



PROFESSIONAL CONSULTANT SERVICES AGREEMENTS FOR GRANULAR ACTIVATED CARBON TESTING

Public Utilities Department

Board of Public Utilities
January 11, 2021

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BACKGROUND

1. On October 28, 2019, RPU's Board approved Work Order No. 2008392 in the total amount of \$850,000 to address the emerging contaminants (PFAS).
2. Part of the approved amount will be assigned to test Bituminous Coal Based Caron for reduction of PFAS.

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BACKGROUND

Goal:

Mitigate PFAS below notification levels at RPU'S compliance points during low demand (Winter) and continue to provide the highest quality water to the community.

DISCUSSION

1. Two Proposals were received from Calgon Carbon Corporation and Carbon Activated Corporation.
2. Professional Services are ranked without seeing pricing, per our purchasing policy. A panel from Water Resources and Planning Engineering, Water Quality and Regulatory Compliance, and Operations staff evaluated the proposals.
3. Proposals were scored based on Qualifications/Product Removal Efficiencies (50%), Pricing (5%), Experience (Projects of similar size and scope) (4%), Professional References (1%), Ability to meet custom reactivation criteria (40%)

DISCUSSION

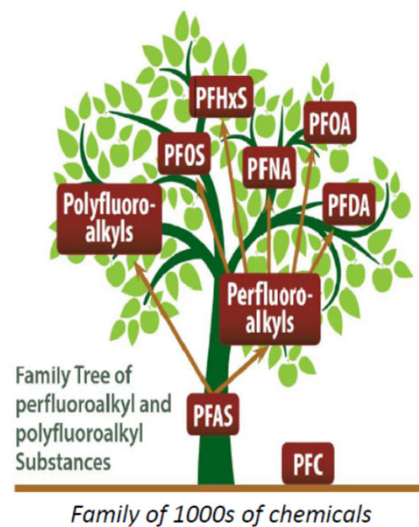
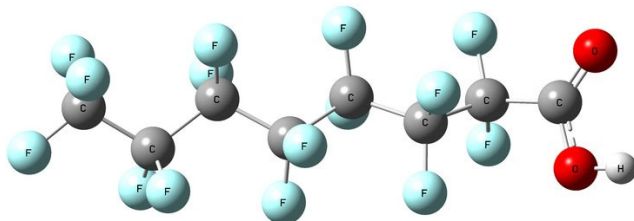
1. The proposals ranking is summarized in the table below:

Corporation	City Location	Rank
Calgon Carbon Corporation	Moon Township, PA	1
Carbon Activated Corporation	Compton, CA	2

2. Therefore, Calgon Caron Corp. will fill the first available GAC vessel, and Carbon Activated Corporation will fill the second available GAC vessel.

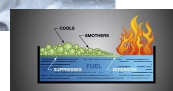
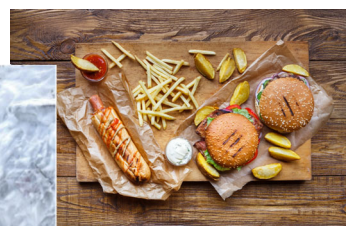
BACKGROUND

- PFAS (Per-and Polyfluoroalkyl Substances) are human-made chemicals.
- Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) are the most extensively produced and analyzed for regulatory standards



BACKGROUND

1. Repel oil and water
2. Widely used in industries and consumer products from the 1940's
3. Phased out in early 2000's but can be imported from overseas via consumer goods



For Leather



STAINMASTER

WATER | ENERGY | LIFE

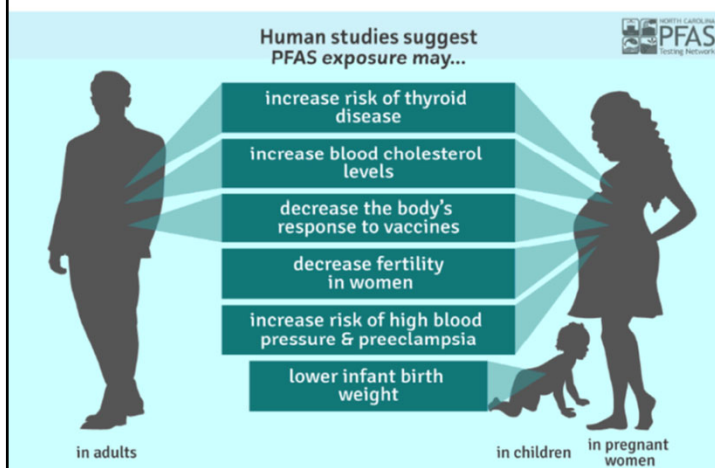


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BACKGROUND



Long-term exposure linked to:

-PFOS: High cholesterol levels, ulcerative colitis, thyroid disease, testicular and kidney cancers, pregnancy induced hypertension

-PFOA: Decreased vaccination response, liver damage, and decreased birth rate

Science Advisory Board to USEPA and World Health Organization considers PFOA a: "...likely human carcinogen"

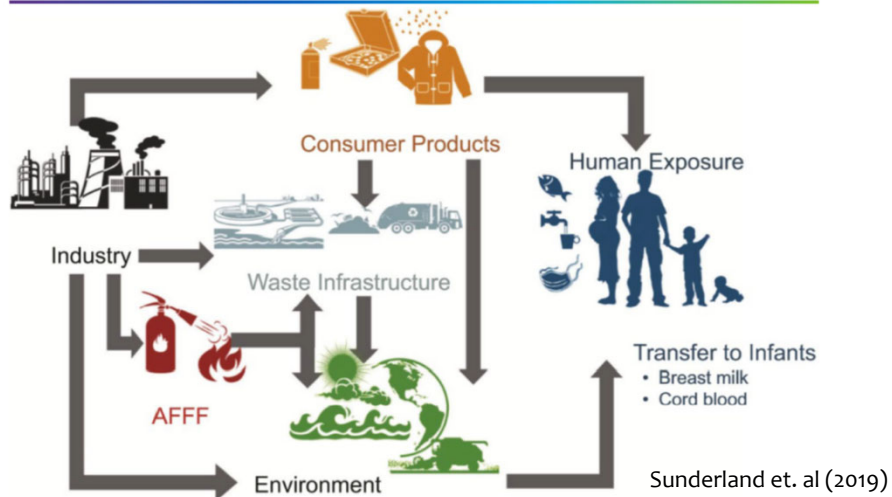


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PFAS Exposure Pathways

BACKGROUND



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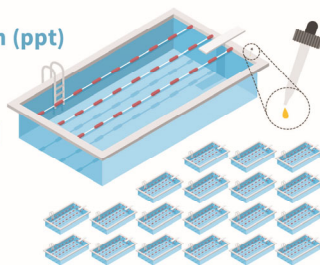
BACKGROUND

Units of Measure: Parts Per Trillion

1 part per trillion (ppt)

IS EQUIVALENT TO A
SINGLE DROP OF
WATER IN

20 olympic-sized
swimming pools

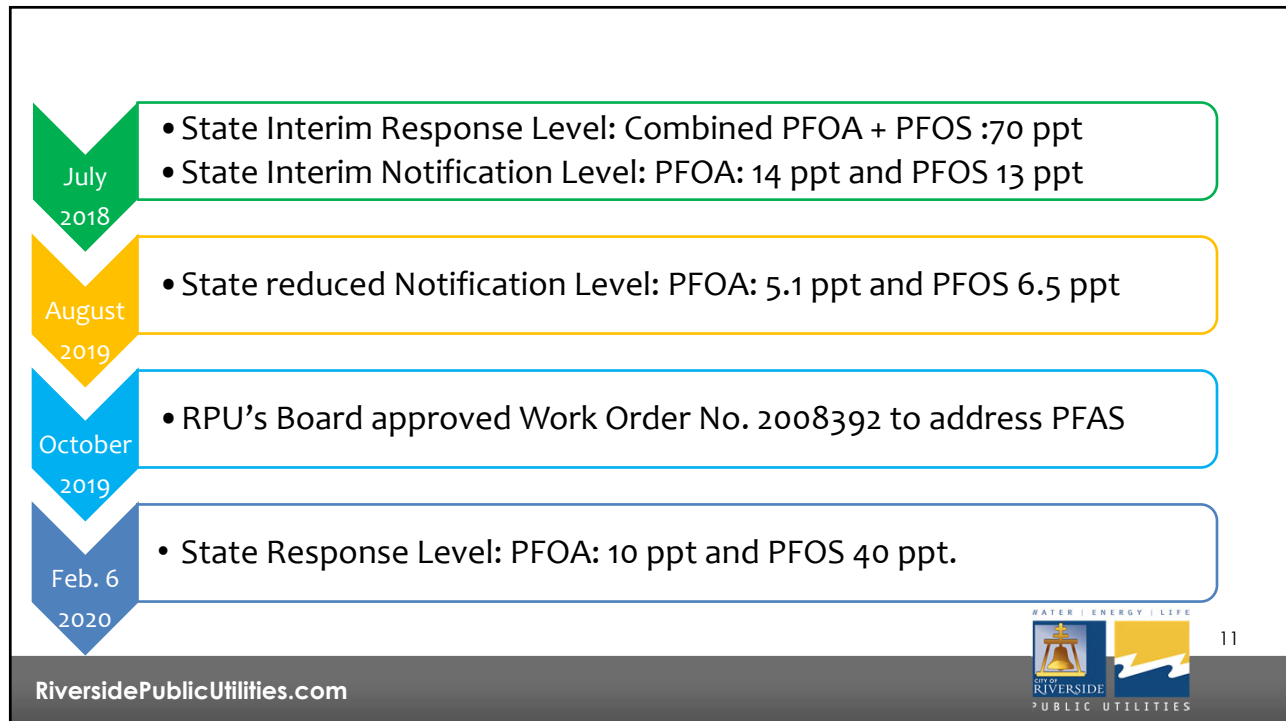


- a. 1 part per trillion (ppt) - 1 in 1,000,000,000,000
- b. 1 grain of sugar in an Olympic-sized pool
- c. 1 second in 320 centuries

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BACKGROUND

1. RPU has detected PFAS within several raw water wells (Spring 2020 results):
 - a) 19 wells for PFOA and 22 wells for PFOS in excess of notification levels.
 - b) 10 wells for PFOA and zero well for PFOS in excess of response levels.

BACKGROUND

1. RPU's customers water remains below the notification levels for PFOS and PFOA at the point of compliance during high demand because of RPU treatments:
 - a) Ion Exchange (IX): mainly for Perchlorate;
 - b) Granular Activated Carbon (GAC): mainly for DBCP, TCE and 1,2,3-TCP; and
 - c) Blending at the Linden/Evans Reservoirs prior to distribution.

BACKGROUND

PFAS Treatment Technologies



Carbon Adsorption:
granular activated carbon (GAC)

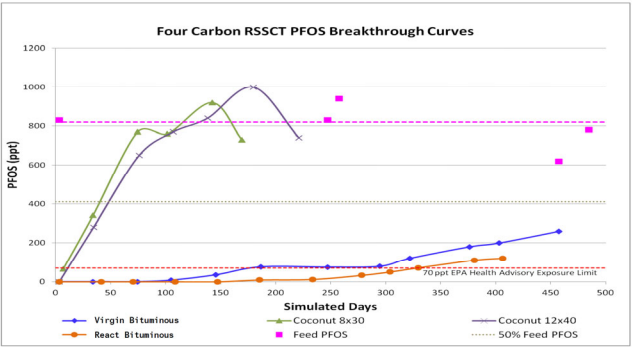
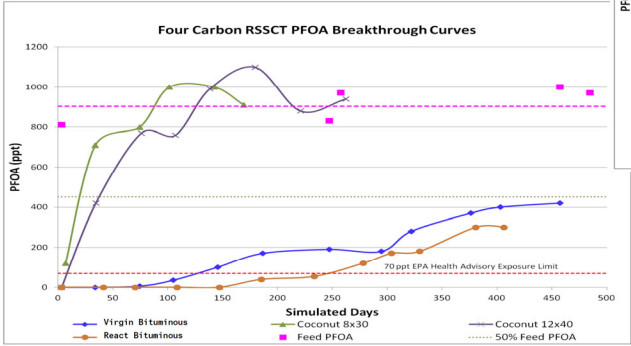


Ion Exchange
(IX) resin



Reverse Osmosis or Nanofiltration
(RO or NF)

PFOA & PFOS Treatment with GAC

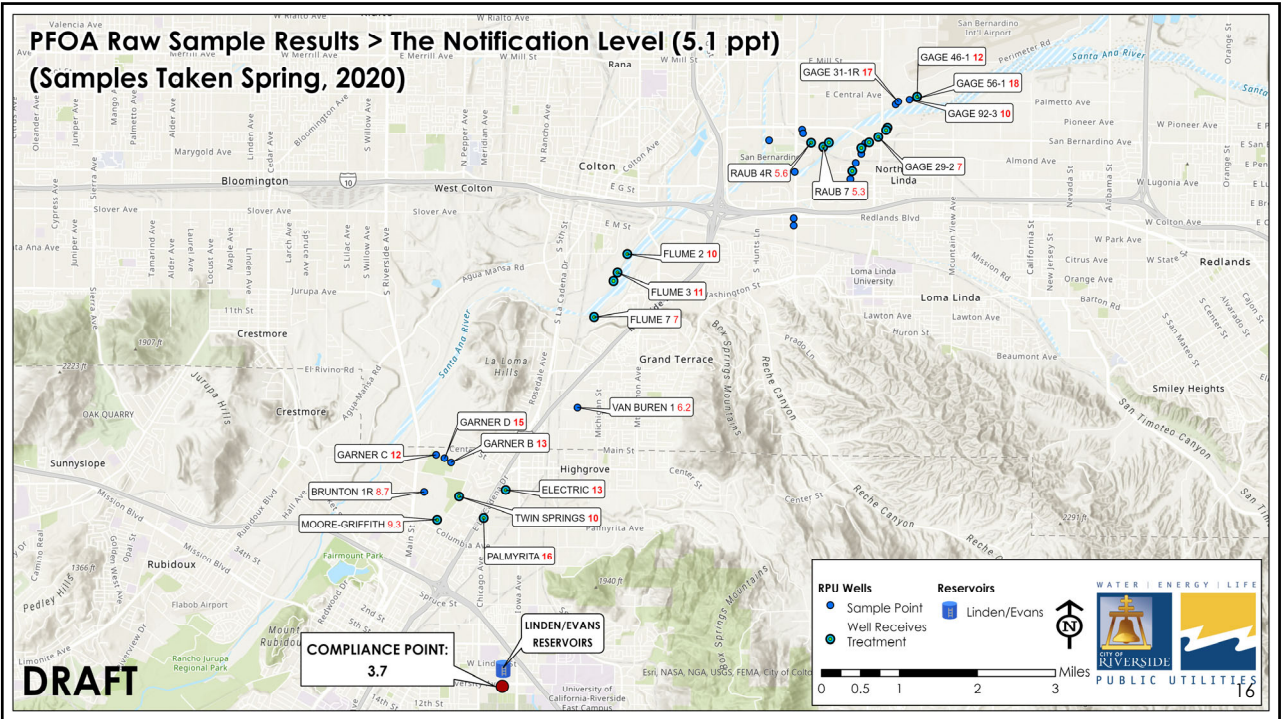


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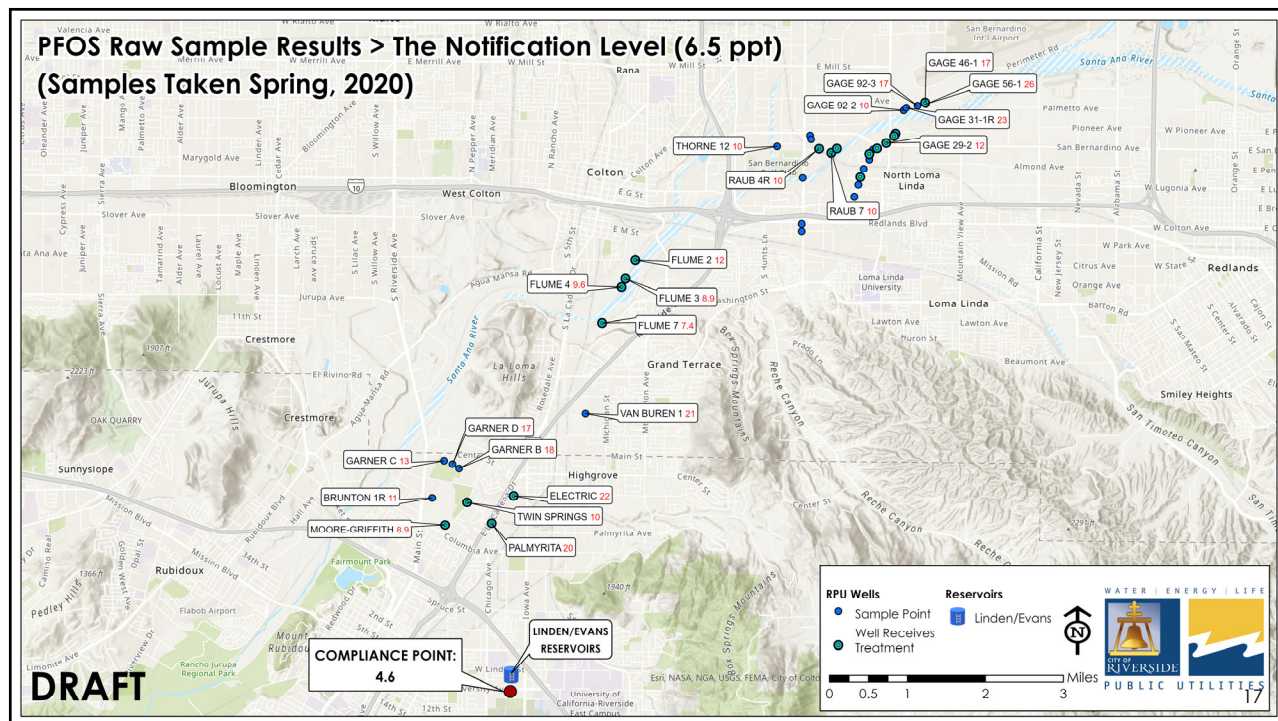
PFOA Raw Sample Results > The Notification Level (5.1 ppt) (Samples Taken Spring, 2020)



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RECOMMENDATIONS

That the Riverside Public Utilities Board:

1. Approve a Professional Consultant Services agreement with Calgon Carbon Corporation for Granular Activated Carbon Testing for a term through December 31, 2021 in an amount not to exceed \$106,000;
2. Approve a Professional Consultant Services Agreement with Carbon Activated Corporation for Granular Activated Carbon Testing for a term through December 31, 2021 in an amount not to exceed \$121,000; and
3. Authorize the City Manager, or his designee, to execute the Professional Consultant Services Agreements with Calgon Carbon and Carbon Activated, including making minor and non-substantive changes and to sign all documents and instruments necessary to complete the transactions.