Sulfolane Response Update

A publication from the Alaska Department of Environmental Conservation to inform the North Pole community of developments related to contamination from the former North Pole Refinery

November 2018

Piped Water Service Construction and Sign-up

Construction to expand the City of North Pole's piped water system is proceeding and on schedule. The water main lines were installed in Zones 1 and 2 this past summer, while water main line construction in Zones 3 and 4 is scheduled for 2019. A map of the four construction zones and the project area can be found at http://dec.alaska.gov/media/2857/2017overview-fig-plume.pdf.

Signing up For Water Service Details
The City of North Pole has sent notification letters to property owners who are eligible for water connection.

- **Zone 1 and 2 property owners** may sign up for service at the City offices beginning December 5th, 2018. Those who sign up by May 31, 2019, will receive a $500 early sign-up bonus.

*(Continued, "**Piped water**," back page)*

PFAS Investigation in North Pole Area Groundwater

This summer, DEC made use of an existing sulfolane monitoring program and sampled a small number of water wells in the North Pole area for a class of chemicals called per- and polyfluoroalkyl substances, or "PFAS." PFAS have been detected in drinking water supplies in some communities in Alaska, including Fairbanks and Moose Creek. DEC is aware that fire-fighting foams containing PFAS were historically used on the former North Pole Refinery property and are present in soil and groundwater on the refinery.

Sampling results show PFAS detections above DEC's "action levels" in North Pole groundwater; however, there is no evidence that people are being exposed to PFAS above these action levels in their drinking water.

- Due to sulfolane contaminated groundwater in the area, the residents and businesses in the North Pole piped water expansion project area are already being provided with safe alternative drinking water or point of entry (POE) well water treatment systems.
- Results suggest that POE systems provided to some properties for removal of sulfolane are also effectively removing PFAS.
- Results indicate the PFAS contamination extends from the former refinery. It is not yet known if there are any other PFAS sources.

*(Continued, "**PFAS investigation**," p. 2)*

The City of North Pole
Flint Hills Resources Alaska &
The State of Alaska

Open House

Wednesday, December 5th
11:30 a.m. – 1:30 p.m. &
4:30 to 6:30 p.m.

North Pole City Hall
125 Snowman Lane

This is the first opportunity for property owners in construction Zones 1 & 2 to sign up for water service with the City of North Pole. Information about sign-ups and remaining construction activities will be available. Current information on both sulfolane and PFAS will also be available.

The City of North Pole: 907-488-8593
www.northpolealaska.com/projects
dec.alaska.gov/spar/csp/sites/north-pole-refinery

What are PFAS?

Per- and polyfluoroalkyl substances (**PFAS**, pronounced "PEA-fass") are a group of chemicals that have been detected in drinking water sources in some Alaska communities, including Fairbanks, Eielson and Moose Creek, North Pole, and Gustavus. PFAS have a range of toxicities, and the presence of these contaminants in drinking water sources has become a complex issue that health and environmental agencies are working diligently to address in Alaska and across the nation.

PFAS are a family of more than 3,000 human-made chemicals with commercially useful properties: they resist heat, oil, stains, grease, and water. PFAS have been used since the 1950s in a wide range of products, including firefighting

*(See **What are PFAS**, p. 3)*

What are Action Levels?

Action Levels for PFAS, set by DEC, are **health-based** levels where concentrations of one or more of six PFAS compounds (PFOS, PFOA, PFNA, PFHxS or PFHpA - see page 3) summed together may not exceed 0.07 micrograms per liter (ug/L). The action level for PFBS, which research shows is less toxic, is 2.0 ug/L.

If these levels are exceeded, the responsible party should take action to:

- Characterize the nature and extent of PFAS-contaminated groundwater,
- Identify and sample impacted drinking water wells,
- Provide alternative water to impacted properties,
- Work with impacted well owners to cease pumping and discharge of contaminated water, unless treated to remove PFAS, and
- Sample impacted wells on a quarterly or annual basis, depending on PFAS concentrations.

DEC's Contaminated Groundwater Advisory

DEC recently issued a Contaminated Groundwater Advisory to all property owners within the North Pole piped water expansion area where many private water wells contain sulfolane, and/or per- and poly-fluoroalkyl substances (PFAS). The advisory assists residents in avoiding unintentional contact with, or spreading of, the chemicals.

While it is known that the spreading of pollution is not allowed under Alaska law, many may not be aware that using untreated, contaminated well water may cause the spread of pollution. Bringing impacted well water to the surface may expose people to the chemicals and/or allow them to spread onto other properties, sloughs, or ponds. In issuing this advisory, DEC is seeking the community's assistance in minimizing the future spread of these contaminants.

DEC has unfortunately discovered an increasing number of areas across Alaska where groundwater contains industrial chemicals. The information in these advisories applies to all properties throughout the state where water wells have been impacted by groundwater contamination, including those properties in the North Pole area. In order to protect the public and the environment from exposure, DEC is issuing these advisories to affected residents and/or working with them to establish institutional controls limiting future use.

Many releases of sulfolane at the former North Pole Refinery have contaminated the groundwater throughout much of the City of North Pole and beyond the city boundaries. Sulfolane is expected to remain in the groundwater for many years. In addition, DEC has recently discovered that historical releases of PFAS at the former refinery have also impacted the groundwater in some areas. Sampling is ongoing, and the extent of PFAS pollution is not yet known (see "PFAS Investigation in North Pole Groundwater," page 1).

Key points of the advisory:

- **DEC advises eligible property owners to connect to the expanded water utility service.** Connection to this service will protect the owner and others on the property from health effects that could be caused by exposure to contaminated well water.
- **DEC similarly advises against using untreated, contaminated well water after a property is eligible for connection to the water utility service.** Stopping use of untreated, contaminated well water reduces spreading the pollution and eliminates exposure.
- **DEC is available to help property owners with the information in this advisory.** DEC representatives will be at the December 5, 2018 open house at the North Pole City Council Chambers. You may also call DEC in Fairbanks at 907-451-2143.

From the Project Manager

Dear North Pole Community,

As the city's piped water system nears completion, we are on the brink of establishing a permanent solution to sulfolane-contaminated drinking water. Community members will be able to connect to the service in 2019 and 2020, phasing out the use of contaminated groundwater wells. DEC considers a public water system to be the best way to provide clean drinking water to those affected by sulfolane in groundwater, now and into the future.

You may have heard that DEC is also investigating PFAS in the North Pole groundwater. The investigation is ongoing, with results expected by the end of 2018 or early 2019. Over the past few years, PFAS have also been discovered in other Fairbanks area drinking water wells. I am currently working with DEC and Department of Health and Social Services (DHSS) scientists, engineers, and health officials to protect the public from exposure to these chemicals. DEC participates in national PFAS working groups, joining with other environmental authorities to stay abreast of the most current science on how best to test for, regulate, and clean up PFAS.

As we continue to navigate these issues, please do not hesitate to contact me if you have questions.

Jim Fish
DEC Project Manager
Contaminated Sites Program
(907)451-2117
james.fish@alaska.gov

PFAS Investigation, *cont. from p. 1*

For the initial PFAS sampling, DEC selected 4 private water wells fitted with POE treatment systems (for sulfolane removal) and 9 groundwater monitoring wells. In the POE systems, samples were taken both before and after treatment. PFAS were detected in all samples of water taken **before** treatment; some results were above the DEC action levels. **All post-treatment samples show PFAS below the DEC action levels**. Of the 9 groundwater monitoring well samples, 3 results were above DEC action levels, while the other 6 were below. Note that samples were collected from multiple depths in some of the locations.

More Extensive Sampling Conducted
DEC is currently conducting additional sampling to collect more information about the PFAS groundwater contamination. The second sampling event includes a greater number of well

*(Continued, "**PFAS investigation**," p. 3)*

What are PFAS, *cont. from p. 1*

foam, non-stick cookware, stain resistant products for furniture and carpets, water-proofing for clothes and mattresses, food packaging, and personal care products. People regularly come into contact with these chemicals because of their use in everyday products.

Perfluorooctanesulfonic acid (**PFOS**, pronounced "PEA-foss") and perfluoro-octanoic acid (**PFOA**, pronounced "PEA-fo-ah") were once the most common PFAS, and scientists know the most about these two compounds. Because PFOS and PFOA don't break down in the environment and have potential health impacts, their production has been discontinued in the US. They have since been replaced by other PFAS compounds that may not accumulate to as high levels in wildlife and humans.

When PFAS are released into the environment (by spills or even through intended uses, such as fighting fires with PFAS-containing foams), they can travel rapidly to groundwater where they can spread both vertically and laterally. Because of their stable chemical structure, PFAS do not easily break down. PFAS tend to build up in the food chain and have been found globally, including throughout the Arctic, in both animals and plant life, and are suspected to have migrated through the ocean and air currents.

DEC Moves Quickly on PFAS

DEC has taken quick action to reglate PFAS in Alaska. DEC established cleanup levels for PFOS and PFOA in 2016 and set updated action levels for six PFAS in an August 2018 Technical Memorandum to guide responsible parties' actions.

On October 1, 2018, DEC proposed regulations with new cleanup levels for six PFAS in soil and groundwater. The department is also working with stakeholders on a statewide action plan to address these chemicals and the contamination resulting from their use. (More information is available at http://dec.alaska.gov/spar/regulation-projects/pfas-cleanup-level-amendments/).

"PFAS in drinking water are an evolving national public health concern. The information regarding safe exposure levels and how to respond is changing as research becomes available and we learn more about these chemicals," stated Kristin Ryan, Director of the department's Division of Spill Prevention and Response. "DEC is working with partners across the state and the nation to stay abreast of the latest science, and carefully respond to protect the public water supplies."

The U.S. Environmental Protection Agency (EPA) recommends that people do not drink water with concentrations of two of these chemicals, PFOS and PFOA, above a sum of 0.07 micrograms per liter (ug/L), which is equivalent to 70 parts per trillion.

DEC's proposed regulations, which received public review in October and November, applies the EPA level 0.07 ug/L to the sum of any or all of the following five PFAS:

- PFOS,
- PFOA,
- PFNA (perfluorononanoic acid),
- PFHxS (perfluorohexane sulfonic acid), and
- PFHpA (perfluoroheptanoic acid).

In addition, the regulations would establish a separate cleanup level of 400 ug/L for a sixth compound, PFBS (perfluoro-butane sulfonic acid), which research shows is less toxic.

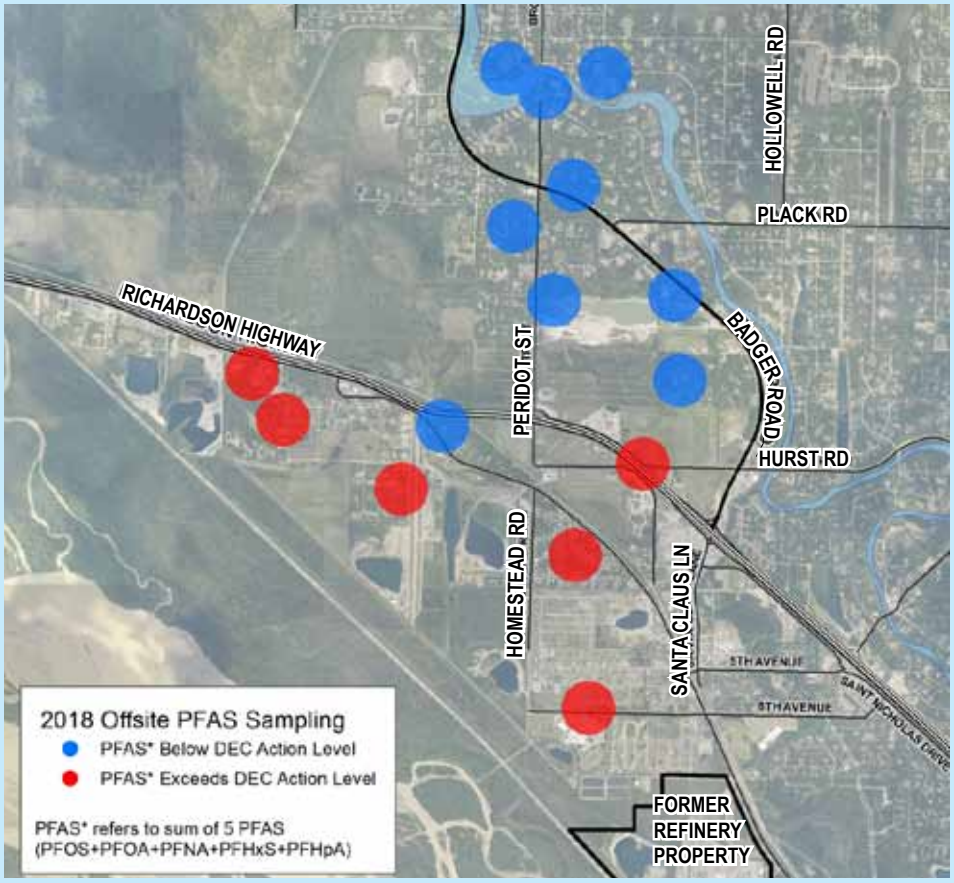
PFAS Investigation, *cont. from p. 2*

locations selected by groundwater specialists to:

- Evaluate the boundaries of PFAS groundwater contamination,
- Provide more information on the potential source(s) of PFAS in the groundwater, and
- Confirm the effectiveness of the POE treatment systems in removing PFAS.

Results of the current sampling event are expected to be available to the public in late 2018. The most current information will be available at the December 5th Open House.

North Pole PFAS sampling — results to date



Piped Water, *cont. from p. 1*

- **The $500 bonus—cash or credit—** will be mailed out by the City after all necessary paperwork is completed – likely within 2- 3 weeks of signing up.
- **Zone 3 and 4 property owners** will be able to sign up in late 2019, after the water main lines have been installed in those areas. The early connection bonus will be available for Zone 3 and 4 property owners signing up between December 2019 and June 1, 2020.

To sign up for water service, you should complete a Utility Account Application Form. These forms will be available at City Hall (125 Snowman Lane in North Pole) and on the City's webpage at http://www.northpolealaska.com. Property owners will need to return the form to the city offices and present a photo ID such as an Alaska driver's license, Alaska ID, or passport.

For more information on the connection process, contact the City of North Pole at (907) 488-8593.

Connection Completion

Once the Utility Account Application Form is signed, submitted to the City and accepted, the project contractor installing service connections will contact the property owner as early as Spring 2019.

The contractor will meet the owner at their property, review details for connection, and schedule a connection date. The owner will also have to sign a Utility Tie-In Application, documenting they approve connecting to the water system.

Construction of the Zone 1 and 2 connections will take place during the spring, summer and fall of 2019. During the connection installation, the project contractor will disconnect any existing water source on the property— the well, bulk tank, or other source—from the property's plumbing.

The City of North Pole will inspect the service connection, and once the tie-in passes inspections, the City will turn on the water.

Costs, Payment

Connection to the water utility is free for eligible properties, and the customary $75 deposit for a new utility account is waived.

After connection to the piped water system, a water credit of $2,000 will be loaded on to the utility account. This credit is estimated to cover the water bills for 2-3 years, depending on use. After the credit is used, the customer is responsible for future water utility costs.

The $2,000 credit is assigned to the account at the property address, and any unused credits would transfer to the next property owner. If there are renters, and the water utility billing will be in their names, the credits will be assigned to their utility account with the homeowner's authorization.

Phase Out of the Alternative Water Supply Program

Flint Hills Resources Alaska (FHRA) will continue providing alternative water (bottled water, bulk water tanks, or point of entry treatment systems) until the expanded piped water system is available for connection. FHRA is ending alternative water supplies for Zone 1 and 2 properties by December 31, 2019. If you are receiving alternative water, FHRA will work with you to convert to City water and phase out the interim systems. Here is a summary of the general transition plan for Zone 1 and 2 properties:

- If you have a Point of Entry System, you have the option to keep the system or FHRA will remove it for you. They will no longer pay for the maintenance of the POE system after December 31, 2019.
- If you have a bulk tank, it will remain in-place. FHRA will no longer pay for the water service after December 31, 2019.
- If you have bottled water, FHRA will no longer pay for the water service after December 31, 2019.

For properties with an alternative water supply, FHRA will contact you in the near future regarding the transition. You can also contact them directly at the Groundwater Office at 907-488-0723. FHRA representatives will also be available at the December 5th Open House to discuss this transition.

Water Main Line Construction in Zones 3 & 4

Water main lines will be constructed in Zones 3 and 4, starting Spring 2019. Exclusive Paving, the City's contractor, will notify local residents and businesses prior to beginning construction in neighborhoods. Updated project information is available at the links below, under the Contacts information.

Project Contacts

City of North Pole, Public Works
Bill Butler, Director of City Services
907-488-8593, bill.butler@northpolealaska.org

DEC, Spill Prevention and Response Division, Contaminated Sites Program
Jim Fish, Environmental Project Manager
907-451-2117, james.fish@alaska.gov

Exclusive Paving
Rebekah Matar
907-409-1347 (office)
907-322-2226 (mobile)

DHSS, Division of Public Health, Epidemiology Section
Sarah Yoder, Public Health Specialist
(907) 269-8054, sarah.yoder@alaska.gov

DEC, Division of Environmental Health, Drinking Water Program
Cindy Christian, Program Manager, Field Operations
907-451-2138, cindy.christian@alaska.gov

Flint Hills Resources Alaska, Groundwater Office
Tim Arnold
907-488-0723, groundwater@fhr.com

Exclusive Paving's project Facebook page:
fb.me/2018watersystemexpansionproject

The City of North Pole's website:
www.northpolealaska.com/utilities/project/2018-water-system-expansion-project

DEC's website:
www.dec.alaska.gov/spar/csp/sites/north-pole-refinery