

1 **Ground Water Classification
And Response Requirements**

OAC 3745-300-10

Certified Professional
8-Hour Training

2 **Ground Water Rule**

- Classification
- Urban setting designation
- Response requirements

3 **Ground Water Classification**

- Each zone that exceeds UPUS must be classified
- Only those zones that exceed UPUS are classified
- Ground water classification determines the applicable response requirements for that zone

4 **Ground Water Classification**

- Each zone that meets UPUS is not classified but must be protected
 - Protection of next lower zone generally means deeper zones are also protected
- Different zones may have different classifications depending on their characteristics

5 **Ground Water Classification**

- Critical Resource Ground Water
- Class A Ground Water
- Class B Ground Water

6 **Critical Resource Ground Water**

Is in a “drinking water source protection area for a public water system using ground water”

- This is a defined term in the rules
- Only applied to the zone used by the public water system

7 **Critical Resource Ground Water**

- Part of an unconsolidated zone that is capable of yielding 100 gpm over 24 hrs
- Is in a consolidated Sole Source Aquifer

8 **Class A Ground Water**

- Zone is used for potable purposes within ½ mile of the property boundary
 - Well search, e.g. ODNR and County Health Dept. records and field survey
- Zone yields greater than 0.1 gpm and has TDS less than 3,000 mg/L
 - Testing for TDS is optional, i.e. can assume TDS is less than 3,000 mg/L

9 **Class A Ground Water**

- Does not meet any of the criteria for critical resource ground water
 - Can assume Class A, if critical resource ground water can be ruled out
 - ODNR Ground Water Resource Maps can help distinguish between Class A and Critical Resource ground water

10 **Class B Ground Water**

- Does not meet any of the criteria for Critical Resource or Class A ground water
 - Cannot assume Class B, yield testing of the zone or TDS analysis must be done
 - ODNR Ground Water Resource Maps can help determine if it is worthwhile investigating

Class B

11 **Class B Ground Water**

Two criteria turn an otherwise Class A ground water into Class B

- Class B by comparison to a lower zone
- Class B by depth from ground surface

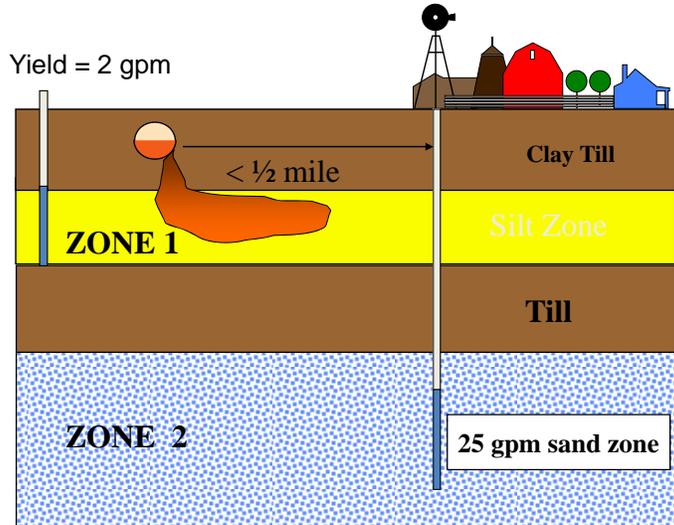
12 **Class B by Comparison**

- Zone contains less than 3,000 mg/L TDS
- Ground water zone being classified must yield less than 3 gpm

13 **Class B by Comparison**

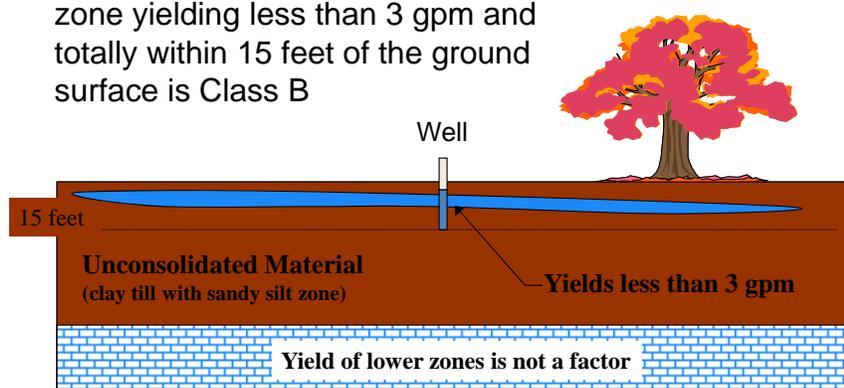
- Ground water zone used for comparison must be:
 - Beneath the property
 - Have a yield at least twice that of the zone being classified, but yield at least 3 gpm
 - Be a likely source of potable water within 1 mile

Class B by Comparison



Class B by Depth from Ground Surface

- Ground water in an unconsolidated zone yielding less than 3 gpm and totally within 15 feet of the ground surface is Class B



- 16  **Summary of Ground Water Classification**
- ODNR resources
 - Potable water wells logs
 - Oil and gas well logs
 - Ground water resource maps
 - Zones are Critical Resource ground water if:
 - Zone is used by a public water system, and
 - Property is in a “drinking water source protection area for a public water system using ground water”
- 17  **Summary of Ground Water Classification**
- Can assume Class A, if Critical Resource is ruled out
 - Yield testing is required to determine Class B by yield
 - Analysis of TDS is only required if TDS is used to make a Class B determination
- 18  **Urban Setting Designation**
- Evaluates the use of ground water as a potable resource
 - Eliminates the off-property potable use pathway near a VAP Property
 - Changes the POC for ground water response requirements
- 19  **How a USD Changes the Point of Compliance**
- Class B: No change
 - Class A: Do not need to meet UPUS at the property boundary
 - Critical Resource: POC for UPUS is moved to ½ mile from the property or the USD boundary, whichever is greater
- 20  **USD Threshold Criteria**
- USD can only be located within a community that is surrounded by:
 - City, or
 - Township(s) with populations of twenty thousand or more residents in unincorporated areas, or
 - The unincorporated portion of a township that has an average population density of 650 people per square mile in the unincorporated area, or
- 21  **USD Threshold Criteria (cont.)**
- A former township that is entirely composed of municipal corporations, or
 - An area that is completely surrounded by areas that are otherwise eligible as described above.
- 22  **USD Threshold Criteria (cont.)**
- Municipal water system has a connection rate of at least 90% of parcels
 - Water system capable of meeting future water needs
 - Located outside of a ground water source water protection area
- 23  **USD Threshold Criteria (cont.)**
- No potable wells within ½ miles of USD boundary
 - If USD area overlies vital ground water zones, must demonstrate no new potable wells will be installed within ½ miles of USD boundary
- 24  **Making a USD Request**
- CP must make the request
 - Granting not automatic based on threshold criteria
 - Additional Criteria For Approval/Denial
 - Local and regional water needs
 - The potential impact of the USD on local jurisdictions

– Potential future use of ground water in the region

25 **USD Request Review**

- Ohio EPA consults with legislative authorities
- Ohio EPA publishes public notice of USD request in local newspaper
- Public information session may be held
- USD applicant is responsible for all Ohio EPA costs for evaluating USD request

26 **Use of USD to Support an NFA Letter**

- CP must demonstrate in the NFA Letter that certain USD criteria are still valid when the NFA Letter is issued
- CP may rely upon Director's determination, if it is recent

27 **Use of USD to Support NFA Letter**

- Ohio EPA reviews area wide USDs once every five years
- USD may be eliminated or its may be boundaries reduced
- Any action will be public noticed and all CPs will be notified
- Changes to a USD only affect new NFA Letters, i.e. a CNS already issued is still valid

28 **Ground Water Response Requirements**

- Classification of Ground Water Zone
- Location of Sources or Source Areas
- Urban Setting Designation (USD)

29 **Response Requirements**

- All classifications of ground water must prevent human exposure to contaminated ground water on the property, either by
 - Implementing institutional or engineering controls, or
 - Restoring the ground water to meet UPUS
- REMINDER – Response requirements for non-potable pathways and other media (e.g., vapor intrusion) are addressed in Rule 7

30 **Off-property contamination**

- Prevent human exposure to contaminated to contaminated ground water on the property
- Prevent leaching of COCs resulting in UPUS being exceeded at the point of compliance.
 - Only applies to Critical Resource or Class A

31 **Class A and Critical Resource Without USD**

- The Point of Compliance for UPUS is the property boundary (with a few exceptions)
- Must ensure ground water above UPUS does not migrate beyond the property boundary

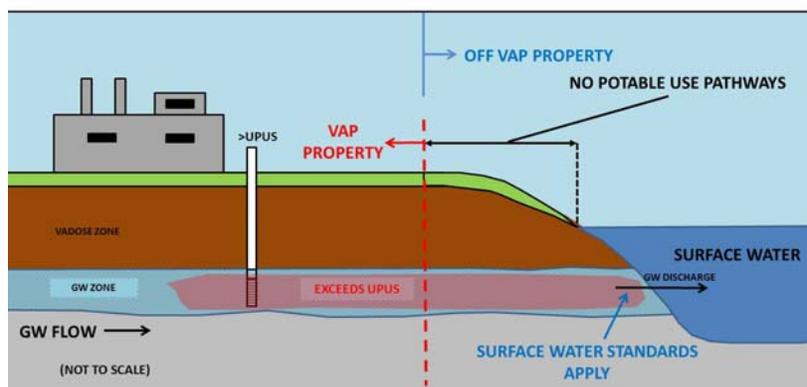
Class A and Critical Resource Points of Compliance (without USD)

Situation → Potable Use POC

- Property adjacent to transportation corridor
- GW discharging to surface water in close proximity (not necessarily adjacent) and GW not likely to be used for potable purposes
- Down-gradient edge of transportation corridor
- Surface water boundary, and surface water standards apply



SURFACE WATER COMPLIANCE BOUNDARY



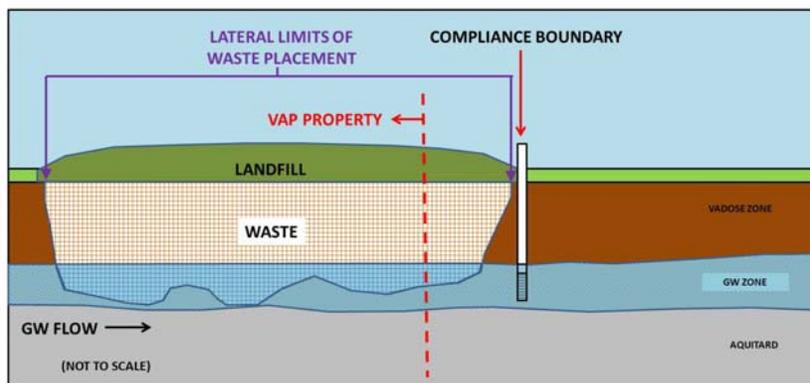
Class A and Critical Resource Points of Compliance (without USD)

Situation → Potable Use POC

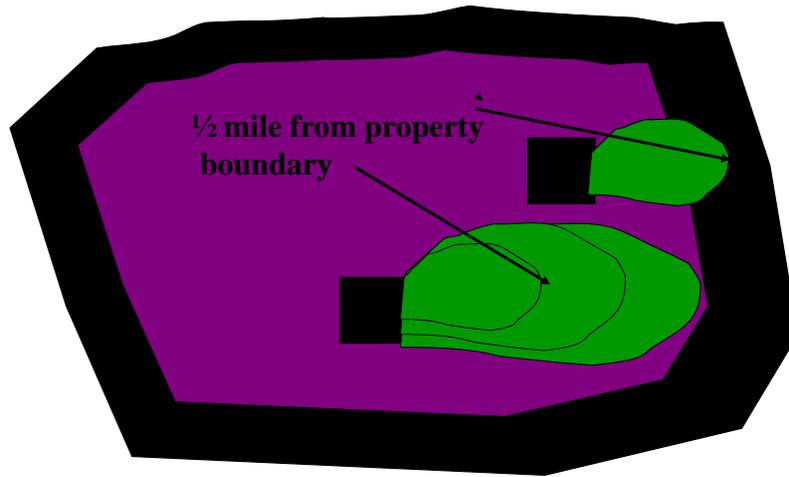
- Adjacent, down-gradient property has an Environmental Covenant
- Property boundary bisects a landfill
- Down-gradient edge of adjacent property
- Down-gradient edge of the lateral extent of the waste in the landfill



LANDFILL COMPLIANCE BOUNDARY



Alternate POC for Critical Resource with USD



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37  **Class A Without a USD and All Critical Resource**

Prevent potable use exposures at existing off property wells by:

- Providing and alternative supply of water,
- Providing water treatment, OR
- Remediate ground water to meet UPUS

38  **Critical Resource**

If Critical Resource ground water above UPUS has migrated off-site,

- Must notify down gradient property owners
- Prevent off-property exposures to future potable users of ground water, a.k.a. “the re-opener” in O&M plan

39  **Class B Ground Water and Class A With a USD**

- Prevent people from drinking ground water on the property
- Ensure non-drinking exposures to humans on and off property meet applicable standards or remediate
- Protect important ecological resources both on and off property

40  **Last Thoughts...**

- Classification is critical because it leads to correct response requirements
- Potable use of ground water is not the only pathway that needs to be considered
- Must also evaluate non-potable ground water pathways both on and off property

GROUND WATER CLASSIFICATION FLOW CHART

