

welcome



transform your environment

FORMER PEASE AIR FORCE BASE

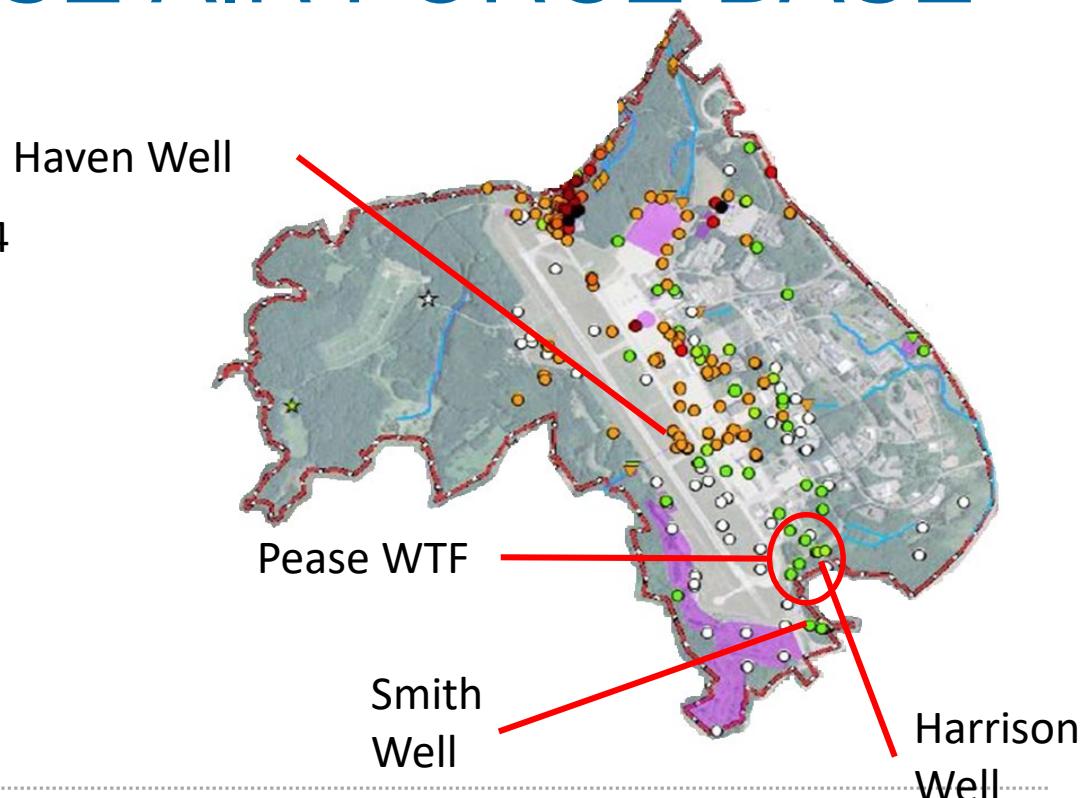
Pease Well Is Shut Down After Unregulated Contaminant Discovered

By SAM EVANS-BROWN • MAY 22, 2014

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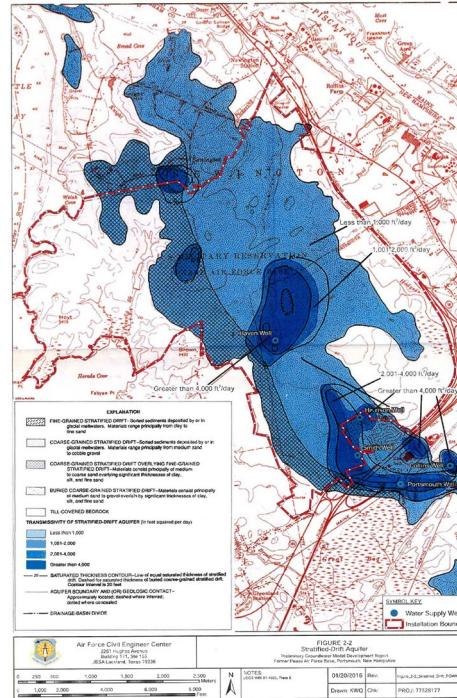


May 2014



PEASE DRINKING WATER SOURCES

Well	Flow Rate (gpm)	PFOA+PFOS (ng/L)
Harrison	286	29
Smith	343	12
Haven	534	1,495-2,600



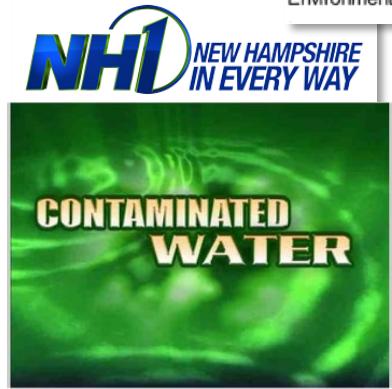
Average PFOA+PFOS concentrations, Harrison and Smith: 2016-2017, Haven: 2016



Article published May 22, 2014

Contaminated well shut down at Pease Tradeport

PORTSMOUTH — A well that serves the Pease International Tradeport has been shut down after testing positive for a chemical contaminant, according to the state Department of Environmental Services.



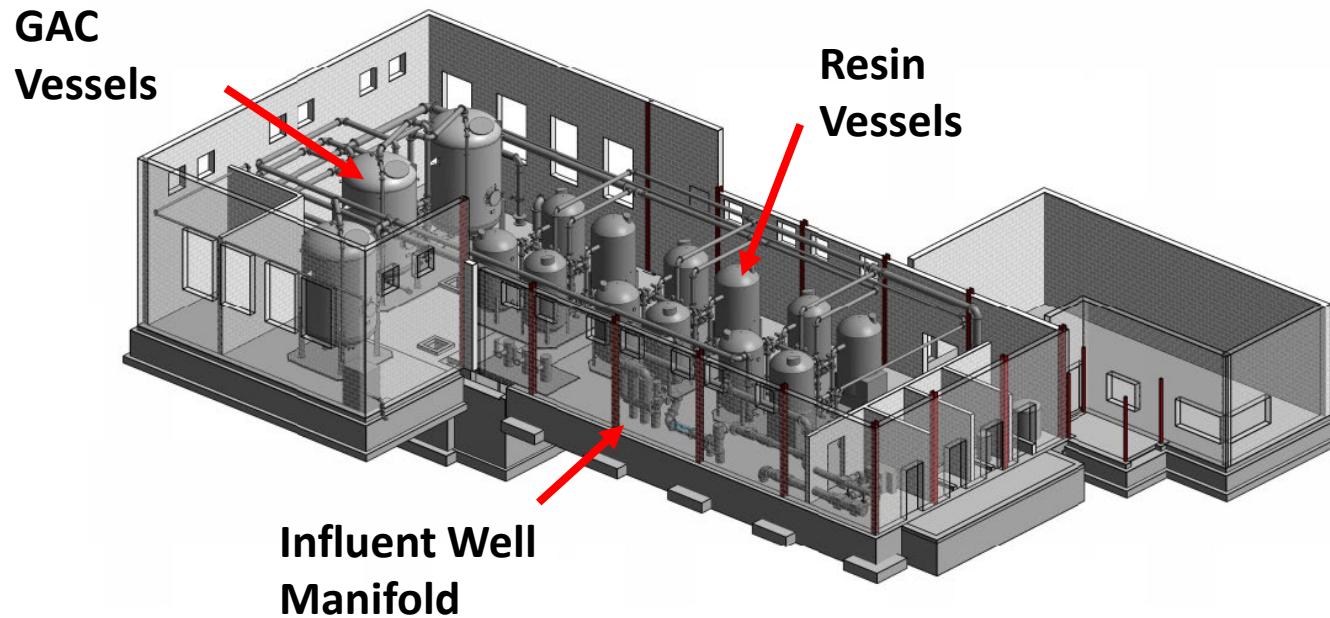
A screenshot of a news broadcast from WMUR.com. A female reporter in a red blazer is speaking. To her right, a video screen shows a 'WATER WARNING' sign at the Pease International Tradeport. The video player interface includes a play button, a timestamp '6:20 PM EDT May 22, 2014', and a 'WMUR.com' logo.

A screenshot of a news article from WGME. The headline reads 'Families on edge over water contamination at former air base'. The article is by The Associated Press and was published on Saturday, March 4th, 2017. The temperature is listed as 39°. The main image shows a glass of water with chemical structures overlaid. The text 'CHEMICALS IN WATER' is overlaid on the image. The bottom of the page shows social media sharing options and a 'TRENDING' section.

DEMONSTRATION STUDY-SEPT 2016



PROPOSED PERMANENT WTP LAYOUT



PEASE PERMANENT WTP



CASE STUDY: FORMER US ARMY BASE FORT DEVENS

MacPherson Well

Flow: 650 gpm

PFAS: 120 ppt*



Shaboken Well

Flow: 1200 gpm

PFAS: 30 ppt*



*Sum of PFOS + PFOA + PFHxS + PFHpA + PFNA + PFDA

MacPHERSON WELL TEMPORARY FILTER

- ▶ Well capacity: 650 gpm
- ▶ PFAS: ~120-130 ppt
- ▶ Temporary Design
 - Single 10' GAC vessel
 - 400 gpm (10 min EBCT)
 - Insulated stick-built structure (installed at later date)

~4 months from initial meeting with DEP to startup to distribution system



MacPHERSON PERMANENT WTP



SHABOKEN WELL TEMPORARY FILTERS

Well capacity: 1,200 gpm

- ▶ PFAS ~30-40 ppt
- ▶ Temporary Design
 - Two pair 12' GAC vessels
 - Up to 900 gpm (10 min EBCT)
 - Insulated membrane structure (installed at later date)

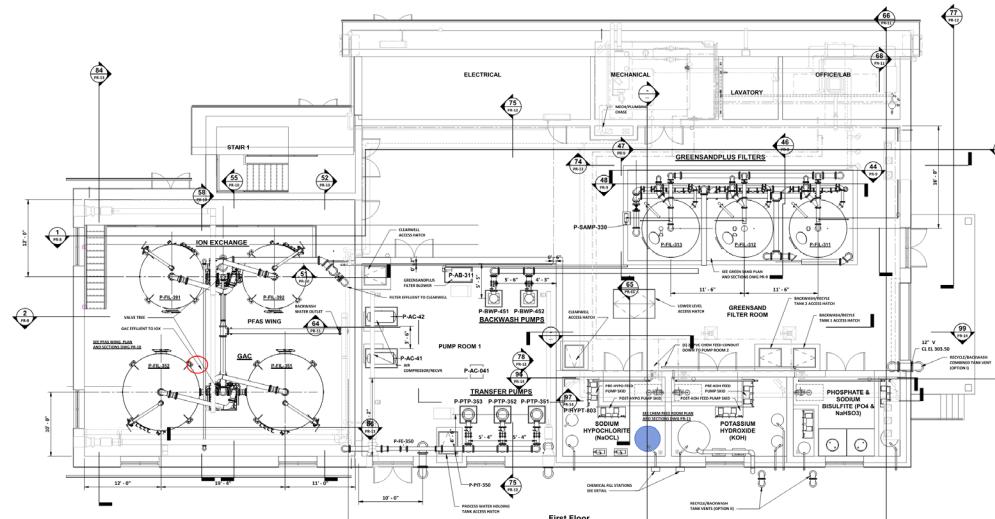
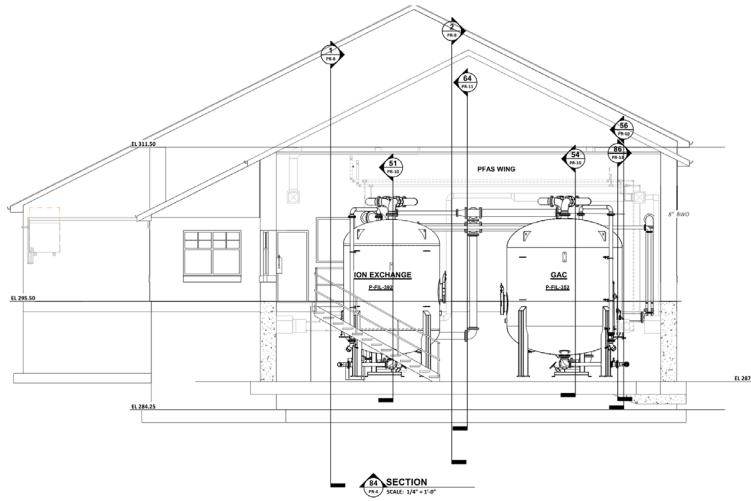


PATTON WELL

- ▶ Well Capacity: 1,200 gpm
- ▶ PFAS ~30-40 ppt
- ▶ Temporary Design
 - Three 4' diameter resin filters
 - 200 gpm each (parallel flow)
 - Insulated storage container



PERMANENT WTP - SHABOKEN & PATTEN



CONCLUDING THOUGHTS

- ▶ GAC and resin media filters are both capable of removing PFAS(6) below current detection levels
- ▶ Iron, Manganese, organics, and other precursors can create operational challenges with both types of filters
- ▶ Temporary (fast-track) treatment at the well sources is becoming a widely accepted solution to this problem
- ▶ Local and federal funding for these types of projects have high potential

thank you

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MassDEP PFAS GUIDELINES

- ▶ May 2016 – EPA Health Advisory
 - 70 ppt (PFOS + PFOA)
- ▶ June 2018 – Office of Research and Standards Guideline (ORSG)
 - 70 ppt (PFOS + PFOA + PFHxS + PFHpA + PFNA)
- ▶ April 2019 – GW-1 Standard
 - 20 ppt (PFOS + PFOA + PFHxS + PFHpA + PFNA + PFDA)