

Pittsgrove Township – Private Well Testing Outreach 2020

Jessie Gleason, MSPH
NJ Department of Health
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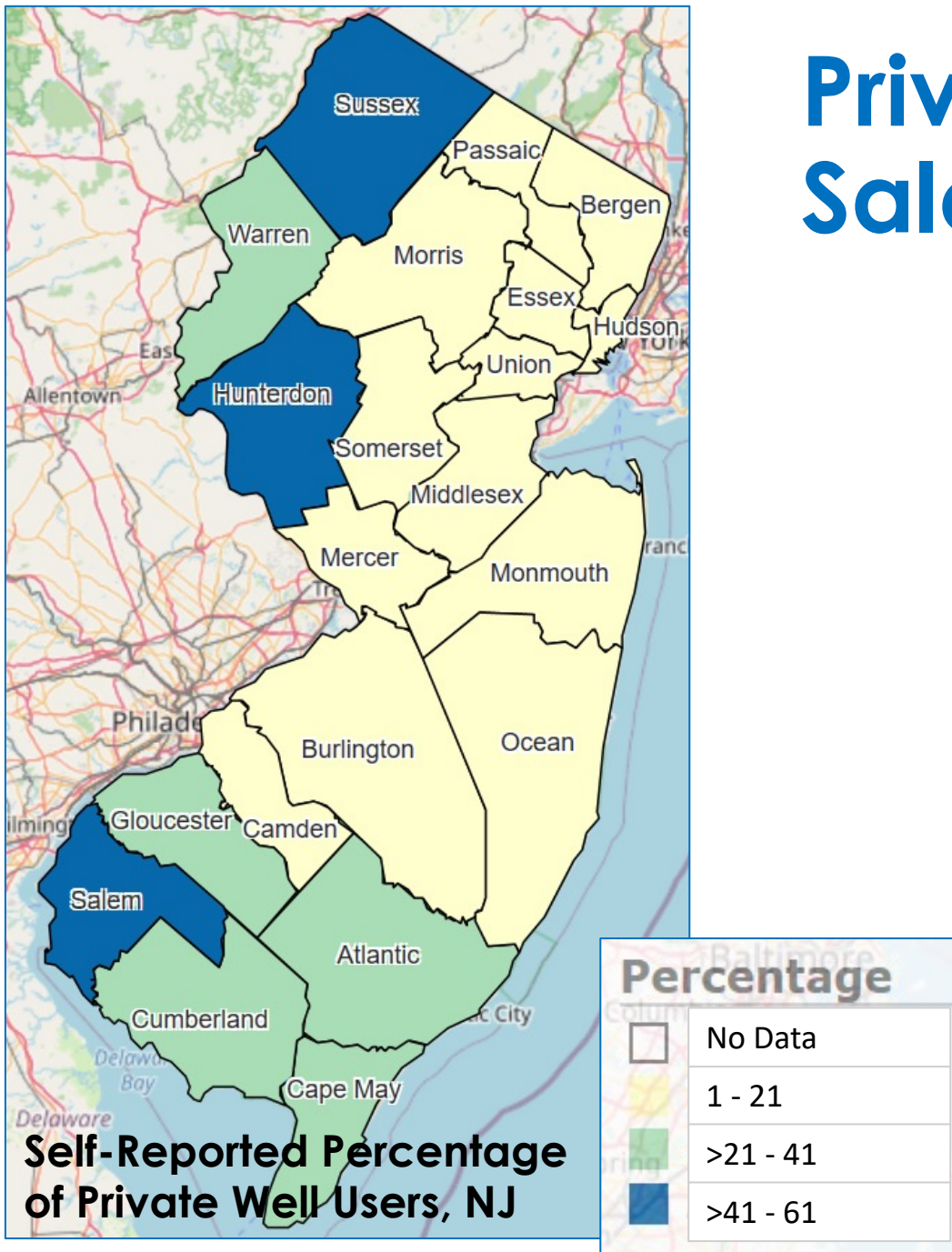


NJ Private Wells

- **400,000** private wells are used for drinking water consumption in NJ (about **12%** of population)
- NJ PWTA - Requires buyers or sellers of real estate property to test for variety of parameters in raw/untreated water before closing of title
- Only about **100,000** wells have been tested under the Private Well Testing Act (PWTA) since 2002
- The quality of private well drinking water is solely the responsibility of the homeowner.
- CDC and NJDOH 5-year cooperative agreement from 2015-2020 to improve private well programs in NJ

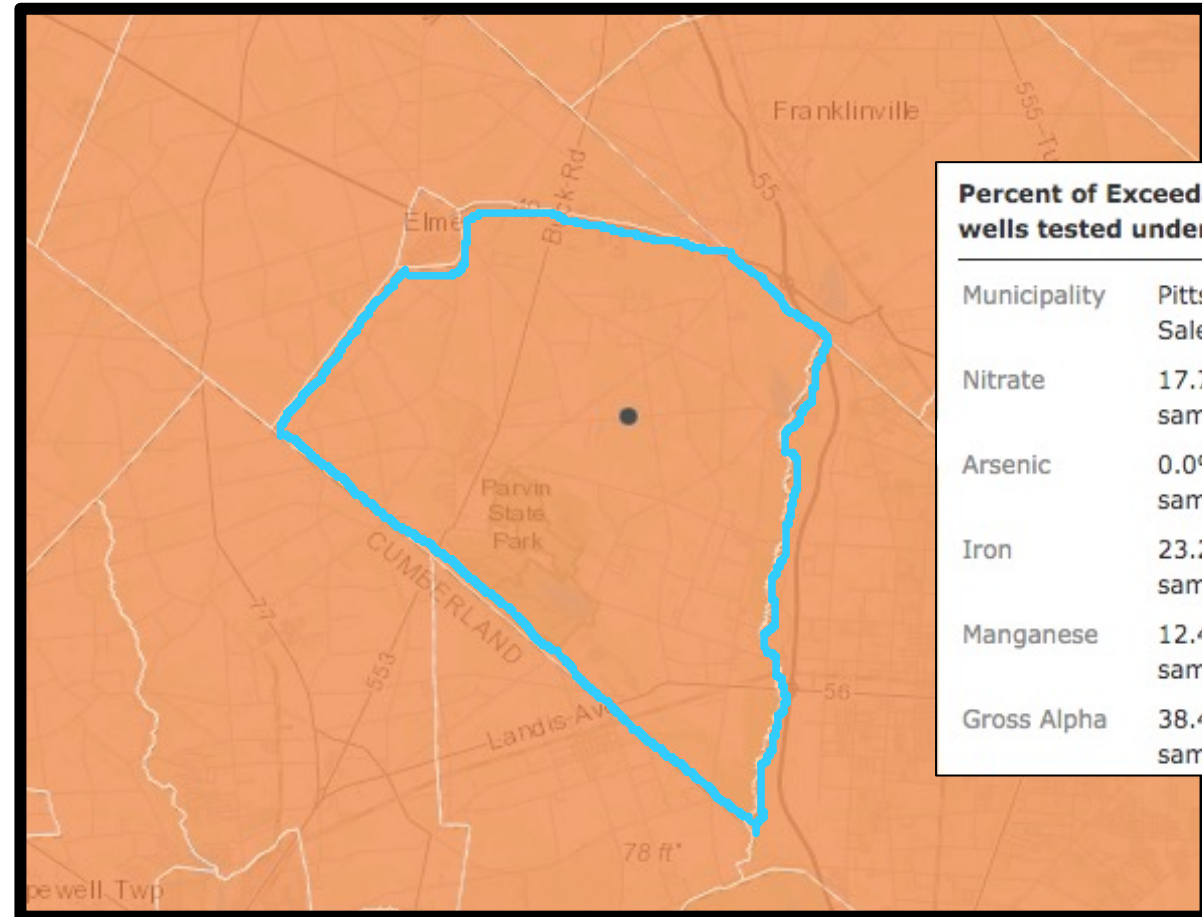
Private Wells: Salem County, NJ

- Statewide survey (representative sample):
 - **3rd** highest percentage of private well users in the state
 - **46%** reported using private well water for drinking



NJ PWTA Summary Data: Pittsgrove Township, Salem County

- Contaminants of concern:
 - Gross alpha – **38.4%**
 - Nitrates – **17.7%**
- Secondary contaminants of concern:
 - Iron – **23.2%**
 - Manganese – **12.4%**



| Percent of Exceedances (Number of wells tested under PWTA) | |
|--|-----------------------------------|
| Municipality | Pittsgrove Township, Salem County |
| Nitrate | 17.7%, (1070 wells sampled) |
| Arsenic | 0.0%, (27 wells sampled) |
| Iron | 23.2%, (1070 wells sampled) |
| Manganese | 12.4%, (1070 wells sampled) |
| Gross Alpha | 38.4%, (1022 wells sampled) |

Pittsgrove Twp. 2020 Outreach Implementation

- In partnership with Pittsgrove Twp. Environmental Commission
- Informational flyers posted online and at community locations; Online Registration
- Funding available to sample and test 70 private wells
 - Received 85 registrants before closing registration
 - 70 homeowners had their private well water sampled
 - Includes 4 homes from previous 2018 outreach
- Cape Environmental Laboratory, LLC conducted water sampling



**PITTSGROVE TOWNSHIP
FREE PRIVATE WELL
TESTING
SIGN UP ONLINE:
bit.ly/Pittsgrove2020**

The Pittsgrove Township Environmental Commission and the New Jersey Department of Health are offering free, confidential private well testing for **gross-alpha, iron, and manganese** to the first **70** interested homeowners. Funding for this project is provided by the Centers for Disease Control and Prevention.

Protect your family. Test your well water. Sign up today!

Did you know...?

Over **35%** of wells tested in Pittsgrove Township had **high** levels of gross alpha, an indicator of **radium** in drinking water.

Source: NJ Private Well Testing Act Summary: <http://www.nj.gov/health/eha/eha/eha.html>



How can I participate?

Click the link to sign-up by September 20th 2020

bit.ly/Pittsgrove2020

Registration is on a first come, first serve basis.

Email us with questions at jessie.gleason@doh.nj.gov or environmentalcommission@pittsgrovetownship.com

Gross-alpha measures radioactivity in well water. In South Jersey this radioactivity is usually derived from **radium** and when detected at high levels, water consumers are at an increased risk for cancer.

Iron and Manganese are common contaminants in well water and can cause issues with the color, odor and taste of your drinking water. At high levels manganese may cause health effects in infants and children.

Drinking Water Standards - Public Water

MCL

- Enforceable limit on amount of contaminant permitted in drinking water;
- Gross alpha: MCL=15 pCi/L

SMCL

- Non-mandatory water quality standard guidelines primarily for aesthetic purposes (color, odor, taste)
- Iron: SMCL= 300 µg/L; Manganese: SMCL= 50 µg/L

Health Advisory

- Non-enforceable guidance that identifies the concentration of a contaminant in drinking water at which USEPA has concluded adverse health effects are not anticipated to occur.
- Manganese: HA= 300 µg/L

State and/or federally regulated

pCi/L = picocuries per liter
µg/L = micrograms per liter

Contaminants of Concern:

Gross Alpha (raw and treated)

- A measure of total radioactivity in drinking water
- Radium is very common in South Jersey
- Drinking water with radium over a long period of time is associated with bone and sinus cancer

Iron and Manganese (raw only)

- Naturally occurring minerals in rock and soil that can leach into groundwater
- Can cause aesthetic issues (odor, staining, taste)
- Secondary contaminants – cause aesthetic or cosmetic effects in drinking water
- Very high levels of manganese in drinking water can be a public health risk

pH (raw only)

- A scale measuring the acidity or alkalinity of an aqueous solution
- Recommended range: 6.5 - 8.5
- Low pH can increase corrosivity of water

Gross Alpha Recommendations

< 5 pCi/L:

- No further action required

5 – 15 pCi/L:

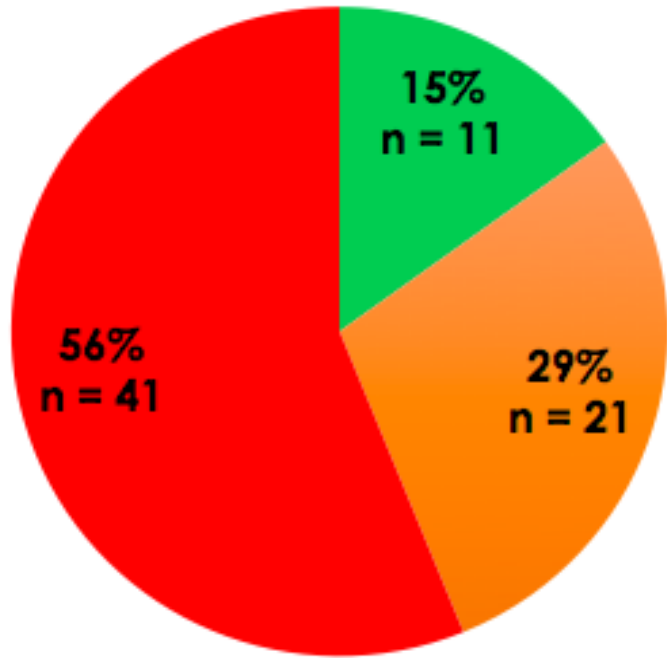
- Advised testing of Ra-226 and Ra-228
- MCL for combined Ra-226 + Ra-228 = 5 pCi/L
- Water treatment is recommended

> 15 pCi/L:

- Water treatment is strongly recommended
- Water Softener or Reverse Osmosis (RO)
- Test for gross alpha again after installation
- Maintenance and monitoring of water treatment, test at least once every year

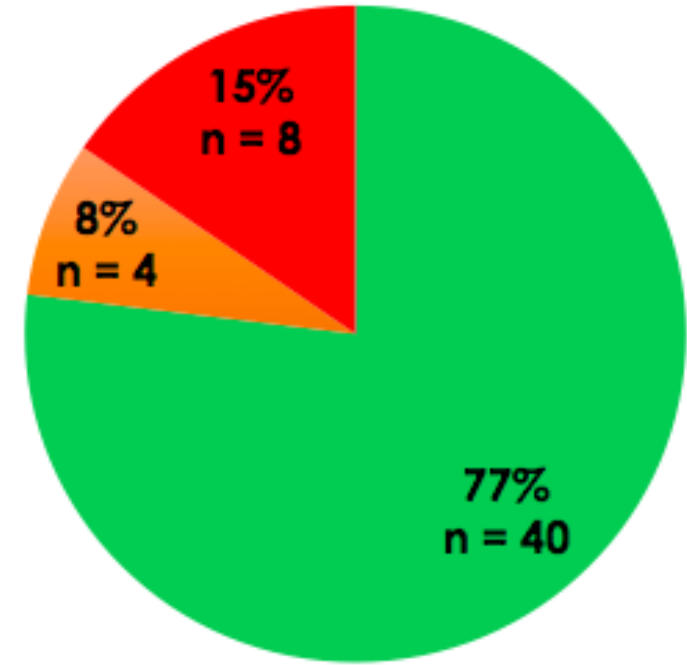
Pittsgrove Twp. 2020 Outreach: Gross Alpha Results

Gross Alpha (Raw/Untreated)



n = 73

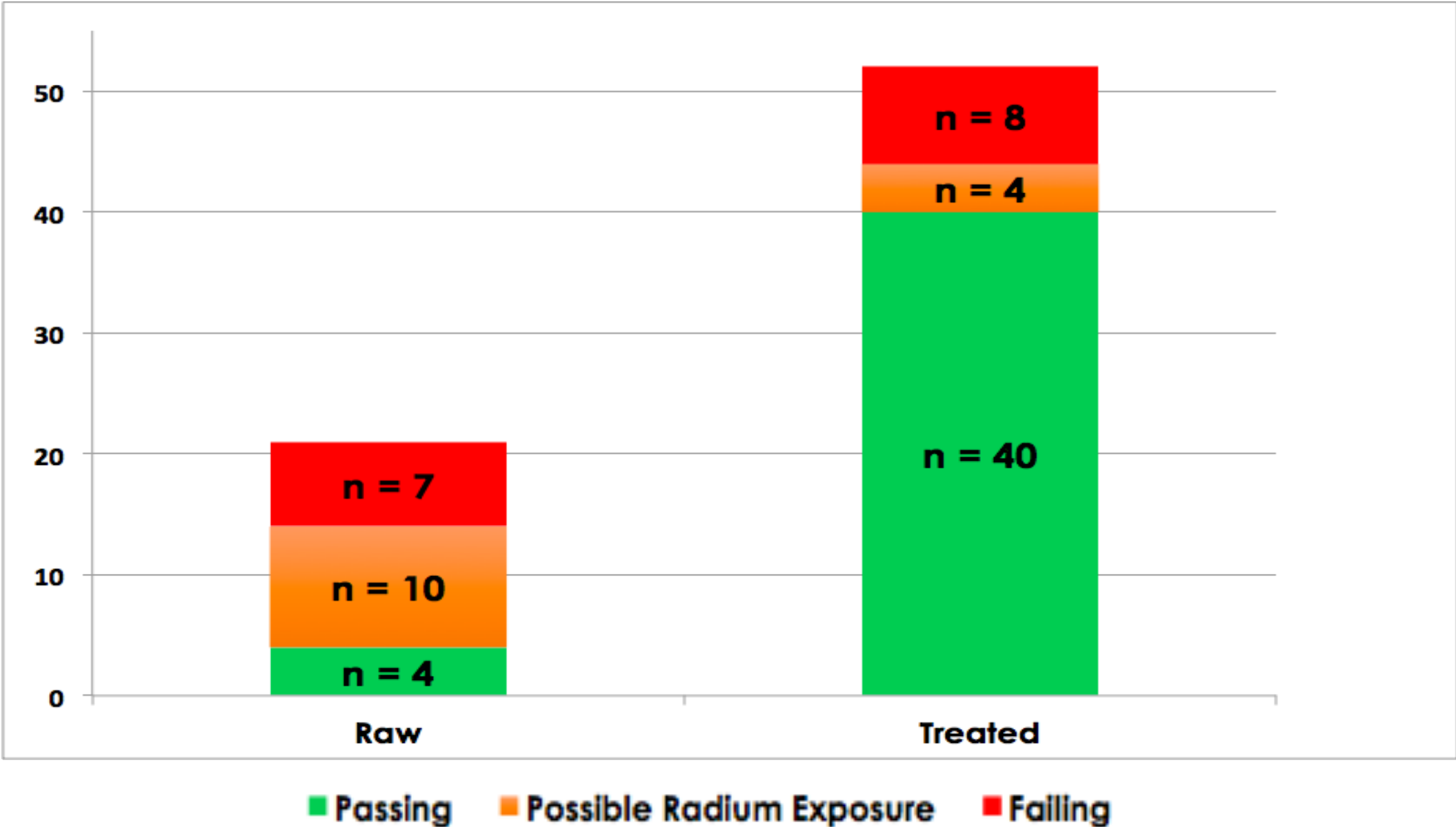
Gross Alpha (Treated)



n = 52

■ Passing ■ Possible Radium Exposure ■ Failing

Summary of Gross Alpha Exposure from Drinking Water



Iron Recommendations

< 300 µg/L:

- No further action required

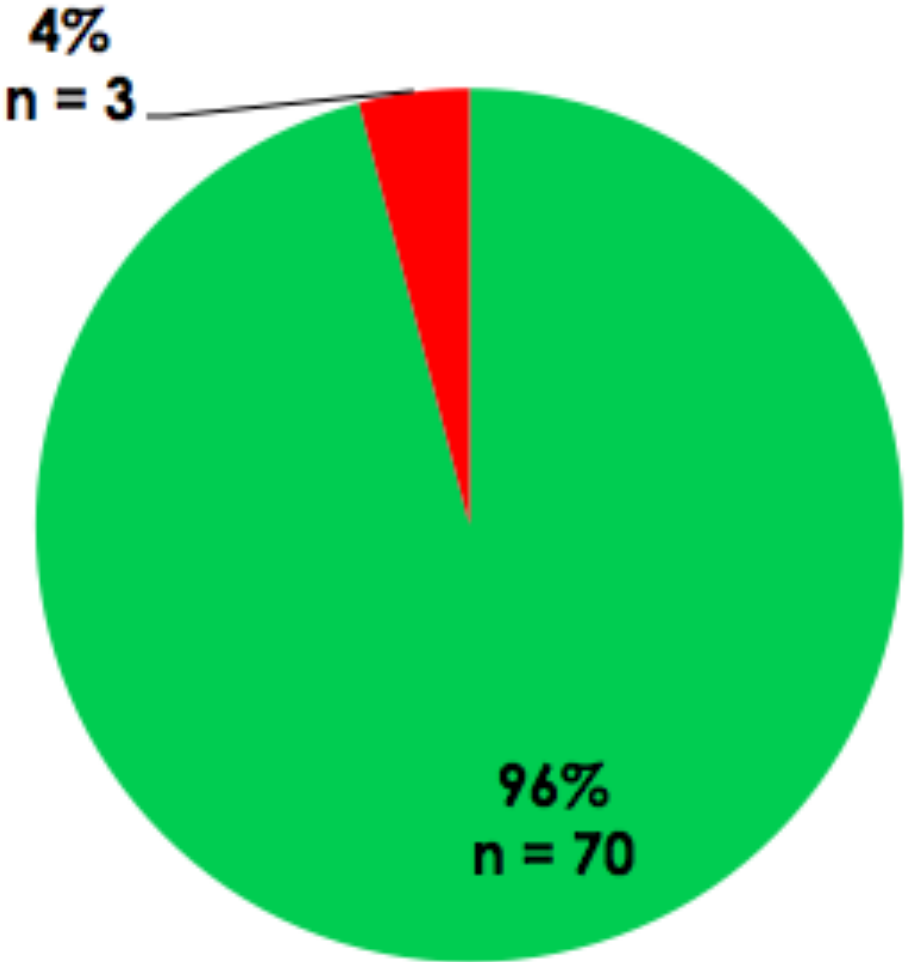
> 300 µg/L:

- Water Softener

> 1,000 µg/L:

- Consult with water treatment professional / Water Softener

Pittsgrove Twp. 2020 Outreach: Iron (Raw) Results



■ Passing ■ Failing

Manganese Recommendations

< 50 µg/L:

- No further action required

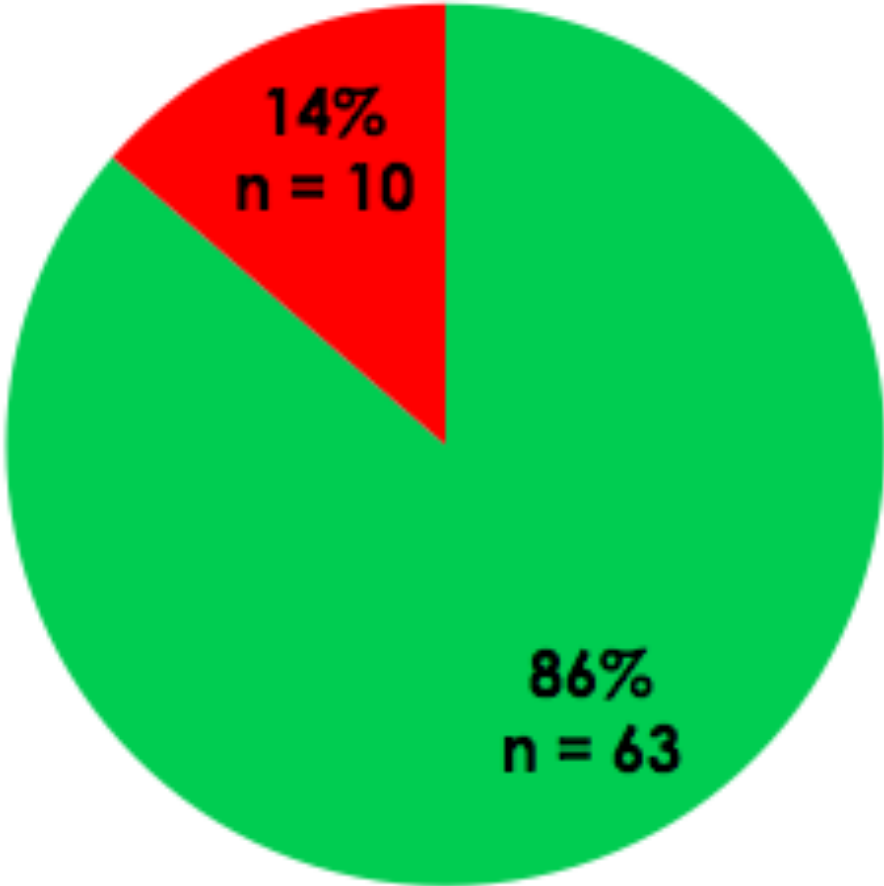
> 50 µg/L:

- Water Softener

> 300 µg/L:

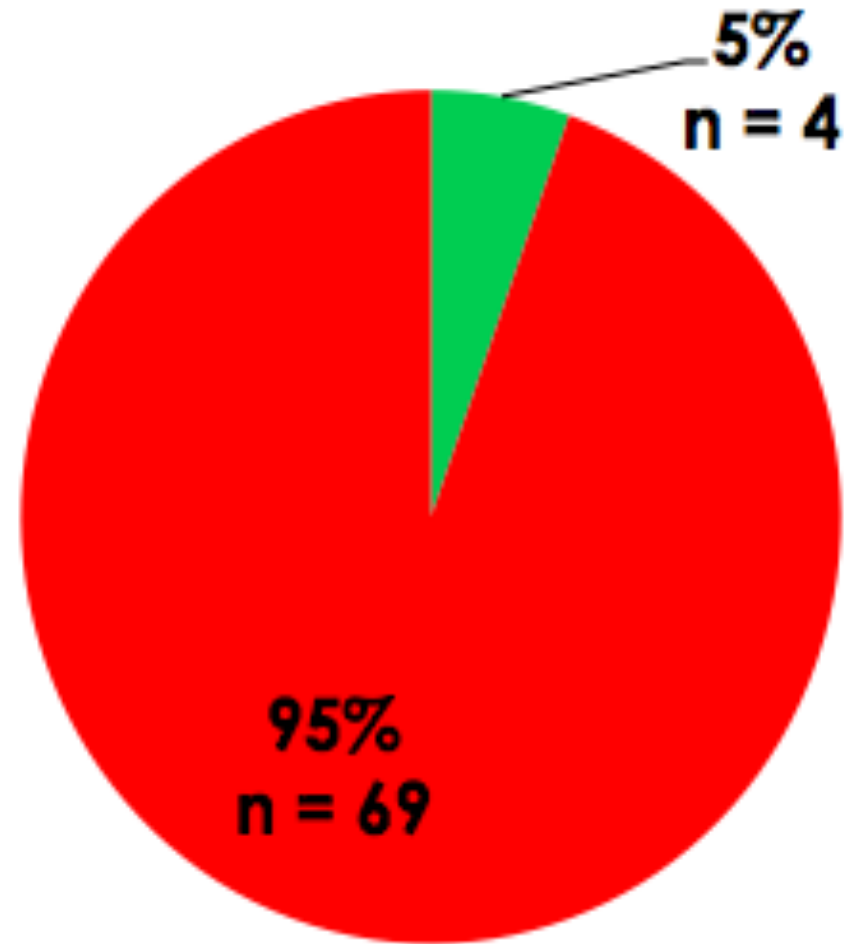
- Consult with water treatment professional / Water Softener

Pittsgrove Twp. 2020 Outreach: Manganese (Raw) Results



■ Passing ■ Failing

Pittsgrove Twp. 2020 Outreach: pH (Raw) Results



■ Passing ■ Failing

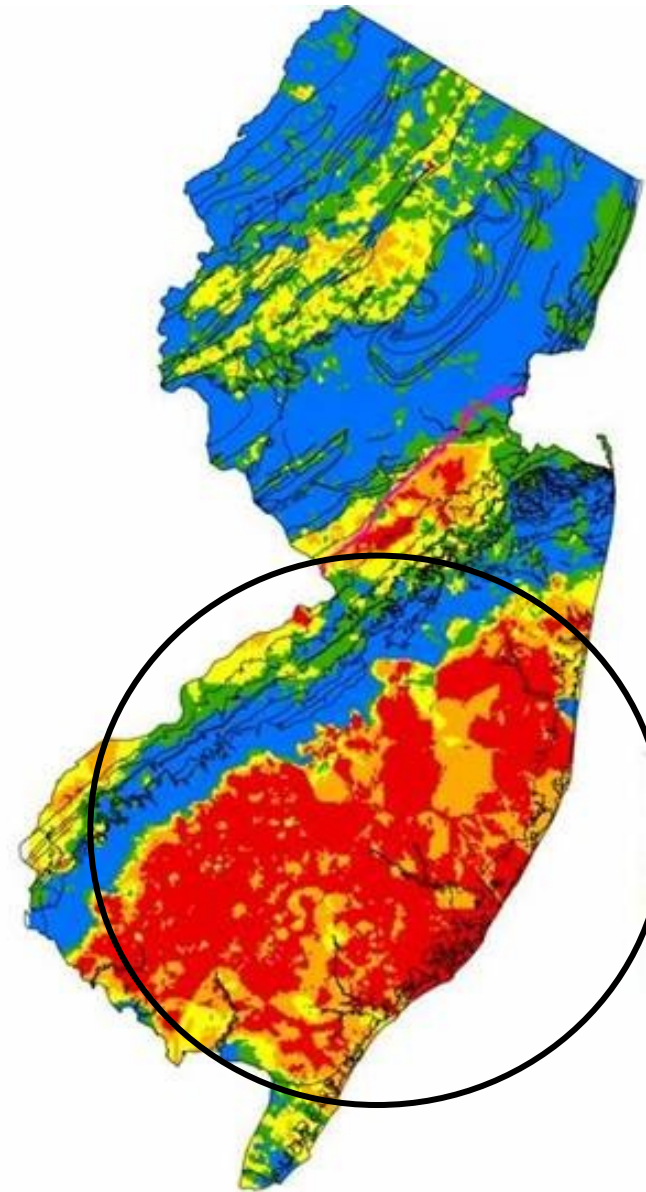
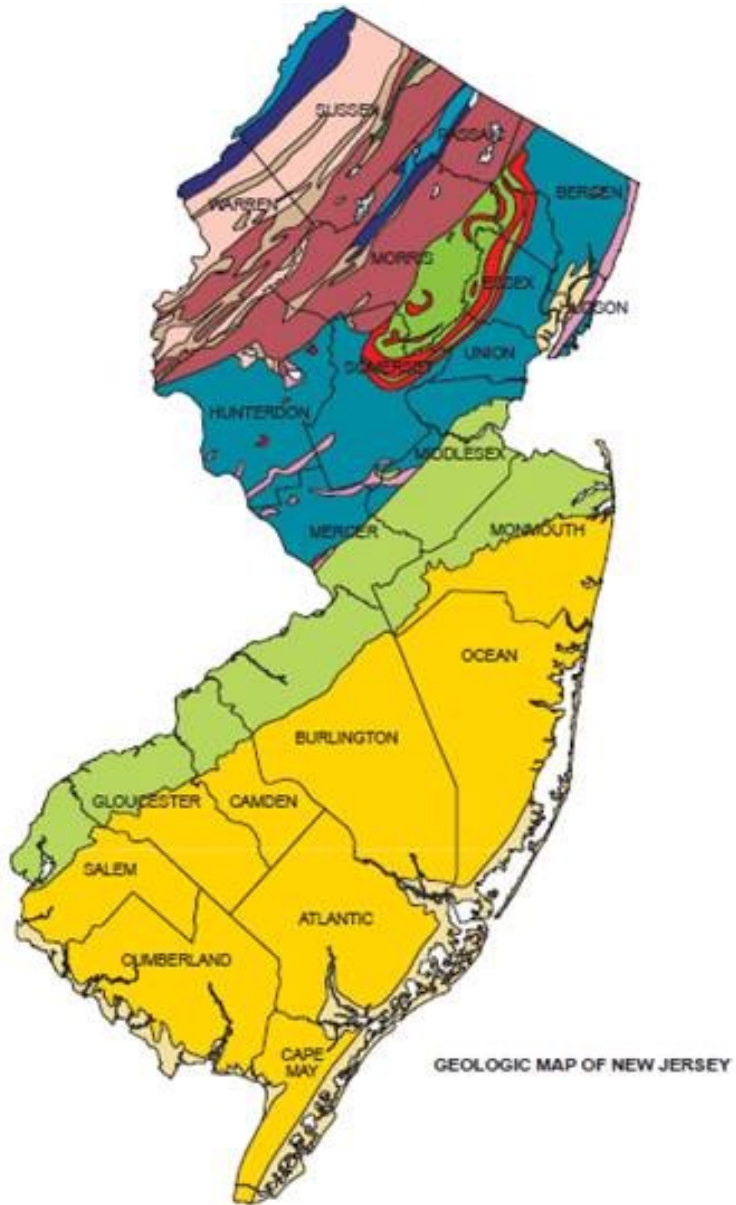
Water Treatment Financing

- NJ Housing and Mortgage Finance Agency: Potable Water Program
- A no-interest mortgage loan is available – up to \$10,000
- For violations of primary drinking water standards (**gross alpha** included)
- Also includes standards for: **iron**, **manganese**, sodium, chloride, lead, mercury



<https://www.nj.gov/dca/hmfa/homeownership/owners/potable/>

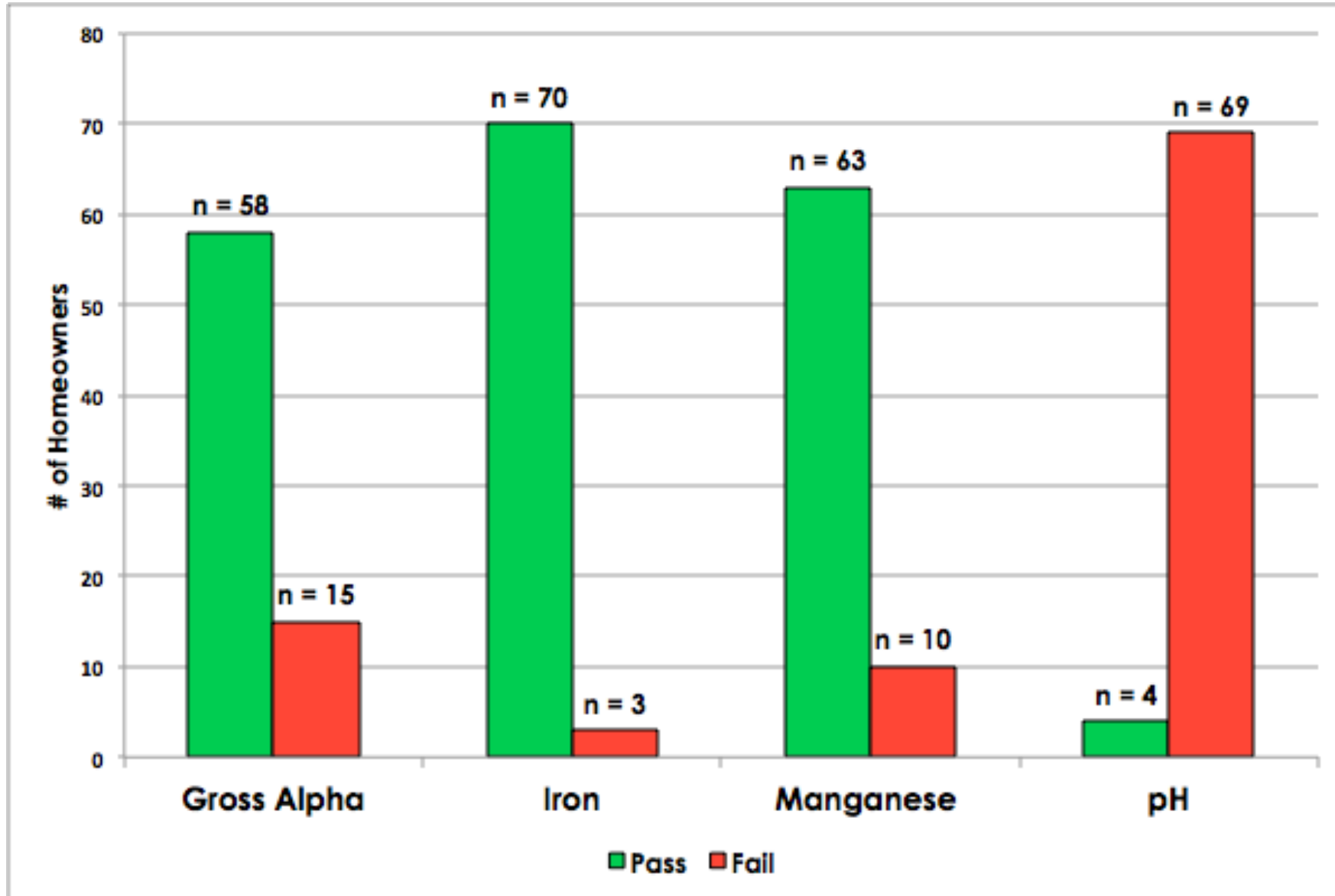
Bedrock Geology vs pH



pH and Lead Correlation


- Acidic pH levels (< 6.5) can increase corrosivity
- Increases risk of lead to leach from piping and fixtures
- Affordable treatment systems available for tap/pitchers to treat water for drinking and cooking
- Recommend a pH neutralizer – can raise pH to a recommended standard ($6.5 - 8.5$) for whole house treatment.
 - Protects plumbing and all taps are treatment.
 - Would have to test effectiveness
- Specific levels of pH required in order to effectively remove manganese and iron

Summary of Exposure from Drinking Water




Frequently Asked Questions

- Is it safe to shower?
 - Yes – skin absorption from radium not a concern
- Will cooking/boiling water remove the contaminants?
 - No – boiling will not remove these contaminants, instead it could concentrate
- Pets
 - If your drinking water exceeds the standard you and/or your pets should not drink
- Additional resources:
 - https://www.state.nj.us/dep/watersupply/pwta/pwta_faq.htm
 - Link for South Jersey homeowner's guide
 - How much does treatment cost?
 - How much does water testing cost?



A South Jersey Homeowner's Guide to Radioactivity in Drinking Water: Radium

Radioactive substances in ground water, such as radium, uranium and thorium, occur naturally. They are present at least to some extent in almost all rocks and radium, in particular, dissolves more readily into ground water in contact with sands or soils. The acidity of the water, which may be increased by the presence of elevated levels of nitrates associated with agricultural land use, is believed to increase the amount of radium that dissolves into ground water from contact with sands and soils.



Sampling of public and private wells that draw water from southern New Jersey's Cohansey aquifer has shown elevated levels of naturally occurring radioactivity. The aquifer, sometimes referred to as the Kirkwood-Cohansey aquifer, is present in all, or parts of Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Monmouth, Ocean and Salem counties (see map at right). Elevated levels of radioactivity most recently were found in the area of Dover township, Ocean County, where an investigation is under way into specific childhood cancers in that area. It is important to note, however, that radioactivity in drinking water, especially at these low concentrations, is not known to cause these types of cancers.

Results from investigations in Dover Township, Ocean County, which used a new testing procedure that detects radiation from short-lived radioactive substances, indicated that elevated levels of radioactivity existed in some area drinking water supplies. Consequently, the N. J. Department of Environmental Protection and the U. S. Geological Survey conducted studies to better understand the presence of radioactivity in this aquifer. The results of these studies confirmed that Radium 226, 228 and 224 may be found in elevated concentrations in parts of the Cohansey aquifer.

Radioactivity in drinking water is not a new phenomenon, having been present to some extent for thousands of years. Nevertheless, exposure to radium over a long period of time is believed to increase one's lifetime risk of developing certain types of cancer. Therefore, homeowners should be aware of the steps they might wish to take to test their private drinking water wells for radioactivity and to reduce their exposure.

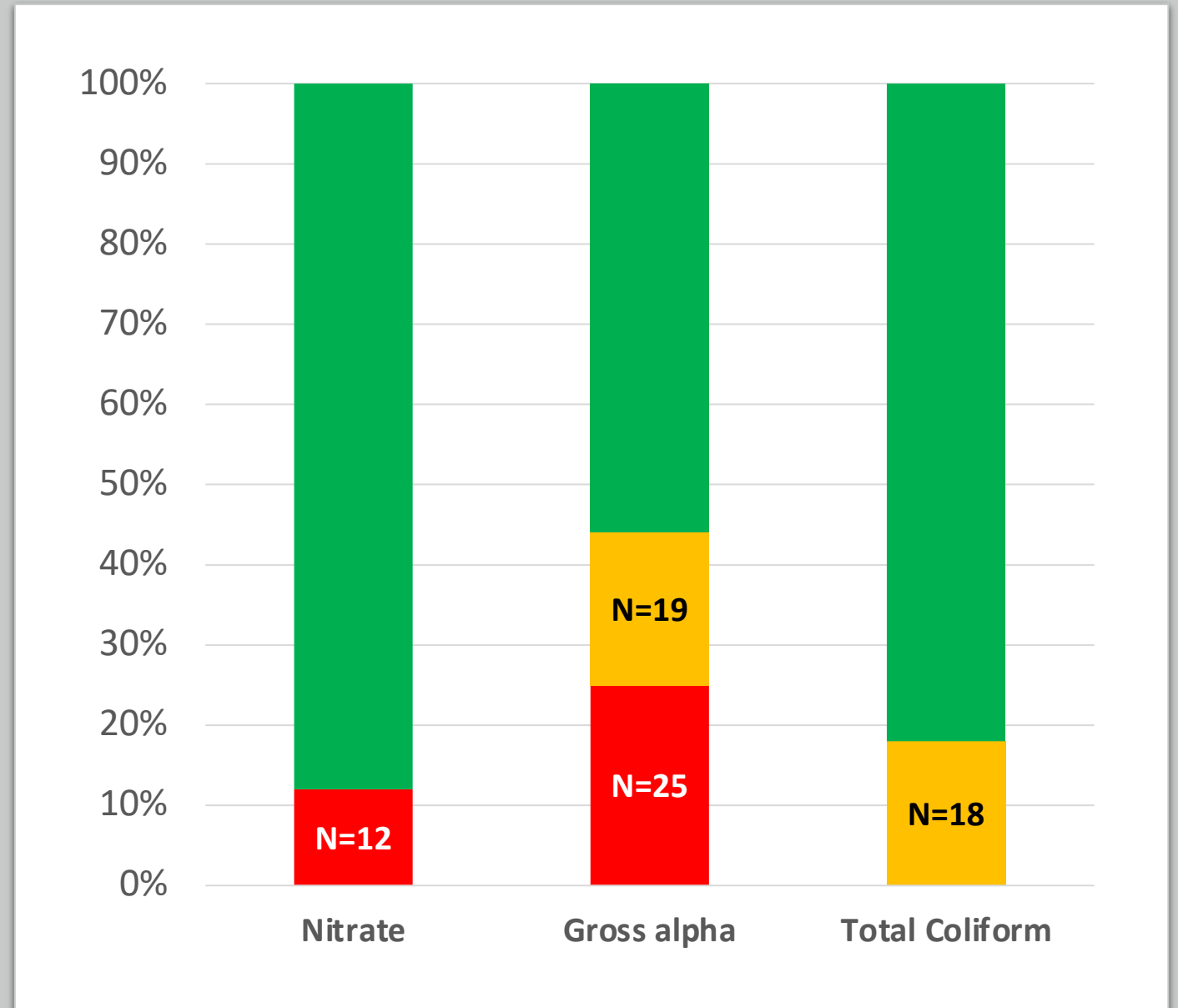
Pittsgrove Twp. 2018 Outreach Event

- In 2018, NJDOH and NJDEP offered free private well testing for: gross alpha, nitrate and coliforms
- 100 private wells were tested

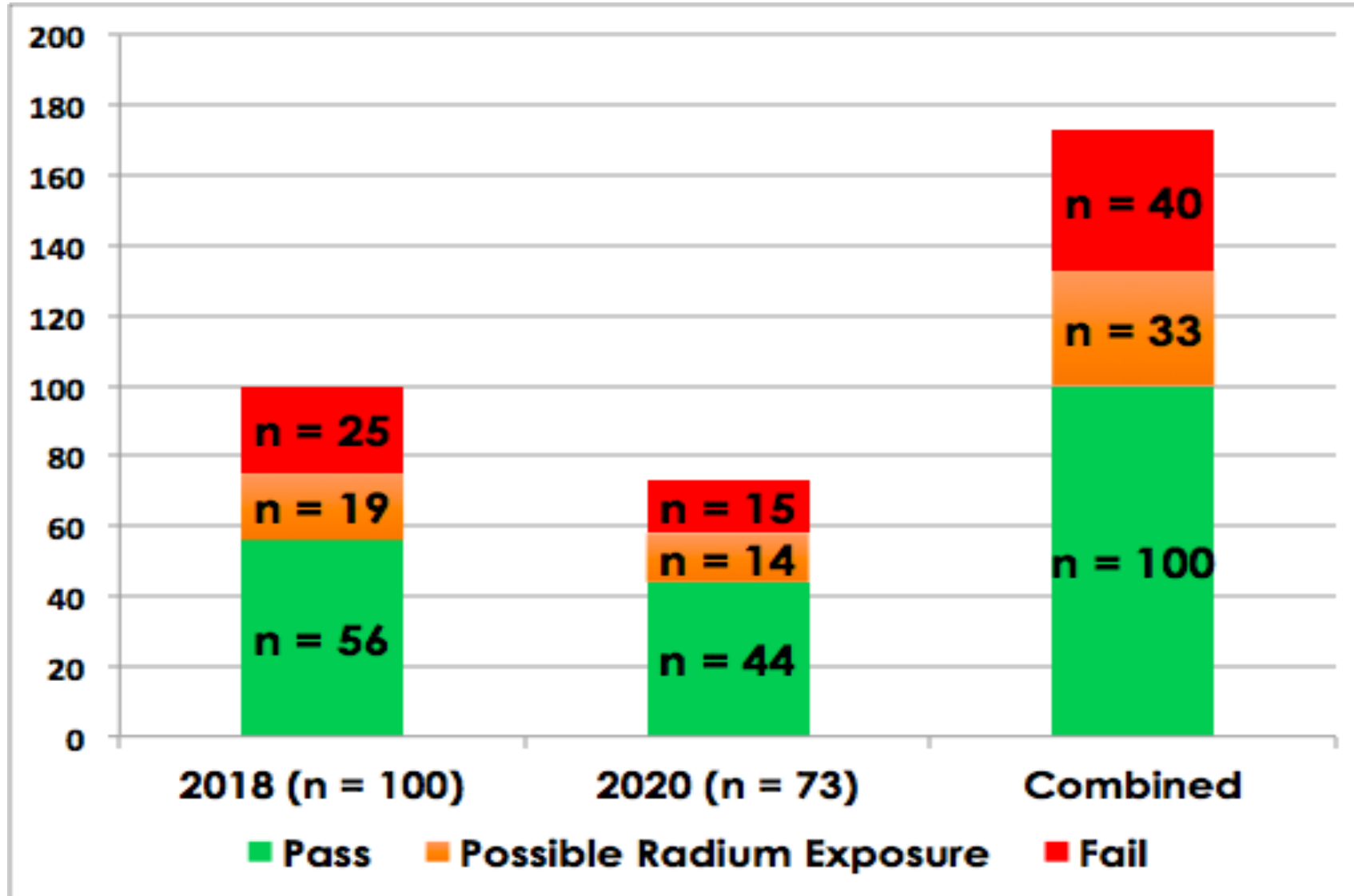
Contaminants Tested For and MCLs:

- Gross alpha in treated water
- Nitrates in treated water
- Total Coliform in raw/untreated water

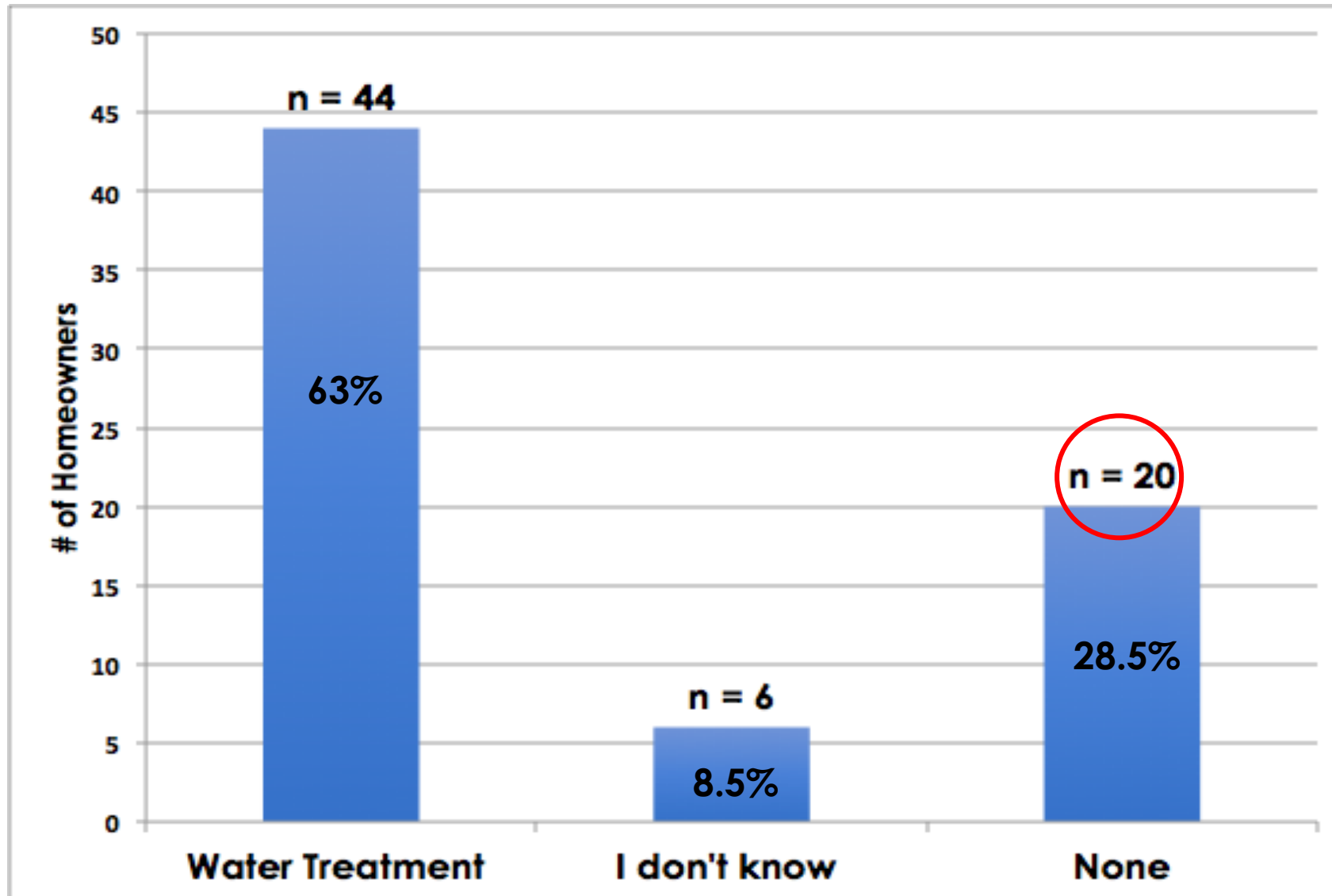
Summary of Drinking Water



Summary of Drinking Water 2018 & 2020 Gross Alpha Results



Self-Reported Water Treatment Summary



What Next -

- Encourage your neighbors to test their well water
- Learn about your water treatment
- Test annually, make sure your treatment is maintained and is effectively reducing the concentration of contaminants in your water

Contact Information:

Email: jessie.gleason@doh.nj.gov

Phone: 609-826-4984

