Section 10. Just Give us the Facts

Rocky Hill Citizens.

We are writing to you as neighbors who are very concerned about solving our low-level PFAS contamination problem in our drinking water. The major concerns are:

1. **The approach**. The mayor and council have (in ad-hoc committee) been discussing this PFAS contamination issue and the water system for more than two years without coming to any scientifically reasoned or fiscally justifiable solution. Moreover, they have been informed of several PFAS remediation systems that exist, and are fully operational in other nearby Municipalities and that are low cost and are successful.

2. **The scale**. Our small town of 700 people does not need a solution designed for a massive water system that is more than three times bigger than our needs, and costing more than $1 million. The stated "official" Rocky Hill solution at present would involve a 40 foot long, 10 foot high trailer "pod" containing six high pressure steel filters, with high pressure steel pipework, and containing 4.8 tons of expensive anion exchange resin.

3. **The cost**. The proposed overall system cost is well over $1 million. It is unclear whether this is going to be funded with a federal grant, involving taxpayer funding, or a long term Federal loan to Rocky Hill of several million dollars that we must pay back with interest – a long-term major debt obligation.

4. **The Ethics**. The EPA has directed States using federal funding for community-based Municipal water system projects to implement their proposals for funding with requirements of demonstrated community support and community inclusion. There is no such community support, or inclusion in Rocky Hill. In fact there is a Community opposition to the present course of action that is being undertaken in Rocky Hill without any community participation or consent. The bidding request procedure for the Rocky Hill PFOS remediation system has also been conducted in an irregular and unacceptable manner, excluding any other system proposals from the bidding process, which involves Federal funding and requires fully open and competitive bidding.

The majority of the Rocky Hill community have no idea about what is happening in regard to the trace level PFAS contamination in our water supply, how it is going to be removed, and what is being done.

The initial requirement is to bring Rocky Hill citizens up to speed on this PFAS remediation issue in a direct and understandable manner, since the overall PFAS contamination problems can be detailed and somewhat complex.

The Rocky Hill water facility, with a dual stage aeration system, was constructed in 1982 to remove a volatile organic contaminant (TCE) from the water at that time. The contamination was severe, and the water system was shut down for more than a year. In 1982 the Community rejected the proposals for installing large-scale activated Carbon filters (GAC) in favor of building a dedicated aeration system for the water facility. This has been operating very successfully as an autonomous (unattended) system for the past 40 years.
Rocky Hill has therefore been through this type of contamination situation before.

Most Rocky Hill residents today were not living here in 1982, and therefore are totally unfamiliar with the Rocky Hill water system, and how it actually works.
We are attempting to rectify this by using a **Q** and **A** approach, which introduces a series of main important **Q**uestions and then provides truthful direct **A**nswers to these questions.
This is intentionally an informational **Q** and **A** and the **A**nswers are sometimes necessarily detailed and are not always simplistic. With this approach it is hoped to bring residents up to speed on the main issues in an easy and direct manner.

With resident and thereby community support it becomes possible to petition Council to address the concerns mentioned above, and to address and correct the serious issues which are described in the following **Q** and **A** presentations.

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Sept 19th 2022.

Introduction.

The one important item that affects and determines the major aspects of the PFAS contaminant remediation system for Rocky Hill is the water systems' duty cycle operation.
Rocky Hill is a small community (less than 700 residents) that dates back to the colonial era in the USA. It was incorporated in 1890 as a Borough, independent from Montgomery Township, and is one of the smallest Boroughs in New Jersey.
The community water system dates from the era of President Franklin. D. Roosevelt, and was constructed under the FDR works program initiative during the economic depression of the 1930's.
The well house is based on a standard construction design that was widely replicated throughout this region in the North East and in Pennsylvania, and it was built with local fieldstone.
The pumping system was designed around a duty cycle operational mode, using a water tower that provides a constant head of water pressure to the Borough.

As Rocky Hill grew, underground pipework was added to the system.
This simple type of water distribution system is often referred to as a "leaf" system or "dead–end" system, using branching connections from a main line, and is limited in extent and capability. This is described more fully in **Section 7** on this website.
As communities significantly developed, multiple water systems were often combined regionally with construction of more complex distribution systems. These are often referred to as "gridiron" systems, essentially networks. They can involve many wells and pumping facilities, all feeding the network at a determined pressure. There would then be cross-linked pumping station "nodes" supplying designated sections of the network, and the pumping would be continuous. Continuous pumping is now the usual operating procedure for water systems in towns, cities and large urban areas.
Rocky Hill does not have the available land area for any such development, and the existing type of water distribution infrastructure will also not support it.
As a result, Rocky Hill, a small independent community, is now somewhat unique in having its own Municipal water supply and its own water distribution system and a water tower and facility that works under duty cycle operation.
Many contractors and companies in the water industry do not outwardly see any significant difference between continuous pumping systems and duty cycle systems, but there are differences and they become decidedly apparent and important in situations such as this required remediation of PFAS contamination, and as presented later. In 1982 an aeration system was added to the water facility. This was totally compatible with the duty cycle operation. Two aeration columns and holding tanks (often called dry wells) at atmospheric pressure were added.
The PFAS remediation (using anion exchange) is also completely compatible with the duty cycle operation, and essentially only requires adding a further stage of anion exchange filtration to this existing aeration system – as will become apparent.

Here come the facts:

Q and A

Q1. Do you know how the water facility operates under duty cycle control?
Q2. Do you know the implications of duty cycle operation, and why this is relevant?

A 1. and A 2. The Rocky Hill water facility is not a pressurized system and it does not pump continuously. Pressurized water systems are those used in larger towns involving multiple wells and are part of a distribution network under pressure.
The Rocky Hill system is completely different. It is a low-pressure (atmospheric pressure) system. It is a single unit system, which pumps in cycles to meet the water demand. The well pump supplies water to an aeration column that is at atmospheric pressure. There are two aeration columns operating in series with receiving tanks at atmospheric pressure. An intermediate stage pump transfers the water from the first receiving tank to the second aeration column. A booster pump operating at **200gpm** then transfers water from the second receiving tank to the storage tower to maintain a water level between **High and Low** sensing levels (about 5 to 6 feet apart) at the top of the water storage tower – that has an estimated capacity of around 200,000 gallons. This water level determines the

constant water pressure of around 40psi for all of the community. The water facility is sized to meet all expected water demands. The system turns **ON** at the detected **Low** sensing level and the pumping cycle continues until the **High** sensing level is reached in the storage tower. That is the only control operation. This requires a plentiful water supply, and a high pumping ability. The Rocky Hill well is extremely good in terms of water supply and water quality is excellent, and the system design can support a duty cycle pumping speed of 200 gpm into the storage tower – which is the pumping capacity of a large municipal well system.
This pumping capability is the required performance feature of a duty cycle system – to be able to quickly maintain constant water height in the water tower and so maintain constant water pressure throughout the community.
In normal operation the Rocky Hill system is only operating at around 25% duty cycle. It is therefore only operating 25% of the time on average, pumping 26 million gallons per year meeting the needs of the Borough, and it is equivalent in throughput to a system pumping continuously at around 50 gallons per minute.
This type of system was traditionally employed in small towns and farming communities, and is extremely simple in operation and very effective. Unlike continuous pumping systems, it only needs one water storage tower, and only requires and uses one major well and well pump unit. It does not need and cannot incorporate more wells and pumping units into the duty cycle operation.
There are other significant distinctions between duty cycle systems and pressurized continuous pumping systems – some of which are introduced later, and that do not always seem to be fully appreciated at a detailed level.

Q3. Do you know there is a long-term loan debt of around $3 million that has been applied for from a Federal Agency and could be imposed on Rocky Hill residents for PFAS remediation of the water supply and some infrastructure work?
Why was there no open Community discussion of this?
Why was there no Community approval, as normally required for federal funding?
Why was there no disclosure and presentation of the loan request details?
Why is this multi-million dollar debt even necessary?

A 3. The $2.3 million Rocky Hill loan application from USDA was based on a system originating in 2020 with a proposal for PFAS remediation submitted to Rocky Hill by a company called **AdEdge** and which initially involved the use of very large filter volumes of granular activated Carbon (GAC). This is detailed in **Q11** and **A11**, later. This plan was later changed to use anion exchange resin – but again with large volumes based on the continued application of GAC type adsorption parameters, and also failure to incorporate the duty cycle operation of the Rocky Hill water facility, and the unique aspects of the anion exchange process.
The Engineer adopted this version (with anion exchange resin) as his plan.

This Engineer's proposal for Rocky Hill PFAS remediation involves the assumption that Rocky Hill continuously pumps at 250 gpm. Continuous pumping at 250 gpm generates 131 million gallons per year, whereas in reality Rocky Hill (running at 200gpm with 25% duty cycle) only pumps 26 million gallons per year.
Furthermore, the important characteristic of the anion exchange process is that the amount of PFAS contaminant captured by the resin only depends on the

contaminant concentration and the volume of water processed up to the point of resin saturation. At the time of resin saturation, there is detected breakthrough of contaminant. The time to breakthrough therefore involves the fixed charge cation capacity of the resin and the volume of water processed – as well as the competing background anion content in the water, and the involved water chemistry.

The Engineer's proposal sizes Rocky Hill at 131 million gallons per year and this high pumping volume requires around 5 tons of expensive anion exchange resin. In his proposal this was then contained in 6 (six) high pressure steel filter tanks, all assembled in a 40 foot long trailer of 10 foot height, and 8 foot width on a large concrete slab at a system cost of around $1 million dollars (or more). This is the existing plan.

Comments.

This totally inappropriate proposal was submitted by the Borough Engineer on behalf of Rocky Hill as part of a $2.3 million long-term USDA loan request, which also included the additional construction of another well and another back-up well-house pumping system for operational redundancy. This so-called "Firm Capacity" redundancy is completely unnecessary and rather pointless in view of the duty cycle operation of the Rocky Hill system – which is based around one main well pump and based on the use of one well, and is a system that cannot incorporate other wells.

There are no **A**nswers as to why this proposal was never presented or meaningfully discussed with the Community before submission, as it should have been.
These topics were all discussed and explained in detail in **Section 7** on this website.

Q4. Do you know that the PFAS contamination problem in Rocky Hill water was essentially solved nearly 4 years ago on the basis of a major study at Horsham PA?

A 4. The heavy PFAS contaminations detected in the water supplies in the towns of Horsham PA and neighboring Warminster PA were some of the worst in the USA. The source of the problems was clearly the nearby military bases and the extensive use of firefighting foams (AFFF) containing PFAS chemicals as fire retardants.
The Horsham community funded a pilot study in 2016 to investigate PFAS removal by anion exchange resin. This was a completely new approach to the removal of PFAS anion contaminants in municipal water systems.
The study lasted two years with seven detected PFAS contaminants being tested, and using a single filter unit with 20 $ft.^3$ of PFAS - selective anion exchange resin (Purolite PFA694E). The results of the study were staggering.
All PFAS contaminants were essentially eliminated for almost 2 years with only 20 $ft.^3$ of anion exchange resin, and the required important parameters of the anion exchange resin were experimentally determined in this Horsham study.
(Horsham Study is presented in **Section 2** on this website).

Q5. Do you know that a PFAS remediation system of relatively low-cost and based on the results of the Horsham study was developed and presented to Rocky Hill Mayor and Council two years ago?

A5. On the basis of the Horsham work, a remediation system for Rocky Hill was developed and presented two years ago and fully described in **Section 3** on this website. It is a relatively low-cost system based on adding two filters in lead - lag configuration to the Rocky Hill water facility in the low-pressure aeration section, and containing 35 $ft.^3$ (1000 liters) of PFA694E anion exchange resin in each filter. The estimated operating time, based on the Horsham data, was more than four years before resin replacement. This, unfortunately, was totally ignored by Mayor and Council.

Q6. Do you know that a PFAS remediation system (exactly like the one proposed for Rocky Hill two years ago) had already been put into operation in Warminster PA (water facility well number 26) and was stated to be completely eliminating PFOS to ND (none detect) levels very successfully for periods of five years before resin change-out?

A6. Following suggestions and requests to Mayor and Council that Rocky Hill personnel should contact and visit Horsham, a visit to Horsham was independently undertaken in May 2022 by some concerned Rocky Hill citizens.
The Horsham visit led to a further visit to Warminster based on the information that they had a working anion exchange two-filter lead-lag system for PFAS remediation in operation at their well#26 water facility, and that this facility also had an aeration system, based on a single stage aeration column.
The Warminster system turned out to be functionally identical to the Rocky Hill PFAS remediation system described in **Section 3** and **Section 8** on this website. They were using 50 cubic feet of resin in each filter, compared to the 35 $ft.^3$ for Rocky Hill, but were pumping 50 to 60 million gallons per year (twice that of Rocky Hill). They were using the aeration system to supply water to the filtration units, and were getting excellent results, completely eliminating PFOS and PFOA for 5 years before needed resin change-out.

Q7. Do you know that following the Horsham and the Warminster well # 26 visits a trip report was provided to Rocky Hill Mayor and Council in May 2022?

A7. A formal report on both the Horsham and the Warminster visits was generated for the Mayor and Council and Borough Engineer – unfortunately, with no response.

Q8 Are there more systems like Warminster well 26?

A8. Yes. There are more systems. Following the initial Horsham study there were plans to use two filters in lead-lag configuration with anion exchange resin as PFAS remediation resin–only systems in other Horsham well facilities. Authorization was recently obtained from PA DEP and dual-filter lead–lag systems with anion exchange resin are now being built and installed in Horsham Wells 10, 17, and 21.

Wells #10 and #17 are both pumping continuously at 100 gpm (55 million gallons per year). The dual filter tanks are 4 feet diameter with 40 $ft.^3$ of resin in each filter.

Both of these new Horsham systems (wells 10 and 17) are completely compatible with the system for Rocky Hill described in **Section 3**, which used a similar resin volume of 35.3 cubic feet (1000 liters), and also used similar sized filters in lead–lag configuration.
The larger Horsham well #21 is using continuous pumping at 200 gpm (105 million gallons per year). It uses an appropriate resin volume of 85 cubic feet in each filter, each of which has a diameter of 6 feet. It also is a dual filter system operated in lead-lag configuration.
There are therefore 3 (three) more PFAS remediation systems (in addition to Warminster well 26) that are based on the use of dual filters operated in lead-lag. All 4 systems have appropriate volumes of anion exchange resin, depending on their pumping capacity, and they all follow the same design parameters as described in **Section 3** and in **Section 8**.

Comments
The engineer's proposed system for Rocky Hill is based (incorrectly) around an assumed continuous pumping rate of 250 gpm – which is 130 million gallons per year. In reality, the Rocky Hill water facility (running under duty cycle) only pumps 26 million gallons per year.
On the basis of 130 million gallons per year, there would be a required use of 114 cubic ft of resin for each filter (228 cu ft., 4.8 tons, total). This total is spread among 6 high pressure steel filter units housed in a 40 ft long, 10 foot high, trailer.
This proposal is inappropriate for Rocky Hill in terms of design, scale, and cost.
The functioning of the electrostatic anion exchange process with duty cycle systems (such as Rocky Hill) is explained fully in **Section 8**.

Q9. Are these new Horsham systems installed in Filtration Buildings?

A9. Yes. They are all installed in buildings. Because of our winter climate conditions, there are always concerns about water systems freezing.
In the case of Rocky Hill, working under duty cycle, there are long periods where the system is not pumping and there is standing water in the filters, and the filters and connecting pipework therefore cannot be located outside.
There are other important reasons for having a Filtration Building - mentioned later below.

Q10. Did Horsham phase 2 study discover anything new?

A10. Yes. The Horsham phase 2 study was performed in the time period following the initial Horsham study and the start of construction of the resin-only systems for Horsham wells 10,17, and 21, as described earlier in **A 8.** – and involved a more detailed analysis of the anion capture of all 7 of their detected PFAS contaminants.
The PFAS contaminants can be broadly divided into two groups (depending on the functional group involved) namely the sulfonates (PFOS for example) and the carboxylic acid group (PFOA for example). In the case of the sulfonates, there is an added sulfur atom of a sulfite functional group, and they are heavier and with a

higher electronegativity. The anion exchange resin therefore has a stronger "affinity" for sulfonates than for the carboxylic acid derivatives.
There are also carbon "short chain" and "long chain" PFAS molecules. The PFOS and PFOA are long (carbon C8) chain molecules (referred to as the "legacy" PFAS chemical contaminants) and were phased out in the year 2000, with an agreed replacement by short (carbon) chain molecules such as PFBS (C4) and PFHxA (C6) which are now produced extensively. Unfortunately, these short chain PFAS chemicals are very soluble in water and are present in fruit and vegetables and animal feedstock, and are now heavily present in the food chain. Most of them have not been studied in regard to their toxicology, and there is no required testing for them at present. That will certainly change soon. They are potentially just as dangerous as the long chain PFAS contaminants that they have replaced.
The major serious concern at present, relating to PFAS contamination, is the required total removal of the short chain carboxylic PFAS chemicals from groundwater. That is what they were investigating in the Horsham phase 2 study, not yet published.

The Horsham phase 2 investigation showed that the short chain carboxylic PFAS contaminants got through the PFA 694E anion exchange resin.
This suggests that "affinity" of the resin to anion charge groups (functional groups) is competitive, and there were indications of "desorption" of PFHxA from the resin.
The overall important conclusion is that there is no single anion exchange resin for total capture and removal of all PFAS contaminants, and there is now a pressing need for selective anion exchange resins to be developed specifically for the removal of the short chain carboxylic PFAS contaminants. This also has important implications relating to PFAS remediation system design, involving modularity.

<u>Modular system design.</u>

It will be necessary for successful PFAS remediation systems to be designed with a flexible capability to be configured as multiplexed filtration systems with the use of multiple selective anion exchange resins. This introduces the future system design requirements of manageability and modularity.
A dual filter system arranged in lead-lag can be considered to be a basic modular system. Filter units of around 4 ft diameter in size are manageable (when empty of water) and sufficiently lightweight to be considered as modular units in a filtration system of this type. The new Horsham wells 10 and 17 PFAS remediation systems certainly have this modular capability. They were installed in Filtration Buildings with adequate room and height to permit filter modules to be moved and handled as modular units that can be incorporated into a filtration system and loaded as required.
That cannot easily be done with a rigid train of connected filter tanks in a trailer unit. Such trailer-mounted systems are normally used as working mobile labs for in-field performance evaluations or for limited short-term remediation work, and not used for permanent on-line installations. We absolutely need a Filtration Building.

Q11. Where did the AdEdge proposal come from?

A11. When the PFAS contamination in Rocky Hill water was first announced, AdEdge (a company near Atlanta GA) submitted a GAC (Granular Activated Carbon) adsorption system proposal in October 2020 to Rocky Hill for PFAS remediation. The Rocky Hill well pump information (250gpm) was provided, although apparently there was no mention of the Rocky Hill duty cycle operation. An EBCT (contact time) requirement of 10 minutes for GAC was assumed (this contact time parameter is explained later). On the basis of 10 minutes contact time at 250 gpm, the system design proposal required a volume of GAC adsorbent of 2500 gallons (334 cu ft) for each filter of a two-filter lead-lag arrangement. This required the use of two (2) steel filter vessels of 11ft diameter and 15ft tall, (costing $500,000 for equipment) that were to be housed in a climate controlled building of 30ftx30ft (to be provided by Rocky Hill). High volume backwashing of the GAC (also to be provided by Rocky Hill) at 800-900 gpm was required for each filter vessel, with a holding tank to store the backwash for disposal (16,000 to 18000 gallons total).
This gives an idea of the very large scale, considerable cost, and total unsuitability of that basic AdEdge proposal for Rocky Hill in Oct 2020, based on the use of GAC.
This is described in **Section 4. Addendum, page 8.**

Also, at that time, the **Section 3** proposal for a PFAS remediation system for Rocky Hill had just been introduced on the website, involving two (fiberglass) filter units of 4ft diameter, 6ft height, costing $9000 total and using 1000 liters (35.3 cuft) of anion exchange resin in each filter, costing $16,000 total (at that time).
This created a totally different reality – PFAS contaminant removal at a small fraction of the typical GAC system cost.
The Horsham study had introduced the use of anion exchange resin for PFAS remediation in Municipal water supplies for the very first time, and it was a new approach that changed everything.
The full implications of the Horsham study were not well understood initially.

As a result, the AdEdge GAC proposal for Rocky Hill was changed to using anion exchange resin in place of GAC. Unfortunately, the use of anion exchange resin was still being considered to be only a form of adsorption, just the same as for GAC, and there was still an introduction of contact times. For GAC (carbon) it is necessary to generate very close molecular contacts for the adsorption process to work, and contact times are therefore very long (10 to 20 minutes) resulting in huge volumes of GAC being needed. The results from the Horsham study with anion exchange resin were very impressive because PFAS contaminants were being totally removed with quite small volumes of resin, and this apparently seemed to indicate a much smaller contact time for the resin. A contact time of around 3 minutes (much less than for GAC) was then generally assumed to apply for ion exchange resin – treating anion exchange resin as a type of adsorption material, analogous to GAC. In reality however it is completely different.
Inevitably, the AdEdge proposal for Rocky Hill was changed to the use of two filter tanks with anion exchange resin. There was then (incorrectly) an assumed continuous pumping rate of 250 gpm and, when also multiplied by an assumed EBCT (contact time) parameter of 3.4 minutes for the resin, this still indicated a large volume of 850 gallons (114 cu ft) of resin needed for each filter.

The latest iteration of this proposal (adopted by the Borough Engineer) is to now replace these two large filter units with a train of 6 smaller filter units in a 40 ft long, 10 ft high, trailer "POD".

Comments.
This latest proposal is now the basis of the Borough Engineer's "official" Rocky Hill proposal, and has no connection whatsoever to the Horsham study findings. It has now been submitted for bidding procurement purposes. It is sized incorrectly, and is oversized by more than a factor of 3, requiring excessive amounts of expensive polymer resin. It is also based around expensive high pressure (100 psi) steel filter units and steel pipework, while the Rocky Hill system is essentially at low (atmospheric) pressure in the aeration stage, and is not a pressurized system.
This Engineer's proposal has not been presented to, nor discussed with, the Rocky Hill community, and has not been subjected to any independent review. It is totally incompatible with the Rocky Hill water facility duty cycle operation (as mentioned above) and with many of the specific system requirements described in **Section 8** on this website.

Q 12. Did you know that the financing for the Rocky Hill PFAS remediation system is based on federal funding and taxpayer dollars?

A 12. Yes. This is an important and relevant issue. There have been extreme efforts to establish funding for much needed national infrastructure improvement including **Clean Water** (relating to rivers and surface water and agricultural groundwater) and **Drinking Water** with related community water distribution infrastructure.
Under the **CWA** (Clean Water Act) the EPA set industrial wastewater standards and established compliance monitoring for discharging into surface water. In the more recent **SDWA** (Safe Drinking Water Act) the EPA additionally established protective drinking water standards – enacted Dec. 2019 with a listed Code of Federal Regulations under 40 CFR 141.
Under the very recent Bipartisan Infrastructure Law there has been implementation of the Clean Water and Drinking Water State Revolving Fund programs, **CWSRF** and **DWSRF**. The funding assignments for N.J. were obtained through the efforts of N.J. Senators Cory Booker, and Robert Menendez and included $1.638 Billion for CWSRF and $1.126 Billion for DWSRF.
A **DWSRF** grant was awarded to Rocky Hill in N.J. 7th Congressional District (Congressional Rep. Tom Malinowski) of $1,167,000 "To improve the water system in the borough, including PFOS treatment."
Prior to the DWSRF program, funding assistance for water infrastructure had been made available under the CWA from Federal sources such as USDA (Department of Agriculture) in the form of supportive long-term financial loans.
Both the USDA loan and the DWSRF grant are based on Federal funding.

Q 13. Are there procedural requirements for project proposals and bidding procedures based on the use of Federal funding and taxpayer dollars?

A 13. Yes. With federally-funded projects in government agencies, or in government contracts and proposals dealing with corporate entities, there are generally very specific bidding requirements, including: full and open listing and announcement: full and open project disclosure (involving a statement of work and description of desired project goals) and including fully competitive bidding process with a required minimum number of vendors participating. At the initial phases, this does not allow for the introduction of a specific project design or proposal to be used as a pre-requisite for supportive bidding purposes. In other words, there are no pet projects to be introduced as initial conditional items in a fully competitive bidding process involving federal funding.
These requirements have been codified.
Under **45 CFR –74, Uniform Administrative Requirements for Awards and Sub Awards**: " All capital projects to be completed under contractual arrangements must be procured by the methods described in 45CFR–74.40 through 74.48, or in 92.36 as applicable." Contracts of $100,000 or more need to go through competitive bidding under 45 CFR – 92.36, and "Procurement shall be conducted in a manner to provide to the maximum extent practical, open and free competition."

Comment. It is suggested that the Rocky Hill Borough Attorney might wish to investigate Code of Federal Regulations 45 CFR–74 to make sure that Rocky Hill is compliant with required standard practices when implementing projects using federal funds, and the issuance of related proposal bidding requests.
Authority 5 U.S.C. 301 Oct 8 1999. Fed Register Ref 64FR54926
US Code Ref 5 U.S.C. 301. 42 U.S.C. 6926.

Q 14. Does the "request for proposal" (RFP) issued by the Engineer on behalf of Rocky Hill Borough comply with the Administrative Requirements for projects using Federal (taxpayer) funding?

A 14. No, it does not. In the so-called "Open RFP" issued in the Courier News dated August 11th 2022, there is not a single mention of the word "proposal" in the whole **Request for Proposal** document.
The relevant section of the RFP, posted 8/11/22, is presented below.
The project description is emboldened for identification.

BOROUGH OF ROCKY HILL 15 MONTGOMERY AVENUE ROCKY HILL NEW JERSEY 08553 PURCHASE OF TREATMENT FILTER UNIT FOR PFOS TREATMENT WELL NO. 2 ADVERTISEMENT FOR BIDS Sealed Bids for the construction of the PFOS Treatment Unit Purchase will be received by the Borough Engineer, Robert Martucci on Thursday September 8, 2022, at the office of the Borough Engineer Martucci Engineering LLC 49 East Main Street Avenue, Flemington, New Jersey 08822, until 11:00 a.m. local time. The bid opening will be virtual and conducted via Live-Stream from Borough Hall. You can access the Live-Stream from the Borough' website http://www.rockyhill.gov via zoom meeting with the invitation that will be posted on the Borough website and all plan holders at the prevailing date and time stated in this Notice to Bidders. During the bid opening process, the bidders will be announced as well bid amounts. A bid review providing unit prices will not take place at the openings. Instead, this information will be posted on the Borough's website once available. **The project consists of fabrication and delivery of the following: Base Bid: Purchase of pre-manufactured filtration unit for PFOS treatment (40'long x 8' wide); six steel pressure filtration units that are ASME certified for up to 100 psi; all related equipment and treatment**

resin. This unit to be delivered to 1 Young Drive Rocky Hill, NJ 08553. (Vendor to coordinate with site contractor for delivery and set up of equipment). The Borough shall reserve the right to award the base bid or to reject all bids. The Issuing Office for the Bidding Documents is: Martucci Engineering LLC, 49 East Main Street, Flemington, New Jersey 08822, the office of the Borough Engineer Robert Martucci (rmartucci@martuccienglLc.com)

There are no requests for any independent proposals. There are no descriptive statements of work defining the tasks to be undertaken or the problems to be solved, and there are no requests for proposals on how a solution or solutions to such problems (in this case PFOS contaminant remediation) could be best achieved. There is no competitive bidding for any independent proposals for a Rocky Hill water facility remediation system for PFOS removal.

Comments.
This RFP, issued by the Borough Engineer, resembles a fixed-job bidding situation. Bids are only being sought for six (6) high-pressure filter tanks and the supporting hardware and resin material for his own specific system proposal that is based on revisions to an inappropriate early GAC design from a company called AdEdge. Any proposals for correct and appropriately sized two-filter lead-lag systems have been excluded from the bidding process.

Q 15. Why is solid Community support so vitally important for such projects?

A 15. Community support and involvement is critically important.
In projects of this type, involving significant levels of Federal funding, there are stated implementation requirements that community concerns are to be met, and that there is citizen inclusion in the process. This inclusion builds trust in the scientific validity, and the fiscal justification of the project, and also establishes true community ownership of solutions.
An EPA directive to the States defines this critical need for active community involvement, and describes it as being a key fundamental requirement for use of **DWSRF** funding. A section from the directive is presented here.
Note: IUP means "intended use plan" and SRF means "state revolving fund".

"5. Public Review and Comment: The IUP must contain a statement of how the state met the requirement of CWA section 605 or SDWA section 1452(b)(1) for meaningful public review and comment on the preparation of the IUP. When seeking public review, states should include a diverse set of potential interested parties, including community groups, neighborhood associations, environmental organizations, environmental justice foundations and public health groups, that represent a broad spectrum of community interests and extend beyond those on existing mailing lists and traditional participants in the SRF process. In addition, states should strive to achieve the following objectives when seeking public review: (1) assure that the public has the opportunity to understand official programs and proposed actions, and that the state fully considers the public's

concerns; (2) assure that the state does not make any significant decision on any SRF activity without consulting interested and affected segments of the public; (3) assure that the state action is as responsive as possible to public concerns; (4) encourage public involvement in implementing the SRFs; (5) keep the public informed about significant issues and proposed project or program changes as they arise; (6) foster a spirit of openness and mutual trust between the state and the public; and (7) use all feasible

means to create opportunities for public participation, and to stimulate and support public participation. States should make a particular effort to identify and engage organizations that work in disadvantaged communities.

EPA will review IUPs with particular focus on whether the state has meaningfully engaged an inclusive spectrum of community interests" (page 12 of 56 in **https://www.epa.gov/dwsrf/bipartisan-infrastructure-law-srf-memorandum).**

Comments.
In the case of the Rocky Hill situation, there is no community support. On the contrary there are significant elements of the community in vehement opposition to the engineer's stated "official" Rocky Hill proposal for PFAS remediation, and this has been fully expressed.
The Engineer has stated that communicating with Rocky Hill residents about his plan is merely a "courtesy" and that the Rocky Hill PFAS remediation plan has been "decided". The issuance of the RFP in the Courier News in the manner described above in **A 14** is clear evidence of this.

What can be done?

The absolute requirement for implementation of community projects with federal funds is having solid Community support.
This is clearly stated and shown in the EPA directive to the States as being the essential requirement for the DWSRF funding program (presented above).
We need to get organized as a community and to participate in fixing this PFAS remediation problem. We need to prevent this Engineer's project from proceeding further before any construction contracts can be signed using Federal funding.
We have presented many solid reasons for this, based on the fact that it is a completely inappropriate project for the Rocky Hill water facility (both in scale and in the actual mode of implementation) and involves excessive and unnecessary cost, and is a waste of valuable federal funding necessary for our other infrastructure needs. Right now, it seems that efforts are being made to ram things through very rapidly without any proper review, and without any community consideration.

It turns out that with the latest PFOS measurement at 13.2 ppt on 07/22/2022 Rocky Hill was in compliance for PFOS contamination (previously around 16 ppt). We were already in compliance for PFNA and PFOA, and now at present are also meeting the required NJ MCL of 13 ppt for PFOS.
This means that Rocky Hill should not (right now) be in the position of being actively forced by NJ DEP, or anyone else, to make rapid "non-compliance" decisions, and certainly not of being forced to make irreversible and bad decisions on this important PFAS remediation issue. We should not be rushed into any detailed construction phase.

It has been remarked that 13.2 ppt is still above the MCL of 13, and therefore Rocky Hill is still not in official compliance. This demonstrates a continuing lack of understanding of the analytical significance and relevance of these quoted numbers underlying the whole PFAS contamination issue – and it all relates directly to what

"ppt" really means, how these numbers are measured, and how they are presented and interpreted.
The measurement of parts per trillion (parts per million-million) is analogous to measuring to 1 inch in a length of 1 million miles. It is almost totally impossible to imagine and consider such accurate measurement, and (in the case of PFAS analysis) it requires the most modern, sophisticated, analytical instrumentation available. There are very few labs in N.J. (maybe 3) that are capable and certified to perform such ppt measurements of PFAS contaminants in water. There are very serious problems of sample contamination, and sample collection and handling becomes a "hazmat containment" type of situation with required approved clothing coverings and sampling equipment. There are no certified standards that can be obtained from NIST (National Institute of Standards and Technology) and each lab probably ends up trying to make their own PFAS standards. This involves difficult microgram level of accuracy in weighing measurements, and very accurately controlled dilution stages. This is why different labs often come up with different measurement results (due to different instrument calibrations). This is a significant overall problem.
Measurements are being made in the region extrapolated down to zero in the noise level. The detectability limit for the LC/MS/MS analytical technique is accepted as being around 2 ppt. The LC/MS/MS analysis procedures all have to follow the rigorous EPA standardized measurement protocol EPA 537.1.
The detectability limit is the so-called **ND** level (2ppt) below which the measurement signal is non-detectable. This is at the system "noise" level. So, any 0.2 of a stated measurement (such as 13.2 ppt or 17.2 ppt) does not have any scientific significance and should not be included, it is within the noise. The numbers cannot be measured to that accuracy. The numbers at this low ppt level have a statistical variance expected to relate to the system noise. Cited numbers should therefore be an average based on a set of independent measurements and should be presented with a deduced standard deviation.
These contamination numbers are not precise – and are expected to bounce around some average value. They have an uncertainty due to statistical and systematic (instrumentation) errors, and system "noise".
Also the MCL numbers themselves are not scientifically precise. The stated MCL numbers are only best estimates for lifetime exposure based on toxicology studies. The only precise and accurate PFAS measurement at these very low contaminant trace levels is **zero**, and we can only determine that as being **ND** (not detectable). This signifies a contamination level where there is no detected signal above the instrument baseline noise. All the measurement labs can agree on that, regardless of their calibration standards, and that is what the goal should be.

Our goal should be (as repeatedly stated) to totally remove all PFAS contaminants from our water, and this can be done in a straightforward way. We now know how to solve the PFAS problems, not only for now but also for the future when the short-chain PFAS contaminants become the major issue – as they certainly will.
We can plan the Rocky Hill PFAS remediation system to be prepared to handle the anticipated changing PFAS contamination issues in the future.
The DWSRF grant enables us to do this, and it can be done at a reasonable cost that will allow us to also address our other needed infrastructure problems.

If the present situation continues there is the distinct likelihood that Rocky Hill will be stuck with a PFAS remediation system (that does not have any community support or approval) that involves six filter tanks in a 40 foot long trailer unit, 10 feet high, 8 feet wide, and involves a cost of 1 million dollars or more and which was constructed with the stated goal of simply reducing PFOS contamination by a few parts per trillion to achieve MCL conformity of less than 13ppt – which in itself is an inadequate and insufficient goal, as is stated above.
We have to stop this project as now formulated – based on an old activated carbon (GAC) system proposal – before it is too late, and re-direct it.
With solid community support this can be done through the Borough Council, which represents the Community and responds to the Community.
After all, the Rocky Hill water system is supposed to be a Community owned water facility, not the property of the Borough Engineer – and that should not be forgotten.

Ivor Taylor. Oct 12 2022.
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