



Virtual Home Resource Guide Workshop

*Preparing for Unconventional Gas
Development In Your Community*

Part 3 -- Jan. 26 @ 7



Protect PT 

Who is Protect PT?

Protect PT (Penn-Trafford) is a nonprofit organization dedicated to ensuring residents' safety, security, and quality of life by engaging in education and advocacy to protect the economic, environmental, and legal rights of the people in Westmoreland and Allegheny counties.

Since starting as a group of neighbors working together to protect their neighborhood from fracking in late 2014, Protect PT has grown to a community-based organization with staff, volunteers, and members.

Learn more at protectpt.org.

OUR GOALS



Educate residents and local lawmakers with factual and important information so they may better protect themselves.



Empower residents to get involved in the local government process.



Engage our lawmakers directly at local meetings and hearings to ensure our rights are protected.

Zoom Housekeeping

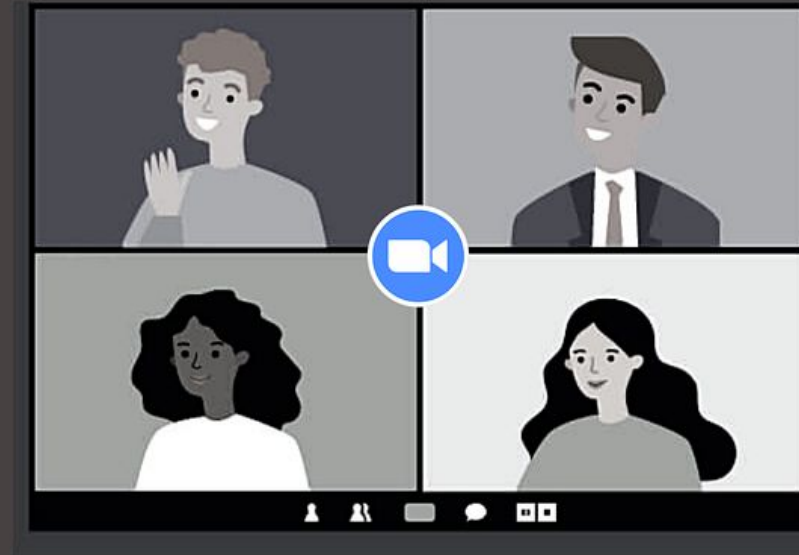
We ask everyone to stay muted that is not speaking

A lot of material to cover

Please add questions in chat/Q & A along the way (we
will address most questions at the end of sections)

Presentation will have interactive elements

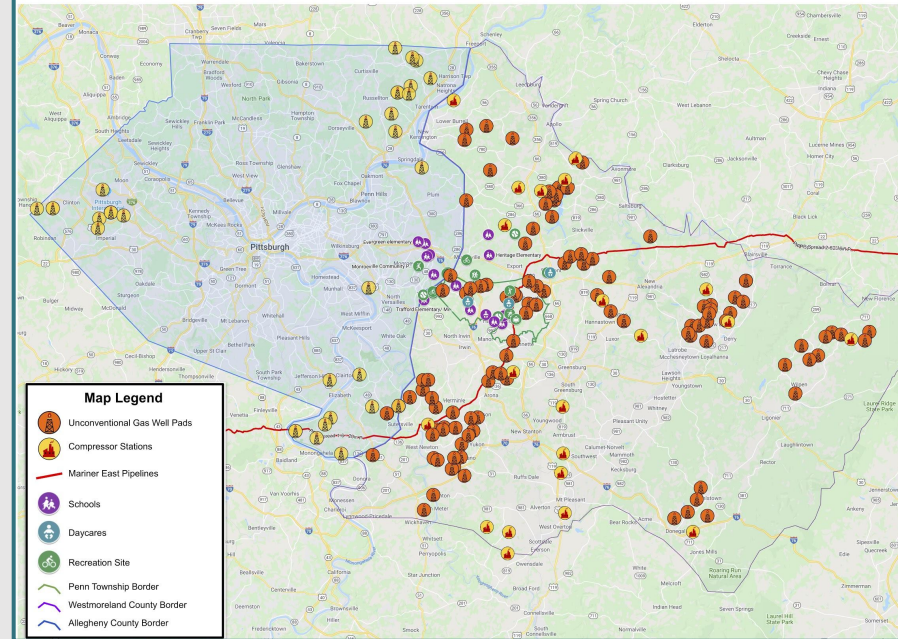
zoom



Why We Are Here

- Residents will be exposed to the different stages of this heavy industrial process in close proximity to our homes, businesses, and schools.
- Each stage of this process brings with it unwanted impacts to our quiet, rural community.
- With more and more gas infrastructure proposed in southwest Pennsylvania residents need to be extremely aware of their surroundings and how to protect themselves and their family.

UNGD in Westmoreland and Allegheny Counties



Overview of Workshop

Community Workshop Agenda

**Jan. 19
7-8:30**



Complaints & Compliance

**Jan. 26
7-8:30**



Air & Water Pollution



Emergency & Disaster
Preparedness

**Jan. 21
7-8:30**



Noise & Nuisance

**Jan. 28
7-8:30**





Air & Water Pollution

Breathe in, Breathe out. Ahhhh, relax under a hot shower.

You have a constitutional right to clean air and water, so why do you smell the diesel from the truck convoys passing your house every day. Just yesterday, your neighbor told you their well water turned brown. And now, you wonder if you need to start buying bottled water.

This section will cover:

- How air and water quality are impacted by shale gas development
- What kinds of potential health impacts could occur
- How you can protect yourself and your family from these impacts
- How to reduce poor air exposure
- How to make an inexpensive but highly-effective air filter using common household items found at your local hardware store
- How radon from shale gas can contaminate your home through air and water and what steps to take in your own home to make sure your family is protected
- What is in oil and gas waste and where does it go

Health Impacts

5 Major Health Threats from Air Pollution

- Respiratory Problems
- Nervous System Impacts
- Blood Disorders
- Cancer
- Birth Defects & Harm to the Developing Fetus



Health Impacts

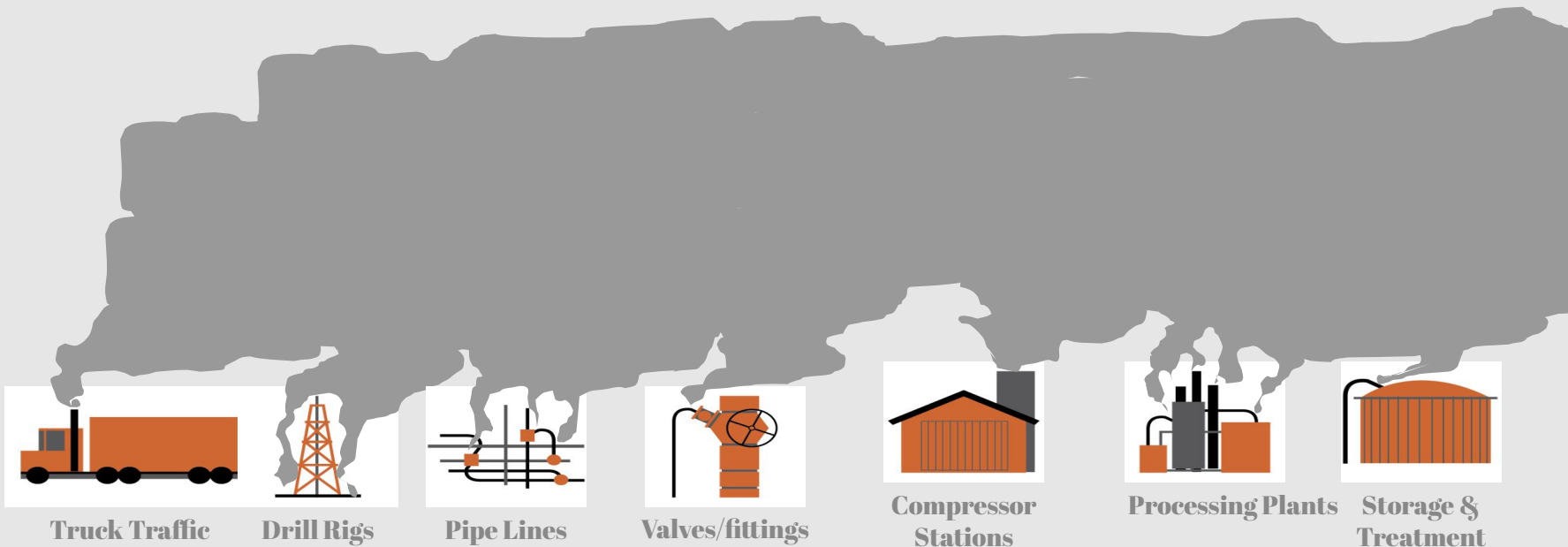
Children Are More Vulnerable to Health Risks

- Children have a higher respiratory rate and receive higher doses of air pollution.
- Bodies are still developing.
- Limited Immune System.
- Lack ability to metabolize and excrete chemicals like adults



Emission Sources

Like any other industrial facility, shale gas wells and infrastructure can present a significant risk to public health at every stage of development.



Truck Traffic

Drill Rigs

Pipe Lines

Valves/fittings

Compressor
Stations

Processing Plants

Storage &
Treatment

Graphics courtesy of Protect Our Children Coalition

Types of Air Emissions

Particulate matter (PM)

- Tiny particles found in the air we breathe.
- PM can be a pathway for VOC's into the body.
- Increased PM is associated with health impacts

Volatile Organic Compounds (VOC's)

- Includes known and suspected carcinogens.

Radioactive Particles



How Weather Affects Air Quality

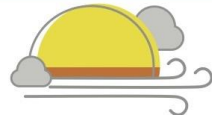
Weather conditions have an effect on the quality of your *indoor* and *outdoor* air

Air Quality Index (AQI)

Satisfactory



Moderate



Unhealthy for Sensitive Groups



Unhealthy for Everyone



Very Unhealthy



Hazardous



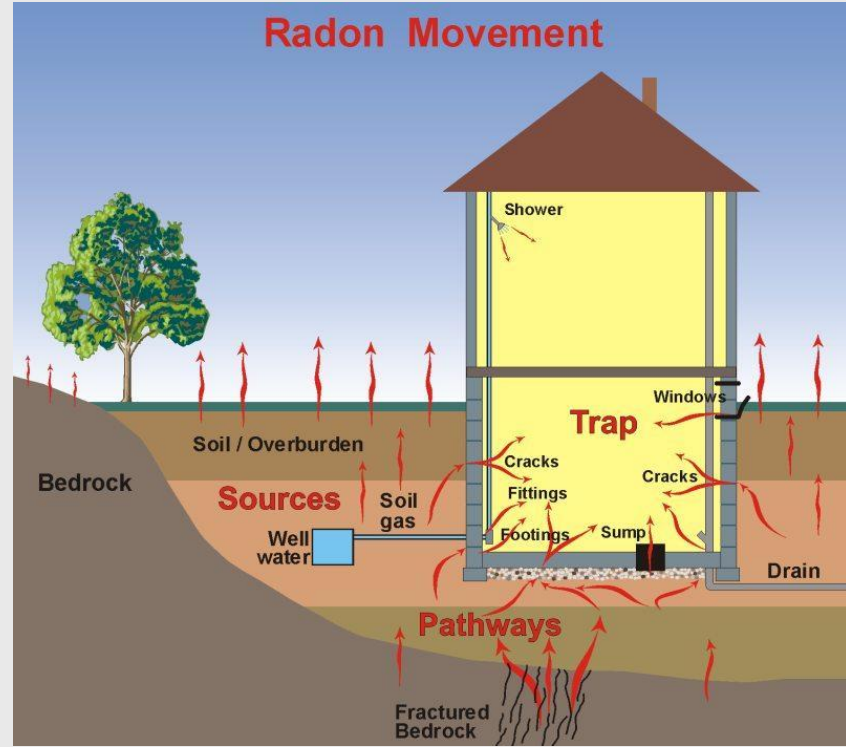
Things to Consider When Cleaning

- Keep the surfaces clean
- Vacuum and mop often
- Maintain a humidity level of 30-50 percent to reduce mold and dust mites
- Use natural cleaning agents
- Many fragrances in common household cleaning agents are harmful to your health.



Radon Gas

- What is radon gas and where does it come from?
- What are the effects on your health?
- How can weather affect radon levels?



Gas Chamber image courtesy of CR3

EPA Map of Radon Zones

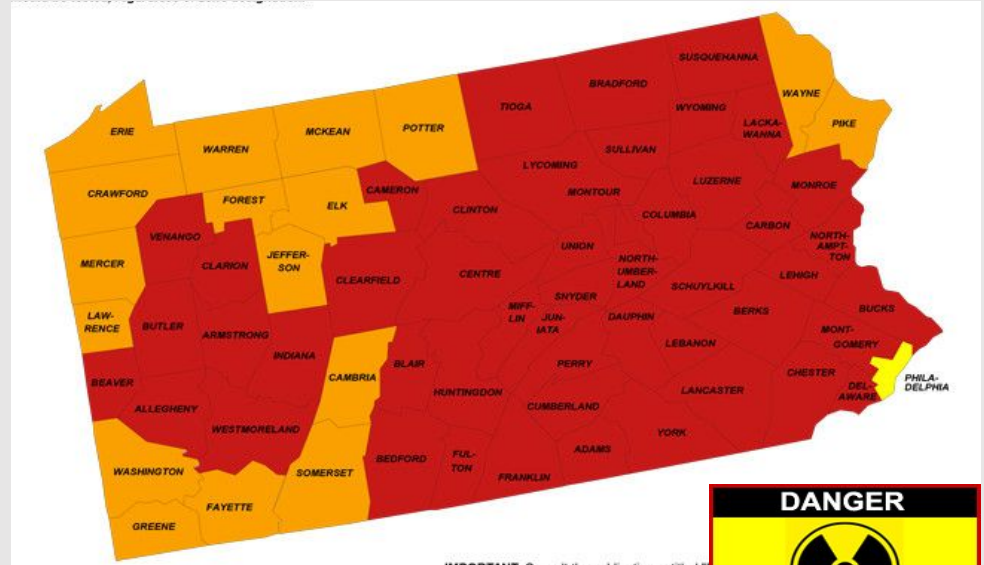
**PENNSYLVANIA HAS THE HIGHEST
RADON LEVELS MEASURED IN
THE UNITED STATES. OVER 17,000
PCI/L IN LEHIGH COUNTY**

EPA ACTION LEVEL IS 4 PCI/L

**WARNING: THE ONLY WAY TO
KNOW IF YOU HAVE ELEVATED
RADON IS TO TEST!!!!**

ELEVATED RADON LEVELS HAVE BEEN FOUND IN THE YELLOW LOW POTENTIAL RADON ZONE ALSO.

The map zones are a potential guide only?



Images from Citizens for Radioactive Radon Reduction (CR3)



Radon Gas

- How can you protect your health from radon gas?
- How can you test for radon gas in your home?
- Learn more by watching our Virtual Lunch Hour

<https://bit.ly/YouTubeProtectPT>



Improving Air Quality

Adjust your behaviors:

- Avoid heavy exertion outside
- Stay indoors if possible
- Close doors and windows
- If possible run air filters
 - Car
 - Office
 - Home
 - Furnace
 - Rooms



Improving Air Quality

Adjust your behaviors:

- On a good air quality day, open your windows to refresh your home
- On a bad air quality day, close the windows and run an air filter



Air Monitoring

[Link to sign up for air monitoring](#)

- Conduct baseline air monitoring.
- Monitor during each phase.
- Follow monitoring instructions
- Make note of particularly PM high levels, visible dust bad odor or taste.
- Monitor inside and outside simultaneously
 - Make sure outdoor monitors are properly sheltered without impeding air flow



Water Pollution

CLEAN WATER
— IS OUR MOST —
PRECIOUS RESOURCE



How Does Fracking Affect Water?

Hydraulic fracturing requires about 10 million gallons of water per well.

- Only 15 - 20% of that water is recovered from the ground.
- The water used for fracking contains many chemicals known to:
 - Cause cancer
 - Disrupt the endocrine system
 - Affect the brain and kidneys
 - Affect the nervous, immune, cardiovascular, respiratory, and gastrointestinal systems
 - Affect skin and eyes



Pathways of Exposure

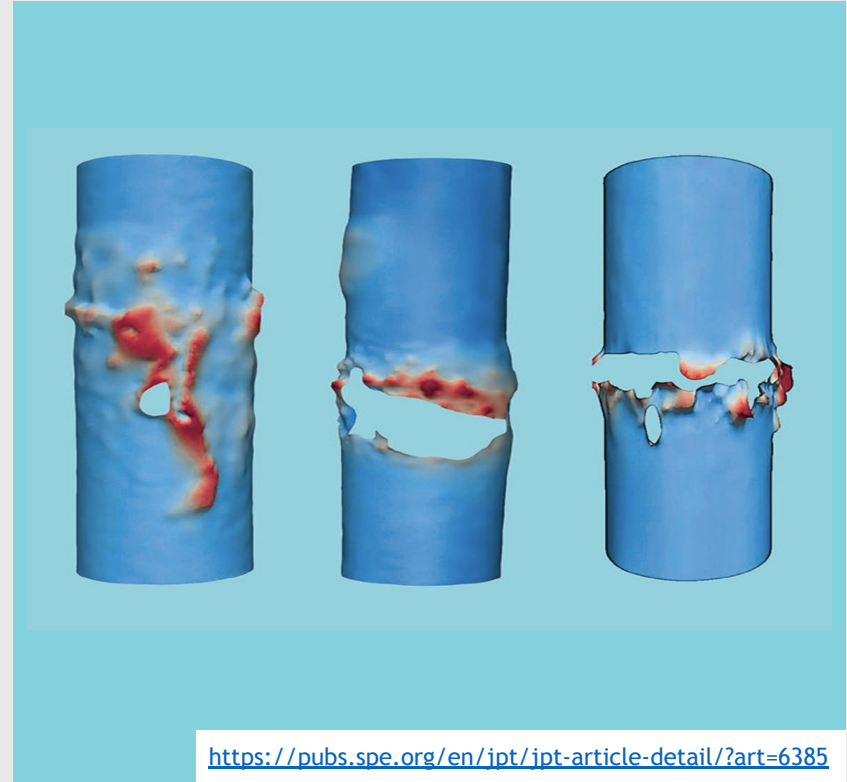
- Contamination of Underground Aquifers
- Surface Contamination
- Wastewater Treatment and Disposal



Ways that Water is Contaminated

- Well failure
- Wastewater storage systems
- Wastewater transportation
- Disposal wells
- Releasing wastewater onto roads
- Using wastewater to irrigate crops

<http://blogs.edf.org/energyexchange/2017/12/29/six-ways-oil-and-gas-development-can-contaminate-land-and-water-and-what-to-do-about-it/>



What is in the water?

Chemicals in Fracking Fluid

- Benzene
- Toluene
- Ethylbenzene
- Xylenes
- Methanol
- Naphthalene
- Formaldehyde
- Acrylamide
- Ethylene Glycol

Naturally Occurring

- Arsenic
- Strontium
- Iron
- Magnesium
- Methane
- Ethane
- Propane
- Radon & Radium

*From Physicians for Social Responsibility

Gas companies do not release the all the ingredients of their fracking fluid due to “trade secrets” this is known as the Halliburton Loophole.

Has Your Water Been Contaminated?

What to ask for with Water Testing:

- 3rd tier testing
- Radiologicals
- Known fracking chemicals like BTEX, Isopropanol and Acetone, etc.
- Make sure the lab is DEP certified
- If a well is scheduled near you, get a baseline test before it is installed



Well Water Testing

- Test your well before drilling activity starts to get a baseline.
- Anyone living within 3 miles of a drilling site should have their water tested, particularly if the bore hole is directly underneath your property.
- Test for:
 - ☐ Ethane/Methane
 - ☐ Conductivity
 - ☐ Chloride
 - ☐ VOC's
 - ☐ Barium/Strontium
 - ☐ Arsenic
 - ☐ Surfactants
 - ☐ Oil & grease
 - ☐ Iron
 - ☐ Potassium,sodium,calcium

*See DEP Certified labs list & call around

Surface Water

Volunteer Monitoring of local streams and waterways Sign up if you:

- Live near a stream or creek
- Have one on your property
- Have some time to devote to monitoring
- Have a passion for nature, fishing, and clean water

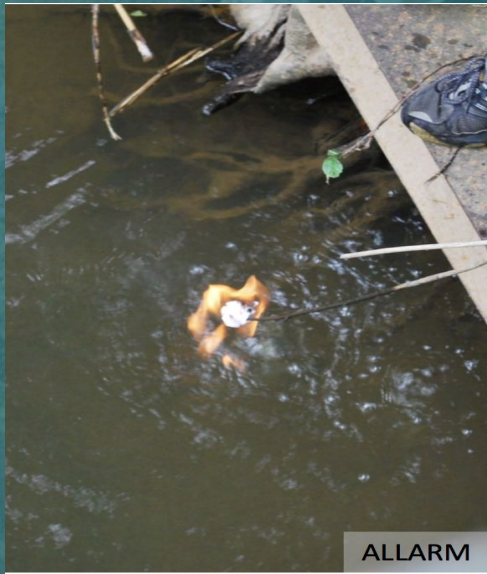


Examples: What Do You See?



Examples: What Do You See?

Gas Migration or Leakages



Oil and Gas Waste

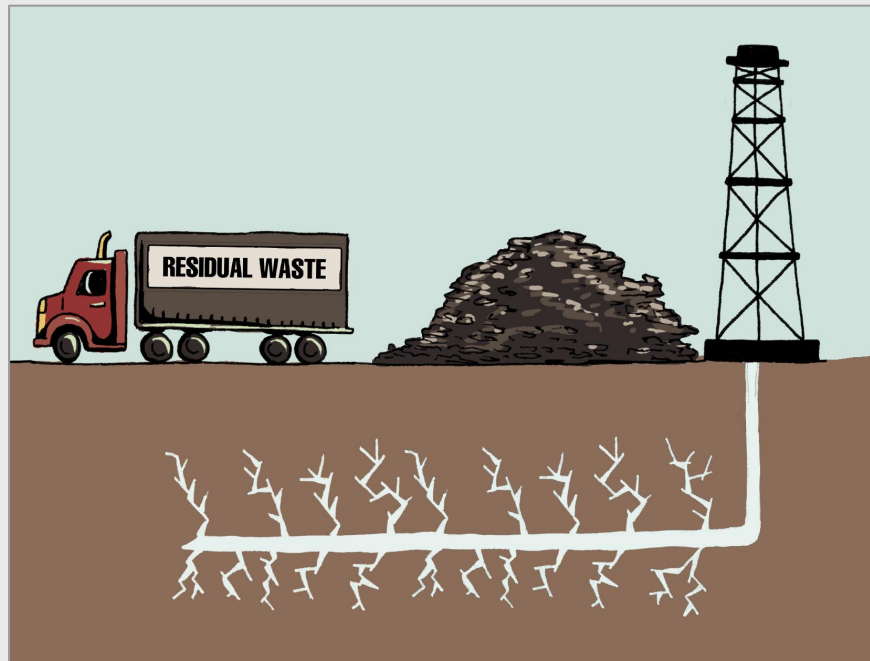
Classified as non-hazardous waste -Resource Conservation and Recovery Act 1976

Where does the oil and gas waste go?

- Landfills
- Injection wells
- On roads

Watch our Virtual Lunch Hour:

<https://www.youtube.com/watch?v=ILquArb5Esl&list=PL3oT6AQZ31cwb3cGjygWjegLvVxlnBMZ4&index=3>



Leachate

IS FRACKING WASTE FROM MUNICIPAL LANDFILLS IMPACTING OUR WATERWAYS?

Unconventional natural gas development (fracking) produces vast amounts of waste. This waste comes in the form of brine and drill cuttings, both brought up from deep shale layers that can contain high amounts of Radium. Despite the potential presence of radioactivity, and chemicals poisonous to humans, fauna and flora, this toxic waste is classified as residual waste and permitted to be disposed of in landfills that are intended for the collection of non-hazardous waste.

Leachate is the result of rainwater and moisture percolating through waste at a landfill and leaching chemicals, organic matter, and other particles from the waste. Landfill tea. The leachate is then classified as residual waste at the landfill and sent to sewage treatment plants. But the leachate is not adequately treated for potential radioactive materials, leaving concerns that discharged treated water could be polluting rivers and streams. Our drinking water comes from the same waterways.

1

DIG UP THE EARTH

When a gas well is drilled, shale rock, gasses, and liquids are brought to the surface. They have been far below Earth's surface for over 500 million years and contain varying levels of radioactivity, including the carcinogen Radium.



2

DUMP IT AT THE LANDFILL

Not all waste is the same, but all waste must be deposited somewhere. Drill cuttings and other waste materials from fracking are brought to the local landfills. The landfills scan the trucks with large gamma detectors, but this only tells us if there are radioactive isotopes present, not how much is present.



3

TREAT TOXIC LEACHATE

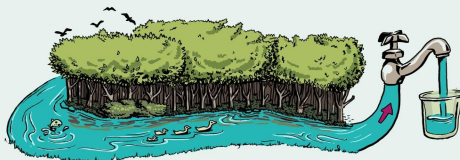
Leachate is the liquid runoff from landfills. This accumulates after the rain has fallen and seeped through radioactive landfill piles. This leachate is notoriously hard to clean and is a major threat to ground and surface water. Leachate is sent to sewage treatment facilities that discharge into our streams.



4

AND THEN WE DRINK IT

Sewage treatment facilities in PA are not adequately equipped to filter out all of the radioactive material. Nevertheless, this proclaimed "clean" water is pumped into rivers and streams, which then feed our drinking water systems.





Air & Water Pollution

Q & A



Final Thoughts/Questions

Don't Forget Your Survey!

<http://bit.ly/hrgsurvey2021>



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