



Well Abandonment

Rules, Guidance, and Ohio EPA's Procedures

Midwest Workshop in Environmental Health
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Outline

- Regulatory framework
- Site conditions requiring additional action
- Ohio EPA process
- Case study

Laws & Rules

- PRIVATE WATER SYSTEMS:
 - OAC 3701-28-17 Sealing of private water systems
 - OAC 3701-28-09 Materials used in the drilling and construction of wells
- ALL OTHER WATER WELLS:
 - OAC 3745-9-10 Abandoned well sealing
 - OAC 3745-9-07 Well grouting for construction or closure

Laws & Rules

- OAC 3701-28-17 Sealing of private water systems
- OAC 3745-9-10 Abandoned well sealing
 - General requirements
 - Specific requirements based on aquifer characteristics
 - Specific requirements based on well construction

More Laws & Rules

- MONITORING WELLS
 - OAC 3745-9-03 Monitoring well
- UIC CLASS V WELLS
 - OAC 3745-34-11 Class V wells
- ALL WATER WELLS:
 - ORC 1521.05 Well construction logs - well sealing reports

OAC 3745-9-03 Monitoring well

- (A) Ohio EPA *Technical Guidance Manual* as guide for well construction and sealing
- (B) Damaged or deteriorated well shall be either repaired or sealed
- (C) Well no longer being used shall be sealed

ORC 1521.05 Well logs & sealing reports

- 1521.05(B) Well log to be filed with ODNR - Division of Water Resources (DWR)
- 1521.05(C) Sealing report to be filed with ODNR-DWR

Guidance

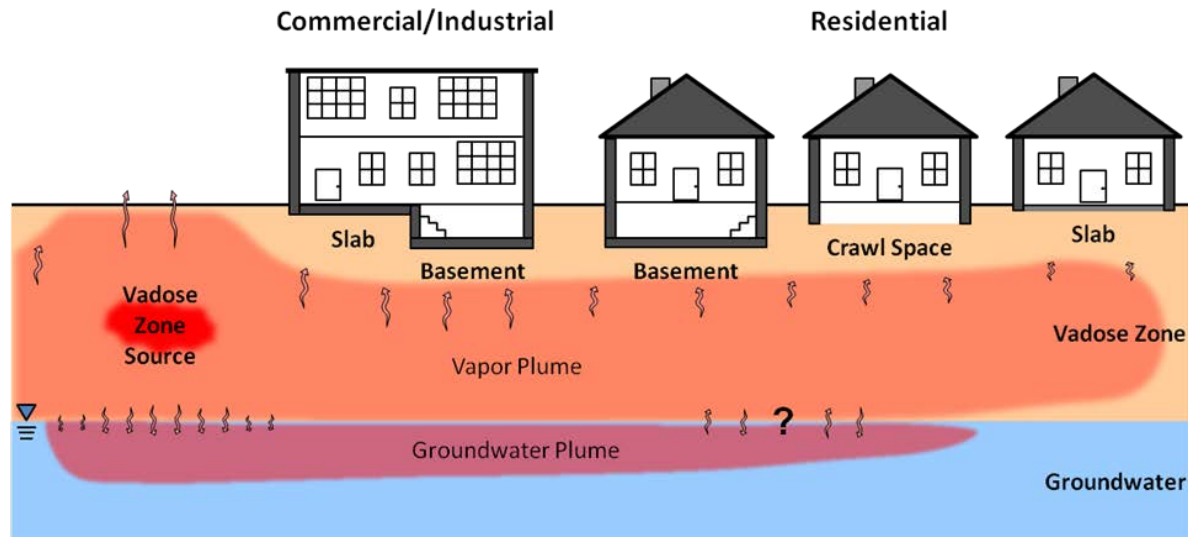
- *Regulations and Technical Guidance For Sealing Unused Wells and Boreholes (2015)*
- *Technical Guidance Manual for Hydrogeologic Investigations and Ground Water Monitoring*
 - *Chapter 9: Sealing Boreholes and Decommissioned Monitoring Wells (2016)*

Reasons to Seal an Unused Well

- Prevents ground water contamination
- Eliminates a physical hazard
- Minimizes further loss of confining pressure

Reasons to Seal Unused Monitoring Wells

- Eliminates a potential vapor intrusion pathway



- Eliminates potential Class V UIC issues

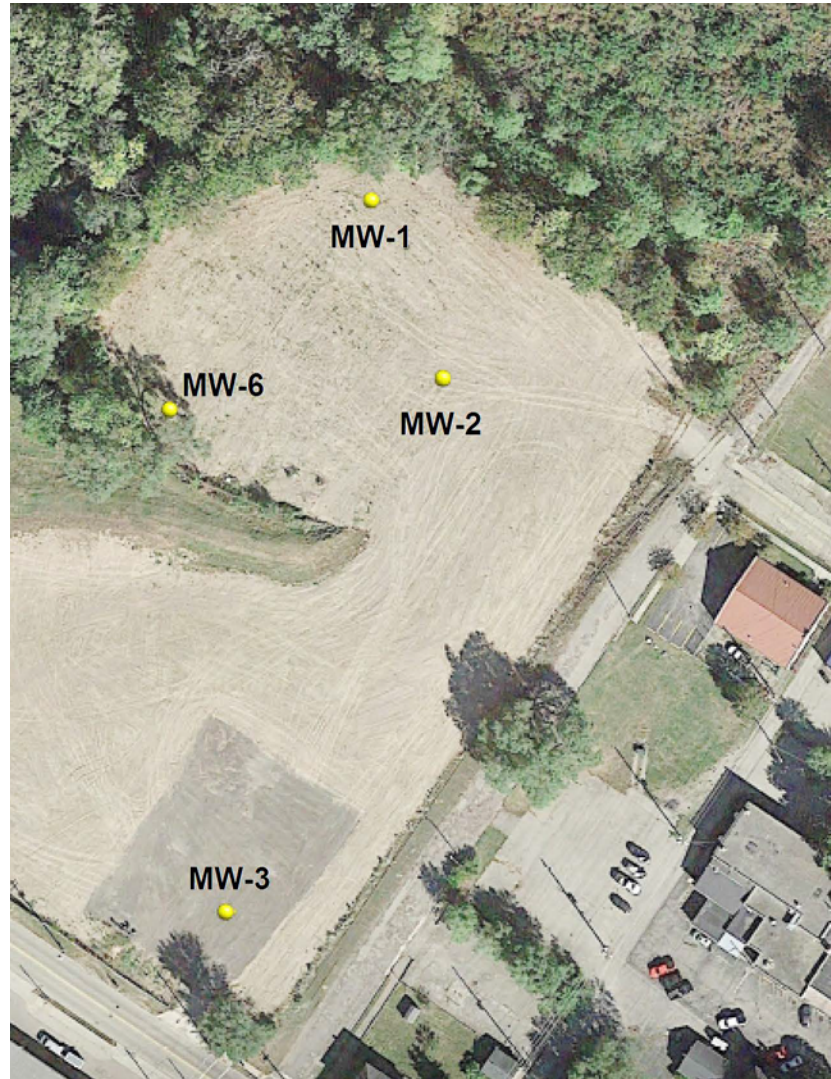
Site Conditions Reported to Ohio EPA

- “ ... sealing has been met to the extent practical, in large part because of the compacted clay placed over the site for redevelopment ...”
- “Wells ... could not be located but the areas were covered with clean fill during the restoration.”

Site Conditions Reported to Ohio EPA

- “ ... the casing was pulled, the holes were filled with a solid substance and left as is.”
- “ ... a monitoring well was severed during basin construction. The remaining portion of the well was pushed into the sidewall of the excavation and covered.”

Former STM, Inc., Butler Co.



Former STM, Inc., Butler Co.



Mounts Park, Warren Co.



- Preliminary well site visit

- Two unused wells

Mounts Park, Warren Co.



Outreach to Environmental Professionals

- Certified Professionals (Voluntary Action Program)
- Emphasis
 - The well is no longer in service
 - Need to file sealing report
 - Wells are ‘fixtures of the property’

Improper Well Abandonment Process

- More Information Needed Notice (MINN)
- Notice of Violation (NOV)
 - Well Location and Abandonment Plan
 - Well Location and Abandonment Report
- Resolution of Violation (ROV)

More Information Needed Notice

- Request information on wells
 - Those still in place
 - Documentation of proper abandonment
- If well(s) improperly abandoned, DDAGW issues an NOV

Notice of Violation

- Issue NOV first if “damaged” or “destroyed” wells documented in writing (correspondence or reports)
- Identify improperly sealed or damaged wells and / or wells no longer in use
- Request *Well Location and Abandonment Plan*

Well Location and Abandonment Plan

- Can provide information well is sealed
 - Forgot to file sealing records
 - Sealing documented in other reports
- List wells covered by building or pavement
- Reasonable plan/attempt to locate wells

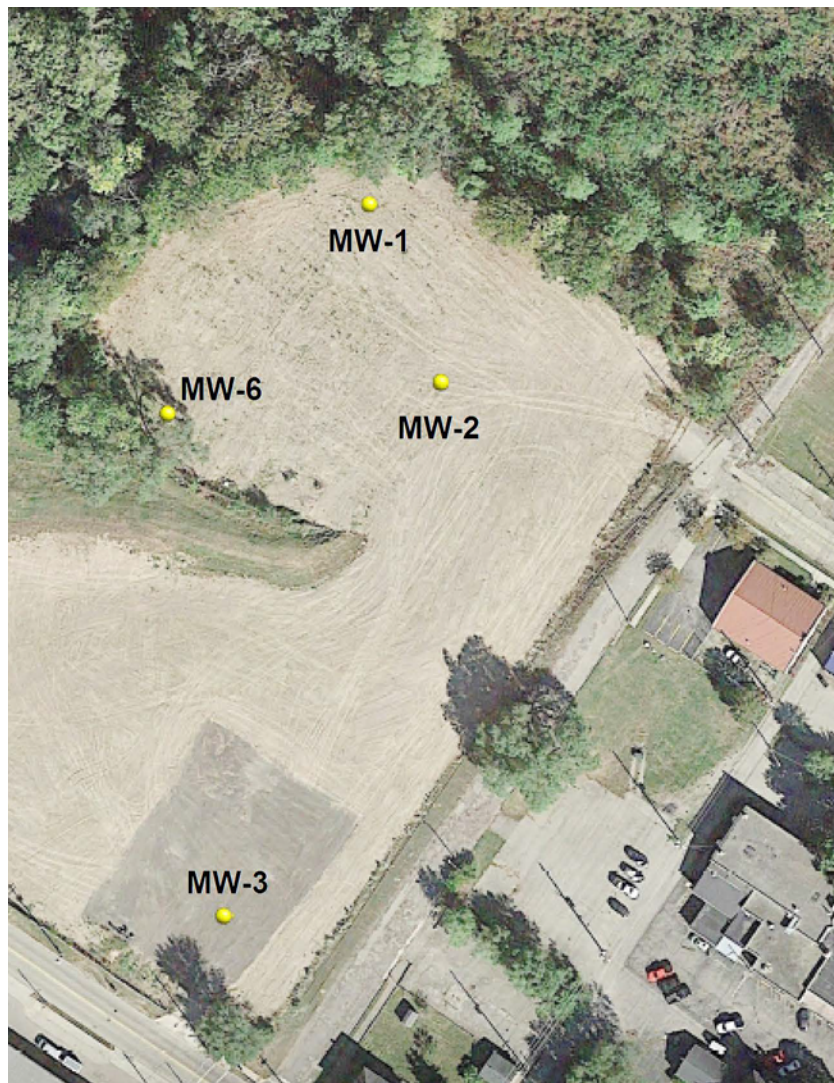
Well Location and Abandonment Report

- Document reasonable efforts to seal wells
- File well sealing reports with ODNR with copies in report
- Compliance with ORC 6111: Evaluate potential impacts to ground water for remaining improperly sealed wells

Resolution of Violation

- DDAGW acknowledgement of compliance with:
 - ORC 1521.05(C)
 - ORC 6111
- Issued by DDAGW w/in 45 days of receiving report

Former STM, Inc., Butler Co.



- No Further Action Letter noted six monitoring wells “destroyed or abandoned” during demolition
- Ohio EPA asked for more information regarding well status

Former STM, Inc., Butler Co.

- Notice of Violation
 - Properly abandon the destroyed wells following the TGM
 - Submit work plan to Ohio EPA
 - Documentation must be provided to Ohio EPA
 - Submit well logs and well sealing forms to ODNR

Former STM, Inc.

- Submitted Work Plan to find and abandon wells







DNR 7610.12e		WATER WELL SEALING REPORT e-FORM OHIO DEPARTMENT OF NATURAL RESOURCES Division of Soil and Water Resources 2045 Morse Road, Bldg B Columbus, OH 43229-6693 Voice: (614) 265-6740 Fax: (614) 265-6767		313969																											
LOCATION																															
County <u>BUTLER</u>		Township <u>LEMON</u>		Section No. _____ Lot No. _____																											
Owner <u>CITY OF MIDDLETOWN</u>																															
Address of Well Location <u>801 FIRST AVE</u>																															
City <u>MIDDLETOWN</u>		Zip Code <u>45044</u>																													
Well Location Description <small>(120 Characters)</small>																															
Location of Well in either: <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <input type="checkbox"/> State Plane OR <input type="checkbox"/> Latitude/Longitude </div> <div> <table style="border-collapse: collapse;"> <tr> <td style="text-align: center;">N</td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="text-align: center;">S</td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="padding: 0 5px;">x</td> <td style="border: 1px solid black; width: 100px; height: 20px;"></td> <td style="padding: 0 5px;">+/-</td> <td style="border: 1px solid black; width: 50px; height: 20px;"></td> <td style="padding: 0 5px;">ft.</td> <td style="padding: 0 10px;">y</td> <td style="border: 1px solid black; width: 100px; height: 20px;"></td> <td style="padding: 0 5px;">+/-</td> <td style="border: 1px solid black; width: 50px; height: 20px;"></td> <td style="padding: 0 5px;">ft.</td> </tr> <tr> <td colspan="13"> Latitude <u>39.516447</u> Longitude <u>-84.407706</u> </td> </tr> </table> </div> </div>					N		S		x		+/-		ft.	y		+/-		ft.	Latitude <u>39.516447</u> Longitude <u>-84.407706</u>												
N		S		x		+/-		ft.	y		+/-		ft.																		
Latitude <u>39.516447</u> Longitude <u>-84.407706</u>																															
Elevation of Well +/- _____ ft. Datum Plane: <input type="checkbox"/> NAD27 <input checked="" type="checkbox"/> NAD83																															
Source of Coordinates: <input type="checkbox"/> GPS <input type="checkbox"/> Survey <input checked="" type="checkbox"/> Other <u>GLOBAL POSITIONING SYSTEM</u> Source of Elevation: <input type="checkbox"/> GPS <input type="checkbox"/> Survey <input type="checkbox"/> Other _____																															
WELL IDENTIFICATION ODNR Well Log Number _____ Project Well ID <u>MW1</u>																															
MEASURED CONSTRUCTION DETAILS																															
Date of measurements <u>10/21/2016</u>																															
Depth of Well <u>35</u> ft. Static Water Level <u>26</u> ft.																															
Borehole Depth <u>35</u> ft. Borehole Diameter <u>8</u> in.																															
Casing Diameter <u>2</u> in. Casing Length <u>35</u> ft. Casing Type <u>PVC</u>																															
SEALING PROCEDURE																															
Placement:		Sealing Material	Volume/Weight Used <small>Units Required</small>	Placement Method																											
From <u>0</u> ft. To <u>35</u> ft.		<u>Bentonite slurry</u>	<u>54.1 GAL</u>	<u>Pumped w/ tremie pipe</u>																											
From _____ ft. To _____ ft.		_____	_____	_____																											
From _____ ft. To _____ ft.		_____	_____	_____																											
From _____ ft. To _____ ft.		_____	_____	_____																											
Condition of Casing _____ Was Casing Removed? <input checked="" type="checkbox"/> Yes or <input type="checkbox"/> No <small>(check one)</small>																															
If casing Not Removed , was it Perforated? <input type="checkbox"/> Yes or <input checked="" type="checkbox"/> No <small>(check one)</small> Perforations: From _____ ft. To _____ ft.																															
Date Sealing Performed <u>10/21/2016</u>																															
Comments/Reason for Sealing <u>WELL CASING PULLED BOREHOLE OVER DRILLED/ WELL NO LONGER NEEDED</u>																															
CONTRACTOR																															
Name <u>ENVIROCORE, LIMITED</u>		ODH Registration # <u>003259</u>																													
Address <u>8250 ESTATES PK</u>																															
City/State/Zip <u>PLAIN CITY, OH 43064</u>																															
e-Signature _____		JOE FLECK Filed electronically on <u>11/4/2016</u>																													
I hereby certify the information given is accurate and correct to the best of my knowledge. Completion of this form is required by section 1521.05, Ohio Revised Code - file within 30 days after completion of sealing. Distribute additional copies to: Customer, Driller and Local Health Department.																															

One Final Thing ...

- Prior to excavation activities, all of the existing monitoring wells ... were abandoned.
- The abandonment logs were completed online and submitted to the Ohio Department of Natural Resources (ODNR).

Questions?

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