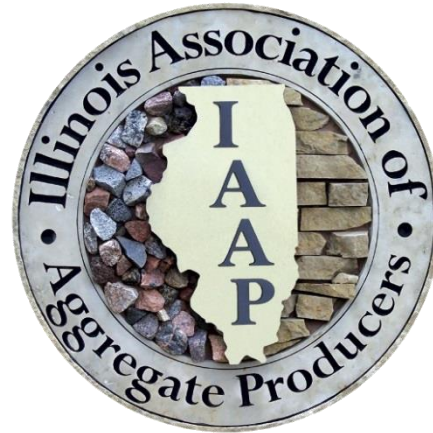


# CCDD Presentation



## **MARTIN N. FALLON, P.G.**

- Hydrogeologist and Project Manager – APTIM
- BS Geology and BBA Business – St. Norbert College, De Pere, WI
- Licensed Professional Geologist – Illinois and Indiana
- 18 years of Professional Experience
  - Siting, Design, Permitting, and Compliance for Solid Waste and CCDD Facilities
  - Coordination and Implementation of Large-Scale Hydrogeologic Investigations
  - Assessment of Subsurface Stratigraphy and Groundwater Flow
  - Environmental Monitoring System Design, Installation, and Operation
  - Characterization of Contaminated Sediments and Groundwater
  - Statistical Analysis of Groundwater Quality Data
  - Contaminant Transport Modeling

# WHAT IS CLEAN CONSTRUCTION AND DEMOLITION DEBRIS?

Clean Construction and Demolition Debris (CCDD) is uncontaminated broken concrete without protruding metal bars, bricks, rock, stone, or reclaimed asphalt pavement generated from construction or demolition activities. But it is mostly uncontaminated soil.



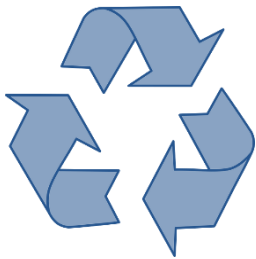
# PURPOSE OF CCDD PROGRAM

- Reclaims old quarries and returns them to productive use.
  - Since the early 1800s, Illinois has been one of the leading producers and consumer of sand and gravel and crushed-stone aggregate in the country.
  - Once quarries are filled back to grade, beneficial re-development can occur.



## PURPOSE OF CCDD PROGRAM (Continued)

- Saves landfill space.
- Saves money on construction.
  - We estimate that over 5 million cubic yards of clean fill are diverted to CCDD and USFO facilities each year, avoiding \$120M or more in landfill disposal costs annually.
  - Annual transportation cost savings are estimated at \$40-60M in just the Chicago metro area alone.
  - The vast majority of these savings are realized by taxpayers through reduced cost of public projects!



# REGULATIONS WERE DEVELOPED WITH STAKEHOLDER INPUT

- Over 88 pages of comments were received from 24 stakeholder groups.

American Institute of Professional Geologists

American Public Works Association – Chicago Metro Chapter

Chicago Public Building Commission

Chicago Street CCDD

City of Chicago

Forest Preserve District of Will County

Illinois Association of Aggregate Producers

Illinois Association of County Engineers

Illinois Attorney General's Office

Illinois Department of Transportation

Illinois Groundwater Association

Illinois Landscape Contractors Association

Illinois Road and Transportation Builders Association

Illinois Society of Professional Engineers

JAS Environmental, Inc.

Land Reclamation and Recycling Association

National Solid Waste Management Association

Naval Facilities Engineering Command Midwest

Professional Geologists of Indiana, Inc.

Suburban Public Works Directors Association

Vulcan Materials Company

Waste Management of Illinois, Inc.

Will County

Wills Burke Kelsey Associates, Inc.

- IPCB held three hearings, considered stakeholder input, and adopted the rules with amendments.

- Specifically rejected the need for groundwater monitoring, finding that up-front soil certification sufficiently protects groundwater.

# IPCB DECISION THAT GROUNDWATER MONITORING IS NOT REQUIRED WAS APPEALED AND UPHELD

- In 2012, the Appellate Court was petitioned to review the IPCB's order declining to require groundwater monitoring for CCDD sites.
- The IPCB decision that groundwater monitoring is not required was upheld!
- HB4315 would call for the legislature to interfere with the well-reasoned, carefully considered, and reaffirmed, decision that monitoring is unnecessary.



# RECENT INSPECTIONS FOUND PROGRAM TO BE WORKING WELL!

- Inspection and Soil Sampling at all CCDD Facilities
- Generally Found Sites to be Operating Correctly with a Handful of Exceptions (e.g. recordkeeping, etc.)
- Soil Sampling Identified One to Four Naturally Occurring Metals above Maximum Allowable Concentration (MAC) Table at Most Facilities
  - Iron, Manganese, Selenium, and/or Chromium
- Resulted in Numerous Violations for Same Issue
  - Material is a Waste, Non-CCDD Material, Impacting Environment and Drinking Water, Operating Landfill without Permit, Etc.

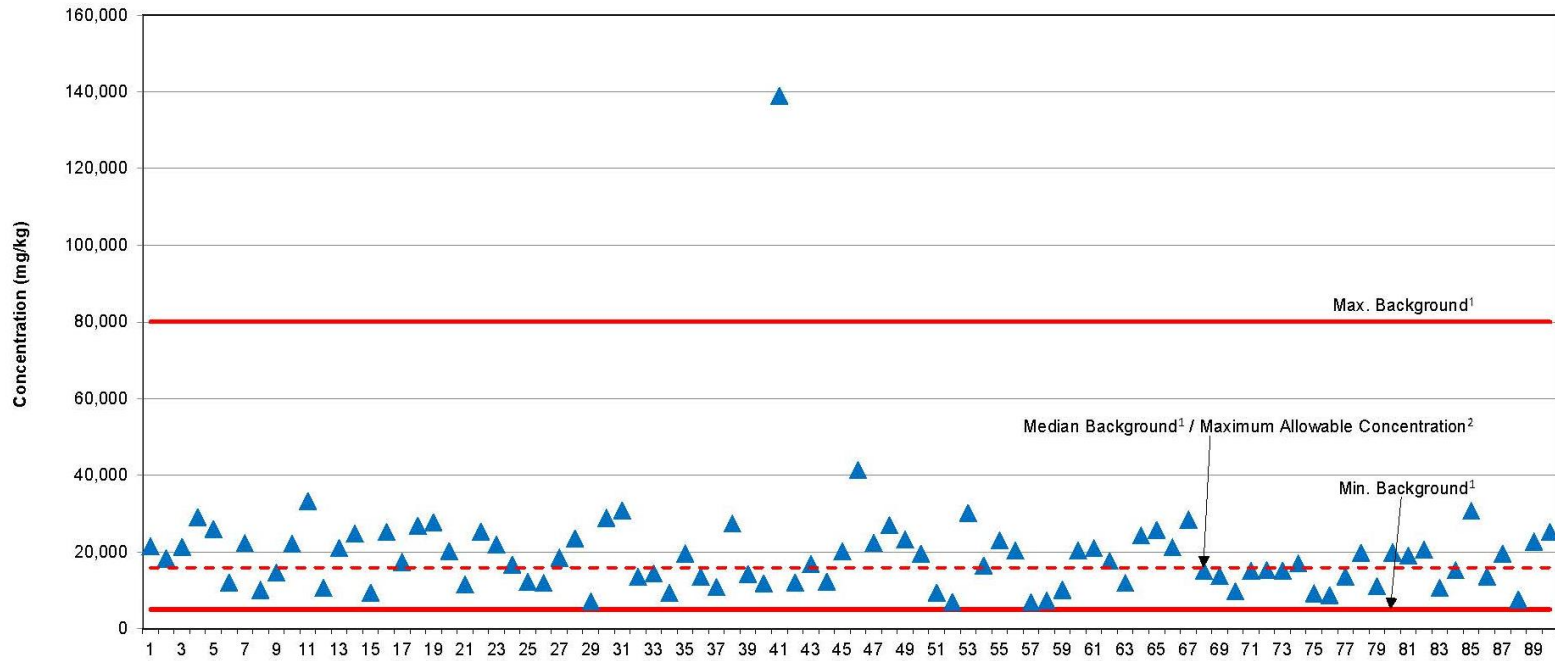




# **MAXIMUM ALLOWABLE CONCENTRATION TABLE IS FUNDAMENTALLY FLAWED**

- MAC Table values for metals were derived from IEPA 1994 publication that found clean soil to have much larger range of concentration.
  - The MAC Table Values Were Derived from Medians, not the True Background Range in Clean Soil.
- The MAC Table was never intended for use at fill sites, but as a screening tool to evaluate material at the source.
- ★ There is an effort underway to make necessary changes to the regulations, and discussions with IEPA are ongoing.

### Iron: Site-Specific Concentrations Compared to Background / Maximum Allowable Concentrations

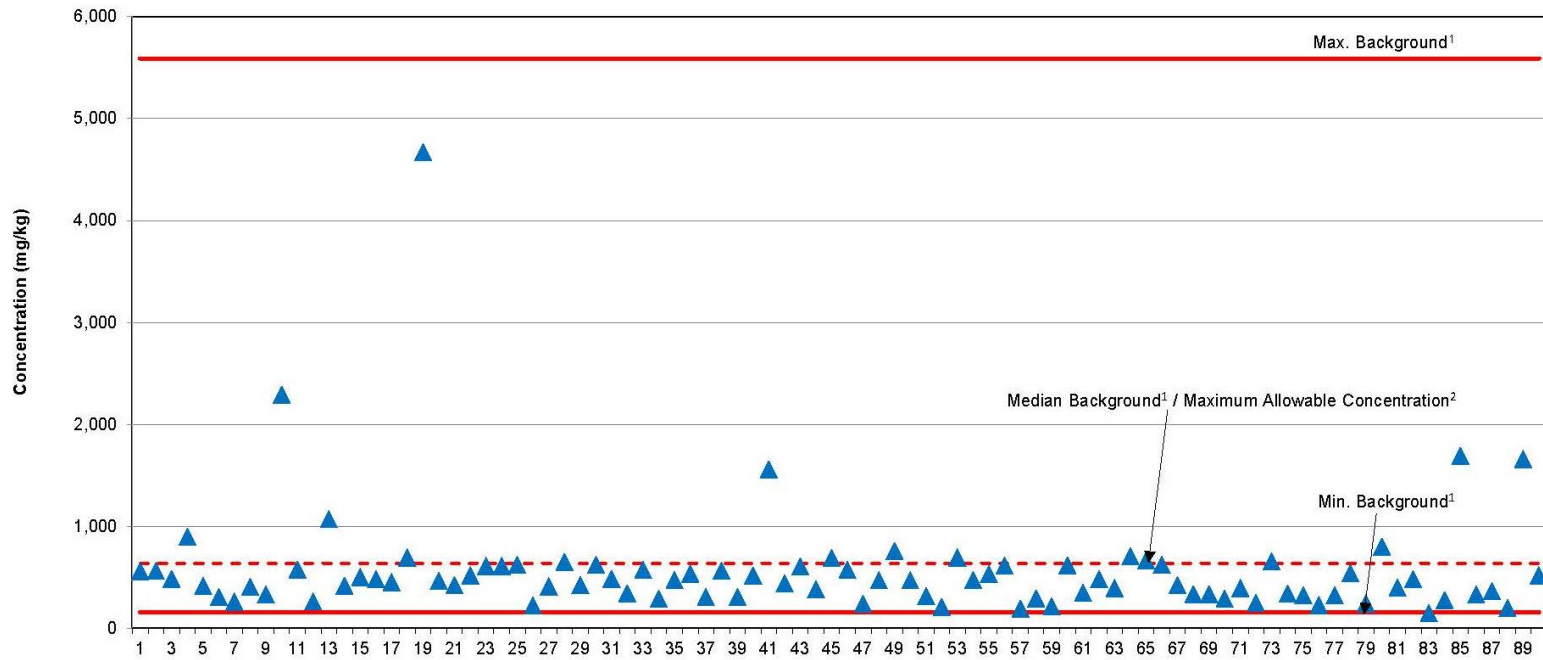


**Sources:**

1. Background concentrations: Illinois Environmental Protection Agency, "A Summary of Selected Background Conditions for Inorganics in Soil", August 1994.
2. Maximum Allowable Concentration (MAC): 35 IAC 1100 Subpart F, for MSA counties.
3. Site-specific concentrations as cited by IEPA in violation notices. Includes all sites for which APTIM has received via FOIA response as of November 7, 2017.



### Manganese: Site-Specific Concentrations Compared to Background / Maximum Allowable Concentrations

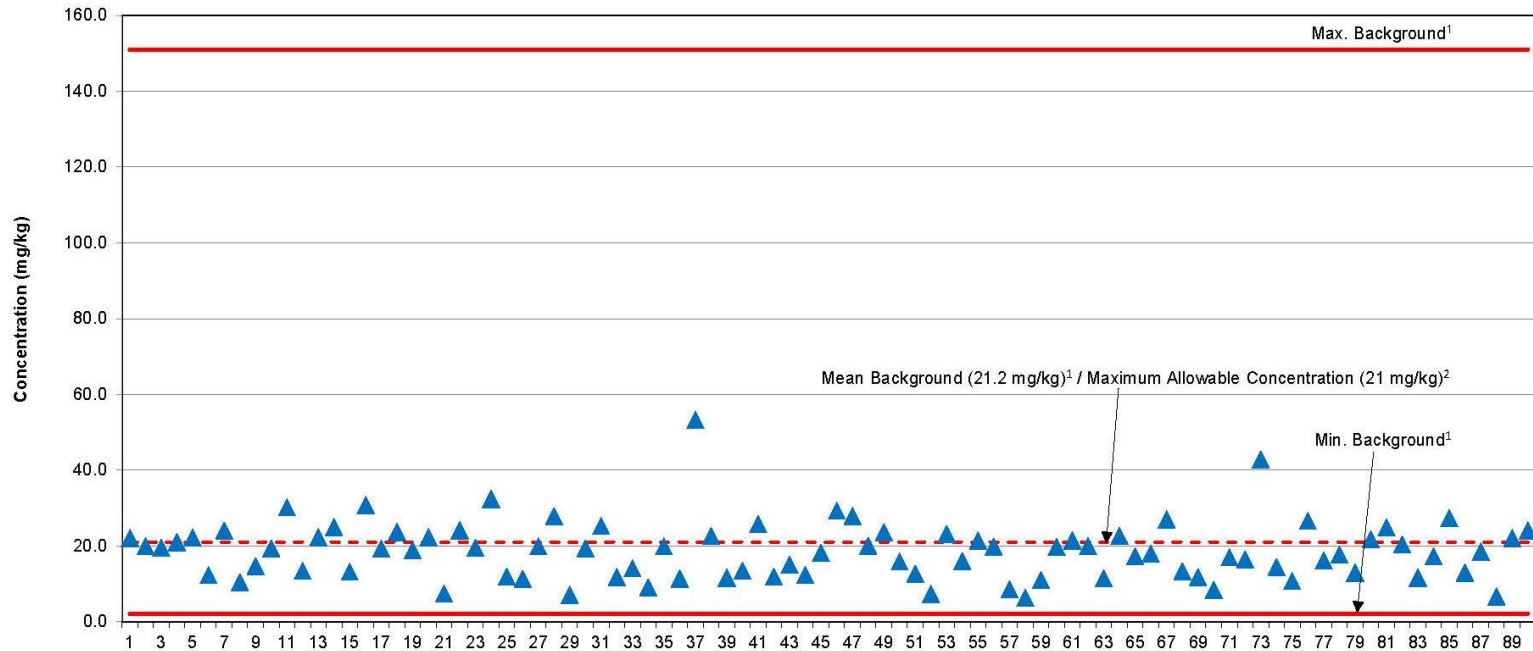


Sources:

1. Background concentrations: Illinois Environmental Protection Agency, "A Summary of Selected Background Conditions for Inorganics in Soil", August 1994.
2. Maximum Allowable Concentration (MAC): 35 IAC 1100 Subpart F, for MSA counties.
3. Site-specific concentrations as cited by IEPA in violation notices. Includes all sites for which APTIM has received via FOIA response as of November 7, 2017.



### Chromium: Site-Specific Concentrations Compared to Background / Maximum Allowable Concentrations



Sources:

1. Background concentrations: Illinois Environmental Protection Agency, "A Summary of Selected Background Conditions for Inorganics in Soil", August 1994.
2. Maximum Allowable Concentration (MAC): 35 IAC 1100 Subpart F.
3. Site-specific concentrations as cited by IEPA in violation notices. Includes all sites for which APTIM has received via FOIA response as of November 7, 2017.



## ADDITIONAL INFORMATION

### But Most Importantly...

- The IEPA did not analyze the sample for metals using the Synthetic Precipitation Leaching Procedure (SPLP) and compare the results to the respective TACO Class I Soil Component of the Groundwater Ingestion Exposure Route as allowed by 35 Ill. Adm. Code 1100.Subpart F.
- This test replicates actual subsurface conditions and is allowed by the regulations - presumably in recognition that the MAC table was developed using the lowest pH specific values in many cases!



## ADDITIONAL INFORMATION

- Iron and Manganese do not threaten the public or the environment.
  - A Manganese concentration of 1,600 mg/kg is acceptable for a residential playground, but has to be less than 636 mg/kg in a CCDD fill site!
- Chromium poses no threat unless it is in hexavalent form
  - IEPA only tested for total chromium.
- Error in IEPA's results for selenium is suspected.
  - Flags indicate that results are biased high; not replicated by third party labs.
  - Nevertheless, the MAC table value (1.3 mg/kg) is well below what California allows for land application on vegetable gardens (100 mg/kg).

# MISLEADING ARTICLES WERE PUBLISHED ANYWAY - PUSH FOR MONITORING CONTINUES

## AP Exclusive: 4 in 5 Illinois debris sites high in toxins

By JOHN O'CONNOR  
Associated Press

NOVEMBER 19, 2017, 9:00 AM | SPRINGFIELD, ILL.

**F**our in five Illinois quarries that backfill with concrete and other demolition waste show higher-than-acceptable levels of toxins, according to state sampling results obtained by The Associated Press.

Illinois Environmental Protection Agency testing last spring produced levels exceeding allowable limits of arsenic, lead, mercury, atrazine and other heavy metals and pesticides as well as volatile organic compounds that can cause health hazards, according to violation notices disclosed to the AP under the Illinois Freedom of Information Act.

## Toxins high in 80% of Illinois quarries that accept demolition waste

CHICAGO NEWS 11/23/2017, 01:01pm



Bud Boyer manages Chicago Street Clean Construction Demolition Debris LLC in Joliet | AP Photo

- Quotes:
  - Toxins high in 80% of Illinois Quarries...
  - It confirms my worst fears.
- In fact, the IEPA inspection effort found exactly the opposite!
- Likely driven by market competitors and misinformation; Reputations, businesses, and taxpayer monies are at stake; Operators not guilty, but asked to prove innocence.

# CCDD IS CLEAN AND GROUNDWATER MONITORING IS UNNECESSARY

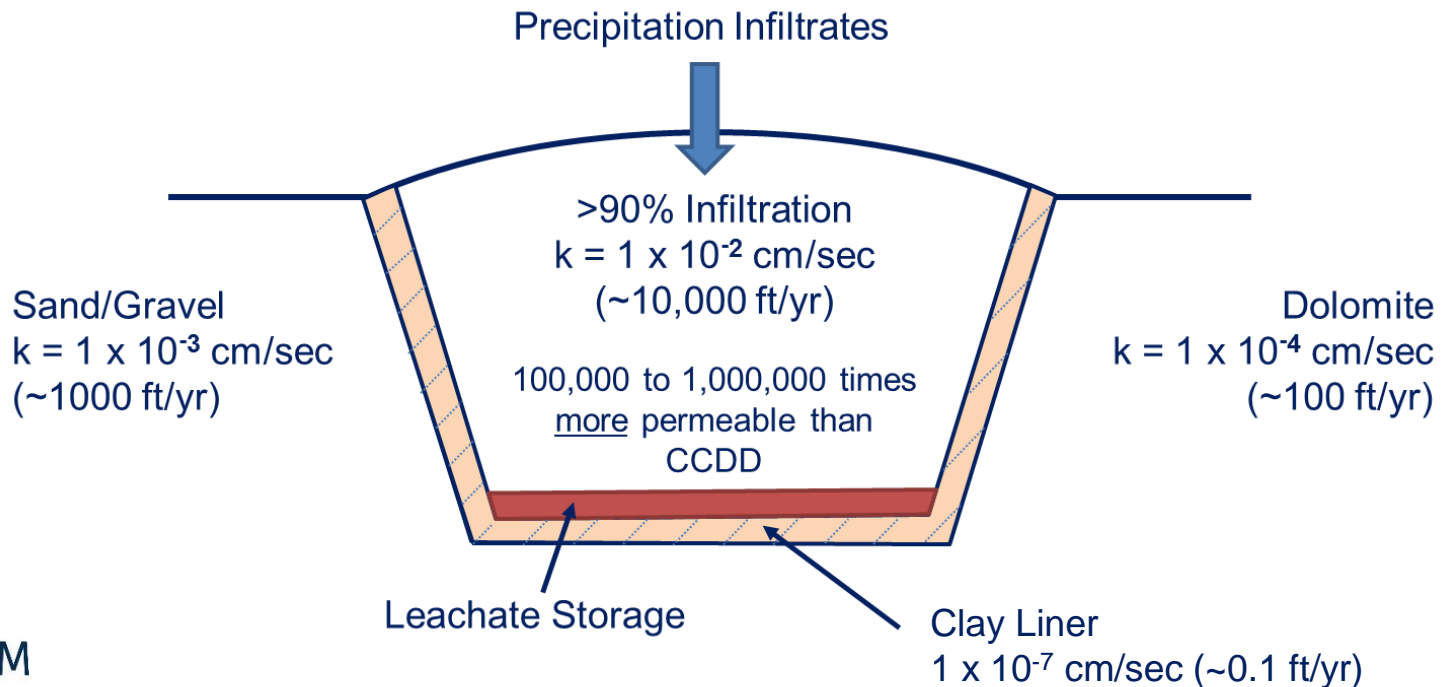
- The IEPA's recent inspection blitz found the program to be working.
- The uncontaminated material was in the ground and unmonitored before it was trucked to a CCDD site.
- The material is verified to be clean by:
  - Review of historic property use
  - Testing
  - P.E., P.G., Certification
  - Screening
- CCDD facilities can't be permitted within the setback zone of a potable water supply well. There are no wells to be impacted!
- Fill sites are different than MSW landfills.





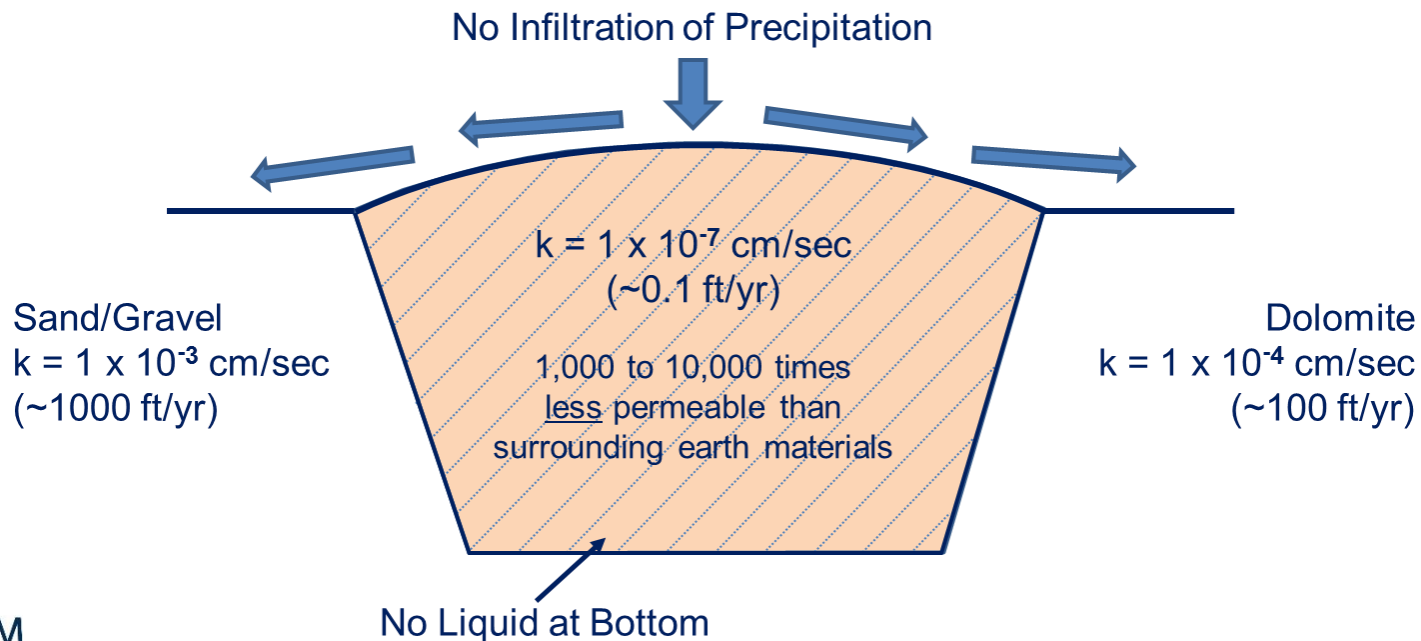
# FILL SITES ARE DIFFERENT THAN LANDFILLS

- Landfills generate leachate due to the infiltration of stormwater into the permeable waste mass.
  - Leachate is stored at the landfill bottom and is contained by liners consisting of at least three feet of compacted clay.

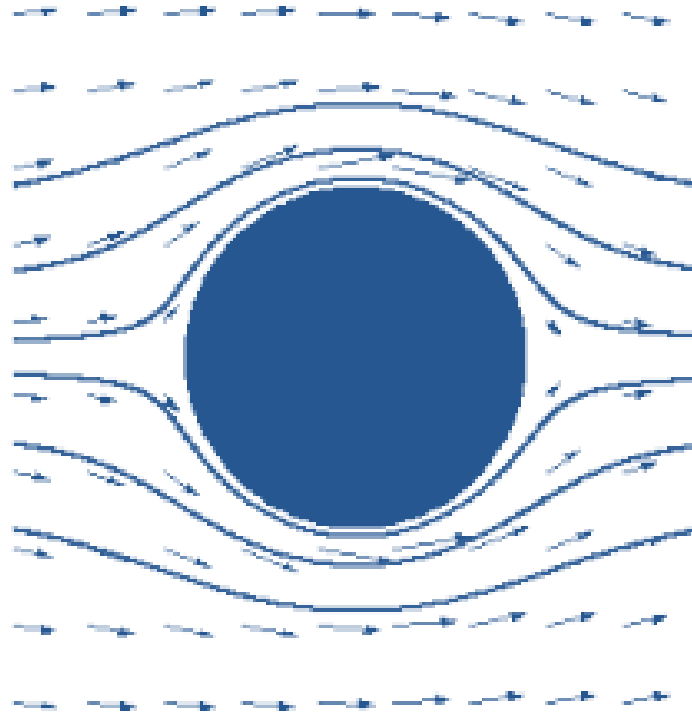


# FILL SITES ARE DIFFERENT THAN LANDFILLS

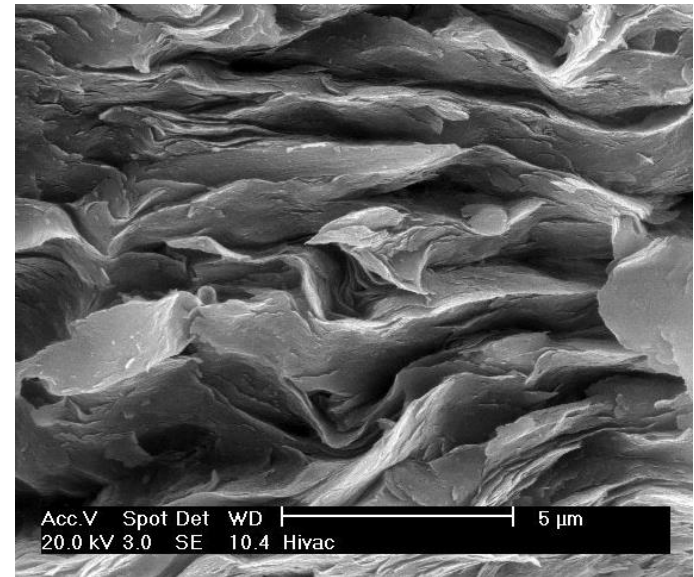
- CCDD Fill is 100,000 to 1,000,000 less permeable than the surrounding earth materials.
  - Forms a clay plug, with similar permeability as a landfill liner.
  - Little infiltration of stormwater - Groundwater flows around fill unit, not through-it.



# ADVECTIVE FLOW AROUND RELATIVELY IMPERMEABLE FILL



# MICROSCOPIC VIEW OF PLATY CLAY PARTICLES (VAST MAJORITY OF CCDD FILL CONTENT)



The platy structure inhibits groundwater movement.

Clay minerals also effectively remove metals from groundwater through adsorption, or cation exchange, with the particle surfaces.

# A WORKING, SAFE, AND BENEFICIAL PROGRAM IS BEING THREATENED

- A push for groundwater monitoring continues with no scientific basis, and despite compelling evidence that the program is working correctly.
- Mandating groundwater monitoring unnecessarily will increase disposal costs - undermining the original goals of the program.
  - Would halt reclamation of old quarries or pits and prevent redevelopment to productive uses.
  - Would increase taxpayer burden for public projects.
  - Would result in a waste of valuable landfill space.
  - Would eliminate good jobs and put CCDD sites out of business.
  - Would be detrimental to CCDD operators, while benefiting market competitors.



# **GROUPS OPPOSED TO WATER MONITORING MANDATE**

**IL Assn. of Aggregate Producers  
IUOE Local 150  
IL Road and Transportation Builders Assn.  
Chicago Laborers District Council  
Chicago Laborers District Council LMCC  
IL Asphalt Pavement Assn.  
Associated General Contractors of IL  
LIUNA Laborers Local 681  
Underground Contractors Assn. of IL  
IL Construction Industry Committee  
IL Mechanical & Specialty Contractors  
Great Lakes Construction Association  
Federation of Women Contractors  
Land Reclamation & Recycling Assn.  
Chicagoland Associated General Contractors  
American Council of Engineering Companies of IL  
Plumbing Contractors Assn. Midwest  
Mason Contractors Assn. of Greater Chicago  
IL Ready Mixed Concrete Assn.  
American Concrete Paving Assn. – IL Chapter  
Great Lakes Cement Promotion Council  
Greater Peoria Contractors and Suppliers Assn.  
Transportation for Illinois Coalition  
Teamsters Local 731  
Chicago and Cook County Building and Trades Council  
Illinois Pipe Trades  
Contractors Association of Will & Grundy Counties**

# QUESTIONS?

