USING THE SOURCE WATER PROTECTION SELF-ASSESSMENT GUIDE

For Non-Municipal Public Water Supply Systems

Contamination Happens!

"I worry about it every day. They fight over everything instead of doing something about it."

Terry Barnhart
owns auto repair shop near the Motor Wheel site

Water Worries

Debate continues over cleanup of contaminated water in

WELLS AREN'T WELL

A chemical meant to clean the air now taints water

By EMILIA ASKARI AND SALLY FARHAT

Kelly Gorham sits in her spacious Clarkston home with concern on her mind. A water cooler in a dining room corner hints at the source of her unease.

Gorham is one of hundreds of Michigan residents whose wells are tainted by a chemical known as MTBE. It seeped into their wells from leaking underground storage tanks at gas stations.

"I'm worried that when I take a bath I'm a guinea pig," said Gorham, who lives on Bluegrass Avenue west of I-75, about a block from a Shell sta-

tion that is suspected of being among those causing the contamination.

In northern Oakland County, where wells are common and sandy soil provides a porous path for MTBE to spread, residents are growing concerned about the gasoline additive.

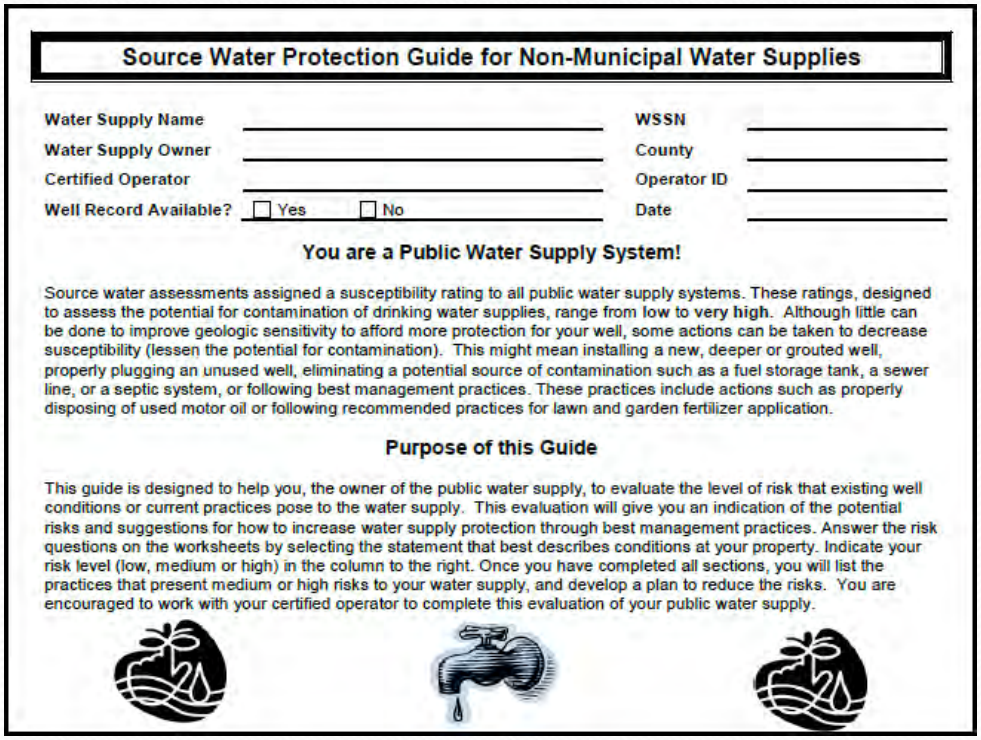
MTBE

SOME OF THE TAINTED WELLS

What's Next?
What Can You Do?

Source Water Protection Guide

Use the information to develop long-term strategies to protect your drinking water source



Source Water Protection Guide for Non-Municipal Water Supplies

Water Supply Name	_____	**WSSN**	_____
Water Supply Owner	_____	**County**	_____
Certified Operator	_____	**Operator ID**	_____
Well Record Available?	☐ Yes ☐ No	**Date**	_____

You are a Public Water Supply System!

Source water assessments assigned a susceptibility rating to all public water supply systems. These ratings, designed to assess the potential for contamination of drinking water supplies, range from **low** to **very high**. Although little can be done to improve geologic sensitivity to afford more protection for your well, some actions can be taken to decrease susceptibility (lessen the potential for contamination). This might mean installing a new, deeper or grouted well, properly plugging an unused well, eliminating a potential source of contamination such as a fuel storage tank, a sewer line, or a septic system, or following best management practices. These practices include actions such as properly disposing of used motor oil or following recommended practices for lawn and garden fertilizer application.

Purpose of this Guide

This guide is designed to help you, the owner of the public water supply, to evaluate the level of risk that existing well conditions or current practices pose to the water supply. This evaluation will give you an indication of the potential risks and suggestions for how to increase water supply protection through best management practices. Answer the risk questions on the worksheets by selecting the statement that best describes conditions at your property. Indicate your risk level (low, medium or high) in the column to the right. Once you have completed all sections, you will list the practices that present medium or high risks to your water supply, and develop a plan to reduce the risks. You are encouraged to work with your certified operator to complete this evaluation of your public water supply.

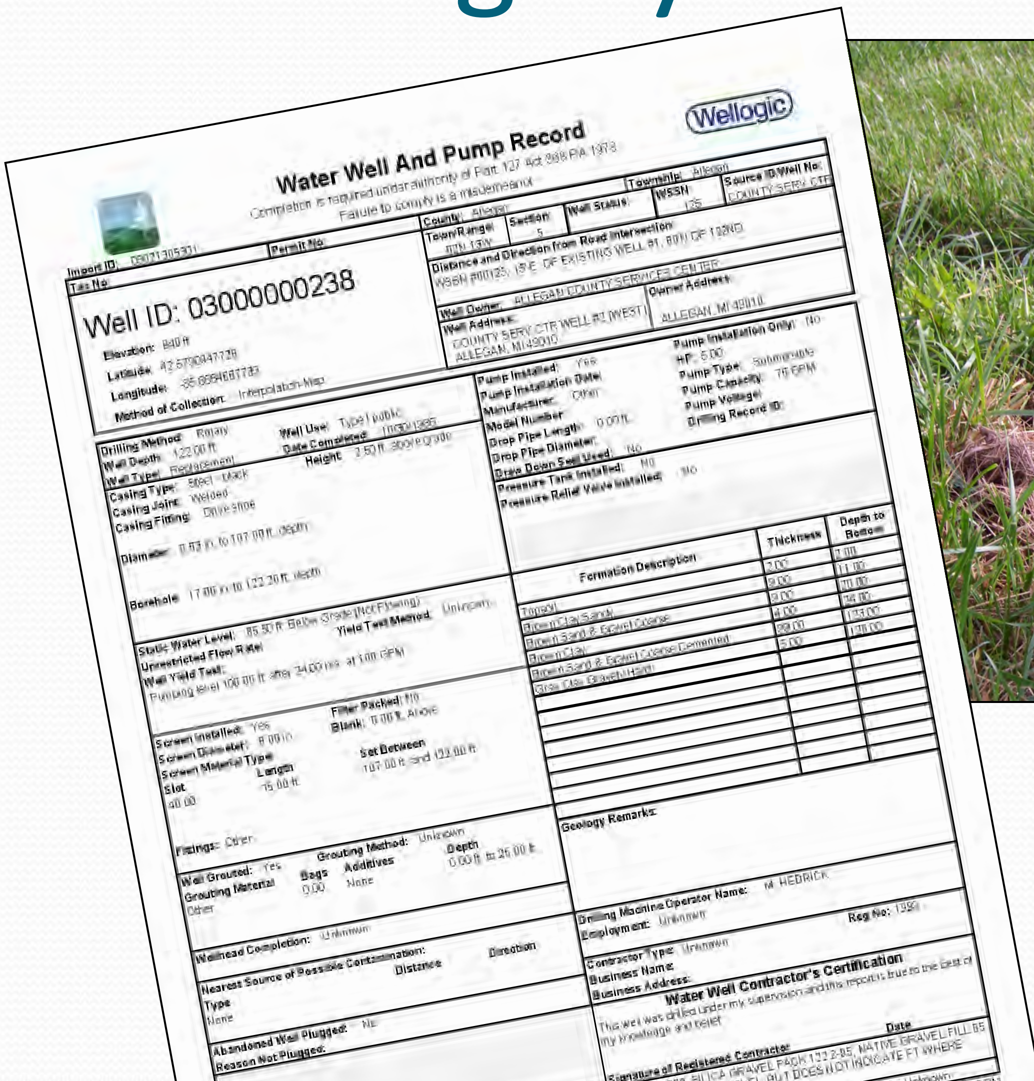
Self-Assessment Guide

- Well Integrity and Management
- Wastewater Management
- Managing Hazardous Products
- Storm Water Runoff Management
- Managing Site Waste

Assess risk

Develop an Action Checklist for Medium and High Risks

Well Integrity and Management



Wellogic

Water Well And Pump Record

Completion is required under authority of Part 127 Act 368 PA 1978
Failure to comply is a misdemeanor

Import ID: 03071305301 | Permit No:
Tax No:

Well ID: 03000000238

Elevation: 840 ft
Latitude: 42.5790947728
Longitude: -85.8854687783
Method of Collection: Interpolation-Map

County: Allegan | Township: Allegan | Source ID/Well No: COUNTY SERV CTR
Town/Range: 02N 13W | Section: 5 | Well Status: | WSSN: 125
Distance and Direction from Road Intersection: WSSN #00125, 15'E. OF EXISTING WELL #1, 800' OF 132ND
Well Owner: ALLEGAN COUNTY SERVICES CENTER
Well Address: COUNTY SERV CTR WELL #1 (WEST) ALLEGAN, MI 49010
Owner Address: ALLEGAN, MI 49010

Drilling Method: Rotary | Well Use: Type I public
Well Depth: 122.00 ft | Date Completed: 10/30/1986
Well Type: Replacement | Height: 2.50 ft. above grade
Casing Type: Steel - black
Casing Joint: Welded
Casing Fitting: Drive Shoe
Diameter: 8.63 in. to 107.00 ft. depth
Borehole: 17.00 in. to 122.20 ft. depth

Pump Installed: Yes
Pump Installation Date:
Manufacturer: Other
Model Number:
Drop Pipe Length: 0.00 ft.
Drop Pipe Diameter:
Draw Down Seal Used: No
Pressure Tank Installed: No
Pressure Relief Valve Installed: No
Pump Installation Only: No
HP: 5.00
Pump Type: Submersible
Pump Capacity: 70 GPM
Pump Voltage:
Drilling Record ID:

Static Water Level: 85.50 ft. Below Grade (Not Flowing)
Unrestricted Flow Rate:
Yield Test Method: Unknown
Well Yield Test:
Pumping level 100.00 ft. after 24.00 hrs. at 100 GPM

Formation Description	Thickness	Depth to Bottom
Topsoil	2.00	2.00
Brown Clay Sandy	9.00	11.00
Brown Sand & Gravel Coarse	9.00	20.00
Brown Clay	4.00	24.00
Brown Sand & Gravel Coarse Cemented	99.00	123.00
Gray Clay Gravel Hard	5.00	128.00

Screen Installed: Yes
Screen Diameter: 8.00 in
Screen Material Type:
Slot: 40.00
Length: 15.00 ft
Filter Packed: No
Blank: 0.00 ft. Above
Set Between: 107.00 ft. and 122.00 ft.
Fittings: Other

Geology Remarks:

Well Grouted: Yes
Grouting Material: Other
Grouting Method: Unknown
Bags: 0.00
Additives: None
Depth: 0.00 ft. to 25.00 ft.

Wellhead Completion: Unknown

Nearest Source of Possible Contamination:
Type: None
Distance
Direction

Abandoned Well Plugged: No
Reason Not Plugged:

Drilling Machine Operator Name: M. HEDRICK
Employment: Unknown
Reg No: 1390
Contractor Type: Unknown
Business Name:
Business Address:

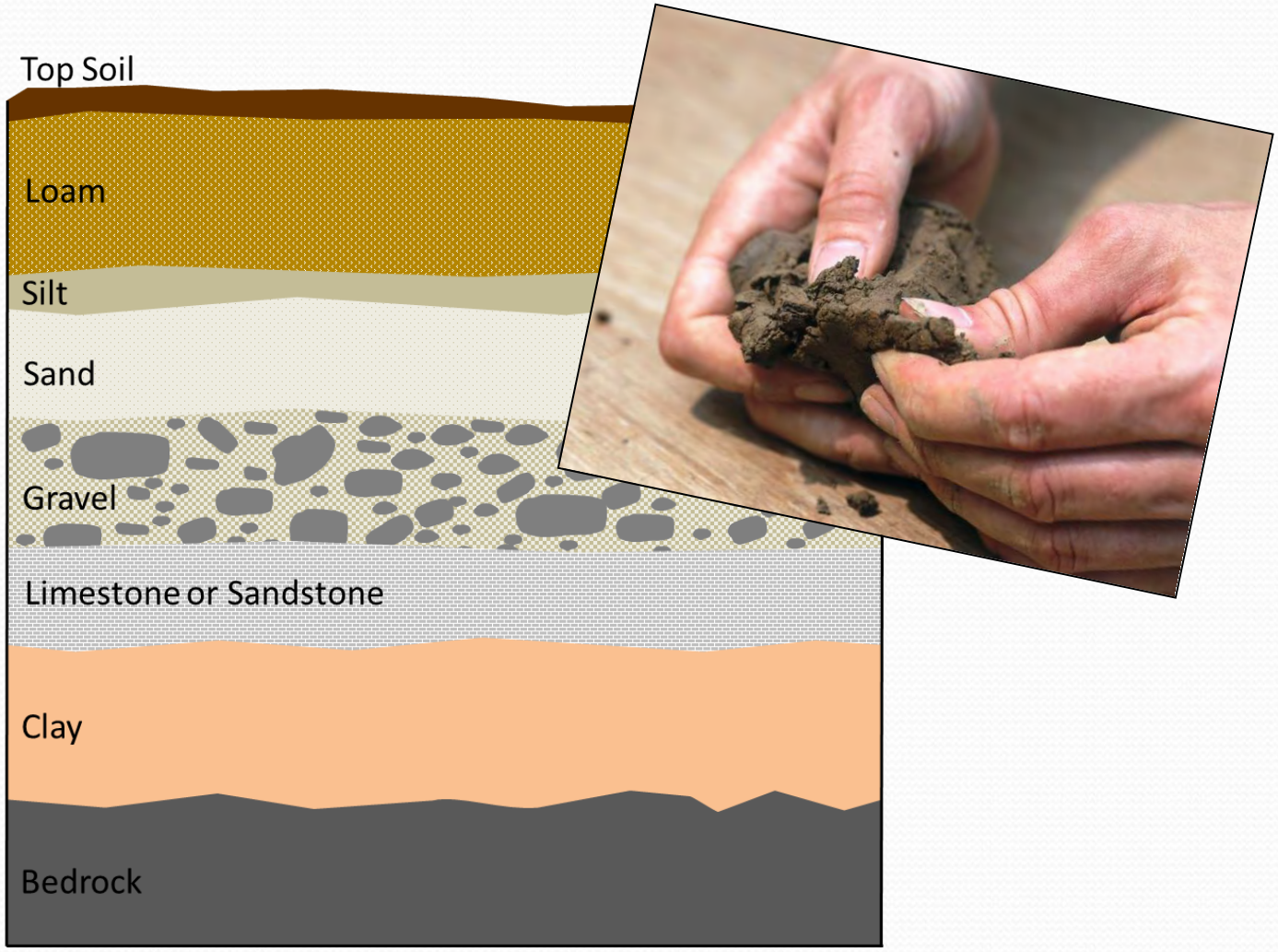
Water Well Contractor's Certification

This well was drilled under my supervision and this report is true to the best of my knowledge and belief.

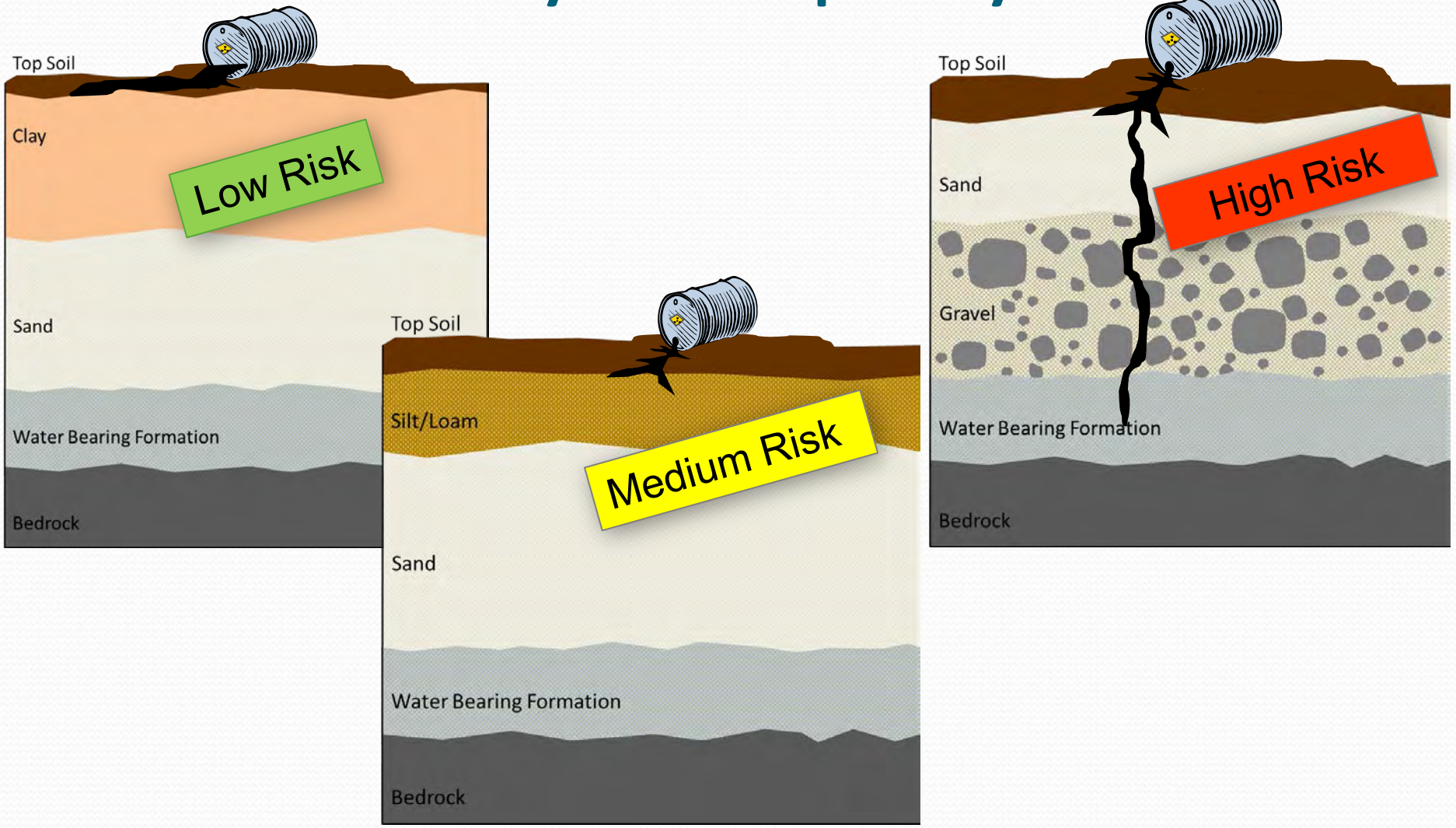
Signature of Registered Contractor | Date

SILICA GRAVEL PACK 122.2-85. NATIVE GRAVEL FILL 85 ... BUT DOES NOT INDICATE FT WHERE

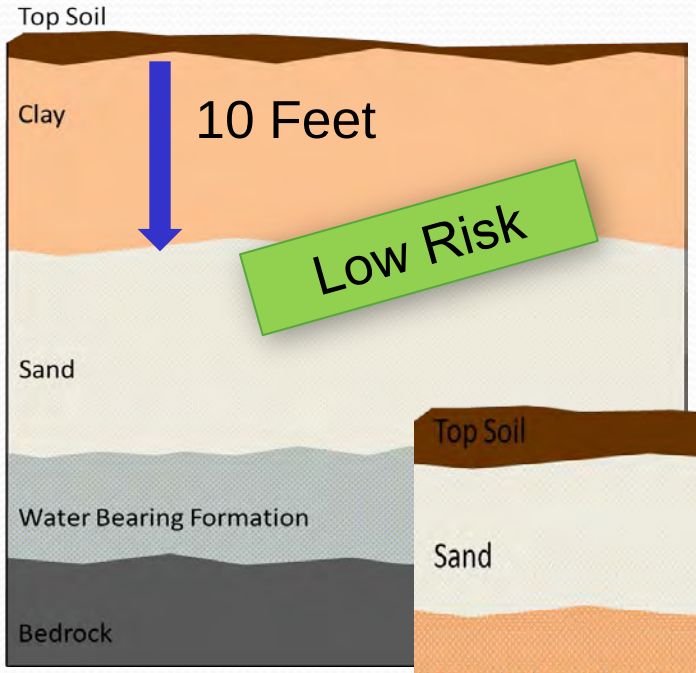
Basic Soil Formation

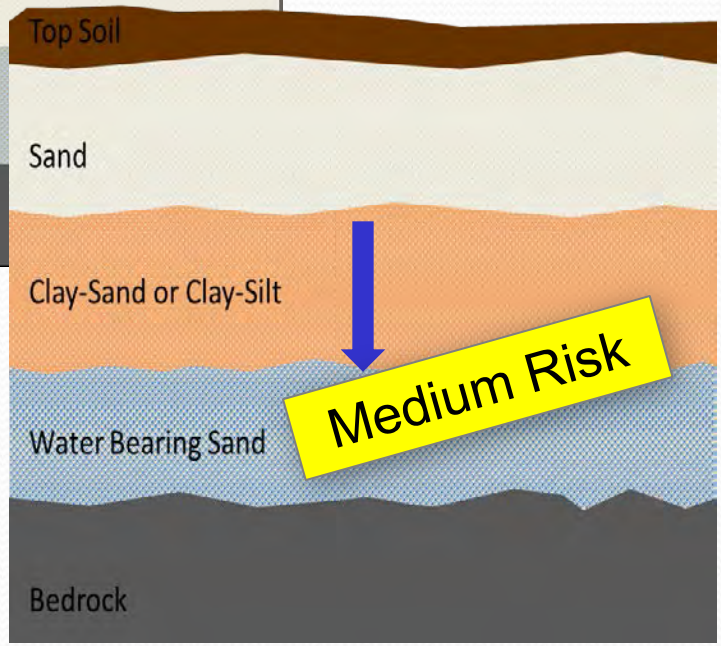


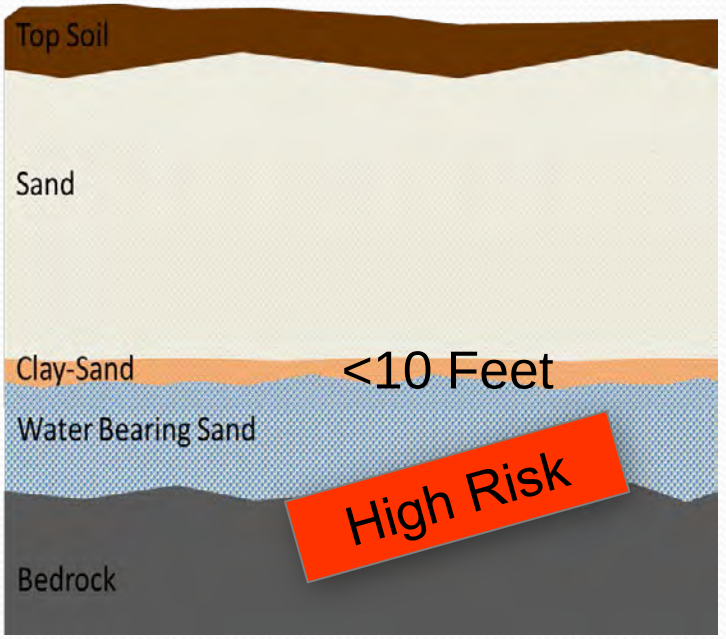
Permeability of Top Layer



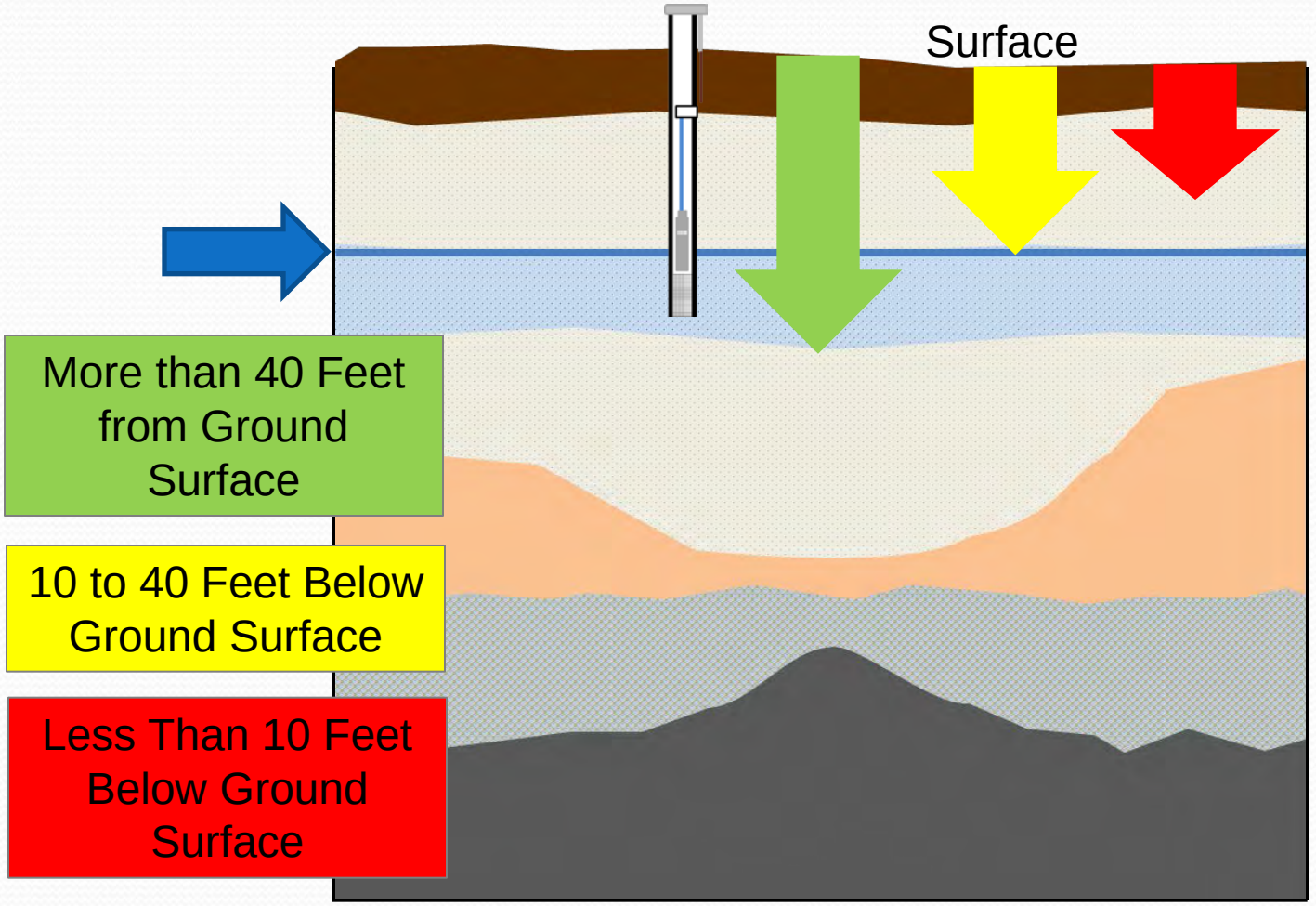
Thickness of Protective Layer







Static Water Level



Age of the Well

Constructed After 1994

Constructed Between 1976 & 1994

Constructed Prior to 1976

Well Grouting

Grouted According to Current Rules

Partially or Poorly Grouted

Not Grouted

Condition of Well Casing & Cap

Approved Cap
No Holes or Cracks
Tightly Secured
Screened Vent

Unapproved Cap

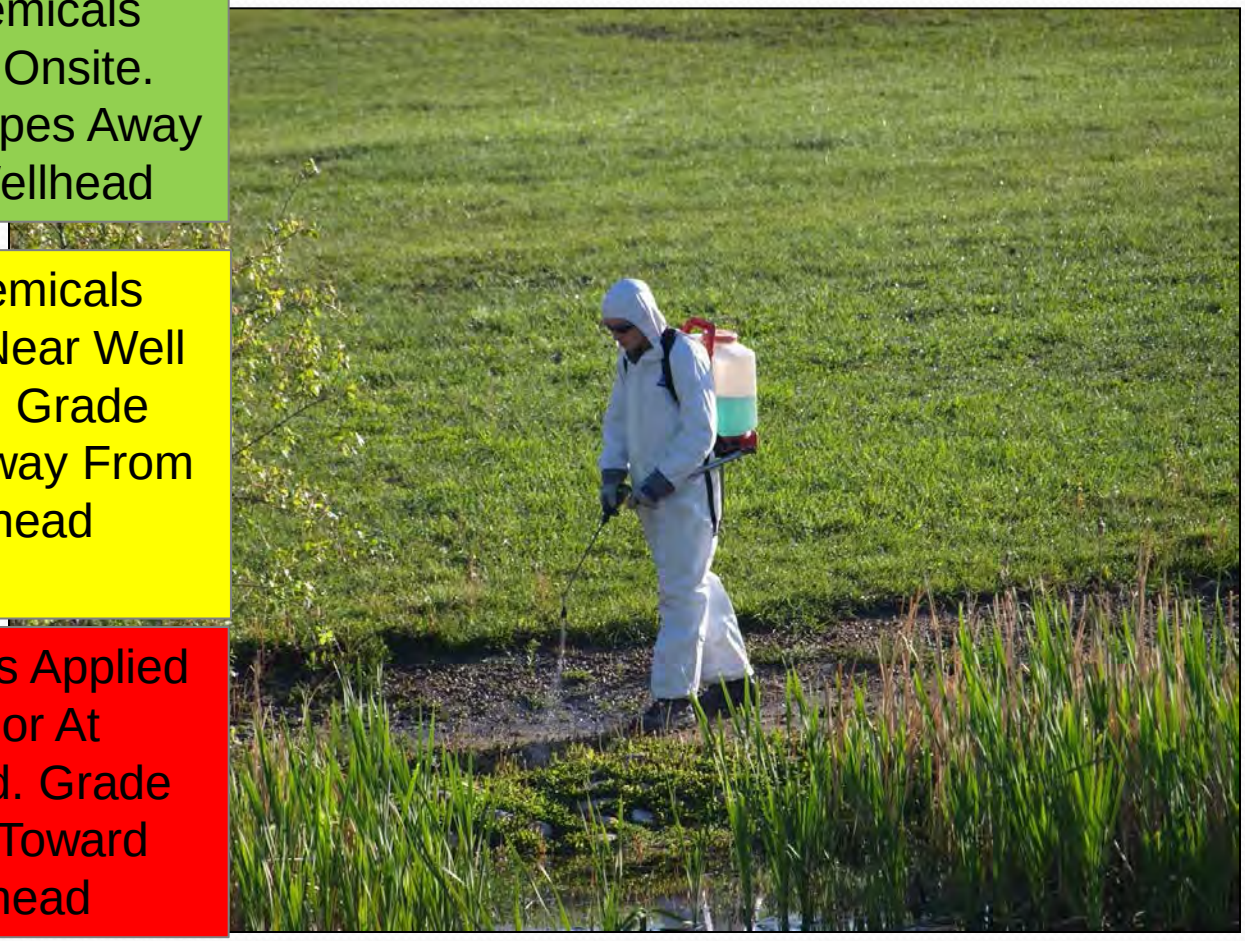
Cracks, Holes, or
Loose Casing, Cap,
or Conduit

Protection of Wellhead

No Chemicals Applied Onsite. Grade Slopes Away From Wellhead

No Chemicals Applied Near Well Casing. Grade Slopes Away From Wellhead

Chemicals Applied Near or At Wellhead. Grade Slopes Toward Wellhead



Casing Height Above Grade

12 Inches or More

From Grade Level to Less Than 12 Inches

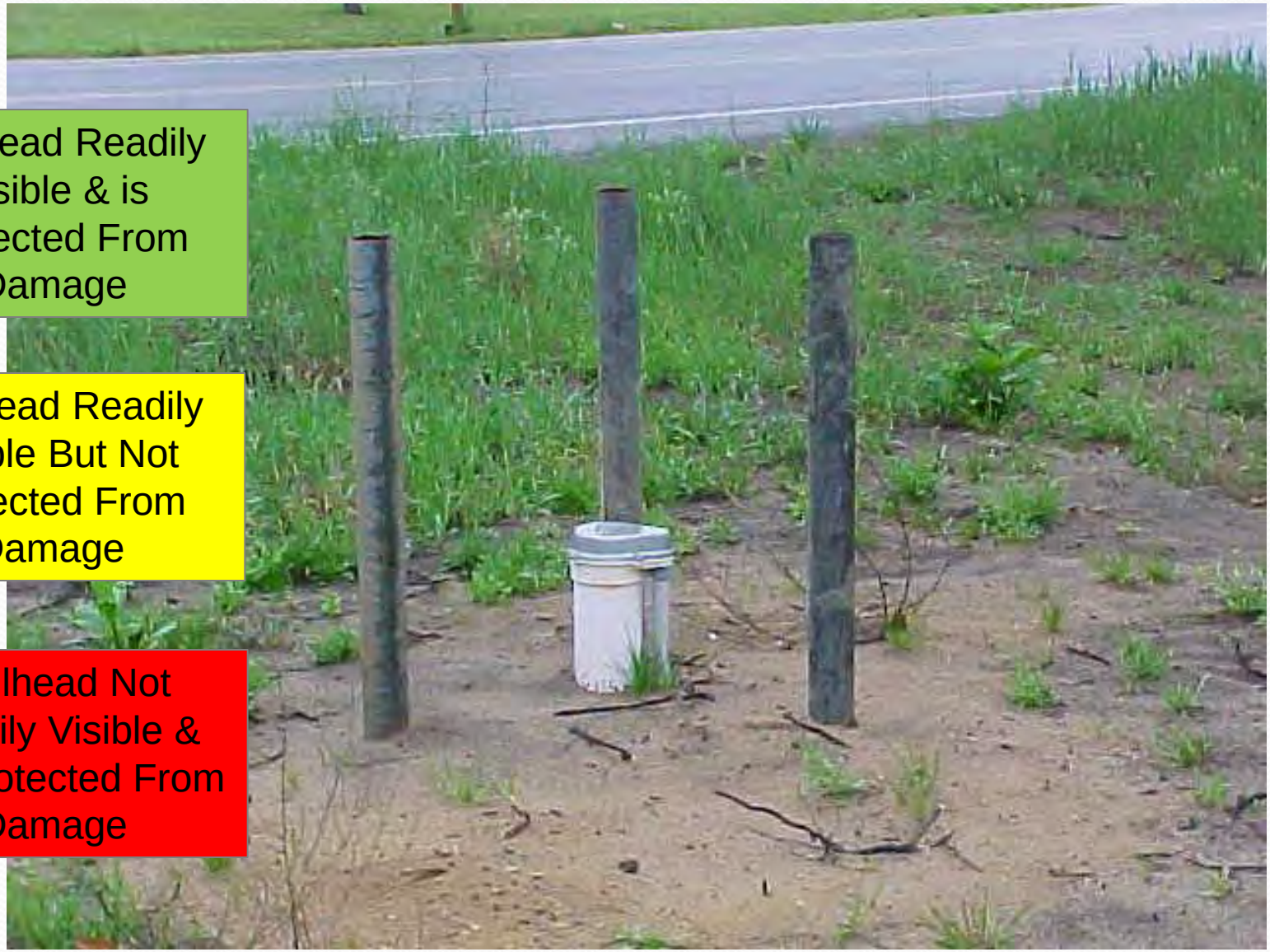
Below Grade, in a Pit, or in a Basement

Surveillance of Wellhead

Wellhead Readily Visible & is Protected From Damage

Wellhead Readily Visible But Not Protected From Damage

Wellhead Not Readily Visible & Not Protected From Damage



Inspected by Registered Driller

Within the Past 10 Years

Between 10 & 20 Years Ago

More Than 20 Years Ago or Don't Know

Wastewater Management

On-Site Disposal

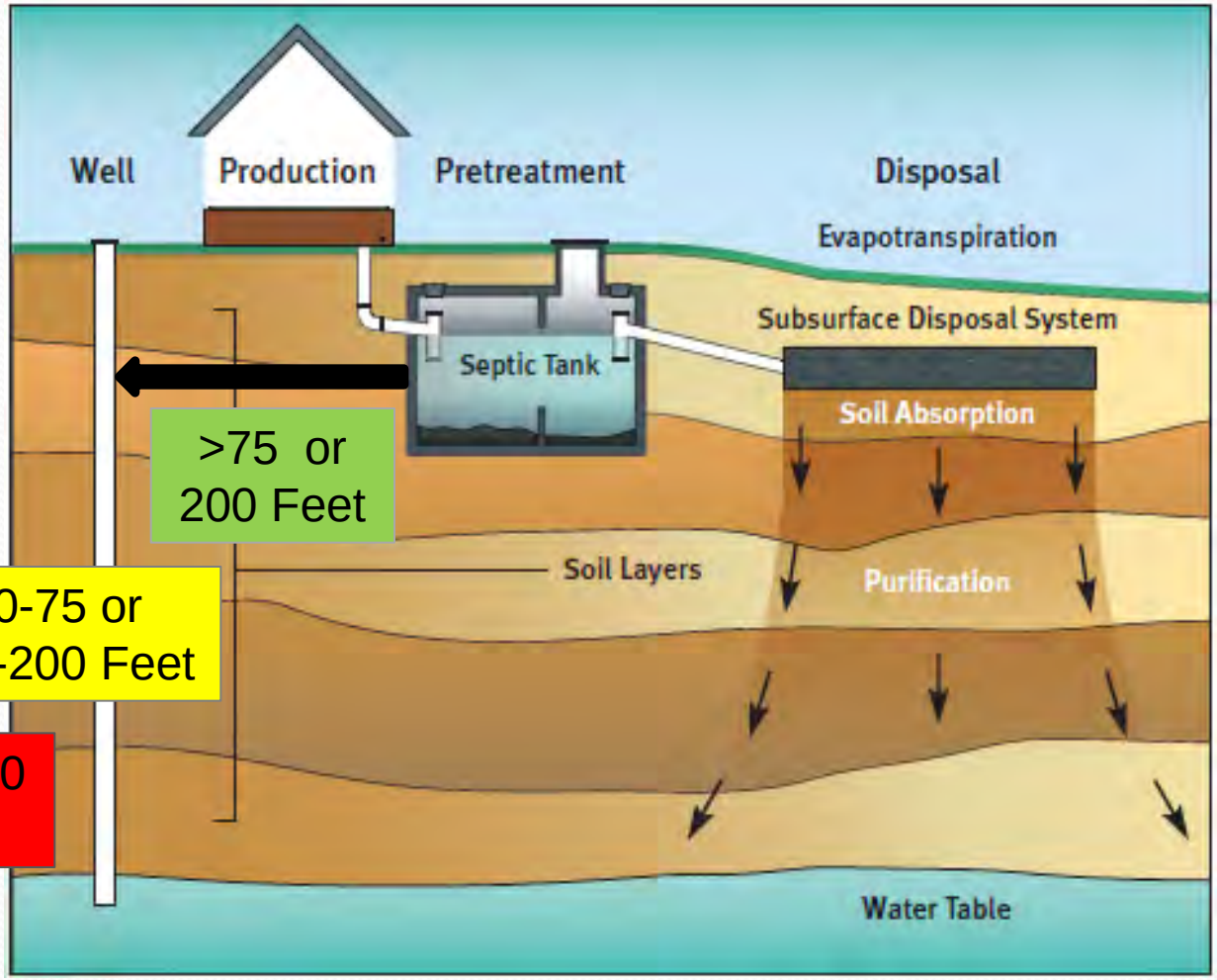
Septic System Size/Age

<5 Years Old

6 to 20 Years Old

More Than 20 Years Old

Distance of Separation



Septic Tank Last Pumped

Within the Past 5 Years

5 to 10 Years

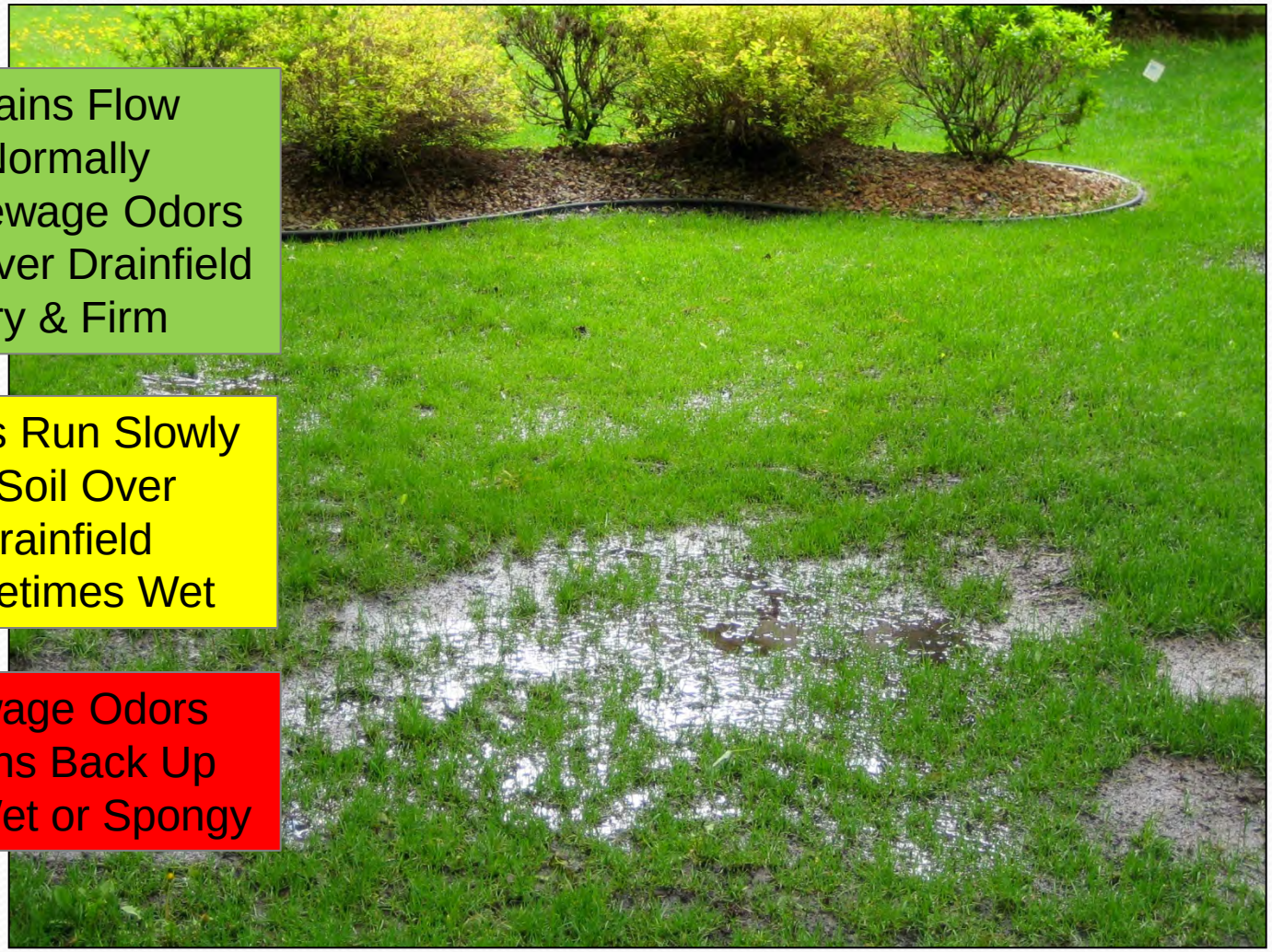
More Than 10 Years

Signs of Trouble

Drains Flow Normally
No Sewage Odors
Soil Over Drainfield
Dry & Firm

Drains Run Slowly or Soil Over Drainfield
Sometimes Wet

Sewage Odors
Drains Back Up
Soil Wet or Spongy



Records Maintained

Good Map & Records of System Repairs & Maintenance

Some Records Maintained

No Map or Maintenance Records Kept

Cleaners, Solvents & Other Chemicals Poured Down Drain

Moderate Use of Cleaning Products Discharged with Wastewater. No Hazardous Chemicals Poured Down Drain.

Moderate Use of Products. Very Small Amounts of Hazardous Chemicals Poured Down

Heavy Use of Products. Hazardous Chemicals Discharged in Wastewater

Lagoons & Feed Lots

Outside WHPA
>2000 or 800 Feet

Outside WHPA but
<2000 or 800 Feet

Within the WHPA

Managing Hazardous Products

Pesticides, Fertilizers, Cleaning Agents & Fuel - Storage

No Products/Fuel Stored on Site. Any Storage >2000 or 800 Feet.

Isolation Maximized Proper Storage, Secondary Containment.

Products in Well Room, No Containment, <200 or 75 Feet.

Pesticides, Fertilizers, Cleaning Agents & Fuel - Use

Pesticides & Fertilizers Not Applied or Applied as Directed

Pesticides Applied Away From Wellhead

Applied Too Close to Wellhead & Excessively

Pesticides, Fertilizers, Cleaning Agents & Fuel - Disposal

Products Used or Completely Removed From Site

Waste Products Stored on Site and/or Disposed in Landfill

Products Disposed of Near Well, Surface Water or Poured Down a Drain

Storm Water Management

Paved Surfaces

Surface Runoff Diverted Away From Wellhead

Minimal Runoff Toward Wellhead

Excessive Amount of Runoff Runs Toward Wellhead

Landscaping & Buffer Strips

Landscaping Slows Storm Water Flow & Provides Areas Where Water Soaks into Ground Away from Wellhead

Minor Landscaping Minimizing Runoff Toward Wellhead

No Landscaping to Slow Flow of Storm Water or Surface Water

Distance From Surface Water

Well Located >200 or 75 Feet From Surface Water

Well Located >200 or 75 Feet From Surface Water with at Least 10 Feet of Protective Clay Layer

Well Located <200 or 75 Feet From Surface Water with No Protective Clay Layer

Managing Site Waste

Waste Disposal

Only Organic Wastes are Disposed of On Site

Waste Stored On Site While Waiting for Removal/Use

Wastes Improperly Discarded to Land, Sewer or Storm Drains

Waste Liquids

Kept in Secure Containers With Secondary Containment

Stored in Non-secure Containers and/or Without Secondary Containment

Improperly Disposed of at an On-Site Location

Time To Evaluate & Reduce Your Risks!

ACTION CHECKLISTS

Go back to the assessment charts in this worksheet. For each medium and high risk, write down the improvements you plan to make. Use recommendations from this worksheet and other resources to choose actions you are likely to complete. A target date will keep you on schedule. You don't have to do everything at once, but try to eliminate the most serious risks as soon as you can. Often it helps to tackle the inexpensive actions first.

Write all high and medium risks in this column:	What can you do to reduce the risk?	Target date for action:

Operator Signature_____

Please send a copy of this completed form to:

Mr. Wayne Kukuk
MI DEQ Resource Management Division
Drinking Water and Environmental Health Section
Community Drinking Water Unit
P.O. Box 30241
Lansing, Michigan 48909-7741
517-241-1434

*The information in this guide was adapted with permission from the Farm*A*Syst Farmstead Assessment System developed by Michigan State University Extension, FAS 107, Dec. 2003.*

DEQ