

2026

State of the Aquifer



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Intentional Page

INTRODUCTION

The State of the Aquifer Report provides an assessment of the condition of the Northern Guam Lens Aquifer (NGLA). The report uses available groundwater quality and hydrologic data to identify concerns related to the quality and quantity of Guam’s aquifer.

1 WATER QUALITY

Water quality is important to the NGLA. Continued development and activities above the aquifer can introduce contaminants into the freshwater lens and affect its quality. Maintaining quality while meeting drinking water standards is crucial to ensure a safe water supply for the island. Contaminants include dieldrin, per- and polyfluoroalkyl substances (PFAS), nitrates, and chloride.

1.1 Dieldrin

Dieldrin is a synthetic insecticide used in the 1950s to control agricultural pests. U.S. EPA banned most uses of dieldrin in 1974, although their use for termite control remained permitted until 1987. Dieldrin is highly persistent in the environment and exposure may pose health risks. Guam EPA established an Interim Action Level (IAL) of 0.20 µg/L (ppb) for dieldrin, which took effect on August 1, 2025. Information on the historical use of dieldrin in Guam is limited; however, monitoring data shown in Figure 1.1 indicate that dieldrin was detected in groundwater as early as 2008, with concentrations in production wells Y-15 and M-4 exceeding the current IAL.

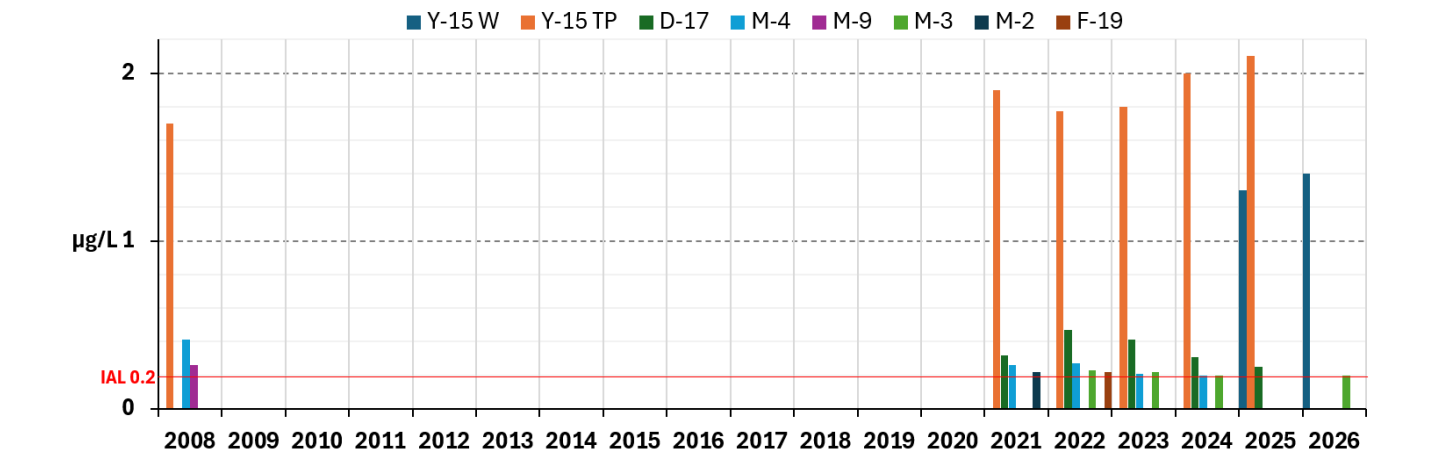


Figure 1.1 Dieldrin monitoring data for select production wells, 2008 – 2026. Red line is Guam EPA’s IAL of 0.20 µg/L.

Figures 1.2-1.4 show recent mapped dieldrin concentrations, with little to no detection in the Finagua’yok Basin and part of the Hagåtña Basin near A-9, A-10, and A-13. Table 1 shows wells with elevated concentrations. Y-15 had a pre-treatment concentration of 1.3 µg/L, substantially above the IAL. Dieldrin was not detected after GAC treatment. Wells in the Tomhom and Mangilao basins (M-2, M-3, M-4, EX-11A, and D-18) had concentrations greater than 0.10 µg/L. Although these concentrations are below the IAL, continued monitoring and further investigation of potential sources are warranted.

Basin	Well	[D] ug/L	Date
Upi	Y-15 W	1.3	4/8/2026
Tomhom	D-18	0.14	4/8/2026
Mangilao	M-2	0.14	4/8/2026
	M-4	0.15	3/10/2026
	EX-11A	0.14	4/8/2026

Table 1 Wells with dieldrin concentrations >0.1 (orange) and >IAL (red).

Figure 1.2 Most recent dieldrin concentrations ($\mu\text{g/L}$) in production wells within the Machanao, Finagua'yok, and Upi Aquifer Basins.

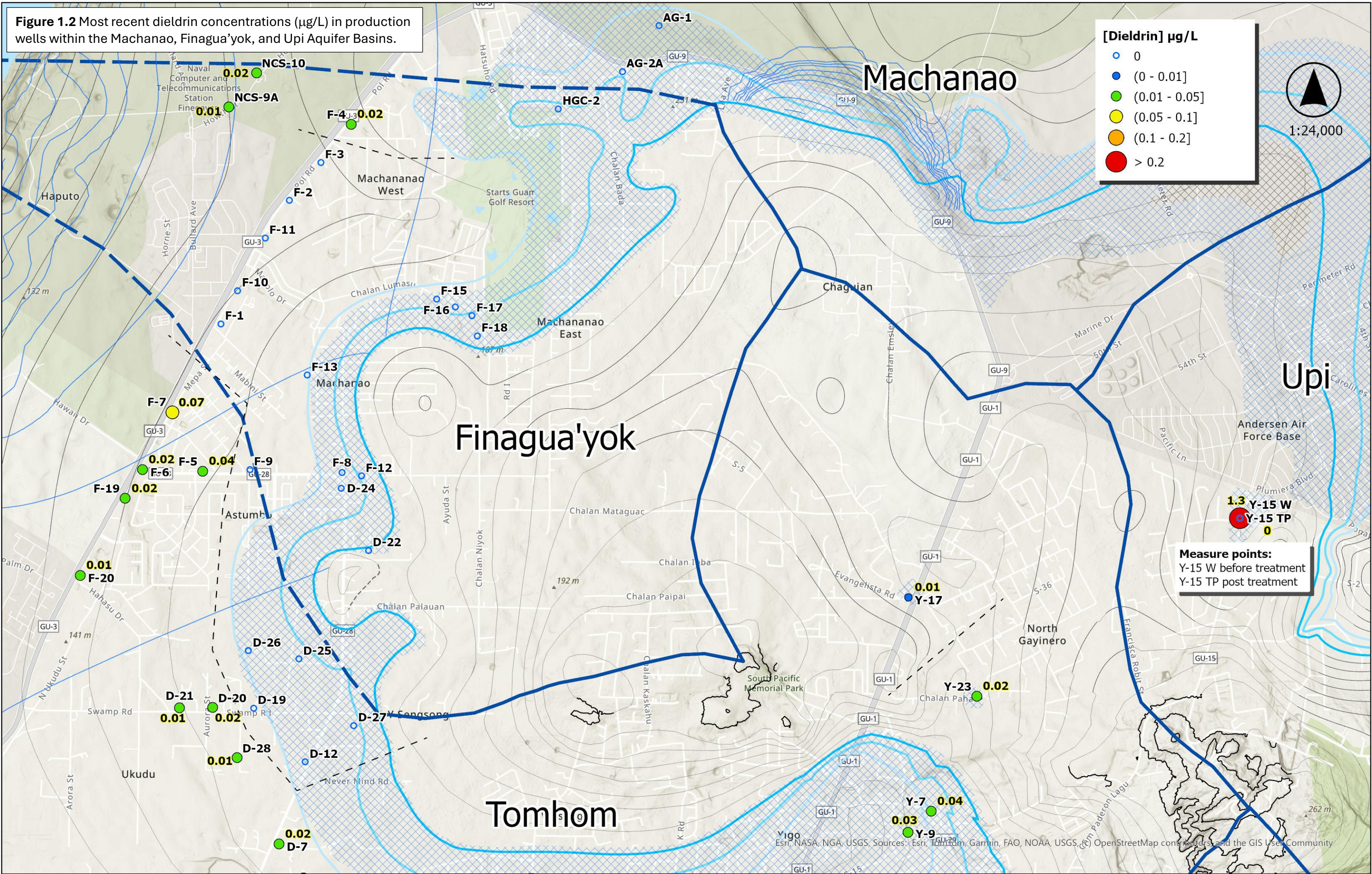


Figure 1.3 Most recent dieldrin concentrations ($\mu\text{g/L}$) in production wells within the Tomhom and Mangilao Aquifer Basins.

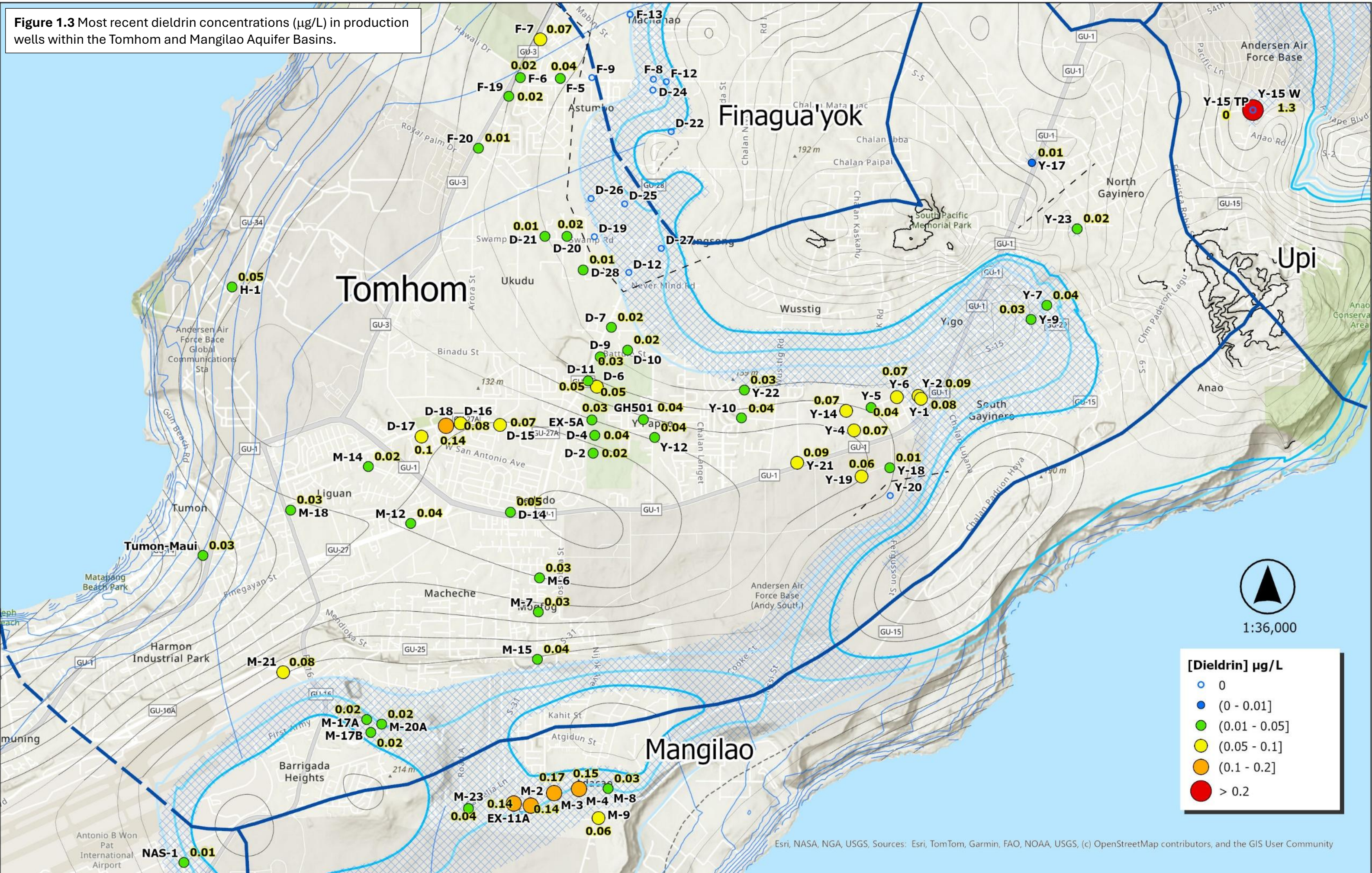
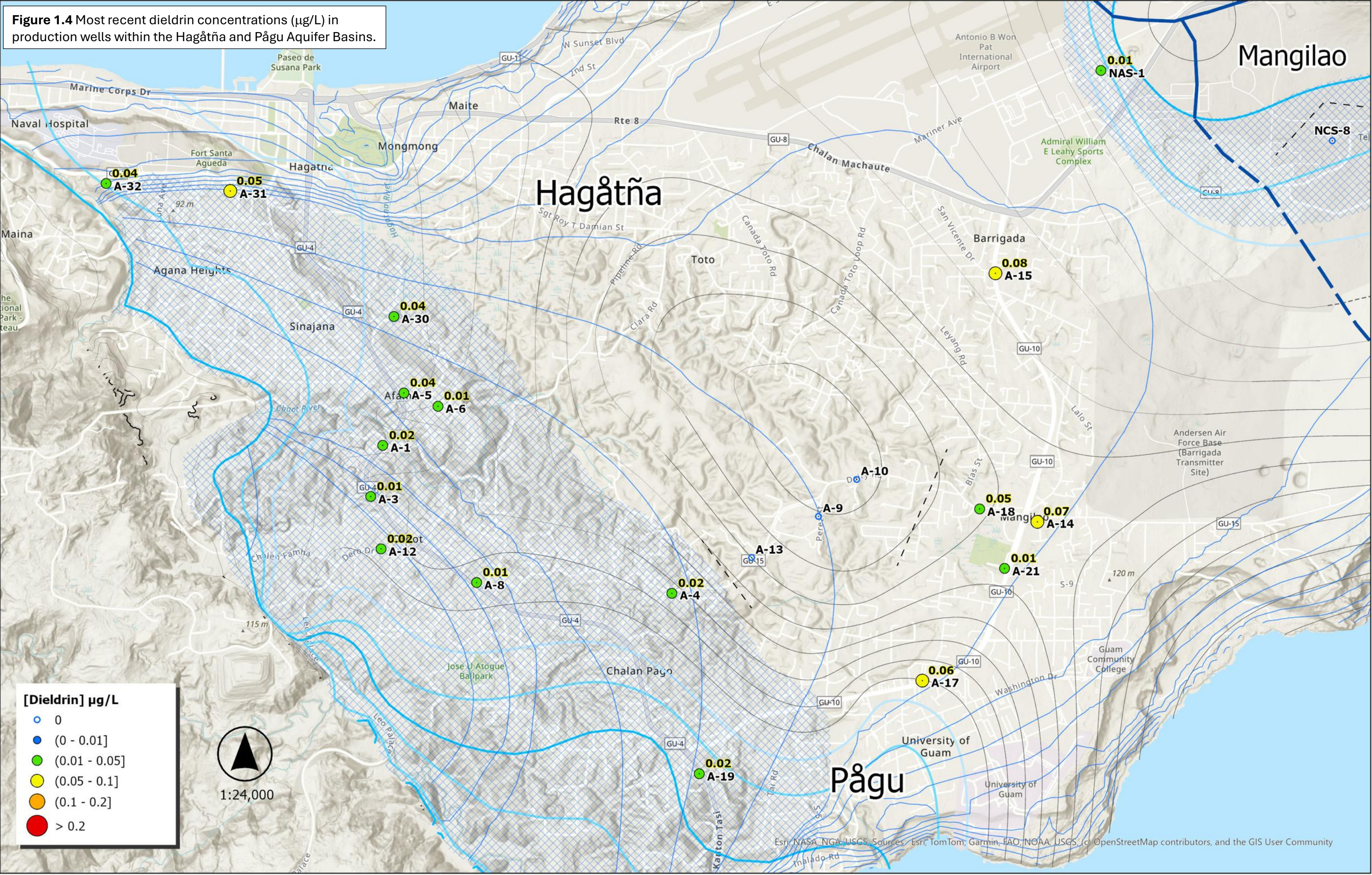


Figure 1.4 Most recent dieldrin concentrations ($\mu\text{g/L}$) in production wells within the Hagåtña and Pāgu Aquifer Basins.



1.2 PFAS – Per- and Polyfluoroalkyl Substances

Per- and polyfluoroalkyl substances (PFAS) have been used for decades in aqueous film-forming foam (AFFF), nonstick cookware, water-repellent fabrics, food packaging, and cosmetics ([Mashima, 2025](#)). Often called “[forever chemicals](#),” PFAS resist degradation and persist in the environment. PFAS studies on Guam include research by [Dr. Barry Kim](#) and an [M.S. Environmental Science thesis](#) by Ms. Mallary Duenas. Monitoring under the fifth cycle of the U.S. EPA’s Unregulated Contaminant Monitoring Rule (UCMR 5) included testing for 29 PFAS from January 2023 through December 2025 (Appendix 2).

Figures 1.5–1.8 show the distribution of PFAS across the NGLA. A total of 48 facilities (production wells and booster stations) had at least one PFAS result at or above its respective minimum reporting level (MRL) (Appendix 3). PFHxS was widely detected in production wells across the Upi, Finagua’yok, Hagåtña, Pāgu, Mangilao, and Tomhom basins. Among the 48 facilities, 21 wells had at least one regulated PFAS concentration above their respective maximum contaminant level (MCL). PFOA, PFOS, and PFHxS exceeded their respective MCLs, with most exceedances occurring in the Hagåtña, Pāgu, Tomhom, and Mangilao basins.

Hazard Index (HI) values and total PFAS concentrations were also calculated for each well. The HI accounts for the combined potential health effects of PFHxS, PFNA, HFPO-DA, and PFBS. An HI greater than 1 indicates that the combined contribution of these PFAS exceeds EPA’s health-based benchmark for the mixture. Wells with HI (>1) included A-4, A-13, and A-30 (Hagåtña); M-8 and M-9 (Mangilao); and D-17A, F-7, M-12, M-17A, and M-21 (Tomhom).

1.3 Nitrates

Nitrate, a common indicator of wastewater discharge, may enter the aquifer from leaking sewer lines, septic systems, and pits. The U.S. EPA maximum contaminant level (MCL) for Nitrate-N is 10 mg/L, with increased monitoring required when concentrations reach 50% of the MCL. Previous studies ([McDonald \(2002\)](#) and [Bulaklak et al. \(2020\)](#)) identified potential nitrate sources and evaluated nitrate-N trends. Subsequently, Valerio et al. (2023) developed [MAppFx: Production Well Nitrates Northern Guam Lens Aquifer](#), an interactive tool that integrates nitrate time-series data with statistical and trend analyses. Table 2 lists ten production wells with increasing linear nitrate-N trends. Three wells (M-2, M-4, and EX-11) are projected to reach or exceed 5 mg/L, equivalent to 50% of the MCL.

	Recent Sample Date	Recent Concentration	1/1/2027 Projected
M-4	2/18/2026	4.5	5.27
EX-11	5/6/2026	4.7	5.26
M-2	2/18/2026	4.4	5.03
F-18	12/4/2025	4.3	4.95
M-3	2/18/2026	4.6	4.90
M-8	2/17/2026	4.3	4.86
M-15	2/17/2026	3.1	4.82
F-12	5/6/2026	4.5	4.74
M-9	2/17/2026	4.1	4.54
F-8	12/3/2025	3.7	4.37

Table 2 Top 10 production wells with increasing nitrate-N trends, ranked based on sampling recency, projected nitrate-N concentration at the beginning of 2027, error analysis, and sample count.

Figure 1.5 Most recent PFAS detections (ng/L) in production wells within the Machanao, Finagua'yok, and Upi Aguifer Basins.

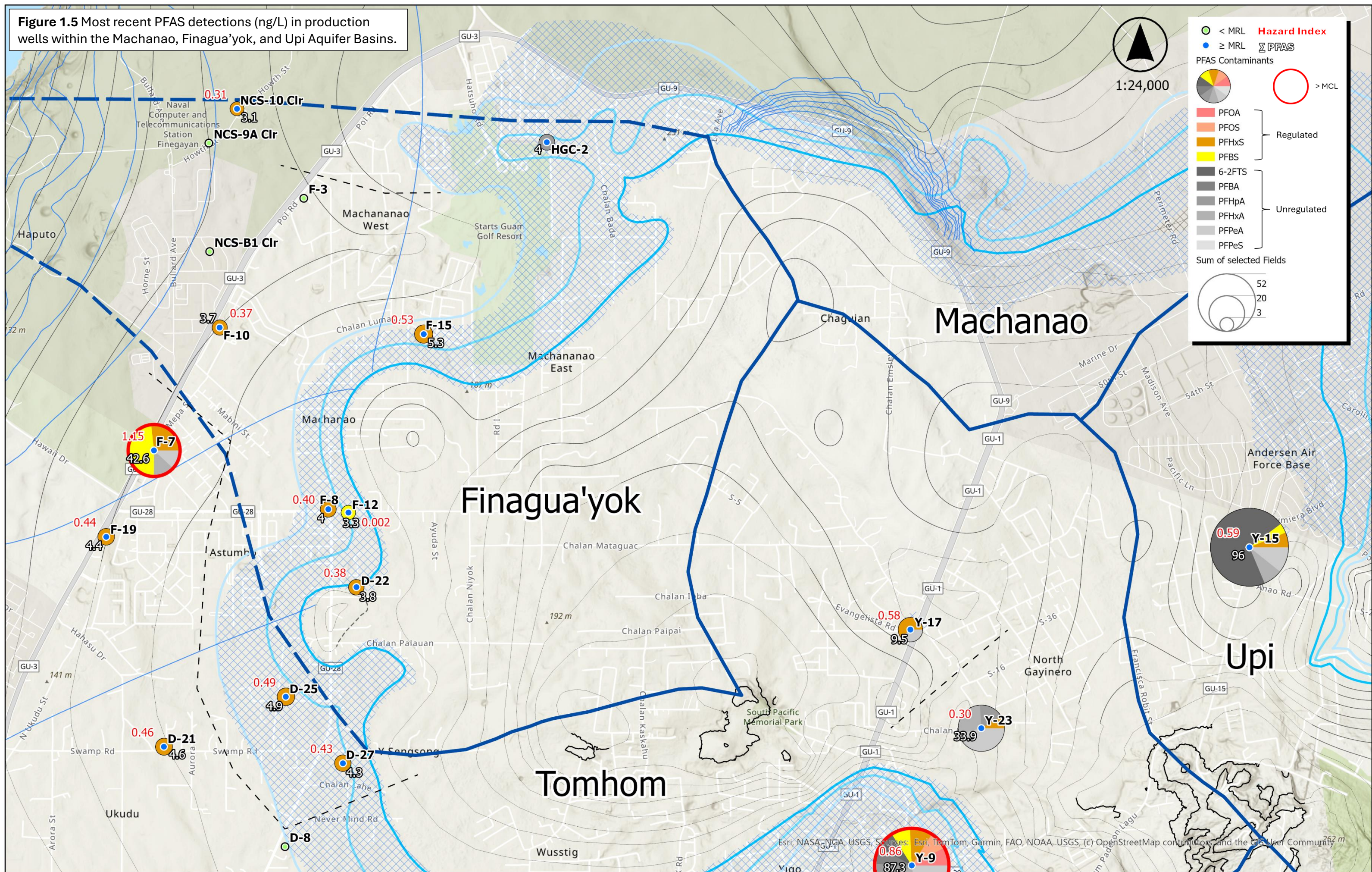


Figure 1.6 Most recent PFAS detections (ng/L) in production wells within the Tomhom and Mangilao Aquifer Basins.

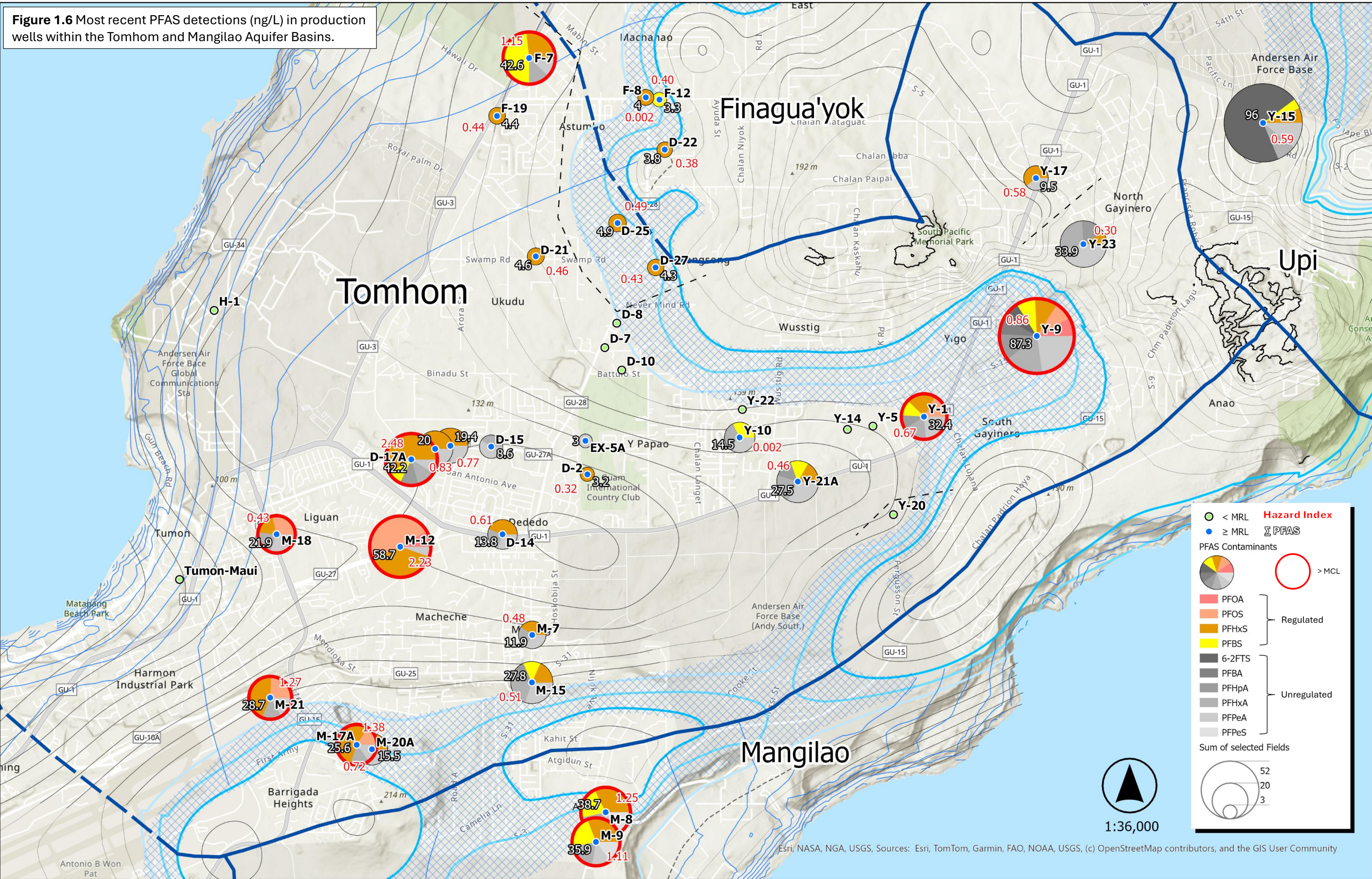
The map displays the Tomhom and Mangilao Aquifer Basins, showing the locations of production wells and their corresponding PFAS detections. The wells are labeled with codes such as F-7, D-21, M-12, Y-9, and M-8. The detections are represented by colored circles, where the size of the circle indicates the sum of selected fields, and the color indicates the hazard index. The legend provides a key for the symbols used, including MRL status, hazard index, and PFAS contaminants. The scale bar indicates a ratio of 1:36,000.

Legend:

- MRL Status:** Green circle for < MRL, Blue circle for ≥ MRL.
- Hazard Index:** Red circle for > MCL.
- PFAS Contaminants:** Pie charts showing the distribution of PFAS contaminants. The legend lists the following contaminants: PFOA, PFOS, PFHxS, PFBS, 6-2FTS, PFBA, PFHpA, PFHxA, PFPeA, and PFPeS. The legend also indicates that PFOA, PFOS, PFHxS, and PFBS are regulated, while 6-2FTS, PFBA, PFHpA, PFHxA, PFPeA, and PFPeS are unregulated.
- Sum of selected Fields:** Concentric circles representing the sum of selected fields, with values 52, 20, and 3.

Scale: 1:36,000

Map Labels: Tomhom, Mangilao, Finagua'yok, Upi, Andersen Air Force Base, North Gayinero, South Gayinero, Anao, Tumon, Tumon-Maui, Macheche, Barrigada Heights, Kahit St, Atgidun St, Camelia Ln, Royal A, S-37, S-31, S-3, S-2, S-1, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13, S-14, S-15, S-16, S-17, S-18, S-19, S-20, S-21, S-22, S-23, S-24, S-25, S-26, S-27, S-28, S-29, S-30, S-31, S-32, S-33, S-34, S-35, S-36, S-37, S-38, S-39, S-40, S-41, S-42, S-43, S-44, S-45, S-46, S-47, S-48, S-49, S-50, S-51, S-52, S-53, S-54, S-55, S-56, S-57, S-58, S-59, S-60, S-61, S-62, S-63, S-64, S-65, S-66, S-67, S-68, S-69, S-70, S-71, S-72, S-73, S-74, S-75, S-76, S-77, S-78, S-79, S-80, S-81, S-82, S-83, S-84, S-85, S-86, S-87, S-88, S-89, S-90, S-91, S-92, S-93, S-94, S-95, S-96, S-97, S-98, S-99, S-100.

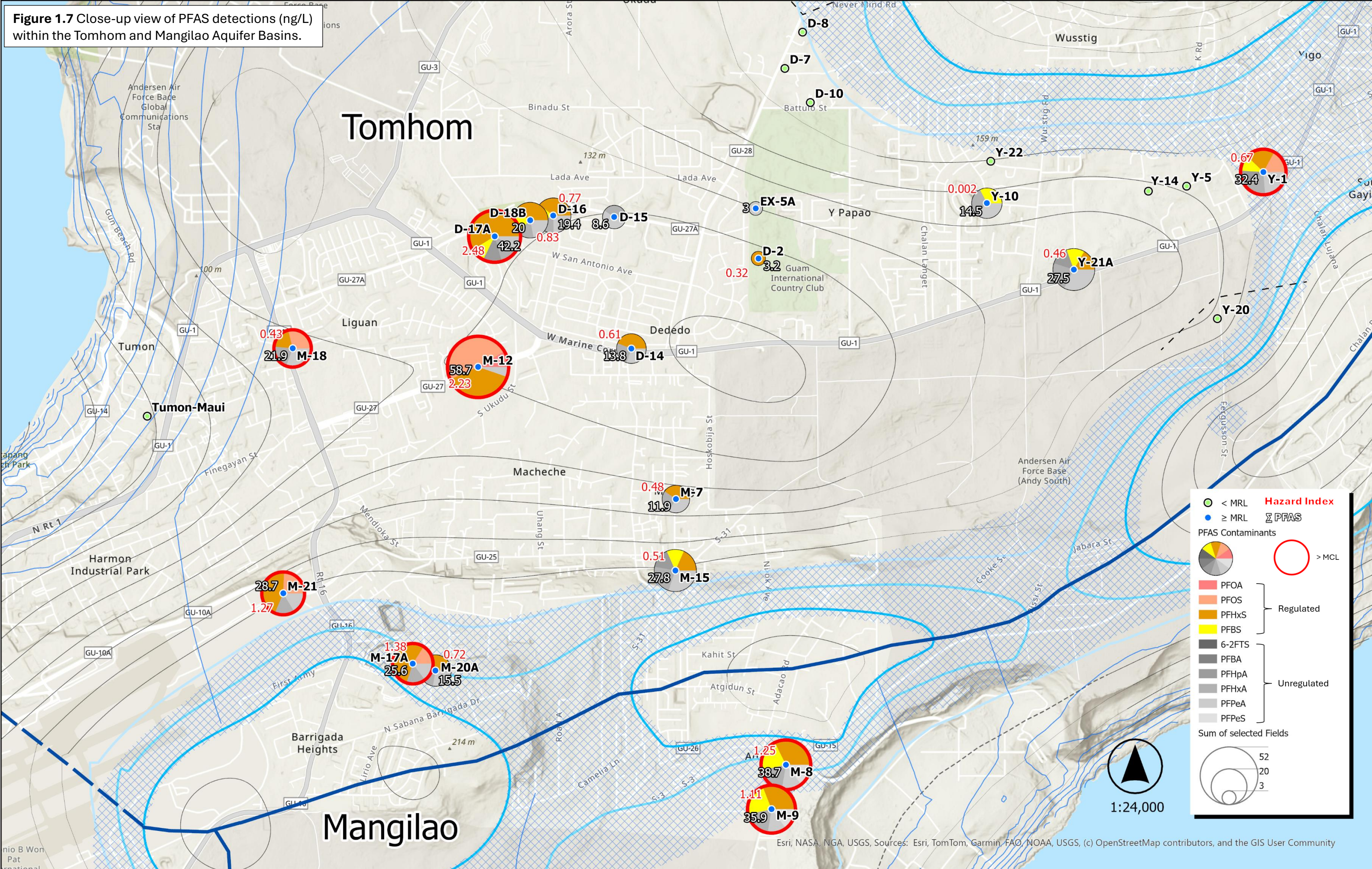


Esri, NASA, NGA, USGS, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community

Figure 1.7 Close-up view of PFAS detections (ng/L) within the Tomhom and Mangilao Aquifer Basins.

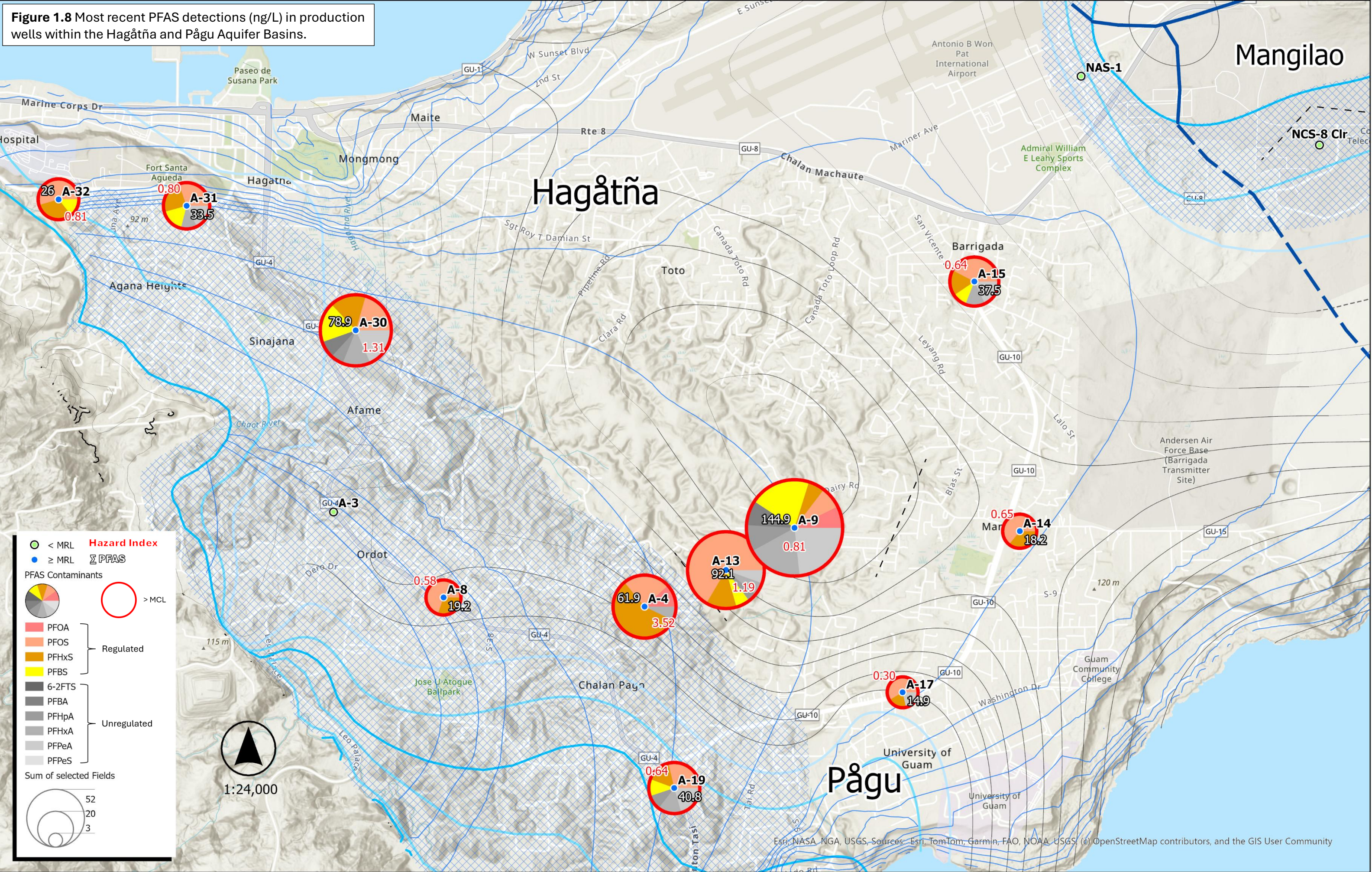
The map shows the Tomhom and Mangilao Aquifer Basins. The Tomhom basin is located in the northern part of the map, and the Mangilao basin is in the southern part. The map displays various monitoring wells (D-2, D-7, D-8, D-10, D-15, D-16, D-17A, D-18B, D-14, D-15, EX-5A, Y-1, Y-5, Y-10, Y-14, Y-20, Y-21A, Y-22) with their respective PFAS concentrations in ng/L. The map also shows the locations of Andersen Air Force Base, Tumon, Tumon-Maui, Macheche, Barrigada Heights, and Mangilao. A legend in the bottom right corner explains the symbols for PFAS contaminants (PFOA, PFOS, PFHxS, PFBS, 6-2FTS, PFBA, PFHpA, PFHxA, PFPeA, PFPeS) and the Sum of selected Fields (52, 20, 3). A scale bar indicates 1:24,000.

Well ID	PFAS Concentration (ng/L)	Contaminants
D-2	0.32	PFOA, PFOS, PFHxS, PFBS
D-7	0.77	PFOA, PFOS, PFHxS, PFBS
D-8	0.67	PFOA, PFOS, PFHxS, PFBS
D-10	0.002	PFOA, PFOS, PFHxS, PFBS
D-15	0.83	PFOA, PFOS, PFHxS, PFBS
D-16	0.77	PFOA, PFOS, PFHxS, PFBS
D-17A	2.48	PFOA, PFOS, PFHxS, PFBS
D-18B	42.2	PFOA, PFOS, PFHxS, PFBS
D-14	0.61	PFOA, PFOS, PFHxS, PFBS
EX-5A	3.2	PFOA, PFOS, PFHxS, PFBS
Y-1	32.4	PFOA, PFOS, PFHxS, PFBS
Y-5	0.46	PFOA, PFOS, PFHxS, PFBS
Y-10	14.5	PFOA, PFOS, PFHxS, PFBS
Y-14	0.002	PFOA, PFOS, PFHxS, PFBS
Y-20	0.46	PFOA, PFOS, PFHxS, PFBS
Y-21A	27.5	PFOA, PFOS, PFHxS, PFBS
Y-22	0.002	PFOA, PFOS, PFHxS, PFBS
M-7	0.48	PFOA, PFOS, PFHxS, PFBS
M-12	58.7	PFOA, PFOS, PFHxS, PFBS
M-15	27.8	PFOA, PFOS, PFHxS, PFBS
M-17A	25.6	PFOA, PFOS, PFHxS, PFBS
M-18	21.9	PFOA, PFOS, PFHxS, PFBS
M-20A	15.5	PFOA, PFOS, PFHxS, PFBS
M-21	28.7	PFOA, PFOS, PFHxS, PFBS
M-8	38.7	PFOA, PFOS, PFHxS, PFBS
M-9	35.9	PFOA, PFOS, PFHxS, PFBS



Esri, NASA, NGA, USGS, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community

Figure 1.8 Most recent PFAS detections (ng/L) in production wells within the Hagåtña and Pāgu Aquifer Basins.



Esri, NASA, NGA, USGS, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community

2 RELATIVE OCEANIC NINO INDEX (RONI) AND RAINFALL

NOAA uses the Relative Oceanic Niño Index (RONI) to measure ENSO. In Figure 2.1, the upper graph shows RONI values from 2000 to July 2026. Values of +0.5 or greater indicate El Niño, while values of -0.5 or lower are La Niña events. The lower graph is annual and seasonal (wet-dry) rainfall from the NWS GIAA rain gage. ENSO can influence rainfall and drought, which may affect rainfall recharge to the aquifer.

3 CHLORIDE AND PRODUCTION

The NGLA is vulnerable to saltwater intrusion and overpumping. WERI Technical Reports 98, 143, and 188 analyzed pumping rates and chloride concentrations in production wells over time to support well operation and pumping management. MAppFx: Chloride and Production provides a view of updated production and chloride data. Table 3 summarizes NGLA production. As of June 2026, GWA production was ~38 MGD, with Tomhom being the most productive basin at 20.4 MGD. Military production totaled ~2.4 MGD, including 0.98 MGD from the USAF and 1.44 MGD from the USN. Table 4 shows the production weighted average of chloride concentrations, with Finagua’yok and Hagåtña at 108.9 mg/L and 110.4 mg/L, respectively.

NGLA Production								
(as of June 2026)								
		2020	2021	2022	2023	2024	2025	2026
GWA	Upi	1.4	1.6	1.7	1.4	1.3	1.3	1.2
	Finagua'yok	3.9	3.9	4.0	4.0	5.2	5.3	5.7
	Tomhom	19.2	19.3	19.1	19.4	19.8	19.6	20.4
	Machanao	1.1	1.1	1.0	1.0	0.9	0.9	0.9
	Mangilao	2.0	2.0	1.9	1.6	1.7	1.7	1.2
	Hagåtña	7.4	8.5	8.7	7.9	8.6	8.6	8.4
		35.0	36.5	36.4	35.2	37.5	37.3	37.9
DOD	USAF				1.03	0.84	0.91	0.98
	USN				1.27	1.34	1.22	1.44

Table 3 NGLA production summary (MGD) for GWA and DOD, 2020 to June 2026.

NGLA Production Weighted Average Chloride								
(as of June 2026)								
	2020	2021	2022	2023	2024	2025	2026	
GWA	Upi	35.5	27.9	21	27.2	46.9	26.8	28.7
	Finagua'yok	81.3	69.0	57.8	72.6	84.5	93.3	108.9
	Tomhom	72.6	73.3	75.5	75.2	77.3	60.3	71.3
	Machanao	35.9	46.3	30.1	42.6	44.7	35.7	37.1
	Mangilao	55.7	56.7	57.9	74.8	68.9	57.1	67.6
	Hagåtña	128.2	124.3	126.1	110.3	128	116.3	110.4

Table 4 NGLA production weighted average chloride summary (mg/L) for GWA, 2020 to 2026.

4 Deep Observation Wells (DOWs)

Long-term [conductivity, temperature, and depth \(CTD\)](#) data from DOWs were analyzed to study the freshwater lens within the NGLA (Figure 4.1). [WERI Technical Report No. 189](#) evaluated changes in freshwater (FW) lens thickness and its response to recharge, drought, sea-level, and ENSO. Figure 4.2 shows the GHURA-Dededo phreatic hydrograph developed in the study. Since 2023, six recently installed DOWs have expanded observation in the Machanao, Finagua'yok, and Mangilao basins (Figure 4.3). Table 5 summarizes FW lens thickness across 13 DOWs.

	FW lens thickness (July 2026)	from previous	from average	avg thickness
EX-8	121.2'	+1.62'	+1.71'	119.5'
NWF-1	64.0'	+46.73'	+40.80'	23.2'
AAFB-1	83.4'	-1.84'	+1.25'	82.1'
NCSF-1	78.0'	+0.21'	-2.01'	80.0'
NCSF-2				
GHURA-Dededo	128.8'	+8.08'	+6.40'	122.4'
EX-10	107.5'	+0.58'	+4.56'	102.9'
EX-7A	4.9'			
Marbo-1	27.7'			
NCSB-1	78.3'	+49.09'	+36.00'	42.3'
EX-9	108.7'	+7.64'	+12.24'	96.4'
EX-1	236.1'	+164.10'	+137.33'	98.7'
EX-4	248.7'	+60.41'	+178.97'	69.7'

Table 5 FW lens thickness of 13 DOWs, difference from previous collection and average thickness (ft).

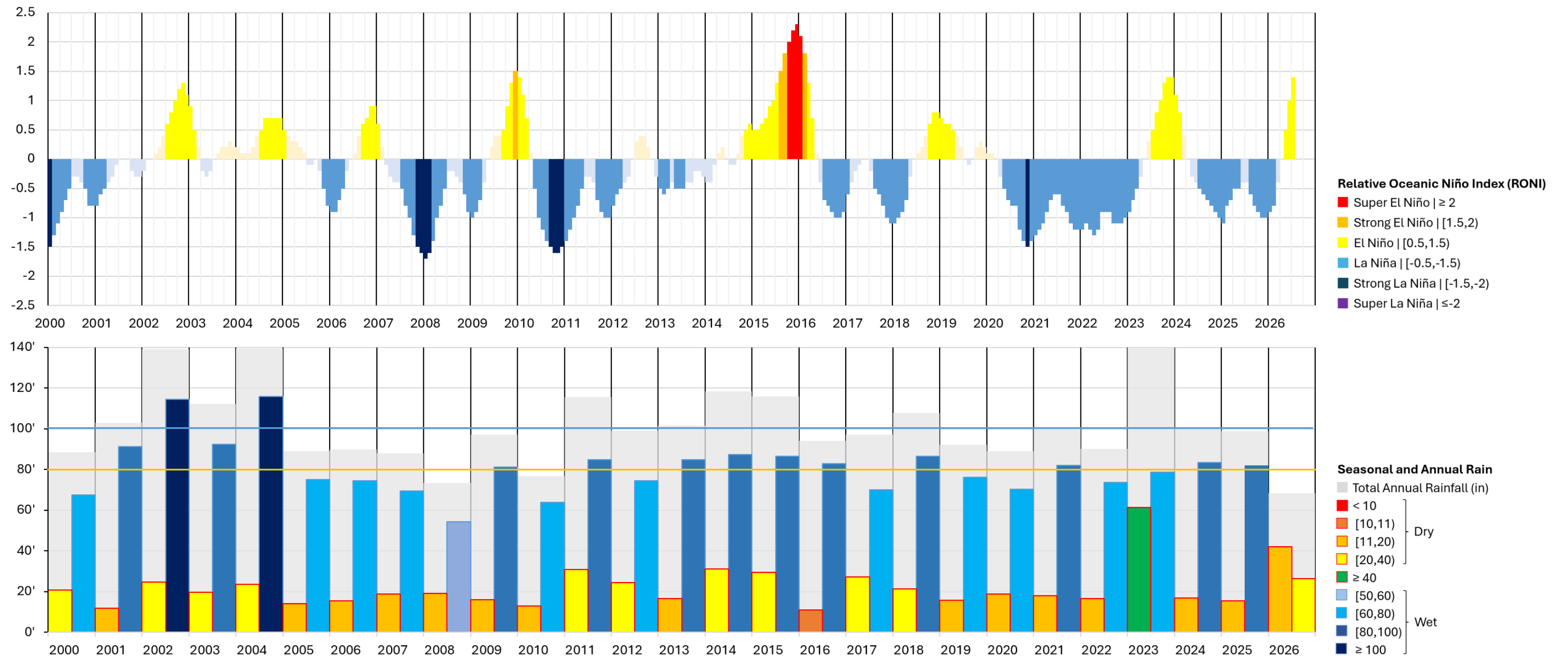
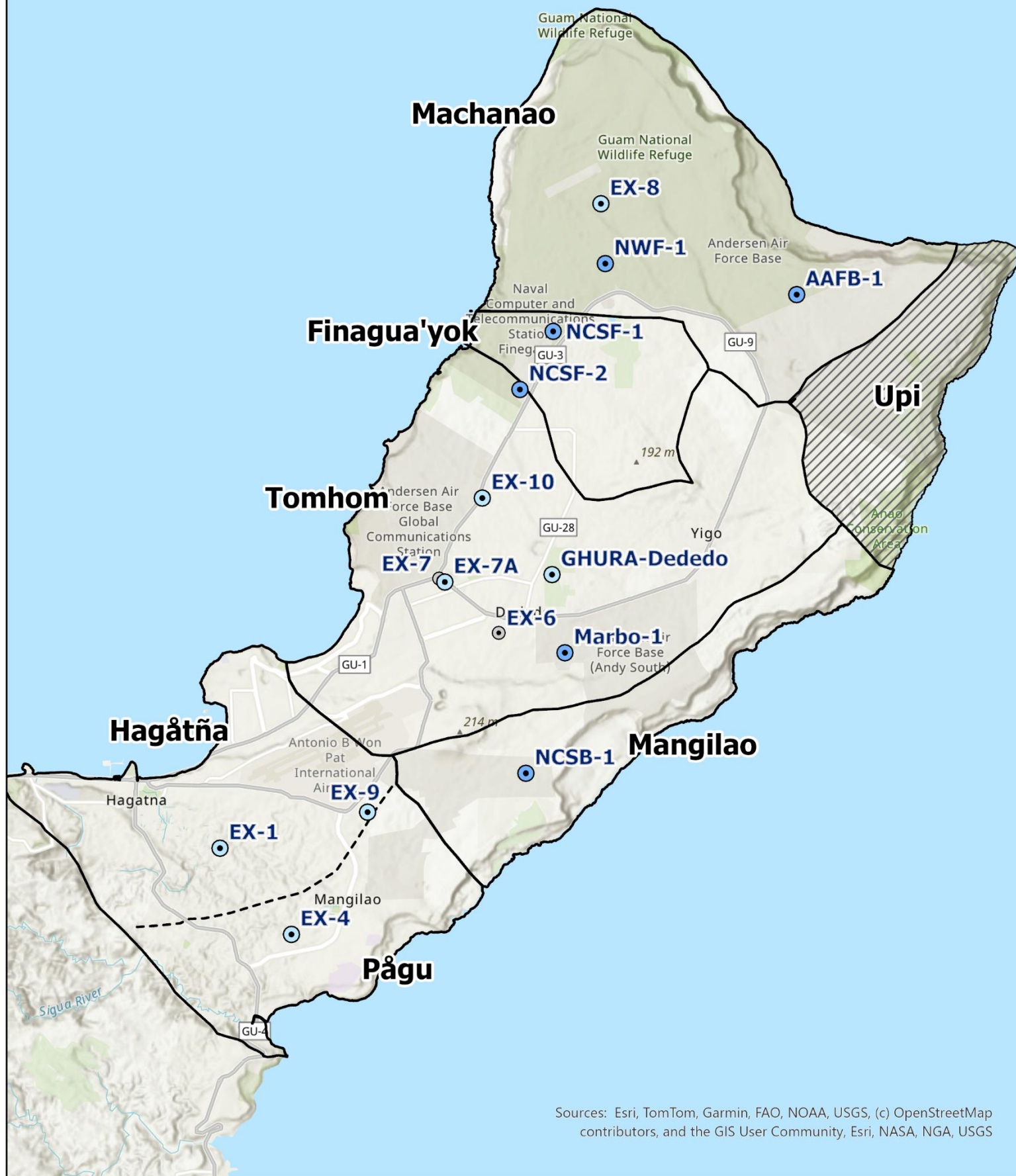


Figure 2.1 Relative Oceanic Niño Index (RONI) (top) and total and seasonal rainfall (bottom), NWS GIAA rain gage, 2000 to July 2026.

Figure 4.1 NGLA DOWs, recently installed DOWs (dark blue).



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Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community, Esri, NASA, NGA, USGS

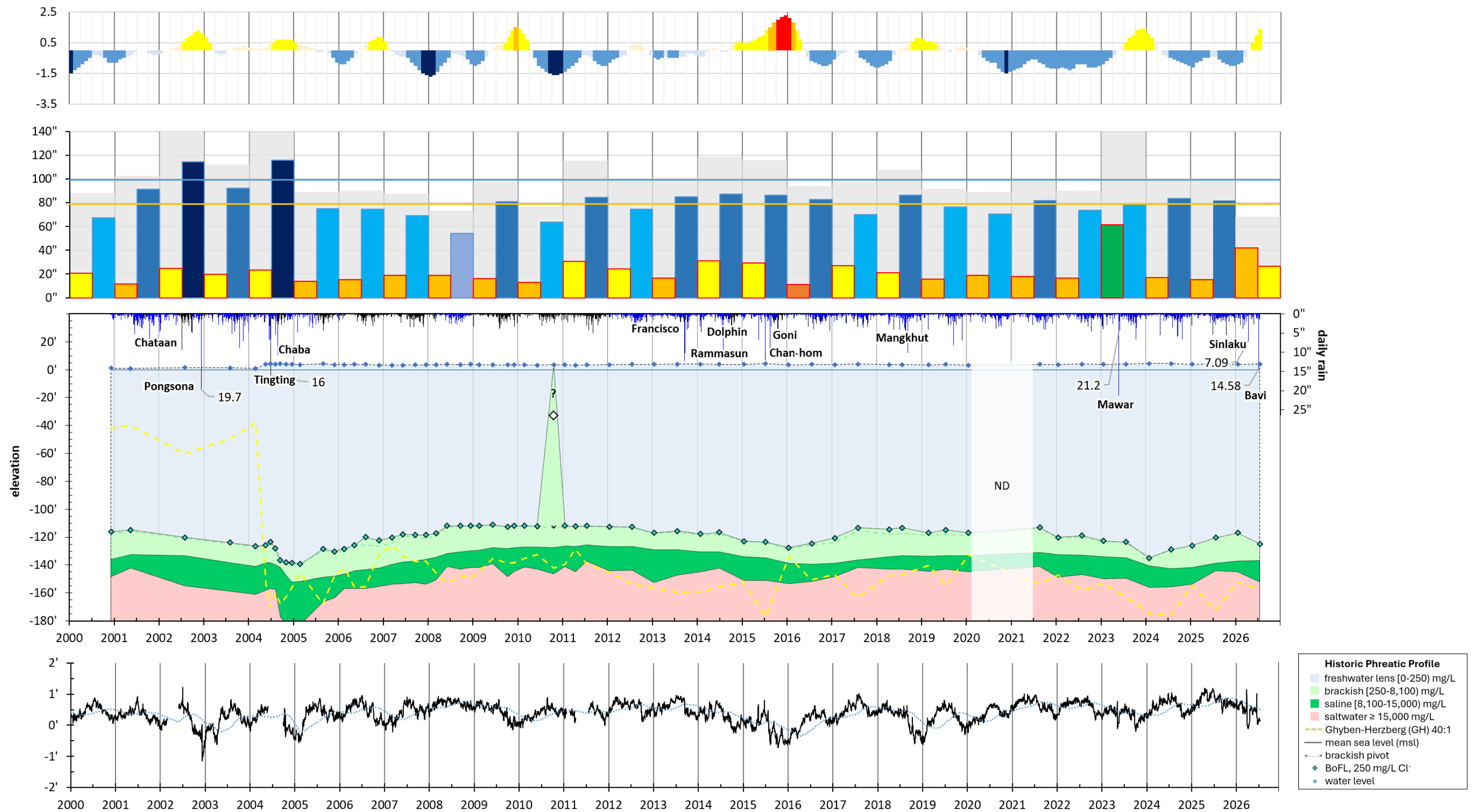


Figure 4.2 GHURA-Dededo Phreatic Hydrograph, 2000 to July 2026.

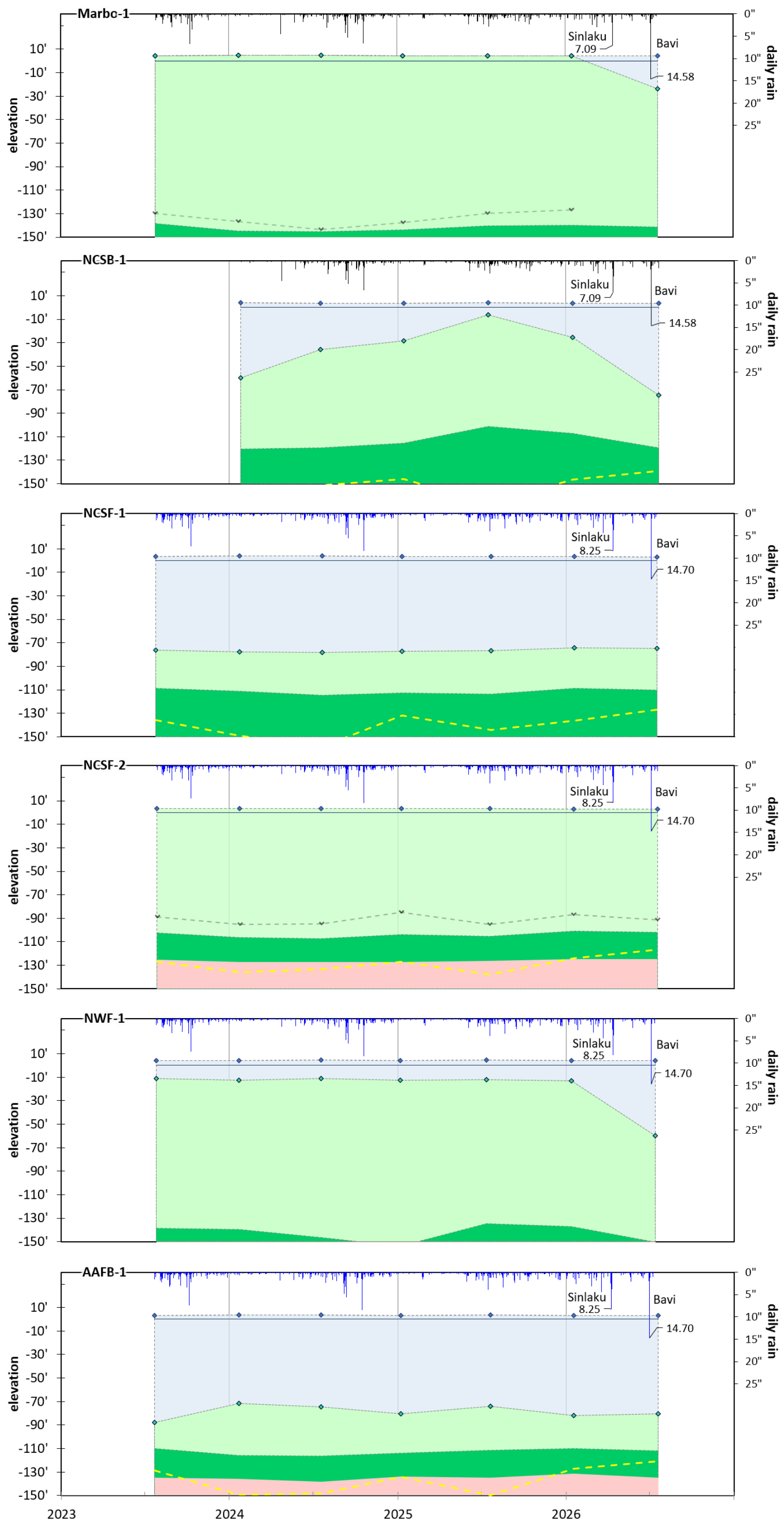


Figure 4.3 Historic phreatic profiles of six recently installed DOWs, 2023 to July 2026. Daily rainfall (secondary axis) from the USGS Dededo (black lines) and Geomag (blue) rain gages.

Appendix 1. Most current dieldrin data (GEPA, 2026).

Basin	Well	[D] ug/L	Date	Basin	Well	[D] ug/L	Date	Basin	Well	[D] ug/L	Date
Upi	Y-15 TP	0	4/8/2026	Tomhom	D-2	0.024	2/26/2026	Hagåtña	A-1	0.023	1/29/2026
	Y-15 W	1.3	4/8/2026		D-4	0.038	2/26/2026		A-3	0.012	1/29/2026
Machanao	AG-1	0	3/11/2026		D-6	0.053	2/26/2026		A-4	0.019	1/29/2026
	AG-2A	0	3/11/2026		D-7	0.02	2/26/2026		A-5	0.042	1/28/2026
Finagua'yok	D-22	0	2/25/2026		D-9	0.03	2/26/2026		A-6	0.014	1/28/2026
	D-24	0	2/25/2026		D-10	0.022	2/26/2026		A-8	0.014	1/29/2026
	F-1	0	3/11/2026		D-11	0.049	2/26/2026		A-9	0	1/28/2026
	F-2	0	3/11/2026		D-12	0	2/26/2026		A-10	0	1/28/2026
	F-3	0	3/11/2026		D-14	0.05	2/26/2026		A-12	0.02	2/12/2026
	F-4	0.023	3/11/2026		D-15	0.066	2/26/2026		A-13	0	1/29/2026
	F-8	0	3/12/2026		D-16	0.084	2/26/2026		A-15	0.08	1/29/2026
	F-10	0	3/11/2026		D-17	0.095	3/10/2026		A-30	0.045	1/28/2026
	F-11	0	3/11/2026		D-18	0.14	4/8/2026		A-31	0.052	1/28/2026
	F-12	0	3/12/2026		D-19	0	2/25/2026		A-32	0.037	1/28/2026
	F-13	0	3/12/2026		D-20	0.016	2/25/2026		NAS-1	0.011	1/29/2026
	F-15	0	3/12/2026		D-21	0.013	2/25/2026	Pågu	A-14	0.065	1/29/2026
	F-16	0	3/12/2026		D-25	0	2/25/2026		A-17	0.057	1/29/2026
	F-17	0	3/12/2026		D-26	0	2/26/2026		A-18	0.047	1/28/2026
	F-18	0	3/12/2026		D-27	0	2/25/2026		A-19	0.02	1/29/2026
	F-2	0	3/11/2026		D-28	0.014	2/25/2026		A-21	0.015	1/29/2026
	F-3	0	3/11/2026		EX-5A	0.028	2/26/2026				
	F-4	0.023	3/11/2026		F-5	0.038	3/12/2026				
	F-8	0	3/12/2026		F-6	0.017	3/12/2026				
	HGC-2	0	3/11/2026		F-7	0.07	3/11/2026				
	NCS-10	0.017	9/25/2025		F-9	0	3/12/2026				
	NCS-9A	0.015	9/25/2025		F-19	0.021	3/11/2026				
					F-20	0.014	3/11/2026				
					GH501	0.041	3/4/2026				
					H-1	0.046	2/18/2026				
					M-6	0.034	2/17/2026				
					M-7	0.029	2/17/2026				
					M-12	0.036	2/17/2026				
					M-14	0.016	2/18/2026				
					M-15	0.036	2/17/2026				
					M-17A	0.022	2/17/2026				
					M-17B	0.02	2/17/2026				
					M-18	0.026	2/17/2026				
					M-20A	0.017	2/17/2026				
					M-21	0.083	2/17/2026				
					Tumon-Maui	0.027	3/20/2026				
					Y-1	0.08	3/5/2026				
					Y-2	0.086	3/5/2026				
					Y-4	0.071	3/5/2026				
					Y-5	0.04	3/5/2026				
					Y-6	0.073	3/5/2026				
					Y-7	0.035	3/5/2026				
					Y-9	0.033	3/5/2026				
					Y-10	0.041	3/5/2026				
					Y-12	0.042	3/4/2026				
					Y-14	0.069	3/5/2026				
					Y-17	0.01	3/17/2026				
					Y-18	0.012	3/17/2026				
					Y-19	0.059	3/5/2026				
					Y-20	0	3/5/2026				
					Y-21	0.088	3/5/2026				
					Y-22	0.03	3/5/2026				
					Y-23	0.016	3/5/2026				

Appendix 2. [U.S. EPA](#) UCMR 5 PFAS contaminant information.

PFAS	Regulatory Status	MRL (ng/L)	MCL (ng/L)	HBWC (ng/L)	Brief Description
PFOA	Individual MCL	4	4	-	C8 long-chain PFCA historically used as a surfactant and processing aid in fluoropolymer manufacturing and in some AFFF formulations.
PFOS	Individual MCL	4	4	-	C8 long-chain PFSA historically used in AFFF, stain- and water-resistant treatments, coatings, and other surfactant applications.
HFPO-DA / GenX	Individual MCL + Hazard Index	5	10	10	C6 perfluoroether carboxylic acid developed as a PFOA replacement for fluoropolymer and perfluoropolyether manufacturing.
PFHxS	Individual MCL + Hazard Index	3	10	10	C6 long-chain PFSA used as a surfactant and associated with AFFF, carpet treatments, nonstick products, and surface coatings .
PFNA	Individual MCL + Hazard Index	4	10	10	C9 long-chain PFCA associated with surfactants, fluoropolymer processing, and stain- and grease-resistant coatings .
PFBS	Hazard Index	3	-	2000	C4 short-chain PFSA used as a surfactant and as a replacement for longer-chain PFAS such as PFOS .
11Cl-PF3OUdS	Unregulated	5	-	-	C10 chlorinated polyfluoroether sulfonate and minor component of F-53B, a PFOS-replacement chemistry used in metal-plating applications.
4:2 FTS		3			4:2 fluorotelomer sulfonate used as a surfactant and associated with some AFFF formulations ; can transform into PFCAs.
6:2 FTS		5			6:2 fluorotelomer sulfonate used as a surfactant, wetting agent, and PFOS replacement in some AFFF formulations.
8:2 FTS		5			8:2 fluorotelomer sulfonate associated with surfactants, AFFF, and fuel-repellent applications ; can act as a PFCA precursor .
9Cl-PF3ONS		2			C8 chlorinated polyfluoroether sulfonate and major component of F-53B used as a PFOS replacement in chrome-plating mist suppressants.
ADONA		3			C7 perfluoroether carboxylic acid developed as a PFOA-alternative processing aid in fluoropolymer manufacturing.
NEtFOSAA		5			C8-based PFOS precursor historically associated with cleaning products, polishes, carpets, cookware, and food-packaging applications.
NFDHA		20			C5 perfluoroether carboxylic acid belonging to a group of alternative or replacement-type ether PFAS.
NMeFOSAA		6			C8-based PFOS precursor associated with surfactants and surface-treatment products and can transform into PFOS.
PFBA		5			C4 short-chain PFCA used as a surfactant and associated with stain-resistant products ; may also form from fluorotelomer degradation.
PFDA		3			C10 long-chain PFCA associated with surfactants, fluoropolymer processing, floor polishes, and food-packaging treatments.
PFDoA		3			C12 long-chain PFCA associated with fluorochemical applications and characterized by high environmental persistence .
PFEESA		3			C4 perfluoroether sulfonic acid belonging to the ether-based PFAS group.
PFHpA		3			C7 short-chain PFCA associated with surfactants, coatings, and surface treatments and may form from fluorotelomer precursors .
PFHpS		3			C7 long-chain PFSA used as a surfactant and structurally related to PFOS.
PFHxA		3			C6 short-chain PFCA associated with surfactants, coatings, surface treatments , and fluorotelomer degradation.
PFMBA		3			C5 perfluoroether carboxylic acid belonging to the ether-based PFAS group.
PFMPA		4			C4 perfluoroether carboxylic acid belonging to the ether-based PFAS group.
PFPeA		3			C5 short-chain PFCA associated with stain- and grease-resistant coatings and may form from fluorotelomer degradation.
PFPeS		4			C5 short-chain PFSA used as a surfactant and related to other sulfonate PFAS.
PFTA		8			C14 long-chain PFCA associated with fluorochemical applications and characterized by high environmental persistence .
PFTTrDA		7			C13 long-chain PFCA that is persistent and may form through degradation of fluorotelomer compounds.
PFUnA		2			C11 long-chain PFCA that may form from fluorotelomer degradation and is persistent in the environment .

Appendix 3. Most recent PFAS data with reported values under UCMR 5 (GEPA, 2026). Total PFAS is the sum of all detected PFAS concentrations, while total regulated PFAS is the sum of PFOA, PFOS, HFPO-DA, PFHxS, PFNA, and PFBS. The Hazard Index (HI) is the sum of hazard quotients for PFHxS, PFNA, HFPO-DA, and PFBS. Each hazard quotient is calculated by dividing the PFAS concentration in water by its respective health-based water concentration (HBWC).

Basin	Well/Booster	Date	[PFAS] ng/L										Σ PFAS	Σ Regulated PFAS	Hazard Index
			PFOA	PFOS	PFHxS	PFBS	6:2 FTS	PFBA	PFHpA	PFHxA	PFPeA	PFPeS			
Upi	Y-15	3/26/2024			5.9	3.9	68.3			7.6	10.3		96	9.8	0.59
Finaguay'ok	D-22	3/21/2024			3.8								3.8	3.8	0.38
	F-8	3/28/2024			4								4	4	0.40
	F-10	11/11/2024			3.7								3.7	3.7	0.37
	F-12	3/28/2024				3.3							3.3	3.3	0.002
	F-15	3/28/2024			5.3								5.3	5.3	0.53
	HGC-2	3/28/2024							4				4	0	0
	NCS-10 Ctr	8/19/2024			3.1								3.1	3.1	0.31
Hagātña	A-4	3/23/2024	7.2	15.1	35.2					4.4			61.9	57.5	3.52
	A-8	3/23/2024		13.4	5.8								19.2	19.2	0.58
	A-9	3/26/2024	10.6	10.6	8	29.8		12.1	12.9	27.1	33.8		144.9	59	0.81
	A-13	3/23/2024		61.3	11.9	5.4			3.4	5	5.1		92.1	78.6	1.19
	A-15	3/23/2024		15.9	6.4	3.6				4.9	6.7		37.5	25.9	0.64
	A-30	3/23/2024		16.2	13	14.5		6.1	4.6	10	14.5		78.9	43.7	1.31
	A-31	3/23/2024		10.2	8	5.6				3.8	5.9		33.5	23.8	0.80
	A-32	3/23/2024		14.2	8.1	3.7							26	26	0.81
Pāgu	A-14	3/23/2024		11.7	6.5								18.2	18.2	0.65
	A-17	3/25/2024		8.7	3						3.2		14.9	11.7	0.30
	A-19	3/23/2024		11.7	6.4	4.4			3.8	6.1	8.4		40.8	22.5	0.64
Mangilao	M-8	3/27/2024			12.5	8.2				7.3	5.1	5.6	38.7	20.7	1.25
	M-9	3/27/2024			11.1	8.1				6.8	4.6	5.3	35.9	19.2	1.11
Tomhom	D-2	11/11/2024			3.2								3.2	3.2	0.32
	D-14	4/10/2024			6.1					3.5	4.2		13.8	6.1	0.61
	D-15	3/21/2024								3.5	5.1		8.6	0	0
	D-16	3/21/2024			7.7	3.3				3.6	4.8		19.4	11	0.77
	D-17A	3/21/2024			24.8	3.8			4.9	5	3.7		42.2	28.6	2.48
	D-18B	3/21/2024			8.3	4.1				3.2	4.4		20	12.4	0.83
	D-21	11/11/2024			4.6								4.6	4.6	0.46
	D-25	3/21/2024			4.9								4.9	4.9	0.49
	D-27	3/21/2024			4.3								4.3	4.3	0.43
	EX-5A	3/21/2024									3		3	0	0
	F-7	3/28/2024			11.4	20.5				5.6	5.1		42.6	31.9	1.15
	F-19	3/28/2024			4.4								4.4	4.4	0.44
	M-7	3/27/2024			4.8					3.1	4		11.9	4.8	0.48
	M-12	9/24/2023	5	28.3	22.3						3.1		58.7	55.6	2.23
	M-15	3/27/2024			5.1	3.7			4.3	6.3	8.4		27.8	8.8	0.51
	M-17A	3/27/2024		4.1	13.8					3.9	3.8		25.6	17.9	1.38
	M-18	3/27/2024		6.3	4.3					4.6	6.7		21.9	10.6	0.43
	M-20A	3/27/2024			7.2					4	4.3		15.5	7.2	0.72
	M-21	4/4/2024		7	12.7					4.3	4.7		28.7	19.7	1.27
	Y-1	4/4/2024		5.5	6.7	3.7			3.2	5.6	7.7		32.4	15.9	0.67
	Y-9	3/26/2024	7	6.9	8.6	7.2	6.8	6.5	10	14.5	19.8		87.3	29.7	0.86
	Y-10	4/24/2024				4.7				4.4	5.4		14.5	4.7	0.002
	Y-17	3/28/2024			5.8						3.7		9.5	5.8	0.58
	Y-21A	4/24/2024			4.6	3.8			4	6.1	9		27.5	8.4	0.46
	Y-23	3/28/2024			3				5.8	9.5	15.6		33.9	3	0.30
	1620-B2	11/18/2024								4.9		4.6	9.5	0	0
	680-B3	11/18/2024			3.2								3.2	3.2	0.32