

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

May 13, 2013

IN THE MATTER OF:)	
PROPOSED AMENDMENTS TO CLEAN)	
CONSTRUCTION OR DEMOLITION)	
DEBRIS (CCDD) FILL OPERATIONS:)	R12-9(B)
PROPOSED AMENDMENTS TO 35 Ill.)	(Rulemaking - Land)
Adm. Code 1100)	

PRE-FILED TESTIMONY FOR THE MAY 20, 2013 HEARING IN RESPONSE TO PRE-FILED
 QUESTIONS REGARDING THE NECESSITY FOR GROUNDWATER MONITORING
 SUBMITTED BY THE COUNTY OF WILL AS REPRESENTED BY STUART J. CRAVENS,
 HYDROGEOLOGIST WITH PSC INDUSTRIAL OUTSOURCING, LP

Part I. General position of Will County concerning proposed groundwater monitoring rules; standing to submit comments and provide testimony on groundwater monitoring rules; and credentials of expert witness testifying on behalf of Will County.

1. At second notice for R12-9(B) (i.e., Subdocket B), the Joint Committee on Administrative Rules (JCAR) recommended that the Illinois Pollution Control Board (IPCB) give further consideration to whether groundwater monitoring should be required at the Clean Construction or Demolition Debris (CCDD) Fill Operations where CCDD and uncontaminated soil is used as fill at quarries, mines, and other excavations.
 - a. Based on years of overseeing CCDD Fill Operations, Will County strongly supports the implementation of groundwater monitoring at these facilities.
 - b. Will County is concerned that if there is not adequate testing, and oversight by the Illinois Environmental Protection Agency (IEPA), that our water supplies – and by extension human health and the environment - are at risk from the potential contamination of groundwater by materials disposed at CCDD and Uncontaminated Soil Fill (USF) sites.
2. Based on comments received through December 1, 2012 relating to groundwater monitoring, the IPCB believed that additional hearings were necessary on the issue of groundwater monitoring and scheduled a prefile of questions by April 19, 2013 and response to prefiled questions and/or testimony at this hearing for May 20, 2013. Given the potential for impacts to human health and the environment of Will County via groundwater and surface water pathways, Will County believes it has a strong standing to weigh in on this issue concerning the implementation of groundwater monitoring and the relevant regulations.

Will County has 9 active CCDD/USF facilities out of the 10 permitted. As seen on Figure 1 (Attachment A), the 9 active facilities are located near or adjacent to the principal waterways of northwestern Will County – namely the DuPage River and the Des Plaines River. An estimated 71 percent of Will County residents rely on groundwater as their potable water supply, with the other 29 percent utilizing Lake Michigan water allocations.

3. On behalf of Will County, it has retained Stuart J. Cravens of PSC Industrial Outsourcing, LP in Columbia, Illinois. Mr. Cravens is a Licensed Professional Geologist in the State of Illinois and a

Certified Groundwater Professional through the Association of Groundwater Scientists and Engineers. Mr. Cravens co-authored several major reports on the groundwater resources of northeastern Illinois while with the Illinois State Water Survey, including the following:

- a. *Meeting the Growing Demand for Water: An Evaluation of the Shallow Groundwater Resources in Will and Southern Cook Counties, Illinois*. Illinois State Water Survey Research Report 123, 1993;
- b. *Regional Assessment of the Ground-Water Resources in Eastern Kankakee and Northern Iroquois Counties*. Illinois State Water Survey Report of Investigation 111, 1990;
- c. *Irrigation Development and Management Alternatives of a Dolomite Aquifer in Northeastern Illinois*. Water Resources Bulletin, October 1989;
- d. *Ground-Water Quality Investigation and Monitoring Program Design for the Lake Calumet Area of Southeast Chicago*. Illinois State Water Survey Contract Report, prepared for the Illinois Environmental Protection Agency, September 1990.

Mr. Cravens has been involved in groundwater investigations and hydrogeologic studies in Illinois and around the United States for over 30 years. He has extensive experience in establishing and managing all facets of groundwater monitoring networks at a variety of facilities, including: municipal waste landfills, chemical waste landfills, and coal-combustion residual (CCR) landfills; manufactured gas plants; a variety of IEPA Site Remediation Program sites, including former landfills and coal ash ponds. In addition, Mr. Cravens has extensive experience with statistical analysis of soil and groundwater data and geochemical characterization of both glacial and bedrock areas in Illinois.

4. General Statement Concerning Groundwater Resources in Will County

The shallow aquifer system in Will County, and northeastern Illinois in general, is a vital resource. The shallow aquifer system in Will County exists within both the glacial sand and gravel deposits and the Silurian Dolomite bedrock. As seen on the two figures in Attachment A, Will County is entirely underlain by a shallow bedrock aquifer (Figure 2) and there are dozens of community water supply wells relying on groundwater from that bedrock as a source for drinking water and general household use water (Figure 3). In addition, most of the drinking water for the remaining residents of Will County that are not on a community water supply is also provided by groundwater pumped from either sand and gravel deposits or the Silurian Dolomite Aquifer.

The frequency and size of water-bearing openings in the Silurian Dolomite Aquifer is greatest at the top of the dolomite, typically the top 100 to 150 feet. Groundwater can move through the dolomite large distances over a short period of time due to the presence of large openings in the form of fractures and along bedding planes. For this reason, the dolomite can be an excellent source of groundwater for community and private wells. The same features that make the dolomite an excellent source of drinking water also make it easily susceptible to contamination from surface and near surface sources. Contaminants either near or deep below the ground surface can rapidly infiltrate into the aquifer and move tens of feet per day through the aquifer and towards waterways or areas of groundwater withdrawal.

Part II. Response by Will County to Questions Posed in Attachment A of R12-9(B) by IPCB and Staff, dated April 18, 2013.

Costs of groundwater monitoring (questions 1 and 2)

During the first comment period for R12-9, Will County submitted cost estimates for development and installation of a groundwater monitoring program at four existing CCDD/USF facilities located in Will County (letter from Lawrence M. Walsh, Will County Executive and James G. Moustis, Will County Board Chairman; dated November 27, 2012). The total estimated cost for the implementation of a groundwater monitoring program, including a Groundwater Monitoring Plan, five monitoring wells to 120 feet, and oversight of the work by a hydrogeologist, was \$156,300. The annual costs to sample and analyze for the modified 620 list of parameters and file a report for the five wells was \$18,700. These costs, all of which were supported by documentation in the attachment to Will County's November 27, 2012 letter, were then applied to four CCDD sites in Will County using information on the subject sites provided to the IEPA as part of their permit. The costs for these sites to implement and maintain annual groundwater monitoring and reporting came to \$0.06 to \$0.16 per cubic yard, which is a fraction of the estimated general dumping fees of \$4.50 to \$5.00 per cubic yard charged by the CCDD facilities.

The IEPA's estimates to implement groundwater monitoring at CCDD sites of less than \$0.10 to \$0.50 per cubic yard of CCDD disposed, based on various assumptions, are generally in line with the lower cost estimates made by Will County at existing CCDD facilities.

In general, the discussion of costs to implement groundwater monitoring at CCDD/USF facilities is somewhat facile, in that they would be a fraction of the costs potentially incurred by the owner of a community water supply, or a subdivision with dozens of private well owners, if their groundwater source were to be contaminated.

Parameters to be monitored

Question 3. With the exception of the parameters described in Section 1100, Appendix A, Will County objects to any limitation on the monitoring parameters for which there is a Class I groundwater quality standard as listed in 35 Ill. Adm. Code 620.410.

Rationale: (i) VOCs are not a reliable indicator of the presence of PAHs or other semi-volatile organic contaminants, such as those present in asphalt, roofing materials, and some other building materials; (ii) RCRA metals are not an indicator parameter for other inorganic constituents that may be associated with CCDD/USF; (iii) other inorganic constituents that are not RCRA metals may be present in groundwater at elevated concentrations at CCDD sites; (iv) the selection of parameters for groundwater monitoring should in no way be based on the cost of monitoring as it has been shown by the IEPA, WMI, and Will County's own cost estimates that the costs of groundwater monitoring will not be economically burdensome to CCDD/USF owners/operators. Based on analysis costs provided by two IEPA-certified laboratories in Illinois for the modified 620 list versus VOCs and RCRA metals, the costs are as follows:

- Modified 620 analysis list: \$750 to \$1,300 per sample analysis; and
- VOCs and RCRA metals: \$136 to \$161 per sample analysis.

Limiting the costs of analysis to only VOCs and RCRA metals may save \$614 to \$1,139 per sample analysis, depending on the laboratory; however, the overall cost savings when incorporated into the cost per ton for disposal of material is minimal.

Comparison of dissolved metal concentrations to the applicable groundwater quality standards is acceptable since transport of inorganics in groundwater will be in the dissolved phase and total concentrations are not necessarily representative of what is being transported offsite.

Question 4. Other changes that should be made in consideration of adding groundwater monitoring.

- i. Define background groundwater monitoring frequency to establish baseline groundwater quality for statistical analysis. This would actually be to the benefit of CCDD/USF operators/owners because it would establish the variability in background groundwater quality over the course of a year, potentially allowing for a higher upper concentration limit for some parameters. A minimum of four quarters of groundwater samples would be necessary to establish a statistical background suitable for comparing to downgradient (compliance) wells.
- ii. Define statistical analysis procedures acceptable for comparing upgradient (background) to downgradient (compliance well) groundwater quality. There are numerous methods for statistical analysis of groundwater data, so specific methods should be delineated unless alternate methods for a specific site are approved by the IEPA.
- iii. Change initial groundwater sampling frequency from annual to quarterly or semi-annual, with a smaller subset of 620 parameters for the quarterly or semi-annual analysis and full set of 620 parameters (excluding Part 1100, Appendix A parameters) for annual analysis. The cost of the increased frequency of analysis will be partially off-set by fewer parameter analyses. But most importantly, the increased frequency will allow for detection monitoring that takes into account seasonal changes in groundwater flow directions, groundwater gradients, groundwater chemistry, and other factors.

Question 5. Front end screening requirements have only recently been required and are there to insure that contaminated materials are not disposed of at CCDD/USF facilities. If screening is discontinued, and the only way to know if contaminated materials have been placed into a CCDD facility is groundwater monitoring, there might be a lag time of months to years before impacts are detected and identified within the groundwater unit. Front end screening is, at best, a minimal method to stop contaminated materials from being landfilled in the first place.

Up until the past several years, loads were not screened to the extent they are now. It is very possible that some loads were accepted at CCDD and USF facilities that have a certain level of contamination. Since these loads have been permanently placed in these facilities, groundwater monitoring is the only mechanism to ensure that groundwater, and for most Will County residents their drinking water supply, is not being impacted from materials placed in the facility prior to the requirement for screening.

Whether or not groundwater monitoring should be self-implementing (question 6).

It is clear that a self-reporting system for groundwater monitoring will weaken the intent of the proposed new groundwater regulations to provide notification of releases to the environment. The intent of these regulations is to protect human health and the environment, but if the data cannot be available to the IEPA in a timely manner then the potential delays incurred by relying on a self-reporting (i.e., self-policing) system could result in more extensive environmental damage. In addition, a self-implementing system will create an immediate lack of trust by the public towards both the process and the CCDD/USF site owners/operators.

Evidence that groundwater was impacted by properly-run facilities (questions 7, 8, and 9)

Lack of data or the presentation of culled data does not constitute proof that impacts to groundwater are not occurring or will not occur in the future. There is a potential threat to groundwater from contaminants associated with CCDD/USF. The potential contamination that may be associated with CCDD/USF is from the materials themselves, even those screened and accepted within permit requirements (i.e., as in the case of PAH impacts associated with asphalt), and from materials deposited either accidentally or in violation of the law.

The evidence provided for CCDD sites in Lyons (was soil testing data) and Kane County (samples were not from a typical groundwater monitoring network) that showed no indication of groundwater contamination from monitoring data results is inconsequential in the decision-making process for implementation of groundwater monitoring at CCDD/USF facilities. These are only two sites and the monitoring was not done under a permitted system with IEPA scrutiny.

Remediation Objectives (questions 10 and 11)

Question 10: No comment on application of risk assessment factors, as regulated under Part 742, to CCDD /USF facilities.

Question 11: For cases in which baseline groundwater monitoring at existing CCDD/USF facilities show exceedances of groundwater quality standards from past practices related to disposal of CCDD/USF (i.e., pre-existing conditions), it is the position of Will County that those facilities must either achieve compliance via the Corrective Action Program detailed in Section 1100.755 of the proposed regulations in order to continue operating or discontinue operations. Allowing facilities to continue operation when there is evidence of impacts to groundwater moving off-site (i.e., “grandfathering” of existing contamination) that potentially endangers human health or the environment is not acceptable. However, it is acceptable that in cases of non-compliance with groundwater quality standards that application for a Groundwater Management Zone (GMZ) be allowed, thus allowing remedial alternatives through an IEPA approved Corrective Action Program to be implemented to achieve compliance. If compliance could not be demonstrated then the permit for the continued operation of the facility would be revoked.

Remediation Costs (question 12)

No comment on costs related to establishing a GMZ and implementation of remedial approaches to achieving compliance.

Applicable Groundwater Quality Standards (question 13)

Class I (potable resource) groundwater quality standards are appropriate for all hydrogeologic units at a CCDD/USF facility unless a demonstration can be made to the IEPA that the groundwater within any individual hydrogeologic unit potentially impacted by the facility can meet the definition of Class II (general resource) groundwater. Facility owners also have the option of petitioning the IPCB for reclassification of groundwater by adjusted standard pursuant to Title 35, Part 620, Section 260.

Location Restriction (questions 14 and 15)

Will County agrees with the Illinois Nature Preserve Commission (INPC) that the Class III (Special Resource) groundwater contribution areas to dedicated Nature Preserves should be afforded protection from potential groundwater impacts from CCDD/USF facilities. Given the potential high level of sensitivity of Nature Preserves and other Class III areas to degradation from groundwater impacts, Will County supports institution of a minimum setback distance of CCDD/USF facilities from these areas.

Part III. Response by Will County to Pre-Filed Questions Posed by the Office of the Attorney General Regarding the Necessity for Groundwater Monitoring, dated April 19, 2013.

A. General Questions

No comment.

B. Questions Concerning the Proposed Subpart G

1. Sampling Frequency (Section 1100.740):

- i. Why do the proposed Part 1100 regulations limit the frequency of groundwater monitoring at CCDD facilities to once a year, when the Board's inert waste landfill regulations require semi-annual testing for contaminants?

As discussed earlier under Part II, Question 4, it is the opinion of Will County that the initial frequency of groundwater monitoring be quarterly until such time as the variability in groundwater flow direction and groundwater quality can be established. Annual monitoring for contaminants does not take into consideration seasonal effects related to climate as it pertains to groundwater levels, groundwater pumpage, river and stream elevations, natural groundwater geochemistry, and other factors. As the recent flooding in northern Illinois this Spring demonstrated, rapid changes can occur to surface water elevations, and groundwater elevations, within a matter of days or weeks. Such changes can have similarly significant changes on groundwater quality that annual sampling cannot adequately address. It also allows for potential manipulation of groundwater sampling events so that compliance with groundwater standards can be seemingly achieved, even though such compliance may be for only a few weeks a year related to significant weather and hydrologic events.

Following establishment of a statistically defensible background well groundwater quality along with compliance well groundwater quality, decreasing monitoring to semi-annual and eventually annual frequencies would be acceptable.

2. Non-Compliance Response Program (Section 1100.745):

- i. Why do the proposed Part 1100 regulations allow a CCDD owner/operator 60 days to report an exceedance when the Board Regulations require an inert waste landfill operator to report an exceedance within 1 business day?

Reporting of non-compliance at CCDD/USF facilities should be in line with conditions established for other solid waste landfills, which requires reporting of an exceedance, or confirmed exceedance, within 10 days of the change in groundwater quality, identifying each well and each parameter. However, if there is an exceedance the owner/operator has the option of taking a resample of the exceeding parameter(s) within 45 days of the original sample date.

If no exceedance is confirmed with the resample then there is no significant change to groundwater quality and no notification to the IEPA is required.

- ii. Why do the proposed Part 1100 regulations allow a CCDD owner/operator 60 days to report an exceedance, when potentially each additional day more fill material could be disposed upon the contaminated soil or other waste?

See previous response.

- iii. How will the proposed Part 1100 regulations insure that these Corrective Action Programs are sufficient to address the identified groundwater contamination?

No comment.

- iv. Should the Corrective Action Program be subject to review and approval by the IEPA with appropriate time frames so that the approval process does not continue for an overly extended period of time, where groundwater contamination has been identified?

Implementation of corrective action in cases of non-compliance with groundwater quality standards should be in line with conditions established for other solid waste landfills. Following an exceedance, or if a resample shows that there is a confirmed exceedance, the owner/operator should have 30 days from that determination to submit an assessment monitoring plan to the IEPA, which could also take the form of a proposal to utilize the Alternate Non-Compliance Response Program of Section 1100.750. Once approved by the IEPA, the owner/operator would have 30 days to implement the monitoring plan and 90 days after the IEPA's approval to submit an assessment monitoring report, or submittal of the Alternate Non-Compliance Response. If the assessment monitoring report indicates that the facility has impacted groundwater, or if the Alternate Non-Compliance Response is rejected by the IEPA, then a Corrective Action Plan must be submitted within 30 days and implemented within 30 days of IEPA approval of that plan. Ultimately, this timeline provides uniformity between how groundwater quality exceedances are managed between CCDD/USF facilities and other solid waste landfills.

3. Alternate Non-Compliance Response Program (Section 1100.750):

- i. Why do the proposed Part 1100 regulations allow a CCDD owner/operator 300 days to provide an alternate non-compliance plan, when the plan and the support for it may be deficient and then the owner/operator would be required to sample the groundwater again as required in Section 1100.745(b), thereby providing an additional 120 days to provide the IEPA with the sampling results?

See previous response.

- ii. What incentive is there for any owner/operator to initiate the Section 1100.745(b) sampling without first attempting to provide the IEPA with a Section 1100.750 alternate non-compliance program?

No comment.

4. Dewatering Fill Operations (Section 1100.760):

- i. Why do not the proposed Part 1100 regulations require the CCDD fill operations or registered uncontaminated soil fill operations currently discharging from their facilities pursuant to an

NPDES permit to modify those permits to sample the discharge for all of the constituents identified in Subpart F?

Will County agrees that water samples should be analyzed to assess the water quality to be discharged under an NPDES permit. All of the Class I constituents required to be analyzed in groundwater should also be required for wastewater samples. Any contaminated water discharged to the surface may result in impacts to the environment.

Will County disagrees with the provision that “dewatering may delay compliance” with the groundwater monitoring requirements of Sections 1100.715 to 1100.755. Demonstration of the existence of a cone of depression at a facility should not release a facility from the requirement to monitor groundwater. Some frequency of groundwater monitoring should be required every year a facility is in operation regardless of whether there is dewatering or not. A facility saying that a cone of depression “is intended to be maintained for the next 12 months” is not protective of groundwater from contamination. A lot can happen in a year, including failure to maintain the cone of depression for short or extended periods, significant precipitation events, and flood events. It does not take long to contaminate groundwater, and maintaining groundwater monitoring during all periods of facility operation, whether dewatering is occurring or not, will ensure that any impacts to groundwater are identified within a reasonable time period.

Part IV. Response by Will County to Pre-Filed Questions Posed by the Illinois Association of Aggregate Producers (IAAP), dated April 18, 2013

Will County is supportive of extending all regulations pertaining to CCDD fill operations and uncontaminated soil fill operations, including groundwater monitoring, to the projects performed for, or by, the Illinois Department of Transportation, all counties, and all municipalities.

Respectfully submitted,



By: _____

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Attachments

Figure 1. Permitted Clean Construction & Demolition Sites with
Reported Wellhead Locations in Will County

Figure 2. Shallow Bedrock Aquifers in Illinois

Figure 3. Shallow Bedrock Community Water Supply Wells in Illinois

Elmhurst Chicago Stone Co.

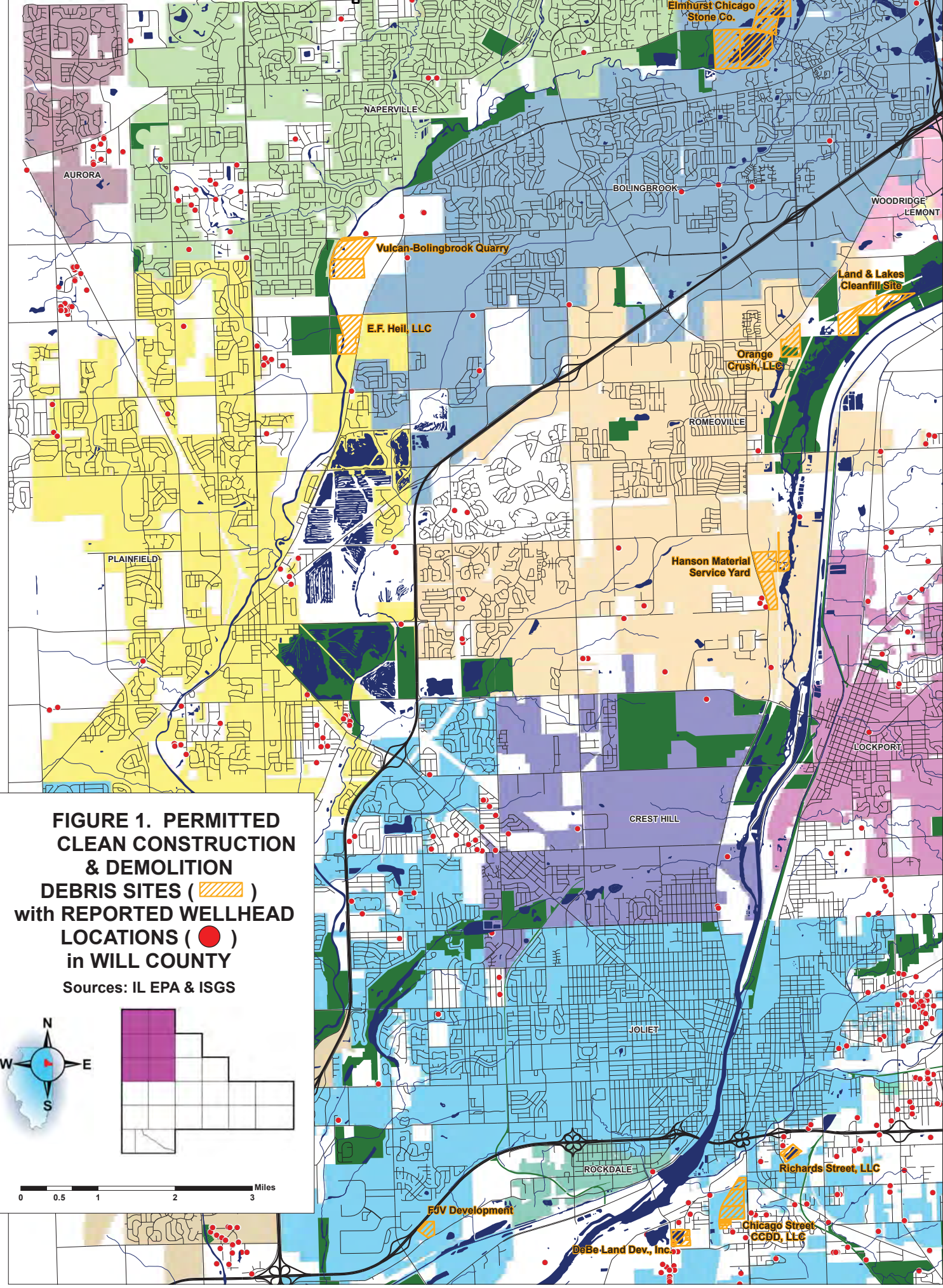


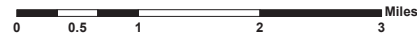
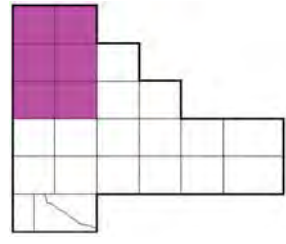


FIGURE 1. PERMITTED CLEAN CONSTRUCTION & DEMOLITION DEBRIS SITES () with REPORTED WELLHEAD LOCATIONS () in WILL COUNTY
 Sources: IL EPA & ISGS



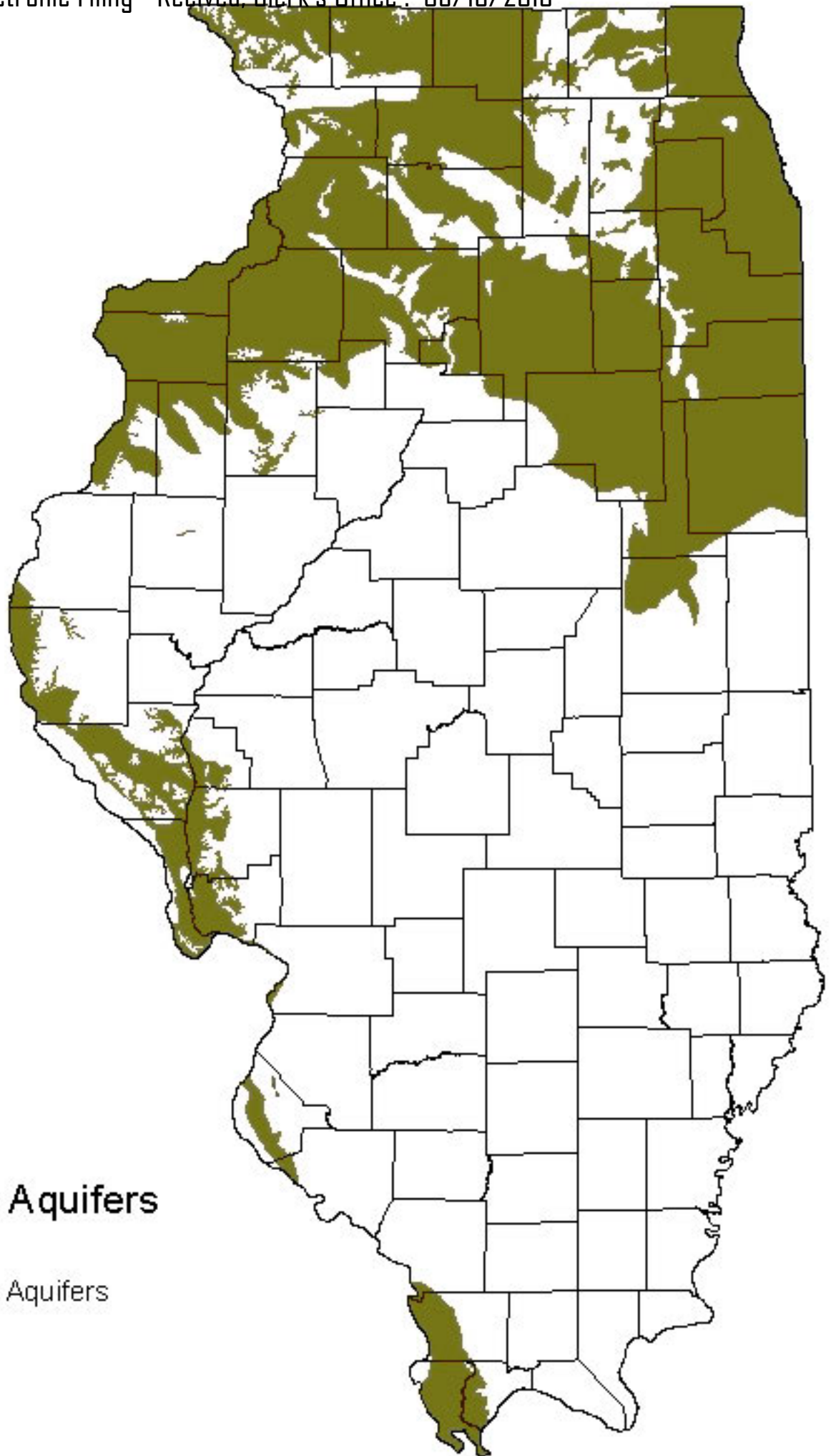
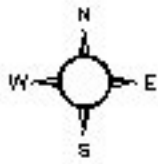
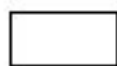


FIGURE 2.
Shallow Bedrock Aquifers

-  Shallow Bedrock Aquifers
-  Counties

(from Illinois State Geological Survey website)



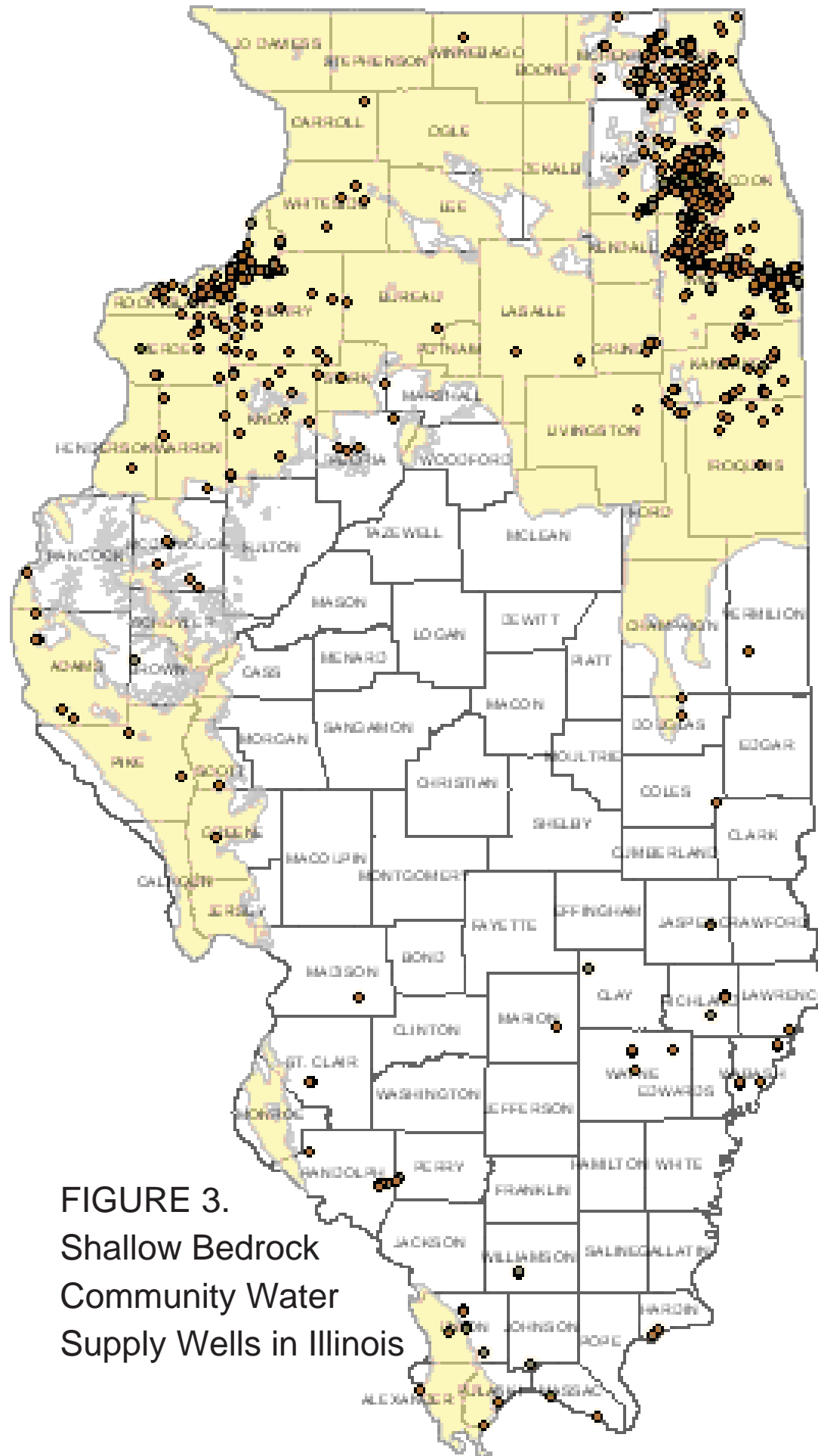


FIGURE 3.
Shallow Bedrock
Community Water
Supply Wells in Illinois

(from Illinois State Geological Survey website)