Ridge Run PFAS
HSCA Site

Public Hearing
West Rockhill Township
July 11, 2018
Agenda

- Site background and investigation results
- Response alternatives for providing potable water supply in the Site area
- Public comments on PADEP’s proposed response
Ridge Run PFAS Site

- Groundwater is contaminated with Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA), which are both per-fluorinated alkyl substances (PFAS)

- PFAS are chemicals present in commercial, industrial, and residential products
  - Cookware, carpets, clothing, food packaging, firefighting foams, water repellent materials

- In May 2016, USEPA set a Health Advisory Limit (HAL) of 70 parts per trillion (ppt) for combined PFOA & PFOS in drinking water
Site Background

- Aug 2016: North Penn Water Authority (NPWA) conducted voluntary sampling of public supply wells
  - PFAS detected at 2 wells
  - PADEP & NPWA customers notified, affected wells shut down
- PADEP met with Townships, created websites
- Nov 2016 – Present: PADEP contacted residents and sampled 156 wells in the area; provides bottled water to 9 residences with PFAS above HAL
Site Investigation

156 wells sampled total

- > 70 ppt (12 wells)
- 40-69 ppt (2 wells)
- 20 – 39 ppt
- ND – 19 ppt
- No detection of PFAS
PADEP Activity

- Bottled water for affected residents as temporary measure during investigation period
  - 9 homes currently receiving bottled water
  - 3 carbon filters by residents
- Multiple sampling events of wells with detections above 40 ppt
- Analysis of response alternatives to evaluate possible response actions for residential drinking water
Response Alternative Evaluation Criteria

- **Effectiveness**
  
  *does it mitigate threats posed by the contamination?*

- **Time frame of the response**

  *is it temporary or permanent; how long will it take to enact?*

- **Reliability**

  *can it consistently comply with health based standards?*

- **Implementability**

  *is it feasible to initiate, install, operate, and/or maintain?*

- **Cost**

  *is it cost prohibitive, or cost-effective for PADEP and homeowners?*

- **Public, municipal, and organizational support**

  *discovered through public comments*
Response Alternatives

1. No action
2. Bottled water with restrictions on use of groundwater
3. Carbon filters with restrictions on use of groundwater
4. Public water line with restrictions on use of groundwater
Alternative 1

No Action
(Baseline Alternative)

PROS
Implementable
No cost

CONS
Not effective
Not a permanent solution
Not reliable
Alternative 2

Bottled water with restrictions on use of groundwater

**PROS**
- Implementable
- Effective
- Reliable
- Cost Effective

**CONS**
- Not a permanent solution
- Inconvenient to use & store
Alternative 3

Whole-house carbon filters with restrictions on use of groundwater

PROS
Implementable
Cost effective
Effective*
Permanent*
Reliable*

CONS
Inconvenience
-requires monitoring & maintenance

* if properly maintained
**Alternative 4**

Public water line with restrictions on use of groundwater

<table>
<thead>
<tr>
<th>PROS</th>
<th>CONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective</td>
<td>Inconvenience during construction</td>
</tr>
<tr>
<td>Permanent</td>
<td>Not cost effective</td>
</tr>
<tr>
<td>Reliable</td>
<td>Not easily implementable</td>
</tr>
</tbody>
</table>
Alternatives 2-3: Environmental Covenants

(PA Uniform Environmental Covenant Act, 2007)

Covenants would be required for homes with PFAS above HAL

- Agreement between PADEP and homeowner that documents presence of contaminated groundwater on the property deed
- Provides guidelines for filter monitoring & maintenance requirements
- Can be removed from property deed after attainment of drinking water health standards

PADEP can issue an Administrative Order (pursuant to HSCA 512) on the property deed if an agreement cannot be reached.
Restrictions on use of groundwater

Alternative 4: Public Waterline

Mandatory hookup ordinance enacted by municipalities

Well abandonment required
## Cost Analysis—PADEP funding

<table>
<thead>
<tr>
<th></th>
<th>Alternative 1 No Action</th>
<th>Alternative 2 Bottled Water*</th>
<th>Alternative 3 Carbon Units**</th>
<th>Alternative 4 Water line***</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Water/Equipment</strong></td>
<td>$0</td>
<td>$5,640</td>
<td>$24,000</td>
<td>$5,487,637</td>
</tr>
<tr>
<td><strong>Sampling/maintenance</strong></td>
<td>$0</td>
<td>$72,360</td>
<td>$72,360</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$0</td>
<td>$78,000</td>
<td>$96,360</td>
<td>$5,487,637</td>
</tr>
</tbody>
</table>

* Alternative 2 estimate covers 1 year of bottled water and quarterly sampling for occupied homes with PFAS above HAL

** Alternative 3 estimate covers installation of filters at homes with PFAS above HAL, and 1 year sampling/maintenance of those systems

*** Alternative 4 estimate covers main and laterals for entire site area
# Cost Analysis for Homeowners

<table>
<thead>
<tr>
<th>Carbon filters*</th>
<th>Water line**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sampling event</td>
<td>Base rate (quarterly)</td>
</tr>
<tr>
<td>Filter change-out event</td>
<td>Rate per 1,000 gal</td>
</tr>
<tr>
<td>Electricity cost</td>
<td>Total Cost per quarterly water bill for average home (15,000 gal)</td>
</tr>
<tr>
<td>Total Cost for monitoring &amp; maintenance event*</td>
<td>Total Cost (3 years)</td>
</tr>
<tr>
<td>$440</td>
<td>$69.50</td>
</tr>
<tr>
<td>$750</td>
<td>$3.70</td>
</tr>
<tr>
<td>$200</td>
<td>$125</td>
</tr>
<tr>
<td>$1,390</td>
<td>$1,500</td>
</tr>
</tbody>
</table>

*One sampling event and one filter maintenance event are estimated to be needed once every 3-5 years.
<table>
<thead>
<tr>
<th>Criteria</th>
<th>#1 (No action)</th>
<th>#2 (Bottled water)</th>
<th>#3 (Carbon filters)</th>
<th>#4 (Water line)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective at mitigation?</td>
<td>NO</td>
<td>YES</td>
<td>YES (with proper maintenance)</td>
<td>YES</td>
</tr>
<tr>
<td>Permanent solution?</td>
<td>NO</td>
<td>NO</td>
<td>YES (with proper maintenance)</td>
<td>YES</td>
</tr>
<tr>
<td>Reliable?</td>
<td>NO</td>
<td>YES</td>
<td>YES (with proper maintenance)</td>
<td>YES</td>
</tr>
<tr>
<td>Implementable?</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES (with difficulties)</td>
</tr>
<tr>
<td>Cost effective?</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Public/municipal support?</td>
<td></td>
<td></td>
<td>To be determined based on public comments</td>
<td></td>
</tr>
</tbody>
</table>
PADEP’s Proposed Alternative

Alternative 3
Whole-house Carbon Filters

• Protective of human health

• Complies with health advisory level

• Most cost-effective

• Permanent solution, if maintained properly. The Department will take quarterly samples for the first year, and pay for the first carbon changeout, if needed within the first year. The Department will then recommend to each resident a carbon changeout schedule, and ongoing maintenance and sampling would become the responsibility of the resident.
PADEP’s Proposed Alternative

Whole-house Carbon Filters

- Filters will be NSF-certified to remove PFAS
- Two carbon canisters and a sediment filter
- Three sampling ports
- Non-freezing location required
- Residents would sign a covenant for maintenance of a carbon filter and notice of contaminated ground water on their property
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DEADLINE FOR WRITTEN COMMENTS:
August 31, 2018