WE24: Step-by-Step Guide to Locating and Recording the Condition of Treatment Field and Treatment Components

Butch Strait Inspections PLC
231-590-4352
www.butchstrait.com
And WasteWaterEducation.org
GET A JOB

• This may sound funny but get it in writing.
• With all the communication gadgets we have there is still room for error.
• What Inspection is Needed, Requested, Required.
• I use email so that I can print it off and have a hard copy
• Get permission to do the inspection from the seller or sellers agent.
• Have a signed Proposal, Quote, Contract.
• Not only for clarity of what is to be done but for collection purposes and lawsuits.
Know the rules

- Be up to date on the code for the area that you are inspecting
- Be up to date on the requirements for certain loans
  - Have a contact person in the finance that you trust for answers.
- Be aware of any ordinances from local authority (Township, Village Etc)
- Let the client know of any mandates that may be different than what is requested.
  - With POS or TOT the seller may have completed part or all of what is desired.
- Keep in mind that if there is an issue later that the inspection was not completed for your client and may not have any recourse for damages.
THINGS TO GET FOR JOB

- Who you are working for
  - Clients name, Realtor who is paying the bill?
  - Get it approved for access
  - Time you will be there and how long it will take
  - Who will be there
  - If client will be there allow time to get thing dug up and ready.
  - Call for utility markings
WHAT KIND OF INSPECTION

• Buyers inspection
• Point of sale, Time of transfer
• Loan requirement
• Short term lease inspection
BUYERS INSPECTION

• What kind of loan
  – Each loan has different requirements
  – Some need dimensions on the drawing
  – Some have certain wording that is needed in the report

• Full inspection is always best.
PREPARE FOR THE INSPECTION

- Contact local entity for any old reports, violations, site surveys.
- Make sure the utilities are marked (for us it is 72 hr. notice.)
WHAT TO LOOK FOR ON THE PERMIT

- Date When was it installed
- Was there a final inspection
- What size is the tank (verify by measuring)
- What kind and size of field (verify)
CHECK ON LINE FOR PICTURES OF JOB

- Looking for green areas
- Location of lakes, rivers, ponds.
- North for the drawing that will be completed
- Also can look at listing to get some appliances and the number of bedrooms for sizing of system.
TOOLS

- Camera
- Shovel
- Measuring Tape
- Probe
- Driveway markers
- Tarps
- Sludge checker
- Gloves
- Glasses Safety and reading
- Paperwork for data collecting
- Pen or pencil
- Business card
- Long pry bar with flat on one end
- 8’ hand auger
- Eye Protection
- Hand sanitizer
- Wasp and hornet Spray

ADVANCED TOOLS

- Sewer Camera
- Extra Shovel
- Extra long Probe
- Rake
- Metal detector
- Remote camera on extendable rod
- Sonde with locator
- Hoist For stuck lids
- Power screwdriver (drill) with bits
- Water Probe with garden hose
- Laser measure device
- Amp / Volt checker
- Float lifting tool
- Clear Pipe for head pressure
- Large slip joint pliers
- Witching sticks (if you can do that)
READY FOR THE WORK TO BEGIN

• Arrive on time
• Knock on door to introduce your self
  – Even if the house is “vacant” there may be someone there.
  – If there is a basement check the plumbing for where the pipe exits the home.
  – Compare that to the drawing from the local entity
  – Do a walk around of the home
VIDEO walk through
LOCATE TANK OR FIELD

• The tank is usually the first item to locate.
• Sometimes locating the field first helps to locate the tank.
• The field is usually a much larger area.
• If the neighbor comes over it is acceptable to ask if he knows where the system is located.
• Be careful not to say much about the inspection.
• I usually just say that “someone is looking at the home and hired me to check it out.”
THE TANK

- Depth of cover
- Note the elevation of the contents of the tank (usually from the outlet invert)
- Overall condition of tank
- Material of tank
- Scum and sludge levels
- Number of compartments
- Baffle in place, Condition
- Effluent filter
- Distance to structure
- Distance to well
- Distance to open water or wetlands
- Size of tank length width and operating depth (multiply by 7.48 to get gallons)
OUTLET BAFFLES / FILTERS

Concrete

Plastic

Orenco or Zabel filter

Brush filter
HYDRAULICALLY TESTING DRAIN FIELD

- Turn on bathtub cold water only
- Do a flow test
  - With a gallon jug time the flow into the jug
  - Example: 12 seconds to fill gallon jug is 5 gpm
  - 20 seconds would be 3 gallons per minute
  - This will be used to calculate the amount of water that is introduced into the system.
  - Monitor the level in the tank after 30 to 45 minutes note the level in the tank
  - Calculate the flow Time X gallons per minute
  - Example 5 gallons per minute for 30 minutes is 150 gallons
  - Daily water usage per person is 35 to 75 gallons the above example would be 2 – 3 people living in the home.
DRAIN FIELD

- Depth
- Distance from structure, Well and open water or wetlands
- Type of drain field (drywell)
  - Bed
  - Trenches
  - Gravelless (Chambers, Infiltrators)
  - Drywell
  - Block trench
  - Refrigerator
DIFFERENT DISPERSION UNITS

Conventional drain field

Chambers or Infiltrators
Gravel less system

Low Pressure

DRYWELL
WHAT TO LOOK FOR IN THE DRAIN FIELD

- Moisture of the stone
- Color of stone
- Roots in stone
- Vegetation on field area
- Buildings or driveway over field area
- Depth to Seasonal high water (might not be wet)
DRAIN FIELD OBSERVATIONS

Stone saturated

Stone Black

Stone dry and clean
VIDEO walk through
VIDEO walk through
VIDEO walk through
VIDEO walk through
WRITE REPORT

- Report should have pictures and explain what they are
- **Make sure the client understands the report**
- Most people do not know crap about the septic until it fails then they are experts
- You will need to explain how the system works and what is important and not so important.
General Property Information
Client and site information

8-26-2019

Client name
P.O. Box 123
Acme, MI 49610

Property Address
2847 Basch Rd
Traverse City, MI 49685

Property ID #: 28-11-410-020-00
Health permit: No [ ] Yes [X] 12345 Date: 2019
Weather at time of inspection: Nice

Interior information
This section is to determine the demand on the system. This allows us to calculate what size the system should be and the usage it has been used for.

<table>
<thead>
<tr>
<th>Age of septic</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last date of occupancy</td>
<td>Unknown Years</td>
</tr>
<tr>
<td>Seasonal use</td>
<td>No [ ] Yes [X]</td>
</tr>
<tr>
<td>Number of bedrooms</td>
<td>2</td>
</tr>
<tr>
<td>Washing Machine</td>
<td>No [X] Yes [ ]</td>
</tr>
<tr>
<td>Dishwasher</td>
<td>No [X] Yes [ ]</td>
</tr>
<tr>
<td>Water softener</td>
<td>No [X] Yes [ ] Connected to septic No [ ] Yes [ ]</td>
</tr>
<tr>
<td>Iron filter</td>
<td>No [X] Yes [ ]</td>
</tr>
<tr>
<td>Garbage Disposal</td>
<td>No [X] Yes [ ]</td>
</tr>
<tr>
<td>Other</td>
<td>Unknown</td>
</tr>
<tr>
<td>Date tank pumped</td>
<td>Unknown</td>
</tr>
</tbody>
</table>
Comments and Recommendations:

The septic system appeared to be operating properly at the time of the inspection. The septic tank does not need to be pumped at this time.

The water system appeared to be operating properly at the time of the inspection.

Lorey (Bruce) Stroot  
President  

Date 8-26-2019
This section is the information about the septic tank. A septic tank is the first "filter" in the system. The tank allows the solids to settle out and to retain the scum. The shorter tanks are a double compartment. This is like having 2 tanks in one. Each time the sewage is discharged into the tank, it helps to clean the solids from the water. The tank should be a certain size to make sure that the detention time in the tank is long enough for the solids to break down the contents. Below is a drawing to help illustrate where the tank should be designed. We are also looking for cracks in lids and the tank and any signs of failure. Some commercial cleaners, if used in excess, can cause deterioration of the concrete. Root intrusion is another threat to concrete. Roots can block pipes in and out of the tank as well as interfering with the baffle. Running water into the tank checks the flow and any indication of a blockage will be noted.

**Septic Tank #1**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover over tank</td>
<td>No</td>
</tr>
<tr>
<td>Access lid secure</td>
<td>Yes</td>
</tr>
<tr>
<td>Depth below grade</td>
<td>6'</td>
</tr>
<tr>
<td>Number of compartments</td>
<td>One</td>
</tr>
</tbody>
</table>

**Tee on outlet (Outlet Baffle):**

This item is very important as it keeps the scum layer in the tank from going out to the field and blocking the pipes.

<table>
<thead>
<tr>
<th>1200 Gallons</th>
<th>Tank size first compartment</th>
<th>Wait 5</th>
<th>Depth 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>3'</td>
<td>Sump level first compartment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NA</td>
<td>Sump level second compartment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23&quot;</td>
<td>Distance from bottom of baffle to sludge</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The distance from the bottom of this baffle to the top of the sludge must be greater than 36".

| 7.5" | Distance to structure |
| 30.5" | Distance to closest well |
| 15"  | Distance to property line |
| NA   | Distance to open water |
This section is the information about the disposal part of the system. This is where the water is sent back into the ground to be recycled. There are several different ways this can be done. The old way was with a drywell. This is a tank with no bottom and drain holes on sides. Stone was placed around the outside to allow the water to get back into the ground. This type of system created a high nitrate concentration and is not recommended. The other disposal is the recommended drainfield. There are several types of these as well. The "normal" system is a gravity system where the pipes in the field are 4" and they are placed in a bed of stone. The pipes can also be placed in separate trenches with stone. This type may also have a pump if it is at a higher elevation. The new system for a pump up system is the LOW PRESSURE drain field. This system uses smaller pipes and forces the water into the stone area. There is also a gravelless system. This is called a bio-chamber or infiltrator system. The system uses plastic dome pieces that connect together. They have leach off the sides and there is no bottom so the water will go into the soil through the bottom and the sides.

Gravity drain field bed

<table>
<thead>
<tr>
<th>19.5' Distance to building</th>
<th>Area dry and odor free</th>
<th>Unapproved vegetation on field area</th>
<th>67.5' Distance to nearest well</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Recommendation: Shallow rooted vegetation is good for the system. Keep trees small so roots do not get into stone and pipe.

<table>
<thead>
<tr>
<th>40'</th>
<th>Size of field</th>
<th>Cover over field</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td>20 inches</td>
<td>NA inches</td>
</tr>
</tbody>
</table>

Clean / Dry

The stone should be a grey color and dry. If there was a significant water usage recently the stone at the beginning of the drain field may be damp. There should not be any standing in the stone. If the color of the stone is black that would be an indication that the field was saturated at one time. There should not be any large trees over the dispersion area as roots could block the water flow back into the soil. Shallow rooted vegetation is beneficial to the system as it allows for absorption through the plants. A shallow drain field treats the effluent better than a deep system.

<table>
<thead>
<tr>
<th>2'-6'</th>
<th>Depth to high water from bottom of field</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td>Head pressure (low pressure field)</td>
</tr>
<tr>
<td>1'-10'</td>
<td>Distance to property line</td>
</tr>
<tr>
<td>NA</td>
<td>Distance to open water</td>
</tr>
</tbody>
</table>

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Water Supply

This section details the water supply to the home. The well and the components to provide water to the home are covered in this section.

- Diameter of casing: [ ]
- Approved cap: [ ] Yes [ ] No [ ] N/A
- Distance above grade: 12 inches
- Electrical conduit: [ ] Grey electrical conduit

The cap should be the sealed type with the breather screen in place. The older caps did not seal as well and could allow bugs to enter the well casing. The distance above grade is another bug deterrent. Vegetation should be kept away from the well casing area.

- Location of pressure tank: in basement
- Working pressure: On
- Pump run time to recharge: >300 seconds
- Proper sample tap: [ ] Yes [ ] No
- Pressure relief valve: [ ] Yes [ ] No
- Water flow at kitchen sink: 1.3 GPM

The location of the tank is important as this is where most of the maintenance will be done. The run time to recharge is important for well pumps that are in the casing of the well, that will be the 4 and 5 inch wells. To cool the motor the water must be moving past the well motor. That is when it is running. The time should be longer than 30 seconds. If the time is low it could be the pressure in the pressure tank or the tank bladder may be going bad. A well person should check it out if the time is low. The well will still provide water to the home but the life of the well pump will be reduced.
This concludes the education portion of this presentation.

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