ILLINOIS POLLUTION CONTROL BOARD
March 1, 2012

IN THE MATTER OF:	)	
	)	
SETBACK ZONE FOR FAYETTE WATER	)	R11-25
COMPANY COMMUNITY WATER	)	(Rulemaking - Public Water Supply)
SUPPLY: AMENDMENTS TO 35 ILL.	)	
ADM. CODE 618	)	

Proposed Rule. First Notice.

OPINION AND ORDER OF THE BOARD (by T.A. Holbrook):

The Board today proposes for first-notice publication in the *Illinois Register* amendments to Part 618 of its public water supplies regulations. The Illinois Environmental Protection Agency (Agency or Illinois EPA) initiated this proceeding by filing a rulemaking proposal on April 21, 2011. Pursuant to Section 14.3 of the Environmental Protection Act (Act) (415 ILCS 5/14.3 (2010)), the Agency seeks to establish a maximum setback zone for six wells owned by the Fayette Water Company (FWC) in Fayette County. The Agency also proposes to reorganize Part 618 to accommodate future establishment of additional maximum setback zones.

After conducting two public hearings in this matter and considering the entire record, the Board proposes for first notice the amendments to Part 618 described below in this opinion, including establishment of a maximum setback zone for the FWC wells. Publication of these proposed amendments in the *Illinois Register* will begin a 45-day public comment period. *See* 5 ILCS 100/5-40(b) (2010) (Illinois Administrative Procedure Act).

In the opinion below, the Board first provides the procedural history of this proceeding before summarizing the statutory background and authorities. Next, the Board summarizes the factual background including, but not limited to, the hydrology and hydrogeology of the site, the location of the wells, and the aquifer from which they draw. Next, the Board summarizes the development of the Agency's proposal and its projected effects. After discussing issues including the technical feasibility and economic reasonableness of the Agency's proposal, the Board provides a section-by-section summary of the record on its first-notice proposal before reaching its conclusion. Finally, the Board's order sets forth the proposed amendments for first-notice publication in the *Illinois Register*.

PROCEDURAL HISTORY

On April 21, 2011, the Agency filed a proposal to amend Part 618 of the Board's public water supply regulations (Prop.). Accompanying the proposal were documents including a Statement of Reasons (SR). In an order dated May 5, 2011, the Board accepted the proposal for hearing.

In an order dated May 6, 2011, the hearing officer scheduled a hearing on July 27, 2011, at the Fayette County Courthouse in Vandalia. The order set deadlines of June 8, 2011, to pre-file testimony; June 29, 2011, to pre-file questions based on that testimony; and July 20, 2011, to pre-file written answers to those questions.

On June 6, 2011, the Agency pre-filed the testimony of Mr. Richard P. Cobb, P.G. (Cobb Test). Mr. Cobb's pre-filed testimony included the following ten attachments:

Richard P. Cobb's *Curriculum Vitae* (Att.A),
Transverse Mercator Projection (Att. B),
USGS [Unites States Geological Survey] DEM [digital elevation model[1]] at the FWC Well Field (Att. C),
Map of the Pennsylvanian Bedrock at the FWC Well Field (Att. D),
Map of the Quaternary Geology at the FWC Well Field (Att. E.),
Map of the Glacial Deposit Thickness at the FWC Well Field (Att. F),
Principal Sand and Gravel Aquifers in Illinois (Att. G),
Principal Sand and Gravel Aquifer in the FWC Well Field (Att. H),
Potential for Aquifer Recharge in Illinois (Att. I), and
Potential for Aquifer Recharge at the FWC Well Field (Att. J).

No participant pre-filed questions based on Mr. Cobb's pre-filed testimony. In an order dated July 14, 2011, the hearing officer directed the Agency to prepare to address at hearing questions enclosed as Attachment A and based both on the Agency's Statement of Reasons and Mr. Cobb's pre-filed testimony.

The first hearing took place as scheduled on July 27, 2011, and the Board received the transcript (Tr.1) on August 1, 2011. During the first hearing, the hearing officer admitted into the record two exhibits: Mr. Cobb's pre-filed testimony (Exh.1); and the Agency's written responses to the questions attached to the hearing officer order of July 14, 2011 (Exh. 2). Tr.2 at 9-11. The Agency's written responses included the following six attachments:

Map of aquifer, FWC well field and the existing underground pipeline (Att. I),
Map of pipeline within the existing setback zone (Att. II),
Wolfe Affidavit filed in ICC [Illinois Commerce Commission] Case No. 07-0446 (Att. III),
Enbridge's response to ICC staff regarding FWC wells in ICC Case No. 07-0446 (Att. (IV),
Lateral Area of Influence (LAI) and Agency confirmation (Att. V), and
Well logs and construction logs (Att. VI).

In an order dated August 2, 2011, the hearing officer scheduled a second hearing on September 22, 2011, in Chicago and set a deadline of September 8, 2011 to pre-file testimony for

[1] The Agency describes DEM as "a digital file consisting of terrain elevations for ground positions at regularly spaced horizontal intervals." Cobb Test. at 4 n.5.

it. No participant pre-filed testimony for the second hearing, which took place as scheduled on September 22, 2011. The Board received the transcript (Tr.2) on September 23, 2011.

In an order dated September 23, 2011, the hearing officer set a deadline of October 7, 2011, to file post-hearing comments. The Board has received no post-hearing comments.

Filing Public Comments

First-notice publication of these proposed amendments in the *Illinois Register* will start a period of at least 45 days during which any person may file a public comment with the Board, regardless of whether the person has already filed a public comment. *See* 5 ILCS 100/5-40(b) (2010) (Illinois Administrative Procedure Act). The Board encourages comments on these proposed amendments. The docket number for this rulemaking, R11-25, should be indicated on the public comment.

Public comments must be filed with the Clerk of the Board at the following address:

Pollution Control Board
Office of the Clerk
James R. Thompson Center
100 W. Randolph Street, Suite 11-500
Chicago, IL 60601

Public comments may be filed electronically through the Board's Clerk's Office On-Line, or COOL, at www.ipcb.state.il.us. Questions about electronic filing through COOL should be directed to the Clerk's Office at (312) 814-3629.

Please note that all comments filed with the Clerk of the Board must be served on the hearing officer and on those persons on the Service List for this rulemaking. Before filing any document with the Clerk, please check with the hearing officer or the Clerk's Office to verify the most recent version of the Service List.

STATUTORY BACKGROUND AND AUTHORITIES

Public Act 85-863 (P.A. 85-863) became effective September 24, 1987, and enacted the Illinois Groundwater Protection Act (IGPA). P.A. 85-863 (§§1-9); *see* 415 ILCS 55/1 *et seq.* (2010); *see also* SR at 1, citing 1987 Ill. Laws 3624; Cobb Test. at 3. Among its provisions, the IGPA established the Interagency Coordinating Committee on Groundwater (ICCG), which consists of the director, or his or her designee, of several State entities, including the Agency, the Department of Natural Resources, the Department of Public Health, and the Department of Agriculture. 415 ILCS 55/4(a) (2010); *see* Cobb Test at 16 n.15. The ICCG is charged with performing a number of tasks and functions pertaining to groundwater quality and protection. 415 ILCS 55/4(b) (2010); *see* SR at 5 n.3.

The IGPA also established the Groundwater Advisory Council (GAC), which consists of

> 9 public members appointed by the Governor, including 2 persons representing environmental interests, 2 persons representing industrial and commercial interests, one person representing agricultural interests, one person representing local government interests, one person representing a regional planning agency, one person representing public water supplies, and one person representing the water well driller industry. 415 ILCS 55/5(a) (2010); *see* SR at 5 n.3; Cobb Test. at 16 n.16.

The GAC is charged with specific tasks pertaining to groundwater laws and legislation, research, and data. 415 ILCS 55/5(a) (2010). The Agency states that "[t]he ICCG and GAC work jointly, and the Illinois EPA is the liaison between the ICCG and GAC." SR at 5 n.3; *see* Cobb Test. at 16 n.16.

In addition, P.A. 85-863 adopted new Sections 14.1-14.5 and 17.1-17.4 of the Act, which address public water supplies (PWS). P.A. 85-863 (§14); *see* 415 ILCS 5/14.1-14.5, 17.1-17.4 (2010); *see also* SR at 2, citing 1987 Ill. Laws 3636; Cobb Test. at 3.

Section 14.1 of the Act establishes a minimum setback zone for the location of new community water supply wells by providing in pertinent part that

> (a) No new community water supply well may be located within 200 feet of any potential primary or potential secondary source or any potential route.
>
> (b) No new community water supply well deriving water from fractured or highly permeable bedrock or from an unconsolidated and unconfined sand and gravel formation may be located within 400 feet of any potential primary or potential secondary source or any potential route. . . . 415 ILCS 5/14.1(a), (b) (2010); *see* SR at 2; Cobb Test. at 3.

Section 3.345 of the Act provides in pertinent part that "potential primary source" means:

> any unit at a facility or site not currently subject to a removal or remedial action which:
>
> (1) is utilized for the treatment, storage, or disposal of any hazardous or special waste not generated at the site; or
>
> (2) is utilized for the disposal of municipal waste not generated at the site, other than landscape waste and construction and demolition debris; or
>
> (3) is utilized for the landfilling, land treating, surface impounding or piling of any hazardous or special waste that is generated on the site or at other sites owned, controlled or operated by the same person; or

> (4) stores or accumulates at any time more than 75,000 pounds above ground, or more than 7,500 pounds below ground, of any hazardous substances. . . . 415 ILCS 5/3.345 (2010).

In addition, Section 3.355 of the Act provides in pertinent part that "potential secondary source" means:

> any unit at a facility or a site not currently subject to a removal or remedial action, other than a potential primary source, which:
>
> (1) is utilized for the landfilling, land treating, or surface impounding of waste that is generated on the site or at other sites owned, controlled or operated by the same person, other than livestock and landscape waste, and construction and demolition debris; or
>
> (2) stores or accumulates at any time more than 25,000 but not more than 75,000 pounds above ground, or more than 2,500 but not more than 7,500 pounds below ground, of any hazardous substances; or
>
> (3) stores or accumulates at any time more than 25,000 gallons above ground, or more than 500 gallons below ground, of petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance; or
>
> (4) stores or accumulates pesticides, fertilizers, or road oils for purposes of commercial application or for distribution to retail sales outlets; or
>
> (5) stores or accumulates at any time more than 50,000 pounds of any de-icing agent; or
>
> (6) is utilized for handling livestock waste or for treating domestic wastewaters other than private sewage disposal systems as defined in the "Private Sewage Disposal Licensing Act". . . . 415 ILCS 5/3.355 (2010); *see* 225 ILCS 225/3(7) (2010) (definition).

Also, Section 3.350 of the Act provides in pertinent part that "potential route" means "abandoned and improperly plugged wells of all kinds, drainage wells, all injection wells, including closed loop heat pump wells, and any excavation for the discovery, development or production of stone, sand or gravel. This term does not include closed loop heat pump wells using USP [U.S. Pharmacopeial Convention] food grade propylene glycol. . . ." 415 ILCS 5/3.350 (2010).

Section 14.2 of the Act establishes a minimum setback zone for the location of each new potential source or new potential route. 415 ILCS 5/14.2 (2010); *see* SR at 2; Cobb Test. at 3. Subsection (a) provides that, with specified statutory 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) (2010); *see* Cobb Test. at 3. Subsection (d) provides that, with specified statutory 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) (2010); *see* Cobb Test. at 3.

Section 3.345 of the Act provides in pertinent part that a new potential primary source is:

(i) a potential primary source which is not in existence or for which construction has not commenced at its location as of January 1, 1988; or

(ii) a potential primary source which expands laterally beyond the currently permitted boundary or, if the primary source is not permitted, the boundary in existence as of January 1, 1988; or

(iii) a potential primary source which is part of a facility that undergoes major reconstruction. Such reconstruction shall be deemed to have taken place where the fixed capital cost of the new components constructed within a 2-year period exceed 50% of the fixed capital cost of a comparable entirely new facility.

Construction shall be deemed commenced when all necessary federal, State and local approvals have been obtained, and work at the site has been initiated and proceeds in a reasonably continuous manner to completion. 415 ILCS 5/3.345 (2010); *see* Cobb Test. at 3.

Section 3.355 of the Act provides that a new potential secondary source is:

(i) a potential secondary source which is not in existence or for which construction has not commenced at its location as of July 1, 1988; or

(ii) a potential secondary source which expands laterally beyond the currently permitted boundary, or, if the secondary source is not permitted, the boundary in existence as of July 1, 1988, other than an expansion for handling of livestock waste or for treating domestic wastewaters; or

(iii) a potential secondary source which is part of a facility that undergoes major reconstruction. Such reconstruction shall be deemed to have taken place where the fixed capital cost of the new components constructed within a 2-year period exceed 50% of the fixed capital costs of a comparable entirely new facility.

Construction shall be deemed commenced when all necessary federal, State and local approvals have been obtained, and work at the site has been initiated and

proceeds in a reasonably continuous manner to completion. 415 ILCS 5/3.355 (2010); *see* Cobb Test. at 3.

Section 3.350 of the Act provides in pertinent part that a new potential route is:

(1) a potential route which is not in existence or for which construction has not commenced at its location as of January 1, 1988, or

(2) a potential route which expands laterally beyond the currently permitted boundary or, if the potential route is not permitted, the boundary in existence as of January 1, 1988.

Construction shall be deemed commenced when all necessary federal, State and local approvals have been obtained, and work at the site has been initiated and proceeds in a reasonably continuous manner to completion. 415 ILCS 5/3.350 (2010); *see* Cobb Test. at 3.

Section 14.3 of the Act provides for the establishment of a maximum setback zone for a community water supply (CWS) well. 415 ILCS 5/14.3 (2010); *see* SR at 2. Section 3.365 of the Act defines "public water supply" to mean

> all mains, pipes and structures though which water is obtained and distributed to the public, including wells and well structures, intakes and cribs, pumping stations, treatment plants, reservoirs, storage tanks and appurtenances, collectively or severally, actually used or intended for use for the purpose of furnishing water for drinking or general domestic use and which serve at least 15 service connections or which regularly serve at least 25 persons at least 60 days per year. A public water supply is either a 'community water supply' or a 'non-community water supply.' 415 ILCS 5/3.365 (2010).

Section 3.145 of the Act elaborates by defining "community water supply" to mean "a public water supply which serves or is intended to serve at least 15 service connections used by residents or regularly serves at least 25 residents." 415 ILCS 5/3.145 (2010). The same section establishes that "'[n]on-community water supply' means a public water supply that is not a community water supply. The requirements of this Act shall to apply to non-community water supplies." *Id*.

Section 14.3(a) of the Act provides in pertinent part that "[o]wners of community water supplies which utilize any water well, or any county or municipality served by any community water supply well, may determine the lateral area of influence [LAI] of the well under normal operating conditions." 415 ILCS 5/14.3(a) (2010); *see* SR at 2 n.1, citing 35 Ill. Adm. Code 671 (Agency procedures for determining LAI). When this determination demonstrates that the LAI extends beyond the radius of the minimum setback zone, "any county or municipality served by such water supply may in writing request the Agency to review and confirm the technical adequacy of such determination." 415 ILCS 5/14.3(b) (2010); *see* 35 Ill. Adm. Code 671.Subpart B (Procedures for Determining the Lateral Area of Influence of Wells Under

Normal Operating Conditions); Cobb Test. at 3. Section 14.3(b) requires that the Agency notify the county or municipality in writing of its conclusion on technical adequacy within 90 days. 415 ILCS 5/14.3(b) (2010).

If the Agency confirms the technical adequacy of the determination of the LAI, then "the county or municipality may, after notice and opportunity for comment, adopt an ordinance setting forth the location of each affected well and specifying the boundaries of a maximum setback zone. . . ." 415 ILCS 5/14.3(c) (2010). The maximum setback zone may have irregular boundaries, but, with one statutory exception, cannot extend more than 1,000 feet from the wellhead. *Id*.; *see* SR at 2-3; Cobb Test. at 3. That statutory exception at Section 14.3(f) provides in pertinent part that,

> "[i]f an active community water supply well is withdrawing groundwater from within the alluvial deposits and is located within 1000 feet of public waters, the boundaries of a maximum setback zone adopted by ordinance pursuant to subsection (c) may be established to a distance of 2,500 feet from the wellhead. . . . For purposes of this subsection, the term 'public waters' means public waters as defined in Section 18 of the Rivers, Lakes, and Streams Act, as now or hereafter amended." 415 ILCS 5/14.3(f) (2010).

Section 18 of the Rivers, Lakes, and Streams Act provides that, with limited exceptions,

> [w]herever the terms public waters or public bodies of water are used or referred to in this Act, they mean all open public streams and lakes capable of being navigated by water craft, in whole or in part, for commercial uses and purposes, and all lakes, rivers, and streams which in their natural condition were capable of being improved and made navigable, or that are connected with or discharged their waters into navigable lakes or rivers within, or upon the borders of the State of Illinois, together with all bayous, sloughs, backwaters, and submerged lands that are open to the main channel or body of water and directly accessible thereto. 615 ILCS 5/18 (2010).

Section 14.3(d) of the Act provides that, "upon written notice to the county or municipality, the Agency may propose to the Board a regulation establishing a maximum setback zone for any well subject to this Section." 415 ILCS 5/14.3(d) (2010); *see* SR at 3. Any proposal of this nature must "be based upon all reasonably available hydrogeologic information, include the justification for expanding the zone of wellhead protection, and specify the boundaries of such zone, no portion of which boundaries shall be in excess of 1,000 feet from the wellhead." 415 ILCS 5/14.3(d) (2010); *see* SR at 3; Cobb Test. at 3.

> Such justification may include the need to protect a sole source of public water supply or a highly vulnerable source of groundwater, or an Agency finding that the presence of potential primary or potential secondary sources or potential routes represents a significant hazard to the public health or the environment. 415 ILCS 5/14.3(d) (2010); *see* SR at 3.

The Agency may proceed to file its proposal to establish a maximum setback zone with the Board "unless the county or municipality, within 30 days of the receipt of the written notice, files a written request for a conference with the Agency." 415 ILCS 5/14.3(d) (2010). If the Agency receives such a request, it must schedule a conference to take place within 90 days. *Id.* The conference "shall inform the county or municipality regarding the proposal. Within 30 days after the conference, the county or municipality may provide written notice to the Agency of its intent to establish a maximum setback zone in lieu of the Agency acting on a proposal." *Id.* If the Agency receives such a notice, it "may not file a proposal with the Board for a period of 6 months." *Id.*

Section 14.3(e) provides in pertinent part that, "[e]xcept as provided in subsection (c) of Section 14.2, no new potential primary source shall be placed within the maximum setback zone established for any community water supply well pursuant to subsection (c) or (d) of this Section." 415 ILCS 5/14.3(e) (2010); *see* 415 ILCS 5/14.2(c) (2010) (allowing Board to grant exceptions to setbacks); Cobb Test. at 3.

Section 14.4(a) of the Act requires the Agency, following consultation with the ICCG and GAC, to propose to the Board "regulations prescribing standards and requirements" for specified activities:

(1) landfilling, land treating, surface impounding or piling of special waste and other wastes which could cause contamination of groundwater and which are generated on the site, other than hazardous, livestock and landscape waste, and construction and demolition debris;

(2) storage of special waste in an underground storage tank for which federal regulatory requirements for the protection of groundwater are not applicable;

(3) storage and related handling of pesticides and fertilizers at a facility for the purpose of commercial application;

(4) storage and related handling of road oils and de-icing agents at a central location; and

(5) storage and related handling of pesticides and fertilizers at a central location for the purpose of distribution to retail sales outlets. 415 ILCS 5/14.4(a) (2010); *see* SR at 3.

Section 14.4(a) also provides that, "[i]n preparing such regulation, the Agency shall provide as it deems necessary for more stringent provisions for those activities enumerated in this subsection which are not already in existence." 415 ILCS 5/14.4(a) (2010). An activity subject to such regulations "may be referred to as a new activity." *Id.*

Section 14.4(d) of the Act provides that, "[f]ollowing receipt of proposed regulations submitted by the Agency pursuant to subsection (a) of this Section, the Board shall promulgate

appropriate regulations for new activities." 415 ILCS 5/14.4(d) (2010). Section 14.4(d) directs the Board during promulgation of such regulations to consider, in addition to the factors established in Title VII of the Act, four specified factors:

> (1) appropriate programs for water quality monitoring, including, where appropriate, notification limitations to trigger preventive response activities;
>
> (2) design practices and technology-based measures appropriate for minimizing the potential for groundwater contamination;
>
> (3) reporting, recordkeeping and remedial response measures; and
>
> (4) requirements for closure or discontinuance of operations. 415 ILCS 14.4(d) (2010); *see* 415 ILCS 5/26-29 (2010) (Title VII: Regulations).

Section 14.4(d) further provides that "[s]uch regulations as are promulgated pursuant to this subsection shall be for the express purpose of protecting groundwater. The applicability of such regulations shall be limited to any new activity which is to be located within a setback zone regulated by this Act. . . ." 415 ILCS 5/14.4(d) (2010).

In addition, Section 14.4(b) of the Act provides in part that "the Board shall promulgate appropriate regulations for existing activities." 415 ILCS 5/14.4(b) (2010). Section 14.4(b) directs the Board during promulgation to consider, in addition to the factors established in Title VII of the Act, four specified factors:

> (1) appropriate programs for water quality monitoring;
>
> (2) reporting, recordkeeping and remedial response measures;
>
> (3) appropriate technology-based measures for pollution control; and
>
> (4) requirements for closure or discontinuance of operations. *Id*.

Section 14.4(b) also provides that

> [s]uch regulations as are promulgated pursuant to this subsection shall be for the express purpose of protecting groundwaters. The applicability of such regulations shall be limited to any existing activity which is located: (A) within a setback zone regulated by this Act, other than an activity located on the same site as a non-community water system well and for which the owner is the same for both the activity and the well. . . . " *Id.*

The Agency states that it has proposed and the Board has adopted required regulations. SR at 4, citing 35 Ill. Adm. Code 615 (Existing Activities in a Setback Zone or Regulated Recharge Area), 616 (New Activities in a Setback Zone or Regulated Recharge Area).

Section 17.1(a) of the Act provides that "[e]very county or municipality which is served by a community water supply well may prepare a groundwater protection needs assessment." 415 ILCS 5/17.1(a) (2010); *see* SR at 4. Such assessments must at a minimum include six specified elements:

(1) Evaluation of the adequacy of protection afforded to resource groundwater by the minimum setback zone and, if applicable, the maximum setback zone;

(2) Delineation, to the extent practicable, of the recharge area outside of any applicable setback zones but contained within any area over which the county or municipality has jurisdiction or control;

(3) Identification and location of potential primary and potential secondary sources and potential routes within, and if appropriate, in proximity to the delineated recharge area for each such well;

(4) Evaluation of the hazard associated with identified potential primary and potential secondary sources and potential routes contained within the recharge area specified according to subparagraph (a)(2) of the Section, taking into account the characteristics of such potential sources and routes, the nature and efficacy of containment measures and devices in use, the attenuative qualities of site soils in relation to substances involved, the proximity of potential sources and potential routes and the nature, rate of flow, direction of flow and proximity of the uppermost geologic formation containing groundwater utilized by the well;

(5) Evaluation of the extent to which existing local controls provide, either directly or indirectly, some measure of groundwater protection; and

(6) Identification of practicable contingency measures, including provision of alternative drinking water supplies, which could be implemented in the event of contamination of the water supply. 415 ILCS 5/17.1(a)(1-6) (2010).

Section 17.1(d) of the Act provides that "[t]he Agency shall implement a survey program for community water supply well sites. The survey program shall be organized on a priority basis so as to efficiently and effectively address areas of protective need." 415 ILCS 5/17.1(d) (2008); *see* SR at 4. These well site surveys must at a minimum consist of four specified elements:

(1) Summary description of the geographic area within a 1,000 foot radius around the wellhead;

(2) Topographic or other map of suitable scale of each well site denoting the location of the wellhead, the 1,000 foot radius around the wellhead, and the location of potential sources and potential routes of contamination within this zone;

(3) A summary listing of each potential source or potential route of contamination, including the name or identity and address of the facility, and a brief description of the nature of the facility; and

(4) A general geologic profile of the 1,000 foot radius around the wellhead, including depth and age of the well, construction of the casing, formations penetrated by the well and approximate thickness and extent of the formations. 415 ILCS 5/17.1(d)(1-4) (2010).

Section 17.1(h) of the Act provides that a county with a population of fewer than 25,000 persons and a municipality with a population fewer than 5,000 persons that is subject to subsection (a) "may request, upon receipt of a well site survey report, the Agency to identify those potential primary sources, potential secondary sources and potential routes which represent a hazard to the continued availability of groundwaters for public use, given the susceptibility of the groundwater recharge area to contamination." 415 ILCS 5/17.1(h) (2010); *see* SR at 4. This action may substitute for the groundwater protection needs assessment under subsection (a). 415 ILCS 5/17.1(h) (2010).

Section 17.2 of the Act requires the Agency to establish a regional groundwater protection planning program. 415 ILCS 5/17.2(a) (2010); *see* SR at 4. The Agency states that, "[u]nder this program, the Illinois EPA, in cooperation with the Department of Natural Resources [DNR], has designated priority groundwater protection planning regions, each with a regional planning committee." SR at 4; *see* 415 ILCS 5/17.2(b) (2010). Subsection (b) designates the members of these committees, and subsection (c) lists committees' responsibilities. 415 ILCS 5/17.2(b), (c) (2010). The Agency reports that it established these groundwater protection planning regions "based on mapping, the Potential for Aquifer Recharge in Illinois, conducted by the Department of Natural Resources that identified appropriate recharge areas." SR at 4-5, citing 415 ILCS 55/7 (2010). The Agency reports that DNR published this mapping in 1990. SR at 5 n.2.

FACTUAL BACKGROUND

Hydrological and Hydrogeological Background

Natural Conditions

In his pre-filed testimony on behalf of the Agency, Mr. Cobb stated that, although some water infiltrating soil may evaporate or transpire through plants, "[t]he remainder migrates downward through pore spaces in soil or rock, eventually reaching a zone where all pore spaces are saturated." Cobb Test. at 8. He characterized water entering the saturated zone and moving downward as "recharge." *Id*. He listed various factors affecting the portion of recharge that

reaches an aquifer: "intensity and amount of precipitation, surface evaporation, vegetative cover, plant water demand, land use, soil moisture content, depth and shape of the water table, distance and direction to a stream or river, and hydraulic conductivity of soil and geologic materials." *Id*. He noted that the Illinois State Geological Survey and the Illinois State Water Survey have developed a Potential for Aquifer Recharge Map of the state. *Id*., citing 415 ILCS 5/17.2(a) (2010) (groundwater protection planning program); *see* Att. I (map).

Mr. Cobb described the surface of the saturated zone as the water table and water below that as groundwater. Cobb Test. at 8, citing 415 ILCS 5/3.210 (definition of "groundwater"), 35 Ill. Adm. Code 620.110 (same). He stated that "[t]he water table can be determined by measuring the elevation of water surface in wells that penetrate the saturated zone." Cobb Test. at 8. He added that "[t]he water table may intersect the ground surface along perennial streams, springs, and lakes, which are natural areas of groundwater discharge." *Id*.

Mr. Cobb stated that, while gravity causes surface water to flow downhill, groundwater moves much more slowly "down-gradient from areas of higher potential energy to areas of lower potential energy." Cobb Test. at 9. He described these areas of equal elevation as "hydraulic head." *Id*. He stated that "[g]roundwater flows from recharge zones, where infiltration occurs, to discharge zones, where groundwater discharges into stream, lakes, and wells." *Id*. He described the transport of dissolved contaminants at the speed of average groundwater pore velocity as "advection." *Id*.

Mr. Cobb stated that one can determine the direction of groundwater flow from a map of the potentiometric surface, which is a contour map of water elevations in observation wells. Cobb Test. at 9. He further stated that, "[g]enerally, groundwater flow will be perpendicular to the contours (*i.e.*, areas of equal elevation) of the potentiometric surface." *Id*. He indicated that the flow rate relates to "permeability of an aquifer and the slope of the potentiometric surface." *Id*. He elaborated that, "[i]n quantitative terms, *hydraulic conductivity* is used in place of permeability and is a function of the size and shape of pore spaces, the degree of interconnection of these spaces, and the type of fluid (*e.g.*, water, oil, or brines) passing through the medium." *Id*. (emphasis in original); *see id*. n.10 (defining "hydraulic conductivity" and providing derivation).

Mr. Cobb testified that an equation known as "Darcy's Law" expresses the hydraulic principles governing groundwater movement. Cobb Test. at 9. He stated that, under this equation, "the flow rate of a liquid through a porous medium is proportional to the head loss and inversely proportional to the length of the flow path." *Id*. at 9-10. He noted that, although "[t]he Darcian velocity assumes that flow occurs across the entire cross-section of the porous material without regard to solid or pore spaces," liquid flows only through pore spaces. *Id*. at 10. He added that Darcy's Law can determine either "the average linear velocity or a velocity representing the *average* rate at which groundwater moves between two points. . . ." *Id*. (emphasis in original) (Equation 1: Darcian groundwater velocity).

Groundwater Hydraulics

Mr. Cobb stated that "transmissivity" refers to the capacity of a formation to transmit groundwater. Cobb Test. at 10. Specifically, he testified that "[t]ransmissivity ("gpd/ft") is the product of the saturated thickness of the aquifer and the hydraulic conductivity ("k"), which is the rate of flow of water, in gpd, through a cross-sectional area of one square foot of the aquifer ("gpd/ft^2") under a hydraulic gradient ("dh/dl") of 100 percent at the prevailing water temperature." *Id*. at 10-11; *see id*. at 10 n.11 (defining and providing derivation of "transmissivity"). Mr. Cobb added that "[t]he storage properties of an aquifer are expressed by the storage coefficient" (*id*. at 11), which "means the volume of water that a permeable unit will adsorb or expel from storage per unit surface area per unit change in head (*id*. n. 12)." He concluded by indicating that "[t]he hydraulic properties of an aquifer may be determined by means of an aquifer pumping test." *Id*. at 11.

Effect of Wells

Mr. Cobb stated that withdrawing groundwater by a well lowers water levels in the water table around that well. Cobb Test. at 11. He further stated that "the change in the water elevation of the static water level produced by a pumping well" is called "drawdown." *Id*. n.13, citing 35 Ill. Adm. Code 671.102 (maximum setback zone definitions). He continued that, "[f]rom a three-dimensional perspective, the pattern of drawdown around single or multiple pumping wells resembles a cone, with the greatest drawdown adjacent to the pumping well." *Id*. at 11. He added that the term "cone of depression" refers to the drawdown area affected by the pumping well. *Id*.; *see* SR at 9.

Mr. Cobb stated that the entire surface area of the cone of depression, which is defined by its rim, is known as the LAI [lateral area of influence]. Cobb Test. at 11; *see* SR at 9. He noted that "[w]ater in the LAI will reach the well faster than other water that replenishes the aquifer because, within the cone of depression, the groundwater velocity (V_x) in the direction of the well is higher than outside the cone of depression. . . ." Cobb Test. at 11 (referring to Equation 1, Darcian groundwater velocity); *see* SR at 9. He added that contaminants within the LAI will also reach the well faster than contaminants outside it. Cobb Test. at 11; *see* SR at 9. He concluded that "preventing new potential sources from locating within the maximum LAI will reduce the possibility of well water contamination, and increase the assurance of a safe and adequate source of potable water. . . ." Cobb Test. at 11-12, citing 35 Ill. Adm. Code 601.101 (general requirements for public water supplies), 611.231(c) (Source Water Quality Conditions); *see* SR at 9.

Location of FWC Wells

FWC's CWS wells are situated in the flood plain of the Kaskaskia River watershed[2] "in Fayette County, Illinois in Township 8 North, Range 2 East, and Sections 31 and 32." Cobb

[2] USGS has delineated U.S. watersheds and classified them into units for the National Resources Conservation Service (NRCS) "using a national standard hierarchical system based on surface hydrological features. . . ." Cobb Test. at 4 n.4. Each hydrologic unit has a unique hydrologic

Test. at 4; *see* SR at 10. The wells "serve portions of Fayette, Shelby, and Effingham counties." SR at 5; *see* Cobb Test. at 4. The Agency used aerial photographic maps to digitize the wells' location onto USGS digital topographical maps in GIS [Geographic Information System]. Cobb Test. at 4. Using GIS, the Agency then overlaid the topographic map with a USGS DEM to determine that "the elevation of the land surface in this area is approximately 146 meters or 450 feet above sea level." Cobb Test. at 4; *see* Att. C.

Bedrock Geology

In his pre-filed testimony, Mr. Cobb stated that "[t]he vast majority of southern Illinois bedrock is composed of Pennsylvanian ("P") aged deposits." Cobb Test. at 4. He further stated that FWC well records confirm that Pennsylvanian age bedrock lies below the well field. *Id*. He added that "[t]he upper most bedrock in the valley where the FWC well field is located is the Bond Formation ("Pb")." *Id*, citing Att. D (bedrock map).

In his response to the Board's questions, Mr. Cobb submitted construction logs for wells 2, 3 and 7, and geologic logs for wells 4, 5, and 6. Exh. 2 at 6; *see* Att. VI (Well logs and construction logs). The logs also show that the six wells are in close proximity to one another, placing them "in the same formation." Exh. 2 at 6; *see* Att. VI. He indicated that the six wells all employed a gravel pack used only in sand and gravel aquifers. Exh. 2 at 6. During the first hearing, he elaborated that "[w]ells that go into the bedrock are typically open hole. They don't have a screen. They don't have a gravel pack." Tr.1 at 29. At depths of approximately 44 to 51 feet, he acknowledged that "these wells do not extend to the Pennsylvania." Exh. 2 at 6. However, he stated that bedrock maps prepared by the Illinois State Geological Survey show that the Bond formation in which they are situated is Pennsylvanian in age. *Id*., citing App. D (Map of the Pennsylvanian Bedrock at the FWC Well Field); *see* Tr.1 at 29.

Mr. Cobb's pre-filed testimony claimed that "[t]he Rocks of Pennsylvanian age in southern Illinois tend to be poor aquifers, with low rates of production, with a few exceptions where outcropping aquifers are recharged locally." Cobb Test. at 5; *see* SR at 5; Tr.1 at 29. He stated that "[g]roundwater produced from the Pennsylvanian is also highly mineralized with high concentrations of total dissolved solids [TDS] often exceeding 10,000 milligrams per liter in concentration." Cobb Test. at 5; *see* SR at 5-6; Tr.1 at 29. He claimed that this groundwater is generally not potable.[3] Cobb Test. at 5. He added that this groundwater is considered to be "Class IV: Other Groundwater" under the Board's groundwater quality regulations. Cobb Test. at 5, citing 35 Ill. Adm. Code 620.230(c) (classifying on basis of TDS concentration).

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unit code (HUC) of up to 10 digits based on the level to which it has been classified. *Id*. Attachment C shows the FWC wells within the boundaries of a single watershed designated with a 10-digit HUC. Att. C.

[3] Both the Act and the IGPA defines "potable" to mean "generally fit for human consumption in accordance with accepted water supply principles and practices." 415 ILCS 5/3.340 (2010); 415 ILCS 55/3(h) (2010).

Quaternary Geology

In his pre-filed testimony, Mr. Cobb stated that Pennsylvanian aged bedrock beneath the FWC well field "is overlain by Quaternary glacial outwash deposits belonging to the Henry Formation in pre-glacial bedrock valleys. . . ." Cobb Test. at 5; *see* Att. E. He further stated that the Henry Formation is comprised of "sorted and stratified water-laid material that is dominantly sand and gravel. These outwash sediments were deposited by debris-laden meltwaters flowing away from the ice fronts during both the advances and retreats of glaciers during the Illinoisan age." Cobb Test. at 5.

Mr. Cobb stated that the Henry Formation is "overlain by modern day channel and floodplain deposits (alluvium) of the Cahokia Formation in the Kaskaskia River Valley and tributaries." Cobb Test. at 5, citing Att. E. He further stated that "[t]he Cahokia is present along all Illinois streams, although locally absent where active stream erosion is occurring." Cobb Test. at 5. He indicated that "[t]he Cahokia Formation consists of deposits in the floodplains and channels of modern rivers and streams, and is comprised of mostly poorly sorted sand, silt, and clay with wood and shell fragments, and local deposits of sandy gravel." *Id*. He added that its upper layer is comprised of overbank silts and clays, while the coarser lower level is comprised of sandy channel deposits. *Id*. Mr. Cobb stated that, at the FWC well field, these quaternary deposits "range in thickness from 100 to 200 feet." *Id*., citing Att. F.

Mr. Cobb claimed that, in southern Illinois, quaternary geology "is mainly composed of glacial deposits (*i.e.*, Glasford Formation)." Cobb Test. at 6. This formation consists generally of clayey tills or loess in layers no thicker than 20-50 feet over low permeability rock. *Id*., *see* SR at 9. He added that, "in southern Illinois, sand and gravel deposits usually occur in thin and discontinuous stringers, except in river valleys." Cobb Test. at 6; *see* SR at 9. He claimed that "[t]hese thin and discontinuous deposits are generally not aquifers[4] because they are not sufficiently permeable to readily yield economically useful quantities of water to wells, springs, or streams under ordinary hydraulic gradients." Cobb Test at 6. Consequently, "[p]otable resource groundwater is very rare in the southern half of the State." *Id*., citing 35 Ill. Adm. Code 620.210 (Class I Potable Resource Groundwater); *see* SR at 9.

Cahokia Aquifer

In his pre-filed testimony, Mr. Cobb stated that "[a] principal aquifer is defined as having a potential yield of 100,000 gallons per day per square mile and having an area of at least 50 [square] miles." Cobb Test. at 6. He further stated that the coarse lower portion of the Cahokia Formation is a single hydrostratigraphic unit known as the Cahokia Aquifer, which is classified as "a principal sand and gravel aquifer system by the Illinois State Water Survey." *Id*., citing Att. G (Aquifer map); *see* SR at 10. He argued that Attachment G shows how rare these aquifer systems are in southern Illinois. Cobb Test. at 6; *see* Att. G. He claimed that the Cahokia

[4] The IGPA provides that "'[a]quifer' means saturated (with groundwater) soils and geologic materials which are sufficiently permeable to readily yield economically useful quantities of water to wells, springs, or streams under ordinary hydraulic gradients." 415 ILCS 55/3(b) (2010); *see* Cobb Test. at 6 n.7.

Aquifer used by FWC "is the sole source of Class I: Potable Resource Groundwater in southern Illinois." Cobb Test. at 6, citing Att. H.

Mr. Cobb stated that, because the sand and gravel comprising the Cahokia Aquifer is overlain by permeable materials, it has "a high potential for aquifer recharge" and "an intrinsically high vulnerability to groundwater contamination." Cobb Test. at 6-7, citing Atts. I, J; *see* SR at 5. The Agency claimed that, in the event of such contamination, "sites for replacement wells would be difficult to find given the hydrogeology of Southern Illinois." SR at 10. The Agency argued that "[m]oving laterally away from the river would yield groundwater that lacks the quality and quantity available" from the existing FWC wells. *Id*. The Agency further argued that "[r]eplacement wells would have to be located upstream or downstream along the river, and constructing new wells and the necessary water mains to connect to existing infrastructure is costly." *Id*.

FWC Public Water Supply

In his pre-filed testimony, Mr. Cobb stated that FWC obtains water from six wells numbered 2, 3, 4, 5, 6, and 7, which the Agency designates as 010103, 010104, 010105, 01533, 01818, and 01858, respectively. Cobb Test. at 7. He further stated that "[t]he wells range from 40-47 feet deep, and utilize the shallow Cahokia Aquifer comprised of 35.4 feet of saturated sand and gravel overlain by a relatively permeable material." *Id*.; *see* SR at 6. He indicated that FWC annually pumps 180,613,000 gallons with a daily average pumpage of 494,830 gallons and a maximum daily average of 882,000 gallons. Cobb Test. at 7; *see* Exh. 2 at 7; Tr.1 at 41-42. He added that FWC directly serves 6,510 persons and also "serves four satellite systems in Brownstown, St. Elmo, St. Peter, and Beecher City in Fayette, Shelby, and Effingham Counties." Cobb Test. at 7; *see* SR at 5; Tr.1 at 42.

Describing FWC's operations, Mr. Cobb stated that groundwater withdrawn by the wells "is metered, aerated, and discharged to 34,000 gallon detention basins." Cobb Test. at 7. He further stated that "[t]his water is pumped to one of two 600 gal[lon] per minute ("gpm") large service pumps, is pre-chlorinated, pressure filtered, fluoridated, and discharged to a 32,000 and 65,000 gal[lon] integrated clear well." *Id*. Mr. Cobb described these clear wells as reservoirs "[f]or storing filtered water of sufficient quantity to prevent the need to vary the filtration rate with variations in demand." *Id*. n.9. He added that they "are also used to provide chlorine contact time for disinfection." *Id*. From these clear wells, "[w]ater is then pumped by one of two 600 gpm high service pumps to the distribution system and a 0.15 million gal ("MG") elevated storage tank which places head on the system in order to maintain pressure." *Id*. at 7.

The Agency stated that it conducted a source water assessment for the FWC wells in 2002. SR at 6, citing 42 U.S.C. § 300j-13 (Safe Drinking Water Act). At that time, FWC obtained water from wells 2, 3, and 4. SR at 6. As part of that assessment, the Agency "evaluated the existing water quality, intrinsic geological vulnerability, and existing potential sources of groundwater contamination, and determined the overall susceptibility for these wells based on the combination of these factors." *Id*. The Agency concluded that all three wells are geologically sensitive and highly vulnerable to contamination. *Id*. The Agency stated that "[t]he wells are susceptible to inorganic chemical (IOC), volatile organic compounds (VOC) and

synthetic organic compounds (SOC) due to "agricultural land use, data from monitoring conducted at the wells and the entry point of the distribution system, and hydrogeologic data. . . . " *Id*. The assessment recommended that FWC undertake four activities to protect the groundwater supply: (1) develop a source water protection program, (2) have a maximum setback zone ordinance enacted, (3) revisit their contingency planning documents, and (4) review its cross connection control program." *Id*. The Agency also determined the recharge area for the FWC wells as an element of the source water assessment. *Id*.

The Agency noted that in 2008 FWC added wells 5, 6, and 7, each of which is in the same well field as wells 2, 3, and 4, draws from the same aquifer, and is similarly constructed. SR at 7. The Agency characterized the three newer wells as "also vulnerable to contamination." *Id*. The Agency stated that in 2008 it updated the delineation of the recharge area to reflect the three additional wells. *Id*.

The Agency stated that it has not identified any potential primary sources, potential routes, or potential secondary sources in the vicinity of the FWC wells. SR at 7. However, the Agency noted that a petroleum pipeline runs through the FWC well field. *Id*. In his response to the Board's questions, Mr. Cobb stated that this pipeline is within the minimum setback zone but is not now in use. Exh, 2 at 1; *see* Att. 2 (Map of pipeline within existing setback zone); Tr.1 at 17-18, 19-20. Mr. Cobb added that, although the pipeline is underground, "[t]he Agency does not have information on whether the pipeline is below the water table in the saturated zone (groundwater) or in the unsaturated zone above the water table." Exh. 2 at 1, citing Att. I (Map of aquifer, FWC well field and the existing underground pipeline); *see* Tr.1 at 14-15. Through communication with FWC on July 21, 2011, the Agency determined that Williams Pipeline Company owned the pipeline, which is eight to ten inches in diameter. Exh. 2 at 1; Tr.1 at 15. FWC indicated that, when it bought the property, it had not been aware of the pipeline. Exh. 2 at 1; Tr.1 at 15. FWC characterized the pipeline as "abandoned." Exh. 2 at 1.

The Agency added that "[a] new pipeline has also been proposed that would follow the same right-of-way." SR at 7. In his response to the Board's questions, Mr. Cobb elaborated that Enbridge Pipeline, L.L.C. (Enbridge) has proposed this installation. Exh. 2 at 1; *see id*. at 3, citing Atts. III, IV; Tr.1 at 15-16, 22-24. Mr. Cobb stated that, "[w]hen the Agency contacted Enbridge in July 22, 2011, the Agency learned that Enbridge Pipeline owns the existing pipeline as well" as a result of a merger with Central Illinois Pipeline Company. Exh. 2 at 1, 5. He also indicated that Enbridge views the existing pipeline as "inactive" rather than "abandoned." *Id*.; Tr. 1 at 15-16. The Agency also determined that Enbridge had placed its new pipeline project "on hold, with no planned start date for construction." Exh. 2 at 3; Tr.1 at 24.

In response to a Board request for comment on federal or state authorities other than the Board's setback regulations that govern pipeline safety in terms of groundwater protection, Mr. Cobb stated that pipelines carrying crude oil in Illinois are governed by the Common Carrier by Pipeline Law, Article XV of the Public Utilities Act. Exh. 2 at 4, citing 220 ILCS 5/15-100 *et seq*. (2010); *see* Tr.1 at 25. He added that the federal government has adopted statutes and United States Department of Transportation (USDOT) regulations addressing pipeline safety. Exh. 2 at 4, citing 49 U.S.C. §§ 60101-60301; 49 C.F.R. 190-199. Mr. Cobb indicated that the USDOT's "Pipeline and Hazardous Material Safety Administration (PHMSA), acting through

the Office of Pipeline Safety (OPS), administers the Department's national regulatory program for the transportation of natural gas, petroleum, and other hazardous materials by pipeline." Exh. 2 at 4. These regulations include standards for pipeline transporting hazardous liquids within one-half mile of an Unusually Sensitive Area (USA) vulnerable to environmental damage from a release. *Id*., citing 49 C.F.R. 195.

Mr. Cobb elaborates that, "[i]n part, a USA drinking water resource is the Source Water Protection Area (SWPA) for a Community Water System . . . that obtains its water supply from a Class I or Class IIA aquifer and does not have an adequate alternative drinking water source." Exh. 2 at 5. He reports that a Class I aquifer is "surficial or shallow, permeable, and is highly vulnerable to contamination." *Id*. A Class II aquifer is "a higher yield bedrock aquifer that is consolidated and is moderately vulnerable to contamination." *Id*. Mr. Cobb states that, "[w]hen a state has not yet identified the SWPA, the Wellhead Protection Area (WHPA) will be used until the state has identified the SWPA." *Id*. Section 611.101 of the Board's public water supply regulations define WHPA to mean "the surface and subsurface recharge area surrounding a community water supply well or well field, delineated outside of any applicable setback zones . . . pursuant to Illinois' Wellhead Protection Program, through which contaminants are reasonably likely to move toward such well or well field." 35 Ill. Adm. Code 611.101. Mr. Cobb notes that, in Illinois, the SWPA and WHPA are the same for community water supply wells. *Id*., citing 35 Ill. Adm. Code 611.101; *see* Tr.1 at 25. He states that the "Phase I WHPA is 1,000 feet which is the same as the proposed maximum setback zone." Exh. 2 at 5.

Determination of LAI

In his pre-filed testimony, Mr. Cobb noted that Part 671 of the Board's public water supply regulations establishes procedures and requirements for determining the LAI of wells. Cobb Test. at 12, citing 35 Ill. Adm. Code 671. He argued that available data demonstrate "that the Cahokia Aquifer is a *highly vulnerable*, unconfined, sand and gravel aquifer that is a *sole source* of Class I groundwater in southern Illinois." Cobb Test. at 12 (emphasis in original), citing Atts. C-J. He cited the Board's regulations to state that "'unconfined aquifer' means an aquifer other than a confined aquifer, and a confined aquifer means an aquifer bounded above and below by impermeable beds or by shale, clay, or siltstone." *Id*. n.14, citing 35 Ill. Adm. Code 671.102 (Definitions).

Mr. Cobb added that a 24-hour pumping test revealed the following data regarding the Cahokia Aquifer with average saturated thickness of 35.4 feet. Cobb Test. at 12. First, transmissivity equals 67,100 gpd/ft. *Id*., *see supra* at 14. Second, the hydraulic conductivity is equal to 1,900 gpd/ft^2. Cobb Test. at 12; *see supra* at 14. Finally, the aquifer's storage coefficient is 0.1. Cobb Test. at 12; *see supra* at 14. From these data, he concluded that "the FWC well field will yield about 400 gpm (576,000 gpd) from two production wells (200 gpm each)." Cobb Test. at 12. He added that FWC employed these data "to determine the extent of drawdown on the potentiometric surface" by employing the applicable equation in the Board's rules. *Id*., citing 35 Ill. Adm. Code 671.APPENDIX B (Theis Equation Using Available Data). He stated that, following those rules, FWC determined that the lateral radius of influence of each of its wells under normal operating conditions is 972 feet. Cobb Test. at 13, citing 35 Ill. Adm. Code 671; *see* SR at 7.

Mr. Cobb stated that, "[o]n June 1, 2009, FWC submitted a request to the Illinois EPA to review and confirm the technical adequacy of the determination." Cobb Test. at 13; *see* 415 ILCS 14.3(b) (2010); SR at 7. He further stated that, "[o]n July 27, 2009, the Illinois EPA confirmed the technical adequacy to the FWC's determination of the LAI pursuant to 35 Ill. Adm. Code 671." Cobb Test. at 13-14; *see* 415 ILCS 5/14.3(b) (2010); SR at 7. He noted that establishing a maximum setback zone requires that LAI must extend beyond the statutory minimum setback zone of 400 feet. Cobb Test. at 14, citing 415 ILCS 5/14.2 (2010); *see* SR at 7. Mr. Cobb concluded that "the radius of influence and thereby the LAI is greater than the minimum setback zone and qualifies for establishing a maximum setback zone." Cobb Test. at 14.

In response to Board questions, Mr. Cobb submitted FWC's determination of the LAI of its wells and the Agency's review confirmation. Att. V (Lateral Area of Influence (LAI) and Agency confirmation); *see* Tr.1 at 27-28. He emphasized that the Agency employs its own unique five-digit well numbers differing from those employed by FWC. Exh. 2 at 6. He stated that the Agency's and FWC's well numbers correspond with one another on the applications for Agency review and on the map of the proposed maximum setback zone. *Id*.; *see* Att. V; Prop. at 7 (proposed Section 618.APPENDIX B).

AGENCY PROPOSAL

Development

The Agency stated that the statutory minimum setback zone for each of FWC's wells is 400 feet. SR at 7. The Agency further stated that FWC met with the Fayette County Board's Rules and Regulations Committee in April 2009 to discuss adoption of maximum setback zones for FWC's wells. SR at 7; *see* Cobb Test. at 14. FWC had determined that each of its CWS wells operating under normal conditions has an LAI of approximately 972 feet. SR at 7. Pursuant to a June 1, 2009 request from FWC, the Agency confirmed the technical adequacy of FWC's determination on July 27, 2009. *Id*. The Agency reported that, "[b]ecause the LAI of the wells under normal operating conditions exceeded the radius of the minimum setback zones established for each well pursuant to Section 14.2 of the Act, Fayette Water Company requested a circular 1,000 foot maximum setback zone." *Id*. The Agency claimed that, although the Rules and Regulations Committee possesses authority to adopt a maximum setback zone ordinance, the committee "did not provide feedback at this meeting." Cobb Test. at 15, citing 415 ILCS 5/14.3(c) (2010).

FWC and the Agency "met with the Fayette County Board Rules and Regulations Committee in September 2009 to discuss adoption of the maximum setback zone ordinance. . . ." SR at 7; *see* Cobb Test. at 15. The Agency reported that "[t]he Fayette County Board did not take any action on the maximum setback zone ordinance during the following six months." SR at 8.

Although a March 2010 letter from FWC to the Fayette County Board requested a response to the maximum setback zone proposal and described the County Board's authority to

adopt maximum setback zones, the Fayette County Board did not respond. SR at 8; *see* Cobb Test. at 15. On May 21, 2010, FWC requested in writing that the Agency propose a maximum setback zone to the Board. SR at 8; *see* Cobb Test. at 15.

The Agency stated that, on July 12, 2010, the Agency notified the Chair of the Fayette County Board that it intended to propose a maximum setback zone for the FWC CWS wells. SR at 8; *see* Cobb Test. at 15, citing 415 ILCS 5/14.3(d) (2010). The Agency reported that the Fayette County Board has not responded to this notification. SR at 8; Cobb Test. at 15. The Agency indicated that, after 30 days had passed, the Agency proceeded to develop a maximum setback zone proposal. SR at 8, citing 415 ILCS 5/14.3(d) (2008); *see* Cobb Test. at 15. Mr. Cobb stated that it has proposed "a circular maximum setback zone with a radius of 1,000 feet pursuant to Section 14.3(d) of the Act" consistent with FWC's request. Cobb Test. at 16; *see* SR at 8.

The Agency indicated that it provided a summary of actions regarding a maximum setback zone for FWC to the ICCG on August 18, 2010. SR at 8; *see* Cobb Test. at 16. The Agency stated that "[t]he ICCG had no questions or comments. . . ." SR at 8; *see* Cobb Test. at 16. Mr. Cobb reported that the Agency had also discussed its proposal with the GAC on October 20, 2010, and on February 24, 2011. Cobb Test. at 16. He reported that "[t]he GAC had no questions or comments" for the Agency. *Id*.

Projected Effects of Adoption

The Agency stated that, because FWC had determined that the LAI of each of its wells is approximately 972 feet under normal operational conditions, it has requested a 1,000 foot maximum setback zone. SR at 7; *see* 415 ILCS 5/14.2 (2010). The Agency argued that "[e]stablishing a maximum setback zone will reduce the potential risk of contamination to the aquifer and increase the assurance of a safe and adequate source of potable water." SR at 8. The Agency stated that adoption of its proposal "will prohibit the placement of new potential primary sources of groundwater contamination wholly or partially within the maximum setback zone." *Id*. at 8-9; *see* Tr.1 at 20-21. The Agency claimed that establishing a maximum setback zone "will provide regulatory control of new potential sources and existing potential sources through the application of groundwater rules and technology regulations." SR at 10. The Agency stated that, "[w]hile neither the minimum nor maximum setback zone prohibit or regulate pipelines, a maximum setback zone will afford the Fayette Water Company wells an additional measure of protection if a release occurs." *Id*.

The Agency elaborated that "Tier 1 groundwater objectives must be met within any minimum setback zone or any designated maximum setback zone." SR at 10, citing 35 Ill. Adm. Code 742.805 (Tiered Approach to Corrective Action Objectives (TACO)). In his response to Board questions, Mr. Cobb stated that the Board's TACO rules provide that "an exposure route can be excluded from any further consideration prior to any tier evaluation." Exh. 2 at 2, citing 35 Ill. Adm. Code 742.110; *see* 35 Ill. Adm. Code 742.300 (Exclusion of Exposure Route). However, he added that "[t]he groundwater ingestion route cannot be excluded from any further consideration if the source of the release is located within the minimum or designated maximum setback zone . . . of a potable water supply well." Exh. 2 at 2, citing 35 Ill. Adm. Code

743.320(c). Mr. Cobb also stated that Tier I objectives must be met within the minimum or designated maximum setback zone of a potable water supply well "before the groundwater ingestion route may be excluded." Exh. 2 at 2, citing 35 Ill. Adm. Code 742.320(e).

Mr. Cobb also stated that one may not request approval of a Tier II groundwater remediation objective exceeding "applicable Tier I groundwater remediation objectives if the source of the release is located within the minimum setback zone or designated maximum setback zone." Exh. 2 at 2, citing 35 Ill. Adm. Code 743.805(a)(6). He added that, "if the source of the release is located outside the minimum or maximum setback zone, the person must show that concentration of any contaminant of concern in groundwater within the minimum or designated maximum setback zone will meet the applicable Tier I groundwater remediation objectives to obtain approval of a groundwater remediation objective under Tier II." Exh. 2 at 2, citing 35 Ill. Adm. Code 742.805(a)(4).

Mr. Cobb stated that establishing a maximum setback zone expands the area in which Tier I objectives must be met in the event of a release of contaminants. Exh. 2 at 2. He claimed that this expansion from a radius of 400 feet to 1,000 feet would increase protection of the wells by providing more reaction time and dilution if a release migrates toward any of the FWC wells. *See id*.; Tr.1 at 19-20.

In its questions to the Agency, the Board noted that Section 14.3 of the Act restricts only new potential primary sources within a maximum setback zone and does not address potential secondary sources or potential routes. *See* 415 ILCS 5/14.3(e) (2010). Mr. Cobb responded that there "is merit to expanding the prohibition to include new potential secondary source and new potential routes of contamination." Exh. 2 at 6; *see* Tr.1 at 30. Citing the statutory definition, he argued that prohibiting new potential secondary sources within maximum setback zones would prohibit the placement of units including "any unit below ground that accumulates more than 500 gallons of petroleum, including crude oil." Exh. 2 at 2, citing 415 ILCS 5/3.355 (2010) (definition); *see* Tr.1 at 30-31.

During the first hearing, Mr. Darrell Schaal of the Fayette County Board asked whether adoption of a maximum setback zone would prevent Enbridge from placing a pipeline within it. Tr.1 at 44-45. Mr. Cobb responded that, if the maximum setback zone prohibits units in addition to new potential primary sources, it might potentially block construction of a new pipeline. *Id*. at 45. He elaborated that, if the maximum setback zone prohibited potential secondary sources and the pipeline satisfied the statutory definition of the term, the pipeline could potentially be forbidden. *Id*. at 46-47; *see* 415 ILCS 5/3.355 (2010) (definition). He acknowledged that the definition of "potential secondary source" does not specifically refer to pipelines. Tr.1 at 47. He added that "[i]t refers to a unit at a site that at any time is below ground that could accumulate 500 gallons or more." *Id*. He indicated that a pipeline may qualify as the applicable unit and the setback zone as the site under that definition. *Id*., *see* 415 ILCS 5/3.355 (2010).

In its questions to the Agency, the Board also noted that Section 14.3(f) of the Act provides that the boundaries of a maximum setback zone adopted by ordinance may extend to a distance of 2,500 feet from the well head under specified circumstances: "if an active community water supply well is withdrawing groundwater from the alluvial deposits and is

located within 1000 feet of public waters." 415 ILCS 5/14.3(f) (2010); Tr.1 at 32. The Board asked whether a maximum setback zone of 2,500 feet could potentially be established for any of FWC's wells. In his response, Mr. Cobb stated that, although "the FWC wells all utilize an alluvial aquifer, and the FWC [wells] are within 1,000 feet of the Kaskaskia River, none of the wells appear to be within 1,000 feet of a public water way." Exh. 2 at 7. He elaborated that, although, the statutory definition of "public waters" appears to be a broad one, the Agency has historically relied on delineations adopted by DNR. *Id*., citing 615 ILCS 5/18 (definition); 17 Ill. Adm. Code 3704.APPENDIX A (Public Bodies of Water); *see* Tr.1 at 32-33. In this delineation, the following segment is considered a public body of water: "Kaskaskia River to East Line, SW ¼, Sec. 31, T8N, R2E, 3rd PM, which is located nine miles south and two miles west of Herrick. . . ." 17 Ill. Adm. Code 3704.APPENDIX A. Mr. Cobb stated that he did not know why the delineation ended at that point on the main stem of the river, which is "approximately one half of a mile to the west of the FWC wells." Exh. 2 at 7; *see* Tr.1 at 35. Accordingly, he concluded that Section 14.3(f) does not apply to the FWC wells. *Id*.; *see* Tr.1 at 33.

Mr. Michael Casey of FWC elaborated on the position of the company's wells. He stated that "there is standing water within 500 or 600 feet" of Well 2. Tr.1 at 40; *see* Att. A. He indicated that there is a slough 600 feet from Well 5. Tr.1 at 39; *see* Att. 2. With regard to Well 6, he indicated that it had been built in a slough and that there was water no more than 30 feet from it. Tr.1 at 39; *see* Att. 2. He added that "Wells Nos. 2, 3, 4, and 6 are all within 50 feet of one another. So that standing water is quite close to all of the wells." Tr.1 at 40. Mr. Cobb stated that the main stem of the Kaskaskia River is approximately 400 feet from Wells 5 and 7 and slightly farther from Wells 2, 3, 4, and 6. *Id.*, citing Att. 2. He emphasized that all six wells were within 1,000 feet of the river as shown by the marked boundary of the proposed maximum setback zone on Attachment 2. Tr.1 at 40; *see* Att. 2.

DISCUSSION

Determination of LAI

The Board notes that Section 671.201 of the Agency's public water supplies rules establishes procedures to determine an LAI. 35 Ill. Adm. Code 671.201 (Estimation Techniques and Pumping Test); *see* 415 ILCS 5/14.3(a) (2010) (requiring Agency to adopt procedures). The record shows that FWC employed these methods to determine that the lateral radius of influence of each of its public water supply wells under normal operating conditions is 972 feet. Cobb Test. at 13; *see* SR at 7. The record also demonstrates that, on June 1, 2009, FWC requested that the Agency "review and confirm the technical adequacy of such determination." 415 ILCS 5/14.3(b) (2010); *see* Cobb Test. at 13, SR at 7. Section 671.302 of the Agency's rules lists hydrogeologic information that must be submitted with such a request. 35 Ill. Adm. Code 671.302 (Contents of a Request). On July 27, 2009, the Agency issued its confirmation of the technical adequacy of FWC's determination. Cobb Test. at 13-14; *see* Att. V (review and confirmation documents); *see also* 415 ILCS 5/14.3(b) (2010); 35 Ill. Adm. Code 671.304 (Agency Review and Confirmation).

Having reviewed the requirements of Sections 14.3(a) and 14.3(b) of the Act (415 ILCS 5/14.3(a), 14.3(b) (2010)) and examined the record in this proceeding, the Board finds that FWC

and the Agency have appropriately determined and confirmed that the LAI of each of FWC's wells is 972 feet. The Board notes that this distance exceeds the statutory minimum setback zone of 400 feet. *See* 415 ILCS 5/14.2(d) (2010).

Notice

Section 14.3(d) of the Act addresses notice of an Agency proposal to establish a maximum setback zone and provides in pertinent part that,

> upon written notice to the county or municipality, the Agency may propose to the Board a regulation establishing a maximum setback zone for any well subject to this Section. . . . The Agency may proceed with the filing of such a proposal unless the county or municipality, within 30 days of the receipt of the written notice, files a written request for a conference with the Agency. 415 ILCS 5/14.3(d) (2010).

The record demonstrates that FWC met with the Fayette County Board's Rules and Regulations Committee in April and September of 2009 to discuss and propose adoption of maximum setback zones for FWC's wells. SR at 7, 8; *see* Cobb Test. at 14, 15. The second meeting included Agency staff. SR at 7; *see* Cobb Test. at 15. In a March 2010 letter to the County Board, FWC requested a response to its proposal. SR at 8; *see* Cobb Test. at 15. In the absence of a response, FWC requested in writing on May 21, 2010, that the Agency propose a maximum setback zone to the Board. SR at 8; *see* Cobb Test. at 15. On July 12, 2010, the Agency notified the chair of the Fayette County Board that the Agency intended to propose a maximum setback zone for FWC's wells. SR at 8; *see* Cobb Test. at 15. The County Board did not respond within 30 days to that notification, and the Agency proceeded to prepare the proposal filed with the Board on April 21, 2011. SR at 8; *see* Cobb Test. at 15.

In this regard, the Board notes that the first hearing in Vandalia was attended by Mr. Darrell Schaal, a member of the County Board, and Mr. Matt Stroud, a representative of the Fayette County Health Department. Tr.1 at 3. Although Mr. Schaal posed a question during the hearing, neither he nor Mr. Stroud took a position on the Agency's proposal. *See* Tr.1. at 44-49.

Having examined the requirements of Section 14.3(d) of the Act (415 ILCS 5/14.3(d) (2010) and reviewed the record in this proceeding, the Board finds that the Agency has met the statutory notice requirements.

Although Section 14.3 of the Act does not prescribe a specific role in establishing maximum setback zones for either the ICCG or the GAC (*see* 415 ILCS 5/14.3(d) (2010); *see also* 415 ILCS 55/4(b) (2010) (ICCG); 415 ILCS 55/5(a) (2010) (GAC)), the record shows that the ICCG on August 18, 2010, received a summary of actions pertaining to a maximum setback zone for FWC. SR at 8; *see* Cobb Test. at 16. The ICCG has not responded to the Agency with any comments or questions. SR at 8; *see* Cobb Test. at 16. The Agency also discussed its proposal with the GAC on October 24, 2010, and on February 24, 2011. Cobb Test. at 16. Mr. Cobb's testimony indicates that the GAC also has not responded with comments or questions. *Id*.

While addressing the issue of notice, the Board notes that the Agency had identified no potential primary sources, potential routes, or potential secondary sources in the vicinity of the FWC wells. SR at 7. A petroleum pipeline runs through the FWC well field within the minimum setback zone, although it is not now in use. SR at 7; *see* Att. 2 (Map of pipeline within existing setback zone); Tr.1 at 17-18, 19-20. In addition, Enbridge had proposed a new pipeline following the same right-of-way. Exh. 2 at 1; Tr.1 at 15. On July 21, 2011, FWC indicated to the Agency that Williams Pipeline Company owned the existing pipeline. Exh. 2 at 1; Tr.1 at 15. However, the Agency determined on July 22, 2011, that Enbridge also owns the existing pipeline, which Enbridge characterizes as "inactive." Exh. 2 at 1, 5; *see* SR at 7; Tr. 1 at 15-16, 22-24. Enbridge has indicated to the Agency that the new pipeline is "on hold, with no planned start date for construction." Exh. 2 at 3; Tr.1 at 24. Although the Board has added Enbridge to its Service List and since served it with hearing officer orders in this case, Enbridge has not filed an appearance or participated in the proceeding before the Board. In this regard, the Board notes the Agency's testimony that "neither the minimum or maximum setback zone prohibit or regulate pipelines." SR at 10; *see* 415 ILCS 5/3.345 (2010) (defining "potential primary source").

Fayette County Board Action

The Agency's confirmation that FWC had performed a technically adequate determination of the LAI enabled the Fayette County Board to adopt an ordinance establishing the boundaries of a maximum setback zone. *See* 415 ILCS 5/14.3(c) (2010). As noted above under "Notice," the record lacks any evidence that the Fayette County Board has exercised this authority.

Under Section 14.3(f), "[i]f an active community water supply well is withdrawing groundwater from within the alluvial deposits and is located within 1000 feet of public waters, the boundaries of a maximum setback zone adopted *by ordinance* pursuant to subsection (c) may be established to a distance of 2,500 feet from the wellhead." 415 ILCS 5/14.3(f) (2010) (emphasis added). A setback established under subsection (f) prohibits the placement, operation, or use of a new potential route within the maximum setback zone. 415 ILCS 5/14.3(f) (2010); *see* 415 ILCS 5/3.350 (2010) (defining "potential route").

In the course of this proceeding, the Board asked whether FWC wells withdraw groundwater from alluvial deposits and are located within 1000 feet of public waters. *See* Exh. 2 at 7; Tr.1 at 32. Mr. Cobb indicated that subsection (f) does not apply to the FWC wells (Exh. 2 at 7), although he acknowledged that different definitions or delineations of "public waters" may lead to another conclusion. *See* Tr.1 at 32-34. On behalf of FWC, Mr. Casey offered testimony on the proximity of various FWC wells to standing water or sloughs. *See id*. at 38-40.

Based on the language of subsection (f), however, the Board need not make any findings on this issue and declines to do so. As the Board indicated in addressing the one other proposal to establish a maximum setback zone it has considered, "[i]n limited instances, *a county or municipality* may adopt an ordinance establishing a maximum setback zone of up to 2,500 feet from the wellhead." Setback Zone for City of Marquette Heights Community Water Supply,

New 35 Ill. Adm. Code 618, R05-9, slip op. at 3, n.4 (May 4, 2006) (emphasis added), citing 415 ILCS 5/14.3(f) (2004). Accordingly, the Board concludes that it does not possess authority under Section 14.3(f) to establish a setback zone of 2,500 feet from the FWC wellheads.

Environment

Under Section 14.3(d) of the Act, the Agency proposal of a maximum setback zone "shall be based upon all reasonably available hydrogeologic information, include the justification for expanding the zone of wellhead protection, and specify the boundaries of such zone. . . ." 415 ILCS 5/14.3(d) (2010). The required justification "may include the need to protect a sole source of public water supply or a highly vulnerable source of groundwater, or a finding that the presence of potential primary or secondary sources or potential routes represents a significant hazard to the public health or the environment." *Id*.

As summarized above under "Factual Background," Mr. Cobb's testimony on behalf of the Agency has provided detailed information on hydrogeological principles and the hydrogeological background of the FWC well field. In summary, FWC's wells draw from the Cahokia Aquifer, a principal sand and gravel aquifer system. These aquifers are rare in southern Illinois, and the Cahokia Aquifer "is a sole source of Class I: Potable Resource Groundwater in southern Illinois." Cobb Test. at 6, citing Atts. G, H; *see* SR at 6. Because relatively permeable materials overlay this sand and gravel, there is a high potential for aquifer recharge at the site of FWC's wells. Cobb Test. at 6-7, citing Atts. I, J; *see* SR at 5. Consequently, the Agency concluded that FWC wells draw from an aquifer with "an intrinsically high vulnerability to groundwater contamination." Cobb Test. at 7.

In addition, the Agency notes that it conducted a source water assessment in 2002 for the three FWC wells then operating. Based on evaluation of factors including hydrogeological data, the Agency concluded that the wells are "geologically sensitive" and "highly vulnerable to contamination." SR at 6. The Agency delineated the recharge area of the wells and recommended groundwater protection measures including adoption of a maximum setback ordinance. *Id*. FWC added three wells in 2008. Because they are in the same field, draw from the same aquifer, and are constructed similarly, the Agency concluded that these new wells "are also vulnerable to contamination." *Id*.

Having reviewed the requirements of Section 14.3(d) of the Act and the record in this proceeding, the Board finds that Agency has demonstrated that expanding the zone of protection around the FWC wells is justified. The Board concludes that the FWC wells are vulnerable to contamination and are not adequately protected by the statutory minimum setback zones. In its order below, the Board directs the Clerk to submit a proposal establishing a maximum setback zone for first-notice publication in the *Illinois Register*.

Economic Reasonableness

DCEO Economic Impact Study Not Required

Section 27(b)(1) of the Act requires that, before adopting substantive rules, the Board shall "request that the Department of Commerce and Economic Opportunity [DCEO] conduct a study of the economic impact of the proposed rules." 415 ILCS 5/27(b)(1) (2010). However, Section 14.3(d) of the Act addressing maximum setback zones provides in pertinent part that "[r]ulemaking proceedings initiated by the Agency under this subsection shall be conducted by the Board pursuant to Title VII of this Act, except that subsection (b) of Section 27 shall not apply." 415 ILCS 5/14.3(d) (2010). Accordingly, the Board has not requested and does not intend to request that DCEO conduct an economic impact study of the Agency's proposal.

Economic Factors

In its Statement of Reasons, the Agency projected economic consequences to local communities of polluted groundwater. The Agency indicated that

> [g]roundwater contamination can produce significant economic hardships for local businesses and communities, including the following: devalued real estate; diminished home sales or commercial real estate sales; loss to the tax base; consulting and legal fees; increased operation and maintenance costs; increased water rates for alternative water supplies as well as the cost of new equipment and treatment and remediation costs including site characterization, feasibility studies, and long-term treatment and disposal costs. SR at 11.

The Agency argued that "establishing a maximum setback will reduce the likelihood of contamination, thereby reducing costs." *Id.*; *see* SR at 10.

In his testimony on behalf of the Agency, Mr. Cobb stated that Southern Illinois is generally marked by thin and discontinuous deposits of sand and gravel which do not yield useful quantities of water. Cobb Test. at 6; *see* SR at 9. He added that "[p]otable resource groundwater is very rare in the southern half of the State." Cobb Test. at 6; *see* SR at 9. Mr. Cobb stated that the Cahokia Aquifer from which FWC draws has both "a high potential for aquifer recharge" and "an intrinsically high vulnerability to groundwater contamination." Cobb Test. at 6-7; *see* SR at 5. In the event that contamination occurred, the Agency claims that the hydrogeology of southern Illinois would make it difficult to find sites for replacement wells. SR at 10. Reliance on replacement wells would result in either construction of costly and lengthy water mains or the withdrawal of groundwater in lower quantities and of poorer quality. *Id.*

Based on this record, the Board finds that the proposed maximum setback zone prohibiting any new potential primary source of groundwater contamination within the proposed zone is economically reasonable and will not have an adverse economic impact on the people of the State. *See* 415 ILCS 5/27, 28 (2010).

Technical Feasibility

In citing the economic consequences of polluted groundwater, the Agency suggested that local communities may experience technical burdens of water pollution such as long-term treatment and disposal, installation of new equipment, expanded operational and maintenance responsibilities, and securing alternative water supplies. *See* SR at 11. The Agency further suggested that, by reducing the risk of contamination, a maximum setback would reduce the likelihood of these technical burdens. *See id*.

Based on this record, the Board finds that the proposed maximum setback zone prohibiting any new potential primary source of groundwater contamination within the proposed zone is technically feasible. *See* 415 ILCS 5/27, 28 (2010).

SECTION-BY-SECTION SUMMARY OF RECORD ON BOARD'S FIRST-NOTICE PROPOSAL

Subpart A: General

Existing Subpart A of Part 618 "establishes the general provisions associated with maximum setback zones that are adopted by the Board." SR at 12; *see* 35 Ill. Adm. Code 618.Subpart A. In the following subsection of the opinion, the Board summarizes the Agency's proposed amendments to Subpart A and the record on them.

Section 618.100: Purpose and Applicability

Section 618.100 establishes the purpose and applicability of Part 618 and provides in its entirety that

> [t]his Part is established in the interest of securing the public health, safety, and welfare; to preserve the quality and quantity of groundwater resources in order to assure a safe and adequate water supply for present and future generations; and to preserve groundwater resources currently in use and those aquifers having a potential for future use as a public water supply. Pursuant to the authority of Section 14.3(d) of the Illinois Environmental Protection Act (Act) [415 ILCS 5/14.3(d)], the provisions of this Part apply to all properties located wholly or partially within a maximum setback zone established under Section 14.3(d) of the Act and this Part. 35 Ill. Adm. Code 618.100; *see* SR at 12.

The Agency first proposed to re-organize this provision into two subsections. Without amending the first sentence of the existing section, the Agency proposes that it form the entire subsection (a). Prop. at 1-2. The Agency also proposes that the second sentence of the existing section form the new subsection (b). *Id*. at 2. However, the Agency proposes to amend that sentence to provide that "[t]he provisions of this Part apply to all properties located wholly or partially within a maximum setback zone established under Section 14.3(d) of the Act or this Part." *Id*.

Section 618.105: Definitions

Section 618.105 sets forth definitions applicable to maximum setback zones. 35 Ill. Adm. Code 618.105. The section now includes an introduction providing that, "[u]nless a different meaning of a word or term is clear from the context, the definitions of words or terms in this Part are the same as those used in the Act, the Illinois Groundwater Protection Act [415 ILCS 55], or 35 Ill. Adm. Code 671. 35 Ill. Adm. Code 618.105; *see* 35 Ill. Adm. Code 671 (Maximum Setback Zone for Community Water Supply Wells).

The Agency first proposed to re-organize this section by designating this introductory language as subsection (a) and replacing it with the following: "[u]nless specified otherwise, all terms shall have the meanings set forth in the Illinois Environmental Protection Act (415 ILCS 5/1 *et seq*.), the Illinois Groundwater Protection Act (415 ILCS 55/1 *et seq*.), and 35 Ill. Adm. Code 671." Prop. at 2; *see* SR at 12.

The Agency also proposed to designate the existing 13 definitions as subsection (b) and to insert introductory language stating that, "[f]or purposes of this Part, the following definitions apply." Prop. at 2. The Agency also proposed to add a definition of "Act" providing that the term "means the Illinois Environmental Protection Act, 415 ILCS 5/1 *et seq*., as amended." Prop. at 2.

Section 618.110: Regulated Activities, Facilities or Units

The Agency proposed to add a subsection entitled "Regulated Activities, Facilities or Units" and providing in its entirety that "[a]ll new or existing activities, facilities or units located wholly or partially in any maximum setback zone created by this Part will be subject to the groundwater rules set forth in Section 14.4 of the Act, and any Board regulations promulgated pursuant to Section 14.4 of the Act." Prop. at 5; *see* SR at 12; *see also* 415 ILCS 5/14.4 (2010) (Groundwater rules); 35 Ill. Adm. Code 615 (existing activities in setback zone), 616 (new activities in setback zone).

In questions to the Agency, the Board asked whether the term "activities, facilities or units" in the Agency's proposed language are the same as those regulated under Parts 615 and 616 of the Board's public water supply regulations. *See* 35 Ill. Adm. Code 615, 616. Mr. Cobb responded that they were the same. Exh. 2 at 8; *see* Tr.1 at 43. The Board sought "comment on whether the proposed language should include a cross reference to Parts 615 and 616 to define the universe of the entities subject to the applicable regulations. Exh. 2 at 8. Mr. Cobb agreed that "[a] cross reference would be appropriate in this case." *Id*.; *see* Tr.1 at 43-44. In its order below, the Board adds this cross-reference to the Agency's original proposal.

Section 618.115: Prohibitions

The Agency proposed to add a subsection entitled "Prohibitions" and providing in its entirety that "[n]ew potential primary sources of groundwater contamination are prohibited from locating wholly or partially within any maximum setback zone established under Section 14.3 of the Act or this Part." Prop. at 5; *see* SR at 12; *see also* 415 ILCS 5/14.3(e) (2010).

Subpart B: Marquette Heights' Maximum Setback Zone

Subpart B of Part 618 is now entitled "Marquette Heights Maximum Setback Zone." 35 Ill. Adm. Code 618.Subpart B; *see* In the Matter of: Setback Zone for City of Marquette Heights Community Water Supply, New 35 Ill. Adm. Code 618, R05-9 (May 4, 2006) (adopting setback). The Agency sought to amend this title to "Established Maximum Setback Zones" because it proposed that the subpart establish "the maximum setback zones for different community water supply wells." SR at 12-13; *see* Prop. at 5.

Section 618.200: Purpose and Applicability

Subsection (a) now provides in its entirety that

> [t]his Subpart prescribes maximum setback zone prohibitions and the applicable technology control regulations that apply under 35 Ill. Adm. Code 615 and 616 in the interest of securing the public health, safety, and welfare; to preserve the quality and quantity of groundwater resources in order to assure a safe and adequate water supply for present and future generations; and to preserve groundwater resources currently in use and those aquifers having a potential for future use as a public water supply. 35 Ill. Adm. Code 618.200(a).

The Agency proposed to strike the designation as subsection (a) and amend this provision to reflect reorganization of Part 618. *See* SR at 12-13. Specifically, the Agency sought to address prohibitions and regulations generally under Subpart A. *See* Prop. at 5 (proposed new Sections 618.110 and 618.115). Accordingly, amended subsection (a) would provide in its entirety that

> [t]his Subpart prescribes maximum setback zones for individual community water supply wells in the interest of securing the public health, safety, and welfare; to preserve the quality and quantity of groundwater resources in order to assure a safe and adequate water supply for present and future generations; and to preserve groundwater resources currently in use and those aquifers having a potential for future use as a public water supply. Prop. at 5; *see* SR at 13.

Subsection (b) now provides in its entirety that

> The provisions of this Subpart apply to all properties located wholly or partially within the maximum setback zone boundaries of Marquette Heights, as delineated in Appendix A of this Part:
>
> 1) That are new potential primary sources of groundwater contamination pursuant to Section 14.3(d) of the Act; or
>
> 2) That are existing or new activities regulated under 35 Ill. Adm. Code 615 or 616, excluding agrichemical facilities that affirmatively opt out of 35 Ill. Adm. Code 615 or 616, which are

> regulated instead under 8 Ill. Adm. Code 257 or 77 Ill. Adm. Code 830. 35 Ill. Adm. Code 618.200(b).

The Agency proposed to strike the entire subsection (b) in the reorganization of Part 618. Prop. at 6; *see* SR at 13. Specifically, the Agency sought to address prohibitions and regulations generally under Subpart A and to establish maximum setback zones for different wells under Subpart B. *See* Prop. at 5-6 (proposed new Sections 618.110 and 618.115). The Agency also proposed to strike "and Applicability" from the heading of the section to reflect this reorganization. Prop. at 5.

Section 618.205: 1,000 Foot Maximum Setback Zone Prohibition

This section now provides in its entirety that "[n]ew potential primary sources of groundwater contamination are prohibited from locating wholly or partially within the Marquette Heights' maximum setback zone boundaries delineated in Appendix A of this Part." 35 Ill. Adm. Code 618.205. In reorganizing this Part, the Agency has sought to address prohibitions and regulations generally under Subpart A. *See* Prop. at 5-6 (proposing new Sections 618.110 and 618.115). The Agency proposed to amend this section to provide that "[t]he Marquette Heights maximum setback zone is established as delineated in Appendix A of this Part." Prop. at 6; *see* SR at 13. In addition, the Agency sought to amend the heading of this section to "Marquette Heights' Maximum Setback Zone." Prop. at 6; SR at 13.

Section 618.210: Fayette Water Company's Maximum Setback Zone

The Agency proposed to add a new section providing in its entirety that "[t]he Fayette Water Company's maximum setback zone is established as delineated in Appendix B of this Part." Prop. at 6; *see* SR at 13.

618.APPENDIX B: Boundaries of Fayette Water Company's Maximum Setback Zone

The Agency proposed to add this appendix, which "details a map of the Fayette Water Company's CWS wells, maximum setback zone boundaries, roads, and property boundaries and associated identification numbers." SR at 13; *see* Prop. at 7.

CONCLUSION

As described above in this opinion, the Board proposes to amend Part 618 of its public water supply regulations by establishing a maximum setback zone for six wells owned by FWC. The Board also proposed limited reorganization of Part 618 to accommodate future establishment of additional setback zones. Based on the record before it, the Board finds that the amended rules proposed today are technically feasible and economically reasonable and will not have an adverse economic impact on the People of Illinois. *See* 415 ILCS 5/27 (2010).

Publication of this first-notice proposal in the *Illinois Register* will start of period of at least 45 days during which any person may file public comments with the Board's Clerk at the

address listed above. As noted above, comments may also be filed electronically through COOL at the Board's Web site, www.ipcb.state.il.us.

ORDER

The Board directs the Clerk to cause first-notice publication of the following proposed amendments to the Board's public water supply regulations in the *Illinois Register*. Proposed additions are underlined, and proposed deletions appear stricken.

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE F: PUBLIC WATER SUPPLIES
CHAPTER I: POLLUTION CONTROL BOARD

PART 618
MAXIMUM SETBACK ZONES

SUBPART A: GENERAL

Section
618.100 Purpose and Applicability
618.105 Definitions
618.110 Regulated Activities, Facilities or Units
618.115 Prohibitions

SUBPART B: ESTABLISHED MAXIMUM SETBACK ZONES ~~MARQUETTE HEIGHTS' MAXIMUM SETBACK ZONE~~

Section
618.200 Purpose ~~and Applicability~~
618.205 Marquette Heights' Maximum Setback Zone ~~1,000 Foot Maximum Setback Zone Prohibition~~
618.210 Fayette Water Company's Maximum Setback Zone.

618.APPENDIX A Boundaries of Marquette Heights' Maximum Setback Zone
618.APPENDIX B Boundaries of Fayette Water Company's Maximum Setback Zone

AUTHORITY: Implementing Section 14.3 and authorized by Section 27 of the Illinois Environmental Protection Act [415 ILCS 5/14.3 and 27].

SOURCE: Adopted in R05-9 at 30 Ill. Reg. 10448, effective May 23, 2006; amended in R11-25 at 36 Ill. Reg. _____, effective _____.

SUBPART A: GENERAL

Section 618.100 Purpose and Applicability

a) This Part is established in the interest of securing the public health, safety, and welfare; to preserve the quality and quantity of groundwater resources in order to assure a safe and adequate water supply for present and future generations; and to preserve groundwater resources currently in use and those aquifers having a potential for future use as a public water supply.

b) ~~Pursuant to the authority of Section 14.3(d) of the Illinois Environmental Protection Act (Act) [415 ILCS 5/14.3(d)],~~ The ~~the~~ provisions of this Part apply to all properties located wholly or partially within a maximum setback zone established under Section 14.3(d) of the Act or this Part.

(Source: Amended in 36 Ill. Reg. _____, effective _____)

Section 618.105 Definitions

a) Unless specified otherwise, all terms shall have the meanings set forth in the Illinois Environmental Protection Act, (415 ILCS 5/1 et seq.), the Illinois Groundwater Protection Act, (415 ILCS 55/1 et seq.), and 35 Ill. Adm. Code 671 ~~Unless a different meaning of a word or term is clear from the context, the definitions of words or terms in this Part are the same as those used in the Act, the Illinois Groundwater Protection Act [415 ILCS 55], or 35 Ill. Adm. Code 671~~.

b) For the purposes of this Part, the following definitions apply:

"Act" means the Illinois Environmental Protection Act, 415 ILCS 5/1 et seq., as amended.

"Agency" means the Illinois Environmental Protection Agency.

"Board" means the Illinois Pollution Control Board.

"Facility" means *the buildings and all real property contiguous thereto, and the equipment at a single location used for the conduct of business* [430 ILCS 45/3].

"New Potential Primary Source" means:

a potential primary source which is not in existence or for which construction has not commenced at its location as of January 1, 1988; or

a potential primary source which expands laterally beyond the currently permitted boundary or, if the primary source is not permitted, the boundary in existence as of January 1, 1988; or

a potential primary source which is part of a facility that undergoes major reconstruction. Such reconstruction shall be deemed to have taken place where the fixed capital cost of the new components constructed within a 2-year period exceed 50% of the fixed capital cost of a comparable entirely new facility [415 ILCS 5/3.345].

"New Potential Route" means:

a potential route which is not in existence or for which construction has not commenced at its location as of January 1,1988; or

a potential route which expands laterally beyond the currently permitted boundary or, if the potential route is not permitted, the boundary in existence as of January 1, 1988 [415 ILCS 5/3.350].

"New Potential Secondary Source" means *a potential secondary source which:*

is not in existence or for which construction has not commenced at its location as of July 1, 1988; or

expands laterally beyond the currently permitted boundary or, if the secondary source is not permitted, the boundary in existence as of July 1, 1988, other than an expansion for handling of livestock waste or for treating domestic wastewaters; or

is part of a facility that undergoes major reconstruction. Such reconstruction shall be deemed to have taken place where the fixed capital cost of the new components constructed within a 2-year period exceed 50% of the fixed capital cost of a comparable entirely new facility [415 ILCS 5/3.355]; but

excludes an agrichemical facility that *modifies on-site storage capacity such that the volume of the pesticide storage does not exceed 125% of the available capacity in existence on April 1, 1990, or the volume of fertilizer storage does not exceed 150% of the available capacity in existence on April 1, 1990; provided that a written endorsement for an agrichemical facility permit is in effect under Section 39.4 of the Act and the maximum feasible setback is maintained. This on-site storage capacity includes mini-bulk pesticides, package agrichemical storage areas, liquid or dry fertilizers, and liquid or dry pesticides* [415 ILCS 5/14.2(g)(4)].

"Potential Primary Source" means *any unit at a facility or site not currently subject to a removal or remedial action which:*

is utilized for the treatment, storage, or disposal of any hazardous or special waste not generated at the site; or

is utilized for the disposal of municipal waste not generated at the site, other than landscape waste and construction and demolition debris; or

is utilized for the landfilling, land treating, surface impounding or piling of any hazardous or special waste that is generated on the site or at other sites owned, controlled or operated by the same person; or

stores or accumulates at any time more than 75,000 pounds above ground, or more than 7,500 pounds below ground, of any hazardous substances [415 ILCS 5/3.345].

"Potential route" means *abandoned and improperly plugged wells of all kinds, drainage wells, all injection wells, including closed loop heat pump wells, and any excavation for the discovery, development or production of stone, sand or gravel* [415 ILCS 5/3.350].

"Potential secondary source" means *any unit at a facility or a site not currently subject to a removal or remedial action, other than a potential primary source, which:*

is utilized for the landfilling, land treating, or surface impounding of waste that is generated on the site or at other sites owned, controlled or operated by the same person, other than livestock and landscape waste, and construction and demolition debris; or

stores or accumulates at any time more than 25,000 but not more than 75,000 pounds above ground, or more than 2,500 but not more than 7,500 pounds below ground, of any hazardous substances; or

stores or accumulates at any time more than 25,000 gallons above ground, or more than 500 gallons below ground, of petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance; or

stores or accumulates pesticides, fertilizers, or road oils for purposes of commercial application or for distribution to retail sales outlets; or

stores or accumulates at any time more than 50,000 pounds of any de-icing agent; or

is utilized for handling livestock waste or for treating domestic wastewaters other than private sewage disposal systems as defined in the Private Sewage Disposal Licensing Act [415 ILCS 5/3.355].

"Setback zone" means *a geographic area, designated pursuant to the Act, containing a potable water supply well or a potential source or potential route, having a continuous boundary, and within which certain prohibitions or regulations are applicable in order to protect groundwaters* [415 ILCS 5/3.450].

"Site" means *any location, place, tract of land, and facilities, including but not limited to buildings, and improvements used for purposes subject to regulation or control by the Act or regulations thereunder* [415 ILCS 5/3.460].

"Unit" means *any device, mechanism, equipment, or area (exclusive of land utilized only for agricultural production). This term includes secondary containment structures and their contents at agrichemical facilities.* [415 ILCS 5/3.515]

"Unit boundary" means a line at the land's surface circumscribing the area on which, above which, or below which waste, pesticides, fertilizers, road oils or de-icing agents will be placed during the active life of the facility. The space taken up by any liner, dike or other barrier designed to contain waste, pesticides, ferti1izer, road oils, or de-icing agents falls within the unit boundary.

(Source: Amended at 36 Ill. Reg. _____, effective _____)

Section 618.110 Regulated Activities, Facilities or Units

All new or existing activities, facilities or units located wholly or partially in any maximum setback zone created by this Part will be subject to the groundwater rules set forth in Section 14.4 of the Act, and any Board regulations promulgated pursuant to Section 14.4 of the Act, including, but not limited to, Parts 615 and 616 of this Title.

(Source: Added in 36 Ill. Reg. _____, effective _____)

Section 618.115 Prohibitions

New potential primary sources of groundwater contamination are prohibited from locating wholly or partially within any maximum setback zone established under Section 14.3 of the Act or this Part.

(Source: Added in 36 Ill. Reg. _____, effective _____)

SUBPART B: ESTABLISHED MAXIMUM SETBACK ZONES
~~MARQUETTE HEIGHTS' MAXIMUM SETBACK ZONE~~

Section 618.200 Purpose ~~and Applicability~~

~~a)~~ This Subpart prescribes maximum setback zones for individual community water supply wells ~~prohibitions and the applicable technology control regulations that apply under 35 Ill. Adm. Code 615 and 616~~ in the interest of securing the public health, safety, and welfare; to preserve the quality and quantity of groundwater resources in order to assure a safe and adequate water supply for present and future generations; and to preserve groundwater resources currently in use and those aquifers having a potential for future use as a public water supply.

~~b) The provisions of this Subpart apply to all properties located wholly or partially within the maximum setback zone boundaries of Marquette Heights, as delineated in Appendix A of this Part:~~

~~1) That are new potential primary sources of groundwater contamination pursuant to Section 14.3(d) of the Act; or~~

~~2) That are existing or new activities regulated under 35 Ill. Adm. Code 615 or 616, excluding agrichemical facilities that affirmatively opt out of 35 Ill. Adm. Code 615 or 616, which are regulated instead under 8 Ill. Adm. Code 257 or 77 Ill. Adm. Code 830.~~

(Source: Amended in 36 Ill. Reg. _____, effective _____)

Section 618.205 Marquette Heights' Maximum Setback Zone ~~1,000 Foot Maximum Setback Zone Prohibition~~

~~New potential primary sources of groundwater contamination are prohibited from locating wholly or partially within the~~ The Marquette Heights' maximum setback zone is established as ~~boundaries~~ delineated in Appendix A of this Part.

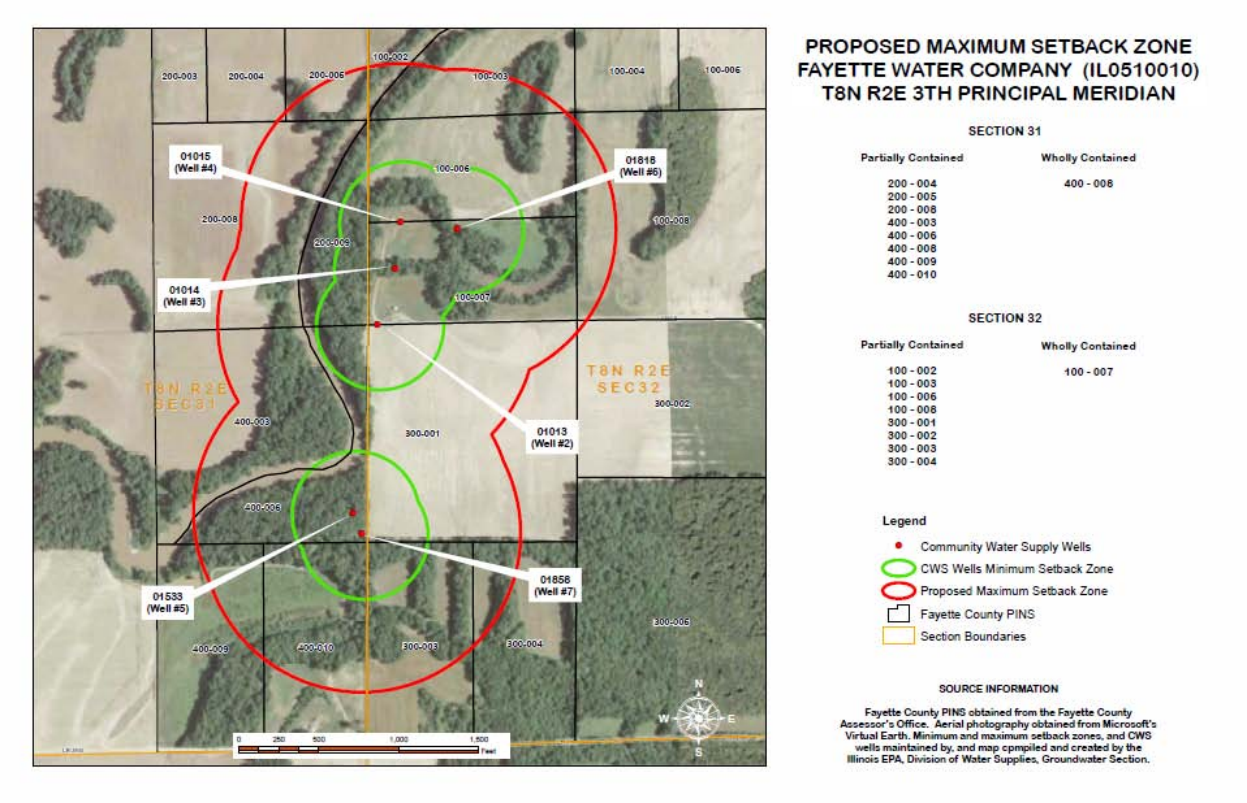
(Source: Amended at 36 Ill. Reg. _____, effective _____)

Section 618.210 Fayette Water Company's Maximum Setback Zone

The Fayette Water Company's maximum setback zone is established as delineated in Appendix B of this Part.

(Source: Added in 36 Ill. Reg. _____, effective _____)

Section 618.APPENDIX B: Boundaries of Fayette Water Company's Maximum Setback Zone



(Added in 36 Ill. Reg. _____, effective _____)

IT IS SO ORDERED.

I, John T. Therriault, Assistant Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above opinion and order on March 1, 2012, by a vote of 5-0.

John T. Therriault, Assistant Clerk
Illinois Pollution Control Board