BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROCEDURES REQUIRED BY	)	R 07-020
P.A. 94-849 FOR REPORTING	)	(Rulemaking - Water)
RELEASES OF RADIONUCLIDES AT	)	
NUCLEAR POWER PLANTS: NEW 35	)	
ILL.ADM.CODE PART 1010	)	

PRE-FILED TESTIMONY OF RICHARD P. COBB, P.G., OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

NOW COMES the Illinois Environmental Protection Agency, through one of its attorneys, and hereby pre-files the enclosed testimony of Richard P. Cobb, P.G.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

/s/ Kyle Rominger
Kyle Rominger
Assistant Counsel

DATED: August 24, 2007

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PRE-FILED TESTIMONY OF RICHARD P. COBB, P.G.,
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

My name is Richard P. Cobb. I am a licensed professional geologist and the Deputy Manager of the Division of Public Water Supplies of the Illinois Environmental Protection Agency's ("Illinois EPA's") Bureau of Water ("BOW"). My primary responsibilities include managing the Groundwater and Source Water Protection, Field Operations, and the Administrative Sections of the Division. Further, I assist with administering the public water supervision program under the federal Safe Drinking Water Act ("SDWA"). Additionally, my responsibilities include the integration of source water protection with traditional water supply engineering and treatment practices, and assisting with linking Clean Water Act and SDWA programs. I also directly manage the BOW's Groundwater Section. The groundwater section applies Geographic Information System ("GIS") programs, global positioning system technology, hydrogeologic models (including, 3D geologic visualization, vadose zone, groundwater flow, particle tracking, solute transport, and geochemical models), and geostatistical programs for groundwater protection and remediation. I represent the BOW on Illinois EPA's Contaminant Evaluation Group, Strategic Management Planning Team, Environmental Justice Committee, Information Management Steering Committee, and GIS Steering Committee. Since 1985 I have worked on the development of legislation, rules, and regulations. I have also served as a primary Illinois EPA witness at

Illinois Pollution Control Board ("Board") proceedings in the matters of groundwater quality standards, technology control regulations, regulated recharge areas, clean-up regulations, and water well setback zone exceptions. Furthermore, I have served as a primary Illinois EPA witness in enforcement cases under these laws and regulations.

For further detail on my qualifications I have enclosed a copy of my Curriculum Vitae in Attachment I. This testimony, the statement of reasons, and attachments included with this testimony describe the basis for the proposed regulations.

PURPOSE OF THE REGULATIONS

The purpose of these regulations is to establish requirements for the owners and operators of nuclear power generating facilities to fulfill their obligation under Section 13.6 of the Illinois Environmental Protection Act ("Act") (415 ILCS 5/13.6) for reporting releases of radionuclides to soil, groundwater, or surface water to the Illinois EPA and the Illinois Emergency Management Agency ("IEMA"). The purpose of this regulation is not to set standards for radionuclide releases, but to merely establish requirements for reporting a release of radionuclides.

BACKGROUND

The genesis of these proposed regulations evolved from three tritium groundwater contamination incidents that occurred at the following Exelon nuclear power generating facilities located in Grundy, Will, and Ogle Counties: Dresden, Braidwood, and Byron, respectively. Releases from the Braidwood facility garnered significant local and national attention. At Braidwood, multiple releases of waste water mixed with tritium, released from leaking vacuum breaker ("VB") vaults along a blow down line to the Kankakee River, resulted in groundwater contamination. In addition, other underground piping carrying tritium also leaked and resulted in groundwater contamination at Braidwood. At Exelon's Dresden station, numerous leaks of tritium from underground piping resulted in groundwater contaminated with tritium. At Exelon's Byron Station leaky VB vaults along a blow down line resulted in groundwater contamination with tritium. The tritium groundwater contamination at Byron was discovered after Public Act 94-0849, which added Section 13.6 to the Act, was signed into law. A brief summary of tritium leaks at each of these stations is included below.

Tritium is a radionuclide that is a byproduct of the production of electricity by nuclear power plants. Tritium is also a naturally occurring radioactive form of hydrogen that is produced in the atmosphere when cosmic rays collide with air molecules; as a result, naturally occurring tritium is found in very small or trace amounts in groundwater throughout the world.

Exelon initiated a comprehensive Fleetwide Study in 2006 to determine whether groundwater at and in the vicinity of all of its nuclear power generating facilities has been adversely impacted by any releases of radionuclides. This study provided a comprehensive analysis of the hydrogeologic conditions at each of its stations. Further, these studies delineated tritium groundwater contamination at Exelon's Zion generating station at Zion and its Quad Cities generating station at Cordova.

Summaries of Braidwood, Dresden, and Byron Releases

Braidwood Station - Attachment II details the multiple plumes that originated from releases from underground piping and VB vaults at the Braidwood Station. Groundwater contamination resulting from an approximate 3 million gallon release of tritiated waste water from a blow down line VB3 at Exelon's Braidwood facility, in 1998, resulted in one of the tritium groundwater contamination plumes. Attachment III is a blow up of the plume that resulted from this release. Further, Attachment III shows the contours of the tritium plume concentrations in the groundwater relative to Exelon's licensee controlled area, which is demarcated by the yellow line.

The area bounded by the red contour line has a tritium concentration greater than 20,000 picocuries per liter (“pCi/L”). Tritium contamination within the blue contour line, shown in Attachment III, is at a concentration greater than 5,000 pCi/L. The concentration of tritium on the north shore of the lake was 3,000 pCi/L, and a private drinking water system well north of the pond had a concentration of 1,600 pCi/L. The concentration of tritium between the well and the green contour line ranges from 1,600 to 200 pCi/L. Tritium contamination at the green contour line is equal to 200 pCi/L. Two hundred pCi/L is the practical quantification limit (“PQL”) for tritium. A PQL is the lowest concentration or level that can be reliably measured with 95 percent confidence in the value (e.g., 200 vs. 201).

The plume illustrated in Attachment IV was continuing to move toward private drinking water system wells down gradient. Exelon subsequently purchased the off-site property with the well degraded by tritium contamination.

Tritium was found, using an enriched tritium testing method, in the Braidwood cooling water pond at a concentration of 35 pCi/L. Thus, the true background concentration of tritium at Braidwood is 35 pCi/L. However, enriched tritium tests are primarily only used in research laboratories. Due to the technical feasibility and economical reasonableness issues associated with using the enriched tritium laboratory method, Illinois EPA believes the use of the 200 pCi/L PQL as a threshold for reporting releases is appropriate because it can be readily performed by Exelon, IEMA’s Division of Nuclear Safety, and other commercial laboratories.

Dresden Station - On October 15, 2004, the Illinois EPA first became aware of a release of tritium from the Dresden Station from a *Crain’s Chicago Business* article. The article indicated some piping at the plant had developed leaks, which allowed the discharge of tritiated water from the Dresden Station. On October 25, 2005, IEMA indicated that there was a 9,000,000 pCi/L release of tritium from a broken underground pipe.

The Dresden Station site sits on top of bedrock, and much of the piping for the Dresden Station sits in excavated bedrock trenches. In 1994 Exelon had experienced a leak from the underground piping at the Dresden Station. In response, they backfilled the area around the piping with sand and installed a number of leak detection monitoring wells sunk to depths of ten to twenty feet. The 2004 leak was discovered when concentrations of tritium in the range of 3,000,000 to 6,000,000 pCi/L were found in the leak detection monitoring wells installed after the 1994 release. Exelon officials stated that the highest concentration of tritium found on site was 20,000,000 pCi/L.

Exelon investigations concluded that the tritium detected in monitoring wells and storm sewers located near what is referred to as the "Unit 2/3 interlock building" originated from a release in the condensate storage tank ("CST") system through a pipe that passed under a liquid nitrogen tank. The pipe was shut down on October 20, 2004, and a replacement section of pipe around the tank was installed in November 2004. Tritium-impacted groundwater is currently migrating both east and west. There are two active storm sewer systems at the Dresden Station, with one originating immediately east of the liquid nitrogen tank, draining the southeastern and northeastern perimeter of the turbine building and discharging to what is referred to as the "Unit 1 intake canal". The second storm sewer originates immediately to the west of the liquid nitrogen tank, drains the western perimeter of the turbine building, and drains to what is referred to as the "Unit 2/3 discharge canal" through an outfall located in the west side of the canal. Tritium has migrated into both storm sewer systems, although to a greater extent into the eastern system. The source of the eastern system tritium appeared to be from the CST system.

It is estimated that the width of the plume of contamination at its source was approximately 20 feet. The depths of both the east and west-moving plumes near the source were estimated at approximately 10 feet. The plume length in the eastern direction was estimated at 210 feet, with a maximum plume width of 62 feet. The west flowing plume length was estimated at 255 feet, with a maximum width of approximately 70 feet. A map of the tritium groundwater contamination plume at the Dresden Station is provided in Attachment V. Tritium concentrations in this plume map are delineated by concentration areas, as follows:

- Red - represents the boundary of tritium concentrations greater than 5,000 pCi/L;
- Light green – represents the boundary of tritium concentrations of 1,000 to 5,000 pCi/L; and
- Dark green – represents the boundary of tritium concentrations between 200 to 1,000 pCi/L

Based on tritium concentrations in the CST system of 9,000,000 to 10,000,000 pCi/L, it was estimated that approximately 121,000 gallons of tritiated water were released to groundwater and approximately 148,000 gallons of tritiated water were released to the storm sewer system.

On February 14, 2006, IEMA notified the Illinois EPA of a new release of tritium found at the Dresden Station. Exelon informed IEMA's resident inspector on February 11, 2006, that it believed an underground pipe was leaking near what is referred to as the "B CST." The E-3 monitoring well near the area showed tritium concentrations at 5,000 pCi/L on January 3, 2006; 89,000 pCi/L on January 19, 2006; and 529,000 pCi/L on February 13, 2006. Exelon believed the leak was in a portion of the 30+ year old piping that it did not replace when it made its November 2004 repairs. Exelon also indicated the valve used to isolate the pipe section was also leaking and would need replacement.

<u>Byron Station</u> - Internal inspections at Byron reported on Feb. 15, 2006, found standing water inside five of six concrete VB vaults in the ground that are part of the blow down line, which runs along a strip of company property to the Rock River. Tests showed the standing water in the vaults contained tritium. After finding tritiated water in the vaults, Exelon arranged for independent testing of drinking water wells at nine homes closest to the property line. None showed detectable levels of tritium. Monitoring wells installed by Exelon showed elevated tritium. One well showed a concentration of about 4,080 pCi/L, and the other about 459 pCi/L. Attachment VI shows the location of the wells tested at the Byron Station and the associated locations. No tritium has migrated outside of the licensee controlled area at the Byron Station.

<u>EXPLANATION OF THE ILLINOIS EPA'S PROPOSAL</u>

Section 1010.106 Definitions

This Section provides the definitions utilized in the proposed regulations. Many definitions proposed in the regulations are codified in the Act or Board regulations (e.g., "Act", "Agency", "Groundwater", "Person", etc.), or are consistent with other Board rules. The definition of picocuries per liter is consistent with the definition in the Board's primary drinking water regulations at 35 Ill. Adm. Code 611.101.

SUBPART B: REPORTING

Section 1010.200 Evaluation of Releases

This Section provides the key thresholds for detecting and reporting releases under the proposed regulation. The thresholds that trigger reporting were selected in order to identify releases of tritium that may cause, threaten, or allow degradation of surface or groundwater resources beyond the licensee control area boundary. Further, the thresholds were based on practical experience in dealing with the Exelon sites, tritium's laboratory PQL, groundwater fate and transport modeling, and the Fleetwide Studies conducted by Exelon.

The reporting thresholds are based on tritium concentrations because our experience has shown that the only radionuclide being found is tritium. Tritium is basically the same composition as water (H^3) and is highly mobile. Reverse osmosis treatment removes other radionuclide contaminants in cooling water. However, there is no conventional or advanced treatment technique (e.g., reverse osmosis) for removing tritium. This is the reason why blow down lines were constructed at the Braidwood and Byron stations. The tritiated water is diluted with waste water and is discharged to the Kankakee and Rock Rivers, respectively.

The proposed off-site reporting threshold is based on the PQL of 200 pCi/L for tritium. Illinois EPA is recommending the PQL because it is used in the existing Board's preventive notice and response provisions of 35 Ill. Adm. Code 620.305 and 620.310. Moreover, as noted above, the PQL is reasonably achieved in commercial, State, and private laboratories. Exelon is in agreement with this threshold.

The on-site reporting threshold is based on the Exelon suggested level of 0.002 Ci of tritium. Ci is a unit of measure that on-site Exelon staff is familiar with, and one that they can easily use to relate the "occurrence" of a release in a rapid manner versus waiting on analytical testing and detection to occur. Concentrations in pCi/L can also be easily calculated from Ci. Thus, Ci was recommended due to its proactive and practical utility.

A groundwater fate and transport model (BIOSCREEN) was used to determine if a 0.002 Ci release on-site would be sufficiently conservative to predict if 200 PCi/L would be exceeded beyond the licensee controlled area. Release scenarios were modeled for the Braidwood, Quad Cities, and Zion Stations. Each Station was selected based on soil and groundwater characteristics that give these Stations the highest potential for groundwater contamination. Further, each Station contains adjacent surface water or groundwater resources proximate to its licensee controlled area. Braidwood had the closest private drinking water system wells located north of the plume shown in Attachment IV.

Groundwater Principles - Water infiltrating the soil may evaporate, or be used by plants and be transpired. The remainder migrates downward through pore spaces in soil or rock, eventually reaching a zone where all pore spaces are saturated. The surface of this zone of saturation is called the "water table". All water below the water table is considered groundwater (415 ILCS 5/3.64 and 35 Ill. Adm. Code 620.105). The water table can be determined by measuring the elevation of water surfaces in wells which penetrate the saturated zone. Under natural conditions, the water table forms a surface which resembles the overlying land surface topography, only in a more subdued and smoother configuration. The water table generally will be at higher elevations beneath upland areas and at lower elevations in valley bottoms. The water table may intersect the ground surface along perennial streams, springs, and lakes which are natural areas of groundwater discharge. Groundwater moves in a fashion somewhat analogous to surface water, only at much slower rates. While surface water moves downhill in response to gravity, groundwater moves down gradient from areas of higher potential energy to areas of lower potential energy. These areas of equal elevation are described as “hydraulic head”. Groundwater flows from recharge zones, where infiltration occurs, to discharge zones, where groundwater discharges into streams and lakes.

The direction of groundwater movement can be estimated from a map of the potentiometric surface, i.e., a contour map of the elevations of water levels in observation wells. Generally, groundwater flow will be perpendicular to the contours of the potentiometric surface. The rate of groundwater movement is related to the permeability of the aquifer and the magnitude of the slope of the potentiometric surface. In 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.

In general, contaminants are transported in the direction of groundwater flow. Transport in this manner, that is, transport of dissolved constituents (solutes) at the same speed as the average groundwater pore velocity, is called *advection.* Groundwater movement is governed by the hydraulic principles described by Darcy's Law. This equation states that 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. The Darcian velocity assumes that flow occurs across the entire cross section of the porous material without regard to solid or pore spaces. Actually, flow is limited to the pore space only. Darcy’s Law can be rearranged to determine the average linear velocity or a velocity representing the average rate at which groundwater moves between two points, as follows:

$$V_x = -\frac{Kdh}{n_e dl}$$

Where:

V_x = average linear velocity feet per day (ft/d)

K = hydraulic conductivity (ft/d)

n_e = effective porosity (dimensionless)

dh = delta or change in groundwater head elevation (ft)

dl = delta or change in distance between wells (ft)

In natural porous materials, the pores possess different sizes, shapes, and orientations. Similar to stream flow, a velocity distribution exists within the pore spaces such that the rate of movement is greater in the center of the pore than at the edges. Thus, in saturated flow through these materials, velocities vary widely across any single pore and between pores. As a result, a miscible fluid (immiscible fluids do not have complete mutual solubility and co-exist as separate phases) will spread gradually to occupy an ever increasing portion of the flow field when it is introduced into a flow system. This mixing phenomenon is known as *dispersion*. In this sense, dispersion is a mechanism of dilution. Dispersion acts to reduce the peak concentration of a "slug" of material introduced into a flow field. However, dispersion also acts to reduce the travel time of migration because some dissolved material will move ahead of what would actually have been predicted by advective movement only.

As water soluble contaminants migrate hydraulically down gradient from their source and are acted on by advection and dispersion, their peak concentrations tend to decline progressively. This is due to dilution, retardation, and transformation (e.g., the half life of tritium is 12 years) processes. Dilution occurs because dispersive and molecular diffusion processes cause the contaminant to spread out and mix with uncontaminated groundwater. Retardation of a plume front occurs due to reactions with soil or aquifer materials. There is no retardation expected with tritium.

Contaminant masses either move as a slug from a “one time source” of contamination or move as a contamination plume from a “continuous source” of contamination.

Modeling Approach - First, a hypothetical source of tritium contamination was identified for each site that is representative of systems at nuclear generating stations. The hypothetical source was then used as the point of release for the model. Secondly, the model BIOSCREEN, was then used to determine if a release of 0.002 Ci would leave the licensee controlled area, and cause, threaten, or allow contamination of off-site resource groundwater at a concentration greater than 200 pCi/L. BIOSCREEN is an analytical (versus numerical) solute transport model that calculates solute migration under uniform groundwater flow conditions based on the Domenico equation. Section 742.810 of the Board's Tiered Approach to Correction Action Objectives ("TACO") regulations references the following R26 equation, detailed in Section742.Appendix C:

$$C_{(x)} = C_{source} \bullet \exp\left[\left(\frac{X}{2\alpha_x}\right) \bullet \left(1 - \sqrt{1 + \frac{4\lambda \bullet \alpha_x}{U}}\right)\right] \bullet erf\left[\frac{S_w}{4 \bullet \sqrt{\alpha_y \bullet X}}\right] \bullet erf\left[\frac{S_d}{2 \bullet \sqrt{\alpha_z \bullet X}}\right]$$

R26 is the Domenico equation, which is the governing equation for BIOSCREEN. Figure 1 below is a screen shot of the graphical user interface for BIOSCREEN.

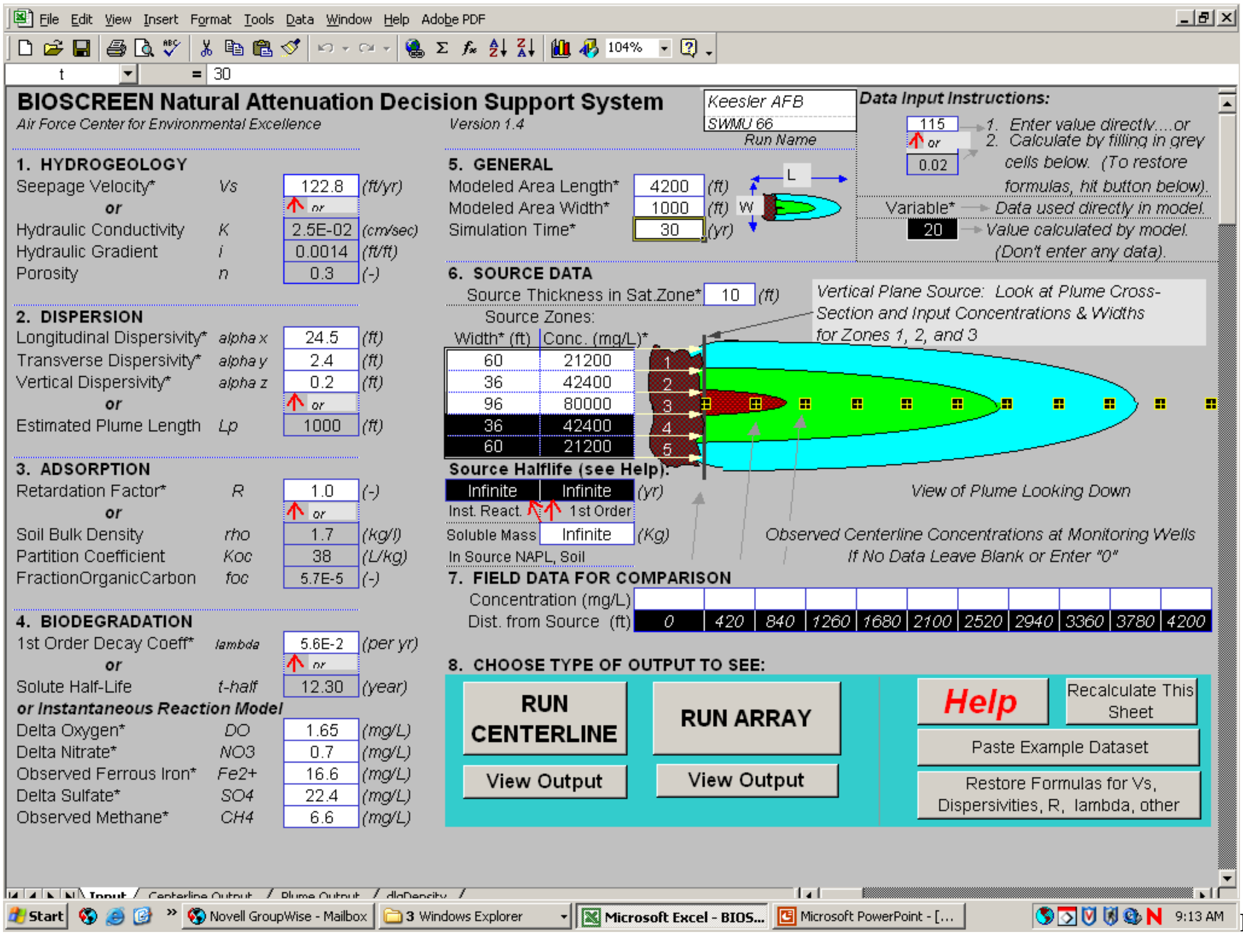


Figure 1. Screen shot of BIOSCREEN Model GUI

The scenarios modeled were "conservative" or "reasonable worst case" scenarios. There were three basic objectives:

1) Determine if a release of 0.002 Ci of tritium from a "representative" source at a nuclear generating station would migrate off-site;

2) Predict the migration of the tritium in groundwater with respect to the licensee controlled area, and with respect to adjacent properties and water bodies; and

3) Use the modeling results to calculate leakage rates and associated concentrations (e.g., 0.71 gallons per minute and 17,248 pCi/L) to determine if they are realistic.

The models were completed using station-specific groundwater and soil characteristics. The model was then adjusted to look at a time-specific source of contamination (e.g., a 30-day release) versus a continuous source of contamination. Exelon has indicated that it is now conducting monthly integrity tests of underground piping and blow down lines and has real-time moisture sensors installed in VB vaults. Thus, it is anticipated that no leak would go undetected more than 30 days. The model evaluated an equivalent "slug" of tritiated water released into the aquifer over a 30-day period as shown in the conceptual models illustrated in Attachments VII, VIII, and IX.

BIOSCREEN was used to assess systems at nuclear stations where releases could go unnoticed in the subsurface. The modeling scenario assumed a release of tritiated water would occur most commonly in buried pipes. Moreover, it was assumed that a conservative time between leak start and discovery would be 30 days (e.g., monthly monitoring or maintenance schedule). Further, the assumed release manifested itself in a buried pipe trench or backfill, as shown in Attachment X.

The geologic cross section in Attachment XI illustrates the Class I groundwater at the Braidwood Station. The uppermost aquifer is composed of coarse grained sand and gravel. Attachment XII is a partial contour map of the potentiometric or water table elevation in the subsurface materials at the Braidwood Station. Groundwater flows down gradient perpendicular to these contours, or lines of equal elevation or head.

Table I below details the aquifer property data that was obtained or calculated for the Braidwood Station and input into BIOSCREEN. Further, Table I also contains the resultant data predicted by the model. In the model a mass of 0.002 Ci in 30,633 gallons of tritiated water, or a concentration of 17,248 pCi/L, was released for a period of 30 days. For reference, the 3,000,000 gallon release from VB 3 in 1996 is estimated to have been at a concentration of 1,000,000 pCi/L. In 2006, the source area of the release was measured at a concentration of 226,000 pCi/L.

BIOSCREEN predicts that the tritium plume will migrate 595 feet in 237 days, as roughly shown in Attachment XV. Moreover, BIOSCREEN predicts that 17,248 pCi/L concentration of tritium will be reduced down to concentration of 200 pCi/L at distance of 595 feet ("ft") via dispersion. As discussed previously, dispersion refers to spreading of a contaminant caused by the fact that not all of the contaminant actually moves at the same linear velocity as the groundwater. In this scenario, a release of this magnitude is predicted not to cause, threaten, or allow off-site degradation of the groundwater at a concentration greater than or equal to 200 pCi/L.

Summary of Modeling Results
Braidwood Station

Site Parameters:

Hydraulic Conductivity (ft/d)...........................78
Hydraulic Gradient.................................0.0070
Effective Porosity.......................................0.25
Groundwater Velocity (ft/d).........................2.18
Source Water Volume (gallons).................30633
Source Concentration (pCi/L)....................17248

Simulation Results:
(To the Level of 200 pCi/L)
Distance From the Source (ft)......................595
Travel Time (after the end of spill).........237 days

Table I. Aquifer property data and modeling results

Attachments XIII, XIV, and XV provide a schematic picture of the slug of tritium moving through the groundwater at Braidwood: 70 days after the end of the spill (plume front is at 350 ft from source); 150 days after the end of the spill (plume front is at 500 ft from source); and 237 days after the end of the spill (plume front is at 595 ft from source). The tritium contaminant slug is predicted by BIOSCREEN to be at a concentration of less than 200 pCi/L, before it crosses the licensee controlled area boundary shown in Attachment XV.

The information obtained from the Braidwood modeling scenario is very useful from a pragmatic standpoint. First, we know how the Braidwood hydrogeologic susceptibility varies with respect to the other Exelon facilities. Thus, we now have a hydrogeologic susceptibility reference point. Secondly, if we have a release with an estimated mass of tritium from an underground pipeline or waste water conveyance in a setting more or less susceptible than Braidwood, we know what the potential fate and transport will be at distances more than or less than 595 feet. Further, this distance is based on the known location of under ground piping. No piping is expected to be closer to the boundaries of the licensee controlled areas at other Exelon facilities than what was used in the modeling.

As a final step of the evaluation of the appropriateness of the proposed release reporting thresholds, modeling was also performed for the Zion and Quad Cities facilities at various source loading rates. Table II below provides the leakage rates used in each of these modeling runs.

Station	Rate of Leakage (gpm)	Concentration (pCi/L)
Braidwood	0.71	17,248
Quad Cities	1.43	8,561
Zion	0.07	174,393

Table II. Rate of leakage and concentrations used for additional modeling runs

Table III below provides the results of the modeling scenarios with the maximum distances needed to reach 200 pCi/L concentrations. These results do not predict that tritium will cause, threaten, or allow tritium concentrations greater than 200 pCi/L beyond the licensee controlled area.

	Station	Travel Time	Maximum Distance from the Source (ft)
To the level of 200 pCi/L	Braidwood	237 days	595
To the level of 200 pCi/L	Quad Cities	109 days	595
To the level of 200 pCi/L	Zion	6 years	436

Table III. Modeling results for Braidwood, Quad Cities, and Byron Station

The modeling results combined with knowledge about the Exelon stations (e.g., hydrogeologic susceptibility, layout, and design) show that 0.002 Ci is a conservative spill reporting threshold for on-site releases of tritiated water. In addition, it is based on occurrence and does not wait on detection. Furthermore, Exelon's detection monitoring program (real time sensors and groundwater monitoring wells) will serve as a backup for detecting tritium. Finally, the reporting threshold will show if resource groundwater beyond the licensee controlled area boundary is being caused, threatened, or allowed to exceed 200 pCi/L.

Section 1010.202 Reporting of Releases

This Part details the form and format of how a release must be reported to the Illinois EPA and IEMA. Illinois EPA duty officers and first responders have an established communication protocol with IEMA and the State Emergency Operations Center. This protocol uses cellular and satellite technology via smart phones, and other wireless devices. Thus, this is the technological basis for the proposed electronic method of reporting.

Section 1010.204 Follow-up Written Report

Illinois EPA believes it is essential to require a follow-up written report to the initial rapid response report. It is our experience that more times than not information provided in the rapid response mode needs to be clarified and supplemented. This report provides the ability to provide follow-up. More importantly, today's societal demands dictate that we provide this type of information; it is expected to meet citizen's information demands. Moreover, these requirements will provide a practical bridge to the Right-to-Know ("RTK") provisions of the Act (415 ILCS 5/25d), and the Board's Community Relations Activities Performed in Conjunction with Illinois EPA Notices of Threats from Contamination (35 Ill. Adm. Code 1600).

The reporting requirements do not establish assessment demands, but are merely intended to capture reasonably available information. This information will be vital in addressing the public's RTK and concern about such releases. The elements that are proposed to be reported are based in part on the Board's RTK regulations.

CONCLUSION

This concludes my testimony. I will be happy to address any questions.

Attachment I.

CURRICULUM VITAE
RICHARD P. COBB, P.G.

Work Experience

Deputy Manager, Division of Public Water Supplies (DPWS), Bureau of Water (BOW), Illinois Environmental Protection Agency (EPA). (5/02- Present) My primary responsibilities include managing the Groundwater and Source Water Protection, Field Operations, and the Administrative Sections of the Division. Further, I assist with administering the public water supervision program under the federal Safe Drinking Water Act ("SDWA") and the Wellhead Protection Program ("WHPP") approved by the United States Environmental Protection Agency ('U.S. EPA"). Additionally, my responsibility includes the integration of source water protection with traditional water supply engineering and treatment practices, and to further assist with linking Clean Water Act and SDWA programs. I also directly manage the BOW's Groundwater Section. The Groundwater Section applies Geographic Information System ("GIS") programs, global positioning system ("GPS") technology, hydrogeologic models (3D geologic visualization, vadose zone, groundwater flow, groundwater particle tracking, solute transport, and geochemical models), and geostatistical programs for groundwater protection and remediation projects. The Groundwater Section also continues to operate a statewide ambient groundwater monitoring program for the assessment of groundwater protection and restoration programs. I also do extensive coordination with federal, state and local stakeholders including the Governor appointed Groundwater Advisory Council ("GAC"), the Interagency Coordinating Committee on Groundwater ("ICCG"), four Priority Groundwater Protection Planning Committees, Illinois Source Water Protection Technical and Citizens Advisory Committee, and with the Ground Water Protection Council ("GWPC"), Association of State Drinking Water Administrators ("ASDWA"), and the Association of State and Interstate Water Pollution Control Administrators ("ASWIPCA") to develop and implement groundwater protection policy, plans, and programs. I represent the BOW on Illinois EPA's: Contaminant Evaluation Group ("CEG"); Strategic Management Planning Team; Environmental Justice Committee; Information Management Steering Committee; and the GIS Steering Committee. Since starting with Illinois EPA in 1985, I have worked on the development of legislation, rules and regulations. I have also served as a primary Illinois EPA witness before Senate and House legislative committees, and at Illinois Pollution Control Board ("Board") proceedings in the matter of groundwater quality standards, technology control regulations, cleanup regulations, regulated recharge areas, maximum setback zone, and water well setback zone exceptions. Furthermore, I have served as primary Illinois EPA witness in enforcement matters.

Manager, Groundwater Section, DPWS, BOW, Illinois EPA. (9/92-5/02) My primary responsibilities included development and implementation of Illinois statewide groundwater quality protection, USEPA approved WHPP, and source water protection program. The Groundwater Section worked with the United States Geological Survey ("USGS") to refine Illinois EPA's ambient groundwater monitoring network using a random stratified probability based design. The Groundwater Section continued to operate a statewide ambient groundwater monitoring program for the assessment of groundwater protection and restoration programs based on the new statistically-based design. I co-authored a *Guidance Document for Conducting*

Groundwater Protection Needs Assessments with the Illinois State Water and Illinois State Geological Surveys. I also continued to conduct extensive coordination with federal, state and local stakeholders including the Governor appointed GAC, the ICCG, four Priority Groundwater Protection Planning Committees, Illinois Source Water Protection Technical and Citizens Advisory Committee, and at the national level as Co-chair of the GWPC Ground Water Division to develop and implement groundwater protection policy, plans, and programs. I also served periodically as Acting Manager for the Division of Public Water Supplies. Additionally, the Groundwater Section provided hydrogeologic technical assistance to the BOW Permit Section and Mine Pollution Control Program to implement source water protection, groundwater monitoring and aquifer evaluation and remediation programs. I continued to work on the development of legislation, rules and regulations. I also served as a primary Illinois EPA witness at Board proceedings in the matter of groundwater quality standards, technology control regulations, regulated recharge areas and water well setback zone exceptions. Furthermore, I served as an Agency witness in enforcement matters.

Acting Manager, Groundwater Section, DPWS, BOW, Illinois EPA. (7/91-9/92) My responsibilities included continued development and implementation of Illinois statewide groundwater quality protection, U.S. EPA approved WHPP, and ambient groundwater monitoring program. The Groundwater Section developed the Illinois EPA's WHPP pursuant to Section 1428 of the SDWA and was fully approved by U.S. EPA. Illinois EPA was the first state in U. S. EPA Region V to obtain this approval. I performed extensive coordination with state and local stakeholders including the Governor appointed GAC, the ICCG to develop and implement groundwater protection, plans, policy, and programs. Developed and implemented the establishment of Illinois' Priority Groundwater Protection Planning Committees. Developed and implemented Pilot Groundwater Protection Needs Assessments. The Groundwater Section also provided hydrogeologic technical assistance to the BOW Permit Section and Mine Pollution Control Program staff to develop groundwater monitoring and aquifer evaluation, remediation and/or groundwater management zone programs. I also served as a primary Agency witness at Board proceedings in the matter of groundwater quality standards and technology control regulations. Additionally, I served as an Agency total quality management ("TQM") facilitator, and TQM trainer.

Manager of the Hydrogeology Unit, Groundwater Section, DPWS, Illinois EPA (7/88-7/91) Managed a staff of geologists and geological engineers that applied hydrogeologic and groundwater modeling principals to statewide groundwater protection programs. Developed, and integrated the application of GIS, GPS, geostatistical, optimization, vadose zone, solute transport, groundwater flow and particle tracking computer hardware/software into groundwater protection and remediation projects. Conducted extensive coordination with state and local stakeholders including the Governor appointed GAC and ICCG to develop and implement groundwater protection policy, plans, and programs. Developed and implemented a well site survey program to inventory potential sources of contamination adjacent to community water supply wells. Additionally, I worked on the development of rules to expand setback zones based on the lateral area of influence of community water supply wells. Furthermore, I provided administrative support to the Section manager in coordination, planning, and supervision of the groundwater program. I also assisted with the development of grant applications and subsequent management of approved projects. In addition, I assisted the section manager with regulatory and legislative development in relation to the statewide groundwater quality protection program. I also served on the Illinois EPA's Cleanup Objectives Team ("COT").

Environmental Protection Specialist I, II, and III, Groundwater Section, DPWS, Illinois EPA. (7/85-7/88) I was the lead worker and senior geologist in the development and implementation of Illinois statewide groundwater quality protection program. I worked on the development of Illinois EPA's ambient groundwater monitoring network, and field sampling methods and procedures with the USGS. I published the first state-wide scientific paper on volatile organic compound occurrence in community water supply wells in Illinois. In addition, I assisted with the development of *A Plan for Protecting Illinois Groundwater*, and the legislation that included the *Illinois Groundwater Protection Act*.

Consulting Well Site Geologist, Geological Exploration (GX) Consultants, Denver Colorado. (3/81-12/83) I worked as a consulting well site geologist in petroleum exploration and development for major and independent oil companies. I was responsible for the geologic oversight of test drilling for the determination and presence of petroleum hydrocarbons. Prepared geologic correlations and performed analysis of geophysical logs, drilling logs and drill cuttings. Supervised and analyzed geophysical logging. Made recommendations for conducting and assisted with the analysis of drill stem tests and coring operations. In addition, I provided daily telephone reports and final written geologic reports to clients.

Undergraduate Teaching Assistant, Geology Department, Illinois State University. (3/79-3/81) I was responsible for teaching and assisting with lecture sessions, lab sessions, assignment preparation and grading for Petrology, Stratigraphy and Geologic Field Technique courses.

Undergraduate Education

B.S Geology, 1981, Illinois State University ("ISU"). Classes included field geology at South Dakota School of Mines and Technology, and Marine Ecology Paleoecology at San Salvador Field Station, Bahamas

Post Graduate Education

Hydrogeology and Engineering Geology, 1984, ISU Graduate Hydrogeology Program

Geochemistry for Groundwater Systems, 1986, USGS National Training Center

Hydrogeology of Waste Disposal Sites, 1987, ISU Hydrogeology Program

Hydrogeology of Glacial Deposits in Illinois, 1995, ISU Graduate Hydrogeology Program

MODFLOW, MODPATH and MT3D groundwater modeling, 1992, USGS National Training Center

24 Hour Occupational Health & Safety Training, 1994

Computer Modeling of Groundwater Systems, 1995, ISU Graduate Hydrogeology Program

Introduction to Quality Systems Requirements and Basic Statistics, 2001, U.S. EPA

Source Water Contamination Prevention Measures, 2001, U.S.EPA, Drinking Water Academy

Understanding Fate and Transport Processes and Models, 2006, Risk Assessment and Management Group, Inc.,

National Incident Management System (NIMS) an Introduction *IS-00700*, 2006, Emergency Management Institute (EMI),

Introduction to the Incident Command System (ICS) *IS-00100*, 2006, EMI

ICS for Single Resources and Initial Action Incidents *IS-00200*, 2006, EMI,

License

Licensed Professional Geologist 196-000553, State of Illinois, expires 3/31/2009

Certification

Certified Professional Geologist 7455, Certified by the American Institute of Professional Geologists 4/88

Certified Total Quality Management Facilitator, 5/92, Organizational Dynamics Inc.,

Summary of Computer Skills

I am proficient with using the following computer programs ARC VIEW, Aqtesolv, SURFER, WHPA, DREAM, AQUIFEM, MODFLOW, MODPATH, and MT3D. I can also use multiple analytical solute transport models based on the Domenico equation.

Professional Representation

Illinois EPA liaison to the ***GAC*** and representative on the ***ICCG*** (1988 – present)

Illinois EPA representative, ***Senate Working Committee on Geologic Mapping***.

Illinois EPA representative and subcommittee chairman, ***State Certified Crop Advisory Board***, and ***Ethics and Regulatory Subcommittee*** established in association with the American Society of Agronomy/American Registry of Certified Professionals in Agronomy, Crops and Soils (1995 – 2001)

Member, ***Illinois groundwater quality standards regulations technical work group*** (1988 – 1991).

Illinois EPA representative, ***ICCG State Pesticide Management Plan Subcommittee*** for the protection of groundwater.

Illinois EPA representative, ***State task group involved with developing the siting criteria for a low level radioactive waste site in Illinois.***

Member, ***Fresh Water Foundation's Groundwater Information System (GWIS)*** project in the great lakes basin.

Illinois EPA technical advisor, ***four priority regional groundwater protection planning committees*** designated by the Director to advocate groundwater protection programs at the local level (1991 – present)

Member, ***Groundwater Subcommittee of the National Section 305(b) Report, of the Clean Water Act Consistency Workgroup.***

Member, ***Ground Water Protection Council's Wellhead Protection Subcommittee***.

Co-Chair, ***Groundwater Division of the GWPC*** on (September 1997 to 2003)

Chairman of ***Illinois' Source Water Protection Technical and Citizens Advisory Committee***.

Member, ***United States Environmental Protection Agency National Ground Water Report Work Group***. One of 10 state representatives serving on a work group sponsored by U.S. EPA headquarters charged with development of a national report to be submitted to the U.S. Congress on the status and needs for groundwater protection programs across the country. (January 1999 to July 2000)

Illinois EPA representative, ***Northeastern Illinois Planning Commission Water Supply Task Force***. The purpose of this task force is to assist the Commission in the development of a Strategic Plan for Water Resource Management. (March 1999 to 2001)

Member, ***GWPC/U.S. EPA Futures Forum Work Group*** providing input on source water protection for the next 25 years. (January 1999 to 2001)

Member, ***GWPC/ASDWA work group providing input into the U.S. EPA Office of Ground and Drinking Water Strategic Plan for Source Water Protection***. June 2000 to March 2005.

Co-Chair, ***U.S. EPA Headquarters/GWPC/ASDWA/ASWIPCA workgroup to develop the second Ground Water Report to Congress***. March 2002 –present.

Chair, ***ICCG Groundwater Contamination Response Subcommittee*** responsible for developing a new strategy for responding to groundwater contamination and the subsequent notification of private well owners. March 2002 – April 2002.

Illinois EPA representative, ***ICCG Water Quantity Planning Subcommittee*** working on development of a surface and groundwater quantity- planning program for Illinois. June 2002 – January 2003

Chair, ***ICCG Right-to-Know (RTK) Subcommittee***

Professional Affiliation

American Institute of Professional Geologists
Illinois Groundwater Association
Ground Water Protection Council
National Groundwater Association -Association of Groundwater Scientists and Engineers
Sigma Xi – The Scientific Research Society

Honors

***Sigma Xi* -4/81-** Elected to *Sigma Xi* The Scientific Research Society for undergraduate research conducted and presented to the Illinois Academy of Science.

Director's Commendation Award **-** Participation in the development of the City of Pekin, Il. Groundwater Protection Program and commitment to the protection of Illinois groundwater. 7/95

Certificate of Appreciation - Outstanding contribution to the development of the Ground Water Guidelines for the National Water Quality Inventory 1996 Report to Congress from the United States Environmental Protection Agency Office of Ground Water and Drinking Water. 8/96

Groundwater Science Achievement Award - Illinois Groundwater Association for outstanding leadership and service in the application of groundwater science to groundwater protection in Illinois and in the development of the wellhead protection program and pertinent land-use regulations. 11/97

Certificate of Appreciation - GWPC for distinguished service, remarkable dedication, valuable wisdom and outstanding contribution as a GWPC member, division co-chair and special committee member. 9/99

Drinking Water Hero Recognition **-** United States Environmental Protection Agency Administrator Carol Browner at the 25th Anniversary of the Federal Safe Drinking Water Act Futures Forum in Washington D.C. 12/99.

Certificate of Recognition - United States Environmental Protection Agency Region V Administrator Fred Lyons for outstanding achievements in protecting Illinois' groundwater resources. 12/99

Exemplary Systems in Government (ESIG) Award - Nomination by the Governor's Office of Technology from the Urban and Regional Information Systems Association (URISA) for the

Illinois EPA's Source Water Assessment and Protection Internet Geographic Information System. 6/01

Publications

Cobb, R.P., 1980. ***Petrography of the Houx Limestone in Missouri***. Transactions of the Illinois Academy of Science Annual Conference, Illinois Wesleyan, Bloomington, IL.

A Plan for Protecting Illinois Groundwater, 1986, Illinois Environmental Protection Agency, January. 65 p.

Cobb, R.P., and Sinnott, C.L., 1987. ***Organic Contaminants In Illinois Groundwater***. Proceedings of the American Water Resources Association, Illinois Section, Annual Conference, Champaign, IL, April 28-29, p. 33-43.

Clarke, R.P., and Cobb, R.P., 1988. ***Winnebago County Groundwater Study***. Illinois Environmental Protection Agency. 58 pp.

Groundwater in Illinois: A Threatened Resource, A Briefing Paper Regarding the Need for Groundwater Protection Legislation, April 1987, Governors Office and Illinois Environmental Protection Agency, 34 pp.

Clarke, R.P., Cobb, R.P. and C.L. Sinnott, 1988. ***A Primer Regarding Certain Provisions of the Illinois Groundwater Protection Act.*** Illinois Environmental Protection Agency. 48 pp.

Cobb, R.P., etal, 1992. ***Pilot Groundwater Protection Needs Assessment for the City of Pekin.*** Illinois Environmental Protection Agency. 111 pp.

Cobb, R.P., 1994. ***Briefing Paper and Executive Summary on the Illinois Groundwater Protection Act and Groundwater Protection Programs with Recommendations from the Illinois Environmental Protection Agency Regarding the Siting of a Low Level Radioactive Waste Site***. Presented to the Low Level Radioactive Waste Task Force on December 9, 1994 in Champaign-Urbana.

Cobb, R.P., 1994. ***Measuring Groundwater Protection Program Success***. In the proceedings of a national conference on Protecting Ground Water: Promoting Understanding, Accepting Responsibility, and Taking Action. Sponsored by the Terrene Institute and the United States Environmental Protection Agency in Washington D.C., December 12-13, 1994.

Cobb, R.P., Wehrman, H.A., and R.C. Berg, 1994. ***Groundwater Protection Needs Assessment Guidance Document***. Illinois Environmental Protection Agency. +94 pp.

Cobb, R.P., and Dulka, W.A., 1995. ***Illinois Prevention Efforts: The Illinois Groundwater Protection Act Provides a Unified Prevention-Oriented Process to Protect Groundwater as a Natural and Public Resource***, The AQUIFER, Journal of the Groundwater Foundation, Volume 9, Number 4, March 1995. 3pp.

Cobb, R.P., 1995. ***Integration of Source Water Protection into a Targeted Watershed Program***. In the proceedings of the Ground Water Protection Council'S Annual Ground Water Protection Forum in Kansas City Missouri.

Dulka, W.A., and R.P. Cobb, 1995. ***Grassroots Group Forges Groundwater Protection Law***. American Water Works Association, Opflow, Vol. 21 No. 3. 2pp.

Cobb, R.P., 1996. ***A Three Dimensional Watershed Approach: Illinois Source Water Protection Program***. In the proceedings of the Ground Water Protection Council's Annual Ground Water Protection Forum in Minneappolis Minnesota.

Cobb, R.P., and W.A. Dulka, 1996. ***Discussion Document on the Development of a Regulated Recharge Area for the Pleasant Valley Public Water District***. Illinois Environmental Protection Agency. pp 28.

Cobb, R.P., 1996. ***Illinois Source Water Protection Initiatives-Groundwater Perspective***. In the proceedings of the American Water Works Association's Annual Conference and Exposition in Toronto Canada. pp 585- 594.

Cobb, R.P., and Dulka, W.A., 1996. ***Illinois Community Examines Aquifer Protection Measures.*** American Water Works Association Journal. p10.

Cobb, R.P., etal. October 1999, ***Ground Water Report to Congress***, United States Environmental Protection Agency.

Cobb, R.P., December 2001.***Using An Internet Geographic Information System (GIS) to Provide Public Access to Hydrologic Data,*** Association of Groundwater Scientists and Engineers, National Groundwater Association, National Conference Proceedings, Nashville, Tennessee.

Cobb, R.P., September 2001, ***Regulated Recharge Area Proposal for the Pleasant Valley Public Water District,*** Ground Water Protection Council Annual Forum Proceedings, Reno Nevada, 13 pp.

Wilson, S., Cobb, R.P., and K. Runkle, January 2002. ***Arsenic in Illinois Groundwater***. Illinois State Water Survey, Illinois Environmental Protection Agency, and Illinois Department of Public Health. http://www.epa.state.il.us/water/groundwater/publications/arsenic/index.html, 7 pp.

R.P., Cobb, August 2002, ***Development of Water Quantity Planning and Protection in Illinois – A New Direction,*** Proceedings of the Annual Ground Water Protection Council Technical Forum, San Francisco, California, 10pp.

P.C. Mills, K.J. Halford, R.P. Cobb, and D.J. Yeskis, 2002. ***Delineation of the Troy Bedrock Valley and evaluation of ground-water flow by particle tracking, Belvidere, Illinois***, U.S. Geological Survey Water-Resources Investigations Report 02-4062, 46 pp.

Illinois Environmental Protection Agency's ***Homeland Security Strategy***, March 2003, 20pp.

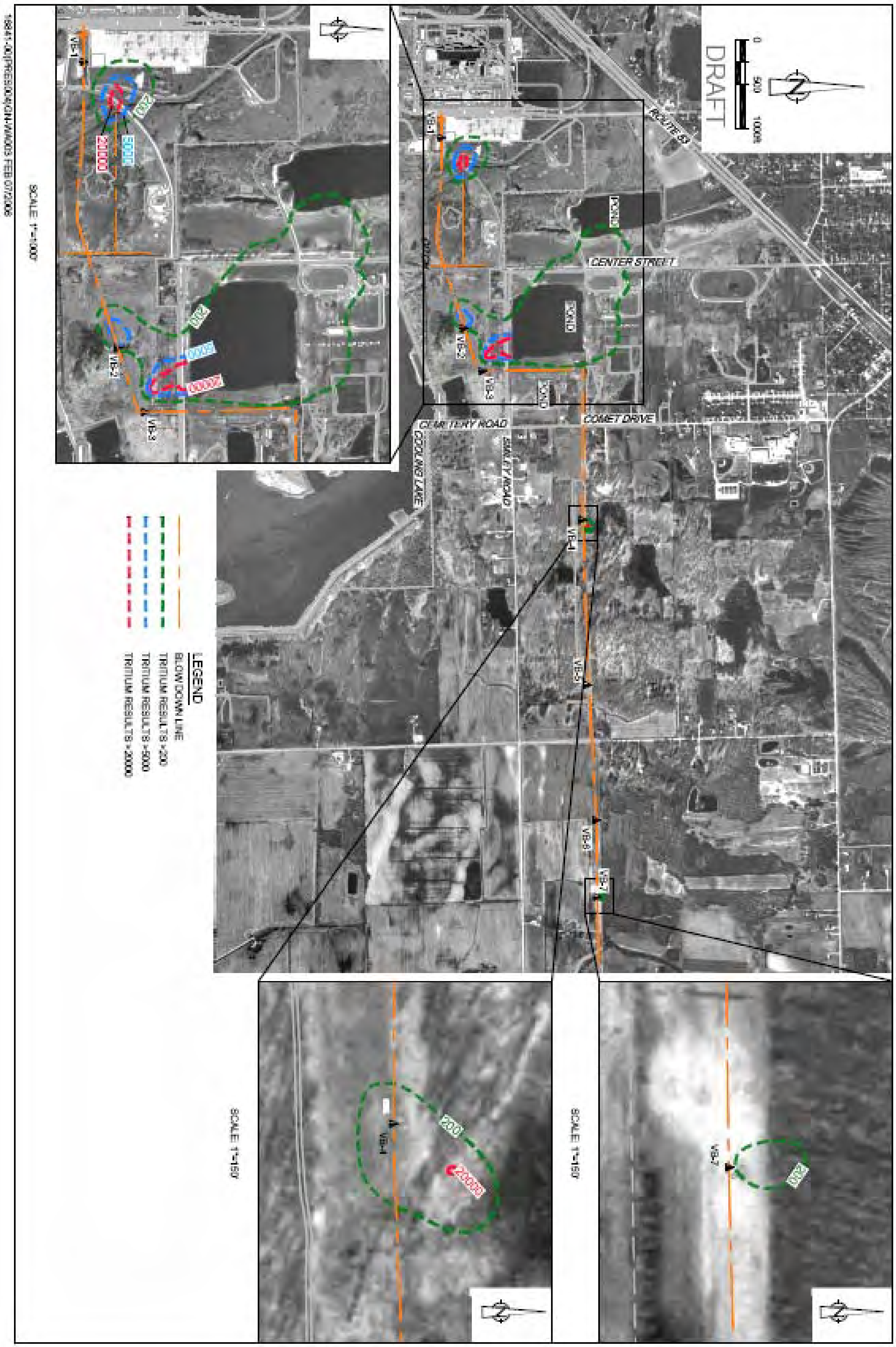
Illinois Environmental Protection Agency' ***Strategic Plan***, *Bureau of Water Section*, September 2003, pp.

Cobb, R.P., Fuller, C., Neibergall, K., and M. Carson, February 2004. ***Community Water Supply Well Shooting/Blasting near the Hillcrest Subdivision Lake County, Illinois Fact Sheet***. Illinois Environmental Protection Agency. 4 pp.

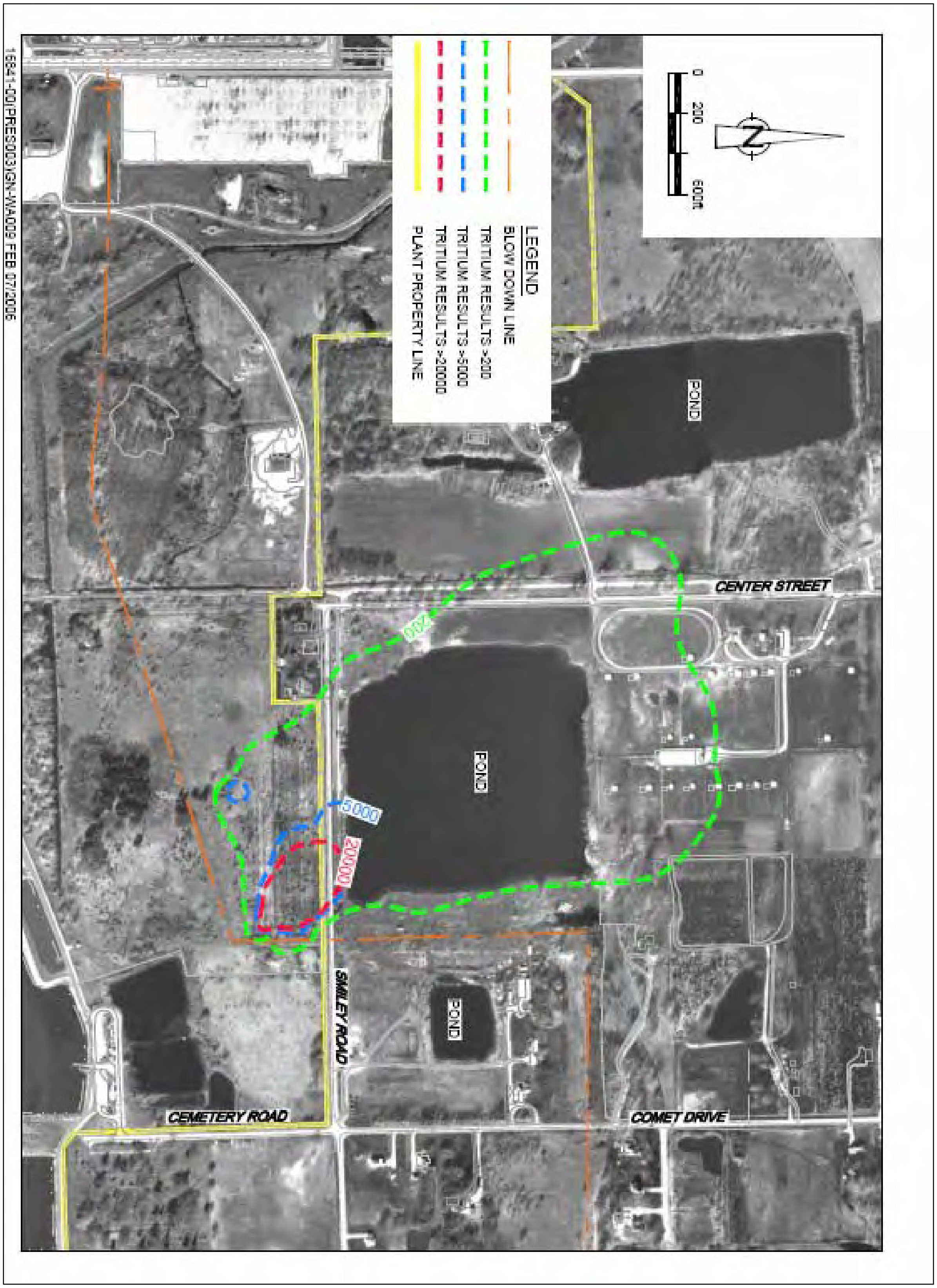
Cobb, R.P., and J Konczyk, April 2007. ***Increasing Volatile Organic Compound Detections in Illinois Groundwater,*** Groundwater Monitoring and Remediation Journal, [Under review]. 8 pp.

Electronic Filing, Received, Clerk's Office, August 24, 2007

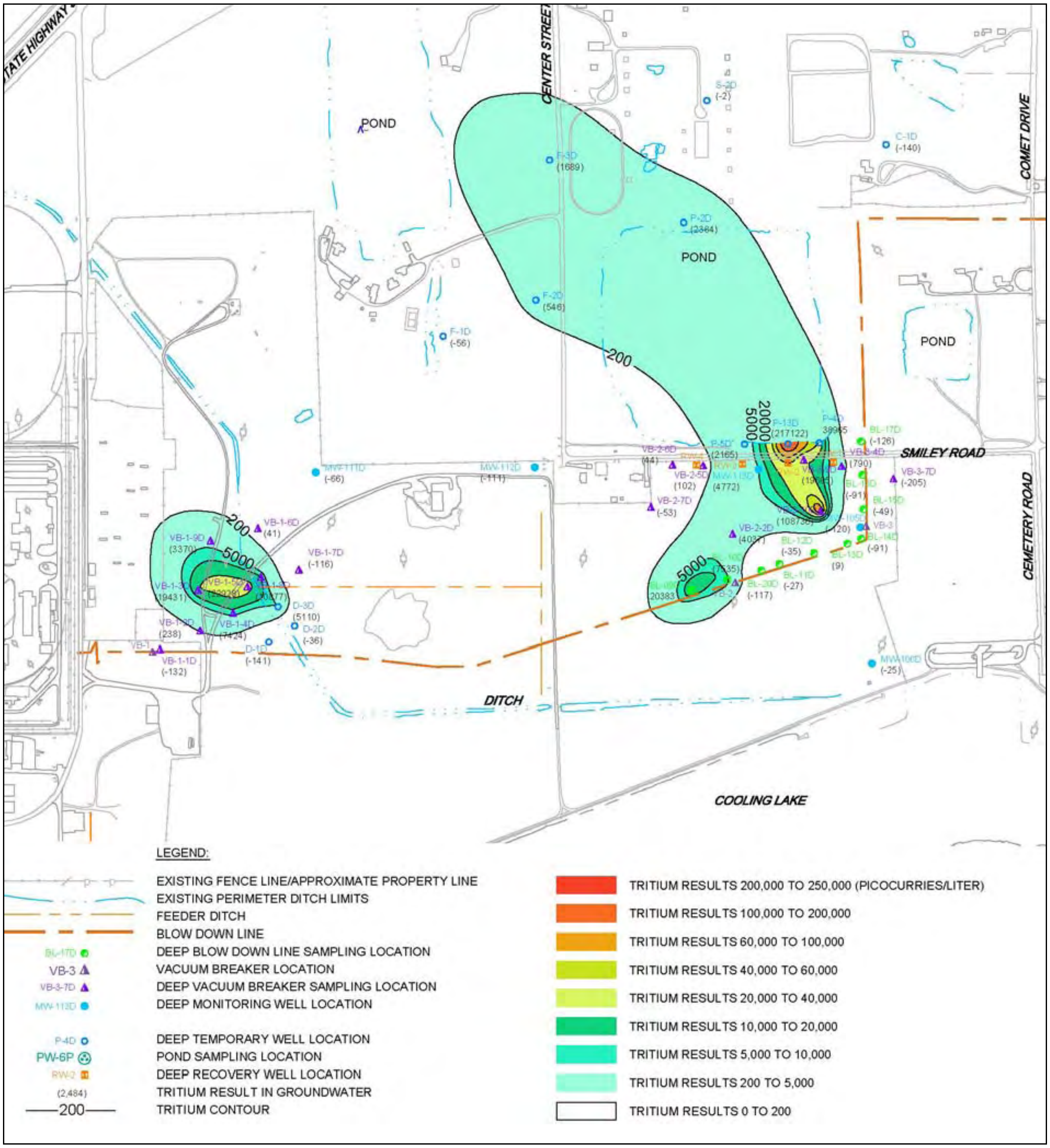
Attachment II. Tritium groundwater contamination plumes at Exelon Braidwood



Attachment III. Braidwood tritium groundwater contamination plume emanating from VB 3 (Exelon, February 7, 2006)

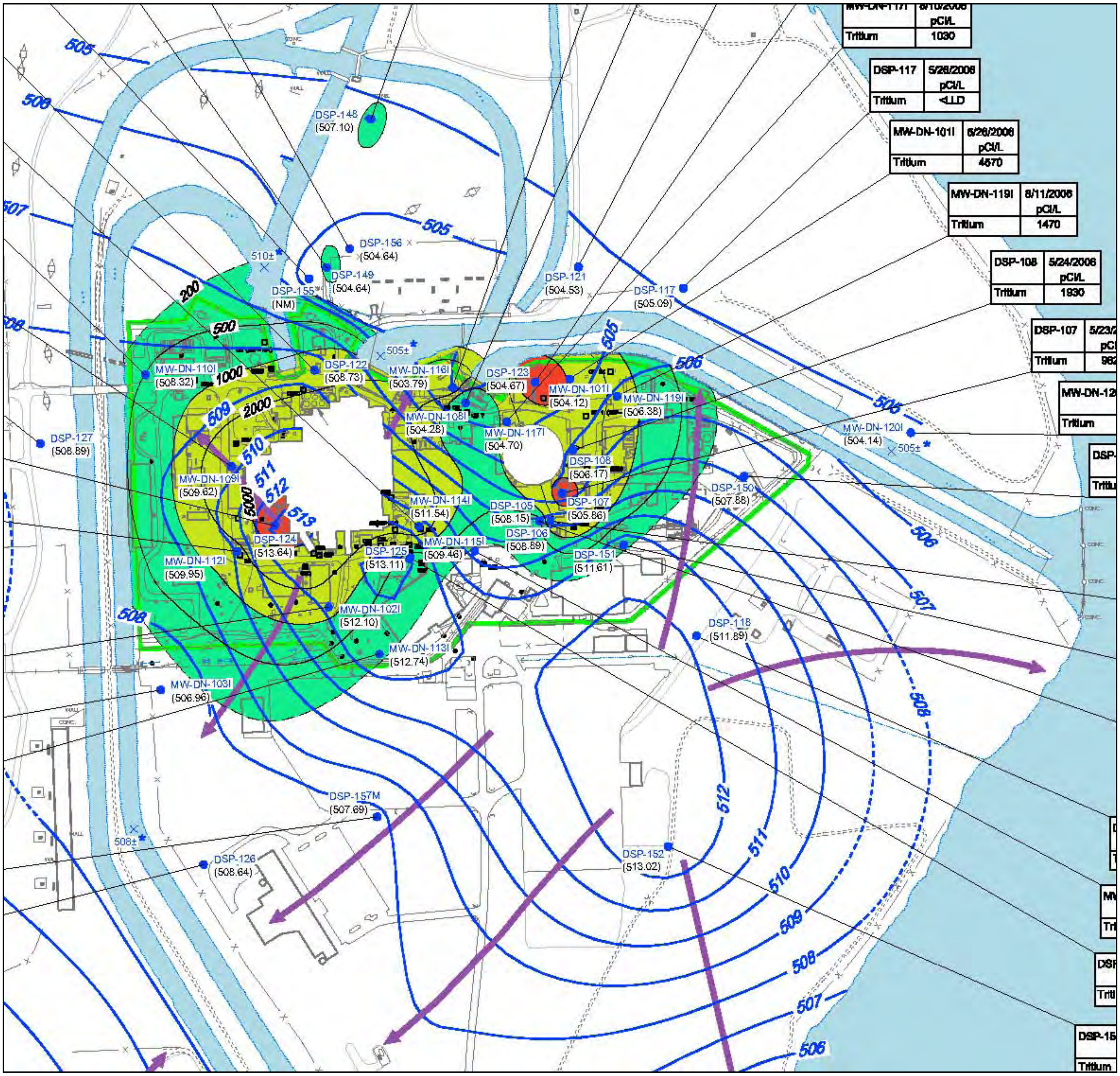


Attachment IV. Private drinking water system wells down gradient from VB 3 plume



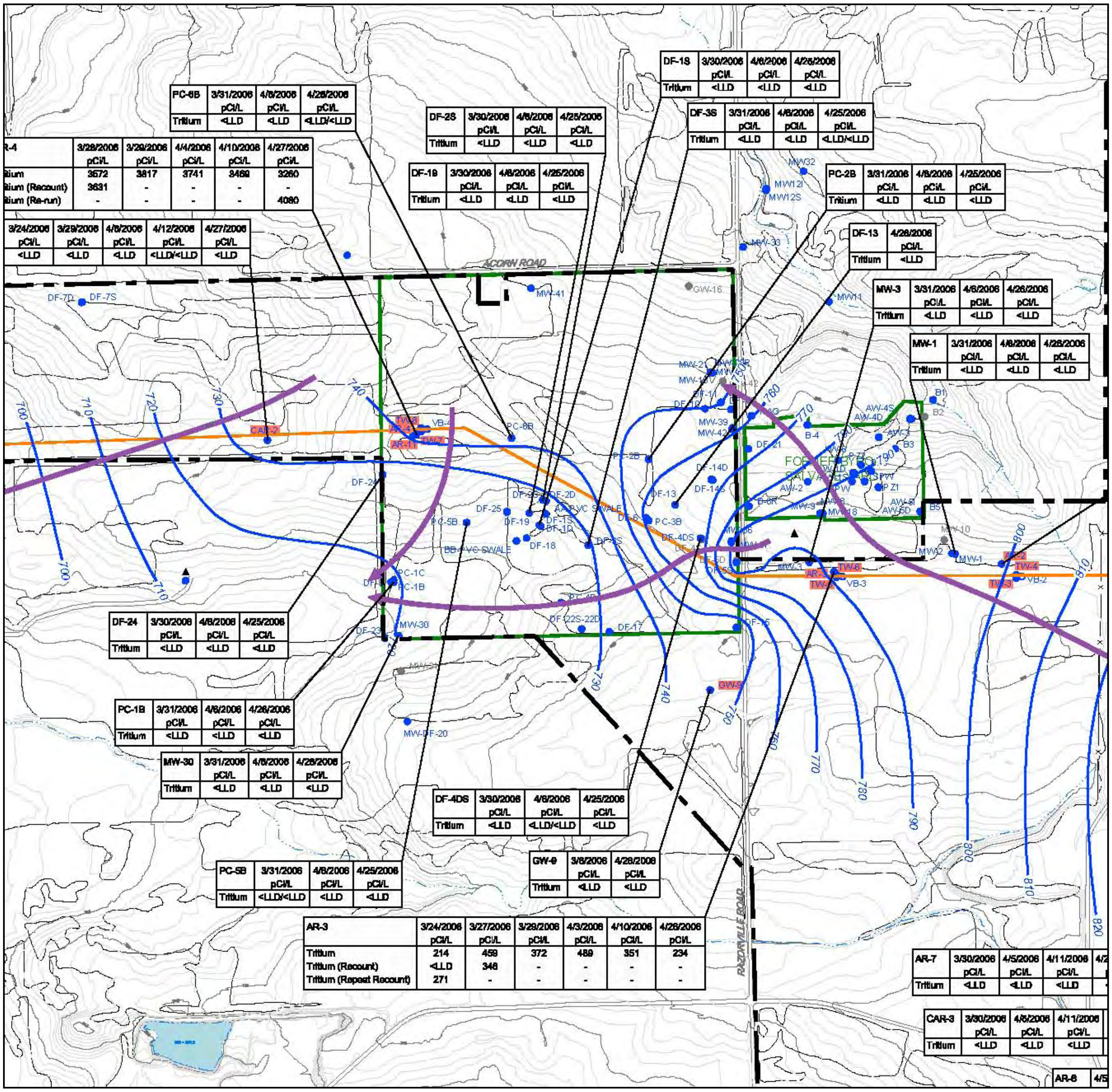
Electronic Filing, Received, Clerk's Office, August 24, 2007

Attachment V. Dresden Station tritium groundwater contamination plume

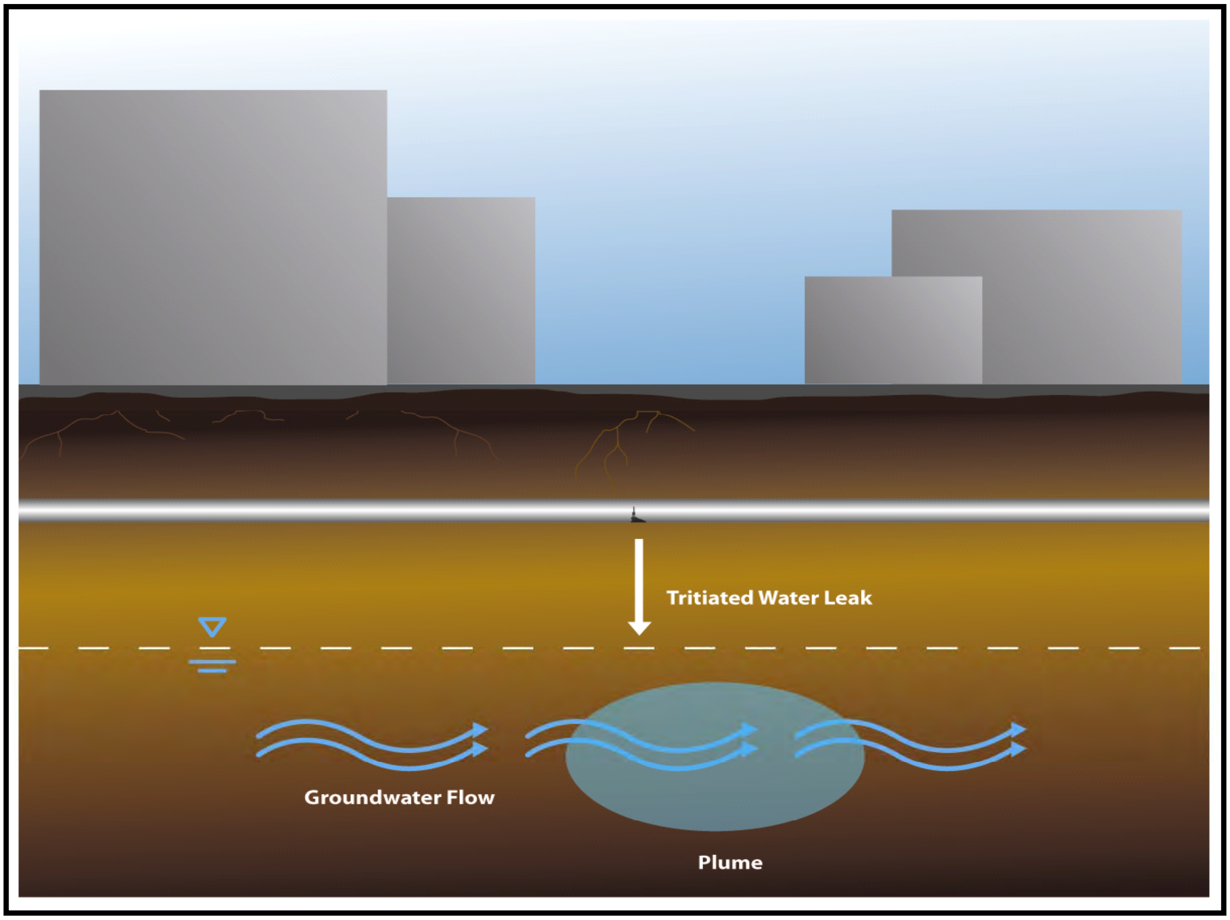


Electronic Filing, Received, Clerk's Office, August 24, 2007

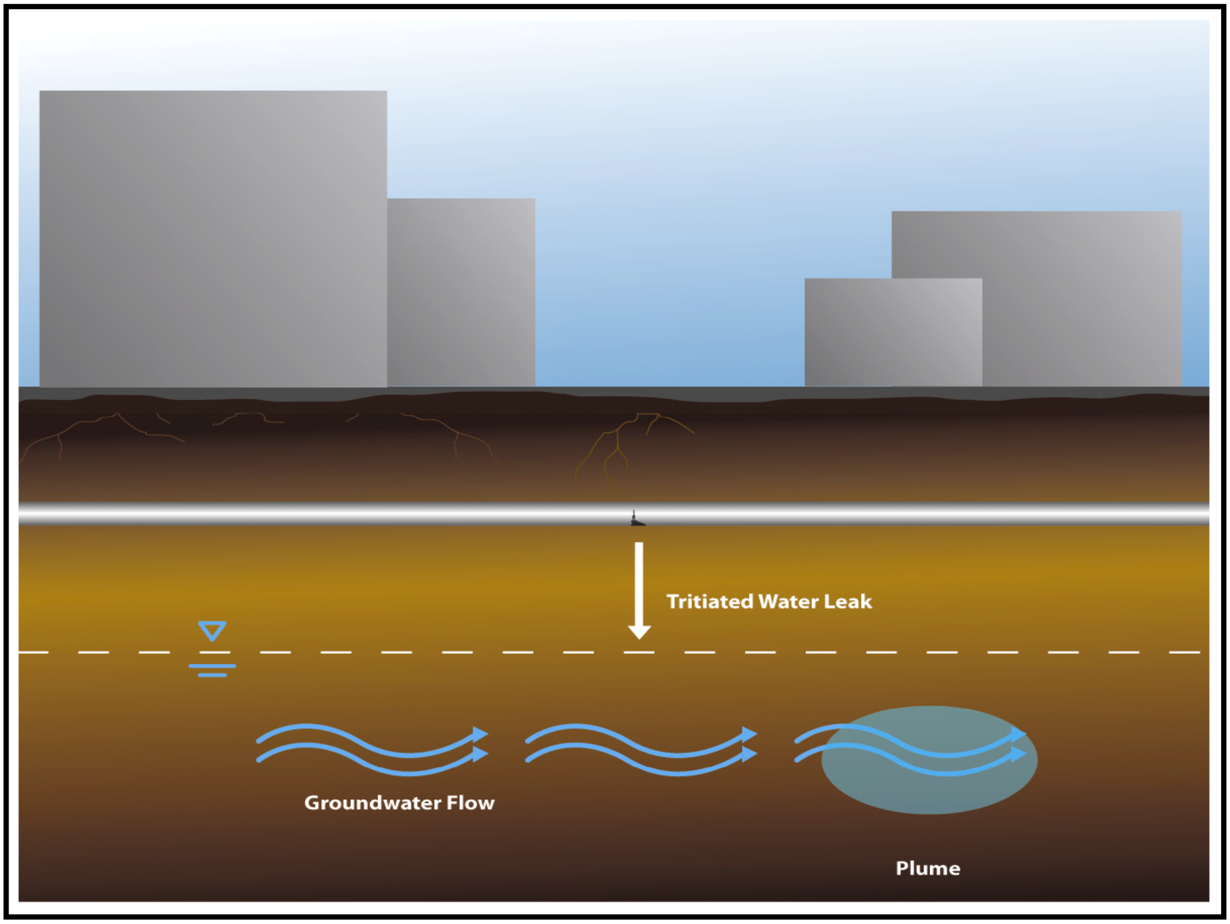
Attachment VI. Byron tritium contamination levels



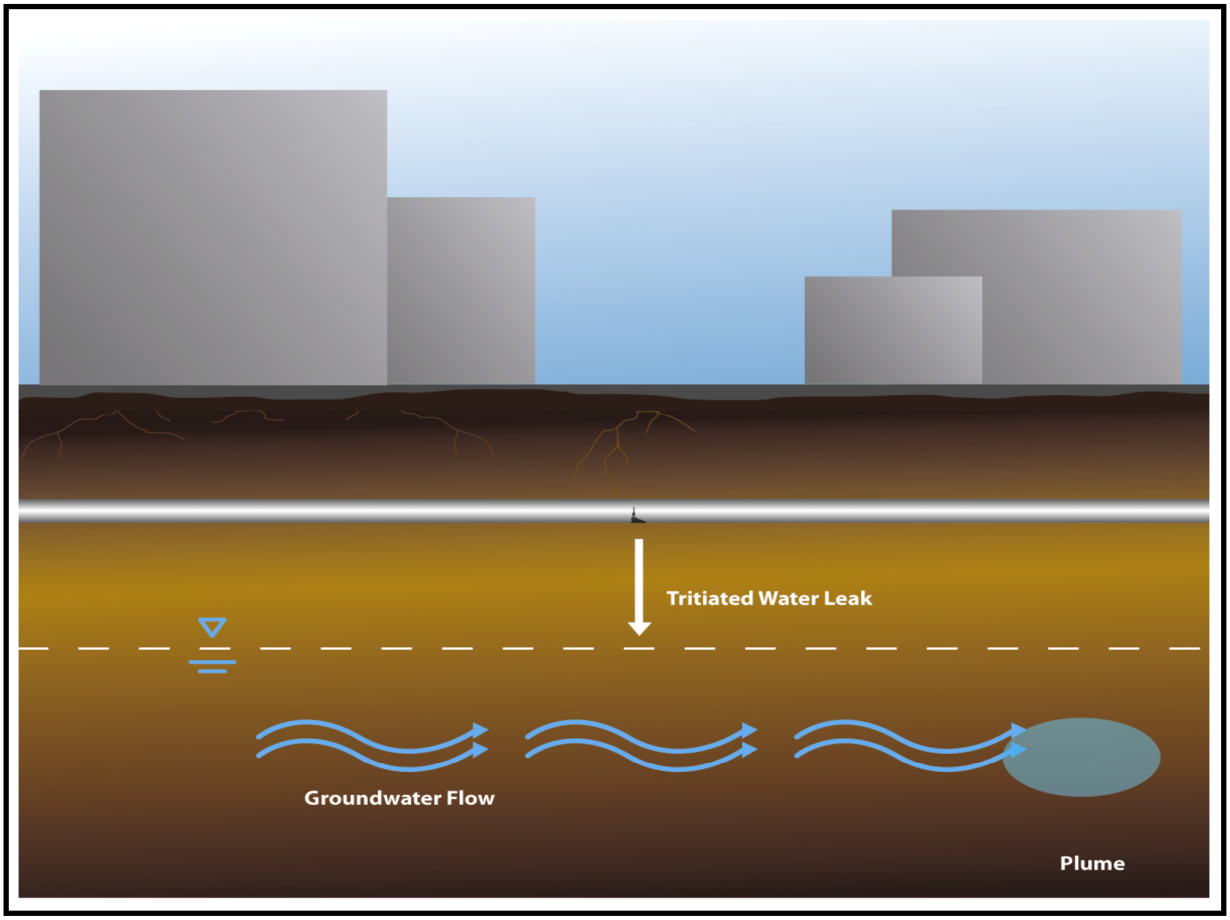
Attachment VII. Hypothetical slug of tritium contaminated groundwater at time (t_0)



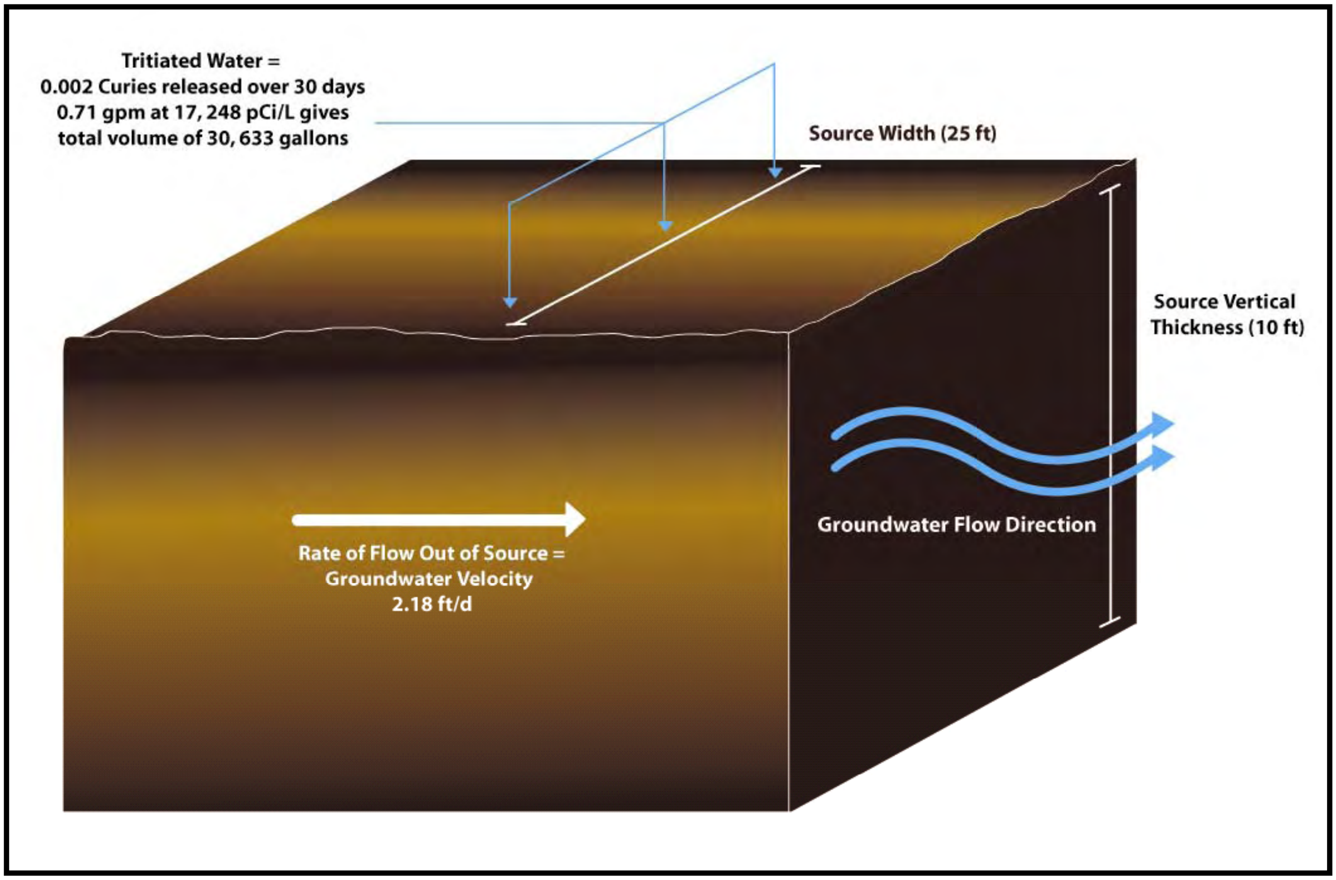
Attachment VIII. Slug of tritium contaminated groundwater at time (t_1)



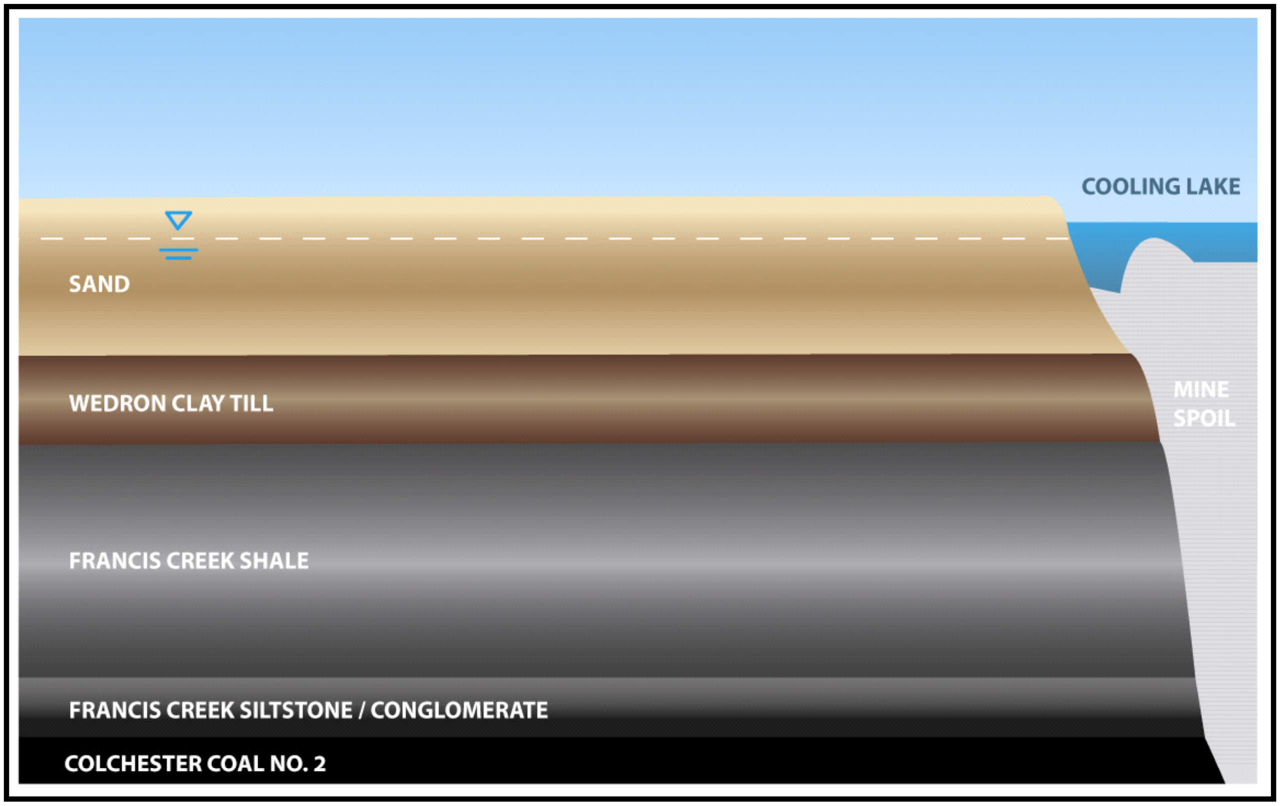
Attachment IX. Slug of tritium contaminated groundwater at time (t_2)



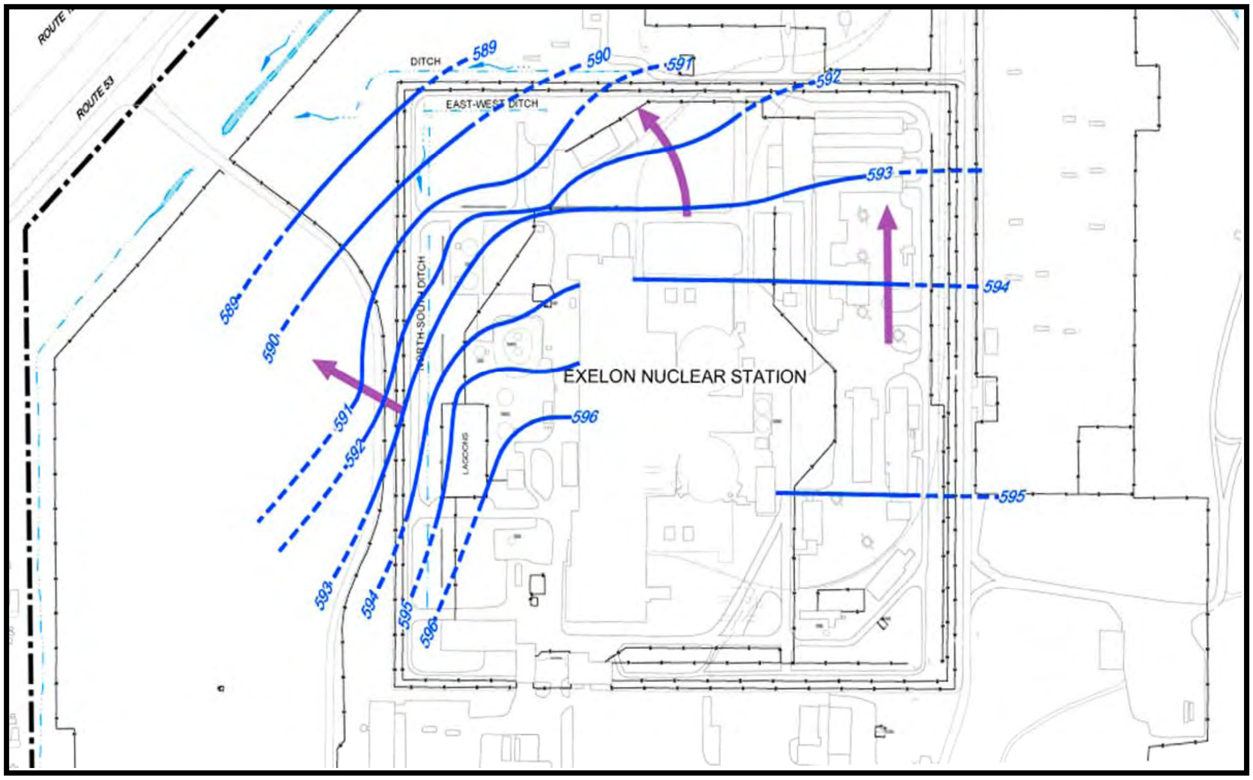
Attachment X. Conceptual model of a release of 0.002 Curies from an underground pipeline leak



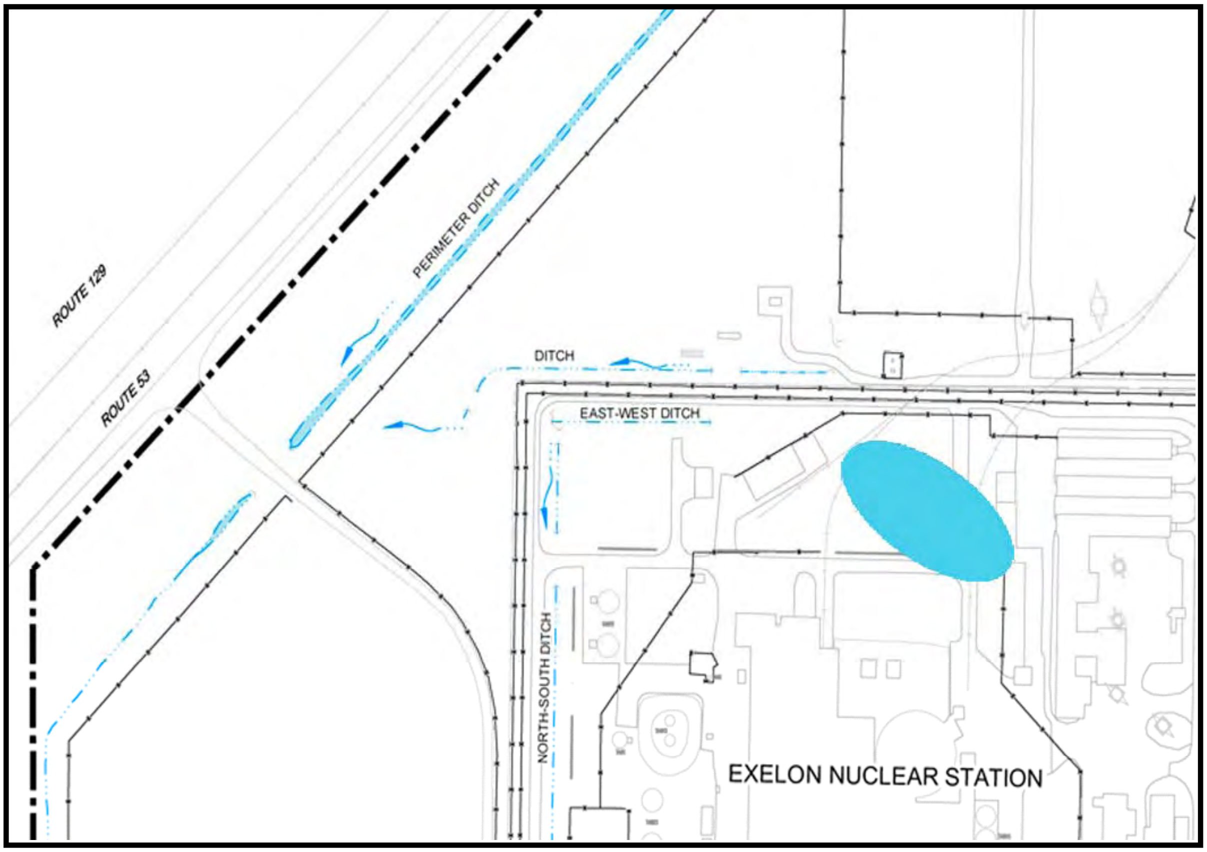
Attachment XI. Geologic cross section of Braidwood Exelon Station



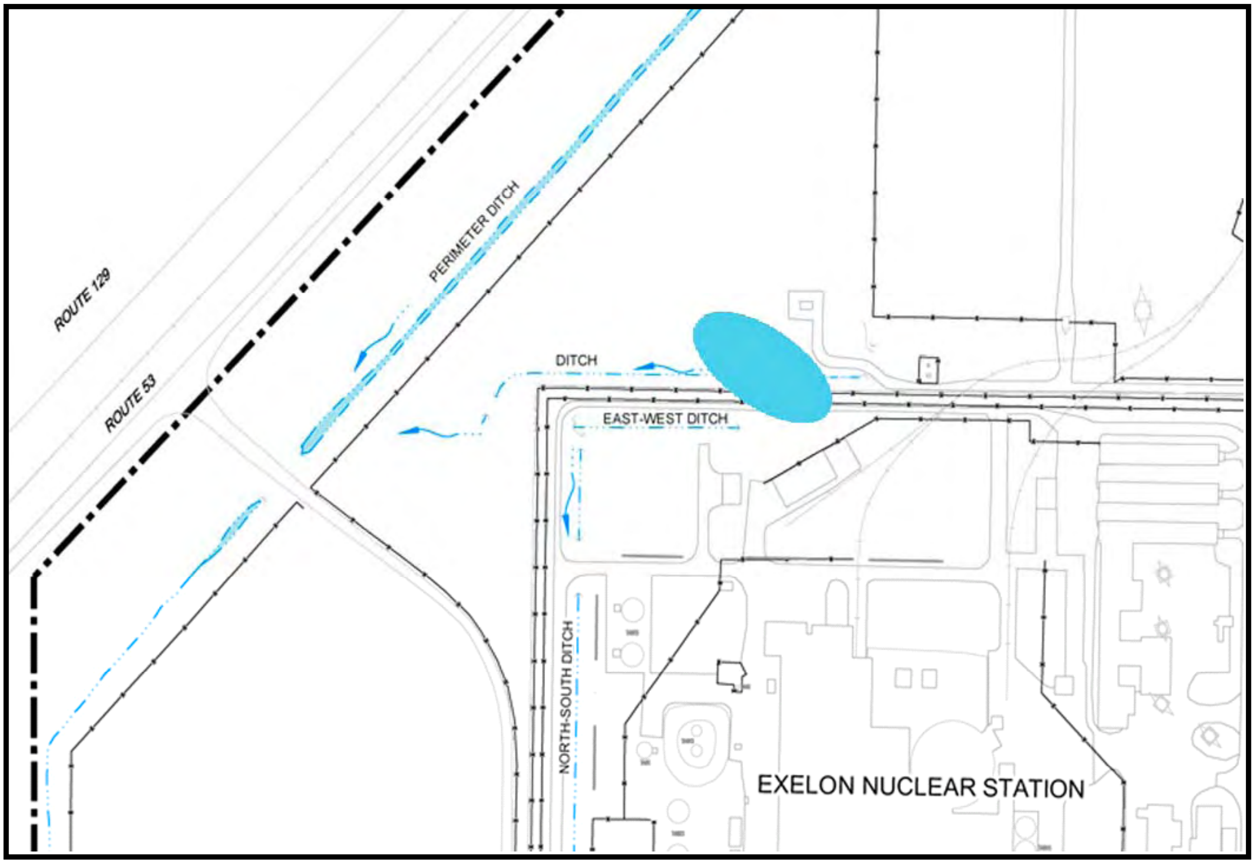
Attachment XII. Partial potentiometric surface map of Braidwood station



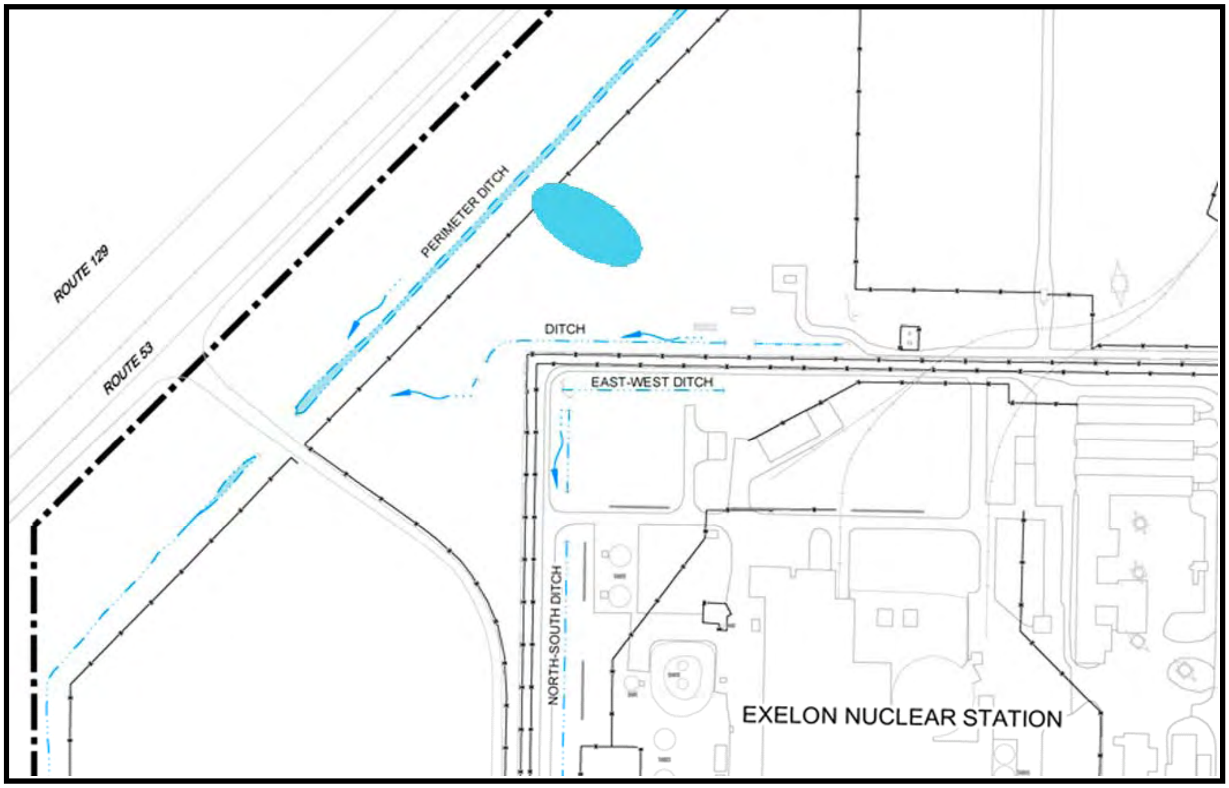
Attachment XIII. Hypothetical plume release from an underground pipeline 70 days after the end of the spill (plume front 350 ft from source)



Attachment XIV. 150 days after the end of the spill (plume front 500 ft from source)



Attachment XV. 237 days after the end of the spill (plume front 595 ft from source)



BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROCEDURES REQUIRED BY	)	R 07-020
P.A. 94-849 FOR REPORTING	)	(Rulemaking - Water)
RELEASES OF RADIONUCLIDES AT	)	
NUCLEAR POWER PLANTS: NEW 35	)	
ILL.ADM.CODE PART 1010	)	

NOTICE OF FILING

To:

Clerk
Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph Street, Suite 11-500
Chicago, Illinois 60601

Marie Tipsord, Hearing Officer
Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph Street, Suite 11-500
Chicago, Illinois 60601

Matthew Dunn, Chief
Environmental Bureau
Office of the Attorney General
100 W. Randolph, 12th Floor
Chicago, Illinois 60601

Bill Richardson
Office of Legal Counsel
Department of Natural Resources
One Natural Resources Way
Springfield, IL 62702-1271

PLEASE TAKE NOTICE that today I filed with the Illinois Pollution Control Board the Pre-Filed Testimony of Richard P. Cobb, P.G., of the Illinois Environmental Protection Agency, a copy of which is herewith served upon you.

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: /s/ Kyle Rominger
Kyle Rominger
Assistant Counsel

Dated: August 24, 2007
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276
(217) 782-5544

PROOF OF SERVICE

I, the undersigned, certify that I have served the enclosed Pre-Filed Testimony of Richard P. Cobb, P.G., of the Illinois Environmental Protection Agency upon the following persons:

Clerk
Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph Street, Suite 11-500
Chicago, Illinois 60601
(filed electronically)

Marie Tipsord, Hearing Officer
Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph Street, Suite 11-500
Chicago, Illinois 60601

Matthew Dunn, Chief
Environmental Bureau
Office of the Attorney General
100 W. Randolph, 12th Floor
Chicago, Illinois 60601

Bill Richardson
Office of Legal Counsel
Department of Natural Resources
One Natural Resources Way
Springfield, IL 62702-1271

by sending a true and correct copy of the document to the above addresses via first-class mail from Springfield, Illinois, on the date below with sufficient postage affixed.

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: /s/ Kyle Rominger
Kyle Rominger
Assistant Counsel

Dated: August 24, 2007
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276
(217) 782-5544