EXECUTIVE OFFICER'S REPORT
Covers July 1, 2022 – July 31, 2022

Contents

1. Personnel Report – *Sandra Lopez*

New Hires – None

Vacancies

- Engineering Geologist, Non-Point Source Unit, South Lake Tahoe. This position will assist with technical, regulatory, and administrative procedures related to review of project environmental disclosure and permitting documents.
- Senior Engineering Geologist (Specialist), Leviathan Mine, South Lake Tahoe. This position will evaluate and provide advice to Water Board management regarding the Water Board's cleanup and abatement actions needed at the Leviathan Mine to comply with the USEPA's Administrative Abatement Action Order.
- Engineering Geologist, Cannabis Unit, Victorville. This position will work as a part of an interdisciplinary team and will perform duties regulating the discharge of waste from illegal or permitted cannabis cultivation sites, and associated facilities or operations with similar environmental effects.
- Engineering Geologist, Land Disposal Unit, Victorville. This position will oversee waste discharges and site investigation/cleanup at various types of regulated and unregulated facilities including landfills, mines, and site cleanup sites.
- Engineering Geologist, Department of Defense Site Cleanup Unit, Victorville. This position will oversee site investigations and cleanups at Department of Defense sites in the South Lahontan area as well as various types of regulated and unregulated facilities including landfills, mines, and site cleanup sites.
- Water Resource Control Engineer, Wastewater & Agricultural Unit, Victorville. This position provides regulatory oversight of projects involving discharges to

groundwater or surface waters and projects intended to restore and/or enhance water quality in the Waste Discharge Requirements (WDRs), National Pollutant Discharge Elimination System (NPDES), and Site Cleanup Programs.

- Scientific Aid, Regulatory & Enforcement Unit, South Lake Tahoe. This position supports staff primarily though review of submitted self-monitoring reports, along with other special projects.
- Scientific Aid, Forestry/Dredge & Fill and Non-Point Source Units, South Lake Tahoe. This position will evaluate water quality data and assess compliance with water quality orders and permits associated with grazing, restoration, timber, and forestry activities.
- Scientific Aid, Planning & Assessment Unit, South Lake Tahoe. This position will help the Water Board's programs that conduct surface water quality monitoring, identify water quality impairments, conduct water quality and watershed restoration planning, and update and improve the Water Quality Control Plan (Basin Plan) of the Lahontan Region.
- Office Technician (Typing), South Lake Tahoe. This position will assist in proofreading and editing staff documents, engage with staff and the public at the front office desk, provide support to technical and administrative staff, ensure documents comply with accessibility standards, and provide administrative support at regional board meetings held throughout the region.

Departures

- Scott Ferguson, Supervising Water Resource Control Engineer, South Lake Tahoe
- Alexander Spencer, Water Resource Control Engineer, Cannabis Unit, South Lake Tahoe

2. Update on Evaluating Potential Water Quality Impacts Associated with Microplastics – *Melissa Thaw*

The Lahontan Water Board continues to investigate microplastics, an emerging water quality concern for Lake Tahoe, the Lahontan Region, and the State of California.

Microplastic Research Updates – Lake Tahoe Basin

While the body of microplastic research is rapidly increasing, its applicability to Lake Tahoe is limited. More specifically, global and regional research on microplastic sources and flow paths have limited applications to Lake Tahoe because microplastic has limited transport pathways to the lake compared with most water bodies studied. Wastewater is exported outside of the Basin. Urban stormwater basins within the Lake Tahoe basin are capable of capturing small particles composed of natural materials including fine sediment particles or synthetic materials such as microplastics.

Microplastic research focused on Lake Tahoe is limited. Not a single peer-reviewed journal article has been published on microplastic in Lake Tahoe. However, both the Desert Research Institute and the University of California, Davis are currently conducting microplastic research in Lake Tahoe. UC Davis researchers will release a

research report on microplastic in Lake Tahoe in December 2022. In the UC Davis State of the Lake Report, released on July 28, 2022, limited preliminary findings on microplastics in Lake Tahoe were included. Researchers found an average of 312,000 plastic particles per square kilometer. The greatest abundance of particles counted exceeded 1,200,000 particles per square kilometer. The number of particles varied over time, with the highest number of particles being found during spring. To put this in perspective, an average of 700,000 particles per square kilometer were previously measured in the San Francisco Bay in 2015 (Sutton et al., 2016)[1]. UC Davis quantified the following percentages of polymer types found in Lake Tahoe: 41% polyethylene, 40% polypropylene and 14% polyesters. The remaining microplastic (5%) consisted of polystyrene, nylon, acrylics, and co-polymer mixtures (Figure 2.1). Polyethylene is used in a wide variety of manufactured items including single use packaging and toys. Polypropylene is also used in a wide variety of products including clothing, carpet, and upholstery, and outdoor furniture. A 2022 article estimated that a single household tumble dryer can release about one hundred million (9×10^7 to 12×10^7) microfibers per year, which can be prevented by a simple dryer filter (Tao et al., 2022)[2]. UC Davis will release a report on their findings in December 2022.

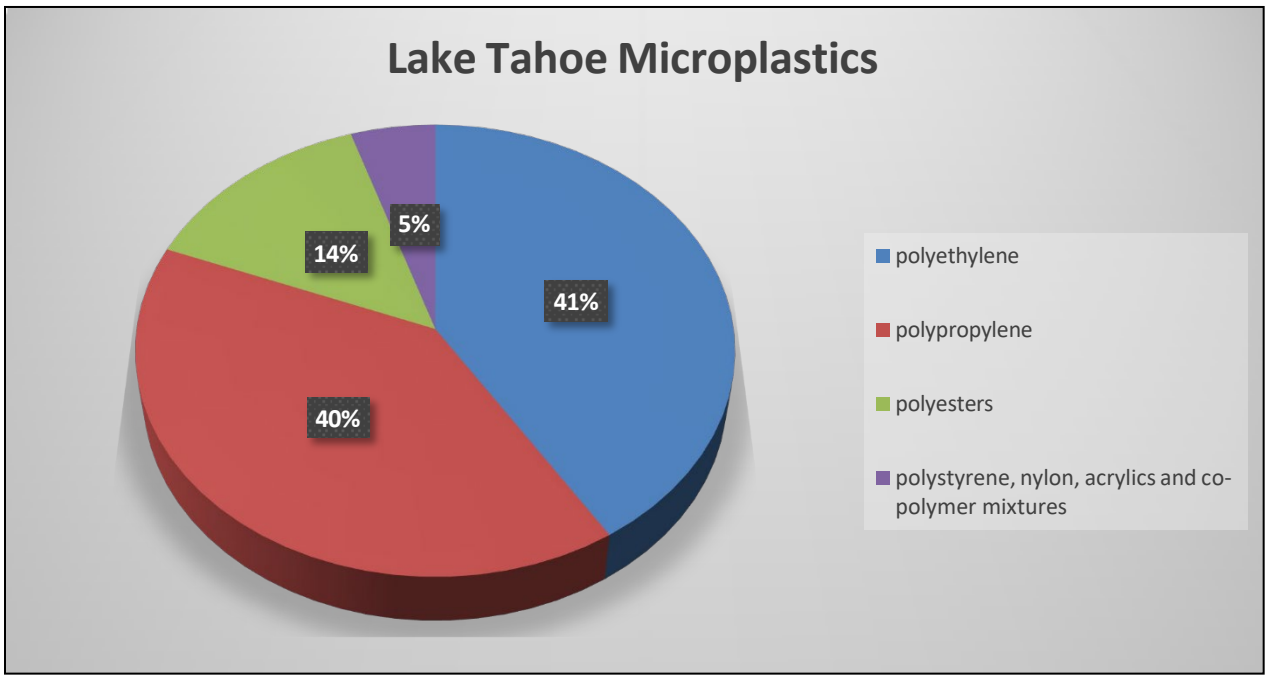

Figure 2.1 - UC Davis preliminary findings presented in the State of the Lake Report revealed that microplastics were composed of 41% polyethylene, 40% polypropylene, 14% polyesters, and 5% polystyrene, nylon, acrylics, and co-polymer mixtures.

Lahontan Water Board staff continue to gather new information and gain knowledge of new research, state-wide topics of interest and the development of monitoring and laboratory analysis methods through scientific literature searches and participating in the State of California Microplastic Subcommittee meetings.

Water Board staff coordinated with Tahoe Regional Planning Agency staff to inspect four monopine cellular towers.

On July 19, 2022, Water Board staff and Tahoe Regional Planning Agency staff conducted inspections on four monopines on the California side of the Lake Tahoe Basin. The four sites included cell phone towers camouflaged as pine trees, referred to as monopines, to mitigate scenic impacts. The purpose of the inspections was to determine the extent of shedding of artificial branches and needles from the towers and note the distance and density of the debris from the towers. All towers inspected exhibited a similar amount of shedding. The majority of branch pieces and individual needles were within 50 feet of each tower, with the density decreasing rapidly with distance from the tower. Monopine needles were observed incorporated with the natural duff, and where there was no duff, incorporated into the soil (Figure 2.2). The furthest distance monopine needles were observed was about 200 feet downwind at the Meyers location. Two of the four sites, Wilson Avenue and Speckled Avenue, had extensive water quality best management practices (BMPs) downslope of the towers that would presumably catch most of the debris. Staff did not observe any branch pieces or individual needles in adjacent roadways, gutters, or public stormwater systems. Clean-up of branch pieces could be performed without much difficulty; however, individual needle retrieval would be difficult since they were incorporated into the soil and natural pine needle duff layers.

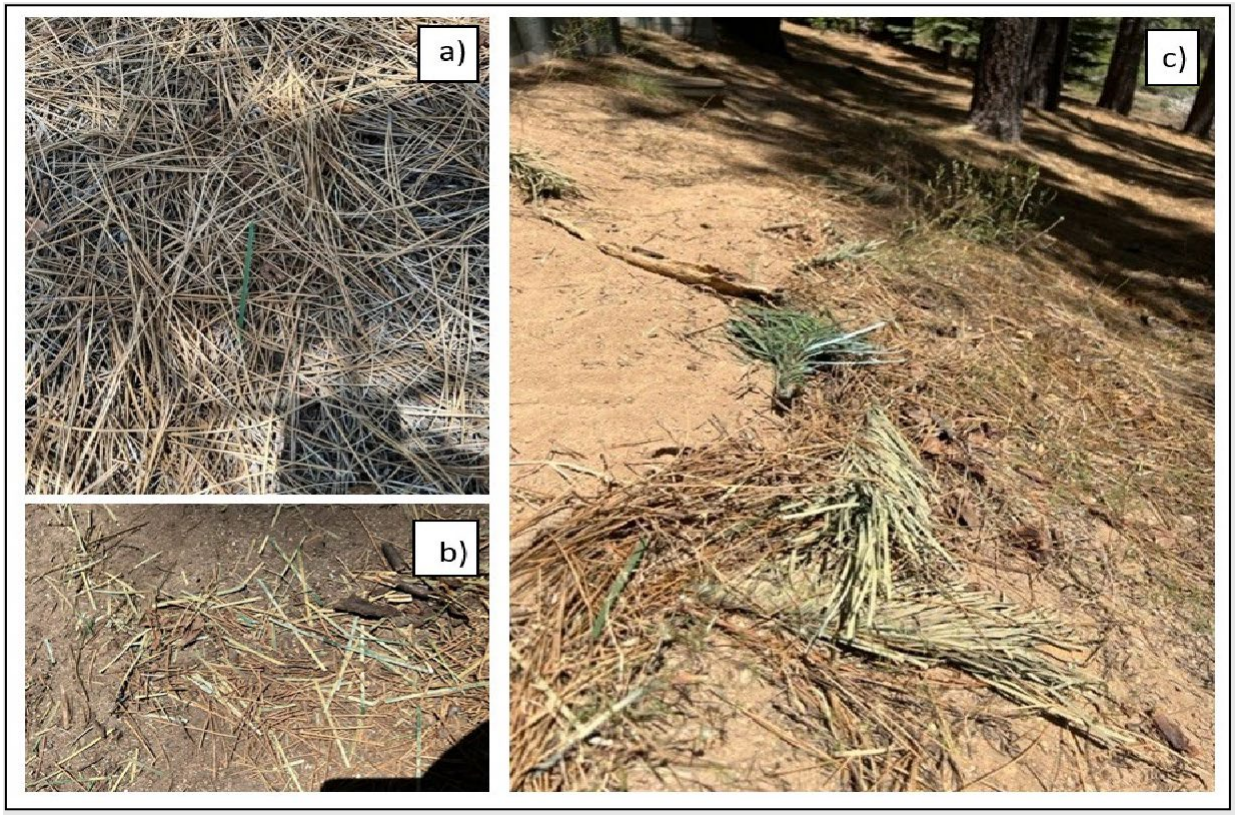

Figure 2.2 - Monopine debris observed during inspection July 19, 2022. a) Plastic pine needle mixed with duff b) Typical plastic pine needle debris mixed with soil c) Average size of plastic branches is about 6 inches long.

Are Monopines a Statewide Water Quality Concern?

Although microplastic is an emerging water quality concern statewide, there is no evidence that monopine debris is a primary or significant source of microplastic to

surface waters. Water Board staff brought up the topic of monopine microplastic at statewide Non-Point Source and Stormwater meetings and inquired whether staff from other Regions have encountered monopine microplastic as a concern or dealt with related complaints. Based on the collective response from staff participating at these meetings, it does not appear that monopine microplastic is currently a water quality concern being brought to the attention of Regional Board staff throughout the state.

Next Steps

Water Board staff will keep the Board informed of relevant research findings and developments, including State Board efforts related to microplastics in surface waters and drinking water. Microplastics science is rapidly evolving as the State Water Board develops monitoring orders for public water systems. Staff plan to provide additional updates to the Board by presenting an informational item to the Board by the end of 2023.

[1] Sutton, R., Mason, S. A., Stanek, S. K., Willis-Norton, E., Wren, I. F., & Box, C. (2016). Microplastic contamination in the San Francisco Bay, California, USA. Marine pollution bulletin, 109(1), 230-235.

[2] Tao, D., Zhang, K., Xu, S., Lin, H., Liu, Y., Kang, J., ... & Leung, K. M. (2022). Microfibers released into the air from a household tumble dryer. Environmental Science & Technology Letters, 9(2), 120-126.

3. Results of Oro Grande Area Groundwater Sampling for PFAS Substances – *Alonzo Poach*

Oro Grande is a community in unincorporated San Bernardino County approximately 2 miles north of the City of Victorville. Oro Grande is immediately adjacent to the Mojave River. The area adjacent to CalPortland's Oro Grande Cement Plant and to the south are connected to the Oro Grande Community Water Service District's water system that supplies drinking water services to these areas (Figure 3.1). In the area north of the Oro Grande Cement Plant, many residents in the community rely on private domestic supply groundwater wells as the water source for their homes. Private water supply wells are not regulated by the Division of Drinking Water (DDW). Therefore, Lahontan Water Board staff identified the north Oro Grande area as an area with potential for exposures to Per- and Polyfluoroalkyl Substances (PFAS). Water Board staff collected four groundwater samples for PFAS compounds in the area to evaluate for the presence and concentration of PFAS compounds in the groundwater of this portion of the Oro Grande area. The sample results and methodologies are summarized below.

Water Board staff conducted research via GeoTracker (and other available databases) to identify homes that may have private water supply wells. In addition, Water Board staff conducted field reconnaissance on the following dates:

- March 8, 2022 (Field reconnaissance, no samples collected)
- April 27, 2022 (1 sample collected)
- May 5, 2022 (3 samples collected)

With permission from the property owners, samples were collected at four separate properties (see Figure 3.1) using standard general practices from the nearest water spigot to the well head. The wells were purged until pH, temperature, turbidity, and

electrical conductivity were stable. When stability was reached, samples and field blanks were collected in laboratory provided bottles. Samples were transported to Babcock Laboratories, Inc in Riverside, CA and analyzed using EPA Method 537.1 for PFAS compounds.

Results

Results are summarized below in Table 3.1 and Table 3.2. Table 3.1 summarizes all detections above the laboratory reporting limit and compares the results to currently established DDW notification levels. Table 3.2 summarizes all detections above the minimum detection limit for the compound (including detections in field blanks).

Quality Assurance/Quality Control

Detections in field blank and laboratory blank samples were estimated values between the laboratory reporting limit and minimum detection limit (Table 3.2). None of the field or laboratory blank samples detected PFAS compounds in excess of 1/3 the method reporting limit. In summary, quality assurance samples (i.e., field and laboratory blanks) met EPA method 537.1 requirements; therefore, validating the data for the groundwater samples collected during this effort.

Discussion

Maximum contaminant levels (MCLs) have not yet been established for PFAS compounds. Notification levels (NLs) are health-based advisory levels established by the DDW for chemicals in drinking water that lack MCLs. Notification levels are only applicable to wholesale and retail water systems (i.e., water purveyors). Notification levels are not enforceable levels; however, they are used herein for comparison purposes to an established health-based advisory level. DDW NLs are included in Table 3.1 for comparison purposes for PFAS compounds that have established NLs.

Summary

After a thorough review of the data, the results of the sampling were transmitted to the property owners in July 2022.

As shown in Table 3.1, there were no exceedances of any established NLs for PFAS compounds. The data were also uploaded to GeoTracker in Electronic Deliverable Format (commonly known as EDF).

At this time, no further sampling in this area is recommended; however, the data are available in GeoTracker for future use and evaluation, should it be warranted.

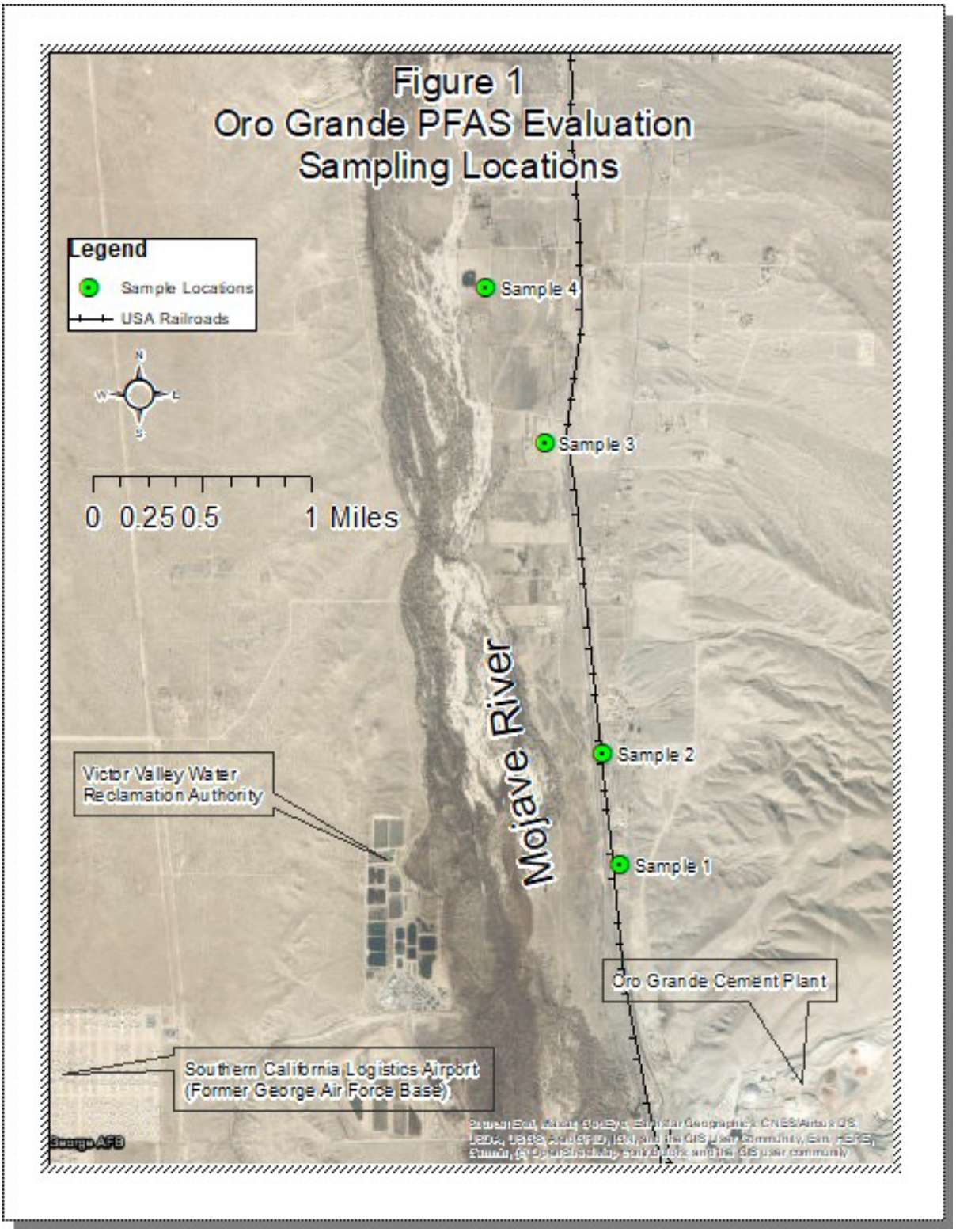

Figure 3.1 - Area adjacent to CalPortland's Oro Grande Cement Plant and to the south are connected to the Oro Grande Community Water Service District's water system that supplies drinking water services to these areas.

Table 3.1 Summary of Results above Reporting Limit

Sample Date	Sample ID	Parameter	Qualifier	Value	Reporting Limit	Minimum Detection Limit	Units	DDW NL
4/27/2022	Sample 2	Perfluorobutanesulfonic acid (PFBS)	=	3.3	1.8	0.052	NG/L	500-
4/27/2022	Sample 2	Perfluorohexanoic acid (PFHxA)	=	4.5	1.8	0.12	NG/L	NE
4/27/2022	Sample 2	Perfluoroheptanoic acid (PFHpA)	=	1.9	1.8	0.081	NG/L	NE
4/27/2022	Sample 2	Perfluorohexanesulfonic acid (PFHxS)	=	5.1	1.8	0.12	NG/L	NE[1]-
4/27/2022	Sample 2	Perfluorooctanoic acid (PFOA)	=	5	1.8	0.089	NG/L	5.1-
4/27/2022	Sample 2	Perfluorooctane sulfonic acid (PFOS)	=	2.7	1.8	0.054	NG/L	6.5
5/5/2022	Sample 1	Perfluorohexanesulfonic acid (PFHxS)	=	2.1	1.7	0.12	NG/L	NE[1]

Notes:
= equals
DDW Division of Drinking Water
NG/L nanograms per liter
NE not established
[1] DDW currently proposing a NL of 2ng/L for PFHxS (expected to be established August 2022)

Table 3.2 PFAS detections above the Minimum Detection limit (includes field blank detections)

Sample Date	Sample ID	Parameter	Qualifier	Value	Reporting Limit	Minimum Detection Limit	Units	Reporting Limit Note
4/27/2022	Sample 2 - Field Blank	Perfluorohexanoic acid (PFHxA)	ND	0.27	2	0.13	NG/L	**J**
4/27/2022	Sample 2 - Field Blank	Perfluorodecanoic acid (PFDA)	ND	0.15	2	0.073	NG/L	**J**
4/27/2022	Sample 2 - Field Blank	Perfluorooctanoic acid (PFOA)	ND	0.21	2	0.1	NG/L	**J**
4/27/2022	Sample 2	Perfluorobutanesulfonic acid (PFBS)	=	3.3	1.8	0.052	NG/L	**-**
4/27/2022	Sample 2	Perfluorohexanoic acid (PFHxA)	=	4.5	1.8	0.12	NG/L	**-**
4/27/2022	Sample 2	Perfluoroheptanoic acid (PFHpA)	=	1.9	1.8	0.081	NG/L	**-**
4/27/2022	Sample 2	Perfluorohexanesulfonic acid (PFHxS)	=	5.1	1.8	0.12	NG/L	**-**
4/27/2022	Sample 2	Perfluorononanoic acid (PFNA)	ND	0.21	1.8	0.086	NG/L	**J**
4/27/2022	Sample 2	Perfluorodecanoic acid (PFDA)	ND	0.18	1.8	0.064	NG/L	**J**
4/27/2022	Sample 2	Perfluorooctanoic acid (PFOA)	=	5	1.8	0.089	NG/L	**-**
4/27/2022	Sample 2	Perfluorooctane sulfonic acid (PFOS)	=	2.7	1.8	0.054	NG/L	**-**

Sample Date	Sample ID	Parameter	Qualifier	Value	Reporting Limit	Minimum Detection Limit	Units	Reporting Limit Note
5/5/2022	Sample 1 - Field Blank	Perfluorodecanoic acid (PFDA)	ND	0.15	2	0.073	NG/L	**J**
5/5/2022	Sample 1 - Field Blank	Perfluorooctanoic acid (PFOA)	ND	0.15	2	0.1	NG/L	**J**
5/5/2022	Sample 1 - Field Blank	Perfluorohexanoic acid (PFHxA)	ND	0.26	2	0.13	NG/L	**J**
5/5/2022	Sample 3	Perfluorodecanoic acid (PFDA)	ND	0.11	1.7	0.062	NG/L	**J**
5/5/2022	Sample 3	Perfluorohexanoic acid (PFHxA)	ND	0.25	1.7	0.11	NG/L	**J**
5/5/2022	Sample 3	Perfluorooctanoic acid (PFOA)	ND	0.13	1.7	0.086	NG/L	**J**
5/5/2022	Sample 1	Perfluorobutanesulfonic acid (PFBS)	ND	1.4	1.7	0.051	NG/L	**J**
5/5/2022	Sample 1	Perfluorooctanoic acid (PFOA)	ND	0.15	1.7	0.087	NG/L	**J**
5/5/2022	Sample 1	Perfluorooctane sulfonic acid (PFOS)	ND	0.074	1.7	0.053	NG/L	**J**
5/5/2022	Sample 1	Perfluorohexanoic acid (PFHxA)	ND	0.32	1.7	0.11	NG/L	**J**
5/5/2022	Sample 1	Perfluorohexanesulfonic acid (PFHxS)	=	2.1	1.7	0.12	NG/L	**-**
5/5/2022	Sample 1	Perfluorodecanoic acid (PFDA)	ND	0.16	1.7	0.062	NG/L	**J**

Sample Date	Sample ID	Parameter	Qualifier	Value	Reporting Limit	Minimum Detection Limit	Units	Reporting Limit Note
5/5/2022	Sample 4	Perfluorodecanoic acid (PFDA)	ND	0.096	1.7	0.063	NG/L	**J**
5/5/2022	Sample 4	Perfluorohexanoic acid (PFHxA)	ND	0.23	1.7	0.12	NG/L	**J**
5/5/2022	Sample 4	Perfluorooctanoic acid (PFOA)	ND	0.15	1.7	0.088	NG/L	**J**

Notes:

= Equals

- Cell left blank intentionally

J Estimated concentration between minimum detection limit and reporting limit

ND Non-detect above reporting limit

NG/L nanograms per liter

4. **Standing Item – 1st Quarter 2022 Violation Report** – *Robert Tucker*

Staff responded to approximately 60 percent of the violations identified for the 1st quarter of 2022 with informal enforcement actions. Violations of more significance involved a limited number of facilities including Briggs Mine, Fort Irwin Landfill, and several closed Modoc County landfills.

Briggs Mine violations included exceedances of groundwater receiving water limitations and two leaking evaporation ponds. Staff initially responded with a staff enforcement letter requesting a plan for response to the leaking ponds from the discharger, DV Natural Resources. Staff specifically requested the plan include lowering pond levels to reduce the leakage rate into the leachate recovery system. DV Natural Resources agreed to this approach. Staff is continuing to work with DV Natural Resources to address the groundwater-related violations.

Fort Irwin's Class 3 landfill monitoring results contained exceedances of groundwater receiving water and soil gas limitations for multiple constituents. The exceedances are thought to be the result of a historical release from an unlined landfill cell that is no longer in use. The discharger, the U.S. Army, is currently evaluating remedial action alternatives through the CERCLA process. Water Board staff is currently documenting these ongoing violations at the facility, following up with staff enforcement letters, and participating in the U.S. Army's alternatives analysis.

Modoc County is installing new monitoring wells near landfills. Modoc County has several small, closed landfills in Surprise Valley (northeast corner of California) with waste discharge and monitoring requirements for groundwater monitoring. Some of the groundwater monitoring wells were either never installed or are non-functional. Modoc County recently installed and sampled new monitoring wells at two of the landfills (Eagleville and Lake City) and will be installing monitoring wells at two other landfills (Cedarville East and Fort Bidwell). The Cedarville East and Fort Bidwell monitoring well installation requires special drilling equipment to address local geological conditions, and Modoc County is working to secure a drilling company.

Attachment: 1st Quarter 2022 Violations Table