium, and low P-supplying regions, respectively.” James Test. at 9, citing Att. R at 102, James Att. 35 at 102; *see* Tr.4 at 151. Dr. James stated that “[a] study conducted in Illinois advised that soil test phosphorus levels near the ground surface be kept to below 200 pounds/acre (or 100 mg/kg) to reduce phosphorus losses from agricultural fields.” James Test. at 10, citing James Att. 36.

Dr. James noted, however, that the Agency’s original proposal “sets 300 pounds of available phosphorus per acre as one of the thresholds for switching from nitrogen-based to phosphorus-based application of livestock waste.” James Test. at 10. She cited the Agency’s statement that, “when soil phosphorus is 300 pounds per acre, the runoff should contain approximately 0.9 mg/L total phosphorus.” *Id.*, citing TSD at 24-25. She indicated that the Agency had apparently relied upon this concentration because “1 mg/L dissolved phosphorus is a suggested discharge limit for sewage treatment plants.” James Test. at 10. Dr. James argued that this suggested limit “is not a regulatory effluent limit and no evidence has been provided by Illinois EPA that this limit is protective of water quality.” *Id.* She further argued that evidence shows “that total phosphorus concentrations lower than 0.9 mg/L can impact aquatic systems.” *Id.*, citing James Att. 39. Dr. James added that, while “sewage treatment plants often discharge into larger streams where dilution comes into play, in agricultural areas runoff and tile discharges from fields can make up the majority of stream flow.” James Test. at 10. To protect surface waters from eutrophication, she stated that “many states have decided to limit nutrient applications based on soil phosphorus levels.” *Id.*, citing James Att. 37 at 289 (Table 1: Threshold soil test P levels and P management recommendations).

Dr. James argued that the Agency’s proposal does not reflect agronomic needs “and in many cases will result in runoff with high concentrations of phosphorus that may contribute to eutrophication in surface waters.” James Test. at 10-11. She stated that, “[w]hile the agronomy science suggests that a threshold of approximately 70 pounds/acre would be reasonable, given common constraints faced by livestock operators, I suggest the Board consider a threshold of no more than 200 pounds/acre.” *Id.* at 11; *see* Tr.4 at 151, 260. Responding to a question during the fourth hearing, Dr. James stated that the effect of this revised threshold on the availability of fields for land application “depends on what fields the particular operator is using and the existing soil test phosphorus concentration in those fields.” Tr.4 at 261.

Winter Application Rates

Dr. James argued that “[s]urface application in winter increases the risk of waste leaving the field during precipitation and thaw events compared to incorporating or injecting the waste under less frigid conditions.” James Test. at 11, citing James Att. 41; *see* Tr.4 at 151. She noted Mr. Yurdin’s response that the Agency “has observed several instances of livestock waste pollution that occurred following winter application. . . . The reasons for these water pollution incidents were frequently related to runoff from surface application to frozen, snow or ice covered ground caused by changes in air and ground temperature.” James Test. at 11, citing Agency Att. 4 at 6 (¶22). Dr. James also noted complaints alleging discharges resulting from winter application. James Test. at 11, citing James Atts. 1, 2, 16.

Dr. James cited USEPA's "Winter Spreading Technical Guidance," which "suggest a ban could be appropriate for surface application on snow, ice, and frozen soil." James Test. at 12, citing James Att. 22 at L-2. The guidance also provides limits "for the maximum amount of liquid waste to be applied on frozen soil." James Test. at 12, citing James Att. 22 at L-3. Dr. James also cited USEPA's Example Technical Standard, which "suggests applying at no more than the one-year phosphorus rate if the watershed is not impaired by nutrients, and not at all if the watershed is impaired." James Test. at 12, citing James. Att. 22 at O-12 (Frozen ground). She added that other Midwestern states have limited "winter application based on gallons or pounds per acre or crop phosphorus needs." James Test. at 12, citing WIS. ADMIN. CODE NR 243.14 (Nutrient management). Dr. James argued that the Agency's original proposal does not appear to establish a winter application rate limit, and in fact, some may interpret the rule as allowing a higher nitrogen-based application rate because the fields used for winter application are supposed to be fields that pose a relatively low-risk of nutrient transport." James Test. at 12; *see* Tr.4 at 151-52.

Dr. James also addressed the Agency's proposed definition providing that "frozen ground" is "[s]oil that is frozen anywhere between the first ½ inch to 8 inches of soil as measured from the ground surface." Prop. 501 at 7; *see* James Test. at 12. She noted that the Agricultural Coalition's proposal that the term "does not include soil that is only frozen to a depth of 2 inches or less." Agri. Mot. at 4; *see* James Test. at 12. She argued that this proposal provides "less protective management of frozen ground, and more surface application on ground with a shallowly frozen surface." James Test. at 12. She stated that, "[w]hile my search has not been exhaustive, I have not seen research articles that evaluated the potential for livestock waste runoff at different depths of frozen soil, or cited freeze depth as a factor for nutrient transport potential." *Id.* She concluded by cautioning the Board against accepting the Agricultural Coalition's proposed change and suggested that "the Board consider defining frozen ground as starting at the soil surface (0 inches) as USEPA suggests." James Test. at 12, citing James Att. 22 at O-12.

LMFA Waste Management Plans

Dr. James argued that the Agency's proposed Part 502 technical standards provide more controls on land application of livestock waste and greater protection of water quality than waste management plans under the LMFA. James Test. at 13, citing 510 ILCS 77/20(f) (2012). She first noted that the LMFA "requires livestock facilities with 1,000 or more animal units to prepare and maintain a waste management plan. However, only the very large facilities exceeding 5,000 animal units (*e.g.*, 5,000 cattle) must actually submit plans to the Department of Agriculture for approval." James Test. at 12; *see* Tr.5 at 87-88. She continued by noting that

the proposed technical standards require land application setbacks from conduits to surface waters, but there is no such setback in LMFA. The technical standards also prohibit application when precipitation is forecasted, but there is no such provision in LMFA. The technical standards prohibit waste application when soil phosphorus reaches 400 pounds/acre, but there is no such prohibition in LMFA. And while the technical standards restrict land application of waste on frozen and snow-covered land and require numerous excellent practices to prevent winter

discharges, the LMFA just states that application is limited to land with slopes of 5% or less where adequate erosion control practices exist. James Test. at 13; *see* Tr.4 at 152.

In her supplemental testimony, Dr. James prepared a table comparing technical standards applicable to land application by unpermitted large CAFOs under the Agency's proposal and under the LMFA. James Supp. Test. at 3-6; *see* Tr.5 at 88. She claimed that "the proposed rule contains a number of protective technical standards that are absent from the LMFA regulations." James Supp. Test. at 6; *see* Tr.5 at 89. She added that the proposed rule also includes standards applicable to production areas, not all of which are required in a waste management plan (WMP) under the LMFA. James Supp. Test. at 2.

Dr. James stated that "[t]he Agricultural Coalition has asked that land application discharges from unpermitted large CAFOs following a waste management plan developed under LMFA be considered agricultural stormwater discharges (*i.e.*, exempt from NPDES permitting requirements)." James Test. at 12; *see* Tr.4 at 152; Tr.5 at 88. She characterized this request as effectively exempting unpermitted large CAFOs from the requirements of the proposed Part 502 technical standards. James Test. at 12-13. She stated that these proposed standards "provide the basis for evaluating whether large CAFOs are land-applying in accordance with practices that ensure appropriate agricultural utilization of the nutrients in livestock waste." *Id.* at 13. She argued that those technical standards "should apply to both permitted and unpermitted large CAFOs." *Id.*; *see* James Supp. Test. at 7; Tr.5 at 89. Dr. James concluded that, "[b]ecause LMFA WMPs are subject to less stringent technical standards, implementing a WMP should not qualify a CAFO for the agricultural stormwater exemption." James Supp. Test. at 3; *see* Tr.4 at 152; Tr.5 at 106. Dr. James added that, by requiring all large CAFOs to submit NMPs to the Agency, the rules would provide greater transparency than the LMFA and more public confidence that CAFOs are developing and implementing plans. James Supp. Test. at 3.

Agency Approval for Winter Application of Livestock Waste

Dr. James noted that the Environmental Groups proposed that "[A]gency permission be required before surface-application of waste on frozen, snow-covered, or ice-covered ground." James Supp. Test. at 7; *see* Env. Prop. at 57 (proposed Section 502.630(a)(1)). She stated that, under the Agency's original proposal, "only permitted CAFOs must submit their winter application plans to the Agency for review. . . ." James Supp. Test. at 7. She added that "unpermitted large CAFOs also must develop a winter application plan, but they do not have to submit that plan or have it approved by the Agency." *Id.* at 8. Because unpermitted CAFOs outnumber permitted operations, she claimed that "very few CAFOs will have their plans checked for compliance with the regulations in advance of winter application." *Id.* at 7. She concluded that, "[e]ven if a plan meets regulatory requirements, there are time-sensitive environmental parameters such as temperature and forecasted precipitation that could easily be overlooked by the applicator. Therefore, the most protective approach is to require Agency permission in advance of winter application." *Id.* at 8.

During the fifth hearing, Dr. James responded to a question concerning the standard the Agency might employ to determine whether to allow winter application. Tr.5 at 100. She

responded that the Environmental Groups intended that the Agency would ensure that the proposed application would comply with Illinois regulations. *Id.* at 100-01. She indicated that this determination could include a site visit depending on whether the facility had submitted an NMP. *Id.* at 101. She noted that “unpermitted large CAFOs will not be submitting their winter plans to IEPA for review and approval, so in which case at least seeing those plans I think would be necessary.” *Id.*

Dr. James stated that some states “require agency permission before surface application on frozen or snow-covered ground.” Tr.5 at 101, citing OHIO ADMIN. CODE § 901:10-2-14(G)(1)(a); WIS. ADMIN. CODE § NR 243.14(7)(d)(1)(c); *see* Tr.5 at 89-90, 98. She added that states including Iowa and Indiana “require livestock operations to provide agency notification.” James Supp. Test. at 8.

Testimony on Behalf of Agricultural Coalition

Mr. Jim Kaitschuk

Mr. Kaitschuk stated that he has worked for the Illinois Pork Producers Association (IPPA) for nine years and now serves as the organization’s Executive Director. Kaitschuk Test. at 1; *see* Tr.1 at 194, 195. He further stated that he represented the Illinois Agricultural Coalition, which includes the Illinois Beef Association, the Illinois Milk Producers’ Association, and the Illinois Farm Bureau in addition to IPPA. Kaitschuk Test. at 2. He added that “this Coalition represents over 80,000 farms and farm families in Illinois.” *Id.*

Mr. Kaitschuk summarized the Agricultural Coalition’s chief interests in this rulemaking proceeding. First, the Agricultural Coalition seeks to ensure that adopted regulations parallel those promulgated by USEPA “and adhere to the federal decisions related to NPDES permitting and regulatory authority.” Kaitschuk Test. at 3. Second, the Agricultural Coalition seeks adoption of rules aligned as closely as possible with LMFA rules. *Id.* Third, the Coalition expresses interest in having the Board “recognize that the federal rules were not only adopted to address agricultural related pollution, but also ‘as part of an overall federal strategy to support a vibrant agricultural community.’” *Id.* at 3-4, citing 68 Fed. Reg. 7176 (Feb. 12, 2003). Finally, the coalition states an interest in adoption of rules “informed by an understanding and appreciation for twenty-first century Illinois agriculture.” Kaitschuk Test. at 4.

Mr. Kaitschuk stated that the Agricultural Coalition would seek clarification and possible modification of language proposed by the Agency where that language “is ambiguous or significantly different or more cumbersome than the parallel federal language.” Kaitschuk Test. at 4; *see* Tr.1 at 199. As a first example, he stated that, instead of the definition proposed by the Agency, “the Agricultural Coalition believes the Board should adopt the more straightforward federal definition of ‘livestock waste. . . .’” Kaitschuk Test. at 4. He also stated that the Coalition “will seek clarification of the Land Application provisions at proposed § 502.103(a) and (b)³, as they are different than the corresponding federal provisions at 40 CFR 122.23(f), especially as they relate to what constitutes agricultural stormwater exempt from discharge.” *Id.*

³ The Board notes that the Agency’s proposal addresses land application discharges and agricultural stormwater in proposed Section 502.102.

Third, he indicated that the Coalition would seek clarification of how the Agency intends to review NMPs, particularly land application plans regarding phosphorus and nitrogen. *Id.* He argued that “[t]his is especially important since the proposed rules conflict with current statutory provisions and rules of the Illinois Department of Agriculture.” *Id.* at 4-5, citing 510 ILCS 77/21(f)(3.6); 8 Ill. Adm. Code 900.813(b), (c). Finally, he testified that the federal courts have conclusively determined and the Agency has correctly accepted that “NPDES permits are only required when a facility is discharging.” *Kaitschuk Test.* at 5, citing SR at 14-15. He stated that, on adoption of rules, “producers and farmers need to have the same understanding as the IEPA as to what constitutes a discharge because, unless there is an ongoing discharge, a federally-derived NPDES permit is not required.” *Kaitschuk Test.* at 5.

Mr. Kaitschuk testified on behalf of the Agricultural Coalition that, “[i]n large part, we support this rule proposal and support the changes that IEPA made during the stakeholder meetings to address issues we raised.” *Kaitschuk Test.* at 2; *see* Tr.1 at 197-98. The Coalition also noted its belief that the Agency’s proposal is “a federally required rule, pursuant to Section 28 of the Act.” *Kaitschuk Test.* at 3; *see* 415 ILCS 5/28.2 (2012) (Federally required rules).

Mr. David Trainor

Mr. Trainor stated that he is a partner in Newfields, “a science and engineering consulting firm founded in 1995. . . .” *Trainor Test.* at 1; *see* Tr.5 at 117. He further stated that he is “a registered professional engineer and registered professional geologist and hold such registrations in six states. I have over 32 years of experience evaluating geologic and hydrogeologic conditions and have consulted on more than 150 environmental projects and investigations.” *Trainor Test.* at 1; *see id.*, Att. A (curriculum vitae); Tr.5 at 117, 130, 138-39. Mr. Trainor stated that the Agricultural Coalition had retained him to provide technical testimony responding to Mr. Panno’s testimony at the fourth hearing. *Trainor Test.* at 1; *see* Tr.4 at 47-138.

Mr. Trainor stated that he is familiar with Mr. Panno’s views on livestock facilities in karst areas based on Mr. Panno’s testimony in Helping Others Maintain Environmental Standards (HOMES) v. A.J. Bos, Tradition Investments, and the Illinois Department of Agriculture, No. 2008 CH 42 (Cir. Ct. 15th Dist. 2009). *Trainor Test.* at 1, *see id.*, Att. B (Judgment). He further stated that, “[i]n that case, HOMES attempted to enjoin the construction of a large dairy farm in Jo Daviess County. Mr. Panno provided the perspective that the facility and any land application from the facility would not be protective of area groundwater.” *Trainor Test.* at 1. Mr. Trainor stated that he was among the technical consultants Traditions Investments retained to evaluate regional and site-specific data regarding the site. *Id.* He further stated that these consultants “concluded that the proposed design was protective of groundwater and surface water resources potentially affected by the proposed facility.” *Id.* at 2; *see* Tr.5 at 118-19. He argued that, “[o]n the basis of the expert testimony describing these conditions, the judge dismissed HOMES’ lawsuit.” *Trainor Test.* at 1, citing *id.*, Att. B.

Mr. Trainor cited the Agency’s proposed Sections 502.620(h), (i), (j), and (k), each of which restricts or proscribes land application of livestock waste under specified field conditions. *Trainor Test.* at 2; *see* Prop. 502 at 37. He argued that “[t]hese requirements are comparable to other states that have developed best practices for land application as envisioned by the federal

rules.” Trainor Test. at 2, citing WIS. ADMIN. CODE § ATCP 51.Appendix B(V)(B) (Criteria to Minimize Entry of Nutrients to Groundwater); *see* Tr.5 at 119, 134-35. He further argued that these restrictions are based upon experience showing “that contaminants in typical livestock wastes are attenuated and are generally not a threat to groundwater when these setbacks are followed.” Trainor Test. at 3; *see* Tr.5 at 120. He stated his “opinion that the restrictions contained in the IEPA’s proposed rule are acceptable and adequately protective of the environment.” Trainor Test. at 3; *see* Tr.5 at 119.

Mr. Trainor acknowledged Mr. Panno’s description that “[g]roundwater within karst bedrock can migrate rapidly (in hydrogeologic terms) because of secondary and tertiary porosity and fracture conditions.” Trainor Test. at 3. Responding to a question at the fifth hearing, Mr. Trainor addressed macropores by stating that “the soil environment is very dynamic. These things change and shift just based on moisture, freeze, temperature. Macropores are not permanent conduits so that you would have the potential for rapid transmission of contaminants to deeper zones at all times.” Tr.5 at 137.

Mr. Trainor stated that investigations comparable to those established in the Agency’s proposal will generate sufficient site-specific data for development of land application plans. Trainor Test. at 3. He argued that Mr. Panno’s testimony referred to investigative techniques that “may be appropriate to develop the proper data for an appropriate design of large facilities with significant potential environmental risks.” *Id.* He expressed the opinion that “such procedures are excessive to evaluate areas proposed for land application, even in areas with potential karst like features.” *Id.*

During the fifth hearing, Mr. Trainor stated that, “when you land apply waste, it’s going to follow an unsaturated flow path by gravity until it reaches the water table.” Tr.5 at 197. He added that, “[o]nce it reaches the water table, it’s subject to the hydraulic behavior of the aquifer.” *Id.* at 197-98. Noting that groundwater flows like surface water from points of high pressure to low pressure, he stated that “the resistance against the porous media controls that rate. . . . It’s not going to be some rapid movement of groundwater through some kind of solution channel where it’s going to cascade out.” *Id.* at 198. He further stated that a pump test involving a series of wells is “the only way you are going to be able to determine what is the actual flow in the groundwater.” *Id.* at 199. Mr. Trainor added that, unlike a continuous rain storm, land application involves “a finite amount of water that’s going to be discharged to the surface, and it’s going to basically follow the fractures or whatever mechanism down to the water table and then be controlled by the hydraulic behavior of the aquifer.” *Id.*

Mr. Trainor noted Mr. Panno’s testimony that “[f]ifty feet of unconsolidated material overlying a karst aquifer is the thickness needed for protection” and that “areas potentially suitable for siting of large and very large CAFOs should be identified based on the absence of all indicators of karst terrain and a minimum of 50 feet of unconsolidated materials overlying karst bedrock.” Trainor Test. at 3, citing Panno Test. at 5, 7. Mr. Trainor noted that the Agency’s proposal establishes separation of various features from land application areas and not the separation of CAFOs from one another. Trainor Test. at 3. However, he claimed that “[i]mplementation of Mr. Panno’s recommendations would result in the virtual elimination of land spreading areas essentially in much of the Driftless Area that encompasses southwest

Wisconsin, southeast Minnesota, northeast Iowa, and northwest Illinois.” *Id.*; *see* Tr.5 at 122, 208. He added that “[e]xisting CAFOs have operated for many years in these areas with few adverse consequences.” Trainor Test. at 3; *see* Tr.5 at 122, 202-03.

Comments on Mr. Keefer’s Proposed Amendments to Agency Proposal

Section 501.254. Responding to a question during the fifth hearing, Mr. Trainor acknowledged that a well is necessary “to determine the actual static water level of a saturated condition.” Tr.5 at 200; *see* Keefer Test. at 4. He added, however, that gathering that information for land application would require a number of wells installed at “some cost.” *Id.* He added that installation of wells would effectively create large permanent macropores. *Id.* Mr. Trainor characterized Mr. Keefer’s proposed amendment of this definition as “onerous.” *Id.* at 201. He indicated that USDA soil surveys can provide water levels, and he argued that “the rule itself is conservative.” *Id.*

Section 502.106(b)(1). Mr. Trainor noted Mr. Keefer’s proposal to base a permitting requirement on the presence of subsurface drainage tiles. *See* Tr.5 at 202; Keefer Test. at 4. Mr. Trainor argued that, because many of those tiles were installed long ago, it would be difficult to identify and monitor them. Tr.5 at 202. He further argued that land application had taken place on these fields for decades, and the Agency’s proposed rule will be “more protective than the current conditions.” *Id.* at 203.

Section 502.615(a)(6). Mr. Trainor noted Mr. Keefer’s proposal to consider subsurface tile drains “as potential routes for contamination of surface waters.” Keefer Test. at 4; *see* Tr.5 at 203. Again stating that he does not expect these existing tile systems to have greater potential to transmit contamination than under the current rules, he stated that he did not support Mr. Keefer’s proposal. Tr.5 at 203.

Section 502.620(k). Mr. Trainor also noted Mr. Keefer’s comment that this proposed section limits land application where minimum depth to the seasonal high water table is equal to or less than two feet. *See* Keefer Test. at 4; Tr. 5 at 203-04. Mr. Keefer commented that that proposal does not specify how to determine the depth to high water table and that USDA soil surveys could provide this information. Tr.5 at 203-04; *see* Keefer Test. at 4. Mr. Trainor indicated that he did not oppose relying on the USDA information. Tr.5 at 204. He suggested that, if information indicated depth of two feet or less, it could trigger actual measurements by farmers wishing to confirm that they could perform land application. *See id.*

AGRICULTURAL COALITION’S MOTION TO AMEND AGENCY’S ORIGINAL PROPOSAL

Summary of Agricultural Coalition’s Motion

As noted above under “Procedural History,” the Agricultural Coalition on September 25, 2012, filed a motion proposing changes to the Agency’s original rulemaking proposal. *See generally* Agri. Mot. The motion stated that the Agricultural Coalition proposed these changes “in order to make the rules more consistent” with both federal and state CAFO authorities. *Id.* at

1. The motion requested that the Board amend the Agency's original proposal with the Agricultural Coalition's proposed changes before submitting a first-notice proposal to publication in the *Illinois Register*. *See id.* Below, the Board summarizes the Coalition's proposed changes. The Board further discusses the Coalition's motion under the section-by-section discussion of contested issues,

Section 502.106: Case-by-Case Designation Requiring NPDES Permit

The Agricultural Coalition expresses uneasiness with the Agency's proposed Section 502.106 addressing designation of CAFOs requiring permits. Agri. Mot. at 6-7. The Agricultural Coalition argues that the provision is not consistent with the corresponding federal rule or with the process of decision-making under the Act. *Id.* at 7. Consequently, "[t]he Agricultural Coalition requests that the Board modify proposed Section 502.106, specifically to provide for Board review of an IEPA finding of permit applicability, consistent with the Illinois statutory framework." *Id.* at 10; *see* Tr.3 at 155-56, 164-65. During the third hearing, Ms. Manning acknowledged that "there's always an appeal you can have after the permit is issued, but at that point the producer has gone through the cost of going through the permit." Tr.3 at 155.

Proposed New Section 502.107

The Agricultural Coalition stated that the Agency has acknowledged that the CWA does not authorize the Agency to require a facility that does not discharge to obtain an NPDES permit. Agri. Mot. at 5, citing Pork Producers, 635 F.3d at 751; Waterkeeper, 399 F.3d at 505; *see* SR at 15; Tr.1 at 45-46; Tr.3 at 145, 149. The Agricultural Coalition argued that, in order to reflect the Agency's position and ensure consistency with federal law, the Board should propose at first notice a new Section 502.107 providing in its entirety that "[n]o NPDES CAFO permit shall be required for any facility which is not discharging or has not yet received livestock." Agri. Mot. at 6.

Section 501.252: Frozen Ground

The Agricultural Coalition noted that the Agency proposed to define "frozen ground" as "soil that is frozen anywhere between the first 1/2 inch to 8 inches of soil as measured from the ground surface." Prop. 501 at 7; *see* Agri. Mot. at 3. The Agricultural Coalition stated that, after reviewing regulations in several Midwestern states including Iowa, the Agency based its proposed definition on Wisconsin regulations. Agri. Mot. at 3, citing Tr.1 at 63-65; *see* WIS. ADMIN. CODE § NR 243.03(24) (2012) (defining "frozen ground"). The Agricultural Coalition argued that, in proposing Wisconsin's 1/2-inch standard, the Agency did not consider climate or agricultural similarities with Illinois. Agri. Mot. at 3, citing Tr.1 at 63-65. The Agricultural Coalition claimed that, because "Iowa is much more similar to the vast majority of agricultural land in Illinois in terms of climate, growing season and types of crops and combined animal feedlot operations (CAFOs)," Iowa's definition of "frozen ground" is a more reasonable one for Illinois. Agri. Mot. at 3-4, citing IOWA ADMIN. CODE r. 567-65.1 (2012) (defining "frozen ground"); *see also* IOWA CODE § 459.102(31) (2011) (defining "frozen ground" in Animal Agriculture Compliance Act). The Agricultural Coalition proposed that the Board amend the

Agency's proposed definition of this term to provide that "frozen ground" is "[s]oil that it impenetrable due to frozen soil moisture but does not include soil that is only frozen to a depth of 2 inches or less." Agri. Mot. at 4; *see* IOWA CODE § 459.102(31) (2011); IOWA ADMIN. CODE r. 567-65.1 (2012).

Section 501.295: Livestock Waste

The Agricultural Coalition argued that the addition to the definition of "sludge and contaminated soil from storage structures" should be struck from the proposed definition. Agri. Mot. at 4. The Agricultural Coalition suggested that the proposed language pertaining more closely to waste disposal should not be included in a proposal based upon the CWA. *Id.* During the third hearing, Ms. Manning testified that these terms are not found in the current definition under the LMFA or federal authorities. Tr.3 at 141, 143; *see* Tr.2 at 20. The Agricultural Coalition further suggested that the Agency's proposed definition would expand the scope of the Agency's proposed rules beyond "water pollution resulting from the waste product of confined animals." Agri. Mot. at 4; *see* Tr.3 at 141, 142, 143. The Agricultural Coalition also indicated that including sludge and contaminated soils in the definition "will no doubt lead to confusing enforcement priorities. . . ." Agri. Mot. at 4; *see* Tr.3 at 141-42.

Section 501.325: Navigable Waters

The Agricultural Coalition noted that the Agency proposed to repeal this entire definition without proposing any replacement. Agri. Mot. at 1-2; *see* SR at 36; Prop. 501 at 8-9. The Agricultural Coalition requested that the Board either retain the existing definition of "navigable waters" or amend the definition. Agri. Mot. at 2. Specifically, the motion proposed that the Board amend it by making the heading of this section "Waters of the United States" and defining that term as "[a]ll waters of the United States as defined in the Federal Clean Water Act." *Id.*

Applicability of NMPs to Unpermitted Large CAFOs

The Agricultural Coalition noted the Agency's position that proposed Part 502 establishes requirements for both permitted CAFOs and unpermitted CAFOs seeking to avail themselves of the agricultural stormwater exemption. Agri. Mot. at 10, citing Tr.1 at 183. The Agricultural Coalition stated that the LMFA requires any large CAFO, whether or not it has an NPDES permit, to develop and execute an WMP. Agri. Mot. at 10. The Agricultural Coalition added that the LMFA and its regulations "set forth specific land application requirements, especially as they relate to phosphorus." *Id.* at 10-11, citing 510 ILCS 77/20(f)(1-10); 8 Ill. Adm. Code 900.803. Specifically, "[t]he Agricultural Coalition requested that, as to unpermitted Large CAFOs, the proposed regulatory requirements mirror those that are already set forth in Illinois law and regulations. . . ." *Id.*

Agency's Response to Agricultural Coalition's Motion

In an order on November 30, 2012, the hearing officer established that responses to the Agricultural Coalition's motion to amend the Agency's proposal would be due with post-hearing comments on January 16, 2013. The Agency's post-hearing comments include its responses to

the motion to amend (*see* PC 17 at 2-12). The Coalition’s motion was also discussed during the second and third hearings as well as in pre-filed questions and answers in the record. The Board discusses the Agency’s responses in the section-by-section discussion of contested issues below.

Environmental Groups’ Response to Agricultural Coalition Motion

The Environmental Groups requested that the Board deny the Agricultural Groups’ motion proposing changes to the Agency’s original rulemaking proposal. Env. Resp. at 1. The Environmental Groups argue that “[t]he rule changes requested by the Agricultural Coalition are unnecessary, misleading, and do not protect Illinois rivers[,] lakes and streams from pollution from CAFOs.” *Id.* The Board discusses the Environmental Groups’ arguments in the section-by-section discussion of contested issues below.

ENVIRONMENTAL GROUPS’ PROPOSED AMENDMENTS TO AGENCY’S ORIGINAL PROPOSAL

As noted above under “Procedural History,” the Environmental Groups on October 17, 2012, proposed amendments to Parts 501 and 502 of the Agency’s original rulemaking proposal. On January 16, 2013, the Environmental Groups filed an updated version of their proposed amendments with the explanation that their updates “do not raise any new issues, but seek to remedy formatting issues and clarify language in light of questions and testimony presented at the Board’s hearings.” PC 20 at 7; *see* Env. Prop.

In the following subsections of its opinion, the Board summarizes the Environmental Groups’ proposed amendments. The Board further discusses the Groups’ proposed amendments in the section-by-section discussion of contested issues below.

Summary of Environmental Groups’ Proposed Amendments

Definition of “Frozen Ground”

The Environmental Groups sought to amend the Agency’s proposed definition of “frozen ground” so that the term referred to “[s]oil that is frozen anywhere in the first 8 inches of soil as measured from the ground surface.” Env. Prop. at 6; *see* Prop. 501 at 7.

In her testimony, Dr. James indicated that the Agricultural Coalition’s motion provided “less protective management of frozen ground, and more surface application on ground with a shallowly frozen surface.” James Test. at 12; *see* Agri. Mot. at 3-4. Dr. James “suggest[ed] that the Board consider defining frozen as starting at soil surface (0 inches) as USEPA suggests.” James Test. at 12, citing *id.*, James Att. 22 at O-12 (Example EPA Nutrient Management Technical Standard). She noted that, in its comments on the Agency’s December 2010 draft proposal, USEPA stated that “[t]he draft definition should be revised consistent with the definition in EPA’s guidance, as exclusion of the first 1/2 inch of soil from the assessment could result in application on ground that is frozen on the surface, creating a high risk of runoff.” Agency Att. 6b at 2; *see* Tr.4 at 250; James Att. 22 at O-12. Dr. James also noted that, in its comments on the Agency’s May 2011 draft proposal, USEPA cited studies addressing the

infiltration capacity of soils with concrete frost. Tr.4 at 251-52, citing Agency Att. 7b at 5. She argued that the Agricultural Coalition “proposed a change to the definition of frozen ground based on no scientific evidence, whatsoever, and I think that they need to be supporting that proposal with scientific evidence that changing that definition will be protective.” Tr.4 at 252.

Setbacks

Surface Waters. Section 501.402 addresses the location of new livestock management and new livestock waste-handling facilities. 35 Ill. Adm. Code 501.402. The Environmental Groups proposed to add a new subsection (h) providing in its entirety that “[n]o livestock management facility or livestock waste handling facility that commences construction of such facility after the effective date of this Section shall locate within 750 feet of surface waters or within a quarter mile of designated surface water drinking supplies.” Env. Prop. at 14.

Wells. Section 501.402 addresses the location of new livestock management and new livestock waste-handling facilities. 35 Ill. Adm. Code 501.402. The Environmental Groups proposed to add a new subsection (i) providing a setback of 1000 feet from community water supply wells or 400 feet from other potable water supply wells. Env. Prop. at 14

Temporary Manure Stacks. Section 501.404(b) addresses temporary manure stacks. The Agency proposed to add a subsection (3) addressing construction and maintenance and requiring a cover and pad or other control under specified circumstances. Prop. 501 at 15. The Environmental Groups also sought to amend subsection (3) by adding setbacks of 750 feet from surface waters, 1000 feet from community water supply wells, 400 feet from other potable water supply wells, and 400 feet from karst features. Env. Prop. at 15.

The Environmental Groups also sought to add to the Agency’s proposal a subsection (4) providing in its entirety that “[a] temporary manure stack without a cover and enclosed pad or other control is prohibited where the minimum soil depth to the seasonal high water table is less than or equal to 2 feet or where there is less than 20 inches of unconsolidated material over bedrock.” Env. Prop. at 15.

High-Quality Waters. The Agency proposed to add a Section 502.645 requiring setbacks from land application of livestock waste. Prop. 502 at 68-69. The Environmental Groups proposed to add to that proposal a subsection (f) providing in its entirety that “[l]ivestock waste shall not be land applied within 500 feet of biologically significant streams, outstanding resource waters and designated surface drinking waste supplies.” Env. Prop. at 69.

Required Permit Coverage

The Agency proposed to strike existing Section 502.101 addressing NPDES permit coverage and replace it with entirely new language. Prop. 502 at 3-4. However, the Environmental Groups sought to strike the Agency’s proposed new subsection (b)(1), which provides in its entirety that “[a] past discharge from a CAFO does not trigger a duty to apply for a permit if the conditions that gave rise to the discharge have been corrected and the

CAFO modified its design, construction, operation or maintenance in such a way as to prevent discharges from occurring in the future.” Env. Prop. at 23.

In addition, the Environmental Groups also sought to strike the Agency’s proposed new subsection (b)(2), which provides in its entirety that “[*no*] permit shall be required under this Part for any discharge for which a permit is not required under the CWA, and regulations pursuant thereto. (Section 12(f) of the Act).” Env. Prop. at 24; *see* 415 ILCS 5/12(f) (2012).

Agricultural Stormwater Exemption

The Agency proposed entirely new language for Section 502.102 addressing agricultural stormwater. Prop. 502 at 4-5. However, the Environmental Groups sought to revise the Agency’s proposed subsection (b) to provide that,

[w]here livestock waste has been land applied in accordance with Sections 502.615 through 502.645 to ensure appropriate agricultural utilization of the nutrients in the livestock waste and in compliance with Section 502.510 for permitted CAFOs and Sections 502.510(b) and 502.500(b) for unpermitted Large CAFOs, a precipitation-related discharge of livestock waste from land application areas is an agricultural stormwater discharge. Env. Prop. at 25.

The Environmental Groups also sought to strike the Agency’s proposed new subsection (c), which provides in its entirety that “[u]npermitted Large CAFOs must maintain the documentation specified in 35 Ill. Adm. Code 502.510(b)(15) either on site or at a nearby office, or otherwise make such documentation readily available to the Agency upon request.” Prop. 502 at 5; *see* Env. Prop. at 25.

Third-Party Waste Transfers

Section 502.201(a)(2). Existing Section 502.201(a) establishes the information that must be submitted with a permit application (35 Ill. Adm. Code 502.201(a)), and the Agency proposed either to amend or add a number of elements to that required information. Prop. 502 at 9-10. The Environmental Groups sought to add a new subsection (a)(2) requiring that the application include, “[i]f a contract operation, the name and address of the integrator.” Env. Prop. at 29.

Section 502.201(a)(10). The Agency proposed to add a subsection (a)(9) requiring that a permit application include “[t]he total number of acres of land application area.” Prop. 502 at 10. The Environmental Groups sought to renumber and amend this subsection to require submission of the total acreage “and the total amount of waste applied to those acres annually.” Env. Prop. at 30.

Section 502.201(a)(12). The Environmental Groups sought to add a new subsection (a)(12) requiring that the permit application include “[c]opies of contracts for the transfer of waste to other persons consistent with Section 502.610(k) and the location on a topographic map and acreage of each site used by the other person for land application of the transferred waste.” Env. Prop. at 30.

Section 502.320(l). The Agency proposed to add a Section 502.320 establishing recordkeeping requirements for permit holders. Prop. 502 at 14-16. The Environmental Groups sought to add a subsection requiring that these records include “[c]opies of contracts for the transfer of waste to other persons consistent with Section 502.610(k).” Env. Prop. at 35.

Section 502.325(b)(3). The Agency proposed to add a Section 502.325(b) addressing the minimum elements of annual reports required of permit holders. Prop. 502 at 16-18. Subsection (b)(3) required that the report include the “[q]uantity of livestock waste transferred to another person by the facility in the previous 12 months (tons/gallons).” Prop. 502 at 17. The Environmental Groups sought to amend this subsection to require reporting “the name of the transferee(s) and the date(s) of transfer.” Env. Prop. at 37.

Section 502.505(h). The Agency proposed to add a Section 502.505 addressing the information contained in an NMP. Prop. 502 at 18-20. Proposed subsection (h) required that the NMP include, “[f]or land application areas not owned or rented [by the owner or operator of the CAFO], copies of statement of consent between the owner or operator of the livestock facilities and the owner of the land where livestock waste will be applied.” *Id.* at 19; *see* Agency Att. 1 at 13 (¶37). The Environmental Groups sought to amend this proposal to require that the plan include, “[f]or land application areas not owned or rented or otherwise under the control of the owner or operator, copies of contracts between the owner or operator of the livestock facilities and the owner of the land where livestock waste will be applied consistent with Section 502.610(k).” Env. Prop. at 39.

Section 502.510(b)(2). The Agency proposed to add a Section 502.510 addressing requirements that must be met by NMPs. Prop. 502 at 20-22. Proposed subsection (b)(2) required that the NMP specify and demonstrate “[a]dequate land application for livestock waste application.” *Id.* at 21. The Environmental Groups sought to amend this proposal to require that this demonstration must include “land owned or controlled by a person other than the CAFO owner or operator.” Env. Prop. at 41.

Section 502.610(k). The Agency proposed to add a Section 502.610 entitled “Additional Measures for CAFO Production Areas.” Prop. 502 at 31-33. While the Agency proposed to add a subsection (k) requiring implementation of “[r]equirements relating to transfer of livestock waste to other persons” (Prop. 502 at 32), the Environmental Groups proposed to add additional subsections elaborating on this requirement. Env. Prop. at 52-53.

Unpermitted Large CAFOs

Section 501.405(a). The Agency proposed to amend Section 501.405 entitled “Field Application of Livestock Waste” by requiring in subsection (a) that “[l]arge unpermitted CAFOs must comply with Sections 501.102 and 502.510(b).” Prop. 501 at 17. The Environmental Groups proposed amendments to subsection (a) including a requirement that “[l]arge unpermitted CAFOs must comply with Sections 502.610(k); and 502.615 through 502.645 of Subpart F.” Env. Prop. at 17; *see* Tr.4 at 255-59.

Section 502.500(a). The Agency proposed to add a Section 502.500 entitled “Purpose, Scope and Applicability.” Prop. 502 at 18. The Agency proposed to provide in subsection (a) that “[t]he requirements of this Subpart [E] apply to CAFOs required to obtain an NPDES permit. Unpermitted Large CAFOs, claiming an agricultural stormwater exemption consistent with Section 502.102, are subject to the requirements in Section 502.510(b).” Prop. 502 at 18. The Environmental Groups sought to amend this proposal to provide in the second sentence that “[u]npermitted Large CAFOs are subject to the requirements in Section 502.500(b), 502.505, 502.510(b), 502.515, and 502.520(a).” Env. Prop. at 38.

Section 502.500(b). The Agency proposed a subsection (b) providing in its entirety that “[t]he CAFO owner or operator shall develop, submit and implement a site specific nutrient management plan. This plan shall specifically identify and describe practices that will be implemented to assure compliance with this Subpart and the livestock waste discharge limitations and technical standards of Subparts F, G, and H.” Prop. 502 at 18. The Environmental Groups sought to amend this second sentence to provide that “[t]he nutrient management plan for a NPDES permitted facility shall identify and describe practices that will be implemented to assure compliance with this Subpart and the livestock waste discharge limitations and technical standards of Subparts F, G, and H.” Env. Prop. at 38. The Environmental Groups also sought to add an additional sentence providing in its entirety that “[t]he nutrient management plan for an unpermitted Large CAFO shall identify and describe practices that will be implemented to assure compliance with Section 502.505, 502.510(b), 502.515 and 502.520(a) of Subpart E and Sections 502.610(k) and 502.615 through 502.645 of Subpart F.” *Id.*; see Env. Resp. at 11-13.

Technical Standards

Applicability. The Agency proposed to add a Section 502.600 entitled “Applicability.” Prop. 502 at 29. In its first sentence, the Agency sought to provide that “[t]his Subpart [F] provides livestock waste discharge limitations and technical standards for permitted CAFOs.” *Id.* The Environmental Groups proposed that Subpart F also apply to “unpermitted Large CAFOs.” Env. Prop. at 49. In the third sentence of its proposed section, the Agency sought to require that “[u]npermitted Large CAFOs claiming an agricultural stormwater exemption consistent with Section 502.102 are also subject to portions of this Subpart.” Prop. 502 at 29. The Environmental Groups proposed to amend this sentence to provide that “[u]npermitted Large CAFOs must achieve the livestock waste discharge limitations and technical standards of [Section] 502.610(k) and [Section] 502.615 through 502.645.” Env. Prop. at 49.

Inspection of Land Application Equipment. The Agency proposed to add a Section 502.640 entitled “Inspection of Land Application for Leaks.” Prop. 502 at 46-47. The Environmental Groups proposed to add introductory language providing in its entirety that “[t]he requirements in this Section apply to permitted CAFOs and Large unpermitted CAFOs.” Env. Prop. at 68. In addition, the Agency originally proposed a subsection (a) requiring that, “[f]or all permitted CAFOs that land apply livestock waste, the CAFO owner or operator must periodically inspect equipment used for land application of livestock waste for leaks or problems that result in improper operation.” Prop. 502 at 47. The Environmental Groups propose to strike the word “permitted” from this provision. Env. Prop. at 68.

Soil Phosphorus Levels. As noted above under “Section-by-Section Summary of Agency’s Original Proposal”, the Agency proposed to add a Section 502.615 entitled “Nutrient Transport Potential.” Prop. 502 at 33-36. Proposed subsection (c)(2) requires that nitrogen-based application of livestock waste must be conducted when “available soil phosphorus (Bray P1 or Mehlich 3) is equal to or less than 300 pounds per acre.” Prop. 502 at 34. The Environmental Groups proposed to amend this provision by amending the threshold to 200 pounds per acre. Env. Prop. at 55.

The Agency also proposed a subsection (d)(4) addressing phosphorus-based application by providing that, “if the soil contains greater than 300 pounds of available soil phosphorus per acre (Bray P1 or Mehlich 3), the amount of phosphorus applied in the livestock waste must not exceed the amount of phosphorus removed by the next year’s crop grown and harvested.” Prop. 502 at 36. The Environmental Groups proposed to amend this provision by amending the threshold to 200 pounds per acre. Env. Prop. at 57.

Application Limits. The Agency proposed to add a Section 502.620 entitled “Protocols to Land Apply Livestock Waste.” Prop. 502 at 36-37. The Agency proposed in subsection (h) that “[l]iquid livestock waste shall not be applied to land with less than 10 inches of soil covering fractured bedrock, sand or gravel.” Prop. 502 at 37. The Environmental Groups sought to amend this provision to increase the scope of the prohibition to such land with less than five feet of soil. Env. Prop. at 58.

Application Rates. The Environmental Groups sought in a new Section 502.620(m) to add to the Agency’s proposal an additional land application protocol providing in its entirety that

[l]iquid livestock waste containing less than 5% solids shall be applied at no greater than 13,000 gallons per acre per application on fields with subsurface drainage. Under drought conditions rated “moderate” or greater by the U.S. Drought Monitor, the application rate shall not exceed 6,800 gallons per acre per application. If there is evidence that tiles are discharging waste, application shall stop immediately and tile plugs or other equipment shall be used to stop the discharge. Env. Prop. at 58.

Winter Application

The Agency proposed to add a Section 502.630 entitled “Protocols to Land Apply Livestock Waste During Winter.” Prop. 502 at 41-45. The Environmental Groups proposed to require CAFOs to obtain Agency approval prior to winter application. Env. Prop. at 62.

In the first of the application criteria, the Agency proposed in subsection (a)(1)(A) to require that “[n]o practical alternative measures are available to handle the livestock waste within storage facilities or to dispose of the livestock waste at other sites.” Prop. 502 at 41. The Environmental Groups proposed to provide examples of “practical alternative measures.” Env. Prop. at 62.

In the third criterion, the Agency proposed in subsection (a)(1)(C) to require that, “[p]rior to December 1, the owner or operator has taken steps to provide 120 days of available storage capacity of manure storage areas.” Prop. 502 at 41. The Environmental Groups proposed to provide examples of these steps. Env. Prop. at 62-63.

Finally, the Environmental Groups sought to add to the Agency’s proposal an new subsection (d) providing in its entirety that, “[i]f livestock waste is to be surface applied on frozen ground, ice covered land or snow covered land, the maximum application rate shall not exceed the amount of phosphorus removed by the next year’s crop grown and harvested.” Env. Prop. at 67; *see* Tr.4 at 263.

“Waters of the State”

Throughout their proposed revision to the Agency’s original rulemaking proposal, the Environmental Groups sought to replace references to “waters of the United States” with references to “waters of the State.” *E.g.*, Env. Prop. at 23 (proposed Section 502.201), 38 (proposed Section 502.200), 54 (proposed Section 502.615). During the fourth hearing, Ms. Knowles claimed that “waters of the State” is broader than “water of the United States.” Tr.4 at 260. She suggested that “the Illinois Environmental Protection Act requires protection of all waters of the state and that this rule should apply to all waters of the state.” *Id.*

Registration Requirements

The Agency proposed to add a Section 501.505 entitled “Requirements for Certain CAFOs to Submit Information.” Prop. 501 at 17-18. The Environmental Groups proposed to strike much of the Agency’s original proposal and replace it with alternate language collecting 16 categories of information. *See* Env. Prop. at 18-20.

Agency’s Response to Environmental Groups’ Proposed Amendments

The Agency’s post-hearing comments include its responses to the Environmental Groups’ proposed amendments to the Agency’s proposal. *See* PC 17 at 12-27. The Board discusses the Agency’s responses under the section-by-section discussion of contested issues below.

Agricultural Coalition’s Response to Environmental Groups’ Proposed Amendments

The Agricultural Coalition argued that the Board should not adopt the Environmental Groups’ proposed changes because they are not required by the federal rule and would effectively amend the LMFA. PC 19 at 4. The Coalition also argued that “these changes are not supported by the record and must be rejected by the Board for that reason as well.” *Id.* The Board addresses the Coalition’s response to these proposed under the section-by-section discussion of contested issues below.

SUMMARY OF POST-HEARING COMMENTS

Agency (PC 17)

The Agency's post-hearing comments included its responses to the Agricultural Coalition's motion to amend the original rulemaking proposal (PC 17 at 2-12) and to the Environmental Groups' proposed amendments (*id.* at 12-27). The Agency's comment also addressed changes recommended by Dr. Funk (*id.* at 27-29) and Mr. Panno (*id.* at 29-30). The Board discusses these elements of the Agency's post-hearing comment in the section-by-section discussion of contested issues below.

Agricultural Coalition (PC 19)

The Agricultural Coalition noted that the Agency proposed to amend the Board's rules to conform them to recently-amended federal CAFO rules. PC 19 at 3. "In large part, the Coalition supports the IEPA proposal." *Id.* at 13. The Agricultural Coalition added that "[t]his is appropriate and, as we stated repeatedly at hearing, the Coalition is totally supportive of the IEPA's attempts to reconcile the State's rules in a manner consistent with the newly adopted federal rules and existing State law." *Id.* at 3-4.

However, the Agricultural Coalition stated that it opposed Board adoption of regulations that are not required by the federal rules on which the Agency has based its original proposal. PC 19 at 1. The Coalition also stated that it opposed rules that "are inconsistent with the current provisions" of the LMFA. *Id.* The Agricultural Coalition elaborated that it rejected any attempt by any other participants effectively to amend the LMFA. *Id.* at 4. The Coalition argued that no such amendment is necessary to incorporate new federal rules into the Board's regulations. *Id.*

The Board addresses the specific elements of the Agricultural Coalition's post-hearing comment in the section-by-section discussion of contested issues below.

Environmental Groups

Environmental Groups (PC 20)

The Environmental Groups stated that Illinois must revise its agriculture-related pollution regulations by adopting the requirements of the federal rule. PC 20 at 1, citing 40 C.F.R § 123.62(e); 77 Fed. Reg. 44494, 44496 (July 30, 2012); *see* Exh. 24. They further stated, however, that "it is well-settled that a state maintains the authority to adopt water pollution standards that are more protective than the federal baseline." PC 20 at 1, citing 33 U.S.C. § 1370, Tr.4 at 199, 215-16. They suggested that a number of factors support state regulations more stringent than the federal rule. First, Illinois has a large livestock industry generating large volumes of livestock waste. PC 20 at 2, citing Exh. 12 at 1, 3. Second, the state includes "nearly 120,000 stream miles and over 300,000 lake acres." PC 20 at 2, citing Exh. 11 at 102, 105. Third, "Illinois has been extensively tile-drained, which allows pollution to reach surface waters more quickly and easily." PC 20 at 2, citing James Test. at 6; Leder Test. at 2; Agency Att. 5 at 4; TSD at 20. Fourth, the state's "relatively long winters create a narrower window within which to safely land-apply manure." PC 20 at 2. "Finally, Illinois is governed by the Illinois

Environmental Protection Act, which establishes additional water pollution protections that the Board must consider when adopting this CAFO rule.” *Id.*

Although the Environmental Groups noted that the Board’s NPDES rules “shall be consistent with the provisions of [the Clean Water Act] and regulations pursuant thereto,” they argued that the Act “does not limit the Board’s rulemaking authority to that which is required to comply with federal requirements.” PC 20 at 2, citing 415 ILCS 5/13(b)(1), 28.2 (2012); Peabody Coal Co. v. PCB, 36 Ill. App. 3d 5, 13-14 (5th Dist. 1976). They claimed that the provisions of the Act

authorizing implementation of the regulations pursuant to an NPDES program shall not be construed to limit, affect, impair, or diminish the authority, duties and responsibilities of the Board . . . to regulate and control pollution of any kind, to restore, to protect or to enhance the quality of the environment, or to achieve all other purposes, or to enforce provisions, set forth in this Act or other State law or regulation. PC 20 at 2, citing 415 ILCS 5/11(c) (2012).

They argued that the Board has broad rulemaking authority limited only to the adoption of regulations that “promote the purposes and provisions of the Illinois Environmental Protection Act.” PC 20 at 2-3, citing 415 ILCS 5/13(a) (2012). They claimed that the Act states a specific purpose to “restore, maintain and enhance the purity of the waters of this State in order to protect health, welfare, property, and the quality of life, and to assure that no contaminants are discharged into the waters of the State. . . .” PC 20 at 3, citing 415 ILCS 5/11(b) (2012). They argued that, because discharges from CAFOs have polluted Illinois’ waters, the Board “must in this instance adopt rules that go beyond the minimum federal requirement in order to further the purpose of the Illinois Environmental Protection Act and protect water for Illinois citizens.” PC 20 at 3.

The Environmental Groups characterized nutrient pollution from nitrogen and phosphorus as “a serious problem in Illinois” and claimed that “[l]ivestock activities are named as one of the top five primary contributors to nutrient pollution in the United States.” PC 20 at 3, citing SR at 2; Exh. 19 at 15. They added that cultivation of row crops also contributes to this pollution “because only a fraction of the nutrients from manure and chemical fertilizers applied to crops is taken up by plants. . . .” PC 20 at 3, citing Exh. 19 at 17. They cited data showing that the greatest water quality impairments are where “crops are intensively cultivated and where livestock operations are concentrated.” PC 20 at 4, citing Att. B at 7181. They added that Illinois lists AFOs as “as one of the top ten potential leading sources of impairment of streams and inland lakes.” PC 20 at 4, citing Exh. 11 (Tables C-37, C-40).

The Environmental Groups claimed that this may underestimate the impact of AFOs, as the report did not assess all streams and surface water acreage and also did not take land application impacts into account. PC 20 at 4, citing Exh. 11 at 1-2. The Environmental Groups claimed that the Agency’s “very low inspection rate of livestock operations and CAFOs” makes it “difficult to account for their total impact.” PC 20 at 4, citing Exh. 7; Tr.4 at 248. They further claimed that, because Agency inspection typically responds to citizen complaints, “water quality violations may go undetected or undocumented because they are not reported or fully

investigated.” PC 20 at 4, citing Exh. 7 at 3. They also noted that the Agency has reviewed and approved only 35 NMPs, so “identifying AFO land application areas as sources of impairment is not possible.” PC 20 at 5, citing Tr. 1 at 84-86; Exh. 7 at 4; Exh. 13; Exh. 14 at 13; Thu Test. at 6. They argued, however, that “it is within reason to surmise that livestock waste used as fertilizer is a contributing factor in the impairment of surface waters where crop production is identified as a source.” PC 20 at 5. They cited other sources in support of their claim that “pollution problems from livestock facilities are widespread.” *Id.*, citing James Test. at 2; Exh. 7 at 2, 3; Exh. 15; Exh. 16; PC 6 at 1.

The Environmental Groups claimed that USEPA responded to a citizen dedelegation petition by describing the deficiencies in Illinois’ NPDES program and setting forth actions the state must take “to avoid withdrawal of its authority to administer the Clean Water Act.” PC 20 at 8, citing Exh. 14 at 3. They argued that, while the Agency’s proposal improves the state’s regulations, the actions required by USEPA to avoid dedelegation “cannot be accomplished under the IEPA’s draft regulations as written.” PC 20 at 8. They claimed that the Agency’s proposal establishes a self-regulating CAFO program under which most requirements apply only to operations with an NPDES permit or seeking the exemption for agricultural stormwater. *Id.* They stressed that, “to date, not one livestock facility that has been discovered polluting in Illinois had sought an NPDES permit in advance of the discharge.” *Id.*, citing Exh. 7 at 3. They also argued that the Agency’s proposal would not necessarily require a permit for a facility that had discharged in the past. PC 20 at 8, citing Prop. 502 at 3 (proposed Section 501.101(b)(1)). They claimed that, “[b]ecause the Illinois EPA is unaware of the actual whereabouts of a vast majority of livestock operations in the state and therefore cannot verify which ones are in fact CAFOs subject to regulatory requirements, under IEPA’s proposed rules facilities have the incentive to continue to pollute or manage their waste poorly until caught discharging.” PC 20 at 8, citing Leder Test. at 7.

The Environmental Groups also argued that the Agency’s proposal requires only permitted CAFOs to submit NMPs and to follow new technical standards for land application. PC 20 at 8. They argued that both permitted and unpermitted large CAFOs should meet these requirements. *Id.* They claimed that all AFOs should be required to implement an NMP in order to minimize health and water quality impacts. *Id.*, citing Leder Test. at 5-6. They also indicated that discharges resulting from land application could be prevented by following these plans and standards. PC 20 at 8-9, citing TSD at 26. The Board addresses the specific elements of the Environmental Groups’ post-hearing comment in the section-by-section discussion of contested issues below.

Dr. John E. Ikerd (PC 16)

Dr. John Ikerd, Ph.D., filed comments on behalf of the Environmental Groups. PC 16 at 1. Dr. Ikerd, a Professor Emeritus of Agricultural Economics at the University of Missouri, stated that he spent half of his “30-year academic career at four major agricultural colleges working on research and extension programs related to animal agriculture as a specialist in livestock marketing.” *Id.*; *see id.*, Att. 1 (*curriculum vitae*), Att. 2 (highlighted works). He added that he had dealt with residents of 16 states and three Canadian provinces who were dealing with CAFO issues. PC 16 at 1. He indicated that his comments focused “on the

potential economic impacts of implementing the regulations that are the subject of this rulemaking, and by implication, the economic impacts of implementing the Environmental Groups regulatory proposal. . . .” *Id.*

Dr. Ikerd stated that he had reviewed USEPA’s assessment of the economic impact of its 2003 CAFO rule. PC 16 at 1; *see id.*, Att. 3 (Economic Analysis of the Final Revisions to the National Pollutant Discharge Elimination System Regulation and the Effluent Guidelines for Concentrated Animal Feeding Operations). He noted that the Agency had used this assessment as the basis to assess the economic impact of its own proposal in this rulemaking. PC 16 at 1. Dr. Ikerd agreed with the Agency’s conclusion that USEPA’s assessment “provides the essential information for assessing the economic impacts of the IEPA CAFO rules on Illinois livestock producers and on the Illinois economy in general.” *Id.* at 2. He suggested that adjusting the analysis to Illinois’ unique economy and proposed regulations would not change the basic conclusions “regarding the economic impacts of the USEPA’s 2003 CAFO Rule.” *Id.* He noted USEPA’s estimate that 83% of all CAFOs could implement the 2003 rule “without any significant financial effects.” *Id.*, citing Att. 3 at 3-15 (Table 3-7).

Dr. Ikerd argued that industry leaders “have widely proclaimed that all responsible CAFO operators have already adopted the best economically achievable manure management technologies and practices.” PC 16 at 3. Dr. Ikerd asserted that, under the new regulations, “*responsible* CAFO operators would no longer have to compete with *irresponsible* operators.” *Id.* (emphasis in original). He argued that the Environmental Groups’ proposal effectively only memorializes requirements already adopted by any responsible CAFO operator. *Id.*

Dr. Ikerd argued that the Agency’s proposal would not impede the establishment of new CAFOs. PC 16 at 3. He claimed that the proposal would have a smaller economic impact on them because they would not “have to remodel existing facilities that are incompatible with new regulations or renegotiate existing manure management arrangements. . . .” *Id.* Dr. Ikerd added that the Environmental Groups’ proposal also would not threaten existing operators. He claimed that no more than 25 of Illinois’ approximately 500 operators of Large CAFOs “would experience financial stress from complying with the Environmental Proposal, and even fewer would experience financial stress from complying with the IEPA CAFO Rules given the more lax standards in that proposal.” *Id.* Dr. Ikerd further stated that, because the strictest standards apply only to larger operators, smaller operators would have greater flexibility to comply and would likely experience a smaller financial impact. *Id.* at 2.

In addition, Dr. Ikerd anticipated a negligible economic impact on overall production costs and retail prices of meat, milk and eggs. Specifically, he expected an “estimated .1% of beef and .2% of dairy production quantity changes post-compliance, with no estimated changes in production of hogs, broilers, layers or turkeys.” PC 16 at 3, citing Att. 3 at 3-29 (Table 3-17). He claimed that assembling, processing, transportation, and other costs account for as much as 75% of the total retail cost of meat, milk, and eggs, causing 50-75% of the retail costs of meat, milk, and eggs to remain unaffected by the proposed regulations. PC 16 at 3 Although Dr. Ikerd determined that USEPA’s findings regarding the economic impact of 2003 CAFO Rule are more applicable to the Environmental Groups’ proposal than to the Agency’s, implementation of new

CAFO regulations under either proposal would not “have a significant impact on the overall livestock industry in Illinois.” *Id.* at 4.

Dr. Ikerd suggested that the USEPA Report analyzed only monetized benefits for which it had supporting data or studies. PC 16 at 4. He argued that the non-monetized benefits of regulation may represent five to ten times the monetized benefits contemplated by USEPA. *Id.* at 5. He listed examples of these benefits that USEPA was not able to express in dollar terms: reduced eutrophication and pathogen contamination, reduced health and environmental risks, reduced odor and air emissions, and avoided loss of property value near CAFOs. *Id.* He claimed that the most important economic costs stem from community division stemming from establishment and operation of CAFOs. *Id.* He concluded that it is not possible to determine the true costs of under-regulated CAFOs. *Id.*

Other Post-Hearing Comments

Maurer-Stutz, Inc. (PC 18)

Maurer-Stutz, Inc. (Maurer-Stutz) is a consulting engineering firm with headquarters in Peoria, Illinois. PC 18 at 1. It includes agricultural engineering staff specializing “in consulting on livestock and poultry facilities.” *Id.* Maurer-Stutz states that its staff includes “NRCS certified technical service providers” and that it has “developed over 100 Comprehensive Nutrient Management Plans (CNMPs).” *Id.*; *see id.*, Att.1 (resumes of Terry L. Feldman, P.E. and James L. Evans, P.E.). Maurer-Stutz stated that

our most common services involve existing livestock producers and facilities where we help them properly expand operations and/or maintain compliance through establishing best management practices and updating nutrient management plans. We design livestock facilities including manure management systems and have developed hundreds of construction plans pursuant to the Livestock Management Facilities Act regulations. PC 18 at 1.

Generally, Maurer-Stutz stated its belief that “IEPA has proposed a good rule” and expressed agreement with the positions taken in these proceedings by Dr. Funk and Mr. Trainor. *Id.*

Maurer-Stutz first responded to Mr. Panno’s testimony from the fourth hearing. PC 18 at 1. Maurer-Stutz also addressed specific elements of the Agency’s original proposal with both questions and suggested modifications. PC 18 at 2-3. The Board addresses these comments in the section-by-section discussion of contested issues below.

Mr. Samuel V. Panno (PC 21)

Mr. Panno stated that he submitted comments both to clarify his own testimony at the fourth hearing and to respond to Mr. Trainor’s testimony at the fifth hearing. PC 21 at 1; *see* Tr.4 at 47-138; Tr.5 at 117-139, 196-209.

Mr. Panno first disputed Mr. Trainor's statement that "'all groundwater is reduced' and therefore no bacteria can survive in it." PC 21 at 1; *see* Tr.5 at 121-22, 205-06. He claimed that his experience and that of most geochemists is "that groundwater in open systems (sand and gravel and karst aquifers) is oxygen enriched and typically contains abundant bacteria (both natural and human related) and nitrate (a ion that is rapidly converted to nitrogen gas in a reduced groundwater environment). PC 21 at 1. He further claimed that sampling of wells and karst springs in southwestern and northwestern Illinois showed that the "oxygen contents of the well and spring waters were similar to those of surface water (*i.e.* between 5 and 10 mg/L dissolved oxygen)." *Id.* He added that "all of the springs and *two thirds* of the private wells contained enteric bacteria and all contained surface-borne contaminants." *Id.* (emphasis in original).

Mr. Panno distinguished open and closed systems from one another. He stated that "[c]losed systems are those aquifers that are somewhat isolated from surface recharge either by depth or by low-permeability layers overlying them (*e.g.*, shale). Groundwater in *closed systems* tends to be oxygen poor and progressively become more chemically reducing with greater isolation and/or depth." PC 21 at 1 (emphasis in original). In contrast, he indicated that open systems result from the formation of karst aquifers by creviced carbonate bedrock. *Id.* He stated that "[g]roundwater within *open systems* is oxygenated and tends to remain so." *Id.* (emphasis in original).

In addition, Mr. Panno challenged Mr. Trainor's testimony regarding characterization of sites underlain by karst aquifers. PC 21 at 1. He claimed that "it is well known by karst hydrologists that dye tracing and trenching is absolutely essential for site characterization of flow paths and flow rates in a karst area. . . ." *Id.* He argued that karst areas are dominated by crevice and conduit flow, which provides "focused pathways for groundwater to travel very quickly and in directions that may be counter to what would be expected in porous media flow." *Id.* at 2. He further argued that characterization of this flow thus requires "thorough inspection of the bedrock (*e.g.*, via excavations) and dye tracing. . . ." *Id.*

Mr. Panno also addressed the costs of determining depth of soil. He reported that "[a]n approximate depth of soil or depth to bedrock would be available" on request from the ISGS. PC 21 at 2. He added that this information is based on ISGS' online database, which includes "drilling data and private well data." *Id.*

Finally, Mr. Panno reported that "surface-borne contaminants were entering sand and gravel aquifers that lay beneath 50 to 60 feet of clay-rich glacial till in northeastern Illinois." PC 21 at 2 (citation omitted). He surmised that this may be attributable to macropores or abandoned wells, both of which "are common in Illinois and constitute points of entry to underlying aquifers that were previously thought to be well-protected from surface-borne contaminants." *Id.* He argued that this demonstrates "the importance of a relatively thick soil zone overlaying karstified carbonate rock." *Id.*

Environmental Integrity Project (PC 22)

The Environmental Integrity Project, Food and Water Justice, Helping Others Maintain Environmental Standards, the Socially Responsible Agriculture Project, Environment Illinois, Rural Residents for Responsible Agriculture, and Concerned Residents Against Pig Confinements (collectively, Environmental Commenters) submitted comments in support of the Environmental Groups' proposal for a reporting rule. PC 22 at 1; *see* Env. Prop. at 18-20. They argued that the Agency's memorandum of law on the issue of authority to adopt such regulations misinterpreted the Act. PC 22 at 1; *see generally* Agency Memo.

The Environmental Commenters agreed with the Agency that the Act does not provide the Agency with general rulemaking powers. PC 22 at 1; *see* Agency Memo. at 4. They claimed that, although the Act "imposes a duty on the Agency to collect and disseminate information, it does not expressly authorize the Agency to impose on others an obligation to provide information." PC 22 at 2, citing 415 ILCS 5/4(b) (2012). They noted that the Act also provides the Agency with authority "to require the submission of such reports regarding actual or *potential* violations of this Act, any rule or regulation adopted under this Act, any permit or term or condition of a permit, or any Board order, as may be necessary for the purposes of this Act." PC 22 at 2 (emphasis in original), citing 415 ILCS 5/4(h) (2012). They argued that, with authority under the LMFA, Section 4(h) of the Act has provided authority for adoption of rules for reporting releases of livestock waste. PC 22 at 2, citing 510 ILCS 77/18(a) (2012); 35 Ill. Adm. Code 580.100-106, 580.200, 580.300. Although they acknowledged that "the scope of these regulations is narrower than the CAFO registration under consideration, section 4(h) of the Act is sufficiently broad to authorize broader regulations." PC 22 at 2.

The Environmental Commenters noted that Section 13 of the Act authorizes the Board to "adopt regulations to promote the purposes and provisions of this Title [III: Water Pollution]." PC 22 at 2, citing 415 ILCS 5/13(a) (2012). They claimed that Section 13 also "specified certain matters which such regulations may prescribe, but expressly does so '[w]ithout limiting the generality of this authority.'" PC 22 at 2-3, citing 415 ILCS 5/13 (2012). They noted the Agency's statement that these specific listed matters do not appear to include a CAFO reporting program, but they argued that this "is irrelevant in light of the fact that the list is expressly stated *not* to limit the generality of the authority granted in section 13(a)." PC 22 at 3.

The Environmental Commenters claimed that, although the Act's grants of rulemaking authority "may be broad and non-specific, they are still express grants of authority." PC 22 at 3. They argued that "[a] careful reading of the Act undermines the Agency's final conclusion that the issue can be resolved only by the grant of additional statutory authority from the Illinois General Assembly." *Id.* They urged the Agency and the Board "to act on this existing authority and include an information collection or registration requirement in the final CAFO regulations." *Id.*

SUMMARY OF RESPONSES TO POST-HEARING COMMENTS

Agricultural Coalition (PC 28)

The Agricultural Coalition expressed "support" for the Agency's proposed rule, stating that it is based upon the NPDES permit requirements under the CWA. PC 28 at 1-2. They

argued that these federal requirements have undergone a thorough economic analysis and have “been shaped over many years through multiple rulemaking proceedings and appellate court intervention.” *Id.* at 2. They further argued that the Board’s proposal must be based on these federal requirements and the Act. *Id.* The Agricultural Coalition claimed that it is an established principle “[t]hat a non-discharging CAFO cannot be required to seek coverage under an NPDES permit. . . .” *Id.* at 3. They suggested that, however other states have implemented this principle, Illinois “cannot require an NPDES permit where one would not be required federally.” *Id.* at 2. They cited Section 12(f) of the Act, which provides in part that “[n]o permit shall be required under this subsection and under Section 39(b) of this Act for any discharge for which a permit is not required under the Federal Water Pollution Control Act, as now or hereafter amended, and regulations pursuant thereto.” *Id.* at 3, citing 415 ILCS 5/12(f) (2012). The Agricultural Coalition responded both to the Agency’s and the Environmental Groups’ post-hearing comments. The Board addresses the specific elements of the Agricultural Coalition’s response to post-hearing comments in the section-by-section discussion of contested issues below.

As a general response, the Agricultural Coalition argued that, although the Environmental Groups’ proposed amendments to the Agency’s original language “may be well-intentioned,” those amendments are “substantially deficient in: (1) technical substance; and (2) the practicability and effectiveness drawn from IEPA’s experience in regulating the livestock industry.” PC 28 at 6. They added that, although Dr. Ikerd’s comment on behalf of the Environmental Groups acknowledges the economic analysis supporting the federal rule, the Environmental Groups’ proposed amendments exceed the requirements of the federal rules “and are more prescriptive, and economically onerous” than the federal rules supported by that analysis. PC 28 at 2; *see* PC 16, Att. 3 (analysis). They argued that “[a]ny assertion that the Environmental Groups’ proposed restrictions are economically reasonable has not been borne out by record evidence.” PC 28 at 7.

As a technical matter, the Agricultural Coalition noted the Environmental Groups’ reliance upon a 1997 USDA Census of Agriculture and Dr. Thu’s testimony “to allege a surplus of manure generation beyond agricultural needs for Illinois land application.” PC 28 at 6. They argued that the Board should reject this allegation, “since the survey upon which it is based is nearly two decades old and was intended to generally cover the entire country.” *Id.* The Agricultural Coalition claimed that the Environmental Groups established no “causal connection between any alleged surplus and water pollution from livestock manure.” *Id.* They further claimed that testimony and comments showed that “[l]ivestock manure is a valuable commodity.” *Id.* They argued that “[b]roader land application should be encouraged, as it addresses the generation of nutrients for the mutual benefit of producers and the environment.” *Id.* at 8. The Agricultural Coalition noted that the Agency develops and implements Illinois’ CAFO rules but had not supported changes proposed by the Environmental Groups. *Id.* at 6-7. They argued that record evidence has not established that the Environmental Groups’ changes are technically justified. *Id.* at 7, citing 415 ILCS 5/27(a) (2012) (Rulemaking).

In addition, the Agricultural Coalition argued that the Agency’s proposal is “significantly more protective than the land application allowed by the Board for municipal sludge.” PC 28 at 8, citing 35 Ill. Adm. Code 391.412 (a), (b) (Phosphorus). They claimed that this sludge “is not nearly as valuable a nutrient” and “in fact poses more potential risks.” PC 28 at 8. They also

argued that the Environmental Groups produced no Illinois data indicating “that the State’s CAFOs are a larger contributor to water pollution in the form of phosphorus or nitrogen than any other source – specifically landowners who fertilize their lawns with chemicals or small businesses and municipalities who apply excess municipal sludge.” *Id.*

Environmental Groups (PC 29)

The Environmental Groups stated that their post-hearing comments filed on January 16, 2013, “adequately address” arguments presented in the post-hearing comments of the Agency (PC 17) and the Agricultural Coalition (PC 19). PC 29 at 1. They stated that their response addressed a “handful of issues . . . that require a response, explanation, or clarification.” *Id.* The Board addresses those issues in the following subsections of the opinion.

Below, the Board summarizes general issues raised by the Environmental Groups. The Board addresses specific elements of the Groups’ response to post-hearing comments in the section-by-section summary of the contested issues below.

Board Authority

The Environmental Groups restated their position that “the Board has authority to promulgate whatever rules meet the Illinois Environmental Protection Act goal of restoring, maintaining and enhancing the purity of the waters of the state and assuring no contaminants are discharged to waters of the state.” PC 29 at 1, citing PC 20 at 2-3. They argued that “the Board should not find its broad authority limited by arguments put forth by the Agricultural Coalition and IEPA.” PC 29 at 1.

Scope of Rulemaking.

The Environmental Groups argued that “[t]he Agricultural Coalition does not cite to any authority for the argument that the scope of the rulemaking is limited to that which is required by the final federal CAFO rule.” PC 29 at 1. They noted that the Agency proposed to amend Parts 501 and 502 regarding agriculture related water pollution. *Id.*; *see* SR at 1-2. They claimed that neither the Act nor the APA “prevents the Board from adopting the Environmental Groups’ proposal.” PC 29 at 2, citing 415 ILCS 5/27 (2012) (Rulemaking); 5 ILCS 100/5-40 (2012) (General rulemaking). In addition, they cited the Board’s procedural rules, which authorize the Board to revise proposed rules “in response to suggestions made at hearing and in written comments made prior to second notice.” PC 29 at 2, citing 35 Ill. Adm. Code 102.600(a). The Environmental Groups argued that their “proposal is exactly the kind of ‘suggestion’ that can properly prompt the Board to amend IEPA’s proposal in this rulemaking.” PC 29 at 2.

LMFA.

The Environmental Groups noted the Agricultural Coalition’s argument “that any regulations that go beyond the minimum federal requirements would amount to an unlawful amendment of the ‘carefully crafted legislative provisions of the LMFA.’” PC 29 at 2. The Environmental Groups argued that the LMFA specifically requires facilities to “comply with the

requirements for handling, storing, and disposing of livestock wastes as set forth in the rules adopted pursuant to the Environmental Protection Act concerning agriculture related pollution.” *Id.*, citing 510 ILCS 77/20(a) (2012). They also argued that the LMFA specifically provides that its provisions “shall not be construed as a limitation or preemption of any statutory or regulatory authority under the Illinois Environmental Protection Act.” PC 29 at 2 (emphasis in original), citing 510 ILCS 77/100 (2012). They claimed that neither the Agency’s proposal nor their own proposed amendments “improperly amend the LMFA.” PC 29 at 2.

Section 12(f) of Act.

The Environmental Groups noted that Section 12(f) of the Act provides that “[n]o person shall cause, threaten or allow the discharge of any contaminant in to waters of the State’ without an NPDES permit or in violation of the Board’s regulations.” PC 29 at 2, citing 415 ILCS 12(f) (2012). They further noted that the same provision states that “[n]o permit shall be required under this subsection and under Section 39(b) of this Act for any discharge for which a permit is not required under the Federal Water Pollution Control Act, as now or hereafter amended, and regulations pursuant thereto.” PC 29 at 2-3, citing 415 ILCS 5/12(f) (2012). They argued that courts interpreting Section 12(f) have found that it “does not prohibit the Board from adopting any rule that is not strictly required by federal law.” PC 29 at 3, citing U.S. Steel Corp. v. IPCB, 52 Ill. App. 3d 1, 4-5 (2d Dist. 1977), Peabody Coal Co. v. IPCB, 36 Ill. App. 3d 5, 13-14 (5th Dist. 1976). They claimed that the Board has “authority to adopt NPDES rules that carry out the purposes of the program, as well as the broad authority to set environmental standards for the state of Illinois that do not require a permit.” PC 29 at 3.

The Environmental Groups claimed that they proposed “a uniform set of land application standards across the class of large CAFOs, whether they are required to get a permit or not.” PC 29 at 3. They argued that the Board need not determine whether Section 12(f) authorizes it to establish a state permit system “because the Environmental Groups’ proposal does not seek permits for facilities that do not discharge.” *Id.*

The Environmental Groups noted arguments that Section 12(f) may limit the Board’s authority to apply Part 502 to “waters of the state” because the CWA applies to “waters of the U.S.” PC 29 at 3, citing 415 ILCS 5/3.550 (2012). They argued that a court rejected an analogous argument “that the Board’s rules were invalid because ‘contaminant’ was defined more broadly under Illinois law than ‘pollutant’ was under federal law.” PC 29 at 3, citing Peabody Coal Co. v. IPCB, 36 Ill. App. 3d 5, 13-14 (5th Dist. 1976). They claimed that “the fact that ‘waters of the state’ as defined in the Illinois Environmental Protection Act is broader than ‘waters of the U.S.’ does not prevent the Board from adopting NPDES (and non-NPDES) rules that apply to ‘waters of the state.’” PC 29 at 3. They added that particular current NPDES regulations apply to “waters of the state.” *Id.*, citing 35 Ill. Adm. Code 309.102, 653.113.

The Environmental Groups also argued that the Agency “does not know which waters are waters of the U.S. and has no “standard method to determine whether receiving waters are ‘waters of the U.S.’ and/or ‘waters of the State.’” PC 29 at 4. They argued that Agency staff make these determinations on an *ad hoc* basis. *Id.* They claimed that, because “waters of the

State” is broader, it would require the Agency to make this distinction only in rare circumstances, thereby reducing the Agency’s administrative burden. *Id.*

Flexibility and Innovation

The Environmental Groups noted the Agency’s testimony that its proposal does “not subject unpermitted large CAFOs to the land application technical standards in Section 502.610 or 502.615-645 and does not require unpermitted Large CAFOs to develop a nutrient management plan” because those operations need flexibility in land-applying waste. PC 29 at 9, citing Tr.1 at 155. The Environmental Groups concurred that these operations should be able to avail themselves of technological advances and claimed that their proposal does not limit innovation in land application. PC 29 at 9.

The Environmental Groups argued that the proposed land application standards in Subpart F do not limit an owner or operator from relying upon technological developments such as improved application equipment that is more accurate and reduces risk of equipment failure. PC 29 at 9. They further argued that proposed “technical standards similarly allow for an appropriate degree of flexibility and innovation in determination of agronomic rates of application.” *Id.* As one example, they claimed that those standards “do not dictate numeric application rates, but instead require ‘nitrogen-based’ and ‘phosphorus-based’ rates allowing for flexibility in application rates based on crop genetics, yields, and nutrient requirements.” *Id.* They added that standards employing well-recognized and widely-used data sources “are hardly the type of requirements that limit innovation.” *Id.* at 10. They concluded that “[a]pplying the land application standards to all Large CAFOs and requiring Large CAFOs to prepare and submit nutrient management plans is both sound and reasonable.” *Id.* They claimed that, because all large CAFOs follow the same practices, use the same equipment, and generate waste with the same characteristics, there is no reason to apply different requirements to them or to believe that such rules would limit innovation. *Id.*

Clarification of Terminology

The Environmental Groups noted the Agency’s comment that terms employed in their proposed amendments require clarification. PC 29 at 14. They sought to provide clarification, which the Board summarizes in the following subsections.

Proposed Section 501.402(h). The Environmental Groups proposed to add Section 501.402(h) restricting location of facilities “within a quarter mile of designated surface drinking water supplies.” Env. Prop. at 14. They also proposed to add Section 502.645(f) restricting land application of livestock waste within 500 feet of features including “designated surface drinking water supplies.” *Id.* at 69. They clarified that “[d]esignated surface water drinking supplies” means “those surface waters designated by the Agency as ‘public and food processing water supply’ as defined in 35 Ill. Adm. Code 301.360.” PC 29 at 14.

Proposed Section 501.404(b)(3). The Agency initially proposed to amend existing Section 501.404(b) addressing temporary manure stacks. Env. Prop. 501 at 15. The Environmental Groups sought to amend this provision by providing that “[e]ither a cover and

enclosed pad or other control must be provided to prevent runoff and leachate from entering surface waters and groundwater or the temporary manure stack must be located in accordance with the following setbacks: 750 feet from surface waters; 1000 feet from community water supply wells; 400 feet from other potable water supply wells; and 400 feet from karst features.” Env. Prop. at 15. The Environmental Groups stated that “‘karst features’ include caves, exposed karstified carbonate bedrock, sinkholes, and springs,” which “are listed as land surface attributes in the LMFA’s definition of ‘karst area.’” PC 29 at 14, citing 510 ILCS 77/10.24 (2012). They added that the term also may include bedrock fractures, exposed bedrock, and seeps. PC 29 at 14.

Proposed Section 502.645(f). The Environmental Groups proposed to add Section 502.645(f) providing that livestock waste shall not be applied within 500 feet of features including biologically significant streams. Env. Prop. at 69. They clarified that the Department of Natural Resources (DNR) designates these streams on the basis of having “better biodiversity and ecosystem health relative to other streams in the state. . . .” PC 29 at 14, citing Resp. Att. 3. They stated that DNR in 2008 designated 100 stream segments as biologically significant. PC 29 at 14, citing Resp. Att. 3 at 25 (Map of Biologically Significant Streams). They argued that, although these “[a]re few enough in number that very few livestock operations will be affected by any land application restrictions associated with biologically significant streams,” the proposed protection is important in those instances. PC 29 at 14.

DISCUSSION OF CONTESTED ISSUES

The Board first provides a brief review of its rulemaking authority under various statutory, regulatory, and case law authorities. This section then turns to contested issues raised in this proceeding. Of these issues, the Board first addresses seven that generated significant amounts of testimony or comment or that pertain to more than one section of the Agency’s proposal. The Board then turns to 25 issues each pertaining to a single section, discussion of which is presented in order by section number.

Board Authority

“The determination of standards by the Board is a quasi-legislative act. . . .” Central Ill. Pub. Svc. Co. v. PCB, 116 Ill.2d 397, 407, 507 N.E.2d 819, 823 (1987). The Act provides that “[t]he Board shall determine, define and implement the environmental control standards applicable in the State of Illinois and may adopt rules and regulations in accordance with Title VII of the Act.” 415 ILCS 5/5(b) (2012); *see* 35 Ill. Adm. Code 101.106(a) (2012) (citing statutory language); *see also* 415 ILCS 5/26-29 (2012) (Title VII: Regulations).

Section 13(a) of the Act states that “[t]he Board, pursuant to procedures prescribed in Title VII of this Act, may adopt regulations to promote the purposes and provisions of this Title [III: Water Pollution].” 415 ILCS 5/13(a) (2012). Section 13(a) also lists standards and requirements the Board may adopt but does so “[w]ithout limiting the generality of this authority. . . .” *Id.*

Section 11(b) of the Act provides that “[i]t is the purpose of this Title [III: Water Pollution] to . . . authorize, empower, and direct the Board to adopt such regulations and the Agency to adopt such procedures as will enable the State to secure federal approval to issue NPDES permits pursuant to the provisions of the Federal Water Pollution Control Act, as now or hereafter amended, and federal regulations pursuant thereto. . . .” 415 ILCS 5/11(b) (2012). Effectuating this purpose, Section 13(b)(1) of the Act states that

[n]otwithstanding other provisions of this Act and for purposes of implementing an NPDES program, the Board shall adopt: (1) Requirements, standards, and procedures which, together with other regulations adopted pursuant to this Section 13, are necessary or appropriate to enable the State of Illinois to implement and participate in the National Pollutant Discharge Elimination System (NPDES) pursuant to and under the Federal Water Pollution Control Act, as now or hereafter amended. All regulations adopted by the Board governing the NPDES program shall be consistent with the applicable provisions of such federal Act and regulations pursuant thereto. . . . 415 ILCS 5/13(b)(1) (2012).

However, Section 11(c) of the Act establishes that

[t]he provisions of this Act authorizing implementation of the regulations pursuant to an NPDES program shall not be construed to limit, affect, impair, or diminish the authority of the Board . . . to regulate and control pollution of any kind, to restore, to protect, or to enhance the quality of the environment, or to achieve all other purposes, or to enforce provisions, set forth in this Act or other State law or regulation. 415 ILCS 5/11(c) (2012); *see Peabody Coal Co. v. PCB*, 36 Ill. App. 3d 5, 13-14, 344 N.E.2d 279, 285 (5th Dist. 1976) (finding that Act does not limit Board’s rulemaking authority to that necessary to obtain federal permit).

Section 12(f) of the Act provides in part that no person shall

[c]ause, threaten or allow the discharge of any contaminant into the waters of the State, as defined herein, including but not limited to, waters to any sewage works, or into any well or from any point source within the State, without an NPDES permit for point source discharges issued by the Agency under Section 39(b) of this Act. . . . No permit shall be required under this subsection [(f)] and under Section 39(b) of this Act for any discharge for which a permit is not required under the Federal Water Pollution Control Act, as now or hereafter amended, and regulations thereto. 415 ILCS 5/12(f) (2012).

Section 28(a) of the Act provides in pertinent part that

“[n]o substantive regulation shall be adopted, amended, or repealed until after a public hearing within the area of the State concerned. In the case of state-wide regulations hearings shall be held in at least two areas. . . . All such hearings shall be open to the public, and reasonable opportunity to be heard with respect to the

subject of the hearing shall be afforded to any person. . . . After such hearing the Board may revise the proposed regulations before adoption in response to suggestions made at the hearing, without conducting a further hearing on the revisions. 415 ILCS 5/28(a) (2012).

Similarly, the Board’s procedural rules address Board action on rulemaking proposals and provide that “[t]he Board may revise the proposed regulations before adoption upon its own motion or in response to suggestions made at hearing and in written comments made prior to second notice. No additional hearing on the revisions need be held.” 35 Ill. Adm. Code 102.600(a).

Applicable Waters and Repeal of Section 501.325

Agency Proposal

Claiming that federal rules no longer employ the term “navigable waters,” the Agency proposed to strike Section 501.325 (35 Ill. Adm. Code 501.325). SR at 36. Current Section 501.325 defines “navigable waters” with reference to a repealed federal definition. *Id.* The Agency sought to follow federal rules by referring instead to “waters of the United States” throughout Part 502, but does not propose a definition for the phrase. *Id.* The Agency argued that, because the two terms “refer to the same jurisdictional waters under the CWA, there will be no implication from this change.” Agency Att. 1 at 3.

Agricultural Coalition’s Motion

The Agricultural Coalition claimed that the Board adopted the definition of “navigable waters” in 1978 to establish “waters applicable for the purposes of NPDES permitting.” Agri. Mot. at 1-2. Claiming that the underlying language of the CWA has not changed, the Coalition argued that it would be confusing to repeal that definition. PC 19 at 14. Accordingly, the Coalition suggested that the Board either maintain the existing definition of “navigable waters” or amend Section 501.325 by defining “waters of the United States” as “all waters of the United States as defined in the Federal Clean Water Act.” Agri. Mot. at 2; PC 19 at 14.

Agency Response to Agricultural Coalition’s Motion

The Agency intended that the term “waters of the United States” encompass waters covered by the CWA. Agency Att. 1 at 2-3. The Agency noted that, although federal regulations now define “waters of the United States” (*see* 40 C.F.R. § 122.2), the definition does not reflect subsequent case law. PC 17 at 3. The Agency also reported that USEPA is developing guidance on this definition. Agency Ans. at 3. The Agency consequently believed that it is both unnecessary and premature to draft a definition of “waters of the United States.” PC 17 at 3. The Agency also characterized the Agricultural Coalition’s suggested definition as imprecise and claimed that its adoption may generate confusion due to subsequent case law, regulatory revisions, or USEPA guidance. *Id.*

Environmental Groups’ Response and Suggestion

The Environmental Groups opposed the Agricultural Coalition's suggested definition. Env. Resp. at 1. They stated that the federal definition of "waters of the United States" has been the subject of recent litigation to determine those waters subject to CWA jurisdiction. *Id.* They claimed that relying on a federal definition subjects Illinois law to the interpretations of courts outside the state. *Id.* at 2.

Rather, the Environmental Groups suggested that Part 502 should encompass "waters of the state" and suggested replacing references to "waters of the United States" with "waters of the state." *E.g.*, Env. Prop. at 23 (amending proposed Section 502.101(a)). The Groups claimed that "waters of the state" is broader than the definition of either "navigable waters" or "waters of the United States." Env. Resp. at 1; PC 20 at 15. They argued that the purposes of both the Act and the Board's rules charge the Board with protecting all waters of the state. Env. Resp. at 2; PC 20 at 16.

Agency Response to Environmental Groups' Suggestion

The Agency surmised that the Environmental Groups' suggestion to apply the CAFO rules to "waters of the state" intends to apply the proposed rules to all waters within Illinois that meet the definition of "waters" in the Act (415 ILCS 5/3.550 (2012)) and Part 301 of the Board's regulations (35 Ill. Adm. Code 301.440). PC 17 at 3-4. The Agency emphasized that the proposed CAFO rules implement NPDES permitting requirements. PC 17 at 4. The Agency argued that the Act (415 ILCS 5/12(f) (2012)) limits the State's authority to issue NPDES permits to sources required to obtain a permit under the CWA and federal case law interpreting it. *Id.* Accordingly, the Agency disagreed with the Groups' suggestion to use the phrase "waters of the state."

Agricultural Coalition's Response to Environmental Groups' Suggestion

The Agricultural Coalition also opposed the Environmental Groups' application of the proposed rules to "waters of the state." PC 19 at 14. The Coalition argued that the Act (415 ILCS 5/12(f) (2012)) provides that no permit can be required for a discharge that does not require a permit under the CWA and regulations adopted under it. *Id.* The Coalition claimed that "waters of the state" encompasses more waters and would require more NPDES permits than necessary to implement the federal program. *Id.* The Coalition suggested that any such expansion of NPDES permitting authority requires legislative approval. *Id.*

Board Discussion

The CWA uses the phrase "navigable waters" to describe its scope. 33 U.S.C. § 1362(7). "Navigable waters" means "waters of the United States, including the territorial seas." *Id.* Regulations promulgated under the CWA define "waters of the United States" as

- (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

- (2) All interstate waters including interstate wetlands;
- (3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
 - (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
 - (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - (iii) Which are used or could be used for industrial purpose by industries in interstate commerce;
- (4) All impoundments of waters otherwise defined as waters of the United States under the definition;
- (5) Tributaries of waters identified in paragraphs (s)(1) through (4) of this section;
- (6) The territorial sea;
- (7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (s)(1) through (6) of this section; waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of the definition) are not waters of the United States.

Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, the final authority regarding Clean Water Act jurisdiction remains with [US]EPA. 40 C.F.R. § 230.3(s); *see* 40 C.F.R. § 122.2 (Definitions).

In response to decisions of the United States Supreme Court, USEPA proposed guidance on the meaning of "waters of the United States." 76 Fed. Reg. 24479 (May 2, 2011). In addition, legislation was introduced in Congress to replace the phrase "navigable waters" in the CWA with "waters of the United States" and define "waters of the United States" in a way not found in current statutes or regulations. *E.g.*, Clean Water Restoration Act, S. 787, 111th Cong. (2009); America's Commitment to Clean Water Act, H.R. 5088, 111th Cong. (2010).

In Illinois, the Act uses the phrases “navigable waters” and “waters of the United States.” The single use of the phrase “navigable waters” in the Act is in Section 39(b), which authorizes the Agency to issue NPDES permits:

The Agency may issue NPDES permits exclusively under this subsection for the discharge of contaminants from point sources into navigable waters, all as defined in the Federal Water Pollution Control Act, as now or hereafter amended, within the jurisdiction of the State, or into any well. 415 ILCS 5/39(b) (2012).

The Act in several provisions employs the phrase “waters of the United States” but does not define it. Rather, the Act uses the phrase together with a reference to the CWA. For example, Section 11(a)(2) of the Act provides that the Assembly finds

that the Federal Water Pollution Control Act, as now or hereafter amended, provides for a National Pollutant Discharge Elimination System (NPDES) to regulate the discharge of contaminants to the waters of the United States. 415 ILCS 5/11(a)(2) (2012).

The Act also twice contains the following language:

. . . waters of the United States, as that term is used in the Federal Water Pollution Control Act . . . 415 ILCS 5/3.487, 12(i) (2012).

In this rulemaking, the Agency proposed to repeal a definition of “navigable waters” and replace the use of “navigable waters” with “waters of the United States” in Part 502 of the Board’s regulations. However, the Agency did not propose a definition for “waters of the United States.”

Section 501.325 currently defines “navigable waters” as

All waters of the United States as defined in Criteria and Standards for the National Pollutant Discharge Elimination System ([40 C.F.R. § 125.1\(p\)](#)):

- a) All navigable waters of the United States;
- b) Tributaries of navigable water of the United States;
- c) Interstate waters;
- d) Intrastate lakes, rivers and streams which are utilized by interstate travelers for recreational or other purposes;
- e) Intrastate lakes, rivers and streams from which fish or shellfish are taken and sold in interstate commerce; and

- f) Intrastate lakes, rivers and streams which are utilized for industrial purposes by industries in interstate commerce. 35 Ill. Adm. Code 501.325.

As 40 C.F.R. § 125.1(p) was long ago repealed (*see* 44 Fed. Reg. 32854, 32948 (June 7, 1979)), the Board agrees with the Agency that Section 501.325 should also be repealed. Because “navigable waters” is defined to mean “waters of the United States” in the CWA and both phrases are meant to encompass waters under the jurisdiction of the CWA, it is appropriate to use “waters of the United States” in these rules instead of “navigable waters.” The Board further finds that it is unnecessary at this time to define “waters of the United States” as suggested by the Agricultural Coalition because it is obvious that “waters of the United States” is a phrase used in Section 502(7) of the CWA to describe the scope of the CWA. *See* 33 U.S.C. § 1362(7).

The Board disagrees with the Environmental Groups’ suggestion to replace “navigable waters” with “waters of the state” throughout the proposed rules. The Act frequently uses the phrase “waters of the state” and defines “waters” as

all accumulations of water, surface and underground, natural, and artificial, public and private, or parts thereof, which are wholly or partially within, flow through, or border upon this State. 415 ILCS 5/3.550 (2012).

The Appellate Court held that “waters of the state” means all waters located in the state, including waters on private land, and is not limited to waters that are navigable. *See Tri-County Landfill Co. v. Pollution Control Board*, 41 Ill. App. 3d 249, 253, 353 N.E. 2d 316, 321 (1976). The court noted the sweeping goals of the Act. For example, Section 11(b) of the Act provides

It is the purpose of this Title to restore, maintain and enhance the purity of the waters of this State in order to protect health, welfare, property, and the quality of life, and to assure that no contaminants are discharged into the waters of the State, as defined herein, including, but not limited to, waters to any sewage works, or into any well, or from any source within the State of Illinois, without being given the degree of treatment or control necessary to prevent pollution, or without being made subject to such conditions as are required to achieve and maintain compliance with State and federal law . . . *Id.*, citing 415 ILCS 5/11(b) (1976)⁴.

The phrase “waters of the state” is broader than the phrases “navigable waters” and “waters of the United States” such that using “waters of the state” throughout Part 502 may impermissibly expand NPDES permit requirements beyond the scope of the CWA, *i.e.*, “waters of the state” may include waters beyond jurisdictional waters under the CWA. For example, groundwater is a water of the state but not a water of the United States. Because Section 12(f) of the Act (415 ILCS 5/12(f) (2012)) requires that “[n]o permit shall be required . . . for any discharge for which a permit is not required under [the CWA],” discharges to waters of the state that are not waters of the United States do not require an NPDES permit. Accordingly, the

⁴ The General Assembly has not amended this language since this case was decided. *See* 415 ILCS 5/11(b) (2012).

Board cannot accept the Environmental Groups' suggestion to use "waters of the state" in place of "navigable waters" throughout the proposed rules.

The Board finds that repeal of the definition of "navigable waters" in Section 501.325 is appropriate. Accordingly, the Board proposes repealing Section 501.325 at first notice. The Board also proposes use of the phrase "waters of the United States" in Part 502. For first notice, the Board therefore proposes replacing "navigable waters" with "waters of the United States" throughout Part 502. The Board notes that the Agency did not propose adoption of the federal definition of the term "waters of the United States." *See* SR at 36, Prop. 501; *see also* 40 C.F.R. § 122.2. The Agency claimed that adoption of the federal definition in Part 501 would not reflect any subsequent case law of USEPA guidance. PC 17 at 3; Agency Att. 1 at 9 (¶26). Accordingly, the Board declines to propose adoption of the federal definition of "waters of the United States" at first notice.

Section 502.102: Agricultural Stormwater Exemption

Agency Proposal

As noted above under "Section-by-Section Summary of the Agency's Original Proposal," the Agency sought in Section 502.103 to define as a "Large CAFO" an operation stabling or confining at least the specified number of various animal species, *e.g.*, 2,500 swine weighing 55 pounds or more or 700 mature dairy cattle.

In Section 502.104, the Agency proposed to define as a "Medium CAFO" an operation stabling or confining a number of animals within a specified range, *e.g.*, 750-2,499 swine weighing 55 pounds or more or 200-699 mature dairy cattle, and also meeting one of two discharge-related conditions: a manmade ditch or similar device discharge pollutants to waters of the United States or animals in direct contact with and discharging pollutants to waters of the United States that pass through the area in which they are confined. In addition, a medium-sized facility may be designated under Section 502.106 as a CAFO if it is found to be a significant contributor of pollutants to waters of the United States.

In Section 502.105, the Agency proposed to define as a "Small CAFO" an operation stabling or confining fewer than a specified number of various animal species, *e.g.*, 750 swine weighing 55 pounds or more or 200 mature dairy cattle, and that has been designated under Section 502.106 as a CAFO as a significant contributor of pollutants.

The Agency proposed in Section 502.102(a) that "[a] CAFO is a point source. Any discharge of pollutants into waters of the United States from a CAFO is prohibited unless authorized by an NPDES permit. . . ." The Agency also proposed that, if a CAFO discharges livestock waste to waters of the United States as a result of land application of livestock waste, the discharge is subject to NPDES permit requirements unless it is an agricultural stormwater discharge. SR at 42; Prop. 502.102(a). Accordingly, as proposed, if a discharge is an agricultural stormwater discharge, the discharge would be exempt from NPDES permitting requirements.

The Agency proposed in Section 502.102(b) how a precipitation-related discharge of livestock waste from a land application area qualifies for the agricultural stormwater discharge exemption. For the discharge to be exempt, a permitted CAFO or an unpermitted Large CAFO land applying livestock waste must do so according to site-specific nutrient management practices that ensure appropriate agricultural use of the livestock waste's nutrients. Specifically, a permitted CAFO must comply with proposed Sections 502.510(a) and (b) to qualify, while an unpermitted Large CAFO must comply with Section 502.510(b) to qualify. SR at 42; Prop. 502.102(b).

Proposed Section 502.510(a), applicable only to permitted CAFOs, states that an NPDES permit issued to a CAFO must include a requirements to implement a nutrient management plan that, at a minimum, contains best management practices needed to meet the requirements of subsection (b) and "the applicable livestock discharge limitations and technical standards in 35 Ill. Adm. Code Part 501 and 502." Prop. 502 at 20. Proposed Section 502.510(b) establishes various standards and requirements, including recordkeeping, that must be specified in the NMP of a permitted operation. In addition, facilities that are not required to obtain a permit are not required submit an NMP to the Agency. However, if that unpermitted facility seeks to claim the agricultural stormwater exemption, it must land apply livestock waste by employing practices that meet the standards and requirements of subsection (b).

The Agency argued that the protocols in Section 502.510(b) should apply to both permitted and unpermitted Large CAFOs to claim the exemption. Yurdin Test. at 7. The Agency claimed that, because they are similar in size, their land applications pose potential risks to surface waters. TSD at 4-5. The Agency also claimed that these criteria provide information about the operation and the land application site in the event that a discharge occurs. Yurdin Test. at 7. The Agency also argued that these criteria assist unpermitted Large CAFOs by providing specific bases on which to claim the agricultural stormwater exemption. TSD at 4-5.

Agricultural Coalition's Motion

The Agricultural Coalition asserted that, under the Agency's proposal, an unpermitted Large CAFO claiming the agricultural stormwater exemption must develop an NMP consistent with those required of permitted Large CAFOs. Agri. Mot. at 10. The Coalition argued, however, that this requirement is both duplicative of and inconsistent with requirements under the LMFA and its implementing regulations. Agri. Mot. at 10-11. The Coalition requested that the Board modify the Agency's proposed Section 502.102(b) by requiring unpermitted Large CAFOs to comply instead with the LMFA (510 ILCS 77/20(f)) and its regulations (8 Ill. Adm. Code 900) to claim the agricultural stormwater exemption. Agri. Mot. at 11. The Coalition also sought to modify the Agency's proposed Section 502.102(c) on recordkeeping by requiring unpermitted Large CAFOs to maintain documentation listed in the LMFA regulations (8 Ill. Adm. Code 900.Subpart H). *Id.* To further implement this comment, the Coalition suggested striking language from proposed Section 502.500 and 502.600. Agri. Mot. at 11.

The Agricultural Coalition argued that, when land application follows site-specific nutrient management practices ensuring appropriate agricultural utilization of the nutrients in the manure, as specified in 40 C.F.R. § 122.42(e)(1)(vi-ix), a precipitation-related discharge is an

agricultural stormwater discharge. PC 19 at 21; *see also* 40 C.F.R. § 122.23(e). The Coalition further argued that any plan meeting the federal requirements should provide a basis to claim the agricultural stormwater exemption. *Id.* It asserted that an LMFA waste management plan meets the federal requirements. *Id.* at 22. The Coalition claimed that the Agency's proposal generates additional requirements that are inconsistent with the LMFA and not necessitated by the federal rule. *Id.*

Dr. Funk's Testimony

Dr. Funk similarly recommended that the Board allow unpermitted Large CAFOs maintaining existing manure management plans to qualify for the agricultural stormwater exemption. Dr. Funk testified that the LMFA requires operations with a design capacity of more than 1,000 animals to develop a plan and notify the Department of Agriculture that it exists. Funk Test. at 2. He added that operations with more than 5,000 animals must submit the plan for approval. *Id.* He claimed that these existing requirements encompass nearly all Large CAFOs in Illinois. *Id.* Dr. Funk also testified that, because the LMFA rules and the Agency's proposals contain similar requirements, an unpermitted Large CAFO maintaining a plan under the LMFA should be allowed to continue operations and continue to claim the agricultural stormwater exemption. *Id.* He also characterized CNMPs developed under the NRCS as rigorous and urged the Board to accept those plans as a basis to claim the agricultural stormwater exemption. *Id.*

Agency Response to Agricultural Coalition's Motion

The Agency noted that its proposal and the federal rules require unpermitted Large CAFOs to employ particular practices to qualify for the agricultural stormwater exemption. PC 17 at 8-9. The Agency argued that, contrary to the Agricultural Coalition's claim, proposed Section 502.510(b) does not require an unpermitted Large CAFO to develop an NMP. PC 17 at 10. The Agency further argued that proposed Section 502.102(b) requires an unpermitted Large CAFO seeking to claim the exemption to demonstrate compliance with practices listed in Section 502.510(b) but does not require unpermitted Large CAFOs to follow any particular plan. PC 17 at 10.

The Agency argued that the Agricultural Coalition's suggestion would allow an unpermitted Large CAFO to claim the exemption merely by preparing an LMFA waste management plan but not actually complying with that plan. PC 17 at 9. The Agency stated that facilities subject to the LMFA differ from facilities defined in its proposal as Large CAFOs. *Id.* The Agency elaborated that, under the Agricultural Coalition's suggestion, some operations that are not now required to prepare an LMFA waste management plan would have to do so to claim the agricultural stormwater exemption. *Id.* The Agency noted that both Dr. James and Dr. Funk testified that the LMFA lacks numerous technical requirements that are included in the Agency's proposal. PC 17 at 10-11. The Agency concluded that the Coalition's motion with regard to the agricultural stormwater exemption is not consistent with the federal rule and should be denied. *Id.* at 12.

Environmental Groups' Response and Suggestion

The Environmental Groups disputed the Agricultural Coalition's argument that the Agency's proposal duplicates requirements under the LMFA. Env. Resp. at 10. Acknowledging that the two programs overlap to some degree, the Groups claimed that the Agency's proposal contains various requirements that are not required by the LMFA and its regulations. *Id.* The Groups added that not every facility that would be required to comply with NPDES regulations is now required to prepare an LMFA waste management plan. PC 20 at 41. In addition, the Groups stressed that the LMFA (510 ILCS 77/20(a) (2012)) specifically provides that operations have an independent obligation to comply with the Act. *Id.* They also noted that the LMFA (510 ILCS 77/100 (2012)) provides that it does not limit or preempt statutory or regulatory authority under the Act. *Id.*

The Environmental Groups argued that Dr. James' testimony explains that an LMFA waste management plan is not equivalent to the standards proposed by the Agency and should not provide a basis for an unpermitted Large CAFO to claim the agricultural stormwater exemption. PC 20 at 41. Dr. James testified that the Agency's proposal also includes standards applicable to production areas, not all of which are required under an LMFA waste management plan. James Supp. Test. at 2. She asserted that implementing a less stringent LMFA plan should not qualify a CAFO for the agricultural stormwater exemption. *Id.* at 3. She claimed that the Agricultural Coalition's request would exempt unpermitted Large CAFOs from the proposed technical standards of Part 502. James Test. at 12-13.

Mr. Leder asserted that, for an unpermitted Large CAFO to claim the agricultural stormwater exemption, it must land apply livestock waste through practices ensuring appropriate agricultural utilization of nutrients. Leder Test. at 5; *see* Tr.4 at 202-03. He testified that the Agency's proposed technical standards establish bases on which to determine whether a stormwater discharge is exempt from NPDES permitting requirements. Leder Test. at 5-6. He claimed that it is both clear and consistent for the same land application technical standards to apply to both permitted and unpermitted Large CAFOs. Leder Test. at 6.

Consequently, the Environmental Groups suggested that, to qualify as an agricultural stormwater discharge, an unpermitted Large CAFO must comply with technical standards in proposed Sections 502.615 through 502.645 as well as prepare, submit, and comply with NMP requirements in proposed Section 502.500, 502.505, and 502.510(b). Env. Prop. at 25, 38.

Agency's Response

The Agency objected to the suggestions of the Environmental Groups that unpermitted Large CAFOs be required to comply with these additional requirements to qualify for the exemption. PC 17 at 18. The Agency cited to Mr. Sofat's testimony that the Agency's proposal is consistent with federal CAFO rules in allowing unpermitted Large CAFOs flexibility in demonstrating how they qualify for the agricultural stormwater exemption. *Id.* at 18-19. The Agency argued that the Groups' suggested revisions are overly prescriptive and should not be adopted. *Id.* at 19.

Board Discussion

The CWA excludes agricultural stormwater discharges from the definition of “point source” and, therefore, agricultural stormwater discharges are not covered by NPDES permit requirements. *See* 33 U.S.C. § 1362(14). Section 122.23(e) of the federal rules explains how to determine whether a discharge is from agricultural stormwater and provides

Where the manure, litter or process wastewater has been applied in accordance with site specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter or process wastewater, as specified in [Section] 122.42(e)(1)(vi)-(ix), a precipitation-related discharge of manure, litter or process wastewater from land areas under the control of a CAFO is an agricultural discharge. 40 C.F.R. § 122.23(e).

Sections 122.23(e)(1) and (2) of the federal rules then expressly require that, for a discharge from an unpermitted Large CAFO to qualify as an agricultural stormwater discharge, the unpermitted Large CAFO must (1) land apply “in accordance with site specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter or process wastewater, as specified in [Section] 122.42(e)(1)(vi)-(ix)” and (2) “maintain documentation specified in [Section] 122.42(e)(1)(ix) either on site or at a nearby office, or otherwise make such documentation readily available.” 40 C.F.R. § 122.23(e)(1) and (2).

Section 122.42(e)(1)(vi)-(ix) of the federal rules lists some of the requirements for nutrient management plans:

- (vi) Identify appropriate site specific conservation practices to be implemented, including as appropriate buffers or equivalent practices, to control runoff of pollutants to waters of the United States;
- (vii) Identify protocols for appropriate testing of manure, litter, process wastewater, and soil;
- (viii) Establish protocols to land apply manure, litter or process wastewater in accordance with site specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter or process wastewater; and
- (ix) Identify specific records that will be maintained to document the implementation and management of the minimum elements described in paragraphs (e)(1)(i) through (e)(1)(viii) of this section. 40 C.F.R. § 122.42(e)(1)(vi)-(ix).

The Agricultural Coalition asserted that the Agency’s proposal is “not necessary to fully implement the federal CAFO rules in Illinois.” PC 19 at 22. The Coalition claimed that the Agency’s proposal to require unpermitted Large CAFOs to comply with Section 502.510(b) to claim the agricultural stormwater exemption goes beyond what is federally required to claim the exemption. *Id.* The Coalition argued that meeting the federal parameters in Section

122.42(e)(1)(vi)-(ix) “should allow for the agricultural stormwater exemption in any precipitation event.” *Id.* at 21.

The Board finds that the Agency’s proposed Sections 502.102(b) and (c) are in accord with Section 13(b)(1) of the Act. The Agency’s proposed Section 502.102(b) and (c) correspond to Section 122.23(e)(1) and (e)(2), respectively, of the federal rules. Proposed Sections 502.510(b)(8), (9), (10), and (15) correspond to Sections 122.42(e)(1)(vi)-(ix) of the federal rules. The Board recognizes that proposed Section 502.510(b) contains requirements that do not correspond exactly to the language of the federal parameters in Sections 122.42(e)(1)(vi)-(ix). However, in adopting the 2008 rule, USEPA stated that

a precipitation-related discharge from land application areas under the control of an unpermitted Large CAFO constitutes an agricultural stormwater discharge where the CAFO has land applied manure, litter, or process wastewater in accordance with site-specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter, or process wastewater, as specified in § 122.42(e)(1)(vi) – (ix). 73 Fed. Reg. 70435 (Nov. 20, 2008).

As noted above, Section 122.42(e)(1)(viii) requires establishment of land application protocols ensuring appropriate agricultural utilization of nutrients in livestock waste. USEPA stated that protocols meet the requirements of subsection (viii) “when they are in accordance with technical standards established by the Director. The form, source, amount, timing, and method of application of nutrients are essential components of the protocols for land application of manure, litter, or process wastewater specified in § 122.42(e)(1)(viii).” 73 Fed. Reg. 70435 (Nov. 20, 2008).

Accordingly, the Board finds that the Agency’s proposal to require unpermitted Large CAFOs to comply with the practices listed in Section 502.510(b) to qualify for the agricultural stormwater exemption is appropriate. The federal rules require establishment of land application protocols ensuring appropriate agricultural utilization of nutrients. The Agency asserted that these practices “are considered to ensure appropriate utilization of nutrients if done in accordance with state technical standards.” *Sofat Test.* at 8. USEPA stated that these technical standards “provide an objective basis for determining when precipitation-related discharges from land application areas are exempt from NPDES permit requirements.” 73 Fed. Reg. 70435 (Nov. 20, 2008). The Board finds that the Agency’s proposed Section 502.510(b) appropriately addresses the form, source, amount, timing, and method of application to establish protocols for land application of livestock waste applicable to unpermitted Large CAFOs that seek to claim the agricultural stormwater exemption. The Agency’s proposal ensures best management practices to minimize runoff of excessive levels of nutrients during wet-weather conditions.

The Agricultural Coalition further argued that each of the federal parameters is covered in LMFA rules found at 8 Ill. Adm. Code Part 900, Subpart H. The Coalition, accordingly, suggested that an unpermitted Large CAFO should be required to prepare a waste management plan under 8 Ill. Adm. Code Part 900, Subpart H to qualify for the agricultural stormwater exemption. PC 19 at 22. Dr. Funk provided extensive comments on LMFA waste management

plans and also urged the Board to recognize existing manure management plans as a basis to qualify unpermitted Large CAFOs for the agricultural stormwater exemption. He further testified that, the Agency's proposal "may constitute an unnecessary burden on compliance efforts by producers, with no verifiable impact on water quality." Funk Test. at 3.

Both the Agency and the Environmental Groups objected to the Agricultural Coalition's suggested revision. The Agency is concerned that some Large CAFOs under the proposed rules are exempt from LMFA waste management plan requirements. Further, requiring unpermitted Large CAFOs to follow the LMFA waste management plan requirements goes against the Agency's specific intent not to require a particular plan. It is also important to the Agency that unpermitted Large CAFOs be required to demonstrate that they actually employ certain practices and not simply have a plan to do so.

On behalf of the Environmental Groups, Dr. James submitted a chart comparing proposed Section 502.510(b) with LMFA waste management plan requirements in 8 Ill. Adm. Code Part 900, Subpart H. James Supp. Test. at 5-6. The chart illustrates that although there are numerous overlapping requirements between proposed Section 502.510(b) and LMFA waste management plan requirements, there are also numerous differences. Dr. James concluded that LMFA waste management plans are less comprehensive than proposed Section 502.510(b). *Id.*

The Board has reviewed the comments and testimony on the comparison between LMFA waste management plans and proposed Section 502.510(b) as well as analyzed the LMFA and its regulations. Section 20(f) of the LMFA provides

- (f) The application of livestock waste to the land is an acceptable, recommended, and established practice in Illinois. However, when livestock waste is not applied in a responsible manner, it may create pollutional problems. . . . The waste management plan shall include the following:
 - (1) An estimate of the volume of livestock waste to be disposed of annually . . .
 - (2) The number of acres available for disposal of the waste, whether they are owned by the owner or operator of the livestock waste management facility or are shown to be contracted with another person or persons for disposal of waste.
 - (3) An estimate of the nutrient value of the waste . . .
 - (3.5) Results of the Bray P1 or Mehlich test for soil phosphorus reported in pounds of elemental phosphorus per acre . . .
 - (4) An indication that the livestock waste will be applied at rates not to exceed the agronomic nitrogen demand of the crops to be grown when averaged over a 5-year period.

- (5) A provision that livestock waste applied within 1/4 mile of any residence not part of the facility shall be injected or incorporated on the day of application. . . .
- (6) A provision that livestock waste may not be applied within 200 feet of surface water unless the water is upgrade or there is adequate diking, and waste will not be applied within 150 feet of potable water supply wells.
- (7) A provision that livestock waste may not be applied in a 10-year flood plain unless the injection or incorporation method of application is used.
- (8) A provision that livestock waste may not be applied in waterways.
- (9) A provision that if waste is spread on frozen or snow-covered land, the application will be limited to land areas on which: (A) land slopes are 5% or less, or (B) adequate erosion control practices exist.
- (10) Methods for disposal of animal waste. 510 ILCS 77/20(f).

Section 900.803(a) through (u) (8 Ill. Adm. Code 900.803(a) – (u)) reiterates requirements in Section 20(f) of the LMFA and expands on the LMFA’s requirements.

After this review, the Board declines to accept the Agricultural Coalition’s suggestion to replace, in proposed Section 502.102(b) and (c), references to Section 502.510(b) with references to the LMFA, specifically 510 ILCS 77/20(f) (2012) and 35 Ill. Adm. Code Part 900, Subpart H. The Board is persuaded that there are significant differences between the goals of the LMFA and the Act. The Board is also persuaded that there are significant differences between LMFA waste management plan requirements and site specific nutrient management practices listed in Section 502.510(b). Accordingly, the Board adopts at first notice Sections 502.102(b) and (c) as proposed by the Agency.

However, the Board shares the Agricultural Coalition’s and Dr. Funk’s concern that regulated entities not be subject to conflicting regulatory schemes. The Agency explains that proposed Section 502.102(b) is derived from federal CAFO regulations and that both the federal regulations and the Agency’s proposal intend that an unpermitted Large CAFO not be directed to follow any particular plan. By not requiring a specific plan, the Agency is attempting to provide flexibility to facilities to determine how best to demonstrate that they employ adequate management practices to qualify for the agricultural stormwater exemption. To the extent a facility’s compliance with an LMFA waste management plan meets the practice requirements of Sections 502.102 and 502.510(b), the facility would be free to make that demonstration to avail itself of the agricultural stormwater exemption. *See* Agency Ans. at 6. The Board, therefore, sees no conflict between these programs. Furthermore, the Board does not read Section

502.102(b) as a requirement that all unpermitted Large CAFOs employ practices outlined in Section 502.510(b). Rather, Section 502.102(b) sets forth how to qualify for an exemption from permitting requirements, if the facility decides to pursue the exemption.

The Board also declines to adopt the Environmental Groups' suggested language to impose additional requirements to qualify for the exemption. The Environmental Groups suggested that, to qualify for the exemption, unpermitted Large CAFOs should comply with technical standards in proposed Sections 502.615 through 502.645 and comply with NMP requirements in proposed Sections 502.500, 502.505, and 502.510(b). Env. Prop. at 17 (Section 501.405(a)), 25 (Sections 502.102(b), (c)), 38 (Section 502.500(c)). The Board agrees with the Agency that this approach is overly prescriptive and defeats the intent of the federal CAFO rules to provide flexibility to unpermitted Large CAFOs. USEPA has explained that unpermitted Large CAFOs need to demonstrate use of certain nutrient management practices to claim the exemption, but they may do so by following technical standards established to comply with 40 C.F.R. 122.42(e)(viii) or follow other standards. *See* 73 Fed. Reg. 70418, 70435 (Nov. 20, 2008). If the facility chooses to follow other standards, the facility "may have to demonstrate both the appropriateness of alternative standards and that its practices conformed to them." *Id.* Under the federal CAFO rule, "owners and operators of unpermitted CAFOs are not precluded from relying on such other standards." *Id.* The Agency stated that it had not proposed to require unpermitted Large CAFOs to meet the technical standards in Section 502.615 through 502.645 "to keep the flexibility that the federal rules has." Tr.1 at 155 (Sofat testimony). The Board agrees with the Agency that USEPA intended for the federal rules to allow flexibility and finds it reasonable that the Illinois rules maintain this flexibility. Accordingly, the Board will propose for first notice the Agency's proposed Section 502.102.

The Board notes that three sections of the Agency's proposal include cross-references to the requirements for unpermitted Large CAFOs to qualify for the exemption: proposed Sections 501.405(a), 502.500(a), and 502.600. The Agency explained throughout its proposal and testimony that land application requirements in Part 502 apply to unpermitted Large CAFOs seeking to claim an agricultural stormwater exemption. *See, e.g.*, SR at 38; TSD at 4; Yurdin Test. at 7; Agency Att. 1 at 2. In addition, the Agency stated that "Section 502.600 does not expand the requirements applicable to unpermitted CAFOs beyond those in 502.510(b)." Agency Att. 1 at 14 (¶40). Accordingly, the Board understands these cross-references as being directed at unpermitted Large CAFOs seeking to claim an agricultural stormwater exemption.

The Agricultural Coalition suggested deleting the cross-references in Sections 502.500(a) and 502.600. The Environmental Groups suggested adding additional requirements to each of these cross-references. The Board, in its first notice order below, declines to accept these suggested revisions to the Agency proposal, but proposes the following clarifying language:

Final sentence of proposed Section 501.405(a): In place of the Agency's proposed language that "Large unpermitted CAFOs must comply with Sections 502.102 and 502.510(b)," the Board proposes that "Unpermitted Large CAFOs claiming an agricultural stormwater exemption must comply with Sections 502.102 and 502.510(b)."

Final sentence of proposed Section 502.500(a): In place of the Agency’s proposed language that “Unpermitted Large CAFOs, claiming an agricultural stormwater exemption consistent with Section 502.102, are subject to the requirements in Section 502.510(b),” the Board proposes that “Unpermitted Large CAFOs claiming an agricultural stormwater exemption must comply with Sections 502.102 and 502.510(b).”

Third sentence of proposed Section 502.600: In place of the Agency’s proposed language that “Unpermitted Large CAFOs claiming an agricultural stormwater exemption consistent with Section 502.102 are also subject to portions of this Subpart,” the Board proposed that “Unpermitted Large CAFOs claiming an agricultural stormwater exemption must comply with Sections 502.102 and 502.510(b) and are subject to portions of this Subpart to the extent required by Section 502.510(b).”

Technical Requirements for Unpermitted Large CAFOs

Agency Proposal

As discussed above, the Agency proposed imposing certain requirements on unpermitted Large CAFOs when the CAFO seeks to claim the permit exemption for agricultural stormwater discharges. Such CAFOs are required to conduct site-specific nutrient management practices that encourage appropriate agricultural use of nutrients in the livestock waste, as enumerated in proposed Section 502.510(b).

Environmental Groups’ Suggestion

The Environmental Groups sought to impose additional requirements on unpermitted Large CAFOs regardless of whether they seek the permit exemption for agricultural stormwater discharges. The Groups suggested requiring all unpermitted Large CAFOs to prepare, submit, and implement an NMP and comply with technical requirements in Sections 502.610(k) and 502.615 through 502.645. Env. Prop. at 17 (Section 501.405(a)), 38 (Section 502.500(a)), 49 (Section 502.600). The Groups claimed that, under the Agency’s proposal, only Section 502.510(b), Section 502.630, and the land application setbacks of Part 502 would apply to unpermitted Large CAFOs. PC 20 at 26. The Groups argued that technical standards should apply to all Large CAFOs regardless of permitting status. *Id.* The Groups claimed that these additional technical requirements provide more protection and better specificity than proposed Section 502.510(b) which calls for an “adequate” land application area and “appropriate” agricultural utilization of nutrients. *Id.* at 27. The Groups argued that their proposal is consistent with Section 12(f) of the Act because it establishes uniform land application standards and does not require permits for facilities that do not discharge. PC 29 at 3.

Dr. James testified that the Agency’s proposed rule includes technical standards for permitted CAFOs that would not apply to unpermitted Large CAFOs. James Supp. Test. at 7. She also testified that the Board should propose a rule requiring unpermitted Large CAFOs to (1) meet the land application technical standards proposed for permitted CAFOs and (2) prepare,

submit, and implement an NMP. *Id.* She claimed that this suggestion would be simpler than having one set of standards for permitted CAFOs, one for unpermitted Large CAFOs, and another under the LMFA. *Id.*

Mr. Leder testified that, regardless of their permitted status, Large CAFOs generate large quantities of waste and present similar management issues. Leder Test. at 5. He claimed that separate regulations addressing permitted and unpermitted Large CAFOs would cause uncertainty and inconsistency. Leder Test. at 5; *see* Tr.4 at 156. He asserted that NMPs represent best management practices and should be required of both permitted and unpermitted Large CAFOs. Leder Test. at 5; *see* Tr.4 at 141.

Agency Response

The Agency objected to the Environmental Groups' suggestions. PC 17 at 18. The Agency noted that its own proposal requires unpermitted Large CAFOs to land apply livestock waste according to site-specific nutrient management practices specified in Section 502.510(b) in order to qualify for the agricultural stormwater exemption. *Id.* The Agency argued that the Environmental Groups' suggestion is too prescriptive and does not provide unpermitted operations flexibility to meet the requirements of Section 502.510(b). PC 17 at 19, citing 73 Fed. Reg. 70435 (Nov. 8, 2008). The Agency requested that the Board not adopt the Environmental Groups' suggestion. PC 17 at 19.

Board Discussion

The Board declines to adopt the Environmental Groups' suggestions to impose additional requirements on unpermitted Large CAFOs whether or not they are seeking to qualify for the agricultural stormwater exemption. The Board finds that the Agency's proposed Section 502.510(b) appropriately implements the federal CAFO rule as to requirements for unpermitted Large CAFOs.

The Board asked the Agency whether there is any drawback to requiring unpermitted Large CAFOs to comply with proposed Sections 502.615 through 502.645. Tr.1 at 154. Mr. Sofat responded that the Agency intended to preserve the flexibility provided in the federal rule for unpermitted Large CAFOs. *Id.* at 155. Noting that an unpermitted Large CAFO may be involved with an organization or university to examine technological developments, he added that "we did not want to limit the flexibility so that they can effectively and efficiently comply with the ag[ricultural] stormwater exemption . . ." *Id.* The Environmental Groups argued that their amendments do not limit flexibility for CAFOs to innovate because the technical standards for permitted Large CAFOs allow an appropriate degree of flexibility and innovation. PC 29 at 9-10.

The Board finds that the Agency's explanation is reasonable and that it is appropriate to allow greater flexibility to unpermitted Large CAFOs whether or not seeking to qualify for the agricultural stormwater exemption. Accordingly, the Board declines to propose at first notice the language suggested by the Environmental Groups.

Section 502.106: Appeals of Case-by-Case Designations

Agency Proposal

The Agency sought to amend Section 502.106, which allows the Agency to designate a facility as a CAFO and require it to obtain an NPDES permit. The proposed rule allows the Agency to designate a facility as a CAFO if the Agency determines that the facility is “a significant contributor of pollutants to waters of the United States.” Prop. 502.106(a). The Agency must consider five specified factors in making this determination. *Id.* The operator is required to apply to the Agency for an NPDES permit within ninety days of receiving the Agency’s notification that a permit is required. Prop. 502.106(d). However, the Agency cannot require a permit unless (1) the facility meets one of two discharge-related conditions (Prop. 502.106(b)) and (2) the Agency conducts an onsite inspection and determines “that the operation should and could be regulated under the permit program” (Prop. 502.106(c)).

The Agency intended that a CAFO designation under Section 502.106 be appealed only after a facility obtains an NPDES permit. The Board asked the Agency to “comment on whether an Agency determination under this section is appealable to the Board.” Agency Att. 1 at 10 (¶28). The Agency responded that these designations “are not directly appealable to the Board. After a permit has been issued, the facility can raise issues related to the designation to the Board in a permit appeal.” *Id.*

During the first hearing, Mr. Sofat stated that a CAFO designation is “the first step in the process because you can still show that we have fixed the problem that caused the Agency to designate in the first place.” Tr.1 at 47. He further stated that “only when the Agency has gone through all the steps, designation requiring them to fix the problem, and if the problem still exists and then requiring them to seek a permit, it makes sense to appeal the Agency’s decision. Otherwise, it’s an intermittent step that may or may not be final.” *Id.* Mr. Yurdin added that it “would most likely be the case” that the Agency would make a designation if a discharge had occurred and an enforcement action had ensued. *Id.* at 48. Under those circumstances, “the appeal of that decision would logically come at the end of that process, not somewhere in the middle of that process.” *Id.* at 48-49.

Agricultural Coalition’s Suggestion

The Agricultural Coalition requested that the Board expressly allow operators to appeal CAFO designations to the Board. Agri. Mot. at 8; PC 19 at 20. The Coalition argued that Section 502.106 is inconsistent with federal rules and the decision-making process under the Act. Agri. Mot. at 7; PC 19 at 17. The Coalition claimed that the Agency’s modifications to the federal rule (40 C.F.R. § 122.23(c)(3)) “would turn this state rule into an unbridled procedural mechanism for [the Agency] to make (unappealable) findings that a specific facility must obtain a permit.” *Id.* The Coalition argued that appealing a designation is consistent with Agency permit determinations appealable to the Board. *Id.*

Agency Response

The Agency argued that, after designation but during the permitting process, the Agency could determine that the designated facility had corrected its discharge and no longer requires a permit. PC 17 at 8. The Agency claimed that this outcome demonstrates that CAFO designation is not a final determination. *Id.* The Agency acknowledged that, if a facility objects to the designation in the permit record, it may raise that issue in a permit appeal to the Board after the Agency issues the permit. *Id.* The Agency also argued that the federal rule and its own proposal include identical factors for designating a CAFO. *Id.* at 7. The Agency acknowledged that the federal rule does not expressly require the designated CAFO to apply for a permit. *Id.* However, the Agency stressed that CAFOs designated under the identical federal factors necessarily have a discharge, suggesting that the permit application requirement effectuates a federal requirement. *Id.*

Environmental Groups' Response

The Environmental Groups argued that the Agency's proposed Section 502.106 and the corresponding federal rule are nearly identical in language and equivalent in meaning. Env. Resp. at 6-7. The Groups claimed that, under Section 41 of the Act (415 ILCS 5/41 (2012)), only final decisions of the Board are subject to judicial review. *Id.* at 9. The Groups also claimed that Section 40 of the Act (415 ILCS 5/40 (2012)) authorizes applicants and other affected parties to contest permit conditions or the denial of a permit. *Id.* The Groups further claimed that the Board's procedural rules allow review of final Agency permit decisions. *Id.* The Groups agreed with the Agency that a CAFO designation is an intermediate step and Illinois law does not authorize review of such a decision. *Id.* The Groups argued that reviewing such a decision would create a two-step permitting process and impede the Agency's permitting. *Id.* at 6.

Board Discussion

The Agency proposes to update the case-by-case designation provision in Section 502.106 "to match the federal rule." SR at 43; TSD at 6; *see* 40 C.F.R. 122.23(c). The Agricultural Coalition argued that the Board should expressly provide for review of these Agency designations and that such review is required to be consistent with federal and Illinois law. Agri. Mot. at 7-8.

As to the Agricultural Coalition's argument that the Agency's proposed changes to Section 502.106 are inconsistent with federal law, the Board disagrees. Section 122.23(c) of the federal rules allows the Agency to "designate any AFO as a CAFO upon determining that it a significant contributor of pollutants to waters of the United States." 40 C.F.R. § 122.23(c). The Agency's proposal adds nearly this exact phrase to Section 502.106(a). Prop. Section 502.106(a).

The federal rules then provide five factors the Agency must consider in making the CAFO designation, which are nearly identical to the five factors in proposed Section 502.106(a). *See* 40 C.F.R. § 122.23(c)(2)(i)-(v). To designate an AFO as a CAFO, the federal rules require the Agency to inspect the site and determine "that the operation should and could be regulated under the permit program." 40 C.F.R. § 122.23(c)(3). Section 502.106(c) currently contains this

language, and the Agency does not propose any changes to this language. Prop. Section 502.106(c). The federal rules also provide that to be designated as a CAFO, two discharge conditions must be met. 40 C.F.R. §§ 122.23(c)(3)(i) and (ii). These two discharge conditions are nearly identical to proposed Sections 502.106(b)(1) and (2).

Finally, the Agency proposed that an operator must apply to the Agency for an NPDES permit within ninety days of receiving the Agency's notification that a permit is required. Prop. 502.106(d). Similar language had been found in Section 122.23(f)(5) of the federal rules: "[f]or operations designated as a CAFO in accordance with paragraph (c) of this section, the owner or operator must seek to obtain coverage under a permit no later than 90 days after receiving notice of the designation." 40 C.F.R. § 122.23(f)(5) (2008); *see* 73 Fed. Reg. 70481 (Nov. 20, 2008). USEPA has since amended this requirement by deleting timing requirements "related to when CAFO owners and operators must seek coverage under an NPDES permit. These provisions extended the time by which facilities newly required to obtain NPDES permits must apply for a permit. . . . The revision clarifies that all CAFOs must have a permit at the time they discharge." 77 Fed. Reg. 44495, 44497 (July 30, 2012); *see* 40 C.F.R. § 122.23(f)(5) (2013). Because the record does not address this recent revision, the Board submits the Agency's proposed Section 502.106(d) to first-notice publication solely for the purpose of eliciting comment in the form of any revised language that may be necessary to implement the revised 40 C.F.R. § 122.23(f).

Based on the above comparison between proposed Section 502.106 and federal rules, the Board finds that the Agency's proposal is consistent with federal rules. The primary difference between proposed Section 502.106(a) and Section 122.23(c) of the federal rules is the express requirement in Section 502.106(a) for a designated facility to obtain a permit. The Agency explains that this difference in language is non-substantive and dates to 1978 when the Board first promulgated CAFO rules. PC 17 at 7. The Board agrees that these differences are non-substantive changes to the federal language.

The Agricultural Coalition also suggested that the Board add a provision to Section 502.106 allowing operators to seek Board review of an Agency decision to designate a CAFO under Section 502.106. Agri. Mot. at 10; *see* Tr.3 at 155-56, 164-65. The Coalition claimed that appealing an Agency CAFO designation is analogous to other Agency permit determinations that may be appealed to the Board. Agri. Mot. at 9-10, citing 415 ILCS 5/4(f), 5(d), 41; Landfill, Inc., 74 Ill.2d at 557; *see* Tr.3 at 154.

Most of the statutory sections cited by the Agricultural Coalition do not provide Board authority to review an Agency decision to designate a CAFO under Section 502.106. Section 4(f) of the Act requires the Agency to appear before the Board in certain cases, namely petitions for variances, permit denials, cases challenging rules of the Board, and allowing the Agency to appear in any other hearing under the Act. 415 ILCS 5/4(f) (2012). This provision does not give the Board any specific authority to review Agency decisions. The Coalition also cited Section 41 of the Act, which provides for appeal of Board decisions to the appellate court. A CAFO designation is a decision by the Agency, not the Board. Accordingly, Section 41 does not provide Board authority to review a CAFO designation by the Agency.

The Coalition also analogized the Agency's CAFO designation to appealable permit decisions. The right to appeal an Agency permit decision is found at Section 40 of the Act, which provides that "[i]f the Agency refuses to grant or grants with conditions a permit under Section 39 of this Act, the applicant may, within 35 days after the date on which the Agency served its decision of the applicant, petition for a hearing before the Board to contest the decision of the Agency." 415 ILCS 5/40 (2012). However, an Agency CAFO designation under Section 502.106 is not an Agency decision to "refuse[] to grant or grant[] with conditions a permit under Section 39 of this Act." Accordingly, Section 40 does not provide for an appeal to the Board of an Agency CAFO designation under Section 502.106.

However, the Coalition also cited Section 5(d) of the Act, which enumerates the Board's authority to conduct various types of proceedings:

The Board shall have authority to conduct proceedings upon complaints charging violations of this Act, any rule or regulation adopted under this Act, any permit or term or condition of a permit, or any Board order; upon administrative citations; upon petitions for variances or adjusted standards; *upon petitions for review of the Agency's final determinations on permit applications in accordance with Title X of this Act*; upon petitions to remove seals under Section 34 of this Act; *and upon other petitions for review of final determinations which are made pursuant to this Act or Board rule and which involve a subject which the Board is authorized to regulate. The Board may also conduct other proceedings as may be provided by this Act or any other statute or rule.* 415 ILCS 5/5(d) (2012) (emphasis added by Agricultural Coalition, *see* Agri. Mot. at 9).

It is the clause in Section 5(d) stating "upon other petitions for review of final determinations which are made pursuant to this Act or Board rule and which involve a subject which the Board is authorized to regulate" where the Board would have authority to review final decisions by the Agency under the CAFO rules.

Section 5(d) of the Act authorizes the Board to review final determinations made by the Agency pursuant to Board rules. The CAFO rules in this proceeding "involve a subject which the Board is authorized to regulate." The Board is conducting this rulemaking to amend current Board agriculture-related pollution rules under the authority in Sections 9, 10, 12, 13, 21, and 22 of the Act. 415 ILCS 5/9, 10, 12, 13, 21, 22 (2012). Further, a decision by the Agency to designate a CAFO under proposed Section 502.106 would be "made pursuant to this Act or Board rule." Thus, the question is whether an Agency designation under proposed Section 502.106 is a "final determination." If it is, the Board would have authority to review such an Agency decision.

There are a variety of Agency decisions for which the Act expressly allows Board review. For example, the Board is authorized to review permit decisions, various decision points in issuing reimbursement from the underground storage tank fund, and site remediation program reviews. *See, e.g.*, 415 ILCS 5/40, 57.7(c)(4), 57.7(e)(2), 57.8(i), 58.7(d), 58.10(f); *see also* Wisconsin Electric Power Co. v. IEPA, PCB 10-11 (Aug. 6, 2009) (Board accepted for hearing

WEPCO's petition to review Agency beneficial use determination under 415 ILCS 5/3.135(b) concerning coal combustion byproduct).

In addition, under Section 5(d), the Board has allowed review of other Agency decisions not expressly addressed in the Act. For example, in Chicago Coke Co. v. IEPA, PCB 10-75 (Sept. 2, 2010), the Board reviewed an Agency decision regarding the use of emission reduction credits. In that case, Chicago Coke sought to sell emission reduction credits to a buyer in the same non-attainment area. The Agency denied Chicago Coke the ability to sell its credits for use by another facility as offsets under 35 Ill. Adm. Code 203.303. The Board accepted Chicago Coke's petition for review of that Agency determination and found that Section 5(d) of the Act allowed the Board to hear such final decisions.⁵ See also Proposed Amendments to Clean Construction or Demolition Debris Fill Operations (CCDD): Proposed Amendments to 35 Ill. Adm. Code 1100, R12-9 (Aug. 23, 2012) (adding Board review provision at 35 Ill. Adm. Code 1100.605(c)(3)).

The Board has also rejected petitions for review of Agency decisions which the Board determined were not final Agency decisions. See J.I. Case Co. v. IEPA, PCB 94-223 (Oct. 6, 1994) (Agency decision recommending voluntary cleanup objectives was not a final determination subject to review under Section 5(d)); BTL Specialty Resins Corp. v. IEPA, PCB 94-160 (Aug. 11, 1994) (Agency letter informing BTL that its waste was K022 hazardous waste was not a final determination subject to review under 5(d) because the letter was a public courtesy responding to an inquiry from BTL).

The Agricultural Coalition cited the United States Supreme Court's opinion in Sackett v. EPA for the proposition that final agency actions under the CWA are reviewable. Agri. Mot. at 8, citing Sackett v. EPA, 132 S. Ct. 1367 (2012). In Sackett, property owners filled a portion of their lot with dirt and rock to prepare to construct a house. Sackett, 132 S.Ct. at 1370. USEPA issued a compliance order alleging that the owners discharged pollutants into waters of the United States without a permit. *Id.* at 1371. The order directed the owners to restore their property and made them subject to penalties for the illegal discharge and additional penalties if they failed to comply with the order. *Id.* at 1371, 1372. The Court considered whether the compliance order was a final agency action and found that it was a final action subject to court review under the federal Administrative Procedure Act. *Id.* at 1374. The Court analyzed various aspects of what makes an agency action final including that the order imposed a legal obligation to restore the property and exposed the owners to penalties. *Id.* at 1371-72. The order also concluded that the agency's decision making process was not subject to any further agency review. *Id.* at 1372.

The Agricultural Coalition claimed that an Agency CAFO designation under proposed Section 502.106 constitutes such final action because it requires a facility to apply for a permit that the facility does not consider necessary. Agri. Mot. at 8. While there are many distinctions between the CAFO designation procedure and Sackett, which involved court review of an Agency enforcement order under the federal Administrative Procedure Act, the Court raised many concerns that also concern the Board in the CAFO designation context. Like the Sackett

⁵ Although an appeal of this decision is pending, it contests the Board's denial of attorney fees. See Chicago Coke Co. v. IEPA, et al., No. 1-13-2704 (1st Dist.).

court, the Board views the CAFO designation as an Agency decision that determines the rights and obligations of the facility, namely the obligation to obtain an NPDES permit. The possibility that the Agency may change this designation after discussions with the facility is not the same as the facility being entitled to further review. Further, the facility that disagrees with the Agency's CAFO designation would be left with the untenable choice of applying for a permit it does not believe it needs or be vulnerable to the Agency bringing an enforcement action against it. Accordingly, the Board finds that an Agency CAFO designation under Section 502.106 is a final determination by the Agency.

The Board notes that proposed Section 502.106 requires the Agency to consider multiple factors before requiring a facility to obtain an NPDES permit when that facility does not fall into the recognized categories requiring permits under Sections 502.103 and 502.104. Rather than the number of animals, the Agency will consider five other factors including the amount of livestock waste reaching waters of the United States, location relative to waters of the United States, and likelihood of discharge. This CAFO designation procedure is unlike the criteria for Large and Medium CAFOs under Sections 502.103 and 502.104 because it requires the Agency to consider multiple factors. As the Agricultural Coalition explained, permitting rules usually specify which facilities need a permit, but here the Agency determines which facilities need a permit. Tr.3 at 154-55. Therefore, the Board proposes allowing an appeal to the Board at first notice.

The Agency also proposed removing the requirement that the Agency notify a facility in writing that it is required to obtain a permit. Prop. Section 502.106(c). The Agency states that it is doing so "to ensure consistency with the federal rule." SR at 44; *see also* Tr.1 at 59. The Board proposes at first notice retaining this provision to ensure that the facility receives notice of the Agency's designation and the grounds for its designation. Taking this together with the Board appeal provision, the Board proposes the following at first notice:

- (e) The Agency will notify the owner or operator in writing of the Agency's decision to designate the animal feeding operation as a CAFO under this Section and the grounds for the designation. The owner or operator may file an appeal of the Agency's decision with the Board within 35 days after the date on which the Agency served the decision pursuant to Section 40(a) of the Act and 35 Ill. Adm. Code 105.

Section 501.505: Reporting or Registration of CAFOs

Agency Proposal

USEPA, on October 21, 2011, proposed two options for obtaining information from CAFOs. SR at 29, citing 76 Fed. Reg. 65437 (Att. G); *see* Sofat Test. at 11-12. Under the first option, all CAFOs would be required to submit specified information to USEPA. *Id.*; *see* Sofat Test. at 11. Under the second option, only CAFOs located in a focus watershed identified by USEPA would be required to submit information. *Id.*

In light of this uncertainty as to the final federal reporting requirement, the Agency proposed adding Section 501.505 to require CAFOs to comply with any future USEPA rule. Prop. at Section 501.505. The Agency “intends that all facilities required to report under a federal rule must also submit the same information to Illinois EPA.” SR at 39. The Agency characterized this section as a “place-holder.” TSD at 1; *see* Sofat Test. at 11-12.

However, on July 20, 2012, USEPA withdrew its proposed rule. Agency Att. 1 at 6 (¶17), citing 77 Fed. Reg. 42679 (July 20, 2012). The Agency stated that it will not amend its proposal. Agency Att. 1 at 6 (¶18).

Environmental Groups’ Suggestion

The Environmental Groups suggested striking most of the Agency’s proposed Section 501.505 and replacing it with alternate language requiring unpermitted Large CAFOs to submit information to the Agency. *See* Env. Prop. at 18-20 (Section 501.505). The Groups suggested deadlines for existing and new unpermitted Large CAFOs to submit information. Env. Prop. at 18-19 (Sections 501.505(a), (b), (c)). The Groups enumerated sixteen types of information to be submitted by unpermitted Large CAFOs. Env. Prop. at 19-20 (Sections 501.505(d)). The Groups suggested that unpermitted Large CAFOs submit this information every five years to the Agency. Env. Prop. at 20 (Sections 501.505(e), (f), (g)).

Mr. Leder testified that federal and state programs face difficulties in knowing where CAFOs are located and which CAFOs require an NPDES permit. Leder Test. at 7. He claimed that, to determine compliance with the CWA, agencies need to have information about CAFOs. *Id.*; Tr.4 at 142. He further claimed that a useful inventory needs to include only basic information including type and number of livestock, annual waste amounts, and waste storage capacity. Leder Test. at 7. However, he also asserted that information gathered from CAFOs should include all fourteen points from the Pork Producers settlement. *Id.* In that case reviewing the 2008 rule, USEPA reached a settlement agreement in which it committed to propose a rule requiring CAFOs to submit certain information. *See* 77 Fed. Reg. 46280 (July 20, 2012) (withdrawing proposed rule). Mr. Leder claimed that requiring the Agency to gather this information without surveying CAFOs would burden the Agency with a time-consuming duty and would result in less complete and less accurate information. Leder Test. at 7. In contrast, individual CAFOs can prepare and submit information to the Agency with little effort. *Id.* According to Mr. Leder, developing an inventory would serve at least two purposes: (1) identify dischargers and bring them into compliance; and (2) identify causes of fish kills and discharges. *Id.*

Dr. Thu also testified in favor of a CAFO registration program, maintaining that one is necessary to identify facilities, set inspection priorities, and determine whether facilities require an NPDES permit. Thu Test. at 1; Tr.4 at 142-43. He testified that his organization, ICCAW, filed a petition with USEPA to withdraw Illinois’ delegated authority under the NPDES program. Thu Test. at 5, citing Thu Atts. 4, 5; *see* Tr.4 at 144. According to Dr. Thu, USEPA concluded that the Agency’s CAFO program was not adequate and found that Illinois does not have a comprehensive CAFO inventory. Thu Test. at 4, citing Exh. 14 at 16. Dr. Thu testified that the Agency responded to the ICCAW petition by committing “to a registration program to populate a

statewide CAFO inventory and prioritize inspections and permitting decisions.” Thu Test. at 4, citing Thu Att. 6 at 5, Thu Att. 7 at 5; *see* Tr.4 at 144. Although he acknowledged that USEPA had withdrawn its proposed federal reporting rule, he claimed that it did so in reliance on state-level data. Tr.4 at 166. He also acknowledged that an inventory and a reporting requirement are not identical and that USEPA does not require states to have a reporting rule. *Id.* at 167, 168. He recommended that the Board adopt the Environmental Groups’ suggestion for registration of CAFOs, because existing sources of data in Illinois are inadequate to develop a comprehensive inventory. Tr.4 at 175.

Noting that USEPA withdrew its proposed reporting rule, the Environmental Groups argued that the Agency’s placeholder language in proposed Section 501.505 is now obsolete. PC 20 at 10. Although the Groups acknowledged the Agency’s effort to compile an inventory from existing records of other agencies, they claimed that this data is incomplete. *Id.* at 12. The Groups argued that CAFOs should be able easily to comply with the Groups’ proposed reporting requirement because CAFOs have immediate access to their own information. *Id.* at 14. The Groups maintained that failure to enact a reporting requirement may jeopardize Illinois’ delegated authority to administer the NPDES program. *Id.* at 10. They further argued that the Act obligates the Board to adopt regulations maintaining that authority. *Id.*, citing 415 ILCS 5/13(b)(1) (2012).

Agency Response

The Agency argued that the Environmental Groups’ proposed Section 501.505 requires information beyond what is necessary to develop an inventory of CAFOs. PC 17 at 13. The Agency stated that it is now developing an inventory that will serve the purpose of the Groups’ suggested registration requirements without collecting unnecessary data. *Id.* at 14. The Agency disputed Dr. Thu’s testimony that the Agency’s proposal fails to meet commitments made to USEPA to avoid withdrawal of Illinois’ delegated authority for the NPDES program. *Id.*

The Agency also submitted a memorandum on the Board’s authority to adopt a registration program. The Agency recognized the Board’s broad rulemaking authority under the Act. Agency Memo. at 4, citing 415 ILCS 5/5(b), 27(a), 13(a) (2012). However, the Agency argued that the Act does not explicitly authorize the Board to prescribe rules for a CAFO reporting or registration program. Agency Memo. at 5. The Agency deferred to the Board to determine whether statutory authority for the Board to adopt such a program may be implied from the Board’s general rulemaking authority. *Id.*

Agricultural Coalition’s Response

The Agricultural Coalition noted that USEPA withdrew its proposed reporting requirement. PC 19 at 12. The Coalition argued that the Board lacks authority to adopt and the Agency lacks authority to implement such a requirement. *Id.* Further, the Coalition claimed that (1) there is no need to register CAFOs that do not discharge and (2) information on CAFOs that do discharge is already publicly available. *Id.* The Coalition also disputed Dr. Thu’s testimony that failing to adopt such a requirement jeopardizes Illinois’ delegation for NPDES permitting. *Id.*

Board Discussion

As participants reported, in October 2011 USEPA proposed a new 40 C.F.R. § 122.23(k) requiring certain CAFOs to provide information to USEPA. 76 Fed. Reg. at 65431 (Oct. 21, 2011). USEPA's proposal was an outcome of a settlement agreement in the Pork Producers case. *Id.* at 65435-36; *see* SR at 29. The fourteen items listed in the settlement agreement to be addressed in the proposal included:

1. Name and address of the owner and operator;
2. If contract operation, name and address of the integrator;
3. Location (longitude and latitude) of the operation;
4. Type of facility;
5. Number and type(s) of animals;
6. Type and capacity of manure storage;
7. Quantity of manure, process wastewater, and litter generated annually by the CAFO;
8. Whether the CAFO land-applies;
9. Available acreage for land application;
10. If the CAFO land-applies, whether it implements a nutrient management plan for land application;
11. If the CAFO land-applies, whether it employs nutrient management practices and keeps records on site consistent with 40 CFR 122.23(e);
12. If the CAFO does not land apply, alternative uses of manure, litter and/or wastewater;
13. Whether the CAFO transfers manure off site, and if so, quantity transferred to recipient(s) of transferred manure; and
14. Whether the CAFO has applied for an NPDES permit. 76 Fed. Reg. at 65435.

USEPA committed to take final action on the rule by July 13, 2012. *Id.*

USEPA derived its authority to request information from CAFOs under Section 308 of the CWA, which USEPA claimed is broader than its authority to require permits. 76 Fed. Reg. at 65436, citing 33 USC §§ 1318(a), 1362(14). USEPA proposed two options for public comment. The first option required all CAFOs to report the following information to USEPA: (1) the name and address of the owner; (2) location of the production area; (3) NPDES permit information; (4) number and types of animals confined; and (5) total number of acres the owner has for land application. *Id.* at 65456. The second option required the same information but only from CAFOs located in a focus watershed identified by USEPA. *Id.* at 65457-58. The USEPA proposal listed criteria for USEPA to apply in identifying focus watersheds. *Id.* USEPA explained that its proposed rule requested information on only some of the fourteen items from the settlement agreement “because [USEPA] believes it can effectively obtain site-specific answers for the remaining questions directly from states, other Federal agencies, specific CAFOs, or other sources, when necessary.” *Id.* at 65439.

USEPA later withdrew its proposed rule. 77 Fed. Reg. 42679 (July 20, 2012). USEPA stated that it was

withdrawing the proposal to collect CAFO information by rule. Instead, the EPA, where appropriate, will collect CAFO information using existing sources of information, including state NPDES programs, other regulations, and other programs at the federal, state, and local level. The EPA believes, at this time, it is more appropriate to obtain CAFO information by working with federal, state, and local partners instead of requiring CAFO information to be submitted pursuant to a rule. *Id.* at 42679.

Thus, as it currently stands, there is no USEPA regulation requiring unpermitted CAFOs to submit information to USEPA or delegated states.

The Environmental Groups urged the Board to adopt a rule requiring unpermitted Large CAFOs to submit information to the Agency as enumerated in their suggested Section 501.505(d)(1)-(15). Env. Prop. at 19-20 (Section 501.505(d)). Their list of items is very similar, though not identical, to the fourteen items in the settlement agreement in Pork Producers.

The Board first considers whether it has the authority to promulgate such a rule. Section 5(b) of the Act provides the Board with rulemaking authority to “determine, define, and implement the environmental control standards applicable in the State of Illinois and may adopt rules and regulations in accordance with Title VII of this Act.” 415 ILCS 5/5(b) (2012); *see* 415 ILCS 5/26-29 (2012). Section 27(a), part of Title VII of the Act, provides that the “Board may adopt substantive regulations as described in this Act. . . . The generality of this grant of authority shall only be limited by the specifications of particular classes of regulations elsewhere in this Act.” 415 ILCS 5/27(a) (2012).

As to water pollution specifically, Section 13(a) of the Act provides that the Board “may adopt regulations to promote the purposes and provisions of this Title.” 415 ILCS 5/13(a) (2012). Section 13(a) also provides a non-exhaustive list of standards, requirements, and procedures the Board is authorized to prescribe. 415 ILCS 5/13(a) (2012). The Board agrees

with the Agency that none of the topics enumerated in Section 13(a) expressly mentions a CAFO reporting or registration program.

In addition to these statutory provisions cited by the Agency, the Board is also mindful that Section 11(b) of the Act provides that a purpose of the Act's water pollution provisions is "to authorize, empower, and direct the Board to adopt such regulations and the Agency to adopt such procedures as will enable the State to secure federal approval to issue NPDES permits pursuant to the [CWA]." 415 ILCS 5/11(b) (2012). The Act further directs that these provisions "shall not be construed to limit, affect, impair, or diminish the authority, duties and responsibilities of the Board, Agency . . . to regulate and control pollution." 415 ILCS 5/11(c) (2012).

The Board finds that requiring unpermitted Large CAFOs to submit information to the Agency as enumerated in the Environmental Groups' suggested Section 501.505 is not required for Illinois to secure or maintain federal approval to issue NPDES permits. As explained above, there is no federal rule requiring unpermitted Large CAFOs to submit information to the permitting authority, namely the Agency. Thus, there is no requirement that Illinois adopt and implement such a requirement to continue to administer the NPDES permit program. The Board acknowledges that the record includes testimony and documents concerning a petition to remove USEPA's delegation to Illinois to administer the NPDES permit program. However, the Agency and the Groups disagree on the status and effect of those interactions between the Agency and USEPA. While the Board is not a party to these discussions, the Board does not see any legal authority for USEPA to require Illinois to establish the type of reporting requirement suggested by the Groups when USEPA itself has withdrawn its own proposed rule. Furthermore, the Groups' sixteen required items go beyond USEPA's proposed, but withdrawn, five items. Accordingly, the Board finds that the Groups' suggested Section 501.505 is not required under a specific federal mandate or to maintain USEPA approval for Illinois' NPDES permit program. *See* 415 ILCS 5/11(b) (2012).

The Environmental Groups further argued that Illinois needs to gather the information listed in its suggested Section 501.505 "so the Agency can identify which livestock facilities in Illinois are in fact CAFOs and which should be subject to NPDES permit requirements." PC 29 at 6. Section 13(b) specifically enables the Board to adopt rules needed to implement the NPDES program and this authority is broader than what specifically is required by a federal mandate. Section 13(b) of the Act provides:

Notwithstanding other provisions of this Act and for purposes of implementing an NPDES program, the Board shall adopt: (1) Requirements, standards, and procedures which, together with other regulations adopted pursuant to this Section 13, are necessary or appropriate to enable the State of Illinois to implement and participate in the National Pollutant Discharge Elimination System (NPDES) pursuant to [the CWA]. All regulations adopted by the Board governing the NPDES program shall be consistent with the applicable provisions of such federal Act and regulations pursuant thereto, and otherwise shall be consistent with all other provisions of this Act . . ." 415 ILCS 5/13(b) (2012).

The Illinois Appellate Court has had opportunities to interpret this language in the context of challenges to NPDES rules adopted by the Board. That court has explained “It is clear that section 13(b)(1) of the Illinois Act, which requires the Board to promulgate regulations ‘necessary or appropriate’ for Federal approval and regulations which are ‘consistent’ with the [CWA], does not limit the Board’s rule-making power to that necessary to obtain Federal approval of Illinois’ NPDES permit program.” U.S. Steel Corp. v. PCB, 52 Ill.App.3d 1, 4-5, 367 N.E. 2d 327 (2nd Dist. 1977), citing Peabody Coal Co. v. PCB, 36 Ill.App.3d 5, 15-16, 344 N.E.2d 279, 285 (5th Dist. 1976). The court continued, “Such a limited interpretation of the Illinois Act would unduly hinder the Board from achieving the true goal of the NPDES permit system, which is the limitation of the discharge of point source pollutants into navigable waters.” *Id.*; *see also Illinois Power Co. v. PCB*, 112 Ill. App. 3d 457, 461, 445 N.E.2d 820, 823 (5th Dist. 1983) (“Under this section all regulations adopted were to be consistent with federal law and otherwise consistent with the Illinois act”).

The Environmental Groups claimed that information is needed to identify which CAFOs are required to obtain permits. The Groups argued that Illinois must have a program “capable of making comprehensive surveys of all facilities and activities subject to the [Agency’s] authority to identify persons subject to regulation who have failed to comply with permit application or other program requirements.” PC 20 at 11, *quoting* 40 C.F.R. § 123.26(b)(1); *see also* PC 29 at 6.

The Agency testified that it is developing such a comprehensive CAFO survey or inventory. *See* Tr.1 at 105-111; *see also* PC 17 at 13. The Agency explained that it is developing a CAFO inventory from an IDPH database of more than 800 dairy operations and “a list of 1,400 permits that have been issued by the Illinois Department of Agriculture under the LMFA since 1996.” SR at 90, citing Atts. K, L; *see* Agency Att. 4 at 5 (¶17); Tr.1 at 108. The Agency may also identify facilities through its inspection records and staff. Tr.1 at 106-07. The Agency believes that its inventory “will serve the stated purposes of the proposal without obligating the Agency to receive, review, store and track a large volume of information that is unnecessary to implement the NPDES program or enforce the [Act].” PC 17 at 14.

The Board agrees with the Agency that the level of detail suggested by the Environmental Groups is not necessary or appropriate to implement the NPDES program for CAFOs. However, the Board notes that the Agency previously considered, at least as of May 2011, proposing a registration program for unpermitted Large CAFOs. *See* Agency Att. 7(a) at Section 501.505. The Agency’s May 2011 draft rule would have required unpermitted Large CAFOs to register with the Agency and submit the following information:

1. name and address of all owners of the facility;
2. facility address;
3. facility location according to township, county, section, and quarter section;
4. latitude and longitude of the facility;

5. types of animal holding areas including pastures, confinement barns, and open lots;
6. types and size of animals and maximum number of each type and size;
7. name and signature of the owner or operator who completed the registration form; and
8. date the registration form was completed. *Id.*

Thus, it appears that in May 2011, the Agency believed that a registration requirement for unpermitted Large CAFOs may have been necessary to implement the NPDES program for CAFOs in Illinois. When USEPA proposed in October 2011 a reporting rule of its own, USEPA's rule also may have met the needs of gathering sufficient information to implement the NPDES program in Illinois. Indeed, in proposing to reference the federal reporting rule in Section 501.505, the Agency stated that the information USEPA had proposed collecting "is intended to allow USEPA to more effectively and efficiently implement the NPDES program for CAFOs." *Sofat Test.* at 11. The Board then is left with the question, now that the federal rule has been withdrawn, of whether Illinois should promulgate a rule to gather information from unpermitted Large CAFOs to implement the NPDES program for CAFOs in Illinois.

The Board finds that a simplified reporting requirement is necessary and appropriate for Illinois to implement the NPDES program for CAFOs. While the Board believes that the Agency's efforts to develop a CAFO inventory may be sufficient to constitute a "comprehensive survey" under the federal rules, there appear to be significant gaps in currently available information. *See* 40 C.F.R. § 123.26(b)(1). The Agency estimated, based on data from the Illinois Department of Agriculture, that there are approximately 350 to 400 Large CAFOs in Illinois. *Yurdin Aff.* at 1-2. The Agency has issued approximately 35 NPDES permit to CAFOs. *Agency Att. 4* at 4 (¶13). Using these numbers, the Agency may need to identify at least 315 to 365 unpermitted Large CAFOs. As described above, the record reveals that the Agency is developing a CAFO inventory from an IDPH database and LMFA database, however the IDPH database only covers dairy operations, and the LMFA information dates only to 1996. *See SR* at 90, citing *Atts. K, L; Agency Att. 4* at 5 (¶17); *Tr.1* at 108. In addition, the Environmental Groups questioned whether the databases have been updated. *See PC 20* at 12.

The Board agrees with the Agency that an appropriate purpose of the CAFO inventory is "to have a usable, workable, day-to-day updatable list that the Agency can rely on in putting together inspection prioritization." *Tr. 1* at 110. The Board further agrees with the Agency that an inventory "although useful in terms of prioritizing inspections, would not address the question of which ones or how many would need permits. . . . [O]nly those with actual discharges need permits and that can only be established through inspections, not by way of registration." *Agency Att. 4* at 5 (¶17). Accordingly, to serve these purposes, in Section 501.505, the Board proposes at first notice a rule for submission of information by unpermitted Large CAFOs.

The Board's proposed reporting requirements parallel the information requirements in the Agency's May 2011 draft rule and the withdrawn federal rule. *See* Agency Att. 7a. The Board adds a requirement to submit information pertaining to types of livestock waste containment and storage units at the facility. The Board believes that the waste containment and storage information would be helpful to the Agency in setting priorities for inspecting CAFOs. Further, the Board proposes timelines ranging from 30 to 90 days depending on the status of the CAFO. The Board has not included requirements in the Agency's draft rule relating to registration because the Board is proposing a reporting rule. The Board also retains a provision from the Agency's proposal referencing any future USEPA rule derived from Section 308 of the CWA.

The Board proposes the following Section 501.505 to identify unpermitted Large CAFOs

Section 501.505 Requirements for Certain CAFOs to Submit Information

- (a) Existing CAFOs, not covered by an NPDES permit, must submit to the Agency the information listed in subsection (c), as follows:
 - (1) Large CAFOs must submit the information within 90 days after the effective date of this Section.
 - (2) CAFOs with the same or fewer animals as the numbers of animals provided in 35 Ill. Adm. Code 502.103 that propose to stable or confine additional animals must submit the information 30 days prior to increasing the number of animals above the numbers provided in 35 Ill. Adm. Code 502.103.
- (b) New CAFOs that commence construction after the effective date of this section and have a capacity for animals greater than the numbers provided in 35 Ill. Adm. Code 502.103 must submit the information in subsection (c) 30 days prior to the commencement of operations if no NPDES permit application has been filed at that time.
- (c) CAFOs covered by subsections (a) and (b) must submit the following information to the Agency:
 - (1) name of all owners and operators of the facility and their mailing addresses and phone numbers;
 - (2) location of the facility identified by the street address or latitude and longitude;
 - (3) location of the facility according to township, county, section, and quarter section;

- (4) for the previous 12 month period, identification of each animal type stabled or confined at the facility and maximum number of each animal type;
 - (5) identification of types of animal holding areas including, but not limited, pastures, confinement barns, and open lots;
 - (6) identification of types and capacity of livestock waste containment and storage units including, but not limited to, anaerobic lagoons, manure stacks, underground storage pits, and storage tanks; and
 - (7) date the information in subsection (c) is submitted to the Agency.
- (d) When a CAFO that has provided information to the Agency under this Section ceases operation, the owner or operator must submit a notification of termination to the Agency within 30 days after closure of the facility.
 - (e) Any CAFO required to submit information to USEPA pursuant to Section 308 of the Clean Water Act must submit the same information to the Agency simultaneously with the submittal to USEPA.
 - (f) All submittals required under this section must be sent to:

Illinois Environmental Protection Agency
 Division of Water Pollution Control
 Attn. Permit Section
 P.O. Box 19276
 Springfield, Illinois 62794-9276.

Off-Site Land Application and Waste Transfers

Agency Proposal

The Agency proposed that permitted CAFOs be required to demonstrate that they have adequate land application area for livestock waste application. Prop. Section 502.510(b)(2). Various proposed permit application, recordkeeping, and reporting requirements pertain to these land application areas and require that the CAFO's records include recipients of livestock waste and the amount transferred. *See, e.g.* Prop. Section 502.201(a)(9), 502.320, 502.325(b), 502.505(h). In addition, proposed Section 502.610(k) requires a CAFO to provide a recipient of livestock waste with the most current nutrient analysis (Prop. Section 502.610(k)), and proposed Section 502.320(w)(7) requires a CAFO to keep records of off-site transfers (Prop. Section 502.320(w)(7)).

Environmental Groups' Suggestion

The Environmental Groups argued that the Agency's proposal does not sufficiently address transfers of livestock waste from a CAFO to others. The Groups, therefore, suggested adding various permit application, recordkeeping, and reporting requirements. *See* Env. Prop. at 29 (Section 502.201(a)(2)), 30 (Sections 502.201(a)(10), (12), 35 (Section 502.320(1)), 37 (Section 502.325(b)(3)), 39 (Section 502.505(h)), 41 (Section 502.510(b)(2)), 52-53 (Section 502.610(k)).

The Environmental Groups claimed that their suggestions augment the Agency's proposed rules by tracking waste generated by a CAFO when the CAFO transfers the waste for application on land that is not owned, rented, or otherwise controlled by the CAFO. PC 29 at 10. The Groups claimed that permit applicants are not required to identify persons to whom waste is transferred or land where waste is to be applied. PC 20 at 29. The Groups argued that operations must keep records of waste transfers but need not submit them to the Agency. *Id.* They also argued that off-site land application of waste not under the control of the owner or operator may not be subject to technical standards if not included in the facility's NMP. *Id.* They claimed that there would be even less oversight of waste generated at unpermitted CAFOs and transferred to others. *Id.* The Groups noted that they do not intend Subpart F standards to apply to off-site transfers. PC 29 at 11.

Agency Response

The Agency objected to the Environmental Groups' suggested revisions to Sections 502.201(a)(12), 502.320(1), 502.325(b)(3), 502.505(h), 502.510(b)(2), and 502.610(k). The Agency explained that its proposal requires a CAFO to have sufficient land for application of the waste it produces and to include this land in its NMP. PC 17 at 14, citing Prop. 502.510(b)(2); SR at 78. When a CAFO applies waste to land it does not own or rent but has access to under a consent agreement, this land application is subject to all the same requirements in Subpart E. PC 17 at 15. Because the CAFO controls all the land needed to land apply its waste, the CAFO can ensure that the waste is properly applied. *Id.* The Agency clarified that it uses the phrase "third-party" to refer to cases in which the CAFO does not perform the land application or where the land is not subject to a consent agreement. *Id.* The Agency believed that these third-party transfers should not be considered in determining whether the CAFO is properly managing its waste. *Id.*

The Agency argued that the Environmental Groups' suggestions require a CAFO to include land not under its control in an NMP. PC 17 at 16, citing Env. Prop. at 41 (Section 502.510(b)). The Agency claimed that this approach is less protective because CAFOs would be allowed to rely on parties over whom they have no control. *Id.* The Agency added that the Environmental Groups also suggested that waste transfer contracts inform the recipient of the waste of the responsibility to comply with land application requirements. PC 17 at 17, citing Env. Prop. at 53 (Section 502.610(k)(2)(E)). The Agency is uncertain whether these requirements would apply to a recipient and whether such contract terms are enforceable by the Agency. PC 17 at 17.

Finally, as to the Groups' suggestion requiring permit applicants to identify the integrator when a CAFO land applies under a contract, the Agency noted that the phrase is unclear. PC 17

at 17-18, citing Env. Prop. at 29 (Section 502.201(a)(2)). The Agency does not comment on the Groups' suggested revision to Section 502.201(a)(10).

Agricultural Coalition's Response

The Agricultural Coalition claimed that the Environmental Groups' suggestion seeks to impose requirements on agreements between producers and other entities that may land apply livestock waste. PC 19 at 7. The Coalition argued that the Groups' suggestion is not based on the federal rules and is not consistent with current law and practice. *Id.*

Board Discussion

The Agency recognized that livestock waste may be transferred off-site for application to land that is not owned by, rented by, or subject to a consent agreement with the CAFO and is not included in the CAFO's NMP. PC 17 at 15. The Agency acknowledged that its proposal does not prohibit a transfer of this nature but stated that CAFOs cannot rely on these transfers in their nutrient management planning. *Id.* Furthermore, a CAFO must keep records of this type of off-site transfer. Tr.1 at 171-76; *see* Prop. Section 502.320(w)(7).

The Environmental Groups believe that these transfers should be allowed only with additional rule restrictions. Specifically, the Groups are concerned that "off-site land application of livestock waste not under the control of the CAFO owner or operator may not be subject to regulatory technical standards if not included in the facility's nutrient management plan." PC 20 at 29. However, the Agency explains that proposed Section 502.510(b)(2) requires a CAFO to have sufficient land for application of its livestock waste. PC 17 at 14. These land application areas may be owned by the CAFO, rented by the CAFO, or accessed by the CAFO under a consent agreement with the owner. *Id.*; SR at 78. Land application to these sites is controlled by the CAFO and covered by the NMP. Tr.1 at 170-71. The Agency explained that when a CAFO applies waste to land it does not own or rent but has access to under a consent agreement, this land application is subject to all the same requirements in Subpart E because the CAFO is controlling application. PC 17 at 15.

The Environmental Groups suggested two changes relating to nutrient management plans. The Groups suggested amending the Agency's proposed Section 502.505(h) on the requirements for nutrient management plans as follows:

For land application areas not owned or rented or otherwise under the control of the owner or operator, copies of contracts ~~statement of consent~~ between the owner or operator of the livestock facilities and the owner of the land where livestock waste will be applied consistent with Section 502.610(k). Env. Prop. at 39 (Section 502.505(h)).

The Groups also suggested adding a requirement to nutrient management practices to include "land owned or controlled by a person other than the CAFO owner or operator" when demonstrating that the CAFO has adequate land application area for livestock waste. Env. Prop. at 41 (Section 502.510(b)(2)).

These suggestions, however, seem to defeat the Groups' intention to better regulate land application areas. As proposed by the Agency, Section 502.505(h) requires the CAFO to submit contracts with all recipients except for land owned or rented. Adding the phrase "or otherwise under the control of the owner or operator," would mean that the CAFO would not be required to submit copies of agreements with some recipients. Similarly, by including land controlled by another person in the NMP, the Agency would seem to be less able to regulate land application on those properties. The Board finds the Agency's proposal requiring CAFOs to have control over adequate acreage for land application by ownership, rental agreements, or consent agreements provides greater protection to the environment by making Subpart E applicable to such land application and making the CAFO responsible for compliance.

Similarly, the Environmental Groups suggested adding several requirements to Section 502.610(k) specifying contents of an agreement between a CAFO and another property owner to use that other property for land application. Env. Prop. at 52-53 (Section 602.610(k)(1)-(3)). Again, these suggestions seem to defeat the Groups' own intent. The Board finds that the Agency will be better able to regulate land application if the rules require that CAFOs secure adequate land as identified in their NMPs and have land application practices under their control. The Board also notes that the Agency's proposed Section 502.601(k) is nearly identical to federal CAFO rules. *See* 40 C.F.R. § 122.42(e)(3).

The Environmental Groups suggested three changes to the requirements for permit applications in proposed Section 502.201(a). Env. Prop. at 29-30 (Section 502.201(a)(2), (10), (12)). These changes would add the following requirements to permit applications:

- (2) If a contract operation, the name and address of the integrator;
- (10) . . . and the amount of waste applied to those acres annually; and
- (12) Copies of contracts for the transfer of waste to other persons consistent with Section 502.610(k) and the location on a topographic map and acreage of each site used by the other person for land application of the transferred waste. *Id.*

The Agency asked for clarification on suggested Section 502.201(a)(2) and made no comment on suggested Section 502.201(a)(10) but opposed suggested Section 502.201(a)(12). As to Section 502.201(a)(12), the Board sees the same drawbacks with requiring contracts as discussed above and declines to accept that revision. As to location and acreage, CAFOs are required to retain or provide that information in proposed Sections 502.320(w)(7), 502.325(b), 502.505, and 502.510. Below, the Board addresses Section 502.201(a)(2) by requesting first-notice comment from the Environmental Groups and Section 502.201(a)(10) by proposing a clarification of the Agency's proposed Section 502.201(a)(9).

The Environmental Groups suggested two changes relating to recordkeeping and reporting for permitted CAFOs. The Groups suggested adding the following recordkeeping requirement for permitted CAFOs: "Copies of contracts for the transfer of waste to other persons

consistent with Section 502.610(k).” Env. Prop. at 35 (Section 502.320(l)). As explained above, the Board disagrees with the Environmental Groups’ suggested revisions relating to off-site waste transfers. Further, to the extent this suggestion intended to require recordkeeping generally for agreements to transfer waste, this suggestion duplicates proposed Section 502.505(h). The Groups also suggested adding that the following information be required in a permitted CAFO’s annual report to the Agency: “the name of the transferee(s) and the date(s) of transfer.” Env. Prop. at 37 (Section 502.325(b)(3)). The Board finds that the Agency’s proposed Section 502.320(w)(7) more comprehensively gathers information on each off-site land application, and that information must be retained by the CAFO for five years and made available upon Agency request.

The Board, therefore, declines to accept the Environmental Groups’ suggested changes to Sections 502.201(a)(12), 502.320(l), 502.325(b)(3), 502.505(h), 502.510(b)(2), and 502.610(k). As to the remaining suggestions from the Environmental Groups, the Board proposes the following clarifications:

Section 502.201(a)(9): The total number of acres of land application area and the estimated amount of waste to be applied to those acres per year.

Section 502.510(b)(2): Adequate land application area for livestock waste application, which may include (i) land owned by the CAFO owner or operator, (ii) land rented by the CAFO, (iii) land covered by a consent agreement between the CAFO owner or operator and the property owner, or (iv) any combination of land described in subsections (i), (ii), and (iii).

Additionally, the Board asks that the Environmental Groups submit a first-notice comment explaining their suggestion to add a requirement to provide the following information in a CAFO’s permit application: “If a contract operation, the name and address of the integrator.” See Env. Prop. at 29 (Section 502.201(a)(2)). The Board recognizes that this same language was contained in the Pork Producers settlement agreement as an item to be addressed in USEPA’s proposed reporting rule. See 76 Fed. Reg. 65431, 65435 (Oct. 21, 2011). The Groups stated that “[l]arge corporate producers or processors that own livestock often enter into contracts with smaller producers or facility owners to raise the integrator’s animals to market weight.” PC 29 at 8. The Groups argued that information on the “integrator” is needed to ensure proper waste management practices. *Id.* The Board asks the Groups for additional explanation as to the definitions of “contract operation” and “integrator,” as well as whether this information is already captured in the Agency’s proposal. If the Groups would like the Board to consider adding such a requirement, the Board asks the Groups to suggest revised language.

Section 501.252: Definition of “Frozen Ground”

Agency’s Proposal

The Agency proposed to add to the Board’s rules this section defining the term “frozen ground” as “[s]oil that is frozen anywhere between the first 1/2 inch to 8 inches of soil as measured from the ground surface.”

Agricultural Coalition's Position

The Agricultural Coalition argued that the Agency based its proposed definition on a Wisconsin regulation, although Iowa is more similar to Illinois as to climate and agricultural conditions. Accordingly, the Coalition suggested amending the Agency's proposal to establish that "frozen ground" is "soil that is impermeable due to frozen soil moisture but does not include soil that is only frozen to a depth of 2 inches or less."

Agency's Position

The Agency noted Dr. Funk's testimony that injection and incorporation of livestock waste may be performed when soil is frozen no deeper than two inches below the surface. The Agency explained that its proposed definition intended to encourage injection and incorporation of livestock waste rather than surface application of livestock waste to frozen ground. The Agency further argued that amending the proposed definition would reduce this incentive when ground conditions allow the use of injection and incorporation and would allow for more instances of surface application under risky conditions.

Environmental Groups' Position

The Environmental Group noted that USEPA recommended that this definition should include soils frozen at the surface. They claimed that it is easier to ascertain whether soil is frozen at the surface than to determine whether soil is frozen at any depth. The Groups argued that the definition should at least include ground frozen to a depth of one-half inch.

The Environmental Groups suggested defining "frozen ground" as "[s]oil that is frozen anywhere in the first 8 inches of soil as measured from the ground surface." The Groups argued that their suggestion is consistent with USEPA guidance and recognizes the limited infiltration of soils with concrete frost.

Dr. James testified that the Agricultural Coalition's proposal would allow more application of livestock waste onto ground with a shallowly frozen surface. She suggested that the Board consider USEPA's recommendation to define "frozen ground" as beginning at the soil surface. She acknowledged that she had not identified research addressing the potential for livestock waste runoff at different frost depths, but she noted a study showing that as little as one inch of frost prevents infiltration. Dr. James argued that the Agricultural Coalition had offered an amended definition without supporting scientific evidence.

Dr. Funk's Testimony

Dr. Funk testified that waste injection systems would not be impeded by frost to a depth of one-half inch and should penetrate two inches of frozen soil with no difficulty. He also testified regarding incorporation of livestock waste by indicating that a chisel plow can penetrate two inches of frost to incorporate livestock waste, although a disc may have more difficulty doing so. He added that it may be difficult to determine an average frost depth across an entire

field, although a depth of two inches likely results from cold temperatures of such duration as to make that depth more consistent across fields.

Board Discussion

The definition of “frozen ground” is important to the Agency’s proposed Section 502.630(a)(1), which prohibits the surface land application of livestock waste on frozen ground unless six conditions are met. One of the six conditions in Section 502.630(a)(1)(B) is that “[l]iquid livestock waste cannot be injected or incorporated within 24 hours due to soil conditions.” The Agency seeks to prohibit a CAFO from conducting surface land application on frozen ground when, among other conditions, the livestock waste can be injected or incorporated. *See Prop. 501.373* (defining “surface land application” as “[a]pplication of livestock waste to the ground surface that is not incorporated or injected”).

The Agency’s proposed definition of “frozen ground” prohibits surface application of livestock waste on fields that are frozen anywhere between the first one-half inch and 8 inches unless the six conditions of proposed Section 502.630 are met. The Agency elaborates that its proposed definition allows an owner or operator to land apply livestock waste on frozen ground if the waste is injected or incorporated.

The Agricultural Coalition’s definition specifically excludes from “frozen ground” soil that is frozen to a depth of two inches or less. Such a definition would allow application of livestock waste on fields frozen to a depth of two inches without requiring injection or incorporation of that waste. The Board agrees with the Agency that this definition would increase the number of cases in which it would be permissible to conduct surface application of livestock waste during the winter months, increasing the potential for waste runoff and water pollution.

The record contains repeated references to the risks posed by surface application of livestock waste during the winter months. Among those references, the Agency’s TSD stated that “[t]he inherent risks associated with the application of livestock waste are compounded when conducted on frozen ground.” TSD at 62. The TSD elaborated that, because frozen soil has limited or no infiltration, rainfall would result in “immediate runoff.” *Id.* at 39. Dr. Funk’s testimony referred to USEPA studies and stated that “there’s not much infiltration on frozen ground.” Tr.3 at 59. In addition, Mr. Leder testified that waste surface-applied to frozen ground “can move off the field more easily than if it were incorporated into the soil.” Leder Test. at 3. Also, Dr. James testified that it is “well-established that from a water quality standpoint, winter application of livestock waste is one of the most risky practices.” James Test. at 11. Finally, Mr. Yurdin stated that the Agency “has observed several instances of livestock waste pollution that occurred following winter application. . . . The reasons for these water pollution incidents were frequently related to runoff from surface application to frozen, snow or ice covered ground caused by changes in air and ground temperature.” Agency Att. 4 at 6.

In its own comments, the Agricultural Coalition “recognizes that land application during winter months is not ideal and should be, if possible, avoided, (or done by injection, not spreading).” PC 19 at 15. The Coalition also commented that “land application of manure to

frozen ground is not a common occurrence in Illinois, as land application is increasingly done by underground injection and most producers prefer not to land apply in winter months.” PC 28 at 5.

Although the practice of surface application of livestock waste during winter may be rare, the risks described in the record require that the Board determine a threshold at which ground is defined as “frozen.” As noted above, the Agricultural Coalition suggested a definition that “does not include soil that is only frozen to a depth of two inches or less.” Dr. Funk testified that, when soil is frozen to a depth of two inches, it approaches “the point where it would be difficult to penetrate with our normal injection equipment.” Tr.3 at 20. He clarified that injection equipment would be expected to penetrate soil frozen to any depth less than two inches “with no trouble.” *Id.* at 61. He added that a chisel plow could also penetrate two inches of frost to incorporate livestock waste, although a disc may have some difficulty doing so. *Id.* Mr. Leder testified that facilities know the power of their equipment, much of which “can penetrate down through two or three inches of frost and disturb it and inject the manure.” Tr.4 at 254.

The Board is troubled that the Agricultural Coalition’s suggested definition would allow surface application of livestock waste to soil that is frozen to a depth of two inches or less when the record clearly shows that injection and incorporation of the waste can be performed with that level of frost. In addition, the record reflects that as little as one inch of frost, which “is observed most frequently in cultivated fields or areas with sparse vegetative cover,” can prevent infiltration of rain or snowmelt. Env. Resp., Att. 1 at 147-48. Considering the risks described in the record, the Board declines to adopt the Agricultural Coalition’s definition. The Board is reluctant to increase the number of cases in which surface land application would be allowed because, by definition, such livestock waste would not be injected or incorporated.

However, declining to adopt the Agricultural Coalition’s revision does not conclude the Board’s consideration of this definition. The Environmental Groups suggested revising the Agency’s definition to provide that “frozen ground” means “soil that is frozen anywhere in the first eight inches of soil as measured from the ground surface.” The Groups cite a USEPA recommendation that this definition should include soils frozen at the surface.

In December 2010, the Agency submitted to USEPA draft rules defining “frozen ground” just as in the proposal before the Board. Agency Att. 6a at 6. USEPA responded by noting guidance that “frozen ground is any portion of the 0-6 inch soil layer (root zone) that is frozen. The draft definition should be revised consistent with the definition in [US]EPA’s guidance. . . .” Agency Att. 6b at 1, citing Att. MM at O-12 (Managing Manure Nutrients at Concentrated Animal Feeding Operations (Aug. 2004)). The Board notes that the Agency’s draft rulemaking proposal submitted to USEPA in May 2011 included the same definition as the previous draft. *See* Agency Att. 7a at 6. USEPA comments on this subsequent draft proposal did not address the definition. *See* Agency Att. 7b at 1-2.

The Board concludes that USEPA has not insisted upon a definition that reflects its guidance manual, the disclaimer of which states that it “is not a rule, is not legally enforceable, and does not confer legal rights or impose legal obligations upon any member of the public, [US]EPA, States, or any other agency.” Att. MM. Although Dr. James’ requested that the Board

consider following this guidance, the Board cannot conclude that the record requires a definition that reflects it.

Dr. James testified that she had “not seen research articles that evaluate the potential for livestock waste runoff at different depths of frozen soil, or cited freeze depth as a factor for nutrient transport potential.” James Test. at 12. Similarly, Dr. Funk stated that there had not been much study of the extent of infiltration at various frost depths. Tr. 3 at 59-60. Nonetheless, the Agency’s proposed definition finds support in the record. Mr. Heacock testified that the one-half to eight-inch depth to measure frozen ground “matches the crop root zone and application depth of most equipment that would be used in winter application.” Agency Att. 2 at 13-14. In its Technical Support Document, the Agency stated that it proposed a frost limit of one-half inch to eight inches of soil as measured from the ground surface “such that the application zone and no other soil layer is considered.” TSD at 62. As noted above, this definition plays a significant role in regulating land application of livestock waste, and the record does not persuasively challenge these boundaries of the application zone. Furthermore, in his testimony, Dr. Funk stated his “expectation that ground frozen only to a half inch would be subject to fairly - could be subject to fairly rapid thawing. And, at that point, if the ground beneath were dry, then it could – it could experience a fair amount of infiltration.” Tr.3 at 60. While the Board does not construe his testimony to mean that surface land application on ground frozen to a depth of one-half inch or less avoids all risk of runoff to surface waters, it does suggest a threshold frost depth below which infiltration becomes less likely and the risk of runoff from surface application increases.

Finally, the Agricultural Coalition argued that the Agency should base its proposal on regulations adopted in Iowa because that state has climate and agricultural conditions similar to Illinois’. However, the Agency persuasively argued that Iowa regulations apply a definition of “frozen ground” in a restrictive manner that is consistent with the Agency’s proposal.

The Board finds that the Agency’s proposed definition provides an appropriate frost depth below which surface application of livestock waste will be prohibited. This threshold provides an incentive for CAFOs to conduct injection or incorporation of that waste. Accordingly, the Board in its order below submits the Agency’s proposed definition of “frozen ground” to first-notice publication.

Section 501.254: Definition of “Groundwater”

Agency’s Proposal

The Agency proposed to define “groundwater” as “[u]nderground water which occurs within the saturated zone and geologic materials where the fluid pressure in the pore space is equal or greater than atmospheric pressure.”

Mr. Keefer’s Suggestion

Mr. Keefer suggested amending the Agency’s proposed definition of “groundwater” by adding the phrase “as demonstrated by the water level in a shallow well.”

Agricultural Coalition’s Testimony

Mr. Trainor’s testified that a well is necessary to determine the static water level of a saturated condition. However, he testified that it would be costly to install the series of wells required to determine the water table over a land application area. He also testified that the wells would create a series large macropores and establish a permanent conduit to groundwater. He further argued that water levels could be based on USDA soil surveys. Because he considered the Agency’s proposal conservative, he characterized Mr. Keefer’s suggestion as onerous.

Board Discussion

The Board notes that the Act defines “groundwater” as “underground water which occurs within the saturated zone and geologic materials where the fluid pressure in the pore space is equal to or greater than atmospheric pressure.” 415 ILCS 5/3.210 (2012). The General Assembly adopted this definition in 1987. Public Act 85-863, eff. Sept. 24, 1987 (Groundwater Protection Act). A 2002 Public Act re-numbered the definition without substantive amendment. Public Act 92-574, eff. June 26, 2002 (implementing recommendations of Illinois Environmental Regulatory Review Commission). It is clear to the Board that the Agency’s proposed definition seeks to be consistent with the statutory definition adopted more than 25 years ago. This consistency is important in implementing and enforcing CAFO requirements such as proposed Section 501.404(b)(3), which addresses runoff and leachate from temporary manure stacks to groundwater.

Mr. Keefer’s testimony sought to amend the Agency’s proposed definition by requiring that the presence of groundwater be demonstrated by the installation of a shallow well and determining the water level in it. Although Mr. Trainor’s testimony acknowledged that, “to determine the actual static water level of a saturated condition, a well is required,” he challenged this proposal on several grounds. First, he noted the cost of installing wells over the extent of a land application area. Mr. Trainor also noted that each well installed to comply with this requirement would establish a permanent conduit from the surface to groundwater. In addition, he suggested that USDA soil surveys provide this information. Mr. Keefer’s testified that USDA soil surveys are a source “to identify seasonal high water table ranges with a fairly good precision of accuracy.”

The Board shares the Agency’s interest in proposing a definition of “groundwater” that is consistent with the Act. In light of the factors raised in Mr. Trainor’s testimony, the Board is not persuaded that Mr. Keefer’s amendment outweighs these interests. The Board declines to accept Mr. Keefer’s amendment, which would result in creation of additional pathways for migration of pollution through conduits to groundwater. Accordingly, the Board submits the Agency’s proposed definition to first-notice publication. However, the Board makes one typographical change. Although the statutory definition refers to fluid pressure “equal to or greater than atmospheric pressure,” the Agency’s proposal omitted the word “to.” The Board inserts that word into its proposal in the order below.

Section 501.295: Definition of “Livestock Waste”

Agency's Proposal

The Agency proposed to define “livestock waste” as

manure, litter, process wastewater, overflow from watering systems, wash waters, sprinkling waters from livestock cooling, precipitation polluted by falling on or flowing onto an animal feeding operation and other materials polluted by livestock, including but not limited to sludge and contaminated soils from storage structures. Livestock waste does not include agricultural stormwater discharge.

Agricultural Coalition Suggestion

The Agricultural Coalition argued that “including but not limited to sludge and contaminated soils from storage structures” should be struck from the Agency’s proposed definition. The Coalition claimed that language relating to waste does not belong in a rule derived from the CWA and addressing water pollution resulting from the waste of confined animals. Ms. Manning offered testimony that these terms are not defined in the LMFA or in federal authorities. However, she agreed that sludge or soil that has been removed from an earthen lagoon at a CAFO meets the definition of “livestock waste” as other materials polluted by livestock. Tr.3 at 143.

Agency Response

The Agency argued that “sludge and contaminated soils” does not expand this definition but merely provides a non-exhaustive list of examples of “other materials polluted by livestock” in the existing definition. However, the Agency noted Ms. Manning’s agreement that sludge and soils removed from an earthen lagoon at a CAFO and land applied would fall within the definition of “livestock waste.” The Agency stated, based on the apparent agreement with this example of materials polluted by livestock, the clarification did not appear to be necessary. The Agency stated that it does not object to removing this language.

Environmental Groups' Response

The Environmental Groups argued that, under either the definition of “pollutant” in the CWA or the definition of “contaminant” in the Act, discharge of any soil is prohibited without an NPDES permit. The Groups claimed that striking the Agency’s proposed example of “other materials polluted by livestock” could lead operations to conclude that discharging such sludge and soils would not be prohibited. The Groups suggested that the Board might clarify the definition by referring to “other materials polluted by livestock, including but not limited to soils and sludge removed from livestock waste storage structures.” Env. Resp. at 3. The Groups stressed that the Agricultural Coalition agreed that sludge or soil removed from an earthen lagoon and applied to land falls within the definition of “livestock waste.”

Board Discussion

Participants' discussion of this language focused on the Agency's proposal that "other materials polluted by livestock waste" includes, but is not limited to "sludge and contaminated soils from storage structures." The Agency argued that its proposal lists "sludge and contaminated soils from storage structures" only to provide a non-exhaustive example of these materials and not to expand the scope of this definition in the Board's rules. The Agricultural Coalition agreed that sludge or soil removed from an earthen lagoon at a CAFO would fall under this definition as "other materials polluted by livestock."

As a preliminary matter, the Board notes that the definition of "livestock waste" in both the LMFA and its implementing regulations includes "other materials polluted by livestock." 510 ILCS 77/10.35 (2012); 8 Ill Adm. Code 900.103. The Board also notes the Agency's proposed Section 502.610(j), which would require a CAFO owner or operator periodically to remove "livestock waste solids from liquid manure storage areas and the waste containment area to maintain proper operation of the storage structures." This proposed subsection specifically provides that "[s]oils that are contaminated with livestock waste removed from earthen manure storage structures shall be considered livestock waste." Prop. 502.610(j) (Additional Measures for CAFO Production Areas); *see also* 8 Ill. Adm. Code 900.608(a) (Lagoon Closure), 900.811 (Sludge Removal).

The Agency and the Agricultural Coalition agree that this sludge and soil would constitute "other materials polluted by livestock." Accordingly, the Agency does not oppose removing this language from the definition.

While the Board appreciates the participants' clarification of the record on this matter, the Board does not believe that their agreement on the meaning of Section 501.295 supports striking this language from the definition because the language needs to be clear as written. The Board finds that a non-exhaustive example clarifies this definition. The Board also finds that the language proposed by the Environmental Groups provides additional clarity to this example. Accordingly, the Board declines to strike an example of "other materials polluted by livestock waste" from the definition and submits to first-notice publication the example of "soils and sludge removed from livestock waste storage structures" as suggested by the Environmental Groups.

Section 501.402(h): Production Area Setbacks

Agency's Proposal

Existing Section 501.402 addresses the location of new livestock management facilities and livestock waste-handling facilities. The Agency's proposal included a single amendment updating a citation to the Agricultural Areas Conservation Act.

Environmental Groups' Suggestion

The Environmental Groups sought to add, as Section 501.402(h), an additional location requirement providing in its entirety that "[n]o livestock management facility or livestock waste handling facility that commences construction of such facility after the effective date of this

Section shall locate within 750 feet of surface waters or within a quarter mile of designated surface drinking water supplies.” Env. Prop. Section 502.402(h). Although the Groups acknowledged that the LMFA prohibits waste storage structures in a floodway, they argued that neither current rules nor the Agency’s proposal establish a setback of a CAFO site from surface waters. They claimed that such a setback reduces the risk that a discharge from a production area reaches surface water.

Dr. James supported the Groups’ suggested setback with observation of production areas situated near surface water or operated in a manner that risks polluted runoff. She also cited Agency inspections documenting discharges resulting from overflow and runoff. In addition, she cited an article claiming that setbacks avoid immediate discharges in the event of minor problems. She also noted studies showing that filter strips or buffers reduce pollutants in livestock waste.

Mr. Leder stated that there are a number of ways in which the various types of waste storage facilities may cause surface water contamination. He argued based on his own experience that locating production areas farther from surface waters reduces the chance of a discharge of livestock waste reaching those waters. He stated that these setbacks provide room to stop waste that has left the production area. He also stated that setbacks may also include vegetated buffers that allow waste to infiltrate the ground before reaching water.

Agency Response

The Agency stated that the Agency and Board do not play a role in siting waste management facilities and setbacks. The Agency explained the respective roles played by the Illinois Department of Agriculture and local county boards in siting new facilities. The Agency stated that these siting issues are appropriately addressed in the LMFA and its regulations. The Agency acknowledged that those authorities are silent on setbacks of the facilities from surface waters. In addition, the Agency noted that the Board’s rules now define a new livestock management facility as a facility built or modified after 1978. The Agency claimed that, if the Board proposed this setback from surface waters, it would need to distinguish facilities built after 1978 from those built after adoption of this requirement. The Agency noted Dr. James’ testimony that the Environmental Groups did not intend for this setback to apply to facilities existing at the time the setback is promulgated.

Agricultural Coalition’s Response

The Agricultural Coalition argued that the Environmental Groups had not provided technical support for its suggested setbacks. The Coalition also argued that the General Assembly typically establishes such setbacks, which the LMFA includes.

Environmental Groups’ Response

The Environmental Groups disputed that their suggested setback from surface waters falls outside the scope of this rulemaking. The Groups argued that Section 501.402 restricts siting and has not been amended since 1991. The Groups also noted the Agency’s comment that

LMFA siting criteria do not include a setback from surface waters. The Groups added that the LMFA requires the owner or operator to comply with livestock waste rules adopted pursuant to the Act to address agriculture related pollution. The Groups argued that the siting setbacks in the LMFA do not override more protective setbacks under the Act. The Groups also argued that the LMFA provides that it does not limit or preempt statutory or regulatory authority under the Act. The Groups also argued that they had corrected an oversight by applying their setback requirements only to facilities that commence construction after the effective date of amended rules. In addition, the Groups clarified that their reference to “designated surface drinking water supplies” means “‘public and food processing water supply’ as defined in 35 Ill. Adm. Code 301.360.”

Board Discussion

As a preliminary matter, the Board notes that it has already exercised its rulemaking authority under the Act to regulate the location of livestock management and waste handling facilities. Before July 1, 1991, Section 501.402(c) provided in pertinent part that “[n]ew livestock management facilities and new livestock waste-handling facilities shall not be located in close proximity to populated areas so as to cause air pollution.” In 1991, the Board designated this provision as subsection (c)(1) and amended it to require that, “[u]pon July 15, 1991, new or expanded livestock management facilities and new or expanded livestock waste-handling facilities shall not be located within 1/2 mile of a populated area or within 1/4 mile of a non-farm residence.” Amendments to 35 Ill. Adm. Code 501 Agriculture-Related Pollution (Management of Livestock Wastes), R90-7, slip op. at 27 (June 29, 1991). In its opinion adopting these regulations, the Board stated that this amendment “addresses one of the principal goals of today’s action. That goal is to provide greater specificity to the existing prohibition against siting of new livestock management facilities. . . . Today’s amendments achieve this goal by providing a quantified limitation to the siting of new and expanded facilities. . . .” *Id.*, slip op. at 8. Section 501.402(c)(1) has remained in effect without amendment since its adoption in 1991.

In 1996 the General Assembly enacted the LMFA. P.A. 89-546, eff. May 21, 1996; *see* 510 ILCS 77/1 *et seq.* (2012). As then enacted, Section 35(a) of the LMFA addressed setbacks and established that “[l]ivestock management facilities and livestock waste-handling facilities in existence prior to July 15, 1991 shall comply with setbacks in existence prior to July 15, 1991, as set forth in the Illinois Environmental Protection Act and rules promulgated under that Act.” P.A. 89-456, eff. May 21, 1996. Section 35(b) established that “[l]ivestock management facilities and livestock waste handling facilities in existence on the effective date of this Act [May 21, 1996] but after July 15, 1991 shall comply with the setbacks in existence prior to the effective date of this Act, as set forth in the Illinois Environmental Protection Act and rules promulgated under that Act. *Id.* In addition, the LMFA as originally enacted provided in Section 100 that “[n]othing in this Act shall be construed as a limitation or preemption of any statutory or regulatory authority under the Environmental Protection Act.” *Id.* The Board notes that the General Assembly has not amended any of these three provisions. *See* 510 ILCS 77/35(a), 35(b), 100 (2012); *see also* 8 Ill. Adm. Code 900.202(a), (b) (“grandfather” provisions).

In 1999, the General Assembly amended the LMFA. P.A. 91-110, eff. July 1, 1999. Among its provisions, Public Act 91-110 added to the LMFA a Section 11 requiring an owner or operator to file with the Department of Agriculture a notice of intent to construct a livestock management or livestock waste handling facility in order to establish a base date for determining compliance with setback distances or maximum feasible location requirements. *Id.*; *see* 510 ILCS 77/11(a) (2012); 8 Ill. Adm. Code 900.302 (Filing). Public Act 91-110 also added a Section 12 obligating the Department of Agriculture to provide a copy of the notice of intent to construct specified facilities to the county board of the county in which that facility is to be located. P.A. 91-110, eff. July 1, 1999; *see* 510 ILCS 77/12(a) (2012); 8 Ill. Adm. Code 900.402(a) (Notice). Section 12 also allowed the county board or county residents to request that the Department of Agriculture conduct an informational hearing on the proposed construction. P.A. 91-110, eff. July 1, 1999; *see* 510 ILCS 77/12(a) (2012); 8 Ill. Adm. Code 900.403 (Request for Informational Meeting). At the meeting or within 30 days after it, the county board is required to submit to the Department of Agriculture an advisory, non-binding recommendation addressing matters including whether the proposed construction achieves siting criteria such as compliance with setback requirements. P.A. 91-110, eff. July 1, 1999; *see* 510 ILCS 77/12(b) (2012); 8 Ill. Adm. Code 900.406 (County Board Recommendation). P.A. 91-110 also added a new Section 12.1, which obligates the Department of Agriculture to determine after the hearing or the deadline to request a hearing whether or not the requirements of the LMFA have been met by the proposed construction and to provide notice of that determination. P.A. 91-110, eff. July 1, 1999; *see* 510 ILCS 77/12.1 (2012); 8 Ill. Adm. Code 900.407 (Final Recommendation). Public Act 91-110 did not amend Section 100 of the LMFA, which provides that “[n]othing in this Act shall be construed as a limitation or preemption of any statutory or regulatory authority under the Environmental Protection Act.” 510 ILCS 77/100 (2012).

Based on this review of the legislative and regulatory background of setbacks and their application, the Board recognizes that the LMFA and its implementing regulations added siting roles for the Department of Agriculture and the county boards. However, unlike the Agency, the Board believes that these roles have not displaced the Board or preempted the Board’s authority to propose and adopt siting requirements in its agriculture related pollution regulations, just as it has already done in enacting Section 501.402. In this proceeding, the Environmental Groups suggested adding to Section 501.402 a setback from surface waters and designated surface drinking water supplies for livestock management and livestock waste handling facilities.

The Environmental Groups acknowledged that Section 13(b)(1) of the LMFA provides that “[n]o new non-lagoon livestock management facility or livestock waste handling facility may be constructed within the floodway of a 100-year floodplain.” 510 ILCS 77/12(b)(1) (2012). They also acknowledged that Section 501.402(b) provides that “[n]ew livestock management facilities and new livestock waste-handling facilities located within a 10-year flood height as recorded by the United State Geological Survey or as officially estimated by the Illinois State Water Survey shall be protected against such flood.” 35 Ill. Adm. Code 501.402(b). Although Mr. Leder testified to his observation that facilities in another state were underwater after a significant storm because they were situated in a floodplain, it is not clear that the Illinois requirements cited above would have failed to prevent such an occurrence. While Dr. James argued that these restrictions are not sufficient to eliminate discharges to surface waters, she acknowledged that they offer protection.

The Board notes Mr. Leder's testimony describing ways in which waste from storage area may reach surface water. The Board recognizes that, among other practices, poor maintenance of storage structures and inadequate stormwater management may result in a discharge. The Board also notes Mr. Leder's testimony that setting back facilities from surface waters reduces the risk that a release of livestock waste reaches those waters. In addition, Dr. James testified that production areas placed in close proximity to surface waters pose an undue risk. However, neither Mr. Leder nor Dr. James supported setbacks of the specific distance suggested by the Environmental Groups, and the record also does not address the economic impact of adopting 750-foot and one-quarter mile setbacks.

Dr. James' testimony supported production area setbacks by citing risks that the Agency sought to address with other requirements of its proposal. As one example, proposed Section 502.610 would establish measures applicable to production areas and require CAFOs to implement practices including proper operation and maintenance of livestock waste storage systems, preventing livestock in the production area from coming into contact with waters of the United States, conducting routine visual inspections of the production area, and correction of any deficiencies identified through these inspections. Under proposed Section 502.510(b), unpermitted Large CAFOs seeking to claim the agricultural stormwater exemption must follow practices including proper operation and maintenance of storage facilities, appropriate diversion of clean water from the production area, and preventing direct contact of animals with waters of the United States. Also, proposed Section 501.404(b)(3) would require that temporary manure stacks must have a cover and pad "when needed to prevent leachate and runoff from entering surface waters and groundwater." The Board considers that adoption, implementation, and enforcement of these requirements would reduce the risk of discharges from production areas into surface waters.

In addition, Dr. James supported a production area setback by citing Illinois studies that evaluated the pollutant removal efficiency of vegetative filters or buffers receiving livestock waste in manner simulating a production area discharge. While she concluded generally that these filter strips reduce pollutants, the Board notes that the Environmental Groups' setback suggestion contains no requirement that the 750-foot or one-quarter mile setback must include vegetative filter strips or buffers of any type or length.

Accordingly, for the reasons above, the Board concludes that it has authority to consider and adopt siting restrictions under its agriculture related pollution regulations. However, the Board concludes that the record does not support adoption of the Environmental Groups' suggested Section 501.402(h) and declines to submit that proposal to first-notice publication.

Section 501.402(i): Setbacks from Wells

Agency's Proposal

Existing Section 501.402 addresses the location of new livestock management facilities and livestock waste-handling facilities. The Agency's proposal included a single amendment

updating a citation to the Agricultural Areas Conservation Act. Prop. 501 at 13-14, citing 505 ILCS 5/1 (2012).

Environmental Groups' Suggestion

The Environmental Groups sought to add, as a new subsection (i), an additional location requirement providing in its entirety that “[n]o livestock management facility or livestock waste handling facility that commences construction of such facility after the effective date of this Section shall locate within 1000 feet of community water supply wells or within 400 feet of other potable water supply wells.” Env. Prop. 501.402(i). The Groups noted that Section 14.2 of the Act establishes setbacks from wells but questioned whether those setback distances were sufficiently protective. Suggesting that few facilities are required to perform groundwater monitoring, the Groups emphasized the importance of these setbacks.

Mr. Leder testified that storage structures may release waste through cracks and contaminate groundwater. He added that polluted runoff may also contaminate wells located near production areas or land application areas.

Agency Response

The Agency stressed that Section 14.2 of the Act establishes setbacks from specified wells. Section 14.2(a) provides in pertinent part that, with specific exceptions, “no new potential route or potential primary source or potential secondary source may be placed within 200 feet of any existing or permitted community water supply well or other potable water supply well. 415 ILCS 5/14.2(a) (2012). Section 14.2(d) provides in pertinent part that, with specific exceptions, “no new potential route or potential primary source or potential secondary source may be placed within 400 feet of any existing or permitted community water supply well deriving water from an unconfined shallow fractured or highly permeable bedrock formation or from an unconsolidated and unconfined sand and gravel formation”. 415 ILCS 5/14.2(d) (2012). The Board notes that the Section 3.355 of the Act defines “potential secondary source” as “any unit at a facility or site not currently subject to a removal or remedial action, other than a potential primary source,” which is used for various purposes including “handling livestock waste.” 415 ILCS 5/3.355 (2012). Section 3.355 also defines “new potential secondary source” with regard to construction, expansion and reconstruction. *Id.*

The Agency argued that the legislature is the proper forum in which to propose an increase in these statutory setback distances. In addition, the Agency argued that setbacks belong in the LMFA or its implementing regulations, which require the Department of Agriculture to determine compliance with LMFA setback provisions. The Agency also noted that the Board’s rules now define a new livestock management facility as a facility built or modified after 1978. The Agency claimed that, if the Board proposed this setback, it would need to distinguish facilities built after 1978 from those built after adoption of this requirement. The Agency noted Dr. James’ testimony that the Environmental Groups did not intend for this setback to apply to facilities existing at the time the setback is promulgated.

Agricultural Coalition's Response

The Agricultural Coalition argued that the Environmental Groups had not provided technical support for its setbacks. The Coalition also argued that the General Assembly typically establishes such setbacks.

Environmental Groups' Response

The Environmental Groups disputed that their proposed setback from wells falls outside the scope of this rulemaking. The Groups argued that Section 501.402 restricts siting and has not been amended since 1991. The Groups added that the LMFA requires the owner or operator to comply with livestock waste rules adopted pursuant to the Act to address agriculture related pollution. The Groups argued that the siting setback in the LMFA contains no indication that they override more protective setbacks under the Act. The Groups also argued that the LMFA provides that it does not limit or preempt statutory or regulatory authority under the Act.

Board Discussion

Since enactment of the Groundwater Protection Act in 1987 (P.A. 85-863, eff. Sept. 24, 1987), the Act has established setbacks from wells applicable to potential sources including livestock waste handling facilities. *See* 415 ILCS 5/14.2 (2012). Section 14.3 of the Act established procedures to extend the setback zone applicable to community water supply wells. 415 ILCS 14.3 (2012). The Agency testified that it intended its proposal to be consistent with these statutory requirements. *See* Tr. 1 at 129.

Mr. Leder testified that wells in the vicinity of production areas may be at risk of contamination from polluted runoff. While the Environmental Groups cite studies attributing groundwater contamination to CAFOs, they acknowledged that construction standards have changed since the studies supporting that attribution. The Groups noted an absence of more recent studies assessing the effectiveness of the statutory setbacks.

Mr. Yurdin testified that consultation with Agency staff revealed one instance involving “a discharge from a livestock facility into a surface water that we believe then contaminated shallow groundwater and lead to the contamination of a residential well” more than 200 feet from the facility. Tr. 1 at 126. Although the Board deplores instances of this nature, the record does not clearly show that increasing the statutory setback as suggested by the Environmental Groups would establish the proper distance to prevent such cases.

Also, as noted above in discussing setbacks from surface waters, the Agency’s proposal sought to address the risk of runoff from production areas with various requirements pertaining to maintenance, operation, and inspection. The Board considers that adoption, implementation, and enforcement of these requirements would reduce the risk of discharges from production areas into wells.

Accordingly, for the reasons above, the Board concludes that that the record does not support adoption of the Environmental Groups’ suggested Section 501.402(i) and declines to submit that proposal to first-notice publication.

Section 501.404(b): Temporary Manure Stacks

Agency's Proposal

Existing Section 501.404(b) addresses temporary manure stacks, and the Agency proposed to amend subsections (b)(1) and (b)(2) and add a subsection (b)(3) providing in its entirety that “[a] temporary manure stack shall be constructed or established and maintained in a manner to prevent runoff and leachate from entering surface waters or groundwater. A cover and pad or other control must be provided when needed to prevent runoff and leachate from entering surface waters and groundwater.” The Agency argued that use of a cover reduces runoff of livestock waste to surface waters and that use of a pad prevents leachate from moving into groundwater.

Environmental Groups' Suggestion

The Environmental Groups sought to amend the Agency's proposed subsection (b)(3) to provide that

[a] temporary manure stack shall be constructed or established and maintained in a manner to prevent runoff and leachate from entering surface waters or groundwaters. Either a cover and enclosed pad or other control must be provided to prevent runoff and leachate from entering surface waters and groundwater or the temporary manure stack must be located in accordance with the following setbacks: 750 feet from surface waters; 1000 feet from community water supply wells; 400 feet from other potable water supply wells; and 400 feet from karst features.

The Groups clarified that the term “karst features” includes caves, exposed karstified carbonate bedrock, sinkholes, and springs included in the LMFA's definition of “karst area” and may also include bedrock fractures, exposed bedrock, and seeps. The Groups also sought to add a new subsection (b)(4) providing in its entirety that “[a] temporary manure stack without a cover and enclosed pad or other control is prohibited where the minimum soil depth to the seasonal high water table is less than or equal to 2 feet or where there is less than 20 inches of unconsolidated material over bedrock.”

The Environmental Groups argued that the Agency's proposed 75-foot setback of water wells from manure stacks may not be sufficient to protect surface water and groundwater. The Groups also noted that the Agency had proposed to reduce land application rates when depth to bedrock is less than 20 inches and depth to water table is less than two feet, and they suggested that it was reasonable to regulate manure stacks under similar circumstances. The Groups also argued that the Agency's proposal to require a cover and pad or other control “when needed” gives facilities too much discretion to determine whether that need exists.

Dr. James testified that, despite regulations enacted more than 20 years ago, Agency livestock facility investigations identified manure stacks as sources of pollution. She stated that

covers and pads can reduce the risk of runoff and leachate from manure stacks. She added that vegetative filter strips and setbacks could also capture pollutants leaving the stack. She testified that setbacks should be an option for an operator if a cover and pad are not feasible. However, she claimed that a cover and pad should be required where a shallow water table or highly permeable soil is present.

Mr. Panno's Testimony

Mr. Panno offered testimony that manure stacks lacking an impermeable pad and cover should be prohibited in karst areas of the state. Because any seepage would enter a karst aquifer, he claimed that stacks lacking an impermeable pad and cover would not safely protect water.

Agency Response

The Agency claimed that its proposal is as protective as the Environmental Groups' setbacks but offers facilities greater flexibility. The Agency noted Dr. James' testimony that a manure stack situated outside of the Groups' 750-foot setback may require a cover and pad to prevent runoff and leachate. The Agency also argued that site-specific factors such as slope and buffers play a role in determining whether a cover and pad are necessary. In addition, the Agency claimed that the Groups proposed a setback from "karst features" without defining the term. Finally, the Agency stated that the Act establishes minimum and maximum setbacks from community water supply wells. The Agency argued that the legislature is the proper forum in which to consider an increase in these setback distances.

Agricultural Coalition's Response

The Agricultural Coalition claimed that the Environmental Groups had sought to prohibit temporary manure stacks in certain areas without sufficient support and without regard to existing requirements. The Coalition argued that the Groups' amendments were not based upon the federal rule and were beyond the scope of this rulemaking.

Board Discussion

As a preliminary matter, the Board observes that the Agency's proposed subsection (b)(1) provides that "[a] temporary manure stack is a potential secondary source, as defined by the Act. As a potential secondary source, a temporary manure stack is subject to the minimum setback zones established in Title IV of the Act." The Board noted in the previous discussion of Section 501.402 that Section 14.2 of the Act established setbacks of 200 feet from community water supply wells or other potable water supply wells and 400 feet from community water supply wells drawing water from specified formations. The Act also establishes procedures to extend setbacks. In addition, the Agency's proposed subsection (b)(2) provides that "[a] temporary manure stack shall not be located within 75 feet from any water well, except monitoring wells." The Board notes that the distances are consistent with the Illinois Water Well Construction Code adopted by the Department of Public Health. *See* 77 Ill. Adm. Code 920.50(b)(1).

Dr. James testified that uncovered temporary manure stacks are not protected from stormwater runoff and may contaminate surface waters. She also testified that, without a pad beneath stacks, manure can leach into and contaminate groundwater. While she cites an experiment suggesting that runoff from stacks can be managed with vegetated filter strips, the Environmental Groups' suggestion does not specifically require them in setbacks.

The Board is not persuaded that the Environmental Groups' suggestion provides more protection from temporary manure stacks than the Agency's proposal. The Agency points out that, under the Groups' suggestion, stacks located farther than 750 feet from surface water would not require a cover, pad, or other control even if the stack needed control in order to prevent contaminated runoff. Dr. James' testimony acknowledged that a 750-foot threshold would not eliminate risks posed by manure stacks.

Nonetheless, the Board shares the Environmental Groups' unease with the Agency's proposed requirement that control "must be provided *when needed* to prevent runoff and leachate from entering surface waters and groundwater." The Groups suggested that this language is subjective and vests too much discretion with livestock operators. The Groups claimed that this unease led them to suggest compliance alternatives providing greater clarity.

The Board declines to adopt the Environmental Groups' suggested changes to Section 501.404(b). However, the Board agrees that the Agency's use of the phrase "when needed" in proposed Section 502.404(b)(3) is vague. It does not clearly identify who is to determine the need for control of manure stacks or the bases on which they are to make the determination. The Board strikes the phrase "when needed" from subsection (b)(3) but otherwise submits the Agency's proposed Section 501.404 to first-notice publication. The Board finds that, taken as a whole, this subsection will clarify and strengthen regulation of temporary manure stacks and improve protection of surface waters and groundwater.

Section 501.404(b)(3): Temporary Manure Stacks

Maurer-Stutz Comment

In the second sentence of this proposed subsection, the Agency sought to require that "[a] cover and pad or other control must be provided when needed to prevent runoff and leachate from entering surface waters and groundwater." Maurer-Stutz argued that this sentence would be clearer if it began "[a] temporary stack should be covered or other control must be provided. . . ."

Environmental Groups' Response

The Environmental Groups claimed that, although Maurer-Stutz had questioned the Agency's proposal and sought to amend it in a number of ways, those suggestions were not supported with sufficient evidence. The Environmental Groups argued that the Board should not adopt them in proceeding to first notice.

Board Discussion

Although the Board appreciates Maurer-Stutz's interest in clarifying the proposed rules, it does not find that this proposed amendment of Section 501.404(b)(3) provides clarification. The Board believes that it has clarified this provision by striking the phrase "when needed" from the Agency's proposal. In addition, the proposed language does not refer to a pad and appears to narrow the scope of this requirement. Accordingly, the Board declines to make this change in its first-notice proposal.

Section 502.101(b): Required Permit Coverage

Agency's Proposal

The Agency proposed to add a subsection (b) providing in its entirety that

[t]he owner or operator of a CAFO must seek coverage under an NPDES permit if the CAFO discharges, provided that:

- (1) A past discharge from a CAFO does not trigger a duty to apply for a permit if the conditions that gave rise to the discharge have been corrected and the CAFO modified its design, construction, operation or maintenance in such a way as to prevent discharges from occurring in the future.
- (2) *No permit shall be required under this Part for any discharge for which a permit is not required under the CWA, and regulations pursuant thereto (Section 12(f) of the Act).*

Environmental Groups' Suggestion

The Environmental Groups proposed to strike the Agency's entire proposed subsections (b)(1) and (b)(2). The Groups argued that subsection (b)(1) is not consistent with, and arguably is less stringent than, federal rules. Noting the Agency's argument that this subsection intends to clarify permitting obligations in light of the Pork Producers case, the Groups argued that the proposed language does not reflect current federal regulations. The Groups also claimed that the Agency had relied on authorities that either pre-date the Pork Producers decision or do not support the Agency's position. The Groups stated that they opposed the Agency's attempt to codify its interpretation of the case law.

Agricultural Coalition's Response

The Agricultural Coalition relied upon case law and Agency testimony to argue that the Agency cannot require a facility to obtain an NPDES permit unless it actually discharges. The Coalition stated that it objects to the Environmental Groups' suggestion to strike subsection (b)(1) because it clarifies permitting requirements with language consistent with USEPA's preamble to the federal rules. The Coalition also opposed striking subsection (b)(2) because it reflects state law.

Board Discussion

The Agency argued that its proposed Section 502.101(b)(1) seeks to clarify permitting obligations in light of the Pork Producers case and reduce confusion about which facilities need to apply for a permit. The Environmental Groups argued that this language is inconsistent with current federal rules and should be struck from the proposal.

The Board need not determine whether the Agency correctly interpreted the case law in proposing Section 502.101(b)(1). Even if it has done so, a single decision could make the Board's regulations inconsistent with federal authorities and lead to further rulemaking by the Board. In any case, the Board need not adopt language such as the proposed subsection (b)(1) to give effect to federal case law and regulations. Furthermore, the Agency's Statement of Reasons explained the current status of CAFO permitting obligations, and the Board believes that it is more appropriate to provide this explanation there than to codify it into the Board's regulations. Accordingly, for these reasons the Board strikes the Agency's proposed subsection (b)(1) from its first-notice proposal.

The Agency's proposed Section 502.101(b)(2) incorporates permitting language from Section 12(f) of the Act into the Board's agriculture related pollution regulations. The Agency stated that, under this language, "discharges to waters that are not waters of the United States will not result in a duty to obtain an NPDES permit." SR at 41. While the Environmental Groups requested that the Board strike subsection (b)(2), the Agricultural Coalition opposed that request because the proposed language reflects state law.

While the Board recognizes that proposed subsection (b)(2) reflects Section 12(f) of the Act, it does not agree that this provides a compelling reason to repeat that language in the Board's regulations. The Board need not adopt language such as the proposed subsection (b)(2) to give effect to a provision of Section 12(f) of the Act. Accordingly, the Board strikes the Agency's proposed subsection (b)(2) from its first-notice proposal.

Section 502.104(b): Medium CAFOs

Agency Proposal

As one basis to determine that an AFO is a Medium CAFO, the Agency sought in this subsection to provide that "[p]ollutants are discharged into waters of the United States through a man-made ditch, flushing system or other similar man-made device."

Maurer-Stutz Comment

Maurer-Stutz argued that this subsection would be clearer if it began "[p]ollutants are discharged from the production area into waters. . . ."

Environmental Groups' Response

The Environmental Groups claimed that, although Maurer-Stutz had questioned the Agency's proposal and sought to amend it in a number of ways, those suggested amendments were not supported with sufficient evidence. The Environmental Groups argued that the Board should not adopt them in proceeding to first notice.

Board Discussion

Again, the Board appreciates Maurer-Stutz's interest in clarifying the proposed rules. However, it does not find that this amendment of Section 502.104(b) provides clarification. In addition, the Board notes that, while Maurer-Stutz's language refers to discharges from the production area, the Agency's proposal does not contain this restriction. Maurer-Stutz has not explained why it would be appropriate to narrow the scope of these determinations. Accordingly, the Board declines to make this change in its first-notice proposal.

Section 502.106(b)(1): Threshold for Case-by-Case Designation

Agency's Proposal

Proposed Section 502.106(b) generally provides that the Agency may not require a permit for an AFO that has fewer animals than established by the definition of "Medium CAFO" unless it meets one of two discharge-related conditions. In proposed subsection (b)(1), the first of these two conditions that may trigger a designation is that "[p]ollutants are discharged into waters of the United States through a man-made ditch, flushing system or other similar man-made device."

Mr. Keefer's Proposal

Mr. Keefer argued that this proposed Section 502.106(b)(1) should also include discharge through subsurface drainage tiles. He cited studies of drainage tile discharge with high concentrations of pollutants from livestock waste application.

Agricultural Coalition's Testimony

While he acknowledged that subsurface drainage tiles are potential conduits for transport of contaminants, Mr. Trainor stated that many tiles were installed decades ago without necessarily generating records of their locations. He suggested that it would be difficult to determine the location of all of these tiles. Mr. Trainor argued that livestock waste has for decades been applied on fields with subsurface drainage. He suggested that, because the proposed rules are more protective than current rules, these subsurface drainage tiles will not pose any greater risk of contaminant transport than they now do.

Board Discussion

Section 502.104 of the Agency's proposal defines an AFO as a Medium CAFO if it stables or confines a specified number of animals and discharges pollutants "into waters of the United States through a man-made ditch, flushing system or other similar man-made device."

This is consistent with the federal condition at 40 C.F.R. § 122.23(b)(6)(II)(A). Under proposed Section 502.106, the Agency may not require a AFO that does not meet the size threshold for a Medium CAFO to obtain a permit unless it meets one of two conditions, the first of which is that it discharges pollutants “into waters of the United States through a man-made ditch, flushing system, or other similar man-made device.” This is consistent with the federal condition at 40 C.F.R. § 122.23(c)(3)(i). It is clear to the Board that the Agency intended these AFOs to be subject to identical discharge-related conditions as the federal rules.

Mr. Keefer suggested that the discharge-related condition in Section 502.106(b)(1) should also encompass discharges through subsurface drainage tiles. While Mr. Trainor’s testimony acknowledged that these tiles may be conduits for contaminant transport, he also suggested that it would be very difficult to locate all of these tiles. The Board is not persuaded that Mr. Keefer’s language should be adopted. The Board finds that the benefits of consistency with federal language on this topic outweighs those of Mr. Keefer’s clarification and the problems it poses. Accordingly, the Board declines to include this language in its first-notice opinion and order.

Section 502.106(b): Maurer-Stutz Comment

Comment

As one basis to designate an AFO as a CAFO, the Agency sought in this subsection to provide that “[p]ollutants are discharged into waters of the United States through a man-made ditch, flushing system or other similar man-made device.” Maurer-Stutz argued that this subsection would be clearer if it began “[p]ollutants are discharged from the production area into waters. . . .”

Environmental Groups’ Response

The Environmental Groups claimed that, although Maurer-Stutz had questioned the Agency’s proposal and sought to amend it in a number of ways, those amendments were not supported with sufficient evidence. The Environmental Groups argued that the Board should not adopt them in proceeding to first notice.

Board Discussion

The Board does not find that Maurer-Stutz’s amendment of Section 502.106(b) provides clarification. In addition, the Board notes that, while Maurer-Stutz’s language refers discharges from the production area, the Agency’s proposal does not contain this restriction. Maurer-Stutz has not explained why it would be appropriate to narrow the scope of these determinations. Accordingly, the Board declines to make this change in its first-notice proposal.

Proposed Section 502.107: Non-Discharging CAFOs

Agricultural Coalition Suggestion

The Agricultural Coalition sought to add to the Agency's proposal a new Section 502.107 providing in its entirety that "[n]o NPDES CAFO permit shall be required for any facility which is not discharging or has not yet received livestock." The Coalition argued that this language is consistent with the federal law regarding the scope of permitting authority and the Agency's intent. The Coalition also argued that its language reflects members' experience during which permits have been required as a condition of settlement or before a facility received any livestock. Noting the Agency's proposed Section 502.101(b), Ms. Manning acknowledged that the Coalition's proposed language is not inconsistent and provides another way of stating the same principle.

Agency Response

The Agency argued that the Agricultural Coalition's Section 502.107 confuses the application of proposed Section 502.101(e), which requires a CAFO that will discharge to apply for permit coverage at least 180 days before commencing operation. The Agency also noted Ms. Manning's testimony that the two provisions are two ways of stating the same principle. The Agency opposed the Coalition's motion to add this language.

Environmental Groups' Response

The Environmental Groups opposed the Agricultural Coalition's Section 502.107 and argued that, to the extent that federal law applied to Illinois permitting, it already applied based on the federal cases cited by the Coalition. The Groups claimed that the Coalition's suggestion would discourage the Agency from communicating with facilities before discharges occur and could cause operators mistakenly to believe that they do not require a permit. The Groups also discounted the argument that settlement of enforcement proceedings has required permits. They claimed that parties enter settlement agreements voluntarily and that the rules cannot and should not limit the settlement terms that the Attorney General may seek. In addition, the Environmental Groups cited a federal definition of a CAFO including facilities where animals "have been, are, or will be stabled or confined and fed or maintained. . . ." The Groups also cited the Coalition's testimony that the Agency's proposed Section 502.101(b) is consistent with the Coalition's language.

Board Discussion

In its discussion of the Agency's proposed Section 502.101(b) above, the Board found that it need not adopt language such as the proposed Section 502.107 to give effect to federal case law and regulations regarding permitting obligations. Even if the Agricultural Coalition correctly interpreted those authorities with its language, a single future decision could make the Board's regulations inconsistent with federal law and generate additional rulemaking by the Board. The Board is also persuaded by the Agency's argument that this suggested new language may be inconsistent with a proposed requirement to apply for a permit before commencing operation. In addition, the Board shares the Environmental Groups' view that adoption of this language could cause operators mistakenly to decide that they do not need a permit. Accordingly, the Board does not include the Agricultural Coalition's proposed Section 502.107 in the first-notice proposal.

**Section 502.201(a)(12): Permit Application
(Stormwater Pollution Prevention Plan)**

Maurer-Stutz Comment

The Agency proposed in this subsection that a permit application must include “[a] stormwater pollution prevention plan.” Maurer-Stutz’s comment asked whether this term could be defined with regard to this requirement.

Environmental Groups’ Response

The Environmental Groups claimed that, although Maurer-Stutz had questioned the Agency’s proposal and sought to amend it in a number of ways, those amendments were not supported with sufficient evidence. The Environmental Groups argued that the Board should not adopt them in proceeding to first notice.

Board Discussion

In its Statement of Reasons, the Agency noted that both the federal rules and proposed Section 501.510(b)(8) require that an NMP include “[a]ppropriate site specific conservation practices to be implemented, including as appropriate buffers or equivalent practices, to control runoff of pollutants to waters of the United States.” *See* 40 C.F.R. § 122.42(e)(1)(vi); SR at 46. The Agency suggested that requiring a permit application to include a stormwater pollution prevention contributes to the implementation of this requirement. Also, in its Technical Support Document, the Agency elaborated that

[p]roper stormwater management of locations outside the production area of the CAFO where raw materials, final products, waste materials and intermediate products may be handled or transported is an important component to protect surface water quality from CAFOs. Mishandling these materials and transportation spills at a CAFO or AFO can result in discharges that could harm water quality or aquatic life. TSD at 7.

The Board recognizes Maurer-Stutz’s request for specificity in this provision but believes that no amendment is necessary to achieve it. As noted above, the Agency addressed the legal authority and rationale for this requirement. The Board concludes that these statements help explain implementation of this requirement even if they are not codified into the Board’s regulations. Further, the record does not include language that would define the term “stormwater pollution prevention plan.” Accordingly, the Board declines to add a definition of this term to its first-notice proposal.

**Section 502.201(a)(13): Permit Applications
(Spill Control and Prevention Plan)**

Maurer-Stutz Comment

The Agency proposed in this subsection that a permit application must include “[a] spill control and prevention plan.” Maurer-Stutz’s comment asked whether this term could be defined with regard to this requirement.

Environmental Groups’ Response

The Environmental Groups claimed that, although Maurer-Stutz had questioned the Agency’s proposal and sought to amend it in a number of ways, those amendments were not supported with sufficient evidence. The Environmental Groups argued that the Board should not adopt them in proceeding to first notice.

Board Discussion

In its Technical Support Document, the Agency stated that the permit application “must also have a spill prevention and control plan to deal with emergency situations.” TSD at 20. The Agency added that this proposed subsection “requires the creation of a plan for preventing and controlling spills when they occur to protect water quality and aquatic life. The spill control and prevention plan applies to spills that may occur at the production area, land application area or other area where livestock waste or other materials of the CAFO are handled or transported.” *Id.* The Agency explained that “[m]anagement and prevention of spills are important to the protection of surface water quality from the release of waste materials, raw materials, intermediate products, by-products and final products handled at CAFOs. Spills at a CAFO or AFO can result in discharges that degrade water quality and harm aquatic life.” *Id.* at 20-21.

As above in addressing stormwater pollution prevention plans, the Board recognizes Maurer-Stutz’s request for specificity in this provision but believes that no amendment is necessary to achieve it. As shown in the preceding paragraph, the Agency’s proposal includes statements above regarding the basis for and application of this requirement. The Board concludes that these statements help explain implementation of this requirement even if they are not codified into the Board’s regulations. Further, the record does not include language that would define the term “spill control and prevention plan.” Accordingly, the Board declines to add a definition of this term to its first-notice proposal.

Section 502.320(w)(7): Recordkeeping Requirements (Off-Site Transfers)

Maurer-Stutz Comment

The Agency proposed in this subsection that permittees must keep records including information pertaining to each day of land application. Specifically, the Agency in subsection (w)(7) listed “the name and address of off-site recipients of livestock waste, the amount of waste transferred to each off-site recipient in gallons or dry tons, off-site location on a topographic map and acreage of each site used by the off-site recipient.” Maurer-Stutz claimed that, when a facility transfers waste out of its own control, it may become difficult to document the location and acreage on which off-site recipients land-apply waste. Maurer-Stutz argued that the Board

should strike the requirement that records include the “off-site location on a topographic map and acreage of each site used by the off-site recipient.”

Environmental Groups’ Response

The Environmental Groups claimed that, although Maurer-Stutz had questioned the Agency’s proposal and sought to amend it in a number of ways, those amendments were not supported with sufficient evidence. The Environmental Groups argued that the Board should not adopt them in proceeding to first notice.

Board Discussion

In its Statement of Reasons, the Agency stated that this proposed subsection is based upon a federal recordkeeping requirement. SR at 50 n.35, citing 40 C.F.R. § 122.42(e)(3). The Agency also stressed that proposed Section 502.610, which addresses CAFO production areas, includes a similar requirement. While the underlying federal rule regulating transfers of livestock waste to other persons does not specifically include a topographic map or acreage used as elements of required records, the Board believes that requiring these elements is consistent with the federal rule and appropriately implements it. While Maurer-Stutz argues that it may be difficult to document this information, it has not persuasively argued that the livestock waste transfer cannot typically include this documentation. Accordingly, the Board declines to amend this subsection as recommended by Maurer-Stutz and submits the Agency’s proposal to first-notice publication.

Section 502.320(w)(8): Recordkeeping Requirements (Weather Conditions)

Maurer-Stutz Comment

The Agency proposed in this subsection that permittees must keep records including information pertaining to each day of land application. Specifically, the Agency in subsection (w)(8) listed “[w]eather conditions, including precipitation, air temperature, wind speed, wind direction and dew point at time of land application and for 24 hours prior to and 24 hours following application.” Maurer-Stutz asked which forecasts might be used and what requirements apply to them.

Environmental Groups’ Response

The Environmental Groups claimed that, although Maurer-Stutz had questioned the Agency’s proposal and sought to amend it in a number of ways, those amendments were not supported with sufficient evidence. The Environmental Groups argued that the Board should not adopt them in proceeding to first notice.

Board Discussion

In its Statement of Reasons, the Agency explained that this requirement is consistent with 40 C.F.R. § 412.37(c)(3), which provides that CAFOs must maintain land application records including “[w]eather conditions at time of application and for 24 hours prior to and following application.” SR at 50 n.34. As neither USEPA nor the Agency specified a source or possible sources of this information, the Board considers it likely that both sought to provide operations flexibility to obtain it. Also, by phrasing its comment in terms of “forecasts,” Maurer-Stutz appears to have overlooked that the proposal requires records of actual weather conditions rather than forecasts of them. Accordingly, the Board declines to amend this subsection as suggested and submits the Agency’s proposal to first-notice publication.

Section 502.325: Annual Report

Maurer-Stutz Comment

As proposed by the Agency, this section requires that permittees file an annual report including specified information. Maurer-Stutz asked whether the Agency could be required to provide a form through which this information could be submitted. Although Maurer-Stutz acknowledged that some of the required information would be attachments of data such as test results, they claimed that a form would simplify this requirement and provide uniformity.

Environmental Groups’ Response

The Environmental Groups claimed that, although Maurer-Stutz had questioned the Agency’s proposal and sought to amend it in a number of ways, those amendments were not supported with sufficient evidence. The Environmental Groups argued that the Board should not adopt them in proceeding to first notice.

Board Discussion

Proposed Section 502.325(b) lists 13 numbered elements that an annual report must contain. As Maurer-Stutz notes, some of these elements consist of the results of calculations or tests. Also, all 13 elements will not necessarily apply to a particular CAFO in a particular year. For example, Section 502.325(b)(13) applies to CAFOs implementing an NMP addressing application rates according to the narrative approach.

The Board finds that the proposed rule describes these elements with specificity and lists them in a manner that suggests the organization of an annual report form. The Board declines to require the Agency to develop a form on which to submit this annual report but notes that the Agency nonetheless may provide such a form on its own. Accordingly, the Board submits the Agency’s proposal to first-notice publication.

Section 502.505(h) Nutrient Management Plan Information

Maurer-Stutz Comment

The Agency proposed that an NMP must include, “[f]or land application areas not owned or rented [by the owner or operator of the CAFO], copies of statement of consent between the owner or operator of the livestock facilities and the owner of the land where the livestock waste will be applied.” Maurer-Stutz commented that the facility may reach such an agreement with a tenant or operator and not with the owner of the land. Stating that land application areas not under the control of the CAFO owner may not be part of an NMP, Maurer-Stutz questioned the purpose of this subsection whether it is required by the federal rule.

Environmental Groups’ Response

The Environmental Groups claimed that, although Maurer-Stutz had questioned the Agency’s proposal and sought to amend it in a number of ways, those amendments were not supported with sufficient evidence. The Environmental Groups argued that the Board should not adopt them in proceeding to first notice.

Board Discussion

In its Statement of Reasons, the Agency acknowledged that its proposed Section 502.505 “is not specifically included in the federal rule.” SR at 77. However, the Agency stressed that requiring this information would simplify preparation of an NMP. The Agency also considers this information necessary to determine whether implementation of the plan “will minimize nutrient transport to waters of the United States.” *Id.* The Agency characterizes Section 502.505 as a “checklist” of information that provides a basis for determining whether an NMP meets the objectives listed in Section 502.510. SR at 79.

Regarding proposed Section 502.505(h), the Agency’s Technical Support Document states that proposed Section 502.510(b)(2) implements federal regulations by requiring an NMP to demonstrate adequate land area for application of its livestock waste. TSD at 15, citing 40 C.F.R. 122.42(e), 412. The Agency acknowledged that a CAFO may have access to such land by owning or renting it or by having a consent agreement with another party. TSD at 15. The Agency proposed to require that the NMP include this consent agreement as “proof of the availability of this additional land. . . . By requiring this consent with another party, CAFO owners may then demonstrate that they have access to sufficient area for application.” *Id.*

The Board finds that the record in this proceeding adequately addresses the questions posed by Maurer-Stutz about the source and purpose of proposed Section 502.505(h). Although the Board recognizes Maurer-Stutz’s comment that a facility may reach a consent agreement for land application with a person other than the owner, the Board finds it appropriate that the NMP include consent agreements showing that a CAFO has sufficient property available for land application. Accordingly, the Board submits the Agency’s proposal to first-notice publication.

Section 502.510(b)(13): Inspection of Subsurface Drainage

Agency’s Proposal

The Agency proposed that

[t]he nutrient management plan must [s]pecify and demonstrate . . . [t]he plan for the inspection, monitoring, management and repair of subsurface drainage systems at the livestock waste application site. Inspection of subsurface drainage systems shall include visual inspection prior to land application to determine failures that may cause discharges and visual inspection after land application to identify discharges.

The Agency stated that the intent of this requirement is to verify that a discharge resulting from a failure in the subsurface drainage system did not occur and that, if it did occur, it was recorded and corrected.

Environmental Groups' Suggestion

The Environmental Groups argued that, although the Agency proposed to require inspection before and after land application, inspection of subsurface drainage tiles during application would better protect water quality. The Groups claimed that a discharge of livestock waste during land application could continue undetected on a large field for a long time. The Groups recommended that the Board require facilities to use tools including tile plugs, shut-off valves, and earth-moving equipment to stop tile discharges when they are observed. The Groups did not submit an amendment to Section 502.510(b)(13) to implement this requirement.

Board Discussion

In its Technical Support Document, the Agency stated that failure of a subsurface drainage system may include the collapse of the drain and erosion of the soil. This failure could result in a discharge of livestock waste from a land application area to the subsurface system. TSD at 20. When such failures occur, “adequate site specific conservation practices, including buffers or equivalent practices, to control runoff of pollutants to waters of the United States may not be present and agricultural utilization of nutrients may not be achieved as required. . . .” *Id.* at 13, citing 40 C.F.R. §§ 122.23(e), 122.42(e)(1)(viii). The Agency proposed in Section 502.510(b)(13) to require a plan including inspections of subsurface drainage systems at the land application site. The Agency explained that “[t]he inspections must include visual inspections prior to and after land application to determine if failures will happen and can be repaired or if failures have occurred. In either case, the objective is to prevent the discharge that may occur or repair the tile to stop a discharge.” TSD at 20.

The Environmental Groups commented that, if inspection and monitoring of subsurface drainage systems is required only before and after land application, a discharge of livestock waste during land application could occur and continue undetected for some time before post-application inspection took place under the Agency’s proposal. The Agency stated that the objective of this proposed requirement to inspect and monitor subsurface drainage systems is to prevent or stop a discharge.

The Board concludes that it would further the achievement of this objective to require visual inspection of subsurface drainage systems at livestock waste application sites during

application in addition to requiring it before and after application. Accordingly, the Board will modify Section 502.510(b)(13) of the Agency’s proposal to provide in the final sentence that “[i]nspection of subsurface drainage systems shall include visual inspection prior to land application to determine failures that may cause discharges and visual inspection during and after land application to identify discharges.”

In addition, the Environmental Groups commented that the rules should “specify that the CAFO must take steps to stop a tile discharge when it is observed.” PC 20 at 25. Their comment named tile plugs, shut-off valves, and earth-moving equipment as devices that might be used to prevent a discharge of livestock waste through subsurface drainage systems to surface waters. In this regard, the Board notes that the proposed rules specifically require a plan for visual inspection of subsurface drainage systems during and after land application in order to identify discharges. The proposed rules also require that the plan must address management and repair of those systems at the livestock waste application site. The Board concludes that the required plans may encompass the devices named by the Groups but may also include other tools for management and repair of subsurface drainage systems. Accordingly, the Board declines to amend the Agency’s proposal by listing these items.

**Section 502.515(d)(3): Terms of Nutrient Management Plan
(Linear Approach)**

Maurer-Stutz Comment

The Agency proposed to require that CAFOs relying on the linear approach to calculate “the maximum amount of livestock waste to be land applied. . . .” Maurer-Stutz suggested that the term “amount” be replaced with “rate per acre.”

Environmental Groups’ Response

The Environmental Groups claimed that, although Maurer-Stutz had questioned the Agency’s proposal and sought to amend it in a number of ways, those amendments were not supported with sufficient evidence. The Environmental Groups argued that the Board should not adopt them in proceeding to first notice.

Board Discussion

The Board notes that 40 C.F.R. § 122.42(e)(5)(i)(B) addresses the terms of an NMP and provides that Large CAFOs using the linear approach “must calculate the maximum amount of manure, litter, and process wastewater to be land applied at least once each year using the results of the most recent representative manure, litter, and process wastewater tests for nitrogen and phosphorus taken within 12 months of the date of land application.” Maurer-Stutz provided no explanation or support for its recommendation, which is not consistent with the underlying federal requirement. Accordingly, the Board declines to follow that recommendation and submits the Agency’s proposed language to first-notice publication.

Section 502.515(e)(1): Terms of Nutrient Management Plan

(Narrative Rate Approach)

Maurer-Stutz Comment

As proposed by the Agency, Section 502.515(e)(1) establishes the required terms of an NMP using the narrative approach for rates of land application. Maurer-Stutz argued that, after assessing field-specific risks, similar fields could be grouped into management units. Maurer-Stutz suggested that facilities could then develop and implement NMPs based on management units in which multiple fields could have the same application rate. Maurer-Stutz claimed that this would make plans simpler to understand and implement.

Environmental Groups' Response

The Environmental Groups claimed that, although Maurer-Stutz had questioned the Agency's proposal and sought to amend it in a number of ways, those amendments were not supported with sufficient evidence. The Environmental Groups argued that the Board should not adopt them in proceeding to first notice.

Board Discussion

The Board recognizes Maurer-Stutz's position that the management units it described conceivably could simplify the preparation and implementation of an NMP. However, the comments have not clearly provided any procedures or standards by which these management units could be submitted in an NMP or considered and approved by the Agency. Accordingly, the Board declines to adopt this recommendation and submits the Agency's proposal to first-notice publication.

Section 502.615(a)(6): Nutrient Transport Potential

Agency's Proposal

The Agency proposed to require that “[a]n individual field assessment of the potential for nitrogen and phosphorus transport from the field to surface waters must be conducted and the results contained in the nutrient management plan.” Among the nine factors required to be identified for each field in determining transport potential is “tile inlet locations.”

Mr. Keefer's Suggestion

Mr. Keefer stated that research shows macropores can rapidly transport land-applied chemicals to subsurface drainage tiles. He suggested that, regardless of whether there is an inlet, these subsurface drainage tiles should be considered as potential routes for contamination of surface waters.

Agricultural Coalition's Response

Mr. Trainor stated that many tiles were installed decades ago and may be difficult to locate. He argued that livestock waste has for decades been applied on fields with subsurface drainage. He suggested that, because the proposed rules are more protective than current rules, these subsurface drainage tiles will not pose any greater risk of contaminant transport than they now do. He did not support Mr. Keefer's recommendation.

Board Discussion

In its Statement of Reasons, the Agency explained that elements of an NMP addressing land application of livestock waste require a determination of nutrient transport potential, which depends on a number of factors. A CAFO determines these factors, including proximity to subsurface drains, by conducting a site-specific assessment of each land application field. SR at 65. The terms of an NMP must then include the outcome of this assessment of nutrient transport potential. That assessment must address application of nutrients to achieve realistic production goals while minimizing nitrogen and phosphorus movement to surface waters. TSD at 19, citing 40 C.F.R. §§ 122.42(e)(5)(i)(A), 122.42(e)(5)(ii)(A), 412.4(c)(1).

The Board recognizes that tile inlets can form a direct connection from the soil surface to subsurface drainage systems. The Board considers it appropriate to identify them as a factor in assessing the potential for nutrient transport from a land application field to surface waters. The Board notes that, as proposed by the Agency, these tile inlet locations are one of nine factors that "must be identified for each field to determine nitrogen and phosphorus transport potential to waters of the United States." The Agency's Technical Support Document stated that the general principle in assessing nutrient transport potential "is to understand how these factors play a role and to what extent certain risk factors, such as the proximity to field tiles, may also be involved." TSD at 22.

Mr. Keefer testified that land-applied materials often appear in tile effluent "and can be rapidly discharged to surface water through tile drainage systems." He cited a 1996 study showing "that a tracer applied parallel to a subsurface drainage tile, at an offset of 15 meters from the tile, was detected in tile effluent after less than 1" of rainfall." Mr. Keefer testified that "the presence of subsurface tiles in general without simply an inlet are significant pathways to potential routes to surface water than need to be considered." Tr.5 at 151. Mr. Trainor agreed with Mr. Keefer that a tile drainage system "is a potential conduit for contaminants to be transferred." *Id.* at 202. The Agency stated that the presence of field tiles had "served to transport livestock waste greater than 200 feet from the point of land application. Agency Att. 5 at 4. The Agency suggested that buffers and setback would not provide protection from this transport because the field tiles pass beneath and through them. *See* TSD at 20.

On the basis of this record, the Board finds that it is appropriate to include the presence of subsurface tile drains as a tenth factor that must be identified for each assessed field to determine the potential for nitrogen and phosphorus transport to waters of the United States. The Board recognizes Mr. Trainor's testimony that it may be difficult to locate subsurface drainage tiles installed in the past. In this regard, the Board notes that the Agency's proposal required the site-specific field assessment to identify tile inlet locations to determine whether subsurface drainage tiles are present. The original proposal also requires identification of the "[I]ocation of conduits

to surface water including preferential flow paths,” a factor that is likely in many cases to require identification of subsurface drainage tiles. Mr. Trainor argued that, because the proposed rules are more protective than the current rules, these subsurface drainage tiles will pose no greater risk to surface water than they already have. Even if the Board accepted this argument, these subsurface drainage tiles would retain their character as potential conduits to surface waters and pose risks to them. Accordingly, the Board amends the Agency’s proposal to add this factor as Section 502.615(a)(10) and submits the amended proposal to first-notice publication.

Sections 502.615(c)(2), (d)(4): Nitrogen-Based and Phosphorus-Based Application Rates

Agency’s Proposal

The Agency proposed in Section 502.615(c)(2) that nitrogen-based application of livestock waste must be conducted consistent with requirements including that “available soil phosphorus (Bray P1 or Mehlich 3) is equal to or less than 300 pounds per acre.”

The Agency also proposed in Section 502.615(d)(4) that phosphorus-based application of livestock waste must be conducted consistent with requirements including that, “if the soil contains greater than 300 pounds of available phosphorus per acre (Bray P1 or Mehlich 3), the amount of phosphorus applied in the livestock waste must not exceed the amount of phosphorus removed by the next year’s crop grown and harvested.”

The Agency noted that the Illinois Agronomy Handbook states that there is no agronomic advantage in applying phosphorus when soil test levels exceed 60, 65, or 70 pounds per acre in high, medium, and low phosphorus-supplying regions, respectively. The Agency argued that this statement is based on economic considerations. The Agency added that the handbook does not recommend application of commercial fertilizer when soil exceeds these levels because it will not increase crop yields. The Agency argued that soil phosphorus levels could increase to 300 pounds per acre and protect surface water quality.

Environmental Groups’ Proposal

The Environmental Groups suggested amending proposed Section 502.615(c)(2) by lowering the soil phosphorus threshold for nitrogen-based application to 200 pounds per acre. Similarly, the Groups suggested amending Section 502.615(d)(4) to provide that, if soil phosphorus levels exceed 200 pounds per acre, land application cannot exceed the amount of phosphorus removed by the next year’s crop.

The Environmental Groups supported their approach by stating that concentrations of phosphorus in runoff tend to increase with soil test phosphorus levels. They emphasized that the Illinois Agronomy Handbook states that there is no agronomic need to apply phosphorus when its level exceeds 70 pounds per acre. The Groups acknowledged that their approach would require more acreage for land application by some CAFOs but claimed that the industry characterizes livestock waste as a valuable resource.

Dr. James testified that land application at a nitrogen-based rate provides plants an appropriate amount of nitrogen but often an excess of phosphorus. She added that land application at a phosphorus-based rate often provides adequate phosphorus but a shortfall of nitrogen. She claimed that phosphorus-based application is more protective of water quality because there is less likely to be over-application of nutrients and therefore less availability of those nutrients for runoff and leaching.

Noting that the Agency's proposal sets a threshold of 300 pounds of available phosphorus per acre as a threshold to move from nitrogen-based to phosphorus-based application, Dr. James claimed that this threshold is not consistent with the Illinois Agronomy Handbook or a study conducted in Illinois and advising soil test phosphorus levels of no more than 200 pounds per acre. Dr. James also discounted the Agency's statement that this threshold should result in runoff containing approximately 0.9 mg/L total phosphorus. She argued that a phosphorus concentration below this level can affect aquatic systems. She added that that concentration is apparently based on suggested discharge limit for sewage treatment plants, which often discharge into larger streams in which dilution is a factor.

Board Discussion

As noted above, the issue of contention concerns the proposed soil test phosphorus threshold to move from nitrogen-based to phosphorus-based application. Section 502.615(c)(2) requires livestock waste application to be nitrogen-based when the available soil phosphorus (Bray P1 or Mehlich 3) is less than or equal to 300 pounds per acre. Above this threshold, livestock waste application must be based on phosphorus. The Environmental Groups argue that the soil phosphorus threshold should be set at a lower level of 200 pounds per acre to protect surface waters from potential runoff from land application fields.

First, regarding the Environmental Groups' argument that the proposed phosphorus threshold is inconsistent with the Illinois Agronomy Handbook, the Board agrees with the Agency that the soil phosphorus levels listed in the handbook address agronomic needs of crops being grown, and not the phosphorus runoff potential. The agronomic application rates recommended in the Agronomy Handbook are based on the nutrient needs of the crop being grown, and on economic considerations to conserve commercial fertilizers. They are not intended to address phosphorus runoff potential.

Therefore, the Board next considers the soil phosphorus content thresholds proposed by the Agency and the Environmental Groups to determine the appropriate soil phosphorus threshold to move from nitrogen-based livestock waste application to phosphorus-based application. The Board notes that both the Agency and the Environmental Groups rely on several studies to support their proposals. The Agency relied on studies by Sharpley *et al.* (1996) (Att. HH) and Daverede *et al.* (2003 and 2004) (Atts. AA, BB) to support the proposed phosphorus threshold of 300 pounds per acre. TSD at 23-25. The Agency's Attachment HH noted that several states utilized soil phosphorus thresholds to restrict the application of livestock waste to agricultural soils by either not allowing phosphorus application or restricting the annual phosphorus rate so as not to exceed crop removal rates. Att. HH at 163. For the seven states

considered by Attachment HH, the soil phosphorus threshold for restricting livestock waste application ranged from 150 pounds per acre to 400 pounds per acre. *Id.*

Attachment HH found that when the Mehlich 3 soil test phosphorus concentration is 400 pounds per acre, the dissolved phosphorus concentration in runoff was 1 mg/L. Att. HH at 165-166. Attachment HH noted that the dissolved phosphorus concentration of 1 mg/L in agricultural runoff has been used as a goal because it is the USEPA's recommended discharge limit for sewage treatment plants. *Id.* at 160. Attachment HH stated, however, that if a dissolved phosphorus level of 1 mg/L is determined to be unacceptable, a lower critical soil test phosphorus level would be necessary. Further, by using equations developed in Attachment AA, the Agency calculated the total phosphorus concentration in runoff to be 0.9 mg/L when soil Bray P1 soil test phosphorus is 300 pounds per acre and sediment concentration is 1 mg/L. TSD at 25. The Agency's proposal considered a total phosphorus level of 0.9 mg/L in agricultural runoff to be protective of surface water quality, since USEPA's recommended sewage treatment plant discharge limit is 1 mg/L⁶. Therefore, the Agency argued that the proposed threshold of 300 pounds per acre to move from nitrogen to phosphorus based application is protective of surface waters. Further, the prohibition of livestock waste application at soil phosphorus content at 400 pounds per acre was based on preventing runoff concentrations of total phosphorus in excess of 1 mg/L. TSD at 25.

The Environmental Groups argued that total phosphorus concentrations less than 0.9 mg/L can impact aquatic life systems. James Test. at 10, citing James Att. 39 (Dodds and Welch (2000)). James Attachment 39 states that in turbid streams the total phosphorus levels should be maintained below 0.4 mg/L to prevent benthic chlorophyll from exceeding 200 mg per square meter to protect recreational uses. James Att. 39 at 194. Regarding the Agency's reliance on the phosphorus effluent standard as a measure of protection of surface waters, Dr. James argued that "sewage treatment plants often discharge into larger streams where dilution comes into play, agricultural areas runoff and tile discharges from fields may constitute the majority of stream flow. Therefore, it would be prudent for the State to seek lower discharge concentrations from fields where livestock waste is applied." James Test. at 10.

Dr. James noted that several states evaluated in Attachment 37 to her testimony recommend that no phosphorus be applied when concentrations of 300 pounds per acre are reached. James Test. at 10, citing James Att. 37. She contended that the proposed soil phosphorus threshold of 300 pounds per acre for requiring phosphorus based application "is far in excess of agronomic needs and in many cases will result in runoff with high concentrations of phosphorus that may contribute to eutrophication in surface waters." *Id.* at 10-11. Dr. James recommended a soil phosphorus threshold of 200 pound per acre to move from nitrogen-based application to phosphorus-based application. *Id.* at 11. She noted that a recent study included with her testimony as Attachment 36 using Illinois soils suggested that soil test phosphorus levels near ground surface be maintained below 200 pounds per acre to reduce phosphorus loss from agricultural fields. *Id.* at 10.

⁶ The Board's total phosphorus effluent standard for treatment works at 35 Ill. Adm. Code 304.123 is 1 mg/L.

The Board observes that the soil phosphorus thresholds proposed by both the Agency and the Environmental Groups are intended to keep the phosphorus levels in agricultural runoff below eutrophic levels. Attachment HH observed that “there is a lack of standards or guidelines on the concentration of P [phosphorus] in agricultural runoff that is considered eutrophic.” Att. HH at 160. In adopting the total phosphorus effluent standard of 1 mg/L in Docket R04-26, the Board noted:

Further, as the Board explained at second notice, while the findings of the nutrient control work group referenced by JCAR will help the Agency in developing scientifically justifiable water quality standards for nutrients, effluent standards are somewhat different. An effluent standard is mainly intended to limit significant loading of a pollutant to a receiving stream giving consideration to availability of appropriate treatment technology and associated costs. Interim Phosphorus Effluent Standard, Proposed 35 Ill. Adm. Code 304.123(g-k), R04-26 slip op. at 3-4 (Jan. 19, 2006).

In the same rulemaking, Mr. Toby Frevert testified on behalf of the Agency:

that the Agency is proposing a technology-based effluent standard because it currently does not have the information to establish a very specific water quality based nutrient limit. [] He testified that the real crux of the problem is the effluent standards addressing a violation of the narrative water quality standard. [] He added that the science is not there either at the state or national level. [] Accordingly, he stated, one can’t derive the water quality based standard, but there is readily available and reasonably affordable technology to limit the existence of nutrient discharge. *Id.* Interim Phosphorus Effluent Standard, Proposed 35 Ill. Adm. Code 304.123(g-k), R04-26, slip op. at 4 (Apr. 7, 2005).

Given the lack of scientifically justifiable phosphorus water quality standards or criteria, the Board finds it appropriate here to use the Board’s effluent standard as a bench mark for establishing the soil phosphorus threshold to determine the basis of livestock waste application. As stated above, the Agency used an equation developed in Attachment AA to determine a runoff concentration of 0.9 mg/L of total phosphorus resulting from Bray P1 soil phosphorus of 300 pounds per acre. For comparison purposes, if the Environmental Groups’ phosphorus threshold of 200 pounds per acre is used in the same equation, the total phosphorus concentration in runoff would be 0.76 mg/L. Thus, the thresholds proposed by both the Agency and the Environmental Groups result in runoff concentrations of total phosphorus below 1 mg/L.

The Board notes that in addition to soil phosphorus content, the loss of phosphorus in agricultural runoff is influenced by several factors, such as soil type, slope, erosion potential, drainage tiles, proximity to surface water, and conservation practices. These factors must be considered to land apply livestock waste under proposed rules as a part of the field assessment. Prop. 502 at 33-34 (proposed Section 502.615(a)). Further, proposed Sections 502.615(b) and (c) include a number of limitations on nitrogen-based application intended to protect water quality.

Given the detailed field assessment requirements and limitations placed on land application of livestock waste, the Board finds that the proposed soil test phosphorus content threshold of 300 pounds per acre to move from nitrogen-based to phosphorus-based application is protective of surface water quality. Accordingly, the Board submits the Agency's proposed Section 502.615(c)(2) and (d)(4) to first-notice publication.

Section 502.620(h), (j): Land Application Protocols

Agency's Proposal

Under protocols for land application of livestock waste, the Agency proposed in Section 502.620(h) that "[l]iquid livestock waste shall not be applied to land with less than 10 inches of soil covering fractured bedrock, sand or gravel." The Agency also proposed in Section 502.620(j) that "[l]ivestock waste shall be applied at no greater than 50 percent of the agronomic nitrogen rate determined pursuant to Section 502.625 when there is less than 20 inches of unconsolidated material over bedrock."

Mr. Panno's Suggestion

Mr. Panno testified that Section 502.620(h) and Section 502.620(j) do not sufficiently protect groundwater and nearby surface water. He argued that two feet of unconsolidated sediment does not protect an underlying karst aquifer from contaminants at the surface. He argued that fifty feet of unconsolidated material overlying a karst aquifer provides adequate protection for that formation.

Agricultural Coalition's Testimony

Mr. Trainor testified that land application protocols including the Agency's proposed Sections 502.620(h) and 502.620(j) are based on experience with land application, are similar to restrictions adopted in other states, and adequately protect the environment. Although he acknowledged that investigations recommended by Mr. Panno may be appropriate to determine the design and location of large facilities, they are excessive to determine areas suitable for land application, even in areas that may have karst features. He argued that implementing Mr. Panno's recommendations would eliminate land application in large areas, including areas where facilities have long operated with few adverse effects.

Maurer-Stutz Comment

Maurer-Stutz stated that restrictions recommended by Mr. Panno are not warranted and could prohibit land application in areas where there are aquitards sufficient to protect groundwater. The comment added that the USDA Web Soil Survey assesses risks and identifies waste management practices. Maurer-Stutz expressed the view that the Agency's proposed Sections 502.620(h) and 502.620(j) reasonably protect surface water and groundwater.

Environmental Groups' Suggestion

The Environmental Groups noted Mr. Panno's testimony that 50 feet of soil cover is necessary to protect karst aquifers from liquid livestock waste but acknowledged that this could pose a significant challenge to facilities in karst areas. Citing Mr. Keefer's testimony regarding macropores, the Groups sought to amend the Agency's proposed Section 502.620(h) to provide that "[l]iquid livestock waste shall not be applied to land with less than five (5) feet of soil covering fractured bedrock, sand or gravel." They claimed that this prohibition is similar to the rules in other Midwestern states and balances agricultural needs and environmental protection.

Agency Response

The Agency opposed Mr. Panno's proposed revisions. The Agency first claimed that there had been conflicting testimony about defining the terms "karst" and "karst terrain" and that the lack of a clear definition would make it difficult to implement Mr. Panno's proposal. The Agency also argued that requiring 50 feet of overburden for application of livestock waste is overly restrictive. The Agency stated that requiring 50 feet of overburden is not necessary to protect groundwater when using the appropriate livestock waste application rate. The Agency claimed that adopting Mr. Panno's recommendation would restrict land application in nearly all of or part of 20 Illinois counties.

Board Discussion

In its Technical Support Document, the Agency explained that its proposed Section 502.610(h) is based on an NRCS waste utilization criterion stating that "[l]iquid manure shall not be applied to soils with less than 10 inches of at least moderately permeable soil over fractured bedrock, sand, or gravel." TSD at 31, citing Att. JJ at 1 (Code 633). The Agency explained in its Statement of Reasons that "[l]iquid passes quickly through fractured bedrock, sand, and gravel, reaching groundwater without natural filtration that removes many contaminants." SR at 72, citing TSD at 31-32. The Agency stressed that soil holds "essential nutrients for uptake by crops." TSD at 31. The Agency stated that its proposal helps ensure that nutrients present in livestock waste would be available for crop uptake and intends "[t]o minimize impact to ground water from liquid livestock waste. . . ." TSD at 31, 32.

Also in its Technical Support Document, the Agency stated that the depth to bedrock from the surface and the livestock waste application rate "are important factors to consider when minimizing the risk to groundwater contamination." TSD at 34. The Agency added that, without adequate soil depth over bedrock, "livestock waste contaminants will more quickly reach groundwater." *Id.* The Agency characterized its proposed Section 502.625(j) as "a common sense conservative approach that the application rates should be halved when the potential to cause groundwater contamination is heightened due to less than 20 inches of unconsolidated material over bedrock." *Id.* The Board notes the NRCS waste utilization criterion that "[n]o application shall occur on organic soils with a seasonal water table within 1 foot of the surface." Att. JJ at 1.

The Environmental Groups submitted a report by the Northeast Wisconsin Karst Task Force entitled Contamination Vulnerability Ranking for the Northeast Wisconsin Carbonate Bedrock Region. PC 20, Att. 6 at iii. That ranking provides that there is an extreme relative

vulnerability to contamination where there is less than five feet of soil over carbonate bedrock. The task force recommended that land application should not occur on land with less than three feet of soil over carbonate bedrock. In addition, it recommended maximum application rates to apply when there is three to five feet of soil over bedrock. *Id.* at 8. Accordingly, the Groups sought to amend the Agency's proposed Section 502.620(h) to prohibit land application on land with less than five feet of soil over bedrock.

While the Board does not discount Mr. Panno's position that fifty feet of unconsolidated material over a karst aquifer provides adequate protection for such a formation, his suggested standard is significantly more restrictive than the Agency's proposal and the amendment sought by the Environmental Groups. The Board does not find sufficient support in the record for adopting Mr. Panno's suggestions.

Nonetheless, the Board believes the record does support an increase in the soil depths in Section 502.620(h) and Section 502.620(i). The Board takes seriously the Agency's views that liquid livestock waste passes rapidly through fractured bedrock, sand, and gravel to infiltrate ground water and that inadequate soil depth over bedrock will lead livestock waste contaminants to reach groundwater more quickly. The Board recognizes the Agency's intent to protect groundwater from these impacts by proposing the restrictions in Section 502.620(h) and 502.620(j) but finds support for increased soil depths.

The Wisconsin report described above concluded that less than five feet of soil over carbonate bedrock presents an extreme relative vulnerability to contamination. PC 20, Att. 6 at iii. The report stated that, in shallow carbonate bedrock areas, "[t]here is a high probability of groundwater contamination when manure is applied to soils with less than three feet of soil to bedrock." PC 20, Att. 6 at 8. The task force recommended that land application should not occur on land with less than three feet of soil over carbonate bedrock. The Board finds that additional soil depth to these formations will minimize the impact on ground water of land application of liquid livestock waste. Accordingly, the Board will amend the Agency's proposed Section 502.620(h) to provide that "[l]iquid livestock waste shall not be applied to land with less than 36 inches of soil covering fractured bedrock, sand or gravel" and submit the amended language to first-notice publication.

The task force also recommended maximum application rates to apply when there is three to five feet of soil over bedrock. PC 20, At. 6 at 8. The Agency emphasized that adequate soil depth over bedrock helps prevent livestock waste contaminants from reaching groundwater, and the Board concludes that this factor applies with particular force to shallow carbonated bedrock areas. The report recommends maximum application rates for bedrock overlain with three to five feet of soils. The Agency noted the role played by adequate soil depth in ensuring that nutrients in livestock waste are available for crop uptake. The Board finds that additional soil depth to bedrock will minimize the impact on groundwater of land application of liquid livestock waste.

Accordingly, the Board will amend the Agency's proposed Section 502.620(j) to provide that "[l]ivestock waste shall be applied at no greater than 50 percent of the agronomic nitrogen

rate determined pursuant to Section 502.625 when there is less than 60 inches of unconsolidated material over bedrock” and submit that amended language to first-notice publication.

Section 502.620(k): Land Application Protocols

Agency’s Proposal

Under protocols for land application of livestock waste, the Agency proposed in Section 502.620(k) that “[I]livestock waste shall be applied at no greater than 50 percent of the agronomic nitrogen rate determined pursuant to Section 502.625 when the minimum soil depth to seasonal high water table is less than or equal to 2 feet.”

Mr. Keefer’s Suggestion

Mr. Keefer stated that this proposed requirement does not establish how the two-foot depth is to be determined. He argued that USDA soil surveys reliably predict characteristics including depth of the seasonal high water table. He claimed that the most recent USDA NRCS Soil Survey could be used to determine the two-foot depth. He suggested that survey information could be overlooked when evaluating fields with subsurface drainage tile networks.

Agricultural Coalition’s Testimony

Mr. Trainor’s testimony noted Mr. Keefer’s suggestion to rely upon USDA soil surveys to determine the depth to high water table. He stated that he did not oppose this suggestion. He testified that, if the survey showed a depth of two feet or less, a facility could perform actual measurements if it wished to try to confirm that it could land apply.

Maurer-Stutz’s Comment

Maurer-Stutz questioned the purpose of this requirement, arguing that it seems appropriate only for highly porous soils. Maurer-Stutz claimed that it is common in Illinois to find a perched water table. In this formation, Maurer-Stutz suggested that a relatively impermeable soil layer provides protection by restricting or preventing connection with an aquifer.

Board Discussion

In its Technical Support Document, the Agency stated that, in the absence of adequate depth of soils covering the water table, livestock waste will more quickly reach groundwater. TSD at 34. The Agency added that its proposed Section 502.620(k) addresses the risk that land application of liquid livestock waste will contaminate groundwater by limiting application rates based on the depth of the water table. The Board concludes that these statements address the question and suggestion raised by Maurer-Stutz.

The Agency’s proposal did not specify a method for determining the two-foot depth of the water table. Both Mr. Keefer and Mr. Trainor suggested that USDA NRCS soils surveys

could be relied upon to determine this depth. Mr. Trainor also suggested that a facility could perform actual measurements to verify that land application is possible on a particular field. The Board finds that record supports but does not require the use of these methods and that it does not proscribe the use of other reliable methods. The Board considers it likely that the Agency wished to preserve some flexibility for facilities to conduct these measurements, and it declines to amend the Agency's proposal by either requiring or forbidding the use of particular measurements. Accordingly, the Board submits the Agency's proposed language to first-notice publication without amendment.

New Section 502.620(m): Land Application Rates

Environmental Groups' Suggestion

In the Environmental Groups' first suggested amendments filed on October 17, 2012, they sought to add a Section 502.620(m) providing in its entirety that "[l]iquid livestock waste shall not be applied to land with subsurface drainage when macropores are present." The Agency responded that this amendment would be a burden on livestock facilities and unnecessary in light of the protective measures in the Agency's proposal. PC 17 at 21-22. The Agricultural Coalition argued that this amendment was inconsistent with current law and not necessary for implementation of the federal rules. PC 19 at 5.

In revised amendments filed on January 16, 2013, the Environmental Groups revised their Section 502.620(m) providing in its entirety that

[l]iquid livestock waste containing less than 5% solids shall be applied at no greater than 13,000 gallons per acre per application on fields with subsurface drainage. Under drought conditions rated 'moderate' or greater by the U.S. Drought Monitor, the application rate shall not exceed 6,800 gallons per acre per application. Tile outlets shall be monitored during and after application. If there is evidence that tiles are discharging waste, application shall stop immediately and tile plugs or other equipment shall be used to stop the discharge.

The Environmental Groups argued that this amendment reflects Mr. Keefer's testimony that restricting application rates and instituting management practices would be protective and would obviate the need to prohibit land application on fields with subsurface drainage. The Groups claimed that their amendment offers clear standards without requiring facilities to determine whether macropores are present on land application fields. The Groups argued that buffers and setbacks do not protect surface water from polluted tile discharge because tiles run under and through those areas. They also recommended reduced application limits during drought conditions because droughts can cause cracks that serve as conduits to tiles. The Groups also stressed that, if monitoring is required only after land application is completed, a discharge may continue undetected for a long time before monitoring is required.

The Environmental Groups stated that, although the Agency and the Agricultural Coalition may also consider this revised language too burdensome, neither the Agency nor the

Coalition offered “scientific evidence that their proposals are adequate to prevent livestock waste loss from fields via macropores and tiles.” PC 29 at 13.

Board Discussion

Although they acknowledged that the Agency’s proposal includes standards addressing land application in various circumstances, the Environmental Groups claimed that none of those standards adequately addresses tile-drained fields with macropores. The Environmental Groups’ initial amendment would bar application of livestock waste to land with subsurface drainage where macropores are present.

At the time of submitting their revised Section 502.620(m), however, the Groups cited Mr. Keefer’s testimony that appropriate application rates and management practices could protect surface waters from discharges of waste contaminants through subsurface drainage tiles. Tr.5 at 176-77. The Groups also noted Mr. Keefer’s testimony that the “liquid content of the applied manure may influence the likelihood of transport of significant concentrations of pollutants to drainage tiles.” Keefer Test. at 3-4. In addition, the Groups relied on USEPA’s example technical standard stating that “[f]ields that are subsurface (tile) drained require additional precautions. When liquid wastes are applied to fields with subsurface (tile) drains, the liquid can follow soil macropores directly to the tile drains, creating a surface water pollution hazard from direct tile discharge.” Att. MM at O-10. The example standard provides the following direction: “[d]o not apply application rates (volume) that would exceed the lesser of the available water capacity (AWC) in the upper 8 inches, or 13,000 gallons/acre per application.” *Id.* The example standard also provides the direction to “[d]ecrease nutrient application rates on non-irrigated areas when drought conditions occur.” *Id.* at O-11. Although the Environmental Groups’ revised proposal is consistent with the example technical standard in USEPA’s guidance manual, the manual includes a disclaimer stating that is “is not a rule, is not legally enforceable, and does not confer legal rights or impose legal obligations upon any member of the public, [US]EPA, States, or any other agency.” Att. MM. It does not appear that USEPA has insisted that the proposed rules include application rates recommended by its guidance manual. *See* Agency Att. 7b.

Responding to the Environmental Groups’ initial Section 502.620(m), the Agency argued that its own proposed rules provide sufficient protection to make the macropore prohibition unnecessary. Proposed Section 502.615(a) requires an NMP to include an assessment of the potential for nutrient transport from the field to surface waters. The Agency identified nine factors that must be included in the assessment, and the Board above concluded that the presence of subsurface tile drains would be proposed as a tenth factor in that assessment. Under proposed subsection (b), this assessment provides the basis “to determine the appropriate phosphorus-based or nitrogen based application rate for each assessed field.” Also, proposed Section 502.620 establishes various protocols for land application, including subsection (b) providing that “[d]ischarge of livestock waste . . . off-site during dry weather through subsurface drains is prohibited.” In addition, proposed Section 502.645 establishes a setback of land application areas from downgradient open subsurface drainage intakes.

The Board notes that the Agency did not specifically address the Environmental Groups' revision of proposed Section 502.620(m). However, the Board believes that, if the Agency believed that the requirements above were sufficient in comparison with the Environmental Groups' initial Section 502.620(m) forbidding land application to fields with subsurface drainage when macropores are present, the Agency must believe they are sufficient in comparison with the less restrictive revised Section 502.620(m). The Board finds that these requirements provide meaningful protection of surface waters from the risk of nutrient transport from a land application field through subsurface drainage tiles to surface waters.

Also, while addressing proposed requirements of the NMP in Section 502.510(b) above, the Board concluded to modify Section 502.510(b)(13) of the Agency's proposal to provide that the plan for "[i]nspection of subsurface drainage systems shall include visual inspection prior to land application to determine failures that may cause discharges and visual inspection *during and* after land application to identify discharges." However, the Board declined to list specific tools for management and repair of subsurface drainage systems, concluding that the required inspection plans may include the devices such as those named in the Environmental Groups' Section 502.620(m) and may also include others. The Board believes that this amendment of the Agency's proposed Section 502.510(b)(13) addresses the management practices named in the Environmental Groups' revised Section 502.620(m).

Accordingly, for the reasons stated above, the Board declines to add a Section 502.620(m) as suggested by the Environmental Groups and omits it from the proposal submitted to first-notice publication.

Section 502.625(b): Estimating Livestock Waste Volumes

Agency's Proposal

Under provisions addressing livestock waste application rates, the Agency proposed in Section 502.625(b) to list two sources that facilities may use to obtain the amount of animal waste generated: (1) Livestock Waste Facilities Handbook, Third Edition, Table 2-1, incorporated by reference at 35 Ill. Adm. Code 5012.00 or (2) 35 Ill. Adm. Code 560, Table 1 (Approximate Quantities of Total Manure, Nitrogen, Phosphorus and Potassium Excreted by Different Livestock Species).

Dr. Funk's Testimony

Dr. Funk testified that the two sources named in the Agency's proposal are outdated and recommended that the Board list three alternative sources. Dr. Funk first named tables contained in MWPS-18 Section 1, which is Attachment T to the Agency's proposal and available through Iowa State University for a small fee. Second, he named NRCS Agricultural Waste Management Field Handbook Chapter 4, which is available electronically to the public free of charge. Third, he named ASABE Standard Data ASAE D384.2 MAR 2005 (R2010). He noted that these data are available to non-members of the organization with a small charge. Dr. Funk argued that adding references to these three sources would align the rules with entities including the NRCS and provide more clarity to facilities and those who prepare plans for them. He also testified that

adding these three sources to those proposed by the Agency would help avoid conflict with the LMFA.

Agency Response

The Agency does not object to listing these three sources identified by Dr. Funk in Section 502.625(b).

Board Discussion

The Board finds merit in Dr. Funk's arguments that this subsection should list three additional sources from which to obtain the amount of animal waste generated. The Board notes that these three sources are available to the public free of charge or with a small charge, and that adding these sources would simplify implementation for facilities and those who prepare NMPs. In addition, the Board notes that the Agency either does not object to adding any of the three sources named by Dr. Funk or states that it is acceptable to do so. Accordingly, the Board amends the Agency's proposed Section 502.635(b) by listing the three sources named by Dr. Funk: (1) MWPS-18 Section 1 (Att. T); (2) NRCS Agricultural Waste Management Field Handbook Chapter 4; and (3) ASABE Standard Data ASAE D384.2 MAR 2005 (R2010). The Board submits this amended proposal to first-notice publication.

Section 502.630(a)(1): Agency Approval of Winter Land Application

Agency's Proposal

Under provisions addressing protocols for winter land application, the Agency proposed in Section 502.630(a)(1) that "[s]urface land application of livestock waste on frozen, ice covered or snow covered ground is prohibited, unless" six conditions listed in subsections (A-F) are met.

Mr. Keefer's Testimony

Mr. Keefer testified that the Agency's proposal generally may be insufficient to protect surface water quality. He stated that liquid waste cannot infiltrate frozen soil until the soil thaws and drains. He further stated that, if waste is applied to ice-covered or snow-covered ground, the waste will freeze to that ice or snow and be included in runoff when melting occurs.

Environmental Groups' Suggestion

The Environmental Groups suggested expanding on the Agency's proposed Section 502.630(a)(1) by providing that "[s]urface land application of livestock waste on frozen, ice covered or snow covered ground is prohibited, unless permission is granted to the owner or operator by the Agency upon verification that" the six conditions listed in subsections (A-F) are met.

Mr. Leder testified that, because winter surface application of livestock waste poses a risk of discharge, it should require Agency pre-approval. He claimed that pre-approval would allow the Agency to review the planned surface application and determine whether there are appropriate fields and weather conditions for it. He also claimed that such a requirement would allow the Agency to conduct an inspection. He clarified that injection or incorporation of the livestock waste should not require Agency pre-approval.

Dr. James noted that the Agency's proposal required only permitted CAFOs to submit winter application plans to the Agency for review. She acknowledged that unpermitted Large CAFOs were required to develop a plan but did not have to submit it to the Agency for approval. She argued that, even if a plan meets all requirements, winter surface application involves a number of time-sensitive environmental factors including precipitation and temperature forecasts. She suggested that these factors make Agency pre-approval a more protective approach to these applications. She argued that this review would allow the Agency to determine whether the planned application meets the proposed requirements.

The Environmental Groups argued that the Agency should be able to determine on the telephone with an owner or operator whether a planned winter surface application satisfies the criteria in the proposed rules. Although the Groups acknowledged that it may be necessary to visit a site to determine whether to approve a land application, they claimed that construction and inspection requirements should indicate in advance that there may be a need for winter application. The Groups also argued that receiving this Agency permission would generate no "shield" against an enforcement action in the event that the application results in a discharge. They suggested that the Board could amend the section to clarify this point.

Agency Response

The Agency stressed that its proposal prohibits surface application of livestock waste on frozen, snow-covered, or ice-covered land unless the application would meet six conditions. The Agency argued that requiring Agency permission for these applications may be harmful. If the Agency cannot immediately grant permission when a discharge may be imminent, the operation may face the choice of violating this proposed requirement or allowing a waste structure to overflow. The Agency also argued that it may conceivably approve application that results in a discharge. In such a case, the Agency argued that its permission should not shield an operation from an enforcement action for causing water pollution.

Agricultural Coalition's Response

The Agricultural Coalition noted the Agency's reluctance to require pre-approval of winter surface application. The Coalition claimed that this proposal was not practical and could result in its own risks to the environment.

Board Discussion

The Agency's proposal prohibits surface application of livestock waste on frozen, snow-covered, or ice-covered land unless the application would meet six conditions. The fifth of those

conditions is that “[t]he owner or operator has notified the Agency in writing on December 1 of that winter season that the CAFO has less than 120 days storage available,” reduced storage capacity that would be expected to make surface application more likely. The Board expects that this notification could trigger monitoring or inspection of the CAFO that would not otherwise occur. Taken together, the Board concludes that these six conditions place appropriate and significant restrictions on the surface application of livestock waste to frozen, snow-covered, and ice-covered ground.

The Agency’s proposed Section 502.630 provides other restrictions. Subsection (b) requires a winter surface application plan encompassing various conditions, including daily monitoring of each snow-covered or ice-covered field on which application has occurred under specified conditions. In addition, subsection (c) restricts the individual fields on which that plan may be executed. These restrictions include adequate erosion and runoff control practices and extended setbacks. The Board concludes that these requirements provide meaningful protection from the risks of winter surface application.

The Board shares the Agency’s unease with implementation of pre-approval. As the Agency suggests, it may not be possible to pre-approve winter surface application on the basis of a telephone call, as the land application may present numerous site-specific factors. The Environmental Groups acknowledged that the Agency may need to inspect a site in order to approve a land application. If, as required by the proposed rule, a “discharge of livestock waste from the [storage] structure is expected to occur due to shortage in storage capacity,” that imminent discharge may occur before inspection and approval can take place. The Board recognizes that this may present a facility with the dilemma of either land-applying in violation of rules requiring Agency approval or allowing the storage structure to overflow in potential violation of various authorities.

On the basis of the factors described above, the Board declines to adopt the Environmental Groups’ language requiring Agency pre-approval of winter surface application. Accordingly, the Board submits the Agency’s proposal to first-notice publication.

Section 502.630(a)(1)(A): Practical Alternatives to Winter Application

Agency’s Proposal

As one of the six conditions that must be met in order to perform winter surface land application, the Agency proposed that “[n]o practical alternative measures are available to handle the livestock waste within storage facilities or to dispose the livestock waste at other sites.”

Responding to a question pre-filed for the first hearing, the Agency stated that these practical alternative measures might include “removing livestock waste to storage units at another site, reducing other sources of flow (*e.g.*, stormwater runoff) to the existing storage units and reducing the volume of manure that would be produced by reducing the size of the herd. During the first hearing, the Agency stated that it was willing to consider clarifying its proposal by providing examples of “practical alternative measures.” Tr. 1 at 114-15. The Agency stated that it “did not want to limit or specify what those possibilities were going to be.” *Id.* at 114.

Environmental Groups' Suggestion

The Environmental Groups suggested amending this condition to provide that

[n]o practical alternative measures are available to handle the livestock waste within storage facilities or to dispose the livestock waste at other sites. Examples of practical alternative measures include the transfer of waste to another waste handling facility or sewage treatment plant, rental or acquisition of a storage tank, reduction of herd size or depopulation, and protection of the facility from direct precipitation and clean stormwater runoff.

The Groups argued that these examples are necessary so that owners and operators understand the alternative the Agency expects them to consider before winter surface land application. They further argued that omitting these examples would provide facilities more discretion to consider alternatives and could lead to more winter application and more water pollution. The Groups stressed that the Agency expressed willingness to consider listing examples of these alternatives.

Board Discussion

The Board is persuaded that Section 502.630(a)(1)(A) as proposed is too vague in merely naming “practical alternative measures” and that this vagueness provides a great deal of discretion when facing winter surface application and its recognized risks. The Board agrees that a non-exhaustive list of examples of possible alternative measures would clarify implementation of the winter application rules. With that clarification, owner and operators would understand alternatives the Agency will expect them to consider before conducting winter surface application.

The Board views the Agency’s pre-filed answer and the Environmental Groups’ consistent, because both refer to transferring waste to another site or facility, reducing herd size, and reducing stormwater runoff. The Environmental Groups also refer to “rental or acquisition of a storage tank,” and the Board views this as an alternative measure that may be practical at particular sites.

Accordingly, the Board finds that the Environmental Groups’ suggestion provides useful clarification of “practical alternative measures” for handling livestock waste. The Board submits that language to first-notice publication with one modification. To clarify that it is a non-exhaustive list of these alternatives, the Board proposes that these measures include, but are not limited to, those listed. The Board notes the Agency’s apparent expectation that the practicality of alternatives may vary from operation to operation. The Board believes that its proposed language reflects this expectation, as it neither requires a facility to consider the listed alternatives nor forbids it from considering other measures “to handle the livestock waste within storage facilities or to dispose of the livestock waste at other sites.”

Section 502.630(a)(1)(C): Steps to Provide Storage Capacity

Agency's Proposal

As one of the six conditions that must be met to land apply during the winter, the Agency proposed that, “[p]rior to December 1, the owner or operator has taken steps to provide 120 days of available storage capacity of manure storage areas.” The Agency explained that such steps may include livestock waste removal through land application or transfer to another entity according to the NMP. The Agency explained that it did not propose to list these steps because it did not want to limit facilities’ compliance options.

Responding to a question pre-filed for the first hearing, the Agency stated that these steps “mean that the producer must have conducted livestock waste removal, by means of land application or transfer to another party, in accordance with their NMP.” Agency Att. 4 at 8. During the first hearing, the Agency stated that it was willing to consider clarifying its proposal by providing examples of these steps. Tr. 1 at 114-15. The Agency stated that it had considered these steps in general terms and “did not want to limit or specify what those possibilities were going to be.” *Id.* at 114.

Mr. Leder's Testimony

Mr. Leder testified that facilities should demonstrate that they have sufficient waste storage capacity for the entire winter. He stated that the steps to demonstrate that they had secured this capacity include land application, transferring waste to other locations or recipients, depopulating facilities to reduce waste volume, and protecting storage structures from precipitation and clean runoff.

Environmental Groups' Suggestion

The Environmental Groups suggested amending this condition to provide that,

[p]rior to December 1, the owner or operator has taken steps to provide 120 days of available storage capacity of manure storage areas. Examples of steps that should be taken include land application or transfer of waste to another party, protection of waste storage structures from direct precipitation and clean stormwater runoff, creation of additional storage capacity if animal units increase, and construction of a waste storage structure(s) with at least 120 days if one does not already exist.

The Groups argued that the Agency’s proposal gave facilities too much discretion to determine the steps it is appropriate to take to provide storage capacity. They suggested that listing examples may improve compliance and result in fewer instances of winter surface application and water pollution. The Groups noted that the Agency did not object to including examples of these steps in this subsection. They argued that their amendment lists examples provided by the Agency, Mr. Leder’s testimony and the equivalent Wisconsin rule.

Board Discussion

The Board agrees that Section 502.630(a)(1)(C) as proposed is too vague in merely naming “has taken steps to provide 120 days of available storage capacity of manure storage areas” and that this vagueness provides a great deal of discretion when facing winter surface application and its recognized risks. The Board agrees that a non-exhaustive list of examples of possible steps would clarify implementation of the winter application rules. With that clarification, owner and operators would understand steps the Agency will expect them to have taken to provide storage capacity before conducting winter surface application.

The Board considers that the Agency’s pre-filed answer and the Environmental Groups’ amendment are substantially consistent with one another, because both refer to land application and transfer of waste to another party. In addition, the record includes Mr. Leder’s testimony referring to facilities taking the step of “protect[ing] their waste storage structures from precipitation and clean stormwater runoff.” He testified that this step would “reduce the amount of waste that needs to be stored.” Leder Test. at 3. He also testified that these steps can also include “depopulating facilities to reduce the amount of waste being generated.” The Board concurs that these steps are intended generally to limit the need for and extend storage capacity. Either may be practical at particular sites.

Accordingly, the Board finds it appropriate to clarify Section 502.630(a)(1)(C) by providing non-exhaustive examples of steps that may be taken to provide storage capacity. On the basis of the record before it, the Board submits the following language to first-notice publication:

[p]rior to December 1, the owner or operator has taken steps to provide 120 days of available storage capacity of manure storage areas. Examples of steps that could be taken include, but are not limited to, land application of livestock waste, transfer of waste to another party, protection of waste storage structures from direct precipitation and stormwater runoff, and depopulating facilities to reduce the amount of waste generated.

The Board notes the Agency’s apparent expectation that the availability of these steps may vary from operation to operation. The Board believes that its proposed language reflects this expectation, as it neither requires a facility to take any of the listed steps nor forbids it from considering others steps “to provide 120 days of available storage capacity of manure storage areas.”

Section 502.630(c)(4): Winter Land Application Standards

Agency’s Proposal

In provisions addressing availability of individual fields for winter application, the Agency in proposed Section 502.630(c)(4) sought to require that “[a]pplication may only occur on sites that have field specific soil erosion loss less than the erosion factor T as determined using Revised Universal Soil Loss Equation 2, and have a median Bray P1 or Mehlich 3 soil level of phosphorus equal to or less than 300 pounds per acre.” The Agency stated that higher soil erosion losses result in loss of more contaminants from the field during snow melt or

rainfall. The Agency claimed that the combination of this factor with the phosphorus threshold provided a protective approach to winter application.

Dr. Funk's Testimony

Dr. Funk's testimony questioned the Agency's reliance on RUSLE 2. He stated that the equation relies on soil factors and tests to address runoff from snow-covered and ice-covered fields. He testified, however, that runoff from these fields does not implicate or affect the soil. He suggested that nutrients can leave the frozen, snow-covered, or ice-covered surface without necessarily taking soil with it. He argued that this subsection is too prescriptive and should be removed from the Agency's proposal.

Agency Response

The Agency argued that Dr. Funk acknowledged that RUSLE 2 and soil phosphorus levels can in some cases affect the impact of winter surface application. The Agency claimed that Dr. Funk had not offered less-prescriptive alternative language. The Agency recommended that the Board decline to follow Dr. Funk's suggestion to strike Section 502.630(c)(4).

Environmental Groups' Response

The Environmental Groups stated that they agreed with the Agency that the Board should not accept Dr. Funk's suggestion to strike this subsection from the rule. They argued that the Agency's proposed language will adequately protect surface waters from the risks of runoff from land application.

Board Discussion

In its Technical Support Document, the Agency stated that the soil erosion potential of a field is a factor that influences contaminated runoff to surface waters. The Agency added that "[f]ields with higher soil erosion losses release more contaminants in the environment during snow melt or rainfall." TSD at 45.

The Board notes Dr. Funk's suggestion that runoff from frozen, snow-covered, or ice-covered surfaces may not affect the soil. However, Dr. Funk acknowledged that calculation of RUSLE 2 includes factors pertaining to runoff from winter application fields, including slope, length of slope, and whether a field is farmed on a contour. Tr.3 at 64. Considering this record, the Board cannot agree with Dr. Funk that this proposed requirement is overly prescriptive. Accordingly, the Board declines to strike this subsection and submits the Agency's proposed language to first-notice publication.

Section 502.630(c)(5): Winter Land Application Standards

Agency's Proposal

In provisions addressing availability of individual fields for winter application, the Agency in proposed Section 502.630(c)(5) sought to require that “[s]urface application may only occur after application of three times the otherwise applicable setbacks from Section 502.615 and 502.645 if the slope of the field is between 2 and 5 percent. This setback requirement does not include the 1/4 mile distance from residences contained in Section 502.645(a).”

The Agency argued that setbacks from land application generally increase the distance any pollutants have to travel to reach surface waters. The Agency stated that it proposed extended setbacks to help ensure that pollutants do not reach surface waters after application to frozen, snow-covered, or ice-covered fields. The Agency added that it did not propose to increase the one-quarter mile setback from residences because surface application in winter is not expected to make waste odors worse than other times of application.

Dr. Funk’s Testimony

Dr. Funk testified that the Agency’s proposed Section 502.6230(c)(5) is too prescriptive because slope is not consistent across an entire field. He also testified that different setbacks for a single field that depend on weather conditions may confuse owners and operators. Dr. Funk acknowledged that there is limited research into the setback distances that will provide protection from winter surface application. However, he cited the NRCS CNMP process, which relies on a site-specific assessment rather than setbacks from surface water. Dr. Funk argued that this subsection should be removed from the Agency’s proposal.

Agency’s Response

The Agency stressed Dr. Funk’s acknowledgement that slope is a significant factor in determining whether land-applied waste will reach surface water. The Agency noted Dr. Funk’s position that setbacks of this nature should be based on a site-specific field assessment, but the Agency stated that he had not offered alternative language implementing this position. The Agency recommended that the Board decline to follow his recommendation to strike this subsection.

Environmental Groups’ Response

The Environmental Groups claimed that the Agency’s proposed setback would help protect surface waters from runoff of livestock waste from land application areas. The Groups concurred with the Agency that the Board should not follow Dr. Funk’s recommendation to strike subsection (c)(5) from the rules.

Board Discussion

In its Technical Support Document, the Agency stated that “[l]ivestock waste runoff from steeply sloping fields is more likely than from fields with little or no slope. The potential for runoff is even more likely when the livestock waste is applied on frozen or snow or ice covered fields.” The Agency noted that the effect of slope on runoff is reflected in the LMFA and its implementing regulations. TSD at 46, citing 510 ILCS 77/20(f)(9) (2012); 8 Ill. Adm. Code

900.803(s). The Agency argued that, because setbacks generally increase the distance pollutants must travel to reach surface waters, it proposed to require “significantly greater [setback] distances for the winter application of the livestock waste.” The Agency added that “[t]he rationale for increased setback is to ensure that pollutants such as nitrogen, phosphorus, and other contaminants in the livestock waste do not reach surface waters after it is applied on frozen or snow or ice covered fields.” TSD at 46.

The Board notes Dr. Funk’s testimony that fields may not have consistent slopes or soil types and his suggestion that a field-specific assessment may generate more precise setbacks. However, Dr. Funk agreed that “slope and distance to water are the two most significant factors that affect whether manure applied in the winter will reach surface waters.” Tr.3 at 86. In addition, he did not suggest any alternative language that would implement field-specific assessments. Also, Dr. Funk testified as to the difficulty in drafting such language or reaching agreement on requirements such as those in the CNMP program. *See* Tr.3 at 87-99. On the basis of this record, the Board is not persuaded that it should strike proposed Section 502.630(c)(5). Below, the Board submits the Agency’s proposal to first-notice publication.

Section 502.630(d): Winter Land Application Protocols

Agency’s Proposal

The Agency’s proposed Section 502.630 established protocols for land application of livestock waste during winter. Subsection (a) proposed a winter application prohibition, subsection (b) addressed winter application plans, and subsection (c) set requirements on the availability of specific fields for winter application.

Environmental Groups’ Suggestion

The Environmental Groups sought to add to the Agency’s proposal a subsection (d) providing in its entirety that, “[i]f livestock waste is to be surface applied on frozen ground, ice covered land or snow covered land, the maximum application rate shall not exceed the amount of phosphorus removed by the next year’s crop grown and harvested.”

The Environmental Groups argued that winter application avoids the potentially very serious risks of an overflowing waste storage structure. They further argued that, if the rules allow high winter application rates, those risks simply shift from the production area to the fields on which the waste is applied. They added that setting a maximum application rate may also provide CAFOs an incentive to increase their waste storage capacity.

Dr. James testified that, because winter application and higher application rates increase the risk of pollutant discharge, the rule should limit application rates during winter application. She argued that the Agency’s proposal does not appear to limit winter application rates. She further argued that the proposal could be interpreted to allow nitrogen-based application, as winter application fields are intended to pose lower risk of nutrient transport. Because winter application fields generally lack a winter crop, applying livestock waste to them will generate few agronomic benefits. Dr. James added that USEPA guidance and regulations adopted in other

states address winter application rates based on gallons or pounds per acre or crop phosphorus needs.

Board Discussion

As the Board observed above, the Agency stressed that proposed Section 502.630(a) prohibits surface application of livestock waste on frozen, snow-covered, or ice-covered land unless the application would meet six conditions. Proposed Section 502.630(b) requires a plan encompassing various conditions, and winter surface application must be conducted according to this plan. In addition, proposed Section 502.630(c) establishes requirements for the individual fields on which winter application may be performed, and application must follow these conditions. Again, the Board concludes that these requirements provide meaningful protection from the risks of winter surface application.

Although the Environmental Groups stated that the Agency's proposal appears to lack limits on winter application rates, the Groups appear to overlook the Agency's proposed Section 502.630(c)(4). That provision addresses the availability of individual fields for winter application and provides that surface application on frozen ground, ice-covered land, or snow-covered land "may only occur in sites that have field specific soil erosion loss less than the erosion factor T as determined using Revised Universal Soil Loss Equation 2 (RUSLE 2), and have a median Bray P1 or Mehlich soil level of phosphorus equal to or less than 300 pounds per acre." Proposed Section 502.630(a)(3) provides that any necessary winter application must be conducted according to conditions in Section 502.630(c) including this one.

The Board recognizes that proposed Section 502.630(c)(4) is not identical to the language offered by the Environmental Groups. However, the Agency's proposal forbids any surface application of livestock waste on land that is frozen, ice-covered, or snow-covered if that land has a soil phosphorus level above 300 pounds per acre. This application would be forbidden even if the field-specific soil erosion loss is less than erosion factor T as determined using RUSLE 2. As proposed, Section 502.630(c)(4) requires winter application to occur on land that meets both the phosphorus-related and erosion-related conditions. Similarly, if the field-specific soil erosion loss exceeds erosion factor T, winter application could not occur at any soil phosphorus level. In addition, the Board notes the 300 pounds per acre soil phosphorus threshold in Section 502.615 to move from nitrogen-based to phosphorus-based application during non-winter months, which the Board found to be protective of surface water quality. The Board finds that the Agency's proposal includes a meaningful winter application rate limit. Accordingly, the Board declines to add subsection (d) offered by the Environmental Groups.

Section 502.640: Inspection of Land Application Equipment for Leaks

Agency's Proposal

In Section 502.640(a) addressing inspection of land application equipment, the Agency proposed that, "[f]or all permitted CAFOs that land apply livestock waste, the CAFO owner or operator must periodically inspect equipment used for land application of livestock waste for leaks or problems that result in improper operation." Proposed subsection (b) required that

“[t]he CAFO owner or operator must ensure that the land application equipment is properly calibrated for application of livestock waste on a routine basis.” Finally, the Agency proposed in subsection (c) that “[c]alibration procedures and schedules shall be described for all equipment in the CAFO’s nutrient management plan.”

The Agency acknowledged that permitted and unpermitted CAFOs employ similar land application equipment. The Agency testified that equipment issues such as pump failure and pipeline ruptures may result in over-application of livestock waste onto fields.

Environmental Groups’ Suggestion

The Environmental Groups suggested adding to Section 502.640 introductory language stating that “[t]he requirements in this Section apply to permitted CAFOs and Large [U]npermitted CAFOs.” The Groups also struck the word “permitted” from subsection (a) so that it would provide, “[f]or all CAFOs that land apply livestock waste, the CAFO owner or operator must periodically inspect equipment used for land application of livestock waste for leaks or problems that result in improper operation.”

The Environmental Groups questioned how an unpermitted facility would demonstrate land application at agronomic rates if the facility is not required to perform the same calibration of equipment required of permitted facilities. The Groups claimed that both permitted and unpermitted Large CAFOs use similar practices and equipment and produce similar quantities of waste with the same characteristics. The Groups argued that effects of runoff from land application are expected to be the same for both permitted and unpermitted CAFOs. The Groups claimed that both categories should follow the same requirements for equipment inspection.

Board Discussion

In its Technical Support Document, the Agency stated that it had proposed to require inspection and calibration of land application equipment in order to prevent unintentional over-application and discharges of livestock waste and to implement the federal rule. TSD at 54, citing 40 C.F.R. § 412.4(c)(4). The TSD stated that, if application equipment is calibrated and operated properly, the facility can apply livestock waste at the desired rate. The Agency claimed that routine calibration reduces the risk of over-application. TSD at 55.

While proposed Section 502.640 applies to “all permitted CAFOs that land apply livestock waste,” the Agency stated that an unpermitted Large CAFO could follow those requirements in order to demonstrate under Section 502.510(b)(10) that it had ensured appropriate agricultural utilization of nutrients. The Agency also acknowledged that its proposal does not specify how unpermitted Large CAFOs would demonstrate that utilization. The Agency stated that the facility’s records may identify alternative practices to ensure appropriate agricultural utilization. The Agency stressed that a facility claiming the agricultural stormwater exemption must ultimately show that its land application complied with the various requirements of Section 502.510(b), whether through compliance with Section 502.640 or through alternative practices. *See* Tr.1 at 168-70.

In light of the factors discussed above, the Board concludes that the Agency's proposal sufficiently addresses inspection and calibration of land application equipment. Permitted CAFOs must comply with the requirements of proposed Section 502.640. *See* 40 C.F.R. § 412.4(c). Unpermitted facilities may qualify for the agricultural stormwater exemption by complying with the same requirements or by maintaining records documenting land application practices ensuring appropriate agricultural utilization of nutrients in livestock waste in compliance with proposed Section 502.510(b). Accordingly, the Board declines to amend Section 502.640 as suggested by the Environmental Groups and submits the Agency's proposal to first-notice publication.

Section 502.645: Land Application Setbacks

Agency's Proposal

The Agency's proposed Section 502.645 established land application setbacks from specified features. Subsection (b)(1) provides in its entirety that "[l]ivestock waste shall not be land applied within 200 feet of surface water, unless the water is upgrade or there is adequate diking." Other provisions of Section 502.645 address features including flood plains; potable water supply wells; and downgradient open subsurface drainage intakes, agricultural drainage wells, sinkholes, grassed waterways, and other conduits to surface waters. The Agency stated that these requirements intended generally to prevent contaminated runoff to surface waters.

Environmental Groups' Suggestion

The Environmental Groups sought to amend the Agency's proposal by adding a new subsection (f) providing in its entirety that "[l]ivestock waste shall not be land applied within 500 feet of biologically significant streams, outstanding resource waters, and designated surface drinking water supplies."

The Environmental Groups cited the Agency's acknowledgment that livestock waste had been observed entering surface water several hundred feet from the field on which it had been applied. The Groups noted that other states have setbacks extending more than 200 feet from certain waters. The Groups argued that high-quality surface waters require this protection from runoff to avoid degradation and the cost of treatment.

Mr. Leder testified that land-applied waste can reach surface waters through dry weather discharges, runoff from a storm or snow melt, or through drainage tiles. He argued that the rules must require land application setbacks from streams, wells, and water conveyances.

Dr. James testified that, although the Agency's proposed 200-foot setback from surface waters significantly improves the current rules, it may not be sufficient in every case. She argued that the proposed setback should be extended to 500 feet in the cases of pristine surface waters and drinking water supplies. While she acknowledged that a vegetative buffer could decrease this setback distance, buffers can be compromised by channelization of storm water.

Agency Response

The Agency argued that the Environmental Groups' new subsection (f) refers to "designated surface drinking water supplies," but the process of designating those water supplies is not clear. The Agency also argued that it is not clear what biologically significant streams are or how they are designated. The Agency claimed that the record does not clarify those terms.

Agricultural Coalition's Response

The Agricultural Coalition argued that the LMFA establishes setbacks from land application of livestock waste. The Coalition claimed that the Environmental Groups' setback lacks support and is not consistent with current law and practice. The Coalition further argued that the setback does not correspond to the federal rule and is beyond the scope of this rulemaking. The Coalition claimed that setbacks are generally established by the General Assembly.

Environmental Groups' Response

The Environmental Groups noted the Agency's view that certain terms required clarification. In response, the Groups stated that "biologically significant streams" are designated by DNR on the basis of biodiversity and ecosystem health. Although the Groups acknowledged that the number of these streams is relatively small, they argued that protection of those streams is particularly important and that few livestock operations would be affected by this setback.

The Environmental Groups also stated that "designated surface drinking water supplies" refers to surface waters designated by the Agency as "public and food processing water supplies," which are defined at 35 Ill. Adm. Code 301.360 as "any water use in which water is withdrawn from surface waters of the State for human consumption or for processing of food products intended for human consumption."

Board Discussion

In its Statement of Reasons, the Agency explained that its proposed setback from surface waters in Section 502.645(b)(1) incorporates and expands upon the federal rule's 100-foot setback from downgradient surface waters. SR at 64, citing 40 C.F.R. 412.2(c)(5). The Agency stressed that its proposal differs from the federal rule in that it does not include exceptions for vegetative buffers or alternative practices. In both its Statement of Reasons and Technical Support Document, the Agency explained that its proposal is also based upon Section 20(f) of the LMFA, which provides that an WMP shall include "[a] provision that livestock waste may not be applied within 200 feet of surface water unless that water is upgrade or there is adequate diking." 510 ILCS 77/20(f)(6) (2012). Also, current Section 560.203 provides that "[l]ivestock waste *should not be applied* within 200 feet of surface water unless the water is upgrade or there is adequate diking." 35 Ill. Adm. Code 560.203 (emphasis added).

The Board concurs with Dr. James' characterization of the Agency's proposal as a "vast improvement on the existing regulations," finding that the proposal provides greater protection

of surface waters from the risk of livestock waste runoff. James Test. at 6. While the Environmental Groups offered clarification of terms employed in their proposed language, the Board believes that the Agency's proposal appropriately incorporates and extends the federal requirement in manner consistent with Illinois law. In addition, the Board is not persuaded that the record provides clear support for an increased 500-foot setback for specified waters. Accordingly, the Board declines to adopt Section 502.645(f) suggested by the Environmental Groups and submits the Agency's proposal to first-notice publication.

Location of Large CAFOs in Karst Areas

Mr. Panno's Testimony

Mr. Panno testified that Large CAFOs should not be permitted in karst areas as defined by carbonate bedrock where the thickness of unconsolidated materials is less than 50 feet, particularly in areas lacking clay-rich glacial till. He further testified that areas suitable for Large CAFOs should be identified based on absence of all indicators of karst terrain and at least 50 feet of unconsolidated materials overlying karst bedrock. He named publications and regional and site-specific investigations as means of identifying karst areas. Mr. Panno further testified that having 50 feet of overburden or unconsolidated material makes sinkhole formation unlikely. He added that, with less than 50 feet of those materials, there is some risk of a sinkhole forming under a waste storage structure.

Agency Response

The Agency responded to Mr. Panno by arguing first that experts had provided conflicting testimony on the definitions of "karst" or "karst terrain." Second, the Agency claimed that requiring 50 feet of overburden too restrictive. Third, the Agency argued that the LMFA governs the site of a CAFO and that any amended limitation on constructing and operating a CAFO over karst terrain should be adopted under the LMFA.

Agricultural Coalition's Response

The Agricultural Coalition stated that Mr. Panno's testimony does not clarify the Agency's proposal and is not relevant to incorporating the federal rules into Illinois' regulations. The Coalition also stated that his testimony did not add environmentally or economically to the current rules.

Maurer-Stutz's Response

Maurer-Stutz noted Mr. Panno's apparent recommendation to prohibit the location of livestock facilities over significant areas. Maurer-Stutz stated that livestock has been produced in areas where there is less than 50 feet of unconsolidated material over carbonate bedrock for many years without widespread problems. Maurer-Stutz also suggested that there are areas in which impermeable bedrock above carbonate bedrock acts as an aquitard and provides protection for groundwater. Maurer-Stutz claimed that Mr. Panno's recommendation lacks support and is extreme in light of its economic impact.

Board Discussion

The Board appreciates Mr. Panno's unease with the location of Large CAFOs and the risk they may pose to groundwater. However, the record does not now contain sufficient information to allow the Board to develop rule language, including definitions, that would implement his suggestions. The Board presently declines to amend the Agency's proposal to adopt a restriction such as that suggested by Mr. Panno.

In this regard, however, the Board notes that Section 501.402(g) provides in its entirety that "[n]ew livestock management facilities or new livestock waste-handling facilities located on soil types or geological formations where the deposition of livestock waste is likely to cause groundwater pollution shall be constructed in such a way that pollution will be prevented, or supplementary measures shall be adopted which will prevent pollution." 35 Ill. Adm. Code 502.402(g).

On June 20, 1991, the Board adopted rules based upon an Agency proposal to amend Part 501. Amendments to 35 Ill. Adm. Code 501 Agriculture-Related Pollution (Management of Livestock Wastes), R90-7 (June 20, 1991). In adopting those amended rules,

the Board noted that the Monroe-Randolph Bi-County Health Department suggested that a section on the siting of livestock management and waste-handling facilities in 'sinkhole' or karst areas be included in these amendments (MRBHD PC #102). The Board points to existing subsection 502.402(d) that covers the siting of facilities in areas where livestock waste is likely to cause groundwater pollution (this subsection is renumbered to 501.402(g) to accommodate changes made in this proceeding). Amendments to 35 Ill. Adm. Code 501 Agriculture-Related Pollution (Management of Livestock Wastes), R90-7, slip op. at 10 (June 20, 1991) (noting re-designation as subsection (g) to accommodate provisions added in proceeding).

The Board notes that the requirement now codified as Subsection 501.402(g) was not substantively amended in R90-7 and has since remained in effect without amendment.

ECONOMIC REASONABLENESS AND TECHNICAL FEASIBILITY OF BOARD'S FIRST-NOTICE PROPOSAL

Section 27(a) of the Act directs the Board to take into account the "technical feasibility and economic reasonableness of measuring or reducing the particular type of pollution" when conducting a substantive rulemaking. 415 ILCS 5/27(a) (2012). Section 27(b) of the Act requires the Board to determine whether a proposed substantive regulation "has any adverse economic impact on the people of the State of Illinois." 415 ILCS 5/27(b) (2012). For the reasons below, the Board finds that the amendments proposed today are technically feasible and economically reasonable and will not have an adverse economic impact on citizens of Illinois. *See* 415 ILCS 5/27(a), (b) (2012).

Request for Economic Impact Study

As required by Section 27(b) of the Act (415 ILCS 5/27(b) (2012)) the Board in a letter dated March 22, 2012, requested that DCEO conduct an economic impact study of the Agency's rulemaking proposal. The Board asked that DCEO determine by May 1, 2012, whether it would conduct such a study. As noted above under "Procedural History," the Board has received no response to this request from DCEO. During each hearing, the hearing officer afforded those present an opportunity to address the Board's request for a study and DCEO's lack of response. Tr.1 at 200-01; Tr.2 at 40-41; Tr.3 at 169-70; Tr.4 at 266-67; Tr.5 at 212-13. No participant offered testimony or comment on the request or response. *See* Tr.1 at 201; Tr.2 at 41; Tr.3 at 170; Tr.4 at 267; Tr.5 at 213.

Potentially Affected Entities

The Agency stated that its proposal generally intends to cover permitted CAFOs. SR at 90. The Agency noted, however, that some elements of its proposal "impact all CAFOs meeting the definition of a large CAFO." *Id.* The Agency added that proposed amendments to Part 502 apply "to all livestock management facilities and livestock waste handling facilities regardless of whether they are a CAFO or whether they have a permit from Illinois EPA." *Id.*

The Agency stated that "[i]t is difficult to give an accurate number of CAFOs in Illinois" and that there is no comprehensive inventory of CAFOs in the state." SR at 90. After the 2003 adoption of federal rules, "the Agency estimated that Illinois may have had approximately 500 large CAFOs and 2,700 medium CAFOs." *Id.* The Agency argued that, following the Waterkeeper and Pork Producers decisions, "it is impossible to specify how many of these would now be required to obtain an NPDES permit because a site-specific evaluation is required to determine whether the CAFO is discharging." *Id.* The Agency stated that it is now developing an inventory relying upon a list of 800 dairy operations inspected by IDPH and an Illinois Department of Agriculture list of 1,400 permits issued under the LMFA since 1996. *Id.*, citing Atts. K, L. The Agency added that it had issued the general CAFO permit on October 20, 2009. The Agency indicated that, on the March 1, 2012, date of filing this proposal, "Illinois had approximately 35 CAFOs covered by the General Permit or proposed to be covered by that permit." SR at 90.

Technical Feasibility

The Agency noted that its proposal does not "require the installation of any particular technology, but the effluent limitations and proposed state technical standards do place requirements on the CAFO production and land application areas that must be evaluated for technical feasibility and economic reasonableness." SR at 83.

Production Area

The Agency summarized the production area effluent limitations "as requiring the CAFO to design, operate and maintain its facility such that a discharge will not occur in dry weather and will occur only in storm events larger than a 25-year, 24-hour event." SR at 83. The Agency

noted an exception for swine, poultry, and veal facilities classified as new sources under the 2008 rule, for which the effluent limitation is no discharge. *Id.*

The Agency argued that its proposed production area effluent limitations “do not require installation of a particular technology or use of particular equipment to comply.” SR at 83. Noting that the required installation of a depth marker in lagoons exposed to the elements is one exception, the Agency claimed that this “is already commonly done at many CAFOs.” *Id.* The Agency acknowledged that its proposal requires CAFOs to manage their livestock waste but argued that “[t]his can be achieved through design of the facility to manage and store sufficient quantities of livestock waste, or it can be achieved through the number of animals housed at one time and the length of time each animal is housed.” *Id.* at 83-84. The Agency noted that “the LMFA currently requires 150 days of storage for non-lagoon structures and 270 days of storage for lagoons at those facilities regulated by the Illinois Department of Agriculture.” Arguing that its proposal “attempts to maintain the greatest possible degree of flexibility on the part of the producer to select technologies, methods and practices that work best at their individual facility and also minimize transport of pollutants to water of the United States,” the Agency concluded that its proposed rules “will be technically feasible for all CAFOs in Illinois.” *Id.* at 84.

Land Application Area

Broadcast Application. The Agency stated that surface application of livestock waste typically involves the use of irrigation equipment, tank wagons, manure spreaders, and other equipment. SR at 84. Common irrigation equipment “includes center pivot irrigation units and traveling guns that spray the manure into the air.” *Id.* The Agency noted that this “equipment is many times connected to the manure storage structures and the manure is directly pumped through pipes or hoses to the irrigation equipment.” *Id.* Tank wagons employ “a splash plate or nozzles to apply the livestock waste onto the surface of the ground.” *Id.* at 84-85. The Agency added that spreaders apply solid manure “by mechanically spreading manure through the air onto the ground.” *Id.* at 85. The Agency stated that “[t]ank wagons and manure spreaders are commonly used to haul the livestock waste from the livestock waste storage structure to the land application site.” *Id.*

Incorporation. The Agency indicated that incorporation of livestock waste into the soil involves “[c]hisel plows, discs, field cultivators, and other common soil tillage equipment.” SR at 85. The Agency stated that “livestock waste may be applied to the surface of the ground with the same equipment that provides the soil tillage, or the livestock waste may be applied with equipment (*i.e.*, tanks wagons or manure spreaders) that is followed by a separate pass of soil tillage equipment that incorporates the livestock waste into the soil.” *Id.*

Injection. The Agency stated that facilities commonly inject liquid livestock waste into the soil to a depth of three to seven inches with the use of “steel knives, disc blades, tines or sweeps to slice the soil.” SR at 85. The Agency further stated that “livestock waste is placed directly in the open slot in the soil behind the steel knives, disc blades, tines, or sweeps. Disc blades or other equipment on the livestock waste injection equipment then closes the slot over the injected liquid livestock waste.” *Id.* The Agency noted that “[l]ivestock waste can be

pumped from storage through pipes and hoses to the injection equipment” and that “[t]ank wagons with injection equipment are also used to inject livestock waste into the ground.” *Id.*

Agency’s Summary of Technical Feasibility. The Agency argued that “[t]he equipment and technology used in the land application of livestock waste is widely available and in use today throughout the agricultural regions of Illinois.” SR at 85; *see id.* at 89. The Agency further argued that its proposed regulations do not require “the use of any particular land application technology or equipment, but do attempt to provide some additional flexibility to producers that use technologies which are intended to help limit the transport of pollutants.” *Id.*

The Agency claimed that its proposed land application effluent limitations “consist of BMPs that are designed to limit the transport of pollutants to the waters of the United States.” SR at 86. The Agency further claimed that “[t]hese BMPs are in common use in Illinois today and are technically feasible when the AFO owner or operator plans ahead to adjust the land application of livestock waste to meet the requirements.” *Id.* The Agency concluded that its Statement of Reasons and Technical Support Document had demonstrated the widespread use and technical feasibility of these BMPs and that, “for any producer that finds difficulty implementing any particular BMP there is the opportunity to select an alternative or demonstrate to the Agency that an equivalent alternative is acceptable.” *Id.* at 86, 89.

Economic Reasonableness

The Agency noted that its proposal does not “require the installation of any particular technology, but the effluent limitations and proposed state technical standards do place requirements on the CAFO production and land application areas that must be evaluated for . . . economic reasonableness.” SR at 83. The Agency argued that, “[b]ecause of the flexibility provided to the owner or operator to choose how to comply with both the production area and land application area requirements, it is very difficult to reliably estimate the cost of the proposed rules.” *Id.* at 87.

Agency

Production Area and Land Application Area.

The Agency claimed that, in the absence of any requirement to install specific technology, “it is difficult to quantify the economic costs associated with compliance with the proposed section for Illinois CAFOs.” SR at 86. The Agency noted that “[m]any CAFOs in Illinois currently implement these requirements either as a result of similar requirements under the LMFA or based on the existing requirements in the Illinois CAFO general permit.” *Id.* The Agency acknowledged that, “[i]f a CAFO is required to build additional storage capacity, dispose of stored livestock waste more frequently, or house fewer animals to reduce livestock waste as a result of these regulations, there will be an economic impact on those facilities.” *Id.* The Agency claimed that any such costs would be economically reasonable, particularly in light of “the economic benefits to the public and the environment.” *Id.*

The Agency claimed that “the BMPs required by the proposed rule for the land application area are already used as good agricultural management practices at many, if not most, of the better performing Illinois CAFOs already under the LMFA, NPDES general permit, or United States Department of Agriculture conservation programs.” SR at 87. For some facilities, the Agency further claimed that its proposal would not trigger additional costs other than a “small administrative cost related to submittal of the appropriate paperwork to the Agency to demonstrate compliance.” *Id.* However, the Agency acknowledged that elements of the land application requirements “are likely to increase costs for certain CAFOs because the Agency has prohibited a field or portions of a field from use for land application of livestock waste because of the high risk that application would result in transport of pollutants from the field to the waters of the United States.” *Id.* The Agency stated that, “[b]ased on the limited information available from USEPA, the Agency believes these additional costs are economically reasonable and that they are sufficiently balanced by the economic benefits to the public and the environment.” *Id.*

2003 Rule. The Agency cited a USEPA analysis of the costs of the 2003 regulations. SR at 87-88, citing 68 Fed. Reg. 7242-50 (Feb. 12, 2003). USEPA determined that, in 2001 dollars, the total annual cost of the regulation borne by regulated entities and the delegated states would be \$335 million. SR at 88. The Agency reported that, “[f]or regulated facilities, USEPA estimated a total costs of \$283 million per year for large CAFOs, \$39 million per year for medium CAFOs and \$4 million per year for designated CAFOs for a total of \$326 million.” *Id.*; see 68 Fed. Reg. 7243-44 (Feb. 12, 2003). The Agency noted that USEPA assumed “that approximately 3 percent of CAFOs may be vulnerable to facility closure as a result of the 2003 regulations.” SR at 88.

The Agency noted that USEPA also itemized these projected annual costs by sector. SR at 88, citing 68 Fed. Reg. at 7243-44 (Feb. 12, 2003). The Agency reported that “[t]he largest costs are attributable to the dairy sector at \$151.2 million.” SR at 88; see 68 Fed. Reg. 7243 (Feb. 12, 2003). “The veal sector is estimated to have no costs associated with the new rule.” SR at 88. Noting that there are flexibilities in the rule, the Agency claimed that “the costs to any individual facility may vary.” *Id.* Based on USEPA’s figures from the 2003 rule, however, “it is estimated that the federal CAFO rule will have an annual average costs of \$21,765 per CAFO. For large CAFOs, the cost would be closer to \$26,912 per year and for medium CAFOs the average estimated cost would be \$8,783 per year.” *Id.* The Agency elaborated that, “[f]or swine CAFOs, USEPA estimated the annual costs to be relatively low at \$6,346 for large CAFOs and \$6,397 for medium CAFOs.” *Id.*, citing Att. J.

The Agency stated that USEPA also sought “to quantify the economic benefit of the 2003 regulations where it was possible to do so.” SR at 89, citing 68 Fed. Reg. 7234-35 (Feb. 12, 2003). The Agency reported that, although “all economic benefits of the federal rule could not be easily quantified, they did arrive at a range of between \$204 million and \$355 million per year (in 2001 dollars) of economic benefits from the pollutant reductions attributable to large CAFOs.” SR at 89, citing 68 Fed. Reg. 7234-35 (Feb. 12, 2003).

2008 Rule. The Agency stated that, “[i]n the 2008 rule, USEPA determined that no changes were being made to technical requirements and the only cost changes between the 2003 and 2008 rules were the result of changed administrative costs.” SR at 88. The Agency reported

that “USEPA concluded that reduced administrative costs as a result of fewer CAFOs seeking permit coverage, subtracted from increased administrative costs for additional NMP requirements and costs for demonstrating compliance with the agricultural stormwater exemption would result in a very small decrease in administrative costs under the 2008 rule.” *Id.* “USEPA assumed that 25 percent fewer CAFOs would seek permit coverage following Waterkeeper.” *Id.* at 89, citing 73 Fed. Reg. 70469 (Nov. 20, 2008). The Agency added that USEPA had not analyzed the economic impact of the Pork Producers decision, “but it would be logical to conclude that decision would further decrease administrative costs with no corresponding increase to NMP costs.” SR at 89. The Agency claimed that, “following Pork Producers and based on Illinois EPA’s recent experience with CAFO permitting, fewer CAFOs will need to apply for NPDES permits in Illinois than was assumed in USEPA’s 2003 or 2008 economic analysis.” *Id.*

The Agency stated that, “[a]lthough some requirements applicable to large CAFOs changed in the 2008 rule, USEPA did not find a change to the economic benefit of the 2008 rule from the 2003 rule.” SR at 89. The Agency reported that “[t]he largest category of economic benefits was found to be ‘recreational and non-use benefits from improved water quality in freshwater rivers, streams, and lakes’ at a benefit of \$166.2 million to \$298.6 million.” *Id.*

Agency’s Summary of Economic Reasonableness.

The Agency concluded that, “[g]iven the information provided by USEPA in development of the federal CAFO rule, Illinois EPA has concluded that the costs to most CAFOs associated with compliance with the proposed regulation will be economically reasonable.” SR at 89.

Agricultural Coalition

The Agricultural Coalition submitted comments by Peter Goldsmith, Ph.D., an Associate Professor and Interim Director of the Food and Agribusiness Management Program at the College of Agricultural and Consumer Economics at the University of Illinois. PC 11 at 1. Dr. Goldsmith stated that he has authored or co-authored publications related to agricultural economics and conducted related research. *Id.* Through reports and analyses, he commented on the economic value and importance of the Illinois livestock industry, which he described as a major topic of his research and publication. *Id.*; *see id.*, Atts. A, B.

Dr. Goldsmith stated that “livestock contributes \$3.5 billion of total impact and over 25,000 jobs to the Illinois economy.” PC 11 at 1. Including meat and dairy processing, the industries collectively produce “\$27 billion of total impact, or 5% of the state’s economy, and 99,000 jobs, or 1.4% of the State’s jobs.” *Id.* at 1-2. Nonetheless, Dr. Goldsmith noted the livestock industry’s steady decline over the past thirty years. *Id.* at 2. He accounted for this by stating that “[t]he State’s industrial base has tended to focus on activities other than livestock and, within agriculture, the change in the industry has been greater specialization to crop production (corn and soybeans).” *Id.* However, Dr. Goldsmith emphasized that per capita meat consumption increased 15% world-wide and 10% in the U.S. between 1990 and 2010. *Id.* He claimed that demand for meat and dairy products is increasing faster in developing countries than

the US. *Id.* Dr. Goldsmith stated that the industry faces the challenges of maintaining profitability, serving markets overseas, and defending domestic markets from imports. *Id.*

In addition to the economic impacts shown in his reports and analyses, Dr. Goldsmith also stressed the manner in which livestock production and meat and dairy processing complement one another, particularly in an industry marked by low-valued goods and costly transportation. PC 11 at 2. Arguing that “good industrial policy is good livestock policy,” he claimed that maintaining a strong in-state supply of livestock provides processors an incentive to remain in Illinois. *Id.* at 3. Alternatively, he argued that “good livestock siting policy is also good industrial policy” because local processors benefit when farmers locate in-state or expand their operations. *Id.* He added that, if processors must look out-of-state for supplies of livestock, their costs will rise due to increased transportation needs and greater competition with other buyers. *Id.*

Finally, Dr. Goldsmith noted that USEPA has assessed the economic impact of its proposed 2003 rules. PC 11 at 3, citing 68 Fed. Reg. 7176-7274 (Feb. 12, 2003). He argued that “decisions which require stricter controls in Illinois than that required federally or by neighboring states will have a disproportionate adverse impact on the livestock industry here in Illinois.” PC 11 at 3.

The Agricultural Coalition argued that Dr. Goldsmith’s comment provides a “full understanding of the impact of the livestock industry to the Illinois economy. . . .” PC 19 at 24, citing PC 11. They added that a number of comments offered during the five hearings also addressed this impact. PC 19 at 24, citing Att. A (summarizing 18 comments).

The Agricultural Coalition claimed that Dr. Ikerd’s comment does not diminish either Dr. Goldsmith’s comment or those offered during the five hearings. PC 19 at 24. They further claimed that Dr. Ikerd had not referred to research on the role of agriculture in Illinois’ economy. *Id.* Noting that Dr. Ikerd had relied on USEPA calculations and an assessment of federal rules, they stated that they did “not dispute such calculations.” *Id.* They argued, however, that the calculations cannot justify proposed rules that exceed the federal requirements. *Id.* The Agricultural Coalition elaborated that “the federal economic calculations should serve as further reason for the Board *not* to adopt any provisions that are not required federally, particularly those sought by the Environmental Groups.” *Id.* (emphasis in original).

Environmental Groups

The Environmental Groups noted that Dr. Ikerd had examined the economic impacts of the Agency’s proposed rules and the Environmental Groups’ proposal by relying upon a USEPA assessment of the 2003 CAFO rule. PC 20 at 42, citing PC 16, Att. 3. They noted that “USEPA assessed a CAFO rule that required all CAFOs to obtain a NPDES permit” and “also assumed that all CAFOs would be subject to the same land application technical standards.” PC 20 at 42. They argued that this assessment would overstate any economic impacts “given that IEPA’s proposed regulations would subject very few CAFOs to permitting requirements or to land application technical standards.” *Id.* at 42-43, citing PC 16 at 2.

The Environmental Groups stated that USEPA found “the 2003 CAFO Rules could be implemented by 83% of all CAFOs without significant financial effects.” PC 20 at 43, citing PC 16 at 2. They noted Dr. Ikerd’s conclusion that, “at most, 25 CAFOs in Illinois would experience financial stress from complying with the Environmental [Groups’] proposal, and even fewer would experience financial stress from complying with the IEPA CAFO Rules due to the more lax standards in that proposal.” PC 20 at 43, citing PC 16 at 2. They also noted Dr. Ikerd’s stress on “USEPA’s finding that its regulations would have an even smaller effect on new CAFOs” and his statement that “the impact on the overall production and prices of meat, milk, and eggs would be so small as to be negligible.” PC 20 at 43, citing PC 16 at 3.

The Environmental Groups also noted Dr. Ikerd’s suggestions that USEPA’s assessment did not fully account for the economic benefits of the proposed rules. PC 20 at 43; *see* PC 16 at 4. He suggested that, by considering non-monetized benefits including “reduced pathogen contamination in private and public drinking water supplies and associated treatment costs and lessened health risks from fewer pollution discharge events . . . , the costs are far outweighed by the economic benefits of implementing effective regulations.” PC 20 at 43; *see* PC 16 at 4-5.

The Environmental Groups stated that they had no dispute with Dr. Goldsmith’s comment regarding the importance of the livestock industry, but they noted that his comment did not address the economic impact of proposed CAFO rules. PC 29 at 15. They also disagreed with the Agricultural Coalition’s argument that the USEPA’s assessment relied upon by Dr. Ikerd is inapplicable to these proposed rules. *Id.* They emphasized that the USEPA proposal “was more stringent than both the IEPA proposal and the Environmental [Groups’] Proposal.” *Id.* They restated that, in spite of the more stringent requirements, “the Agency found that the 2003 CAFO Rule could be implemented by 83% of all CAFOs without any significant financial effects.” *Id.*, citing PC 16, Att. 3 at 3-15 (Table 3.7).

The Environmental Groups concluded that their proposal and the Agency’s proposed rules “are both economically reasonable and should have no significant financial effect on Illinois CAFO operators or on the livestock industry in Illinois.” PC 20 at 43. They emphasized that USEPA’s assessment of the 2003 rule and Dr. Ikerd’s comment “establish that the Environmental [Groups’] Proposal is economically feasible for Large CAFOs in Illinois.” PC 29 at 15.

Board Discussion

Technical Feasibility

The Agency argued that compliance with its proposed requirements applicable to production areas does not require installation or use of specific equipment, methods, or practices. The Agency acknowledged the installation of a depth marker in specified waste storage structures as an exception but claimed that these markers are in common use. The Agency also noted that Section 502.610(l) requires subject CAFOs to have 180 days of waste storage capacity. The Agency supported the feasibility of this requirement by stressing that the LMFA imposes similar limits.

Generally, the Agency claimed that facilities can handle livestock waste by managing the design of the production area, the number of animals housed, and the length of time they are housed. The Agency argued that its production area limitations preserve a high degree of flexibility for each facility to determine appropriate compliance strategies and that the proposed rules will be technically feasible for all CAFOs.

The Agency argued that its proposed land application provisions also do not require the use of specific technology or equipment and seek to provide facilities with flexibility. The Agency claimed that land application equipment, including that used in incorporation and injection of livestock waste, is in common use in Illinois. The Agency suggested that its land application effluent limits can be met with this equipment by adjusting existing common waste application practices.

The Agency claimed “that both the land application area and production area requirements of the proposed rule are technically feasible and rely on widely available existing equipment, methods and practices.” SR at 89. The record does not include persuasive evidence or arguments challenging the Agency’s claim of technical feasibility. To the extent that the Board proposed limited amendments, it has not imposed additional technical requirements. While the Board modified Section 502.510(b)(13) to require visual inspection of subsurface drainage systems during land application in addition to inspection before and after application, it has not required the use of any equipment or practice. The Board does not expect that the three stages of visual inspection would differ technically from one another.

On the basis of the record before it and for the reasons discussed above, the Board finds that its first-notice proposal is technically feasible.

Economic Reasonableness

The Agency argued that it is not simple to estimate the economic impact of the proposed rules because regulated facilities have considerable flexibility in determining how to comply with them. However, the Agency claimed that many of the proposed requirements are now being implemented under the LMFA, the CAFO general permit, or USDA conservation programs. The Agency acknowledged that, although some facilities may bear costs such as building additional waste storage capacity or locating additional fields for land application, the economic impact of those costs will be reasonable when compared to the benefits.

The Agency noted that USEPA analyzed the costs of its proposed 2003 regulations and estimated that those regulations would have average annual costs of \$26,912 for Large CAFOs and \$8,783 for Medium CAFOs. SR at 88, citing 68 Fed. Reg. 7243 (Feb. 12, 2003). For swine CAFOs, USEPA estimated lower costs. SR at 88. USEPA also estimated that the rules would yield \$204-355 million of economic benefit through pollution reductions attributable to Large CAFOs.

USEPA determined that the only change in costs from the 2003 rule to the 2008 rule was a small decrease in administrative costs. SR at 88. The Agency claimed that, while USEPA did not analyze the economic impact of the Pork Producers decision, it expects further decreases in

administrative costs. The Agency argued that fewer CAFOs will be required to apply for a permit than under the proposed 2003 or 2008 rules. *Id.* at 89. USEPA did not find a change in the economic benefit between the 2003 rule and the 2008 rule.

While the Agricultural Coalition stated that it did not dispute USEPA's calculations on the impact of the 2003 rules, it argued that those calculations provide a clear reason for the Board to reject requirements that are more stringent than the federal rule. On behalf of the Coalition, Dr. Goldsmith argued that more stringent regulations would have a disproportionate impact on facilities in Illinois. PC 11 at 3.

The Environmental Groups argued that, because the 2003 rule required all CAFOs to obtain an NPDES permit, USEPA's analysis of that 2003 rule is likely to overstate the costs of the Agency's proposal. They emphasized USEPA's conclusion that 83% of all CAFOS could have implemented the more stringent 2003 rule without significant financial effects. While the Groups did not dispute Dr. Goldsmith's analysis of the importance of livestock to the Illinois economy, they claimed that he had not addressed the effects of the proposed rules.

The Board notes that none of the participants persuasively challenge USEPA's economic analysis of its proposed 2003 rules or application of it to the Agency's proposal. The Agency claimed that the Waterkeeper decision had been expected to reduce the number of CAFOs seeking a permit and that the Pork Producers decision would also reduce facilities' administrative expenses. The Agency cited its own experience to claim that fewer CAFOs will apply for a permit than assumed by USEPA's previous analyses.

The Board agrees with the Agency, in light of the analyses performed by USEPA, that its proposal implements the federal requirements in a manner that is economically reasonable. To the extent that the Board proposed limited amendments, those do not impose unreasonable economic burdens. For example, while the Board modified Section 501.505 to require submission of information by specified CAFOs, that information is limited to seven items requiring little expense to submit.

On the basis of the record before it and for the reasons discussed above, the Board finds that its first-notice proposal is economically reasonable.

FILING COMMENTS ON THE BOARD'S FIRST-NOTICE PROPOSAL

First-notice publication of the Board's proposal in the *Illinois Register* will start a period of at least 45 days during which anyone may file a public comment with the Board, regardless of whether the person has already filed a public comment. 5 ILCS 100/5-40(b) (2012). The Board encourages persons to file public comments on the proposed amendments. The docket number for this rulemaking, R12-23, should be indicated on the public comment. Below, the Board elicits comment on five specific issues.

- 1) The Agency's proposed Section 502.106(d), which requires an AFO designated as a CAFO to apply for an NPDES permit within 90 days, is based on a federal requirement that USEPA amended in 2012. *See* 77

Fed. Reg. 44495, 44497 (July 30, 2012) (amending 40 C.F.R. §122.23(f)). The Board seeks comment from the Agency and any of the other participants on any amendment of the proposed Section 502.106(d) that may be necessary to implement this revised federal requirement.

- 2) The Board noted in discussion of the definition of “Erosion Factor T” in Section 501.244 that the Agency had referred to availability of data through a Web site subsequently scheduled for deactivation. The Board requested comment on any amendment to this proposal necessitated by this deactivation and whether any other material that may be named as an alternative is capable of incorporation by reference under the APA.
- 3) The Board has proposed in Section 501.360 to define the term “Revised Universal Soil Loss Equation” and has also sought to incorporate the source of that definition by reference in Section 501.200. The Board seeks comment both on the substance of the proposed definition and incorporation of the federal regulation on which it is based.
- 4) The Board requested that the Environmental Groups address their proposed Section 502.201(a)(2) regarding contract operations by suggesting revised language if they wished the Board to consider such a requirement. The Board seeks comment from the Environmental Groups and any of the other participants on this issue.
- 5) The Board notes that Public Act 98-484, effective August 16, 2013, amended Section 21(q)(3) of the Act (415 ILCS 5/21(q)(3)((2012))). Section 21(q)(3) provides that no person shall “[c]onduct a landscape waste composting operation without an Agency permit, provided, however, that no permit shall be required for any person . . . operating a landscape waste permitting facility on a farm, if the facility meets all of the following criteria. . . .” P.A. 98-484, eff. Aug. 16, 2013. Public Act 98-484 added as Section (A-1) a criterion providing that

the composting facility accepts from other agricultural operations for composting with landscape waste no materials other than uncontaminated and source-separated (i) crop residue and other agricultural plant residue generated from the production and harvesting of crops and other customary farm practices, including, but not limited to, stalks, leaves, seed pods, husks, bagasse, and roots and (ii) plant-derived animal bedding, such as straw or sawdust, that is free of manure and was not made from painted or treated wood. P.A. 98-484, eff. Aug. 16, 2013.

The Board requests comment on whether Public Act 98-484 warrants amendment of the Board’s first-notice proposal. The Board seeks comment from the Agency and other participants on whether provisions

including the definitions of “livestock waste” or “manure” require any amendment to address this statutory revision.

Public comments must be filed with the Clerk of the Board at the following address:

Pollution Control Board
 John Therriault, Assistant Clerk
 James R. Thompson Center
 100 W. Randolph Street, Suite 11-500
 Chicago, IL 60601

In addition, public comments may be filed electronically through the Clerk’s Office On-Line (COOL) on the Board’s Web site at www.ipcb.state.il.us. Any questions about electronic filing should be directed to the Clerk’s Office at (312) 814-3629. Public comments and all other filings with the Clerk must be served on the hearing officer and on those persons on the Service List for this rulemaking. The current version of the Service List for R12-23 is available on COOL.

CONCLUSION

The Board proposes for first notice amendments to its regulations governing agriculture related pollution regulations in Parts 501, 502 and 504 (35 Ill. Adm. Code 501, 502, 504). Publication of the proposed amendment in the *Illinois Register* will start a period of at least 45 days during which any person may file public comments with the Clerk of the Board at the address provided above.

ORDER

The Board directs the Clerk to cause first-notice publication of the following proposed amendments to Parts 501, 502, and 504 of the Board’s agriculture related pollution regulations in the *Illinois Register*. Proposed additions to Parts 501, 502, and 504 are underlined, and proposed deletions appear stricken.

TITLE 35: ENVIRONMENTAL PROTECTION
 SUBTITLE E: AGRICULTURE RELATED POLLUTION
 CHAPTER I: POLLUTION CONTROL BOARD

PART 501
 GENERAL PROVISIONS

SUBPART A: AUTHORITY AND POLICY

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501.101	Authority
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501.103 Organization of this Chapter
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SUBPART B: DEFINITIONS AND INCORPORATIONS

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501.200	Incorporations by Reference
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501.295	Livestock Waste
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501.310	Man-made Ditch
<u>501.312</u>	<u>Manure</u>
<u>501.313</u>	<u>Manure Storage Area</u>
501.315	Manure Storage Structure
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<u>501.358</u>	<u>Production Area</u>
<u>501.359</u>	<u>Raw Materials Storage Area</u>
501.360	Revised Universal Soil Loss Equation <u>Settling Basin</u>
<u>501.361</u>	<u>Saturated</u>
<u>501.363</u>	<u>Setbacks</u>
501.365	Silvicultural Point Source
501.370	Standard of Performance
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<u>501.373</u>	<u>Surface Land Application</u>
501.375	Temporary Manure Stack
<u>501.377</u>	<u>Vegetative Buffer</u>
<u>501.378</u>	<u>Vegetative Fence Row</u>
<u>501.379</u>	<u>Waste Containment Area</u>
501.380	Water Pollution
<u>501.385</u>	<u>Wet Lot</u>
<u>501.390</u>	<u>25-Year, 24-Hour Precipitation Event</u>
<u>501.395</u>	<u>100-Year, 24-Hour Precipitation Event</u>

SUBPART C: OPERATIONAL RULES FOR ALL LIVESTOCK MANAGEMENT FACILITIES AND LIVESTOCK WASTE-HANDLING FACILITIES

Section	
501.401	<u>Purpose and Scope of Operational Rules for Livestock Management Facilities and Livestock Waste-Handling Facilities</u> General Criteria
501.402	Location of New Livestock Management Facilities and New Livestock Waste-Handling Facilities

501.403	Protection of Livestock Management Facilities and Livestock Waste-Handling Facilities
501.404	Handling and Storage of Livestock Waste
501.405	Field Application of Livestock Waste
501.406	Inspections and Disease Prevention

SUBPART D: SUBMITTAL OF INFORMATION

Section	
<u>501.505</u>	<u>Requirements for Certain CAFOs to Submit Information</u>

Appendix: A References to Previous Rules

AUTHORITY: Implementing and authorized by Sections 9, 12, 13, 21, 22 and 27 of the Environmental Protection Act [415 ILCS 5/9, 5/12, 5/13, 5/21, 5/22 and 5/27](~~Ill. Rev. Stat. 1989, ch. 111 1/2, pars. 1009, 1012, 1013, 1021, 1022 and 1027~~).

SOURCE: Filed and effective January 1, 1978; amended at 2 Ill. Reg. 44, p. 137, effective October 30, 1978; codified at 7 Ill. Reg. 10592; amended in R90-7 at 15 Ill. Reg. 10075, effective July 1, 1991; amended at 38 Ill. Reg. _____, effective _____.

SUBPART A: AUTHORITY AND POLICY

Section 501.103 Organization of this Chapter

The Board regulations adopted in 35 Illinois Administrative Code Subtitle E: Agriculture Related Pollution, Chapter I: Pollution Control Board are organized as provided in this Section.

- (a) Part 501 of this Chapter contains definitions and incorporations by reference applicable to Parts 501, 502 and 503 which are the Parts of this Chapter administered by the Environmental Protection Agency. Subpart C of Part 501 also contains the requirements applicable to all Livestock Waste Handling Facilities and Livestock Management Facilities whether or not those facilities are defined as Animal Feeding Operations (AFOs) or Concentrated Animal Feeding Operations (CAFOs) and without regard to whether the facility is subject to National Pollutant Discharge Elimination System (NPDES) permitting requirements.
- (b) Part 502 of this Chapter identifies which AFOs are subject to NPDES permit requirements and specifies those requirements. Part 502 also provides the state technical standards applicable to permitted CAFOs. This Part also contains requirements applicable to land application activities from AFOs which are defined as Large CAFOs and are not permitted under an NPDES permit.

- (c) Part 503 of this Chapter contains the requirements applicable to fish and aquatic animal production facilities, irrigation activities, and silvicultural activities and sources.
- (d) The Part 506 rules implement the Livestock Management Facilities Act [510 ILCS 77]. These rules and the Livestock Management Facilities Act are administered by the Illinois Department of Agriculture.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.104 Severability

If any provision of these rules or regulations is adjudged invalid, or if the application thereof to any person or in any circumstance is adjudged invalid, such invalidity shall not affect the validity of this chapter as a whole, or of any part, subpart, sentence or clause thereof not adjudged invalid.

(Source: Added at 38 Ill. Reg. _____, effective _____)

SUBPART B: DEFINITIONS AND INCORPORATIONS

Section 501.200 Incorporations by Reference

- a) The Board incorporates the following material by reference:

ASABE/ASAE. Available from American Society of Agricultural and Biological Engineers, 2950 Niles Road, St. Joseph, MI 49085-9659 ~~(616-429-6300)~~ (269-429-0300), fax 269-429-3852, hq@asabe.org.

“Management Control of Manure Odors,” ASAE EP379.4EP379.1 (January 2007)~~(December 1986)~~.

“Design of Anaerobic Lagoons for Animal Waste Management,” ASABE/ASAE EP403.4EP403.1 (R2011)~~(March 1999)~~.

“Illinois Agronomy Handbook, 24th Edition,” University of Illinois, College of Agriculture, Consumer and Environmental Sciences, Urbana, IL, July 2009. Available from University of Illinois, Office of Extension and Outreach, 111 Mumford Hall (MC-710), 1301 W. Gregory Dr., Urbana, IL 61801 (217) 333-5900

MWPS. Available from MidWest Plan Service, 122 Davidson Hall, Iowa State University, Ames, IA 50011-3080 (515)294-4337.

“Livestock Waste Facilities Handbook, Third Edition,” MWPS-18. MidWest Plan Service. April 1993.

“Manure Characteristics,” Section 1. Second Edition MWPS-18-S1. MidWest Plan Service. 2004.

“Recommended Chemical Soil Test Procedures for the North Central Region,” North Central Regional Publication No.221, Missouri Agricultural Experiment Station Bulletin SB 1001 (January 1998). Available from North Central Region-University of Missouri Soil Testing Lab, 23 Mumford Hall, University of Missouri Columbia, MO 65211 (573) 884-4288.

“Average Crop, Pasture, and Forestry Productivity Ratings for Illinois Soils; Bulletin No. 810,” University of Illinois, College of Agricultural, Consumer and Environmental Sciences Office of Research (2000), revised January 15, 2011 to amend Table 2 for B810. Available from University of Illinois, College of Agricultural, Consumer, and Environmental Sciences, Office of Research, 228 Mumford Hall, 1301 W. Gregory Dr., Urbana, IL 61801 (217) 333-0240.

“Optimum Crop Productivity Ratings for Illinois Soils; Bulletin 811,” University of Illinois, College of Agricultural, Consumer and Environmental Sciences Office of Research (2000), revised January 15, 2011, to amend Table S2 for B811. Available from University of Illinois, College of Agricultural, Consumer, and Environmental Sciences, Office of Research, 228 Mumford Hall, 1301 W. Gregory Dr., Urbana, IL 61801 (217) 333-0240.

“NOAA Atlas 14: Precipitation-Frequency Atlas of the United States,” United States Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service, Volume 2, Version 3.0 (2004), revised 2006. Available from NOAA, NWS, Office of Hydrologic Development, 1325 East West Highway, Silver Spring, MD 20910 (Available online at http://www.nws.noaa.gov/oh/hdsc/PF_documents/Atlas14_Volume2.pdf).

Code of Federal Regulations. Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20401 (202) 783-3238:

7 CFR 610.12 (2013), Revised Universal Soil Loss Equation

“Agricultural Waste Management Field Handbook,” United States Department of Agriculture, Natural Resources Conservation Service (2009). Available from USDA, NRCS, 1400 Independence Ave., S.W., Washington, DC 20250. (Available online at <http://directives.sc.egov.usda.gov/viewerFS.aspx?hid=21430>).

- b) This Section incorporates no later editions or amendments.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.201 Definitions

- a) Except as hereinafter stated and unless a different meaning of the term is clear from its context, the definitions of terms used in this Chapter shall be the same as those used in the Act and 35 Ill. Adm. Code: Subtitle C, Chapter I.
- b) The definitions contained in this Subpart are applicable to 35 Ill. Adm. Code Parts 501, 502 and 503.

(Source: Amended at 38 Ill. Reg. _____, effective _____)

Section 501.223 Animal Confinement Area

Animal confinement area includes but is not limited to open lots, housed lots, feedlots, confinement houses, stall barns, free stall barns, milkrooms, milking centers, cowyards, barnyards, medication pens, walkers, animal walkways and stables.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.236 Chemicals and Other Contaminants

Antibiotics, hormones, feed additives, pesticides, hazardous and toxic chemicals, petroleum products and by-products, other chemical products and by-products, and the residues and containers thereof.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.238 Concentrated Animal Feeding Operation (CAFO)

An Animal Feeding Operation (AFO) that is defined as a Large CAFO pursuant to Section 502.103 or as a Medium CAFO pursuant to Section 502.104, or that is designated as a CAFO pursuant to Section 502.106.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.241 CWA

The Clean Water Act, as amended, 33 U.S.C. 1251 *et seq.* Federal Water Pollution Control Act (also known as the Clean Water Act), as amended, 33 U.S.C 1251 *et seq.*, Public Law 92-500, enacted by the Congress October 18, 1972, as amended by Public Law 95-217, enacted December 27, 1977, as amended.

(Source: Amended at 38 Ill. Reg. _____, effective _____)

Section 501.242 Dry lot

A facility for growing ducks in confinement with a dry litter floor cover and no access to swimming areas.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.244 Erosion Factor T

An estimate of the maximum average annual rate, in tons per acre per year, of soil erosion by water that can occur without affecting crop productivity over a sustained period.

BOARD NOTE: Erosion Factor T for Illinois soils is available from the United States Department of Agriculture Natural Resources Conservation Service's published soil surveys for Illinois at http://soils.usda.gov/survey/printed_surveys/state.asp?state=Illinois&abbr=IL

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.252 Frozen Ground

Soil that is frozen anywhere between the first 1/2 inch to 8 inches of soil as measured from the ground surface.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.253 Grassed Waterway

A natural or constructed waterway or outlet shaped or graded and established in suitable vegetation as needed for the conveyance of runoff from a field, diversion or other structure.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.254 Groundwater

Underground water which occurs within the saturated zone and geologic materials where the fluid pressure in the pore space is equal to or greater than atmospheric pressure [415 ILCS 5/3.210].

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.261 Incorporation

A method of land application of livestock waste in which the livestock waste is thoroughly mixed or completely covered with the soil within 24 hours. Any ponded liquid livestock waste remaining on the site after application is not considered to be thoroughly mixed or completely covered with the soil.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.263 Injection

Means the placement of livestock waste 4 to 12 inches below the soil surface in the crop root zone using equipment specifically designed for that purpose and where the applied material is retained by the soil.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.267 Land Application Area

Land under the control of an Animal Feeding Operation owner or operator, whether it is owned, rented, or leased, to which livestock waste from the production area is or may be applied.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.295 Livestock Waste

Livestock excreta and associated feed losses, bedding, Manure, litter, process wastewater, overflow from watering systems, wash waters, sprinkling waters from livestock cooling, precipitation polluted by falling on or flowing onto an ~~a~~Animal ~~f~~Feeding ~~o~~Operation and other materials polluted by livestock, including but not limited to soils and sludges removed from livestock waste storage structures. Livestock waste does not include agricultural stormwater discharge.

(Source: Amended at 38 Ill. Reg. _____, effective _____)

Section 501.305 Man-made

~~Constructed by man and used for the purpose of transporting waste.~~

(Source: Amended at 38 Ill. Reg. _____, effective _____)

Section 501.310 Man-made Ditch

~~A discrete fissure or channel excavated in the earth for the purpose of transporting livestock waste directly to navigable waters. This is not to be confused with a vegetative filter or acceptable disposal area which is a treatment device and may take the form of a man-made terrace or grass waterway system.~~

(Source: Amended at 38 Ill. Reg. _____, effective _____)

Section 501.312 Manure

Manure includes animal excreta, bedding, compost and raw materials or other materials commingled with manure or set aside for disposal.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.313 Manure Storage Area

Manure storage area includes but is not limited to lagoons, runoff ponds, storage sheds, stockpiles, under the house or pit storages, liquid impoundments, static piles, and composting piles.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.325 Navigable Waters (Repealed)

~~All waters of the United States as defined in Criteria and Standards for the National Pollutant Discharge Elimination System (40 CFR 125.1(p)):~~

- ~~a) All navigable waters of the United States;~~
- ~~b) Tributaries of navigable water of the United States;~~
- ~~e) Interstate waters;~~
- ~~d) Intrastate lakes, rivers and streams which are utilized by interstate travelers for recreational or other purposes;~~
- ~~e) Intrastate lakes, rivers and streams from which fish or shellfish are taken and sold in interstate commerce; and~~
- ~~f) Intrastate lakes, rivers and streams which are utilized for industrial purposes by industries in interstate commerce.~~

(Source: Repealed at 38 Ill. Reg. _____, effective _____)

Section 501.333 New Source

Any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced after either of the following dates:

- a) after promulgation of standards of performance under section 306 of the Clean Water Act which are applicable to such source, or
- b) after proposal of standards of performance in accordance with section 306 of the Clean Water Act which are applicable to such source, but only if the standards are promulgated in accordance with section 306 within 120 days of their proposal.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.343 Overflow

The discharge of livestock waste resulting from the filling of livestock waste storage structures beyond the point at which livestock waste or stormwater can no longer be contained by the structure.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.345 Owner /~~or~~ Operator

Any person who owns, leases, operates, controls or supervises a livestock management facility or livestock waste-handling facility.

(Source: Amended at 38 Ill. Reg. _____, effective _____)

Section 501.355 Pollutant

Dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal and agricultural waste discharged into water, as defined in CWA.

(Source: Amended at 38 Ill. Reg. _____, effective _____)

Section 501.357 Process Wastewater

Water directly or indirectly used in the operation of the AFO for any of the following activities: spillage or overflow from animal or poultry watering systems; washing, cleaning, or flushing pens, barns, manure pits, or other AFO facilities; direct contact swimming, washing, or spray cooling of animals; or dust control. It also includes any water which comes into contact with any raw materials, products, or byproducts, including manure, litter, feed, milk, eggs or bedding.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.358 Production Area

The part of an AFO that includes the animal confinement area, the manure storage area, the raw materials storage area, and the waste containment areas. Also included in the definition of production area is any egg washing or egg processing facility, and any area used in the storage, handling, treatment, or disposal of mortalities.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.359 Raw Materials Storage Area

Raw materials storage area includes, but is not limited to, feed silos, silage bunkers, and bedding materials stacks.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.360 Revised Universal Soil Loss Equation~~Settling Basin~~

~~Any excavated, diked or walled structure or combination of structures designed as part of a livestock waste handling facility to detain feedlot runoff for a sufficient time to permit solids to settle for later removal.~~

The equation for calculating soil loss due to water erosion as set forth in 7 C.F.R. 610.12 (2013), incorporated by reference in Section 501.200:

$$A = R * K * LS * C * P$$

Where

A is the estimation of average annual soil loss in tons per acre caused by sheet and rill erosion;

R is the rainfall erosivity factor, which accounts for the energy and intensity of rainstorms;

K is the soil erodibility factor, which measures the susceptibility of a soil to erode under a standard condition and adjusts it bi-monthly for the effects of freezing and thawing, and soil moisture;

LS is the slope length and steepness factor, which accounts for the effect of length and steepness of slope on erosion based on the relationship of rill to interrill erosion; and

P is the support practice factor, which accounts for the effect of conservation support practices, such as cross-slop farming, strip cropping, buffer strips, and terraces on soil erosion.

BOARD NOTE: Soil loss may be calculated using Revised Universal Soil Loss Equation 2 (RUSLE2) software program available at http://fargo.nserl.purdue.edu/rusle2_dataweb/RUSLE2_Index.htm

(Source: Amended at 38 Ill. Reg. _____, effective _____)

Section 501.361 Saturated

Means soils where pore spaces are occupied by liquid such that additional inputs of water or liquid wastes cannot infiltrate into the soil.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.363 Setbacks

A specified distance from surface waters or potential conduits to surface waters where livestock waste may not be land applied. Examples of conduits to surface waters include, but are not limited to, open tile intake structures, sinkholes, and agriculture well heads.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.373 Surface Land Application

Application of livestock waste to the ground surface that is not incorporated or injected.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.377 Vegetative Buffer

Narrow, permanent strip of dense perennial vegetation established parallel to the contours of the land and perpendicular to the dominant slope of the field for the purposes of slowing water runoff, enhancing water infiltration, and minimizing the risk of any potential nutrients or pollutants from leaving the field and reaching surface waters.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.378 Vegetative Fence Row

Narrow, permanent strip of perennial vegetation established at the edge of a field that is a minimum of 15 feet wide. The vegetative fence row slows water runoff and enhances water infiltration thereby reducing the risk of pollutants leaving the field.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.379 Waste Containment Area

Waste containment area includes, but is not limited to, settling basins, and areas within berms and diversions which separate uncontaminated stormwater from livestock waste.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.385 Wet Lot

A confinement facility for raising ducks which is open to the environment, has a small number of sheltered areas, and with open water runs and swimming areas to which ducks have free access.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.390 25-Year, 24-Hour Precipitation Event

The maximum 24-hour precipitation event with a probable recurrence interval of once in 25 years, as defined by NOAA Atlas 14; Precipitation Frequency Atlas of the United States, incorporated by reference in Section 501.200.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 501.395 100-Year, 24-Hour Precipitation Event

The maximum 24-hour precipitation event with a probable recurrence interval of once in 100 years, as defined by NOAA Atlas 14; Precipitation Frequency Atlas of the United States, incorporated by reference in Section 501.200.

(Source: Added at 38 Ill. Reg. _____, effective _____)

SUBPART C: OPERATIONAL RULES FOR ALL LIVESTOCK MANAGEMENT FACILITIES AND LIVESTOCK WASTE-HANDLING FACILITIES

Section 501.401 Purpose and Scope of Operational Rules for Livestock Management Facilities and Livestock Waste-Handling Facilities General Criteria

- a) Besides the regulations contained within this Chapter, every person shall also comply with provisions of the Act and Board regulations.
- b) The owner or operator of any livestock management facility or livestock waste-handling facility shall comply with the CWA, NPDES filing requirements and the feedlot category of point source effluent guidelines. All livestock management facilities and livestock waste handling facilities have the obligation to make a site specific determination of whether the facility is subject to NPDES permit requirements and to follow those requirements when and where they are applicable. CAFOs are subject to additional requirements applicable under Part 502.
- c) The ~~These~~ regulations in this subpart shall apply to stockyards and similar operations where animals are held briefly, as well as to conventional livestock operations.
- d) The transportation of livestock wastes shall be planned and conducted so as not to cause, threaten, or allow any violation of the Act and applicable regulations.
- e) Any runoff or overflow from a livestock management facility or a livestock waste handling facility shall not cause a water quality violation pursuant to the Act or 35 Ill. Adm. Code Subtitle C: Water Pollution.

(Source: Amended at 38 Ill. Reg. _____, effective _____)

Section 501.402 Location of New Livestock Management Facilities and New Livestock Waste-Handling Facilities

- a) No new livestock management facility or new livestock waste-handling facility shall contain within its boundaries any stream or other surface waters except small temporary accumulations of water occurring as a direct result of precipitation.
- b) New livestock management facilities and new livestock waste-handling facilities located within a 10-year flood height as recorded by the United States Geological Survey or as officially estimated by the Illinois State Water Survey shall be protected against such flood.
- c)
 - 1) Upon July 15, 1991, new or expanded livestock management facilities and new or expanded livestock waste-handling facilities shall not be located within 1/2 mile of a populated area or within 1/4 mile of a non-farm residence.
 - 2) For purposes of this subsection (c), the following shall not be considered location of a new or expanded livestock management or waste handling facility:
 - A) Commencement of operations at an idle facility which has livestock shelters left intact, and which has been operated as a livestock management facility or livestock waste-handling facility for four consecutive months at any time within the ten (10) previous years;
 - B) Commencement of operations at a facility reconstructed after partial or total destruction due to natural causes, i.e., tornado, fire, or earthquake.
 - 3) Adequate odor control methods and technology shall be practiced by operators of new and existing livestock management facilities and livestock waste-handling facilities so as not to cause air pollution.
- d) The setback requirements of subsection (c) shall not apply to any livestock management facility or livestock waste-handling facility which meets any of the following conditions:
 - 1) The facility is located in an Agricultural Area, designated as such pursuant to the Agricultural Areas Conservation and Protection Act, 505 ILCS 5/1 ~~ll. Rev. Stat. 1989, ch. 5, para. 1001 et seq.~~;
 - 2) The facility undergoes expansion, and the owner of the facility certifies and notifies the Agency in writing as such that the facility was operating

as a livestock management facility or livestock waste-handling facility for at least one year prior to the existence of any non-farm residence within 1/4 mile of the facility or of a populated area within 1/2 mile of the facility; or

- 3) The use of the facility as a livestock management or livestock waste handling facility is allowed by local zoning or municipal ordinance. If no local zoning or municipal ordinance exists that covers such use, the facility shall be exempt if the livestock are not raised or kept at the facility primarily for hire or the raising or keeping of livestock at the facility does not have financial profit as a primary aim.
- e) A new livestock management facility or new livestock waste-handling facility which locates within 1/4 mile of a neighboring farm residence shall locate at the maximum feasible location from such residence.
- f) A new livestock management facility or new livestock waste-handling facility which locates within 1/4 mile of a non-farm residence or within 1/2 mile of a populated area, pursuant to subsection (d), shall locate at the maximum feasible location from such residence or populated area.
- g) New livestock management facilities or new livestock waste-handling facilities located on soil types or geological formations where the deposition of livestock waste is likely to cause groundwater pollution shall be constructed in such a way that pollution will be prevented, or supplementary measures shall be adopted which will prevent pollution.

(Source: Amended at 38 Ill. Reg. _____, effective _____)

Section 501.404 Handling and Storage of Livestock Waste

- a) Any livestock waste stored in excess of six months shall be contained in a manure storage structure.
- b) Temporary Manure Stacks
 - 1) A temporary manure stack is a potential secondary source, as defined by the Act. As a potential secondary source, a temporary manure stack is subject to the minimum setback zones established in Title IV of the Act. Temporary manure stacks shall be constructed or established and maintained in a manner to prevent runoff and leachate from entering surface or groundwaters.
 - 2) A temporary manure stack shall not be located within 75 feet from any water well, except monitoring wells. No temporary manure stack shall be constructed within 100 feet of a water well.

- 3) A temporary manure stack shall be constructed or established and maintained in a manner to prevent runoff and leachate from entering surface waters or groundwaters. A cover and pad or other control must be provided to prevent runoff and leachate from entering surface waters and groundwater.

c) Livestock Waste-Holding Facilities

- 1) Liquid manure-holding tanks shall be impermeable and capable of withstanding pressures and loadings to which such a tank may be subjected.
- 2) Holding ponds and lagoons shall be impermeable or so sealed as to prevent groundwater or surface water pollution.
- 3) For livestock management facilities and livestock waste handling facilities that are not required to obtain an NPDES permit, theThe contents of livestock waste-handling facilities shall be kept at levels such that there is adequate storage capacity so that an overflow does not occur except in the case of precipitation in excess of a 25-year 24-hour storm.
- 4) Liquid Livestock Waste
 - A) Existing livestock management facilities which handle the waste in a liquid form shall have adequate storage capacity in a liquid manure-holding tank, lagoon, holding pond, or any combination thereof so as not to cause air or water pollution as defined in the Act or applicable regulations. If inadequate storage time causes or threatens to cause a violation of the Act or applicable regulations, the Agency may require that additional storage time be provided. In such cases, interim pollution prevention measures may be required by the Agency.
 - B) New livestock waste-handling facilities which handle the waste in a liquid form shall provide a minimum of 120-day storage with a liquid manure-holding tank, lagoon, holding pond, or any combination thereof unless the operator has justifiable reasons substantiating that a lesser storage volume is adequate. If inadequate storage volumes cause or threaten to cause a violation of the Act or applicable regulations, the Agency may require corrective measures.

d) Runoff Field Application Systems

Any livestock management facility not meeting the definition of a CAFO in Section 501.238 may construct and operate a runoff field application system for the treatment of livestock waste from fewer than 300 animal units, meeting the requirements of 35 Ill. Adm. Code 570, in lieu of utilizing liquid manure-holding tanks, holding ponds, or lagoons in compliance with subsection (c), or other livestock waste-handling systems which would assure compliance with the Act and 35 Ill. Adm. Code Subtitle E.

- e) Subsections (a) through (d) shall not apply to livestock management facilities with fifty (50) or fewer animal units, provided that the following conditions exist:
- 1) The location of the facility relative to waters of the State is such that there is no discharge of livestock waste into waters of the State, in violation of Section 12 of the Act [415 ILCS 5/12]~~(Ill. Rev. Stat. 1989, ch. 111 1/2, par. 1012)~~;
 - 2) There is no discharge of livestock waste into waters of the State by means of a man-made ditch, flushing system or other similar man-made device, in violation of Section 12 of the Act [415 ILCS 5/12]~~(Ill. Rev. Stat. 1989, ch. 111 1/2, par. 1012)~~; and
 - 3) The facility is managed so that livestock waste is not allowed to accumulate to an extent which threatens to cause a discharge to waters of the State, in violation of Section 12 of the Act [415 ILCS 5/12]~~(Ill. Rev. Stat. 1989, ch. 111 1/2, par. 1012)~~.

(Source: Amended at 38 Ill. Reg. _____, effective _____)

Section 501.405 Field Application of Livestock Waste

- a) For livestock management facilities and livestock waste handling facilities that are not required to obtain an NPDES permit, the ~~The~~ quantity of livestock waste applied on soils shall not exceed a practical limit as determined by soil type, especially its permeability, the condition (frozen or unfrozen) of the soil, the percent slope of the land, cover mulch, proximity to surface waters and likelihood of reaching groundwater, and other relevant considerations. These livestock waste application guidelines will be adopted pursuant to Section 502.305, unless otherwise provided for by Board regulations. Facilities required to obtain an NPDES permit are subject to the requirements in Subpart F of Part 502. Unpermitted Large CAFOs claiming an agricultural stormwater exemption must comply with Sections 502.102 and 502.510(b).
- b) Operators of livestock waste handling facilities shall practice odor control methods during the course of manure removal and field application so as not to affect a neighboring farm or non-farm residence or populated area by causing air

pollution as described in Section 501.102(d). Odor control methods include, but are not limited to,

- 1) Soil injection or other methods of incorporation of waste into the soil including disking or plowing;
- 2) Consideration of climatic conditions including wind direction and inversions;
- 3) For liquid livestock waste: whether supernatant which is used for irrigation purposes has been stored in a livestock waste lagoon system which is designed and operated in accordance with "Design of Anaerobic Lagoons for Animal Waste Management", as incorporated by reference at Section 501.200.
- 4) Other methods as described in "~~Management~~Control of Manure Odor", as incorporated by reference at Section 501.200.

(Source: Amended at 38 Ill. Reg. _____, effective _____)

SUBPART D: SUBMITTAL OF INFORMATION

Section 501.505 Requirements for Certain CAFOs to Submit Information

- (a) Existing CAFOs not covered by an NPDES permit must submit to the Agency the information listed in subsection (c) as follows.
 - (1) Large CAFOs must submit the information within 90 days after the effective date of this Section.
 - (2) CAFOs with the same or fewer animals as the numbers of animals provided in 35 Ill. Adm. Code 502.103 that propose to stable or confine additional animals must submit the information 30 days prior to increasing the number of animals above the numbers provided in 35 Ill. Adm. Code 502.103.
- (b) New CAFOs that commence construction after the effective date of this section and have a capacity for animals greater than the numbers provided in 35 Ill. Adm. Code 502.103 must submit the information in subsection (c) 30 days prior to the commencement of operations if no NPDES permit application has been filed at that time.
- (c) CAFOs covered by subsections (a) and (b) must submit the following information to the Agency:

- 1) name of all owners and operators of the facility and their mailing addresses and phone numbers;
 - 2) location of the facility identified by the street address or latitude and longitude;
 - 3) location of the facility according to township, county, section, and quarter section;
 - 4) for the previous 12-month period, identification of each animal type stabled or confined at the facility and maximum number of each animal type;
 - 5) identification of types of animal holding areas including pastures, confinement barns, and open lots;
 - 6) identification of types and capacity of livestock waste containment and storage units, including, but not limited to, anaerobic lagoons, manure stacks, underground storage pits, and storage tanks; and
 - 7) date the information in subsection (c) is submitted to the Agency.
- (d) When a CAFO that has provided information to the Agency under this Section ceases operation, the owner or operator must submit a notification of termination to the Agency within 30 days after closure of the facility.
- (e) Any CAFO required to submit information to USEPA pursuant to Section 308 of the Clean Water Act must submit the same information to the Agency simultaneously with the submittal to USEPA.
- (f) Any submittal required under this Section must be sent to:
- Illinois Environmental Protection Agency
Division of Water Pollution Control
Attn. Permit Section
P.O. Box 19276
Springfield, Illinois 62794-9276.

(Source: Added at 38 Ill. Reg. _____, effective _____)

TITLE 35: ENVIRONMENTAL PROTECTION
 SUBTITLE E: AGRICULTURE RELATED POLLUTION
 CHAPTER I: POLLUTION CONTROL BOARD

PART 502
PERMITS

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APPENDIX A References to Previous Rules

AUTHORITY: Implementing Sections 9, 10, 12, 13, 21, and 22 of the Environmental Protection Act [415 ILCS 5/9, 10, 12, 13, 21, 22] (~~Ill. Rev. Stat. 1981, ch. 111 1/2, pars. 1009, 1012, 1013, 1021 and 1022~~) and authorized by Section 27 of the Environmental Protection Act [415 ILCS 5/27] (~~Ill. Rev. Stat. 1981, ch. 111 1/2 par. 1027~~).

SOURCE: Filed and effective January 1, 1978; amended 2 Ill. Reg. 44, p. 137, effective October 30, 1978; codified at 7 Ill. Reg. 10592; amended at 38 Ill. Reg. _____, effective _____.

SUBPART A: PERMITS REQUIRED

Section 502.101 NPDES Permit Requirement and Duty to Maintain Permit Coverage

- a) A CAFO is a point source. Any discharge of pollutants into waters of the United States from a CAFO is prohibited unless authorized by an NPDES permit or unless the discharge is an agricultural stormwater discharge as described in Section 502.102(b). No person shall cause or allow a discharge from a CAFO in violation of federal or state law, including but not limited to the CWA, the Act or Board regulations.
- b) The owner or operator of a CAFO must seek coverage under an NPDES permit if the CAFO discharges.
- c) The owner or operator of a CAFO that discharges must either apply for an individual NPDES permit or submit a notice of intent for coverage under an NPDES general permit. If the Agency has not made a general permit available to the CAFO, the CAFO owner or operator must submit an application for an individual permit to the Agency. All permit applications and applications for permit modifications must contain the information set forth in Subpart B of this Part.
- d) Any permitted CAFO shall apply for reissuance of the NPDES permit not less than 180 days prior to the expiration date of the permit unless the CAFO will not discharge after the expiration date of the NPDES permit.
- e) The owner or operator of a new CAFO that will discharge must apply for NPDES permit coverage at least 180 days prior to the time that the CAFO commences operation.
- f) Once an Animal Feeding Operation is defined as a CAFO for at least one type of animal, the NPDES permit requirements for CAFOs apply with respect to all animals in confinement at the Animal Feeding Operation and all livestock waste generated by those animals or the production of those animals.

~~No person specified in Sections 502.102, 502.103 or 502.104 or required to have a permit under the conditions of Section 502.106 shall cause or allow the operation of any new livestock management facility or livestock waste handling facility, or cause or allow the modification of~~

~~any livestock management facility or livestock waste handling facility, or cause or allow the operation of any existing livestock management facility or livestock waste handling facility without a National Pollutant Discharge Elimination System (NPDES) permit. Facility expansions, production increases, and process modifications which significantly increase the amount of livestock waste over the level authorized by the NPDES permit must be reported by submission of a new NPDES application.~~

(Source: Amended at 38 Ill. Reg. _____, effective _____)

Section 502.102 Land Application Discharges and Agricultural Stormwater~~Twenty-five Year Storm Event~~

- a) The discharge of livestock waste to waters of the United States from a CAFO as a result of the livestock waste application by the CAFO to land application areas is a discharge from that CAFO subject to NPDES permit requirements, except where it is an agricultural stormwater discharge and therefore exempt from the definition of a point source under Section 502 of the Clean Water Act.
- b) Where livestock waste has been land applied in accordance with site specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the livestock waste and in compliance with Section 502.510 for permitted CAFOs and Section 502.510(b) for unpermitted Large CAFOs, a precipitation-related discharge of livestock waste from land application areas of an unpermitted Large CAFO or a permitted CAFO, is an agricultural stormwater discharge.
- c) Unpermitted Large CAFOs must maintain the documentation specified in 35 Ill. Adm. Code 502.510(b)(16) either on site or at a nearby office, or otherwise make such documentation readily available to the Agency upon request.

~~An NPDES permit shall be required for an animal feeding operation which falls within the criteria set forth in Section 502.103 or Section 502.104 below; provided, however, that no animal feeding operation shall require a permit if it discharges only in the event of a 25-year 24-hour storm event.~~

(Source: Amended at 38 Ill. Reg. _____, effective _____)

Section 502.103 Very Large CAFOs ~~Operators~~

An Animal Feeding Operation is defined as a Large CAFO if as many as or ~~NPDES permit is required if~~ more than the numbers of animals specified in any of the following categories are stabled or confined:

<u>Number of Animals</u>	<u>Kind of Animals</u>
<u>700</u>	<u>Mature dairy cows, whether milked or dry</u>

<u>1,000</u>	<u>Veal calves</u>
<u>1,000</u>	<u>Cattle other than mature dairy cows or veal calves. Cattle includes but is not limited to heifers, steers, bulls and cow/calf pairs</u>
<u>2,500</u>	<u>Swine each weighing 55 pounds or more</u>
<u>10,000</u>	<u>Swine each weighing less than 55 pounds</u>
<u>500</u>	<u>Horses</u>
<u>10,000</u>	<u>Sheep or lambs</u>
<u>55,000</u>	<u>Turkeys</u>
<u>30,000</u>	<u>Laying hens or broilers, if the AFO uses a liquid manure handling system</u>
<u>125,000</u>	<u>Chickens (other than laying hens), if the AFO uses other than a liquid manure handling system</u>
<u>82,000</u>	<u>Laying hens, if the AFO uses other than a liquid manure handling system</u>
<u>30,000</u>	<u>Ducks (if the AFO uses other than a liquid manure handling system)</u>
<u>5,000</u>	<u>Ducks (if the AFO uses a liquid manure handling system)</u>

Number of Animals Kind of Animals

<u>1000</u>	<u>Brood cows and slaughter and feeder cattle</u>
<u>700</u>	<u>Milking dairy cows</u>
<u>500</u>	<u>Horses</u>
<u>2500</u>	<u>Swine weighing over 55 pounds</u>
<u>10,000</u>	<u>Sheep, lambs or goats</u>
<u>55,000</u>	<u>Turkeys</u>
<u>100,000</u>	<u>Laying hens or broilers (if the facility has continuous overflow watering)</u>
<u>30,000</u>	<u>Laying hens or broilers (if the facility has a liquid manure handling system)</u>
<u>5000</u>	<u>Ducks</u>
<u>1000</u>	<u>Animal units</u>

(Source: Amended at 38 Ill. Reg. _____, effective _____)

Section 502.104 Medium CAFOs ~~Large Operators~~

- a) An Animal Feeding Operation is defined as a Medium CAFO ~~NPDES permit is required if more than the following numbers and types of animals specified in any of the following categories are stabled or confined and the provisions of either subsection condition (b), or(c) or (d) below of this Section is met:~~

<u>Number of Animals</u>	<u>Kind of Animals</u>
<u>200 to 699</u>	<u>Mature dairy cows, whether milked or dry</u>
<u>300 to 999</u>	<u>Veal calves</u>
<u>300 to 999</u>	<u>Cattle other than mature dairy cows or veal</u>

	<u>calves. Cattle includes but is not limited to heifers, steers, bulls and cow/calf pairs</u>
<u>750 to 2,499</u>	<u>Swine each weighing 55 pounds or more</u>
<u>3,000 to 9,999</u>	<u>Swine each weighing less than 55 pounds</u>
<u>150 to 499</u>	<u>Horses</u>
<u>3,000 to 9,999</u>	<u>Sheep or lambs</u>
<u>16,500 to 54,999</u>	<u>Turkeys</u>
<u>9,000 to 29,999</u>	<u>Laying hens or broilers, if the AFO uses a liquid manure handling system</u>
<u>37,500 to 124,999</u>	<u>Chickens (other than laying hens), if the AFO uses other than a liquid manure handling system</u>
<u>25,000 to 81,999</u>	<u>Laying hens, if the AFO uses other than a liquid manure handling system</u>
<u>10,000 to 29,999</u>	<u>Ducks (if the AFO uses other than a liquid manure handling system)</u>
<u>1,500 to 4,999</u>	<u>Ducks (if the AFO uses a liquid manure handling system)</u>

<u>Number of Animals</u>	<u>Kind of Animals</u>
300	Brood cows and slaughter or feeder cattle
200	Milking dairy cows
750	Swine weighing over 55 pounds
150	Horses
3000	Sheep, lambs or goats
16,000	Turkeys
30,000	Laying hens or broilers (if the facility has continuous overflow watering)
9000	Laying hens or broilers (if the facility has a liquid manure handling system)
1000	Ducks
300	Animal units

- b) Pollutants are discharged into navigable waters of the United States through a man-made ditch, flushing system or other similar man-made device; or
- c) Pollutants are discharged directly into navigable waters of the United States which originate outside of and pass over, across, through or otherwise come into direct contact with the animals confined in the operation; or-
- d) The Animal Feeding Operation is designated as a CAFO by the Agency pursuant to Section 502.106.

(Source: Amended at 38 Ill. Reg. _____, effective _____)

Section 502.105 Small CAFOs Voluntary Applications

An Animal Feeding Operation is a Small CAFO if it is designated as a CAFO by the Agency pursuant to Section 502.106 of this Part, and it is not a Medium CAFO. None of the requirements listed in this subpart precludes the voluntary filing of an NPDES application by the owner or operator of an animal feeding operation.

(Source: Amended at 38 Ill. Reg. _____, effective _____)

Section 502.106 Case-By-Case ~~Case-by-case~~ Designation Requiring NPDES Permits

- a) Notwithstanding any other provision of this Part, the Agency may require any a~~Animal~~ f~~Feeding~~ o~~Operation~~ not falling within Sections ~~502.102, 502.103 or 502.104~~ to obtain an~~a~~ NPDES permit by designating the Animal Feeding Operation as a CAFO upon determining that it is a significant contributor of pollutants to waters of the United States. In making ~~such designation~~ the determination of whether the Animal Feeding Operation is a significant contributor of pollutants, the Agency shall consider the following factors:
- 1) The size of the a~~Animal~~ f~~Feeding~~ o~~Operation~~ and the amount of livestock wastes reaching navigable waters of the United States;
 - 2) The location of the a~~Animal~~ f~~Feeding~~ o~~Operation~~ relative to navigable waters of the United States;
 - 3) The means of conveyance of livestock animal-wastes-and-process wastewaters into navigable waters of the United States;
 - 4) The slope, vegetation, rainfall and other factors relative to the likelihood or frequency of discharge of livestock waste-animal-wastes-and-process wastewaters into navigable waters of the United States; and
 - 5) Other such factors bearing on the significance of the pollution problem sought to be regulated.
- b) The Agency, however, may not require a permit under subsection (a) paragraph a) of this Section for any a~~Animal~~ f~~Feeding~~ o~~Operation~~ with less than the number of animals units (300) set forth in Section 502.104 above, unless it meets either of the following conditions:
- 1) Pollutants are discharged into navigable waters of the United States through a man-made ditch, flushing system or other similar man-made device; or
 - 2) Pollutants are discharged directly into navigable waters of the United States which originate outside of and pass over, across, through or

otherwise come into direct contact with the animals confined in the operation.

- c) In no case may a permit application be required from an ~~a~~Animal Feeding Operation designated pursuant to this section until there has been an onsite inspection of the operation and a determination that the operation should and could be regulated under the permit program. ~~In addition, no application may be required from an owner or operator of an animal feeding operation designated pursuant to this section unless the owner or operator is notified in writing of the requirement to apply for a permit.~~
- d) Upon receipt of the Agency's notification that an NPDES permit is required pursuant to ~~this Section, paragraph b)~~ the operator shall make application to the Agency within ~~90~~60 days. The Agency may issue an NPDES permit with a compliance schedule detailing interim steps to be taken along with a final date, not to exceed 14 months from the date the permit is issued, by which compliance with the Act and all applicable regulations shall be achieved.
- e) The Agency will notify the owner or operator in writing of the Agency's decision to designate the Animal Feeding Operation as a CAFO under this Section and the grounds for the designation. The owner or operator may file an appeal of the Agency's decision with the Board within 35 days after the date on which the Agency served the decision pursuant to Section 40(a) of the Act and 35 Ill. Adm. Code 105.~~No animal feeding operation may be required to have a permit if it discharges only in the event of a 25-year 24-hour storm event.~~

(Source: Amended at 38 Ill. Reg. _____, effective _____)

SUBPART B: PERMIT APPLICATIONS

Section 502.201 Permit Applications~~Contents~~

- a) All applications from a new or existing CAFO for any permit, including an individual permit or a general permit, required under this Chapter shall contain, where appropriate, the following information and documents:
- 1) The name of the owner or operator;
 - 2) The facility location and mailing addresses;
 - 3) The latitude and longitude at the entrance to the production area;
 - 4) Specific information about the average and maximum number and type of animals, whether in open confinement or housed under roof (beef cattle, broilers, layers, swine weighing 55 pounds or more, swine weighing less

than 55 pounds, mature dairy cows, dairy heifers, veal calves, sheep and lambs, horses, ducks, turkeys, other);~~Kinds and numbers of livestock;~~

- 52) A statement as to any projected changes in the size of the livestock operation and when they may occur during the term of the permit;
- 63) The type of containment and storage (anaerobic lagoon, roofed storage shed, storage ponds, underfloor pits, above ground storage tanks, below ground storage tanks, concrete pad, impervious soil pad, other) and total capacity for manure, litter, and process wastewater storage (in tons or gallons); ~~Description of land areas used for the livestock management facilities and livestock waste handling facilities and land areas used for livestock waste disposal;~~
- 74) A topographic map of the geographic area in which the CAFO is located showing the specific location of the production area and land application areas, and indicating the following:~~A sketch of the existing and/or proposed facility indicating the following:~~
- ~~A)~~ Approximate overall dimensions of the facility;
 - ~~AB)~~ Direction and location of surface and subsurface drainage and other discharges from the facility; and
 - ~~BC)~~ General Location~~location~~ of waterways in the area.;
 - ~~D)~~ Location of area for manure disposal; and
 - ~~E)~~ A marked up aerial photograph or U.S. Geological Survey map of the area involved is desirable in lieu of a sketch.
- 8) Estimated amounts of livestock waste generated per year (in tons or gallons);
- 9) The total number of acres of land application area and the estimated amount of waste to be applied to those acres per year;
- 10) Estimated amount of livestock waste transferred to other persons per year (in tons or gallons);
- 11) A nutrient management plan that is consistent with the requirements of Subpart E;
- 12) A stormwater pollution prevention plan;
- 13) A spill control and prevention plan; and

- 145) A statement identifying and justifying any departure from current design criteria promulgated by the Agency.
- b) The Agency may adopt procedures requiring such additional information as is necessary to determine whether the CAFO livestock management facility or ~~livestock waste handling facility~~ will meet the requirements of the Act and applicable Board ~~regulations~~regulations.
- c) Applicable requirements of 35 Ill. Adm. Code 309: Subpart A shall apply to applications for NPDES permits required by this chapter. The Agency may prescribe the form in which information required under this section shall be submitted.

(Source: Amended at 38 Ill. Reg. _____, effective _____)

Section 502.202 Permit Application Submissions~~Registered or Certified Mail~~

All permit applications shall be mailed, ~~or delivered~~ or electronically submitted to the appropriate address designated by the Agency. ~~Any application or revised application sent by mail shall be sent by registered or certified mail, return receipt requested. Applications which are hand-delivered shall be delivered to and received for by any authorized person employed in the Permit Section of the Agency's Division of Water Pollution Control.~~

(Source: Amended at 38 Ill. Reg. _____, effective _____)

Section 502.203 New Applications ~~(Repealed)~~

~~Any person now discharging whose discharge was not covered by the Refuse Act permit program (33 U.S.C. 407), but which is subject to the NPDES program, must apply for an NPDES permit on the effective date of this chapter. However, for purposes of this chapter, any person who has applied for an NPDES permit from the U.S. Environmental Protection Agency and whose application has not been denied, shall be considered to have applied for an NPDES permit unless the discharge described in the Application for an NPDES Permit has substantially changed in nature, volume, or frequency; in which case another NPDES permit application shall be submitted.~~

(Source: Repealed at 38 Ill. Reg. _____, effective _____)

Section 502.204 Renewal

Permittees seeking reissuance of their NPDES permit pursuant to 502.101(d) ~~who wish to continue to discharge subsequent to the expiration date of their permit~~ must apply for reissuance of the permit, using proper forms, not less than 180 days prior to the permit expiration date. The Agency will notify such persons of the need for renewal at least 60 days prior to the date on

which the renewal application must be submitted; however, failure to do so does not excuse non-compliance with this chapter.

(Source: Amended at 38 Ill. Reg. _____, effective _____)

Section 502.205 New Operations (Repealed)

~~Any person whose livestock waste handling facility or livestock management facility is required by Sections 502.101, 502.102, 502.103 or 502.104 to obtain a permit and will begin operation on or after the effective date of these Regulations must apply for an NPDES permit no later than 180 days in advance of the date on which the facility is to commence operation minus the number of days available storage time for installed manure storage structures.~~

(Source: Repealed at 38 Ill. Reg. _____, effective _____)

Section 502.207 Disclosure Required for Land Trusts

An applicant filing for an NPDES permit shall satisfy the requirements of the "Land Trust Beneficial Interest Disclosure Act" [735 ILCS 405 et. seq.]. ~~An Act to Require disclosure, under certification of perjury, of all beneficial interests in real property held in a land trust, in certain cases" (Ill. Rev. Stat. 1981, ch. 148, par. 72)~~ before the Agency grants the applicant its permit.

(Source: Amended at 38 Ill. Reg. _____, effective _____)

SUBPART C: PERMIT ISSUANCE AND CONDITIONS

Section 502.304 Issuance and Conditions

- a) The provisions of 35 Ill. Adm. Code 309: Subpart A shall apply to the issuance, conditions and modification of NPDES permits under this chapter in the same manner as such provisions apply to NPDES permits issued pursuant to 35 Ill. Adm. Code 309. Specific provisions applicable to CAFOs seeking coverage under NPDES general permits are found in Section 502.310 of this Subpart.
- b) In addition to specific conditions authorized under this Part, the Agency may impose such conditions in any permit issued pursuant to this Part as may be necessary to accomplish the purposes of the Act or Board regulations.

(Source: Amended at 38 Ill. Reg. _____, effective _____)

Section 502.310 CAFOs Seeking Coverage Under NPDES General Permits

- a) CAFO owners or operators must submit a notice of intent that meets the requirements of Section 502.201 and Subpart E of this Part when seeking authorization to discharge under a general permit.

- b) When additional information is necessary to complete the notice of intent or to clarify, modify, or supplement previously submitted material, the Agency may request such information from the owner or operator as provided in 35 Ill. Adm. Code 309.106.
- c) The Agency must notify the public of its proposal to grant coverage under the general permit to the CAFO. This public notice must include the CAFO's nutrient management plan.
- d) The process for submitting public comments and hearing requests, and the hearing process if a request for a hearing is granted, will follow the procedures applicable to draft individual permits found in 35 Ill. Adm. Code 309.109(b) and 309.115 through 309.118.
- e) The time period for the public to comment and request a hearing is 30 days following the date of the notice issued pursuant to subsection (c).
- f) When a public hearing is held, the Agency must respond to significant comments received during the comment period as provided in 35 Ill. Adm. Code 309.119 and 309.120, except that notice and transmission to the U.S. EPA Regional Administrator is not required. If no hearing is held, the Agency shall follow the procedures in 35 Ill. Adm. Code 309.112 and 309.120 for Agency action after the comment period. If necessary, the Agency will require the CAFO owner or operator to revise the nutrient management plan in order to be granted permit coverage.
- g) When the Agency authorizes coverage for the CAFO owner or operator under the general permit, the terms of the nutrient management plan shall become incorporated as terms and conditions of the permit for the CAFO. This incorporation of terms and conditions does not require a modification of the general permit.
- h) The Agency shall notify the CAFO owner or operator and inform the public that coverage has been authorized and of the terms of the nutrient management plan incorporated as terms and conditions of the permit applicable to the CAFO.
- i) Nothing in this Section shall limit the Agency's authority to require an individual NPDES permit pursuant to Section 39(b) of the Act.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 502.315 CAFO Permit Requirements

NPDES permits issued to CAFOs under this Part must include:

- a) Requirements to implement a nutrient management plan that meets the provisions of Subpart E of this Part.
- b) Requirements for the permittee to create, maintain for five years from creation on site, and make available to the Agency, upon request, a complete copy of the records required in Section 502.320 of this Part.
- c) Annual reporting requirements for permitted CAFOs. The permittee must submit an annual report to the Agency. The annual report must include the information specified in Section 502.325 of this Part.
- d) Requirements to comply with the livestock waste discharge limitations in Subparts F, G and H of this Part, if applicable.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 502.320 Recordkeeping Requirements

The permittee must create, maintain for five years, and make available to the Agency, upon request, the following records:

- a) A copy of all applicable records identified pursuant to Section 502.510(b)(16);
- b) A copy of the information required under Section 502.201;
- c) Records documenting the visual inspections required under Section 502.610(c);
- d) Weekly records of the depth of the manure and process wastewater in the liquid livestock waste storage as indicated by the depth marker under Section 502.610(d);
- e) Records documenting any actions taken to correct deficiencies required under Sections 502.610(e) and (f). Deficiencies not corrected within 30 days must be accompanied by an explanation of the factors preventing immediate correction;
- f) Records of mortalities management and practices used by the facility to meet the requirements of Section 502.610(g);
- g) Records documenting the current design of any livestock waste storage structures, including volume for solids accumulation, design treatment volume, total design volume, and approximate number of days of storage capacity;
- h) Records of the date, time, and estimated volume of any overflow;
- i) A copy of the facility's site-specific nutrient management plan;

- j) Expected crop yields for land application areas;
- k) The date(s) livestock waste is applied to each land application area;
- l) Records documenting subsurface drainage inspections conducted according to the plan developed pursuant to Section 502.510(b)(13);
- m) Results from livestock waste and soil sampling;
- n) Explanation of the basis for determining livestock waste application rates;
- o) Calculations showing the total nitrogen and phosphorus to be applied to each field, including sources other than livestock waste;
- p) Total amount of nitrogen and phosphorus actually applied to each field, including documentation of calculations for the total amount applied;
- q) The method used to apply the livestock waste;
- r) Date of livestock waste application equipment inspection;
- s) Maximum number and type of animals, whether in open confinement or housed under roof by the following types: beef cattle, broilers, layers, swine weighing 55 pounds or more, swine weighing less than 55 pounds, mature dairy cows, dairy heifers, veal calves, sheep and lambs, horses, turkeys, ducks, other;
- t) All records necessary to prepare the annual report required by Section 502.325;
- u) Total number of acres of land application area covered by the nutrient management plan;
- v) The quantity of livestock waste removed when a manure storage area or waste containment area is dewatered;
- w) The permittee will record the following information for each day during which livestock wastes are applied to land:
 - 1) the amount applied to each field in either gallons, wet tons or dry tons per acre,
 - 2) soil water conditions at the time of application (such as dry, saturated, flooded, frozen, snow-covered),
 - 3) an estimate of the amount of precipitation 24 hours prior to, and for 24 hours after the application,

- 4) the type of application method used (surface, surface with incorporation, or injection),
- 5) the location of the field where livestock waste was applied,
- 6) the results of leak inspection of livestock waste application equipment,
- 7) the name and address of off-site recipients of livestock waste, the amount of waste transferred to each off-site recipient in gallons or dry tons, off-site location on a topographic map and acreage of each site used by the off-site recipient,
- 8) Weather conditions, including precipitation, air temperature, wind speed, wind direction and dew point, at time of land application and for 24 hours prior to and for 24 hours following application, and
- 9) Records of the weather forecasts required to be maintained pursuant to Sections 502.620(d) and 502.630(b)(3), (4), and (5);
- x) The laboratory analysis sheets reporting the analysis of the livestock waste samples shall be kept on file at the facility for the term of this permit and for 5 years after expiration of the permit; and
- y) Records documenting the test methods and sampling protocols for manure, litter and process wastewater and soil analyses.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 502.325 Annual Report

- a) The NPDES permit must specify annual reporting requirements for the CAFO. The annual report must be submitted to the Agency.
- b) The annual report must contain the following minimum elements:
 - 1) Maximum number and type of animals, whether in open confinement or housed under roof by the following types: beef cattle, broilers, layers, swine weighing 55 pounds or more, swine weighing less than 55 pounds, mature dairy cows, dairy heifers, veal calves, sheep and lambs, horses, turkeys, ducks, other;
 - 2) Quantity of livestock waste generated by the facility in the previous 12 months (tons/gallons);
 - 3) Quantity of livestock waste transferred to another person by the facility in the previous 12 months (in tons or gallons);

- 4) Total number of acres of land application area covered by the nutrient management plan;
- 5) Total number of acres the CAFO used for land application of livestock waste in the previous 12 months and were under the control of the CAFO through ownership, lease, or consent agreement;
- 6) A statement indicating whether the current version of the CAFO's nutrient management plan for land application of livestock waste was developed or approved by a certified nutrient management planner and by whom the certification was issued;
- 7) Summary of all livestock waste discharges from the production area that have occurred in the previous 12 months, including date, time, and approximate volume;
- 8) A report of instances of non-compliance with the NPDES permit in the previous 12 months;
- 9) The actual crops planted and actual yields for each field;
- 10) The actual nitrogen and phosphorus content of the livestock waste;
- 11) The results of calculations conducted in accordance with Sections 502.515(d)(3) and (e)(3);
- 12) The amount of livestock waste land applied to each field during the previous 12 months; and
- 13) For any CAFO that implements a nutrient management plan that addresses rates of application in accordance with Section 502.515(e):
 - a) the results of any soil testing for nitrogen and phosphorus taken during the preceding 12 months,
 - b) data used in calculations conducted in accordance with Section 502.515(e)(3), and
 - c) the amount of any supplemental fertilizer applied during the previous 12 months; and
- 14) Annual review of the nutrient management practices to be implemented and an update of the nutrient management plan when there is a change in the nutrient management practices.

(Source: Added at 38 Ill. Reg. _____, effective _____)

SUBPART E: REQUIREMENTS FOR DEVELOPING AND IMPLEMENTING NUTRIENT MANAGEMENT PLANS

Section 502.500 Purpose, Scope and Applicability

The requirements in this Subpart are intended to minimize the transport of nitrogen and phosphorus to waters of the United States in compliance with the nutrient management plan.

- a) The requirements in this Subpart apply to CAFOs required to obtain an NPDES permit. Unpermitted Large CAFOs claiming an agricultural stormwater exemption must comply with Sections 502.102 and 502.510(b).
- b) The CAFO owner or operator shall develop, submit and implement a site specific nutrient management plan. This plan shall specifically identify and describe practices that will be implemented to assure compliance with this Subpart and the livestock waste discharge limitations and technical standards of Subparts F, G, and H.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 502.505 Nutrient Management Plan Information

The nutrient management plan shall contain, at a minimum, the following items:

- a) Name, address, and phone number of the owners of the CAFO;
- b) Name, address, and phone number of the managers or operators if different than the owners;
- c) Address, phone number, and plat location of the CAFO production area;
- d) Name of the person who developed the nutrient management plan and a statement indicating whether it was developed or approved by a certified nutrient management planner and by whom the certification was issued;
- e) Type of waste storage for the CAFO;
- f) Species, size and maximum number of animals at the CAFO;
- g) Scaled aerial photos or maps depicting each field available and intended for livestock waste applications with available acreage listed and indicating residences, non-farm businesses, common places of assembly, streams, wells, waterways, lakes, ponds, rivers, drainage ditches, subsurface drainage systems, other water sources, 10-year flood plain, buffers, slope, locations of structural

Best Management Practices, setbacks and areas restricted from application by this Subpart E;

- h) For land application areas not owned or rented by the owner or operator of the CAFO, copies of statement of consent between the owner or operator of the livestock facilities and the owner of the land where livestock waste will be applied;
- i) Cropping schedule for each field for the past year, anticipated crops for the current year, and anticipated crops for the five year term of the permit;
- j) Realistic crop yield goal for each crop in each field;
- k) An estimate of the nutrient value of the livestock waste or results of livestock waste analysis determined pursuant to Section 502.625(c);
- l) Livestock waste application methods;
- m) Results of the Bray P1 or Mehlich 3 test for soil phosphorus, in accordance with Recommended Chemical Soil Test Procedures for the North Central Region, incorporated by reference in Section 501.200, reported in pounds of elemental phosphorus per acre. If the livestock waste is to be land applied based on a single year or multi-year phosphorus application on the land application area, the following items must be provided;
 - 1) An estimate of the volume of livestock waste to be disposed of annually,
 - 2) The phosphorus content of the livestock waste,
 - 3) The phosphorus amount needed for each crop in the planned crop rotation, expressed as pounds of P₂O₅ per acre, obtained from the Illinois Agronomy Handbook, 24th Edition, incorporated by reference at Section 501.200, and
 - 4) The maximum livestock waste application rate based on phosphorus for each field, determined pursuant to Section 502.625(g).
- n) Calculations showing the following;
 - 1) An estimate of the volume of livestock waste to be disposed of annually,
 - 2) Nitrogen loss due to the method of storage, if applicable,
 - 3) Amount of nitrogen available for application,
 - 4) Nitrogen loss due to the method of application,

- 5) Amount of plant-available nitrogen including first-year mineralization of organic nitrogen,
 - 6) Amount of nitrogen required by each crop in each field based on realistic crop yield goal,
 - 7) Nitrogen credits from previous crops, from other sources of fertilizer applied for the growing season, and from any livestock waste applications during the previous three years for each field,
 - 8) Livestock waste application rate based on nitrogen for each field, and
 - 9) Land area required for application.
- o) A listing of fields and the planned livestock waste application amounts for each field.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 502.510 Nutrient Management Plan Requirements

- a) Any permit issued to a CAFO must include a requirement to implement a nutrient management plan by the date of permit coverage that, at a minimum, contains best management practices necessary to meet the requirements of this Section and the applicable livestock discharge limitations and technical standards in 35 Ill. Adm. Code Parts 501 and 502.
- b) The nutrient management plan must specify and demonstrate:
 - 1) The livestock waste application rate of nitrogen in a single year and phosphorus in a single year or multiple years, not to exceed the single year crop nitrogen and single year or multi-year phosphorus requirements for realistic crop yield goals in the rotation;
 - 2) Adequate land application area for livestock waste application which may include (i) land owned by the CAFO owner or operator, (ii) land leased by the CAFO, (iii) land covered by a consent agreement between the CAFO owner or operator and the property owner, or (iv) any combination of the above;
 - 3) Adequate storage of livestock waste, including procedures to ensure proper operation and maintenance of the storage facilities;

- 4) Proper management of mortalities to ensure that they are not disposed of in a liquid livestock waste or stormwater storage or treatment system that is not specifically designed to treat animal mortalities;
- 5) That clean water is diverted, as appropriate, from the production area;
- 6) Prevention of direct contact of confined animals with waters of the United States;
- 7) That chemicals and other contaminants handled on-site are not disposed of in any livestock waste or stormwater storage or treatment system unless specifically designed to treat such chemicals and other contaminants;
- 8) Appropriate site specific conservation practices to be implemented, including as appropriate buffers or equivalent practices, to control runoff of pollutants to waters of the United States;
- 9) Protocols for appropriate testing of livestock waste and soil. Livestock waste must be analyzed a minimum of once annually for nitrogen and phosphorus content, and soil analyzed a minimum of twice every five years for phosphorus content. The results of these analyses are to be used in determining application rates for livestock wastes;
- 10) Protocols to land apply livestock waste in accordance with site-specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the livestock waste;
- 11) Livestock waste shall not be applied within the distance from residences provided in Section 502.645(a) and within the areas prohibited from land application by this Part;
- 12) A winter time land application plan that meets the requirements of Section 502.630 of this Part;
- 13) The plan for the inspection, monitoring, management and repair of subsurface drainage systems at the livestock waste application site. Inspection of subsurface drainage systems shall include visual inspection prior to land application to determine failures that may cause discharges and visual inspection during and after land application to identify discharges;
- 14) A spill prevention and control plan;
- 15) Annual review of the nutrient management practices to be implemented and an update of the nutrient management plan when there is a change in the nutrient management practices;

- 16) Specific records that will be maintained to document the implementation and management of the minimum elements described in subsections (2) through (15) of this Section; and
- 17) A description of the storage provisions and schedules provided for livestock waste when cropping practices, soil conditions, weather conditions or other conditions prevent the application of livestock waste to land or prevent other methods of livestock waste disposal.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 502.515 Terms of Nutrient Management Plan

Any permit issued to a CAFO must require compliance with the terms of the CAFO's site-specific nutrient management plan. These terms include:

- a) The terms of the nutrient management plan are the information, protocols, best management practices, and other conditions in the nutrient management plan determined by the Agency to be necessary to meet the requirements of Sections 502.505 and 502.510.
- b) The terms of the nutrient management plan, with respect to protocols for land application of livestock waste as required by Subpart F, must include:
 - 1) the fields available for land application;
 - 2) field-specific rates of application properly developed pursuant to subsections (d) or (e) of this Section, to ensure appropriate agricultural utilization of the nutrients in the livestock waste; and
 - 3) any timing limitations identified in the nutrient management plan concerning land application on the fields available for land application.
- c) The terms of the nutrient management plan must address rates of application using either the Linear Approach as described in subsection (d) of this Section or the narrative rate approach as described in subsection (e) of this Section, unless the Agency specifies that only one of these approaches may be used.
- d) The linear approach is an approach that expresses rates of application as pounds of nitrogen and phosphorus, according to the following specifications:
 - 1) The terms include maximum application rates from livestock waste for each year of permit coverage, for each crop identified in the nutrient management plan, in chemical forms determined to be acceptable to the

Agency, in pounds per acre, per year, for each field to be used for land application, and certain factors necessary to determine such rates.

- 2) At a minimum, the factors that are terms must include:
- A) the outcome of the field-specific assessment of the potential for nitrogen and phosphorus transport from each field;
 - B) the crops to be planted in each field or any other uses of a field such as pasture or fallow fields;
 - C) the realistic yield goal for each crop or use identified for each field;
 - D) the nitrogen and phosphorus recommendations according to Section 502.625 for each crop or use identified for each field;
 - E) credits for all nitrogen in the field that will be plant available;
 - F) consideration of multi-year phosphorus application;
 - G) accounting for all other additions of plant available nitrogen and phosphorus to the field;
 - H) the form and source of livestock waste to be land-applied;
 - D) the timing and method of land application; and
 - J) the methodology by which the nutrient management plan accounts for the amount of nitrogen and phosphorus in the livestock waste to be applied.
- 3) CAFOs that use this linear approach must calculate the maximum amount of livestock waste to be land applied at least once each year using the results of the most recent representative livestock waste tests for nitrogen and phosphorus taken within 12 months of the date of land application required by Section 502.635.
- e) The narrative rate approach is an approach that expresses rates of application as a narrative rate of application that results in the amount, in tons or gallons, of livestock waste to be land applied, according to the provisions of this subsection (e).
- 1) The terms include:
- A) maximum amounts of nitrogen and phosphorus derived from all sources of nutrients, for each crop identified in the nutrient

management plan, in chemical forms determined to be acceptable to the Agency, in pounds per acre, for each field, and certain factors necessary to determine such amounts;

- B) the outcome of the field-specific assessment of the potential for nitrogen and phosphorus transport from each field;
- C) the crops to be planted in each field or any other uses such as pasture or fallow fields including alternative crops identified in accordance with subsection (e)(1)(G) of this Section;
- D) the realistic yield goal for each crop or use identified for each field;
- E) the nitrogen and phosphorus recommendations according to Section 502.625 for each crop or use identified for each field;
- F) the methodology by which the nutrient management plan accounts for the following factors when calculating the amounts of livestock waste to be land applied:
 - i) results of soil tests conducted in accordance with protocols identified in the nutrient management plan, as required by Section 502.510(b)(9);
 - ii) credits for all nitrogen in the field that will be plant available;
 - iii) the amount of nitrogen and phosphorus in the livestock waste to be applied;
 - iv) consideration of multi-year phosphorus application;
 - v) accounting for all other additions of plant nitrogen and phosphorus to the field;
 - vi) the form and source of livestock waste;
 - vii) the timing and method of land application; and
 - viii) volatilization of nitrogen and mineralization of organic nitrogen.
- G) alternative crops identified in the CAFO's nutrient management plan that are not in the planned crop rotation.

- i) Where a CAFO includes alternative crops in its nutrient management plan, the crops must be listed by field, in addition to the crops identified in the planned crop rotation for that field, and the nutrient management plan must include realistic crop yield goals and the nitrogen and phosphorus recommendations according to Section 502.625 for each crop.
 - ii) Maximum amounts of nitrogen and phosphorus from all sources of nutrients and the amounts of livestock waste to be applied must be determined in accordance with the methodology described in subsections (e)(1)(A) through (F) of this Section.
- 2) For CAFOs using this narrative approach, the following projections must be included in the nutrient management plan submitted to the Agency, but are not terms of the nutrient management plan:
 - A) the CAFO's planned crop rotations for each field for the period of permit coverage;
 - B) the projected amount of livestock waste to be applied;
 - C) projected credits for all nitrogen in the field that will be plant available;
 - D) consideration of multi-year phosphorus application;
 - E) accounting for all other additions of plant available nitrogen and phosphorus to the field;
 - F) the predicted form, source, and method of application of livestock waste for each crop; and
 - G) timing of application for each field, insofar as it concerns the calculation of rates of application, is not a term of the nutrient management plan.
- 3) CAFOs that use this narrative rate approach must calculate maximum amounts of livestock waste to be land applied at least once each year using the methodology required in subsections (e)(1)(A) through (F) of this Section before land applying livestock waste and must rely on the following data:
 - A) a field-specific determination of nitrogen that will be plant available consistent with the methodology required by subsections

(e)(1)(A) through (F) of this Section, and for phosphorus, the results of the most recent soil test conducted in accordance with soil testing requirements approved by the Agency; and

- B) the results of most recent representative livestock waste tests for nitrogen and phosphorus taken within 12 months of the date of land application, in order to determine the amount of nitrogen and phosphorus in the livestock waste to be applied.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 502.520 Changes to the Nutrient Management Plan

When a CAFO owner or operator makes changes to the CAFO's nutrient management plan previously submitted to the Agency, the procedures in this Section are applicable.

- a) The CAFO owner or operator must identify changes to the nutrient management plan, except that the results of calculations made in accordance with the requirements of Sections 502.515(d)(3) and 502.515(e)(3) of this Part are not subject to the requirements of this Section. These calculations may be revised without submittal to the Agency provided the calculation revisions do not change the terms of the nutrient management plan.
- b) The Agency must determine whether the changes to the nutrient management plan necessitate revision to the terms of the nutrient management plan incorporated into the permit issued to the CAFO.
- 1) If revision to the terms of the nutrient management plan is not necessary, the Agency must notify the CAFO owner or operator and upon such notification the CAFO may implement the revised nutrient management plan.
 - 2) If revision to the terms of the nutrient management plan is necessary, the Agency must determine whether such changes are substantial changes as described in subsection (d) of this Section.
 - 3) If the Agency determines that the changes to the terms of the nutrient management plan are not substantial, the Agency must notify the owner or operator and inform the public of any changes to the terms of the nutrient management plan that are incorporated into the permit.
- c) If the Agency determines that the changes to the terms of the nutrient management plan are substantial, the Agency must notify the public and make the proposed changes and the information submitted by the CAFO owner or operator available for public review and comment.

- 1) The process and time limits for submitting public comments and hearing requests, the hearing process if a request for a hearing is granted and the process for responding to significant comments received during the comment period, will follow the procedures applicable to draft general permits found in 35 Ill. Adm. Code 502.310(d) through (f).
 - 2) The Agency will require the CAFO owner or operator to further revise the nutrient management plan, if necessary, in order to approve the revision to the terms of the nutrient management plan incorporated into the CAFO's permit.
 - 3) Once the Agency incorporates the revised terms of the nutrient management plan into the permit, the Agency must notify the owner or operator and inform the public of the final decision concerning the revisions to the terms and conditions of the permit.
- d) Substantial changes to the terms of the nutrient management plan incorporated as terms and conditions of a permit include, but are not limited to:
- 1) Addition of new land application areas not previously included in the CAFO's nutrient management plan. Except if the land application area that is being added to the nutrient management plan is covered by the terms of a nutrient management plan incorporated into an existing NPDES permit in accordance with the requirements of Section 502.515, and the CAFO owner or operator applies livestock waste on the newly added land application area in accordance with the existing field-specific permit terms applicable to the newly added land application area, such addition of new land would be a change to the new CAFO owner or operator's nutrient management plan but not a substantial change for purposes of this Section;
 - 2) For nutrient management plans using the Linear Approach as set forth in Section 502.515(d) changes to the field-specific maximum annual rates of land application (pounds of nitrogen and phosphorus from livestock waste). For nutrient management plans using the narrative rate approach, changes to the maximum amounts of nitrogen and phosphorus derived from all sources for each crop;
 - 3) Addition of any crop or other uses not included in the terms of the CAFO's nutrient management plan and corresponding field-specific rates of application expressed in accordance with Section 502.515 of this Part; and
 - 4) Changes to site-specific components of the CAFO's nutrient management plan, where such changes are likely to increase the risk of nitrogen and phosphorus transport to waters of the United States.

(Source: Added at 38 Ill. Reg. _____, effective _____)

SUBPART F: LIVESTOCK WASTE DISCHARGE LIMITATIONS AND TECHNICAL STANDARDS

Section 502.600 Applicability

This Subpart provides livestock waste discharge limitations and technical standards for permitted CAFOs. Permitted CAFOs must achieve the livestock waste discharge limitations and technical standards in this Subpart as of the date of permit coverage. Unpermitted Large CAFOs claiming an agricultural stormwater exemption must comply with Sections 502.102 and 502.510(b) and are subject to portions of this Subpart to the extent required by Section 502.510(b). This Subpart does not apply to CAFOs that stable or confine Horses, Sheep or Ducks. CAFOs that stable or confine Horses or Sheep are subject to applicable production area livestock waste discharge limitations and technical standards found in Section 502.720. CAFOs that confine Ducks in either a Dry Lot or Wet Lot are subject to applicable production area livestock waste discharge limitations and technical standards found in Section 502.730.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 502.605 Livestock Waste Discharge Limitations for the Production Area for Permitted CAFOs

- a) Except as provided in subsections (a)(1), (a)(2) and (c) of this Section, there must be no discharge of livestock wastes into waters of the United States from the CAFO production area. Whenever precipitation causes an overflow of livestock wastes from the containment or storage structure, such wastes in the overflow may be discharged into waters of the United States provided:
- 1) The production area is designed, constructed, operated and maintained to contain all livestock wastes including the runoff and the direct precipitation from a 25-year, 24-hour precipitation event except for swine, poultry or veal Large CAFOs that are new sources which must comply with Subpart H of this Part, and
 - 2) The production area is operated in accordance with the additional measures and records required by Section 502.610.
- b) Any point source subject to this Subpart must achieve the livestock waste discharge limitations in this Section as of the date of the permit coverage.
- c) Voluntary alternative performance standards. Any CAFO subject to this Subpart may request the Agency to establish NPDES permit livestock waste discharge limitations based upon site-specific alternative technologies that achieve a quantity of pollutants discharged from the production area equal to or less than

the quantity of pollutants that would be discharged under the baseline performance standards as provided by Section 502.605(a).

- 1) In requesting site-specific livestock waste discharge limitations to be included in the NPDES permit, the CAFO owner or operator must submit a supporting technical analysis and any other relevant information and data that would support such site-specific livestock waste discharge limitations within the time frame provided by the Agency.
- 2) The supporting technical analysis must include calculation of the quantity of pollutants discharged, on a mass basis where appropriate, based on a site-specific analysis of a system designed, constructed, operated, and maintained to contain all livestock waste, including the runoff from a 25-year, 24-hour rainfall event.
- 3) The technical analysis of the discharge of pollutants must include:
 - A) all daily inputs to the storage system, including livestock waste, direct precipitation, and runoff;
 - B) all daily outputs from the storage system, including losses due to evaporation, sludge removal, and the removal of wastewater for use on cropland at the CAFO or transport off site;
 - C) a calculation determining the predicted median annual overflow volume based on a 25-year period of actual rainfall data applicable to the site;
 - D) site-specific pollutant data, including nitrogen, phosphorus, BOD₅ and total suspended solids, for the CAFO from representative sampling and analysis of all sources of input to the storage system, or other appropriate pollutant data; and
 - E) predicted annual average discharge of pollutants, expressed where appropriate as a mass discharge on a daily basis (lbs/day), and calculated considering subsections (c)(3)(A) through (D) of this subsection.
- 4) The Agency has the discretion to request additional information to supplement the supporting technical analysis, including inspection of the CAFO.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 502.610 Additional Measures for CAFO Production Areas

Each CAFO subject to this Subpart must implement the following:

- a) The CAFO owner or operator must at all times properly operate and maintain all structural and operational aspects of the facilities including all systems for livestock waste treatment, storage, management, monitoring and testing.
- b) Livestock within a CAFO production area shall not come into contact with waters of the United States.
- c) Visual inspections. There must be routine visual inspections of the CAFO production area. At a minimum, the following must be visually inspected:
 - 1) Weekly inspections of all stormwater diversion devices, runoff diversion structures, and devices channeling contaminated stormwater to the wastewater and manure storage and containment structure;
 - 2) Daily inspection of water lines in the production areas, including drinking water or cooling water lines; and
 - 3) Weekly inspections of the livestock waste storage facilities. The inspection will note the level in liquid livestock waste storage facility using the depth marker required in subsection (d) of this Section.
- d) Depth marker. All open surface liquid livestock waste storage facilities must have a depth marker which clearly indicates the minimum capacity necessary to contain the runoff and direct precipitation of the 25-year, 24-hour rainfall event. In the case of new sources subject to livestock waste discharge limitations established pursuant to Section 502.830 of this Part, all open surface livestock waste storage structures associated with such sources must include a depth marker which clearly indicates the minimum capacity necessary to contain the maximum runoff and direct precipitation associated with the design storm used in sizing the storage facility for no discharge.
- e) Corrective actions. Any deficiencies found as a result of these inspections must be corrected as soon as possible.
- f) In addition to the requirement in subsection (e) of this Section, deficiencies not corrected within 30 days must be accompanied by an explanation of the factors preventing immediate correction.
- g) Discharge to waters of the United States of pollutants from dead livestock or dead animal disposal facilities are prohibited. Dead livestock and water contaminated by dead livestock shall not be disposed in the liquid manure storage structures, egg wash wastewater facilities, egg processing wastewater facilities, or areas used to hold products, by-products or raw materials that are set aside for disposal, or

contaminated stormwater facilities, other than facilities used solely for disposal of dead livestock.

- h) Chemicals and other contaminants shall not be disposed of in any livestock waste or stormwater storage or treatment system unless specifically designed to treat such chemicals and other contaminants.
- i) A CAFO owner or operator utilizing an earthen lagoon or other earthen manure storage area or waste containment area shall inspect all berm tops, exterior berm sides, and non-submerged interior berm sides for evidence of erosion, burrowing animal activity, and other indications of berm degradation on a frequency of not less than once every week.
- j) The CAFO owner or operator shall perform periodic removal of livestock waste solids from liquid manure storage areas and the waste containment area to maintain proper operation of the storage structures. Soils that are contaminated with livestock waste removed from earthen manure storage structures shall be considered livestock waste.
- k) Requirements relating to transfer of livestock waste to other persons.
 - 1) Prior to transferring livestock waste to other persons, CAFOs must provide the recipient of the livestock waste with the most current nutrient analysis.
 - 2) The analysis provided must be consistent with applicable requirements to sample livestock wastes in Section 502.635(b).
 - 3) CAFOs must retain for five years records of the date, recipient name and address, and approximate amount of livestock waste transferred to another person.
- l) Livestock Waste Storage requirements
 - 1) Livestock waste storage structures at the CAFO production area shall be designed to contain a volume equal to or greater than the sum of the volumes of the following:
 - A) the amount of waste generated during a 180-day period of operation at design capacity;
 - B) the runoff volumes generated during a 180-day period, including all runoff and precipitation from lots, roofs and other surfaces where precipitation is directed into the storage structure;

- C) the volume of all wash down liquid generated during the 180-day period that is directed into the manure storage structure;
 - D) the volume of runoff and precipitation directed to the storage structure during a 25 year, 24 hour storm event;
 - E) the design volatile solids loading volume, if applicable;
 - F) the sludge accumulation volume, if applicable; and
 - G) a freeboard of 2 feet, except for structures with a cover or otherwise protected from precipitation.
- 2) The storage volume requirements in this subsection (1) do not apply to pump stations, settling tanks, pumps, piping or other components of the CAFO production area that temporarily hold or transport waste to a storage facility meeting the requirements of this subsection.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 502.615 Nutrient Transport Potential

- a) Field assessment. An individual field assessment of the potential for nitrogen and phosphorus transport from the field to surface waters must be conducted and the results contained in the nutrient management plan. The following factors must be identified for each field to determine nitrogen and phosphorus transport potential to waters of the United States.
- 1) Soil type,
 - 2) Slope,
 - 3) Conservation practices,
 - 4) Soil erodibility or potential for soil erosion,
 - 5) Soil test phosphorus,
 - 6) Tile inlet locations,
 - 7) Distance to surface waters,
 - 8) Proximity to wells,

- 9) Location of conduits to surface water including preferential flow paths; and
- 10) Subsurface drainage tiles.
- b) The applicant shall utilize the field assessment information obtained in subsection (a) of this Section to determine the appropriate phosphorus-based or nitrogen based application rate for each assessed field. The determination of phosphorus-based or nitrogen-based application of livestock waste on an assessed field must be consistent with subsection (c) or (d) of this Section and Sections 502.620, 502.625, 502.630, and 502.635 of this Part.
- c) Nitrogen-based application of livestock waste must be conducted consistent with the following requirements:
- 1) livestock waste is applied consistent with the setback requirements in Section 502.645;
 - 2) available soil phosphorus (median Bray P1 or Mehlich 3 in accordance with Recommended Chemical Soil Test Procedures for the North Central Region, incorporated by reference in Section 501.200) is equal to or less than 300 pounds per acre;
 - 3) the soil loss calculated using the Revised Universal Soil Loss Equation 2 is less than the erosion factor T;
- BOARD NOTE: Soil loss may be calculated using Revised Universal Soil Loss Equation 2 (RUSLE 2) software program available at http://fargo.nserl.purdue.edu/rusle2_dataweb/RUSLE2_Index.htm and Erosion Factor T for Illinois soils is available from the United States Department of Agriculture Natural Resources Conservation Service's published soil surveys at http://soils.usda.gov/survey/printed_surveys/state.asp?state=Illinois&abbr=IL
- 4) if conduits on the field are less than 400 feet from surface waters, the setback requirements in 502.645(b)(2) do not apply. Instead the following setbacks apply:
 - A) Livestock waste application shall be conducted no closer than 150 feet from a tile inlet, agricultural well head, sinkhole, or edge of a ditch that has no vegetative buffer; or
 - B) Livestock waste application shall be conducted no closer than 50 feet from a tile inlet, agricultural well head, sinkhole, or edge of a

ditch that has a 50 foot vegetative buffer or 50 feet from the center of a grass waterway.

- C) These setbacks do not apply if the CAFO is able to demonstrate to the Agency that a setback or buffer is not necessary because implementation of alternative conservation practices (including, but not limited to, injection and incorporation) or field-specific conditions will provide pollutant reductions equivalent or better than the reductions that would be achieved by the 150-foot setback under Section 502.615(c)(4)(A) or the 50-foot setback under Section 502.615(c)(4)(B).
- 5) if conduits on the field are greater than 400 feet from surface waters, the setback requirements in Section (c)(4) do not apply;
- 6) where surface waters are on the assessed field or within 200 feet of the field, the livestock waste applied to the field shall be injected or incorporated within 24 hours of the application or equivalent conservation practices must be installed and maintained on the field pursuant to the United States Department of Agriculture Natural Resources Conservation Service practice standards; and
- 7) if nitrogen-based application cannot be conducted in accordance with this Section, then phosphorus-based application must be conducted as specified in Section 502.615(d).
- d) Phosphorus-based application of livestock waste must be conducted consistent with the following requirements:
- 1) livestock waste must be applied consistent with the setback requirements in Section 502.645;
 - 2) the livestock waste application rate must not exceed the annual agronomic nitrogen demand of the next crop grown as provided in Section 502.625(a);
 - 3) if the soil contains greater than 50 pounds of available soil phosphorus per acre (median Bray P1 or Mehlich 3 in accordance with Recommended Chemical Soil Test Procedures for the North Central Region, incorporated by reference in Section 501.200)), phosphorus-based application rates must be neutral during the nutrient management plan period;
 - 4) if the soil contains greater than 300 pounds of available soil phosphorus per acre (median Bray P1 or Mehlich 3 in accordance with Recommended Chemical Soil Test Procedures for the North Central Region, incorporated by reference in Section 501.200)), the amount of phosphorus applied in

the livestock waste must not exceed the amount of phosphorus removed by the next year's crop grown and harvested; and

- 5) livestock waste shall not be applied to fields with available soil phosphorus (median Bray P1 or Mehlich 3 in accordance with Recommended Chemical Soil Test Procedures for the North Central Region, incorporated by reference in Section 501.200)) greater than 400 pounds per acre.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 502.620 Protocols to Land Apply Livestock Waste

- a) Livestock wastes shall not be applied to waters of the United States. Livestock waste application shall not cause runoff to waters of the United States during non-precipitation events. Livestock waste application shall not occur on land that is saturated at the time of application. Livestock waste shall not be applied onto land with ponded water.
- b) Discharge of livestock waste to waters of the United States or off-site during dry weather through subsurface drains is prohibited.
- c) Livestock waste shall not be applied during precipitation when runoff of livestock waste will be produced.
- d) Surface land application of livestock waste shall not occur within 24 hours preceding a forecast of 0.5 inches or more of precipitation in a 24 hour period as measured in liquid form. The CAFO owner or operator shall use one of the two methods provided below for determining whether or not these conditions exist and shall maintain a record of the forecast from the source used.
- 1) A prediction of a 60 percent or greater chance of 0.5 inches or more of precipitation in a 24 hour period as measured in liquid form, obtained from the National Weather Service's Meteorological Development Laboratory, Statistical Modeling Branch, 1325 East West Highway, Silver Spring, MD 20910 for the location nearest to the land application area; or
- BOARD NOTE: The prediction in Section 502.610(d)(1) may be obtained from the National Weather Service's Web site at <http://www.nws.noaa.gov/mdl/forecast/graphics/MAV/>
- 2) A prediction of 0.5 inches or more of precipitation in a 24 hour period as measured in liquid form and identified as higher than Quantitative Precipitation Forecast (QPF) category 3, obtained from the National Weather Service's Meteorological Development Laboratory, Statistical

Modeling Branch, 1325 East West Highway, Silver Spring, MD 20910 for the land application area location.

BOARD NOTE: The prediction in Section 502.620(d)(2) may be obtained from the National Weather Service's Web site at <http://www.nws.noaa.gov/mdl/synop/products/bullform.mex.htm>

- e) Determination of soil loss must be made for each field using Revised Universal Soil Loss Equation.

BOARD NOTE: Soil loss may be determined using Revised Universal Soil Loss Equation 2 (RUSLE2) software program available at http://fargo.nserl.purdue.edu/rusle2_dataweb/RUSLE2_Index.htm and Erosion Factor T for Illinois soils is available from the United States Department of Agriculture Natural Resources Conservation Service's published soil surveys at http://soils.usda.gov/survey/printed_surveys/state.asp?state=Illinois&abbr=IL

- f) Surface land application may be used when the land slope is no greater than 5% or when the yearly average soil loss calculated using Revised Universal Soil Loss Equation is equal to or less than 5 tons per acre per year or Erosion Factor T, whichever is less, regardless of slope. Injection or incorporation within 24 hours shall be used when the land slope is greater than 5% and the yearly average soil loss calculated using Revised Universal Soil Loss Equation is greater than 5 tons per acre per year or Erosion Factor T, whichever is less.

BOARD NOTE: Soil loss may be determined using Revised Universal Soil Loss Equation 2 (RUSLE2) software program available at http://fargo.nserl.purdue.edu/rusle2_dataweb/RUSLE2_Index.htm and Erosion Factor T for Illinois soils is available from the United States Department of Agriculture Natural Resources Conservation Service's published soil surveys at http://soils.usda.gov/survey/printed_surveys/state.asp?state=Illinois&abbr=IL

- g) Land application of livestock waste is prohibited on slopes greater than 15%.
- h) Liquid livestock waste shall not be applied to land with less than 36 inches of soil covering fractured bedrock, sand or gravel.
- i) Livestock waste shall not be applied to bedrock outcrops.
- j) Livestock waste shall be applied at no greater than 50 percent of the agronomic nitrogen rate determined pursuant to Section 502.625 when there is less than 60 inches of unconsolidated material over bedrock.
- k) Livestock waste shall be applied at no greater than 50 percent of the agronomic nitrogen rate determined pursuant to Section 502.625 when the minimum soil depth to seasonal high water table is less than or equal to 2 feet.

- l) Livestock waste shall not be applied at rates that exceed the infiltration rates of the soil.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 502.625 Determination of Livestock Waste Application Rates

- a) Livestock waste application shall not exceed the agronomic nitrogen rate, which is defined as the annual application rate of nitrogen that can be expected to be required for a realistic crop yield goal. Multi-year phosphorus application is allowed when such application is specified in a nutrient management plan and meets the requirements in Section 502.615. Any such application must be consistent with nutrient management plan requirements. The agronomic rate must be determined in a manner consistent with this Section and Section 502.615.
- b) Livestock Waste Volumes. The estimate of the annual volume of available livestock waste for application shall be obtained by multiplying the number of animals constituting the maximum design capacity of the facility by the appropriate amount of waste generated by the animals. For purposes of this section, “maximum design capacity” means the maximum number of animals that can be housed at any time for a minimum of 45 days at a CAFO. The following sources may be used to obtain the amount of waste generated:
- 1) Livestock Waste Facilities Handbook, Third Edition, Table 2-1, incorporated by reference at 35 Ill. Adm. Code 501.200(a),
 - 2) 35 Ill. Adm. Code 560, Table 1;
 - 3) Manure Characteristics, 2nd ed., 2004 (MWPS-18 Section 1), MidWest Plan Service, incorporated by reference at 35 Ill. Adm. Code 501.200(a);
 - 4) NRCS Agricultural Waste Management Field Handbook Chapter 4; and
 - 5) ASABE Standard Data ASAE D384.2 MAR 2005 (R2010).
- c) Nutrient Value of Livestock Waste. For new livestock facilities that have not generated livestock waste, the owner or operator must prepare a plan based on an average of the minimum and maximum numbers in the table values derived from Livestock Waste Facilities Handbook, Third Edition, (Table 2-1, 10-6, or 10-7), or Manure Characteristics, incorporated by reference at 35 Ill. Adm. Code 501.200, or the 35 Ill. Adm. Code 560, Table 1 or Table 2. If “as produced” or “as excreted” nutrient values are used, the nitrogen value shall be adjusted to account for losses due to the type of storage system utilized using an average of the ranges in Livestock Waste Facilities Handbook, Third Edition, Table 10-1. Other sources of nutrient values may be used if approved by the Agency. Owners or operators

of existing livestock facilities, must prepare the plan based on representative sampling and analysis of the livestock waste generated by the CAFOs in accordance with Section 502.635(b).

- d) Adjustments to Nitrogen Availability. Adjustments shall be made to nitrogen availability to account for the following:
- 1) Nitrogen loss from livestock waste due to method of application, based on an average of the ranges in Livestock Waste Facilities Handbook, Third Edition, Table 10-2; and
 - 2) The first-year mineralization of organic nitrogen into a plant available form, as obtained from Livestock Waste Facilities Handbook, Third Edition, Table 10-5.
- e) Realistic Crop Yield Goal
- 1) The realistic crop yield goal shall be determined for each field where the livestock waste is to be land applied. The realistic crop yield goal shall be determined using an average yield over a five-year period from the field where livestock waste is to be land applied. The source of data to be utilized to determine the realistic crop yield goal is provided in subsection (e)(2) of this Section.
 - 2) Whenever five years of data is available for the field where livestock waste is to be land applied, proven yields shall be used in calculating the realistic crop yield, unless there is an agronomic basis for predicting a different realistic crop yield goal. The owner or operator shall indicate the method used to determine the proven yield. Data from years with crop disasters may be discarded.
 - A) If five years of proven yield data is not available for the field where the livestock waste is to be land applied or if an agronomic basis exists for predicting a different realistic crop yield goal, the owner or operator may calculate the realistic crop yield goal using crop insurance yields or Farm Service Agency United States Department of Agriculture yields. If either of these sources is used, a copy of the insurance or assigned crop yields shall be included with the nutrient management plan.
 - B) If data is not available on proven yields, crop insurance yields or Farm Service Agency yields or if an agronomic basis exists for predicting a different realistic crop yield goal, soils based yield data from the University of Illinois “Average Crop, Pasture, and Forestry Productivity Ratings for Illinois Soils; Bulletin No. 810” (Bulletin 810) or “Optimum Crop Productivity Ratings for Illinois

Soils ; Bulletin 811” (Bulletin 811), incorporated by reference at 35 Ill. Adm. Code 501.200, shall be used by the owner or operator to calculate the realistic crop yield goal pursuant to subsection (e)(1).

- i) If Bulletin 810 or 811 is used to calculate the realistic crop yield goal, a soil map of the land application areas shall be included in the nutrient management plan.
- ii) If Bulletin 810 or 811 is used, the realistic crop yield goal shall be determined by a weighted average of the soil interpretation yield estimates for the fields where livestock waste is to be land applied.
- iii) If Bulletin 811 is used, the owner or operator shall demonstrate in the nutrient management plan that the operational management and field conditions of the facility and land application areas meet the requirements for optimum conditions as provided in Bulletin 811.

f) Nitrogen Credits

- 1) Nitrogen credits shall be calculated by the CAFO owner or operator, pursuant to Section 502.505(n)(7) of this Part, for nitrogen-producing crops grown the previous year, for other sources of nitrogen applied for the growing season, and for mineralized organic nitrogen in livestock waste applied during the previous three years.
- 2) Nitrogen credits shall be calculated by the CAFO owner or operator for the mineralized organic nitrogen in livestock waste applied during the previous three years at the rate of 50%, 25%, and 12.5%, respectively, of that mineralized during the first year.

g) Phosphorus. The plan shall be developed or amended by the CAFO owner or operator to determine the maximum livestock waste application rate for each field. The plan for that field shall contain the following:

- 1) The phosphorus content of the livestock waste shall be determined in accordance with subsection (c) of this Section;
- 2) The realistic crop yield goal of each crop in the field, obtained pursuant to subsection (e)(1) of this Section;
- 3) The phosphorus amount needed for each crop in the planned crop rotation, expressed as P₂O₅, obtained from the Illinois Agronomy Handbook, 24th Edition, incorporated by reference at Section 501.200. The determination

of this phosphorus amount shall be based on the realistic crop yield goal for each planned crop and the soil test for available phosphorus (Bray P1 or Mehlich 3 in accordance with Recommended Chemical Soil Test Procedures for the North Central Region, incorporated by reference in Section 501.200));

- 4) The phosphorus carryover from previous years application of phosphorus or livestock waste;
 - 5) Soil test phosphorus results for that field; and
 - 6) The maximum livestock waste application rate shall be consistent with nitrogen-based or phosphorus-based applications allowed under Section 502.615.
- h) Nitrogen and phosphorus fertilization rates for the realistic crop yield goal may be obtained from the Illinois Agronomy Handbook, 24th Edition, incorporated by reference at Section 501.200, or 35 Ill. Adm. Code 560, Appendix A.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 502.630 Protocols to Land Apply Livestock Waste During Winter

- a) Winter Application Prohibition
 - 1) Surface land application of livestock waste on frozen, ice covered or snow covered ground is prohibited, unless:
 - A) No practical alternative measures are available to handle the livestock waste within storage facilities or to dispose the livestock waste at other sites. Examples of practical alternative measures include, but are not limited to, the transfer of waste to another waste handling facility or sewage treatment plant, rental or acquisition of a storage tank, reduction of herd size or depopulation, and protection of the facility from direct precipitation and clean stormwater runoff;
 - B) Liquid livestock waste cannot be injected or incorporated within 24 hours due to soil conditions;
 - C) Prior to December 1, the owner or operator has taken steps to provide 120 days of available storage capacity of manure storage areas. Examples of steps that could be taken include, but are not limited to, land application of livestock waste, transfer of waste to another party, protection of waste storage structures from direct

precipitation and stormwater runoff, and depopulating facilities to reduce the amount of waste generated ;

- D) The owner or operator has complied with subsection (a)(1)(C) and yet the storage volume available on December 1 of that winter season is less than 120 days of storage;
- E) The owner or operator has notified the Agency in writing on December 1 of that winter season that the CAFO has less than 120 days storage available; and
- F) The discharge of livestock waste from the structure to the surface waters is expected to occur due to shortage in storage capacity.

2) The storage volume calculation in subsection (a)(1)(C) must include runoff and direct precipitation plus the volume of livestock excreta, wash water and other process wastewater generated and expected to enter the storage structure during the period of December 1 to April 1. Runoff volume calculations must meet the following requirements:

- A) Runoff calculations must be based on the runoff transferred into the storage structure under frozen ground conditions;
- B) Direct precipitation that will reduce the available storage volume must be based on normal precipitation for the December 1 to April 1 period for the nearest weather station and for facilities exposed to precipitation, the 25-year, 24-hour storm event volume or the design storm event volume determined under Subpart H for swine, poultry and veal Large CAFOs that are new sources. The determination of normal precipitation shall be based on National Weather Service or State Water Survey Records;

BOARD NOTE: The following sources may be used to determine normal precipitation:

<http://www.isws.illinois.edu/atmos/statecli/newnormals/newnormals.htm>

or

<http://cdo.ncdc.noaa.gov/cgi-bin/climatenormals/climatenormals.pl>

- C) The owner or operator shall keep a record of the precipitation value used and the source from which the value was obtained; and
- D) Calculations must allow for a freeboard of two feet.

- 3) In the event winter land application is necessary, it must be conducted pursuant to a winter application plan described in subsection (b) of this Section and according to the conditions of subsection (c) of this Section.

b) Winter Application Plan

In order to conduct surface land application on frozen, ice covered, or snow covered ground, the requirements of this subsection (b) conditions must be met.

- 1) No land application may occur within ¼ mile of a non-farm residence.
- 2) No discharge may occur during land application of livestock waste.
- 3) Surface land application on frozen ground shall not occur within 24 hours preceding a forecast of 0.25 inches or more of precipitation in a 24 hour period as measured in liquid form. The CAFO owner or operator shall use one of the two methods provided below for determining whether or not these conditions exist and shall maintain a record of the forecast from the source used.

- A) A prediction of a 60 percent or greater chance of 0.25 inches or more of precipitation in a 24 hour period as measured in liquid form, obtained from the National Weather Service's Meteorological Development Laboratory, Statistical Modeling Branch 1325 East West Highway, Silver Spring, MD 20910, for the location nearest to the land application area; or

BOARD NOTE: The prediction in Section 502.630(b)(3)(A) may be obtained from the National Weather Service's Web site at <http://www.nws.noaa.gov/mdl/forecast/graphics/MAV/>

- B) A prediction of 0.25 inches or more of precipitation in a 24 hour period as measured in liquid form and identified as higher than QPF category 2 obtained from the National Weather Service's Meteorological Development Laboratory, Statistical Modeling Branch, 1325 East West Highway, Silver Spring, MD 20910, for the land application area location.

BOARD NOTE: The prediction in Section 502.630(b)(3)(B) may be obtained from the National Weather Service's Web site at <http://www.nws.noaa.gov/mdl/synop/products/bullform.mex.htm>

- 4) Surface land application of livestock waste on ice covered or snow covered land shall not occur within 24 hours preceding a forecast of 0.1 inches or more of precipitation in a 24 hour period as measured in liquid form. The CAFO owner or operator shall use one of the two methods

provided below for determining whether or not these conditions exist and shall maintain a record of the forecast from the source used.

- A) A prediction of a 60 percent or greater chance of 0.1 inches or more of precipitation in a 24-hour period as measured in liquid form obtained from the National Weather Service's Meteorological Development Laboratory, Statistical Modeling Branch, 1325 East West Highway, Silver Spring, MD 20910 for the location nearest to the land application area; or

BOARD NOTE: The prediction in Section 502.630(b)(4)(A) may be obtained from the National Weather Service's Web site at <http://www.nws.noaa.gov/mdl/forecast/graphics/MAV/>

- B) A prediction of 0.1 inches or more of precipitation in a 24-hour period as measured in liquid form and identified as higher than QPF category 1 obtained from the National Weather Service's Meteorological Development Laboratory, Statistical Modeling Branch, 1325 East West Highway, Silver Spring, MD 20910 for the land application area location.

BOARD NOTE: The prediction in Section 502.630(b)(4)(B) may be obtained from the National Weather Service's Web site at <http://www.nws.noaa.gov/mdl/synop/products/bullform.mex.htm>

- 5) If the land application of livestock waste is on ice covered or snow covered land, surface land application shall not occur when the predicted high temperature exceeds 32 degrees F on the day of land application or on any of the 7 days following land application as predicted by the National Weather Service's Meteorological Development Laboratory, Statistical Modeling Branch, 1325 East West Highway, Silver Spring, MD 20910 for the location nearest to the land application area. The owner or operator shall maintain a record of the forecast from the source used.

BOARD NOTE: The predicted high temperature in Section 502.630(b)(5) may be obtained from the National Weather Service's Web site at

<http://www.nws.noaa.gov/mdl/forecast/graphics/MEX/index.html> or <http://www.nws.noaa.gov/mdl/synop/products/bullform.mex.htm>.

- 6) If the surface land application of livestock waste is on ice covered or snow covered land, the CAFO owner or operator shall visually monitor for runoff from the site. The CAFO owner or operator must monitor each ice covered or snow covered field where land application has been conducted daily when the ambient temperature is 32 degrees F or greater following

winter land application until all the ice or snow melts from the land application area.

- 7) If the surface land application of livestock waste is on ice covered or snow covered land and a runoff from the land application area occurs, the CAFO owner or operator shall report any discharge of livestock waste within 24 hours of the discovery of the discharge as follows:

- A) The report shall be made to the Agency through the Illinois Emergency Management Agency by calling 1-800-782-7860 or 1-217-782-7860;
- B) Within 5 days of this telephone report, the CAFO owner or operator shall file a written report with the Agency that includes the name and telephone number of the person filing the report, location of the discharge, an estimate of the quantity of the discharge, time and duration of the discharge, actions taken in response to the discharge, and observations of the condition of the discharge with regards to turbidity, color, foaming, floatable solids and other deleterious conditions of the runoff for each day of each runoff event until the ice or snow melts off the site.

c) Availability of Individual Fields for Winter Application

If livestock waste is to be surface applied on frozen ground, ice covered land or snow covered land, the land application may only be conducted on land that meets the following requirements:

- 1) Adequate erosion and runoff control practices exist, including, but not limited to, vegetative fence rows around the site, contour farming, terracing, catchment basins and buffer areas that intercept surface runoff from the site;
- 2) A crop stubble, crop residue or vegetative buffer of 200 feet exists between the land application area and surface waters, waterways, open tile line intake structures, sinkholes, agricultural wellheads, or other conduits to surface water and the vegetative buffer zone is down gradient of the livestock waste application area;
- 3) Application on land with slopes greater than 5% is prohibited;
- 4) Application may only occur on sites that have field specific soil erosion loss calculated using Revised Universal Soil Loss Equation less than Erosion Factor T, and have a median Bray P1 or Mehlich 3 soil level of phosphorus, in accordance with Recommended Chemical Soil Test

Procedures for the North Central Region, incorporated by reference in Section 501.200, equal to or less than 300 pounds per acre;

BOARD NOTE: Soil loss may be calculated using Revised Universal Soil Loss Equation 2 (RUSLE2) software program available at http://fargo.nserl.purdue.edu/rusle2_dataweb/RUSLE2_Index.htm and Erosion Factor T for Illinois soils is available from the United States Department of Agriculture Natural Resources Conservation Service's published soil surveys at http://soils.usda.gov/survey/printed_surveys/state.asp?state=Illinois&abbr=IL

- 5) Surface Application may only occur after application of three times the otherwise applicable setbacks from Sections 502.615 and 502.645 if the slope of the field is between 2 percent and 5 percent. This setback requirement does not include the ¼ mile distance from residences contained in Section 502.645(a); and
- 6) For fields with slopes of less than 2 percent, the surface application may only occur after application of two times the otherwise applicable setbacks from Sections 502.615 and 502.645. This setback requirement does not include the quarter mile distance from residences contained in Section 502.645(a).

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 502.635 Manure and Soil Sampling and Analysis

- a) Soil Phosphorus Sampling. Soil samples shall be obtained and analyzed from each field of the land application area where applications are planned. Fields where livestock waste is applied shall be sampled twice for each field during the term of the permit. Soil testing must be conducted as follows:
 - 1) Soil sampling for phosphorus shall be in accordance with the sampling protocols in Chapter 8 of the Illinois Agronomy Handbook, 24th Edition, incorporated by reference at Section 501.200. Laboratory analysis for soil Bray P1 or Mehlich 3 shall be in accordance with Recommended Chemical Soil Test Procedures for the North Central Region, incorporated by reference at Section 501.200;
 - 2) Soil samples shall be at the same time in the cropping cycle and rotation so that results are comparable year to year; and
 - 3) The two required soil samples for each field must be taken at least one year apart.

b) Manure Sampling.

- 1) The CAFO owner or operator shall annually obtain a laboratory analysis of the nutrient content representative of the livestock waste to be land applied as provided within the nutrient management plan. Livestock waste shall be sampled during the application process. Multiple subsamples shall be obtained and combined into one sample so that a representative sample is obtained for analysis. Results of a sample taken during waste application the previous year can be used for plan preparation unless there has been a change in the waste management practices during the year. The analytical results of livestock waste samples shall be used for calculation of the application rate allowed by the NPDES permit.
- 2) The laboratory analysis of livestock waste sample shall include total kjeldahl nitrogen, ammonia or ammonium nitrogen, total phosphorus, total potassium, and percent total solids. The nutrient results shall be reported in mg/kg dry weight basis or mg/l wet weight basis on the laboratory analysis sheet. The results of these analyses are to be used in determining application rates for livestock waste.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 502.640 Inspection of Land Application Equipment for Leaks

- a) For all permitted CAFOs that land apply livestock waste, the CAFO owner or operator must periodically inspect equipment used for land application of livestock waste for leaks or problems that result in improper operation.
- b) The CAFO owner or operator must ensure that the land application equipment is properly calibrated for application of livestock waste on a routine basis.
- c) Calibration procedures and schedules shall be described for all equipment in the CAFO's nutrient management plan.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 502.645 Land Application Setback Requirements

a) Distance from Residences

Livestock waste shall not be land applied within 1/4 mile of any residence not part of the CAFO, unless it is injected or incorporated on the day of application.

b) Setbacks from Waters

- 1) Livestock waste shall not be land applied within 200 feet of surface water, unless the water is upgrade or there is adequate diking, which includes, but is not limited to, diking that prevents runoff from the land application from entering surface waters that are within 200 feet of the land application area.
- 2) Livestock waste shall not be land applied within 100 feet of down gradient open subsurface drainage intakes, agricultural drainage wells, sinkholes, grassed waterways or other conduits to surface waters, unless a 35 foot vegetative buffer exists between the land application area and the grassed waterways, open subsurface drainage intakes, agricultural drainage wells, sinkholes or other conduits to surface water.
- 3) The setback requirements in subsection (b)(2) do not apply if the CAFO is able to demonstrate to the Agency that a setback or buffer is not necessary because implementation of alternative conservation practices (including, but not limited to, injection and incorporation) or field-specific conditions will provide pollutant reductions equivalent or better than the reductions that would be achieved by the 100-foot setback.
- c) Livestock waste shall not be applied in a 10-year flood plain unless the injection or incorporation method of application is used.
- d) Livestock waste shall not be land applied to waters of the United States, grassed waterways or other conduits to surface waters.
- e) Livestock waste shall not be land applied within 200 feet of potable water supply wells.

(Source: Added at 38 Ill. Reg. _____, effective _____)

SUBPART G: ADDITIONAL LIVESTOCK WASTE DISCHARGE LIMITATIONS

Section 502.710 New Source Performance Standards For Dairy Cows and Cattle Other Than Veal Calves

- a) New Source Performance Standards (NSPS) applicability

Any CAFO with the capacity to stable or confine 700 or more mature dairy cows whether milked or dry or 1,000 or more cattle other than mature dairy cows or veal calves that is a new source must achieve the livestock waste discharge limitations representing the application of NSPS as of the date of permit coverage or within the timelines provided in Section 502.303.

- b) The livestock waste discharge limitations representing NSPS for the CAFO production area for CAFOs subject to this Section are the livestock waste discharge limitations found in Sections 502.605 and 502.610.
- c) The livestock waste discharge limitations representing NSPS for the CAFO land application area are the livestock waste discharge limitations and requirements found in Sections 502.615 through 502.645.
- d) CAFOs subject to this Section shall attain the limitations and requirements in Subpart F as of the date of permit coverage or within the timelines provided in Section 502.303.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 502.720 Horse and Sheep CAFOs: BPT, BAT and NSPS

This Section contains the effluent limitations applicable to discharges resulting from the production area at horse and sheep CAFOs. CAFOs subject to this Section shall attain the limitations and requirements of this Section as of the date of permit coverage. CAFOs with the capacity to stable or confine fewer than 10,000 sheep or fewer than 500 horses are exempt from these effluent limitations.

- a) Effluent limitations attainable by the application of the best practicable control technology currently available (BPT) for Horse and Sheep CAFOs
 - 1) Except as provided in subsection (a)(2) of this Section, any existing point source subject to this Section shall have no discharge of process wastewater pollutants to waters of the United States. Achievement of no process wastewater discharge to waters of the United States is the effluent limitation representing the application of BPT for Horse and Sheep CAFOs.
 - 2) Process waste pollutants in the overflow may be discharged to waters of the United States whenever rainfall events, either chronic or catastrophic, cause an overflow of process waste water from a facility designed, constructed and operated to contain all process generated wastewaters plus the runoff from a 10-year, 24-hour rainfall event for the location of the point source.
- b) Effluent limitations attainable by the application of the best available technology economically achievable (BAT) for Horse and Sheep CAFOs
 - 1) Except when the provisions of subsection (b)(2) of this Section apply, any existing point source subject to this Section shall have no discharge of process wastewater pollutants to waters of the United States. Achievement of no process wastewater discharge to waters of the United

States is the effluent limitation representing the application of BAT for Horse and Sheep CAFOs.

- 2) Whenever rainfall events cause an overflow of process wastewater from a facility designed, constructed, operated and maintained to contain all process-generated wastewaters plus the runoff from a 25-year, 24-hour rainfall event at the location of the point source, any process wastewater pollutants in the overflow may be discharged to waters of the United States.
- c) New Source Performance Standards (NSPS) for Horse and Sheep CAFOs
Except as provided in subsection (b)(2) of this Section, any new source subject this Section shall have no discharge of process wastewater pollutants to waters of the United States. Achievement of no process wastewater discharge to waters of the United States is the performance standard representing New Source Performance Standards for Horse and Sheep CAFOs.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 502.730 Duck CAFOs: BPT and NSPS

This Section contains the effluent limitations applicable to discharges resulting from the production areas at dry lot and wet lot duck CAFOs. CAFOs subject to this Section shall attain the limitations and requirements of this Section as of the date of permit coverage. CAFOs with the capacity to stable or confine fewer than 5,000 ducks are exempt from these effluent limitations.

- a) Effluent limitations attainable by the application of the best practicable control technology currently available (BPT) for Wet Lot and Dry Lot Duck CAFOs

Any existing point source subject to this Section shall achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of BPT:

- 1) BOD₅ is limited to a maximum daily limit of 3.66 pounds/1,000 ducks or 1.66 kilograms/1,000 ducks.
- 2) BOD₅ is limited to a maximum monthly average of 2.0 pounds/1,000 ducks or 0.91 kilograms/1,000 ducks.
- 3) Fecal coliform is not to exceed MPN of 400/100 ml at any time.
- b) New Source Performance Standards for Wet Lot and Dry Lot Duck CAFOs
- 1) Except as provided in subsection (b)(2) of this Section, any new source subject to this Section shall have no discharge of process wastewater

pollutants to waters of the United States. Achievement of no process wastewater discharge to waters of the United States is the performance standard representing NSPS for Duck CAFOs.

- 2) Whenever rainfall events cause an overflow of process wastewater from a facility designed, constructed, operated and maintained to contain all process-generated wastewaters plus the runoff from a 25-year, 24-hour rainfall event at the location of the point source, any process wastewater pollutants in the overflow may be discharged to waters of the United States.

(Source: Added at 38 Ill. Reg. _____, effective _____)

SUBPART H: NEW SOURCE PERFORMANCE STANDARDS FOR NEW, LARGE SWINE, POULTRY AND VEAL CAFOS

Section 502.800 Applicability

- a) This Subpart applies to all New Swine, Poultry and Veal CAFOs with the capacity to stable or confine the numbers of animals of the types provided for in the definition of Large CAFOs in Section 502.103.
- b) The requirements of this Subpart H are in addition to the livestock waste discharge limitations and technical standards in Subpart F of this Part, except Section 502.605.
- c) The limitations and requirements of this Subpart must be attained as of the date of NPDES permit coverage or within the timelines provided in Section 502.303.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 502.810 Production Area Requirements

There must be no discharge of livestock waste pollutants to waters of the United States from the production area unless the CAFO complies with the alternative livestock waste discharge limitations provided in Section 502.830 of this Part.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 502.820 Land Application Area Requirements

For CAFOs subject to this Subpart, the land application areas shall attain the same limitations and requirements as specified in Sections 502.615 through 502.645.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 502.830 Alternative Best Management Practice Livestock Waste Discharge Limitations

- a) Any CAFO subject to this Subpart may request that the Agency establish NPDES permit best management practice livestock waste discharge limitations designed to ensure no discharge of livestock waste based upon a site-specific evaluation of the CAFO's open surface livestock storage structure.
- b) The NPDES permit best management practice livestock waste discharge limitations must address the CAFO's entire production area. In the case of any CAFO using an open surface livestock waste storage structure for which the Agency establishes such livestock waste discharge limitations, "no discharge of livestock waste pollutants," as used in this subpart H, means that the storage structure is designed, operated, and maintained in accordance with best management practices established by the Agency on a site-specific basis after a technical evaluation of the storage structure.
- c) The technical evaluation must address the elements listed in Section 502.840.

(Source: Added at 38 Ill. Reg. _____, effective _____)

Section 502.840 Technical Evaluation

All technical evaluations conducted pursuant to this Subpart H must address the minimum elements contained in this Section. Waste management and storage facilities designed, constructed, operated, and maintained consistent with the analysis conducted in subsections (a) through (g) of this Section and operated in accordance with the additional measures and records required by Section 502.610 will fulfill the requirements of this Subpart.

- a) Information to be used in the design of the open manure storage structure including, but not limited to:
 - 1) Minimum storage periods for rainy seasons;
 - 2) Additional minimum capacity for chronic rainfalls;
 - 3) Applicable technical standards that prohibit or otherwise limit land application on frozen, saturated or snow-covered ground found in Section 502.630 of this Part;
 - 4) Planned emptying and dewatering schedules consistent with the CAFO's nutrient management plan;
 - 5) Additional storage capacity for livestock waste intended to be transferred to another recipient at a later time; and

- 6) Any other factors that would affect the sizing of the structure.
- b) The design of the open livestock waste storage structure as determined in accordance with the United States Department of Agriculture National Resource Conservation Service's Animal Waste Management Field Handbook, incorporated by reference at 35 Ill. Adm. Code 501.200.

BOARD NOTE: Animal Waste Management software is available at <http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/technical/alphabetical/mnm/?&cid=stelprdb1045812> and includes procedures and calculation based on the Animal Waste Management Field Handbook for design of open livestock waste storage units.

- c) All inputs used in the open livestock waste storage structure design including:
- 1) actual climate data for the previous 30 years consisting of historical average monthly precipitation and evaporation values;
 - 2) the number and types of animals;
 - 3) anticipated animal sizes or weights;
 - 4) any added water and bedding;
 - 5) any other process wastewater; and
 - 6) the size and condition of outside areas exposed to rainfall and contributing runoff to the open livestock waste storage structure.
- d) The planned minimum period of storage in months including, but not limited to, the factors for designing an open livestock waste storage structure listed in subsection (a) of this Section. Alternatively the CAFO may determine the minimum period of storage by specifying times the storage pond will be emptied consistent with the CAFO's nutrient management plan.
- e) Site-specific predicted design specifications including:
- 1) dimensions of the storage facility;
 - 2) daily manure and wastewater additions;
 - 3) the size and characteristics of the land application areas; and
 - 4) the total calculated storage period in months.

- f) An evaluation of the adequacy of the designed manure storage structure using simulation procedures in the United States Department of Agriculture Natural Resources Conservation Services Agricultural Waste Management Field Handbook, incorporated by reference at 35 Ill. Adm. Code 501.200.
- 1) The evaluation must include all inputs used in the simulation, including but not limited to:
 - A) daily precipitation, temperature, and evaporation data for the previous 100 years;
 - B) user-specified soil profiles representative of the CAFO's land application areas;
 - C) planned crop rotations consistent with the CAFO's nutrient management plan; and
 - D) the final modeled result of no overflows from the designed open livestock waste storage structure.
 - 2) For those CAFOs where 100 years of local weather data for the CAFO's location is not available, CAFOs may use a simulation with a confidence interval analysis conducted over a period of 100 years.
 - 3) The adequacy of the designed manure storage structure may be evaluated using equivalent evaluation and simulation procedures approved by the Agency.

BOARD NOTE: The adequacy of the designed manure storage structure may be evaluated by using the most recent version of the Soil Plant Air Water (SPAW) Hydrology Tool found at <http://hydrolab.arsusda.gov/SPAW/Index.htm>
- g) The Agency may waive the requirement in subsection (f) of this Section for a site-specific evaluation of the designed livestock waste storage structure and instead authorize a CAFO to use a technical evaluation developed for a class of specific facilities within a specified geographical area.
- h) The Agency may request additional information to support a request for livestock waste discharge limitations based on a site-specific open surface livestock waste storage structure.

(Source: Added at 38 Ill. Reg. _____, effective _____)

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE E: AGRICULTURE RELATED POLLUTION
CHAPTER I: POLLUTION CONTROL BOARD

PART 504
IMPLEMENTATION PROGRAM (REPEALED)

Section	
504.101	Compliance Dates
504.102	Severability
APPENDIX A	References to Previous Rules

AUTHORITY: Implementing Sections 9, 12, 13, 21, and 22 of the Environmental Protection Act (Ill. Rev. Stat. 1981, ch. 111 1/2, pars. 1009, 1012, 1013, 1021 and 1022) and authorized by Section 27 of the Environmental Protection Act (Ill. Rev. Stat. 1981, ch. 111 ½, par. 1027).

SOURCE: Filed and effective January 1, 1978; amended 2 Ill. Reg. 44, p. 137, effective October 30, 1978; codified at 7 Ill. Reg. 10592; repealed at 38 Ill. Reg. _____, effective _____.

Section 504.101 Compliance Dates

Compliance with the limitations of 35 Ill. Adm. Code 501 shall be achieved by the following dates;

- a) With respect to existing facilities not required to obtain National Pollutant Discharge Elimination System (NPDES) permits, by June 30, 1979.
- b) With respect to all other existing and new facilities, as of the effective date of this amendment.

Section 504.102 Severability

If any provision of these rules or regulations is adjudged invalid, or if the application thereof to any person or in any circumstance is adjudged invalid, such invalidity shall not affect the validity of this chapter as a whole, or of any part, subpart, sentence or clause thereof not adjudged invalid.

Section 504.APPENDIX A References to Previous Rules

The following table is provided to aid in referencing old Board rule numbers to section numbers pursuant to codification.

Chapter 5: Agriculture Related Pollution	35 Ill. Admin. Code 504
Part IV, Implementation Program	
Rule 401	Section 504.101

Rule 402

Section 504.102

IT IS SO ORDERED.

I, John T. Therriault, Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above order on November 7, 2013, by a vote of 4-0.

A handwritten signature in black ink that reads "John T. Therriault". The signature is written in a cursive style with a long horizontal stroke at the end.

John T. Therriault, Clerk
Illinois Pollution Control Board