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Submitted via Ecology's eComment System and email

June 4, 2024

Brett Carp, Aquatics Unit Supervisor
Washington Department of Ecology
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Brett.Carp@ecy.wa.gov

Re: Public comment on Agreed Orders for the Lower Issaquah Valley PFAS Cleanup Sites
Eastside Fire & Rescue Headquarters / Issaquah Valley Elementary Site (Site ID 16581)
Rainier Trail & Memorial Field Site (Site ID 16582)

Dear Mr. Carp:

Introduction

Sammamish Plateau Water and Sewer District (the District or Sammamish Plateau Water) appreciates the opportunity to comment on the proposed Agreed Orders for the two Lower Issaquah Valley cleanup sites noted above. These cleanup sites and the related Agreed Orders are matters of great importance to residents of the Issaquah Valley and Sammamish Plateau, including customers of the District. The District will continue to monitor Ecology's application of MTCA, and provide comments and input on behalf of its substantial customer base due to the PFAS contamination of its groundwater resources. In providing input, the District's comments are not intended to be critical of the City of Issaquah or East Side Fire and Rescue, but are intended to ensure appropriate steps are taken to fully comply with MTCA, and to recognize impacts to the District's and its customers' interests.

For the reasons discussed below, the District recommends several important revisions to the Orders before they are signed by Ecology and implemented. The revisions are necessary to ensure that the resulting remedial investigations comply with the Model Toxics Control Act (MTCA) and result in timely identification of cleanup options that address the entire area impacted by the sites. Revisions are also necessary to ensure that the proposed interim action at the Eastside Fire & Rescue (EFR) Headquarters Site is more thoroughly evaluated for long-term effectiveness so that it does not create long-term problems while attempting to address short-term PFAS source control.

As you know, the District serves approximately 66,000 customers with potable drinking water, much of it drawn from the Lower Issaquah Valley Aquifer (LIVA). The District and its customers have been directly impacted by the per and poly-fluorinated alkyl substances (PFAS) groundwater contamination of the LIVA

that the Agreed Orders are intended to address. The District had to suspend production at two of its wells in 2017 due to the LIVA PFAS contamination. And the District is currently planning for installation of a brand new state-of-the-art water treatment facility to address the LIVA PFAS contamination. The District acknowledges that some funding for the treatment system's construction is coming from Ecology, but the District's customers will still have to shoulder substantial additional capital costs, and operating costs for decades to come, to address the contamination impacting the District's wells. It is therefore essential that the Agreed Orders acknowledge the documented impacts to the District's wells, include them in the scope of the remedial investigation (RI), and support evaluation of appropriate cleanup actions in the feasibility study (FS). Failure to do so now will only result in further delay in the investigation and cleanup selection process after the initial RI work is complete.

The District also believes that the Interim Action being proposed for the EFR headquarters site requires substantially more review and analysis before proceeding. Specifically, the District is concerned about the potential impact to the LIVA after the sequestration media (AKA "permeable reactive barrier") becomes saturated with PFAS and other naturally present chemicals such as iron and manganese that are also sequestered and reduce the performance life of the media. Based on District review of the pilot test report for this media, there is little to no mention of how the injected media, once saturated, could be removed and regenerated. Without the ability to perform routine removal and replacement (due to the extensive depth this media will be applied to treat the source) the sequestration media will eventually become saturated and likely act as an ongoing source of PFAS in years to come. The Interim Action Work Plan should fully evaluate the long-term effectiveness of this media against other potential interim and permanent remedial actions. Additionally, any interim action should also include appropriate contingency measures.

Given the importance of these PFAS cleanup sites to the communities relying on the LIVA for drinking water, the District expects Ecology to closely adhere to MTCA's requirements. Along with Ecology's role as a major funder of the work to be completed under the Agreed Orders should come absolute adherence to MTCA.

Specific Comments

The District provides the following specific comments and requests for revisions to the City of Issaquah and EFR Headquarters proposed Agreed Orders and related Exhibits.

Site definition:

Both Agreed Orders should include references to groundwater contamination in the definition of the "Site" (Paragraph 4.1). Groundwater contamination is a key component of the human health risk to be addressed by the Agreed Orders, and is the dominant driver of where the contamination has "come to be located." WAC 173-340-200 (definition of Facility/Site). As currently drafted, the definitions of the "Sites" only refer to the respective source areas. Omission of contaminated groundwater creates an inaccurate impression of the extent of the Sites that must be addressed under the Orders.

History of PFAS use:

Both Agreed Orders, in the findings of fact, should acknowledge the decades-long period of time (30 or more years) over which substantial quantities of materials containing per and poly-fluorinated alkyl substances were released to ground at the respective source areas.¹ The long release period, coupled with natural groundwater flow and past and present groundwater withdrawal, resulted in the extensive groundwater plumes that now require investigation and remediation. Omission of this essential fact obscures the impact of the releases and the scope of the resulting contamination that must be addressed.

Extent and delineation of EFR plume:

The EFR Agreed Order (Paragraph 5.7) should be revised to state that the extent of the groundwater plume has not been fully delineated, and that the RI will be used to define the full nature and extent of the plume, as required by MTCA. Determining the full areal and vertical extent of contamination that is above cleanup levels (CULs) is required for a MTCA RI. WAC 173-340-350(1),² (5)(g)(ii)(C)³ and (6)(c)(i).⁴ EPA's recently adopted PFAS Maximum Contaminant Levels (MCLs) are the presumptive CULs for the LIVA PFAS Sites.⁵ Fully delineating the horizontal and vertical extent of the plume exceeding CULs during the RI is also necessary for preparation of a MTCA-compliant FS, which must include a permanent remedy and one with standard points of compliance (i.e., points at which CULs must be achieved). WAC 173-340-351(6)(b)(ii),⁶ (6)(b)(iii)⁷ and (6)(f)(i)(C).⁸ Failure to delineate the groundwater plume exceeding CULs during the RI will only delay the FS and development of a cleanup action plan.

¹ Per- and Poly-Fluoroalkyl Substances Characterization Study Summary Report, Lower Issaquah Valley, Farallon Consulting, LLC, March 27, 2019, at Section 2.5.

² Purpose of RI is to "adequately characterize a contaminated site, including the distribution of hazardous substances and the threat they pose to human health and the environment."

³ RI report must include "Proposed site boundaries, as defined by where hazardous substances exceed the proposed cleanup levels identified in (d)(iv) of this subsection."

⁴ RI investigations must collect sufficient information to meet the purposes of WAC 173-340-350(1), including, for groundwater "The areal and vertical distribution and concentrations of hazardous substances in the groundwater."

⁵ WAC 173-340-720(3)(b)(ii)(A) provides that MTCA CULs must be at least as stringent as federal MCLs.

⁶ Alternatives evaluated in the FS must include "At least one permanent cleanup action alternative." Permanent cleanup alternative means "a cleanup action in which cleanup standards of Part 7 of this chapter can be met without further action being required at the site being cleaned up or any other site involved with the cleanup action, other than the approved disposal of any residue from the treatment of hazardous substances."

⁷ FS alternatives must include "For each environmental medium, at least one alternative with a standard point of compliance." The standard point of compliance for groundwater is across the entire Site and to the full depth potentially affected by the Site. WAC 173-340-720(8)(b).

⁸ FS report must include "Maps, cross-sections, and calculations illustrating the location, estimated amount, and concentration distribution of hazardous substances above the proposed cleanup levels for each affected environmental medium at the site" unless already provided in RI report.

As currently drafted, the EFR Agreed Order (Paragraph 5.7) suggests that the EFR groundwater plume has been delineated, is largely linear in nature, and extends to the City’s well COI-PW04. Exhibit 1 (Site Location) and Exhibit B (Scope of Work and Schedule at “Purpose”) reinforce this overly determinative conclusion. The language in the City Agreed Order (Paragraph 5.5 – “The groundwater plume has not yet been delineated”) is more appropriate and should be included in the EFR Order at Paragraph 5.7 and in Exhibit B.

Figure 1 of the EFR Order should also be expanded to include the District’s Wells 7 and 8, which have been impacted by the PFAS plume and must be addressed by the RI and FS. Ecology’s Fact Sheet for the City and EFR Sites⁹ recognizes the impact to the District’s wells from the Sites by showing the District’s South Zone as an “Impacted Service Area.” The District took wells 7 and 8 out of service in 2017 due to high levels of PFAS. PFAS levels have remained elevated at the wells despite being out of service for seven years. The most recent monitoring results show PFAS levels that are still approximately 10x the EPA’s MCLs.¹⁰ As demonstrated by the District’s groundwater modeling,¹¹ the EFR plume migrated towards District Wells 7 and 8 over the course of their 30 years of operation (1987-2017). As a result, the residual PFAS from this migration continues to be hydraulically captured by District Wells 7 and 8. The attached annotated copy of Figure 36 from the District’s groundwater modelling report shows the likely interrelationship of the EFR plume and District Wells 7 and 8, as well as the current maximum PFAS levels at wells 7 and 8. It also shows the area between the modeled EFR plume and wells 7 and 8 in which no data has been collected, highlighting a data gap that must be addressed in the RI.

The District has repeatedly advised Ecology of the impact of the EFR plume on the District wells, including as recently as March of this year (see attached letter from March 29, 2024). The EFR Agreed Order and Scope of Work should therefore recognize the impact on the District’s wells, take advantage of the extensive data set available from the District’s wells, and include characterization of the PFAS plume, in relation to the CULs/MCLs, at and around the District’s wells in the required scope for the RI. The District fully expects that the RI will include impacts to the District’s wells as part of the required delineation of the areal and vertical extent of contamination above CULs/MCLs. Failure to do so now would waste time and resources on

⁹ Lower Issaquah Valley PFAS Cleanup Sites, Washington Department of Ecology, April 2024, p.5.

¹⁰ Recent sampling detected PFAS above the MCLs in District wells 7 and 8 as follows:

| | | |
|---------------|-----------|----------|
| Sample Date | 2/12/2024 | |
| PFAS Chemical | PFOS | PFHxS |
| MCL | 4 ppt | 10 ppt |
| Well 7 | 39.0 ppt | 38.0 ppt |
| Well 8 | 35.0 ppt | 34.0 ppt |

Note: The most recent test results for Well 7 and 8 for the other two PFAS chemicals with MCLs (PFOA (MCL 4ppt) and PFNA (MCL 10 ppt)) were under the MCLs.

¹¹ Technical Memorandum re Groundwater Model Development and Applications for PFC Risk Mitigation, CDM Smith, April 17, 2017, see p. 10, Figure 36.

preparing a deficient RI report¹² that inevitably triggers the need for more data collection and analysis.

EFR HQ Interim Action:

The proposed Interim Action for EFR Headquarters, specifically the proposed “permeable reactive barrier,” appears to be premature based on the information presented in the Agreed Order, including Exhibit C (Interim Action Summary). The barrier needs vigorous review before implementation, including additional public comment under MTCA (WAC 173-340-430(6)(a)) and environmental review under SEPA (WAC 197-11-268). In addition to the required elements in Exhibit C, the Agreed Order should require the Interim Action Work Plan (IAWP) to describe how it meets the requirements of WAC 173-340-430(1)-(3), including a demonstration that it will not foreclose reasonable alternatives for permanent cleanup of the Site (WAC 173-340-430(3)(b) and (7)(a)). The IAWP should also describe alternative interim actions considered and an explanation of why they were not selected (WAC 173-340-430(7)(B)(ii)).

In addition, the IAWP for the barrier needs to fully evaluate the potential impacts of introducing PFAS sequestration media deep into the aquifer, including performance effectiveness after the sequestration media becomes saturated with PFAS. By nature and design, as well as the chemical it is targeting, the media proposed for use in this barrier has a fixed capacity and lifespan, much like the carbon vessels used to sequester PFAS for water treatment.¹³ Because there is no practical way to remove saturated media from the depths being proposed for the Interim Action, the IAWP must consider the long-term impact of saturated media on the aquifer and on groundwater quality. The IAWP should also contain long-term monitoring and appropriate contingency plans for responding to remedy failure, such as saturated media becoming a source of future groundwater contamination.

SPW modeling:

The Agreed Orders should acknowledge the District’s 2017 modeling work,¹⁴ which was provided to the City, EFR and Ecology, and which was the basis of subsequent modeling work referenced in Paragraph 5.4 of the City Agreed Order and Paragraph 5.5 of the EFR Order. The District’s modeling report documents plume transport under production well operations prior to 2017 and demonstrates how the EFR plume migrates towards and is hydraulically captured by District wells 7 and 8. The subsequent modeling work referenced in the Orders primarily assumes no pumping from District wells 7 and 8, which is inconsistent with historical conditions, and with

¹² Both Scopes of Work require the RIs to “determine the nature and extent of contamination exceeding preliminary MTCA cleanup levels . . . and other regulatory requirements at the Site [e.g., EPA MCLs]. **The RI must provide sufficient data and information to define the nature and extent of contamination.**” City Scope of Work at p. 3, Task 2; EFR Scope of Work at p. 4-5, Task 4 (emphasis added).

¹³ The City of Issaquah Well 4 performs routine removal and replacement of the carbon treatment media based on diligent monitoring and predictive calculations and/or indications of chemical saturation.

¹⁴ *Id.*

future production expectations after installation of the PFAS treatment system being partially funded by Ecology.

Conclusion

Sammamish Plateau Water appreciates the willingness of the City of Issaquah and EFR to undertake this important work affecting the Lower Issaquah valley, its residents, and the beneficial use of affected groundwater. The District also appreciates Ecology's willingness to support this work through MTCA grant funding. The District encourages Ecology to carefully consider the District's comments and make changes to the Agreed Orders as requested above. The District also remains ready and willing to share its extensive data set and collaborate on the evaluation of impacts to the District's wells. We would be happy to meet with Ecology, the City and EFR at any time to discuss our comments. We look forward to continued engagement as the work under these Agreed Orders begins and proceeds.

Sincerely,



John C. Krauss

General Manager

Cc

Jay Regenstreif, Sammamish Plateau Water
Scott Coffey, CDM Smith
Matt Wells, Doll Mack Wells PLLC

Attachments

3/19/24 Sammamish Plateau Water letter to Ecology

Annotated PFAS plume map (from CDM Smith, 2017)

March 19, 2024

Kristen Forkeutis
Community Outreach & Environmental Education Specialist
Department of Ecology

via email: kristen.forkeutis@ecy.wa.gov

Re: Lower Issaquah Valley PFAS Contamination MTCA Public Comment Process

Dear Ms. Forkeutis:

The District appreciates being brought into the conversation in anticipation of the MTCA formal public comment process to date. As we continue to collaborate with Ecology we want to reiterate the following points that have been discussed in the past along with new requests, to ensure they are considered as the process moves forward.

1. As you know, our customers have been impacted by the PFAS contamination in the Lower Issaquah Valley Aquifer (LIVA), and Ecology intends to provide mail notification to our customers. This notification is based upon the District's assembled mailing list for Ecology's use. Once the mailings go out and the process begins, we anticipate our customers will show interest and will contact the District regarding the process. As such, we would appreciate that you would share the draft Public Participation Plan (PPP) with us prior to the date when the formal process will be initiated. Note that we have a larger number of customers that will receive the mailing than the City of Issaquah, and fully understanding PPP process before the mailing goes out will help us provide the best information to our customers.
2. You have previously indicated that the Fact Sheet was still being developed and would not be provided to the District prior to initiation of the public comment period, when it is available to all customers and interested parties. As advocates for our customers we wanted to ask again to receive a copy of this Fact Sheet before the process goes live. This will allow us to be fully aware of what is being provided to our customers and will assist us in answering their questions on this topic of great concern.
3. The City of Issaquah and EFR depended heavily on test results from Sammamish Plateau Water wells and a 3D numerical groundwater model which we provided to the City and EFR. We feel that level of cooperation by the District should be reciprocated by providing timely access to the model results, as well as underlying assumptions used for the model, such as the scope of the aquifer modeled, well operations and the time frame over which the model was run.
4. It is the District's opinion that any Remedial Investigation (RI) plan that does not specifically include the District's wells (and other nearby commercial/industrial wells)

would be deficient under MTCA. The District's wells are known to be impacted by PFAS in the LIVA, and so must be included in the scope of the RI in order to adequately characterize the nature and extent of the LIVA PFAS contamination. The District's wells, including both production and monitoring wells, can provide a wealth of current and historical data. Since 2016 the District has conducted regular and extensive testing and PFAS presence has remained constant. Our data should be included in the RI, and the impact to the District's resources must be addressed. When the presence of PFAS was first identified in 2015/2016, there was no question that both Issaquah and the District's supplies were impacted by the same source.

As Ecology knows, our customers and water resources have been impacted by the PFAS contamination in the LIVA. Our customers will be incurring significant expense for long-term treatment for PFAS contamination, and we appreciate Ecology's generous support in securing grant funds from the State for this treatment. We look forward to continuing to participate in the public comment process and in the MTCA RI and Feasibility Study process. We also look forward to the ultimate remediation of PFAS from our drinking water resources. If it would be helpful, we are open to meeting with you prior to the initiation of the public process to ensure our interests and concerns are addressed in the MTCA actions to be presented to the public, which includes, significantly, the District's many thousand customers.

Sincerely



John C. Krauss
General Manager

c: Pricilla Tomlinson, DOE
Brett Carp, DOE
Scott Coffey, CDM
Jay Regenstreif, SP Water

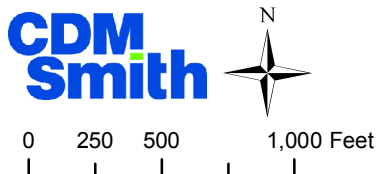
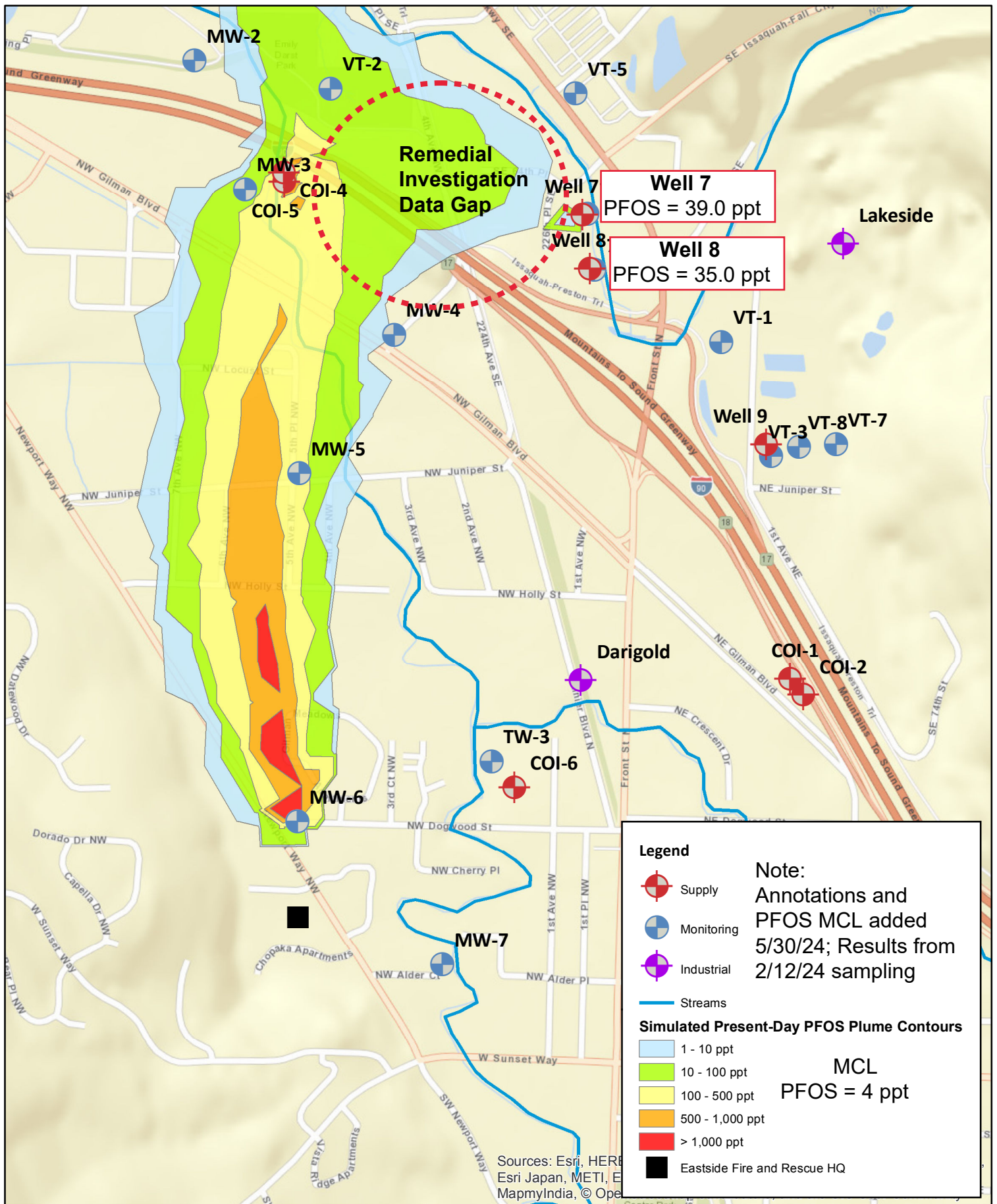


Figure 36
Simulated Present-Day A Sand PFOS Concentrations from MW-6 Source
Sammamish Plateau Water