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Annual Corrective Action Report for the F-Area Hazardous Waste Management Facility, the H-Area Hazardous Waste Management Facility, and the Mixed Waste Management Facility (U)

SRNS-RP-2025-00773

Volume I

August 2025

SAVANNAH RIVER SITE • AIKEN, SOUTH CAROLINA

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Savannah River Nuclear Solutions, LLC
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CERTIFICATION

Annual Corrective Action Report for the F-Area Hazardous Waste Management Facility, the H-Area Hazardous Waste Management Facility, and the Mixed Waste Management Facility (U)
SRNS-RP-2025-00773, Revision 0, August 2025

[REF: R.61-79.270.11 (d)(1)]

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8/27/25

Christopher L. Bergren, Director
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for Savannah River Nuclear Solutions, LLC
as the Co-Operator with the U.S. Department of Energy
Savannah River Operations Office

Date Signed

EXECUTIVE SUMMARY

This Corrective Action Report (CAR) has been prepared to support the regulatory reporting requirements for 2024 for the F-Area Hazardous Waste Management Facility (HWMF), the H-Area HWMF, and the Mixed Waste Management Facility (MWMF) at the Savannah River Site (SRS). The reporting requirements are defined by the Office of Environmental Quality Control Bureau of Land and Waste Management Hazardous and Mixed Waste Permit (SC1 890 008 989), dated February 11, 2014, modified on November 30, 2021, hereafter referred to as the "Permit" and by Section C of the Underground Injection Control (UIC) Permit Applications, as well as other information by agreement with the South Carolina Department of Environmental Services[1] (SCDES). In accordance with the Permit, an Annual CAR will be submitted on or before August 31 of each year and will document the effectiveness of the Corrective Action Program for the F-Area HWMF, the H-Area HWMF, and the MWMF for the period of January 1 through December 31 for the previous year (First, Second, Third and Fourth Quarters).

F-Area HWMF and H-Area HWMF

The well network for the F-Area HWMF and the H-Area HWMF monitors the Upper Aquifer Zone (UAZ) and the Lower Aquifer Zone (LAZ) of the Upper Three Runs Aquifer (UTRA), and the Gordon Aquifer (GA) in the uppermost aquifer system beneath the facility. Groundwater sampling and surface water sampling, analysis, and other monitoring requirements are conducted as required by the Permit.

The scheduled sampling was completed successfully in 2024 for all wells. Overall, there were no observed changes in regional groundwater flow direction or velocity from previous years. Compliance monitoring data revealed that inorganic and radionuclide constituents exceeded the Groundwater Protection Standard (GWPS) but overall continue to show downward trends as compared to previous monitoring data. At F and H Area, surface water in the wetlands (corrective action Phase 2b goal) exceeded the GWPS for cobalt, nitrate-nitrite, gross alpha, iodine-129, nonvolatile beta, strontium-90, tritium, uranium-233/234, and uranium-238. Surface water in

[1] South Carolina Department of Environmental Services (SCDES) was known as South Carolina Department of Health and Environmental Control prior to July 1, 2024.

Fourmile Branch (FMB) (corrective action goals Phase 2a and 2b F-Area HWMF; Phase 2a H-Area HWMF) exceeded the GWPS for iodine-129 (two locations at F Area), carbon-14 (one location at F Area) and tritium (seven locations at F and H Areas). During 2024, no new constituents were added to the GWPS.

The corrective actions for the F-Area HWMF include an engineered groundwater funnel and gate system, a base injection system for treatment of metals and metallic radionuclides within the gates and in the wetlands, and placement of a silver chloride amendment within the central gate for in situ treatment of iodine-129. In 2024, base injection was performed starting in March and continued into June at the central gate, then operated at the western gate starting in July and continued into November. Approximately 45,800,000 L (12.1 M gal) of base solution was injected in 2024 at F-Area HWMF. The latest deployment of silver chloride was completed in May 2019 to augment previous injections along the eastern half of the central gate, where the majority of the iodine-129 flux occurs. Injection of additional silver chloride is not required at this time. SRS will continue to monitor the effectiveness of the silver chloride treatment at the central gate in accordance with the UIC and Resource Conservation and Recovery Act (RCRA) Permit.

The corrective actions for the H-Area HWMF consist of two engineered groundwater barriers (without gates) and a base injection system, which began initial operation in 2010. At H Area, operation of the base injection system was not required during 2024. Adjustment of pH has been achieved locally at H Area and SRS is observing the effects of the base injection prior to potentially injecting additional base.

For the F- and H-Area HWMFs, one of the Phase 2a corrective action goals is to reduce the mass flux of tritium discharging to FMB by 70% compared to baseline fluxes established in 2000. In 2024, SRS continued to meet these goals, in that the flux of tritium from the H-Area HWMF to FMB was reduced by approximately (~) 90%. At the F-Area HWMF, the annual tritium flux to FMB was reduced by ~ 85% in 2024.

On February 11, 2014, the SCDES originally issued the 2014 RCRA Permit Renewal for the SRS. The SCDES modified the 2014 RCRA Permit Renewal on November 30, 2021, which became effective on December 15, 2021.

MWMF

The well network for the MWMF monitors the UAZ and LAZ of the UTRA and the GA in the uppermost aquifer system beneath the facility. The MWMF is divided into the following four plume areas: Southwest Plume (SWP), Northwest Plume (NWP), Northeast Plume (NEP), and Southeast Plume (SEP). Groundwater and surface water sampling and other monitoring requirements are conducted as required by the Permit. In 2017, the SCDES modified the 2014 RCRA Permit Renewal, which became effective on September 2, 2017. With the issuance of the permit renewal, natural attenuation remedies were approved for the NWP, NEP, and SEP. On September 12, 2023, SRS submitted the revision 0 permit renewal application for the MWMF. A revised RCRA permit is forthcoming for the MWMF.

During 2024, there were no identified changes in groundwater flow direction from previous years and groundwater velocities remained consistent with previous observations. In 2024, 14 separate constituents exceeded the GWPS within the four plume areas but overall continue to show downward trends as compared to previous monitoring data. These exceedances included 13 constituents in the SWP, 9 constituents in the SEP, 11 constituents in the NEP, and 9 constituents in the NWP.

The corrective action for the SWP consists of the MWMF Phytoremediation System. In 2024, the MWMF Phytoremediation System irrigated and sprayed ~25.4M L (6.7M gal of tritiated water) preventing ~11.7 curies (Ci) of tritium from reaching FMB. In addition, ~3.8 Ci of tritium directly evaporated from the surface of the collection pond. The current system has proven to be effective in managing nearly 70% of the water that is discharging from the plume that was originally impacting FMB, by preventing its discharge into FMB.

The average evapotranspirative efficiency of the irrigation system in 2024 was similar to what it was in 2023. The average evapotranspirative efficiency of the irrigation system during 2024 was ~86.6 ± 1.2% for the original plots, 77.4 ± 3.3% for the eastern expansion area, and 68.3 ± 0.8% for the western expansion area. The collective annual efficiency was 80.8 ± 7.3% for all irrigation plots. Lower efficiencies for the eastern and western areas are due to lower vegetative densities at these plots. SRS expects the efficiencies to increase as the trees grow and mature. The efficiency

varies over the seasons and is least efficient during the winter months when evapotranspiration rates are low and during high rainfall periods. The full capacity of the new eastern and western irrigation areas will not be realized until the trees have grown to a mature size. SRS plans to maintain operation of the irrigation system into the winter months by using the two expansion areas and two new evaporators (that intake water from the pond) that began operating in 2022. The overall objective is to maintain the water level as low as practicable in the irrigation pond throughout the year to maximize the volume of groundwater collected by the pond from the UAZ and LAZ.

When tritium is evaporated and transpired to the atmosphere by the spray irrigation, it is likely that chlorinated volatile organic compounds (cVOCs) and 1,4-dioxane are volatilized, photo-oxidized, or degraded at a very high efficiency. The 1,4-dioxane and other VOCs in the SWP are commingled with the tritium, and it is likely these constituents were present in the plume as long as the tritium. Based on attenuation rates for tritium, cVOCs, and 1,4-dioxane at the SWP, the radioactive decay of tritium to below the GWPS is expected to take longer than the natural attenuation of 1,4-dioxane and the other cVOCs. Due to the constituents being commingled, SRS believes that continuing to manage tritium, cVOCs, and 1,4-dioxane with the collection pond and irrigation system is a reasonable approach with a high probability of success.

Source control from the completed installation of a low-permeability cap at the Old Radioactive Waste Burial Ground (ORWBG) is moderating the contamination concentration within the SWP, SEP, NEP, and NWP. Thus, the long-term corrective action employed for groundwater contamination at the SWP should be the continued operation of the irrigation system (operating at low pond levels to maximize efficiency) coupled with infiltration control via the Old Radioactive Waste Burial Ground cap. Natural attenuation continues to be an effective remedy at the SEP, NEP, and NWP.

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LIST OF ABBREVIATIONS AND ACRONYMS

~	approximate, approximately
2,4,5-T	2,4,5-Trichlorophenoxyacetic acid
ac	acre
bgs	below ground surface
CAP	Corrective Action Plan
CAR	Corrective Action Report
CBCU	Crouch Branch Confining Unit
CERCLA	Comprehensive Environmental response, Compensation and Liability Act
Ci	curie
cm	centimeter
CMIR	Corrective Measures Implementation Report
CPT	Cone penetrometer technology
CRML	Comprehensive Radiological Monitoring List
cVOC	Chlorinated volatile organic compounds
DCE	dichloroethylene
ED	Engineered Ditch
ERT	Electrical Resistivity Tomography
FMB	Fourmile Branch
ft	foot
gal	gallon
GA	Gordon Aquifer
GAC	Granular activated carbon
GCU	Gordon Confining Unit
GSA	General Separations Area
gpm	gallon per minute
GSACU	General Separations Area Consolidation Unit
GWPS	Groundwater Protection Standard
ha	hectare
HWMF	Hazardous Waste Management Facility
in.	inch
L	liter
LAZ	Lower Aquifer Zone
LLRWDF	Low Level Radioactive Waste Disposal Facility
MCL	maximum contaminant level
ug	microgram
m	meter
MDL	method detection limit
mL	milliliter
MWMF	Mixed Waste Management Facility
NEP	Northeast Plume
NTU	Nephelometric Turbidity Unit
NWP	Northwest Plume

LIST OF ABBREVIATIONS AND ACRONYMS *(Continued/End)*

OFED	Old F-Area Effluent Ditch
ORWBG	Old Radioactive Waste Burial Ground
PCE	tetrachloroethylene
pCi	picocurie
PCR	Post-Construction Report
PNNL	Pacific Northwest National Laboratory
POC	point of compliance
PWMS	Purge Water Management System
RACR	Remedial Action Completion Report
RCRA	Resource Conservation and Recovery Act
RED	Zero valent iron and GAC mixture
ROD	Record of Decision
SCDES[2]	South Carolina Department of Environmental Services
SEP	Southeast Plume
SREL	Savannah River Ecology Lab
SRNL	Savannah River National Laboratory
SRNS	Savannah River Nuclear Solutions
SRS	Savannah River Site
SWP	Southwest Plume
TCE	trichloroethylene
TCCZ	tan clay confining zone
UAZ	Upper Aquifer Zone
UIC	Underground Injection Control
USDOE	United States Department of Energy
USEPA	United States Environmental Protection Agency
UTR	Upper Three Runs
UTRA	Upper Three Runs Aquifer
VOC	volatile organic compound
WTU	Wastewater Treatment Unit
yr	year

[2] South Carolina Department of Environmental Services (SCDES) was known as South Carolina Department of Health and Environmental Control prior to July 1, 2024.

1.0 INTRODUCTION

1.1 Purpose and Scope

This Corrective Action Report (CAR) has been prepared to support the regulatory reporting requirements for the F-Area Hazardous Waste Management Facility (HWMF), the H-Area HWMF, and the Mixed Waste Management Facility (MWMF) at the Savannah River Site (SRS). The reporting requirements are defined by the Office of Environmental Quality Control Bureau of Land and Waste Management Hazardous and Mixed Waste Permit (SC1 890 008 989), dated February 11, 2014, last modified November 30, 2021, hereafter referred to as the "Permit" and by Section C of the Underground Injection Control (UIC) Permit Applications, as well as other information by agreement with the South Carolina Department of Environmental Services[3] (SCDES). In accordance with the Permit, an annual report will be submitted on or before August 31 of each year and will document the effectiveness of the Corrective Action Program (CAP) for the F-Area HWMF, the H-Area HWMF, and the MWMF for the period of January 1 through December 31 (First, Second, Third and Fourth Quarters) of the previous year.

1.1.1 F-Area and H-Area HWMFs Regulatory Background

Groundwater at the F-Area and H-Area Seepage Basins is impacted by operations of the F-Area and H-Area HWMFs. Each area has an extensive monitoring well network that is sampled for a variety of chemical and radioactive contaminants. Groundwater monitoring results have indicated the major contaminants are metals, radionuclides, and nitrates at both areas. In addition, investigations performed at the F-Area HWMF, and to a lesser extent the H-Area HWMF, revealed the presence of acid contamination in the subsurface, which increases mobility of metals.

[3] South Carolina Department of Environmental Services (SCDES) was known as South Carolina Department of Health and Environmental Control prior to July 1, 2024.

The CAP applies a phased approach for both the H-Area HWMF and the F-Area HWMF. Phase 1 was the implementation of a groundwater extraction and injection system to capture and remediate portions of the tritium plume with the highest activities. This phase was considered complete in October 2003 upon suspension of pump and treat operations.

Phase 2 implements several technologies including engineered groundwater barriers, base injection, and silver chloride technology (F Area Only) to reduce the concentration of contaminants in surface water of FMB and reduce the discharge of contaminants from the plumes to surface water at the seeplines along FMB. The remedial technologies implemented for Phase 2 have proven effective and feasible in working toward the corrective action goals; however, additional time is needed for these technologies to work to meet Phase 2b remedial goals at the F- and H-Area seeplines along FMB. These remedial technologies will continue to be deployed as part of the corrective actions.

On February 11, 2014, the SCDES originally issued the 2014 RCRA Permit Renewal for the SRS. The SCDES most recently modified the 2014 RCRA Permit Renewal on November 30, 2021, which became effective on December 15, 2021. The modifications to the Permit revised the GWPS limits for several constituents, revised the Phase 2 corrective action goals, and revised the date for achieving the GWPS for iodine-129 in FMB and all Appendix IVB-A constituents in surface water at the seepline to January 14, 2032. In addition, a management strategy is included for the Phase 2 goals to facilitate future goal revisions as necessary.

The Phase 2 remedial action for the F-Area HWMF and H-Area HWMF consists of engineered groundwater barriers, base injection, and silver chloride injection (F-Area HWMF only). These technologies are targeted to address both stream/seepline and groundwater contamination and replaced the Phase 1 pump-treat-reinjection systems for both areas. Installation of the engineered barriers at the F-Area HWMF and the H-Area HWMF was completed September 13, 2004, and December 16, 2004, respectively. An extension to the F Area barrier system was constructed in 2011.

In 2011, an UIC Permit was approved to deploy a technology for the treatment of radioactive iodine (e.g., iodine-129) in-situ at the F-Area HWMF. SRS successfully injected a suspension containing finely ground silver chloride particles mixed with domestic water into the subsurface to test the capture potential for radioactive iodine. At the central gate, half of the permitted and purchased quantity (i.e., approximately [~] 291,500 liters [L] [77,000 gallons [gal]) were injected over two months. After monitoring the effect of silver chloride on iodine for several years, SRS concluded that silver chloride is effective at sequestering iodine-129 in-situ and that additional silver chloride is needed at the central gate to improve the effectiveness of treating iodine-129.

In 2015, SRS injected the remaining quantity of silver chloride in the central gate to boost the treatment effectiveness for iodine-129. During June and July 2015, 363.4 L (96 gal) of silver chloride concentrate (362,642.4 L [95,800 gal] diluted) were injected into the Upper Aquifer Zone (UAZ) on the eastern half of the central gate using seven temporary injection points.

Silver chloride technology has been demonstrated to be effective at managing iodine-129. In May 2016, SRS submitted Revision 2 to the 2000 RCRA Permit Renewal Application, Volume IV, that proposed adding silver chloride as a corrective action at the F-Area HWMF. SCDES approved the Renewal Application and incorporated silver chloride technology in the August 2017 modification of the RCRA Permit Renewal. Deployments of silver chloride will be managed under the UIC permit process.

In 2018, SRS performed a third deployment of silver chloride at the F-Area HWMF. This deployment of silver chloride was again placed at the central gate with the intent to augment previous silver chloride injections and increase robustness through further development of a permeable in situ treatment zone of silver chloride reactive particles along the eastern half of the central gate, where the majority of the iodine-129 flux occurs. The injections for the third deployment of silver chloride began in September of 2018 and were completed in May 2019.

1.1.2 MWMF Regulatory Background

As mentioned, an extensive monitoring well network monitors groundwater quality and remedial effectiveness associated with the MWMF (which included the Burial Ground Complex). The MWMF is divided into the following four plume areas: Southwest Plume (SWP), Northwest Plume (NWP), Northeast Plume (NEP), and Southeast Plume (SEP). A modification of the 2014 RCRA Permit Renewal was issued by the SCDES on August 17, 2017. With the issuance of the modification, natural attenuation remedies were approved for the NWP, NEP, and SEP. All four plume areas are monitored for a comprehensive GWPS that can be found in the Permit. On September 12, 2023, SRS submitted the revision 0 permit renewal application for the MWMF. A revised RCRA permit is forthcoming for the MWMF.

The SWP discharges tritium-contaminated groundwater into a small tributary that feeds FMB. Monitoring results revealed that tritium concentrations from these seeps exceed the GWPS.

The remedial action for the SWP involves phytoremediation and natural degradation. The remedial action consists of the following three major components: 1) construction of a small sheet pile dam across the portion of the seeps with the highest tritium concentration; 2) collection of contaminated groundwater behind the dam in a surface pond; and 3) pumping of the seep water from the surface pond to an irrigation system that distributes the water to a mixed pine/hardwood forest and to two engineered pine forests referred to as the eastern and western expansion areas. All the irrigation areas (~24.3 hectare {ha} 60 acres [ac]) are located over the plume area and cause direct evaporation of water containing contaminants (tritium and organic compounds, e.g., 1,4-dioxane, TCE), oxidation of organics, and uptake of water into trees for transpiration to the atmosphere. Dose modeling indicates atmospheric levels of tritium are well below regulatory standards.

The primary contaminants in the SEP, NWP, and NEP are cVOCs (e.g., trichloroethylene [TCE] and tritium). Natural degradation with source control (capping of the ORWBG/MWMF/Low Level Radioactive Waste Disposal Facility [LLRWDF]) remedies

have been approved for these plumes. The primary attenuation mechanisms for the cVOCs are reductive dechlorination beneath the caps and aerobic degradation within the plume. For tritium, the primary mechanism is radioactive decay.

As required by the permit, every five years SRS evaluates and prepares a report on remedial technologies available for tritiated groundwater. The 2024 technology review was provided in Appendix H of the 2024 CAR and concluded that the current remedial action for tritium remains appropriate for the MWMF. The next tritium technology review will be completed in year 2029.

1.1.3 General Separations Area Comprehensive Environmental Response, Compensation, and Liability Act -Related Activities

The General Separations Area Consolidation Unit (GSACU) combined four waste sites (H-Area Retention Basin, Warner's Pond, HP-52 Ponds, and the ORWBG) into one program. Final remedial actions, which included waste consolidation and capping for the GSACU, began in December 2003 and are physically complete. The Regulatory approval of the Record of Decision (ROD), Revision 1 Post-Construction Report (PCR)/Corrective Measures Implementation Report (CMIR)/Remedial Action Completion Report (RACR) for the GSACU document was received from the United States Environmental Protection Agency (USEPA) on May 21, 2008, and from the SCDES on May 22, 2008.

2.0 MONITORING/REPORTING REQUIREMENTS

2.1 F-Area HWMF and H-Area HWMF/Monitoring/Reporting Requirements

The F-Area HWMF groundwater monitoring requirements are described in Module IV, Section B, of the Permit. The H-Area HWMF groundwater monitoring requirements are described in Module IV, Section C, of the Permit. The well networks for the F-Area and H-Area HWMFs monitor the UAZ and the LAZ of the UTRA, and the GA. (Refer to Maps 1A, 1B, and 1C, Volume II). The wells that are Purge Water Management System (PWMS) wells are listed in Appendix A (Table A-2), Volume I.

Groundwater sampling, analysis, and other monitoring requirements are conducted as required by the Permit. The former F-Area and H-Area Waste Water Treatment Units (WTUs) were shut down and placed in a dry lay-up configuration during 1Q2005 and 4Q2003 (respectively), and their industrial wastewater permits closed during 4Q2009.

In 2024, a field start was scheduled for CERCLA (Comprehensive Environmental Response, Compensation and Liability Act) unit “Spill on 2/1/57 of Unknown of Seepage Basin Leak from 904-44G”. The 904-44G spill release area is located adjacent to the H-Area HWMF cap/cover system. The 904-44G spill release area was initially investigated in 2002 under the SRS Site Evaluation program and placed in Federal Facility Agreement Appendix C, RCRA/CERCLA Units due to the presence of cesium-137 concentrations in soil that exceeded acceptable background levels.

In August 2023, a meeting was held to discuss an updated risk assessment and a path forward. The Core Team agreed that removal of the “hot spot” as a maintenance action (hot spot excavation) per the SRS Operations and Maintenance Plan was appropriate and formal documentation of the updated risk assessment was warranted in an addendum to the 2003 Site Evaluation Report.

On May 7, 2024, SRS excavated soil above the background cesium-137 concentration down to 0.3 m (1 ft) below ground surface. A total volume of approximately 14.1 m^3 (18.5 cubic yards) was excavated. After the excavation was complete, the area was filled and

graded with crusher run gravel to provide positive uniform sheet flow drainage (maximum slope of 2%) toward the perimeter drainage ditch.

The addendum to the site evaluation report was submitted to SCDES and the USEPA in March of 2025 and concluded that there is no risk to the future industrial worker. Comments from EPA and SCDES were received in June of 2025. Final comment responses and Revision 1 page changes were submitted in August of 2025. Upon regulatory approval of the Revision 1 addendum, the 904-44G spill release area will be moved from Appendix C to Appendix G.2, *Areas Determined to Require No Further Response Action*.

2.2 MWMF Monitoring/Reporting Requirements

The MWMF groundwater monitoring requirements are defined in Module IV, Section D of the Permit. The well network for the MWMF monitors the UAZ and LAZ of the UTRA and the GA beneath the facility in all four plume areas (SWP, SEP, NWP, and NEP). Refer to Maps 1A, 1B, and 1C, Volume II. Appendix A (Table A-2), Volume I, lists the wells in the PWMS network.

Groundwater and surface water monitoring is conducted as specified in the Permit. A modification of the 2014 RCRA Permit Renewal was issued by the SCDES on August 17, 2017. With the issuance of the permit renewal, natural attenuation remedies were approved for the NWP, NEP, and SEP. All four plume areas are monitored with a comprehensive GWPS that can be found in the Permit.

Permit Section IVD.B.10.b.xii requires a list of wells and corresponding well construction details for wells installed since the submittal of the 2000 RCRA Part B Renewal Application. Appendix A, Volume I, contains a list of all existing, installed, and abandoned wells.

3.0 COMPLIANCE MONITORING

3.1 Water Quality and Elevation Data (IVB.B.11.b.i, IVC.B.11.b.i, and IVD.B.10.b.i)

All water quality (monitoring wells, wetland piezometers, and surface water) and water-elevation data (water levels) for the F-Area HWMF, the H-Area HWMF (Appendix B, Tables, Volume I), and the MWMF (Appendix B, Tables and Appendix C, Volume I) collected during 2024 are presented in accordance with the Permit requirements. The data tables present the analytical data in a matrix format depicting sampling stations and analytical constituents by aquifer unit. The data tables include laboratory-qualified data that are verified.

Field data for the F-Area HWMF, the H-Area HWMF, and the MWMF for 2024 are also included in the data tables, in accordance with the Permit requirements. The tables include water elevations as they correspond to specific sampling events.

3.2 Hydrographs (IVB.B.11.b.ii, IVC.B.11.b.ii, and IVD.B.10.b.ii)

Hydrographs for selected wells for the F-Area HWMF, the H-Area HWMF, and the MWMF are provided in Appendix D, Volume I, in accordance with the Permit requirements. The wells were selected to provide a representative evaluation of the hydrogeology at the waste units. Hydrograph data include water-level specific measurements and water-level measurements taken during routine sampling from 1995 through 2024. Clustered wells are shown on a single graph. Unique symbols are assigned for each well cluster, and the aquifer zone for each well is identified in the legend.

3.3 Time Series Plots (IVB.B.11.b.iii, IVC.B.11.b.iii, and IVD.B.10.b.iii)

Appendix E, Volume I, contains time series plots for selected wells for the F-Area HWMF, the H-Area HWMF, and the MWMF in accordance with the Permit requirements. The wells selected provide a representative evaluation of the groundwater contamination and corrective actions at the waste units. The time series plots show permit-required constituents monitored from 1995 through 2024. Data from clustered wells are shown on

a single graph, and the GWPS is depicted with a horizontal dashed line for reference. Unique symbols are assigned for each well in a cluster, and the aquifer zone for each well is identified in the legend. Scaling is optimized and all graphs are semi-log plots with concentration on the log scale.

Since it is possible to have negative values for radiological results below the detection limit, these negative values will not plot on the log scale and the plotted positive values on either side of the negative value are not connected by a line. This will only be apparent for plots below the detection limit.

The data used to develop the time series plots was not filtered to graphically present comparisons among the parent sample, field duplicates, field splits, reruns, and laboratory duplicates.

3.4 Isoconcentration Maps (IVB.B.11.b.iv, IVC.B.11.b.iv, and IVD.B.10.b.iv)

Isoconcentration plan-view maps for the F-Area HWMF, the H-Area HWMF, and the MWMF are provided in Volume II, in accordance with the Permit requirements. Individual maps depict the contaminant plumes. The concentration contour intervals on each map include the GWPS for that contaminant and additional contours that adequately represent the contaminant distribution.

3.5 Potentiometric Maps (IVB.B.11.b.v, IVC.B.11.b.v, and IVD.B.10.b.v)

Potentiometric contours and groundwater flow lines for 3Q2024 are provided on the isoconcentration maps for the F-Area HWMF, the H-Area HWMF, and the MWMF (Volume II). The combined maps show groundwater flow direction for the UAZ and LAZ of the UTRA and the GA.

Groundwater velocity calculations provide a basis for estimates of the transport rate for constituents. Groundwater velocities are calculated using the following equation:

$$\text{Velocity (ft/day)} = \frac{\text{Hydraulic Conductivity (ft/day)}}{\text{Porosity (unitless)}} \times \frac{\Delta h(\text{ft})}{\Delta l(\text{ft})}$$

The value Δh is the difference in head, and Δl is the length of the flow path. Flow path length is calculated to the nearest 7.62 meters (m) (25 feet [ft]).

During 2024, groundwater velocities were relatively constant in F Area and H Area, down gradient of the ORWBG (vicinity of the SWP and SEP), and in the north plumes of the MWMF, as has been reported for many years. The following tables provide the 2024 horizontal flow rate estimates for the hydrostratigraphic units for the F-Area HWMF (Table 1), the H-Area HWMF (Table 2), and the MWMF (Table 3).

Table 1. Horizontal Groundwater Velocities in the Hydrostratigraphic Units Beneath the F-Area HWMF

F-Area HWMF	UAZ of the UTRA	LAZ of the UTRA	GA
Kh (ft/day)	91.7	1.5	40
Effective Porosity	0.2	0.2	0.25
dh/dl	**Varies**	**Varies**	**Varies**
Groundwater Velocity (ft/yr) (Third Quarter 2024)			
Flow Path F	1,913	27	377

Note: **Table depicts approximate values.**
Flow was to the southwest in the UAZ and LAZ of the UTRA, and northwest in the GA.

Table 2. Horizontal Groundwater Velocities in the Hydrostratigraphic Units Beneath the H-Area HWMF

H-Area HWMF	UAZ of the UTRA	LAZ of the UTRA	GA
Kh (ft/day)	37.1	1.5	39
Effective Porosity	0.2	0.2	0.25
dh/dl	**Varies**	**Varies**	**Varies**
Groundwater Velocity (ft/yr) (Third Quarter 2024)			
Flow Path H	913	38	162

Note: **Table depicts approximate values.**
Flow was to the southwest in the UAZ and of the UTRA, and northwest in the GA.

Table 3. Horizontal Groundwater Velocities in the Hydrostratigraphic Units Beneath the MWMF

MWMF	UAZ of the UTRA	LAZ of the UTRA	GA
Kh (ft/day)	32	1.5	39
Effective Porosity	0.2	0.2	0.25
dh/dl	**Varies**	**Varies**	**Varies**
Groundwater Velocity (ft/yr) (Third Quarter 2024)			
Flow Path SWP	471	24	162
Flow Path SEP	722	25	162
Flow Path NWP	*	17	162
Flow Path NEP	*	43	162

Note: Table depicts approximate values.
Flow directions in the UAZ and LAZ of the UTRA were to the southwest (SWP), northwest (NWP), northeast (NEP), and southwest (SEP). Flow direction in the GA was to the northwest.
*Due to the limited extent of the UAZ (i.e., the water table drops into the LAZ), no calculation is made for the UAZ in the NWP and the NEP areas.

3.6 Isoconcentration Cross Sections (IVB.B.11.b.vi, IVC.B.11.b.vi, and IVD.B.10.b.vi)

Isoconcentration cross sections for the F-Area HWMF, the H-Area HWMF, and the MWMF are presented in Volume II of this report, in accordance with the Permit requirements. All cross sections selected to represent contamination transport are essentially parallel to groundwater flow from the waste units. For well clusters in a cross section, each screen in a cluster is depicted on the cross section and available data for each screen is posted. The plan-view location of the cross sections is shown on insets on each cross section map and on the plume maps in Volume II.

3.7 Determination and Extent of Severity of Groundwater Contamination (IVB.B.11.b.viii, IVC.B.11.b.viii, and IVD.B.10.b.vii)

Monitoring results for groundwater, surface water, and wetlands are included for the F-Area HWMF, the H-Area HWMF, and the MWMF. The extent and severity of the groundwater contamination is determined based on the analytical results of the groundwater sampling performed for that period. The following sections describe the extent and severity of the groundwater contamination in terms of compliance monitoring and GWPS exceedances for the F-Area HWMF, the H-Area HWMF, and the MWMF.

3.7.1 Compliance Groundwater Monitoring

3.7.1.1 F-Area HWMF Compliance Groundwater Monitoring

Compliance monitoring for the F-Area HWMF was performed quarterly during 2024, in accordance with the Permit requirements. Monitoring results are in Appendix B, Tables B-1, Volume I.

The scheduled 2024 sampling was completed for all wells in F Area.

3.7.1.2 H-Area HWMF Compliance Groundwater Monitoring

Compliance monitoring for the H-Area HWMF was performed quarterly during 2024, in accordance with the Permit requirements. Monitoring results are in Appendix B, Table B-2, Volume I.

The scheduled 2024 sampling was completed for all wells in H Area.

3.7.1.3 MWMF Compliance Groundwater Monitoring

Compliance monitoring was performed for the MWMF, in accordance with the Permit, and is discussed by plume areas (SWP, SEP, NEP, and NWP). During 2024, all four plume areas were monitored.

All four of the plume areas (SWP, NWP, NEP, and SEP) have radiological indicator parameters (nonvolatile beta, gross alpha, sum of beta, sum of beta dose, or sum of alpha) that exceed GWPS levels. GWPS exceedances of radiological indicator parameters are only discussed when the indicator parameter exceeds the GWPS and are not supported by speciated radiological isotopes. However, due to an analysis phenomenon known as “cross talk”, radiological indicator analyses such as gross alpha and nonvolatile beta rarely agree with the sum of the speciated data. Cross talk occurs when part of the alpha emissions is counted as beta and part of the beta emissions are counted as alpha so that the overall sum of gross measurements is usually higher than the sum of the speciation. Therefore, gross

radiological parameter exceedances should not be considered at the same level of importance as speciated values.

SWP Compliance Monitoring

During 1Q2024 and 3Q2024, the SWP monitoring wells were monitored for compliance requirements. Analytical results indicate thirteen constituents exceeded the GWPS. The results and the aquifer zones, in which the exceedances occurred, are presented in Appendix B, Table B-7, Volume I.

SEP Compliance Monitoring

For the SEP plume, the 1Q2024 and 3Q2024 data were compared to the GWPS.

During 2024, the SEP monitoring wells were monitored for semi-annual compliance requirements. Analytical results indicate nine constituents exceeded the GWPS. The results and the aquifer zones in which the exceedances occurred are presented in Appendix B, Table B-8, Volume I.

NEP Compliance Monitoring

For the NEP plume, the 1Q2024 and 3Q2024 data were compared to the GWPS.

During 2024, the NEP monitoring wells were monitored for semi-annual compliance requirements. Analytical results indicate eleven constituents exceeded the GWPS. The results and the aquifer zones, in which the exceedances occurred, are presented in Appendix B, Table B-9, Volume I.

NWP Compliance Monitoring

For the NWP plume, the 1Q2024 and 3Q2024 data were compared to the GWPS.

During 2024, the NWP monitoring wells were monitored for compliance requirements. Analytical results indicate nine constituents exceeded the GWPS. The results and the

aquifer zones, in which the exceedances occurred, are presented in Appendix B, Table B-10, Volume I.

3.7.2 Wetland Compliance Monitoring

The following subsections discuss Wetland Compliance Monitoring for the F-Area HWMF, the H-Area HWMF, and the MWMF.

3.7.2.1 F-Area HWMF Wetland Compliance Monitoring

During all four quarters of 2024, groundwater sampling was scheduled for 17 F-Area HWMF wetland piezometers. Groundwater samples were collected from all 17 piezometers during each quarter, excluding FSP 2B which was dry during the second and third quarter.

In accordance with the Permit Application, all 17 wetland groundwater piezometers are analyzed for the full suite of GWPS constituents during the third quarter of each year. During the remaining quarters, the stations are analyzed for a reduced suite of GWPS constituents based on the analytes detected during the full suite sampling event. If a constituent is not detected above the GWPS during the third quarter sampling event, it is excluded from further analyses during the remaining quarters. However, gross alpha, nonvolatile beta, tritium, and nitrate-nitrite, are sampled for during all quarterly events. The sample results for 2024 are presented in Appendix B, Table B-3, Volume I, and the locations are shown on Map 1A, Volume II.

In groundwater beneath the wetlands of FMB, cobalt, nitrate-nitrite, carbon-14, gross alpha, iodine-129, nonvolatile beta, radium-226, radium-228, strontium-90, tritium, uranium-233/234, and uranium-238 exceeded the GWPS. Iodine-129 and tritium were the most widespread constituents at the wetlands, exceeding the GWPS at all but three and seven locations, respectively. The maximum concentration of iodine-129 (146 picocuries per liter [pCi/L]) and tritium (604 picocuries per milliliter [pCi/mL]) occurred at FPZ 7B and FPZ 6A, respectively and was less than the results in 2023. Lead exceeded the GWPS (15 micrograms per liter [ug/L]) at FPZ 4A (15.9 ug/L). This exceedance appears to be an

artifact of elevated turbidity (447 nephelometric turbidity units [NTUs]) in the sample. The sample results are presented in Appendix B, Table B-3, Volume I. The locations are shown on Map 1A, Volume II.

3.7.2.2 H-Area HWMF Wetland Compliance Monitoring

During all four quarters of 2024, sampling was scheduled for ten H-Area HWMF wetland groundwater piezometers. All wetland piezometers were sampled during all four quarters, excluding HPZ 5B which was dry during the second and third quarter.

In accordance with the Permit Application, during the third quarter of each year, all ten wetland groundwater piezometers are analyzed for the full suite of GWPS constituents. During the remaining quarters, the stations are analyzed for a reduced suite of GWPS constituents based on the analytes detected during the full suite sampling event. If a constituent is not detected above the GWPS during the third quarter sampling event, it is excluded from further analyses during the remaining quarters. However, gross alpha, nonvolatile beta, tritium, nitrate-nitrite, and mercury are sampled for during all quarterly events. The sample results are presented in Appendix B, Table B-4, Volume I, and the locations are shown on Map 1A, Volume II.

In groundwater beneath the wetlands of the FMB, carbon-14, nitrate-nitrite, iodine-129, nonvolatile beta, and tritium exceeded the GWPS. Tritium was the most widespread constituent at the wetlands, exceeding at all but one location (HPZ 5B). The maximum concentration for tritium was 673 pCi/mL at location HSP 60A and was less than results measured in 2023. Lead exceeded the GWPS at HPZ 5B (25.6 micrograms per liter [ug/L]). This exceedance appears to be an artifact of elevated turbidity (823 NTUs) in the sample. The sample results are presented in Appendix B, Table B-4. The locations are shown on Map 1A, Volume II.

3.7.2.3 MWMF SWP Wetland Compliance Monitoring

During 2024, seven wetland groundwater piezometers were monitored for tritium each quarter and in 3Q for the full GWPS list (Appendix B, Table B-11, Volume I). Analytical

results indicate tritium (all locations), carbon-14 (two locations), and 1,4-dioxane (two locations) exceeded the GWPS. The sample results are presented in Appendix B, Table B-11, Volume I. The locations are shown on Map 1A, Volume II.

Tritium is the most prevalent contaminant in groundwater at the SWP wetlands. Tritium is usually measured at higher concentrations in the deeper piezometers because the deeper wetland piezometers monitor groundwater just above a clay horizon. This horizon has lower conductivities, higher effective porosities, and is not easily flushed by groundwater movement. In addition, the shallower piezometers are screened near the surface and intersect a highly conductive root zone near the surface, which can transmit rainwater or overland flow and dilute the concentrations.

3.7.3 Surface Water Compliance Monitoring

The following sections discuss Surface Water Compliance Monitoring for the F-Area HWMF, the H-Area HWMF, and the MWMF (SWP and NWP/NEP).

3.7.3.1 F-Area HWMF and H-Area HWMF Surface Water Compliance Monitoring in FMB

In accordance with the Permit Application, during the third quarter of each year, 12 FMB surface water stations are analyzed for the full suite of GWPS constituents. During the remaining quarters, the stations are analyzed for a reduced suite of GWPS constituents determined based on the analytes detected during the full suite sampling event. If a constituent is not detected above the GWPS during the third quarter sampling event, it is excluded from further analyses during the remaining quarters. However, gross alpha, nonvolatile beta, tritium, nitrate-nitrite, and mercury are sampled for during all quarterly events. The sample results are presented in Appendix B, Table B-3, and B-4, Volume I, and the locations are shown on Figure 1.

As part of the tritium flux monitoring, an additional station (FMC 002H) was sampled for tritium only. The results for this station are also presented in Appendix B, Table B-3 and B-4, Volume I. The location is shown on Figure 1.

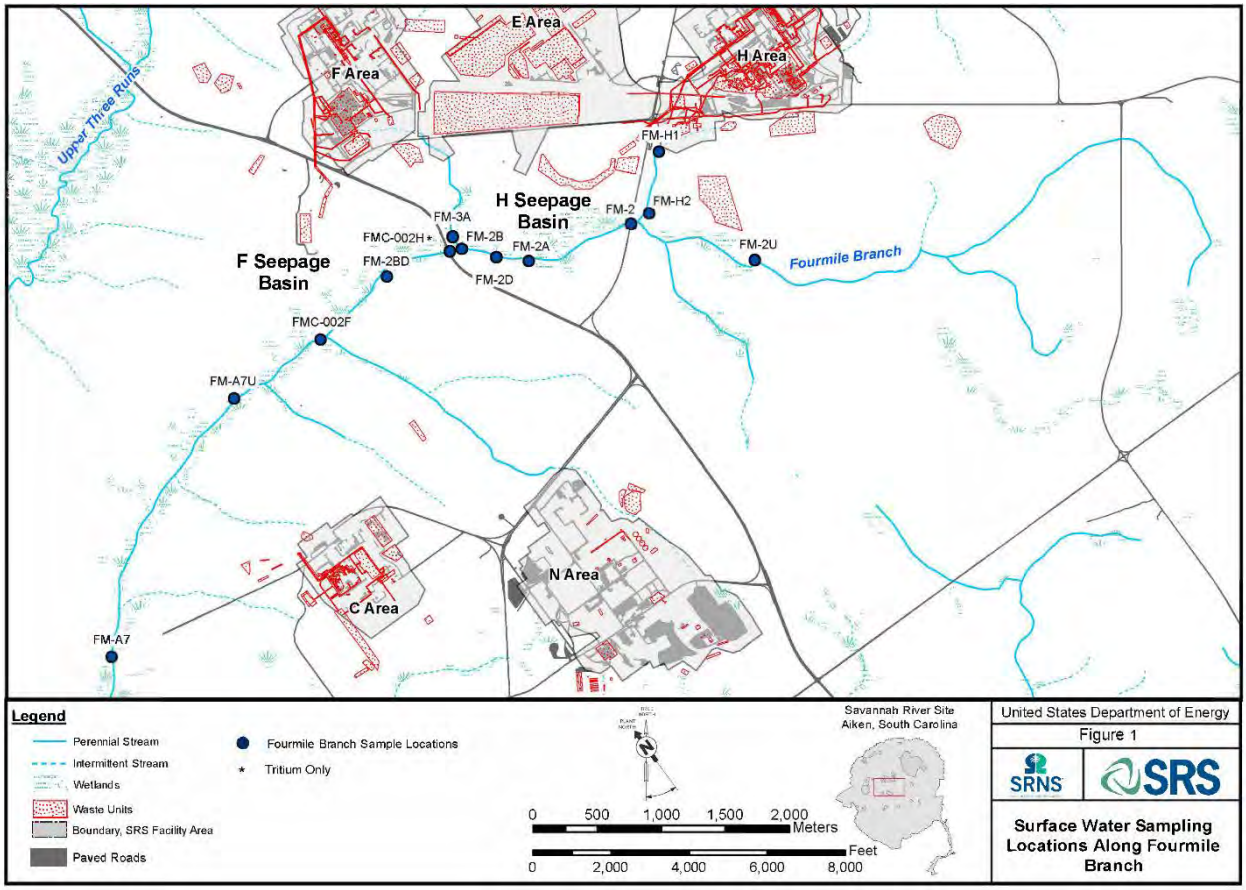


Figure 1. Surface Water Sampling Locations Along Fourmile Branch

During 2024, iodine-129 (two locations at F Area), carbon-14 (one location at F Area) and tritium (seven locations at F and H Areas) exceeded the GWPS in FMB. Tritium was the most prevalent contaminant exceeding the GWPS at 7 of 13 locations. The maximum concentration of tritium in FMB was 594 pCi/mL at FM 3A (located downgradient from the MWMF SWP).

3.7.3.2 MWMF Surface Water Compliance Monitoring in FMB and Upper Three Runs

SWP (FMB Watershed)

During 2024, SRS sampled the ten MWMF SWP surface water locations (Engineered Ditch [ED], Old F-Area Effluent Ditch (OFED), phytoremediation pond, and FMB) for

tritium. Analytical results indicate tritium exceeded the GWPS in FMB at every location except for background station FM-2. The sample results are presented in Appendix B, Table B-11, Volume I. The locations are shown on Map 1A, Volume II.

Surface water locations ED-01, OFD-01, and OFD-02 monitor tritium concentrations from the ED, the OFED below the pond, and the OFED farther downstream of the pond, respectively. A surface water grab sample from the phytoremediation pond (location FHP-001) and a grab sample from the irrigation water tank (location FHP-001A) filled from the pond used to irrigate the phytoremediation plots are representative of the phytoremediation pond. During normal operation of the phytoremediation system, water from the entire pond exits at the pump intake as it is withdrawn for irrigation use. Samples collected at the pump intake represent the average concentration of tritium in the pond. Surface water in the ED originates from the discharge of F Area process water and storm water runoff. Surface water in the OFED consists of many braided streams originating from numerous groundwater seep locations that combine to form a single stream. Location FM-3A is located just below the confluence of the ED and the OFED and is the last sampling location before entering FMB. FMC-002H, and FM-2B are FMB sampling locations at the MWMF while FM-2 is a background station on FMB.

Tritium exceeded the GWPS at 9 of 10 monitoring locations during 2024. Overall, maximum concentrations in 2024 were similar to last year's results. The maximum concentration in the pond was 580 pCi/mL at location FHP-001. At the ED, the maximum concentration was 891 pCi/mL while at the OFED tritium was 1,620 pCi/mL below the pond. Downstream at the confluence of the ED and OFED tritium was 594 pCi/mL in 2024. In FMB at the MWMF, the maximum tritium concentration was 56.9 pCi/mL at location FM-2B.

NWP and NEP (Upper Three Runs Watershed)

Stream locations CBS 010, CBS 020, and CBS 030 monitor surface water in Crouch Branch, a tributary of Upper Three Runs (UTR). This tributary's headwaters originate in H Area. Crouch Branch also receives water from groundwater seeps emanating from the

NEP. Stream location UTR-155 monitors an unnamed tributary to Upper Three Runs Creek, which receives water from seeps where the NWP is projected to discharge.

Ten MWMF NWP and NEP surface water locations (Crouch Branch and an unnamed tributary to UTR) are monitored quarterly for tritium. During 2024, tritium exceeded the GWPS at seven locations: CBS-10, CBS-30, CBS-BF1, UTR-120, UTR-130, UTR-140, and UTR-BF1.

Tritium was most prevalent at locations CBS-BF1 and UTR-BF1 exceeding the GWPS during each quarter in 2024. The maximum concentration overall was 147 pCi/mL at CBS-BF1.

The sample results for 2024 are presented in Appendix B, Table B-12, Volume I. The locations are shown on Map 1B, Volume II.

3.8 Statistical Evaluation for Changes in Groundwater Elevations and pH for F-Area HWMF and H-Area HWMF

In accordance with the Permit requirements, the F-Area and the H-Area HWMFs are required to perform a statistical evaluation of annual groundwater quality and elevation changes for the point of compliance (POC) wells and selected assessment wells. No statistical evaluation is required for the MWMF.

Since the remedial system consists of groundwater barriers and base injection systems, the statistical evaluation focuses on the impacts of the barriers and base injection on the groundwater elevations and change in pH. It is important to assess the effects of the barriers and the base injection on the aquifer to better understand the long-term impacts on groundwater quality. Base injection (pH adjustment) represents the treatment mechanism for metals at the F Area barriers and at the wetlands of F and H Areas. Several years after the installation of the remedial systems during the April 2007 reporting period, a simple hypothesis test was used to assess the impact of the barriers and base injection system on the groundwater elevations (F- and H-Areas HWMFs) and changes in pH (F-Area HWMF). A detailed description of the test and the trend statistics for all available wells are presented

in Appendix F, Volume I. A review of the previous statistical analysis during this reporting period indicates that the statistical evaluation continues to be valid and is included in this report as Section 3.8.1 and 3.8.2.

3.8.1 Groundwater Elevations

The groundwater elevation statistical results for the F-Area HWMF and the H-Area HWMF are included in Appendix F, Table 1, and Table 2, Volume I, respectively.

Water level changes resulting from barrier installation were statistically evaluated by analyzing the gradients between wells located across the barriers. Although many wells exist near the barriers, only a few well pairs contained sufficient data to adequately perform statistical tests. The majority of the well pairs excluded from the analysis had an insufficient number of measurements collected before the installation of the barriers.

The water level gradient evaluation for the F-Area HWMF and the H-Area HWMF indicates that groundwater flow has changed, due to the installation of the barriers. This is demonstrated by at least four well pairs. At F Area, at least one well pair indicated a significant change in gradient, due to the installation of the barrier walls. This well pair is in the area with the greatest groundwater contamination. The remaining three well pairs are located at the H Area barriers. Due to the configuration of the barriers, located both up gradient and down gradient of the waste unit, the H Area barriers had an immediate impact on groundwater flow.

3.8.2 Change in pH

The change in pH statistical results for the F-Area HWMF are included in Appendix F, Table 3, Volume I.

Significant changes in groundwater pH were statistically evaluated using monitoring wells and wetland sampling locations within the vicinity of the injection wells. The differences in pH before and after injection of the base solution are often a function of location of the monitoring wells and geochemical buffering of the groundwater plume. The most

appropriate locations for monitoring pH are the wells that are located down gradient in close proximity of the injection zone.

Five of the wells that were statistically evaluated showed significant indications of change in the groundwater plume pH, due to base injection. The majority of these wells are in the eastern portion of the plume. This is also the area of the plume containing the most significant groundwater contamination. As expected, all the wells located up gradient and outside of the influence of the base injection, except for one (FSB 118), show no statistical impact to pH. Well FSB 118 shows a significant change in pH; however, it is located up gradient a significant distance away from the injection system and thus is not impacted by the base injection.

The statistical evaluation indicates that pH adjustment was accomplished near the gates, due to the injection of base into the aquifer. This is supported by monitoring data from the wells that are located close to the zone of injection.

3.8.3 Changes in Tritium Concentration

The time series plots in Appendix E, Volume I illustrate the trends in tritium concentration in the groundwater near the barriers, since the termination of pump and treat operations at the F-Area and H-Area Seepage Basins.

Since installation of the barriers and operation of the base injection system, the tritium concentration down gradient of the F-Area Seepage Basin barriers and gates has decreased significantly. The reduction in concentration is attributed to the control of the contaminated groundwater by the barriers and the release of less contaminated groundwater through the gates.

The tritium concentrations down gradient of the H-Area Seepage Basin barriers have also decreased significantly, as shown in the time series graphs. The reduction in concentration is due to the control of the contaminated groundwater by the barrier.

In conclusion, sampling and analysis performed during this reporting period has confirmed that significant reductions in concentration of tritium continue to occur and are consistent with the planned performance of the barriers and gates. The barriers are reducing contamination in FMB. Sections 5.1.3.4 and 5.2.2.3 provide more information on tritium flux to FMB for the F-Area HWMF and the H-Area HWMF, respectively.

3.9 Rainfall (IVB.B.11.b.xi, IVC.B.11.b.xi, and IVD.B.10.b.viii)

Due to the central proximity, the H Area rain gauge station was selected to represent rainfall patterns within the study area. The monthly, quarterly, and cumulative rainfall data in inches for the F-Area HWMF, the H-Area HWMF, and the MWMF during 2024 are presented in Table 4.

Figure 2 presents monthly rainfall totals for January 1 through December 31, 2024. Rainfall for 2024 was approximately 6 inches greater than the long-term annual average (122.5 centimeters [cm] 48.25 inches). A pattern of above average rainfall began in 2013 continuing through 2020. Prior to this SRS experienced below average rainfall in most of the years since 1998.

Table 4. Rainfall for 2024

Month	Rainfall (in)
January	2.37
February	3.31
March	5.92
First Quarter Total	**11.6**
April	1.66
May	4.33
June	3
Second Quarter Total	**8.99**
Cumulative Total for First Half of 2024	**20.59**
July	6.94
August	8.64
September	7.19
Third Quarter Total	**22.77**
October	0
November	8.58
December	2.53
Fourth Quarter Total	**11.11**
Cumulative Total for Second Half of 2024	**33.88**
Cumulative Annual Total	**54.47**

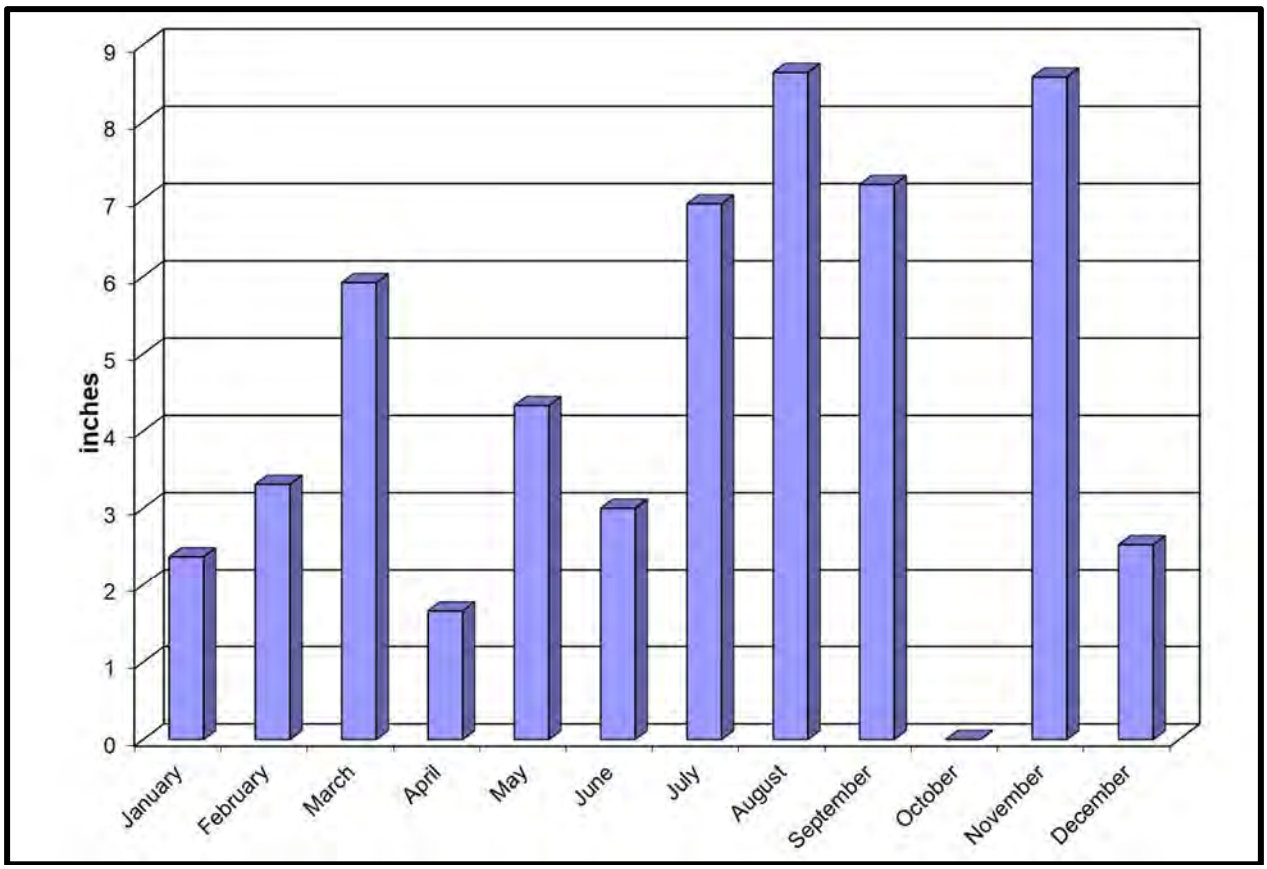


Figure 2. Rainfall for 2024

4.0 DETECTION MONITORING

4.1 F-Area HWMF Appendix IX (IVB.B.10.c)Table

SRS performed detection monitoring for the F-Area HWMF during 3Q2024, in accordance with the Permit requirements. Twenty percent of the POC wells were sampled for Appendix IX constituents, carbon-14, and cesium-134. The sample results for the wells are presented in Appendix B, Table 5, Volume I.

Detection monitoring indicated that one constituent (2,4,5-Trichlorophenoxyacetic acid [2,4,5-T]) not on the current GWPS for the F-Area HWMF was detected in well FSB 92C during the F-Area HWMF annual Appendix IX sampling. Confirmation sampling result for 2,4,5-T (non-detect) did not confirm the presence of 2,4,5-T at concentrations above the estimated quantitation limit (EQL). SRS will continue to monitor for Appendix IX constituents at the F-Area HWMF in 2025.

4.2 H-Area HWMF Appendix IX (IVC.B.10.c)

SRS performed detection monitoring for the H-Area HWMF during 3Q2024, in accordance with the Permit requirements. Twenty percent of the POC wells were sampled for Appendix IX constituents, carbon-14, and cesium-134. The sample results for the wells are presented in Appendix B, Table 6, Volume I.

During detection monitoring in 2024, no new constituents were detected at H-Area HWMF

4.3 MWMF Appendix IX and Comprehensive Radiological Monitoring List (IVD.B.9.d)

SRS performed detection monitoring for the MWMF during 3Q2024, in accordance with the Permit requirements. Samples were collected from 20% of the POC wells for Appendix IX and Comprehensive Radiological Monitoring List (CRML) constituents. The CRML constituents are specified in the Permit. The sample results are presented in Appendix B, Tables B-13 through B-16, Volume I.

During detection monitoring in 2024, no new constituents were detected in the SWP, SEP, NWP nor NEP.

However, detection monitoring detected tetrachlorodibenzo-p-furans at background well HSB 85A. Tetrachlorodibenzo-p-furans is not known to be associated with the waste unit and SRS will evaluate the presence of this constituent by resampling in 2025. SRS will continue to monitor for Appendix IX constituents at the MWMF in 2025.

5.0 CORRECTIVE ACTION EFFECTIVENESS MONITORING

5.1 F-Area HWMF Corrective Action Program

The current corrective actions for the F-Area HWMF include an engineered low-permeability cap over the seepage basins, an engineered groundwater barrier system with gates, a base injection system as treatment within the gates and in the wetlands of FMB, and silver chloride amendment for treatment of iodine-129. Further discussion on the effectiveness of the corrective action is provided in Section 5.1.3.

Installation of the original length of engineered groundwater barriers at F Area was completed in 2004. A section of barriers ~350.5-m (1,150-ft) long, including an additional gate, was added in 2011 to extend the barrier system to the east. The barrier system now consists of three gates: west gate, central gate, and east gate. The groundwater barrier funnel and gate system were designed to manage tritium and metal releases to FMB and the seepline. The groundwater barriers have been effective at moderating the flow of contaminated groundwater and reducing the discharge of contaminants to FMB.

During June 2005, SRS completed construction and commenced operation of the base injection system within the original two gates (west gate and central gate) at the F-Area groundwater barrier. In 2008, the base injection system was expanded to treat groundwater beneath the wetlands located down gradient of the barriers. In 2011, SRS expanded the base injection system to include the east gate at the extension of the barriers. The base injection system is designed to mitigate acidic groundwater contamination in situ. Figure 3 shows the system configuration.

Figure 3. Base Injection Layout

E47500 E48000 E48500 E49000 E49500 E50000 E50500 E51000 E51500 E52000 E52500

N76500 N76000 N75500 N75000 N74500 N74000 N73500 N73000 N72500 N72000

LEGEND

- BASIN CLOSURE BOUNDARY
- SRS AREA FENCE BOUNDARY
- STREAM
- SEEPLINE
- SRS TOPOGRAPHIC CONTOUR (5 FOOT INTERVAL)
- SRS TOPOGRAPHIC CONTOUR (10 FOOT INTERVAL)
- SRS MAIN/PAVED ROAD
- SRS SECONDARY ROAD
- SRS RAILROAD
- INJECTION WELL
- SEEPLINE INJECTION WELL
- PIEZOMETER
- SURFACE WATER SAMPLE
- DOMESTIC WATER PIPE
- BASE DISTRIBUTION PIPE
- VEHICLE ACCESS
- UNDERGROUND BARRIER WALL
- UNDERGROUND BARRIER WALL EXTENSION

F - AREA

BASIN F-1

BASIN F-2

BASIN F-3

West Gate

Middle Gate

East Gate

FIB-9 FIB-10 FIB-11 FIB-12 FIB-13 FIB-14 FIB-15 FIB-16 FIB-17 FIB-18 FIB-19 FIB-20 FIB-21 FIB-22 FIB-23 FIB-24 FIB-25 FIB-26 FIT-14 FIB-27 FIB-28 FIB-29 FIB-30 FIB-31 FIB-32 FIB-33 FIB-34

FSI-01 FSI-02 FSI-03 FSI-04 FSI-05 FSP47A FSI-06 FSI-07 FSI-08 FSI-09 FAS091 FSI-10 FSI-11 FSI-12 FSI-13 FSI-14 FSI-15 FPZ7B FPZ7A FSI-16 FSI-17 FSI-18 FSI-19 FPZ8BR FPZ8AR FAS092 FAS094 FAS095 FSI-20 FSI-21 FSI-22 FSI-23 FSI-24 FPZ6A FPZ6B FSI-25 FSI-26 FSI-27 FSI-28 FAS093

FSI-29 FSP204A FSI-30 FAS096 FSI-32 FSI-31 FSI-33 FSI-34 FAS097

FOURMILE BRANCH

PLANT TRUE NORTH NORTH

36° 22'

0 100 200 300 400 500

SCALE: FEET

SAVANNAH RIVER SITE

Figure 3. Base Injection Layout

Figure 3
Base Injection Layout

Iodine-129 is currently present at levels greater than the GWPS in the groundwater beneath the wetlands, in surface water within the wetlands and in FMB. In May 2016, SRS submitted a modification to the 2000 RCRA Permit Renewal Application, Volume IV, Revision 2, proposing to add silver chloride technology as part of the corrective action for iodine-129. The SCDES approved the 2000 RCRA Permit Renewal Application and modified the 2014 RCRA Permit Renewal on August 17, 2017. The permit renewal became effective on September 2, 2017, adding silver chloride technology as the corrective action for iodine-129. The installed engineered groundwater barriers, base injection system, and silver chloride technology form the remediation system for the F-Area HWMF. Section 5.1.3.3 provides additional information on the silver chloride technology.

5.1.1 Injection Well Volumes and Injection Rates (IVB.B.11.b.xii)

In 2024, base injection was performed starting in March and continued into June at the central gate, then operated at the western gate starting in July and continued into November. Approximately 45,800,000 L (12.1 M gal) of base solution was injected in 2024 at F-Area HWMF. The base injection treatment areas are shown on Figure 3. Table 5 summarizes the volumes injected, average rate of injection, and period of injection, for 2024.

5.1.2 Surface Water Monitoring at the Seeplines

SRS has surface water monitoring stations within the seeplines below the closed F-Area Seepage Basins. These monitoring stations support corrective action effectiveness determinations for the Phase 2b corrective action goals of the Permit.

Table 5. F-Area Base Injection Flow Rate 2024

Treatment Area	Well Number	January			February			March			April			May			June			July			August			September			October			November			December			12-month Well Volume
		Tot Hours	Tot gal	Avg gpm	Tot Hours	Tot gal	Avg gpm	Tot Hours	Tot gal	Avg gpm	Tot Hours	Tot gal	Avg gpm	Tot Hours	Tot gal	Avg gpm	Tot Hours	Tot gal	Avg gpm	Tot Hours	Tot gal	Avg gpm	Tot Hours	Tot gal	Avg gpm	Tot Hours	Tot gal	Avg gpm	Tot Hours	Tot gal	Avg gpm	Tot Hours	Tot gal	Avg gpm	Tot Hours	Tot gal	Avg gpm	gal
West Gate	FIB-9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	320.0	74,400.0	3.9	432.0	114,048.0	4.4	288.0	100,800.0	5.8	286.0	51480.0	3.0	96.0	23040.0	4.0	0.0	0.0	0.0	363,768
	FIB-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	320.0	76,800.0	4.0	432.0	137,376.0	5.3	288.0	190,080.0	11.0	286.0	85800.0	5.0	96.0	51840.0	9.0	0.0	0.0	0.0	541,896
	FIB-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	320.0	81,600.0	4.3	432.0	98,496.0	3.8	288.0	77,760.0	4.5	190.0	27360.0	2.4	96.0	74880.0	13.0	0.0	0.0	0.0	360,096
	FIB-12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	320.0	79,200.0	4.1	432.0	75,168.0	2.9	288.0	97,920.0	5.7	286.0	70356.0	4.1	96.0	40320.0	7.0	0.0	0.0	0.0	362,964
	FIB-13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	320.0	74,400.0	3.9	432.0	90,720.0	3.5	288.0	112,320.0	6.5	286.0	58344.0	3.4	96.0	37440.0	6.5	0.0	0.0	0.0	373,224
	FIB-14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	320.0	79,200.0	4.1	432.0	114,048.0	4.4	288.0	115,200.0	6.7	286.0	60060.0	3.5	96.0	34560.0	6.0	0.0	0.0	0.0	403,068
	FIB-15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	320.0	79,200.0	4.1	432.0	108,864.0	4.2	288.0	115,200.0	6.7	286.0	46332.0	2.7	96.0	23040.0	4.0	0.0	0.0	0.0	372,636
	FIB-16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	320.0	69,600.0	3.6	432.0	90,720.0	3.5	288.0	123,840.0	7.2	286.0	54912.0	3.2	96.0	40320.0	7.0	0.0	0.0	0.0	379,392
	FIB-17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	320.0	81,600.0	4.3	432.0	98,496.0	3.8	288.0	126,720.0	7.3	286.0	97812.0	5.7	96.0	66240.0	11.5	0.0	0.0	0.0	470,868
	FIB-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	320.0	86,400.0	4.5	432.0	124,416.0	4.8	288.0	112,320.0	6.5	286.0	82368.0	4.8	96.0	54720.0	9.5	0.0	0.0	0.0	460,224
	FIB-19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	320.0	76,800.0	4.0	432.0	103,680.0	4.0	288.0	138,240.0	8.0	286.0	109824.0	6.4	96.0	57600.0	10.0	0.0	0.0	0.0	486,144
	FIB-20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	320.0	86,400.0	4.5	432.0	111,456.0	4.3	288.0	126,720.0	7.3	286.0	73788.0	4.3	96.0	46080.0	8.0	0.0	0.0	0.0	444,444
	FIB-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	320.0	76,800.0	4.0	432.0	111,456.0	4.3	288.0	109,440.0	6.3	286.0	68640.0	4.0	96.0	43200.0	7.5	0.0	0.0	0.0	409,536
Middle Gate	FIB-22	0.0	0.0	0.0	0.0	0.0	0.0	72.0	54000.0	12.5	480.0	365760.0	12.7	408.0	306000.0	12.5	336.0	244440.0	12.1	185.0	127,650.0	11.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,097,850
	FIB-23	0.0	0.0	0.0	0.0	0.0	0.0	72.0	54000.0	12.5	480.0	377280.0	13.1	408.0	315792.0	12.9	336.0	234360.0	11.6	185.0	127,650.0	11.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,109,082
	FIB-24	0.0	0.0	0.0	0.0	0.0	0.0	72.0	54000.0	12.5	480.0	365760.0	12.7	408.0	313344.0	12.8	336.0	254520.0	12.6	185.0	138,750.0	12.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,126,374
	FIB-25	0.0	0.0	0.0	0.0	0.0	0.0	72.0	56160.0	13.0	480.0	380160.0	13.2	408.0	306000.0	12.5	336.0	236880.0	11.8	185.0	133,200.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,112,400
	FIB-26	0.0	0.0	0.0	0.0	0.0	0.0	72.0	54000.0	12.5	480.0	383040.0	13.3	408.0	315792.0	12.9	336.0	239400.0	11.9	185.0	127,650.0	11.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,119,882
	FIT-14	0.0	0.0	0.0	0.0	0.0	0.0	72.0	56160.0	13.0	480.0	362880.0	12.6	408.0	313344.0	12.8	336.0	252000.0	12.5	185.0	133,200.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,117,584
East Gate	FIB-30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FIB-31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FIB-32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FIB-33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FIB-34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Wetlands	FSI-1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	FSI-34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	Monthly Volume	0	0	0	0	0	0	432	328,320	76	2,880	2,234,880	78	2,452	1,870,272	76	2,016	1,461,600	73		1,810,500	124	5,616	1,378,944		3,744	1,546,560		3,622	887,076		1,248	593,280			0	0	12,111,432

Similar to the monitoring strategy used for surface water in FMB and the wetland piezometers, the seepline surface water stations are analyzed for the full suite of GWPS constituents during the third quarter of each year. During the remaining quarters, the stations are analyzed for a reduced suite of GWPS constituents determined based on the analytes detected during the full suite sampling event. If a constituent is not detected above the GWPS during the third quarter sampling event, it is excluded from further analyses during the remaining quarters. However, gross alpha, nonvolatile beta, tritium, and nitrate-nitrite are sampled for during all quarterly events. The sample results are presented in Appendix B, Table B-3, Volume I, and the locations are shown on Map 1A, Volume II.

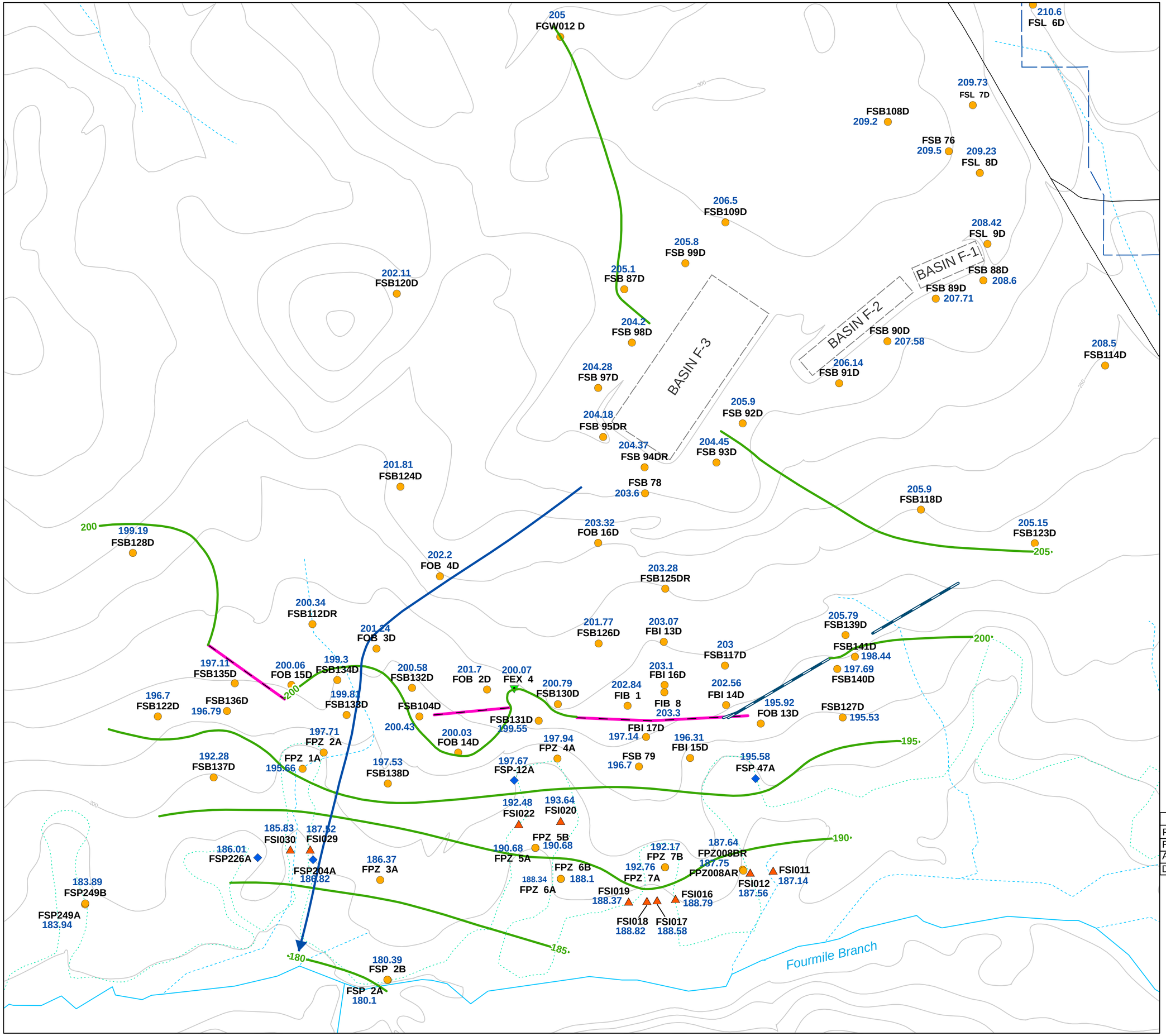
In 2024, surface water samples were collected during each quarter from all sample locations. At the F Area seepline (Phase 2b corrective action goals), cobalt, nitrate-nitrite, gross alpha, nonvolatile beta, iodine-129, strontium-90, tritium, uranium-233/234, and uranium-238 exceeded the GWPS in surface water. Vanadium also exceeded the GWPS (4 ug/L) at FAS-96 (13.1 ug/L). This exceedance appears to be an artifact of elevated turbidity (43.1 NTUs) in the sample. Iodine-129, strontium-90, and tritium were the most widespread constituents in surface water at the wetlands, exceeding the GWPS at four out of five locations. The maximum concentration of iodine-129 (198 picocuries per liter [pCi/L]) and strontium-90 (37.8 pCi/L) occurred at FAS-91. The maximum concentration of tritium (86.6 pCi/mL) was measured at FAS-92.

5.1.3 Effectiveness of the F-Area HWMF Corrective Action Program (IVB.B.11.b.xiii)

5.1.3.1 Groundwater Barriers

In 2004, SRS constructed three groundwater barriers at the F-Area HWMF. The barriers consisted of ~419.4 linear meters (~1,375 linear feet) of low-permeability wall installed from just below the ground surface to the base of the UAZ. Construction utilized an in-situ soil mixing technique to blend acid resistant pozzolan cement and attapulgite clay with native soils. A small percentage of caustic was also added to the cement to facilitate curing. Upon hardening, the resulting soil/cement mixture formed a low-permeability subsurface barrier ~0.85-m (~2.8-ft) thick on average. Configuration of the engineered barriers is shown in Figure 4.

Figure 4. F-Area HWMF Groundwater Barriers and Potentiometric Surface



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Date: April 30, 2013

GSA Corrective Action Report, Potentiometric Surface in the Upper Aquifer Zone of the Upper Three Runs Aquifer at the GSA, F-Area Seepage Basin and F-Area Barrier Walls Third Quarter 2012

GSA Corrective Action Report, Potentiometric Surface in the Upper Aquifer Zone of the Upper Three Runs Aquifer at the GSA, F-Area Seepage Basin and F-Area Barrier Walls,Third Quarter 2012

To improve the F-Area HWMF barrier system, in 2011 SRS installed an extension onto the east side of the barriers. The barrier extension is ~350.5-m (~1,150-ft) long and includes a 61-m (200-ft) wide gate with base injection wells at the gate. The barrier is tied-in to the eastern most side of the existing barriers and was constructed using the same soil mixing techniques. Construction occurred in February and March 2011. The general location of the extension is shown on the plume maps in Volume II and on Figure 4. Figure 4 also shows the potentiometric surface and flow directions for the UAZ.

The barriers function as a funnel and gate system which increases tritium travel time allowing for more radioactive decay and decreasing tritium flux to FMB; and restricts the flow of other constituents to the gates, increasing the effectiveness of in situ treatment. Base injection, iodine treatment (silver chloride injection), and tritium flux reduction are discussed in more detail in Sections 5.1.3.2 through 5.1.3.4.

5.1.3.2 Base Injection

The primary objective of the base injection technology is reducing concentrations of metals and metallic radionuclides in the groundwater. Previous studies and current monitoring demonstrate that adjusting the acidic groundwater plume to neutral or background pH levels results in reduced concentrations of many metals and radionuclides in the groundwater.

In June 2005, SRS started the base injection system for the F-Area HWMF. Per the approved UIC permit, a dilute base solution was injected into the UAZ at the two gate areas located between the groundwater barrier walls (west and central gates). The injected solution consisted of sodium hydroxide and sodium bicarbonate mixed with domestic water to a pH of ~10. The base solution provides treatment of the acidic groundwater at the gates and is an integral component of the groundwater funnel and gate remedial system. The initial injection was completed in 2005.

Since the initial injection in 2005, injections have been performed almost every year either to deliver maintenance doses of base solution or to perform technology evaluations. In

2024, base injection was performed starting in March and continued into June at the central gate, then operated at the western gate starting in July and continued into November. A summary of base injection campaigns at the F-Area HWMF is provided in Table 6.

Construction of the barrier extension in 2011 created the east gate injection area. To date only one injection campaign has been performed in the east gate. From 2012 to 2013, 11,734,780 L (3.1M gal) were injected at the east gate. Since then, SRS has been monitoring groundwater conditions and additional injections of base have not been required at the east gate.

Table 6. F-Area HWMF Base Injection Volumes Injected (million gallons)

Year	West Gate	Central Gate	East Gate[1]	Wetlands	Totals
2005	7.4	5.1	--	--	**12.5**
2006	--	3.6	--	--	**3.6**
2007	5	0.9	--	--	**5.9**
2008	--	3.2	3.8[1]	4.8	**11.8**
2009	0.5	0.5	2.6[1]	13.1	**16.7**
2010	2.8	1.4	--	3.1	**7.3**
2011	--	--	--	1.1	**1.1**
2012	--	--	2.8[1]	3.2	**6.0**
2013	1.9	1.4	0.3[1]	--	**3.6**
2014	--	1.8	--	--	**1.8**
2015	--	--	--	--	--
2016	11.9	5.1	--	5.4	**22.4**
2017	0	0	0	11.5	**11.5**
2018	10.1	8.1	--	--	**18.2**
2019	--	--	--	2.6	**2.6**
2020	--	5.4	--	12.0	**17.4**
2021	10.6	6.9	--	--	**17.5**
2022	--	14.0	--	--	**14.0**
2023	--	7.5	--	--	**7.5**
2024	**5.4**	**6.7**	--	--	**12.1**
Totals	**55.6**	**71.6**	**9.5[1]**	**56.8**	**193.5**

1. In 2011, the east gate was renamed from injection wells FIB 27-29 to injection wells FIB 30-34.

The effects of injection vary across each of the injection areas, due to the differences in geochemical conditions and contaminant concentrations within the plumes, groundwater velocity, and proximity of the monitoring wells to the injection galleries. When base is injected, the portions of the aquifer impacted by the base can be identified by changes in

indicator parameters, such as tritium, nitrate, chlorides, conductivity, and pH. Monitoring one or more of these parameters before and after break-through of the injection front demonstrates that movement of the injected solution through the aquifer (from point of injection to the monitoring locations) occurs over a 100–150-day period at the central gate and a 150-200 day period at the western gate.

The base injection has been effective in neutralizing the acidity of the plume to natural pH levels (5.5-6). During a typical injection campaign, groundwater pH in the treatment zone is initially increased to levels approaching the injectate concentration. This serves to alter not only the groundwater chemistry (immediate effect), but also the surfaces of the aquifer sediments such that buffering persist after injection is stopped. Monitoring results reveal that after the initial increase in pH, the groundwater pH remains elevated for some period, due to buffering by the aquifer. This buffering effect persists for ~12 - 18 months at the central gate and ~30-plus months at the west gate. Cationic metals and radionuclides are less mobile at natural pH and once neutral pH levels prevail, there is no need to continue injections.

Base injection has been effective in the in situ precipitation of cationic radionuclides, most evident with strontium-90 and uranium-238. In 2004, before the commencement of base injection, the concentrations of strontium-90 and uranium-238 at well FSB131D directly below the central gate were 68.4 pCi/L and 192 pCi/L, respectively. In 2024, the maximum concentration of both constituents has decreased to 38.5 pCi/L for strontium-90 and 7.53 pCi/L for uranium-238, demonstrating the effectiveness of the base injection system. Furthermore, higher concentrations of each constituent are present directly upgradient of the injection system. Concentrations at well FSB126D were 140 pCi/L and 112 pCi/L for strontium-90 and uranium-238, respectively, indicating that both radionuclides are precipitating as the plume flows through the base injection area. This effect is also evident in the plume map for strontium-90 (Map 4A, Volume II) and uranium-238 (Map 7A, Volume II), where an area of cleaner water exists down gradient of the injection area. The precipitation of these cationic metals and radionuclides has allowed concentrations of these constituents in FMB to fall below their respective GWPS, as well as reducing the

concentration of these constituents in the seepline surface water and groundwater. The continued use of the system will ensure concentrations remain below the GWPS in FMB (Phase 2a goal) and continue to reduce the concentrations of cations in the seepline surface water (Phase 2b goal) and in the groundwater at the F-Area HWMF.

The engineered barriers and base injection continue to reduce concentrations of cations and metallic radionuclides down gradient of the injection areas and in the seeplines. Although concentrations of many constituents are now below GWPS limits in surface water at the seepline, some constituents are still above GWPS limits. To facilitate meeting corrective action goals, SRS is investigating potential amendments that could be used in the seepline to immobilize contaminants in situ prior to discharging to surface water. In 2019, SRS tested ten materials in the laboratory for potential use as amendments in the seepline. The laboratory studies identified at least three materials that warrant further study. In 2020, SRS executed additional laboratory testing and developed a field study plan to evaluate individually the effectiveness of the materials in a system representing the in situ groundwater conditions along the FMB seepline. In 2021, SRS executed field testing of four potential amendments: a porous iron composite material, a zero valent iron material, a granular activated carbon (GAC) material, and a zero valent iron and GAC mixture. Each of the sorbent materials was tested individually over a two-week period by pumping groundwater from a piezometer with known contamination through a flow cell filled with the sorbent material. During the testing of each sorbent material, samples were taken of the groundwater before flowing through the flow cell containing the sorbent and after flowing through the sorbent. The canisters containing the sorbent material were also sent to the lab for analysis. Field tests for two mixtures of the test sorbents were executed early in 2022.

The field testing utilized groundwater pumped directly from a well with an average iodine-129 concentration of 32.3 pCi/L. The experiments were designed to simulate the conditions of a permeable reactive barrier. In the initial field study, the most effective sorbent was GAC. The GAC achieved an average of 76.2% removal of the iodine present in the groundwater and reached a minimum concentration of 0.1 pCi/L after the water

passed through the sorbent material. A commercial sorbent (RED) that contained a mixture of GAC and iron-based material removed on average 61.3% of the iodine and reached a minimum concentration of 9.34 pCi/L. However, for both sorbents the iodine concentration in the effluent increased over time during the experiments. Additional experimentation is needed to determine if the implementation of these sorbents could be adjusted to increase iodine sorption to achieve and maintain the GWPS of 1 pCi/L. Another type of sorbent or a combination of more than one sorbent may be necessary to effectively sorb iodine-129, especially considering the complex speciation chemistry of iodine. SRS plans to continue studying the GAC and RED materials along with innovative biochar and organoclay materials. Recent literature suggests new sorbents like biochars, organoclays, and similar organic-based materials show significant promise for attenuating iodine. If the additional studies identify promising amendments for a treatability study, one would be proposed at that time. SRS will continue to implement base injection and silver chloride injection at F-Area HWMF as needed per the approved CAP while evaluating the potential use of amendments to assist with achieving corrective action goals at the seeplines of FMB.

5.1.3.3 Iodine Treatment

In 2009, a treatment pilot study was initiated to evaluate the removal of iodine-129 by the injection of silver chloride into the plume. Ultra-fine ground silver chloride particles were mixed with domestic water to form an aqueous suspension and then injected into the water table using wells FIB27R, FIB-28R, and FIB29R. Approximately 4,277,515 L (~1.13M gal) of suspension (45.4 kilograms [kg] 100 pounds [lb] of silver chloride) were injected. The pilot test demonstrated that a suspension of silver chloride could successfully be dispersed in the aquifer and that silver chloride could reduce the concentration of iodine-129. Levels of iodine-129 were reduced between 55 and 70%.

In 2011, a Temporary Authorization was approved to deploy silver chloride technology at the central gate as part of the corrective action. During August and September 2011, per an approved UIC permit, an aqueous suspension of ultra-fine ground silver chloride particles was injected into the UAZ of the UTRA. Seven temporary injection points,

installed by a cone penetrometer technology (CPT) rig, were used to place the silver chloride into the subsurface. Depth discrete placement of the amendment with the CPT rig was used to achieve better distribution in the subsurface versus the traditional wells used in the 2009 pilot study. The 2011 injection locations are shown in Figure 5.

The silver chloride concentrate consisted of ground silver chloride particles suspended in a food grade propylene glycol carrier fluid. This concentrated material was diluted with domestic water prior to injection into the subsurface. The dilution factor was roughly 460:1 (domestic water to silver chloride concentrate). The resulting concentration of silver chloride in the diluted solution was ~130 milligrams per liter (mg/L).

The treatment zone (7.6- to 15.2-m [25- to 50-ft] below ground surface [bgs]) was established from the top of the water table down to the tan clay confining zone. Injection was performed starting at the bottom of the aquifer and proceeded upward placing a specific volume of amendment into each zone at 0.76-m (2.5-ft) intervals. The minimum quantity of diluted solution injected at each of the seven injection locations was 40,882.4 L (10,800 gal). Overall, 291,143.6 L (76,912 gal) were injected across the seven locations. This equates to ~29 kg (~64 lb) of metallic silver placed into the subsurface.

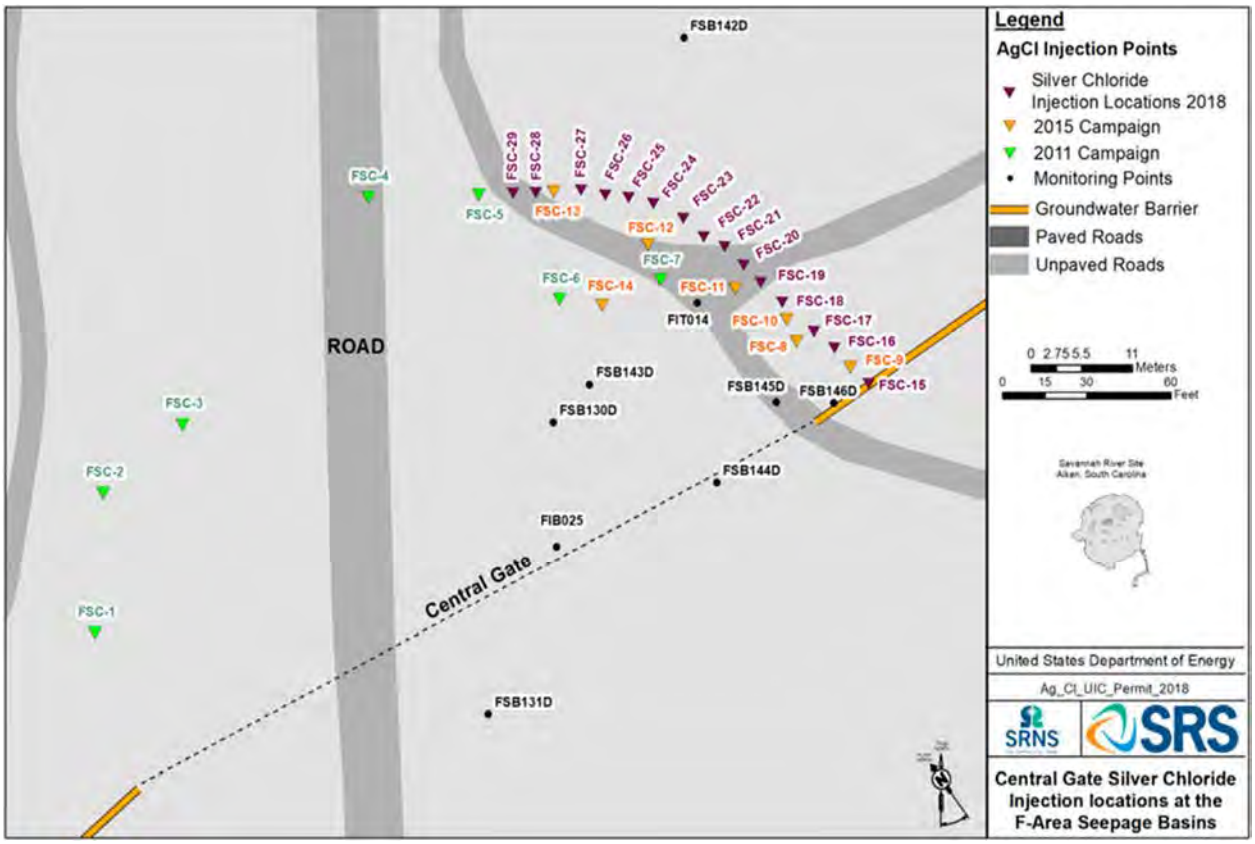


Figure 5. F-Area HWMF Silver Chloride Injection Layout

SRS evaluated the effectiveness of the treatment zone at the central gate on iodine-129. A reduction of iodine-129 was observed in two of the monitoring wells (FSB130D and FIT14) closest to the injection zone. The degree of reduction due to the silver chloride ranged from 50 to 75%. The monitoring data also demonstrated that the silver chloride particles do not migrate a significant distance away from the treatment zone. Data from monitoring wells located further from the injection zone were ambiguous due to changing hydrology (and plume movement) through the central gate resulting from installation of an extension to the adjacent groundwater barriers a few months before the injection. Due to shifting groundwater flow, iodine-129 increased at one of the monitoring wells. This indicated a need for additional treatment of iodine-129 at other areas within the central gate.

Based on this first deployment of silver chloride at the central gate, SRS concluded that 1) silver chloride effectively sequesters iodine-129 in situ, 2) the silver chloride particles do not migrate a significant distance away from the treatment zone, 3) the barrier extension improved control of the plume (increased water volumes and contaminant mass going through the central gate), and 4) additional silver chloride is needed at the central gate to establish a more effective treatment zone for iodine-129.

During the placement of silver chloride in 2011, only half of the permitted and purchased quantity (i.e., ~291,476.7 L [77,000 gal] diluted with potable water) was injected. In 2015, SRS injected the remaining quantity of silver chloride in the central gate in order to boost the treatment effectiveness. During June and July 2015, 364.9 L (96.4 gal) of silver chloride concentrate were injected into the UAZ on the eastern side of the central gate. Injection of the material was performed in a similar manner as in 2011 using seven temporary injection points. Including the water used to inject the material, a total of 362,642.4 L (95,800 gal) was injected. The 2015 injection locations are shown on Figure 5.

Based on the monitoring data collected, a reduction of iodine-129 has been observed in wells near the injection locations. Specifically, wells FSB 143D, FSB 144D, FSB 145D,

FIT 14, and FIB 26 measured lower concentrations of iodine-129 following the injection of silver chloride. The degree of reduction ranged from 25% to 65%. There was no change in iodine-129 at the up-gradient well FSB 142D.

Based on the pilot test and the two rounds of injection at the central gate, silver chloride has been demonstrated effective at sequestering iodine-129 in situ. Variations in the degree of reduction have been observed during each deployment. Monitoring points closest to the injection show the greatest reduction in concentration, and wells further away show less of an impact. In 2018, a UIC Permit was approved for the third deployment of silver chloride at the F-Area HWMF. This deployment of silver chloride was again placed at the central gate with the intent to augment previous silver chloride injections and increase robustness through further development of a permeable in situ treatment zone of silver chloride reactive particles along the eastern half of the central gate, where the majority of the iodine-129 flux occurs. A total of 15 uniformly spaced direct-push injection points were used to inject 624.6 L (165 gal) of concentrated silver chloride. The spacing between the injection points for this injection campaign was based on an expected distribution of silver chloride particles between 1.2 to 2.4 m (4 to 8 ft) from the injection location. Injections for the third deployment of silver chloride began in September 2018 and were completed in May 2019. The injection locations are shown on Figure 5.

In 2019, SRS prepared and executed a strategy to assess the distribution of silver chloride particles in the subsurface resulting from the 2019 injections. To assess the distribution, 10.2-cm (4-in.) diameter soil cores were collected from the injection zone at four locations along a transect extending upgradient away from one of the 2019 injection locations (FSC-24). Cores were collected at distances of 0.46-m (1.5-ft), 1.2-m (4-ft), 2.4-m (8 ft), and 4.6-m (15-ft) stepping away from the location where silver chloride was injected at FSC-24. Intervals of the core were identified in the field to be sampled and analyzed for silver in an attempt to assess the distribution of silver chloride in the subsurface after injection. Results from the sampling showed the majority of the injected silver is located within 0.46 m (1.5 ft) of the injection location and within the top of the injection zone (11- to 1.2-m [36- to 40-ft]) bgs and the bottom of the injection zone (15.2- to 18.3-m [50- to 60-ft] bgs).

Very little silver was detected from 12.5- to 16.8-m (41- to 55-ft) bgs. This is likely due to heterogeneity of the geology in the area. An estimated 54% of the silver injected remained within 1.2 m (4 ft) of the injection zone, but an estimated 22% of the silver injected was located between 1.2 and 2.1 m (4 and 7.4 ft) from the injection zone. Silver was not detected in a significant number of samples from the core located 4.6 m (15 ft) from the injection location. Results from the study show that the silver chloride is being distributed between 1 and ~2.4 m (8 ft) from the injection locations which is consistent with the design spacing of injection locations used in the 2018-2019 campaign.

Iodine-129 remains the only constituent consistently greater than the GWPS (other than tritium) in FMB (Phase 2b F-Area HWMF Corrective Action Goal). The 2021 modifications to the Permit revised the corrective action goal date to reduce the concentration of iodine-129 in FMB to levels that are less than the GWPS to January 14, 2032 (note: the Permit includes an agreed-to-understanding with SCDES that SRS may request an extension to this date as part of the permit renewal process, e.g., in the event SRS needs additional time for its remedial technologies to work to achieve remedial goals). SRS is implementing silver chloride technology to reduce the concentration of iodine-129 in groundwater at F-Area HWMF and in FMB and continues to evaluate the need for additional silver chloride injection(s) in the future.

5.1.3.4 Tritium Flux

Overall, the flux of tritium to FMB from F-Area HWMF has been declining since 2003. Flux is calculated from the monthly paired tritium concentration and flow measurements at strategic locations (to isolate sources) within FMB. The monthly fluxes are then averaged over a 1-year period to account for seasonal variability. The total tritium flux to FMB from F-Area HWMF for calendar year 2024 was 97curies per year (Ci/yr), a reduction of ~85% compared to the baseline flux in 2000 (660 Ci/yr in 2000 versus 97 Ci/yr in 2024. A combination of radioactive decay, increased travel times, the presence of subsurface barriers, and the presence of the F-Area HWMF cap likely contributed to this

decrease in flux. The annual flux from the F-Area HWMF to FMB since 2003 is tabulated in Table 7.

Table 7. F-Area HWMF Annual Tritium Flux to FMB

Year	Tritium Flux *(Ci/yr)*	Reduction*
2000	660	NA
2003	352	47%
2004	352	47%
2005	254	61%
2006	177	73%
2007	173	74%
2008	168	74%
2009	115	82%
2010	240	64%
2011	117	82%
2012	141	79%
2013	243	63%
2014	256	61%
2015	195	70%
2016	187	72%
2017	146	78%
2018	133	80%
2019	122	81%
2020	159	76%
2021	106	84%
2022	88	87%
2023	60	91%
2024	97	85%

*Percent reduction from baseline established in year 2000.

5.1.4 Status of Technology Demonstration

The Savannah River National Laboratory (SRNL) along with the Pacific Northwest National Laboratory (PNNL) is performing a technology demonstration for the United States Department of Energy (USDOE) at the F-Area HWMF beginning in calendar year 2022 with ~5 years of data collection. This technology demonstration will evaluate the application and feasibility of Electrical Resistivity Tomography (ERT) as a monitoring technology for capped waste units and its potential application elsewhere within the USDOE complex. The purpose of the study is to evaluate the application of ERT as a non-intrusive, long-term monitoring technology of the RCRA cover system performance. ERT

is a geophysical measurement tool that can image the electrical conductivity distribution of the subsurface. For this application, ERT will be used to monitor subsurface electrical conductivity to identify areas where soil moisture is changing beneath the cap's low-permeability clay layer. The images taken of soil moisture content over an estimated 5-year study period can be compared and used to diagnose anomalous conditions such as a breach or failure of the low-permeability layer of the cap system. The ERT system was installed in July 2022 and consists of 8 shallow trenches that were created across the cap to bury the cables containing 128 electrodes into the top 15.2 cm (6 in.) of soil. The system covers the north end of Basin F-3. The electrodes are installed in the topsoil layer and do not penetrate the much deeper drainage layer and protective barrier that begins at 61-cm (24-in.) below the surface.

The collection of ERT measurements began on September 28, 2022. Changes in soil moisture beneath the clay cap can be investigated by collecting time-lapse measurements of bulk soil conductivity using the ERT system. An ERT measurement is collected by inducing current flow between two electrodes and measuring the resulting voltage across two different electrodes. Many such measurements with different electrode pairs are collected during an ERT survey to produce a subsurface ERT image. The initial survey consisted of 9,195 individual measurements, which required approximately one hour to collect. The initial survey on September 28, 2022, is considered the baseline survey. A comparison of subsequent surveys against the baseline survey can identify changes in soil bulk electrical conductivity beneath the clay cap. Changes to bulk electrical conductivity are anticipated to be governed by precipitation-driven changes in moisture content. Thus, ERT imaging can detect changes in moisture content of soils beneath the clay cap.

Since September 28, 2022, ERT surveys have been scheduled every 6 hours. In early June 2023, the electrical equipment controlling the ERT system failed, and the system went offline. SRS received and installed replacement control equipment from the USDOE PNNL and had the ERT system operating again on August 30, 2023.

5.2 H-Area HWMF Corrective Action Program

The current corrective action for the H-Area HWMF includes an engineered low-permeability cap over the seepage basins, an engineered groundwater barrier system and a base injection system in the wetlands of FMB.

SRS completed installation of the engineered groundwater barriers at H Area in 2004. The groundwater barriers are the replacement remedial action for the groundwater pump and treat system. The engineered barriers were designed to reduce the flow of groundwater through the residual contamination beneath the waste unit in order to better manage tritium and metal releases to surface waters. Upon installation of the barriers, the water levels adjacent to the walls changed as the groundwater flow patterns adjusted. Groundwater levels on the up-gradient side of the walls increased, levels down gradient of the walls decreased, and the horizontal gradient beneath the waste unit flattened.

SRS constructed a base injection system at H Area in 2010 to augment the remedial action. The injection system provides treatment for the acidic plume and metals within the wetlands prior to groundwater discharging to FMB. Initial operations began in September 2010 and were completed in June 2013. A second injection campaign began in July 2019 and was completed in May 2020.

5.2.1 Surface Water Monitoring at the Seeplines

SRS has five surface water monitoring stations within the seeplines below the closed H-Area Seepage Basins. These monitoring stations support corrective action effectiveness determinations for the Phase 2b corrective action goals of the Permit.

Similar to the monitoring strategy used for surface water in FMB and the wetland piezometers, during the third quarter of each year, the seepline surface water stations are analyzed for the full suite of GWPS constituents. During the remaining quarters, the stations are analyzed for a reduced suite of GWPS constituents determined based on the analytes detected above the GWPS during the full suite sampling event. If a constituent is not detected during the third quarter sampling event, it is excluded from further analyses

during the remaining quarters. However, gross alpha, nonvolatile beta, tritium, nitrate-nitrite, and mercury are sampled for during all quarterly events. The sample results are presented in Appendix B, Table B-4, Volume I, and the locations are shown on Map 1A, Volume II.

In 2024 at the H Area seepline (Phase 2b corrective action goals), four of the five seepline surface water locations were sampled. HAS-113 was dry during each quarterly sampling event. Iodine-129, nonvolatile beta, strontium-90, and tritium exceeded the GWPS in surface water at the seepline. Cobalt (37.2 ug/L), vanadium (19.1 ug/L), gross alpha (46.7 pCi/L) and radium-226 (80.5 pCi/L) also exceeded the GWPS, all in the same sample. These exceedances appear to be an artifact of the elevated turbidity of the sample (150 NTUs). Iodine-129, strontium-90 and tritium were the most widespread constituents in surface water at the wetlands, exceeding the GWPS at the four locations that were able to be sampled in 2024. The maximum concentration of iodine-129 (11.2 pCi/L) and strontium-90 (246 pCi/L) was measured at location HAS-103. The maximum concentration of tritium (181 pCi/mL) was measured at location HAS-106. Although detected above the GWPS at the seepline, iodine-129 and strontium-90 were below the GWPS in FMB surface water adjacent to the H-Area HWMF.

5.2.2 Effectiveness of the H-Area HWMF Corrective Action Program (IVC.B.11.b.x)

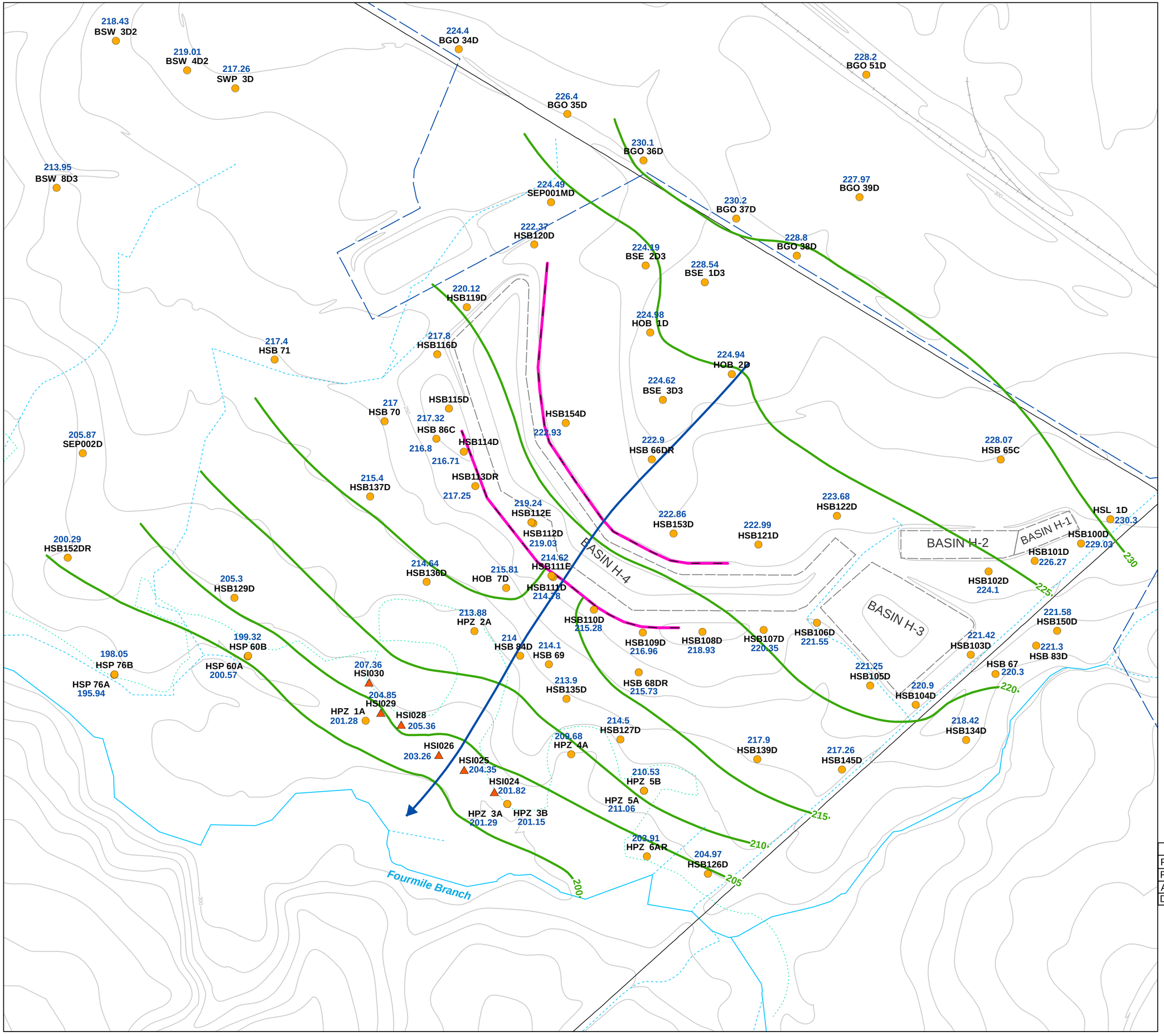
5.2.2.1 Groundwater Barriers

In 2004, SRS installed two groundwater barriers at the H-Area HWMF. One barrier was placed up gradient of Basin H-4 and a second barrier was placed down gradient of the basin. Approximately 963.2 linear meters (~3,160 linear feet) of low-permeability walls were installed from just below the ground surface to the base of the UAZ. Construction utilized an in-situ soil mixing technique to blend pozzolan cement and attapulgite clay with native soils. A small percentage of caustic was also added to the cement to facilitate curing. Upon hardening, the resulting soil/cement mixture formed a low-permeability subsurface barrier ~0.85-m (~2.8-ft) thick on average. Configuration of the engineered barriers is shown on the plume maps in Volume II and on Figure 6.

Placement of the barriers altered groundwater levels near the walls. After installation of the barriers, water levels on the up-gradient side increased between 0.9 to 1.8 m (3 to 6 ft). Water levels down gradient of the barriers declined 0.3 to 0.6 m (1 to 2 ft).

Installation of the barriers has resulted in a flattening of the water table on the up gradient and down gradient sides. As water backs up behind the barriers, the head level rises, resulting in a smaller horizontal flow gradient. Due to lower gradients, groundwater travel times at the seepage basins have increased, resulting in reduced transport of contamination to surface water and seeplines, and added time for radioactive decay. Figure 6 shows the potentiometric surface for the UAZ.

Figure 6. H-Area HWMF Groundwater Barriers and Potentiometric Surface



Groundwater Contours

(5 ft intervals) (ft msl)

Groundwater Flow Direction

Station Type

Extraction Well

Injection Well

Monitoring/Piezometer Well

Seepline Well

Groundwater Contours

Type

(5 ft intervals) (ft msl)

Groundwater Flow Direction

BASIN CLOSURE BOUNDARY

BARRIER WALL

BARRIER WALL EXTENSION

MAIN/PAVED ROAD

FACILITY AREA BOUNDARY

RAILROAD

SEEPLINE

STREAM

OTHER SURFACE FLOW PATTERN

TOPOGRAPHIC CONTOUR (10 FOOT INTERVAL)

PLANT NORTH

TRUE NORTH

N

3.6

2.2

0 100 200 400 600 800 Feet

0 25 50 100 150 200 Meters

Prepared By: Ashley Shull
Reviewed By: Kevin Boerstler
Approved By: Jeffrey Thibault
Date: April 30, 2013

GSA Corrective Action Report, Potentiometric Surface in the Upper Aquifer Zone of the Upper Three Runs Aquifer at the GSA, H-Area Seepage Basin and H-Area Barrier Walls Third Quarter 2012

GSA Corrective Action Report, Potentiometric Surface in the Upper Aquifer Zone of the Upper Three Runs Aquifer at the GSA, H-Area Seepage Basin and H-Area Barrier Walls,Third Quarter 2012

5.2.2.2 Base Injection

In 2010, SRS constructed and commenced operations of a base injection system at the H-Area HWMF. The primary objective of the base injection technology at H Area is to reduce concentrations of metals and metallic radionuclides in the groundwater beneath the wetlands of FMB. Previous injections at the F-Area HWMF demonstrated that adjusting the acidic groundwater plume to neutral or background pH levels results in reduced concentrations of many metals and metallic radionuclides.

The injected solution consists of sodium hydroxide and sodium bicarbonate mixed with domestic water to a pH of ~10. The base solution provides treatment of the acidic groundwater beneath the wetlands and is an integral component of the groundwater barrier remedial system.

SRS routinely monitors the effects of base injection and evaluates the need for additional base. The previous injection campaign at H Area began in July 2019 and was completed in May 2020. At H Area, operation of the base injection system was not required during 2024 (Table 8). Adjustment of pH has been achieved locally at H Area and SRS is observing the effects of the base injection prior to potentially injecting additional base. Since 2011, SRS has injected ~227,881,800 L (~60.2M gal) of base solution at H Area.

The engineered barriers and base injection continue to reduce concentrations of cations and metallic radionuclides down gradient of the injection areas in the seeplines. Although concentrations of many constituents are now below GWPS limits in surface water at the seepline, some constituents are still above GWPS limits. To facilitate meeting the corrective action goals at the H-Area HWMF, SRS is investigating potential mineral amendments that could be used in the seepline to immobilize contaminants in situ prior to discharging to surface water. See discussion in Section 5.1.3.2 for information on the amendment studies. If the studies identify promising amendments for a treatability study, one would be proposed at that time. SRS will continue to implement base injection per the approved corrective action plan while evaluating the potential use of amendments to assist with achieving corrective action goals at the seeplines of FMB.

Table 8. H-Area Base Injection Flow Rate 2024

Well Number	January		February		March		April		May		June		July		August		September		October		November		December		12-month Well Volume
	Tot gal	Avg gpm	Tot gal	Avg gpm	Tot gal	Avg gpm	Tot gal	Avg gpm	Tot gal	Avg gpm	Tot gal	Avg gpm	Tot gal	Avg gpm	Tot gal	Avg gpm	Tot gal	Avg gpm	Tot gal	Avg gpm	Tot gal	Avg gpm	Tot gal	Avg gpm	gal
HSI-001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-003	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-004	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-005	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-006	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-007	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-008	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-009	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-011	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-012	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-013	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-014	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-015	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-016	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-017	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-018	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-019	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-020	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-021	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-022	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-023	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-025	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-026	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-027	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-028	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-029	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
HSI-030	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Monthly Volume	0		0		0	0	0		0		0		0		0		0		0		0		0		0

5.2.2.3 Tritium Flux

Overall, the flux of tritium to FMB from H-Area HWMF has been declining. Flux from H-Area HWMF to FMB is calculated in the same way as F-Area HWMF, i.e., from the monthly paired tritium concentration and flow measurements at strategic locations (to isolate sources) within FMB since 2003. The monthly fluxes are averaged over the period of a year to account for seasonal variability. The total tritium flux to FMB from H-Area HWMF for calendar year 2024 was ~23 Ci/yr, a reduction of ~90% compared to the baseline flux in 2000 (240 Ci/yr in 2000 versus 23 Ci/yr in 2024). A combination of radioactive decay, increased travel times, the presence of subsurface barriers, and the presence of the H-Area HWMF and ORWBG caps likely contributed to this decrease in flux. The annual flux from the H-Area HWMF to FMB since 2003 is tabulated in Table 9.

Table 9. H-Area HWMF Annual Tritium Flux to FMB

Year	Tritium Flux *(Ci/yr)*	Reduction*
2000	240	NA
2003	221	8%
2004	147	39%
2005	114	52%
2006	116	52%
2007	81	66%
2008	90	62%
2009	67	72%
2010	50	79%
2011	56	77%
2012	44	82%
2013	50	79%
2014	52	78%
2015	54	77%
2016	42	82%
2017	41	83%
2018	39	83%
2019	42	82%
2020	49	80%
2021	34	86%
2022	19	92%
2023	27	89%
2024	23	90%

*Percent reduction from baseline established in year 2000.

5.3 Description of the MWMF Corrective Action Program

In accordance with the agreement with the SCDES, each of the four plume areas are addressed under separate corrective actions.

SWP

The SWP was the first of the four plume areas addressed for corrective action under the 2000 RCRA Permit Renewal Application. The 2013 RCRA Permit Renewal Application is the current CAP for the SWP. On September 12, 2023, SRS submitted the revision 0 permit renewal application for the MWMF. Once the renewal application has been reviewed and approved, a revised RCRA permit will be issued for the MWMF. The SWP

is the area to the south of the western section of the ORWBG. This plume extends from the ORWBG to FMB, with the primary contaminants consisting of tritium, TCE, and 1,4-dioxane. These groundwater contaminants are currently discharging to the surface at a natural seepage area north of FMB at the OFED.

The SWP Module of the Permit, which included approval of the CAP, was issued on September 30, 2003, and became effective on October 30, 2003. This has been superseded by the 2014 Permit Renewal issued by the SCDES on February 11, 2014, and last modified in November 2021. This modification became effective on December 15, 2021.

The SWP CAP is in Phase 1 with the following objectives:

- reduction of tritium flux from the SWP Area to FMB by 70% using phytoremediation and natural attenuation (radioactive decay)
- reduction of volatile organic compound (cVOC) and 1,4-dioxane concentrations using phytoremediation and natural attenuation
- natural attenuation for mercury
- minimization of human exposure to constituents of concern in the SWP area using institutional controls (e.g., restricted access to the general public)

The potential for human exposure to contaminated groundwater and seepline areas in the SWP is managed to prevent exposure of on-site workers during sampling activities. These exposures are mitigated through the use of personal protective equipment and routine training regarding the handling of contaminated sample media. Unauthorized access to seepline areas by on-site workers is restricted through the Site Use/Site Clearance Program. SRS restricts access to the general public and trespassers using security procedures and equipment, 24-hour surveillance systems, artificial and natural boundaries, control entry systems, and warning signs in place at the SRS boundary.

In 2004, mercury was detected in one POC well (BGO 33C) with values near the GWPS (2 ug/L). Consequently, mercury has been added to the GWPS for the SWP, and passive natural attenuation was selected as the remedial component for mercury in the UAZ and LAZ.

The installation of a low-permeability cap at the ORWBG was completed, in accordance with the GSACU signed ROD, in 2007. The Revision 1 PCR/CMIR/RACR was approved by the USEPA on May 21, 2008, and the SCDES on May 22, 2008, respectively. Final USEPA concurrence was received on June 25, 2008. The low-permeability cap is expected to provide source control for the SWP mercury plume and other constituents (iodine-129, technetium-99, 1,4-dioxane), by reducing infiltration and flux to the groundwater.

SRS monitored the BSW, BGO, and SWP wells for mercury to better determine plume attenuation. Sample results indicate that mercury is above the GWPS in only two wells in the proximal and central areas of the plume. However, mercury is not affecting the pond (< method detection limit [0.02 ug/L]). All exceedances occur in the LAZ of the UTRA. In 2024, the maximum result was 5.08 ug/L at SWP 1C. During a detailed evaluation of mercury in 2005, there were no exceedances of filtered and unfiltered mercury in the LAZ or the UAZ of the UTRA at the distal portion of the SWP near FMB, which indicates significant mercury attenuation (Figure 7).

SRS will continue to monitor the natural attenuation of mercury in the SWP, and the benefit achieved by installation of a low-permeability cap on the ORWBG.

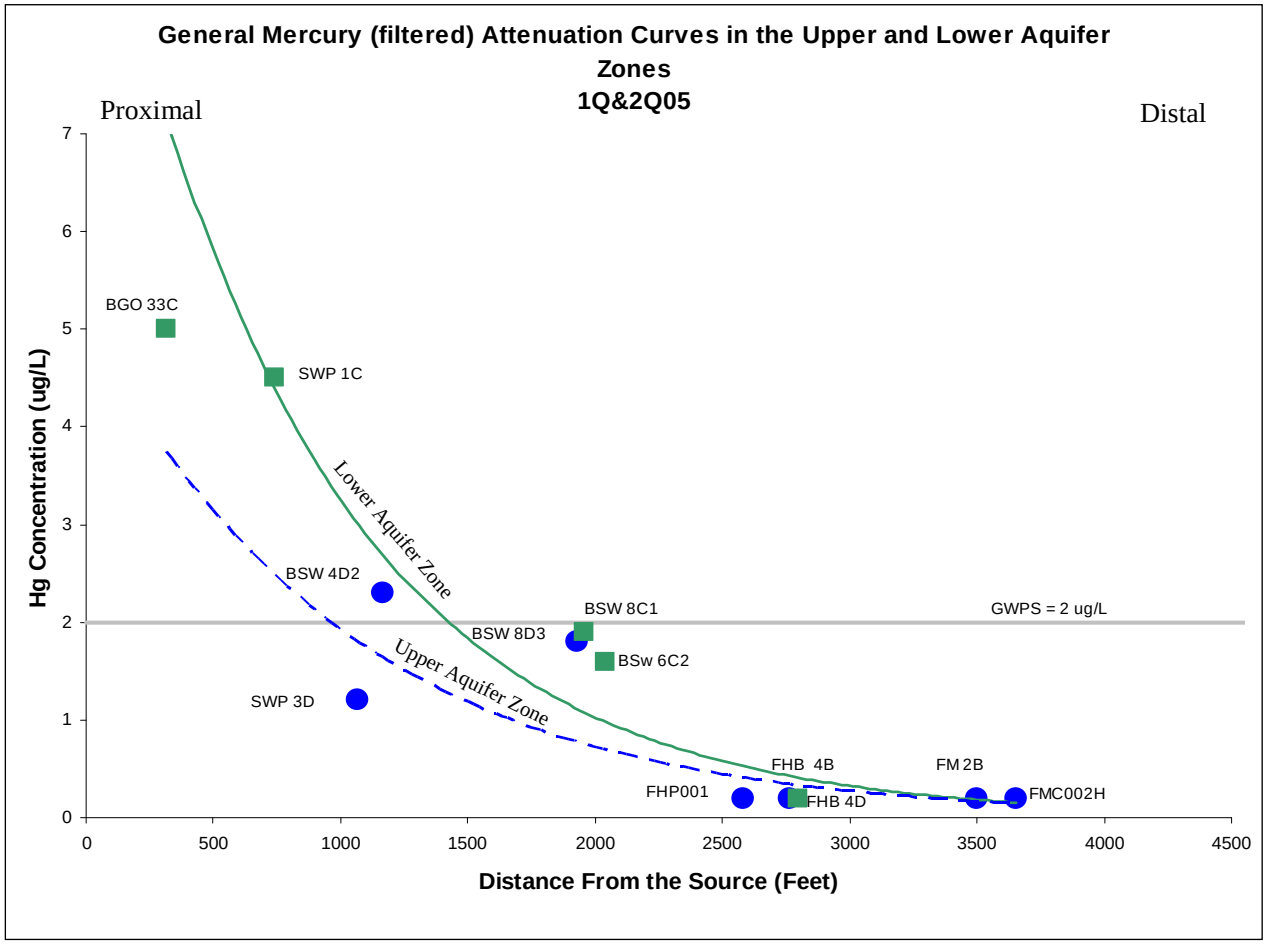


Figure 7. MWMF General Mercury Attenuation Curves (UAZ and LAZ)

SEP

The 2013 RCRA Permit Renewal Application (Revision 2) is the current CAP for the SEP. On September 12, 2023, SRS submitted the revision 0 permit renewal application for the MWMF. Once the renewal application has been reviewed and approved, a revised RCRA permit will be issued for the MWMF. The SEP is the area to the south of the eastern section of the ORWBG. This plume extends from the ORWBG and comingles with the H-Area HWMF plume. The primary contaminants include tritium and TCE.

The SEP Module of the Permit is included in the November 30, 2021, modification of the 2014 Permit Renewal, which was issued on February 11, 2014. This modification became effective on December 15, 2021.

The SEP CAP is in Phase 1 and includes the following main objectives:

- reduction of cVOC and tritium (radioactive decay) concentrations using natural attenuation

In order to achieve these objectives, the following actions have been defined in the Corrective Action Program:

- low permeability cap over the ORWBG (source control)
- passive natural attenuation of cVOCs and tritium in the original SEP area within the LAZ sourced near monitoring wells BGO-36, BGO-37, and BGO-38

The CAP also includes a contingent correction action (e.g., a reactive zone composed of edible oil) to be implemented in the LAZ (near the POC) to degrade cVOCs. This will be implemented if cVOC concentrations reach unacceptable levels in monitoring wells BGO-35C, BGO-49C, and HIW-5MC. Levels would be unacceptable when cVOC releases have the potential to impact surface water in FMB (greater than the MCL) or create a large high concentration plume. SRS will evaluate the need to implement this contingency remedy if concentrations of TCE in wells exceed 1,000 ug/L in the vicinity of the SEP.

The SEP is located immediately up gradient of the H-Area HWMF. Prior to the H Area WTU injection operations, the tritium concentrations in the UAZ of the UTRA were

slightly above the GWPS with a maximum concentration of ~43 pCi/mL. Hot spots in the LAZ of the UTRA were present in 1997 and ranged from 200 pCi/mL to 260,000 pCi/mL (BGO 37C) (Figure 8). Operation of the H Area WTU injection wells between 1997 and 2003 has influenced the tritium concentrations in the SEP, as documented in previous CARs.

Since the 1990s, tritium concentrations have decreased significantly near the source (ORWBG) in the LAZ of the UTRA. However, the concentrations remain above the GWPS. In 2009, tritium at well BGO 37C was 19,100 pCi/mL. The concentration at this well continues to be relatively high (4,190 pCi/mL and 6,580 pCi/mL during the first and third quarter of 2024, respectively), but appears to have stabilized and has followed an overall decreasing trend since 2013. Tritium in the LAZ at the edge of the ORWBG increased temporarily following construction of the low-permeability cap. The rise in concentration is believed to be due to the reduction in recharge due to the cap, and in previous years, to the lower-than-normal precipitation pattern. Reduced recharge of the LAZ beneath the cap can result in higher concentrations because there is less dilution. Along with reduced recharge, the cap is expected to reduce the migration of contamination from the buried waste to the groundwater. The tritium concentrations in well BGO 37C have decreased with time as shown in the time series plots in Appendix E.

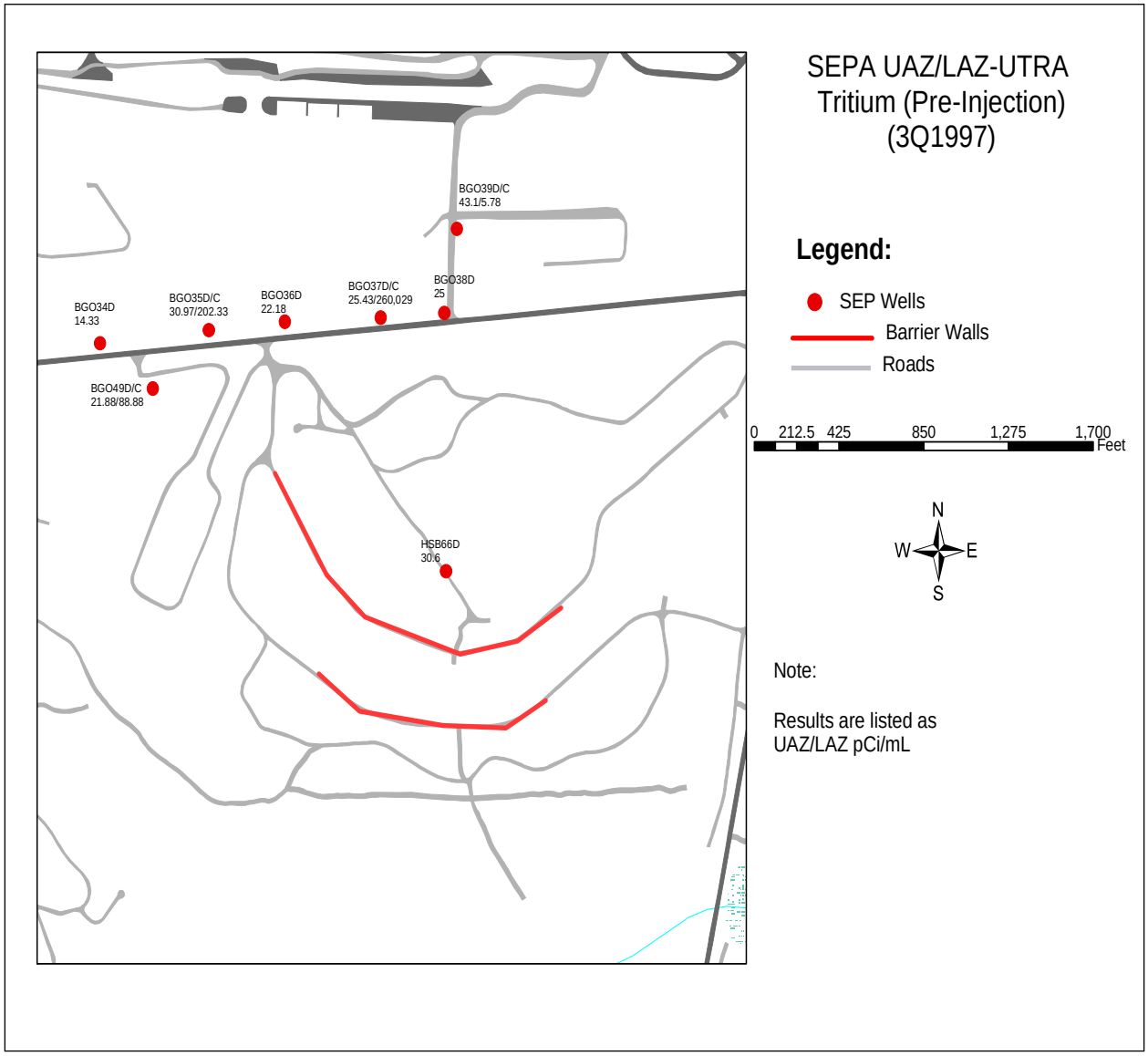


Figure 8. MWMF Southeast Plume Area (UAZ/LAZ-UTRA) Tritium Concentration Pre-Injections

Down gradient from the ORWBG at assessment wells in the LAZ (close to BGO 37C and the LAZ plume from the H Area WTU injection), tritium concentrations ranged from 750 pCi/mL at BSE 2CR1 to 3,650 pCi/mL at HIW 5MC1 in 2005. The 2024 results at HIW 5MC1 (714 pCi/mL) show that concentrations at this well have decreased over time. Concentrations at BSE 2CR1 have increased with time and in 2024 was 3,260 pCi/mL. However, the assessment monitoring well that is further down gradient of the injection plume (HSB 154C) continues to be low in concentration (444 pCi/mL) relative to concentrations closer to the ORWBG (6,580 pCi/mL at BGO 37C), thus demonstrating the slow travel time in the LAZ as determined in 2005 (Figure 9).

The original CAP was submitted for the tritium in the SEP in Revision 6 of the 2000 Part B Renewal Application. The CAP assumed that the SEP tritium would be captured by the H Area WTU extraction well network (hydraulic control). However, the H Area WTU was placed in dry lay-up during October 2003 and has been replaced by a subsurface barrier system immediately up gradient and down gradient of Seepage Basin H-4 and extending down through the UAZ of the UTRA to the Tan Clay Confining Zone. The barriers will have no effect on the LAZ of the UTRA. However, the engineered barrier will create a longer flow path allowing more time for tritium decay in the UAZ of the UTRA between the SEP and FMB. The travel time from the SEP to FMB in the LAZ of the UTRA is naturally slower than the UAZ, due to the low aquifer hydraulic conductivity. This allows for considerable tritium decay in the LAZ. Estimates indicate that the travel time in the LAZ of the UTRA will allow for eight to ten half-lives, thereby reducing a concentration of 7,350 pCi/mL to 7.2 pCi/mL (Figure 10).

Construction of the low-permeability cap at the ORWBG was completed in accordance with the GSACU signed ROD. The cap is expected to reduce infiltration and tritium flux in the SEP. SRS believes that radioactive decay along with the long travel time and the source control for the ORWBG will be sufficient to manage the tritium releases associated with the SEP and that natural attenuation with monitoring is an effective remedy. SRS will continue to monitor tritium in the SEP to verify the benefit achieved by installation of the H Area groundwater barrier and a low-permeability cap on the ORWBG.

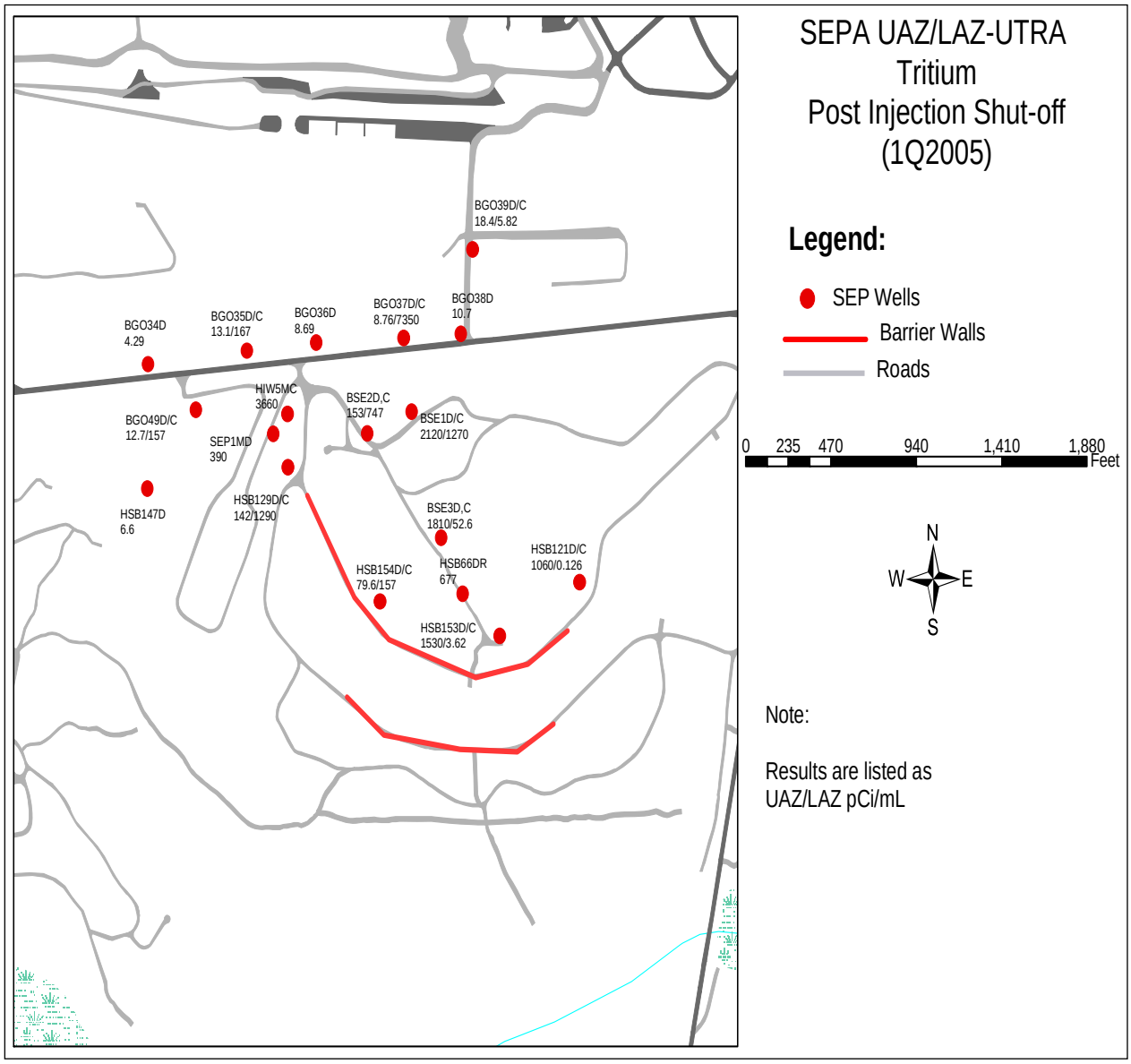


Figure 9. MWMF Southeast Plume Area (UAZ/LAZ/UTRA) Tritium Concentrations Post Injection Shut-Off

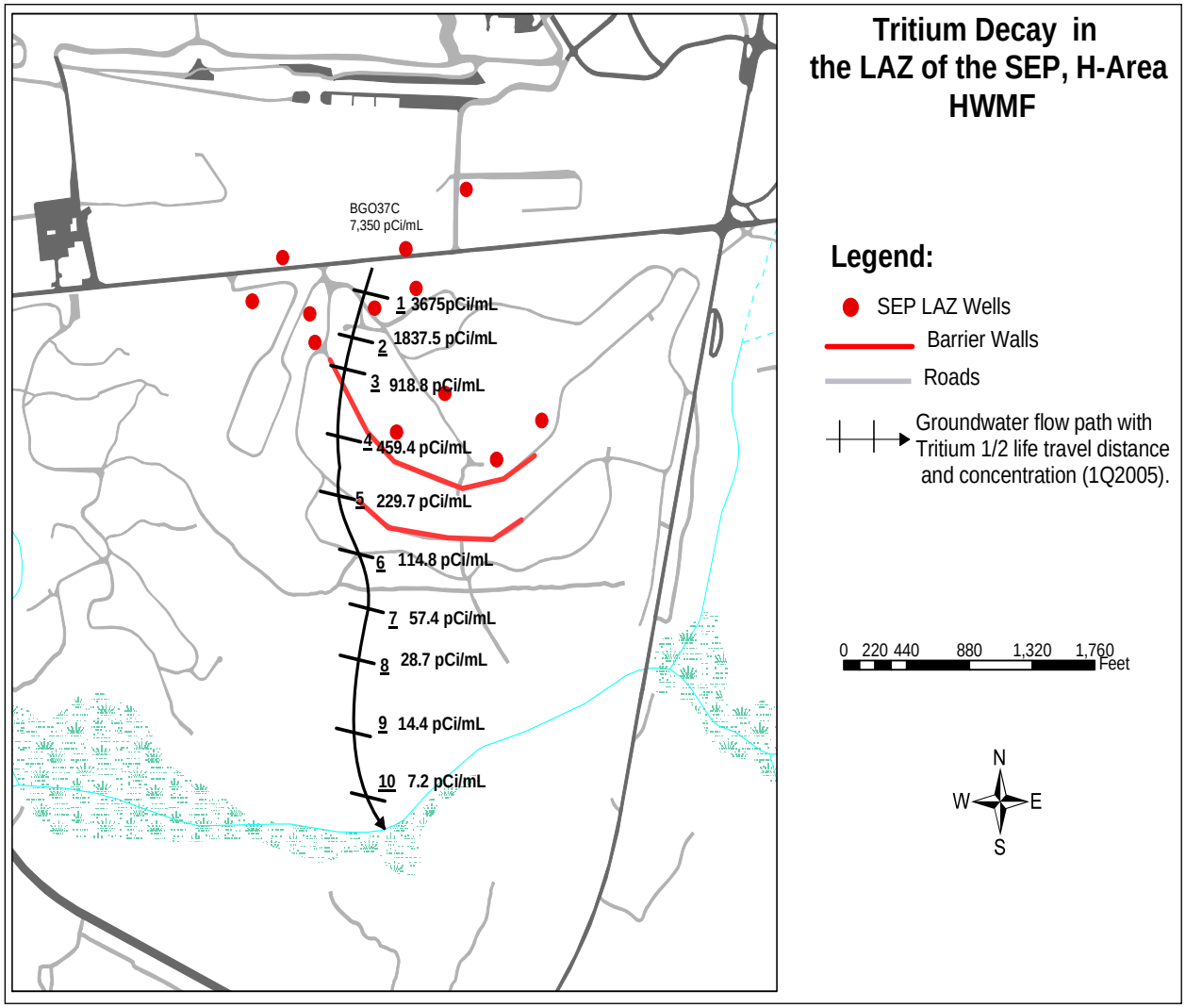


Figure 10. Tritium Decay in the LAZ of the Southeast Plume Area and the H-Area HWMF

NEP

The 2013 RCRA Permit Renewal Application (Revision 2) is the current CAP for the NEP. On September 12, 2023, SRS submitted the revision 0 permit renewal application for the MWMF. Once the renewal application has been reviewed and approved, a revised RCRA permit will be issued for the MWMF. The NEP is the area to the north of the eastern section of the MWMF and LLRWDF. This plume is sourced mainly from the MWMF/LLRWDF. The primary contaminants include tritium and TCE. Tritium is emanating from the northeast corner of the MWMF and is discharging at low concentrations to seeps that feed tributaries to Upper Three Runs Creek. Tritium is not expected to exceed the GWPS at the sample stations in Upper Three Runs Creek down-stream of the NEP discharge zone.

The NEP Module of the Permit is included in the November 30, 2021, modification of the 2014 Permit Renewal, which was issued on February 11, 2014. This modification became effective on December 15, 2021.

The NEP CAP is in Phase 1 and includes the following main objectives:

- reduction of cVOC and tritium (radioactive decay) concentrations using natural attenuation

In order to achieve these objectives, the following actions have been defined in the Corrective Action Program:

- low permeability caps over the MWMF and LLRWDF (source control)
- passive natural attenuation of cVOCs and tritium (radioactive decay) in the UAZ and LAZ
- optional subsurface engineered low-permeability barrier to redirect groundwater flow direction and significantly increase travel time for radioactive decay of tritium; to be implemented if tritium concentrations reach unacceptable levels in groundwater on the north and northeast sides of the MWMF and LLRWDF. Levels would be unacceptable when tritium releases have the potential to impact surface water in Upper Three Runs Creek (above 20 pCi/mL), or create a large high concentration plume

- institutional controls for seepline areas where low concentration tritiated water is currently present

The option to install a subsurface engineered barrier was developed to address the potential failure of containment measures associated with the Mound burial. This burial from the DOE Mound Laboratory is estimated to contain a significant amount of the total tritium inventory buried at the MWMF/LLRWDF. If a significant amount of tritium were to leach to groundwater from this source, the likely result would be tritium concentrations several orders of magnitude higher than currently observed in the plume. At this time, tritium levels and concentration trends measured in groundwater at the plume definition wells and in the POC wells at the edge of the MWMF low-permeability cap remain relatively stable from year to year indicating a significant release of tritium from the Mound burial has not occurred. Based on monitoring results from the well network, seeplines, and surface water stations, SRS does not believe implementing the optional barrier is warranted at this time.

The potential for human exposure to contaminated groundwater and seepline areas in the NEP is managed to prevent exposure of on-site workers during sampling activities. These exposures are mitigated through the use of personal protective equipment and routine training regarding the handling of contaminated sample media. Unauthorized access to seepline areas by on-site workers is restricted through the Site Use/Site Clearance Program. SRS restricts access to the general public and trespassers using security procedures and equipment, 24-hour surveillance systems, artificial and natural boundaries, control entry systems, and warning signs in place at the SRS boundary.

The NEP emanates mainly from the northeast corner of the MWMF. The migration of the plume is north and northeast toward Crouch Branch and Upper Three Runs Creek.

Characterization data from the mid-1990s identified a relatively extensive tritium plume and a smaller cVOC plume in the UAZ and LAZ. The extent of the tritium plume is larger than the cVOC plume due to the greater mobility of tritium in the environment. The UAZ generally contains higher concentrations than the LAZ. The early characterization data indicated the highest tritium activity in UAZ well BGO 6 (greater than 5,000 pCi/mL) and

a TCE concentration of over 200 ug/L in the same well. In 2024, the highest concentration of tritium occurred in BGO 10DR (1,200 pCi/mL) and the maximum TCE concentration in BGO 7D (121 ug/L). Overall, current data are much lower than historic maximum concentrations demonstrating the plumes are continuing to shrink over time. Current plume maps for tritium (Maps 6A, 6B and 6C) and TCE (Maps 5A, 5B and 5C) and TCE are provided in Volume II.

Statistical analysis of the groundwater data (2013 RCRA Permit Renewal Application, Revision 2) showed that the overall concentration trend for contaminants in the NEP is decreasing and natural attenuation with monitoring is an effective remedy. The analysis also showed that within the commingled plume (tritium and cVOCs), the radioactive decay of tritium to below the GWPS will take significantly longer than the natural attenuation of the cVOCs. Groundwater flow in the UAZ and LAZ (15.2 m [50 ft/yr] and 7.6 [25 ft/yr], respectively) is relatively slow providing significant time for radioactive decay. Water velocity calculations suggest a travel time of ~60 years (or 5 tritium half-lives) for the plume to reach Upper Three Runs Creek. The presence of source control, downward contaminant trend, shrinking plume, and ample time for attenuation of contaminants all support the continued management of contamination with natural attenuation and monitoring at the NEP.

Tritium levels are monitored quarterly in UTRs at station UTR-90 located downstream of the NEP discharge zone. In 2024, tritium was low (maximum of 0.852 picocuries/milliliter [pCi/mL]) in samples collected at UTR-90, indicating that surface water in Upper Three Runs Creek is not being impacted above the GWPS by tritium from the NEP.

NWP

The 2013 RCRA Permit Renewal Application (Revision 2) is the current CAP for the NWP. On September 12, 2023, SRS submitted the revision 0 permit renewal application for the MWMF. Once the renewal application has been reviewed and approved, a revised RCRA permit will be issued for the MWMF. The NWP is the area to the north of the western section of the ORWBG and west of the MWMF. This plume is sourced mainly

from the ORWBG and extends from the ORWBG a short distance northwest toward Upper Three Runs Creek. The primary contaminants include tritium and TCE.

The NWP Module of the Permit is included in the November 30, 2021, modification of the 2014 Permit Renewal which was issued on February 11, 2014. This modification became effective on December 15, 2021.

The NWP CAP is in Phase 1 and includes the following main objectives:

- reduction of cVOC and tritium (radioactive decay) concentrations using natural attenuation

In order to achieve these objectives, the following actions have been defined in the Corrective Action Program:

- low-permeability caps over the MWMF, LLRWDF, and ORWBG (source control)
- passive natural attenuation of cVOCs and tritium (radioactive decay) in the UAZ and LAZ

The NWP is located very close to the groundwater divide. The migration of contaminants tends to be downward with little lateral movement in the UAZ; migration in the LAZ is toward Upper Three Runs Creek to the northwest. Tritium and cVOCs (mostly TCE) are the prominent groundwater contaminants.

Characterization data from the mid-1990s identified a small tritium and TCE plume in the UAZ and LAZ. Current data indicate similar plume extent, but with lower overall concentrations, (i.e., the plumes are not expanding). Tritium activities and TCE concentrations in the UAZ have tended to decrease over time and since installation of the ORWBG cap. Tritium and TCE in the LAZ have remained relatively stable, except for at UAZ well BGO 15D where tritium concentrations were 21,500 pCi/mL in 2014 then dropped to below 3,000 pCi/mL until rising again to 76,400 pCi/mL in the first quarter of 2022 and has since decreased again to 5,870 pCi/mL in the third quarter of 2024. SRS will continue to monitor tritium at BGO 15D. Current plume maps for tritium and TCE are provided in Volume II.

Statistical analysis of the groundwater data (2013 RCRA Permit Renewal Application, Revision 2) showed that the overall concentration trend in the NWP is decreasing and that natural attenuation with monitoring provides an effective remedy. The analysis also showed that within the commingled plume (tritium and cVOCs), the radioactive decay of tritium to below the GWPS will take significantly longer than the natural attenuation of the cVOCs. Groundwater flow in the UAZ and LAZ (15.2 m/yr and 7.6 m/yr [50 ft/yr and 25 ft/yr], respectively) is relatively slow, providing significant time for radioactive decay. Water velocity calculations suggest a travel time of ~220 years (or 18 tritium half-lives) for the plume to reach Upper Three Runs Creek. The presence of source control, the downward contaminant trend, shrinking plume, and ample time for attenuation of contaminants all support the continued management of contamination with natural attenuation and monitoring at the NWP.

5.3.1 MWMF Operational Data

The SWP Phytoremediation System consists of 51 irrigation plots. All 51 plots received irrigation in 2024. Approximately 25.4M L (6.7M gal) of tritiated water were irrigated on the plots and sprayed over the pond between January 1 and December 31, 2024. The average tritium concentration of the applied water (measured at SWPTNK 001) was ~501 pCi/mL and concentrations ranged from 417 to 657 pCi/mL. Operation of the irrigation system and spray evaporators prevented ~11.7 Ci of tritium from reaching FMB during 2024. It is estimated that an additional 3.8 Ci of tritium evaporated from the pond surface due to ~8,132,579 L (2,148,400 gal) of pond surface water evaporation based on surface area, annual evaporation rate, and average tritium concentration. Table 10 contains the irrigation rates, the average monthly tritium concentrations, and the monthly totals of tritium sprayed (in curies).

Table 10. Phytoremediation Irrigation Rates and Tritium Concentrations for 2024

Month	Total Irrigation (G)/Month	Total Tritium (in Curies) Irrigated to Plots/Month	Total Tritiated Water Sprayed by Evaporator (G)/Month	Total Tritium (in Curies) Sprayed by Evaporator / Month	Average Tritium Concentrations in the Water/Month *(pCi/mL)*
January	67,499	0.12	1,951,990	3.58	485
February	188,062	0.33	2,402,718	4.29	461
March	192,810	0.30	2,520,798	4.08	418
April	722,454	1.16	0	0.00	425
May	760,518	1.33	0	0.00	461
June	1,008,660	2.01	0	0.00	527
July	817,560	1.70	0	0.00	548
August	908,010	1.52	0	0.00	441
September	921,049	1.47	0	0.00	421
October	915,124	1.71	0	0.00	493
November	171,484	0.28	0	0.00	437
December	54,581	0.10	57,770	0.11	477
Total	**6,727,811**	**12.03**	**6,933,276**	**12.06**	**466.04**

Note: Table depicts approximate rates and concentrations.

The application rates of pond water to the plots were in accordance with seasonal irrigation schedules derived from calculated soil moisture deficits and pan evaporation rates. The summer schedule (April 15 to October 15) is based on soil moisture deficit. Soil moisture deficit is the difference between evapotranspiration and net precipitation in terms of rainfall and irrigation.

5.3.2 Corrective Action Monitoring System

The Corrective Action Monitoring System at the MWMF SWP Phytoremediation System consists of the monitoring wells specified in the RCRA Permit, pond samples, wetland samples, and surface water samples in FMB. These components are sampled in accordance with the schedule provided in the RCRA Permit. Sampling results are evaluated to determine the effectiveness of the phytoremediation project and reported in the Compliance Monitoring Section of the Annual (August) CAR each year.

The concentration of tritium in the pond water has been decreasing since the start of irrigation, due to radioactive decay of the tritium. The highest average tritium concentration occurred in 2002 (13,140 pCi/mL). Since the installation of the low-permeability cap on the ORWBG in 2007-2008, there has been further reduction in tritium concentration in the pond that seems to be significantly greater than the previous decay component. From 2007 to 2010, tritium concentration decreased from 9,258 pCi/mL to 2,666 pCi/mL. Since then, average tritium concentrations have continued to show a decreasing trend. Concentrations (measured at FHP-001) averaged ~469 pCi/mL in 2024, due to capping of the ORWBG, natural attenuation, and in part to the pattern of above average rainfall since 2013.

5.3.3 Summary of Downtime (IVD.B.10.b.xiii)

Permit Section IVD.B.10.b.xiii requires a summary of any downtime of the irrigation system at the SWP Phytoremediation System that exceeds 72 hours and is caused by mechanical or equipment failure.

- There were no downtimes of the irrigation system that exceeded 72 hours due to mechanical or equipment failure in 2024.

5.3.4 Modifications to System (IVD.B.10.b.ix)

In accordance with the Permit Section IVD.B.10.b.ix, a summary of the modifications to the Correction Action System (SWP Phytoremediation System) is required.

In January 2011, SRS expanded the MWMF Phytoremediation System area by ~9.7 ha (24 ac). The additional acreage is located to the east of the original irrigation site over the plume area. The expansion consisted of 12 plots (plots 31 through 42) and distribution piping. SRS has also expanded the irrigation area to the west. The western expansion is ~6.1 ha (15 ac) and consists of nine plots (plots 43 through 51) and distribution piping. The western expansion was completed in 2013 and placed into operation in 2014. The expansion areas utilize the existing irrigation system equipment, with the addition of a

distribution pump for the western expansion and larger filtration system. These expansions provide additional acreage needed to maximize the irrigation capacity, especially during winter operations, and maintain the pond level as low as possible. They also provide additional irrigation acreage to accommodate any silviculture treatment that may be needed in the future. The full potential of the expansion areas will be realized when the trees become mature in size.

In 2015, SRS completed the replanting of ~10,000 loblolly pine seedlings at the eastern and western expansions. The replanting was necessary due to the natural mortality of some original seedlings at the western expansion and the loss of trees at the eastern area due to the ice storm in 2014. Additional minor replanting was needed in 2016 due to natural tree mortality. No trees from the irrigation plots have been removed from the remediation site. Fallen trees and trees or limbs cut during forest maintenance activities remain on unit to naturally decay.

SRS replaced the old evaporator with two new evaporators (which intake water directly from the pond) in 2021. The evaporators will provide increased evaporation efficiency and enhance water management capabilities, especially during the winter months and during periods of rainy weather when irrigation capacity is reduced. The new evaporators began operation in December 2022. During 2024 the evaporators were inoperable beginning in late March due to a lightning strike from a storm. The evaporators were repaired and began operating again in mid-December of that year.

5.3.5 Effectiveness of the MWMF Corrective Action Program

As part of the effectiveness monitoring, tritium concentration is measured in FMB downstream of the SWP. Tritium concentration in FMB dropped ~68% immediately upon closing the valve on the discharge side of the phytoremediation pond in 2000 (Figure 11). The closed position of the valve on the discharge side of the pond results in the collection of tritiated water from the seeps and prevents the tritiated water from reaching FMB. Tritium concentrations remained reduced by 60% to 80% until September 23, 2005, when the pond valve was opened to drain the pond to FMB for maintenance and for upgrades to

the irrigation system. During this time, tritium concentrations increased in FMB to 642 pCi/mL. During March 2006, the pond valve was closed again, and tritium concentrations in FMB dropped to 111 pCi/mL by April 2006, and have remained below 200 pCi/mL since that time, with most measurements less than 100 pCi/mL. In 2024, the concentration of tritium ranged from 7.2 pCi/mL to 40.8 pCi/mL in FMB. In previous years, the operation of the collection pond and phytoremediation system resulted in an ~100 Ci/yr reduction in tritium flux to FMB (phytoremediation + evaporation from the pond). In 2024, due to reduced tritium concentrations, above average rainfall, and the evaporators being inoperable from late March to mid-December, the reduction in tritium flux was ~15.5 Ci/yr. Overall, the current system has proven to be effective in reducing tritium flux by nearly 70% of the water that is discharging from the plume and was originally impacting FMB.

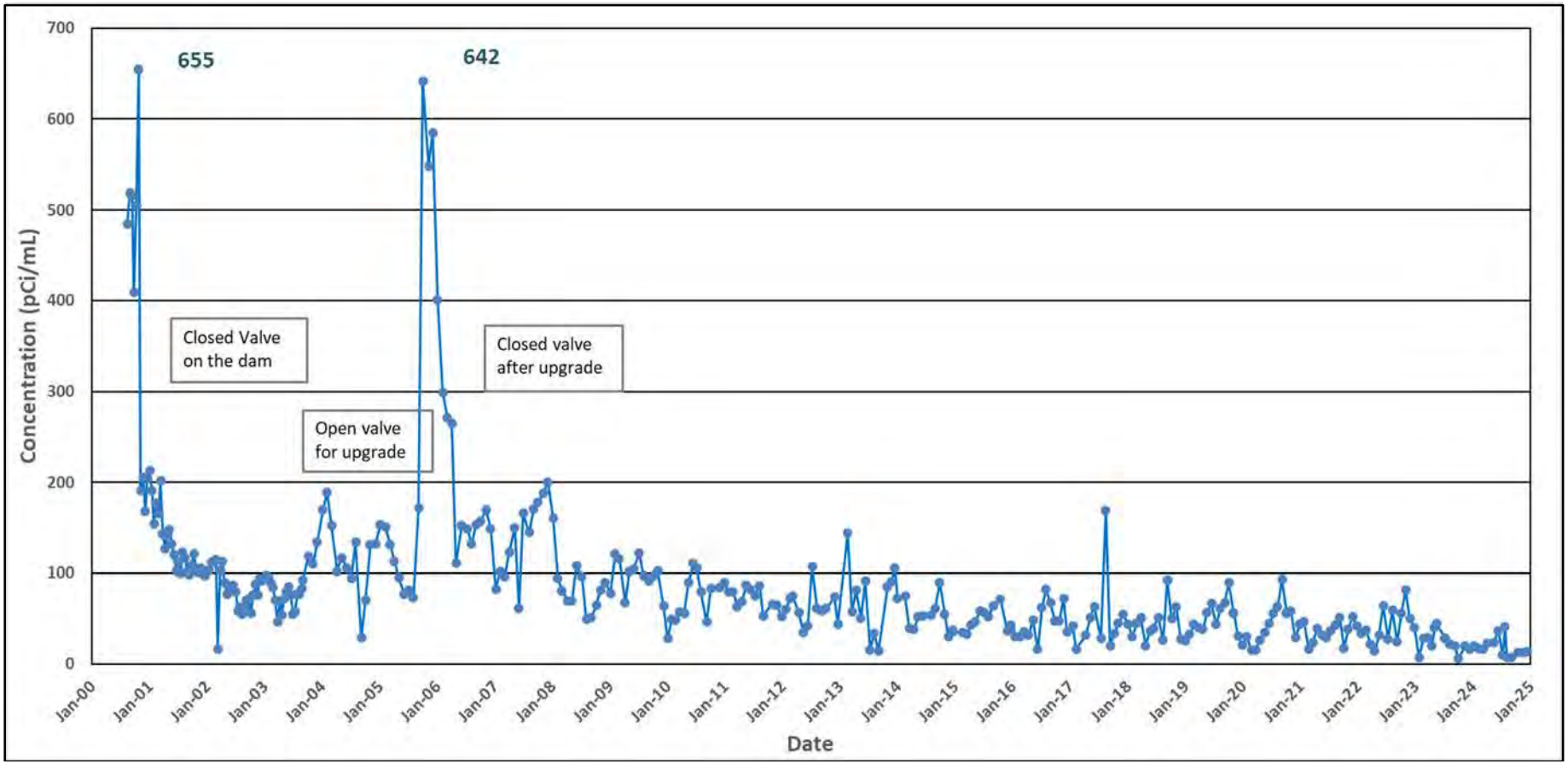
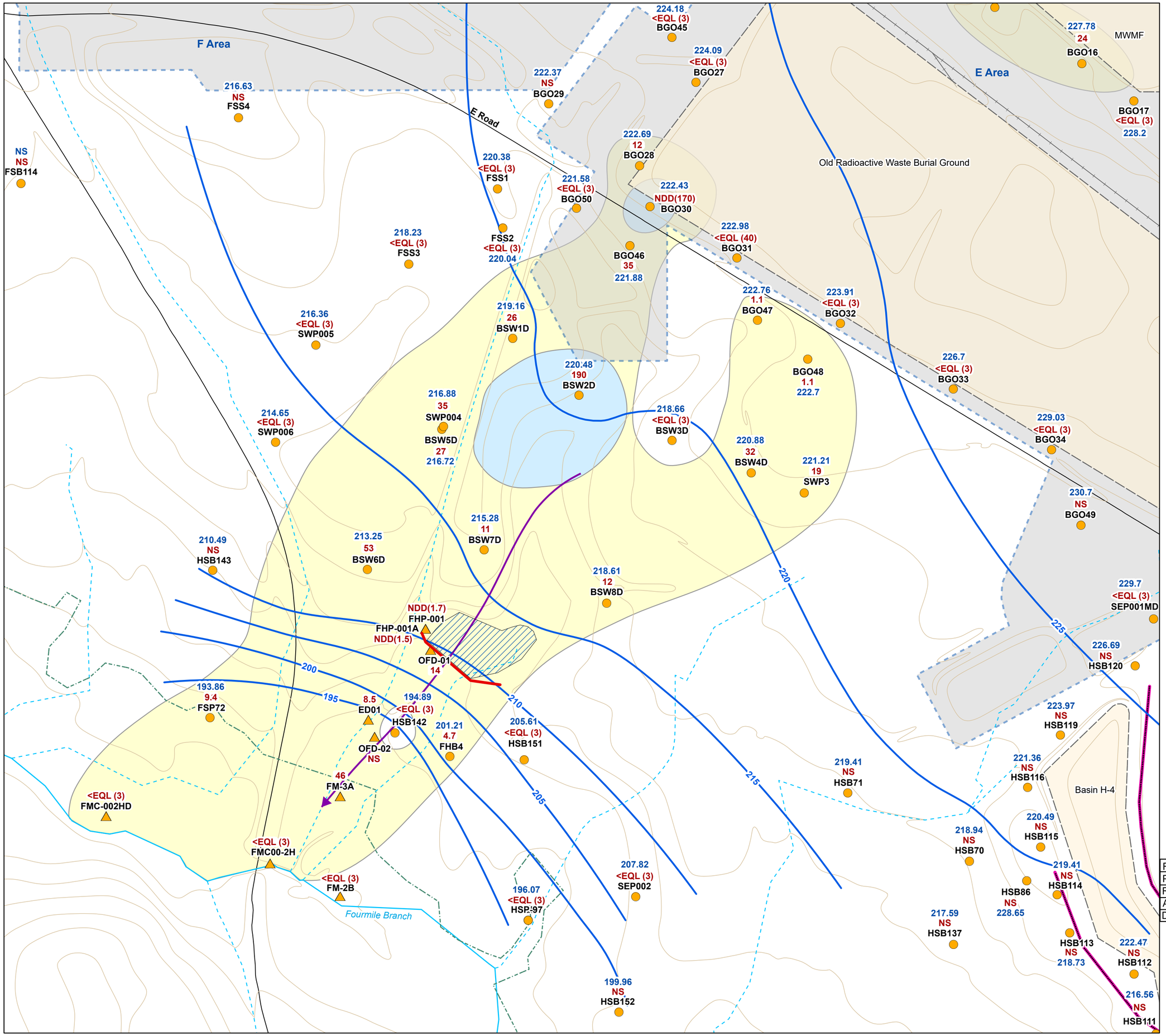


Figure 11. Tritium Concentrations in FMB

Figure 12. MWMF SW Plume 1,4-dioxane Concentrations in the UAZ



1,4-Dioxane Sample (3Q24) ug/L

- Monitoring Well
- Seepline Well
- Surface Water
- Water Level Measurement (3Q24) ft msl

UAZ Potentiometric Surface (3Q24)

- Contours (5 ft interval) (ft msl)
- Groundwater Flow Path

1,4-Dioxane Plume (3Q24)

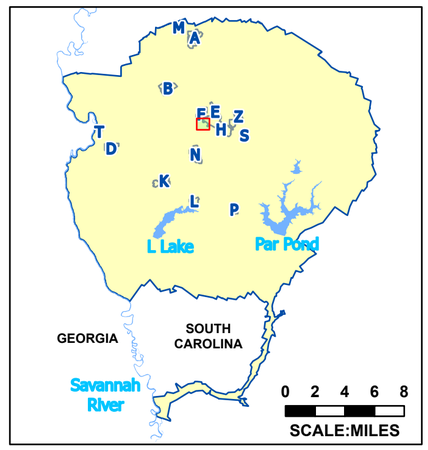
- >0 ug/L
- 100 - 499 ug/L
- > 500 ug/L

- PHYTOREMEDIATION POND
- BASIN CLOSURE BOUNDARY
- SUBSURFACE BARRIER
- MAIN/PAVED ROAD
- FACILITY AREA BOUNDARY
- RAILROAD
- SEEPLINE
- STREAM
- OTHER SURFACE FLOW PATTERN
- TOPOGRAPHIC CONTOUR (10 FOOT INTERVAL)

PLANT NORTH
TRUE NORTH
N
3 6 ' 2 2

0 95 190 380 570 Feet

0 20 40 80 120 160 Meters



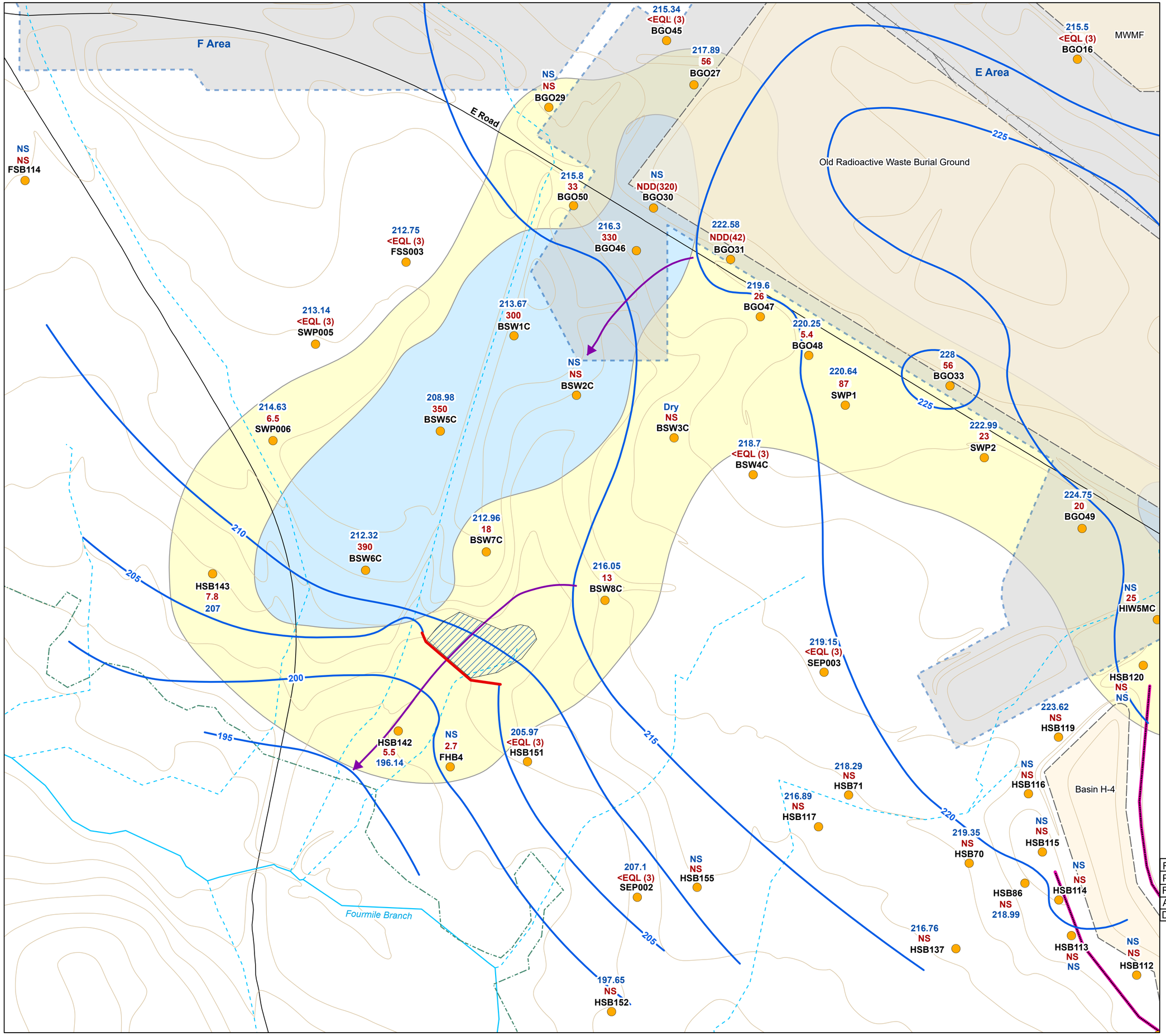
SAVANNAH RIVER SITE

Report Number: SRNS-RP-2025-00773
Prepared By: Kevin Boerstler
Reviewed By: Bryce Garner
Approved By: Jeffery Thibault
Date: August 31, 2025

GSA Corrective Action Report, Potentiometric Surface in the Upper Aquifer Zone of the Upper Three Runs Aquifer at the GSA, and 1,4-Dioxane Plume at the Southwest Plume Third Quarter 2024

GSA Corrective Action Report, Potentiometric Surface in the Upper Aquifer Zone of the Upper Three Runs Aquifer at GSA and 1,4-Dioxane at the Southwest Plume,Third Quarter 2024

Figure 13. MWMF SW Plume 1,4-dioxane Concentrations in the LAZ



SAVANNAH RIVER SITE

Report Number: SRNS-RP-2025-00773
Prepared By: Kevin Boerstler
Reviewed By: Bryce Garner
Approved By: Jeffery Thibault
Date: August 31, 2025

GSA Corrective Action Report, Potentiometric Surface in the Lower Aquifer Zone of the Upper Three Runs Aquifer at the GSA, and 1,4-Dioxane Plume at the Southwest Plume Third Quarter 2024

GSA Corrective Action Report, Potentiometric Surface in the Lower Aquifer Zone of the Upper Three Runs Aquifer at GSA and 1,4-Dioxane at the Southwest Plume,Third Quarter 2024

Annually, the Savannah River Ecology Lab (SREL) estimates the evapotranspiration efficiency of the irrigation plots (Appendix G, Volume I). In 2024, the average evapotranspirative efficiency of the irrigation system was ~86.6 ± 1.2% for the original plots, 77.4 ± 3.3% for the eastern expansion area, and 68.3 ± 0.8% for the western expansion area. The collective annual efficiency was 80.8 ± 7.3% for all irrigation plots. The calculated evaporative efficiency of the spray evaporators is 17%.

Lower efficiencies for the eastern and western areas are due to lower vegetative densities at these plots. SRS expects the efficiencies to increase as the trees become mature. SRS plans to apply fertilizer in the future to promote increased vegetative canopy growth.

5.3.6 Progress and Implementation of the CAPs (IVD.B.10.b.x)

During 2024, the maximum groundwater concentration of 1,4-dioxane in the UAZ of the UTRA was 220 ug/L, which was observed in well BGO 30D and the maximum concentration in the LAZ of the UTRA was 390 ug/L observed in well BSW 6C. The maximum concentration of 1,4-dioxane in surface water was 46 ug/L, which was observed at sampling station FM-3A below the confluence of the ED and the OFED. Figures 12 and 13 are 2024 plume maps for 1,4-dioxane in the UAZ and LAZ.

In the past, the concentration of 1,4-dioxane in the SWP was not well understood due to analytical uncertainty. However, it was known that 1,4-dioxane was present above the GWPS of 6.1 ug/L in the SWP. Current analytical methods now provide better concentration certainty within the groundwater and the irrigation pond. Past pond concentrations have ranged from ~10 to 20 ug/L. The 2024 concentration was 1.9 J ug/L in the pond. 1,4-Dioxane is also present in surface water downstream of the pond. The current corrective action for 1,4-dioxane is continued operation of the phytoremediation system, natural degradation, the low-permeability cap of the ORWBG and the MWMF, and institutional (access) controls.

Current literature indicates that irrigated 1,4-dioxane (in the pond water) will likely degrade to levels that do not represent a threat to receptors or the groundwater. 1,4-Dioxane is

prone to evaporation and photo-oxidation in air (7 to 10-hour half-life, maximum lifetime of 23 hours) in a spray irrigation setting, and it is reported by researchers to be highly degradable in biologically active soils by filamentous bacteria and fungus present in the leaf mulch. When tritium is evaporated and transpired to the atmosphere by the spray irrigation, it is likely that 1,4-dioxane is evaporated, photo-oxidized, or degraded at a very high efficiency. SRS believes that conditions present in the irrigation plots are favorable for the evaporation, transpiration, and degradation of 1,4-dioxane.

SRS believes that continuing to manage tritium, cVOCs and 1,4-dioxane with the collection pond and irrigation system is a reasonable approach with a high probability of success. The current system has proven to be effective in managing nearly 70% of the water that is discharging from the plume and was originally impacting FMB. The 1,4-dioxane and other cVOCs in the SWP are commingled with the tritium, and it is likely that their presence in the plume is as old as the tritium. Based on attenuation rates for tritium, cVOCs, and 1,4-dioxane at the SWP, the radioactive decay of tritium to below the GWPS is expected to take longer than the natural attenuation of 1,4-dioxane and the other cVOCs. Thus, the long-term corrective action employed for groundwater contamination at the SWP should be the continued operation of the irrigation system (operating at low pond levels to maximize efficiency) coupled with infiltration control via capping of the ORWBG.

Additions to irrigation capacity in the eastern and western expansions help to maximize reductions in contaminant flux to FMB by reducing water overflowing the dam and bypassing in the subsurface. SRS is able to operate the system into the winter months using the two expansion areas. The overall objective is to maintain as low a level as practicable in the irrigation pond throughout the year to maximize the volume of water going to the pond from the UAZ and LAZ. Maintaining water levels as low as possible will support SRS meeting the overall remedial goal for tritium reduction to FMB.

5.3.7 cVOC Degradation

Relative concentrations of cVOC parent and daughter degradation products can give a direct indication of the presence or absence of microbial degradation processes. The production of cis-1,2-dichloroethylene (DCE) and chloride ions along aquifer flow paths is direct evidence of reductive dechlorination. The ratios of cis-1,2-DCE to the total 1,2-DCE indicate that the 1,2-DCE observed in the groundwater is likely of biogenic origin.

SWP

The MWMF SWP monitoring wells were sampled for VOCs during 2024 (Appendix B, Table B-7, Volume I). The presence of cis-1,2-DCE indicates that reductive biodegradation of TCE is occurring as TCE will degrade to DCE only under an anaerobic degradation pathway. Because of the large amount of organic matter (wood and paper products) and carbon steel that was included in the burial trenches, it is believed that reducing conditions exist in and beneath the burial ground waste trenches. Low oxygen levels allow for anaerobic degradation of tetrachloroethylene (PCE) and TCE to produce DCE in and beneath the burial trenches while aerobic degradation occurs within the SWP groundwater where dissolved oxygen levels are much higher. The oxidizing conditions in the SWP groundwater rapidly degrade the DCE and vinyl chloride limiting their accumulation. Thus, reductions in cVOC parents (TCE and PCE), the presence of cis-1,2-DCE, and low levels of chloroethene (vinyl chloride) are evidence of dechlorination at the SWP.

Overall, concentrations of cVOCs continue to exhibit decreasing trends. SRS believes continued implementation of the SWP Corrective Action Effectiveness Monitoring Program and operation of the phytoremediation system for the cVOC degradation component of the CAP, as discussed in Sections E.8.1.3 and E.8.1.4 of the 2013 RCRA Permit Renewal Application, remains appropriate for cVOCs.

SEP

The MWMF SEP monitoring wells were sampled for volatile organic compounds (VOCs) during 2024 (Appendix B, Table B-8, Volume I). The lower hydraulic conductivity in the LAZ aquifer is beneficial to VOC degradation. The low flow conditions cause an increase in travel time within the aquifer, creating greater opportunity for degradation before discharging to surface water in FMB. In 1997, the highest concentration of VOCs was associated with well BGO 37C, which had a concentration of 1,160 ug/L of TCE. By 2003, the TCE concentration in the well had decreased to 126 ug/L and currently remains lower at 46 ug/L. The drop in the concentration is attributed to natural attenuation and capping of the ORWBG.

The flux of VOCs to the groundwater beneath the source area in the ORWBG is expected to be reduced by infiltration control. The low-permeability cap installed at the ORWBG is part of the corrective action for VOCs at the SEP. Installation of the cap was completed in 2007. In 2006, prior to capping, the concentration of TCE at BGO 37C was 170 ug/L. After capping, the concentration of TCE has had an overall decreasing trend and in 2024, the maximum concentration was 46 ug/L.

Monitoring data show evidence that degradation of the cVOCs is occurring within the SEP. The highest concentrations of TCE occur at POC well BGO 35C (240 ug/L) adjacent to the ORWBG and plume assessment well HSB 120C (284 ug/L). The presence of daughter products (cis-1,2 DCE) indicates that degradation of PCE and TCE is occurring beneath the ORWBG. Well BGO 35C has the highest concentration of cis-1,2 DCE at 146 ug/L. The accumulation of vinyl chloride was not observed; however, dissolved oxygen levels beyond the footprint of the cap ranged from 0.5 to 7.25 mg/L and are sufficient to prevent the accumulation of vinyl chloride. Vinyl chloride is known to degrade rapidly under aerobic groundwater conditions and is not expected to be present at high concentrations. Trace levels of ethane and ethylene have been present in these wells indicating dechlorination is proceeding to completion. These conditions are also observed in plume definition wells within the cVOC plume.

NEP

The MWMF NEP monitoring wells were sampled for VOCs in 2024 (Appendix B, Table B-9, Volume I). The NEP VOC plume occurs in both the UAZ and LAZ. The NEP is sourced from the MWMF, and because of groundwater flow paths, the VOC plume in the UAZ is adjacent to the MWMF whereas the LAZ plume is located further down gradient. The highest concentrations of TCE in the UAZ at the NEP occur near the source at UAZ POC well BGO 7D (121 ug/L). The highest concentrations in the LAZ occur in well BGX 2D (42.2 ug/L).

Monitoring data show evidence that degradation of cVOCs is occurring within the NEP. In 2024, at BGO 7D concentrations of parent compounds PCE and TCE were 40.4 ug/L and 121 ug/L, respectively. The concentration of cis-1,2 DCE was 72.4 ug/L. The presence of daughter products (cis-1,2 DCE) indicates that degradation of PCE and TCE is occurring in the NEP. Vinyl chloride was not detected in BGO 7D; however, dissolved oxygen levels (2.5 to 3.03 mg/L) in the aquifer are sufficient to prevent the accumulation of vinyl chloride. Vinyl chloride is known to degrade rapidly under aerobic groundwater conditions and is not expected to be present at high concentrations. Trace levels of ethane have been observed indicating that dechlorination is proceeding to completion. Similar conditions are also observed in other UAZ and LAZ monitoring wells within the cVOC plume.

NWP

The MWMF NWP monitoring wells were sampled for VOCs in 2024 (Appendix B, Table B-10, Volume I). The NWP VOC plume is relatively small and occurs mainly in the LAZ. The highest concentrations of TCE in the NWP have historically occurred near the source at wells BGO 14CR and BGO 53C. In 2006, concentrations of TCE were as high as 49.3 ug/L at well BGO 14CR. Since then, concentrations of TCE have been decreasing and are currently 25 ug/L. In 2024, the highest concentration of TCE occurred at POC well BGO 15D (46.7 ug/L).

Monitoring data show evidence that degradation of cVOCs is occurring within the NWP. In 2024, at BGO 15D concentrations of parent compounds PCE and TCE were 5.91 ug/L and 26.9 ug/L, respectively. The concentration of cis-1,2 DCE was 43.8 ug/L. The presence of daughter products (cis-1,2 DCE) indicates that degradation of PCE and TCE is occurring in the NWP. Vinyl chloride was not observed to be accumulating in BGO 15D; however, dissolved oxygen levels (2.1 to 5.4 mg/L) in the aquifer are sufficient to prevent the accumulation of vinyl chloride. Vinyl chloride is known to degrade rapidly under aerobic groundwater conditions and is not expected to be present at high concentrations. Trace levels of ethane and ethylene have also observed indicating that dechlorination is proceeding to completion. Similar conditions are also observed in other monitoring wells within the cVOC plume.

Monitoring data show that the low-permeability cap on the ORWBG is reducing the flux of VOCs to the groundwater beneath the source area. The low-permeability cap installed at the ORWBG is part of the corrective action for VOCs at the NWP. Installation of the cap was completed in 2007. In 2006, prior to capping, the concentration of TCE at BGO 42C was 130 ug/L. After capping, the concentration of TCE has been decreasing and in 2015 was below the GWPS of 5 ug/L. In 2024, the maximum concentration was 2.1 ug/L.

5.3.8 History of the Corrective Action Program

The pond and the phytoremediation system are continuing to effectively reduce the tritium concentrations in FMB. Since closure of the valve on the pond and beginning the collection of water from the seeps, tritium concentrations in FMB have remained 60% to 80% lower (with the exception of 2005, when the pond valve was opened to empty the pond to FMB for maintenance and system upgrades). After this time, the tritium concentration increased in FMB until 2006, when the pond valve was again closed (Figure 11). The maintenance actions and upgrades were necessary in order to improve wintertime operation, maintain pond volume at a low level to drive groundwater toward the pond, and to reduce water outcropping from under the dam. After a review of the upgraded irrigation system, SRS

determined that the system was adequate to supply water for additional irrigation acreage. SRS expanded the irrigation area at MWMF SWP. The eastern expansion consists of 9.7 ha (24 ac) and was completed in January 2011. The western expansion consists of 6.1 ha (15 ac) located to the west of original irrigation plots. Construction of the western expansion was completed in 2013, and it is fully operational.

6.0 CONCLUSION

6.1 F-Area HWMF and H-Area HWMF

Overall, concentrations of most constituents continue to decrease over time in both F-Area HWMF and H-Area HWMF. The low-permeability caps, base injection, groundwater barriers, and silver chloride amendment (F Area only) at the F-Area and H-Area HWMFs are having a positive effect on the aquifer. Despite decreasing concentrations over time for most constituents, compliance monitoring data in 2024 indicated several inorganics and radiological constituents exceeded the GWPS in the wetlands/FMB at both HWMFs (Table 11). No new constituents were added to the GWPS for the F-Area nor H-Area HWMFs as a result of detection monitoring in 2024.

Table 11. Constituents exceeding the GWPS in the wetlands/FMB in 2024

Monitoring Network	F Area	H Area
FMB Surface Water (Phase 2a and 2b F Area; Phase 2a H Area Corrective Action Goals)	Iodine-129, carbon-14, tritium	Tritium
Wetland Seepline Surface Water (Phase 2b Corrective Action Goals)	Cobalt, nitrate-nitrite, gross alpha, iodine-129, nonvolatile beta, strontium-90, tritium, uranium-233/234, uranium-238	Iodine-129, nonvolatile beta, strontium-90, tritium
Wetland Groundwater	Cobalt, nitrate-nitrite, carbon-14, gross alpha, iodine-129, nonvolatile beta, radium-226, radium-228, tritium, uranium-233/234, uranium-238	Carbon-14, nitrate-nitrite, iodine-129, nonvolatile beta, tritium

The most widespread contaminant was tritium (radiological), which is being addressed with subsurface barriers at the F-Area HWMF and H-Area HWMF. An evaluation of the tritium concentration in the vicinity of the barriers at both F Area and H Area indicates that the barrier systems are controlling tritium releases to the seeplines and FMB. Tritium flux reduction to FMB in 2024 exceeded targets. For F Area it was ~85% (calculated flux of 97 Ci/yr), and for H Area it was ~90% (calculated flux of 23 Ci/yr), respectively, demonstrating that the barriers are having the desired effects. Tritium flux to FMB will continue to be monitored.

Most metal and metallic radiological contaminants (except tritium and iodine-129) are being addressed with base injection. Base injection at the F-Area HWMF was performed starting in March and continued into June at the central gate, then operated at the western gate starting in July and continued into November. Approximately 45.8 M L (12.1 M gal) of base solution was injected in 2024 at F-Area HWMF. At H Area, operation of the base injection system was not required during 2024. Adjustment of pH has been achieved locally at H Area. SRS is observing the effects of the base injection prior to potentially injecting additional base.

Base injection has been effective in the in situ precipitation of cationic radionuclides, most evident with strontium-90 and uranium-238. The precipitation of these cationic metals and radionuclides has allowed concentrations of these constituents in FMB to fall below their respective GWPS, as well as reducing the concentration of these constituents in the seepline surface water and groundwater. The continued use of the system will ensure concentrations remain below the GWPS in FMB (Phase 2a goal) and continue to reduce the concentrations of cations in the seepline surface water (Phase 2b goal) and in the groundwater at the F-Area and H-Area HWMFs.

The remedial technologies implemented for Phase 2 have proven effective and feasible in working toward the corrective action goals and will continue to be deployed as part of the corrective actions; however, additional time is needed for these technologies to work to meet remedial goals at the F- and H-Area seeplines along FMB. These remedial technologies will continue to be implemented as part of the corrective actions.

The approved corrective action to address iodine-129 in F Area is the use of silver chloride technology. The latest deployment of silver chloride was completed in May 2019 to augment previous injections along the eastern half of the central gate, where the majority of the iodine-129 flux occurs. Injection of additional silver chloride is not required at this time. SRS will continue to evaluate the effectiveness of the silver chloride treatment at the central gate by monitoring in accordance with the UIC and RCRA Permit.

6.2 MWMF

The phytoremediation system along with low-permeability caps and natural attention are being utilized in improving groundwater and surface water impacted by the four MWMF plumes (SWP, NWP, SEP, and NEP). Compliance monitoring for the MWMF indicated several constituents exceeded the GWPS with tritium and TCE as the primary constituents at all four plume areas. Sampling of groundwater beneath the FMB wetland and surface water at FMB and UTR indicated tritium was the most widespread contaminant. No new constituents were added to the GWPS for any of the four MWMF plumes as a result of detection monitoring in 2024.

The SWP discharges tritium-contaminated groundwater with low amounts of cVOCs and 1,4-dioxane into a small tributary that feeds FMB. The MWMF Phytoremediation System is being used to collect contaminated groundwater from the seeps stopping the contaminated groundwater from reaching FMB. The system had a positive effect by reducing the amount of tritium reaching FMB during 2024. The MWMF Phytoremediation System irrigated and sprayed ~25.4M L (6.7M gal) in 2024 preventing ~11.7 Ci of tritium from reaching FMB, nearing a 70% tritium flux reduction to FMB. In addition, ~3.8 Ci of tritium directly evaporated from the surface of the collection pond. The average evapotranspirative efficiency of the irrigation system in 2024 was similar to what it was in 2023. The average evapotranspirative efficiency of the irrigation system during 2024 was ~86.6 ± 1.2% for the original plots, 77.4 ± 3.3% for the eastern expansion area, and 68.3 ± 0.8% for the western expansion area. The collective annual efficiency was 80.8 ± 7.3% for all irrigation plots. 1,4-dioxane and cVOCs are also removed by volatilization, transpiration, evaporation, and degradation in the phytoremediation system. SRS believes that continuing to manage tritium, cVOCs and 1,4-dioxane with the collection pond and irrigation system is a reasonable approach with a high probability of success. The SWP also contained mercury, which is being successfully addressed by natural attenuation and the ORWBG low-permeability cap. Thus, the long-term corrective action employed for groundwater contamination at the SWP is the continued operation of the irrigation system

(operating at low pond levels to maximize efficiency) coupled with rainwater infiltration control via the ORWBG cap.

Natural attenuation coupled with the ORWBG low-permeability cap are the approved remedial actions for the NWP, NEP, and SEP. Monitoring data show that the ORWBG low-permeability cap is reducing the flux of VOCs to the groundwater to all plumes. Monitoring data also show evidence that degradation of the VOCs is occurring within each of the plumes. Overall, current tritium concentrations are much lower than historic maximum concentrations demonstrating the plumes are continuing to shrink over time. SRS will continue to monitor natural attenuation in the NWP, NEP, and SEP. Natural attenuation continues to be an effective remedy at the NWP, NEP, and SEP.

7.0 APPENDICES

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APPENDIX A

MIXED WASTE MANAGEMENT FACILITY

WELL CONSTRUCTION DATA

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F-AREA HWMF, H-AREA HWMF, AND MWMF

PWMS WELLS

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Table A-1. MWMF Monitoring Well Construction Details

Monitoring Well Designation as Used in This Report	Monitoring Well Designation as Used in the MWMF RCRA Part B Permit Application (Rev. 6)	Installation Date (mo/day/yr)	Well Casing/ Screen Material	Well Casing Diameter (in)	Length of Screen (ft)	Top of Casing Reference Elevation (ft msl)	Land Surface/ Ground Elevation (ft msl)	Top Depth of Screen (ft below land surface)	Bottom Depth of Screen (ft below land surface)	Top of Screen Elevation (ft msl)	Bottom of Screen Elevation (ft msl)	Northing	Easting	Date Abandoned (mo/day/yr)
BGO 1D	BGO 01D	9/10/1987	PVC	4	20	295.3	293	48	68	245	225	3682856	438984	
BGO 2D	BGO 02D	8/12/1987	PVC	4	20	297	297.74	56	76	241.74	221.74	3683062	438846	
BGO 3A	BGO 03A	5/13/1994	PVC	2	10	291.9	288.7	175	185	113.7	103.7	3683310	438664	
BGO 3C	BGO 03C	5/13/1994	PVC	2	10	291.9	288.7	100	110	188.7	178.7	3683307	438666	
BGO 3DR	BGO 03D(R)	10/23/1995	*PVC*	*2*	20.1	291.8	289.3	51.7	71.8	237.6	217.5	3683301	438676	
BGO 4D	BGO 04D	8/13/1987	PVC	4	20	297.5	295.6	55	75	240.6	220.6	3683455	438558	
BGO 5C	BGO 05C	9/4/1987	PVC	4	10	296.1	294.2	101	111	193.2	183.2	3683534	438497	
BGO 5D	BGO 05D	9/4/1987	PVC	4	20	296.3	294.2	54.9	74.9	239.3	219.3	3683532	438494	
BGO 6A	BGO 06A	10/8/1987	PVC	4	10	285.8	283.8	166.3	176.3	117.5	107.5	3683450	438377	
BGO 6B	BGO 06B	3/18/1992	*PVC*	*4*	10	287	284.5	134.8	144.8	149.7	139.7	3683472	438373	
BGO 6C	BGO 06C	9/2/1987	PVC	4	10	285.8	283.5	115.5	125.5	168	158	3683449	438375	
BGO 6D	BGO 06D	8/31/1987	PVC	4	20	285.7	283.2	46	66	237.2	217.2	3683447	438372	
BGO 7D	BGO 07D	8/15/1987	PVC	4	20	287.2	285.2	45	65	240.2	220.2	3683381	438277	
BGO 8AR	BGO 08A(R)	2/25/1991	PVC	4	10	286.8	284.6	180	190	104.6	94.6	3683353	438185	
BGO 8C	BGO 08C	8/28/1987	PVC	4	10	288	285.8	101.5	111.5	184.3	174.3	3683348	438189	
BGO 8D	BGO 08D	8/28/1987	PVC	4	20	288	285.6	45	65	240.6	220.6	3683350	438187	
BGO 9AA	BGO 09AA	7/10/1991	*PVC*	*4*	10	285	282.8	199	209	83.8	73.8	3683401	438057	
BGO 9D	BGO 09D	8/20/1987	*PVC*	*4*	20	285.3	283.2	54	74	229.2	209.2	3683380	438113	
BGO 10AA	BGO 10AA	8/21/1991	*PVC*	*4*	10	300.9	298.8	208	218	90.8	80.8	3683338	437959	
BGO 10AR	BGO 10A(R)	2/20/1991	*PVC*	*4*	10	300.7	298.5	192	202	106.5	96.5	3683304	438011	
BGO 10B	BGO 10B	8/21/1991	*PVC*	*4*	10	301.1	299	150	160	149	139	3683332	437959	
BGO 10C	BGO 10C	9/15/1987	*PVC*	*4*	10	301.5	299.3	132	142	167.3	157.3	3683300	438006	
BGO 10DR	BGO 10D(R)	2/8/1991	*PVC*	*4*	20	300.6	298.3	60	80	238.3	218.3	3683306	438014	
BGO 11DR	BGO 11D(R)	9/7/1995	*PVC*	*4*	19.9	305.5	302.9	69.9	89.8	233	213.1	3683241	437902	
BGO 12AX	BGO 12A(X)	10/3/1995	*PVC*	*4*	10	313.1	310.5	201	211	109.5	99.5	3683167	437808	
BGO 12CX	BGO 12C(X)	9/12/1995	*PVC*	*4*	20.1	313.9	311.3	78.5	98.6	232.8	212.7	3683159	437797	
BGO 12DR	BGO 12D(R)	9/29/1995	*PVC*	*4*	10	313.6	311	159.8	169.8	151.2	141.2	3683162	437801	
BGO 13DR	BGO 13D(R)	2/27/1991	*PVC*	*4*	10	319.5	317.3	97	107	220.3	210.3	3683090	437707	
BGO 14AR	BGO 14A(R)	3/5/1991	*PVC*	*4*	10	300.9	298.7	191.9	201.9	106.8	96.8	3682964	437779	
BGO 14CR	BGO 14C(R)	3/5/1991	*PVC*	*4*	10	300.7	298.4	98.3	108.3	200.1	190.1	3682960	437781	
BGO 14DR	BGO 14D(R)	3/8/1991	*PVC*	*4*	20	300.4	298.2	60.1	80.1	238.1	218.1	3682957	437784	
BGO 15D	BGO 15D	8/25/1987	*PVC*	*4*	20	298.8	296.7	58	78	238.7	218.7	3682883	437864	

Table A-1. MWMF Monitoring Well Construction Details

Monitoring Well Designation as Used in This Report	Monitoring Well Designation as Used in the MWMF RCRA Part B Permit Application (Rev. 6)	Installation Date (mo/day/yr)	Well Casing/ Screen Material	Well Casing Diameter (in)	Length of Screen (ft)	Top of Casing Reference Elevation (ft msl)	Land Surface/ Ground Elevation (ft msl)	Top Depth of Screen (ft below land surface)	Bottom Depth of Screen (ft below land surface)	Top of Screen Elevation (ft msl)	Bottom of Screen Elevation (ft msl)	Northing	Easting	Date Abandoned (mo/day/yr)
BGO 16AR	BGO 16A(R)	7/22/1992	*PVC*	*4*	10	303.8	301.6	187.9	197.9	113.7	103.7	3682891	437993	
BGO 16B	BGO 16B	2/20/1992	*PVC*	*4*	10	305.3	302.9	156.9	166.9	146	136	3682891	437981	
BGO 16D	BGO 16D	8/24/1987	*PVC*	*4*	20	304.8	302.3	65	85	237.3	217.3	3682890	437988	
BGO 17DR	BGO 17D(R)	4/30/1992	*PVC*	*4*	20	299.4	296.9	60	80	236.9	216.9	3682890	438065	
BGO 18A	BGO 18A	10/30/1987	*PVC*	*4*	10	295.3	292.9	183.4	193.4	109.5	99.5	3682942	438138	
BGO 18D	BGO 18D	11/4/1987	*PVC*	*4*	20	295.1	292.6	53	73	239.6	219.6	3682944	438141	
BGO 19DR	BGO 19D(R)	10/19/1995	*PVC*	*4*	20	294.2	291.6	74.9	94.9	216.7	196.7	3682940	438177	
BGO 20A	BGO 20A	1/27/1995	*PVC*	*4*	10	283.9	281.3	185	195	96.3	86.3	3682858	438350	
BGO 20AA	BGO 20AA	1/17/1995	*PVC*	*4*	10	283.6	281.3	253	263	28.3	18.3	3682852	438351	
BGO 20B	BGO 20B	2/21/1995	*PVC*	*4*	10	283.5	281	140	150	141	131	3682858	438358	
BGO 20C	BGO 20C	3/2/1995	*PVC*	*4*	10	283.5	281	97	107	184	174	3682852	438357	
BGO 20D	BGO 20D	3/2/1988	*PVC*	*4*	20	283.7	281.3	45	65	236.3	216.3	3682859	438354	
BGO 21D	BGO 21D	11/11/1987	*PVC*	*4*	20	285.6	283	45.3	65.3	237.7	217.7	3682856	438491	
BGO 22DX	BGO 22D(X)	6/14/1996	*PVC*	*4*	20	286.1	283.35	45.5	65.5	237.85	217.85	3682878	438588	
BGO 23D	BGO 23D	8/6/1987	*PVC*	*4*	20	289.4	287	45	65	242	222	3682863	438735	
BGO 24D	BGO 24D	7/29/1987	*PVC*	*4*	20	293.4	291	50	70	241	221	3682863	438851	
BGO 25A	BGO 25A	10/19/1987	*PVC*	*4*	10	296.6	294.7	180.6	190.6	114.1	104.1	3682895	437784	
BGO 26A	BGO 26A	3/15/1989	*PVC*	*4*	10	287.4	285.1	194.1	204.1	91	81	3682774	437625	
BGO 26D	BGO 26D	12/2/1988	*PVC*	*4*	20.1	285.7	283.5	50	70.1	233.5	213.4	3682770	437628	
BGO 27C	BGO 27C	3/17/1989	*PVC*	*4*	9	276.2	273.9	110	119	163.9	154.9	3682595	437626	
BGO 27D	BGO 27D	12/5/1988	*PVC*	*4*	20	276.6	274.3	45	65	229.3	209.3	3682599	437627	
BGO 28D	BGO 28D	12/16/1988	*PVC*	*4*	20	277.7	275.1	45	65	230.1	210.1	3682478	437631	
BGO 29A	BGO 29A	2/17/1989	*PVC*	*4*	10	264.4	262.1	149.6	159.6	112.5	102.5	3682466	437506	
BGO 29C	BGO 29C	11/14/1991	*PVC*	*4*	10	265	262.8	76	86	186.8	176.8	3682470	437501	
BGO 29D	BGO 29D	11/13/1991	*PVC*	*4*	20	265.6	263.5	35	55	228.5	208.5	3682474	437499	
BGO 30C	BGO 30C	4/5/1989	PVC	4	10	274.7	272.6	84.2	94.2	188.4	178.4	3682446	437674	
BGO 30D	BGO 30D	2/6/1989	PVC	4	20	275	272.8	45	65	227.8	207.8	3682446	437670	
BGO 31C	BGO 31C	4/5/1989	PVC	4	10	273.3	271.1	84.7	94.7	186.4	176.4	3682451	437785	
BGO 31D	BGO 31D	2/11/1989	PVC	4	20	273.9	271.6	40.5	60.5	231.1	211.1	3682457	437790	
BGO 32D	BGO 32D	12/16/1988	PVC	4	20	281.9	279.5	45	65	234.5	214.5	3682467	437937	
BGO 33C	BGO 33C	4/4/1989	PVC	4	10	279.6	277.4	89.6	99.6	187.8	177.8	3682483	438088	
BGO 33D	BGO 33D	12/6/1988	PVC	4	20	280.5	278.1	45	65	233.1	213.1	3682483	438093	

Table A-1. MWMF Monitoring Well Construction Details

Monitoring Well Designation as Used in This Report	Monitoring Well Designation as Used in the MWMF RCRA Part B Permit Application (Rev. 6)	Installation Date (mo/day/yr)	Well Casing/ Screen Material	Well Casing Diameter (in)	Length of Screen (ft)	Top of Casing Reference Elevation (ft msl)	Land Surface/ Ground Elevation (ft msl)	Top Depth of Screen (ft below land surface)	Bottom Depth of Screen (ft below land surface)	Top of Screen Elevation (ft msl)	Bottom of Screen Elevation (ft msl)	Northing	Easting	Date Abandoned (mo/day/yr)
BGO 34D	BGO 34D	12/7/1988	PVC	4	20	275.1	272.7	40	60	232.7	212.7	3682493	438232	
BGO 35C	BGO 35C	4/3/1989	PVC	4	10	273.7	271.4	99.5	109.5	171.9	161.9	3682509	438395	
BGO 35D	BGO 35D	12/8/1988	PVC	4	20	273.8	271.4	32	52	239.4	219.4	3682509	438399	
BGO 36D	BGO 36D	12/8/1988	PVC	4	20	275.7	273.3	30	50	243.3	223.3	3682518	438517	
BGO 37C	BGO 37C	3/31/1989	PVC	4	10	286.5	284.3	105.5	115.5	178.8	168.8	3682528	438658	
BGO 37D	BGO 37D	12/9/1988	PVC	4	20	287.5	285.1	39	59	246.1	226.1	3682529	438662	
BGO 38D	BGO 38D	12/15/1988	PVC	4	20	291.8	289.3	47	67	242.3	222.3	3682536	438756	
BGO 39A	BGO 39A	9/12/1994	*PVC*	*2*	10	296.4	293.7	198.9	208.9	94.8	84.8	3682644	438778	
BGO 39C	BGO 39C	9/12/1994	PVC	2	10	296.9	293.6	108.7	118.7	184.9	174.9	3682640	438778	
BGO 39D	BGO 39D	12/14/1988	PVC	4	20	295.9	293.7	49	69	244.7	224.7	3682648	438778	
BGO 40D	BGO 40D	3/14/1991	PVC	4	9.9	288.5	286.4	59.9	69.8	226.5	216.6	3682702	437536	
BGO 41A	BGO 41A	5/24/1991	*PVC*	*4*	10	300.5	298.3	185	195	113.3	103.3	3682924	437663	
BGO 42C	BGO 42C	5/10/1991	*PVC*	*4*	10	298.1	295.9	100	110	195.9	185.9	3682929	437704	
BGO 43A	BGO 43A	4/26/1991	*PVC*	*4*	10	315.1	312.9	197	207	115.9	105.9	3683222	437766	
BGO 43AA	BGO 43AA	4/1/1991	*PVC*	*4*	10	314.5	312.2	240	250	72.2	62.2	3683226	437769	
BGO 43CR	BGO 43C(R)	6/6/1991	*PVC*	*4*	10	315.5	313.4	125	135	188.4	178.4	3683213	437767	
BGO 43D	BGO 43D	4/29/1991	*PVC*	*4*	10	315.5	313.2	105	115	208.2	198.2	3683218	437763	
BGO 44A	BGO 44A	7/18/1991	*PVC*	*4*	10	285.5	283	175	185	108	98	3683433	438214	
BGO 44AA	BGO 44AA	6/18/1991	*PVC*	*4*	10.1	285.4	283.3	212	222.1	71.3	61.2	3683439	438221	
BGO 44B	BGO 44B	6/27/1991	*PVC*	*4*	10	285.3	283.1	125	135	158.1	148.1	3683436	438218	
BGO 44C	BGO 44C	6/21/1991	*PVC*	*4*	10	285.7	283.4	82.8	92.8	200.6	190.6	3683441	438225	
BGO 44D	BGO 44D	6/13/1991	*PVC*	*4*	10	285.6	283.4	50	60	233.4	223.4	3683445	438228	
BGO 45A	BGO 45A	3/6/1991	*PVC*	*4*	10	279.1	276.9	150	160	126.9	116.9	3682613	437567	
BGO 45B	BGO 45B	3/8/1991	*PVC*	*4*	10	278.7	276.6	129.6	139.6	147	137	3682618	437569	
BGO 45C	BGO 45C	3/11/1991	*PVC*	*4*	10	278.8	276.5	76	86	200.5	190.5	3682619	437573	
BGO 45D	BGO 45D	3/14/1991	*PVC*	*4*	20	278.8	276.6	47	67	229.6	209.6	3682625	437572	
BGO 46B	BGO 46B	11/12/1991	*PVC*	*4*	10	265.6	263.4	113	123	150.4	140.4	3682393	437688	
BGO 46C	BGO 46C	11/19/1991	*PVC*	*4*	10	265.2	263	75	85	188	178	3682393	437683	
BGO 46D	BGO 46D	11/19/1991	*PVC*	*4*	10	265.3	263.1	51	61	212.1	202.1	3682394	437678	
BGO 47A	BGO 47A	4/15/1991	*PVC*	*4*	10	267	264.8	168	178	96.8	86.8	3682407	437854	
BGO 47C	BGO 47C	4/22/1991	*PVC*	*4*	10	267.8	265.6	77	87	188.6	178.6	3682416	437855	
BGO 47D	BGO 47D	4/17/1991	*PVC*	*4*	10	267.6	265.4	52	62	213.4	203.4	3682411	437855	

Table A-1. MWMF Monitoring Well Construction Details

Monitoring Well Designation as Used in This Report	Monitoring Well Designation as Used in the MWMF RCRA Part B Permit Application (Rev. 6)	Installation Date (mo/day/yr)	Well Casing/ Screen Material	Well Casing Diameter (in)	Length of Screen (ft)	Top of Casing Reference Elevation (ft msl)	Land Surface/ Ground Elevation (ft msl)	Top Depth of Screen (ft below land surface)	Bottom Depth of Screen (ft below land surface)	Top of Screen Elevation (ft msl)	Bottom of Screen Elevation (ft msl)	Northing	Easting	Date Abandoned (mo/day/yr)
BGO 48C	BGO 48C	5/6/1991	*PVC*	*4*	10	276.8	274.7	88	98	186.7	176.7	3682413	437929	
BGO 48D	BGO 48D	5/9/1991	*PVC*	*4*	10	277.1	275	63	73	212	202	3682409	437931	
BGO 49A	BGO 49A	5/14/1991	*PVC*	*4*	10	271.4	269.1	184	194	85.1	75.1	3682435	438320	
BGO 49C	BGO 49C	5/24/1991	*PVC*	*4*	10	271.3	269	93	103	176	166	3682438	438317	
BGO 49D	BGO 49D	5/24/1991	*PVC*	*4*	20	271.7	269.5	31	51	238.5	218.5	3682441	438314	
BGO 50A	BGO 50A	11/27/1991	*PVC*	*4*	10	255.6	253.5	153	163	100.5	90.5	3682392	437589	
BGO 50C	BGO 50C	11/27/1991	*PVC*	*4*	10	255.7	253.5	81	91	172.5	162.5	3682392	437595	
BGO 50D	BGO 50D	11/27/1991	*PVC*	*4*	20	256.2	254	26	46	228	208	3682392	437599	
BGO 51A	BGO 51A	6/3/1994	*PVC*	*4*	10	289.6	287.1	202	212	85.1	75.1	3682785	438682	
BGO 51AA	BGO 51AA	5/31/1994	*PVC*	*4*	10	289.5	287.2	248	258	39.2	29.2	3682785	438692	
BGO 51B	BGO 51B	6/7/1994	*PVC*	*4*	10	289.4	286.9	160	170	126.9	116.9	3682785	438685	
BGO 51C	BGO 51C	6/8/1994	*PVC*	*4*	10	289.3	287.1	102	112	185.1	175.1	3682785	438687	
BGO 51D	BGO 51D	6/8/1994	*PVC*	*4*	20	289.6	287.1	47	67	240.1	220.1	3682785	438690	
BGO 52A	BGO 52A	9/14/1994	*PVC*	*4*	10	284.4	281.7	190	200	91.7	81.7	3682790	438431	
BGO 52AA	BGO 52AA	8/11/1994	*PVC*	*4*	10	284.5	281.6	235	245	46.6	36.6	3682791	438428	
BGO 52B	BGO 52B	9/19/1994	*PVC*	*4*	10	284.4	281.7	145	155	136.7	126.7	3682790	438433	
BGO 52C	BGO 52C	9/23/1994	*PVC*	*4*	10	284.5	281.4	92.7	102.7	188.7	178.7	3682790	438435	
BGO 52D	BGO 52D	9/23/1994	*PVC*	*4*	20	284.8	282.1	42.7	62.7	239.4	219.4	3682790	438438	
BGO 53A	BGO 53A	12/1/1994	*PVC*	*4*	10	291.5	288.7	200	210	88.7	78.7	3682829	437739	
BGO 53AA	BGO 53AA	11/18/1994	*PVC*	*4*	10	291.78	288.9	240	250	48.9	38.9	3682829	437742	
BGO 53B	BGO 53B	12/2/1995	*PVC*	*4*	10	291.5	288.6	135.1	145.1	153.5	143.5	3682829	437736	
BGO 53C	BGO 53C	12/2/1994	*PVC*	*4*	10	291.3	288.4	95.2	105.2	193.2	183.2	3682829	437733	
BGO 53D	BGO 53D	12/7/1994	*PVC*	*4*	20	292	289	43.7	63.7	245.3	225.3	3682826	437742	
BGX 1A	BGX 01A	4/12/1991	*PVC*	*4*	10	291.3	289.1	165	175	124.1	114.1	3683584	438383	
BGX 1C	BGX 01C	4/25/1991	*PVC*	*4*	10	291.4	289.3	103.3	113.3	186	176	3683583	438387	
BGX 1D	BGX 01D	4/29/1991	*PVC*	*4*	20	291.4	289.2	54.5	74.5	234.7	214.7	3683582	438391	
BGX 2B	BGX 02B	2/15/1991	*PVC*	*4*	10	291.5	289.2	142	152	147.2	137.2	3683616	438234	
BGX 2D	BGX 02D	3/1/1991	*PVC*	*4*	10	291.3	289.1	98	108	191.1	181.1	3683615	438238	
BGX 3D	BGX 03D	2/7/1991	*PVC*	*4*	20	291.4	289.1	67.5	87.5	221.6	201.6	3683623	438050	
BGX 4A	BGX 04A	1/22/1991	*PVC*	*4*	10	291	288.8	172	182	116.8	106.8	3683596	437856	
BGX 4C	BGX 04C	1/29/1991	*PVC*	*4*	10	290.9	288.7	108	118	180.7	170.7	3683595	437852	
BGX 4D	BGX 04D	1/29/1991	*PVC*	*4*	20	291.1	288.8	65	85	223.8	203.8	3683594	437846	

Table A-1. MWMF Monitoring Well Construction Details

Monitoring Well Designation as Used in This Report	Monitoring Well Designation as Used in the MWMF RCRA Part B Permit Application (Rev. 6)	Installation Date (mo/day/yr)	Well Casing/ Screen Material	Well Casing Diameter (in)	Length of Screen (ft)	Top of Casing Reference Elevation (ft msl)	Land Surface/ Ground Elevation (ft msl)	Top Depth of Screen (ft below land surface)	Bottom Depth of Screen (ft below land surface)	Top of Screen Elevation (ft msl)	Bottom of Screen Elevation (ft msl)	Northing	Easting	Date Abandoned (mo/day/yr)
BGX 5D	BGX 05D	2/5/1991	*PVC*	*4*	20	285.2	283	68	88	215	195	3683741	437785	
BGX 6D	BGX 06D	4/15/1991	*PVC*	*4*	20	277.2	275	64	84	211	191	3683863	437778	6/20/2012
BGX006DR	BGX006DR	6/21/2012	*PVC*	*2*	20	278.9	276.4	73	93	203.4	183.4	3683838	437734	
BGX 7D	BGX 07D	4/12/1991	*PVC*	*4*	20	279.4	277.1	63	83	214.1	194.1	3683908	438042	
BGX 8DR	BGX 08D(R)	6/6/1991	*PVC*	*4*	20	278.4	276.1	73	93	203.1	183.1	3683834	438334	
BGX 9D	BGX 09D	3/18/1991	PVC	4	20	279.6	277.4	45	65	232.4	212.4	3683777	438594	
BGX 10D	BGX 10D	2/6/1991	PVC	4	20	277	274.8	38.6	58.6	236.2	216.2	3683635	438789	
BGX 11D	BGX 11D	1/24/1991	*PVC*	*4*	20	276.5	273.8	37.1	57.1	236.7	216.7	3683385	438902	
BGX 12C	BGX 12C	1/21/1991	PVC	4	10	275.3	273.1	89	99	184.1	174.1	3683187	439081	
BGX 12D	BGX 12D	1/21/1991	PVC	4	20	275.4	273.2	29.5	49.5	243.7	223.7	3683182	439084	
BGX 13D	BGX 13D	11/1/2010	PVC	4	10	278.57	275.78	72.8	82.8	202.98	192.98	3683849	438267	
BSE 1C1	BSE 01C	9/10/1997	PVC	4	2.5	292.07	283.65	112.06	114.56	171.59	169.09	3682435	438675	
BSE 1C2	BSE 01C	9/10/1997	PVC	4	2.5	292.07	283.65	130.62	133.12	153.03	150.53	3682435	438675	
BSE 1C3	BSE 01C	9/10/1997	PVC	4	2.5	292.07	283.65	143.16	145.66	140.49	137.99	3682435	438675	
BSE 1C4	BSE 01C	9/10/1997	PVC	4	2.5	292.07	283.65	158.2	160.7	125.45	122.95	3682435	438675	
BSE 1D1	BSE 01D	9/10/1997	PVC	4	2.5	286.52	283.76	57.48	59.98	226.28	223.78	3682436	438679	
BSE 1D2	BSE 01D	9/10/1997	PVC	4	2.5	286.52	283.76	70.02	72.52	213.74	211.24	3682436	438679	
BSE 1D3	BSE 01D	9/10/1997	PVC	4	2.5	286.52	283.76	80.04	82.54	203.72	201.22	3682436	438679	
BSE 1D4	BSE 01D	9/10/1997	PVC	4	2.5	286.52	283.76	97.6	100.1	186.16	183.66	3682436	438679	
BSE 2CR1	BSE 02C(R)	10/24/2001	PVC	2	2.5	287.09	286.09	107.9	110.4	178.19	175.69	3682277	438725	
BSE 2CR2	BSE 02C(R)	10/24/2001	PVC	2	2.5	287.09	286.09	127.4	129.9	158.69	156.19	3682277	438725	
BSE 2CR3	BSE 02C(R)	10/24/2001	PVC	2	2.5	287.09	286.09	137.9	140.4	148.19	145.69	3682277	438725	
BSE 2CR4	BSE 02C(R)	10/24/2001	PVC	2	2.5	287.09	286.09	153.4	155.9	132.69	130.19	3682277	438725	
BSE 2D1	BSE 02D	9/2/1997	PVC	4	2.5	286.48	279.72	53.48	55.98	226.24	223.74	3682407	438602	
BSE 2D2	BSE 02D	9/2/1997	PVC	4	2.5	286.48	279.72	66.02	68.52	213.7	211.2	3682407	438602	
BSE 2D3	BSE 02D	9/2/1997	PVC	4	2.5	286.48	279.72	76.04	78.54	203.68	201.18	3682407	438602	
BSE 2D4	BSE 02D	9/2/1997	PVC	4	2.5	286.48	279.72	93.6	96.1	186.12	183.62	3682407	438602	
BSE 3C1	BSE 03C	8/21/1997	PVC	4	2.5	287.07	286.07	112.78	115.28	173.29	170.79	3682276	438728	8/23/2024
BSE 3C2	BSE 03C	8/21/1997	PVC	4	2.5	287.07	286.07	132.84	135.34	153.23	150.73	3682276	438728	8/23/2024
BSE 3C3	BSE 03C	8/21/1997	PVC	4	2.5	287.07	286.07	145.4	147.9	140.67	138.17	3682276	438728	8/23/2024
BSE 3C4	BSE 03C	8/21/1997	PVC	4	2.5	287.07	286.07	160.46	162.96	125.61	123.11	3682276	438728	8/23/2024
BSE 3CR	BSE 03CR	8/27/2024	PVC	2	10	290.01	286.84	118.21	128.21	168.63	158.63	3682484	438737	

Table A-1. MWMF Monitoring Well Construction Details

Monitoring Well Designation as Used in This Report	Monitoring Well Designation as Used in the MWMF RCRA Part B Permit Application (Rev. 6)	Installation Date (mo/day/yr)	Well Casing/ Screen Material	Well Casing Diameter (in)	Length of Screen (ft)	Top of Casing Reference Elevation (ft msl)	Land Surface/ Ground Elevation (ft msl)	Top Depth of Screen (ft below land surface)	Bottom Depth of Screen (ft below land surface)	Top of Screen Elevation (ft msl)	Bottom of Screen Elevation (ft msl)	Northing	Easting	Date Abandoned (mo/day/yr)
BSE 3D1	BSE 03D	9/2/1997	PVC	4	2.5	287.09	286.09	63.72	66.22	222.37	219.87	3682277	438725	
BSE 3D2	BSE 03D	9/2/1997	PVC	4	2.5	287.09	286.09	71.24	73.74	214.85	212.35	3682277	438725	
BSE 3D3	BSE 03D	9/2/1997	PVC	4	2.5	287.09	286.09	81.26	83.76	204.83	202.33	3682277	438725	
BSE 3D4	BSE 03D	9/2/1997	PVC	4	2.5	287.09	286.09	93.8	96.3	192.29	189.79	3682277	438725	
BSW 1C1	BSW 01C	4/7/2000	PVC	2	2.51	256.68	254.88	74.38	76.89	180.5	177.99	3682223	437629	
BSW 1C2	BSW 01C	4/7/2000	PVC	2	2.5	256.72	254.88	83.88	86.38	171	168.5	3682223	437629	
BSW 1C3	BSW 01C	4/7/2000	PVC	2	2.5	256.72	254.88	101.38	103.88	153.5	151	3682223	437629	
BSW 1C4	BSW 01C	4/7/2000	PVC	2	2.5	256.71	254.88	108.88	111.38	146	143.5	3682223	437629	
BSW 1D1	BSW 01D	4/10/2000	PVC	2	2.5	256.63	254.63	39.46	41.96	215.17	212.67	3682221	437630	
BSW 1D2	BSW 01D	4/10/2000	PVC	2	2.5	256.62	254.63	48.97	51.47	205.66	203.16	3682221	437630	
BSW 1D3	BSW 01D	4/10/2000	PVC	2	2.51	256.63	254.63	60.49	63	194.14	191.63	3682221	437630	
BSW 2C1	BSW 02C	4/11/2000	PVC	2	2.51	241.42	240.06	71.88	74.39	168.18	165.67	3682210	437732	9/3/2024
BSW 2C2	BSW 02C	4/11/2000	PVC	2	2.51	241.41	240.06	96.38	98.89	143.68	141.17	3682210	437732	9/3/2024
BSW 2C3	BSW 02C	4/11/2000	PVC	2	2.51	241.39	240.06	103.89	106.4	136.17	133.66	3682210	437732	9/3/2024
BSW 2CR	BSW 02CR	9/5/2024	PVC	2	10	244.55	241.07	71.7	81.7	169.37	159.37	3682421	437744	
BSW 2D1	BSW 02D	4/13/2000	PVC	2	2.51	241.94	240.01	23.4	25.91	216.61	214.1	3682212	437734	
BSW 2D2	BSW 02D	4/13/2000	PVC	2	2.51	241.93	240.01	29.91	32.42	210.1	207.59	3682212	437734	
BSW 2D3	BSW 02D	4/13/2000	PVC	2	2.51	241.92	240.01	52.42	54.93	187.59	185.08	3682212	437734	
BSW 3C1	BSW 03C	4/4/2000	PVC	2	2.5	260.35	128.3	78.87	81.37	49.43	46.93	3682238	437857	
BSW 3C2	BSW 03C	4/4/2000	PVC	2	2.5	260.35	258.52	96.57	99.07	161.95	159.45	3682238	437857	
BSW 3C3	BSW 03C	4/4/2000	PVC	2	2.51	260.36	258.52	108.87	111.38	149.65	147.14	3682238	437857	
BSW 3C4	BSW 03C	4/4/2000	PVC	2	2.5	260.34	258.52	123.38	125.88	135.14	132.64	3682238	437857	
BSW 3D1	BSW 03D	4/5/2000	PVC	2	2.5	259.54	258.18	39.91	42.41	218.27	215.77	3682234	437857	
BSW 3D2	BSW 03D	4/5/2000	PVC	2	2.51	259.53	258.18	53.41	55.92	204.77	202.26	3682234	437857	
BSW 4C1	BSW 04C	3/29/2000	PVC	2	2.51	267.56	266.44	93.38	95.89	173.06	170.55	3682258	437960	
BSW 4C2	BSW 04C	3/29/2000	PVC	2	2.5	267.42	266.44	110.88	113.38	155.56	153.06	3682258	437960	
BSW 4C3	BSW 04C	3/29/2000	PVC	2	2.51	267.52	266.44	125.39	127.9	141.05	138.54	3682258	437960	
BSW 4D1	BSW 04D	3/31/2000	PVC	2	2.5	268.56	266.61	47.39	49.89	219.22	216.72	3682259	437956	
BSW 4D2	BSW 04D	3/31/2000	PVC	2	2.5	268.51	266.61	61.89	64.39	204.72	202.22	3682259	437956	
BSW 4D3	BSW 04D	3/31/2000	PVC	2	2.5	268.56	266.61	67.39	69.89	199.22	196.72	3682259	437956	
BSW 5C1	BSW 05C	3/14/2000	PVC	2	2.5	257.31	255.41	80.87	83.37	174.54	172.04	3682079	437625	
BSW 5C2	BSW 05C	3/14/2000	PVC	2	2.5	257.23	255.41	90.37	92.87	165.04	162.54	3682079	437625	

Table A-1. MWMF Monitoring Well Construction Details

Monitoring Well Designation as Used in This Report	Monitoring Well Designation as Used in the MWMF RCRA Part B Permit Application (Rev. 6)	Installation Date (mo/day/yr)	Well Casing/ Screen Material	Well Casing Diameter (in)	Length of Screen (ft)	Top of Casing Reference Elevation (ft msl)	Land Surface/ Ground Elevation (ft msl)	Top Depth of Screen (ft below land surface)	Bottom Depth of Screen (ft below land surface)	Top of Screen Elevation (ft msl)	Bottom of Screen Elevation (ft msl)	Northing	Easting	Date Abandoned (mo/day/yr)
BSW 5C3	BSW 05C	3/14/2000	PVC	2	2.5	257.05	255.41	109.88	112.38	145.53	143.03	3682079	437625	
BSW 5C4	BSW 05C	3/14/2000	PVC	2	2.5	257.21	255.41	121.38	123.88	134.03	131.53	3682079	437625	
BSW 5D1	BSW 05D	3/16/2000	PVC	2	2.51	257.24	255.5	41.43	43.94	214.07	211.56	3682082	437625	
BSW 5D2	BSW 05D	3/16/2000	PVC	2	2.52	257.25	255.5	51.94	54.46	203.56	201.04	3682082	437625	
BSW 5D3	BSW 05D	3/16/2000	PVC	2	2.5	257.37	255.5	60.46	62.96	195.04	192.54	3682082	437625	
BSW 6C1	BSW 06C	3/8/2000	PVC	2	2.5	244.06	242.16	67.4	69.9	174.76	172.26	3681891	437651	
BSW 6C2	BSW 06C	3/8/2000	PVC	2	2.5	244.05	242.16	78.9	81.4	163.26	160.76	3681891	437651	
BSW 6C3	BSW 06C	3/8/2000	PVC	2	2.5	243.89	242.16	85.4	87.9	156.76	154.26	3681891	437651	
BSW 6C4	BSW 06C	3/8/2000	PVC	2	2.5	244.07	242.16	104.9	107.4	137.26	134.76	3681891	437651	
BSW 6D1	BSW 06D	3/10/2000	PVC	2	2.5	244.65	242.41	29.4	31.9	213.01	210.51	3681893	437652	
BSW 6D2	BSW 06D	3/10/2000	PVC	2	2.5	244.62	242.41	35.9	38.4	206.51	204.01	3681893	437652	
BSW 6D3	BSW 06D	3/10/2000	PVC	2	2.5	244.65	242.41	44.4	46.9	198.01	195.51	3681893	437652	
BSW 7C1	BSW 07C	3/20/2000	PVC	2	2.5	249.34	248.01	76.89	79.39	171.12	168.62	3681994	437755	
BSW 7C2	BSW 07C	3/20/2000	PVC	2	2.51	249.3	248.01	89.39	91.9	158.62	156.11	3681994	437755	
BSW 7C3	BSW 07C	3/20/2000	PVC	2	2.5	249.31	248.01	102.91	105.41	145.1	142.6	3681994	437755	
BSW 7C4	BSW 07C	3/20/2000	PVC	2	2.51	249.32	248.01	120.42	122.93	127.59	125.08	3681994	437755	
BSW 7D1	BSW 07D	3/23/2000	PVC	2	2.51	250.63	248.7	40.41	42.92	208.29	205.78	3681995	437751	
BSW 7D2	BSW 07D	3/23/2000	PVC	2	2.51	250.67	248.7	49.92	52.43	198.78	196.27	3681995	437751	
BSW 7D3	BSW 07D	3/23/2000	PVC	2	2.5	250.68	248.7	64.93	67.43	183.77	181.27	3681995	437751	
BSW 8C1	BSW 08C	3/27/2000	PVC	2	2.5	234.04	231.79	55.98	58.48	175.81	173.31	3682031	437905	
BSW 8C2	BSW 08C	3/27/2000	PVC	2	2.5	234.04	231.79	70.48	72.98	161.31	158.81	3682031	437905	
BSW 8C3	BSW 08C	3/27/2000	PVC	2	2.51	234.03	231.79	91.97	94.48	139.82	137.31	3682031	437905	
BSW 8C4	BSW 08C	3/27/2000	PVC	2	2.51	234.05	231.79	104.48	106.99	127.31	124.8	3682031	437905	
BSW 8D1	BSW 08D	3/28/2000	PVC	2	2.5	233.5	232.27	21.9	24.4	210.37	207.87	3682030	437908	
BSW 8D2	BSW 08D	3/28/2000	PVC	2	2.51	233.47	232.27	33.4	35.91	198.87	196.36	3682030	437908	
BSW 8D3	BSW 08D	3/28/2000	PVC	2	2.5	233.45	232.27	39.9	42.4	192.37	189.87	3682030	437908	
FAB 2	(1)	5/9/1994	PVC	4	20	328.5	326.5	90	110	236.5	216.5	3683122	437418	
FAB002MC	**(4)**	2/24/2004	PVC	2	10	329.07	326.5	130	140	196.5	186.5	3683126.88	437417.558	
FCB 2	FCB 02	9/3/1981	PVC	4	30	307.5	305.2	70	100	235.2	205.2	3682911	437537	11/3/2003
FCB 2C	(2)	11/10/2003	PVC	2	10.2	308.51	305.6	124.7	134.72	180.9	170.88	3682918	437536	
FCB 2D	**(1)**	**11/10/2003**	**PVC**	**2**	**10.2**	**308.02**	**305.3**	**70.34**	**80.36**	**234.96**	**224.94**	**3682916**	**437534**	
FCB 2D	**(1)**	**11/10/2003**	**PVC**	**2**	**10.2**	**308.02**	**305.3**	**80.36**	**90.38**	**224.94**	**214.92**	**3682916**	**437534**	

Table A-1. MWMF Monitoring Well Construction Details

Monitoring Well Designation as Used in This Report	Monitoring Well Designation as Used in the MWMF RCRA Part B Permit Application (Rev. 6)	Installation Date (mo/day/yr)	Well Casing/ Screen Material	Well Casing Diameter (in)	Length of Screen (ft)	Top of Casing Reference Elevation (ft msl)	Land Surface/ Ground Elevation (ft msl)	Top Depth of Screen (ft below land surface)	Bottom Depth of Screen (ft below land surface)	Top of Screen Elevation (ft msl)	Bottom of Screen Elevation (ft msl)	Northing	Easting	Date Abandoned (mo/day/yr)
FSS 1D	FSS 01D	10/6/1988	PVC	4	20	266.3	263.9	34	54	229.9	209.9	3682355	437509	
FSS 2D	FSS 02D	10/7/1988	PVC	4	20	261.8	259.4	35	55	224.4	204.4	3682321	437542	
FSS 3D	FSS 03D	10/10/1988	PVC	4	20	258.4	255.8	30	50	225.8	205.8	3682219	437476	
FSS003C	FSS003C	6/29/2012	PVC	2	20	258.96	256	74.5	94.5	181.5	161.5	3682219	437472	
FSS 4D	FSS 04D	10/16/1988	PVC	4	20	292	289.8	67.2	87.2	222.6	202.6	3682241	437207	
HIW5MC	**HIW5MC**	**11/12/1993**	**PVC**	**4**	**29.9**	**268.2**	**266.1**	**84.1**	**114**	**182**	**152.1**	**3682402.9**	**438454.745**	
HIW5MC	**HIW5MC**	**11/12/1993**	**PVC**	**4**	**14.8**	**268.2**	**266.1**	**129**	**143.8**	**137.1**	**129**	**3682402.9**	**438454.745**	
HMD 1D	HMD 01D	2/1/1991	*PVC*	*4*	20	264.7	262.7	43	63	219.7	199.7	3683762	437644	
HMD 2D	HMD 02D	2/1/1991	*PVC*	*4*	20	261.4	259.3	48.5	68.5	210.8	190.8	3684046	437549	
HMD 3D	HMD 03D	2/1/1991	*PVC*	*4*	20	259.6	257.5	49.8	69.8	207.7	187.7	3684110	437682	
HMD 4B	HMD 04B	5/18/2001	*PVC*	*4*	10.04	251.24	248.72	75	85.04	173.72	163.68	3684088	437869	
HMD 4D	HMD 04D	2/1/1991	*PVC*	*4*	20	251.1	248.5	39.6	59.6	208.9	188.9	3684086	437866	
HSB 85A	HSB 85A	7/1/1984	PVC	3	10	294.5	292.1	221	231	71.1	61.1	3682899	439015	
HSB 85B	HSB 85B	7/1/1984	PVC	4	10	294.7	292	148.8	158.8	143.2	133.2	3682900	439018	
HSB 85C	HSB 85C	8/1/1984	PVC	4	10	294.3	292	67.8	77.8	224.2	214.2	3682902	439014	
HSB142C	HSB 142C	11/5/1990	PVC	4	10	204.2	201.6	30	40	171.6	161.6	3681758	437796	
HSB142D	HSB142D	11/5/1990	PVC	4	10	204.4	201.7	2	12	199.7	189.7	3681754	437794	
HSB143C	HSB 143C	10/9/1990	PVC	4	10	222.4	220.1	41	51	179.1	169.1	3681779	437505	
HSB143D	HSB 143D	10/9/1990	PVC	4	20	223.1	220.9	4	24	216.9	196.9	3681783	437502	
HSB151C	HSB 151C	8/9/1990	PVC	4	10	213.8	211.6	31	41	180.6	170.6	3681819	437943	
HSB151D	HSB 151D	8/20/1990	PVC	4	10	213.8	211.6	4	14	207.6	197.6	3681821	437946	9/18/2003
HSB151DR	(2)	9/8/2003	PVC	2	5.03	214.16	211	14.76	19.79	196.24	191.21	3681819	437939	
NEP 1D	NEP 01D	5/18/2001	PVC	2	10.02	260.27	257.75	64	74.02	193.75	183.73	3684180	437358	8/14/2024
NEP 1DR	NEP 01DR	9/18/2024	PVC	2	10	260.291	257.144	64.9	74.9	192.244	182.244	3684388	437371	
NEP 2D	NEP 02D	5/21/2001	PVC	2	10.01	267.98	265.35	65	75.01	200.35	190.34	3684137	437511	
NEP 4D	NEP 04D	5/18/2001	PVC	2	10	233.32	230.72	34	44	196.72	186.72	3684136	438473	
NEP 3D	*NEP 03D*	*5/15/2001*	*PVC*	*2*	*10*		*238.91*	*45*	*55*	*193.91*	*183.91*	*78358*	*59278*	
NWP 1B	NWP 01B	6/5/2001	PVC	2	10.02	275.76	273.36	92	102.02	181.36	171.34	3683413	437742	
NWP 1D	NWP 01D	6/5/2001	PVC	2	10.1	275.06	272.72	60	70.1	212.72	202.62	3683420	437742	
NWP 2D	NWP 02D	5/24/2001	PVC	2	10.02	249.8	247.33	45	55.02	202.33	192.31	3683875	437500	
NWP 3C	NWP 03C	6/5/2001	PVC	2	10.2	315.69	313.17	114	124.02	199.17	189.15	3682996	437579	
NWP 3D	NWP 03D	5/25/2001	PVC	2	20.12	315.93	313.45	78	98.12	235.45	215.33	3683000	437577	

Table A-1. MWMF Monitoring Well Construction Details

Monitoring Well Designation as Used in This Report	Monitoring Well Designation as Used in the MWMF RCRA Part B Permit Application (Rev. 6)	Installation Date (mo/day/yr)	Well Casing/ Screen Material	Well Casing Diameter (in)	Length of Screen (ft)	Top of Casing Reference Elevation (ft msl)	Land Surface/ Ground Elevation (ft msl)	Top Depth of Screen (ft below land surface)	Bottom Depth of Screen (ft below land surface)	Top of Screen Elevation (ft msl)	Bottom of Screen Elevation (ft msl)	Northing	Easting	Date Abandoned (mo/day/yr)
NWP101D	NWP 101D	2/17/1999	PVC	2	10	336	333.59	110	120	223.59	213.59	3683188	437540	
NWP202C	NWP 202C	2/16/1999	PVC	2	10	336.61	334.3	150.8	160.8	183.5	173.5	3683189	437519	
NWP302A	(1)	3/17/1999	PVC	2	10	337.91	333.37	254	264	79.37	69.37	3683183	437494	
NWP303A	(1)	2/11/1999	PVC	2	10	329.43	326.71	201	211	125.71	115.71	3683117	437420	
SEP001MD	**(4)**	2/23/2004	PVC	2	20	268.01	265.45	40	60	225.45	205.45	3682401.23	438450.548	
SEP002B	**(4)**	2/17/2004	PVC	2	10	214.93	212.35	57	67	155.35	145.35	3681765.31	438145.86	
SEP002D	**(4)**	2/18/2004	PVC	2	10	214.86	212.3	30	40	182.3	172.3	3681765.4	438143.731	
SEP003CL	**(4)**	2/19/2004	PVC	2	10	254.85	252.35	100	110	152.35	142.35	3682116.16	438168.098	
SEP003CU	**(4)**	2/20/2004	PVC	2	10	254.7	252.25	76	86	176.25	166.25	3682116.62	438166.045	
SWP 1C	(1)	10/30/2003	PVC	2	10	280.86	278.2	96.35	106.35	181.85	171.85	3682390	438000	
SWP 2C	(1)	10/31/2003	PVC	2	10.02	272.04	269.4	88.34	98.36	181.06	171.04	3682438	438172	
SWP 3D	**(1)**	**10/31/2003**	**PVC**	**2**	**15.02**	**269.03**	**266.4**	**57.77**	**72.79**	**208.63**	**193.61**	**3682277**	**438022**	
SWP 3D	**(1)**	**10/31/2003**	**PVC**	**2**	**5.01**	**269.03**	**266.4**	**47.75**	**52.76**	**218.65**	**213.64**	**3682277**	**438022**	
SWP004MD	**(4)**	2/25/2004	PVC	2	10	257.73	255.1	58	68	197.1	187.1	3682086.21	437624.581	
SWP005C	SWP005C	7/2/2012	PVC	2	10	253.39	249.55	75	85	174.55	164.55	3682075	437442	
SWP005D	SWP005D	7/3/2012	PVC	2	20	252.18	249.42	30	50	219.42	199.42	3682073	437441	
SWP006C	SWP006C	7/9/2012	PVC	2	10	253.56	250.64	70	80	180.64	170.64	3681951	437467	
SWP006D	SWP006D	7/9/2012	PVC	2	20	253.69	250.88	29.5	49.5	221.38	201.38	3681950	437470	
HSB 66DR	**(5)**	10/1/2003	PVC	2	20	281.9	278.6	70	90	208.59	188.57	3682203.93	438759.879	
HSB 119C	**(5)**	11/26/2003	PVC	2	10	257.95	255	95.18	105.17	159.82	149.83	3682218.85	438441.82	
HSB 120C	**(5)**	12/3/2003	PVC	2	10	268.28	265.3	100.02	110.02	165.28	155.28	3682348.43	438473.476	
HSB 154D	**(5)**	12/3/2003	PVC	2	10	264.84	261.6	46.92	56.92	214.68	204.68	3682175.78	438639.034	

(1) Added to the monitoring program or installed in 2003; however, will not be sampled for the first time until 1Q04.

(2) Replacement well for HSB151D and sampled for the first time in 4Q03.

(3) Installed in 2003; however, will not be sampled for the first time until 2Q04.

(4) Installed in 2004; however, will not be sampled for the first time until 2Q04.

Italics indicate from ESH-EMS-2000470, Environmental Protection Department's Well Inventory (U), March 2001.

Bold indicates two screen zones.

Table A-2. F-Area HWMF, H-Area HWMF, and MWMF PWMS Wells

F-Area HWMF PWMS Wells

Well ID	PWMS Type	Well ID	PWMS Type
FSB 77	Tank	FSB 104D	Tank
FSB 78	Tank	FSB 105C	Tank
FSB 78C	TAP	FSB 106C	Tank
FSB 79	Tank	FSB 107C	TAP
FSB 79C	Tank	FSB 107D	Tank
FSB 87C	TAP	FSB 110C	TAP
FSB 89D	Tank	FSB 110D	Tank
FSB 91D	Tank	FSB 112DR	Tank
FSB 92D	Tank	FSB 117D	Tank
FSB 93C	TAP	FSB 119D	Tank
FSB 94C	TAP	FSB 120C	TAP
FSB 94DR	Tank	FSB 121C	TAP
FSB 97C	TAP	FSB 121DR	Tank
FSB 98C	TAP	FSB 122C	TAP
FSB 99C	TAP	FSB 127D	Tank
FSB 104C	TAP		

H-Area HWMF PWMS Wells

Well ID	PWMS Type
HSB 67	Tank
HSB 69	Tank
HSB 84D	Tank
HSB 86C	Tank
HSB 86D	Tank
HSB 102D	Tank
HSB 103D	Tank
HSB 104D	Tank
HSB 105D	Tank
HSB 106D	Tank
HSB 107D	Tank
HSB 108D	Tank
HSB 109D	Tank
HSB 114D	Tank
HSB 115D	Tank
HSB 116D	Tank
HSB 134D	Tank
HSB 136D	Tank
HSB 139D	Tank

MWMF PWMS Wells

Well ID	PWMS Type
BGO 6D	Tank
BGO 7D	Tank
BGO 12DR	Tank
BGO 14CR	Tank
BGO 14DR	Tank
BGO 27C	TAP
BGO 28D	Tank
BGO 30C	TAP
BGO 31D	Tank
BGO 33C	TAP
BGO 37C	TAP
BGO 41A	Tank
BGO 42C	Tank
BGO 46C	TAP
BGO 46D	Tank
BGO 48C	TAP
BGO 48D	Tank
BGO 50C	TAP
BGO 53C	Tank
BGX 2D	Tank

APPENDIX B

F-AREA, H-AREA, AND MIXED WASTE MANAGEMENT FACILITY GROUNDWATER AND SURFACE WATER MONITORING RESULTS TABLES

List of Matrix Tables (Annual)

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Table B-3 2024 F Area Seepline Piezometer and Surface Water Monitoring
Table B-4 2024 H Area Seepline Piezometer and Surface Water Monitoring
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Table B-6 2024 H Area Annual Appendix IX Monitoring
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Table B-12 2024 NWP/NEP Surface Water Sampling
Table B-13 3Q24 SWP Annual Appendix IX and CRML Monitoring
Table B-14 3Q24 SEP Annual Appendix IX and CRML Monitoring
Table B-15 3Q24 NEP Annual Appendix IX and CRML Monitoring
Table B-16 3Q24 NWP Annual Appendix IX and CRML Monitoring

Available Laboratories

Laboratory name	Acronym	SC Certification Number
EBL	Environmental Bioassay Lab (SRS)	02550001
GEL	General Engineering Laboratories	10120001
PACE	Pace Analytical Energy Services, LLS	89009003
SHE	Shealy Environmental Services, Inc	32010
TAL	TestAmerica Labs, Inc	85002001

Data Qualification

The qualifiers and qualification codes to be used when validating analytical data are listed in the following tables. Qualifiers are given in order of "usability," i.e., lower ones supercede higher ones as validation functions are applied. Qualification codes form a series in validation.

USEPA Functional Guideline Qualifiers	
Qualifier	**Description**
[null]	Data not remarked. The **detected** analyte result is acceptable for use as reported.
J	The **detected** analyte was positively identified but the **result is approximate**.
NJ	The **detected** analyte was only **tentatively identified** and the **result is approximate**. All usable tentatively identified compounds results receive this code.
U	The analyte was analyzed for, but **not detected**. The sample quantitation limit (SQL) is valid unless blank contamination is indicated.
UJ	The analyte was analyzed for, but **not detected**. The **Sample Quantitation Limit (SQL) is approximate**, and may be inaccurate or imprecise.
R	The sample result is **rejected** as unusable due to serious deficiencies in meeting quality control criteria. The **analyte may be present or absent**.

Qualification Codes	
Qual Codes	**Description**
(Null)	Data not remarked.
A	The result is the mean of two or more results.
C	The result is calculated.

Qualification Codes	
G	The result reported is the maximum of two or more results.
H	The result is from a field kit determination and may not be accurate.
I[1]	The result is less than the SQL, but equal to or greater than the sample-specific method detection limit (ssMDL).
K[2]	The actual concentration is suspected to be less than the reported result.
L	The actual concentration is suspected to be greater than the reported result.
Q	The sample was held beyond the normal holding time prior to analysis.
T	The result is less than the criteria of detection.
V	The analyte was detected in the method blank.
Y	The result is from an unpreserved or incorrectly preserved sample; the data may not be accurate.
Z[2]	There were too many colonies present to count; the numeric value represents the filtration volume.
1	Compound identification criteria were not met.
2	Laboratory control sample criteria were not met.
3	Instrument performance check serial dilution criteria were not met.
4	Matrix interference was present.
5	Matrix spike concentration was $\leq$ 0.25× the sample concentration, and the percent recovery cannot be determined.
6	The analyte was detected in the field blank.
7	The analyte was detected in the rinsate blank.
8	The analyte was detected in the trip blank.
9	The field duplicate relative percent difference (RPD) was not within control limits.
10	Internal standard or carrier criteria were not met when affecting quantitation.
11	Matrix spike recovery was not within the control limits.
12	A tentatively identified compound is a suspected aldol-condensation product.
13	Initial or continuing calibration criteria was not met.
14	Surrogate or tracer spike recovery is out of specification.

Qualification Codes	
15[2]	Graphite furnace atomic absorption quality control (QC) a. Duplicate injection criteria were not met. b. Post-digestion spike recovery was not within control limits and the sample absorbance is > 50% of the post-digestion spike absorbance.
16	The sample was analyzed by the method of standard additions.
17[2]	Graphite furnace atomic absorption QC: The post-digestion spike recovery is not within control limits and the sample absorbance is < 50% of the post-digestion spike absorbance.
18	The laboratory duplicate RPD or matrix spike (MS)/matrix spike duplicate RPD was not within control limits.
19	Analyte detected in storage blank.
21	Result is above detection, but less than SQL.
22	South Carolina Department of Health and Environmental Control (SCDHEC)-required certification for analyte-method combination was not held by lab.
23	Result was derived beyond the calibration range of the instrument/method.

NOTES: *[1] This code is not currently used, but may be used in the future or in other SRS programs.*

[2] This code is redundant to another code and is not used at this time.

Results below Detection

The contract laboratories perform method detection limit studies on an annual or as-needed basis to establish threshold values for determination of detected and nondetected constituents. Results below detection are reported differently for radiological and nonradiological analyses.

For radiological analyses, the analytical result field contains the result calculated by the analytical instrument software. Because the result is calculated, it may be reported as a value below the minimum detectable activity or even a negative number.

For nonradiological analyses, nondetected results are converted to the value of estimated quantitation limit (EQL). The EQL is defined as the lowest concentration that can be

achieved reliably for a specific sample within specified limits of precision and accuracy during routine laboratory operating conditions. The EQL is modified for sample dilution or concentration or because of an unusual aliquot size that affects analytical sensitivity. In some cases, a detected result is requalified as nondetected during the validation process. This occurs when the constituent is detected in an associated blank sample, requiring a higher detection threshold for the analytical batch or well clusters. If an analyte is reported by the laboratory as detected but is converted to a nondetect during validation, the numeric value reported by the laboratory is retained in the result column, but the < symbol is added to the record.

Data Filtering

Data in this report have been filtered per Westinghouse Savannah River Company (WSRC) protocol specifically designed Resource Conservation and Recovery Act (RCRA) groundwater reporting to define data quality objectives and data usability. The purpose of the filtering logic and the data retrieval process is to select the maximum result that has the least amount of uncertainty based upon qualifiers applied during the validation process.

Rej is used to indicate rejected data. For nondetects, <EQL for nonradiological results or the sample-specific minimum detectable activity for radiological results. For all data qualified with the United States Environmental Protection Agency (USEPA) Functional Guideline code *J*, indicating an estimated quantity, the result is replaced by the letters *NDD*, meaning that these data are considered not decision data.

None of the data classified as rejected, undetected, or estimated are considered in discussions of results above standards in this report.

Holding Times

Action when criteria are not met and the holding time is exceeded:

Criteria	Functional Guideline Qualifier	Qualification Code
Holding time exceeded by <2x	*J*-detects *UJ*-nondetects	*Q*
Holding time grossly exceeded (≥2x)	*J*-detects *R*-nondetects	*Q*

Beta Dose (F- and H-Area HWMF only)

If any beta-emitting radionuclides on the Groundwater Protection Standard (GWPS) list exceed their minimum detectable activity (MDA), beta dose is calculated and entered into the data tables in this appendix. Nondetected, rejected, or estimated values are not included in the calculation of beta dose.

The dose is obtained by dividing each detected result for beta-emitting radionuclides by the USEPA conversion factor shown in table below:

Activity to Dose Conversion Factors

Analyte	USEPA 1976 Dose (4 mrem/yr) Limit
Carbon-14	2,000 pCi/L
Cesium-137	200 pCi/L
Cobalt-60	100 pCi/L
Iodine-129	1 pCi/L
Radium-228*	5 pCi/L
Strontium-90	8 pCi/L
Technetium-99	900 pCi/L

*The USEPA's 1976 guidance document gives no equivalent for radium-228, so the GWPS of 5 pCi/L for the sum of radium-226 and -228 is used for radium-228.

For each well, the unfiltered activities (in pCi/L) for each of the beta emitters on the GWPS is divided by its individual limit (also in pCi/L) x 4mrem/yr, as shown below:

$A_{C\text{-}14}/2{,}000$ x 4mrem/yr + $A_{Cs\text{-}137}/200$ x 4mrem/yr + $A_{Co\text{-}60}/100$ x 4mrem/yr+ $A_{I\text{-}129}/1$ x 4mrem/yr + $A_{Ra\text{-}228}/5$ x 4mrem/yr + $A_{Sr\text{-}90}/8$ x 4mrem/yr + $A_{Tc\text{-}99}/900$ x 4mrem/yr = beta dose, where A is the measured activity for each radionuclide.

The beta dose for a theoretical person drinking 2 L/day of that well's water exceeds the USEPA standard of 4 mrem/yr.

Beta Dose, Sum of Beta, and Sum of Alpha (MWMF only)

Sum of beta dose <4 mrem/yr and <50 pCi/L is defined as follows: sum of beta dose <4mrem/yr = the measured concentration (pCi/L) of carbon-14/2000 x 4mrem/yr + the measured concentration (pCi/L) of iodine-129/1.0 x 4mrem/yr + the measured concentration (pCi/L) of strontium-90/8.0 x 4mrem/yr. This value must be <1.0 for sum of beta dose to be <4 mrem/yr for the period of review.

Sum of Beta: <50 pCi/L = the measured concentration (pCi/L) of carbon-14 + the measured concentration (pCi/L) of iodine 129. This value must be <50 pCi/L for the period of review.

Sum of Alpha <15 pCi/L = the measured concentration (pCi/L) of uranium-233/234 + the measured concentration (pCi/L) of uranium-235 + the measured concentration (pCi/L) of uranium-238. This value must be <15 pCi/L for the period of review.

Table B-1a. UAZ 2024 F-Area Annual Compliance Monitoring

| Station | Well Use | Aquifer Zone | SAMPLE COLLECTION DATE day-month-year | Field Data: pH su/unitless | SPECIFIC CONDUCTANCE uS/cm | WATER TEMPERATURE degC | TURBIDITY NTU | SAMPLING EVENT WATER ELEVATION ft | Constituent | CAWPU Unit | Inorganics: FIELD CONDITIONS | ALUMINUM n/a | ANTIMONY ug/L | ARSENIC ug/L | BARIUM ug/L | BERYLLIUM ug/L | CADMIUM ug/L | CHROMIUM ug/L | COBALT ug/L | COPPER ug/L | LEAD ug/L | MERCURY ug/L | NICKEL ug/L | NITRATE/NITRITE AS NITROGEN mg/L | SELENIUM ug/L | SILVER ug/L | THALLIUM ug/L | VANADIUM ug/L | ZINC ug/L | Organics: BENZENE ug/L | CHLOROFORM ug/L | DICHLOROMETHANE (METHYLENE CHLORIDE) ug/L | PHENOLS ug/L | TETRACHLOROETHYLENE (PCE) ug/L | TRICHLOROETHYLENE (TCE) ug/L | TRICHLOROFLUOROMETHANE ug/L | Radionuclides: AMERICIUM-241 pCi/L | CARBON-14 pCi/L | CESIUM-137 pCi/L | COBALT-60 pCi/L | COMBINED RADIUM (226 AND 228) pCi/L | CURIUM-242 pCi/L | CURIUM-243/244 pCi/L | CURIUM-245/248 pCi/L | GROSS ALPHA pCi/L | IODINE-129 pCi/L | NONVOLATILE BETA pCi/L | PLUTONIUM-238 pCi/L | PLUTONIUM-239/240 pCi/L | RADIUM-226 pCi/L | RADIUM-228 pCi/L | STRONTIUM-90 pCi/L | SUM OF ALPHAS (F/H) pCi/L | SUM OF BETA (F/H) mrem/yr | SUM OF BETA DOSE (F/H) pCi/L | TECHNETIUM-99 pCi/L | THORIUM-228 pCi/L | THORIUM-230 pCi/L | THORIUM-232 pCi/L | TRITIUM pCi/mL | URANIUM-233/234 pCi/L | URANIUM-234 pCi/L | URANIUM-235 pCi/L | URANIUM-238 pCi/L |
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Table B-1b. 2024 LAZ F-Area Annual Compliance Monitoring

| | | | Field Data | | | | | | | | Inorganics | | | | | | | |

Table B-1c. GAU 2024 F-Area Annual Compliance Monitoring

| | | | Field Data | | | | | | | Inorganics | | | | | | |

Table D-2a. SAT 2024 H-Area Annual Compliance Monitoring

Analyte Group	Analyte	Unit	Method	Lower Limit	Upper Limit	Sample Date	Sample Time	Result	Qualifier	Lab Name	Lab Sample ID	Lab Batch ID	Lab Comments
Alkalinity	ALKALINITY, TOTAL (AS CACO3)	MG/L	SM 2320B			01/02/2024	1100	1.5	U	SRL	2401A0001	2401A0001	

Table B-2b. LAZ 2024 H-Area Annual Compliance Monitoring

| Station | Well Use | Aquifer Zone | Field Data: SAMPLE COLLECTION DATE | WATER TEMPERATURE | SAMPLING EVENT WATER ELEVATION | TURBIDITY | SPECIFIC CONDUCTANCE | PH | Comothmet | Inorganics: ANTIMONY | ARSENIC | BARIUM | BERYLLIUM | CADMIUM | CHROMIUM | COBALT | COPPER | CYANIDE | LEAD | MERCURY | NICKEL | NITRATE-NITRITE AS NITROGEN | SELENIUM | SILVER | THALLIUM | TIN | VANADIUM | ZINC | Organics: BENZENE | DICHLOROMETHANE (METHYLENE CHLORIDE) | TETRACHLOROETHYLENE (PCE) | TRICHLOROETHYLENE (TCE) | TRICHLOROFLUOROMETHANE | Radionuclides: AMERICIUM-241 | CARBON-14 | COBALT-60 | COMBINED RADIUM (226 AND 228) | CURIUM-242 | CURIUM-243/244 | CURIUM-245/246 | GROSS ALPHA | IODINE-129 | NICKEL-63 | NONVOLATILE BETA | PLUTONIUM-238 | PLUTONIUM-239/240 | RADIUM-226 | RADIUM-228 | STRONTIUM-90 | SUM OF ALPHAS (F/H) | SUM OF BETA (F/H) | SUM OF BETA DOSE (F/H) | TECHNETIUM-99 | THORIUM-228 | THORIUM-230 | THORIUM-232 | TRITIUM | URANIUM-233/234 | URANIUM-234 | URANIUM-235 | URANIUM-238 |
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Table B-2c. GAU 2024 H-Area Annual Compliance Monitoring

| | | | Field Data | | | | | | | | Inorganics | | | | | | | |

Table B-3 2024 F-Area Seepline Surface Water Monitoring

| Station | Well Use | Aquifer Zone | Field Data: SAMPLE COLLECTION DATE | PH | SPECIFIC CONDUCTANCE | WATER TEMPERATURE | PHENOLPHTHALEIN ALKALINITY (AS CACO3) | TOTAL ALKALINITY (AS CACO3) | TURBIDITY | SAMPLING EVENT WATER ELEVATION | SYNCHRONOUS MEASUREMENT DATE | SYNCHRONOUS WATER ELEVATION | Constituent | GWPS Unit | FIELD CONDITIONS | Inorganics: ALUMINUM | ANTIMONY | ARSENIC | BARIUM | BERYLLIUM | CADMIUM | CHROMIUM | COBALT | COPPER | LEAD | MERCURY | NICKEL | NITRATE-NITRITE AS NITROGEN | SELENIUM | SILVER | THALLIUM | VANADIUM | ZINC | Organics: BENZENE | CHLOROFORM | DICHLOROMETHANE (METHYLENE CHLORIDE) | PHENOLS | TETRACHLOROETHYLENE (PCE) | TRICHLOROETHYLENE (TCE) | TRICHLOROFLUOROMETHANE | Radionuclides: AMERICIUM-241 | CARBON-14 | CESIUM-137 | COBALT-60 | COMBINED RADIUM (226 AND 228) | CURIUM-242 | CURIUM-243/244 | CURIUM-245/246 | GROSS ALPHA | IODINE-129 | NONVOLATILE BETA | PLUTONIUM-238 | PLUTONIUM-239/240 | RADIUM-226 | RADIUM-228 | STRONTIUM-90 | SUM OF ALPHAS (F/H) | SUM OF BETA (F/H) | SUM OF BETA DOSE (F/H) | TECHNETIUM-99 | THORIUM-228 | THORIUM-230 | THORIUM-232 | TRITIUM | URANIUM-233/234 | URANIUM-234 | URANIUM-235 | URANIUM-238 |
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Table B-4. 2024 H-Area Seepline Piezometer and Surface Water Monitoring

| Station | Well Use | Aquifer Zone | SAMPLE COLLECTION DATE | WATER TEMPERATURE | SAMPLING EVENT WATER ELEVATION | TURBIDITY | SPECIFIC CONDUCTANCE | PH | Constituent | FIELD CONDITIONS | ANTIMONY | ARSENIC | BARIUM | BERYLLIUM | CADMIUM | CHROMIUM | COBALT | COPPER | CYANIDE | LEAD | MERCURY | NICKEL | NITRATE-NITRITE AS NITROGEN | SELENIUM | SILVER | THALLIUM | TIN | VANADIUM | ZINC | BENZENE | DICHLOROMETHANE (METHYLENE CHLORIDE) | TETRACHLOROETHYLENE (PCE) | TRICHLOROETHYLENE (TCE) | TRICHLOROFLUOROMETHANE | COMBINED RADIUM (226 AND 228) | CONVERTED URANIUM MASS | CURIUM-242 | CURIUM-243/244 | CURIUM-245/246 | GROSS ALPHA | IODINE-129 | NICKEL-63 | NONVOLATILE BETA | PLUTONIUM-238 | PLUTONIUM-239/240 | RADIUM-226 | RADIUM-228 | STRONTIUM-90 | SUM OF ALPHAS (F/H) | SUM OF BETA (F/H) | SUM OF BETA DOSE (F/H) | TECHNETIUM-99 | THORIUM-228 | THORIUM-230 | THORIUM-232 | TRITIUM | URANIUM | URANIUM-233/234 | URANIUM-234 | URANIUM-235 | URANIUM-238 |
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Table B-5 3Q24 F-Area Annual Appendix IX Monitoring

Station	Well Use	Aquifer Zone	Field Data: SAMPLE COLLECTION DATE	Acids: 2,3,4,6-TETRACHLOROPHENOL	Acids: 2,4,5-TRICHLOROPHENOL	Acids: 2,4,6-TRICHLOROPHENOL	Acids: 2,4-DICHLOROPHENOL	Acids: 2,4-DIMETHYLPHENOL	Acids: 2,4-DINITROPHENOL	Acids: 2,6-DICHLOROPHENOL	Acids: 2-CHLOROPHENOL	Acids: 2-NITROPHENOL	Acids: 4-NITROPHENOL	Acids: DINITRO-O-CRESOL	Acids: MP-CRESOL	Acids: O-CRESOL (2-METHYLPHENOL)	Acids: P-CHLORO-M-CRESOL	Acids: PENTACHLOROPHENOL	Acids: PHENOL	Base/Neutrals: 1,2,4,5-TETRACHLOROBENZENE	Base/Neutrals: 1,2,4-TRICHLOROBENZENE	Base/Neutrals: 1,2-DICHLOROBENZENE	Base/Neutrals: 1,3,5-TRINITROBENZENE	Base/Neutrals: 1,3-DICHLOROBENZENE	Base/Neutrals: 1,3-DINITROBENZENE	Base/Neutrals: 1,4-DICHLOROBENZENE	Base/Neutrals: 1,4-DIOXANE	Base/Neutrals: 1,4-NAPHTHOQUINONE	Base/Neutrals: 1-NAPHTHYLAMINE	Base/Neutrals: 2,4-DINITROTOLUENE	Base/Neutrals: 2,6-DINITROTOLUENE	Base/Neutrals: 2-ACETYLAMINOFLUORENE	Base/Neutrals: 2-CHLORONAPHTHALENE	Base/Neutrals: 2-METHYLANILINE (O-TOLUIDINE)	Base/Neutrals: 2-METHYLNAPHTHALENE	Base/Neutrals: 2-NAPHTHYLAMINE	Base/Neutrals: 2-NITROANILINE	Base/Neutrals: 2-PICOLINE	Base/Neutrals: 3,3-DICHLOROBENZIDINE	Base/Neutrals: 3,3'-DIMETHYLBENZIDINE	Base/Neutrals: 3-METHYLCHOLANTHRENE	Base/Neutrals: 4-AMINOBIPHENYL	Base/Neutrals: 4-BROMOPHENYL PHENYL ETHER	Base/Neutrals: 4-CHLOROANILINE	Base/Neutrals: 4-CHLOROPHENYL PHENYL ETHER	Base/Neutrals: 4-NITROQUINOLINE-1-OXIDE	Base/Neutrals: 5-NITRO-O-TOLUIDINE	Base/Neutrals: 7,12-DIMETHYLBENZ(A)ANTHRACENE	Base/Neutrals: A,A-DIMETHYLPHENETHYLAMINE	Base/Neutrals: ACENAPHTHENE	Base/Neutrals: ACENAPHTHYLENE	Base/Neutrals: ACETOPHENONE	Base/Neutrals: ANILINE
			day-month-year	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	5200	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
FSB 90D	Point of Compliance Well	UAZ_UTRAU	08-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
				<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
FSB 92C	Point of Compliance Well	LAZ_UTRAU	08-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
FSB 93D	Point of Compliance Well	UAZ_UTRAU	08-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
FSB 95CR	Point of Compliance Well	LAZ_UTRAU	10-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
FSB 95DR	Point of Compliance Well	UAZ_UTRAU	10-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
FSB 97A	Point of Compliance Well	GAU	08-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL

Table B-5 3Q24 F-Area Annual Appendix IX Monitoring

Station	Well Use	Aquifer Zone	Field Data: SAMPLE COLLECTION DATE	Base/Neutrals: ANTHRACENE	Base/Neutrals: ARAMITE	Base/Neutrals: BENZO(G,H,I)PERYLENE	Base/Neutrals: BENZO(A)ANTHRACENE	Base/Neutrals: BENZO(A)PYRENE	Base/Neutrals: BENZO(B)FLUORANTHENE	Base/Neutrals: BENZO(K)FLUORANTHENE	Base/Neutrals: BENZYL ALCOHOL	Base/Neutrals: BIS(2-CHLORO-1-METHYLETHYL)ETHER	Base/Neutrals: BIS(2-CHLOROETHOXY)METHANE	Base/Neutrals: BIS(2-CHLOROETHYL)ETHER	Base/Neutrals: BIS(2-ETHYLHEXYL)PHTHALATE (DEHP)	Base/Neutrals: BUTYL BENZYL PHTHALATE	Base/Neutrals: CHLOROBENZILATE	Base/Neutrals: CHRYSENE	Base/Neutrals: DIALLATE	Base/Neutrals: DIBENZ(A,H)ANTHRACENE	Base/Neutrals: DIBENZOFURAN	Base/Neutrals: DIETHYL PHTHALATE	Base/Neutrals: DIMETHOATE	Base/Neutrals: DIMETHYL PHTHALATE	Base/Neutrals: DI-N-BUTYL PHTHALATE	Base/Neutrals: DIPHENYLAMINE	Base/Neutrals: DISULFOTON	Base/Neutrals: ETHYL METHACRYLATE	Base/Neutrals: ETHYL METHANESULFONATE	Base/Neutrals: FAMPHUR	Base/Neutrals: FLUORANTHENE	Base/Neutrals: FLUORENE	Base/Neutrals: HEXACHLOROBENZENE	Base/Neutrals: HEXACHLOROBUTADIENE	Base/Neutrals: HEXACHLOROCYCLOPENTADIENE	Base/Neutrals: HEXACHLOROETHANE	Base/Neutrals: HEXACHLOROPHENE	Base/Neutrals: HEXACHLOROPROPENE	Base/Neutrals: INDENO(1,2,3-CD)PYRENE	Base/Neutrals: ISODRIN	Base/Neutrals: ISOPHORONE	Base/Neutrals: ISOSAFROLE	Base/Neutrals: KEPONE	Base/Neutrals: METHAPYRILENE	Base/Neutrals: METHYL METHANESULFONATE	Base/Neutrals: METHYL PARATHION	Base/Neutrals: M-NITROANILINE	Base/Neutrals: NAPHTHALENE	Base/Neutrals: N-DIOCTYL PHTHALATE	Base/Neutrals: NITROBENZENE	Base/Neutrals: N-NITROSODIETHYLAMINE	Base/Neutrals: N-NITROSODIMETHYLAMINE	Base/Neutrals: N-NITROSODI-N-BUTYLAMINE
			day-month-year	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	[0.559]	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
FSB 90D	Point of Compliance Well	UAZ_UTRAU	08-Jul-2024	<EQL	<EQL	[0.49]	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	[0.559]	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	NS	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	0.5	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
				<EQL	<EQL	[0.91]	[0.42]	[0.6]	[0.57]	[0.55]	<EQL	<EQL	<EQL	<EQL	[0.4]	<EQL	<EQL	<EQL	<EQL	[0.98]	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	[0.92]	<EQL	<EQL	<EQL	<EQL	<EQL	[0.51]	<EQL	<EQL
FSB 92C	Point of Compliance Well	LAZ_UTRAU	08-Jul-2024	<EQL	<EQL	[0.45]	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	[0.49]	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	NS	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	[0.43]	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
FSB 93D	Point of Compliance Well	UAZ_UTRAU	08-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	[0.3]	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	NS	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
FSB 95CR	Point of Compliance Well	LAZ_UTRAU	10-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	NS	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
FSB 95DR	Point of Compliance Well	UAZ_UTRAU	10-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	NS	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
FSB 97A	Point of Compliance Well	GAU	08-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	NS	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL

Table B-5 3Q24 F-Area Annual Appendix IX Monitoring

Station	Well Use	Aquifer Zone	Field Data: SAMPLE COLLECTION DATE	Base/Neutrals: N-NITROSODIPHENYLAMINE	Base/Neutrals: N-NITROSODIPHENYLAMINE+DIPHENYLAMINE	Base/Neutrals: N-NITROSODIPROPYLAMINE	Base/Neutrals: N-NITROSOMORPHOLINE	Base/Neutrals: N-NITROSO-N-METHYLETHYLAMINE	Base/Neutrals: N-NITROSOPIPERIDINE	Base/Neutrals: N-NITROSOPYRROLIDINE	Base/Neutrals: O,O,O-TRIETHYL PHOSPHOROTHIOATE	Base/Neutrals: PARATHION	Base/Neutrals: P-DIMETHYLAMINOAZOBENZENE	Base/Neutrals: PENTACHLOROBENZENE	Base/Neutrals: PENTACHLOROETHANE	Base/Neutrals: PENTACHLORONITROBENZENE	Base/Neutrals: PHENACETIN	Base/Neutrals: PHENANTHRENE	Base/Neutrals: PHORATE	Base/Neutrals: P-NITROANILINE	Base/Neutrals: P-PHENYLENEDIAMINE	Base/Neutrals: PRONAMIDE	Base/Neutrals: PYRENE	Base/Neutrals: PYRIDINE	Base/Neutrals: SAFROLE	Base/Neutrals: SULFOTEPP	Base/Neutrals: THIONAZIN	Cyanide: CYANIDE	Dioxins: 2,3,7,8-TCDD	Dioxins: HEXACHLORODIBENZO-P-DIOXINS	Dioxins: PENTACHLORODIBENZO-P-DIOXINS	Dioxins: TETRACHLORODIBENZO-P-DIOXIN	Furans: HEXACHLORODIBENZO-P-FURANS	Furans: PENTACHLORODIBENZO-P-FURANS	Furans: TETRACHLORODIBENZO-P-FURANS	Herbicides: 2,4,5-T	Herbicides: 2,4,5-TP (SILVEX)	Herbicides: 2,4-DICHLOROPHENOXYACETIC ACID (2,4-D)	Herbicides: DINOSEB	Metals: ANTIMONY	Metals: ARSENIC	Metals: BARIUM	Metals: BERYLLIUM	Metals: CADMIUM	Metals: CHROMIUM	Metals: COBALT	Metals: COPPER	Metals: LEAD	Metals: MERCURY	Metals: NICKEL	Metals: SELENIUM	Metals: SILVER	Metals: THALLIUM
			day-month-year	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
FSB 90D	Point of Compliance Well	UAZ_UTRAU	08-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	100	[0.988]	3.83	[4.84]	[13.9]	23	[2.4]	4.43	[8.05]	[4.7]	<EQL	<EQL
				<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	103	[1.03]	3.65	<EQL	[12.9]	24.2	[2.29]	3.76	[8.14]	[4.9]	<EQL	<EQL
FSB 92C	Point of Compliance Well	LAZ_UTRAU	08-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	102	2.97	6.89	[4.48]	41.7	747	<EQL	76.8	4.05	[16.2]	23	<EQL	<EQL
FSB 92C	Point of Compliance Well	LAZ_UTRAU	13-Mar-2024	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
FSB 93D	Point of Compliance Well	UAZ_UTRAU	08-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
FSB 95CR	Point of Compliance Well	LAZ_UTRAU	10-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
FSB 95DR	Point of Compliance Well	UAZ_UTRAU	10-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
FSB 97A	Point of Compliance Well	GAU	08-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL

Table B-5 3Q24 F-Area Annual Appendix IX Monitoring

Station	Well Use	Aquifer Zone	Field Data: SAMPLE COLLECTION DATE	Metals: TIN	Metals: VANADIUM	Metals: ZINC	PCBs: AROCLOR 1016	PCBs: AROCLOR 1221	PCBs: AROCLOR 1232	PCBs: AROCLOR 1242	PCBs: AROCLOR 1248	PCBs: AROCLOR 1254	PCBs: AROCLOR 1260	Pesticides: ALDRIN	Pesticides: ALPHA-BENZENE HEXACHLORIDE	Pesticides: ALPHA-CHLORDANE	Pesticides: BETA-BENZENE HEXACHLORIDE	Pesticides: DDD	Pesticides: DDE	Pesticides: DDT	Pesticides: DELTA-BENZENE HEXACHLORIDE	Pesticides: DIELDRIN	Pesticides: ENDOSULFAN I	Pesticides: ENDOSULFAN II	Pesticides: ENDOSULFAN SULFATE	Pesticides: ENDRIN	Pesticides: ENDRIN ALDEHYDE	Pesticides: GAMMA-CHLORDANE	Pesticides: HEPTACHLOR	Pesticides: HEPTACHLOR EPOXIDE	Pesticides: LINDANE	Pesticides: METHOXYCHLOR	Pesticides: TOXAPHENE	Sulfide: SULFIDE	Volatiles: 1,1,1,2-TETRACHLOROETHANE	Volatiles: 1,1,1-TRICHLOROETHANE	Volatiles: 1,1,2,2-TETRACHLOROETHANE	Volatiles: 1,1,2-TRICHLOROETHANE	Volatiles: 1,1-DICHLOROETHANE	Volatiles: 1,1-DICHLOROETHYLENE	Volatiles: 1,2,3-TRICHLOROPROPANE	Volatiles: 1,2-DIBROMO-3-CHLOROPROPANE	Volatiles: 1,2-DIBROMOETHANE	Volatiles: 1,2-DICHLOROETHANE (EDC)	Volatiles: 1,2-DICHLOROPROPANE	Volatiles: 2-HEXANONE	Volatiles: ACETONE	Volatiles: ACETONITRILE (METHYL CYANIDE)	Volatiles: ACROLEIN	Volatiles: ACRYLONITRILE	Volatiles: ALLYL CHLORIDE	Volatiles: BENZENE	Volatiles: BROMODICHLOROMETHANE
			day-month-year	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
				2.6	4	6000	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
FSB 90D	Point of Compliance Well	UAZ_UTRAU	08-Jul-2024	<EQL	<EQL	35	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	R	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
				<EQL	<EQL	35.6	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	R	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
				<EQL	<EQL	35.9																																													
FSB 92C	Point of Compliance Well	LAZ_UTRAU	08-Jul-2024	<EQL	<EQL	166	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	R	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
FSB 93D	Point of Compliance Well	UAZ_UTRAU	08-Jul-2024	<EQL	<EQL	[19.2]	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	R	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
FSB 95CR	Point of Compliance Well	LAZ_UTRAU	10-Jul-2024	<EQL	<EQL	[106]	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
FSB 95DR	Point of Compliance Well	UAZ_UTRAU	10-Jul-2024	<EQL	<EQL	[23.3]	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
FSB 97A	Point of Compliance Well	GAU	08-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	R	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL

Table B-5 3Q24 F-Area Annual Appendix IX Monitoring

Station	Well Use	Aquifer Zone	Field Data: SAMPLE COLLECTION DATE	Volatiles: BROMOFORM (TRIBROMOMETHANE)	Volatiles: BROMOMETHANE (METHYL BROMIDE)	Volatiles: CARBON DISULFIDE	Volatiles: CARBON TETRACHLORIDE	Volatiles: CHLOROBENZENE	Volatiles: CHLOROETHANE (ETHYL CHLORIDE)	Volatiles: CHLOROETHENE (VINYL CHLORIDE)	Volatiles: CHLOROFORM	Volatiles: CHLOROMETHANE (METHYL CHLORIDE)	Volatiles: CHLOROPRENE	Volatiles: CIS-1,3-DICHLOROPROPENE	Volatiles: DIBROMOCHLOROMETHANE	Volatiles: DIBROMOMETHANE (METHYLENE BROMIDE)	Volatiles: DICHLORODIFLUOROMETHANE	Volatiles: DICHLOROMETHANE (METHYLENE CHLORIDE)	Volatiles: ETHYLBENZENE	Volatiles: IODOMETHANE (METHYL IODIDE)	Volatiles: ISOBUTANOL	Volatiles: METHACRYLONITRILE	Volatiles: METHYL ETHYL KETONE	Volatiles: METHYL ISOBUTYL KETONE	Volatiles: METHYL METHACRYLATE	Volatiles: PROPIONITRILE	Volatiles: STYRENE	Volatiles: TETRACHLOROETHYLENE (PCE)	Volatiles: TOLUENE	Volatiles: TRANS-1,2-DICHLOROETHYLENE	Volatiles: TRANS-1,3-DICHLOROPROPENE	Volatiles: TRANS-1,4-DICHLORO-2-BUTENE	Volatiles: TRICHLOROETHYLENE (TCE)	Volatiles: TRICHLOROFLUOROMETHANE	Volatiles: VINYL ACETATE	Volatiles: XYLENES	Radionuclides: CARBON-14	Radionuclides: CESIUM-134
			day-month-year	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L

Table B-6. 3Q24 H-Area Annual Appendix IX and CRML

Station	Well Use	Aquifer Zone	Field Data	Acids														Base/Neutrals																									
			SAMPLE COLLECTION DATE	2,3,4,6-TETRACHLOROPHENOL	2,4,5-TRICHLOROPHENOL	2,4,6-TRICHLOROPHENOL	2,4-DICHLOROPHENOL	2,4-DIMETHYLPHENOL	2,4-DINITROPHENOL	2,6-DICHLOROPHENOL	2-CHLOROPHENOL	2-NITROPHENOL	4-NITROPHENOL	DINITRO-O-CRESOL	M/P-CRESOL	O-CRESOL (2-METHYLPHENOL)	P-CHLORO-M-CRESOL	PENTACHLOROPHENOL	PHENOL	1,2,4,5-TETRACHLOROBENZENE	1,2,4-TRICHLOROBENZENE	1,2-DICHLOROBENZENE	1,3,5-TRINITROBENZENE	1,3-DICHLOROBENZENE	1,3-DINITROBENZENE	1,4-DICHLOROBENZENE	1,4-DIOXANE	1-NAPHTHOQUINONE	1-NAPHTHYLAMINE	2,4-DINITROTOLUENE	2,6-DINITROTOLUENE	2-ACETYLAMINOFLUORENE	2-CHLORONAPHTHALENE	2-METHYLANILINE (O-TOLUIDINE)	2-METHYLNAPHTHALENE	2-NAPHTHYLAMINE	2-NITROANILINE	2-PICOLINE	3,3-DICHLOROBENZIDINE	3,3'- DIMETHYLBENZIDINE	3-METHYLCHOLANTHRENE	4-AMINOBIPHENYL	4-BROMOPHENYL PHENYL ETHER	4-CHLOROANILINE	4-CHLOROPHENYL PHENYL ETHER	4-NITROQUINOLINE-1-OXIDE	5-NITRO-O-TOLUIDINE	7,12-DIMETHYLBENZ(A)ANTHRACENE	A,A-DIMETHYLPHENETHYLAMINE	ACENAPHTHENE	ACENAPHTHYLENE	ACETOPHENONE	ANILINE
			day-month-year	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
HSB101D	Point of Compliance Well	UAZ_UTRAU	08-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
				<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
HSB102C	Point of Compliance Well	LAZ_UTRAU	08-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
HSB103C	Point of Compliance Well	LAZ_UTRAU	08-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
HSB103D	Point of Compliance Well	UAZ_UTRAU	08-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
HSB104D	Point of Compliance Well	UAZ_UTRAU	10-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
HSB105D	Point of Compliance Well	UAZ_UTRAU	09-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
HSB113DR	Point of Compliance Well	UAZ_UTRAU	09-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
HSB114D	Point of Compliance Well	UAZ_UTRAU	09-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
HSB119A	Point of Compliance Well	GAU	09-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL

Table B-6. 3Q24 H-Area Annual Appendix IX and CRML

Station	Well Use	Aquifer Zone	Field Data	Base/Neutrals																																							
			SAMPLE COLLECTION DATE	ANTHRACENE	ARAMITE	BENZO(G,H,I)PERYLENE	BENZO(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE	BENZO(K)FLUORANTHENE	BENZYL ALCOHOL	BIS(2-CHLORO-1-METHYLETHYL)ETHER	BIS(2-CHLOROETHOXY)METHANE	BIS(2-CHLOROETHYL)ETHER	BIS(2-ETHYLHEXYL)PHTHALATE (DEHP)	BUTYL BENZYL PHTHALATE	CHLOROBENZILATE	CHRYSENE	DIALLATE	DIBENZ[A,H]ANTHRACENE	DIBENZOFURAN	DIETHYL PHTHALATE	DIMETHOATE	DIMETHYL PHTHALATE	DI-N-BUTYL PHTHALATE	DIPHENYLAMINE	DISULFOTON	ETHYL METHACRYLATE	ETHYL METHANESULFONATE	FAMPHUR	FLUORANTHENE	FLUORENE	HEXACHLOROBENZENE	HEXACHLOROBUTADIENE	HEXACHLOROCYCLOPENTADIENE	HEXACHLOROETHANE	HEXACHLOROPHENE	HEXACHLOROPROPENE	INDENO[1,2,3-CD]PYRENE	ISODRIN	ISOPHORONE	ISOSAFROLE	KEPONE	METHAPYRILENE	METHYL METHANESULFONATE	METHYL PARATHION	M-NITROANILINE	NAPHTHALENE	N-DIOCTYL PHTHALATE	NITROBENZENE	N-NITROSODIETHYLAMINE	N-NITROSODIMETHYLAMINE	N-NITROSODI-N-BUTYLAMINE
			day-month-year	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
HSB101D	Point of Compliance Well	UAZ_UTRAU	08-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	NS	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
				<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
HSB102C	Point of Compliance Well	LAZ_UTRAU	08-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	NS	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
HSB103C	Point of Compliance Well	LAZ_UTRAU	08-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	NS	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
HSB103D	Point of Compliance Well	UAZ_UTRAU	08-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	NS	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
HSB104D	Point of Compliance Well	UAZ_UTRAU	10-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	[3.16]	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	NS	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
HSB105D	Point of Compliance Well	UAZ_UTRAU	09-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	NS	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
HSB113DR	Point of Compliance Well	UAZ_UTRAU	09-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	NS	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
HSB114D	Point of Compliance Well	UAZ_UTRAU	09-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	NS	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
HSB119A	Point of Compliance Well	GAU	09-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	NS	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL

Table B-6. 3Q24 H-Area Annual Appendix IX and CRML

Station	Well Use	Aquifer Zone	Field Data	Base/Neutrals																																							
			SAMPLE COLLECTION DATE	N-NITROSODIPHENYLAMINE	N-NITROSODIPHENYLAMINE+DIPHENYLAMINE	N-NITROSODIPROPYLAMINE	N-NITROSOMORPHOLINE	N-NITROSO-N-METHYLETHYLAMINE	N-NITROSOPIPERIDINE	N-NITROSOPYRROLIDINE	O,O,O-TRIETHYL PHOSPHOROTHIOATE	PARATHION	P-DIMETHYLAMINOAZOBENZENE	PENTACHLOROBENZENE	PENTACHLOROETHANE	PENTACHLORONITROBENZENE	PHENACETIN	PHENANTHRENE	PHORATE	P-NITROANILINE	P-PHENYLENEDIAMINE	PRONAMIDE	PYRENE	PYRIDINE	SAFROLE	SULFOTEPP	THIONAZIN	Cyanide	Dioxins	HEXACHLORODIBENZO-P-DIOXINS	PENTACHLORODIBENZO-P-DIOXINS	TETRACHLORODIBENZO-P-DIOXIN	Furans	HEXACHLORODIBENZO-P-FURANS	PENTACHLORODIBENZO-P-FURANS	TETRACHLORODIBENZO-P-FURANS	Herbicides	2,4,5-T	2,4,5-TP (SILVEX)	2,4-DICHLOROPHENOXYACETIC ACID (2,4-D)	DINOSEB	Metals	ANTIMONY	ARSENIC	BARIUM	BERYLLIUM	CADMIUM	CHROMIUM	COBALT	COPPER	LEAD	MERCURY	NICKEL	SELENIUM	SILVER	THALLIUM
			day-month-year	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
HSB101D	Point of Compliance Well	UAZ_UTRAU	08-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	20	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	6	<EQL	10	2000	4	5	100	[5.1]	<EQL	115	2	390	50	94	2
				<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
HSB102C	Point of Compliance Well	LAZ_UTRAU	08-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	[39.6]	[0.468]	[0.178]	<EQL	<EQL	[7.3]	<EQL	0.697	[2.03]	<EQL	<EQL	<EQL
HSB103C	Point of Compliance Well	LAZ_UTRAU	08-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	[61.9]	[0.257]	[0.513]	<EQL	[11.4]	<EQL	<EQL	0.619	[4.65]	<EQL	<EQL	<EQL
HSB103D	Point of Compliance Well	UAZ_UTRAU	08-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	[53.2]	[0.382]	[0.205]	[5.78]	<EQL	[2.41]	[3.05]	2.69	[3.28]	<EQL	<EQL	<EQL
HSB104D	Point of Compliance Well	UAZ_UTRAU	10-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	[10.9]	<EQL	<EQL	0.476	<EQL	<EQL	<EQL	<EQL
HSB105D	Point of Compliance Well	UAZ_UTRAU	09-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	[11.6]	[0.209]	[0.148]	[7.39]	<EQL	<EQL	<EQL	1.29	<EQL	<EQL	<EQL	<EQL
																													<EQL																																	
HSB113DR	Point of Compliance Well	UAZ_UTRAU	09-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL
HSB114D	Point of Compliance Well	UAZ_UTRAU	09-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	[12.4]	<EQL	<EQL	[5.09]	[22.3]	[3.01]	<EQL	0.815	[2.31]	<EQL	<EQL	<EQL
HSB119A	Point of Compliance Well	GAU	09-Jul-2024	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	<EQL	1

Table B-6. 3Q24 H-Area Annual Appendix IX and CRML

| Station | Well Use | Aquifer Zone | Field Data | Metals | | | PCBs | | | | | | | Pesticides | | | | | | | | | | | | | | | | | | | | | | | | Sulfide | Volatiles | | | | | | | | | | | | | | | | | | |

Table B-7a. 2024 SWP UAZ Annual Compliance Monitoring

| Station | Well Use | Aquifer Zone | Field Data | | | | | | | | | | | | Metals | | | | | | | | | | | |

Table B-7b. 2024 SWP LAZ Annual Compliance Monitoring

| Station | Well Use | Aquifer Zone | Field Data: SAMPLE COLLECTION DATE | PH | SPECIFIC CONDUCTANCE | WATER TEMPERATURE | TOTAL ALKALINITY (AS CACO3) | TURBIDITY | SAMPLING EVENT WATER ELEVATION | SYNCHRONUS MEASUREMENT DATE | SYNCHRONUS WATER ELEVATION | DAYGYON | OXIDATION/REDUCTION POTENTIAL | Constituent | FIELD CONDITIONS | Metals: ANTIMONY | ARSENIC | BARIUM | BERYLLIUM | CHROMIUM | COBALT | COPPER | LEAD | MERCURY | NICKEL | SELENIUM | SILVER | THALLIUM | TIN | VANADIUM | ZINC | Radionuclides: CARBON-14 | COMBINED RADIUM (226 AND 228) | GROSS ALPHA | IODINE-129 | NONVOLATILE BETA | RADIUM, TOTAL ALPHA EMITTING | RADIUM-226 | RADIUM-228 | STRONTIUM-90 | SUM OF ALPHAS (MWMF) | SUM OF BETA (MWMF) | SUM OF BETA DOSE (MWMF) | TECHNETIUM-99 | TRITIUM | URANIUM-233/234 | URANIUM-235 | URANIUM-238 | Hydrocarbons: ETHANE | ETHYLENE | VOC: 1,1,1-TRICHLOROETHANE | 1,1-DICHLOROETHANE | 1,1-DICHLOROETHYLENE | 1,2,4-TRICHLOROBENZENE | 1,2-DICHLOROETHANE (EDC) | 1,2-DICHLOROETHYLENE | 1,2-DICHLOROPROPANE | 1,4-DIOXANE | BENZENE | CARBON DISULFIDE | CARBON TETRACHLORIDE | CHLOROBENZENE | CIS-1,2-DICHLOROETHYLENE (VINYL CHLORIDE) | CHLOROFORM | CIS-1,2-DICHLOROETHYLENE | DICHLOROMETHANE (METHYLENE CHLORIDE) | TETRACHLOROETHYLENE (PCE) | TOLUENE | TRANS-1,2-DICHLOROETHYLENE | TRICHLOROETHYLENE (TCE) | TRICHLOROFLUOROMETHANE | VINYL ACETATE | XYLENES |
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Table B-7c. 2024 SWP GAU Annual Compliance Monitoring

| | | | Field Data | | | | | | | | | | | | Metals | | | | | | | | | | | |

Table B-8a. 2024 SEP UAZ Annual Compliance Monitoring

| Station | Well Use | Aquifer Zone | Field Data: SAMPLE COLLECTION DATE | WATER TEMPRATURE | SAMPLING EVENT WATER ELEVATION | PH | SPECIFIC CONDUCTANCE | TURBIDITY | SYNCHRONOUS MEASUREMENT DATE | SYNCHRONOUS WATER ELEVATION | OXYGEN | OXIDATION/REDUCTION POTENTIAL | Constituent | Metals: FIELD CONDITIONS | ANTIMONY | ARSENIC | BARIUM | BERYLLIUM | CHROMIUM | COBALT | COPPER | LEAD | MERCURY | NICKEL | SELENIUM | SILVER | THALLIUM | TIN | VANADIUM | ZINC | Radionuclides: CARBON-14 | COMBINED RADIUM (226 AND 228) | GROSS ALPHA | IODINE-129 | NONVOLATILE BETA | RADIUM, TOTAL ALPHA EMITTING | RADIUM-226 | RADIUM-228 | STRONTIUM-90 | SUM OF ALPHAS (MWMF) | SUM OF BETA (MWMF) | SUM OF BETA DOSE (MWMF) | TECHNETIUM-99 | TRITIUM | URANIUM-233/234 | URANIUM-235 | URANIUM-238 | Hydrocarbons: ETHANE | ETHYLENE | VOC: 1,1,1-TRICHLOROETHANE | 1,1-DICHLOROETHANE | 1,1-DICHLOROETHYLENE | 1,2,4-TRICHLOROBENZENE | 1,2-DICHLOROETHANE (EDC) | 1,2-DICHLOROETHYLENE | 1,2-DICHLOROPROPANE | 1,4-DIOXANE | BENZENE | CARBON DISULFIDE | CARBON TETRACHLORIDE | CHLOROBENZENE | CHLOROETHENE (VINYL CHLORIDE) | CHLOROFORM | CIS-1,2-DICHLOROETHYLENE | DICHLORODIFLUOROMETHANE | DICHLOROMETHANE (METHYLENE CHLORIDE) | TETRACHLOROETHYLENE (PCE) | TOLUENE | TRANS-1,2-DICHLOROETHYLENE | TRICHLOROETHYLENE (TCE) | TRICHLOROFLUOROMETHANE | VINYL ACETATE | XYLENES |
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Table B-8b. 2024 LAZ SEP Annual Compliance Monitoring

| | | | Field Data | | | | | | | | | | | | Metals | | | | | | | | | | | |

Table B-8c. 2024 SEP GAU Annual Compliance Monitoring

| | | | Field Data | | | | | | | | | | Metals | | | | | | | | | |

Table B-9a. 2024 NEP UAZ Annual Compliance Monitoring

| | | | Field Data | | | | | | | | | | Metals | | | | | | | | | |

Table B-9b. 2024 NEP LAZ Annual Compliance Monitoring

| Station | Well Use | Aquifer Zone | SAMPLE COLLECTION DATE | WATER TEMPERATURE | SAMPLING EVENT WATER ELEVATION | PH | TURBIDITY | SYNCHRONOUS MEASUREMENT DATE | SYNCHRONOUS WATER ELEVATION | SPECIFIC CONDUCTANCE | OXIDATION/REDUCTION POTENTIAL | OXYGEN | Constituent | FIELD CONDITIONS | ANTIMONY | ARSENIC | BARIUM | BERYLLIUM | CHROMIUM | COBALT | COPPER | LEAD | MERCURY | NICKEL | SELENIUM | SILVER | THALLIUM | TIN | VANADIUM | ZINC | CARBON-14 | COMBINED RADIUM (226 AND 228) | GROSS ALPHA | IODINE-129 | NONVOLATILE BETA | RADIUM, TOTAL ALPHA-EMITTING | RADIUM-226 | RADIUM-228 | STRONTIUM-90 | SUM OF ALPHAS (MWMF) | SUM OF BETA (MWMF) | SUM OF BETA DOSE (MWMF) | TECHNETIUM-99 | TRITIUM | URANIUM-233/234 | URANIUM-235 | URANIUM-238 | ETHANE | ETHYLENE | 1,1,1-TRICHLOROETHANE | 1,1-DICHLOROETHANE | 1,1-DICHLOROETHYLENE | 1,2,4-TRICHLOROBENZENE | 1,2-DICHLOROETHANE (EDC) | 1,2-DICHLOROETHYLENE | 1,2-DICHLOROPROPANE | 1,4-DIOXANE | BENZENE | CARBON DISULFIDE | CARBON TETRACHLORIDE | CHLOROBENZENE | CHLOROETHENE (VINYL CHLORIDE) | CHLOROFORM | CIS-1,2-DICHLOROETHYLENE | DICHLORODIFLUOROMETHANE | DICHLOROMETHANE (METHYLENE CHLORIDE) | TETRACHLOROETHYLENE (PCE) | TOLUENE | TRANS-1,2-DICHLOROETHYLENE | TRICHLOROETHYLENE (TCE) | TRICHLOROFLUOROMETHANE | VINYL ACETATE | XYLENES |
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Table B-9c. 2024 NEP GAU Annual Compliance Monitoring

| Station | Well Use | Aquifer Zone | SAMPLE COLLECTION DATE | WATER TEMPERATURE | SAMPLING EVENT WATER ELEVATION | PH | TURBIDITY | SYNCHRONOUS MEASUREMENT DATE | SYNCHRONOUS WATER ELEVATION | SPECIFIC CONDUCTANCE | OXIDATION/REDUCTION POTENTIAL | OXYGEN | Constituent | FIELD CONDITIONS | ANTIMONY | ARSENIC | BARIUM | BERYLLIUM | CHROMIUM | COBALT | COPPER | LEAD | MERCURY | NICKEL | SELENIUM | SILVER | THALLIUM | TIN | VANADIUM | ZINC | CARBON-14 | COMBINED RADIUM (226 AND 228) | GROSS ALPHA | IODINE-129 | NONVOLATILE BETA | RADIUM, TOTAL ALPHA-EMITTING | RADIUM-226 | RADIUM-228 | STRONTIUM-90 | SUM OF ALPHAS (MWMF) | SUM OF BETA (MWMF) | SUM OF BETA DOSE (MWMF) | TECHNETIUM-99 | TRITIUM | URANIUM-233/234 | URANIUM-235 | URANIUM-238 | ETHANE | ETHYLENE | 1,1,1-TRICHLOROETHANE | 1,1-DICHLOROETHANE | 1,1-DICHLOROETHYLENE | 1,2,4-TRICHLOROBENZENE | 1,2-DICHLOROETHANE (EDC) | 1,2-DICHLOROETHYLENE | 1,2-DICHLOROPROPANE | 1,4-DIOXANE | BENZENE | CARBON DISULFIDE | CARBON TETRACHLORIDE | CHLOROBENZENE | CHLOROETHENE (VINYL CHLORIDE) | CHLOROETHANE | CHLOROFORM | CIS-1,2-DICHLOROETHYLENE | DICHLORODIFLUOROMETHANE | DICHLOROMETHANE (METHYLENE CHLORIDE) | TETRACHLOROETHYLENE (PCE) | TOLUENE | TRANS-1,2-DICHLOROETHYLENE | TRICHLOROETHYLENE (TCE) | TRICHLOROFLUOROMETHANE | VINYL ACETATE | XYLENES |
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Table B-10a. 2024 NWP UAZ Annual Compliance Monitoring

| | | | Field Data | | | | | | | | | | | | Metals | | | | | | | | | | | |

Table B-10b. 2024 NWP LAZ Annual Compliance Monitoring

| Station | Well Use | Aquifer Zone | Field Data: SAMPLE COLLECTION DATE | WATER TEMPERATURE | PH | TURBIDITY | SPECIFIC CONDUCTANCE | SAMPLING EVENT WATER ELEVATION | SYNCHRONOUS MEASUREMENT DATE | SYNCHRONOUS WATER ELEVATION | OXIDATION/REDUCTION POTENTIAL | OXYGEN | Constituent | Metals: FIELD CONDITIONS | ANTIMONY | ARSENIC | BARIUM | BERYLLIUM | CHROMIUM | COBALT | COPPER | LEAD | MERCURY | NICKEL | SELENIUM | SILVER | THALLIUM | TIN | VANADIUM | ZINC | Radionuclides: CARBON-14 | COMBINED RADIUM (226 AND 228) | GROSS ALPHA | IODINE-129 | NONVOLATILE BETA | RADIUM, TOTAL ALPHA-EMITTING | RADIUM-226 | RADIUM-228 | STRONTIUM-90 | SUM OF ALPHAS (MWMF) | SUM OF BETA (MWMF) | SUM OF BETA DOSE (MWMF) | TECHNETIUM-99 | TRITIUM | URANIUM-233/234 | URANIUM-235 | URANIUM-238 | Hydrocarbons: ETHANE | ETHYLENE | VOC: 1,1,1-TRICHLOROETHANE | 1,1-DICHLOROETHANE | 1,1-DICHLOROETHYLENE | 1,2,4-TRICHLOROBENZENE | 1,2-DICHLOROETHANE (EDC) | 1,2-DICHLOROETHYLENE | 1,2-DICHLOROPROPANE | 1,4-DIOXANE | BENZENE | CARBON DISULFIDE | CARBON TETRACHLORIDE | CHLOROBENZENE | CHLOROETHENE (VINYL CHLORIDE) | CHLOROFORM | CIS-1,2-DICHLOROETHYLENE | DICHLORODIFLUOROMETHANE | DICHLOROMETHANE (METHYLENE CHLORIDE) | TETRACHLOROETHYLENE (PCE) | TOLUENE | TRANS-1,2-DICHLOROETHYLENE | TRICHLOROETHYLENE (TCE) | TRICHLOROFLUOROMETHANE | VINYL ACETATE | XYLENES |
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Table B-10c. 2024 NWP GAU Annual Compliance Monitoring

| | | | Field Data | | | | | | | | | | | | | | | | Metals | | | | | | | | | | | | | | | |

Table B-11. 2024 SWP Surface Water and Seepline Sampling

| | | | Field Data | | | | | | | | | | | Metals | Radionuclides | | | | | | | | | | | | | | | | | | | | | | | | | | VOC | | | | | | | | | | | | | | | | | | |

Table B-12. 2024 NWP/NEP Surface Water Sampling

| | | | Field Data | | | | | | | | | | Metals | | Radionuclides | | | | | | | | | | | | | | | | | | | | | | VOC | | | | | | | | | | | | | | | | | | |

Table B-13. 2024 SWP Annual Appendix IX and CRML Sampling

| Station | Well Use | Aquifer Zone | Field Data | Acids | | | | | | | | | | | | Base/Neutrals | | | | | | | | | | | |

Table B-14. 3Q24 SEP Annual Appendix IX and CRML Sampling

| Station | Well Use | Aquifer Zone | Field Data: Any-month-over | Field Data: SAMPLE COLLECTION DATE | Acids: 2,4,5-T | Acids: 2,4,5-TRICHLOROPHENOL | Acids: 2,4,6-TRICHLOROPHENOL | Acids: 2,4-D | Acids: 2,4-DICHLOROPHENOL | Acids: 2,4-DINITROPHENOL | Acids: 2,4-DINITROTOLUENE | Acids: 2,6-DICHLOROPHENOL | Acids: 2-CHLOROPHENOL | Acids: 2-NITROPHENOL | Acids: 4-NITROPHENOL | Acids: DINITRO-O-CRESOL | Acids: MCPA | Acids: MCPP | Base/Neutrals: 2,4,5-TETRACHLOROBENZENE | Base/Neutrals: 2,4,6-TRICHLOROBENZENE | Base/Neutrals: 2,4-DICHLOROBENZENE | Base/Neutrals: 2,6-DICHLOROBENZENE | Base/Neutrals: 3,3'-DICHLOROBENZIDINE | Base/Neutrals: 4-BROMOPHENYL PHENYL ETHER | Base/Neutrals: 4-CHLOROPHENYL PHENYL ETHER | Base/Neutrals: ACENAPHTHENE | Base/Neutrals: ACENAPHTHYLENE | Base/Neutrals: ANILINE | Base/Neutrals: ANTHRACENE | Base/Neutrals: BENZIDINE | Base/Neutrals: BENZO(A)ANTHRACENE | Base/Neutrals: BENZO(A)PYRENE | Base/Neutrals: BENZO(B)FLUORANTHENE | Base/Neutrals: BENZO(G,H,I)PERYLENE | Base/Neutrals: BENZO(K)FLUORANTHENE | Base/Neutrals: BETA-BENZENE HEXACHLORIDE | Base/Neutrals: BETA-BENZENE HEXACHLORIDE (DUP) | Base/Neutrals: BETA-ETHYLHEXYL PHTHALATE | Base/Neutrals: BETA-ETHYLHEXYL PHTHALATE (DUP) | Base/Neutrals: BETA-HEXACHLOROCYCLOHEXANE | Base/Neutrals: BETA-HEXACHLOROCYCLOHEXANE (DUP) | Base/Neutrals: BIS(2-CHLOROETHOXY)METHANE | Base/Neutrals: BIS(2-CHLOROETHOXY)METHANE (DUP) | Base/Neutrals: BIS(2-CHLOROETHYL)ETHER | Base/Neutrals: BIS(2-CHLOROETHYL)ETHER (DUP) | Base/Neutrals: BIS(2-CHLOROISOPROPYL)ETHER | Base/Neutrals: BIS(2-CHLOROISOPROPYL)ETHER (DUP) | Base/Neutrals: BIS(2-ETHYLHEXYL)PHTHALATE | Base/Neutrals: BIS(2-ETHYLHEXYL)PHTHALATE (DUP) | Base/Neutrals: BUTYL BENZYL PHTHALATE | Base/Neutrals: BUTYL BENZYL PHTHALATE (DUP) | Base/Neutrals: CARBAZOLE | Base/Neutrals: CHRYSENE | Base/Neutrals: DELTA-BENZENE HEXACHLORIDE | Base/Neutrals: DELTA-BENZENE HEXACHLORIDE (DUP) | Base/Neutrals: DIBENZ(A,H)ANTHRACENE | Base/Neutrals: DIBENZOFURAN | Base/Neutrals: DIETHYL PHTHALATE | Base/Neutrals: DIMETHOATE | Base/Neutrals: DIMETHYL PHTHALATE | Base/Neutrals: DI-N-BUTYL PHTHALATE | Base/Neutrals: DI-N-OCTYL PHTHALATE | Base/Neutrals: DIPHENYLAMINE | Base/Neutrals: DISULFOTON | Base/Neutrals: ENDOSULFAN I | Base/Neutrals: ENDOSULFAN II | Base/Neutrals: ENDOSULFAN SULFATE | Base/Neutrals: ENDRIN | Base/Neutrals: ENDRIN ALDEHYDE | Base/Neutrals: GAMMA-CHLORDANE | Base/Neutrals: HEPTACHLOR | Base/Neutrals: HEPTACHLOR EPOXIDE | Base/Neutrals: HEXACHLOROBENZENE | Base/Neutrals: HEXACHLOROBUTADIENE | Base/Neutrals: HEXACHLOROCYCLOPENTADIENE | Base/Neutrals: HEXACHLOROETHANE | Base/Neutrals: INDENO(1,2,3-CD)PYRENE | Base/Neutrals: ISODRIN | Base/Neutrals: ISOPHORONE | Base/Neutrals: ISOSAFROLE | Base/Neutrals: KEPONE | Base/Neutrals: METHAPYRILENE | Base/Neutrals: METHOXYCHLOR | Base/Neutrals: METHYL METHANESULFONATE | Base/Neutrals: METHYL PARATHION | Base/Neutrals: MIREX | Base/Neutrals: NAPHTHALENE | Base/Neutrals: N-DECYCYL PHTHALATE | Base/Neutrals: NITROBENZENE | Base/Neutrals: N-NITROSODIETHYLAMINE | Base/Neutrals: N-NITROSODIMETHYLAMINE | Base/Neutrals: N-NITROSODI-N-BUTYLAMINE |
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Table B-15 3Q24 NEP Annual Appendix IX and CRML

| Station | Well Use | Aquifer Zone | Field Data | Base/Neutrals | | |

Table B-16. 3Q24 NWP Appendix IX and CRML Sampling

| Station | Well Use | Aquifer Zone | Field Data | Acids | | |

APPENDIX C

MIXED WASTE MANAGEMENT FACILITY

ANALYTICAL DATA

FIRST QUARTER 2024 – FOURTH QUARTER 2024

AND

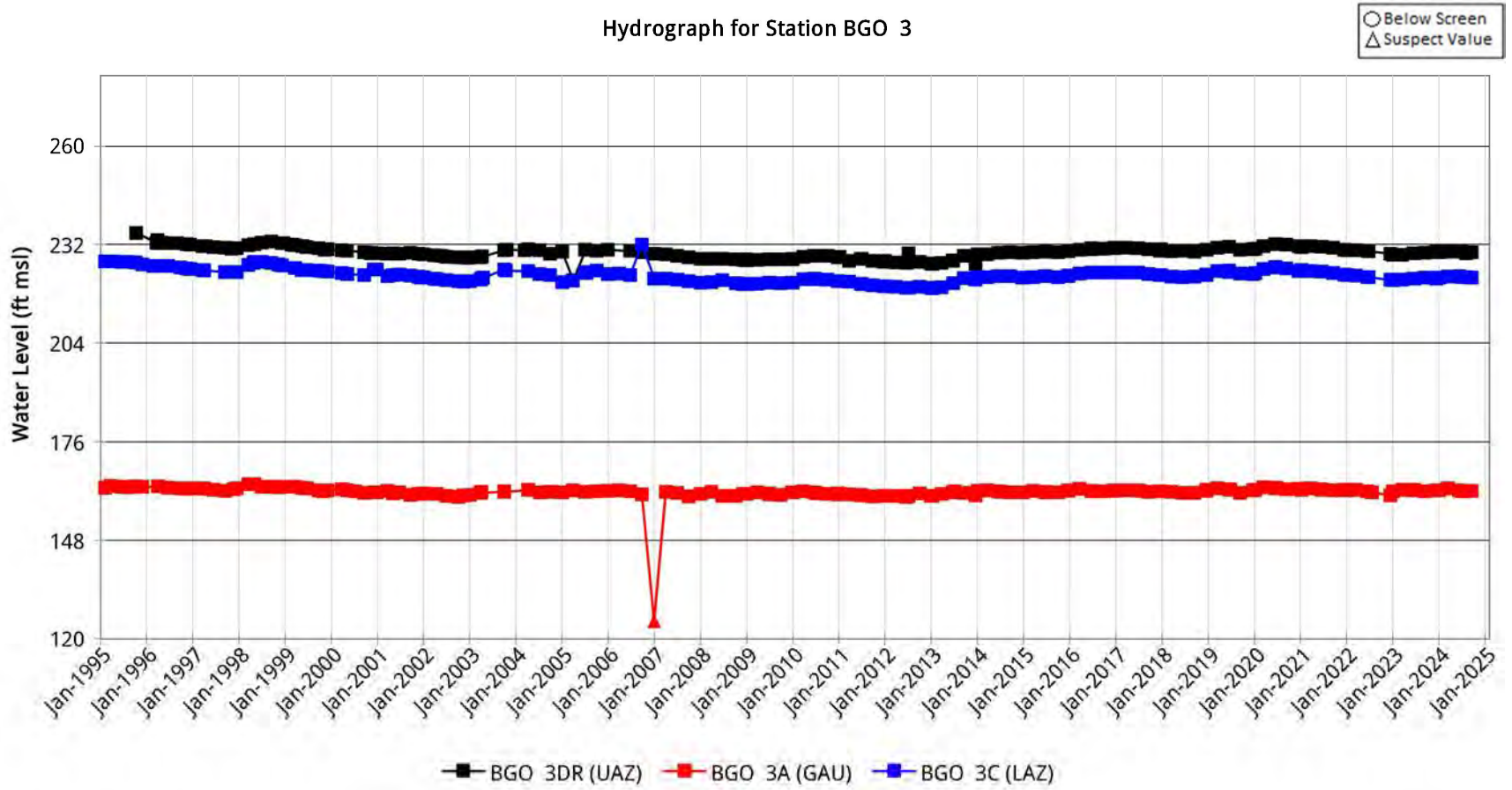
HISTORICAL DATA

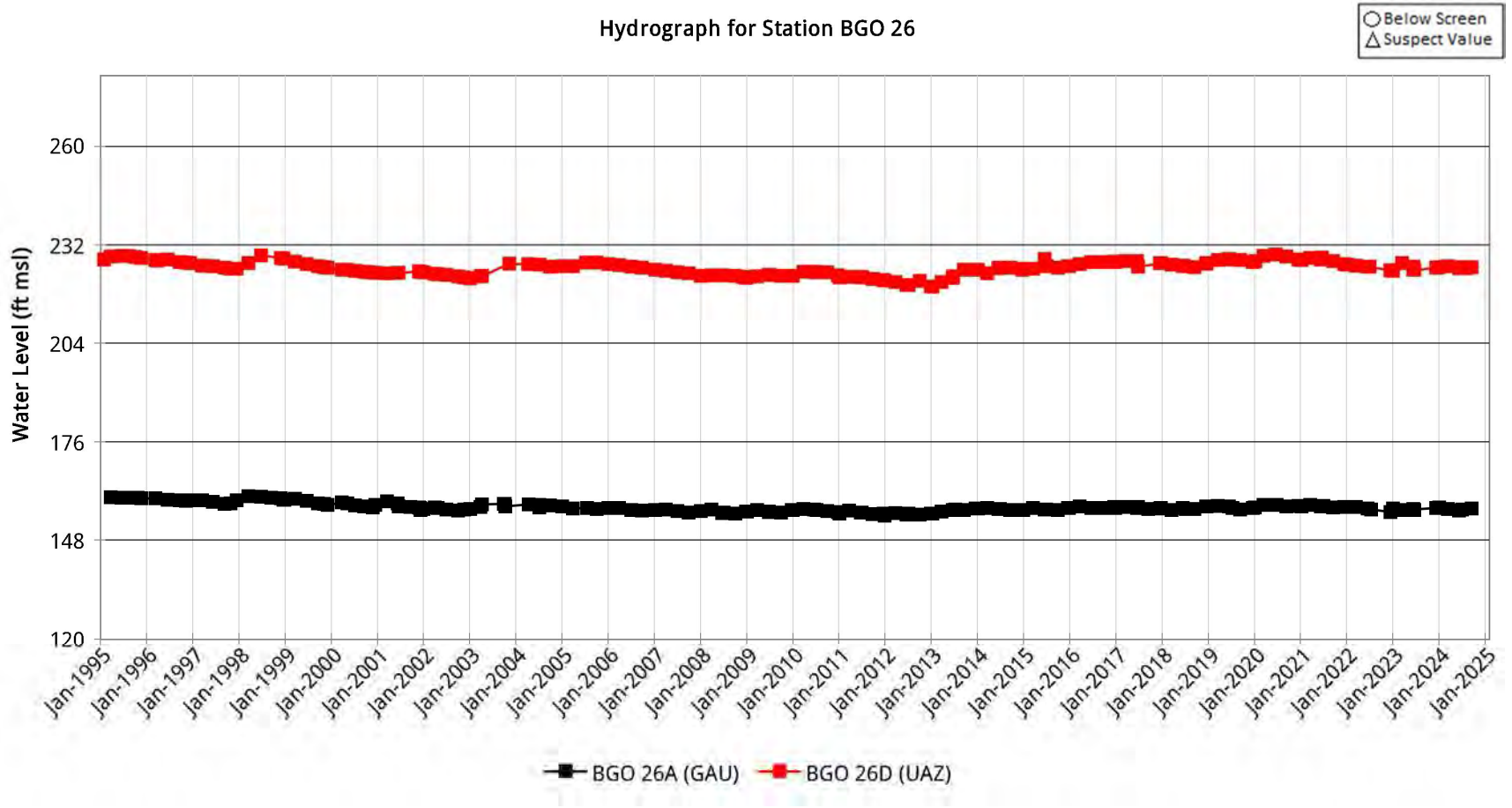
Note: Analytical data are presented on CD ROM.

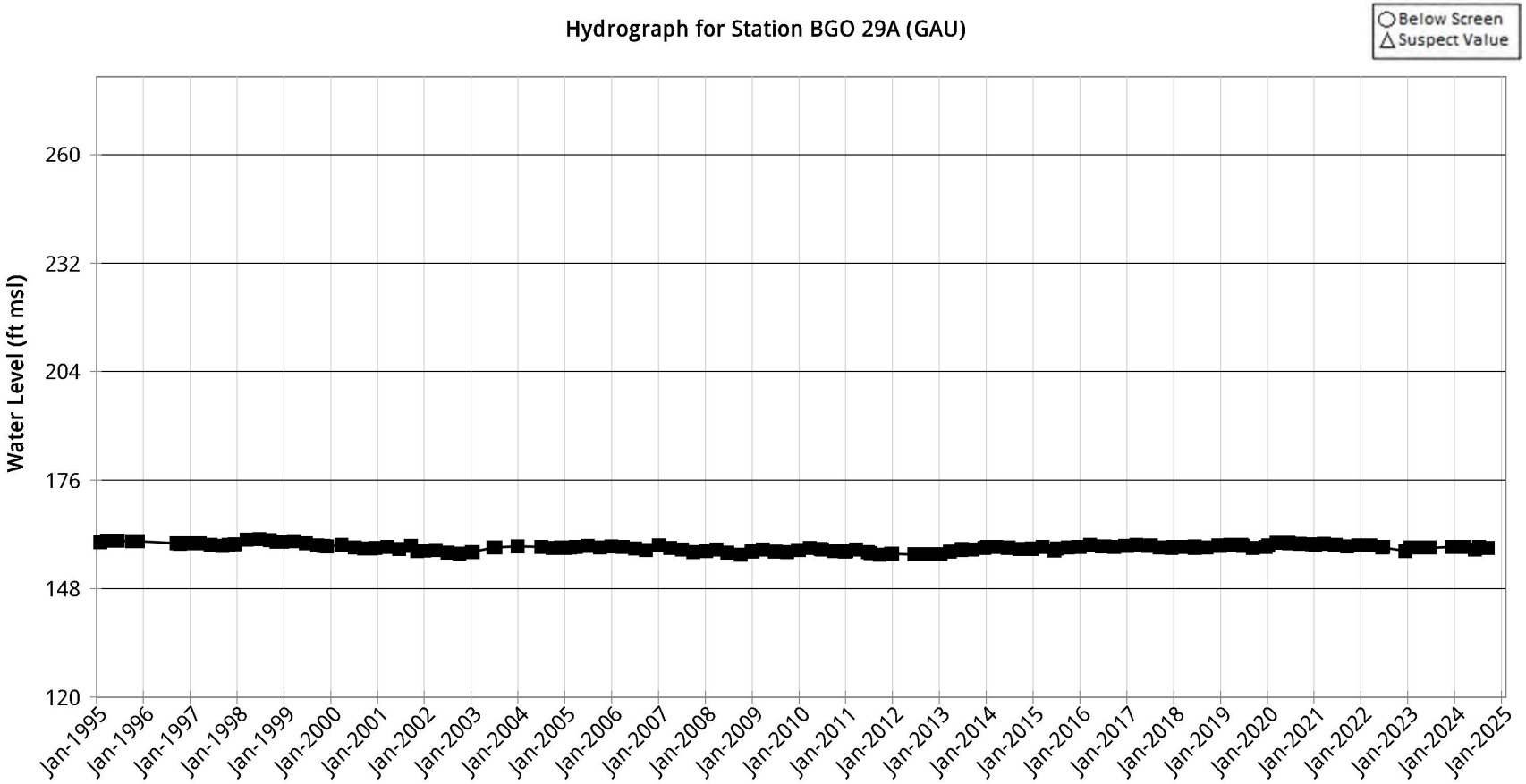
APPENDIX D

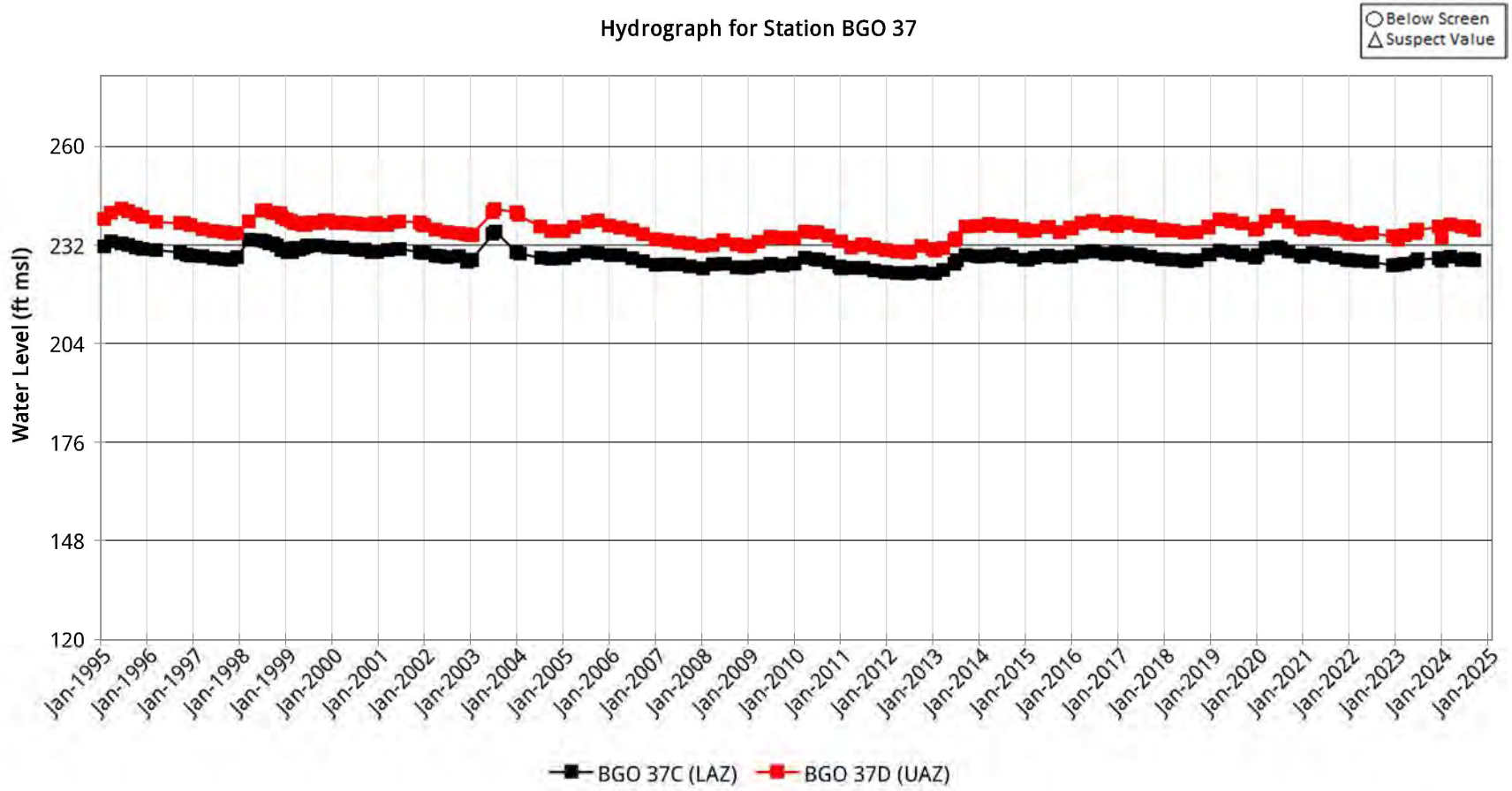
F-AREA, H-AREA, AND MIXED WASTE MANAGEMENT FACILITY HYDROGRAPHS

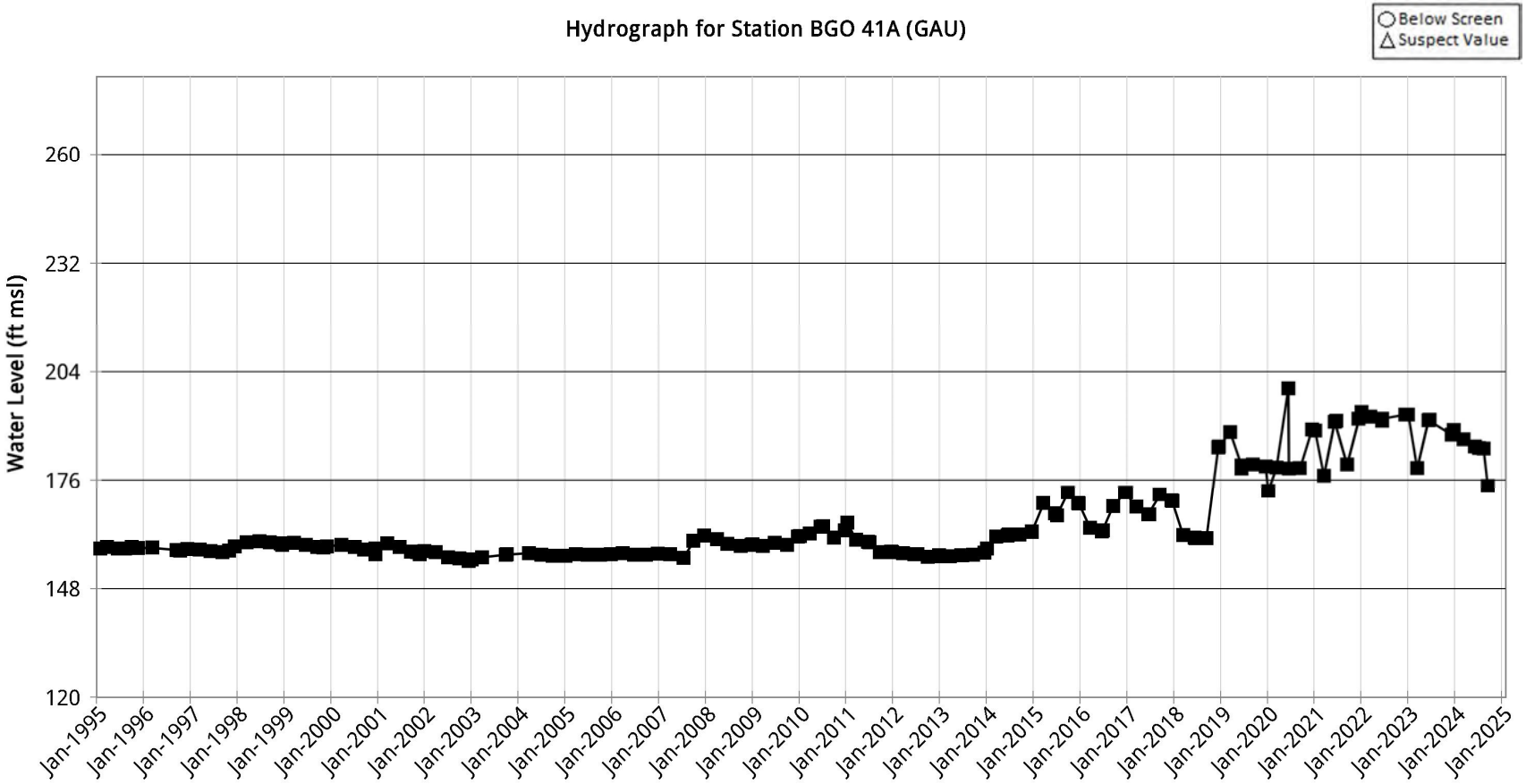
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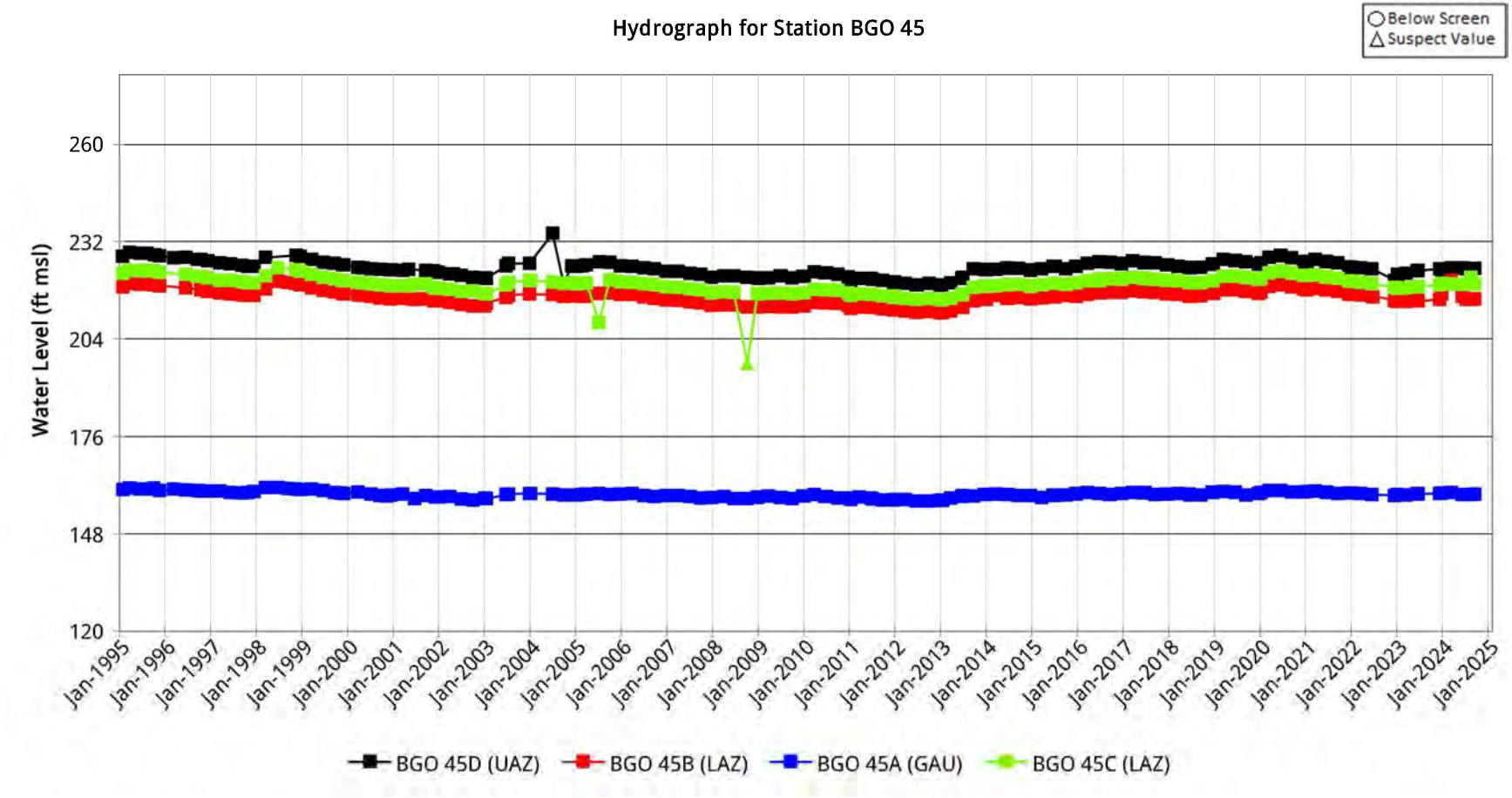

Hydrograph for Station BGO 3
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
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Jan-2025
BGO 3DR (UAZ)
BGO 3A (GAU)
BGO 3C (LAZ)

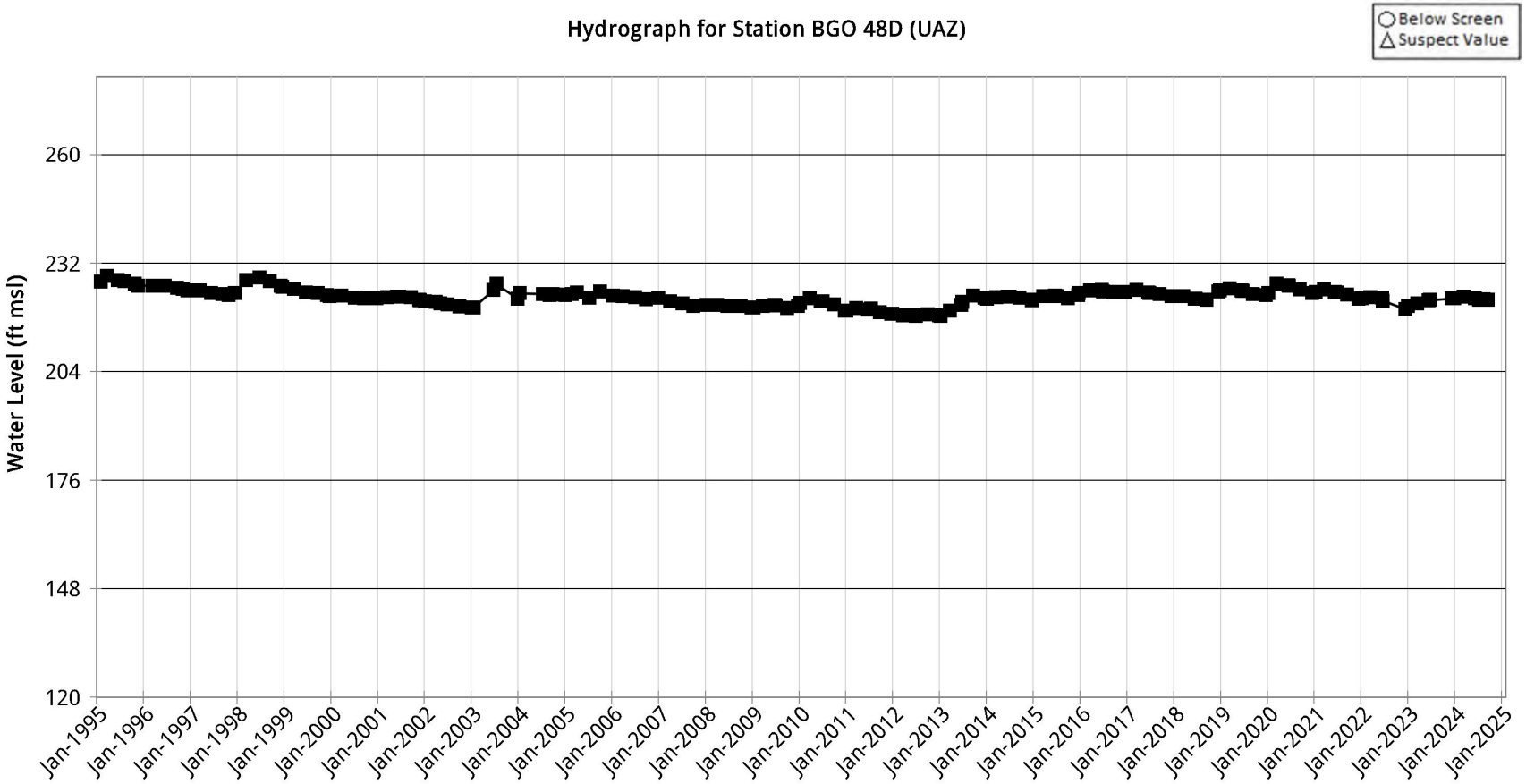

Hydrograph for Station BGO 26
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
Jan-1996
Jan-1997
Jan-1998
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Jan-2000
Jan-2001
Jan-2002
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Jan-2023
Jan-2024
Jan-2025
BGO 26A (GAU)
BGO 26D (UAZ)

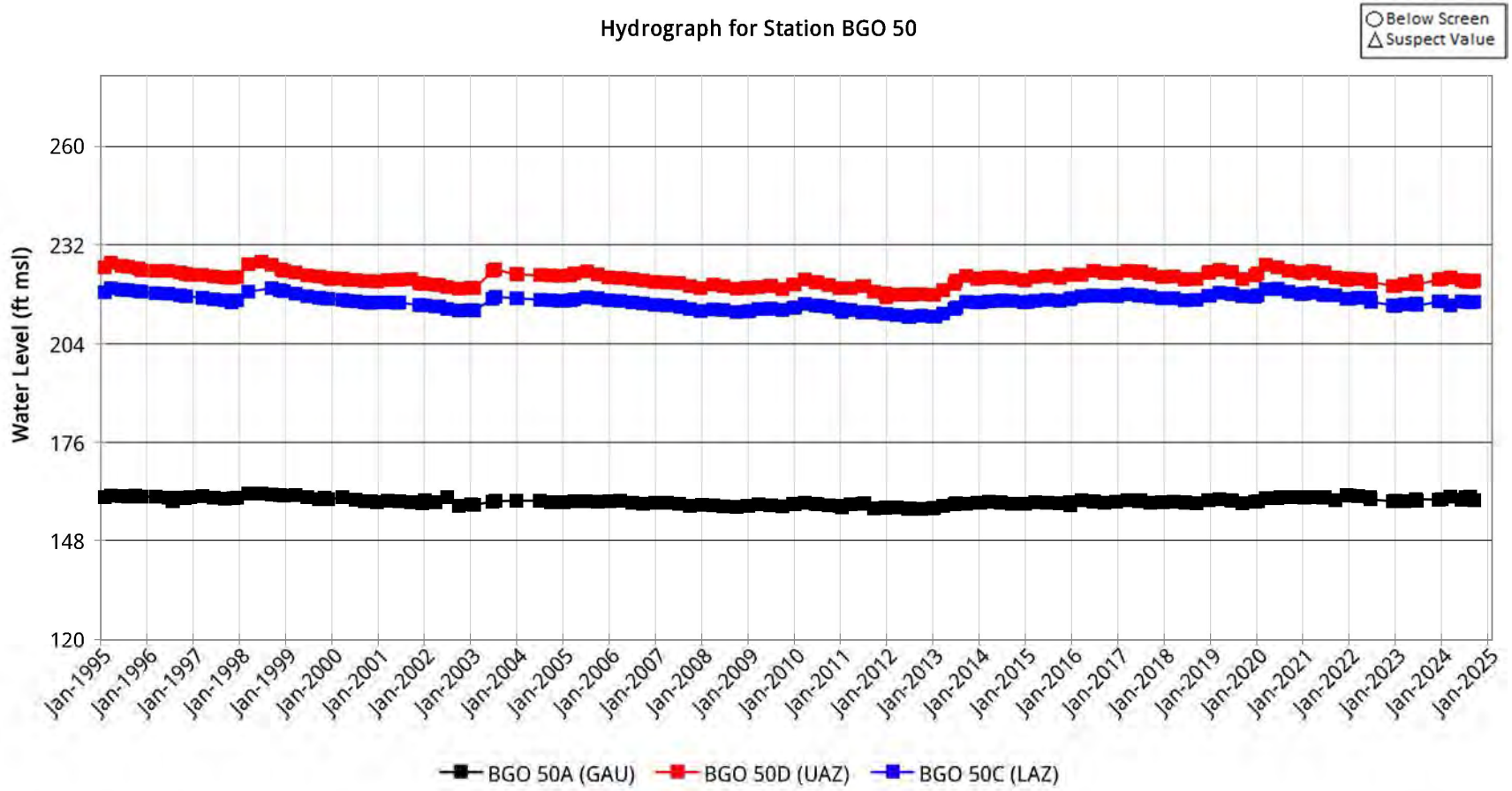

Hydrograph for Station BGO 29A (GAU)
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
Jan-1996
Jan-1997
Jan-1998
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Jan-2000
Jan-2001
Jan-2002
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Jan-2025

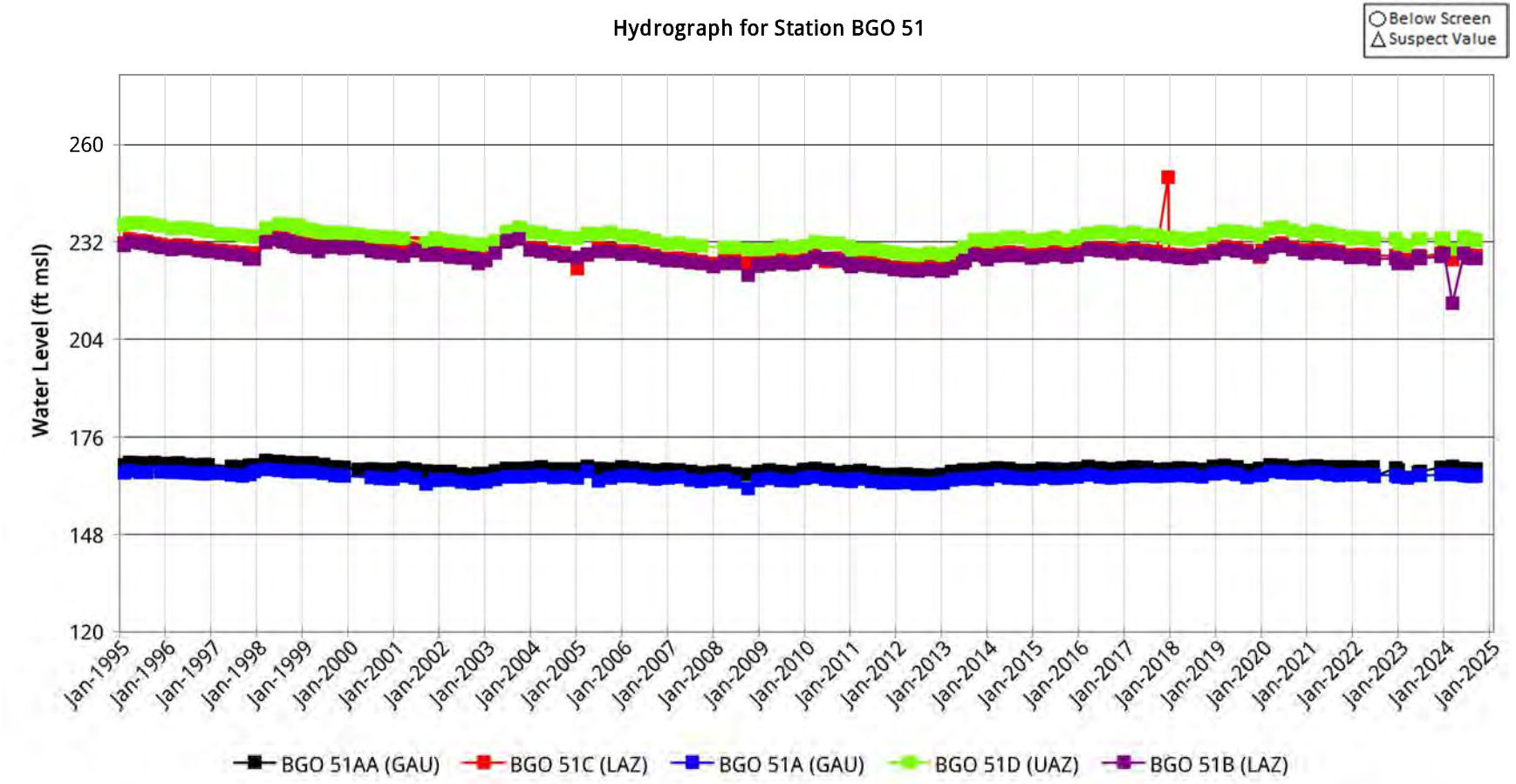

Hydrograph for Station BGO 37
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
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Jan-2025
BGO 37C (LAZ)
BGO 37D (UAZ)

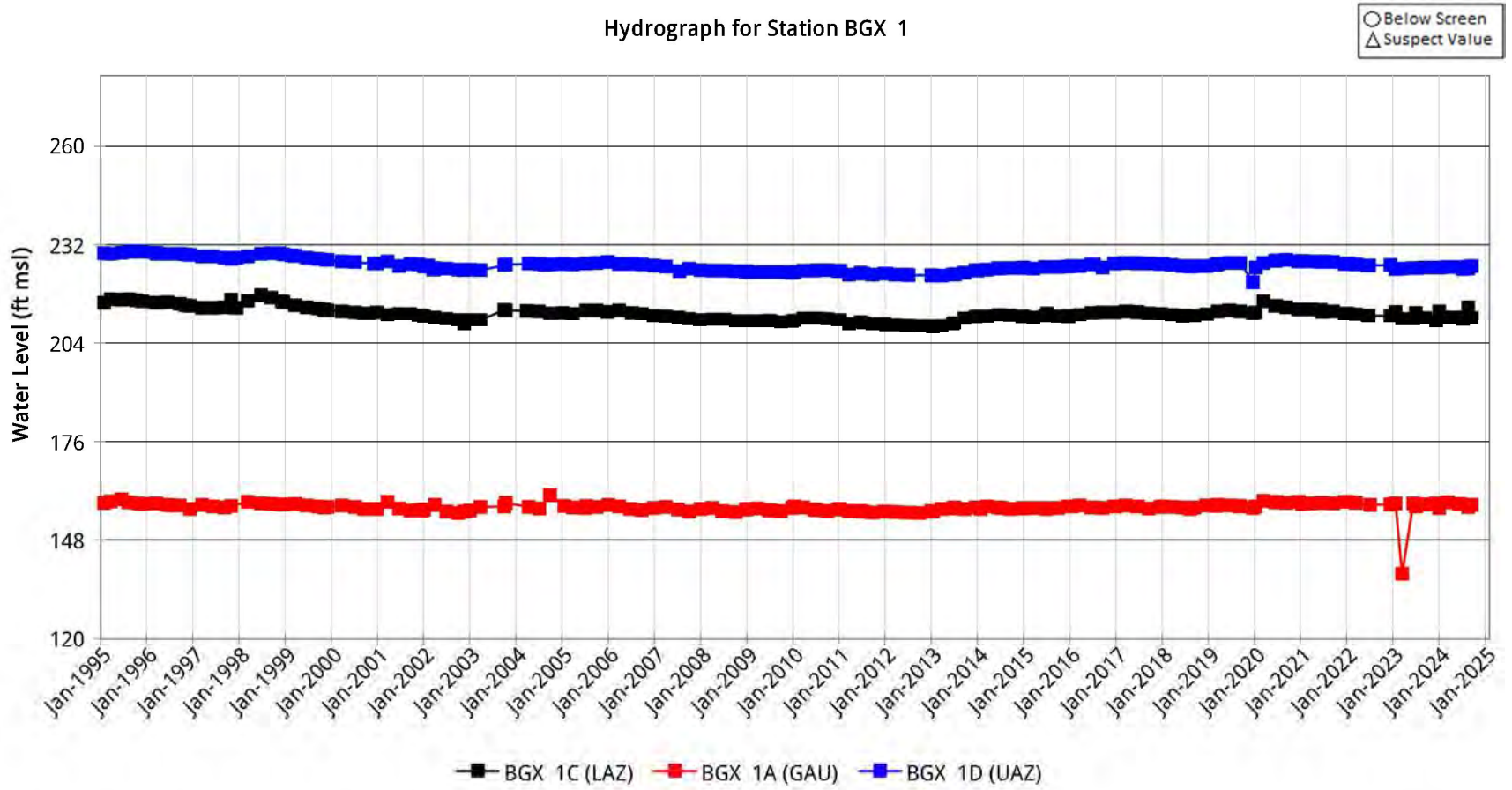

Hydrograph for Station BGO 41A (GAU)
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
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Jan-1995
Jan-1996
Jan-1997
Jan-1998
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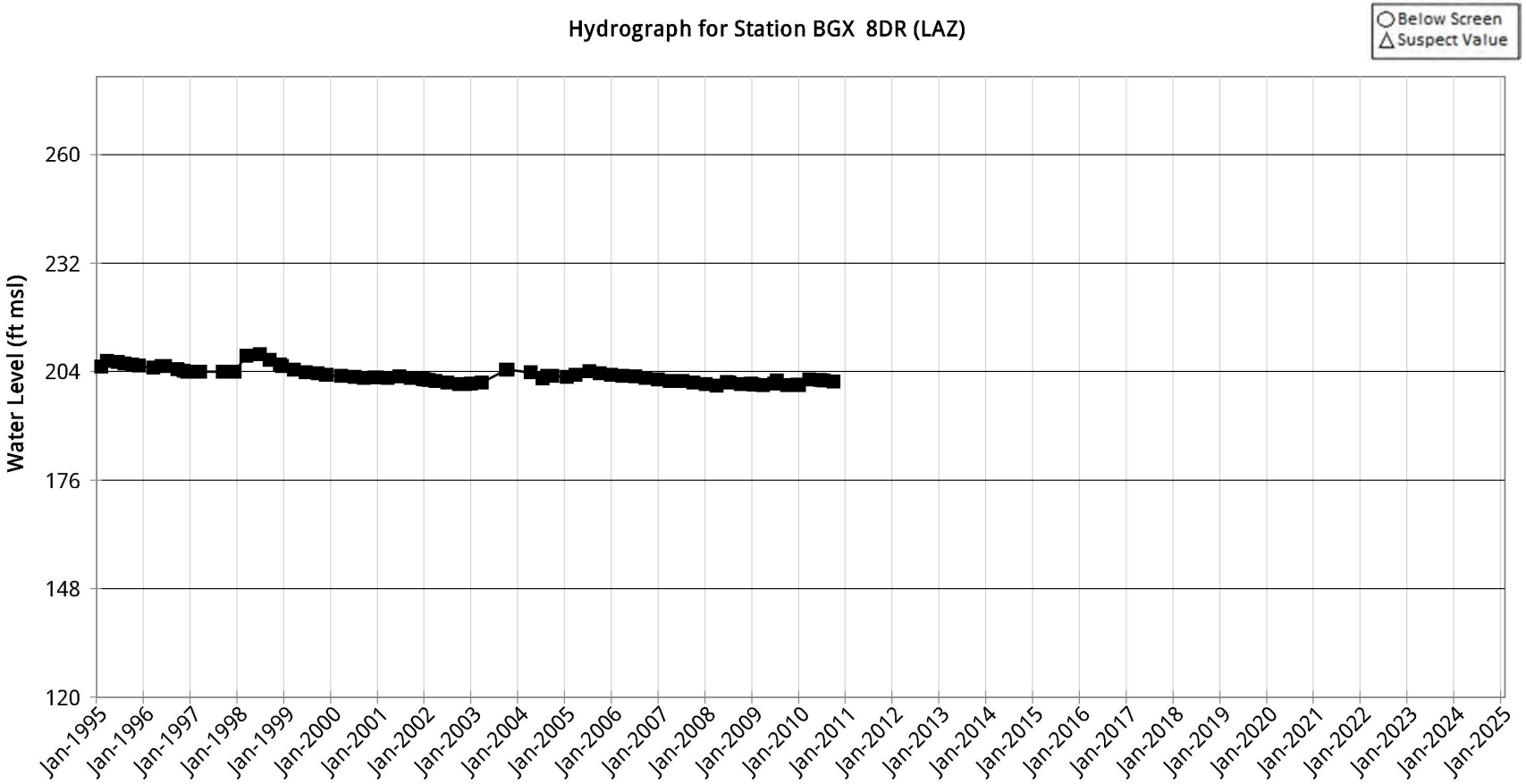

Hydrograph for Station BGO 45
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
Jan-1996
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Jan-2025
BGO 45D (UAZ)
BGO 45B (LAZ)
BGO 45A (GAU)
BGO 45C (LAZ)

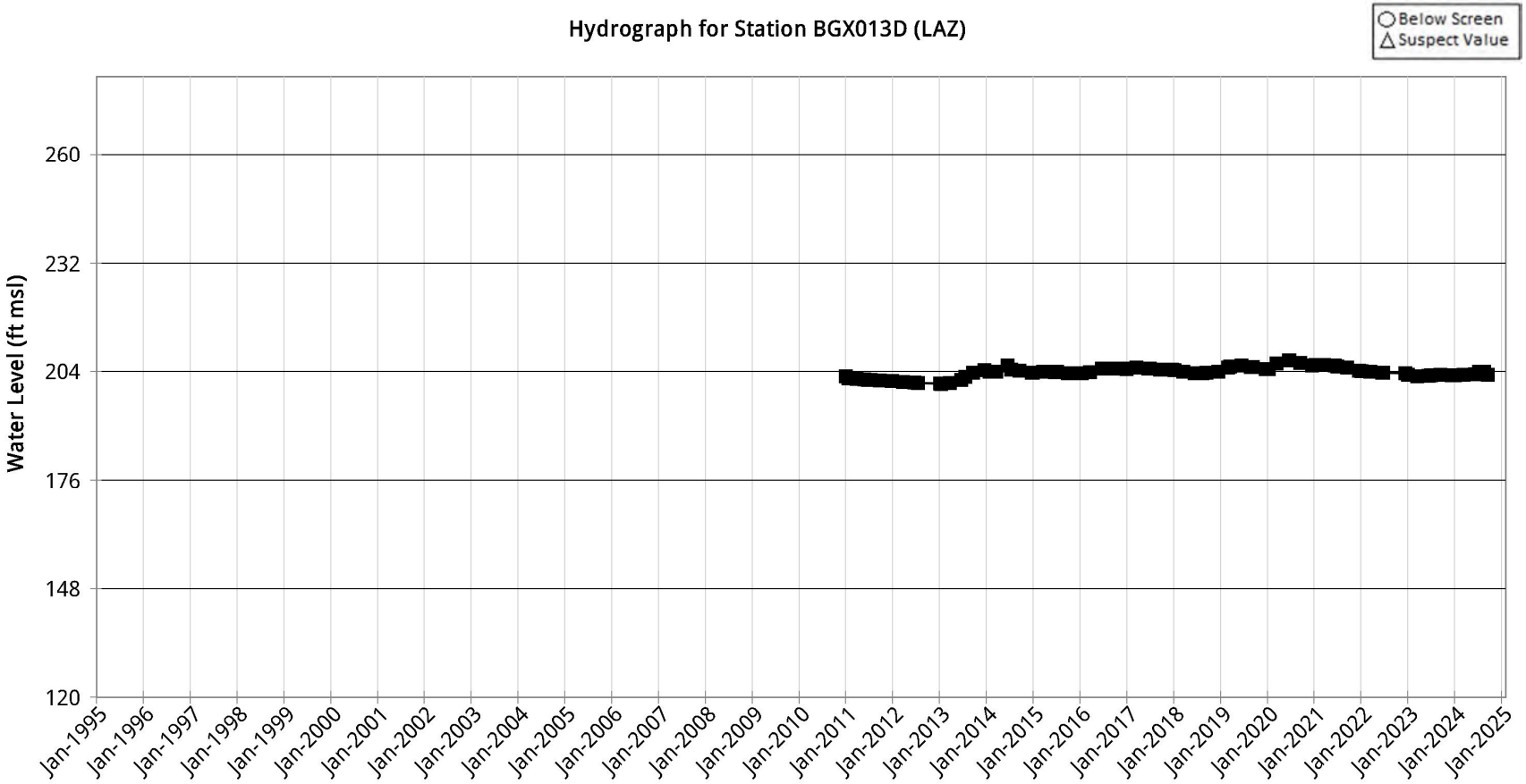

Hydrograph for Station BGO 48D (UAZ)
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
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Jan-2001
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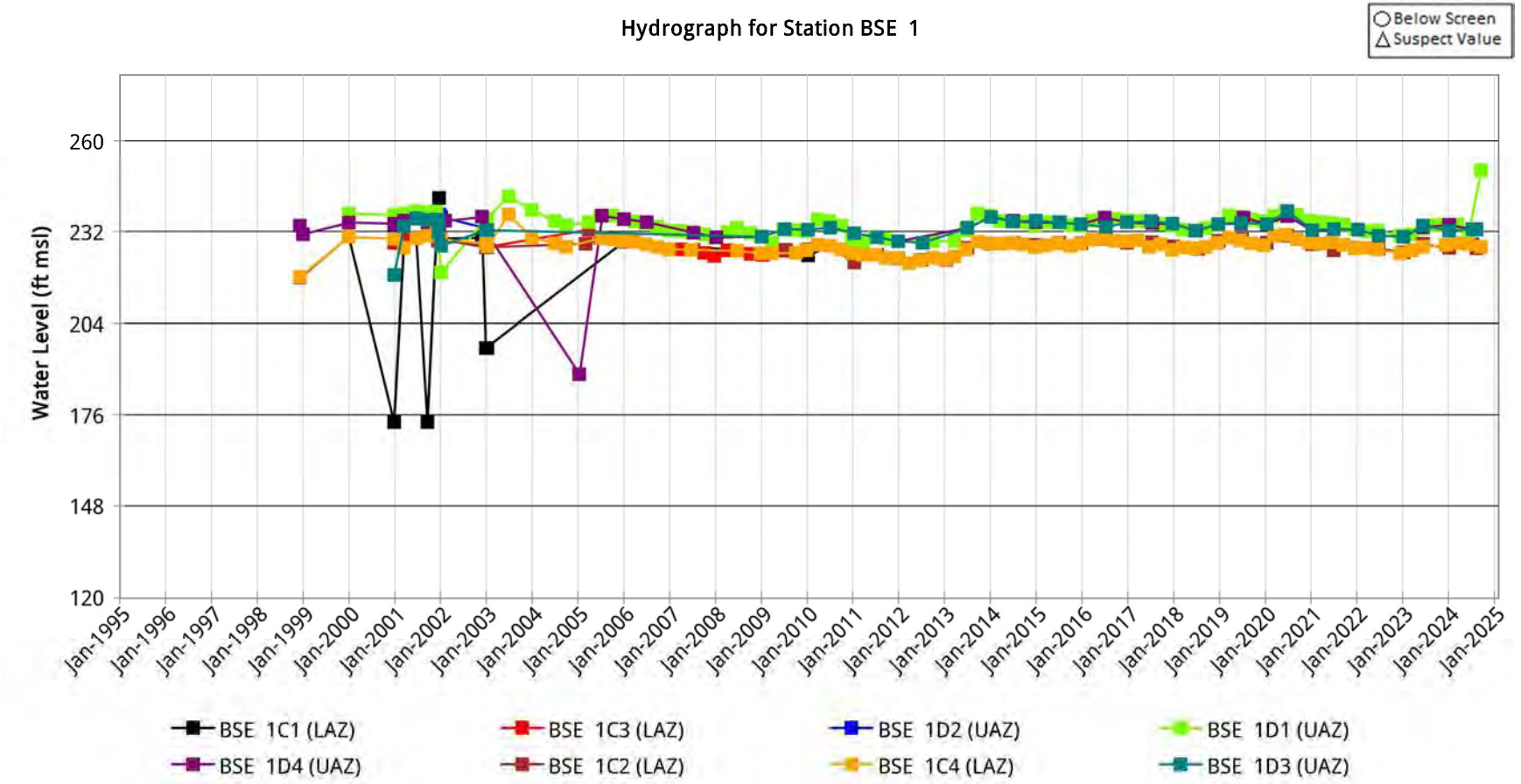

Hydrograph for Station BGO 50
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
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Jan-1998
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Jan-2024
Jan-2025
BGO 50A (GAU)
BGO 50D (UAZ)
BGO 50C (LAZ)

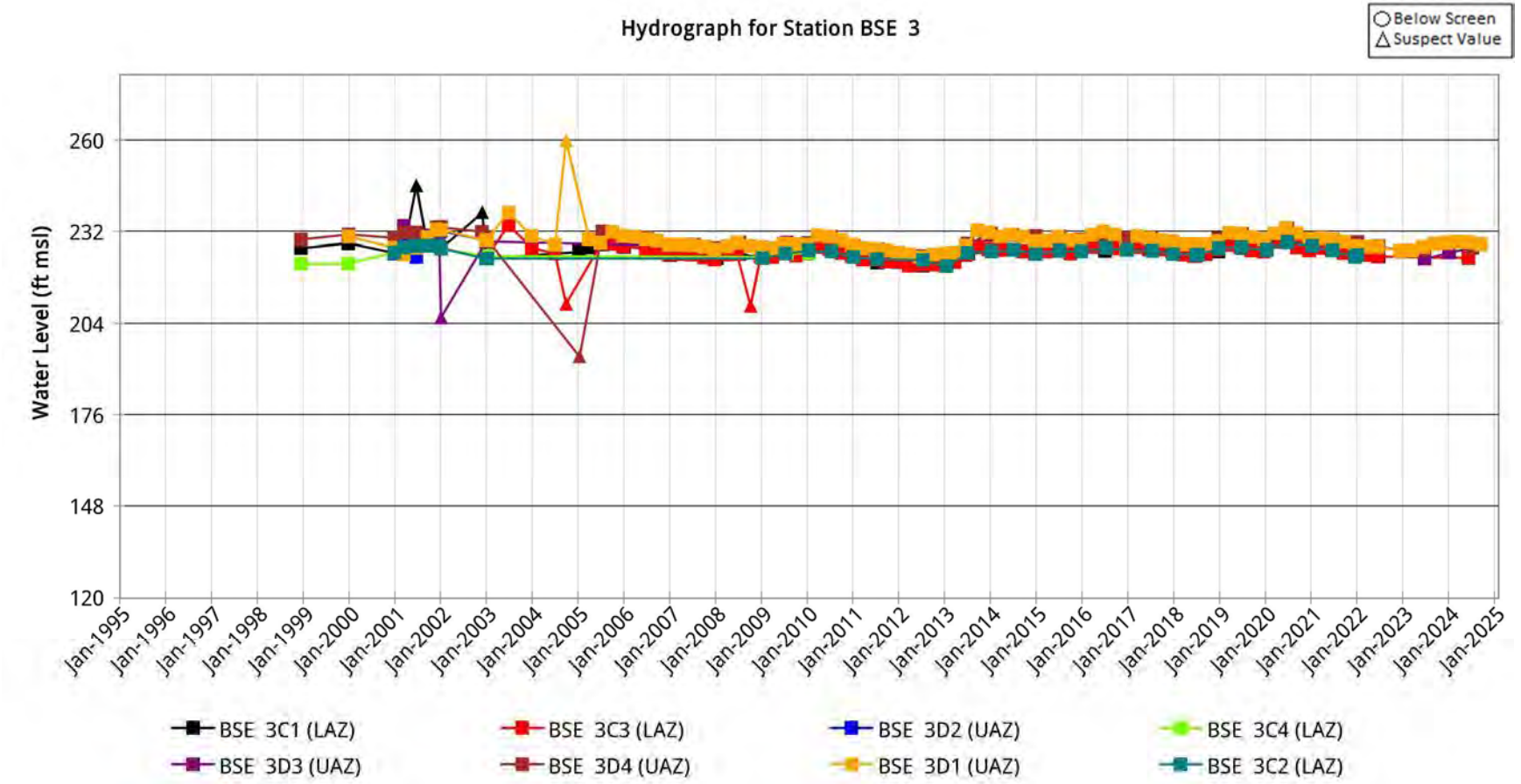

Hydrograph for Station BGO 51
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
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Jan-1998
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Jan-2001
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Jan-2025
BGO 51AA (GAU)
BGO 51C (LAZ)
BGO 51A (GAU)
BGO 51D (UAZ)
BGO 51B (LAZ)

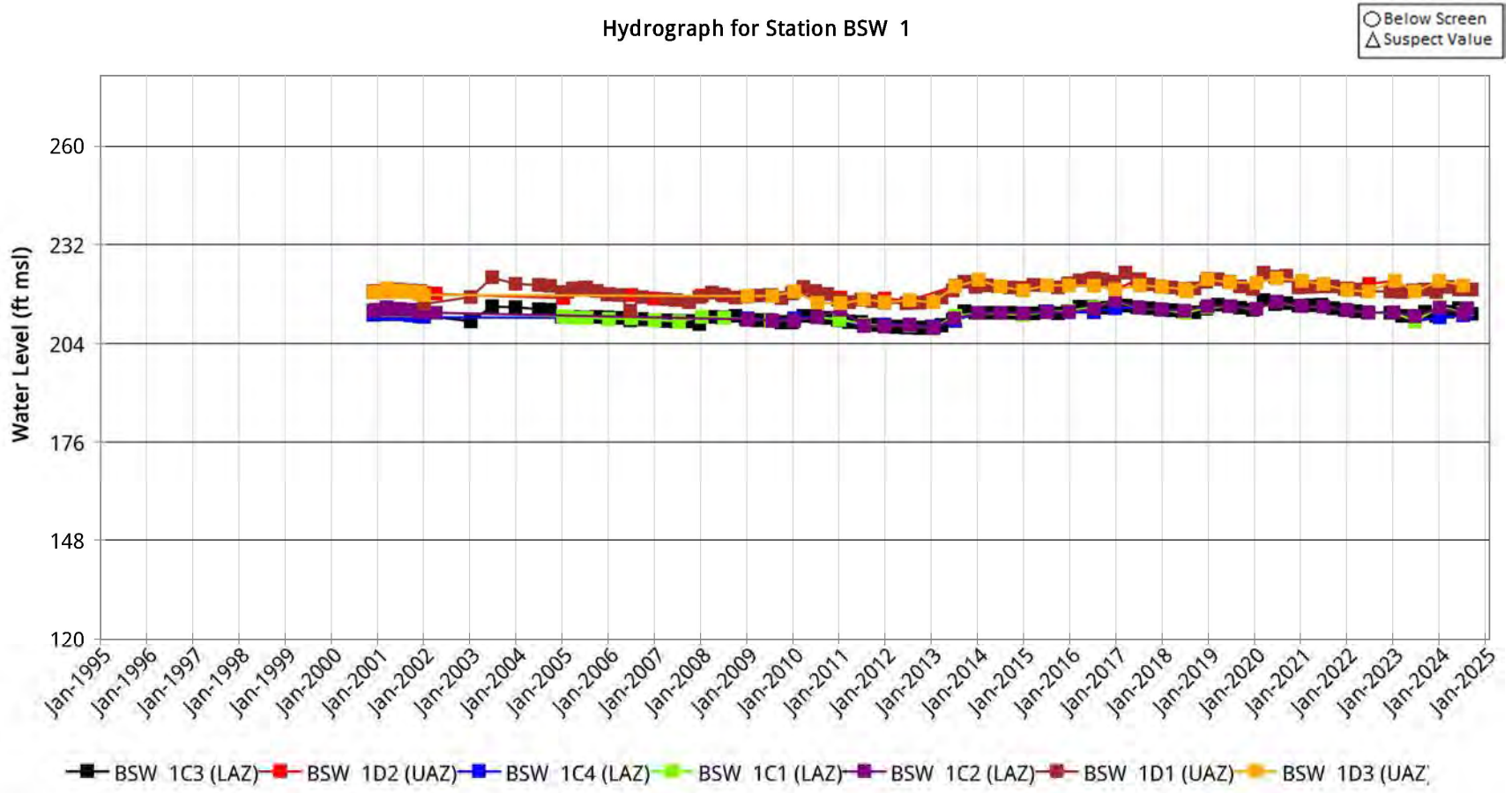

Hydrograph for Station BGX 1
Below Screen
Suspect Value
Water Level (ft msl)
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232
204
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148
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Jan-1995
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Jan-1998
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Jan-2025
BGX 1C (LAZ)
BGX 1A (GAU)
BGX 1D (UAZ)

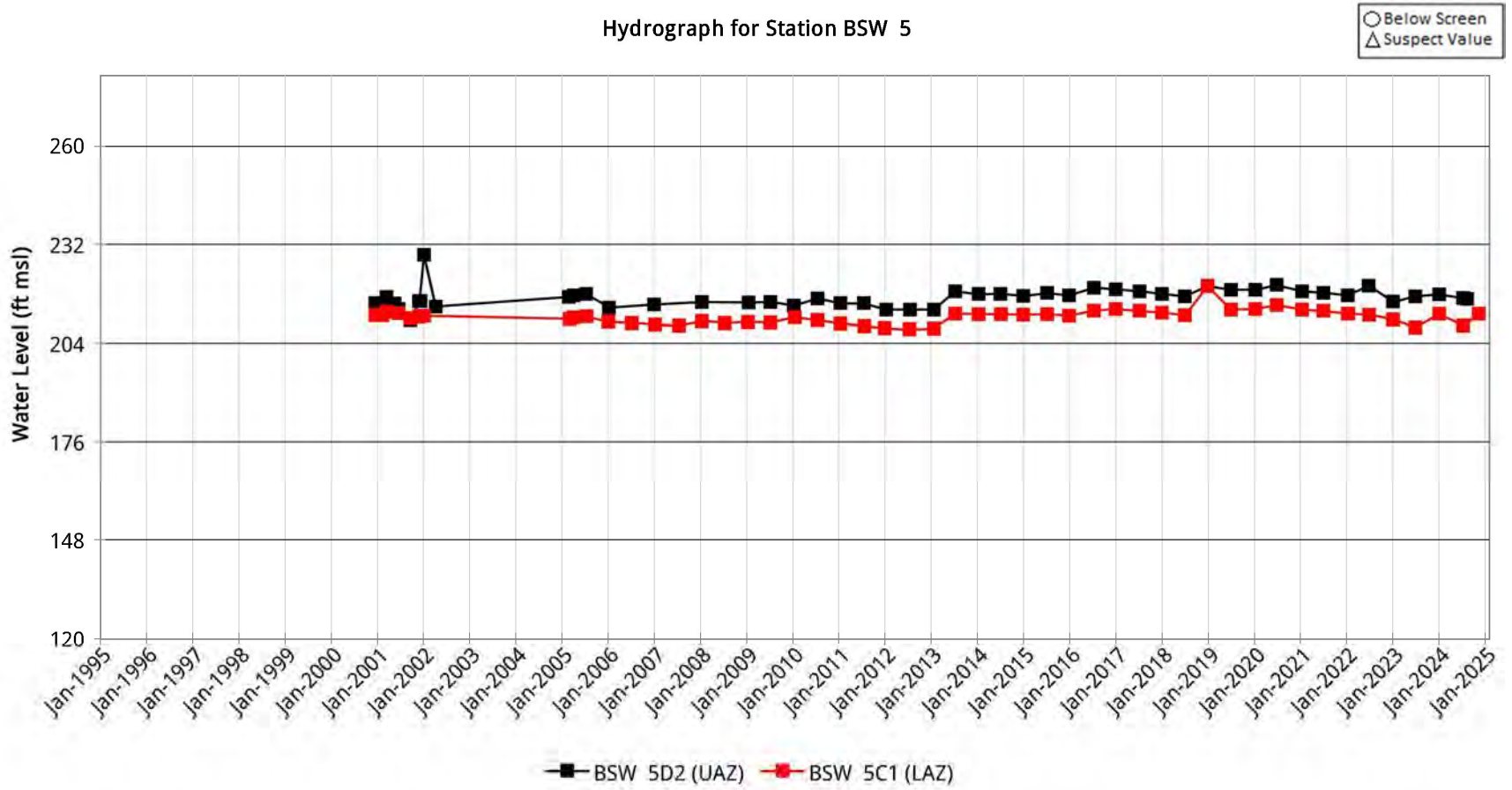

Hydrograph for Station BGX 8DR (LAZ)
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
Jan-1996
Jan-1997
Jan-1998
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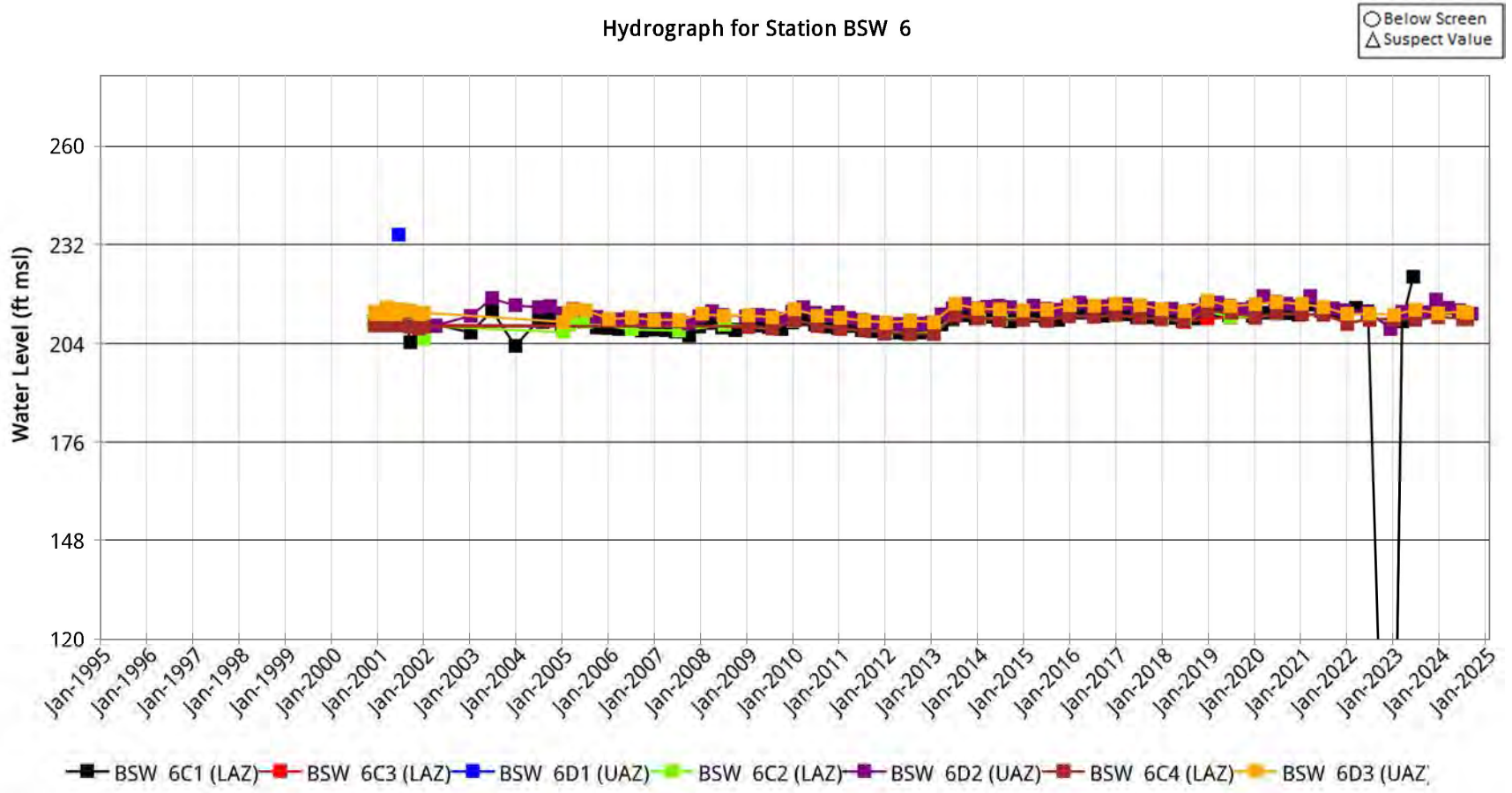

Hydrograph for Station BGX013D (LAZ)
Below Screen
Suspect Value
Water Level (ft msl)
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232
204
176
148
120
Jan-1995
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Jan-1997
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Jan-2025

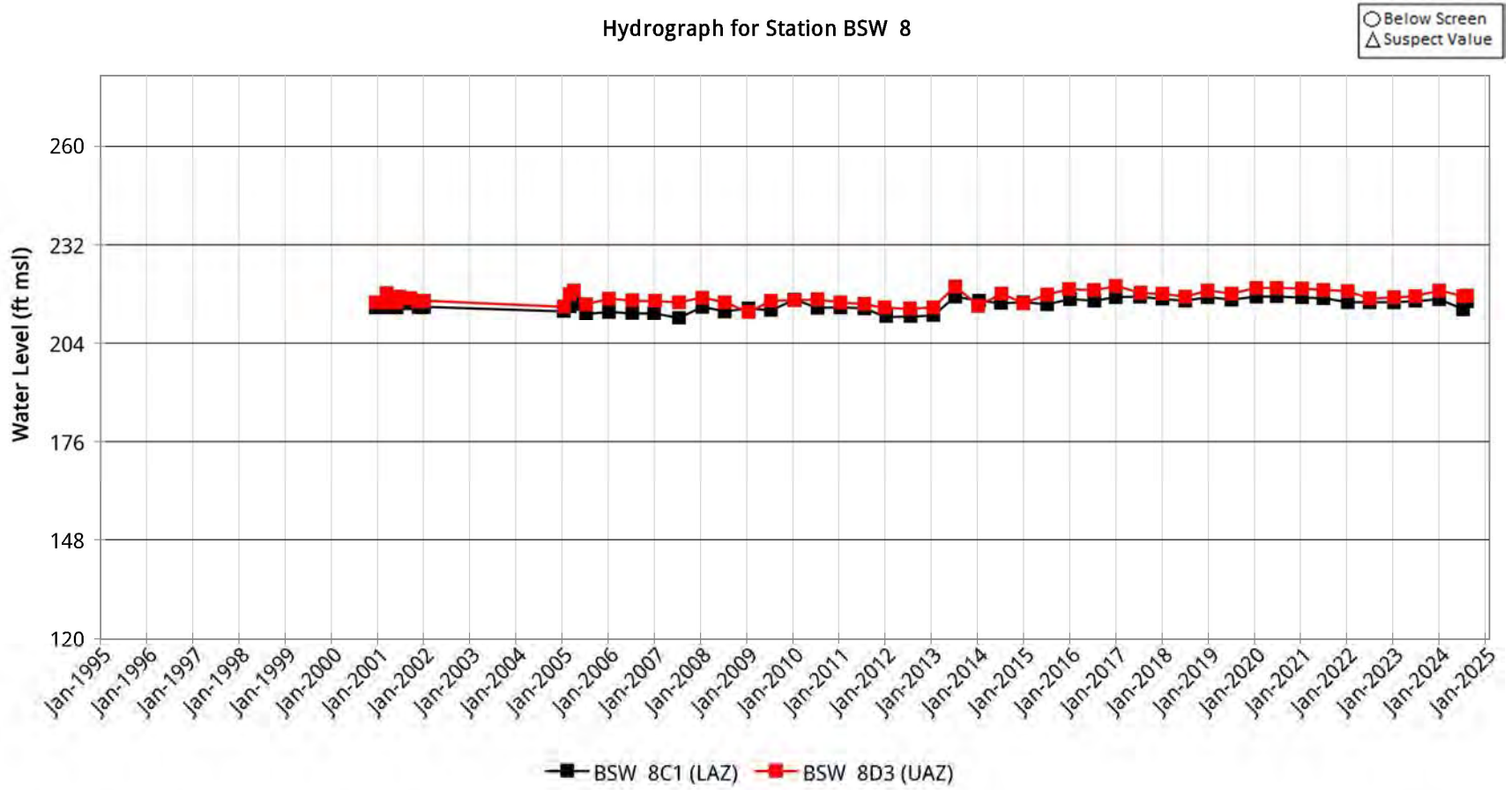

Hydrograph for Station BSE 1
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
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Jan-1998
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Jan-2023
Jan-2024
Jan-2025
BSE 1C1 (LAZ)
BSE 1C3 (LAZ)
BSE 1D2 (UAZ)
BSE 1D1 (UAZ)
BSE 1D4 (UAZ)
BSE 1C2 (LAZ)
BSE 1C4 (LAZ)
BSE 1D3 (UAZ)

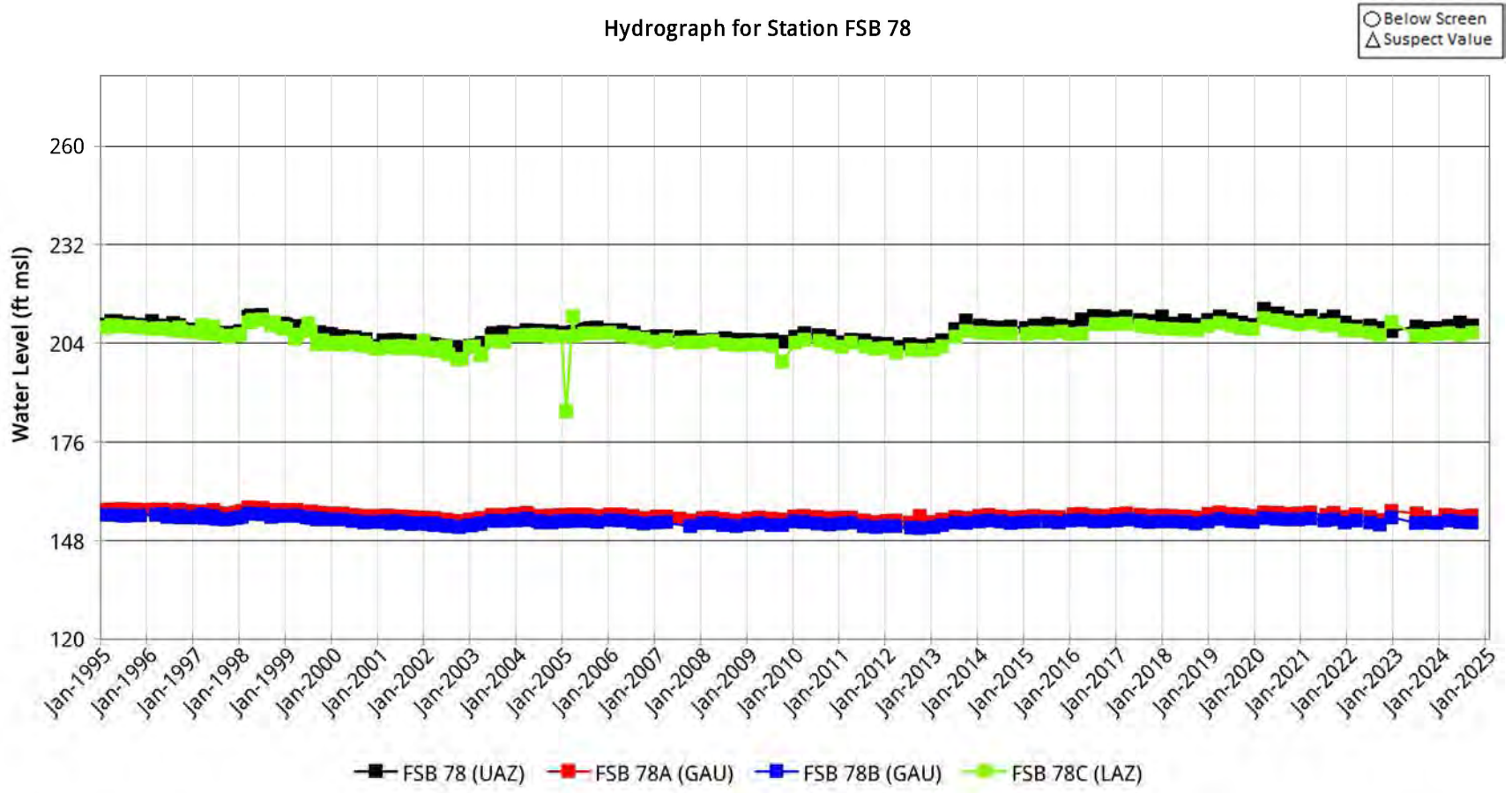

Hydrograph for Station BSE 3
Below Screen
Suspect Value
Water Level (ft msl)
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232
204
176
148
120
Jan-1995
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Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BSE 3C1 (LAZ)
BSE 3C3 (LAZ)
BSE 3D2 (UAZ)
BSE 3C4 (LAZ)
BSE 3D3 (UAZ)
BSE 3D4 (UAZ)
BSE 3D1 (UAZ)
BSE 3C2 (LAZ)

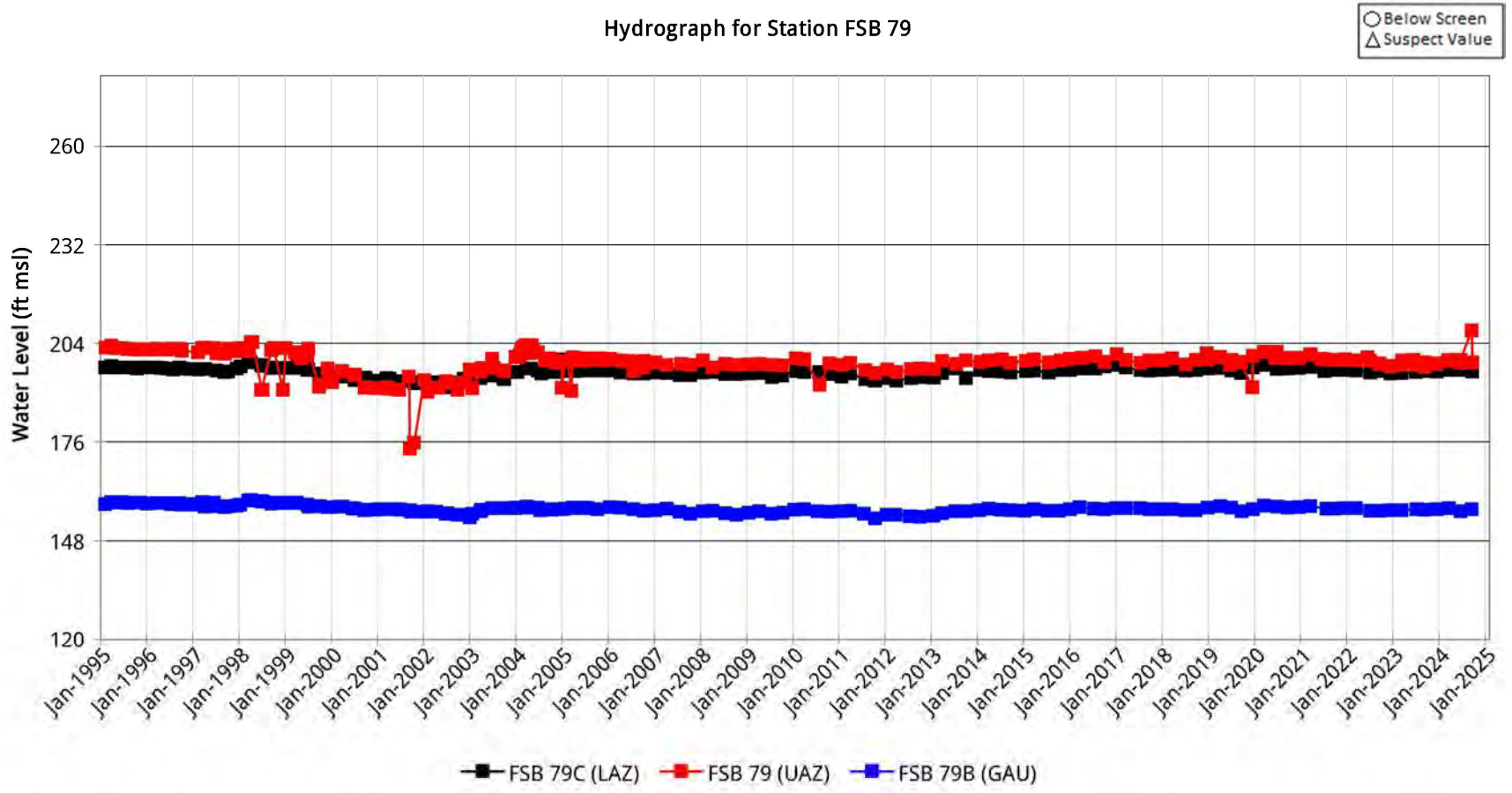

Hydrograph for Station BSW 1
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
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Jan-1998
Jan-1999
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Jan-2023
Jan-2024
Jan-2025
BSW 1C3 (LAZ)
BSW 1D2 (UAZ)
BSW 1C4 (LAZ)
BSW 1C1 (LAZ)
BSW 1C2 (LAZ)
BSW 1D1 (UAZ)
BSW 1D3 (UAZ)

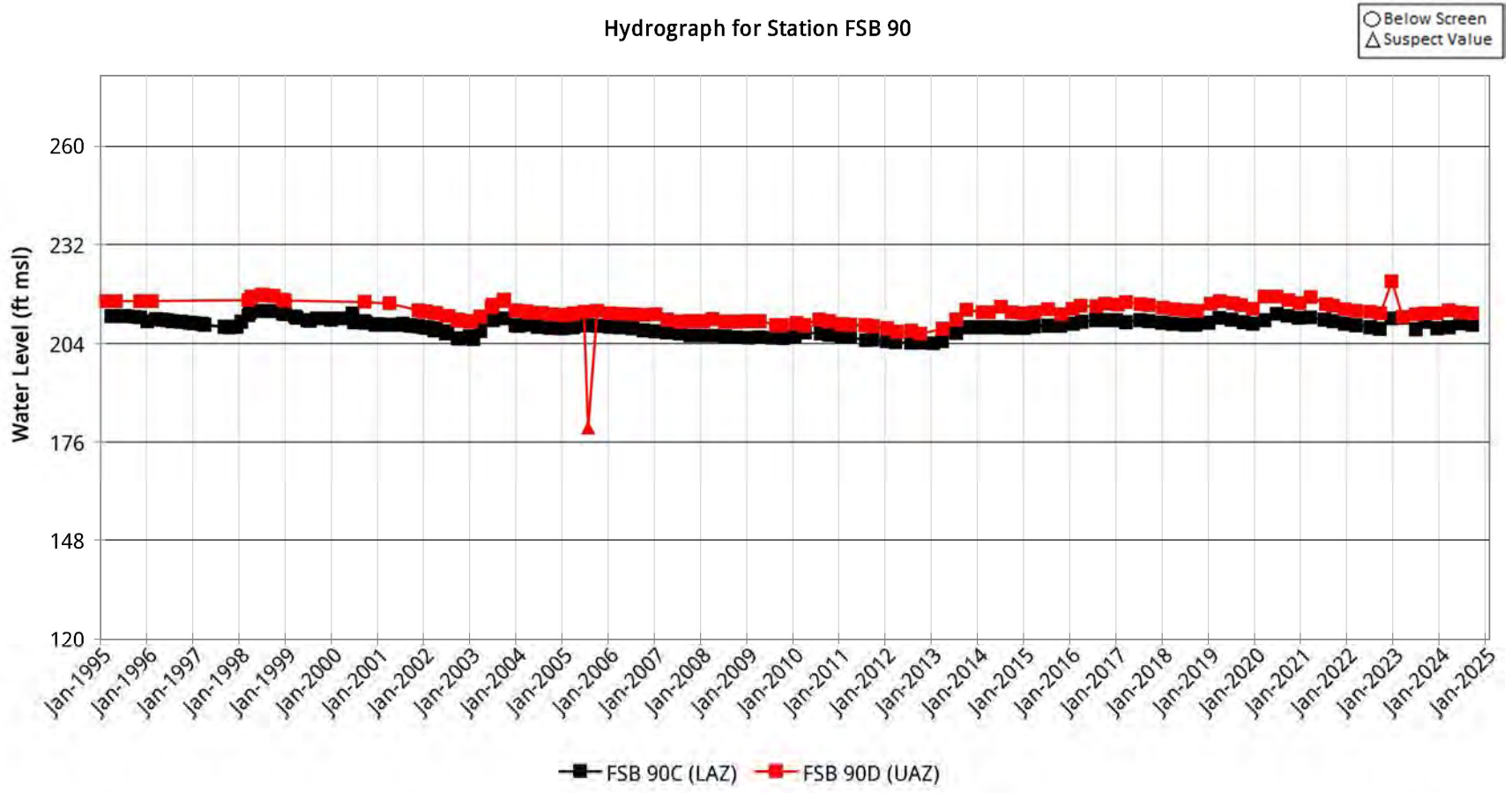

Hydrograph for Station BSW 5
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
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Jan-2023
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Jan-2025
BSW 5D2 (UAZ)
BSW 5C1 (LAZ)

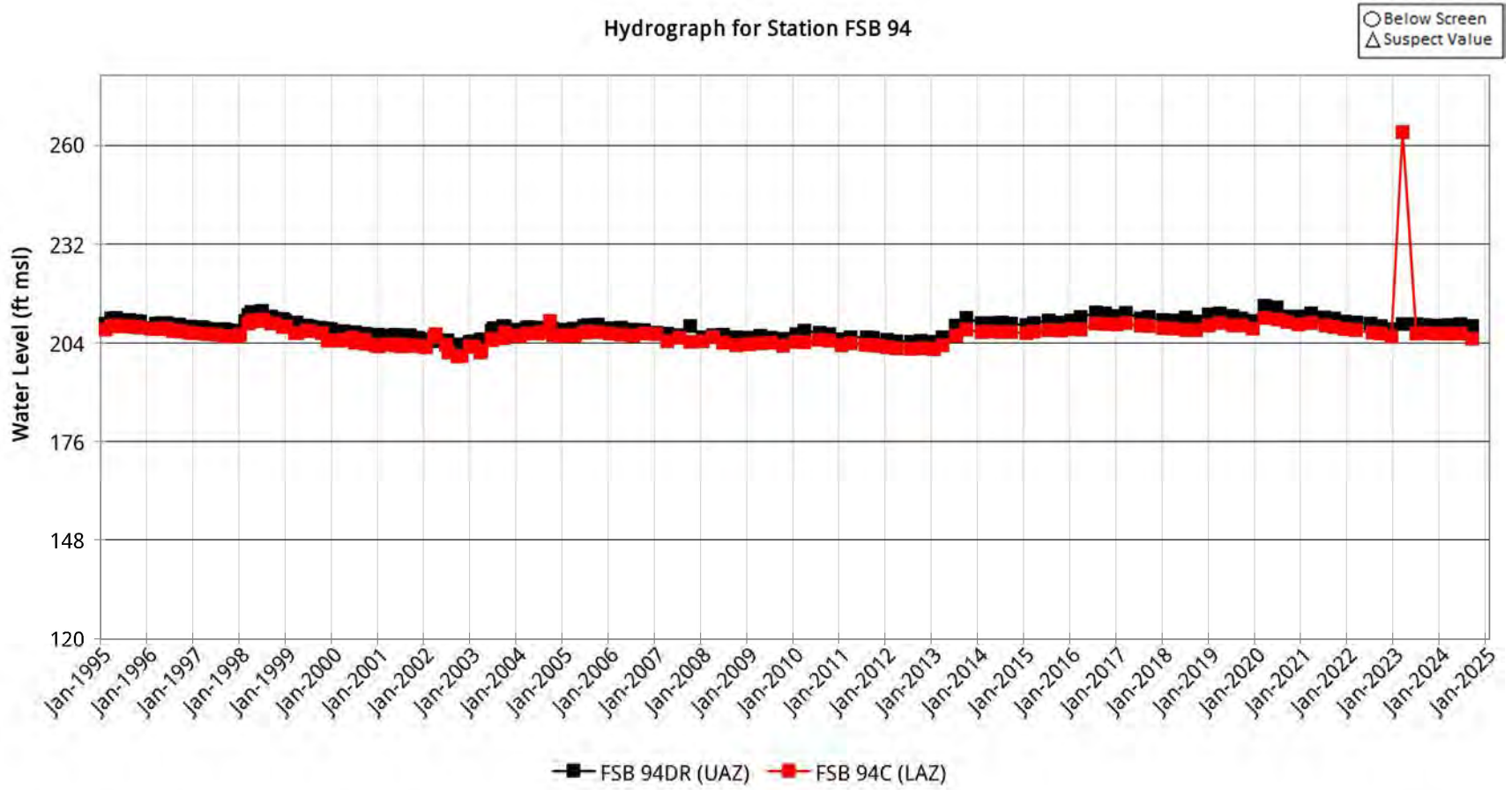

Hydrograph for Station BSW 6
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
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Jan-2023
Jan-2024
Jan-2025
BSW 6C1 (LAZ)
BSW 6C3 (LAZ)
BSW 6D1 (UAZ)
BSW 6C2 (LAZ)
BSW 6D2 (UAZ)
BSW 6C4 (LAZ)
BSW 6D3 (UAZ)

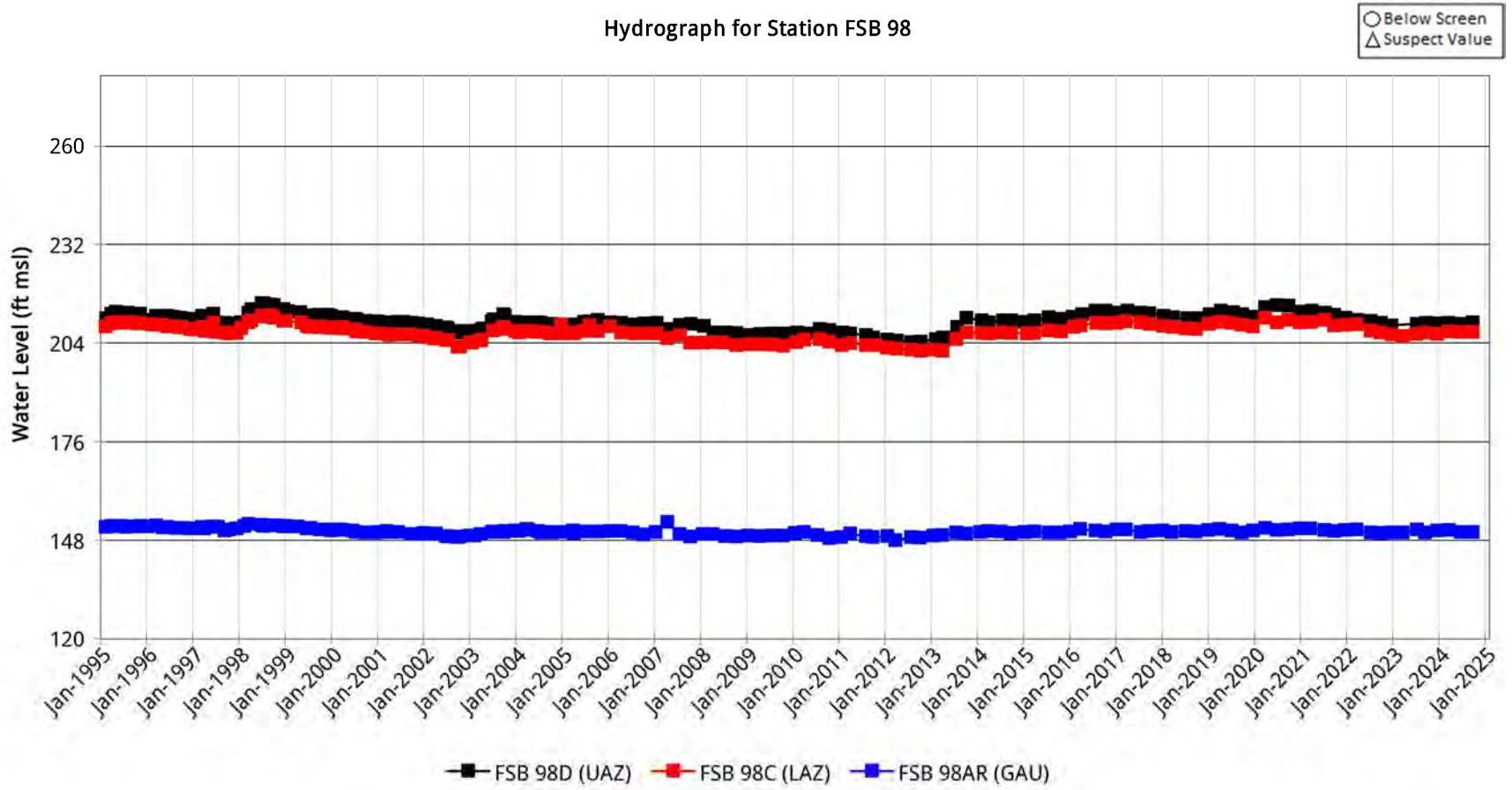

Hydrograph for Station BSW 8
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
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Jan-2002
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Jan-2024
Jan-2025
BSW 8C1 (LAZ)
BSW 8D3 (UAZ)

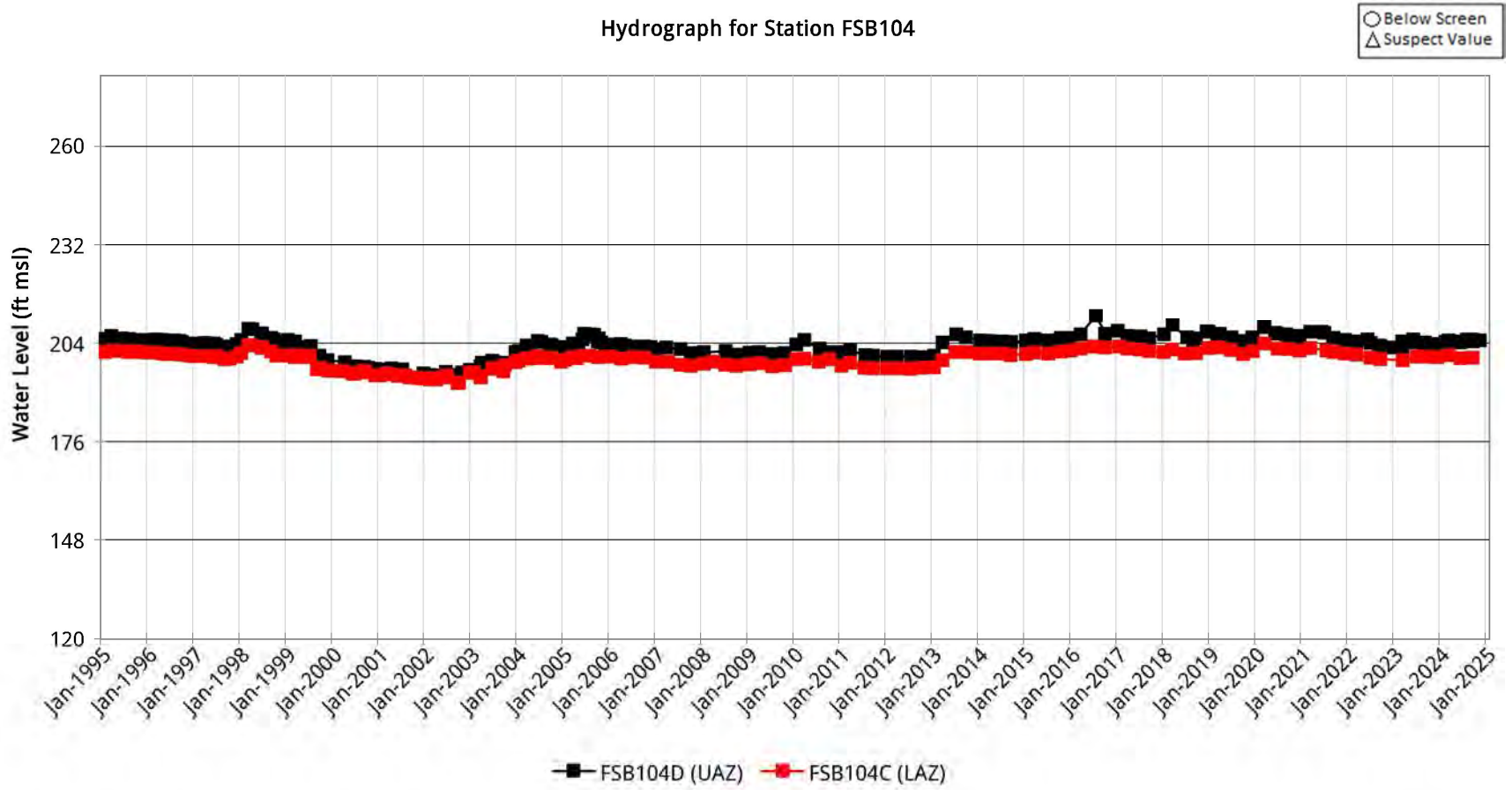

Hydrograph for Station FSB 78
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
Jan-1996
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Jan-1999
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Jan-2024
Jan-2025
FSB 78 (UAZ)
FSB 78A (GAU)
FSB 78B (GAU)
FSB 78C (LAZ)

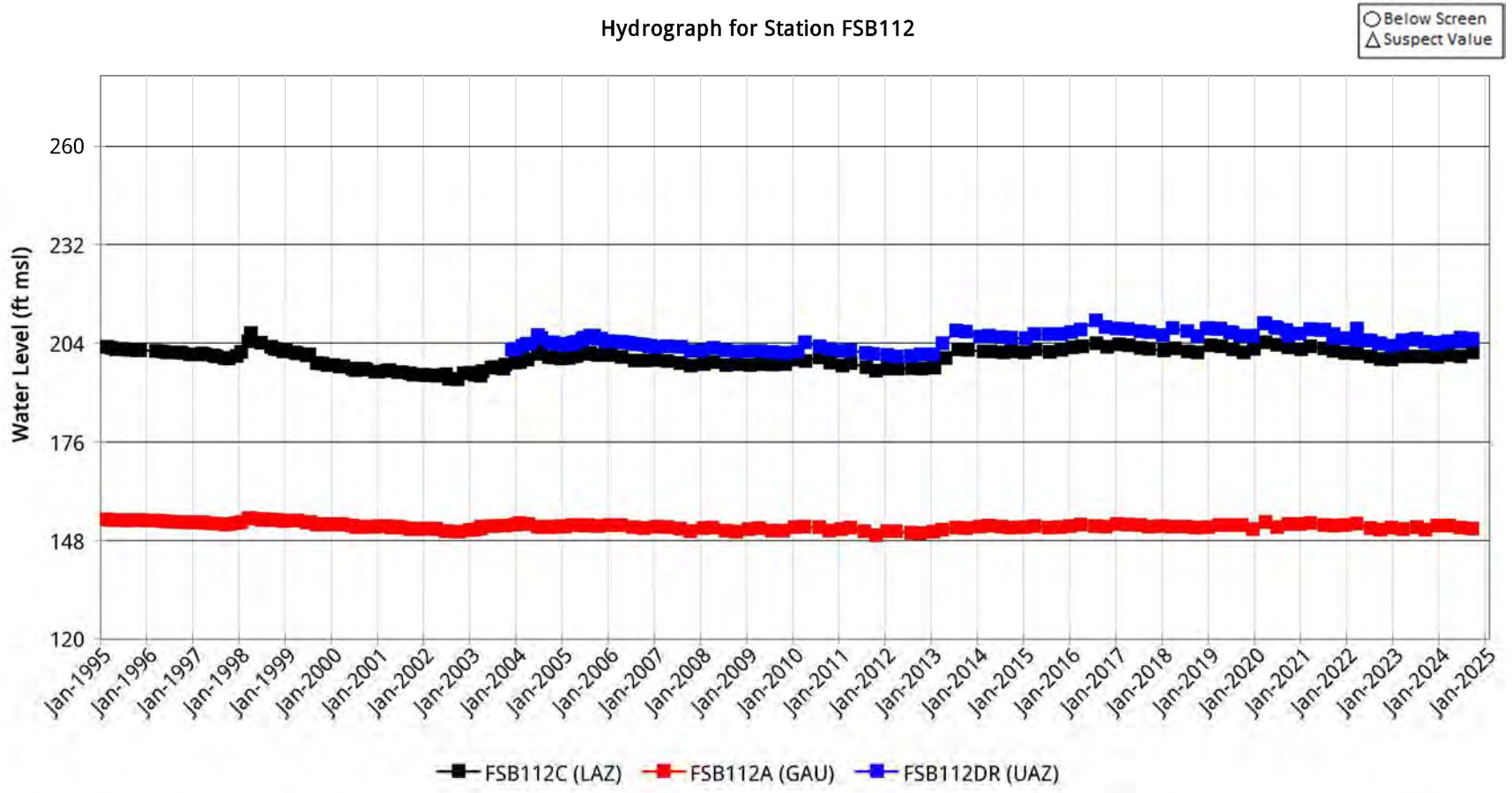

Hydrograph for Station FSB 79
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
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FSB 79C (LAZ)
FSB 79 (UAZ)
FSB 79B (GAU)

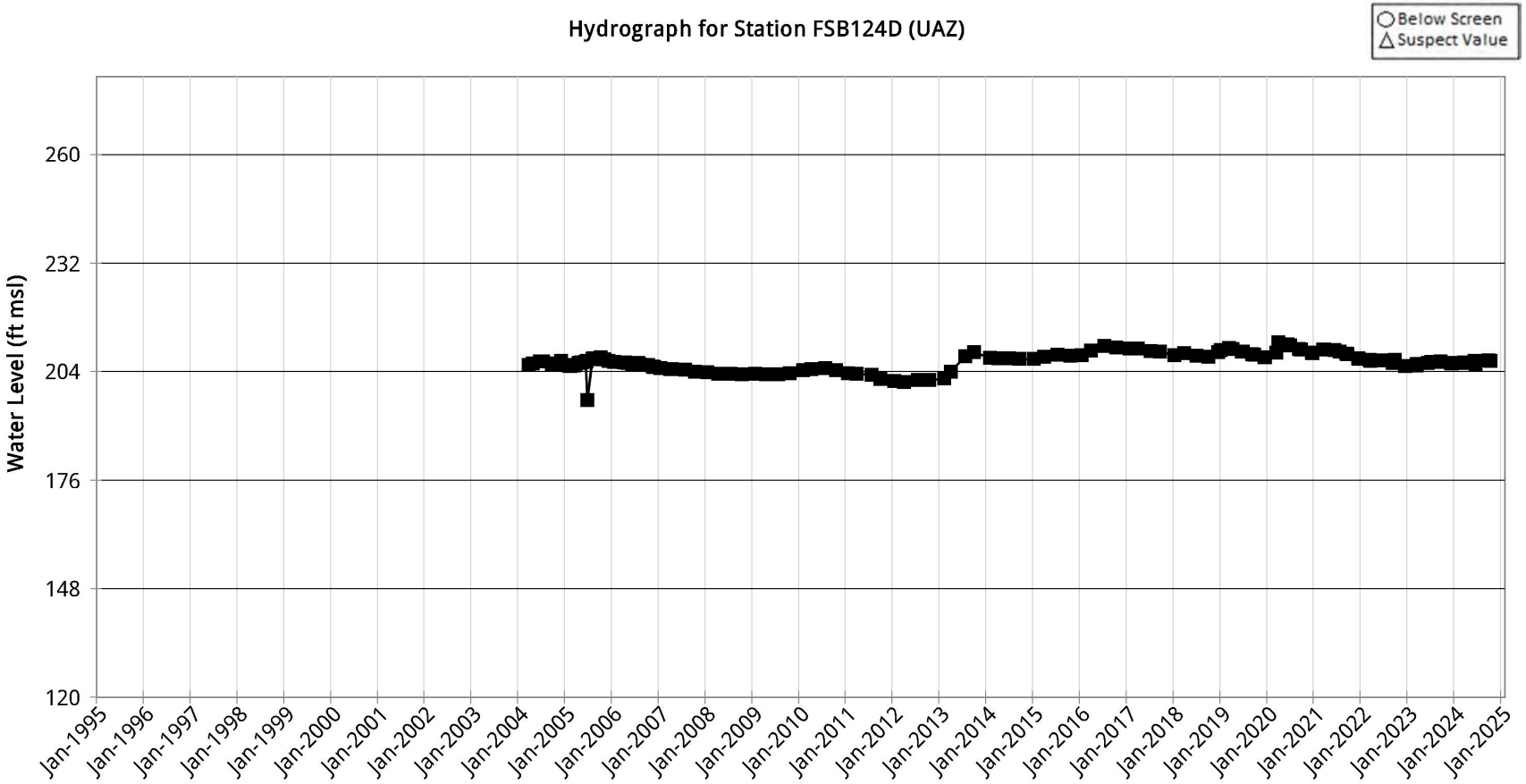

Hydrograph for Station FSB 90
Below Screen
Suspect Value
Water Level (ft msl)
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232
204
176
148
120
Jan-1995
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FSB 90C (LAZ)
FSB 90D (UAZ)

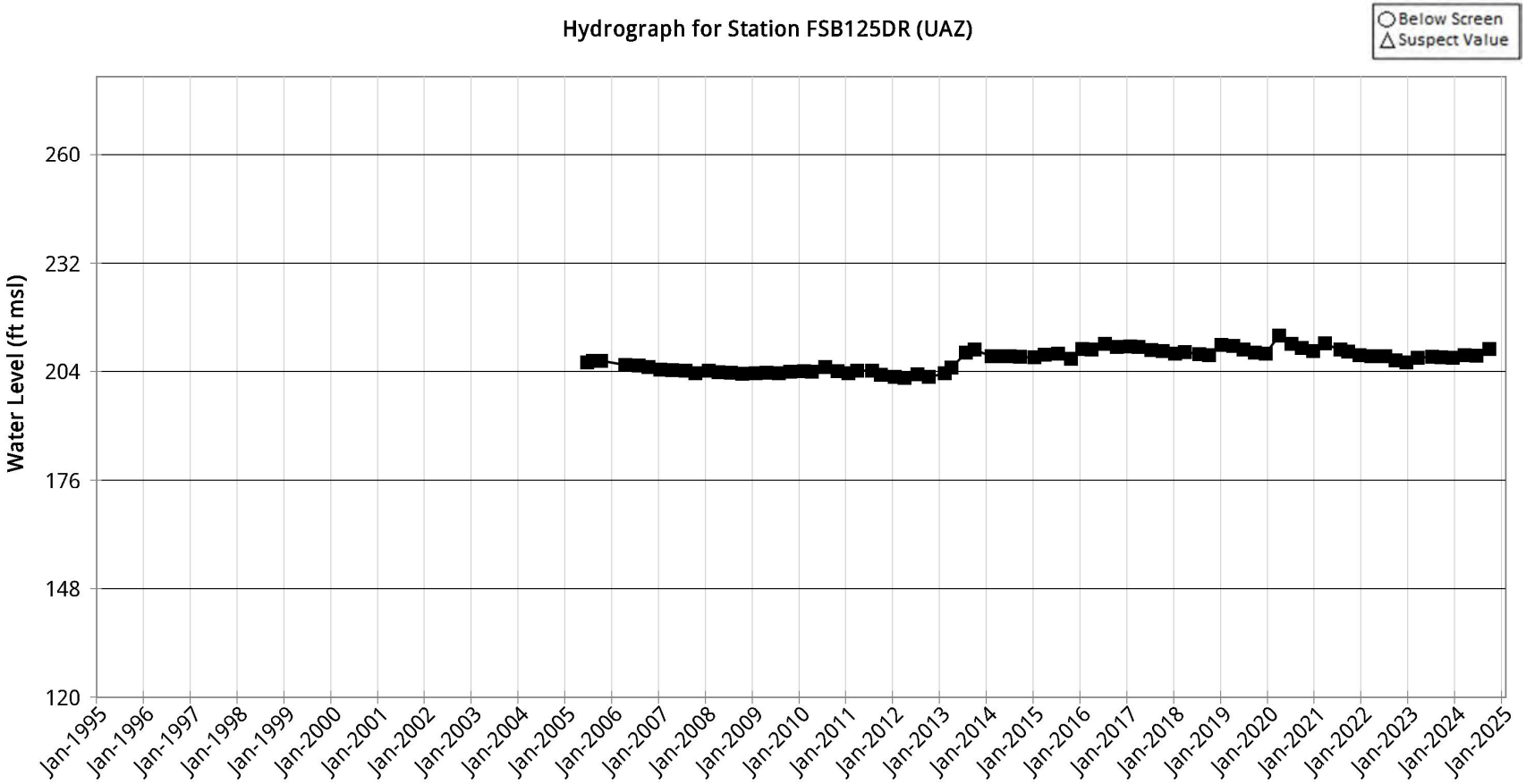

Hydrograph for Station FSB 94
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Suspect Value
Water Level (ft msl)
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232
204
176
148
120
Jan-1995
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FSB 94DR (UAZ)
FSB 94C (LAZ)

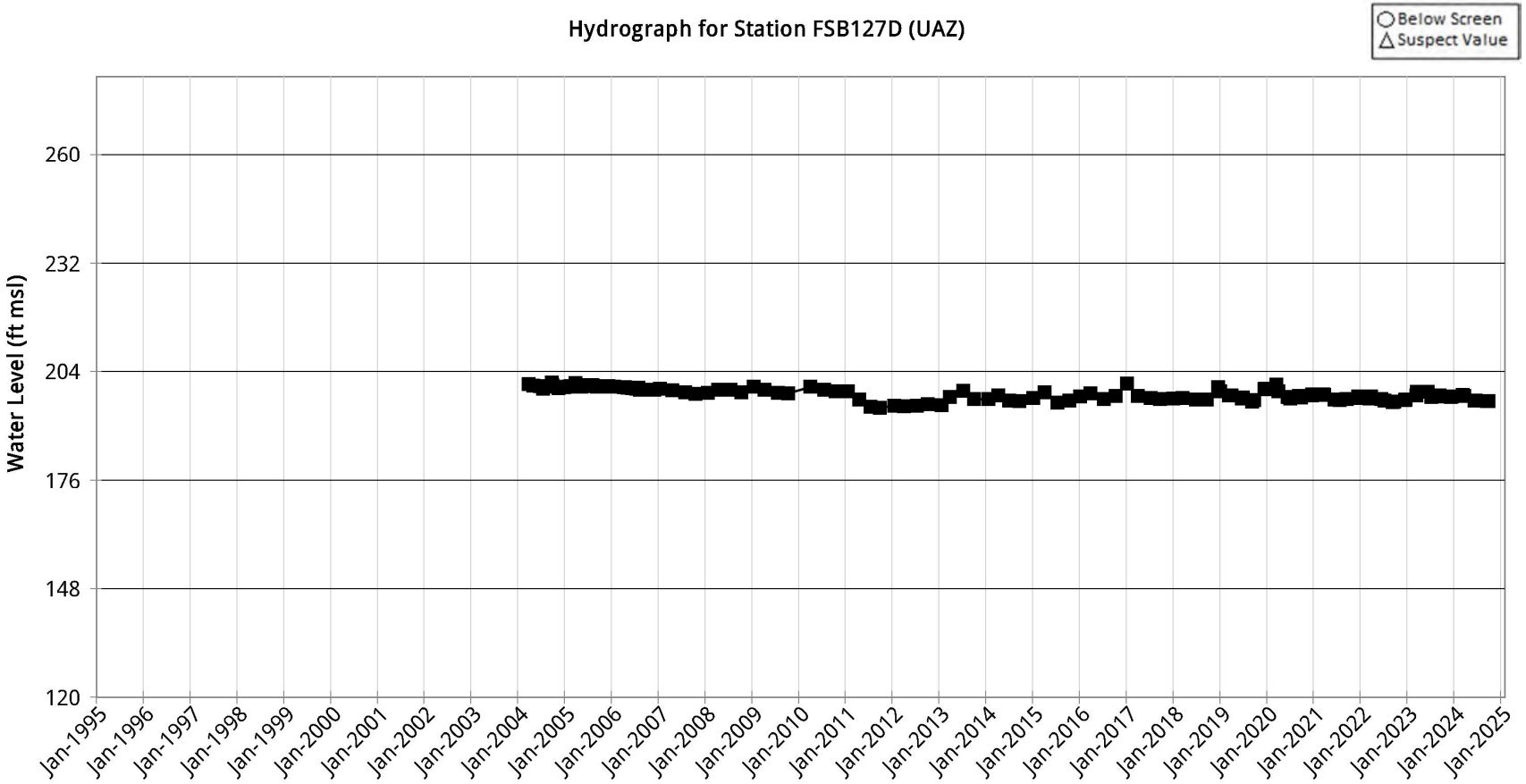

Hydrograph for Station FSB 98
Below Screen
Suspect Value
Water Level (ft msl)
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232
204
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148
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Jan-1995
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FSB 98D (UAZ)
FSB 98C (LAZ)
FSB 98AR (GAU)

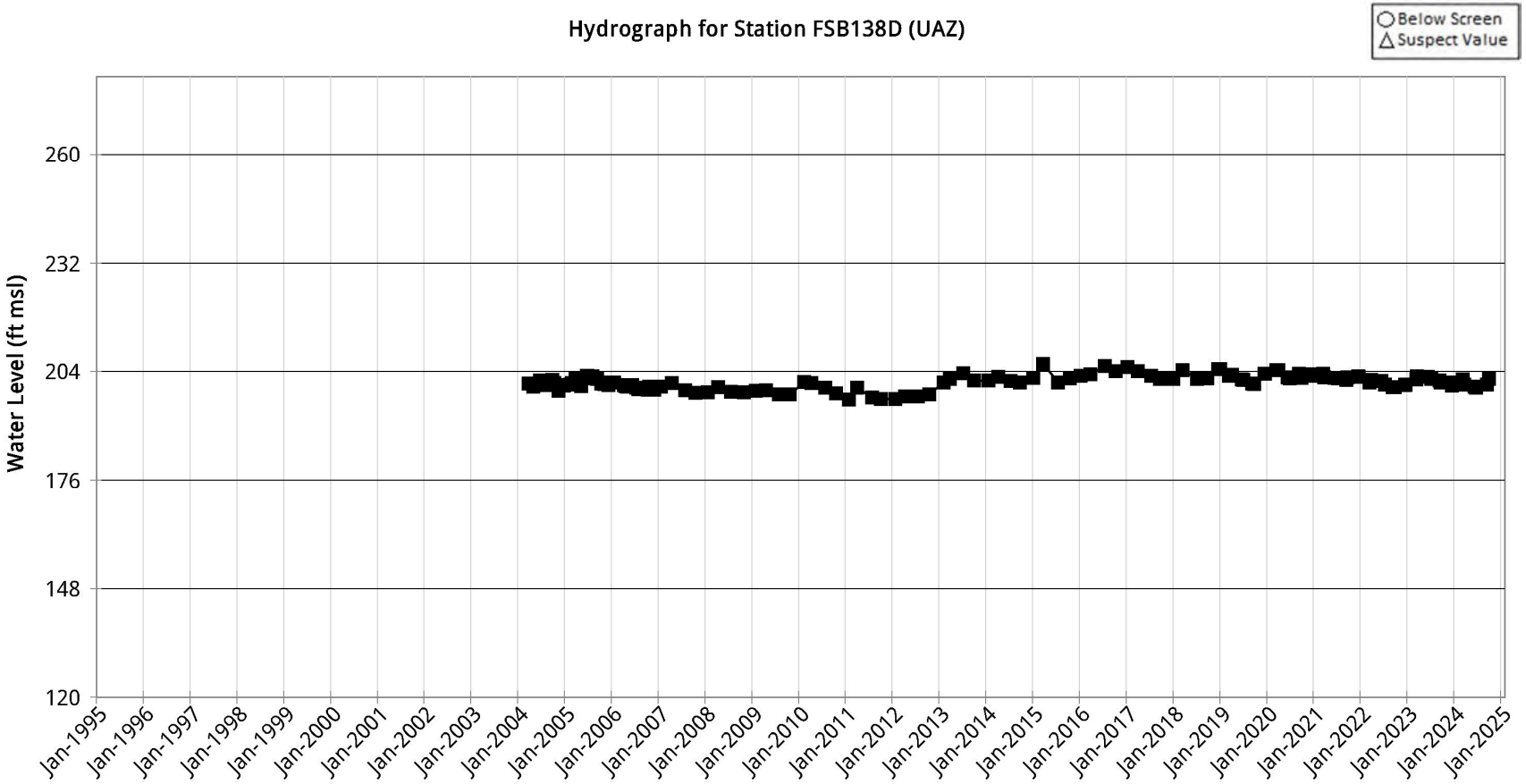

Hydrograph for Station FSB104
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Suspect Value
Water Level (ft msl)
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148
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Jan-1995
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FSB104D (UAZ)
FSB104C (LAZ)

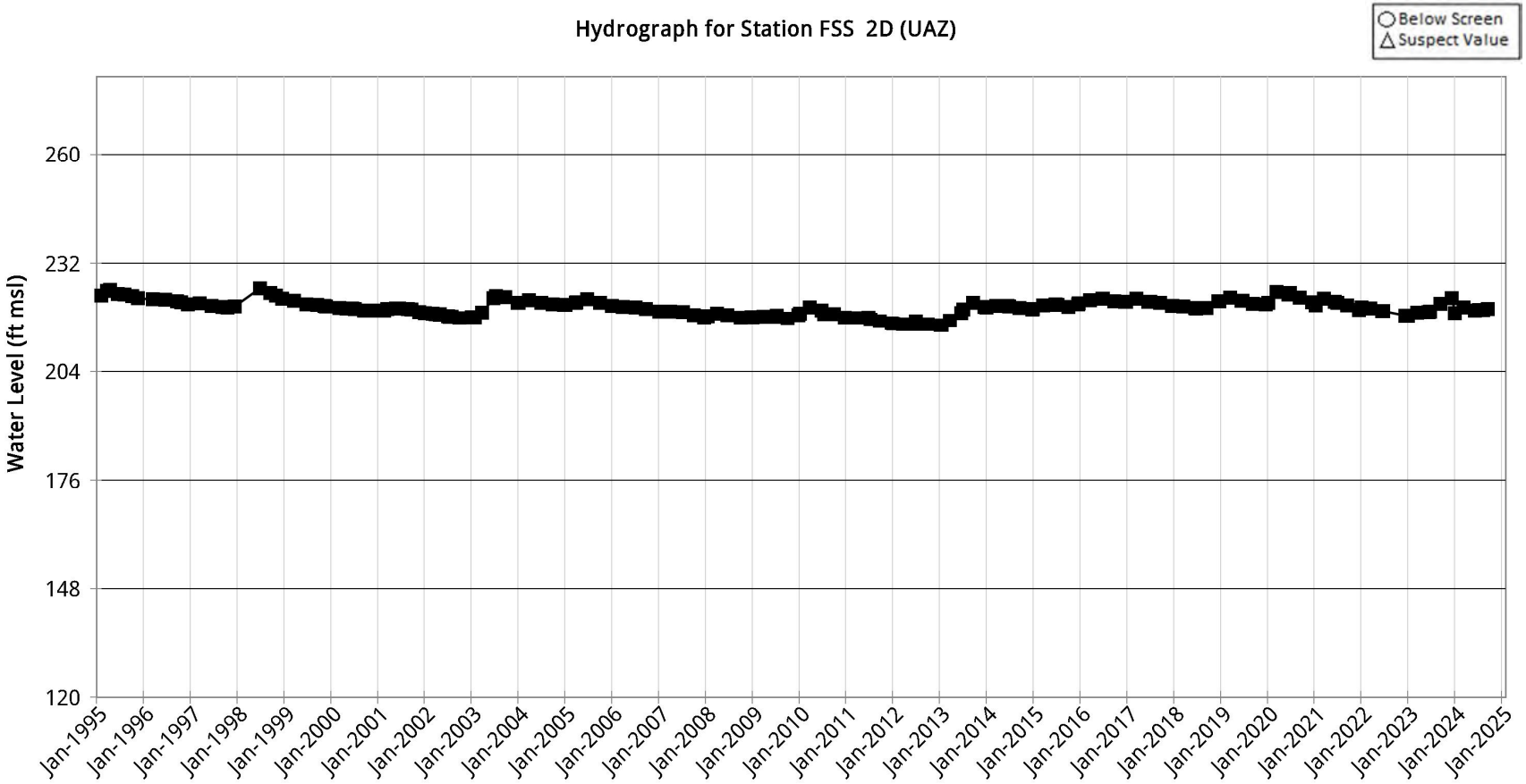

Hydrograph for Station FSB112
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Suspect Value
Water Level (ft msl)
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FSB112C (LAZ)
FSB112A (GAU)
FSB112DR (UAZ)

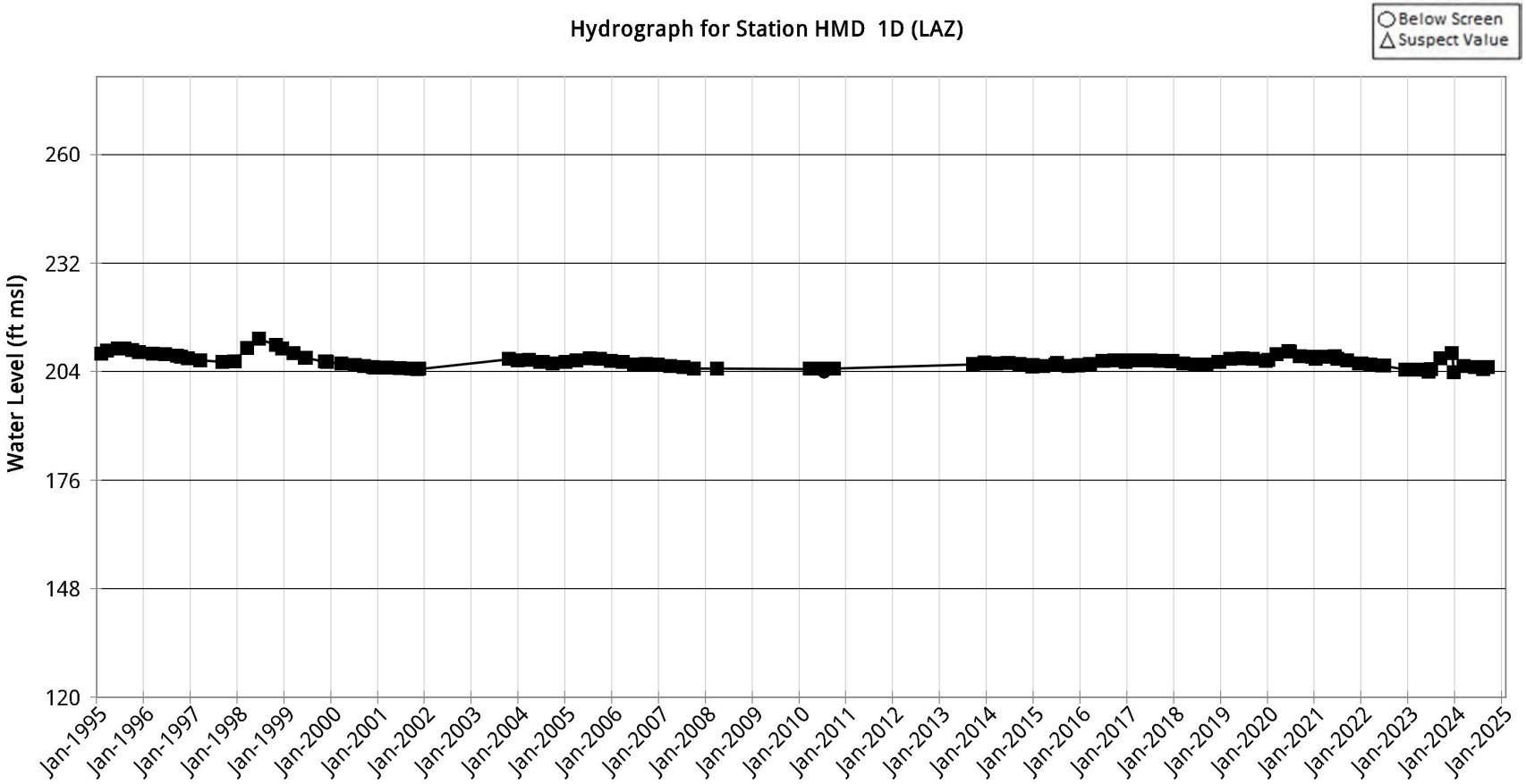

Hydrograph for Station FSB124D (UAZ)
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Suspect Value
Water Level (ft msl)
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148
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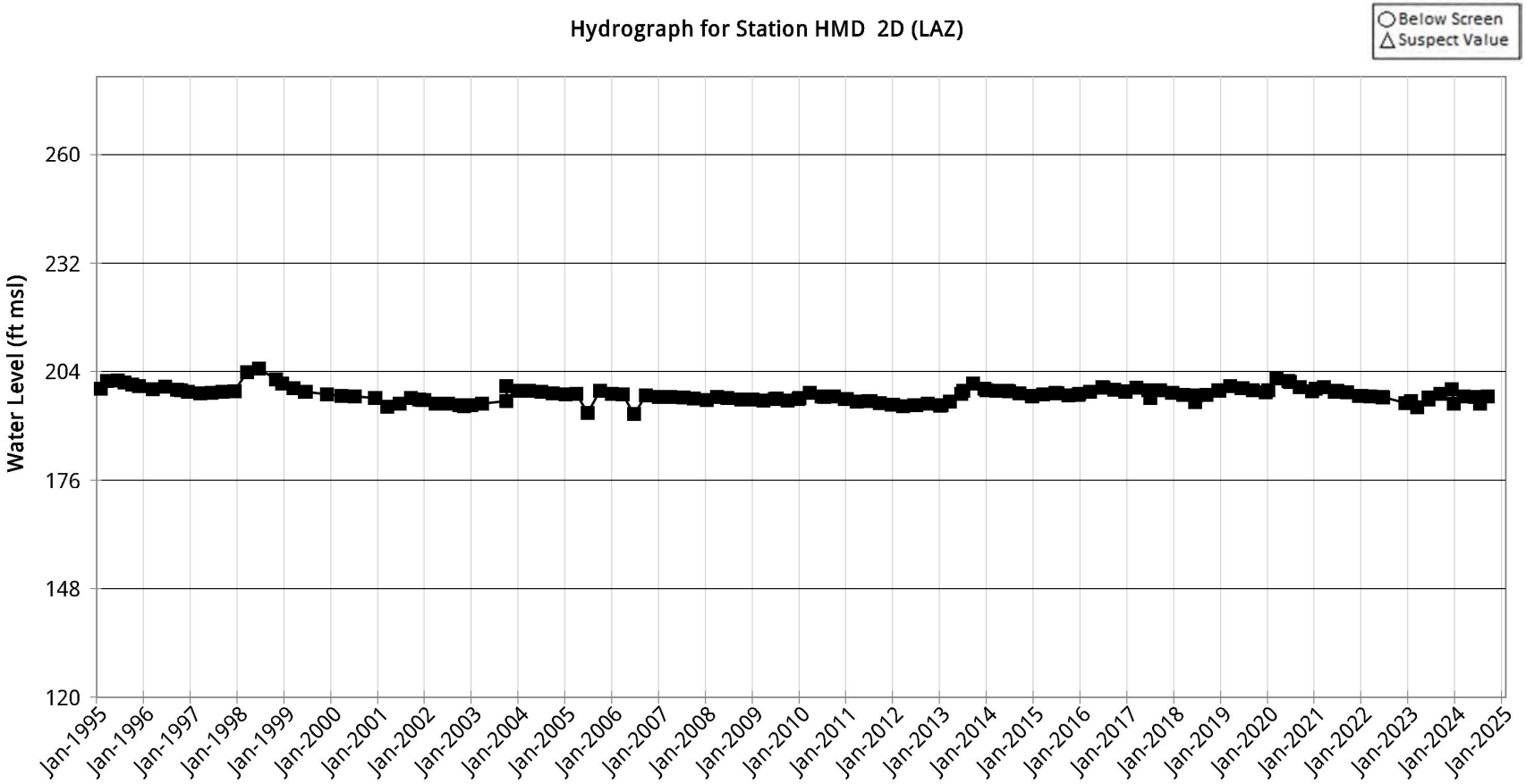

Hydrograph for Station FSB125DR (UAZ)
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Suspect Value
Water Level (ft msl)
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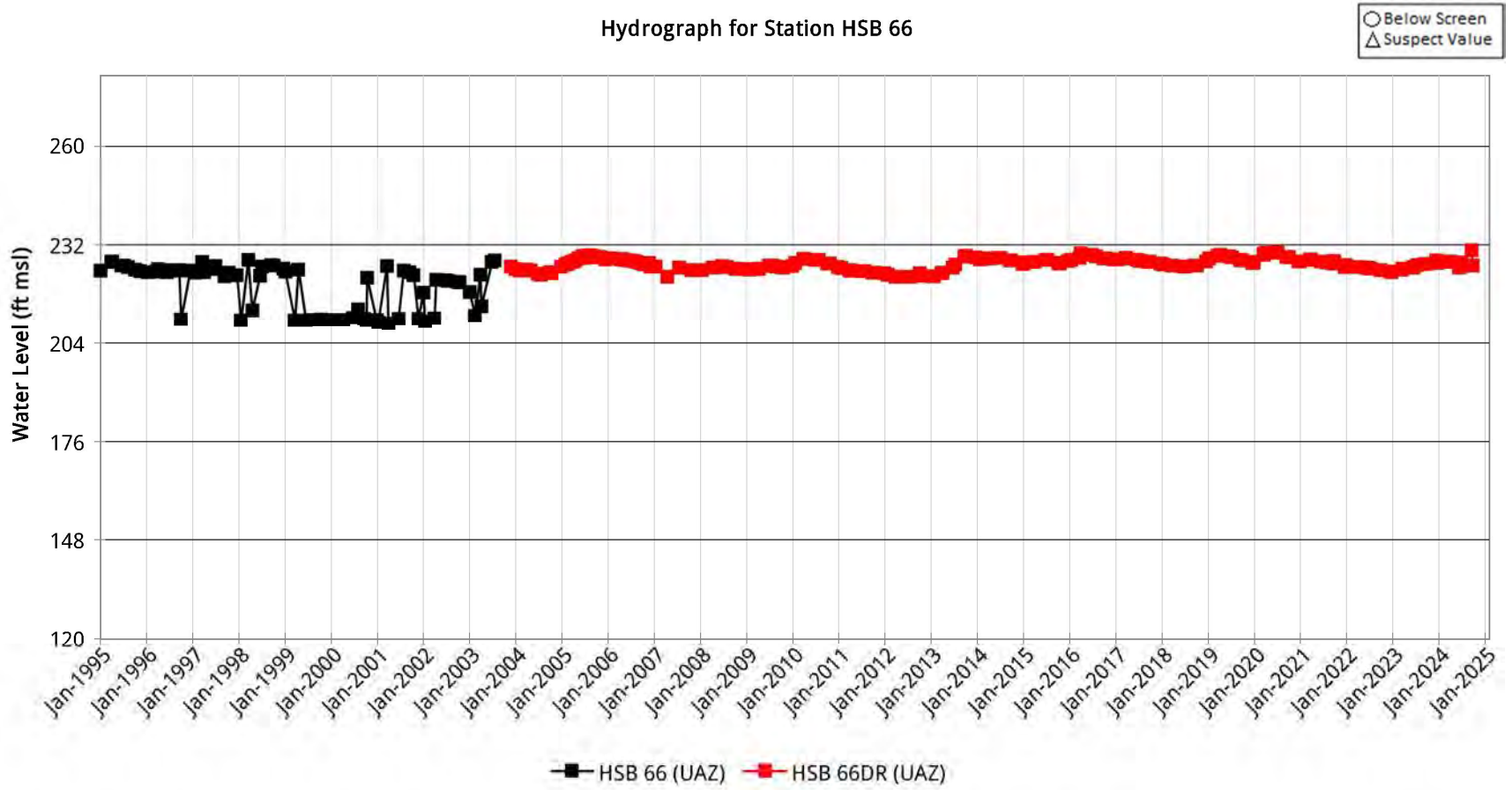

Hydrograph for Station FSB127D (UAZ)
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Suspect Value
Water Level (ft msl)
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Jan-1995
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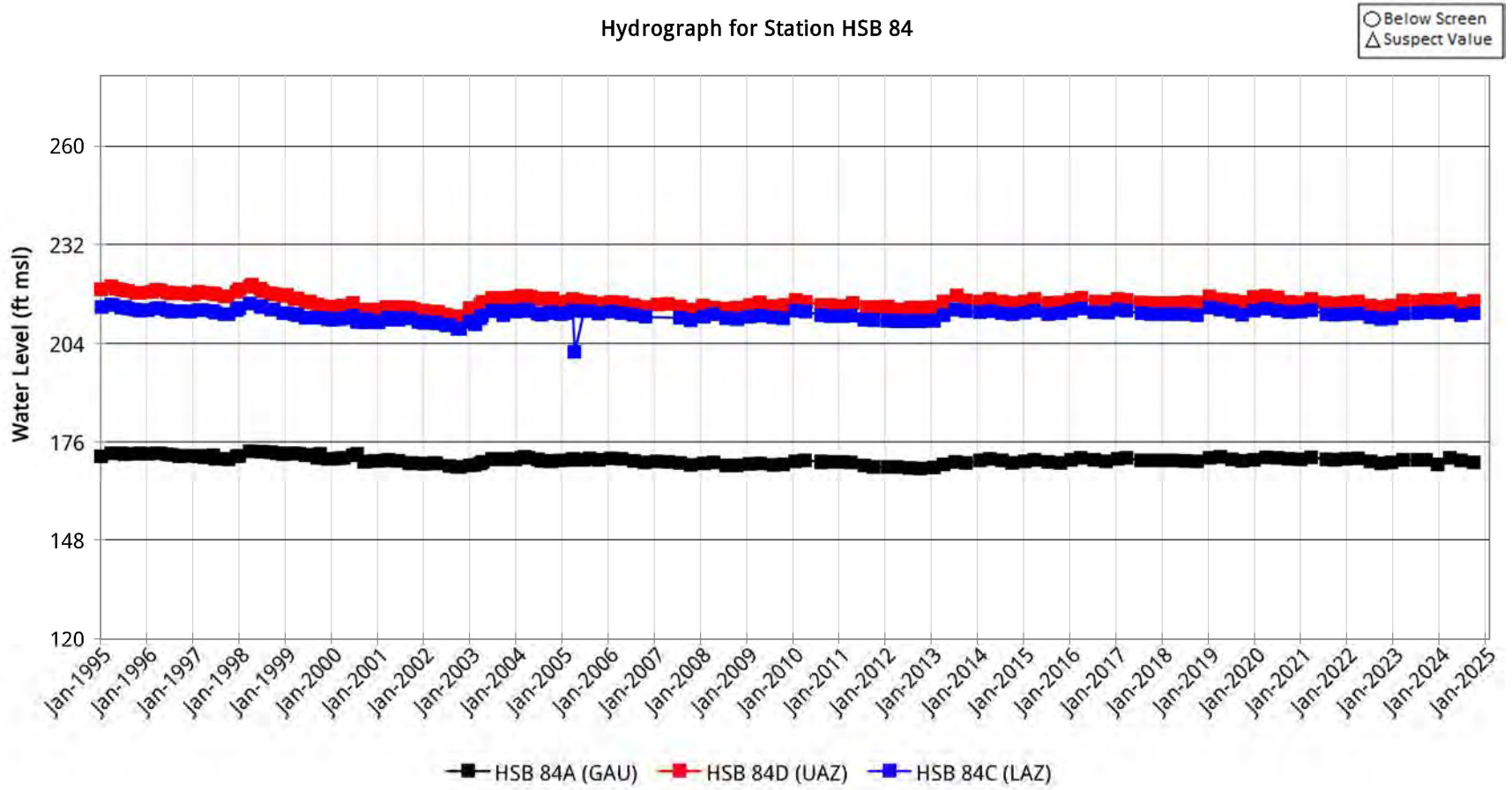

Hydrograph for Station FSB138D (UAZ)
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Suspect Value
Water Level (ft msl)
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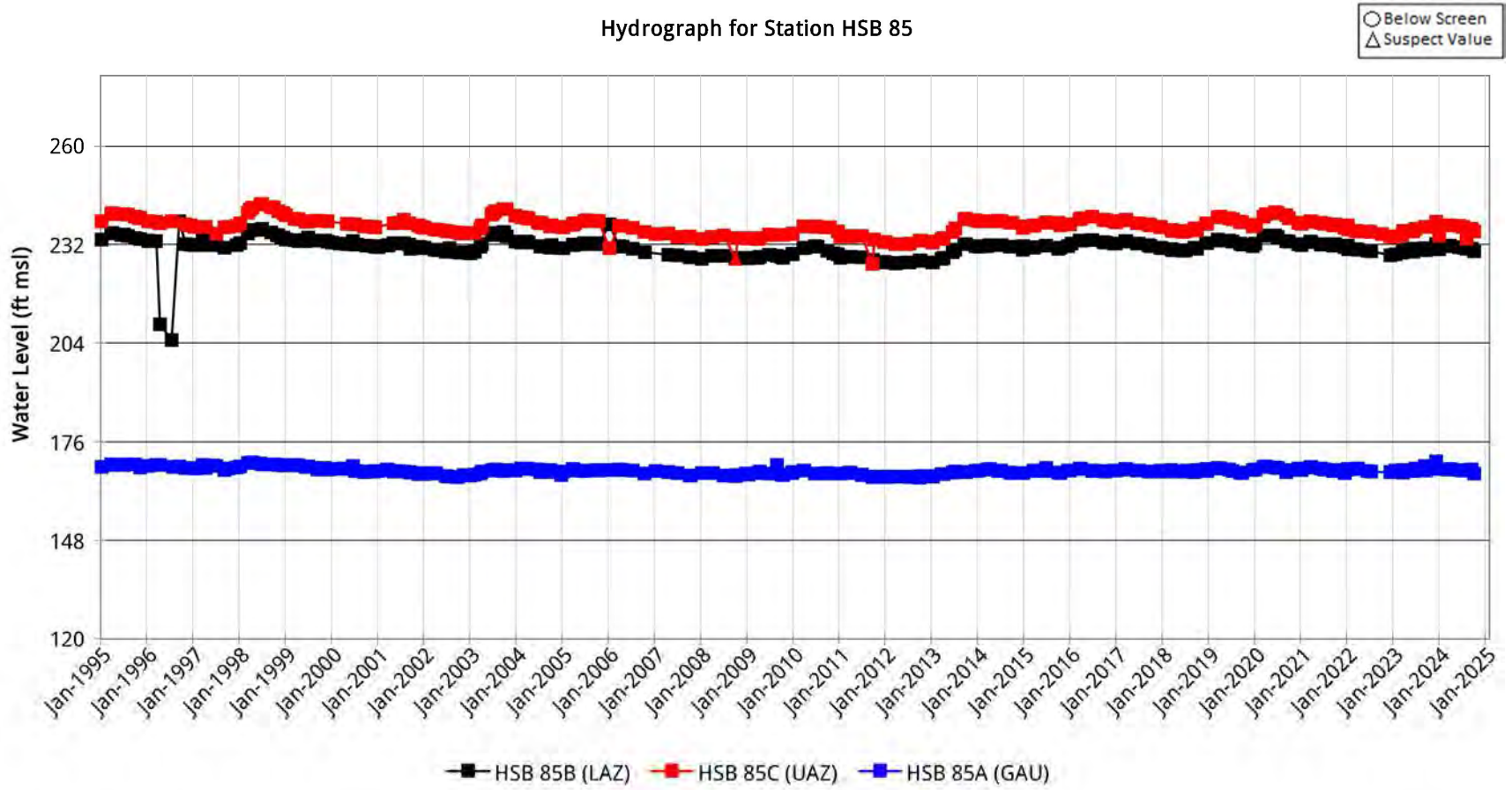

Hydrograph for Station FSS 2D (UAZ)
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Suspect Value
Water Level (ft msl)
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232
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Jan-1995
Jan-1996
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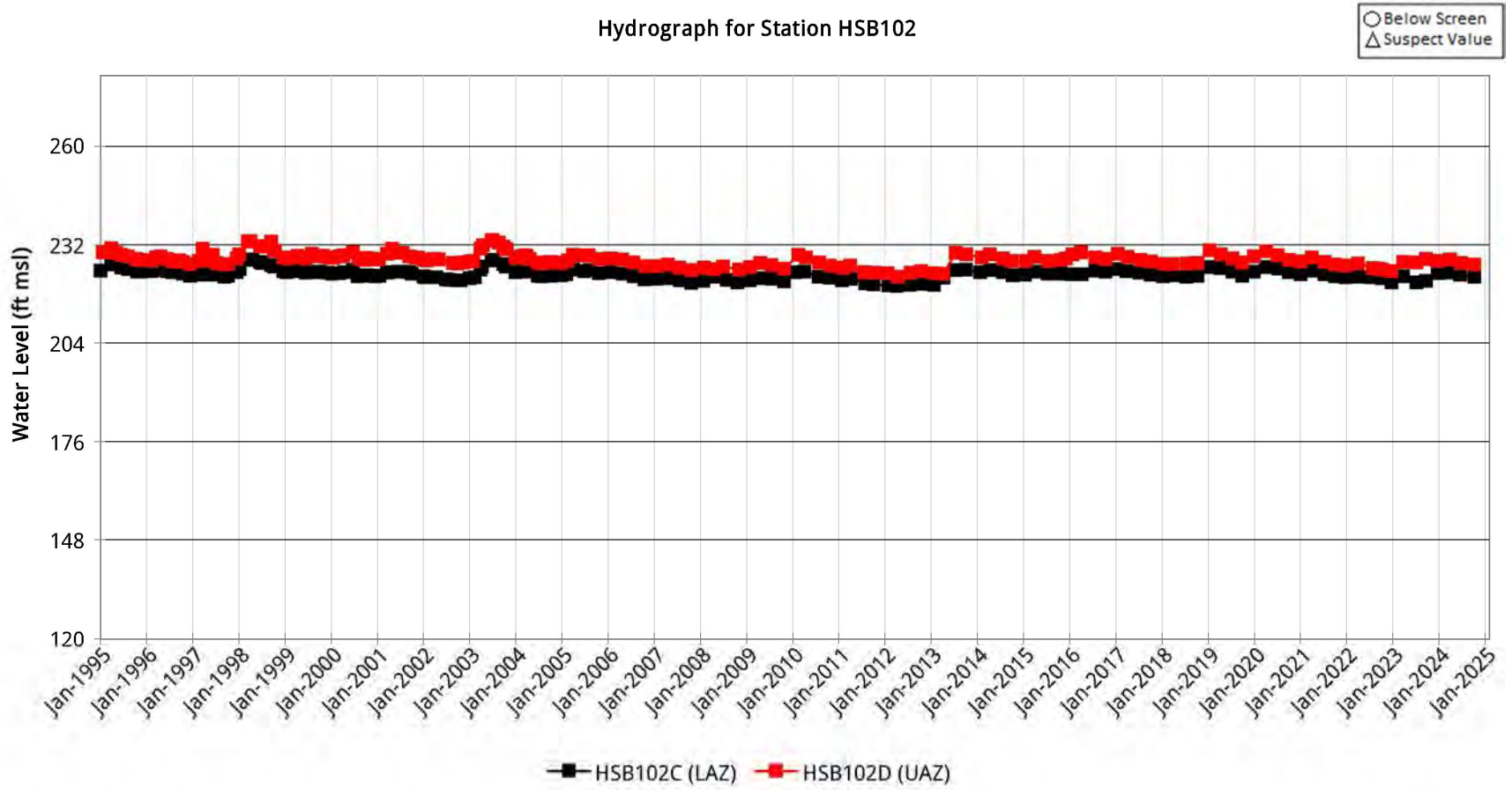

Hydrograph for Station HMD 1D (LAZ)
Below Screen
Suspect Value
Water Level (ft msl)
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Jan-1995
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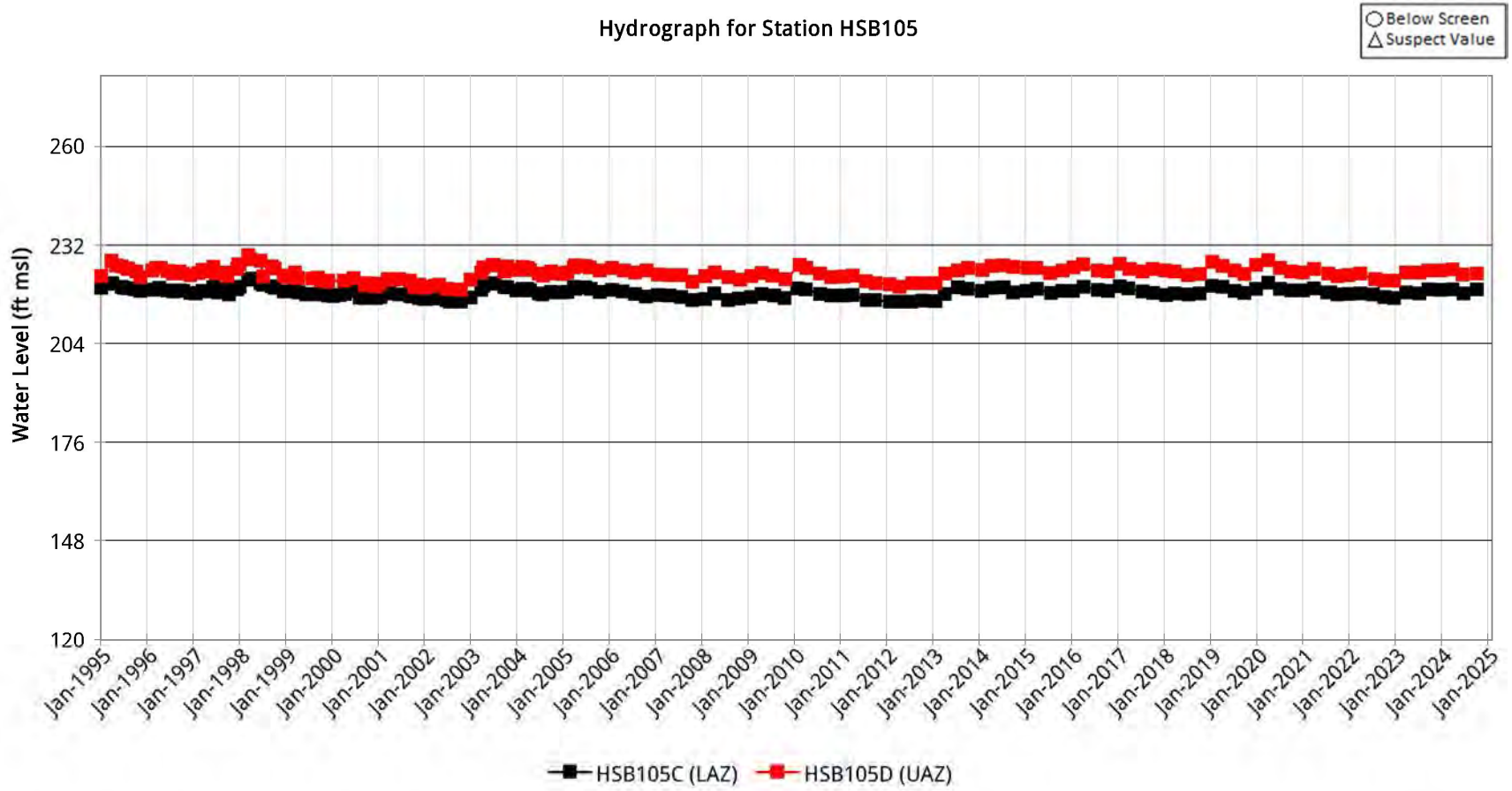

Hydrograph for Station HMD 2D (LAZ)
Below Screen
Suspect Value
Water Level (ft msl)
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232
204
176
148
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Jan-1995
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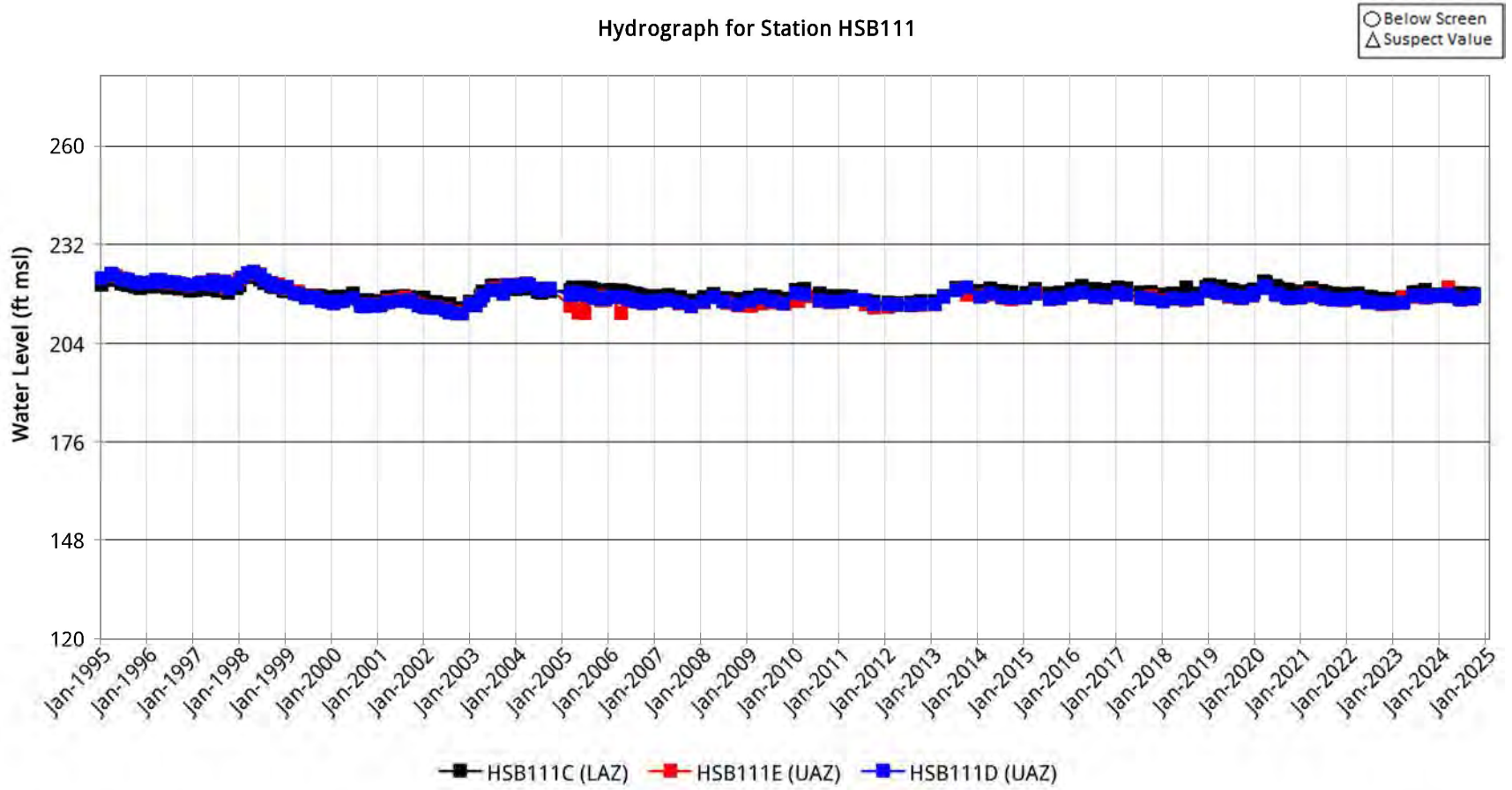

Hydrograph for Station HSB 66
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
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Jan-1995
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Jan-2025
HSB 66 (UAZ)
HSB 66DR (UAZ)

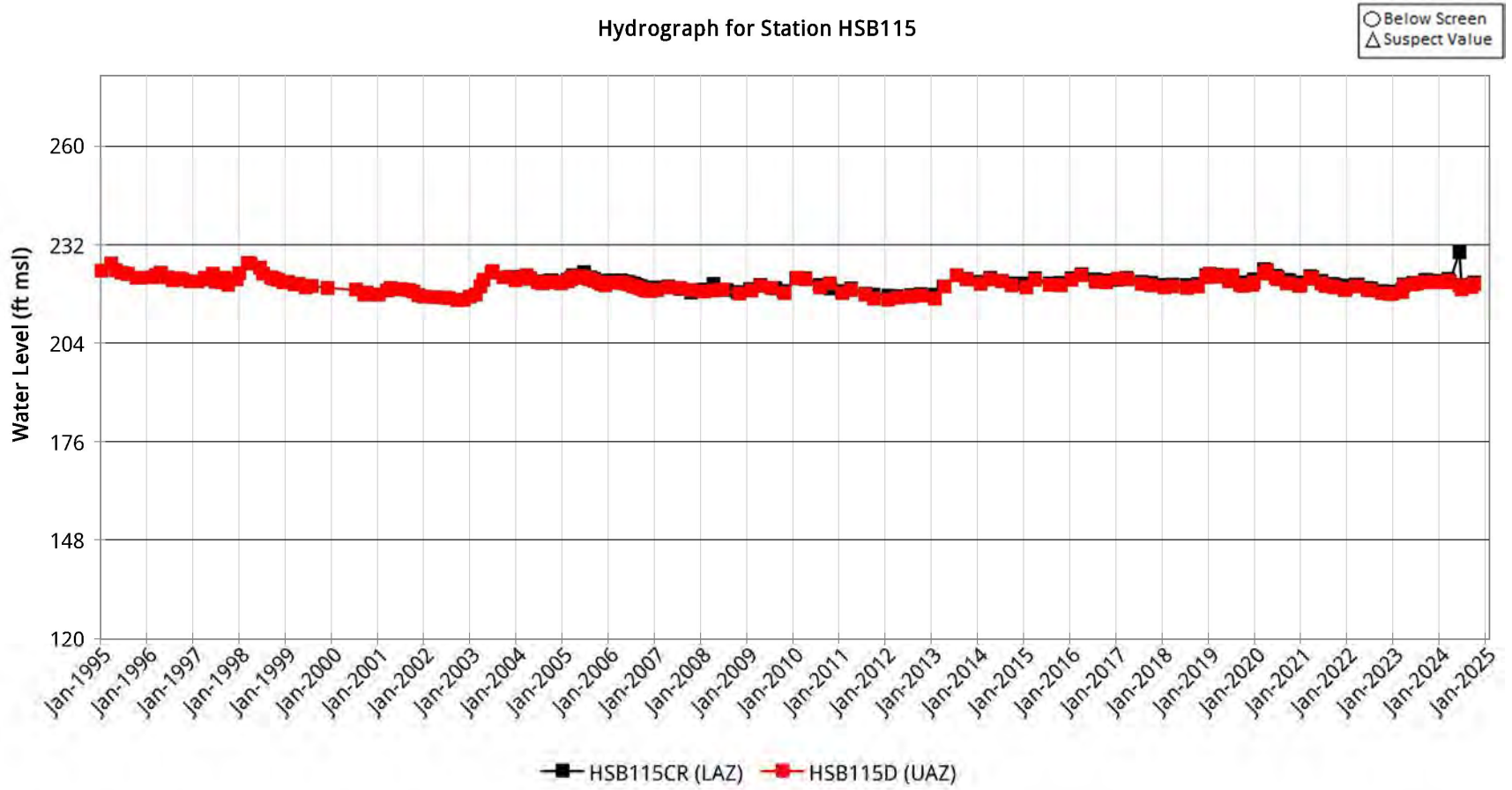

Hydrograph for Station HSB 84
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
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HSB 84A (GAU)
HSB 84D (UAZ)
HSB 84C (LAZ)

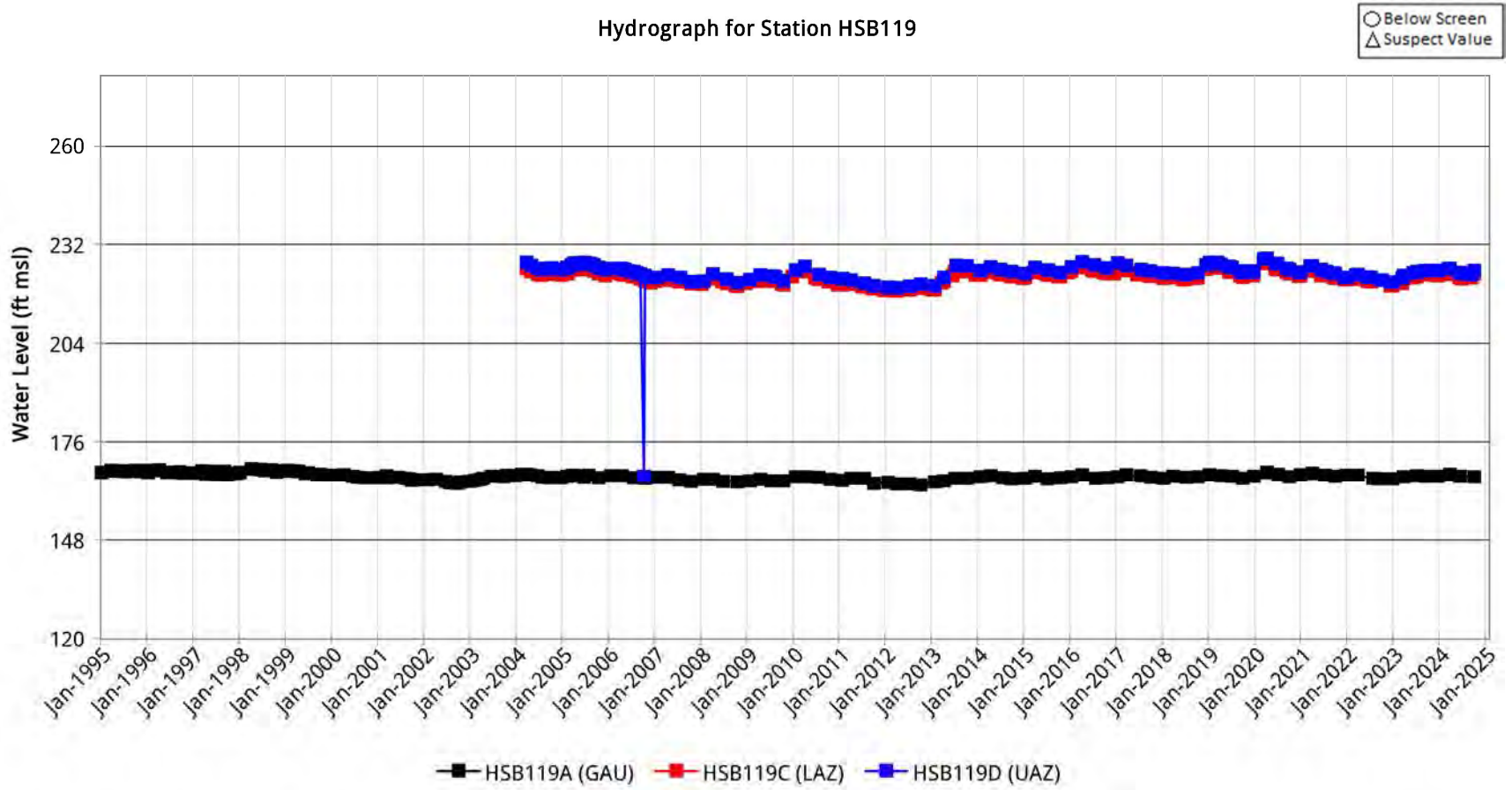

Hydrograph for Station HSB 85
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
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HSB 85B (LAZ)
HSB 85C (UAZ)
HSB 85A (GAU)

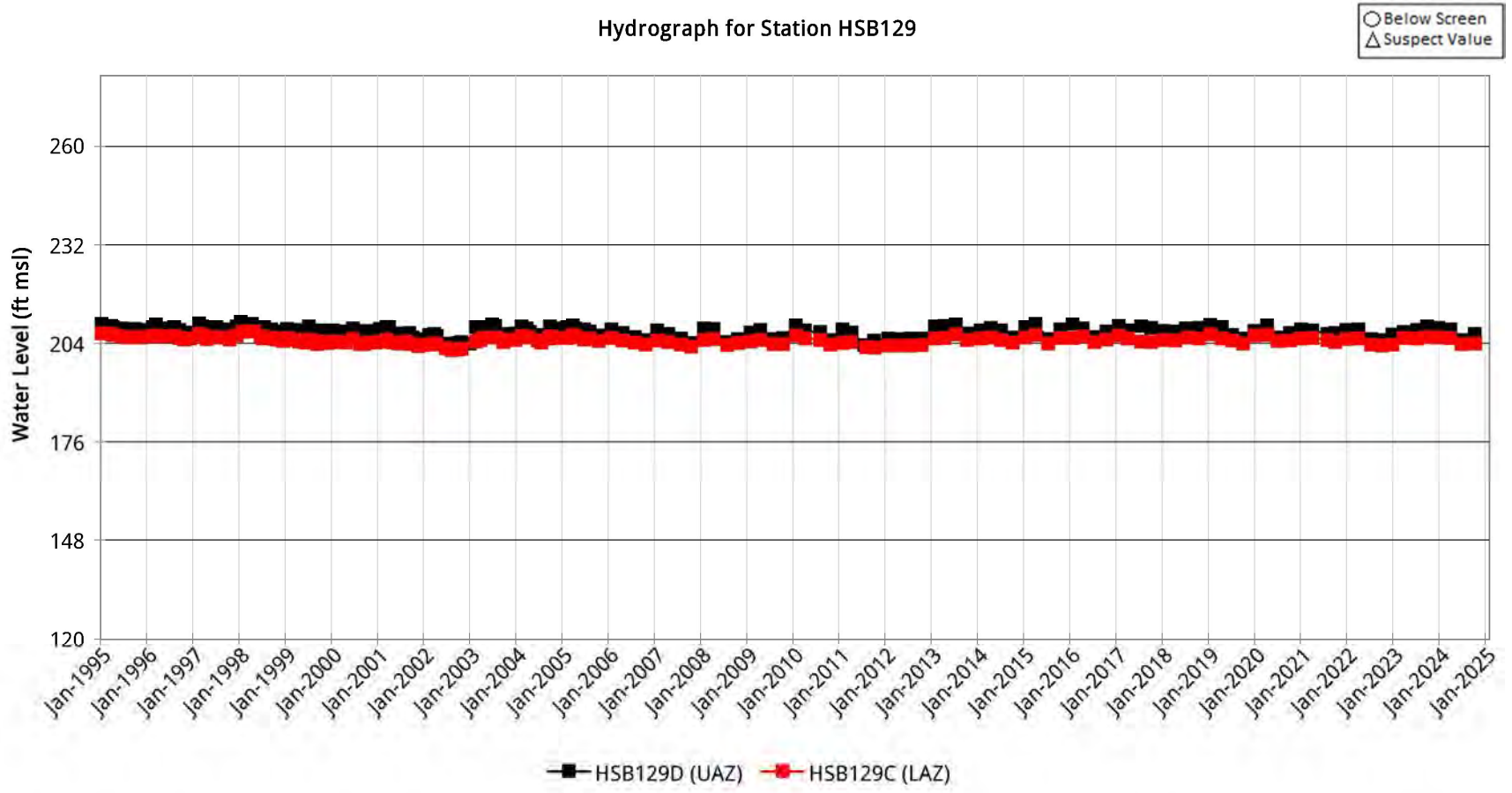

Hydrograph for Station HSB102
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
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HSB102C (LAZ)
HSB102D (UAZ)

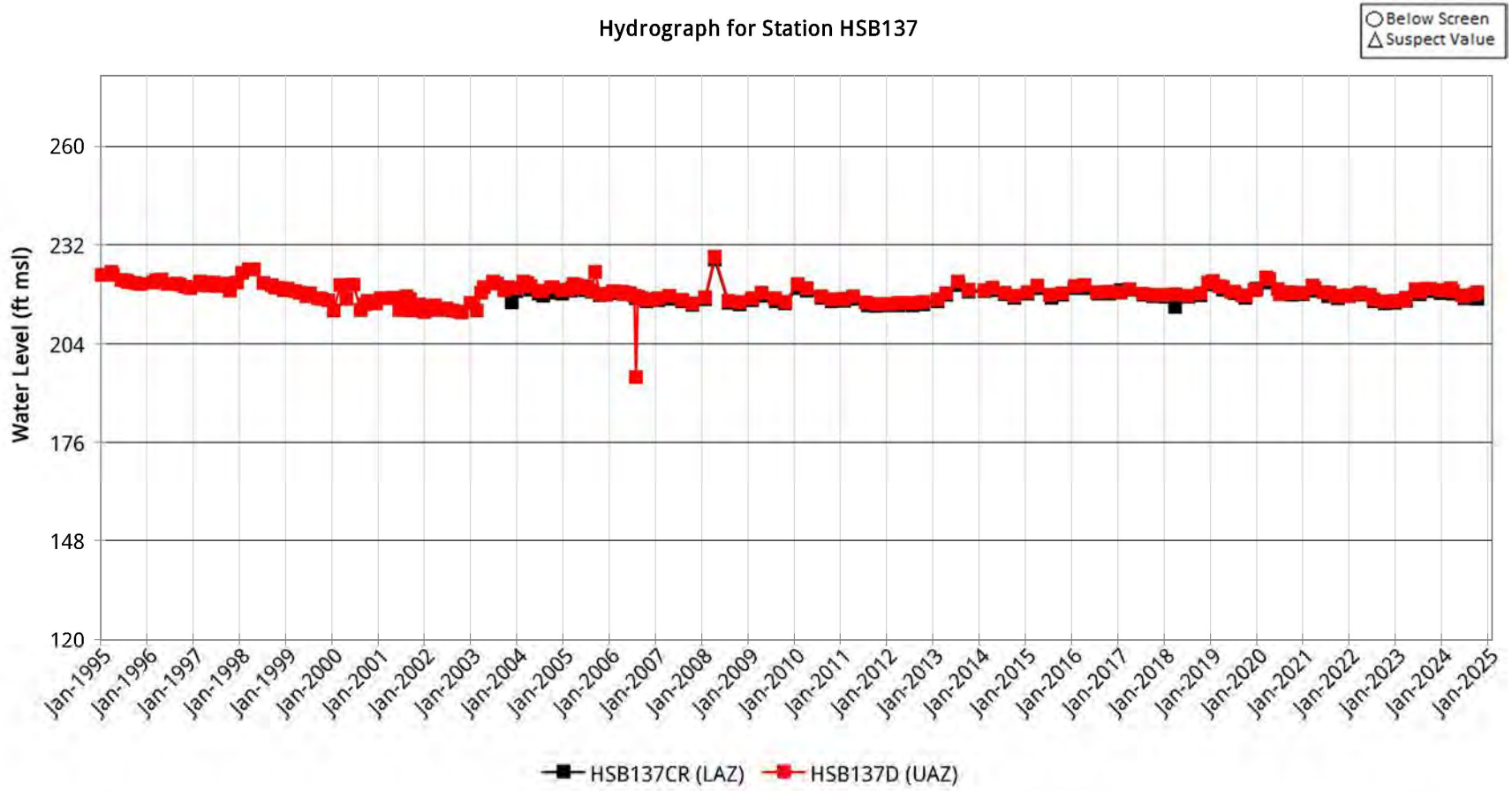

Hydrograph for Station HSB105
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Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
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Jan-2025
HSB105C (LAZ)
HSB105D (UAZ)

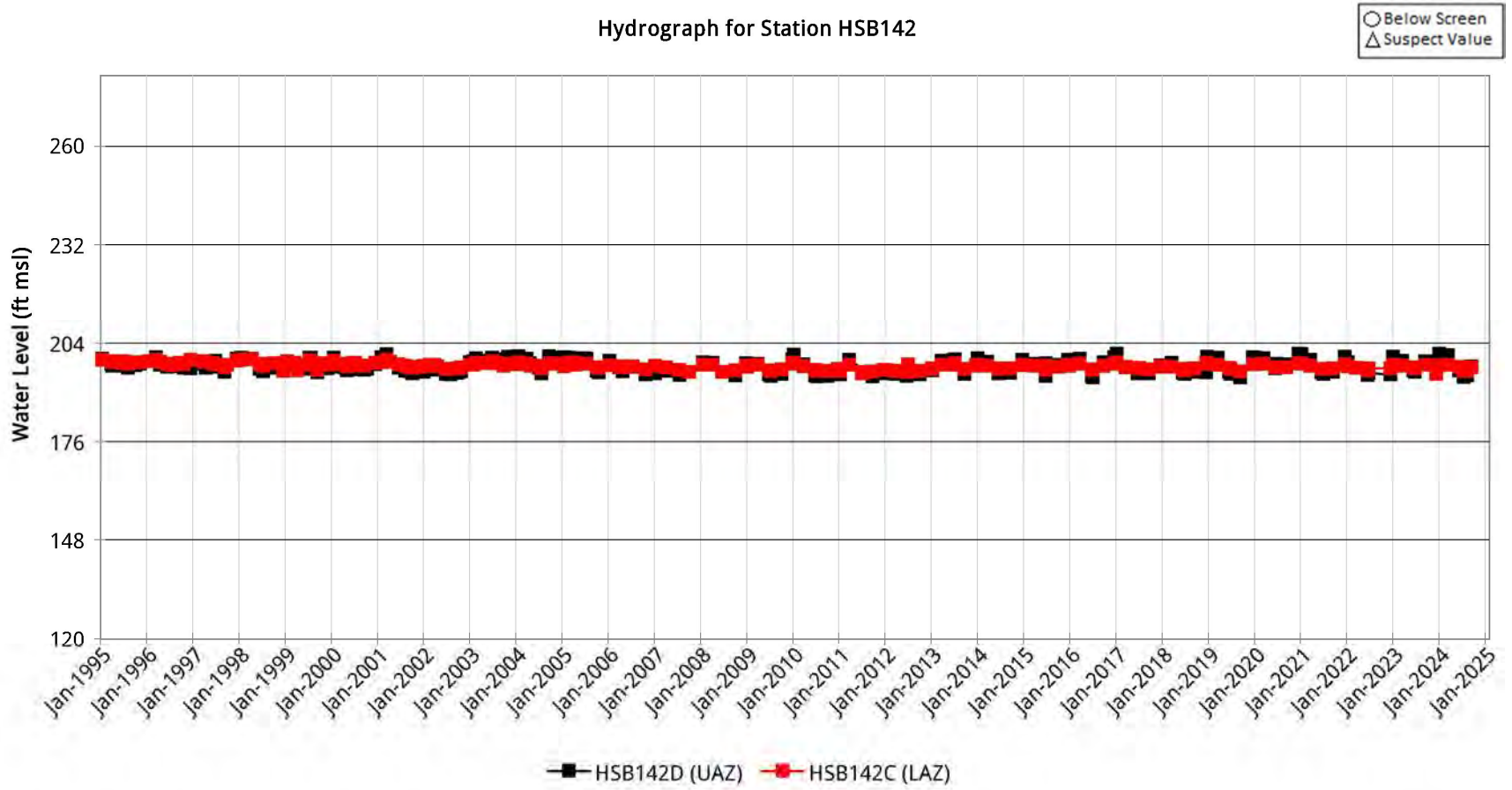

Hydrograph for Station HSB111
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
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HSB111C (LAZ)
HSB111E (UAZ)
HSB111D (UAZ)

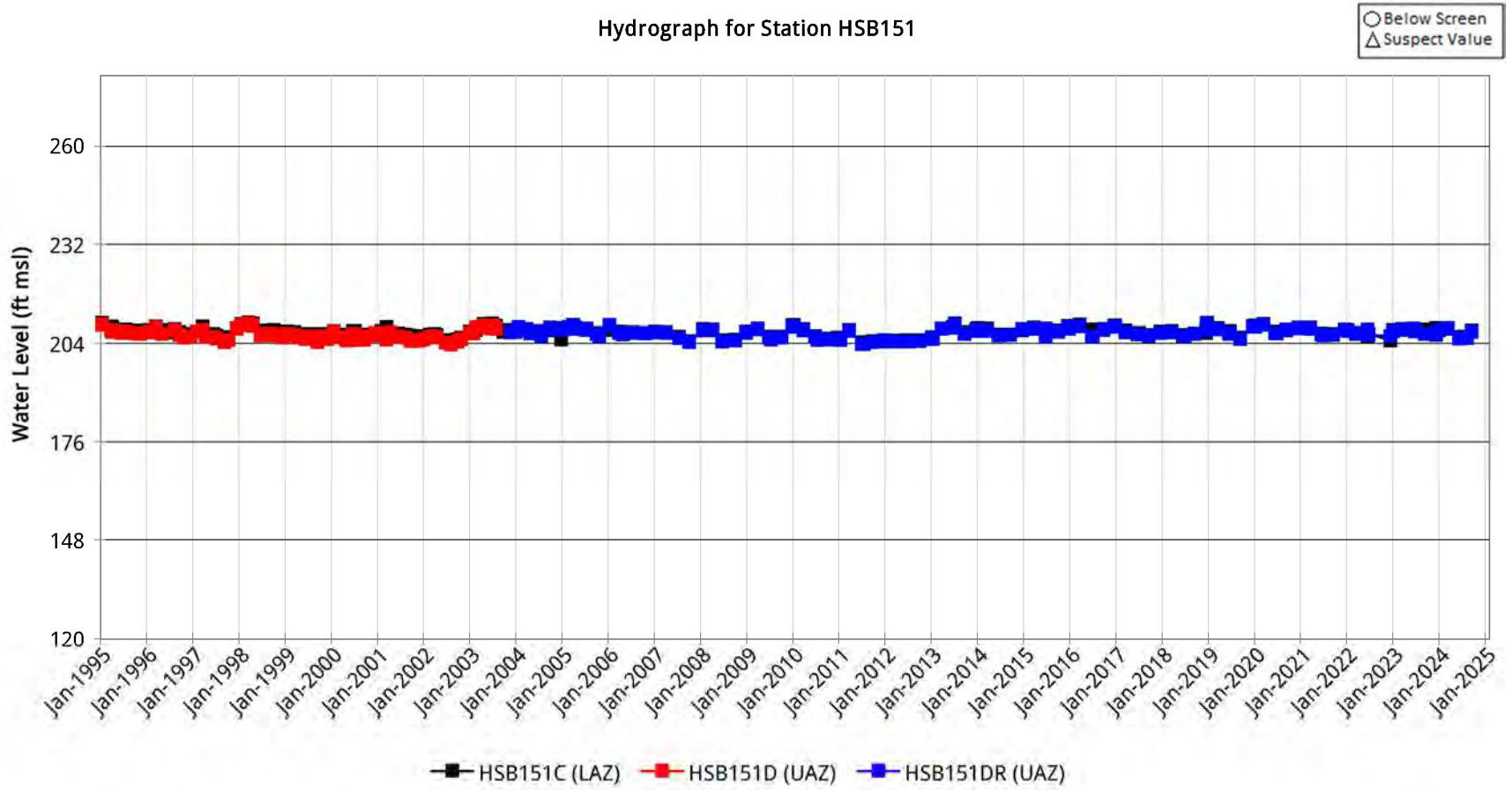

Hydrograph for Station HSB115
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Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
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HSB115CR (LAZ)
HSB115D (UAZ)

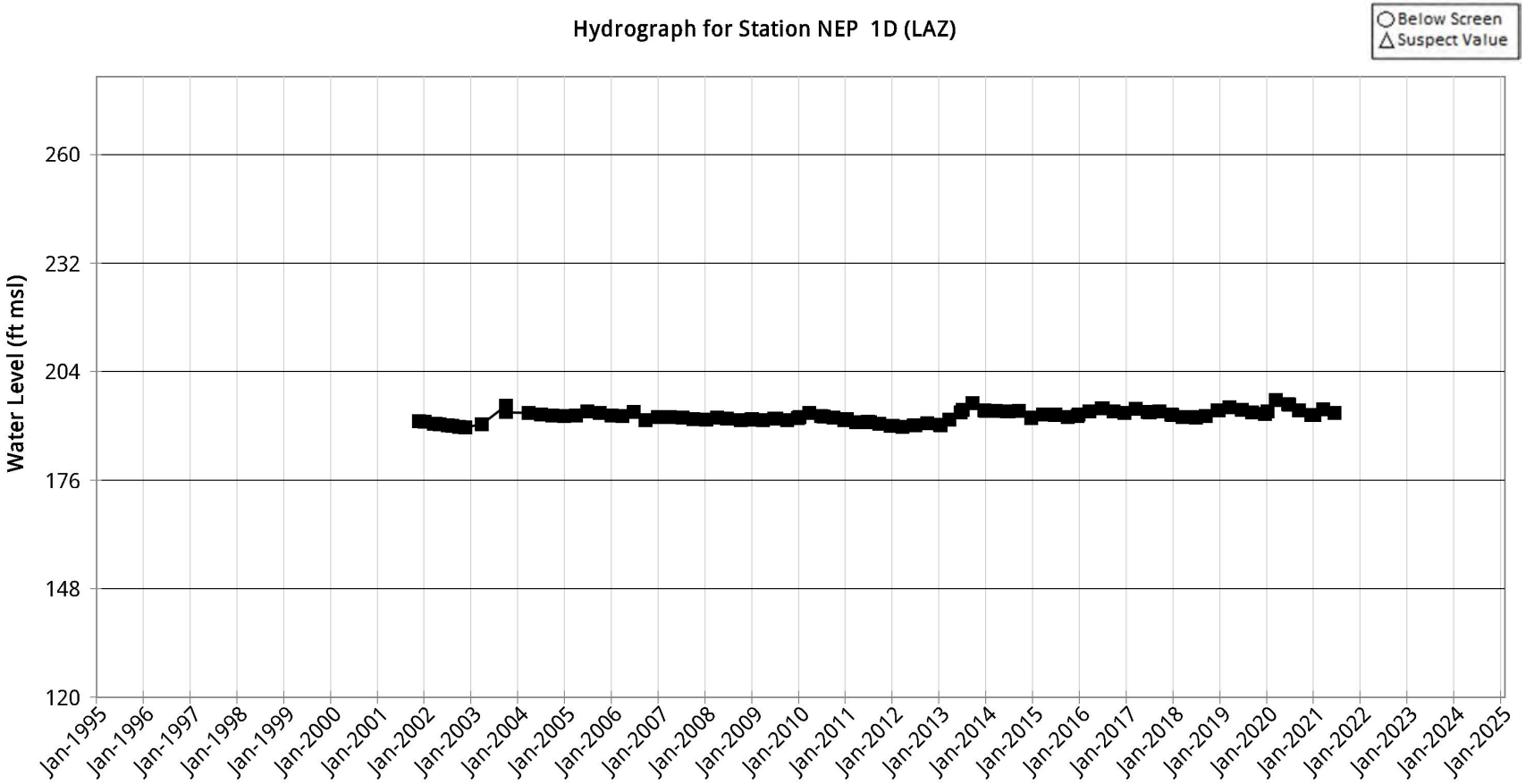

Hydrograph for Station HSB119
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
Jan-1996
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HSB119A (GAU)
HSB119C (LAZ)
HSB119D (UAZ)

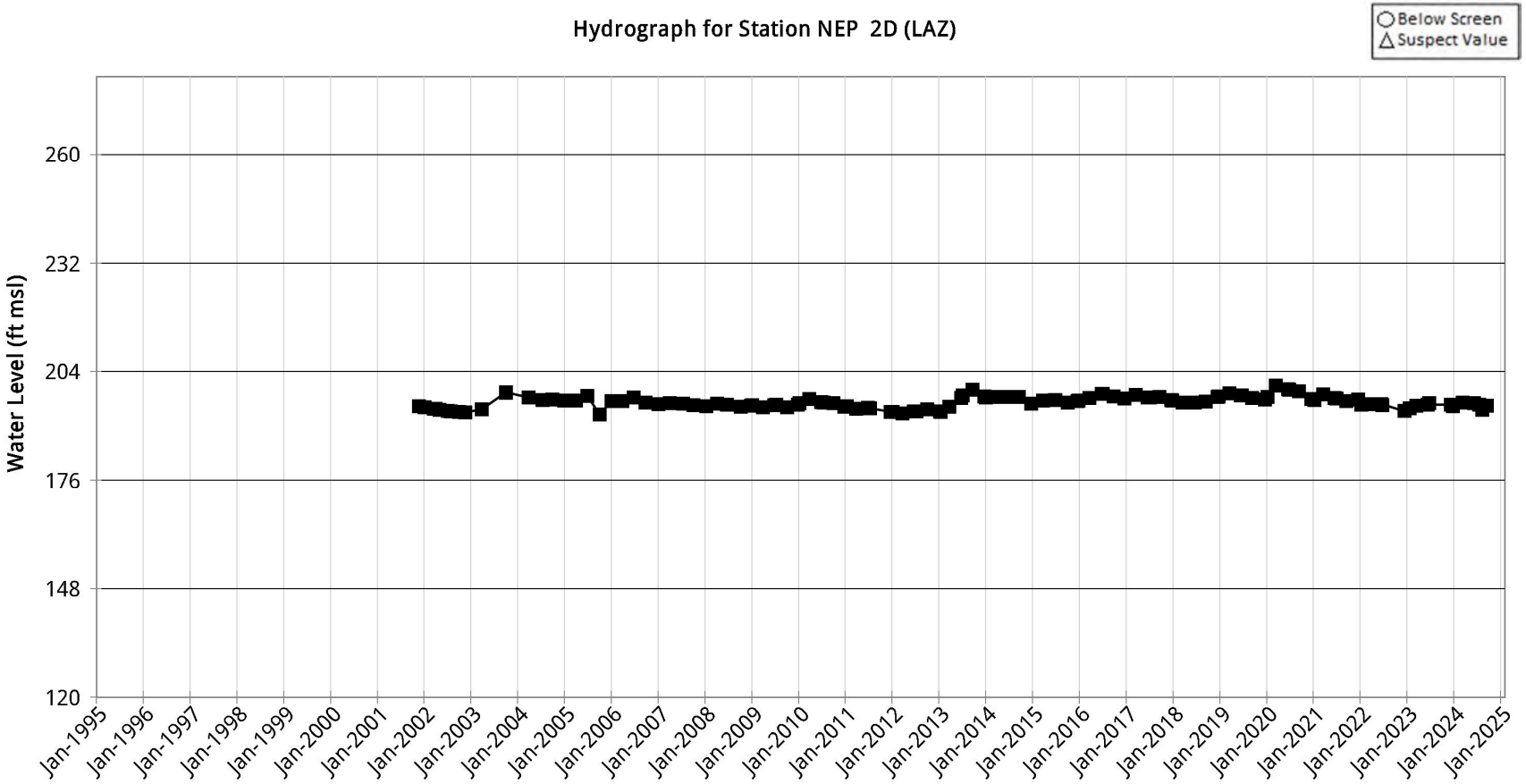

Hydrograph for Station HSB129
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Suspect Value
Water Level (ft msl)
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232
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176
148
120
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HSB129D (UAZ)
HSB129C (LAZ)

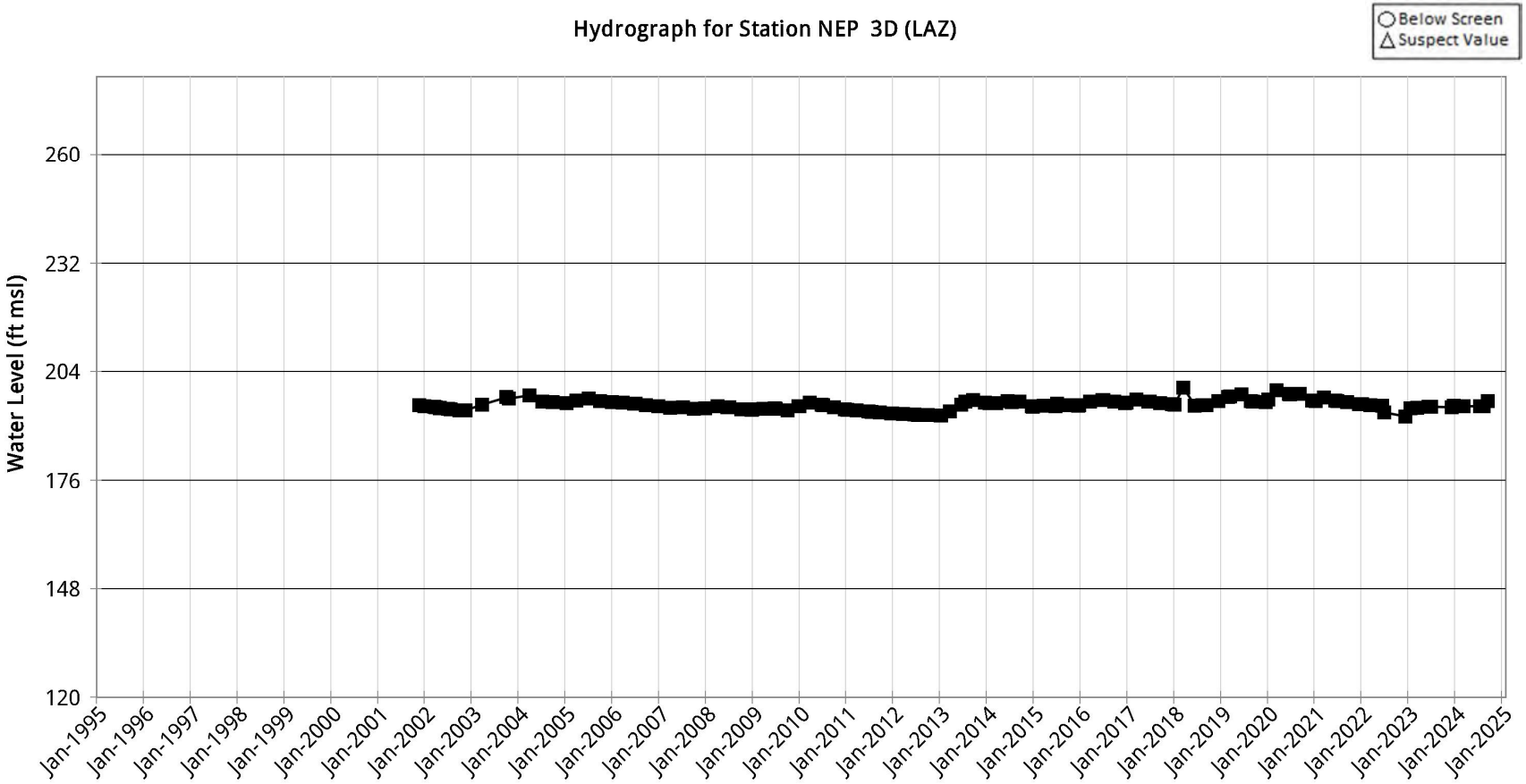

Hydrograph for Station HSB137
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Suspect Value
Water Level (ft msl)
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232
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148
120
Jan-1995
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Jan-2024
Jan-2025
HSB137CR (LAZ)
HSB137D (UAZ)

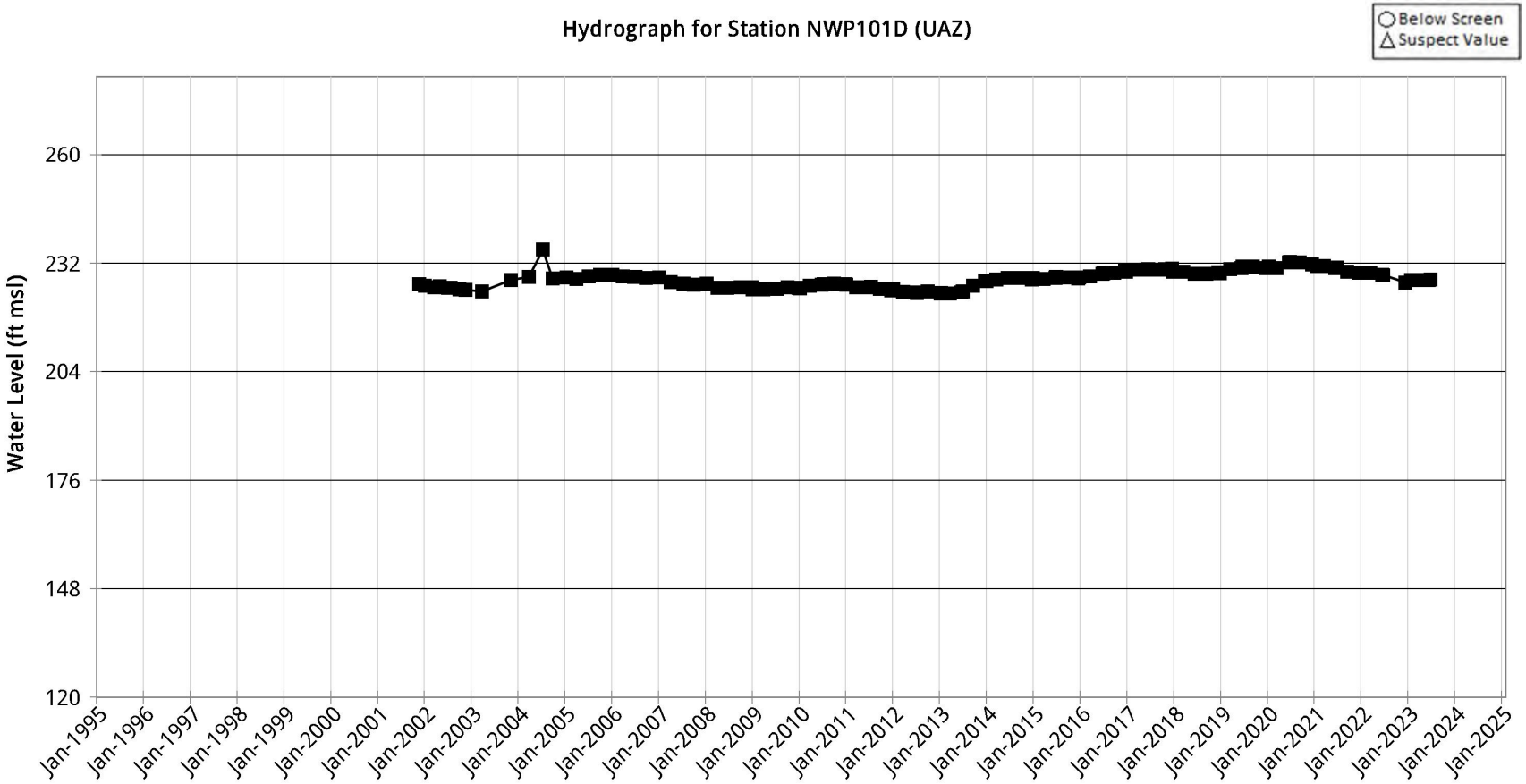

Hydrograph for Station HSB142
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
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Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB142D (UAZ)
HSB142C (LAZ)

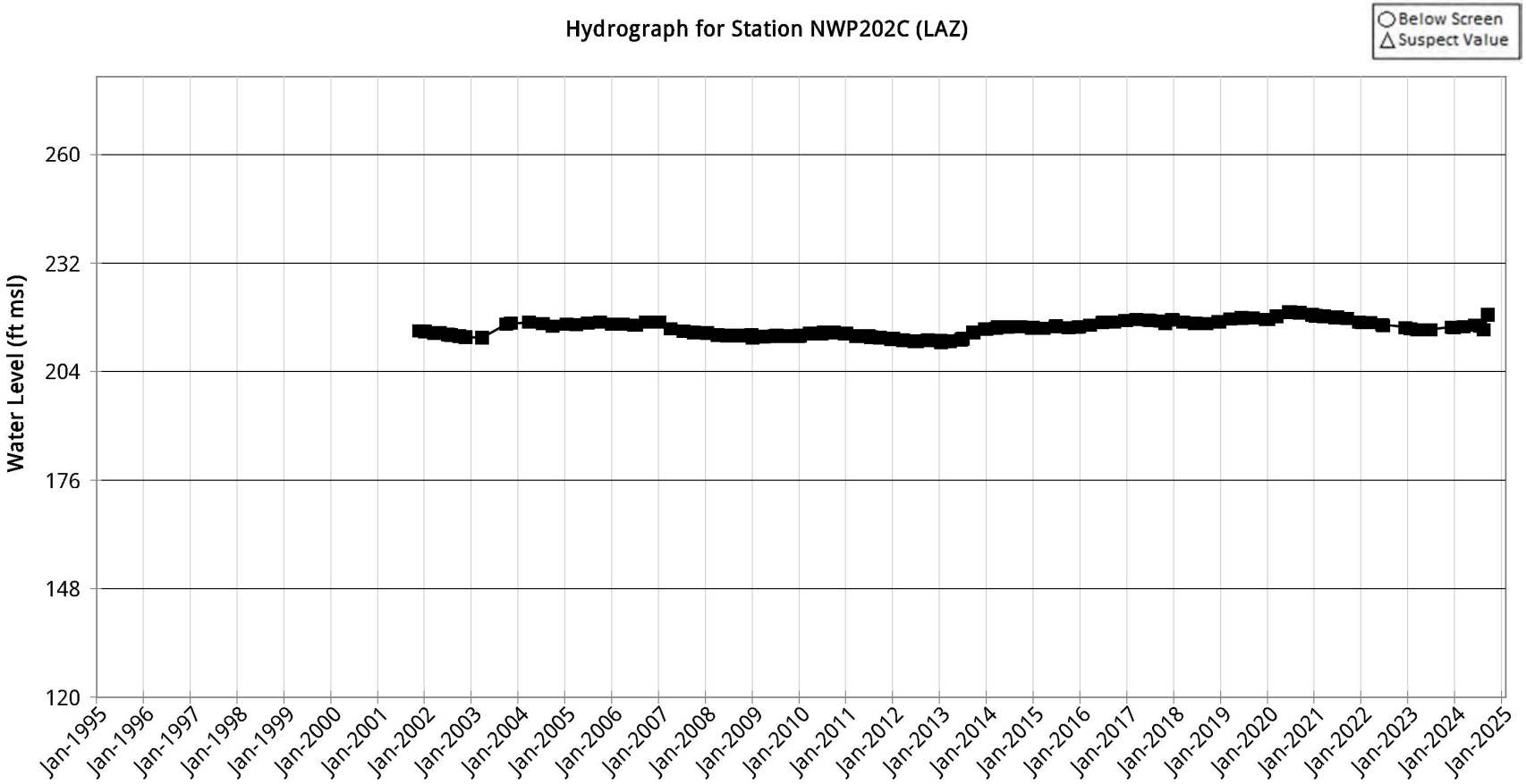

Hydrograph for Station HSB151
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB151C (LAZ)
HSB151D (UAZ)
HSB151DR (UAZ)

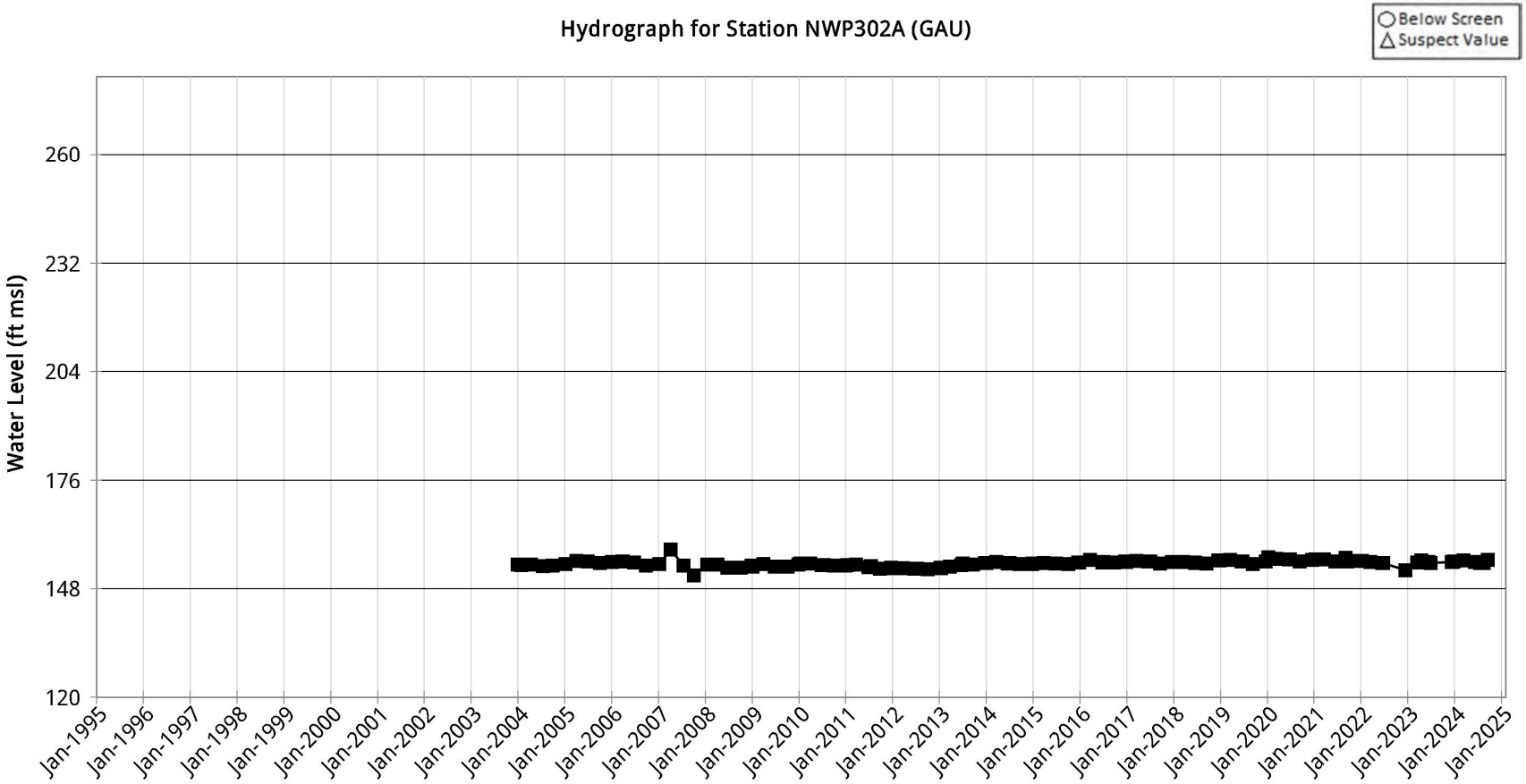

Hydrograph for Station NEP 1D (LAZ)
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
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Jan-2022
Jan-2023
Jan-2024
Jan-2025

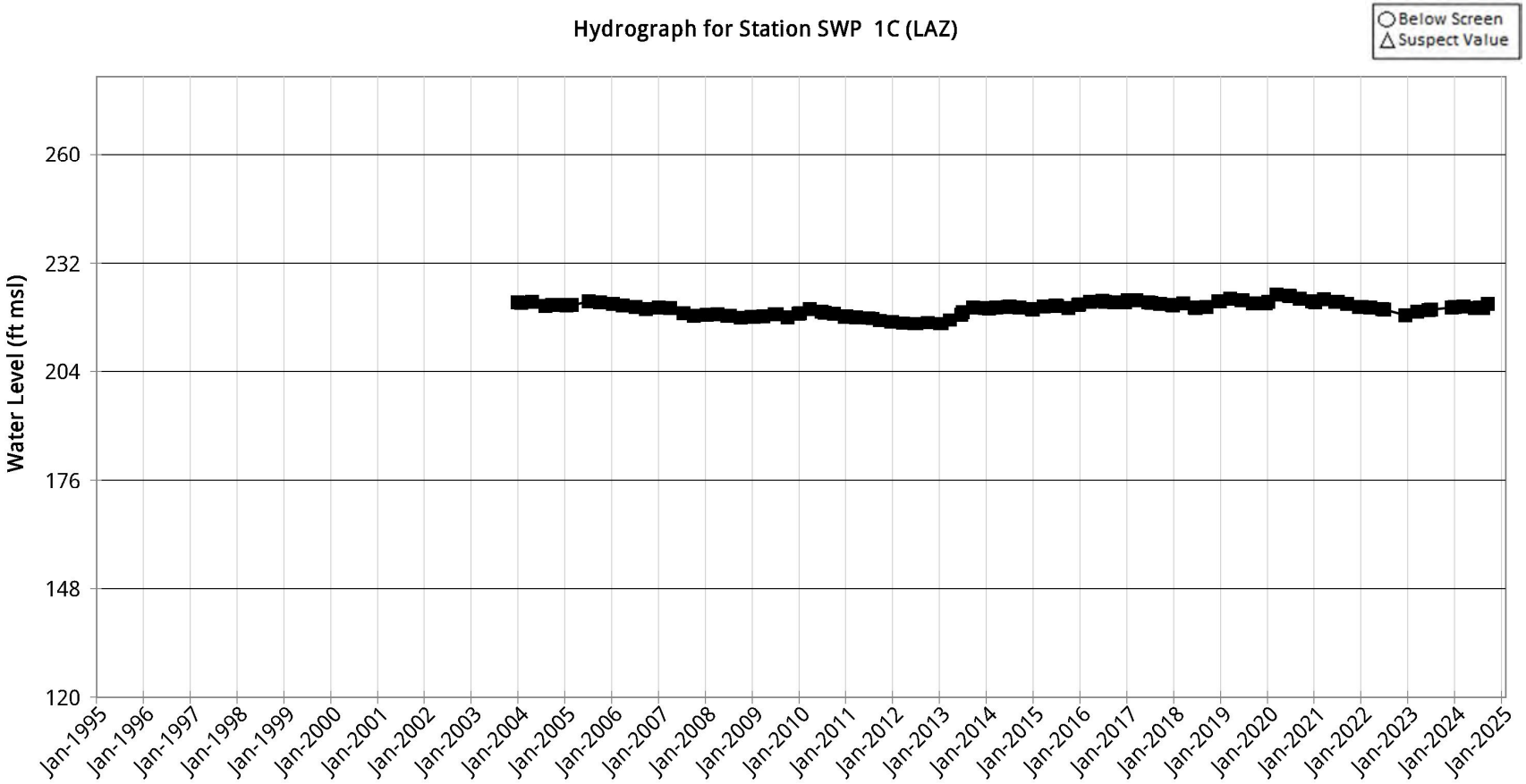

Hydrograph for Station NEP 2D (LAZ)
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2024
Jan-2025

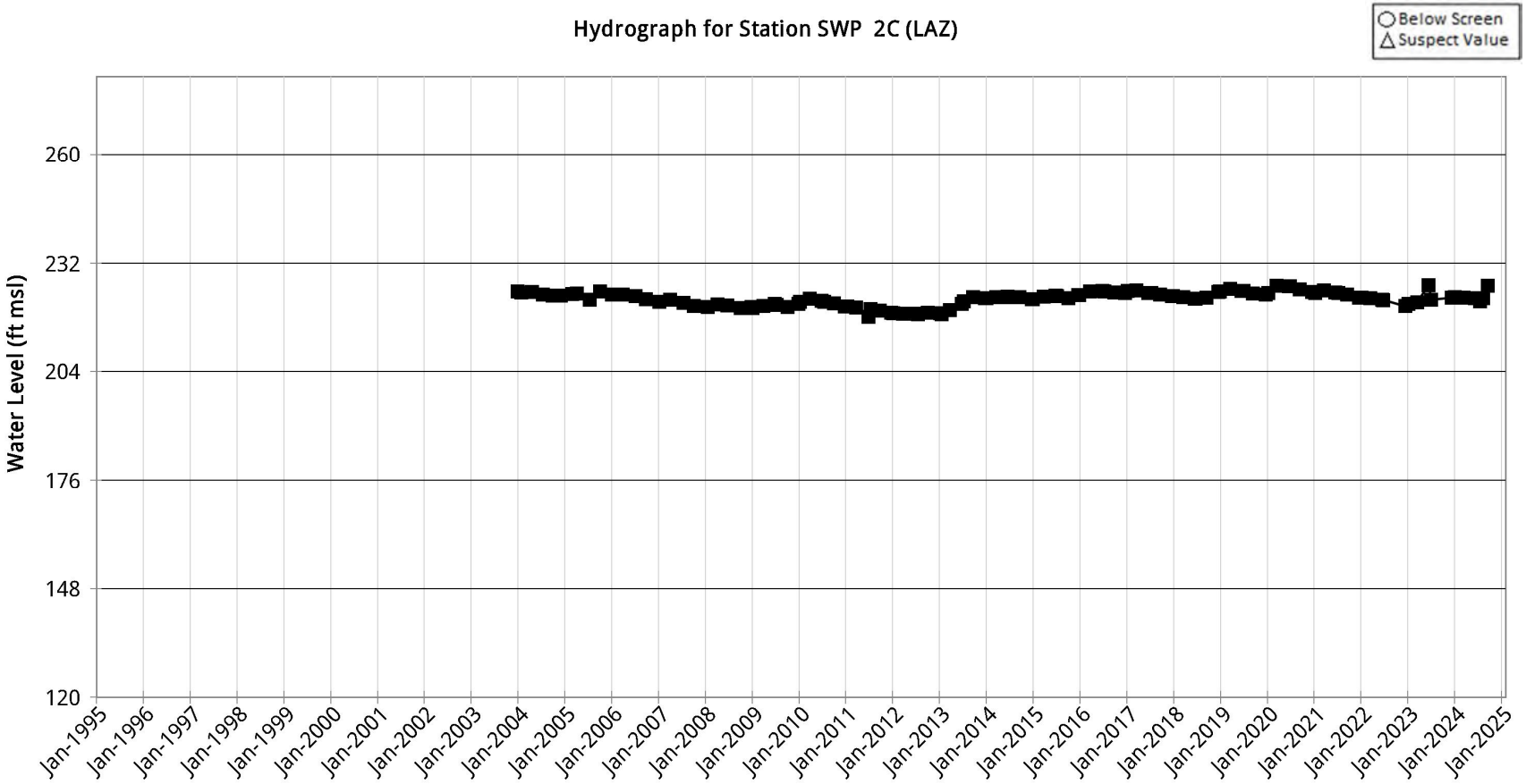

Hydrograph for Station NEP 3D (LAZ)
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
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Jan-2025

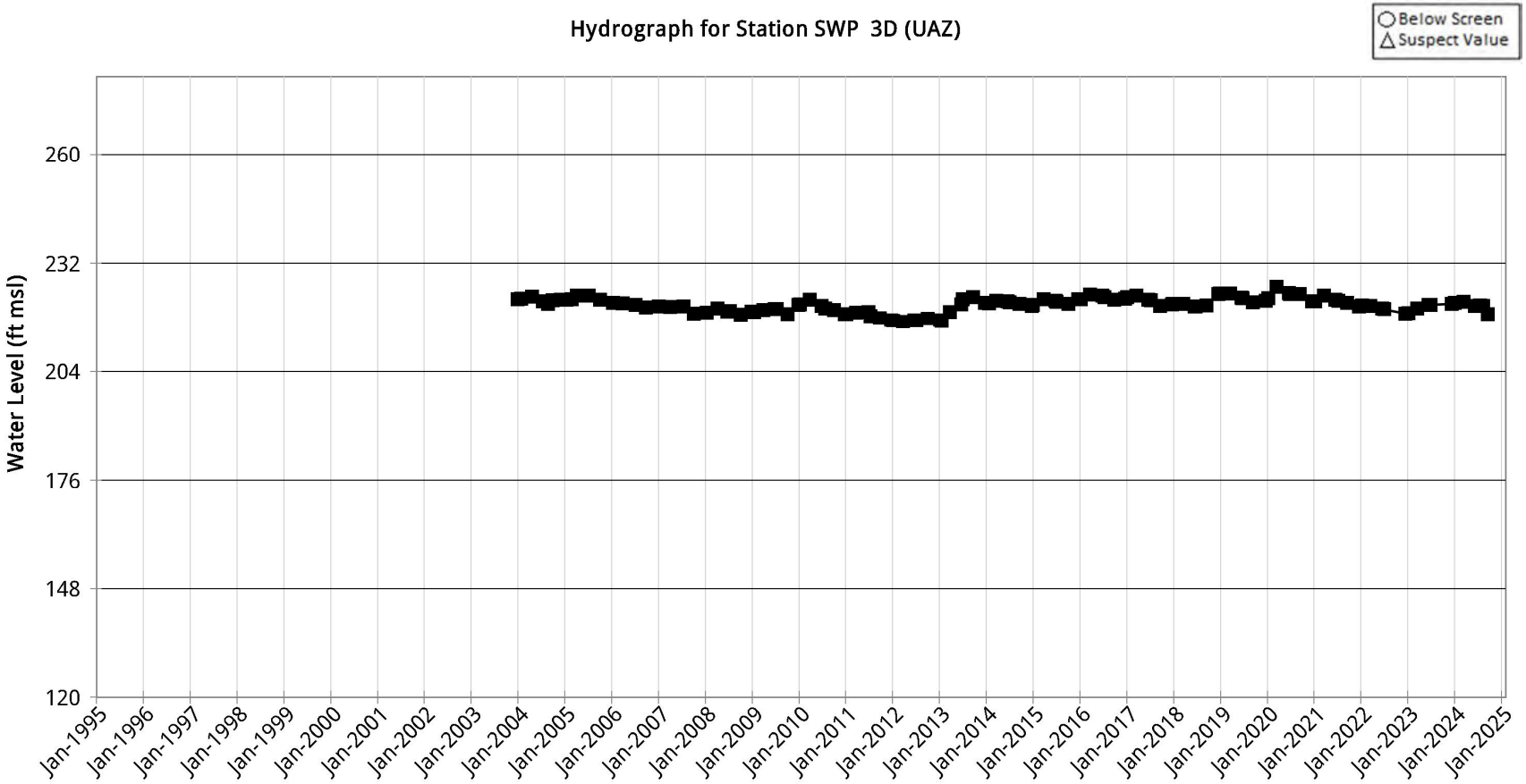

Hydrograph for Station NWP101D (UAZ)
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
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Jan-2022
Jan-2023
Jan-2024
Jan-2025

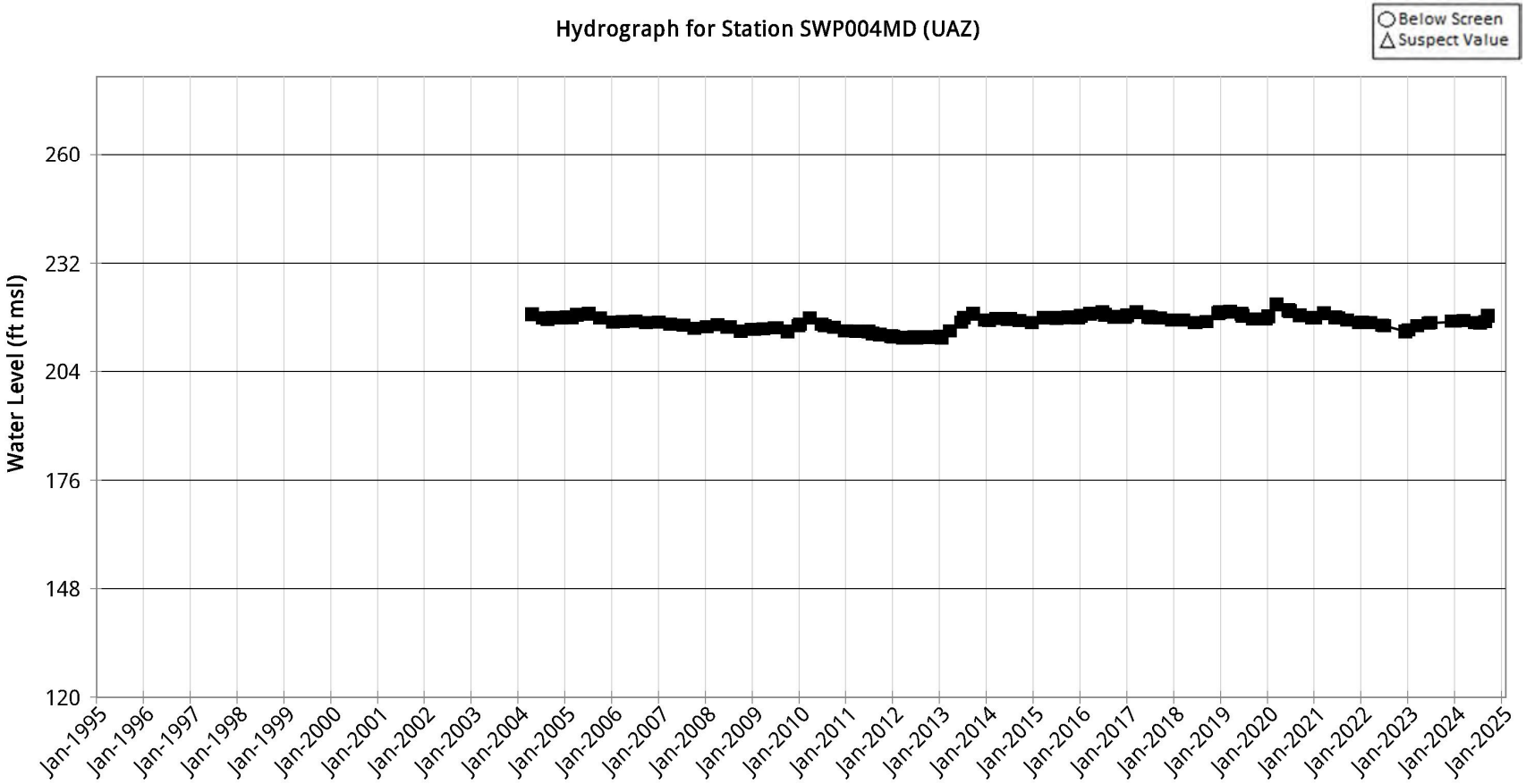

Hydrograph for Station NWP202C (LAZ)
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
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Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025


Hydrograph for Station NWP302A (GAU)
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2017
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Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025


Hydrograph for Station SWP 1C (LAZ)
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
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Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025


Hydrograph for Station SWP 2C (LAZ)
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
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Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025


Hydrograph for Station SWP 3D (UAZ)
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
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Jan-2025

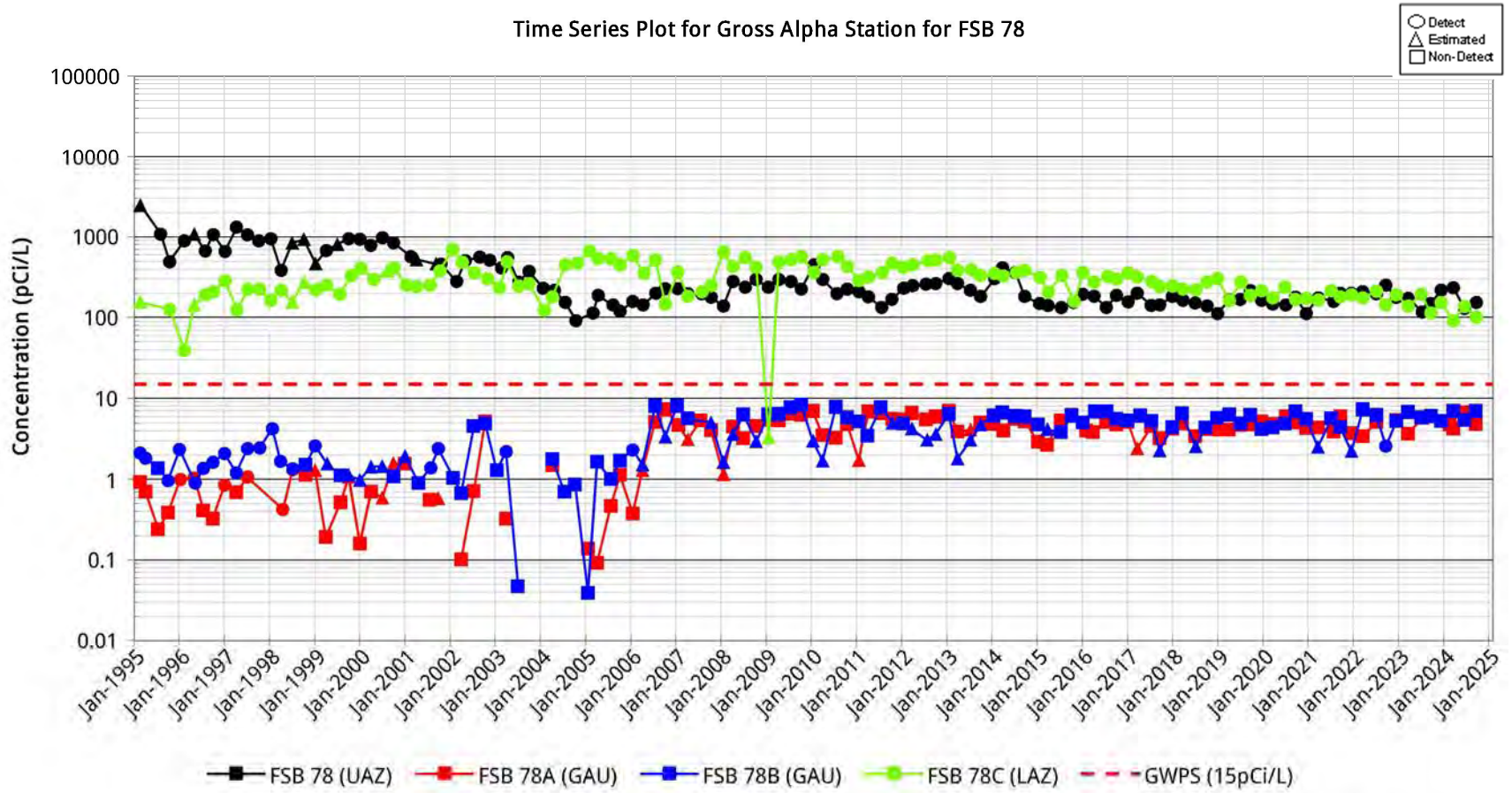

Hydrograph for Station SWP004MD (UAZ)
Below Screen
Suspect Value
Water Level (ft msl)
260
232
204
176
148
120
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
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Jan-2025

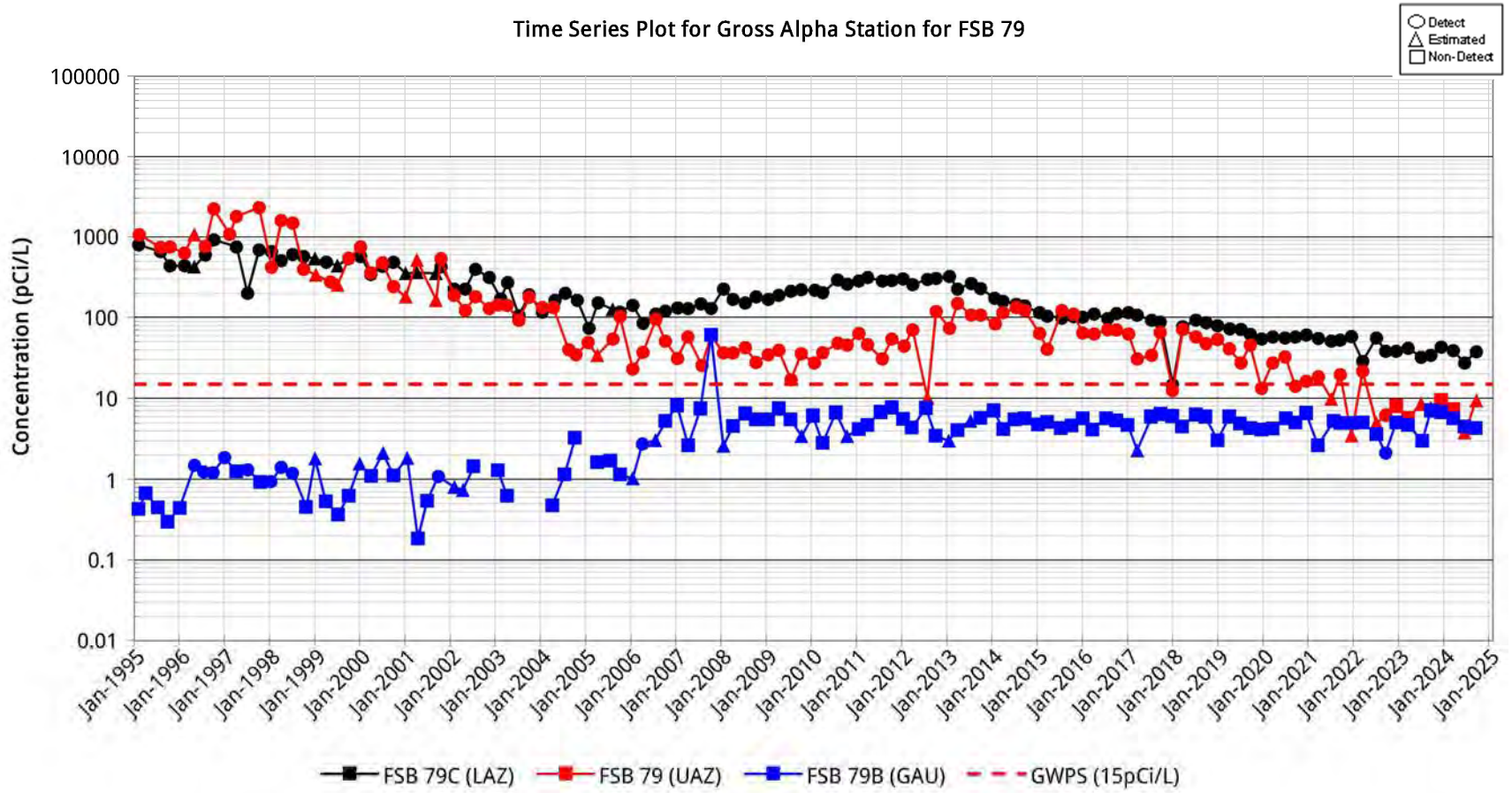
APPENDIX E

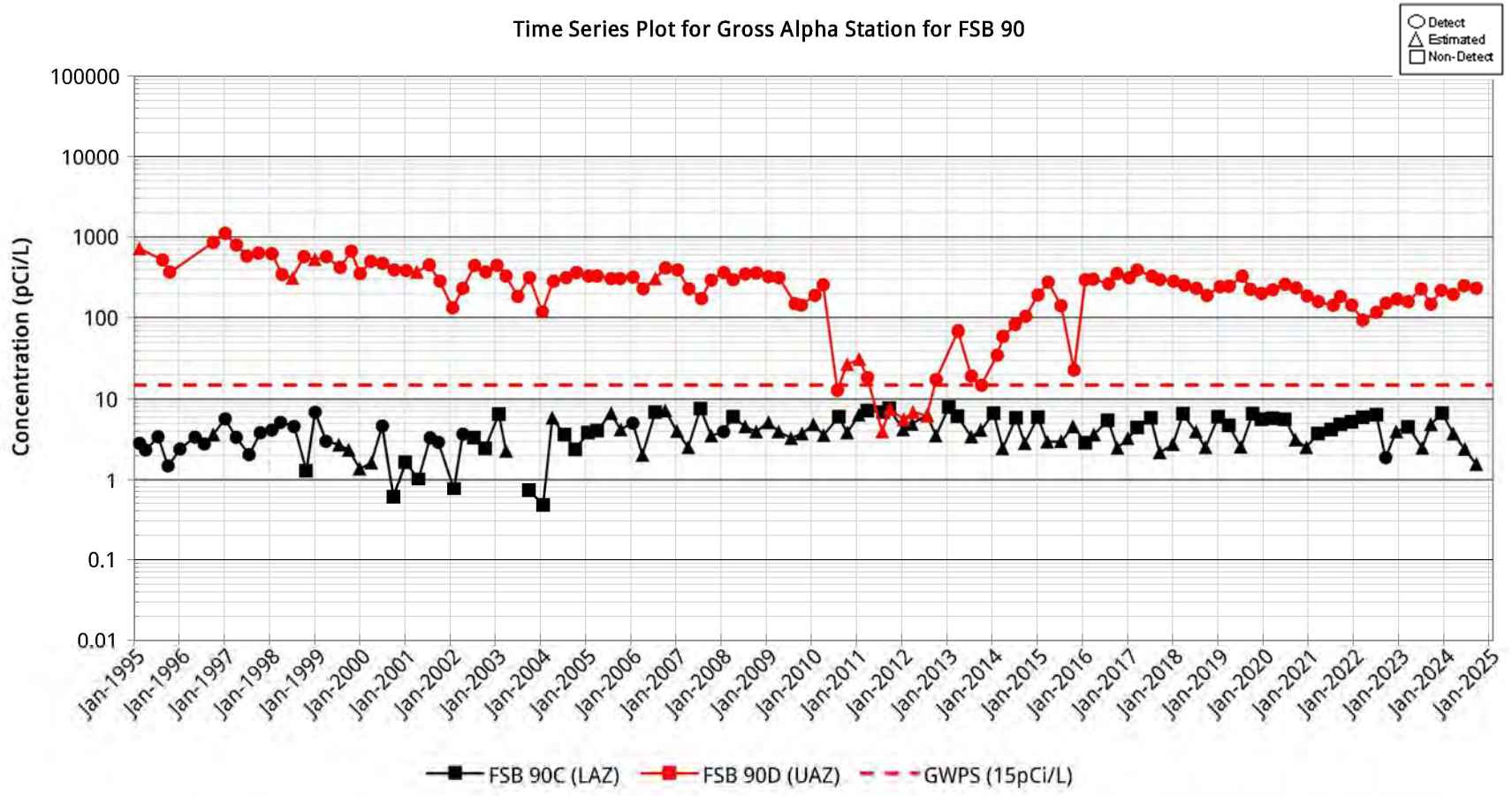
F-AREA, H-AREA, AND MIXED WASTE MANAGEMENT FACILITY

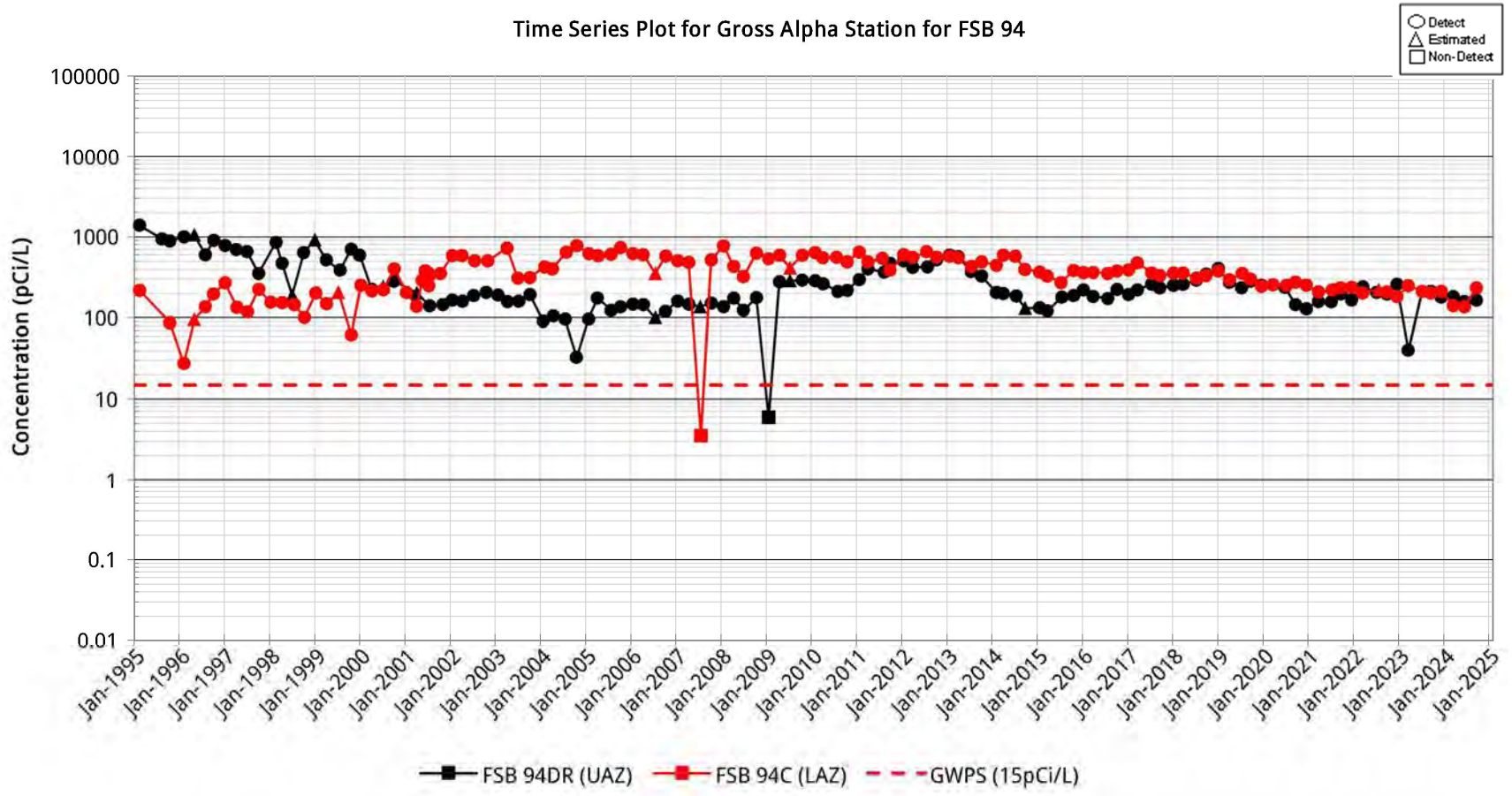
TIME SERIES PLOTS

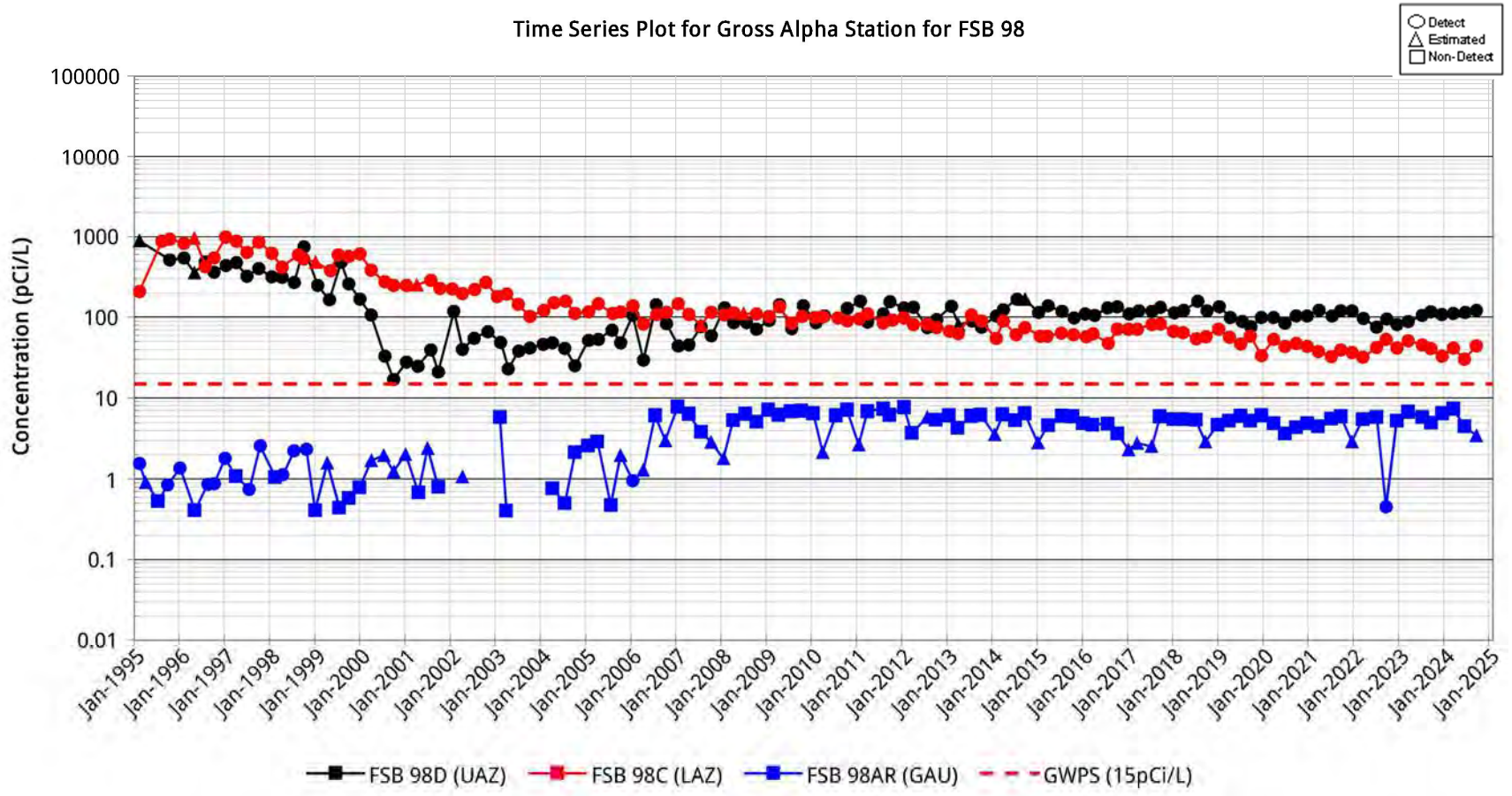
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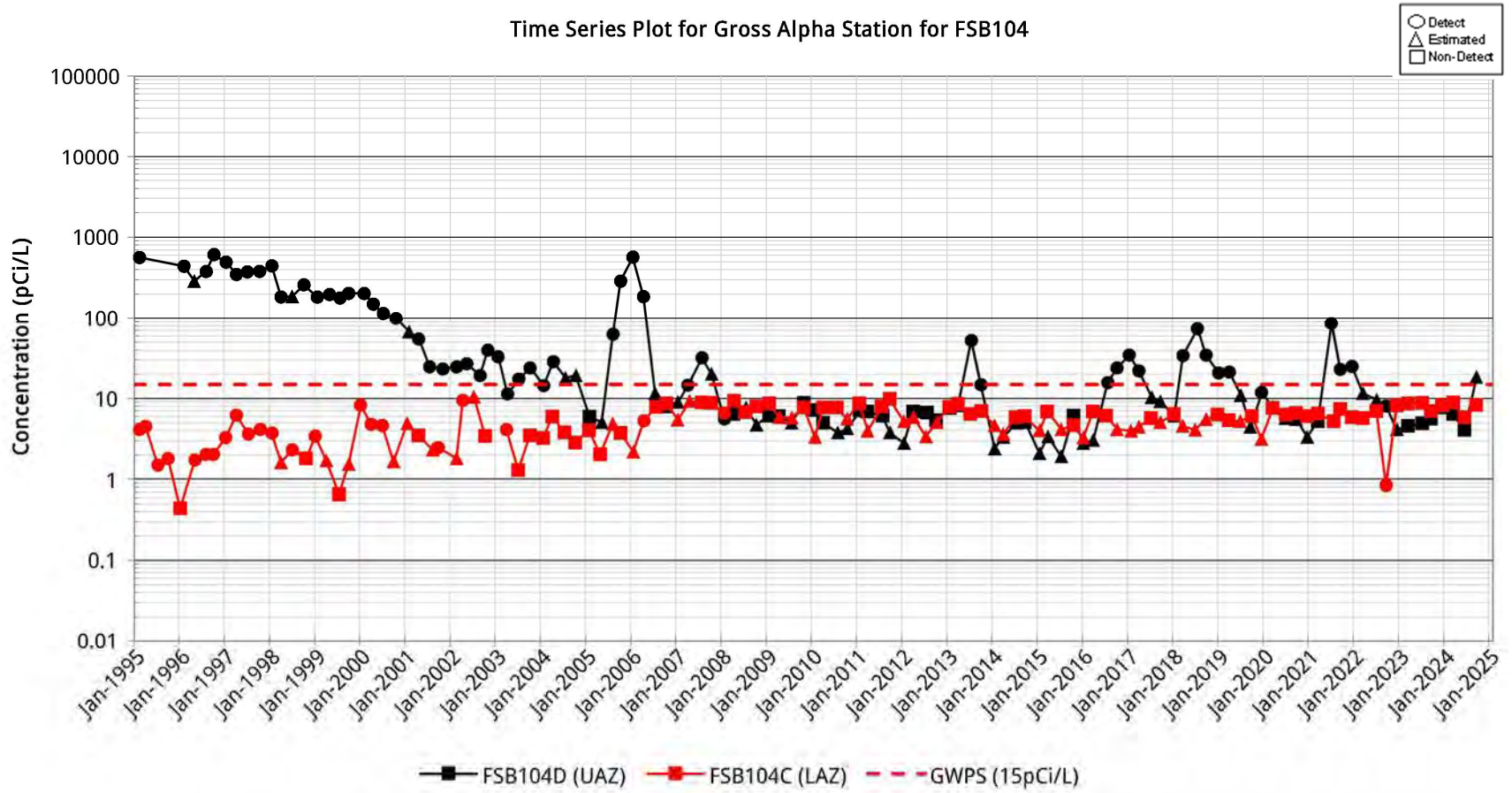

Time Series Plot for Gross Alpha Station for FSB 78
Detect
Estimated
Non-Detect
Concentration (pCi/L)
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 78 (UAZ)
FSB 78A (GAU)
FSB 78B (GAU)
FSB 78C (LAZ)
GWPS (15pCi/L)

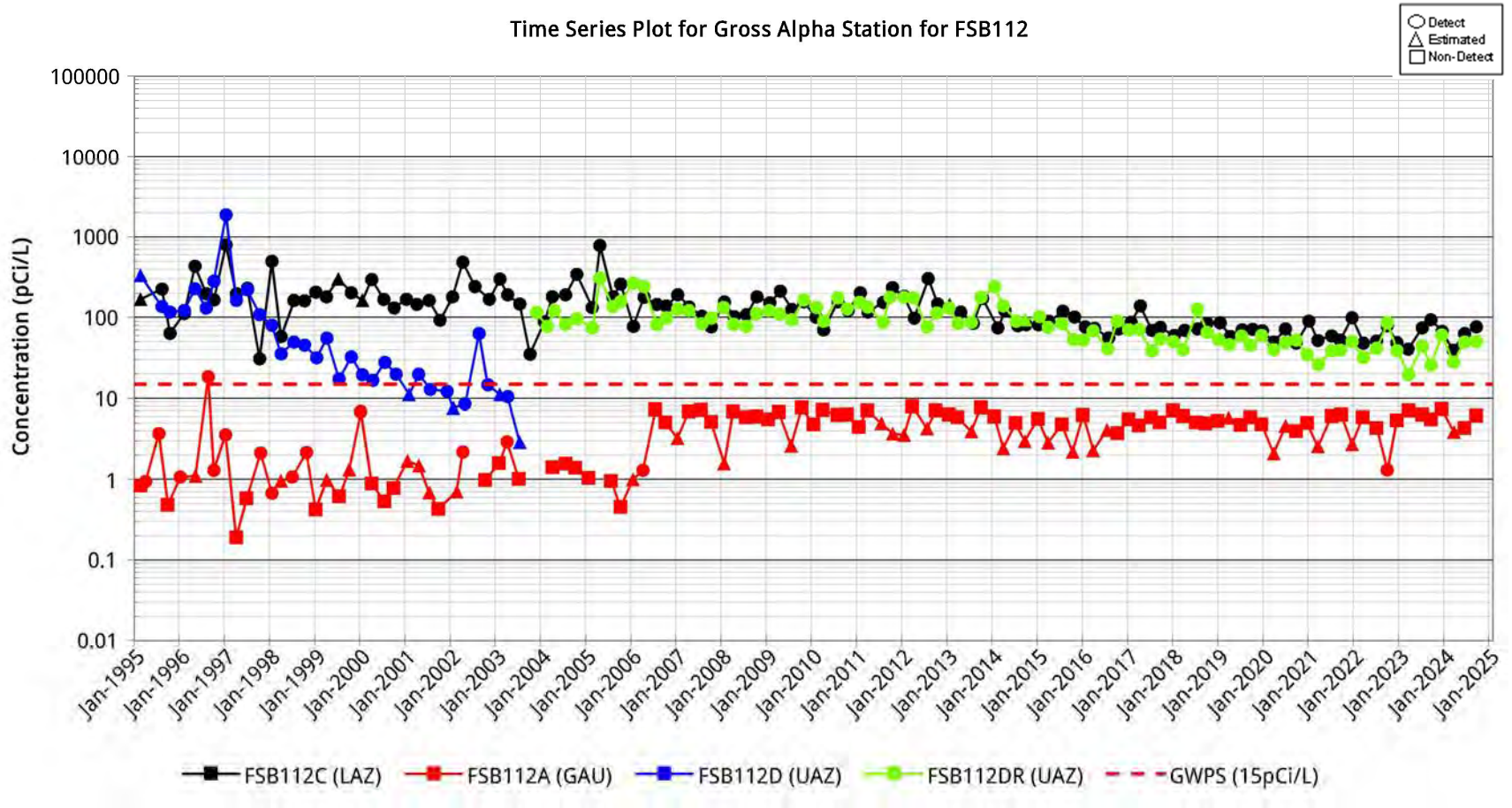

Time Series Plot for Gross Alpha Station for FSB 79
Detect
Estimated
Non-Detect
Concentration (pCi/L)
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
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Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 79C (LAZ)
FSB 79 (UAZ)
FSB 79B (GAU)
GWPS (15pCi/L)

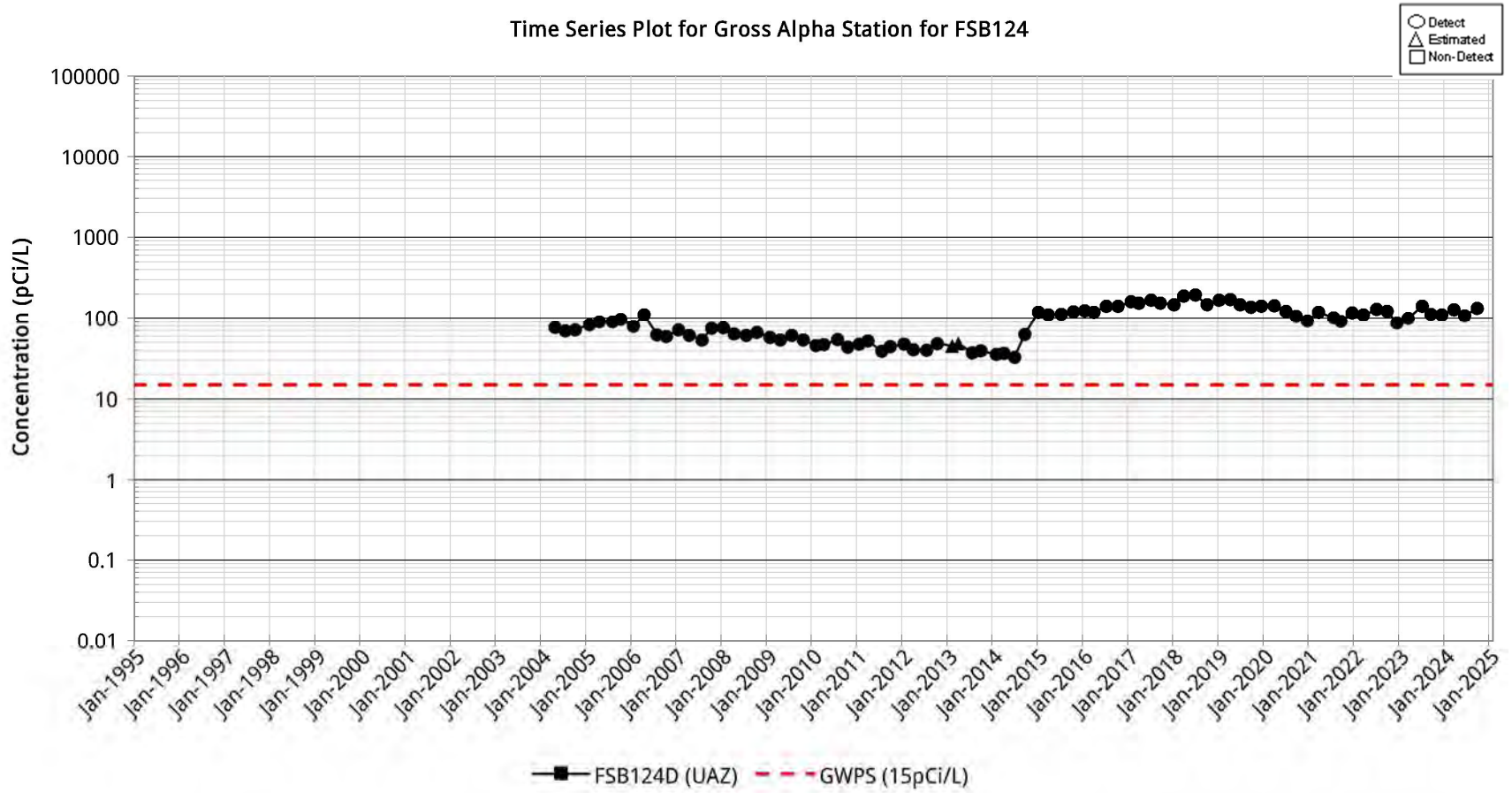

Time Series Plot for Gross Alpha Station for FSB 90
Detect
Estimated
Non-Detect
Concentration (pCi/L)
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
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Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 90C (LAZ)
FSB 90D (UAZ)
GWPS (15pCi/L)

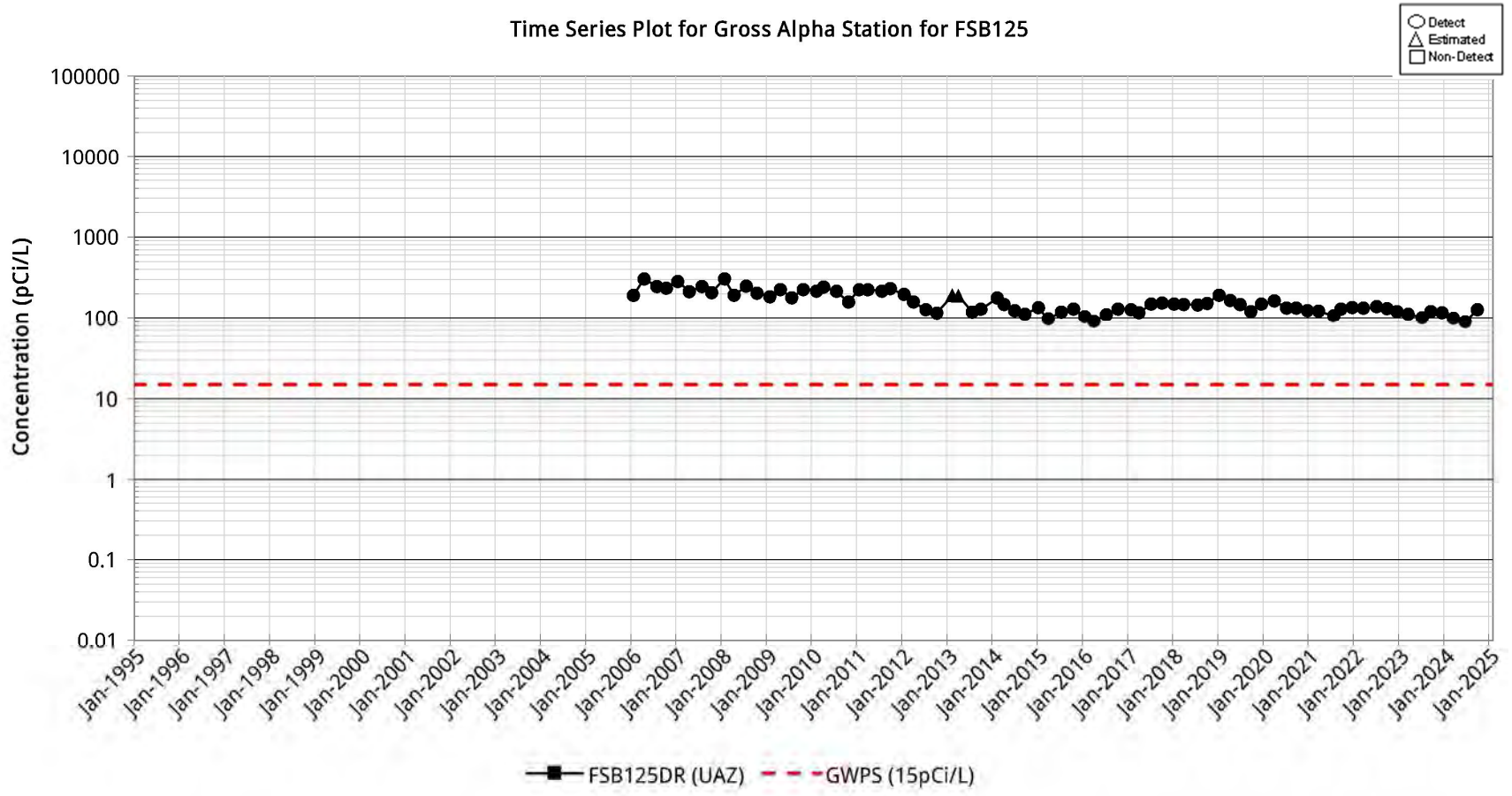

Time Series Plot for Gross Alpha Station for FSB 94
Detect
Estimated
Non-Detect
Concentration (pCi/L)
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
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Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 94DR (UAZ)
FSB 94C (LAZ)
GWPS (15pCi/L)

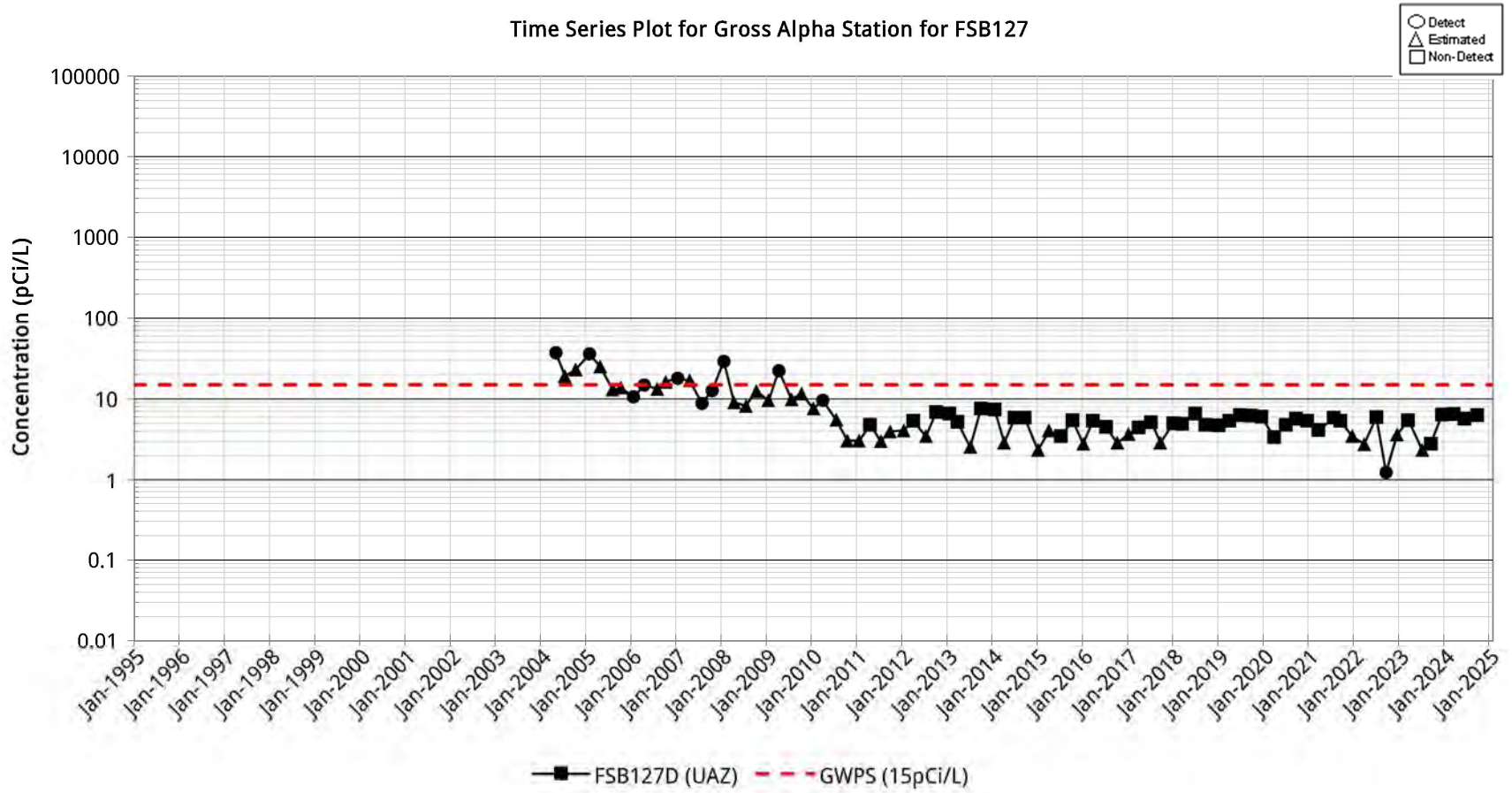

Time Series Plot for Gross Alpha Station for FSB 98
Detect
Estimated
Non-Detect
Concentration (pCi/L)
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
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Jan-2011
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Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 98D (UAZ)
FSB 98C (LAZ)
FSB 98AR (GAU)
GWPS (15pCi/L)

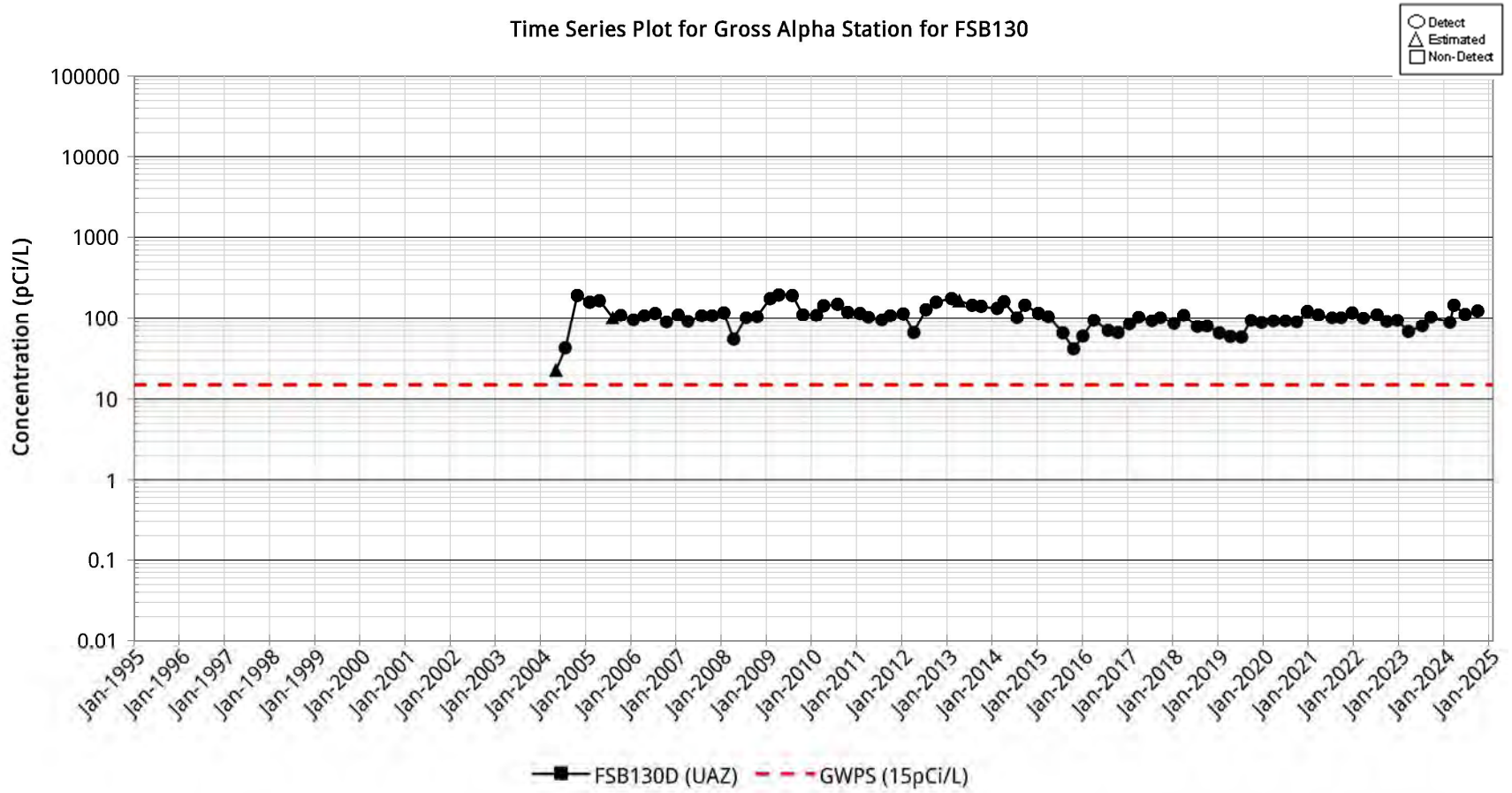

Time Series Plot for Gross Alpha Station for FSB104
Detect
Estimated
Non-Detect
Concentration (pCi/L)
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2011
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Jan-2014
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Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
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Jan-2023
Jan-2024
Jan-2025
FSB104D (UAZ)
FSB104C (LAZ)
GWPS (15pCi/L)

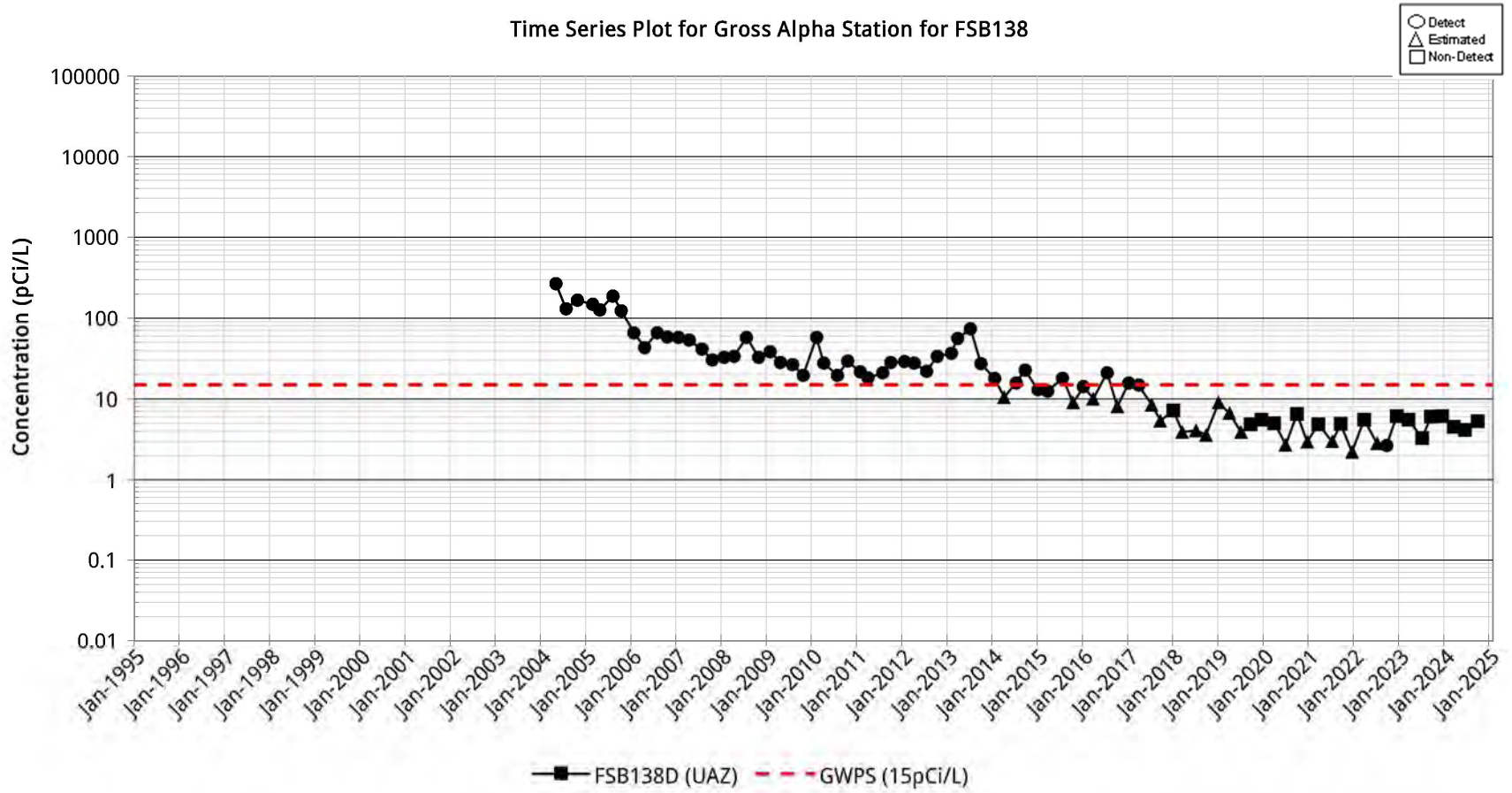

Time Series Plot for Gross Alpha Station for FSB112
Detect
Estimated
Non-Detect
Concentration (pCi/L)
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB112C (LAZ)
FSB112A (GAU)
FSB112D (UAZ)
FSB112DR (UAZ)
GWPS (15pCi/L)

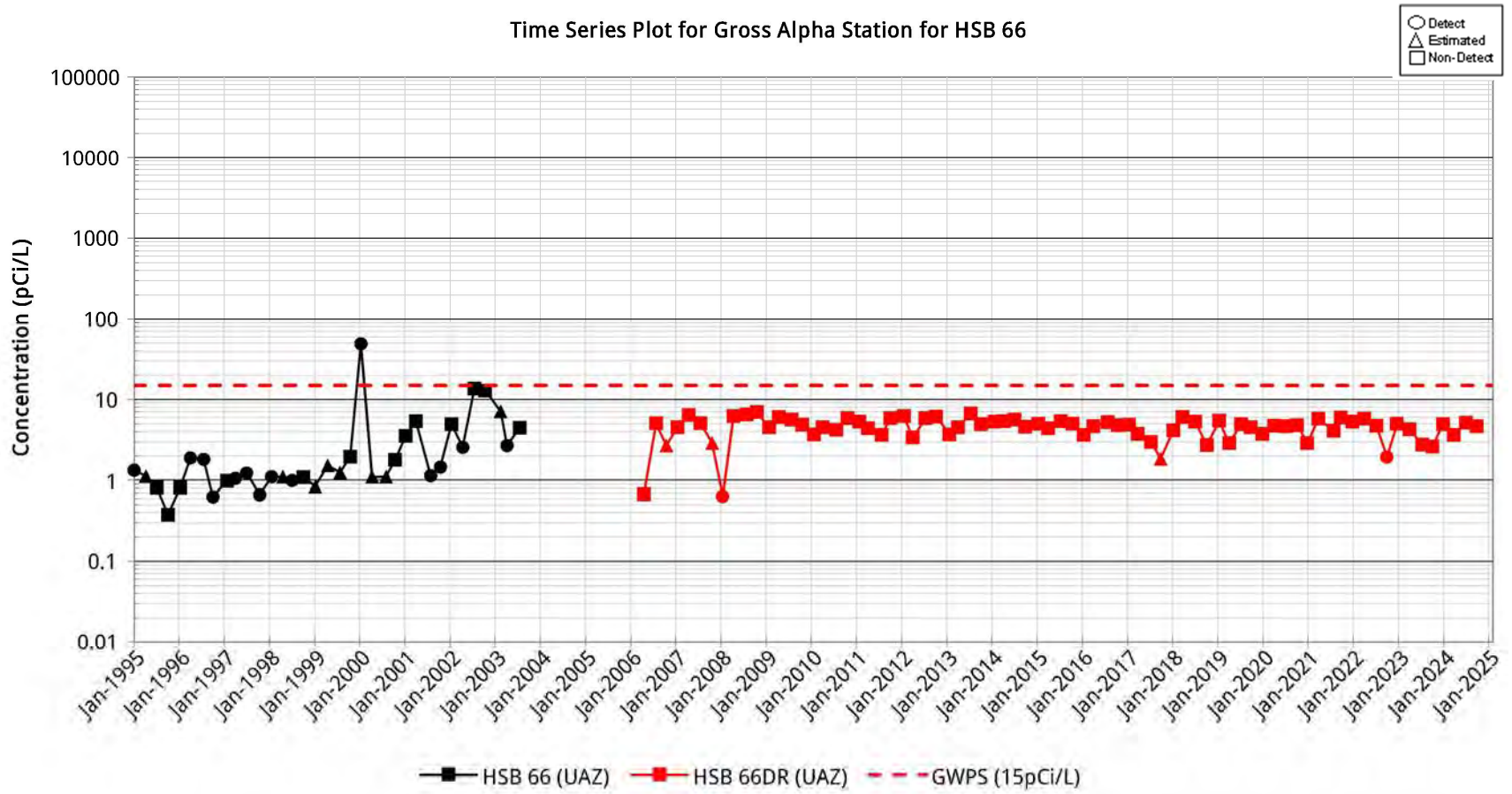

Time Series Plot for Gross Alpha Station for FSB124
Detect
Estimated
Non-Detect
Concentration (pCi/L)
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB124D (UAZ)
GWPS (15pCi/L)

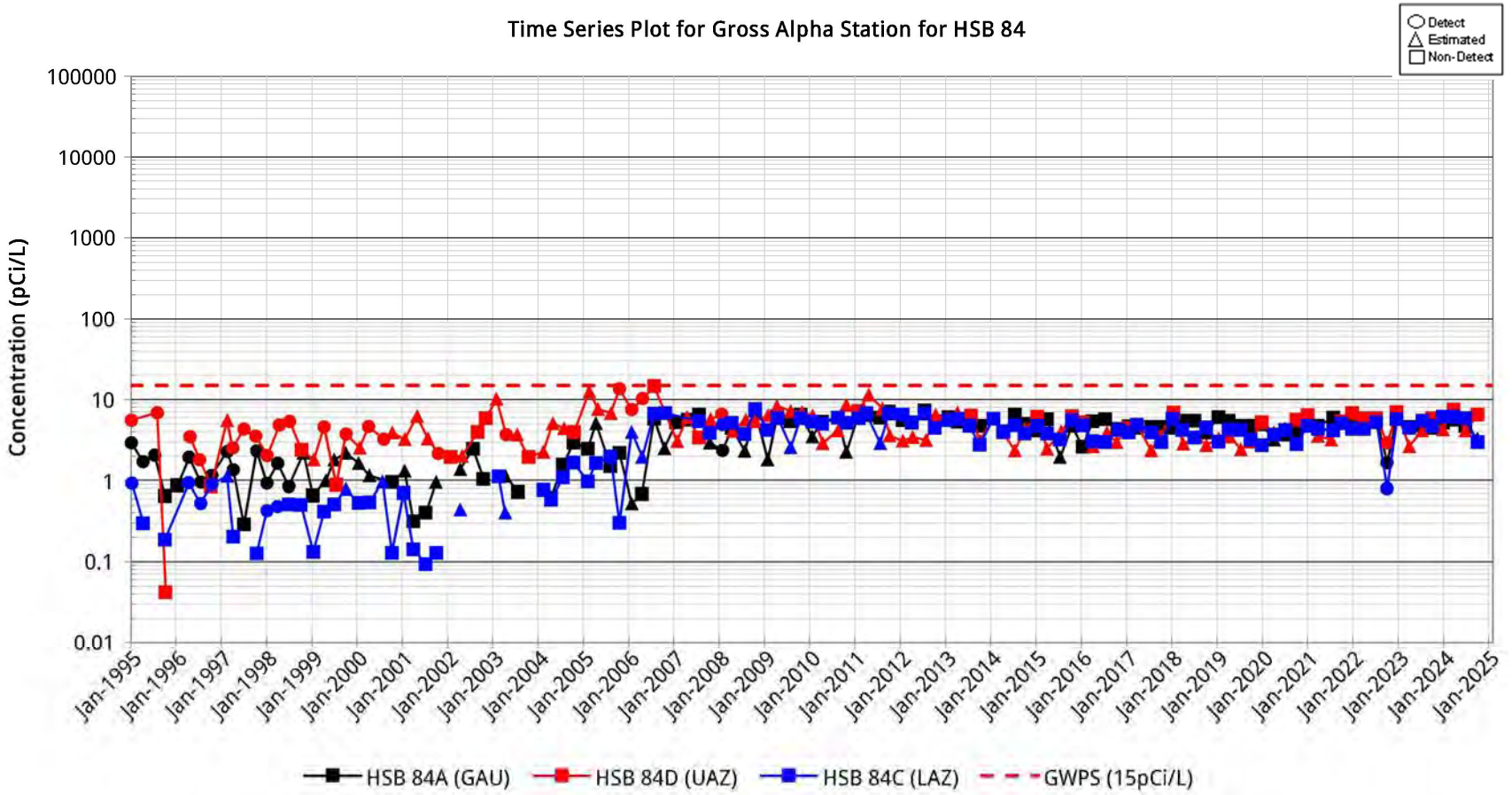

Time Series Plot for Gross Alpha Station for FSB125
Detect
Estimated
Non-Detect
Concentration (pCi/L)
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB125DR (UAZ)
GWPS (15pCi/L)

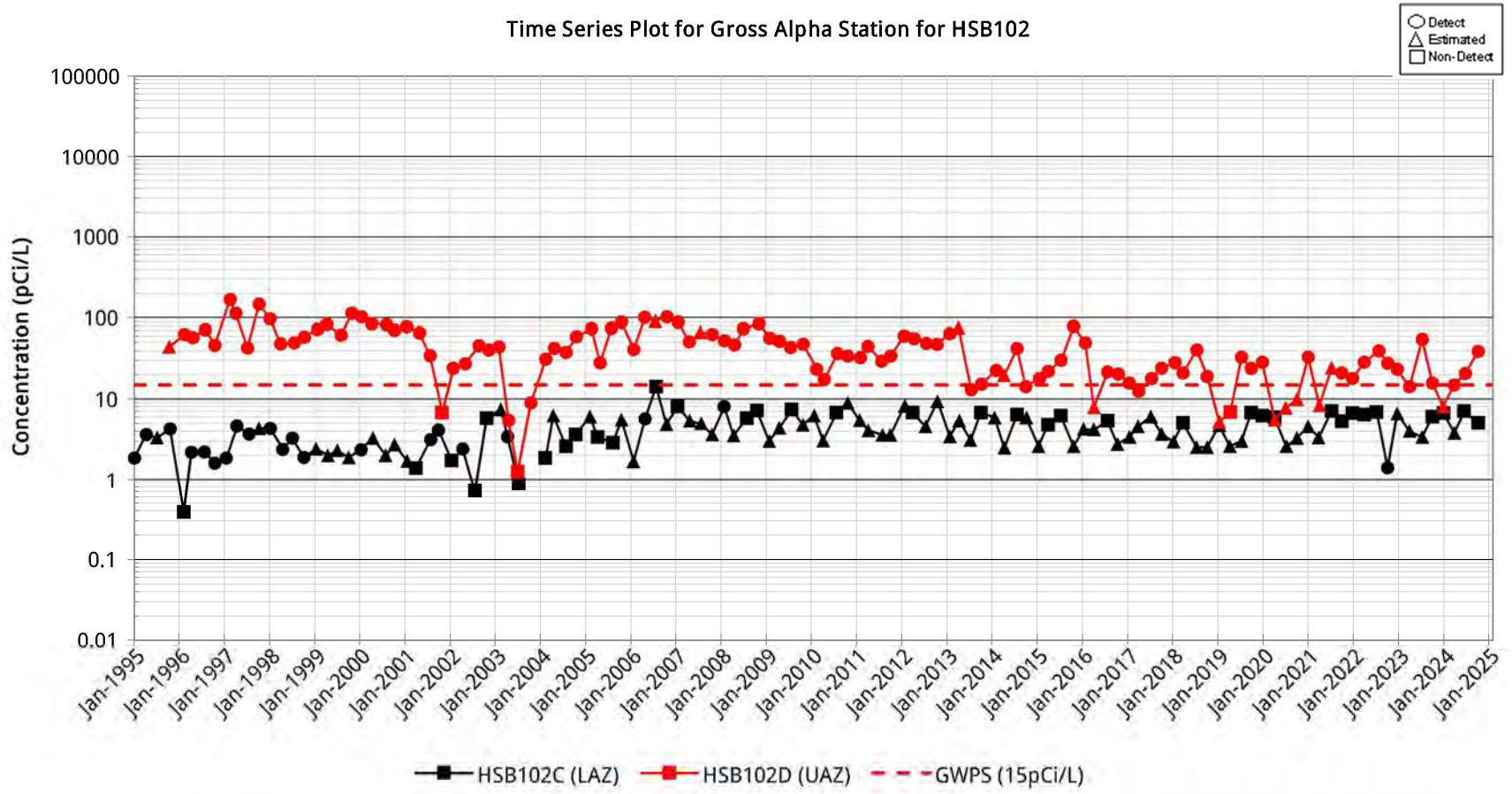

Time Series Plot for Gross Alpha Station for FSB127
Detect
Estimated
Non-Detect
Concentration (pCi/L)
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
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Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB127D (UAZ)
GWPS (15pCi/L)

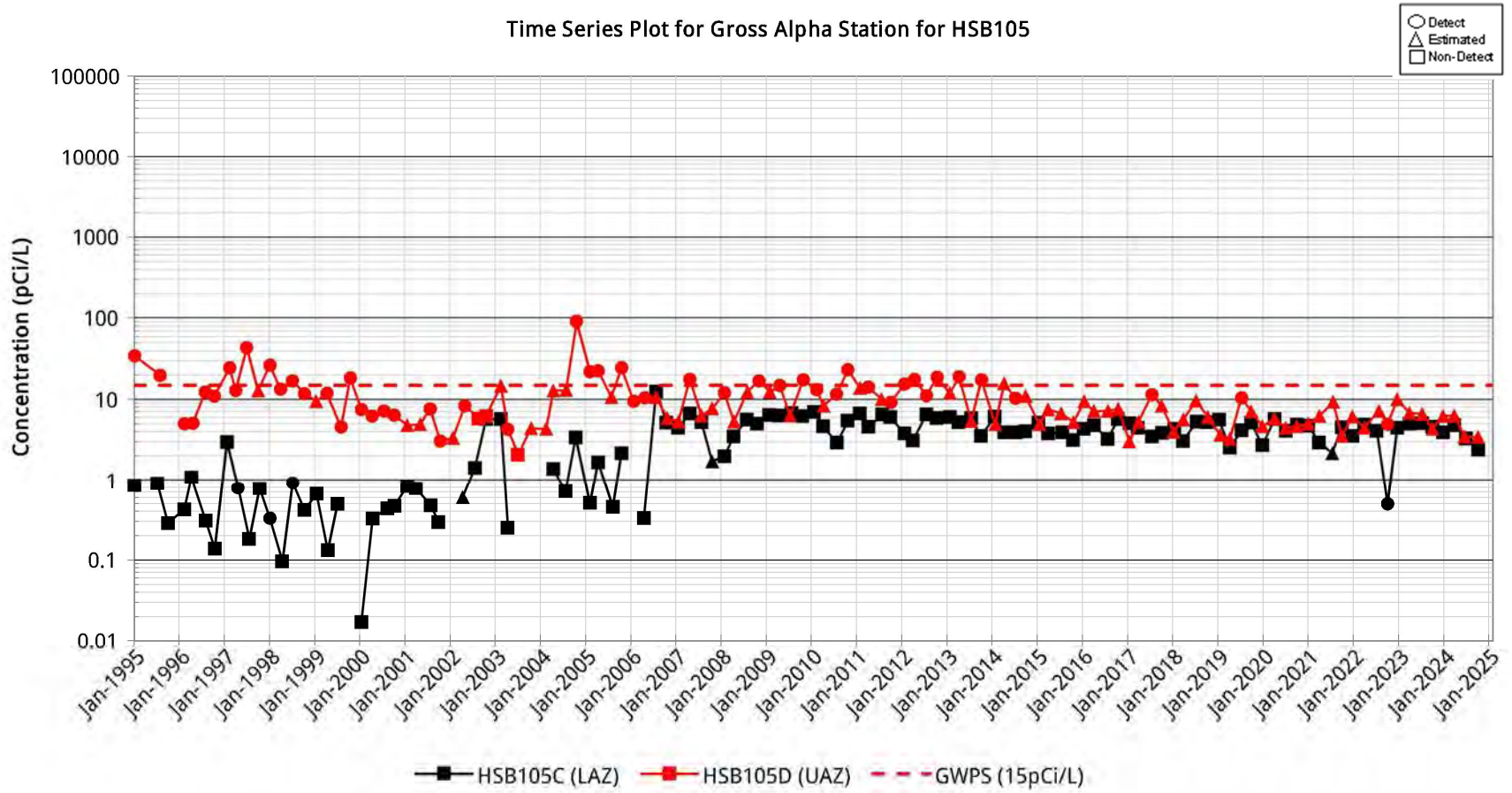

Time Series Plot for Gross Alpha Station for FSB130
Detect
Estimated
Non-Detect
Concentration (pCi/L)
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
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Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB130D (UAZ)
GWPS (15pCi/L)

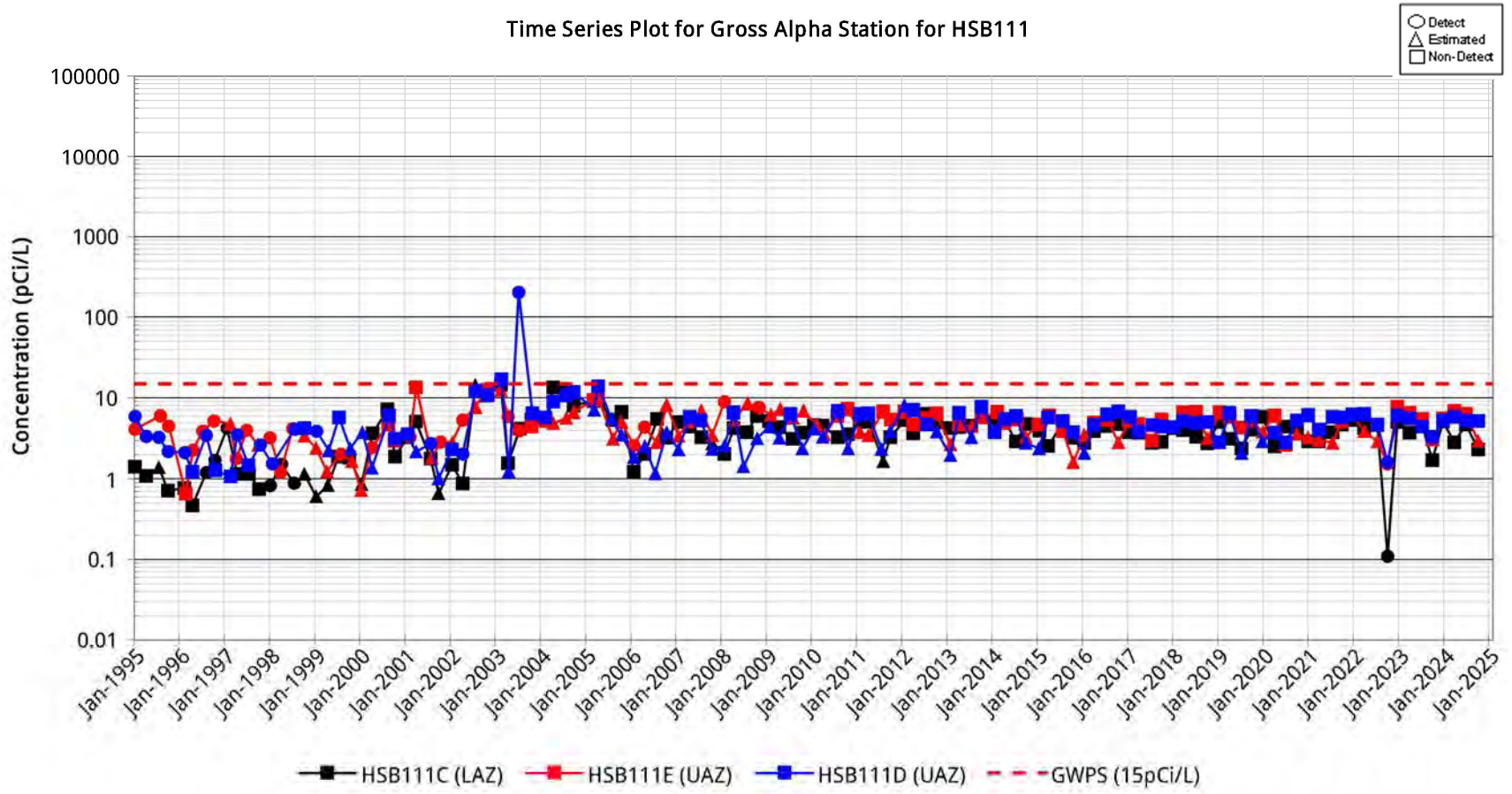

Time Series Plot for Gross Alpha Station for FSB138
Detect
Estimated
Non-Detect
Concentration (pCi/L)
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB138D (UAZ)
GWPS (15pCi/L)

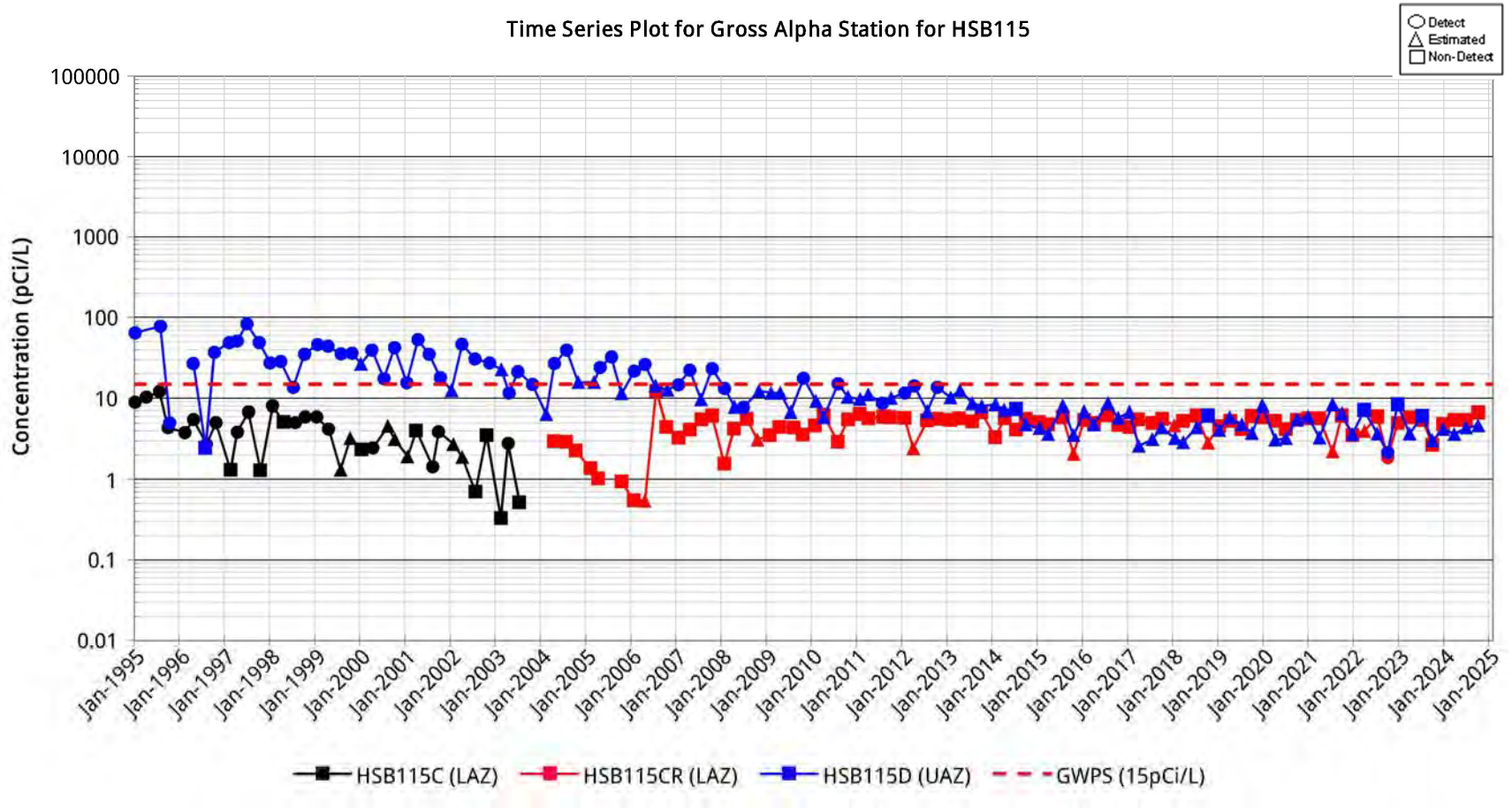

Time Series Plot for Gross Alpha Station for HSB 66
Detect
Estimated
Non-Detect
Concentration (pCi/L)
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
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Jan-2016
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Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB 66 (UAZ)
HSB 66DR (UAZ)
GWPS (15pCi/L)

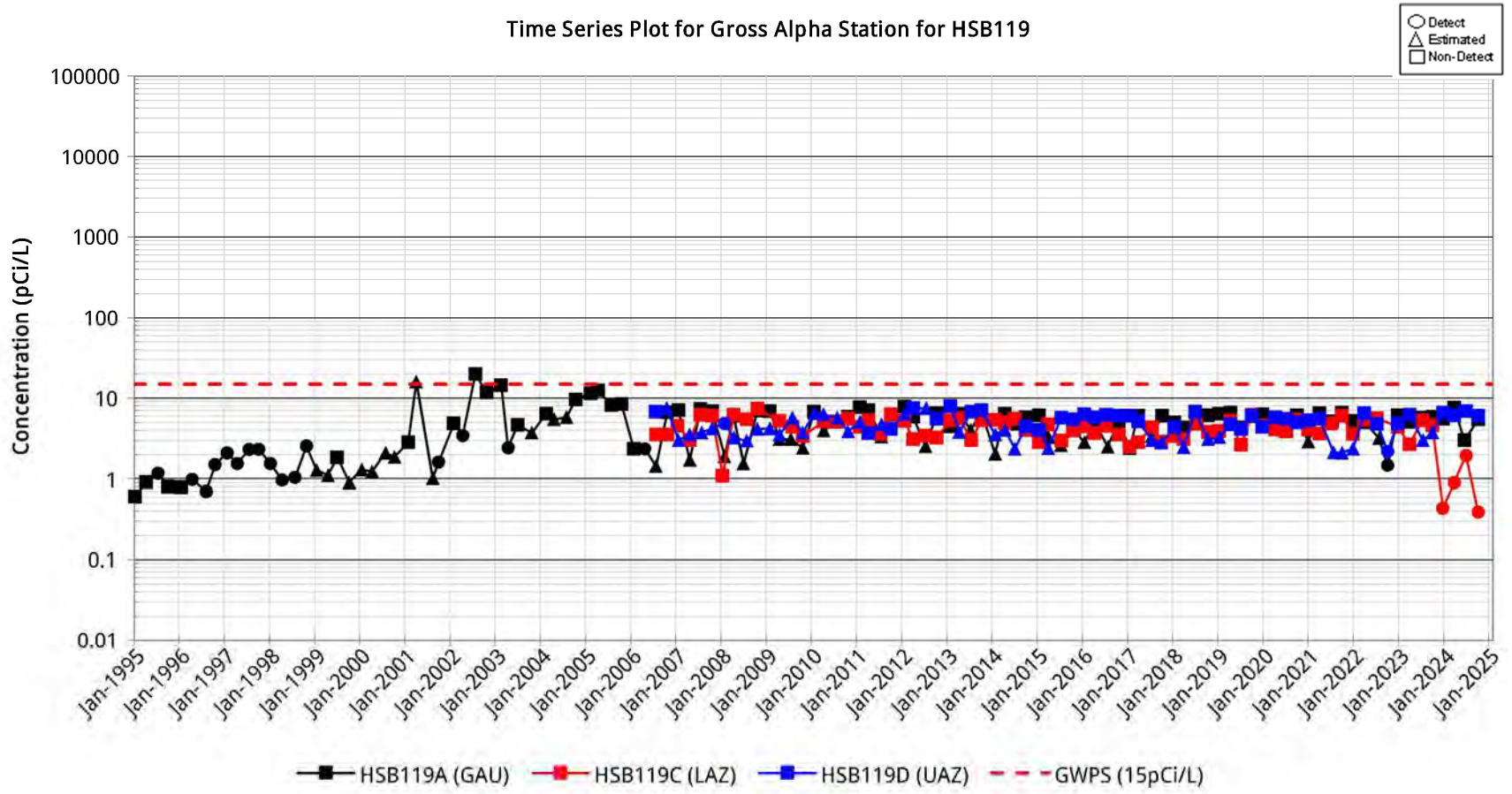

Time Series Plot for Gross Alpha Station for HSB 84
Detect
Estimated
Non-Detect
Concentration (pCi/L)
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB 84A (GAU)
HSB 84D (UAZ)
HSB 84C (LAZ)
GWPS (15pCi/L)

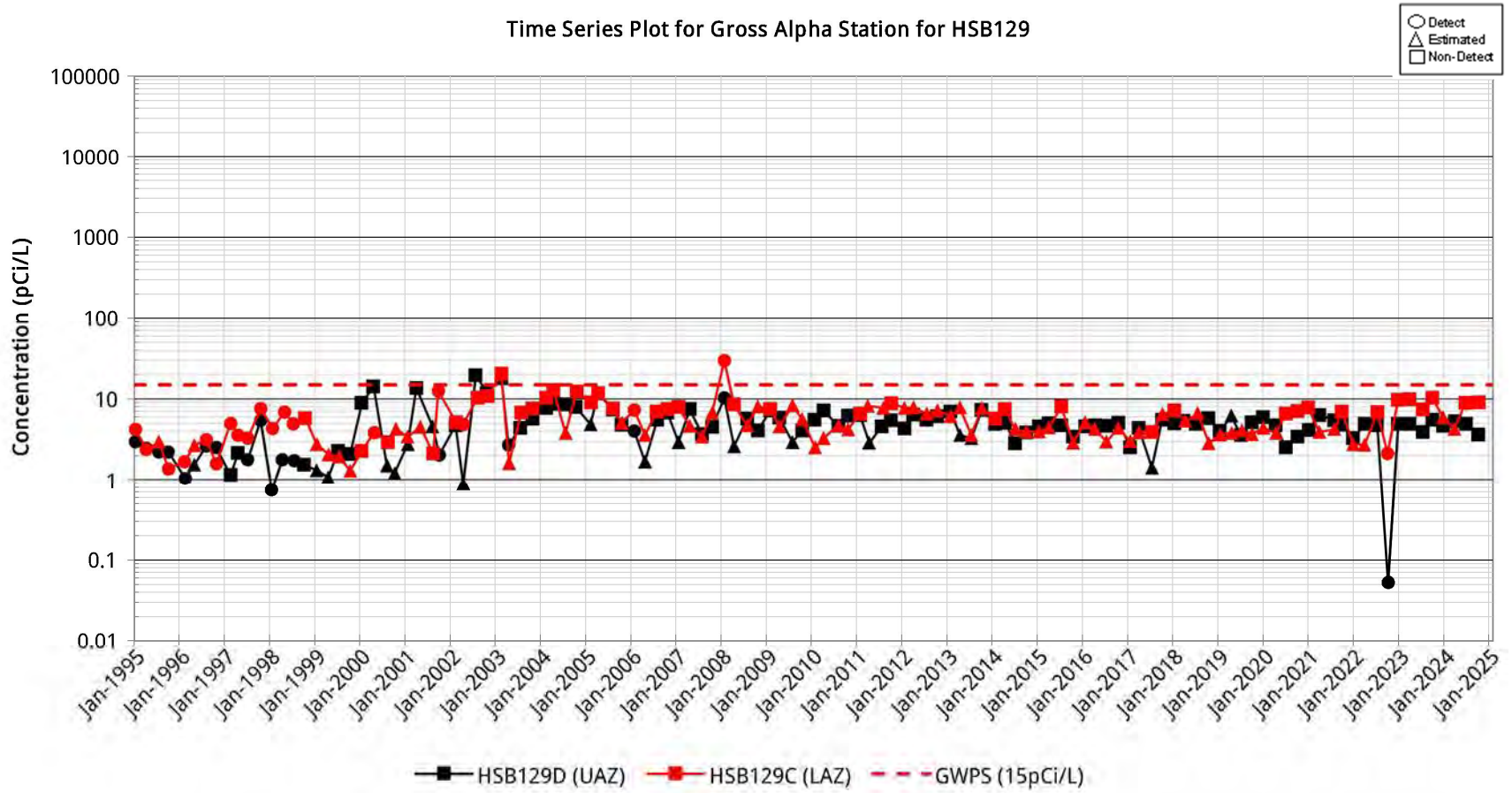

Time Series Plot for Gross Alpha Station for HSB102
Detect
Estimated
Non-Detect
Concentration (pCi/L)
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB102C (LAZ)
HSB102D (UAZ)
GWPS (15pCi/L)

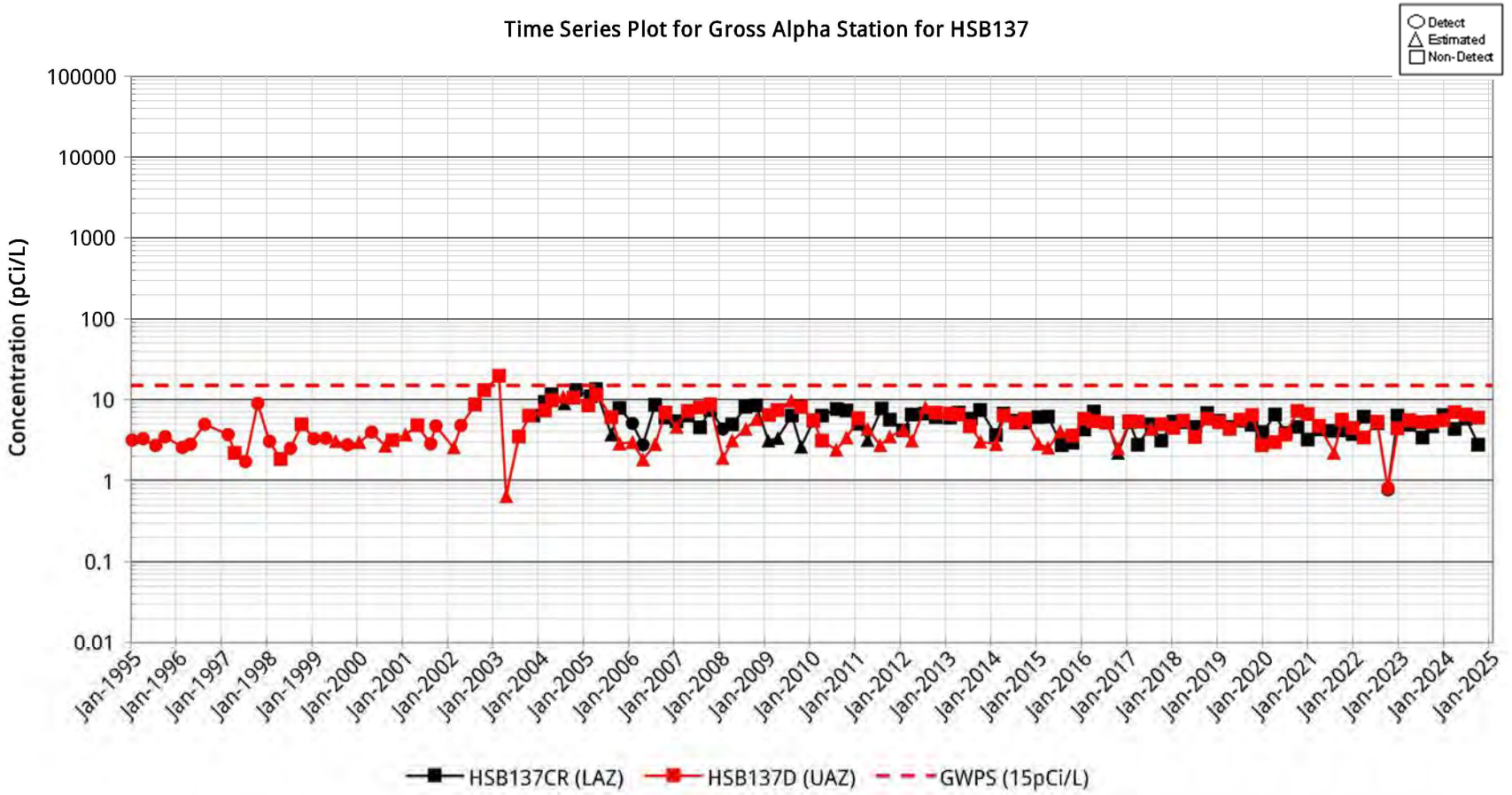

Time Series Plot for Gross Alpha Station for HSB105
Detect
Estimated
Non-Detect
Concentration (pCi/L)
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB105C (LAZ)
HSB105D (UAZ)
GWPS (15pCi/L)

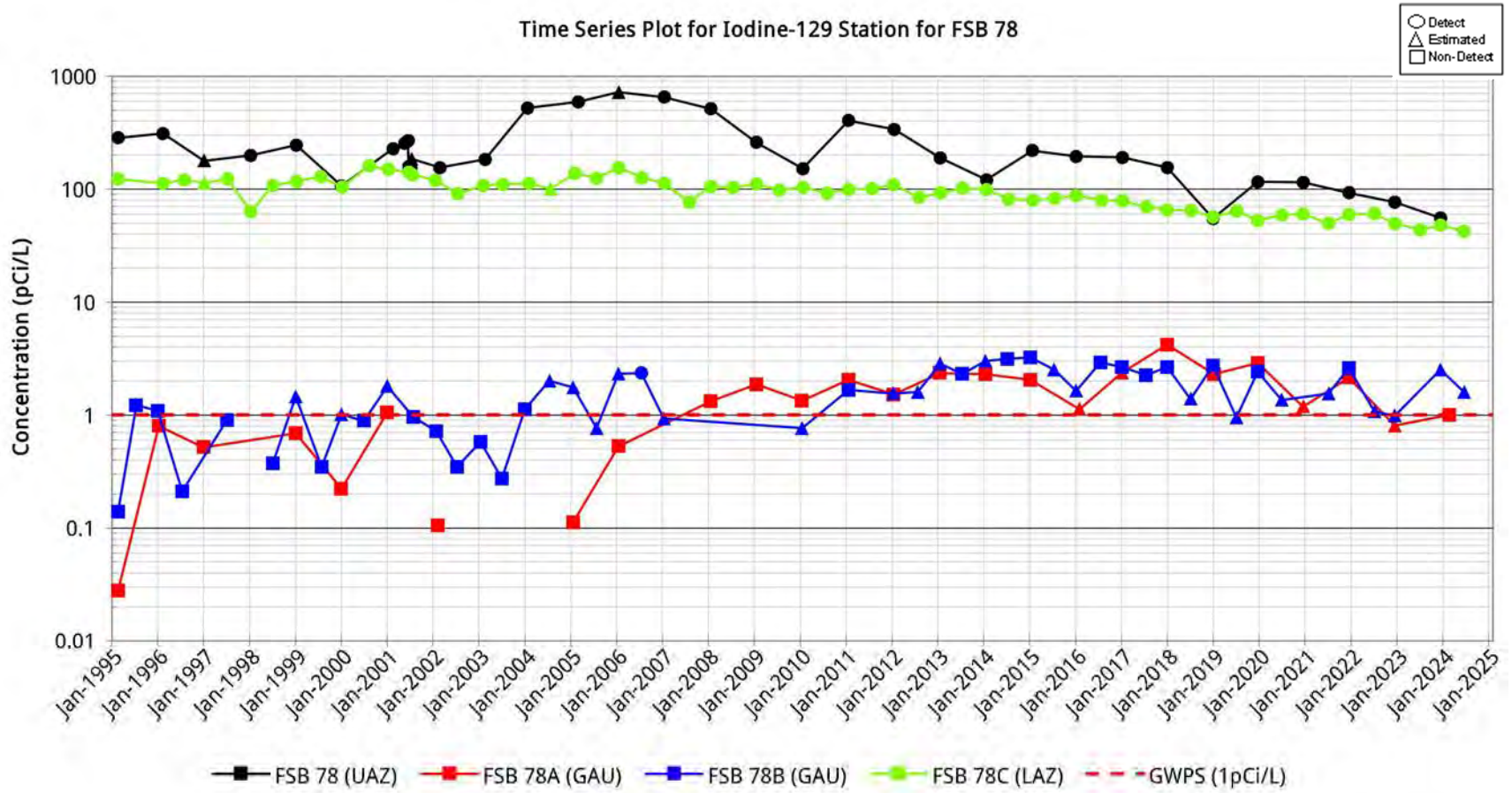

Time Series Plot for Gross Alpha Station for HSB111
Detect
Estimated
Non-Detect
Concentration (pCi/L)
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB111C (LAZ)
HSB111E (UAZ)
HSB111D (UAZ)
GWPS (15pCi/L)

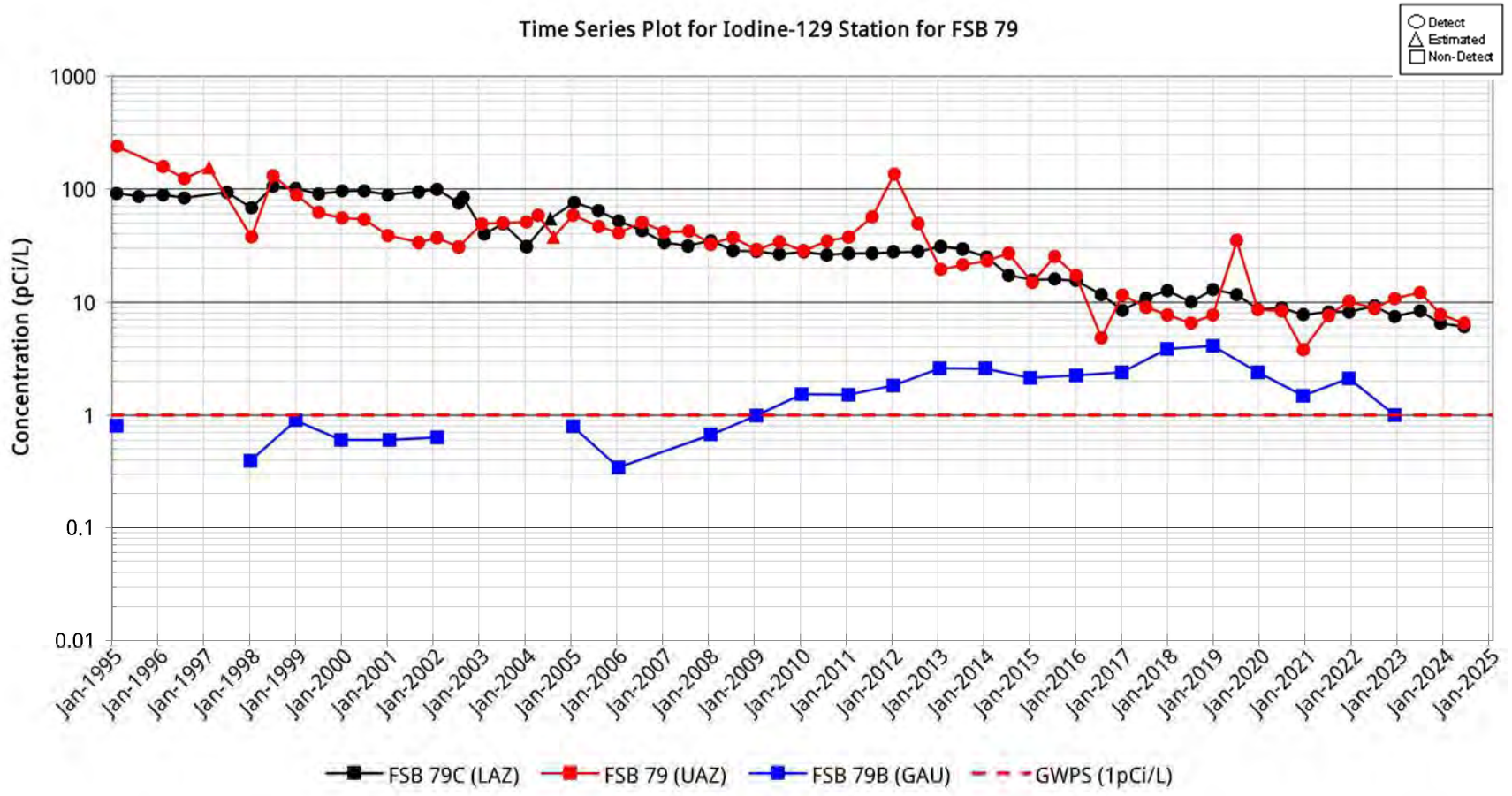

Time Series Plot for Gross Alpha Station for HSB115
Detect
Estimated
Non-Detect
Concentration (pCi/L)
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
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Jan-2011
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Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB115C (LAZ)
HSB115CR (LAZ)
HSB115D (UAZ)
GWPS (15pCi/L)

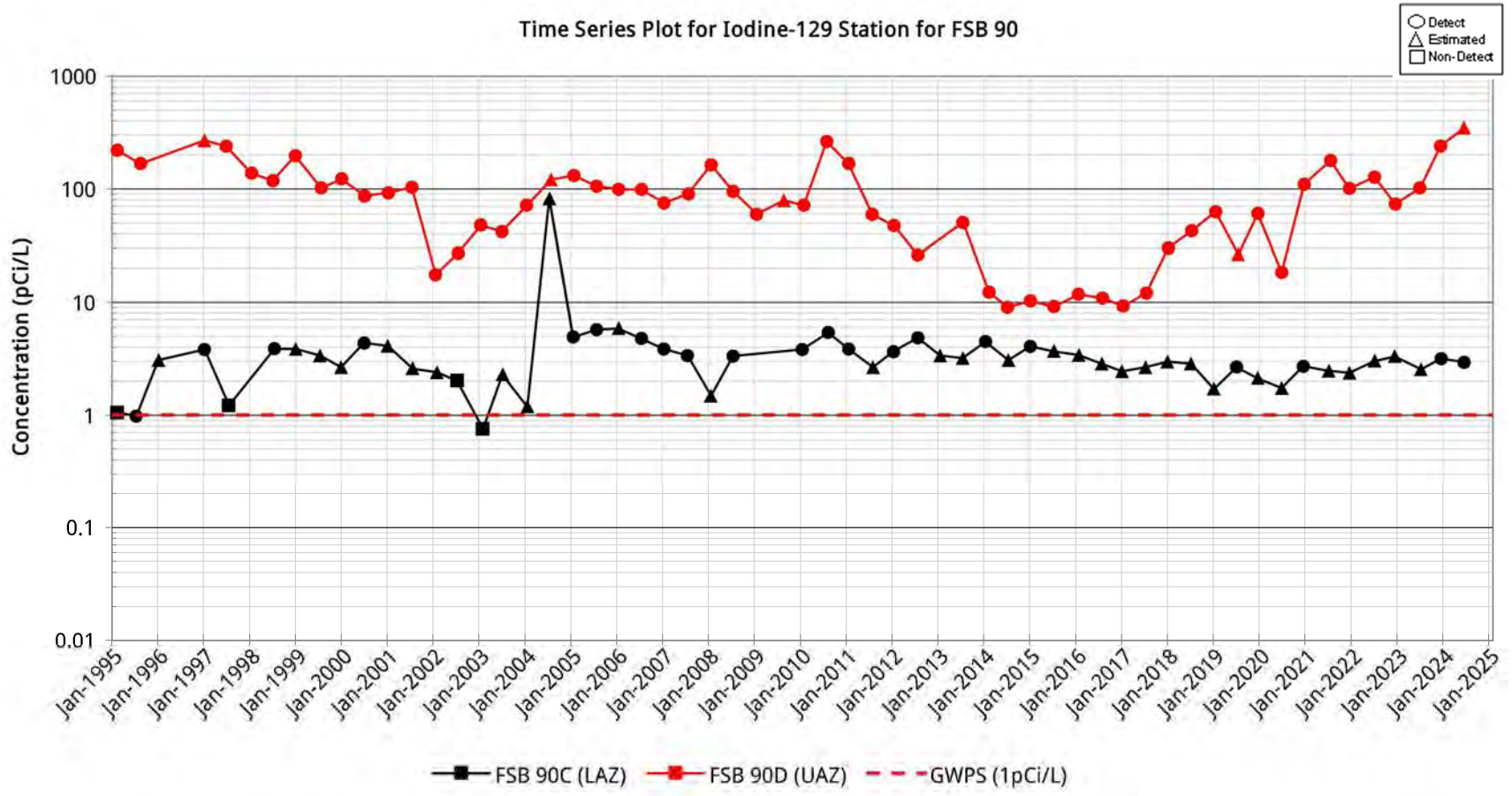

Time Series Plot for Gross Alpha Station for HSB119
Detect
Estimated
Non-Detect
Concentration (pCi/L)
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB119A (GAU)
HSB119C (LAZ)
HSB119D (UAZ)
GWPS (15pCi/L)

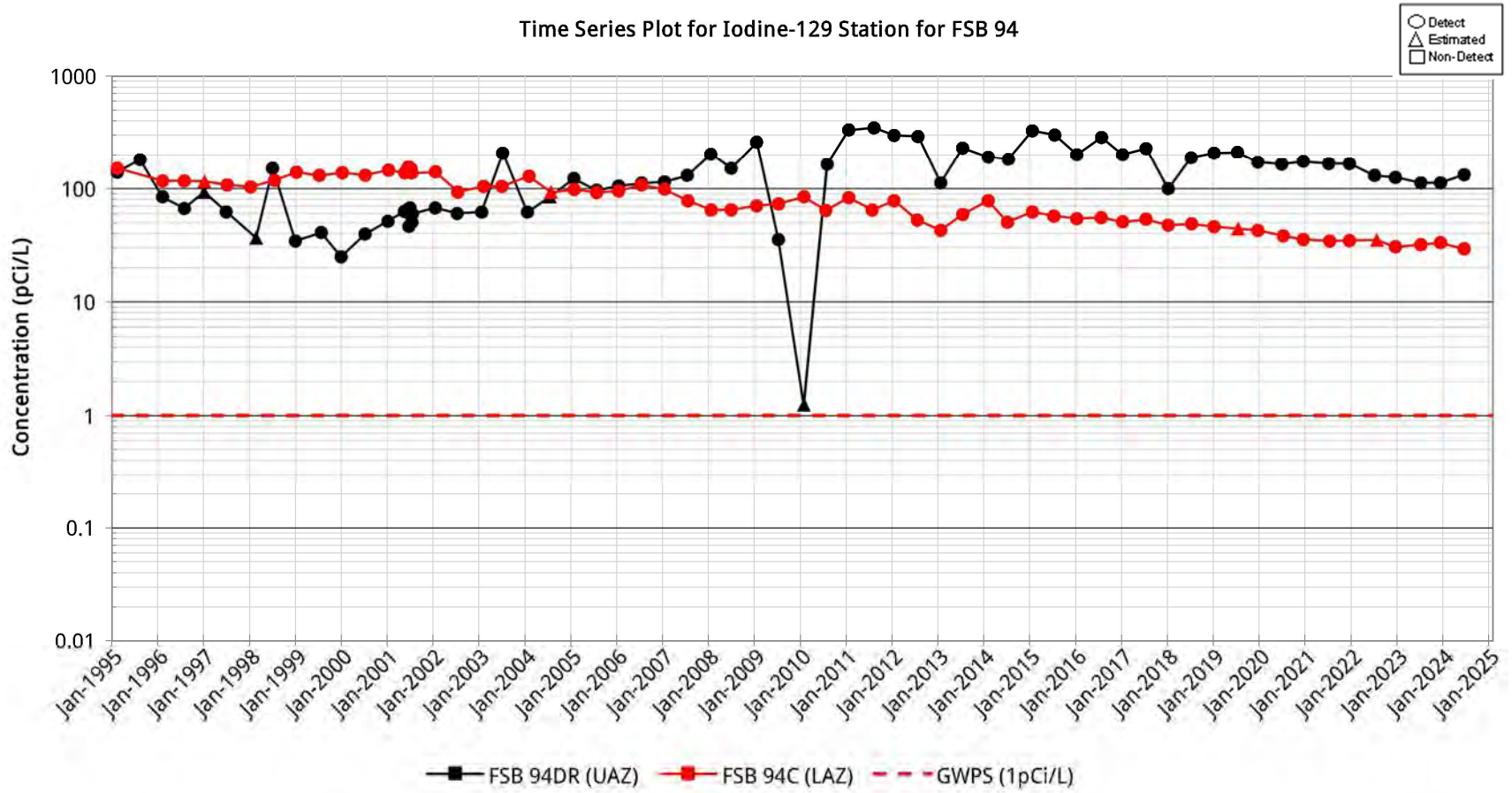

Time Series Plot for Gross Alpha Station for HSB129
Detect
Estimated
Non-Detect
Concentration (pCi/L)
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB129D (UAZ)
HSB129C (LAZ)
GWPS (15pCi/L)

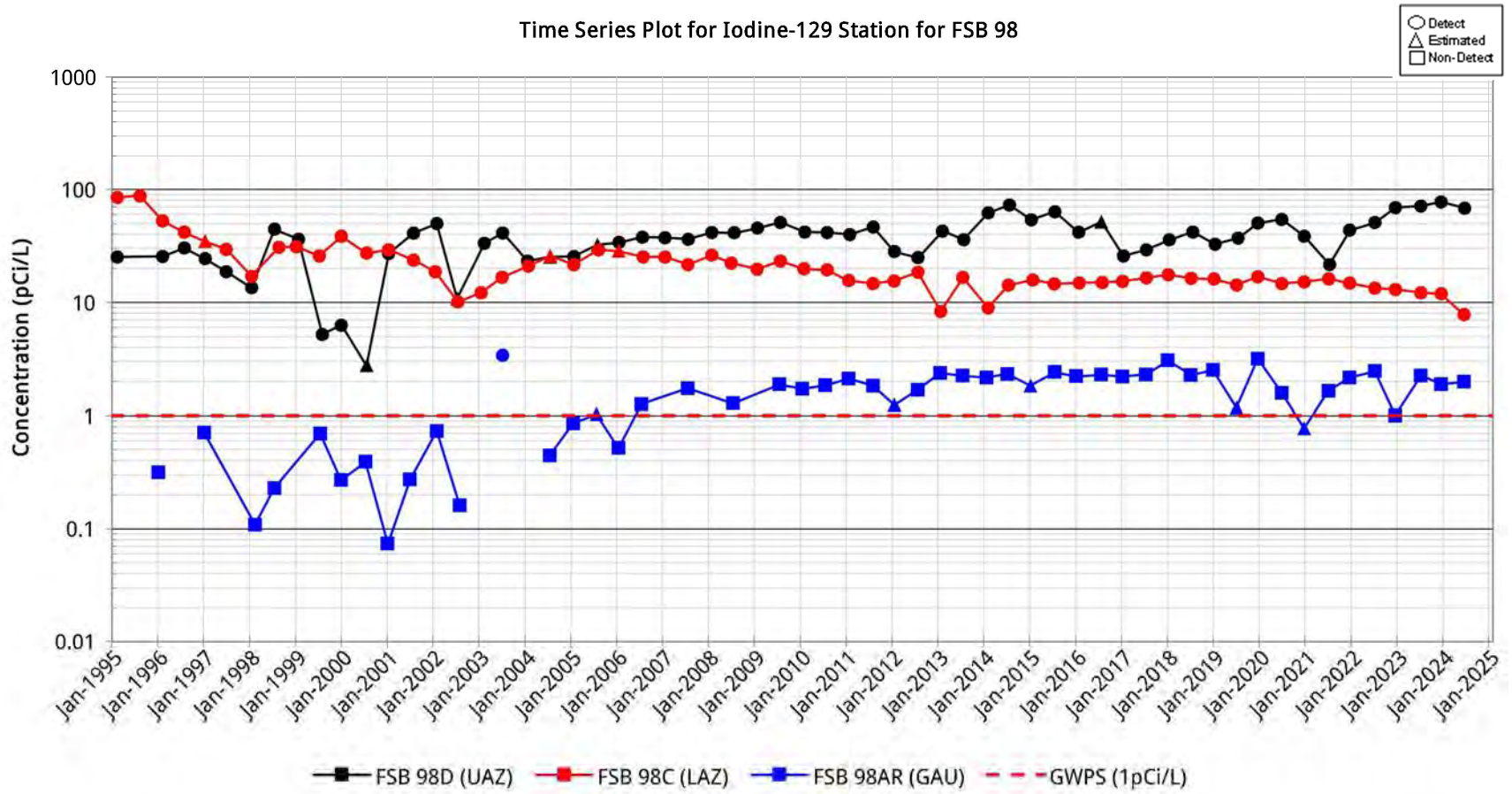

Time Series Plot for Gross Alpha Station for HSB137
Detect
Estimated
Non-Detect
Concentration (pCi/L)
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
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Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB137CR (LAZ)
HSB137D (UAZ)
GWPS (15pCi/L)

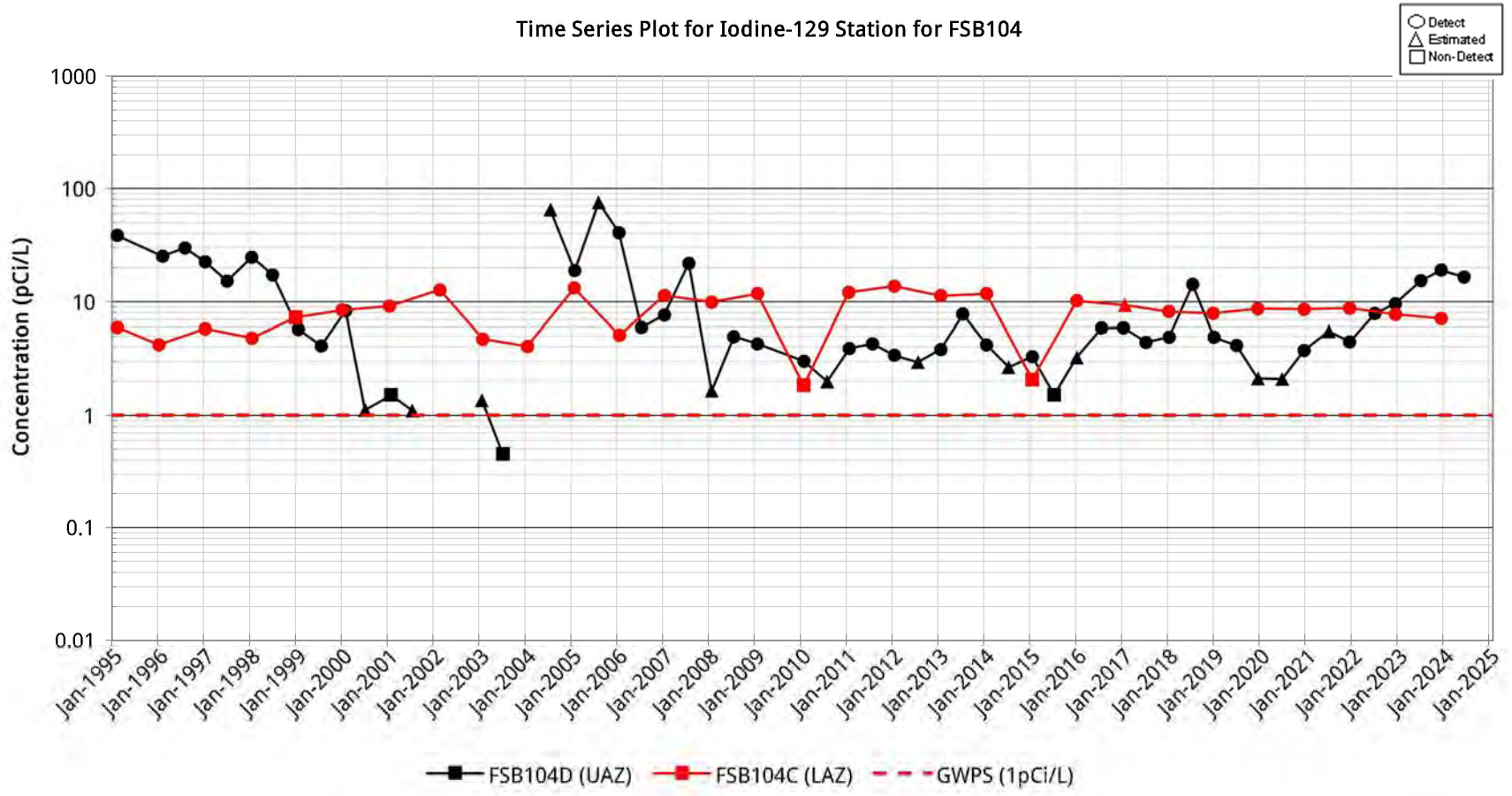

Time Series Plot for Iodine-129 Station for FSB 78
Detect
Estimated
Non-Detect
Concentration (pCi/L)
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
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Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 78 (UAZ)
FSB 78A (GAU)
FSB 78B (GAU)
FSB 78C (LAZ)
GWPS (1pCi/L)

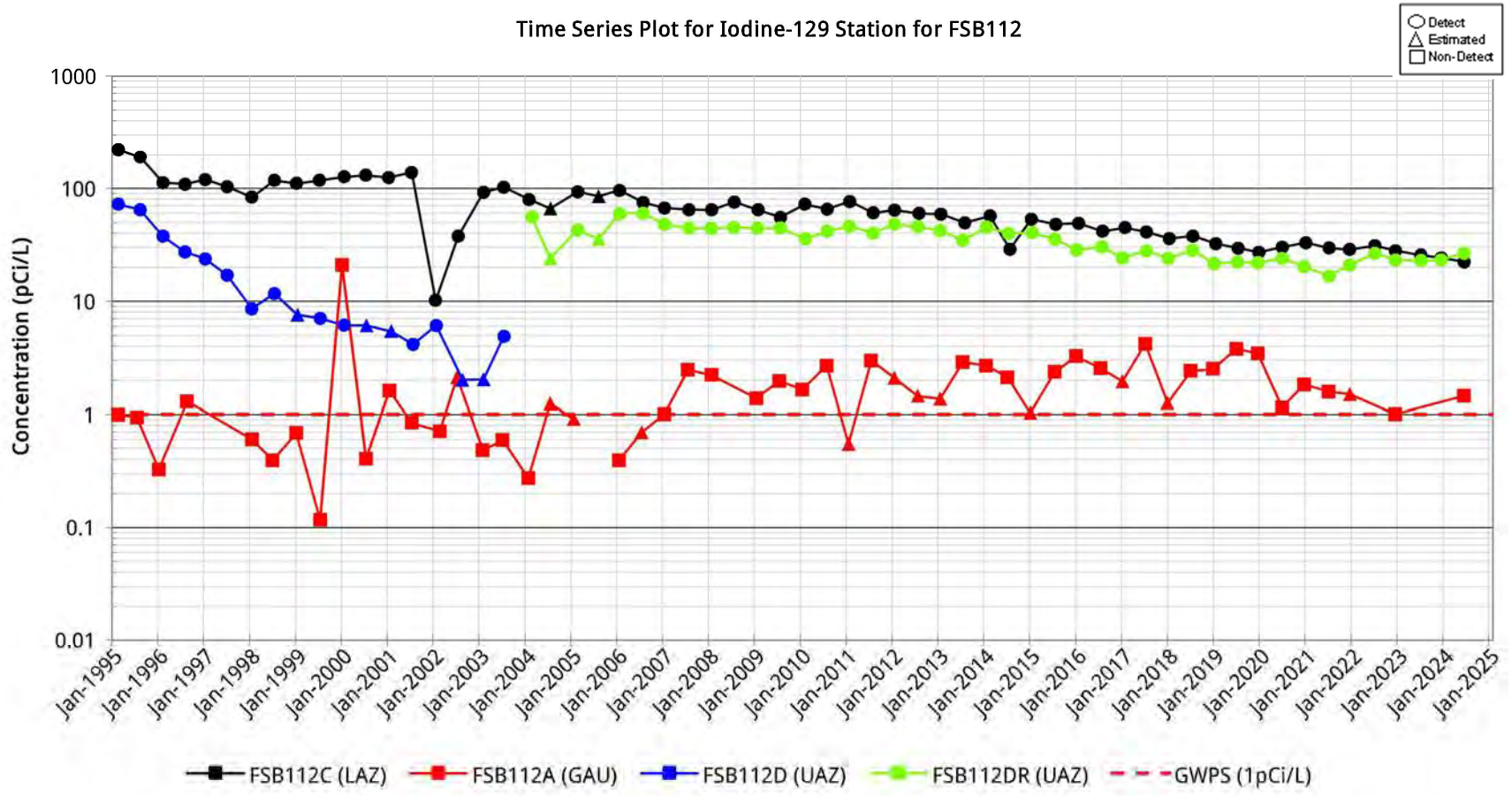

Time Series Plot for Iodine-129 Station for FSB 79
Detect
Estimated
Non-Detect
Concentration (pCi/L)
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
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Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 79C (LAZ)
FSB 79 (UAZ)
FSB 79B (GAU)
GWPS (1pCi/L)

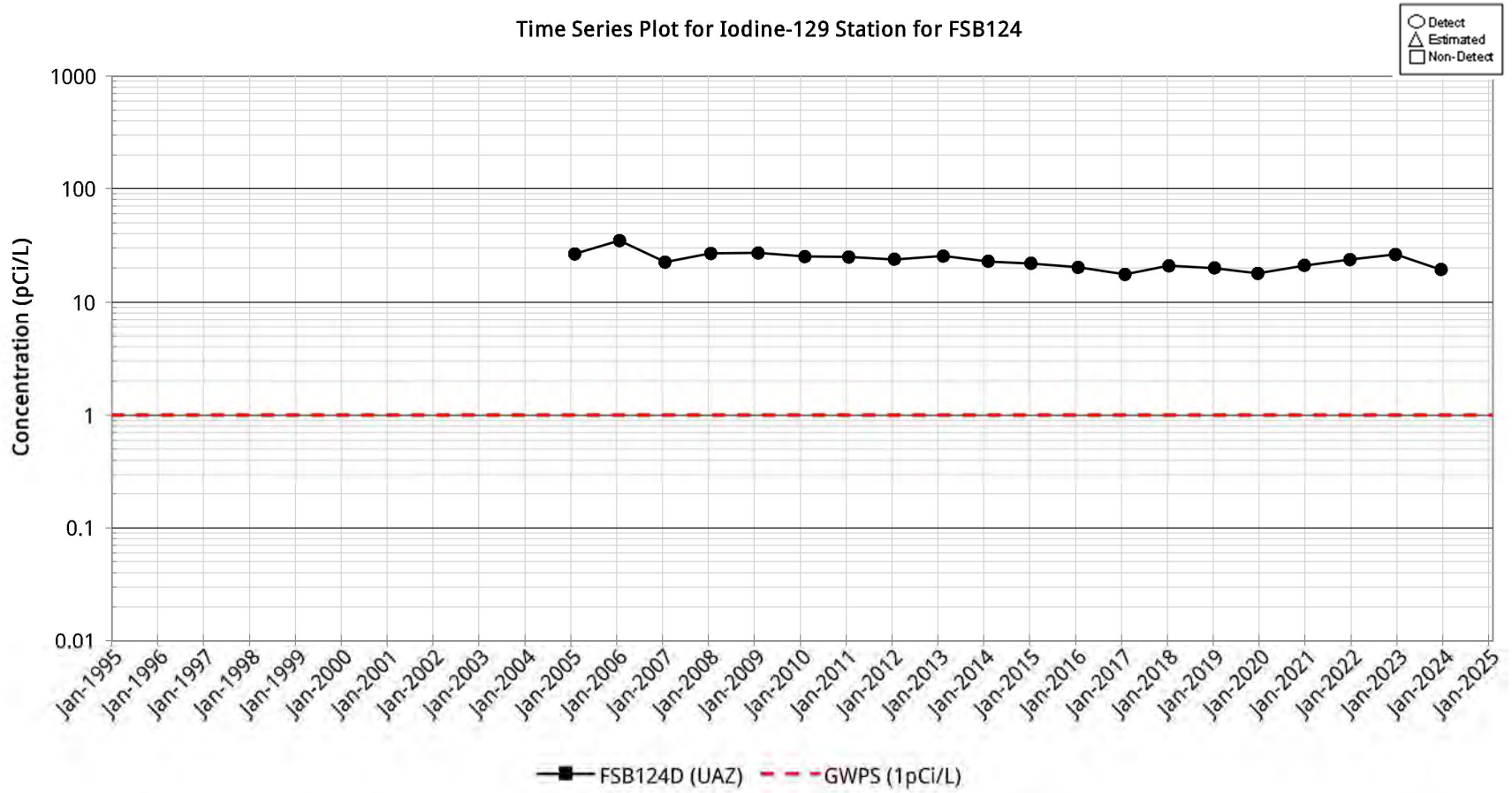

Time Series Plot for Iodine-129 Station for FSB 90
Detect
Estimated
Non-Detect
Concentration (pCi/L)
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
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Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
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Jan-2023
Jan-2024
Jan-2025
FSB 90C (LAZ)
FSB 90D (UAZ)
GWPS (1pCi/L)

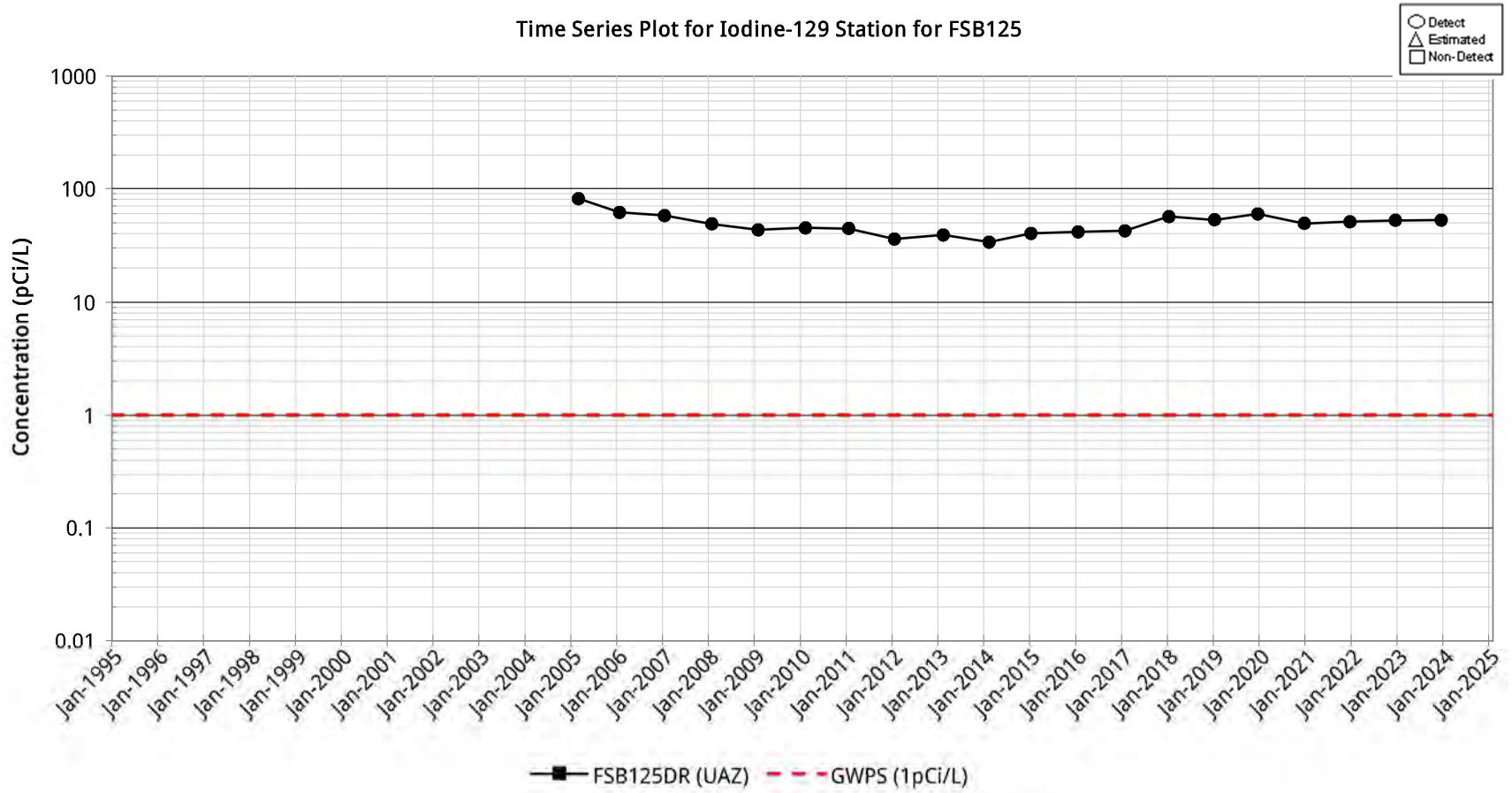

Time Series Plot for Iodine-129 Station for FSB 94
Detect
Estimated
Non-Detect
Concentration (pCi/L)
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 94DR (UAZ)
FSB 94C (LAZ)
GWPS (1pCi/L)

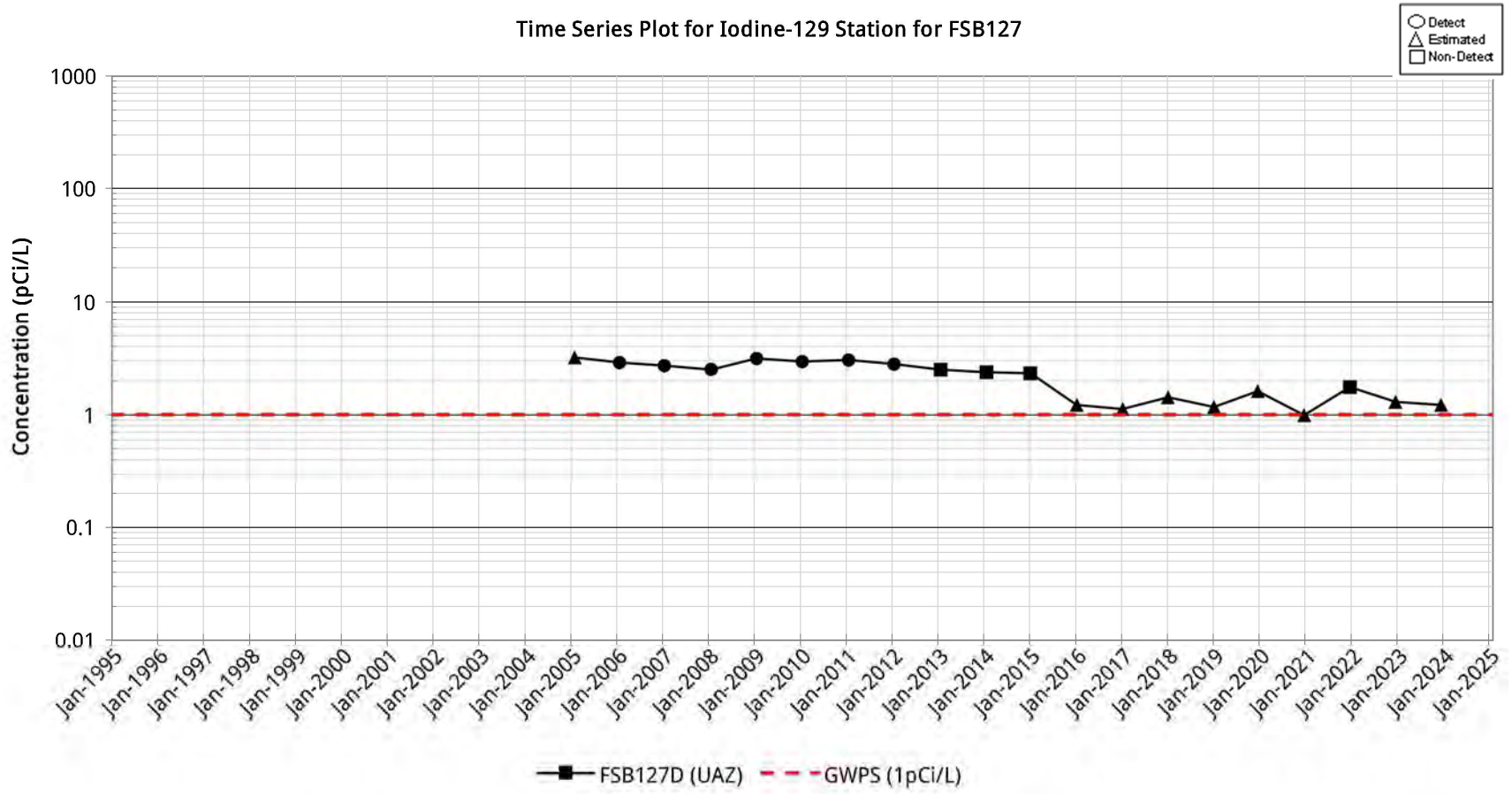

Time Series Plot for Iodine-129 Station for FSB 98
Detect
Estimated
Non-Detect
Concentration (pCi/L)
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
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Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 98D (UAZ)
FSB 98C (LAZ)
FSB 98AR (GAU)
GWPS (1pCi/L)

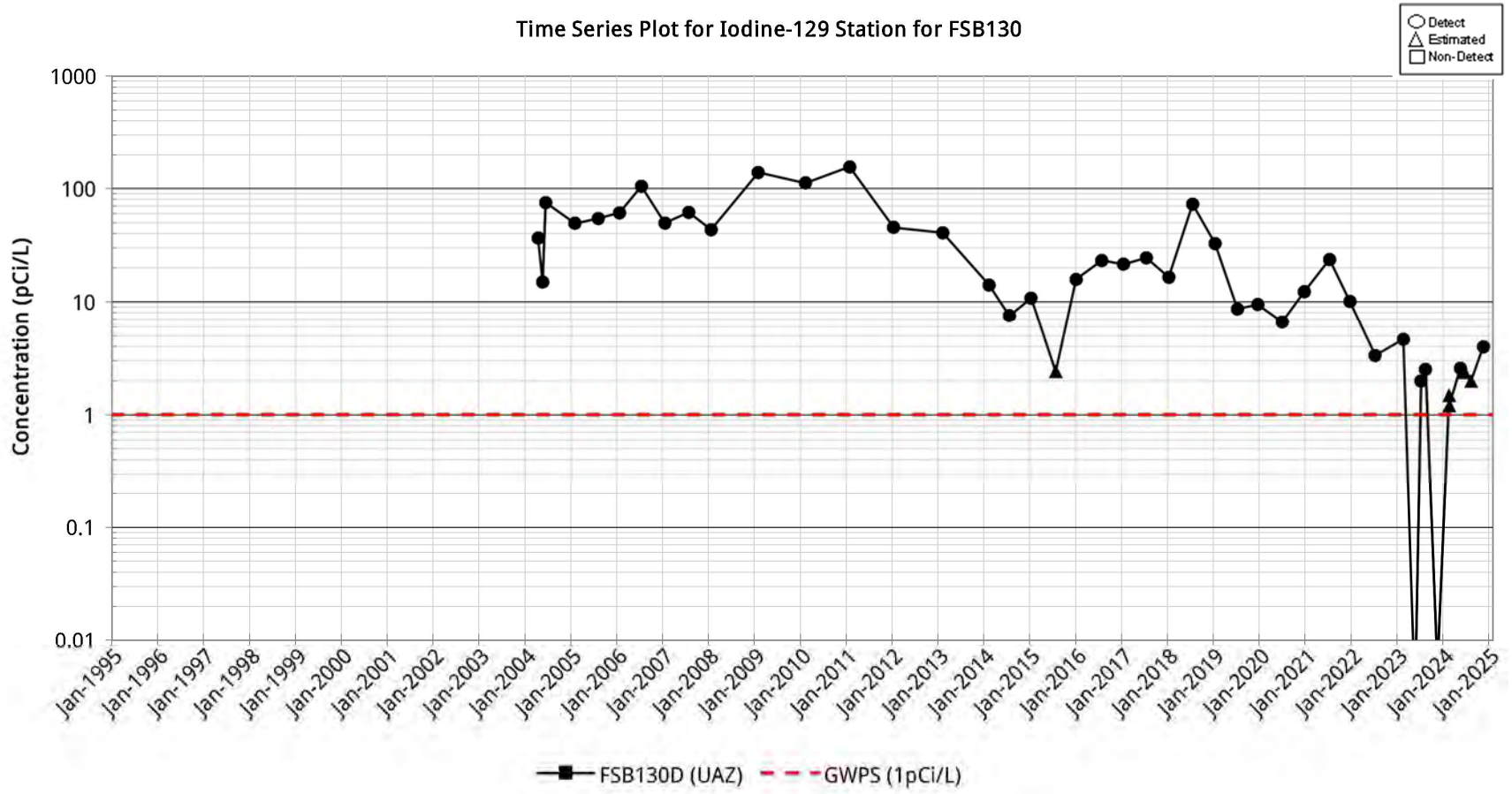

Time Series Plot for Iodine-129 Station for FSB104
Detect
Estimated
Non-Detect
Concentration (pCi/L)
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
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Jan-2018
Jan-2019
Jan-2020
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Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB104D (UAZ)
FSB104C (LAZ)
GWPS (1pCi/L)

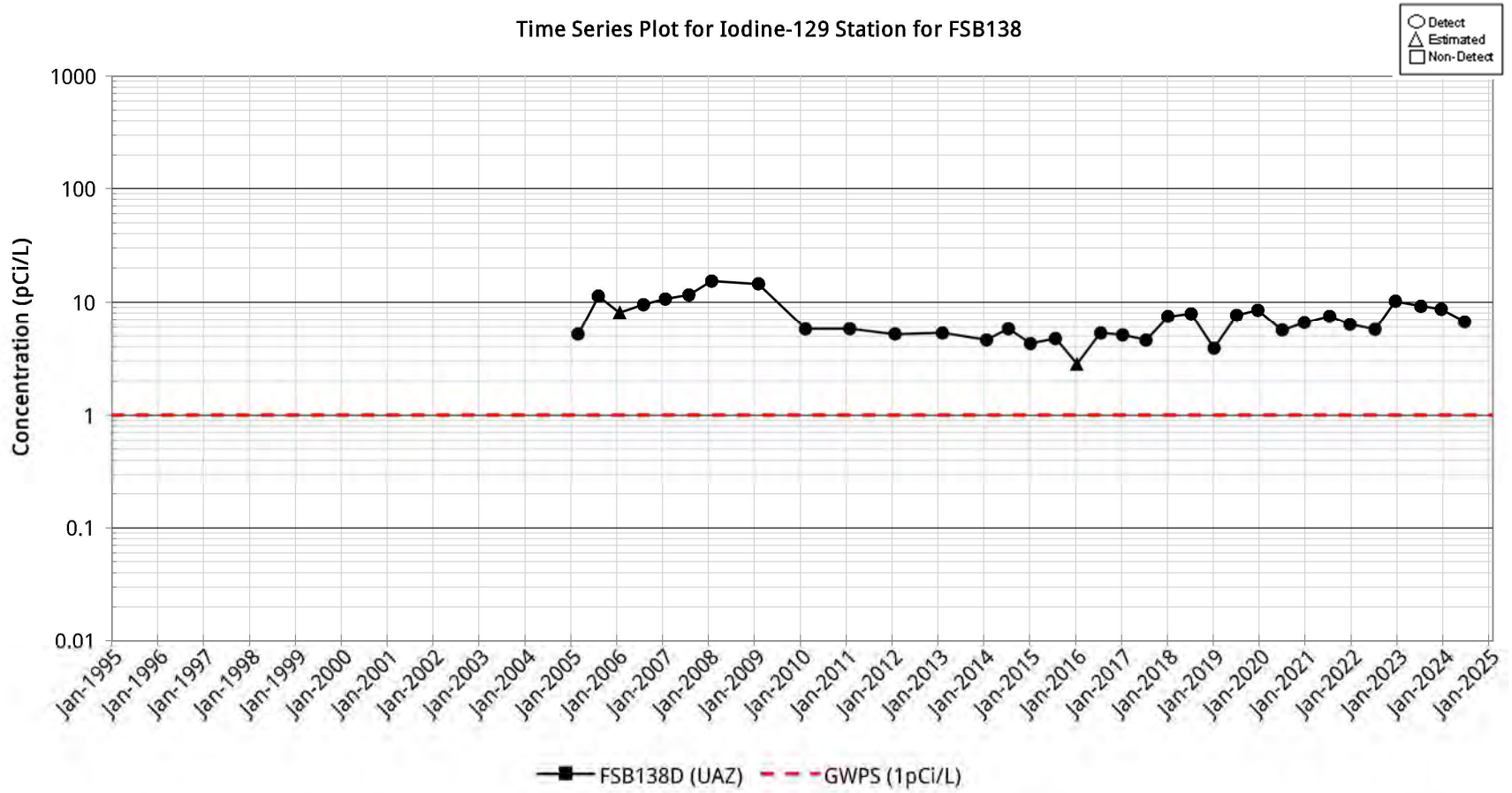

Time Series Plot for Iodine-129 Station for FSB112
Detect
Estimated
Non-Detect
Concentration (pCi/L)
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB112C (LAZ)
FSB112A (GAU)
FSB112D (UAZ)
FSB112DR (UAZ)
GWPS (1pCi/L)

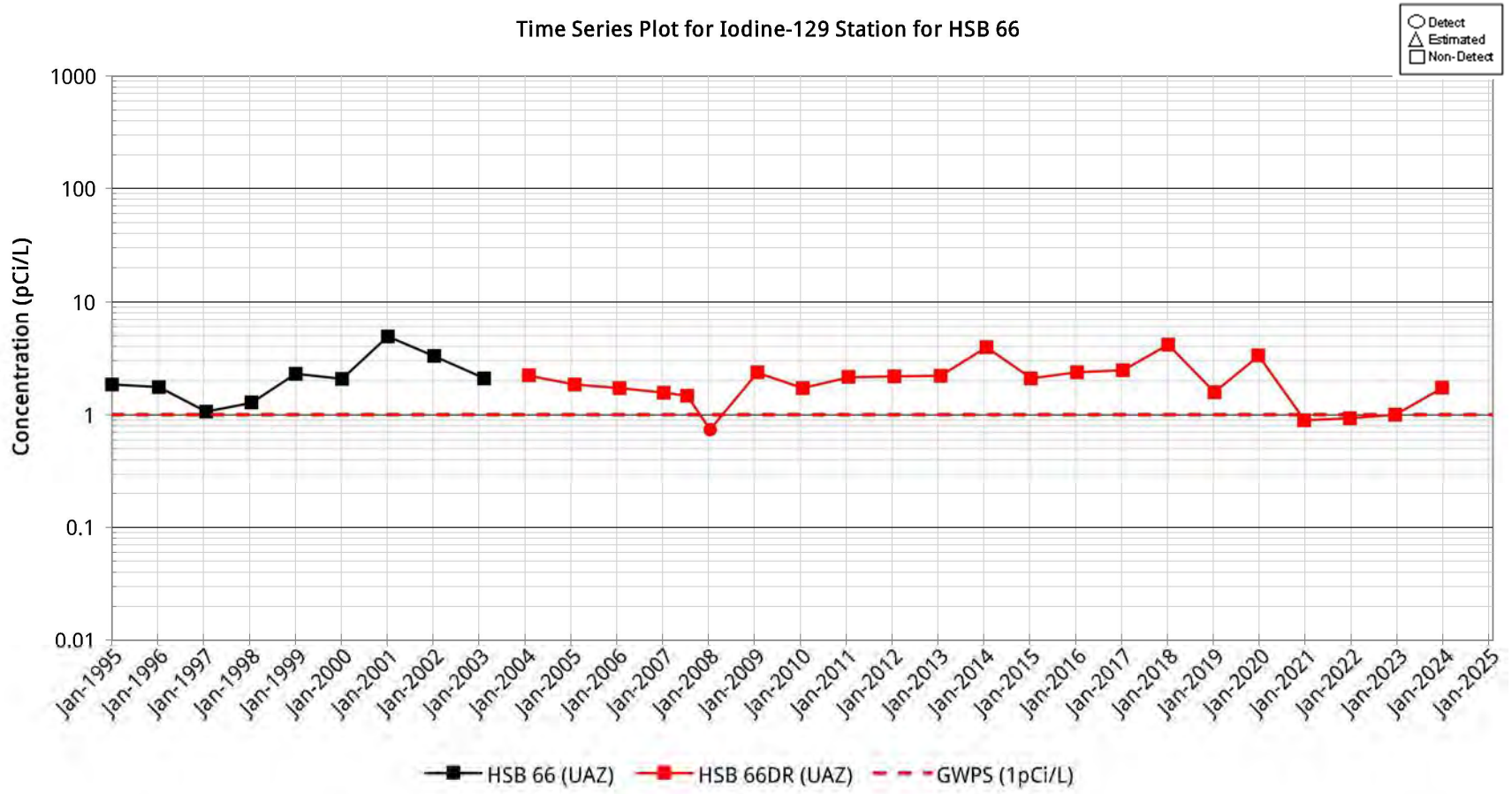

Time Series Plot for Iodine-129 Station for FSB124
Detect
Estimated
Non-Detect
Concentration (pCi/L)
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
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Jan-2018
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Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB124D (UAZ)
GWPS (1pCi/L)

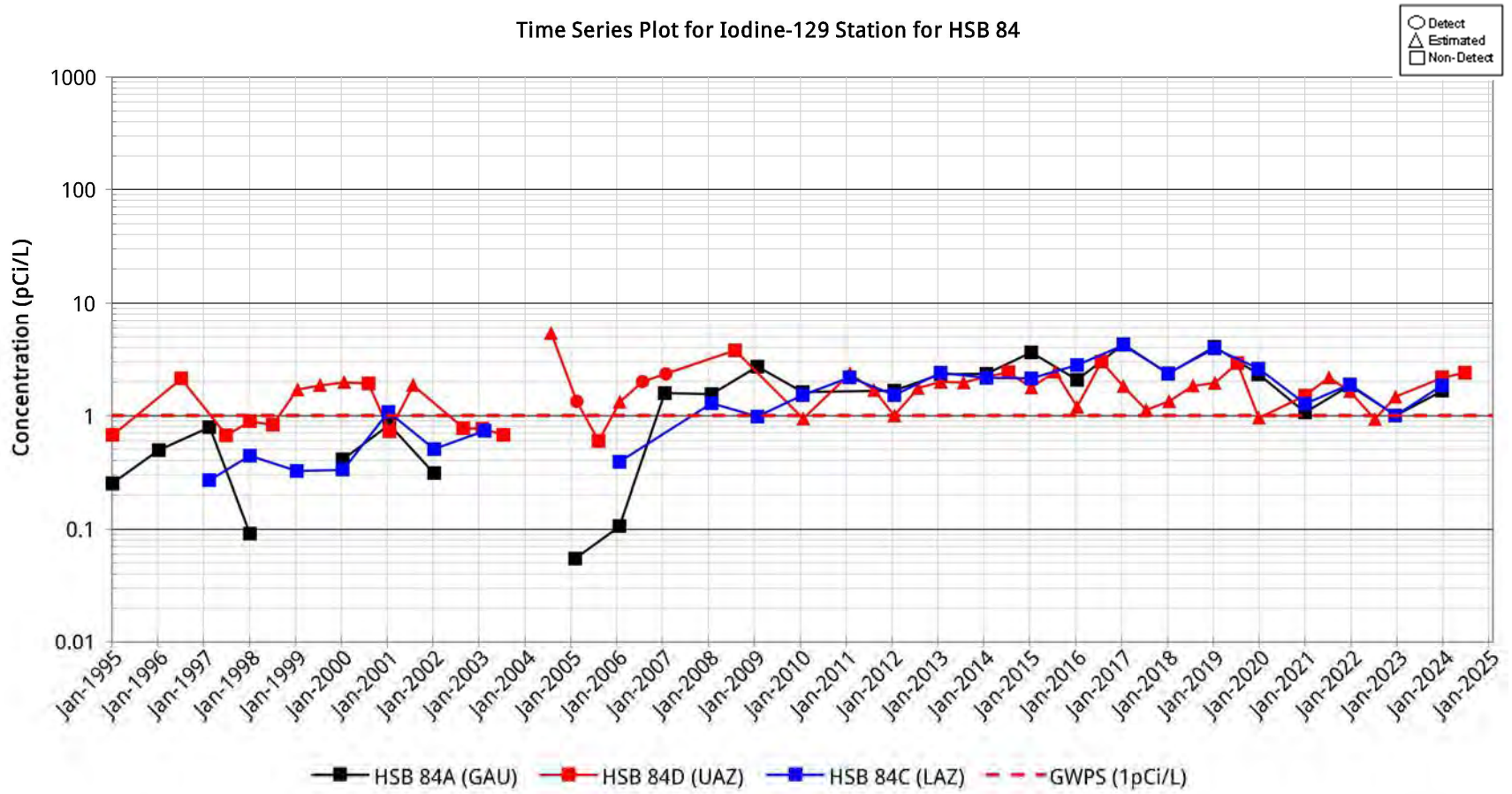

Time Series Plot for Iodine-129 Station for FSB125
Detect
Estimated
Non-Detect
Concentration (pCi/L)
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2013
Jan-2014
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Jan-2016
Jan-2017
Jan-2018
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Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB125DR (UAZ)
GWPS (1pCi/L)

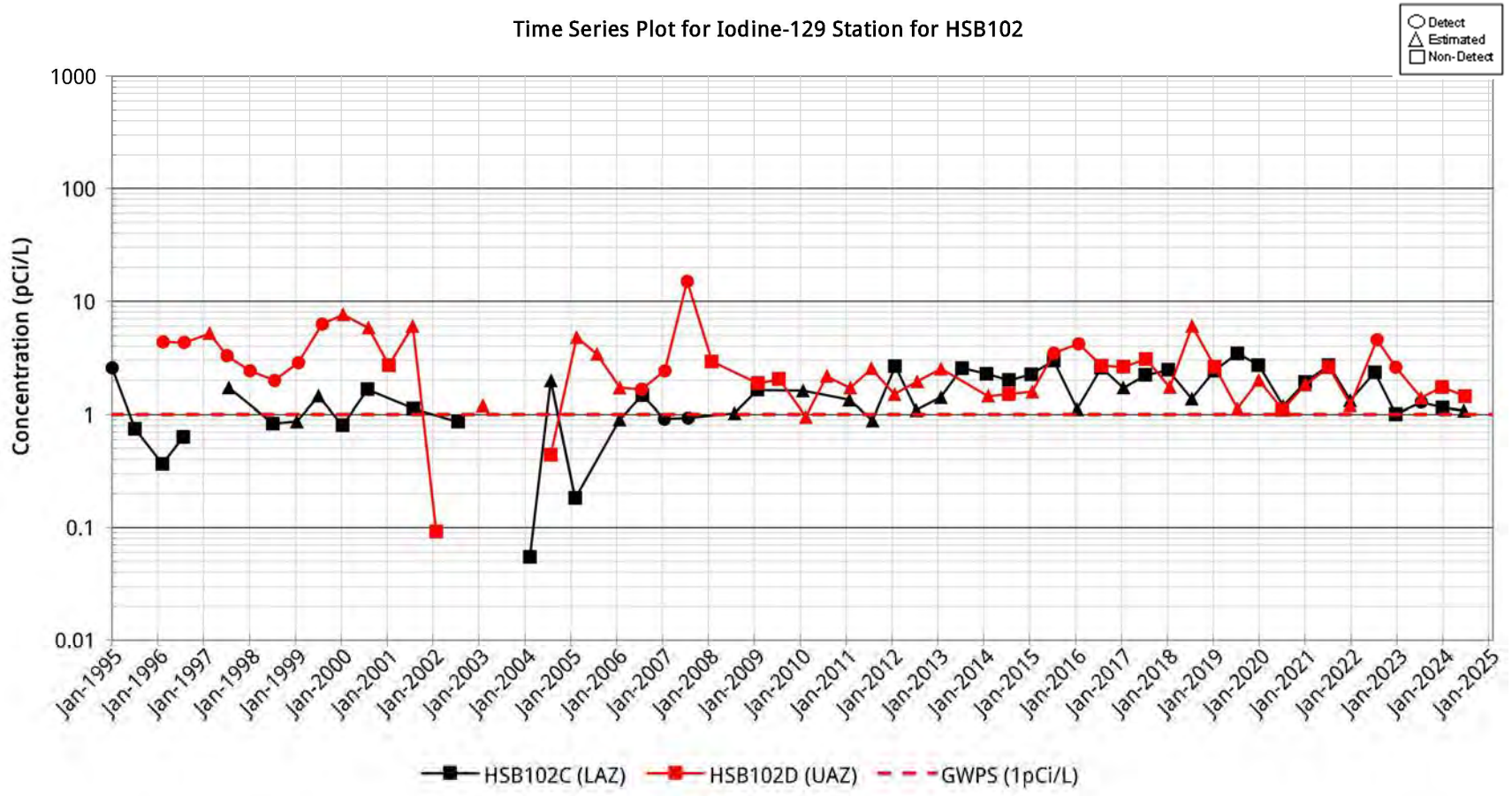

Time Series Plot for Iodine-129 Station for FSB127
Detect
Estimated
Non-Detect
Concentration (pCi/L)
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
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Jan-2004
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Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB127D (UAZ)
GWPS (1pCi/L)

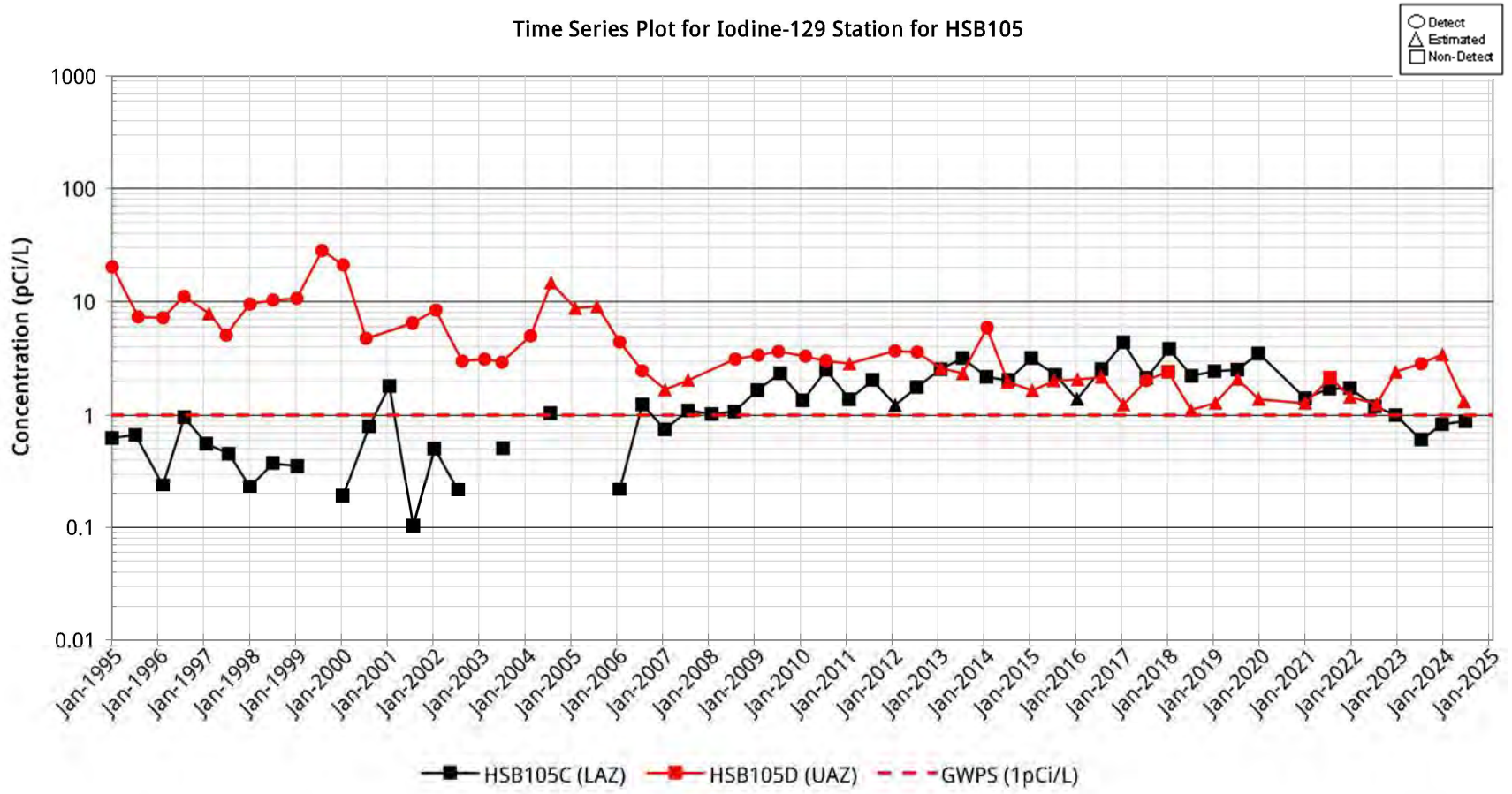

Time Series Plot for Iodine-129 Station for FSB130
Detect
Estimated
Non-Detect
Concentration (pCi/L)
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
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Jan-2007
Jan-2008
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Jan-2010
Jan-2011
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Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB130D (UAZ)
GWPS (1pCi/L)

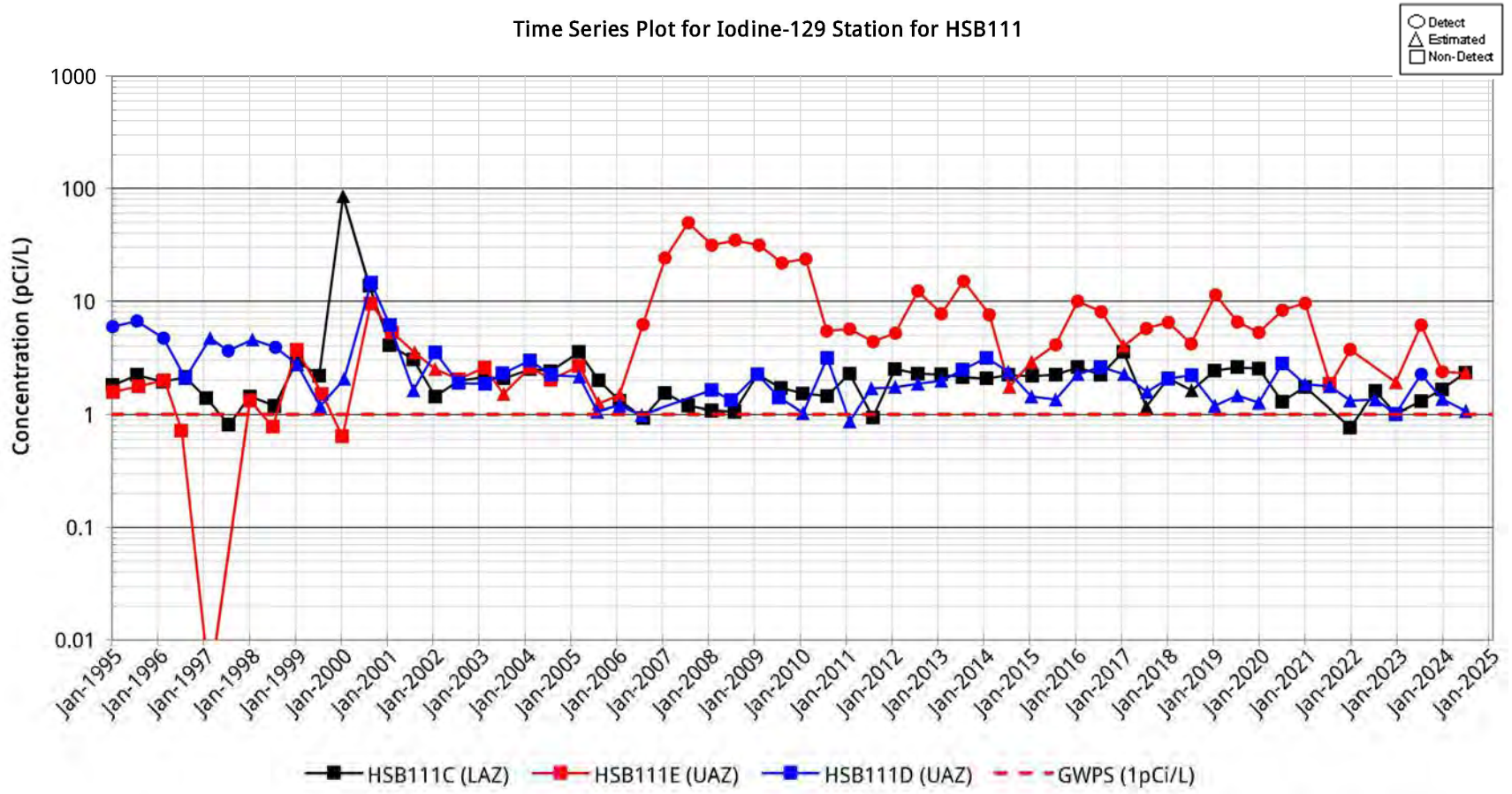

Time Series Plot for Iodine-129 Station for FSB138
Detect
Estimated
Non-Detect
Concentration (pCi/L)
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB138D (UAZ)
GWPS (1pCi/L)

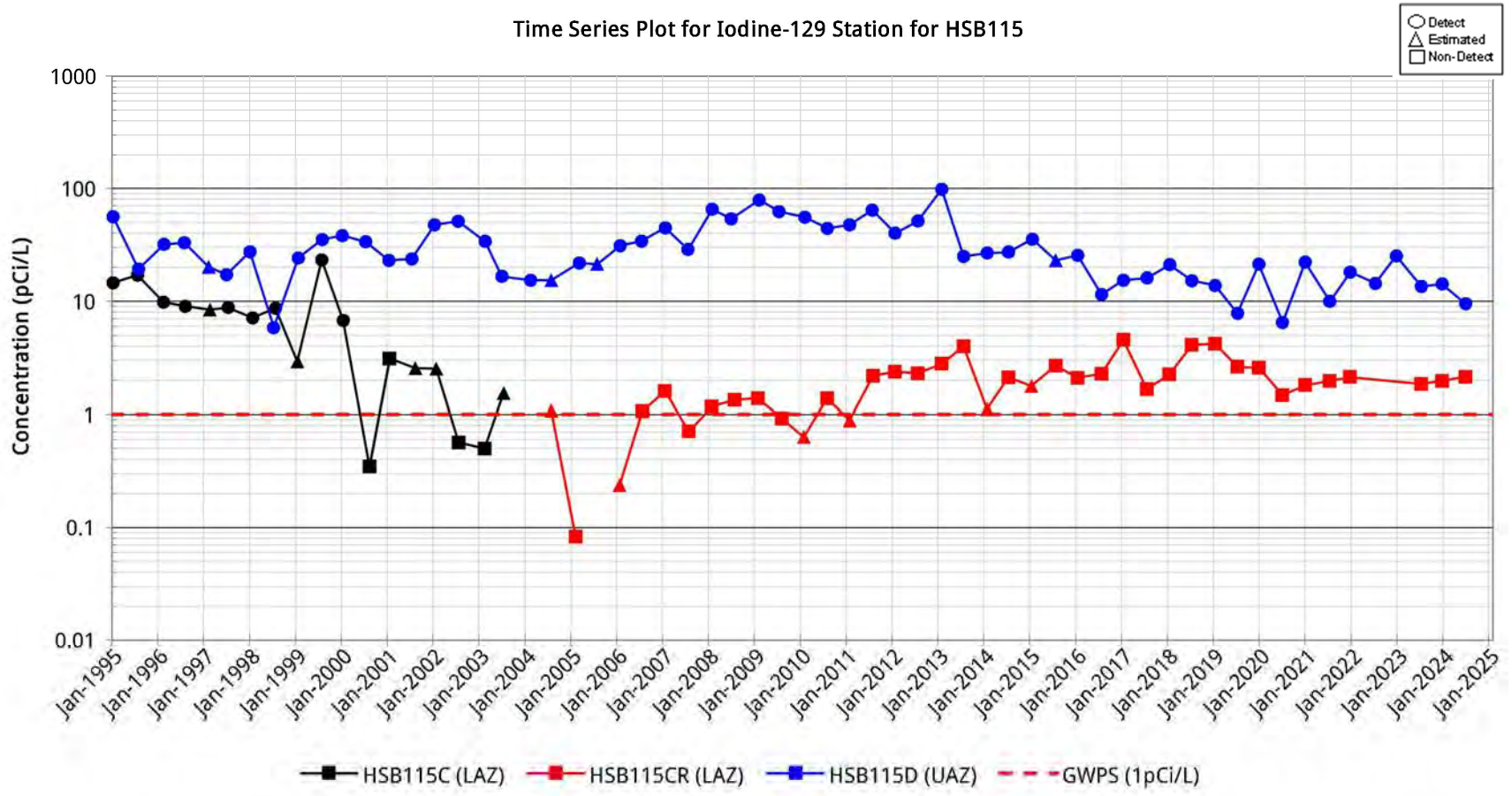

Time Series Plot for Iodine-129 Station for HSB 66
Detect
Estimated
Non-Detect
Concentration (pCi/L)
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2010
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Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB 66 (UAZ)
HSB 66DR (UAZ)
GWPS (1pCi/L)

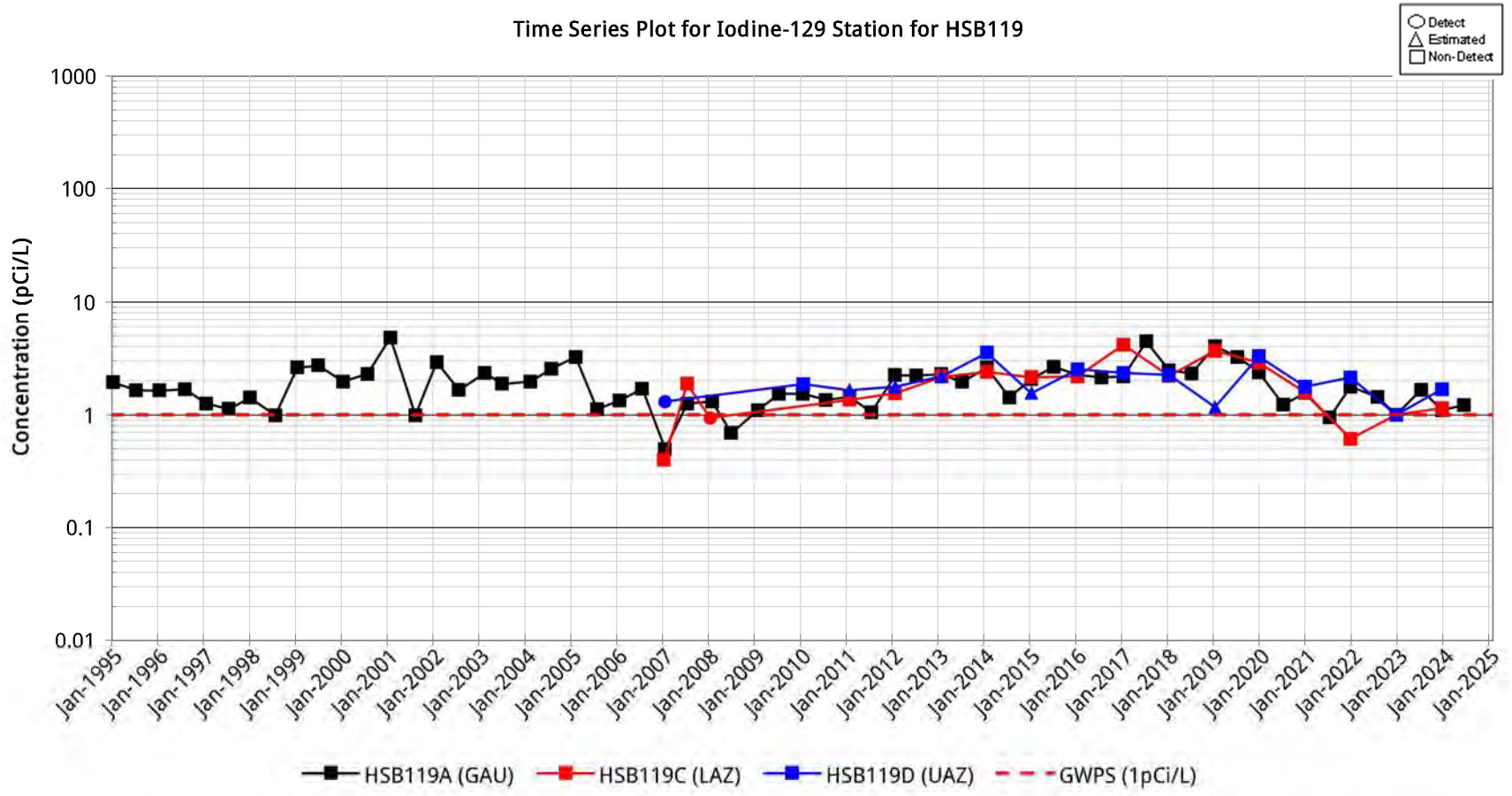

Time Series Plot for Iodine-129 Station for HSB 84
Detect
Estimated
Non-Detect
Concentration (pCi/L)
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
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Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB 84A (GAU)
HSB 84D (UAZ)
HSB 84C (LAZ)
GWPS (1pCi/L)

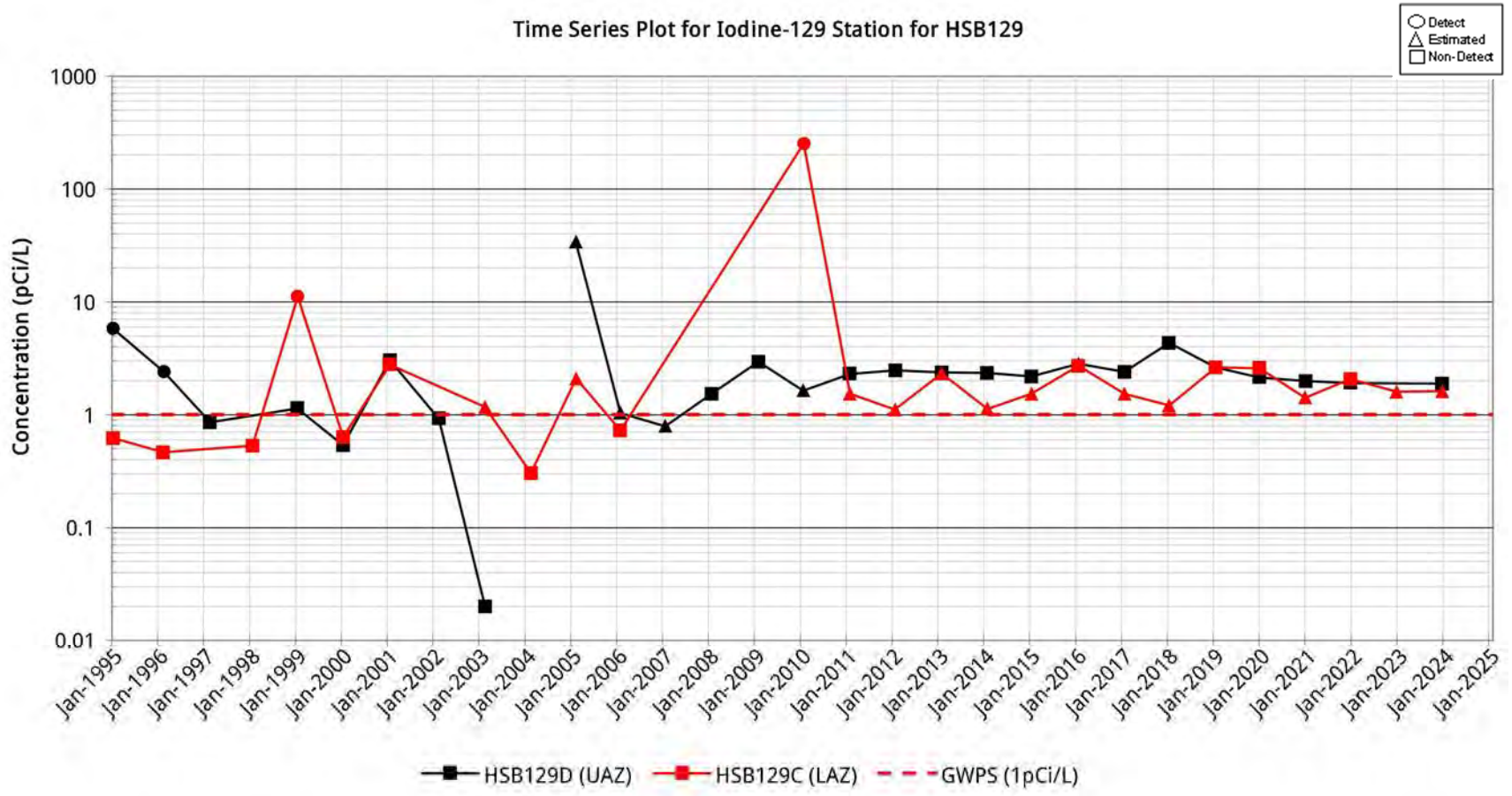

Time Series Plot for Iodine-129 Station for HSB102
Detect
Estimated
Non-Detect
Concentration (pCi/L)
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB102C (LAZ)
HSB102D (UAZ)
GWPS (1pCi/L)

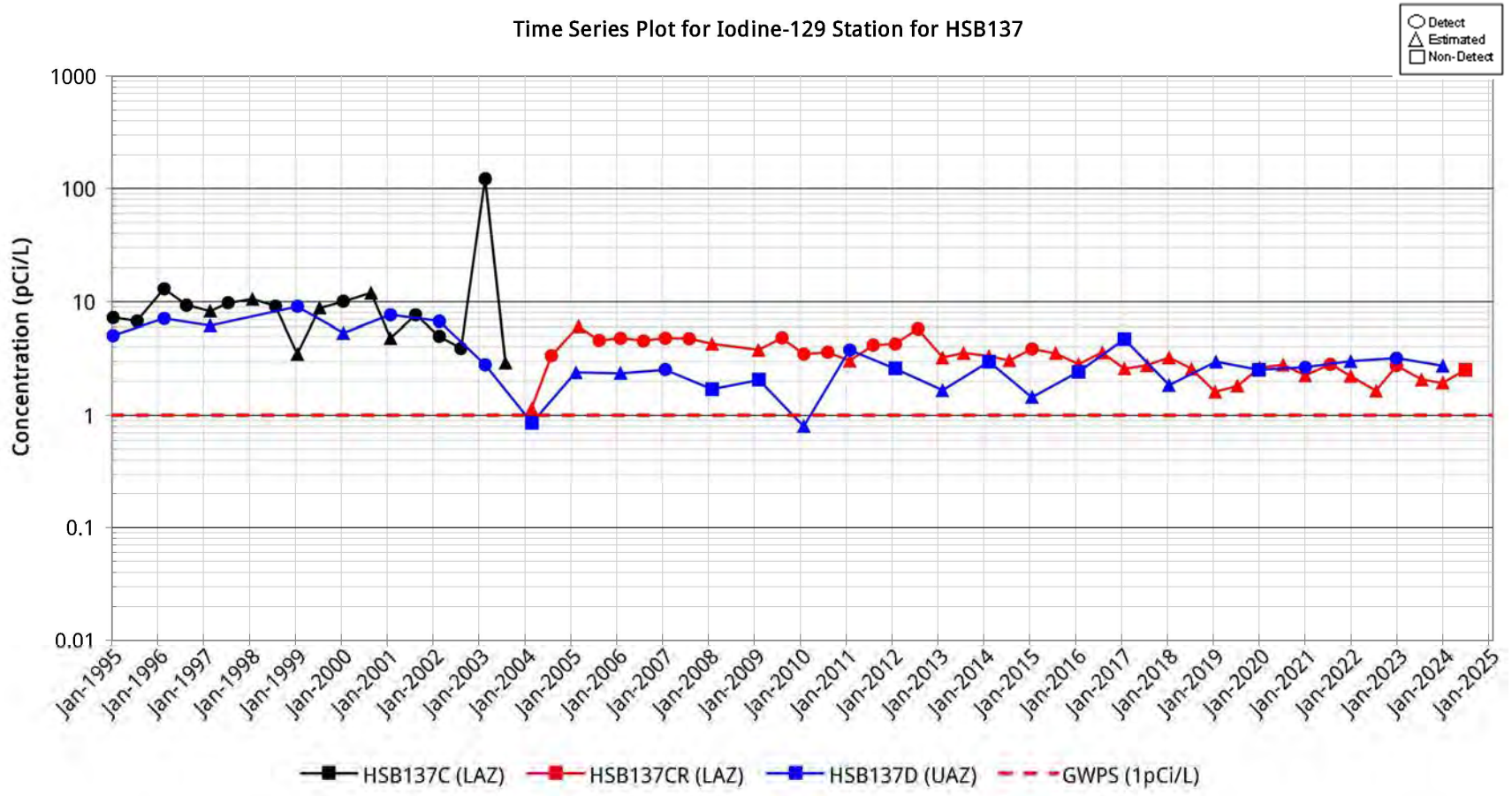

Time Series Plot for Iodine-129 Station for HSB105
Detect
Estimated
Non-Detect
Concentration (pCi/L)
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
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Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB105C (LAZ)
HSB105D (UAZ)
GWPS (1pCi/L)

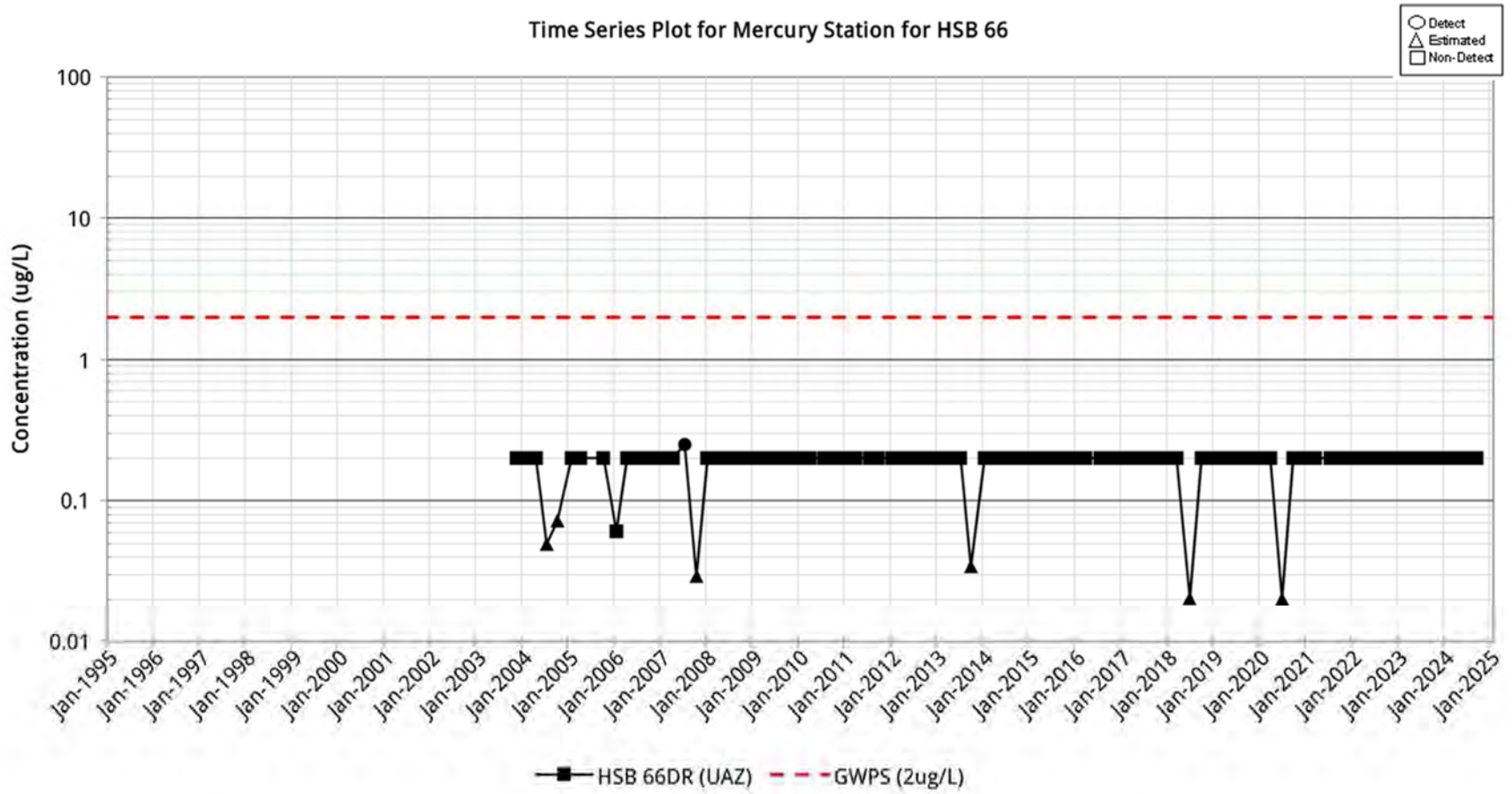

Time Series Plot for Iodine-129 Station for HSB111
Detect
Estimated
Non-Detect
Concentration (pCi/L)
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
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Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB111C (LAZ)
HSB111E (UAZ)
HSB111D (UAZ)
GWPS (1pCi/L)

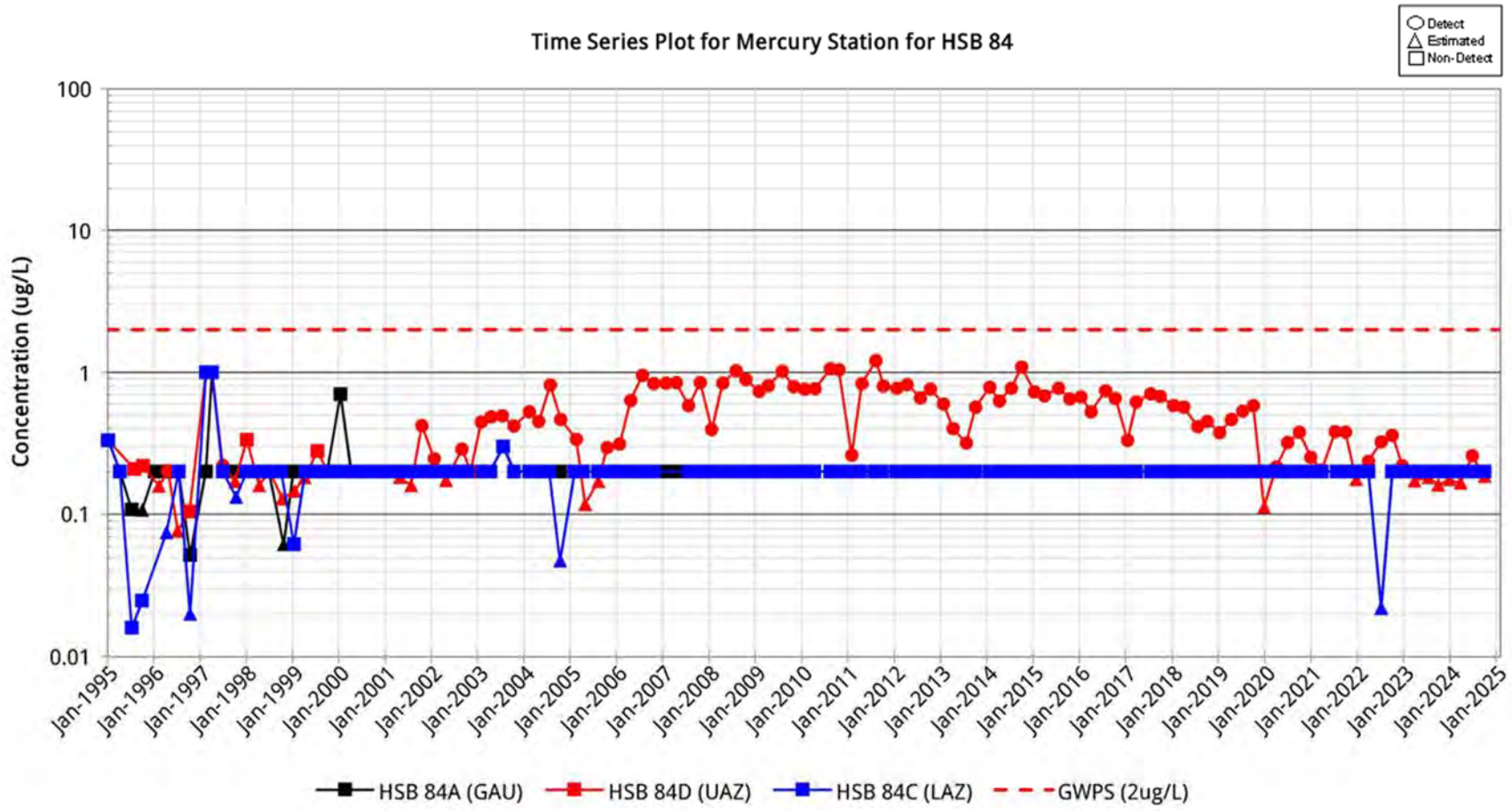

Time Series Plot for Iodine-129 Station for HSB115
Detect
Estimated
Non-Detect
Concentration (pCi/L)
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB115C (LAZ)
HSB115CR (LAZ)
HSB115D (UAZ)
GWPS (1pCi/L)

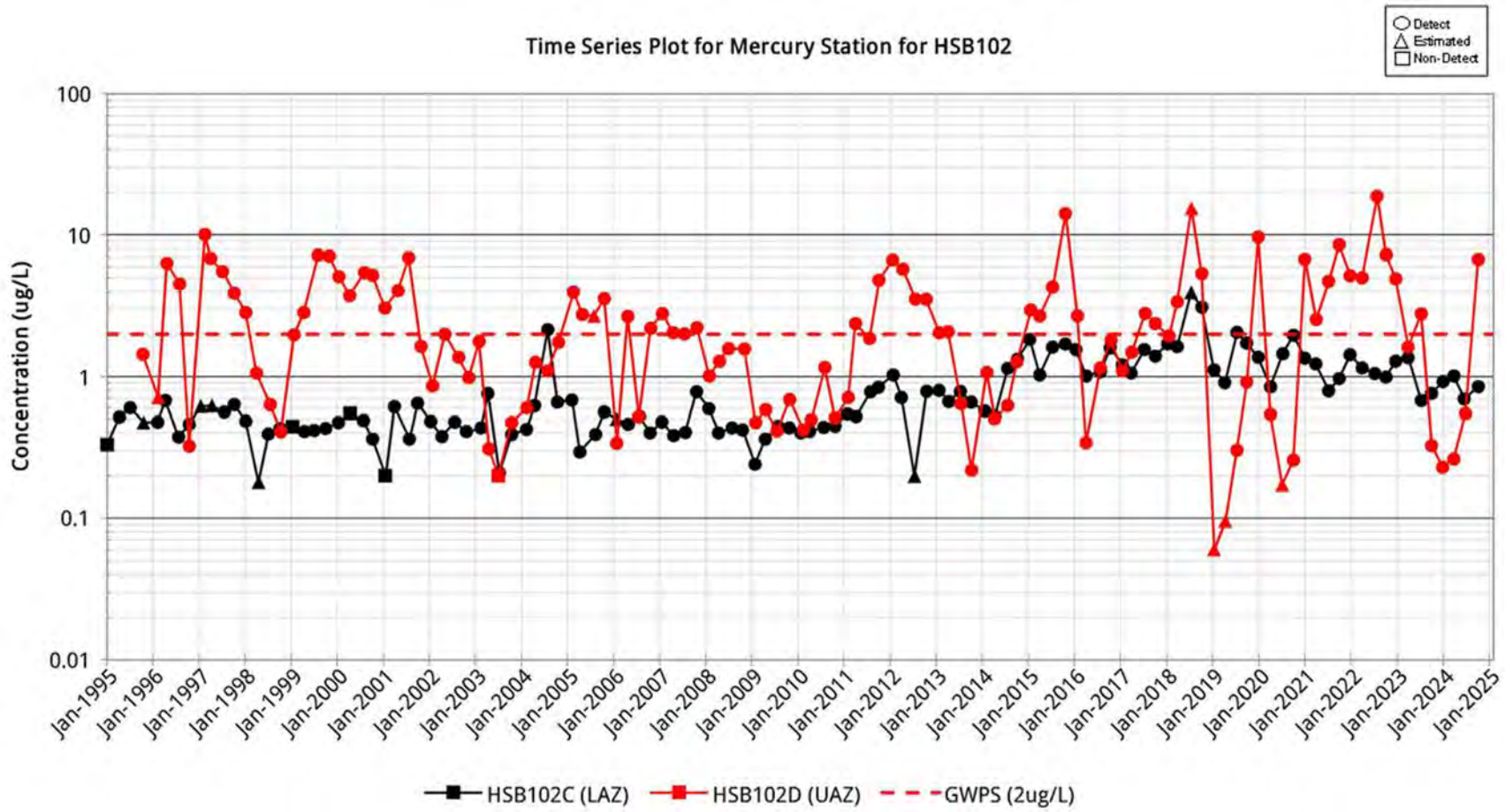

Time Series Plot for Iodine-129 Station for HSB119
Detect
Estimated
Non-Detect
Concentration (pCi/L)
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
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Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB119A (GAU)
HSB119C (LAZ)
HSB119D (UAZ)
GWPS (1pCi/L)

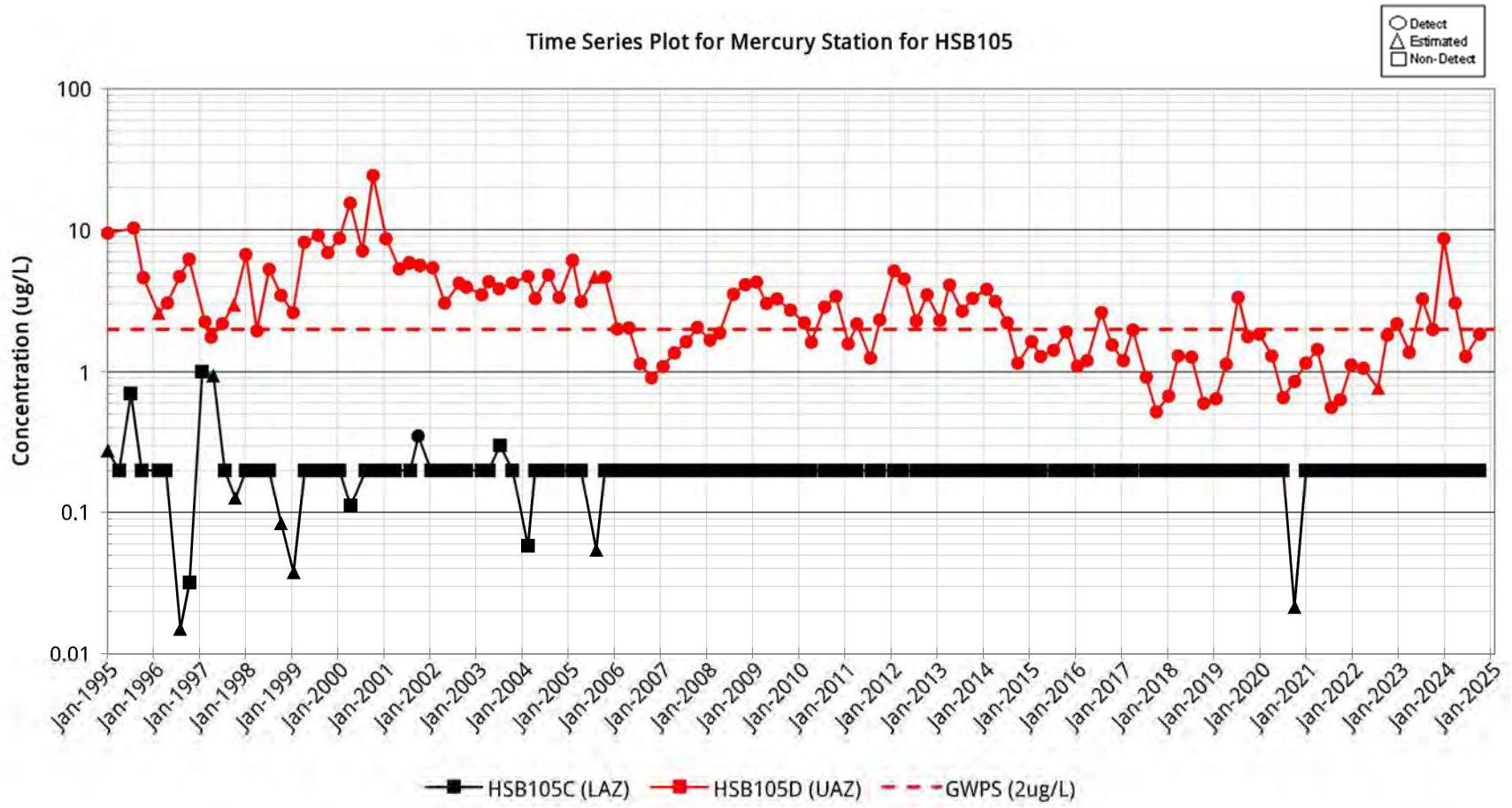

Time Series Plot for Iodine-129 Station for HSB129
Detect
Estimated
Non-Detect
Concentration (pCi/L)
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
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Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB129D (UAZ)
HSB129C (LAZ)
GWPS (1pCi/L)

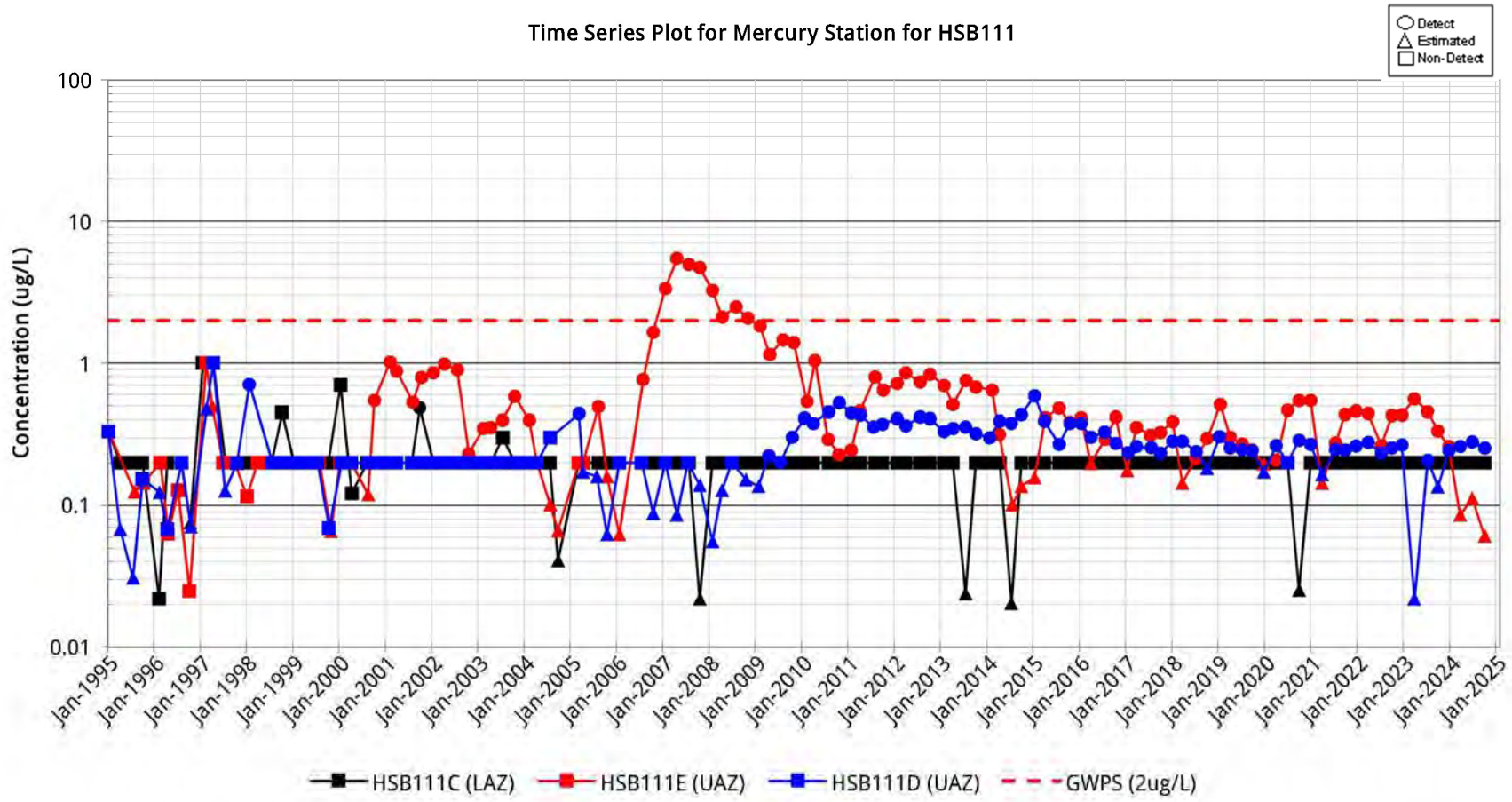

Time Series Plot for Iodine-129 Station for HSB137
Detect
Estimated
Non-Detect
Concentration (pCi/L)
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB137C (LAZ)
HSB137CR (LAZ)
HSB137D (UAZ)
GWPS (1pCi/L)

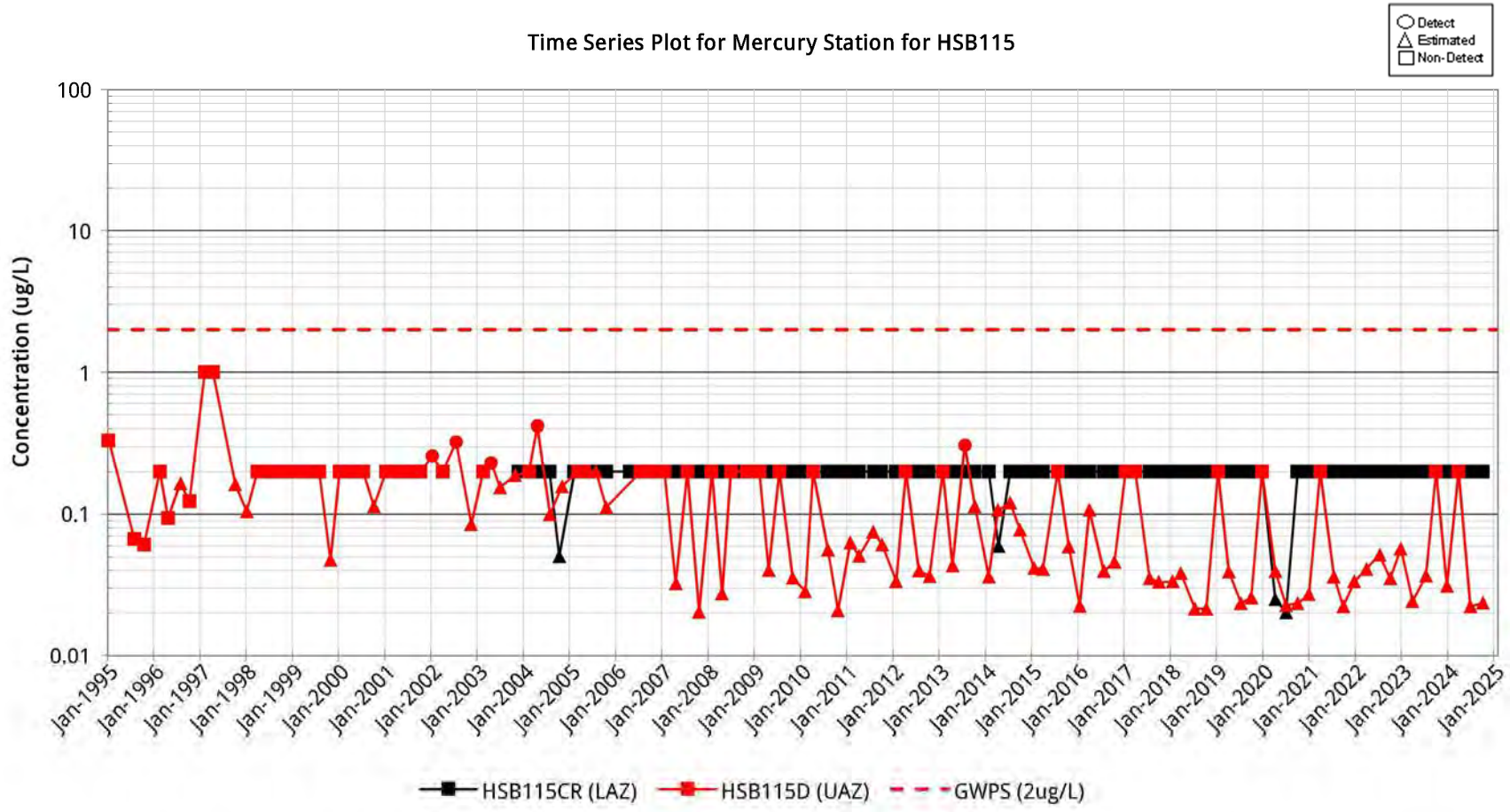

Time Series Plot for Mercury Station for HSB 66
Detect
Estimated
Non-Detect
Concentration (ug/L)
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
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Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB 66DR (UAZ)
GWPS (2ug/L)

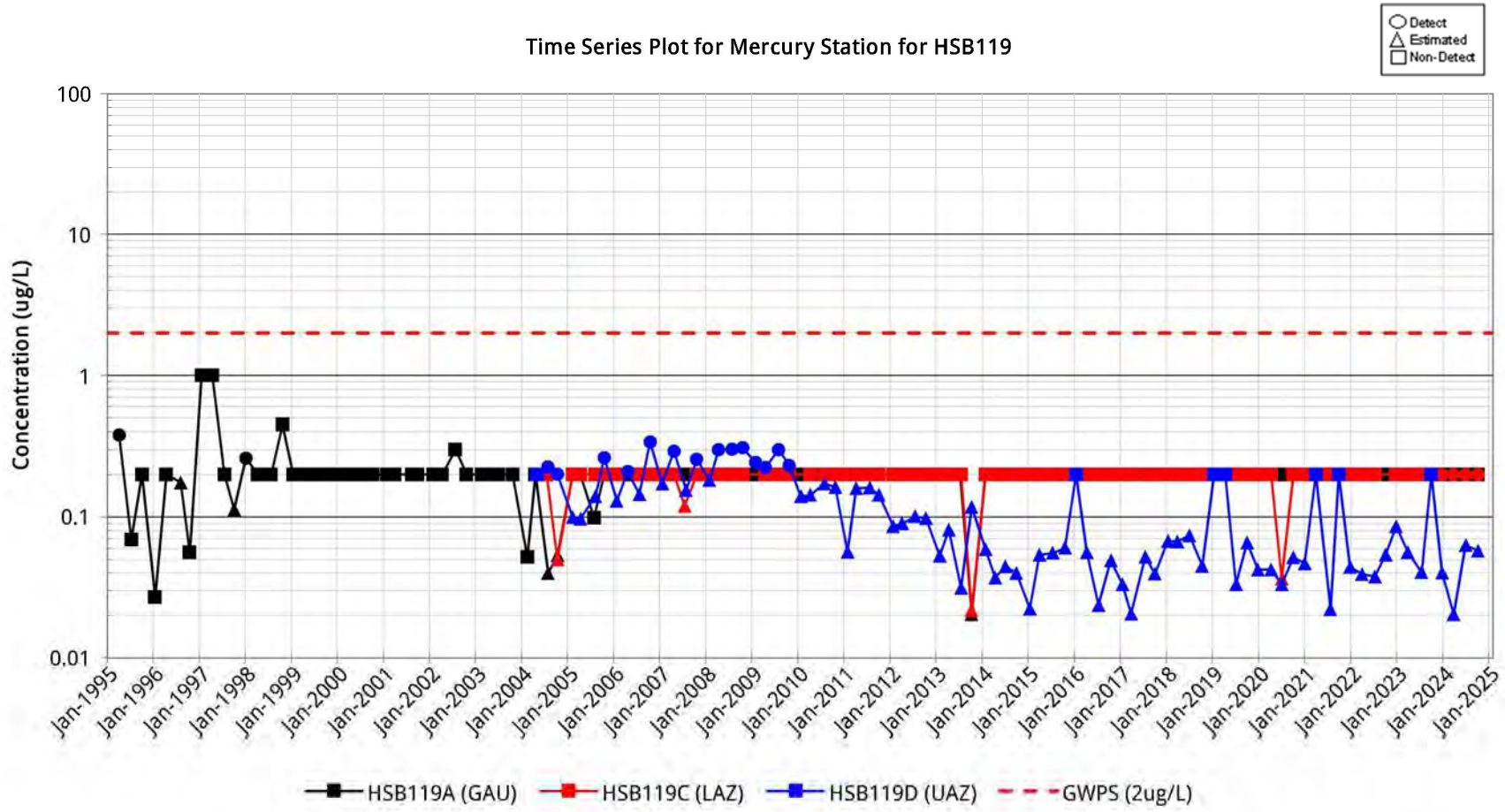

Time Series Plot for Mercury Station for HSB 84
Detect
Estimated
Non-Detect
Concentration (ug/L)
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2010
Jan-2011
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Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB 84A (GAU)
HSB 84D (UAZ)
HSB 84C (LAZ)
GWPS (2ug/L)

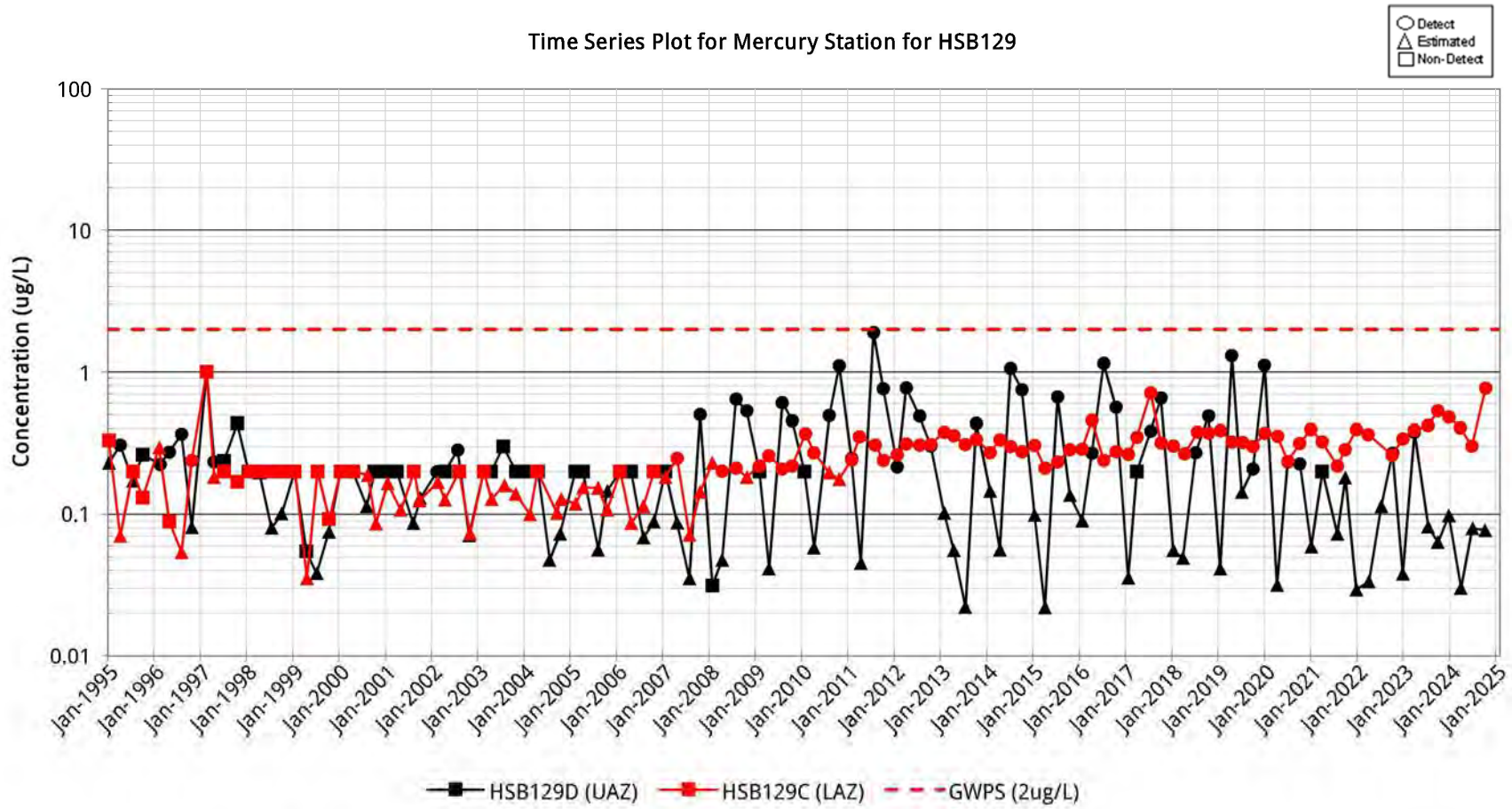

Time Series Plot for Mercury Station for HSB102
Detect
Estimated
Non-Detect
Concentration (ug/L)
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2011
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Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB102C (LAZ)
HSB102D (UAZ)
GWPS (2ug/L)

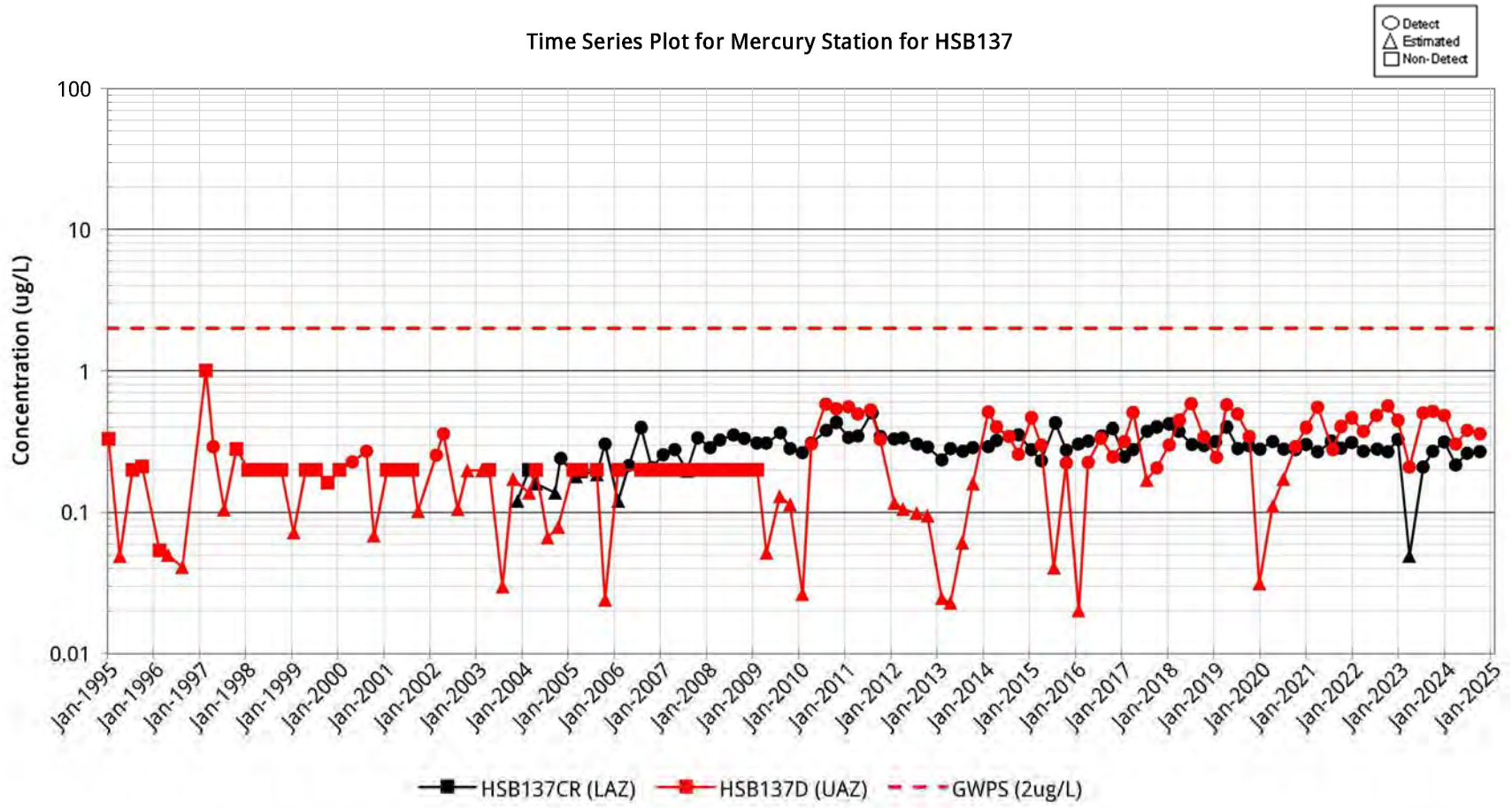

Time Series Plot for Mercury Station for HSB105
Detect
Estimated
Non-Detect
Concentration (ug/L)
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
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Jan-2011
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Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB105C (LAZ)
HSB105D (UAZ)
GWPS (2ug/L)

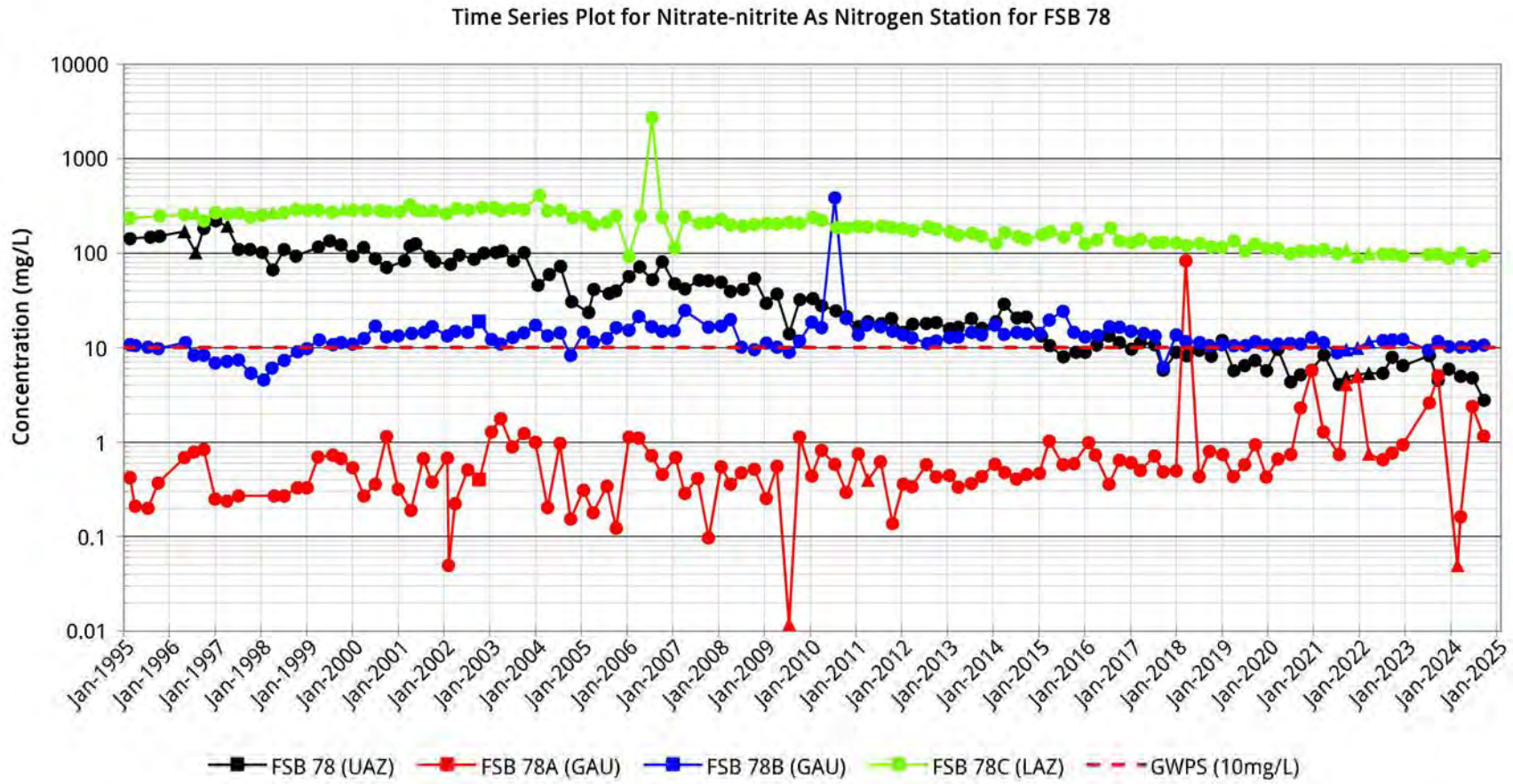

Time Series Plot for Mercury Station for HSB111
Detect
Estimated
Non-Detect
Concentration (ug/L)
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB111C (LAZ)
HSB111E (UAZ)
HSB111D (UAZ)
GWPS (2ug/L)

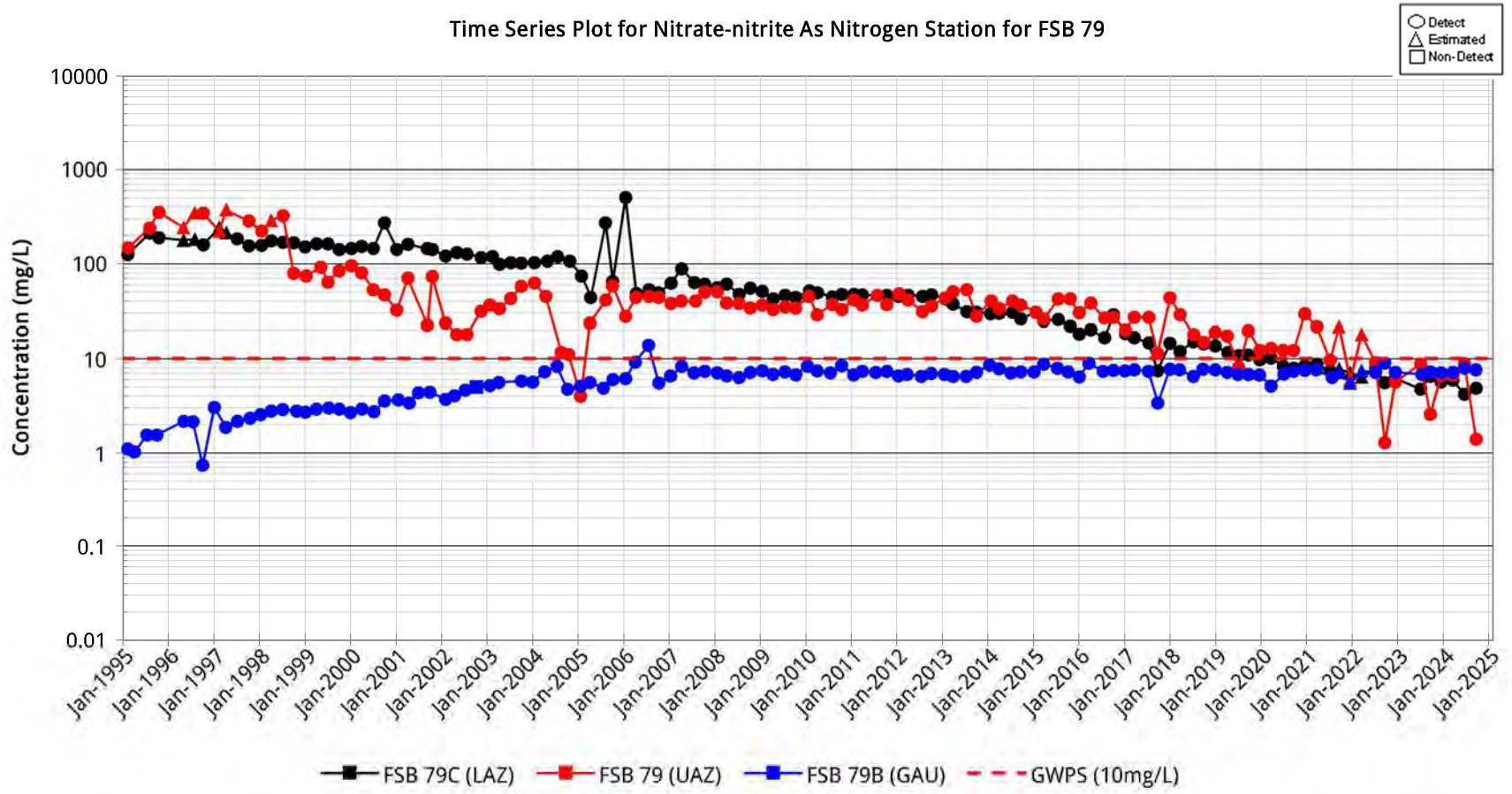

Time Series Plot for Mercury Station for HSB115
Detect
Estimated
Non-Detect
Concentration (ug/L)
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB115CR (LAZ)
HSB115D (UAZ)
GWPS (2ug/L)

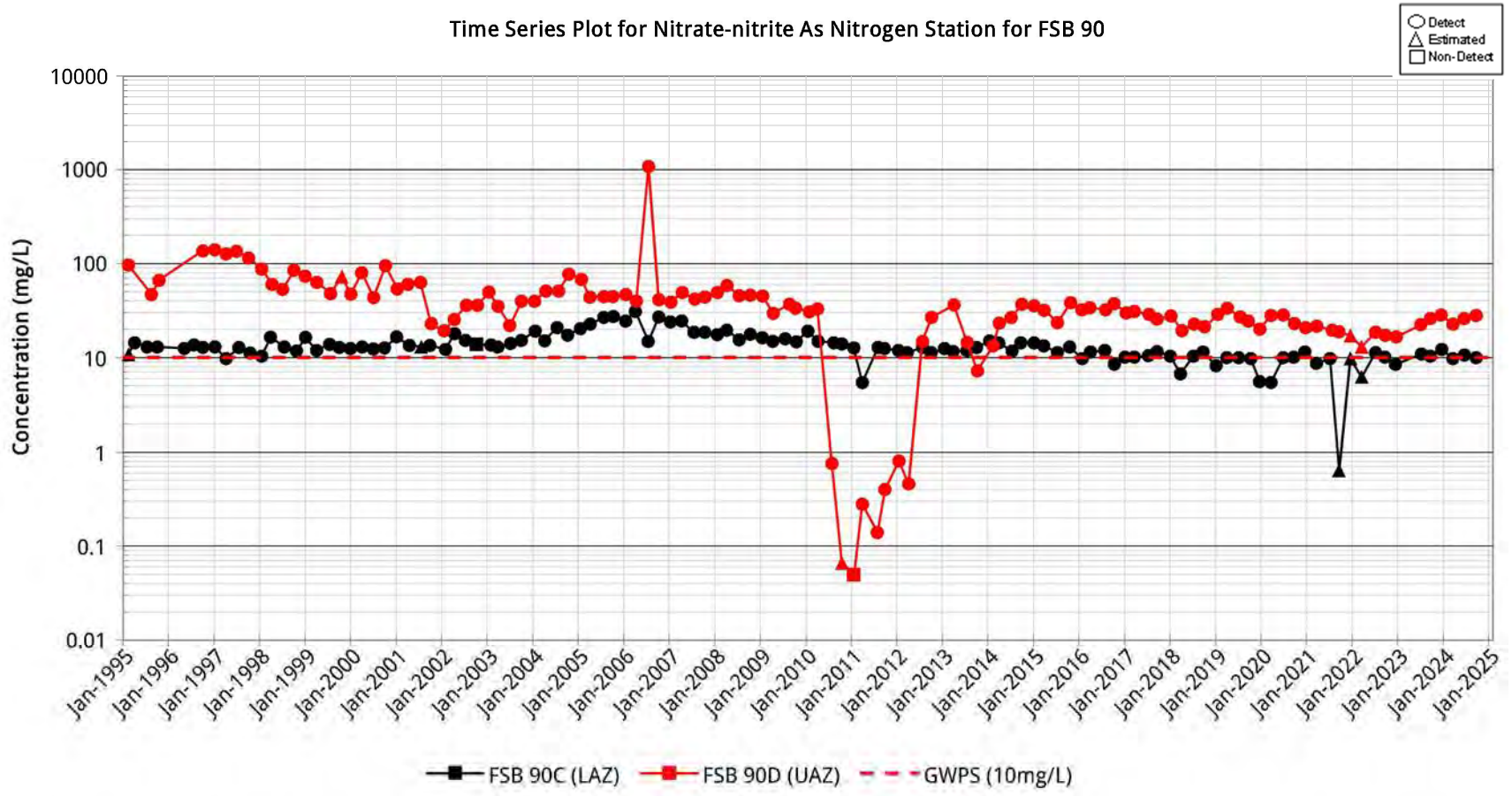

Time Series Plot for Mercury Station for HSB119
Detect
Estimated
Non-Detect
Concentration (ug/L)
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB119A (GAU)
HSB119C (LAZ)
HSB119D (UAZ)
GWPS (2ug/L)

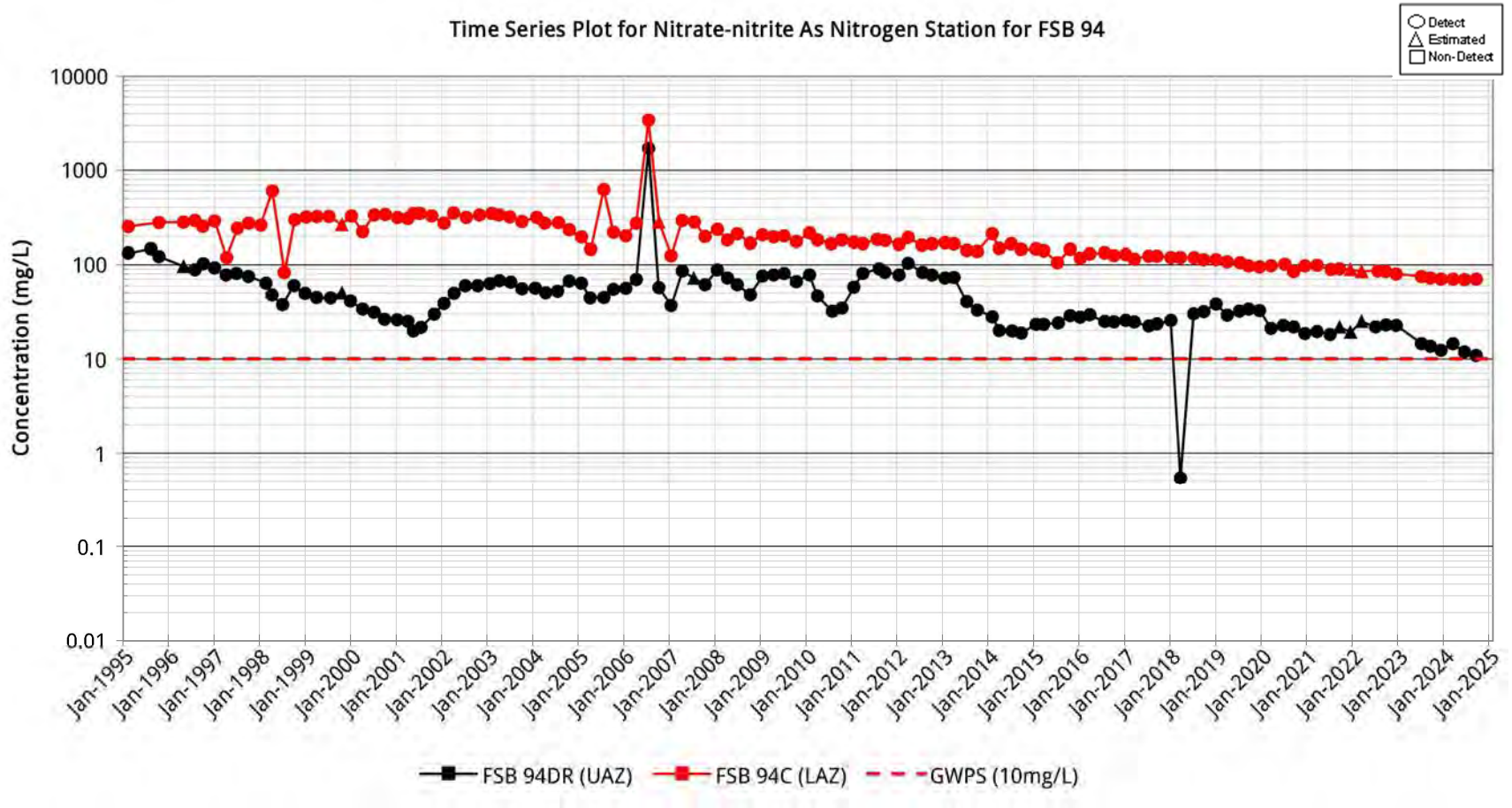

Time Series Plot for Mercury Station for HSB129
Detect
Estimated
Non-Detect
Concentration (ug/L)
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB129D (UAZ)
HSB129C (LAZ)
GWPS (2ug/L)

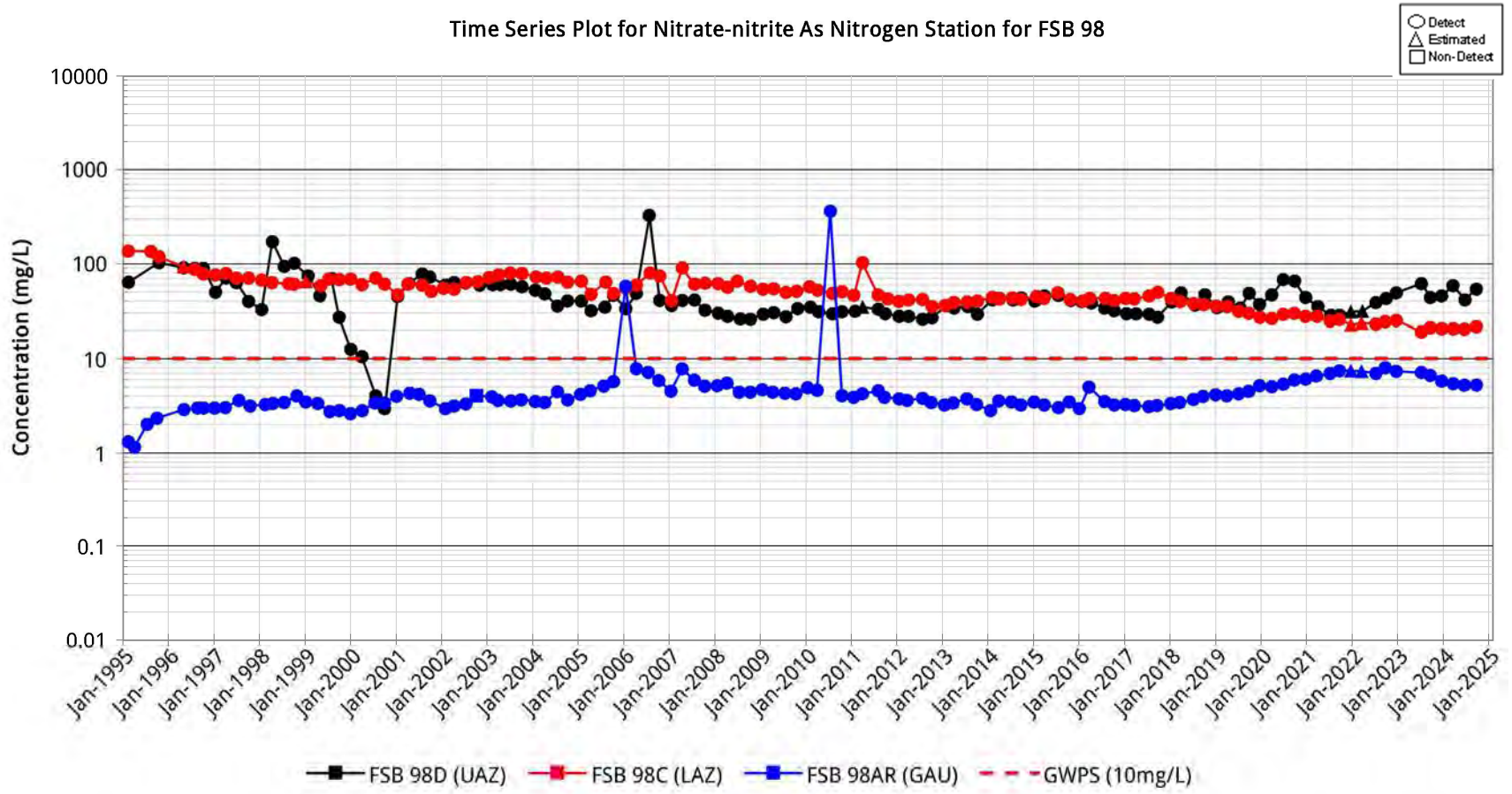

Time Series Plot for Mercury Station for HSB137
Detect
Estimated
Non-Detect
Concentration (ug/L)
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB137CR (LAZ)
HSB137D (UAZ)
GWPS (2ug/L)

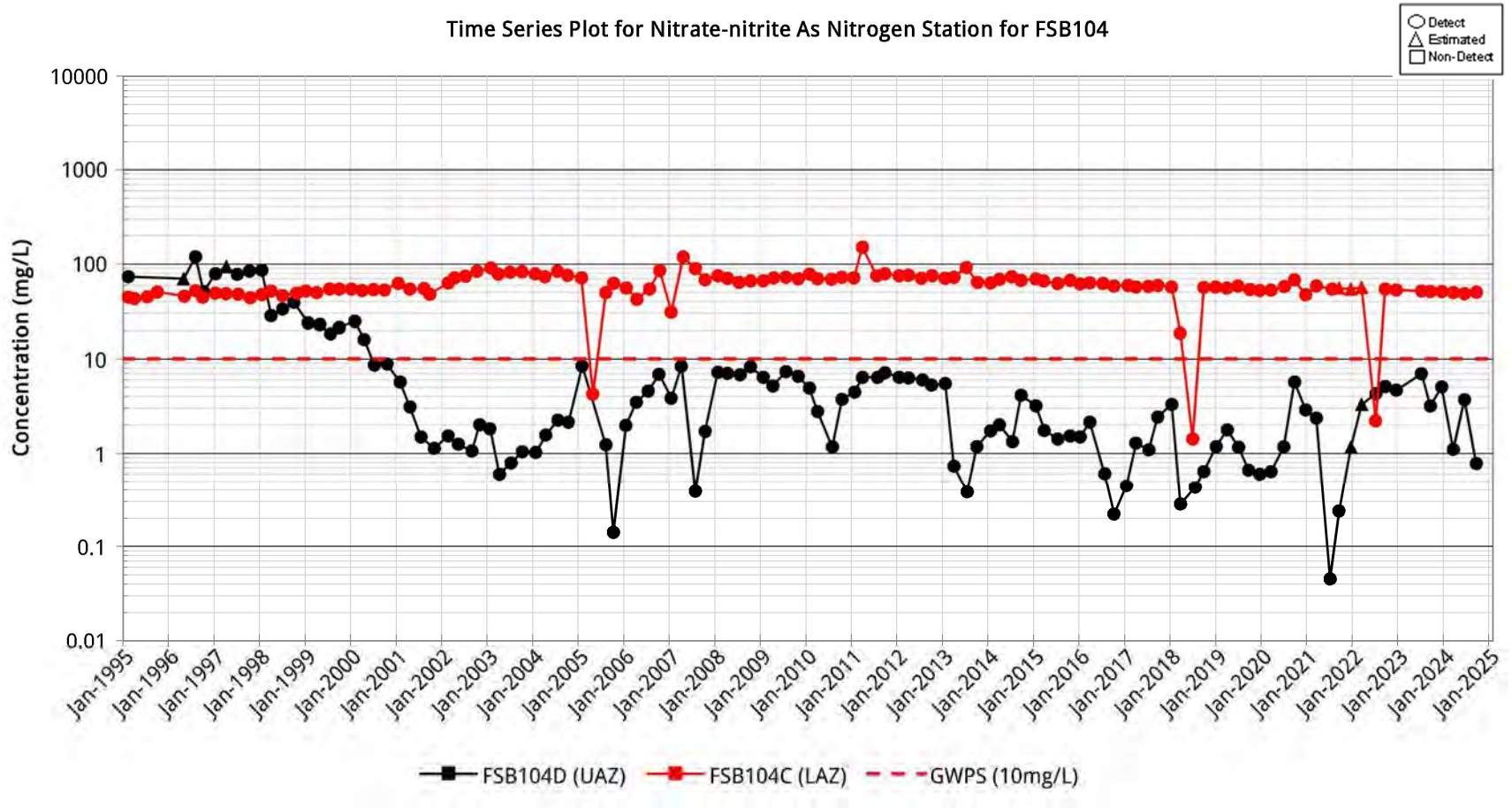

Time Series Plot for Nitrate-nitrite As Nitrogen Station for FSB 78
Concentration (mg/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
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Jan-2014
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Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 78 (UAZ)
FSB 78A (GAU)
FSB 78B (GAU)
FSB 78C (LAZ)
GWPS (10mg/L)

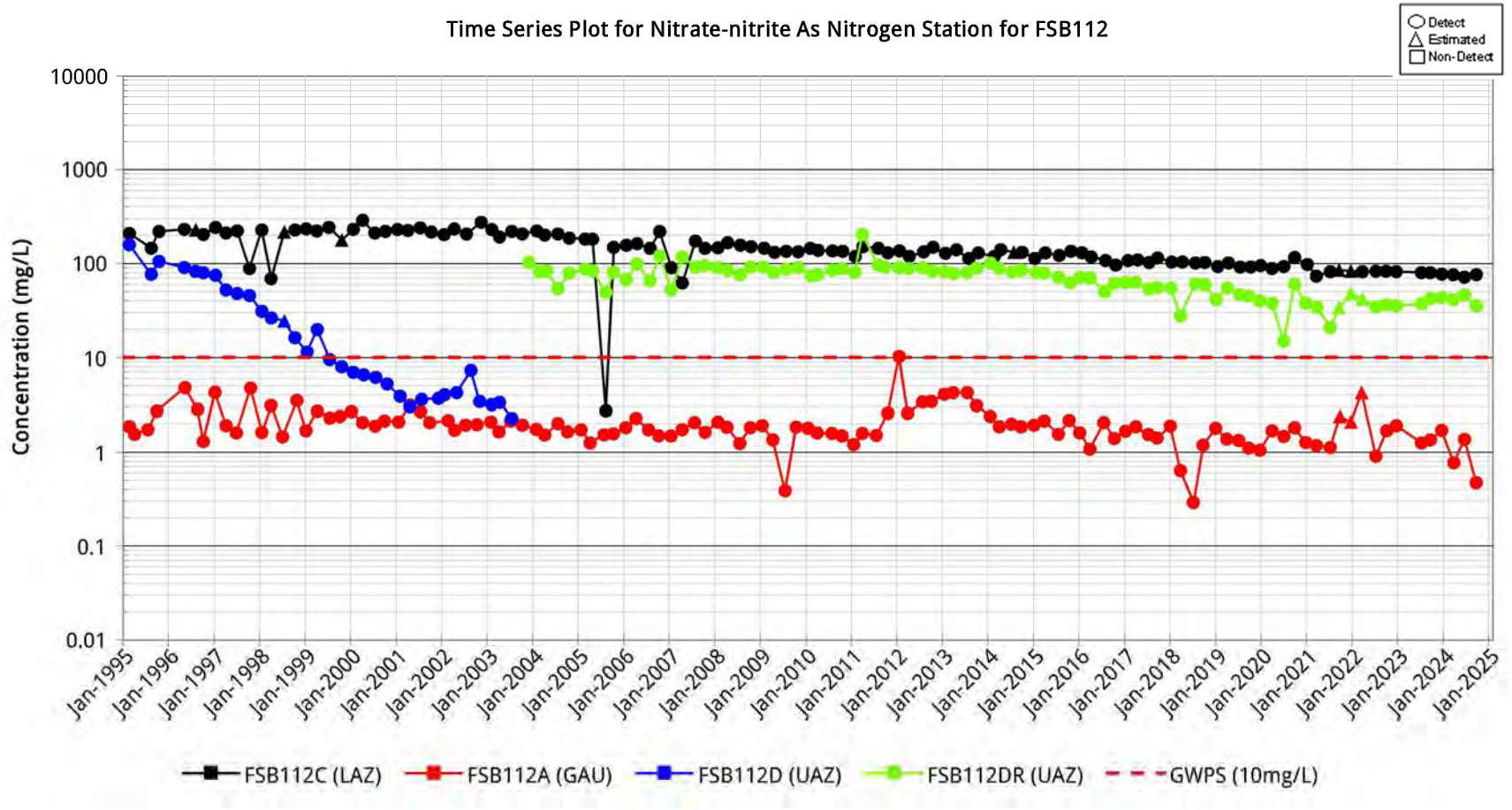

Time Series Plot for Nitrate-nitrite As Nitrogen Station for FSB 79
Detect
Estimated
Non-Detect
Concentration (mg/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 79C (LAZ)
FSB 79 (UAZ)
FSB 79B (GAU)
GWPS (10mg/L)

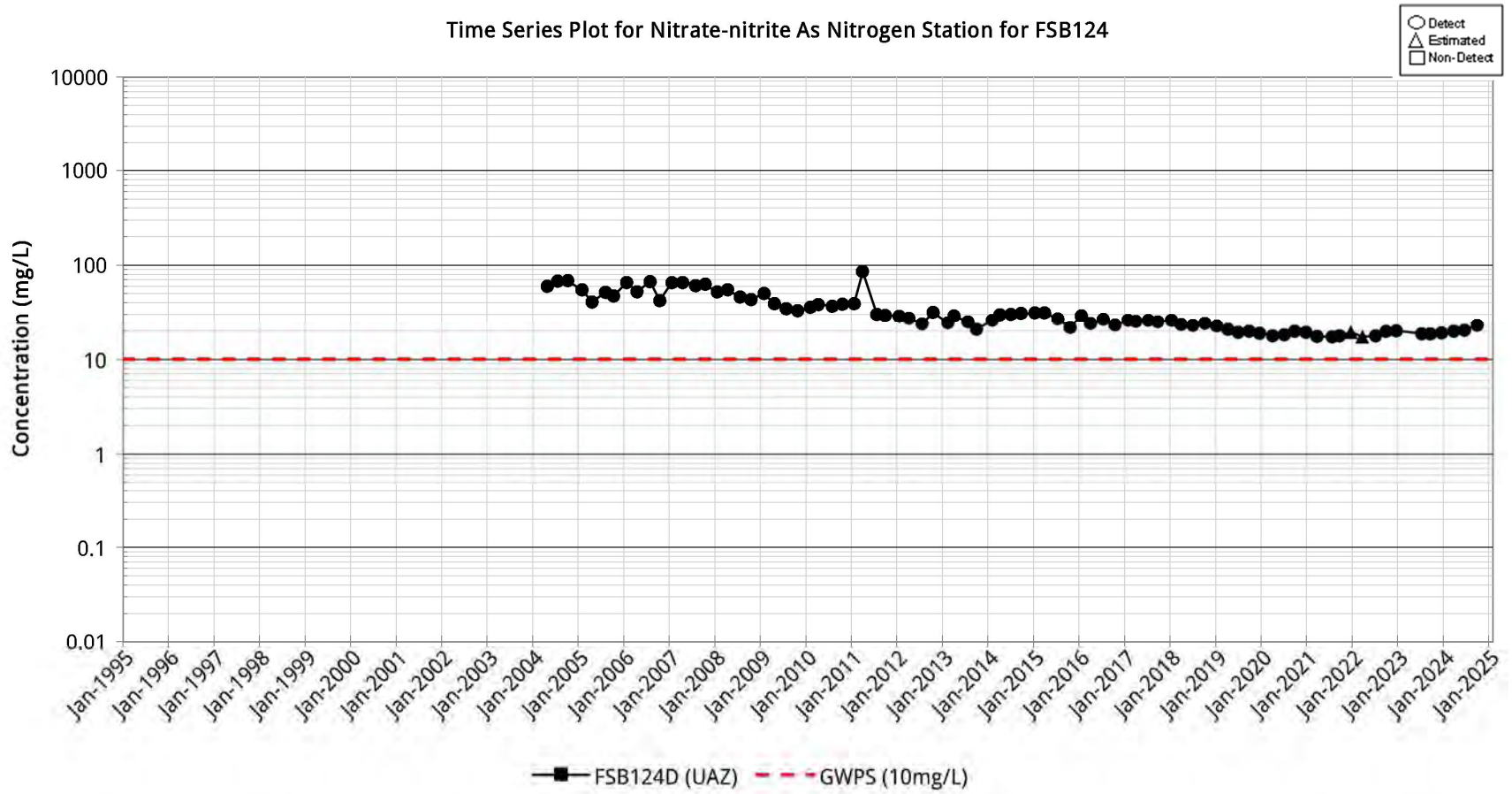

Time Series Plot for Nitrate-nitrite As Nitrogen Station for FSB 90
Detect
Estimated
Non-Detect
Concentration (mg/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 90C (LAZ)
FSB 90D (UAZ)
GWPS (10mg/L)

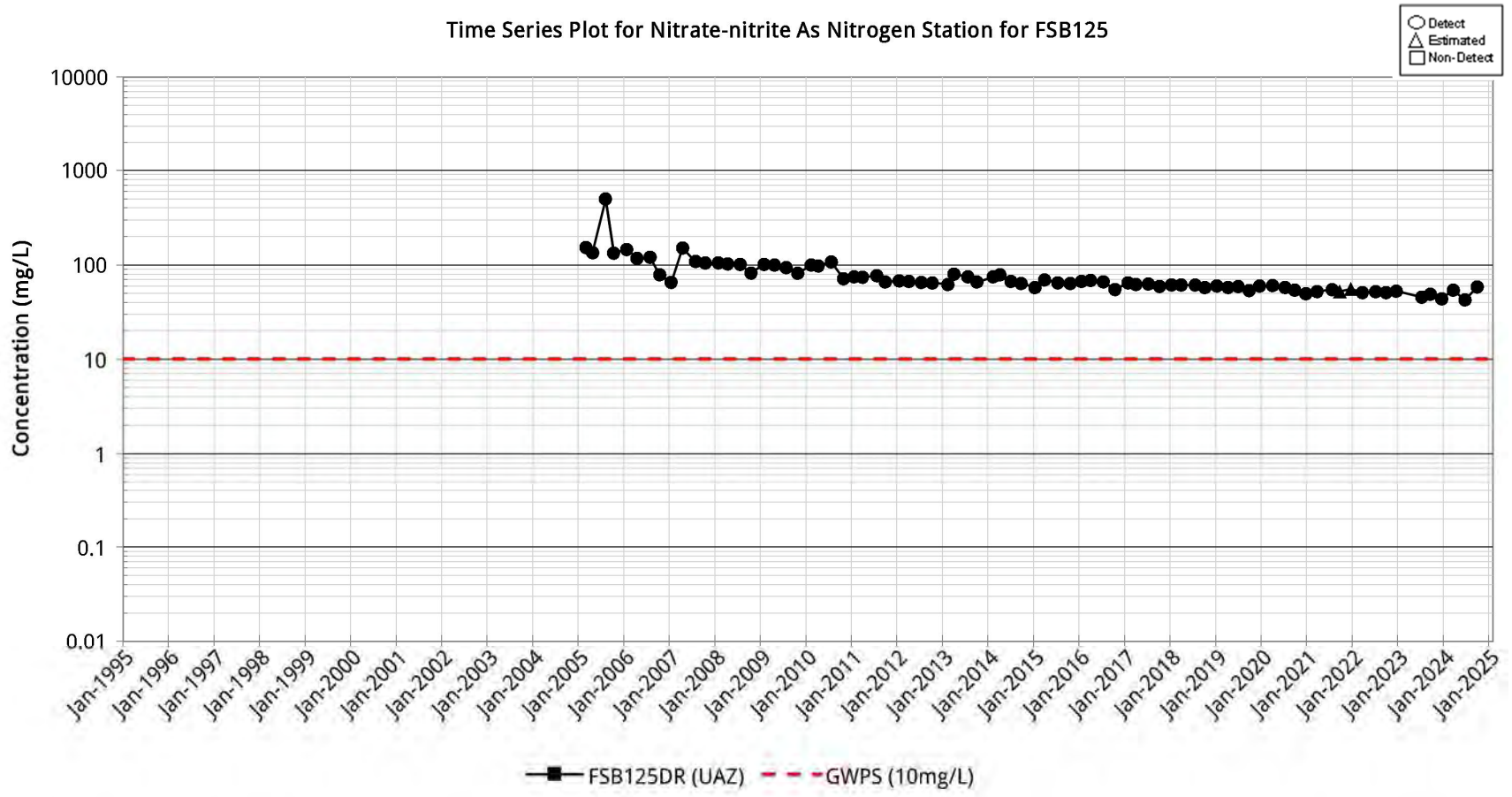

Time Series Plot for Nitrate-nitrite As Nitrogen Station for FSB 94
Detect
Estimated
Non-Detect
Concentration (mg/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
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Jan-2014
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Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 94DR (UAZ)
FSB 94C (LAZ)
GWPS (10mg/L)

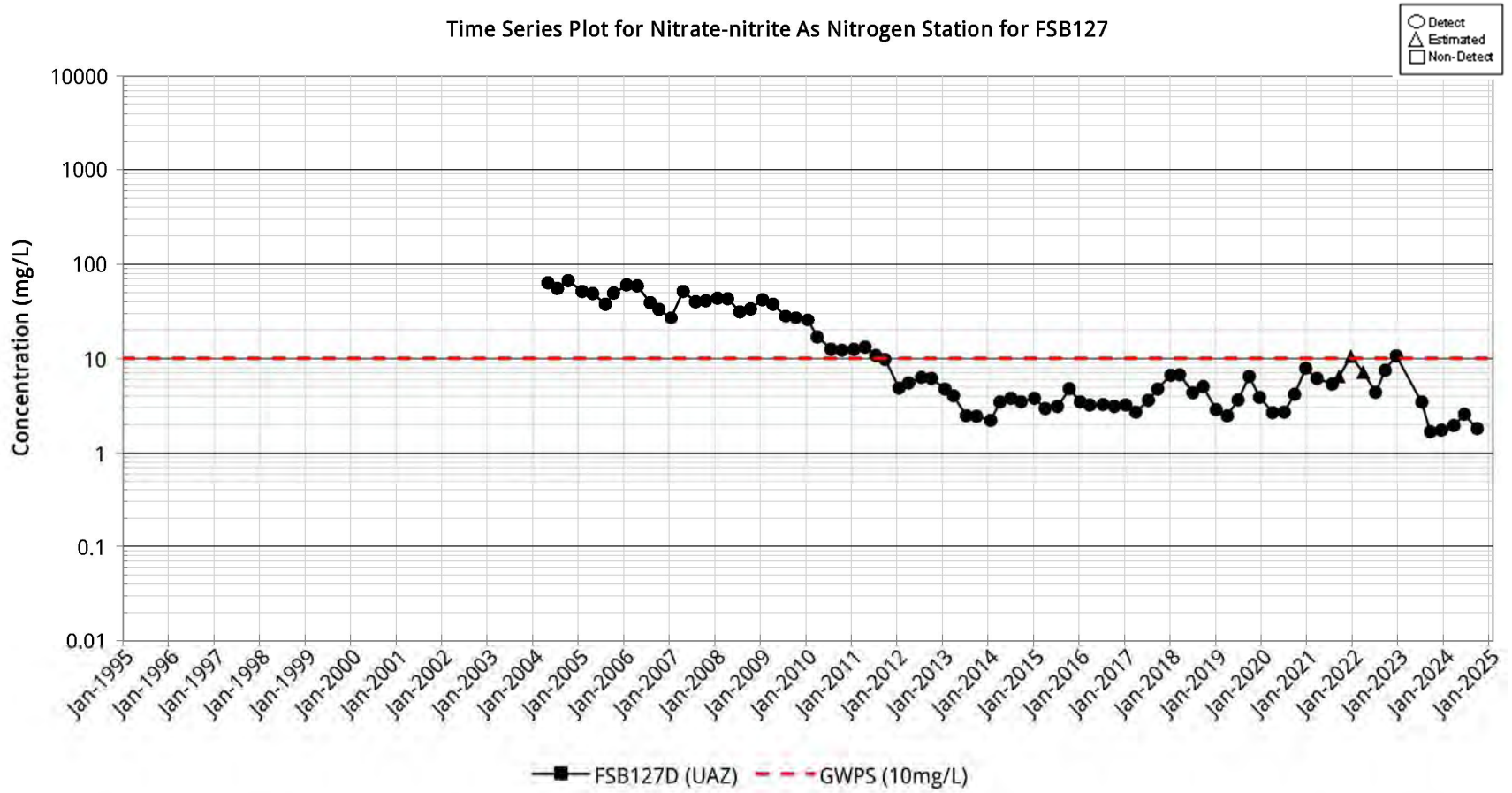

Time Series Plot for Nitrate-nitrite As Nitrogen Station for FSB 98
Detect
Estimated
Non-Detect
Concentration (mg/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
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Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 98D (UAZ)
FSB 98C (LAZ)
FSB 98AR (GAU)
GWPS (10mg/L)

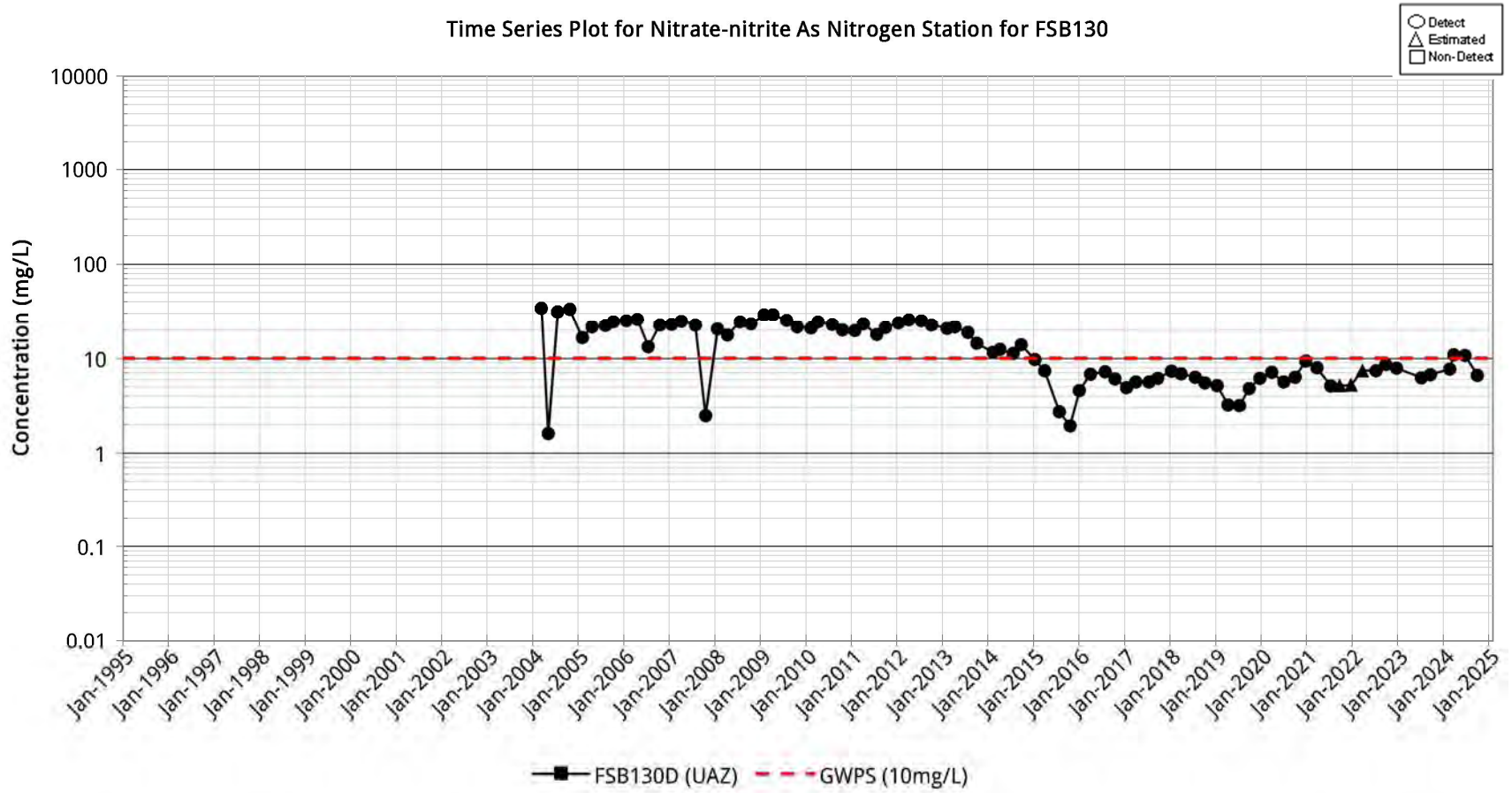

Time Series Plot for Nitrate-nitrite As Nitrogen Station for FSB104
Detect
Estimated
Non-Detect
Concentration (mg/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
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Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB104D (UAZ)
FSB104C (LAZ)
GWPS (10mg/L)

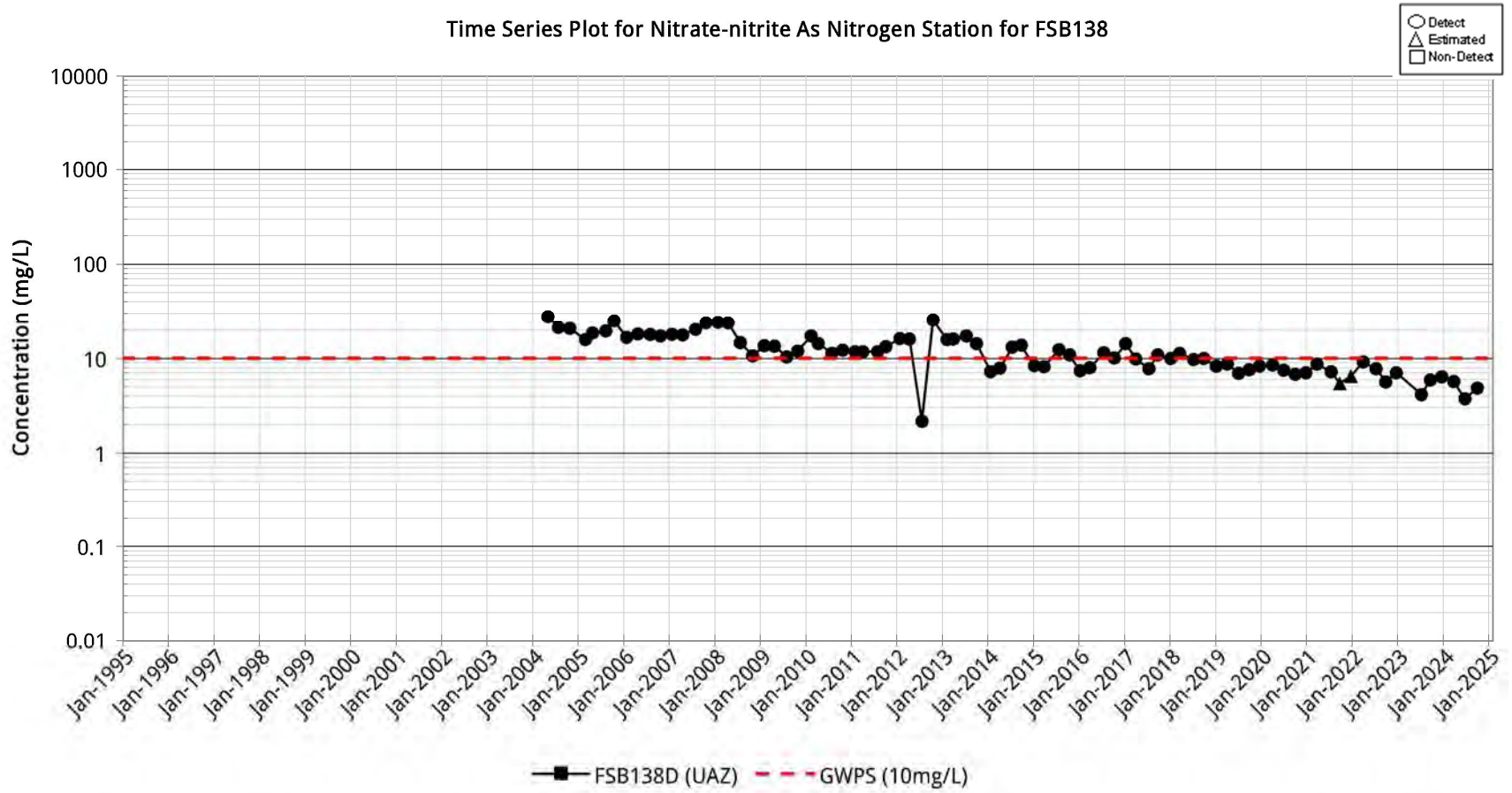

Time Series Plot for Nitrate-nitrite As Nitrogen Station for FSB112
Detect
Estimated
Non-Detect
Concentration (mg/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
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Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB112C (LAZ)
FSB112A (GAU)
FSB112D (UAZ)
FSB112DR (UAZ)
GWPS (10mg/L)

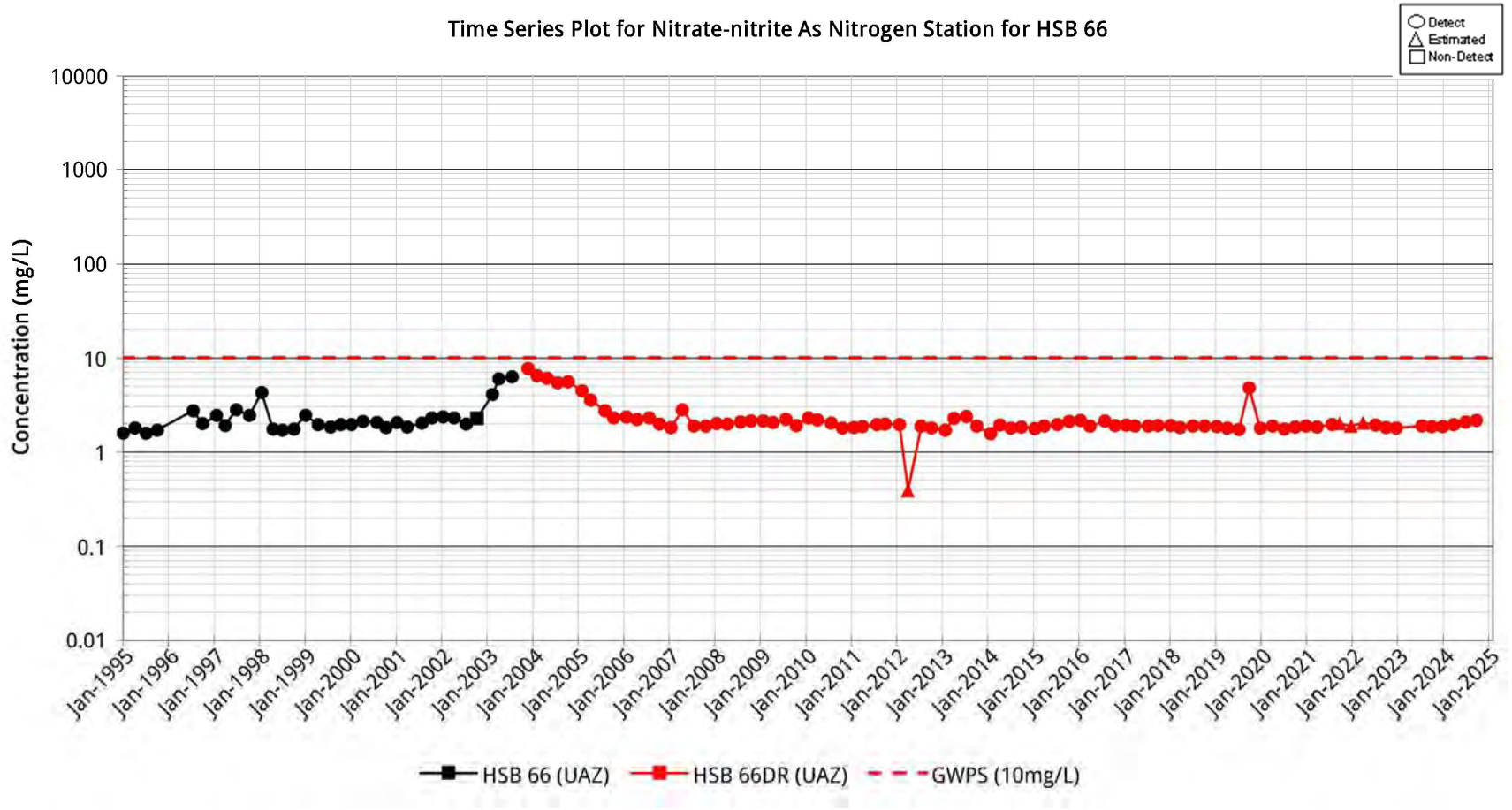

Time Series Plot for Nitrate-nitrite As Nitrogen Station for FSB124
Detect
Estimated
Non-Detect
Concentration (mg/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
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Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB124D (UAZ)
GWPS (10mg/L)

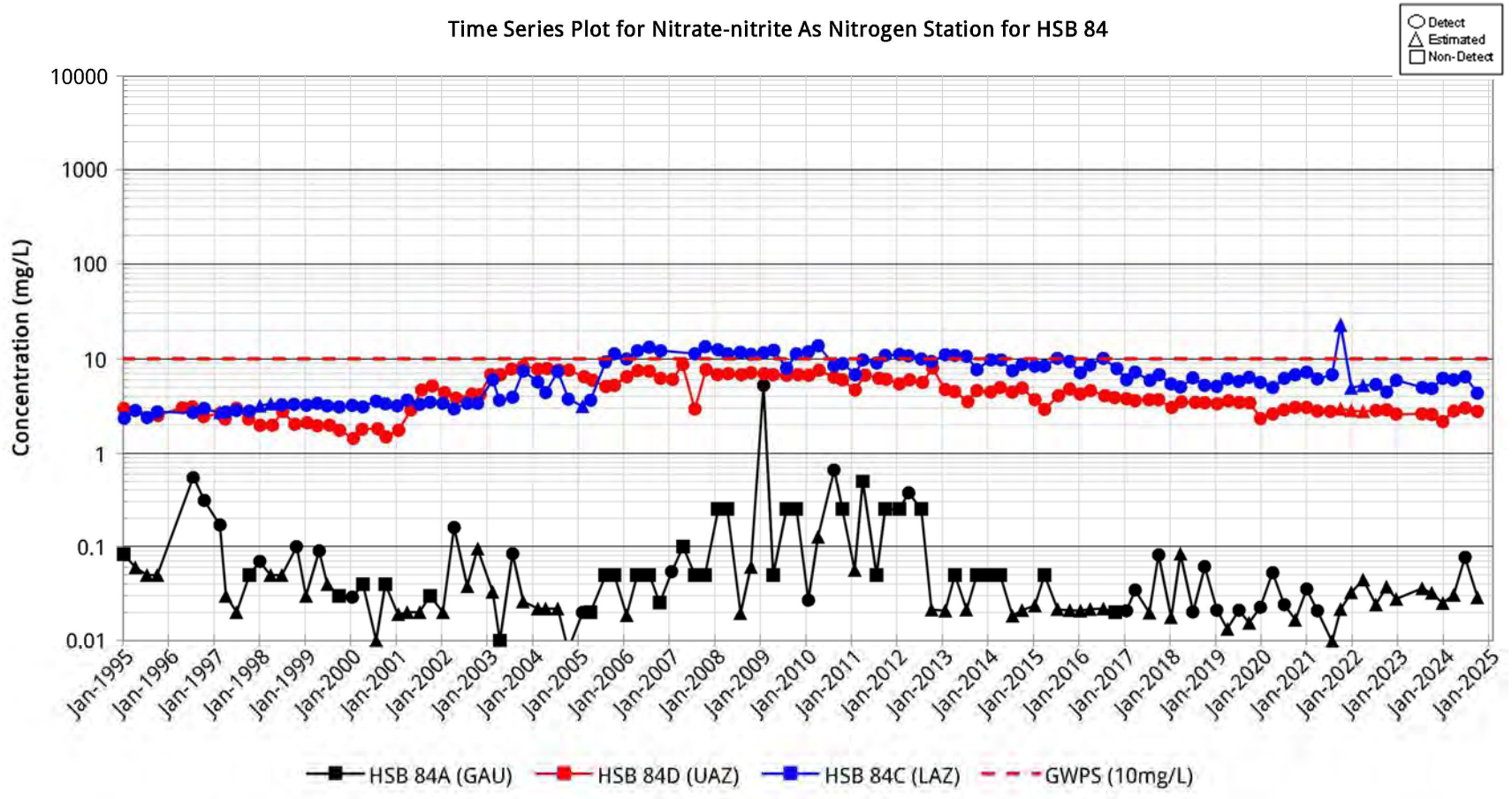

Time Series Plot for Nitrate-nitrite As Nitrogen Station for FSB125
Detect
Estimated
Non-Detect
Concentration (mg/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB125DR (UAZ)
GWPS (10mg/L)

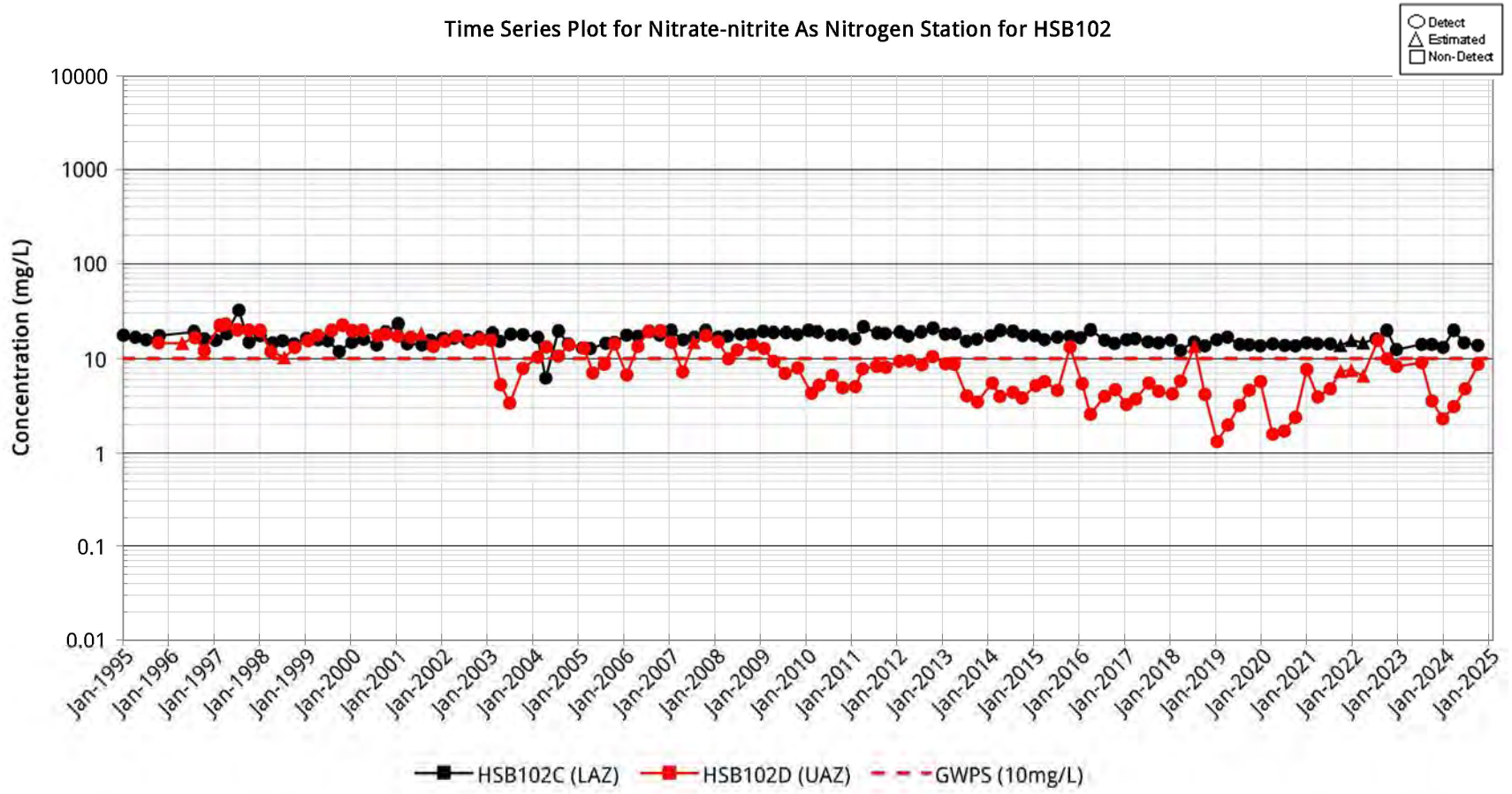

Time Series Plot for Nitrate-nitrite As Nitrogen Station for FSB127
Detect
Estimated
Non-Detect
Concentration (mg/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB127D (UAZ)
GWPS (10mg/L)

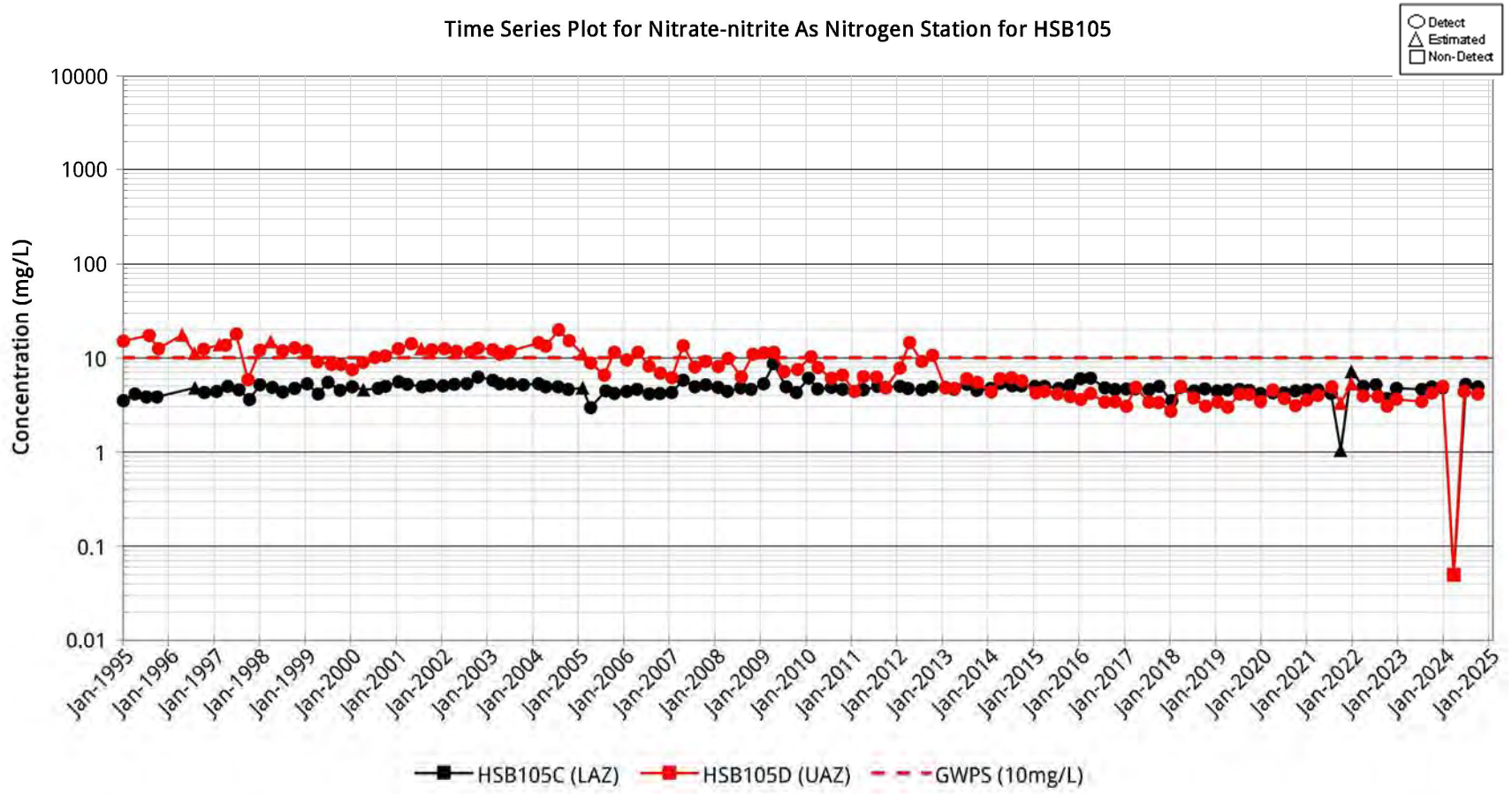

Time Series Plot for Nitrate-nitrite As Nitrogen Station for FSB130
Detect
Estimated
Non-Detect
Concentration (mg/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
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Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB130D (UAZ)
GWPS (10mg/L)

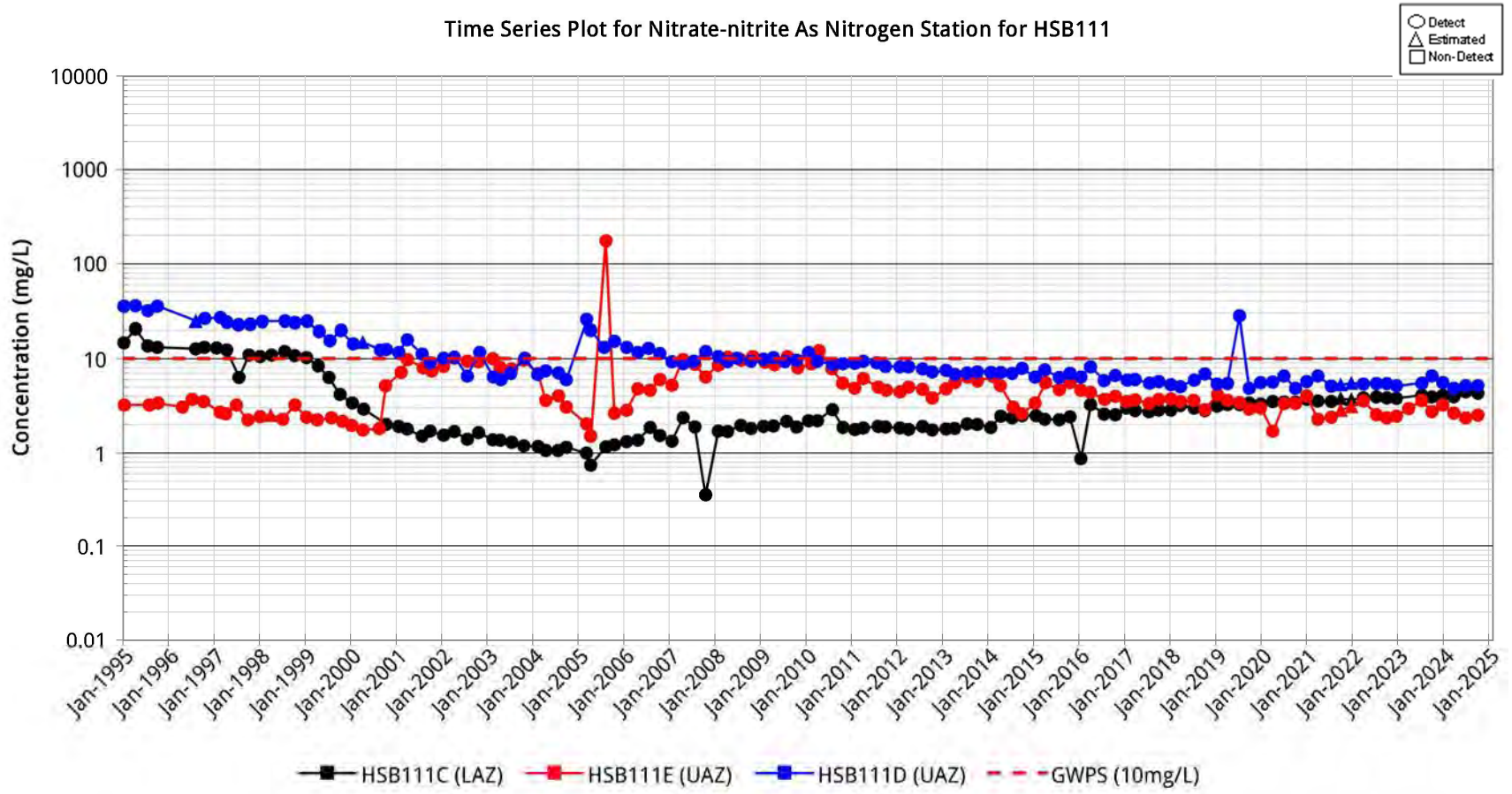

Time Series Plot for Nitrate-nitrite As Nitrogen Station for FSB138
Detect
Estimated
Non-Detect
Concentration (mg/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB138D (UAZ)
GWPS (10mg/L)

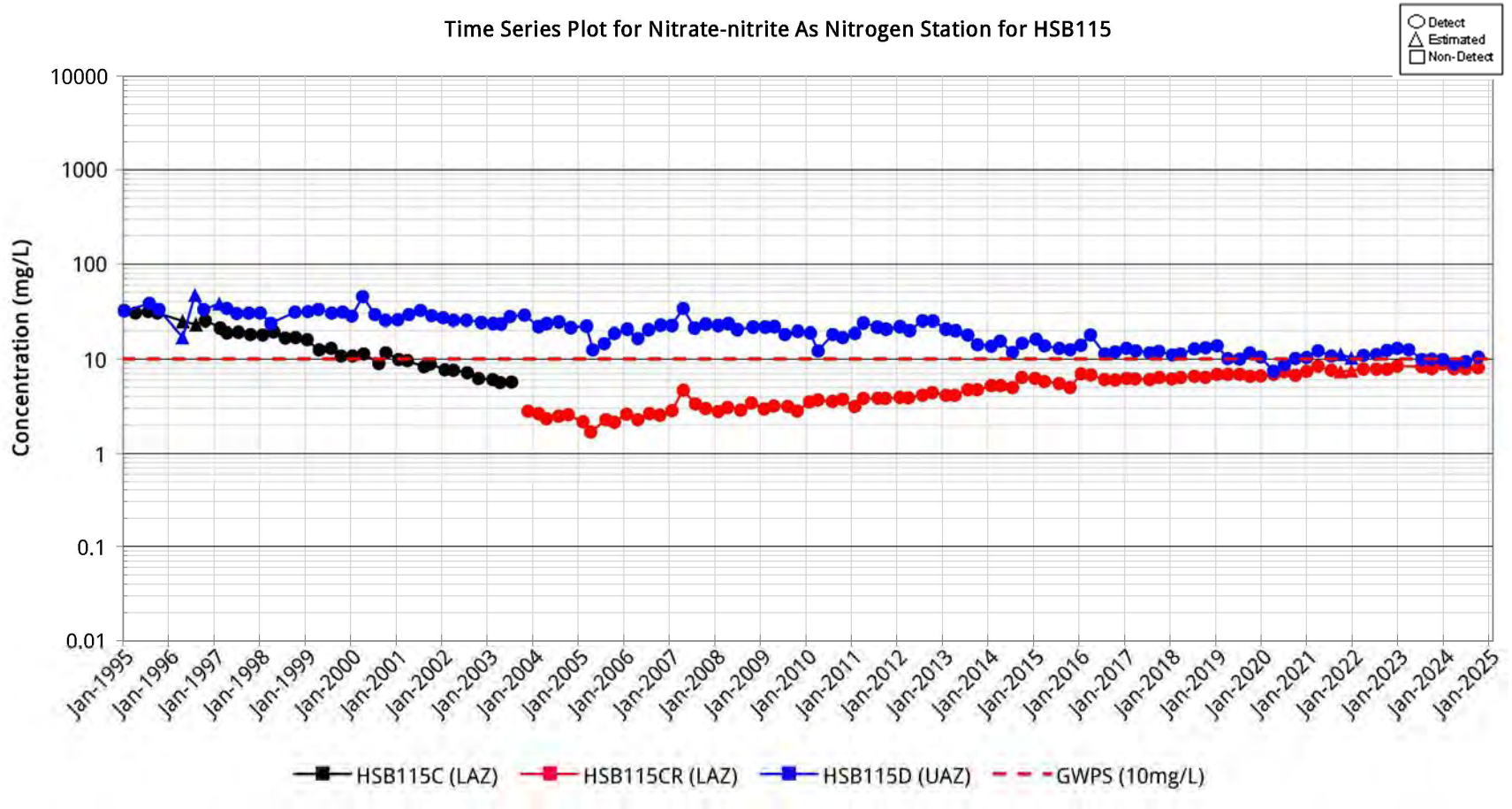

Time Series Plot for Nitrate-nitrite As Nitrogen Station for HSB 66
Detect
Estimated
Non-Detect
Concentration (mg/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB 66 (UAZ)
HSB 66DR (UAZ)
GWPS (10mg/L)

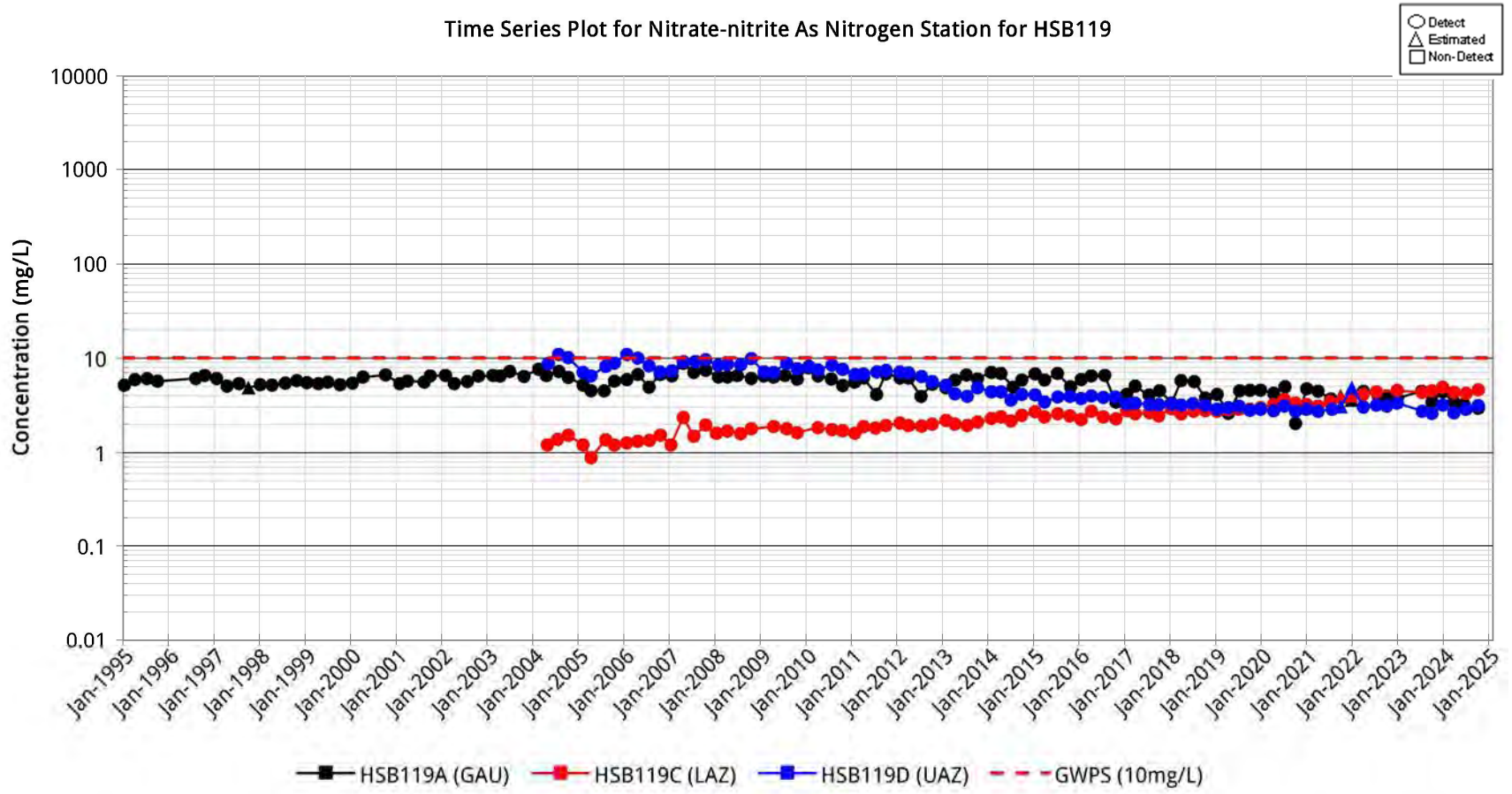

Time Series Plot for Nitrate-nitrite As Nitrogen Station for HSB 84
Detect
Estimated
Non-Detect
Concentration (mg/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB 84A (GAU)
HSB 84D (UAZ)
HSB 84C (LAZ)
GWPS (10mg/L)

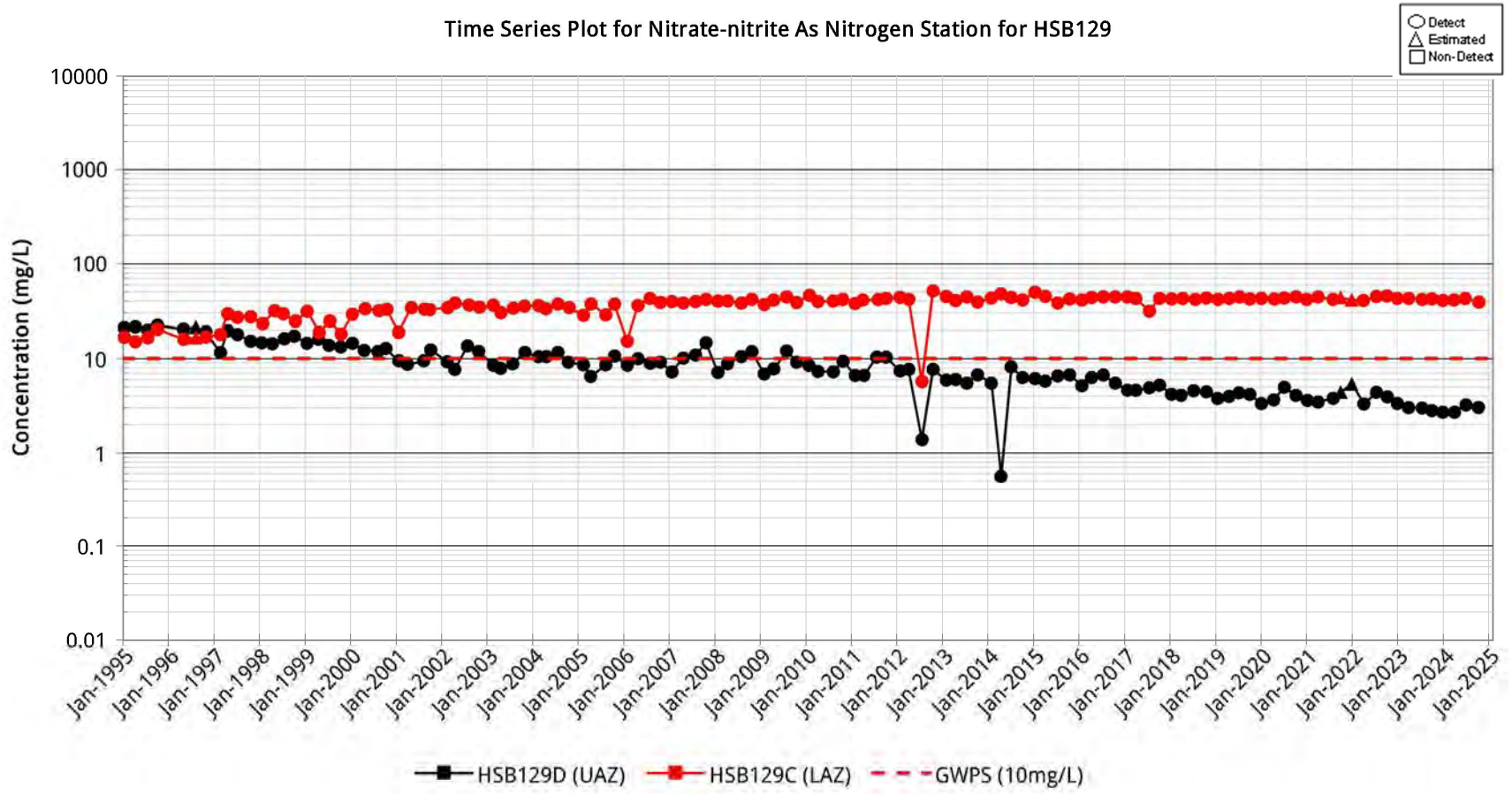

Time Series Plot for Nitrate-nitrite As Nitrogen Station for HSB102
Detect
Estimated
Non-Detect
Concentration (mg/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
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Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB102C (LAZ)
HSB102D (UAZ)
GWPS (10mg/L)

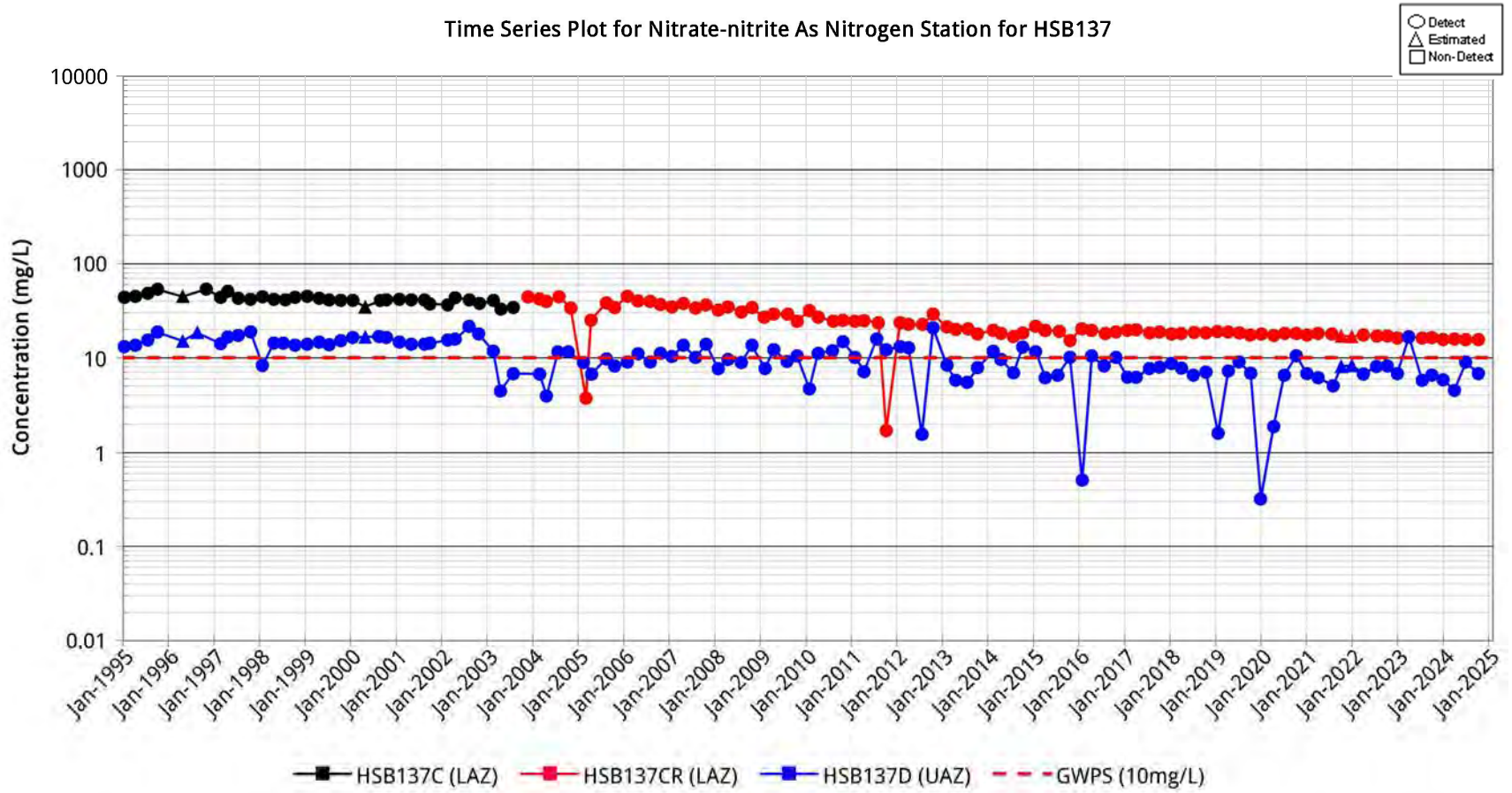

Time Series Plot for Nitrate-nitrite As Nitrogen Station for HSB105
Detect
Estimated
Non-Detect
Concentration (mg/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
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Jan-2011
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Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB105C (LAZ)
HSB105D (UAZ)
GWPS (10mg/L)

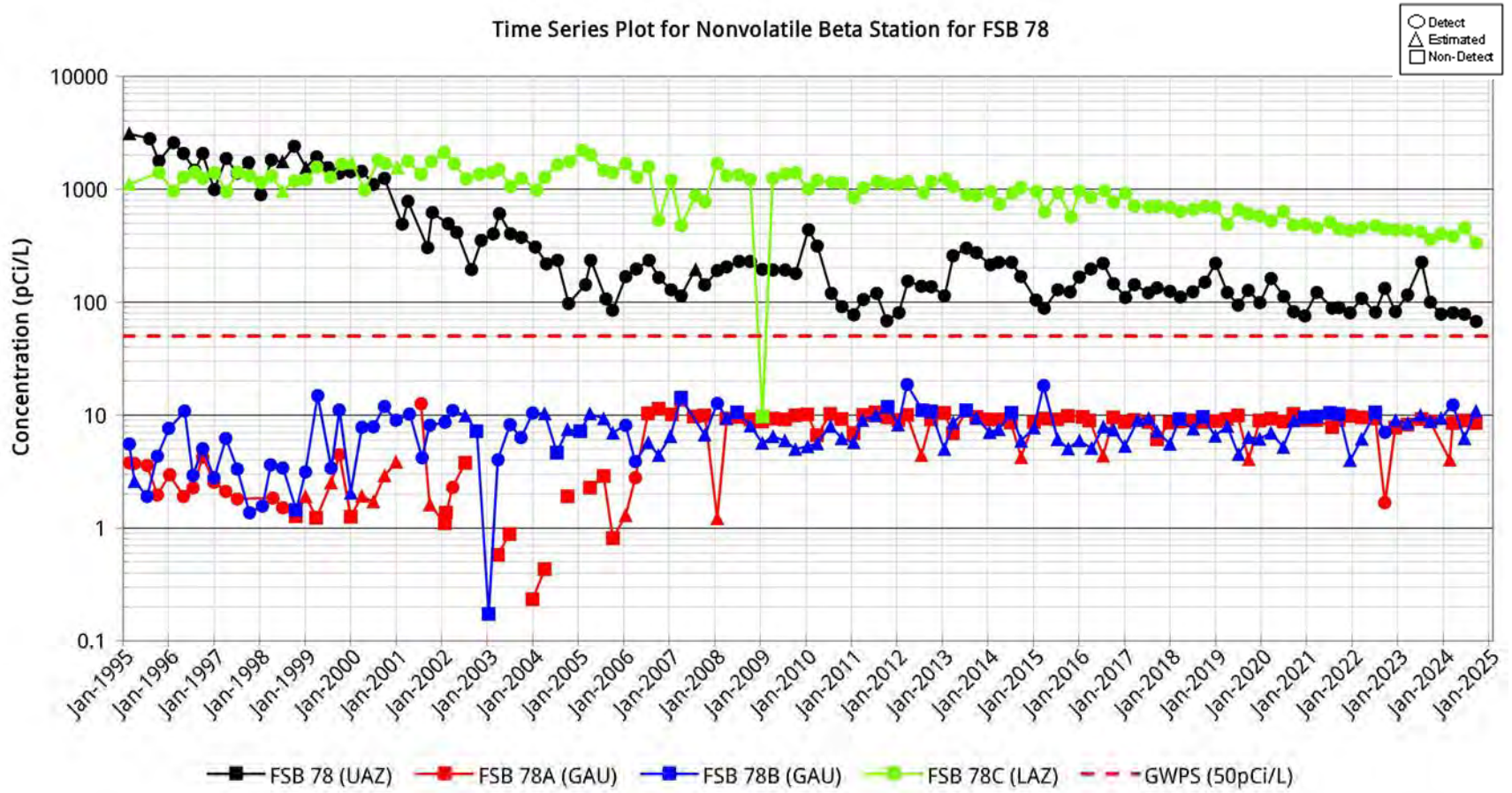

Time Series Plot for Nitrate-nitrite As Nitrogen Station for HSB111
Detect
Estimated
Non-Detect
Concentration (mg/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
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Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB111C (LAZ)
HSB111E (UAZ)
HSB111D (UAZ)
GWPS (10mg/L)

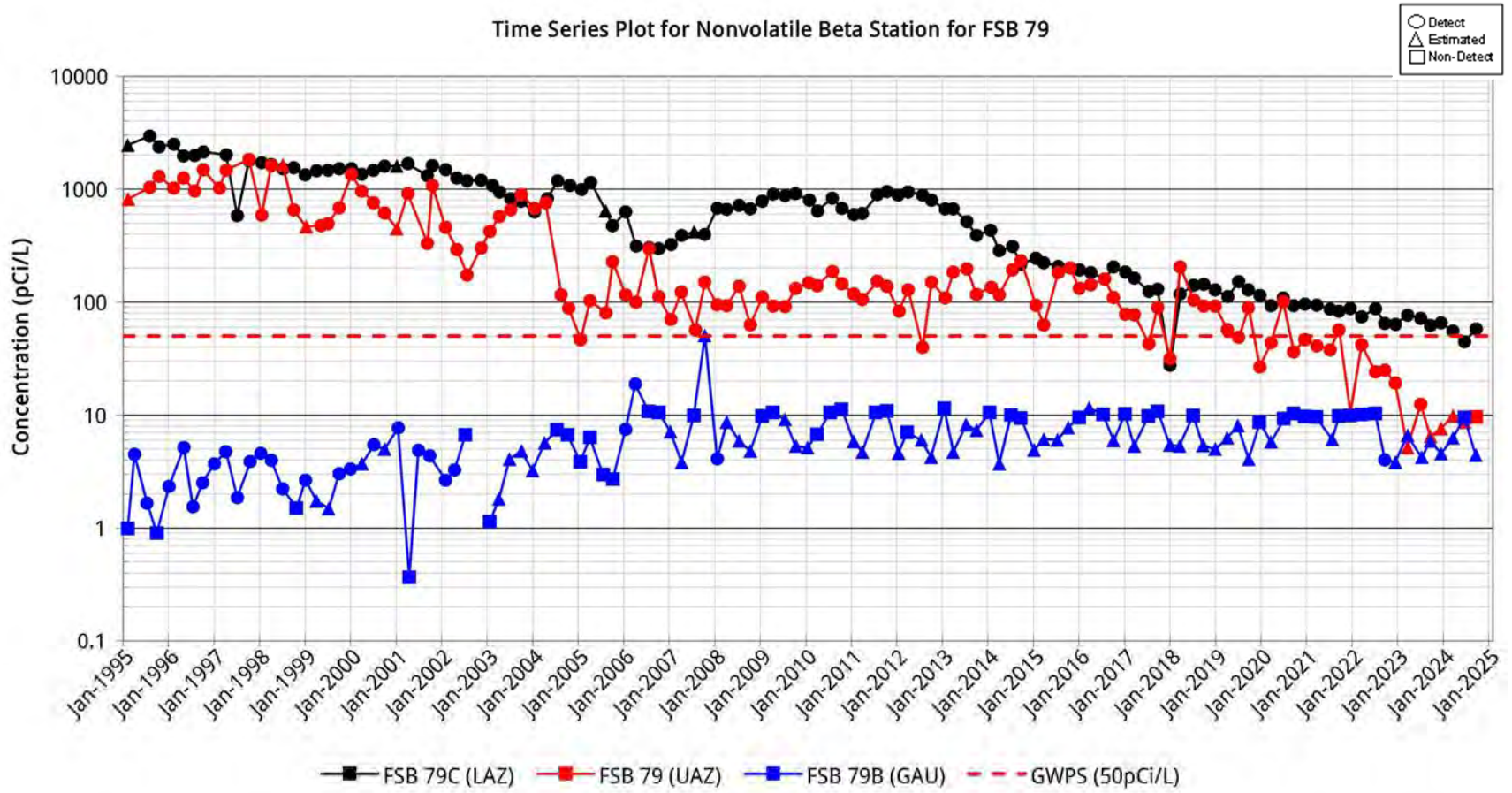

Time Series Plot for Nitrate-nitrite As Nitrogen Station for HSB115
Detect
Estimated
Non-Detect
Concentration (mg/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB115C (LAZ)
HSB115CR (LAZ)
HSB115D (UAZ)
GWPS (10mg/L)

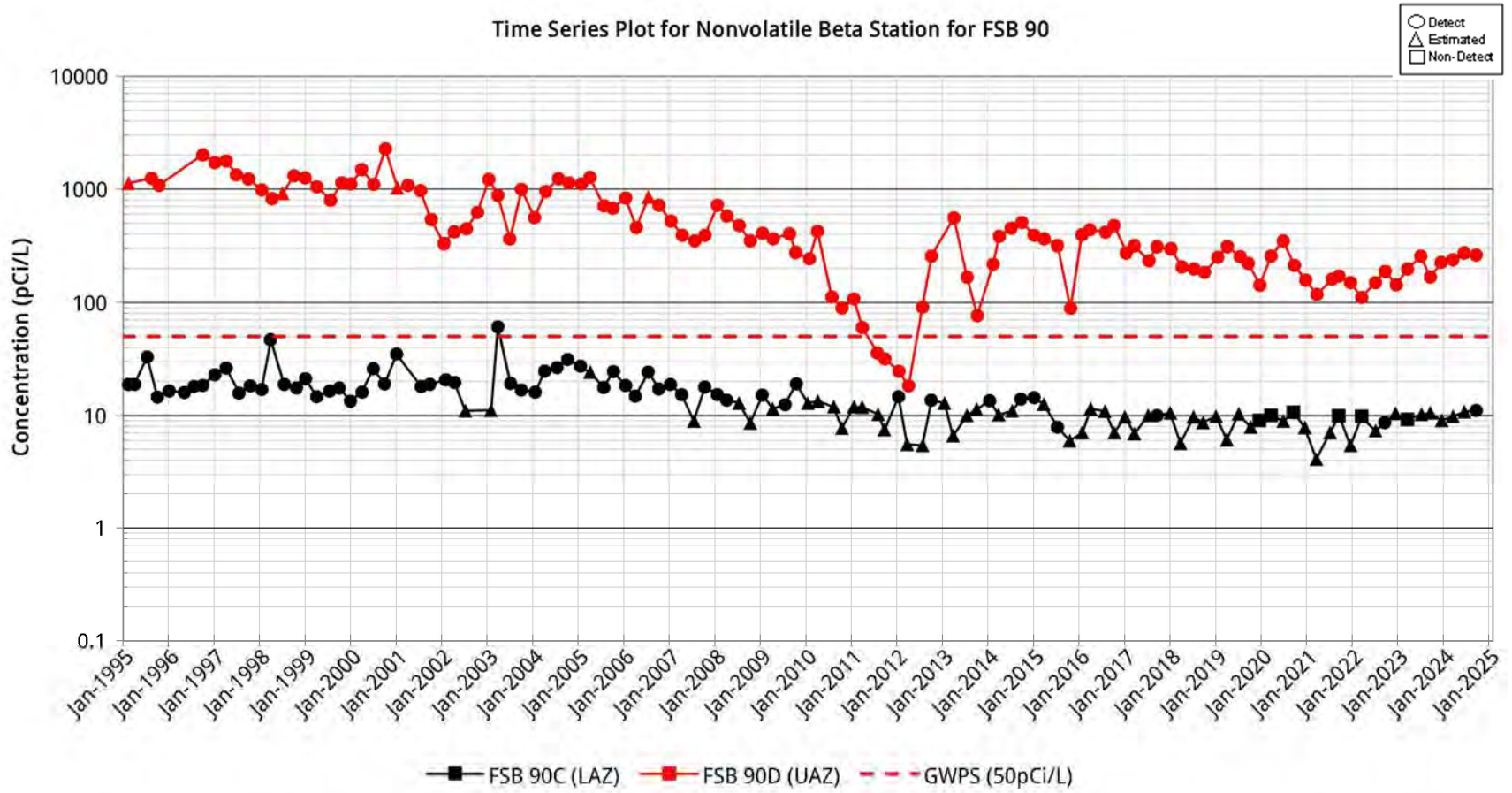

Time Series Plot for Nitrate-nitrite As Nitrogen Station for HSB119
Detect
Estimated
Non-Detect
Concentration (mg/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2010
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Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB119A (GAU)
HSB119C (LAZ)
HSB119D (UAZ)
GWPS (10mg/L)

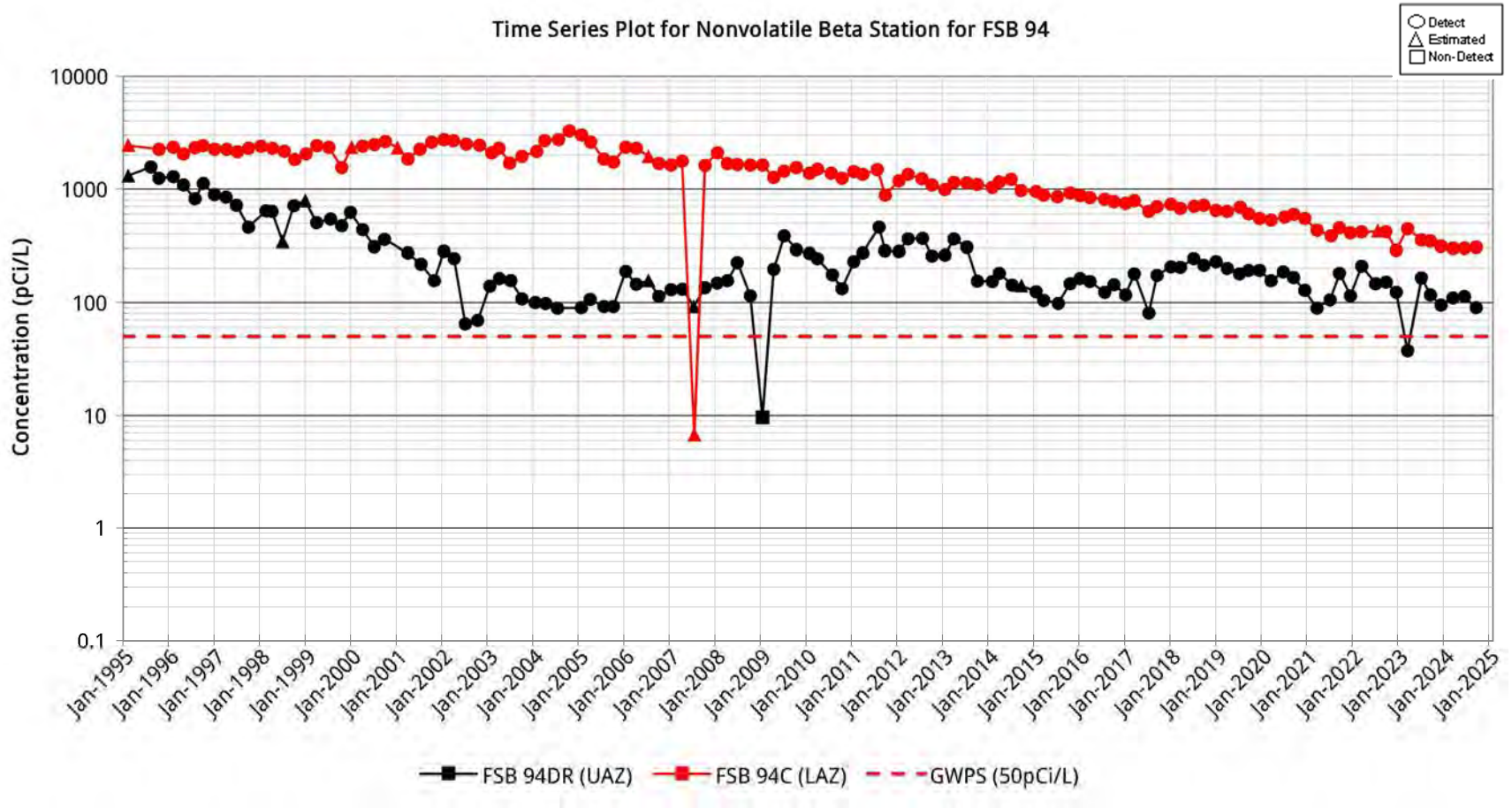

Time Series Plot for Nitrate-nitrite As Nitrogen Station for HSB129
Detect
Estimated
Non-Detect
Concentration (mg/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
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Jan-2019
Jan-2020
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Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB129D (UAZ)
HSB129C (LAZ)
GWPS (10mg/L)

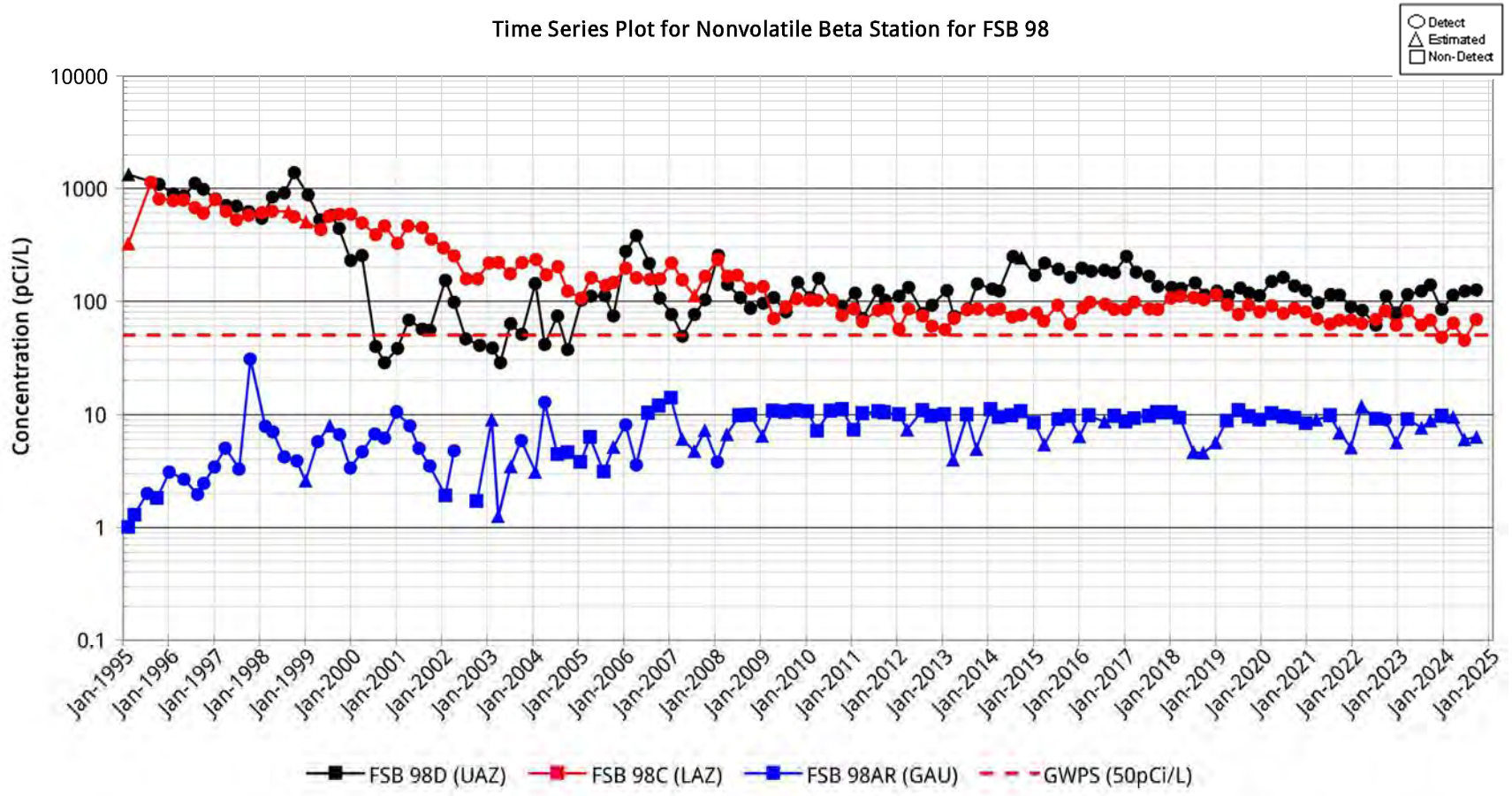

Time Series Plot for Nitrate-nitrite As Nitrogen Station for HSB137
Detect
Estimated
Non-Detect
Concentration (mg/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB137C (LAZ)
HSB137CR (LAZ)
HSB137D (UAZ)
GWPS (10mg/L)

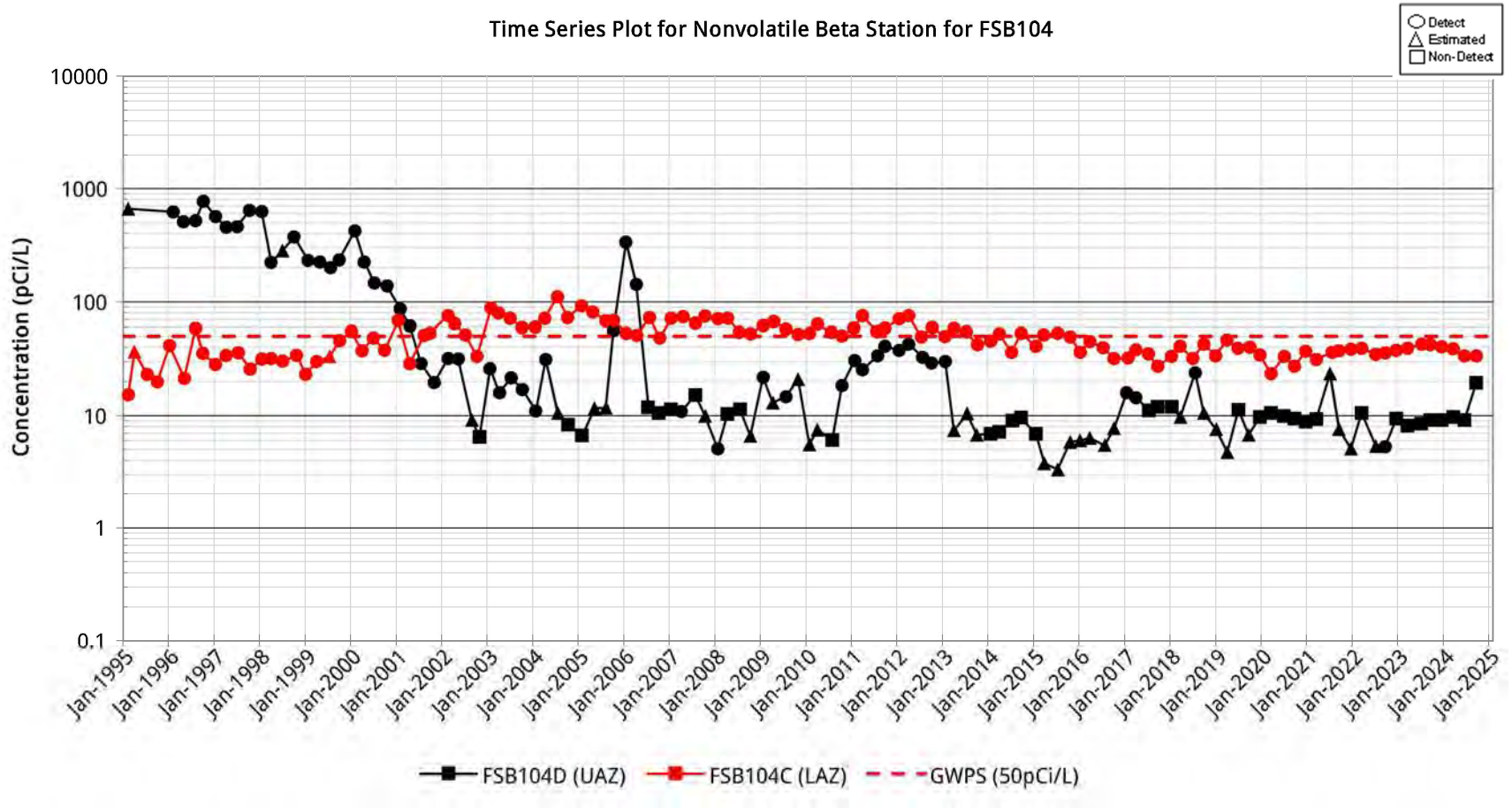

Time Series Plot for Nonvolatile Beta Station for FSB 78
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 78 (UAZ)
FSB 78A (GAU)
FSB 78B (GAU)
FSB 78C (LAZ)
GWPS (50pCi/L)

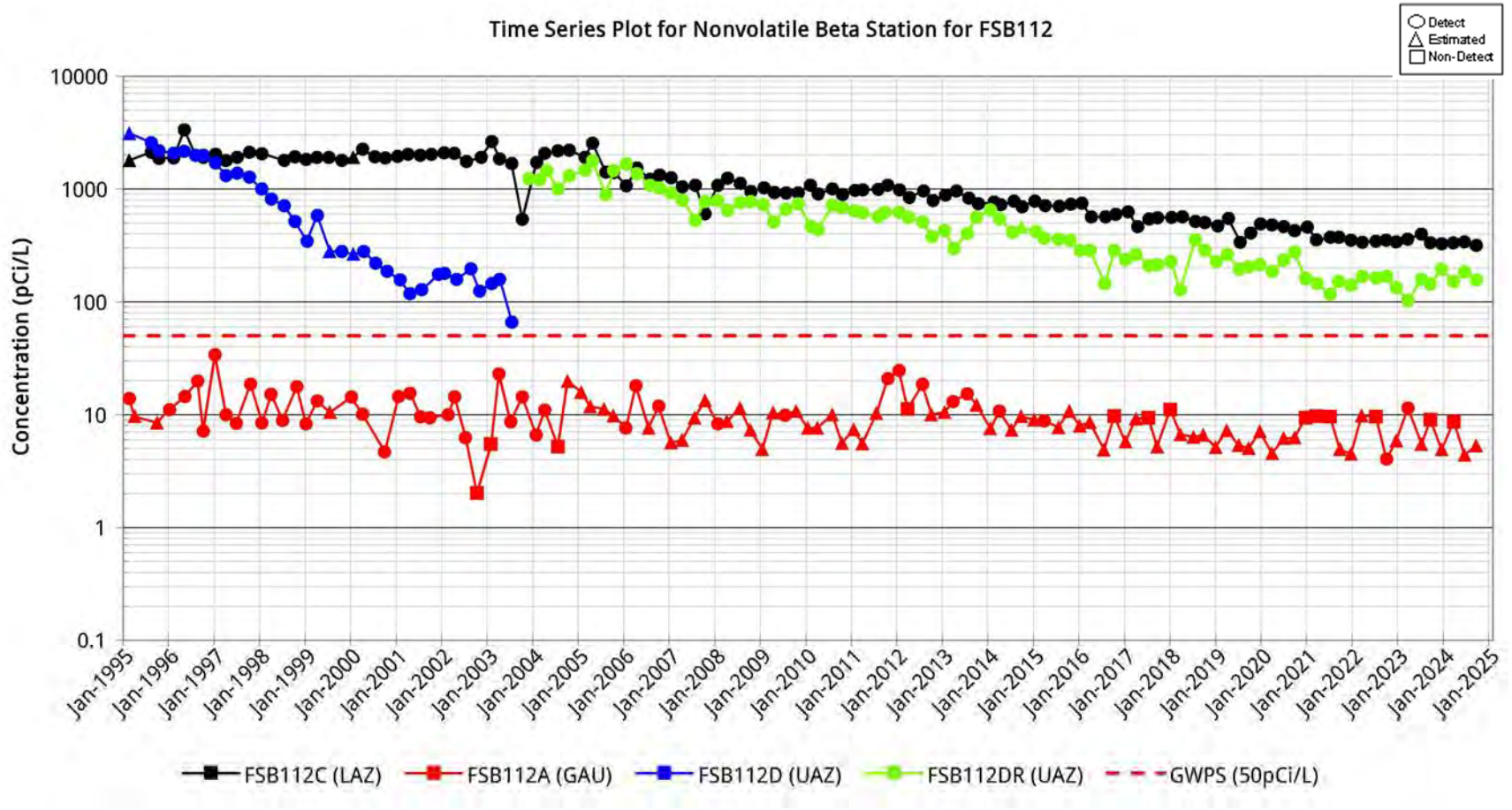

Time Series Plot for Nonvolatile Beta Station for FSB 79
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 79C (LAZ)
FSB 79 (UAZ)
FSB 79B (GAU)
GWPS (50pCi/L)

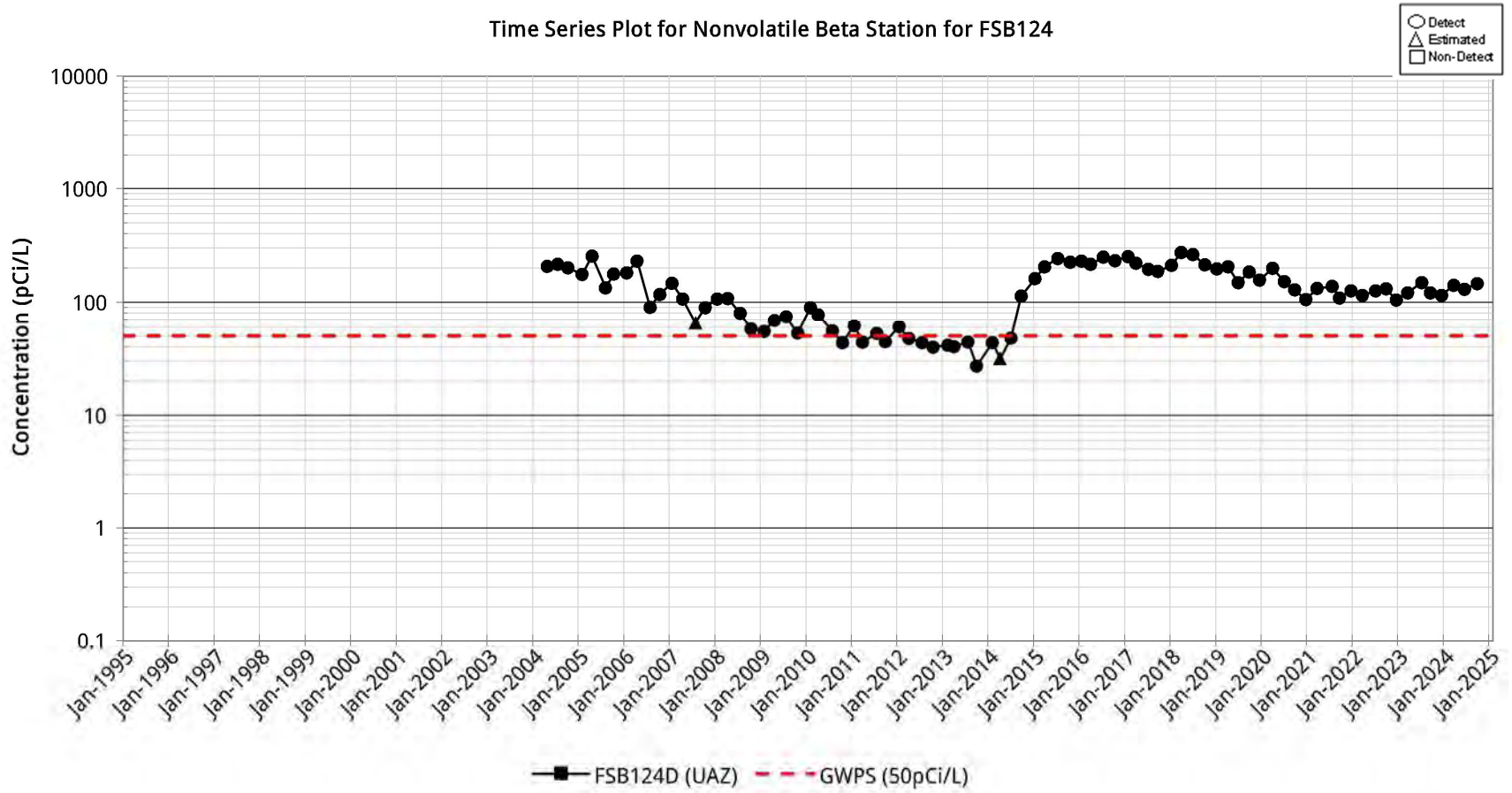

Time Series Plot for Nonvolatile Beta Station for FSB 90
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
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Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 90C (LAZ)
FSB 90D (UAZ)
GWPS (50pCi/L)

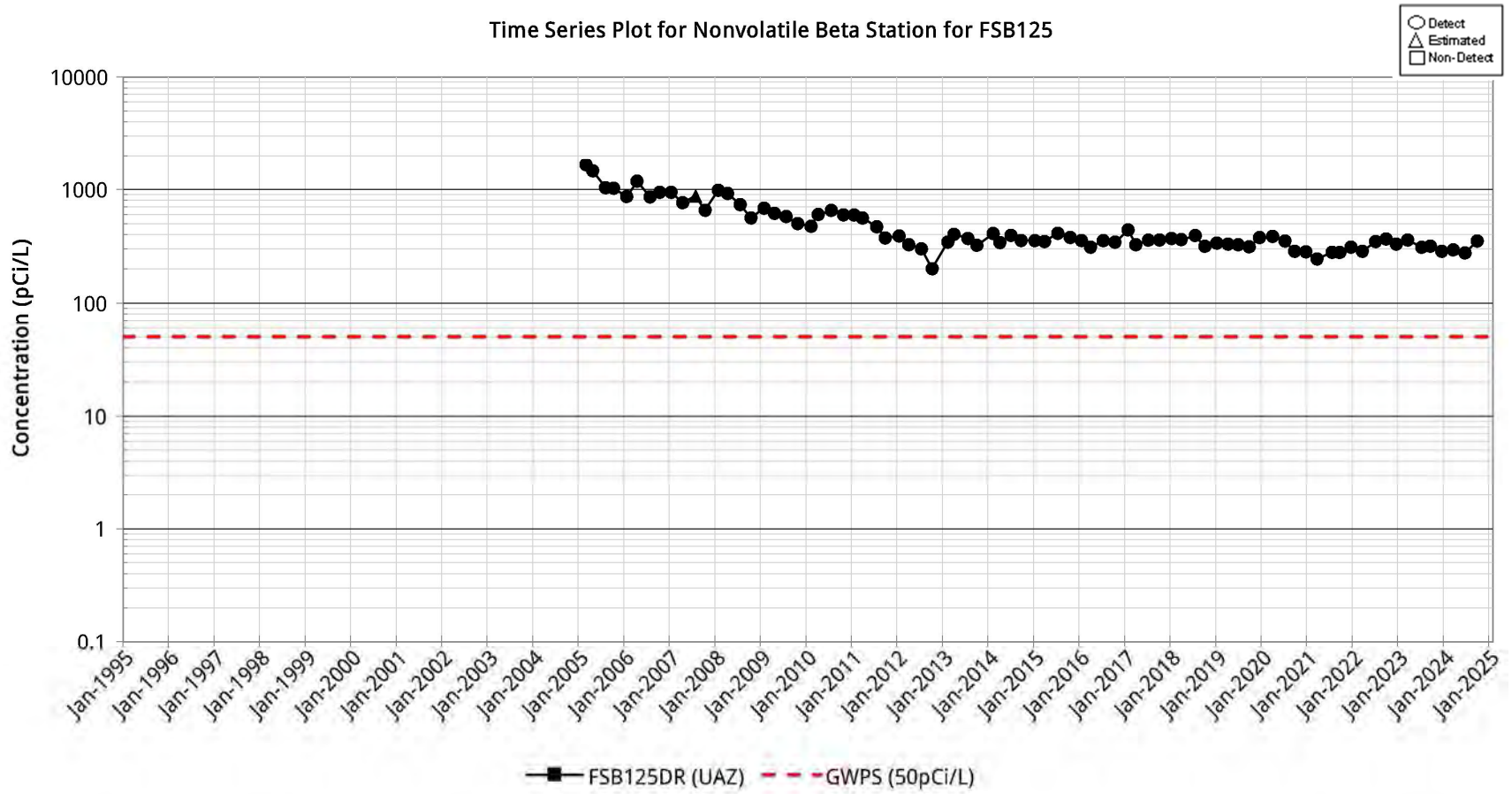

Time Series Plot for Nonvolatile Beta Station for FSB 94
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 94DR (UAZ)
FSB 94C (LAZ)
GWPS (50pCi/L)

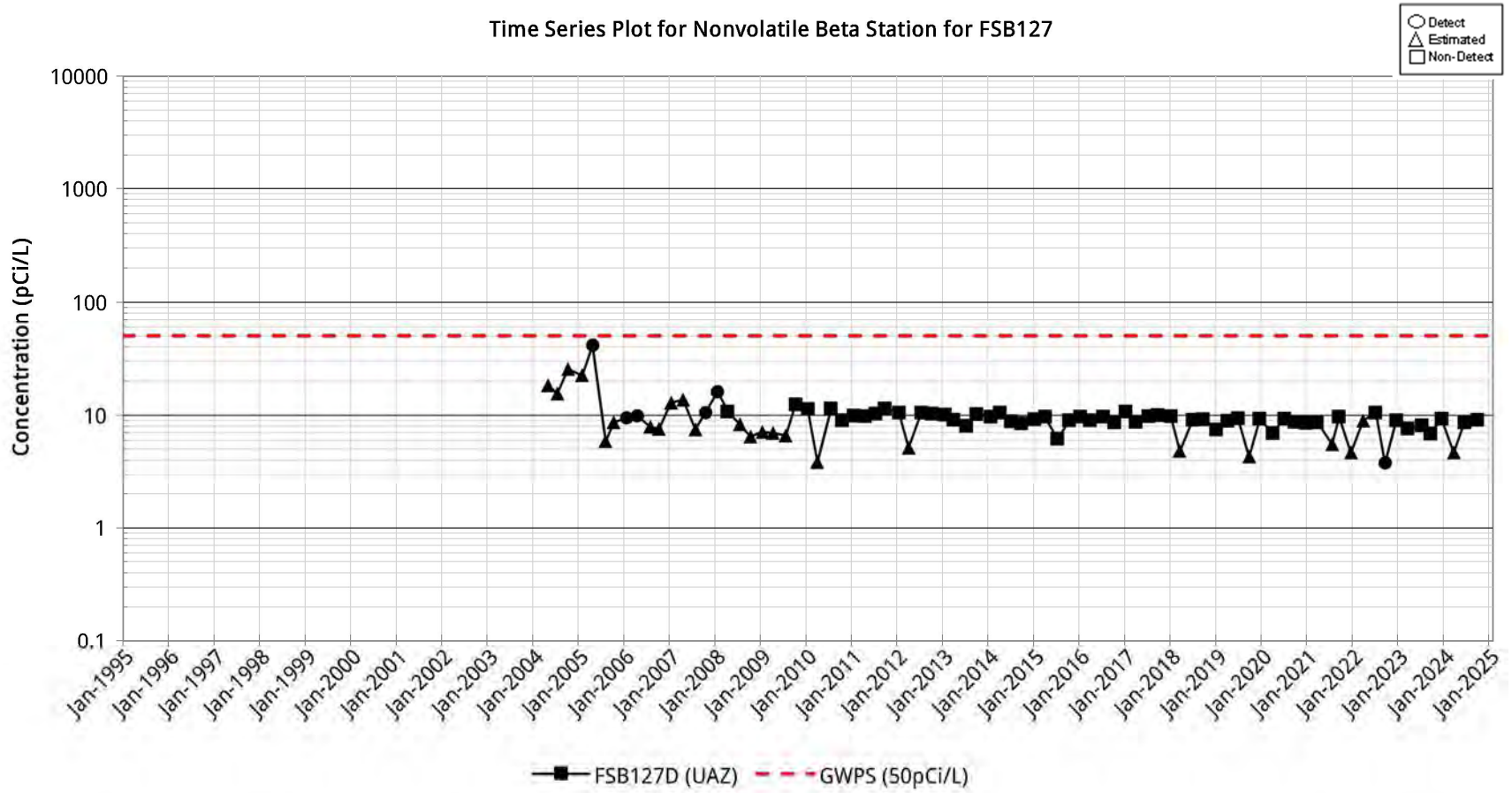

Time Series Plot for Nonvolatile Beta Station for FSB 98
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
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Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 98D (UAZ)
FSB 98C (LAZ)
FSB 98AR (GAU)
GWPS (50pCi/L)

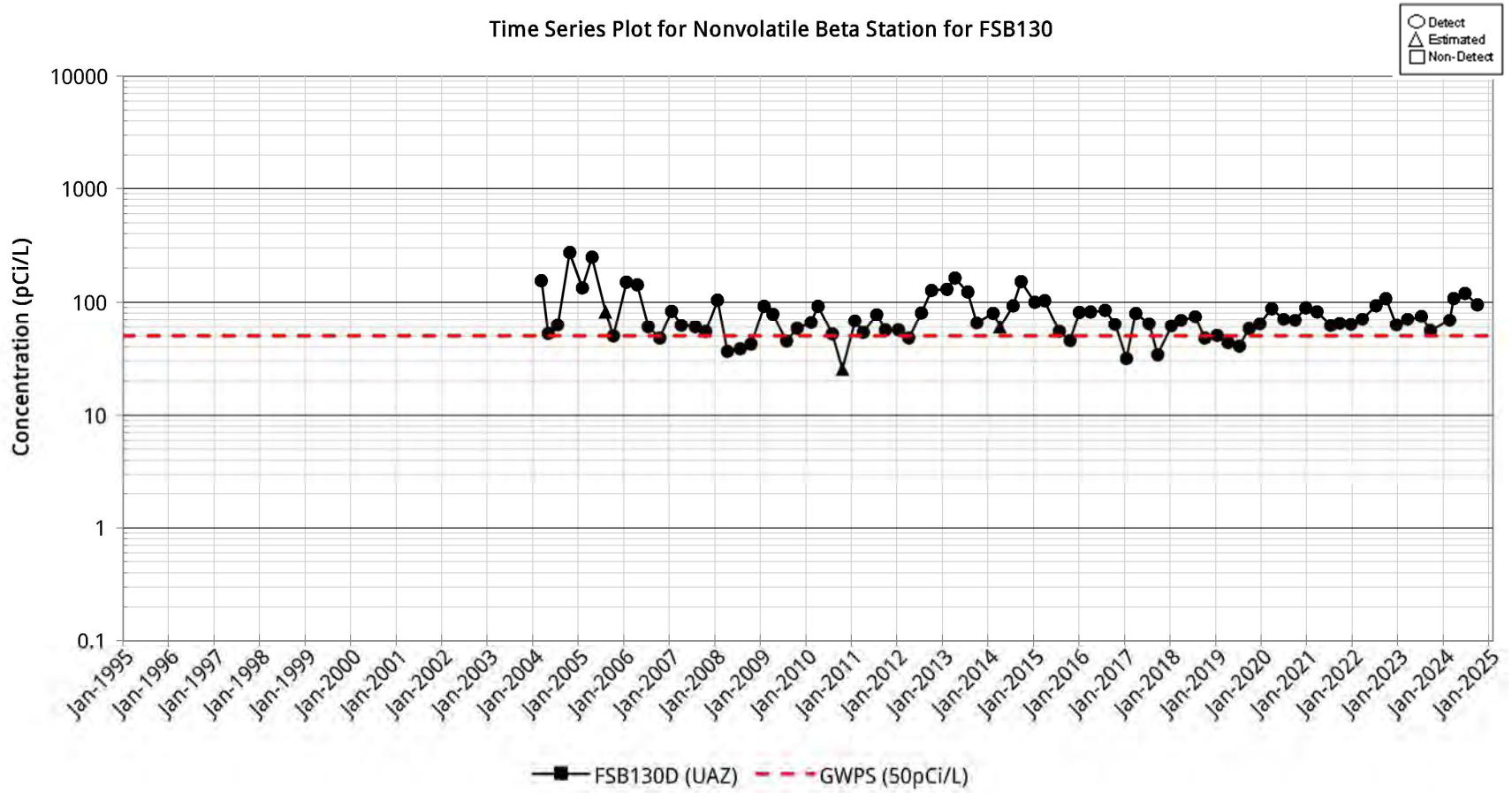

Time Series Plot for Nonvolatile Beta Station for FSB104
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB104D (UAZ)
FSB104C (LAZ)
GWPS (50pCi/L)

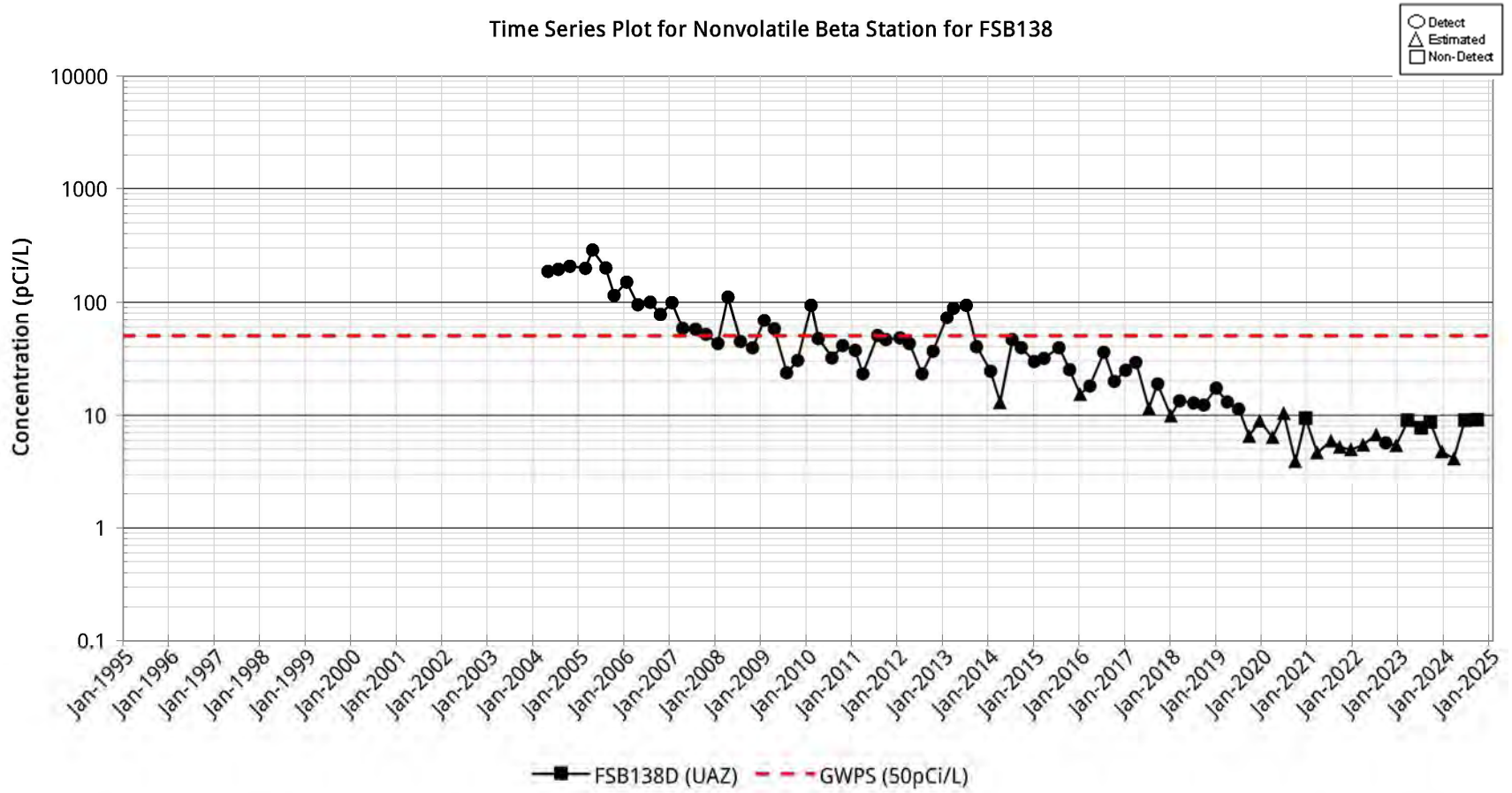

Time Series Plot for Nonvolatile Beta Station for FSB112
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
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Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB112C (LAZ)
FSB112A (GAU)
FSB112D (UAZ)
FSB112DR (UAZ)
GWPS (50pCi/L)

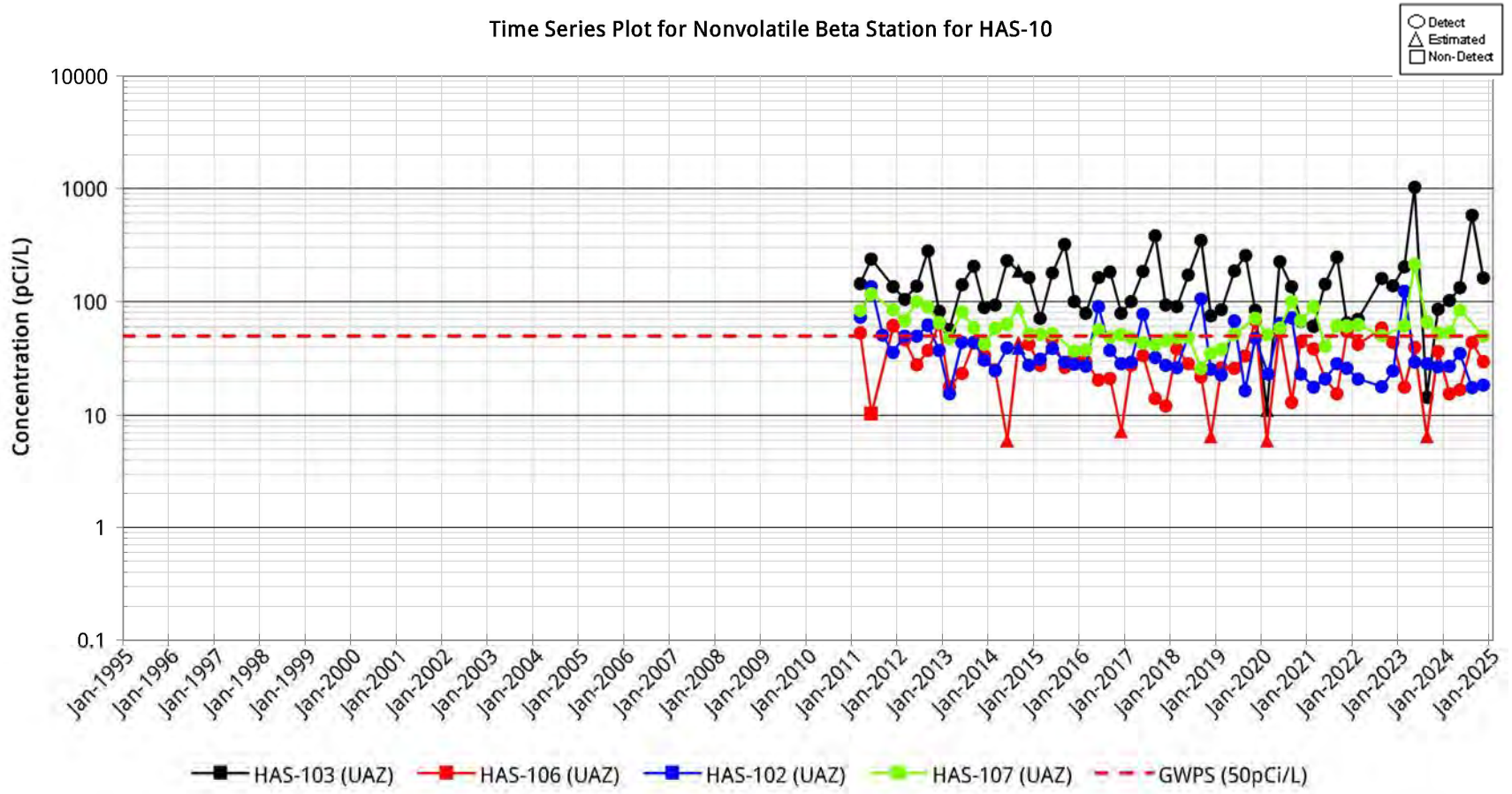

Time Series Plot for Nonvolatile Beta Station for FSB124
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2014
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Jan-2016
Jan-2017
Jan-2018
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Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB124D (UAZ)
GWPS (50pCi/L)

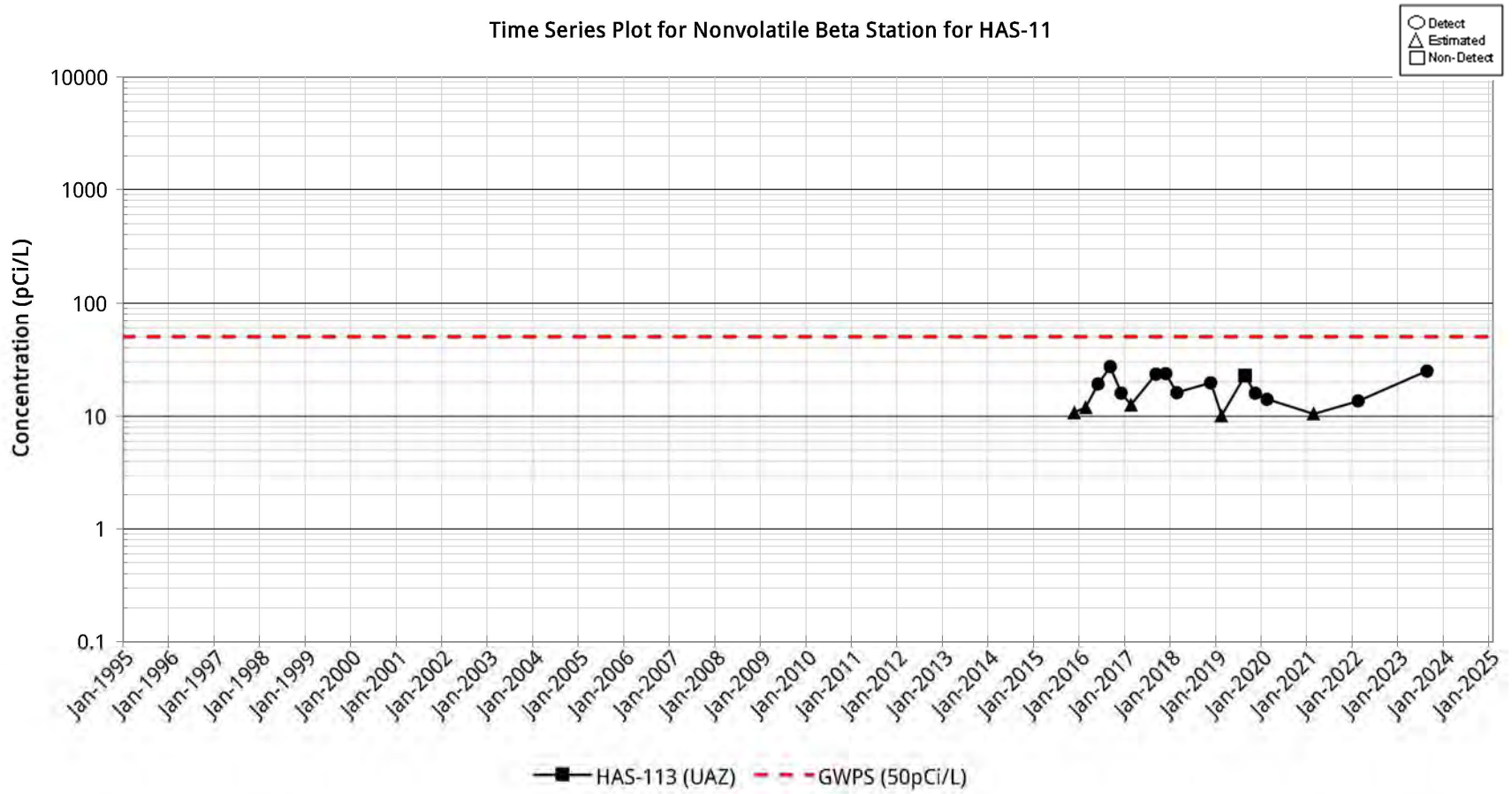

Time Series Plot for Nonvolatile Beta Station for FSB125
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
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Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB125DR (UAZ)
GWPS (50pCi/L)

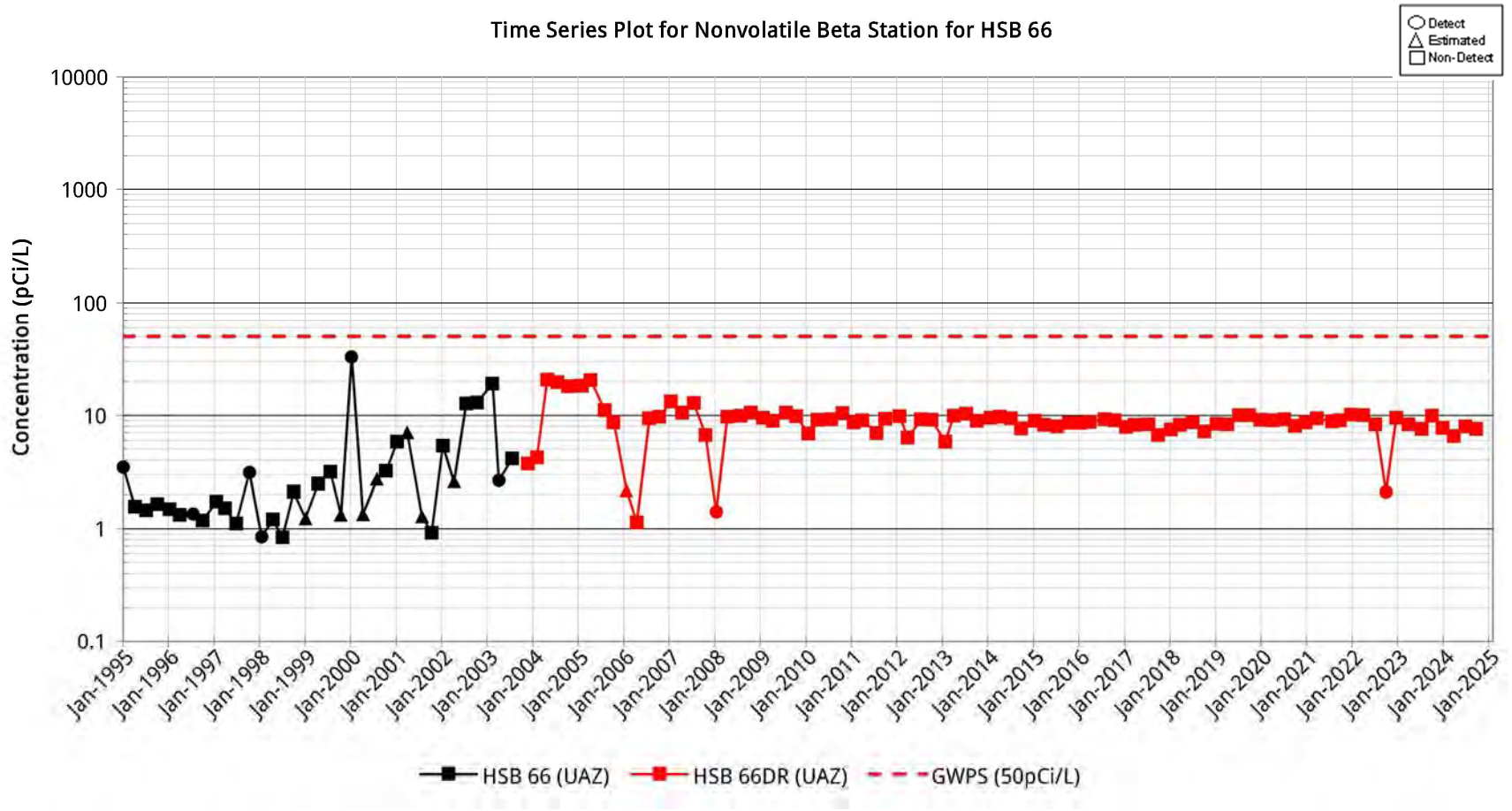

Time Series Plot for Nonvolatile Beta Station for FSB127
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB127D (UAZ)
GWPS (50pCi/L)

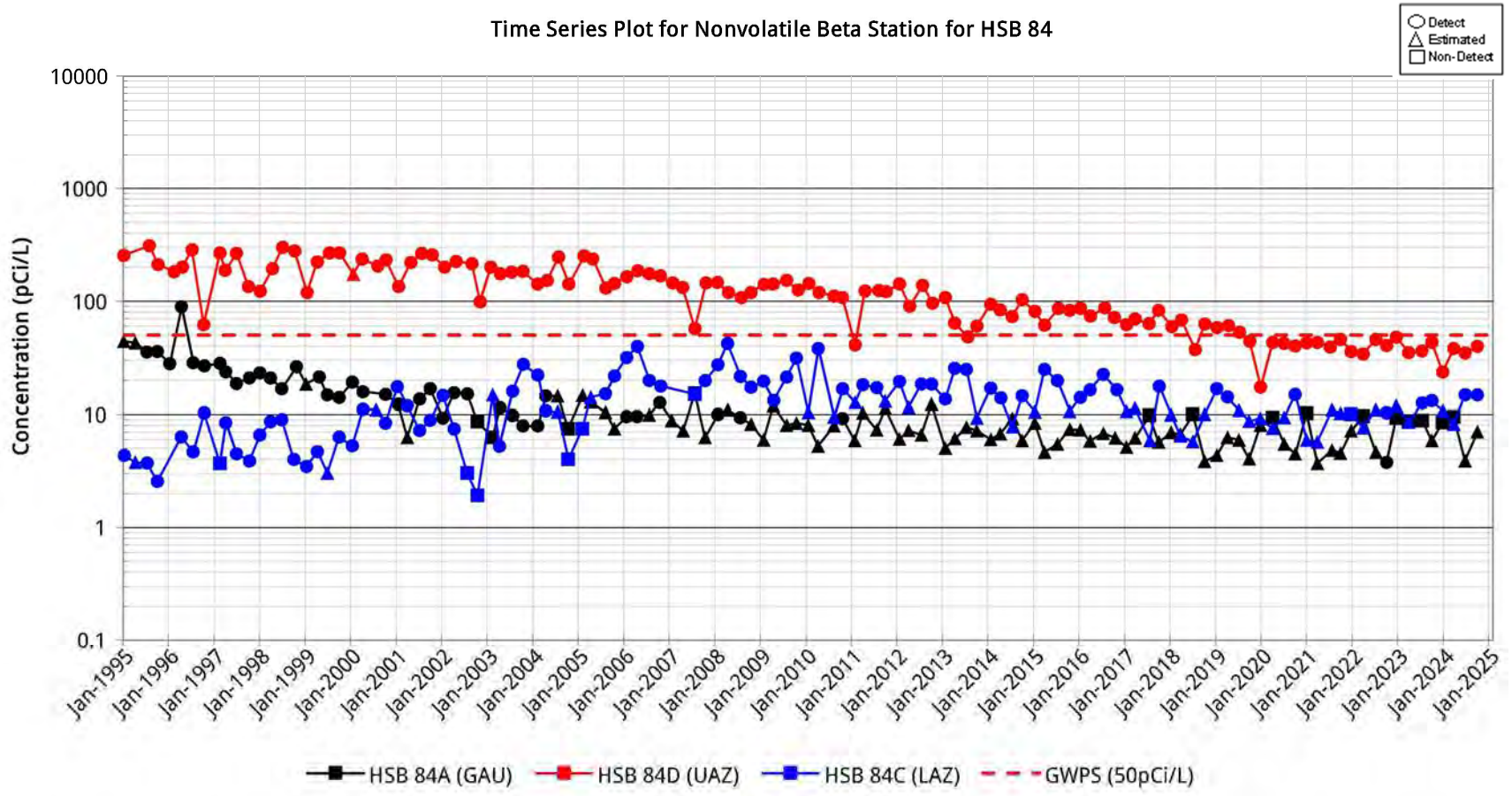

Time Series Plot for Nonvolatile Beta Station for FSB130
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB130D (UAZ)
GWPS (50pCi/L)

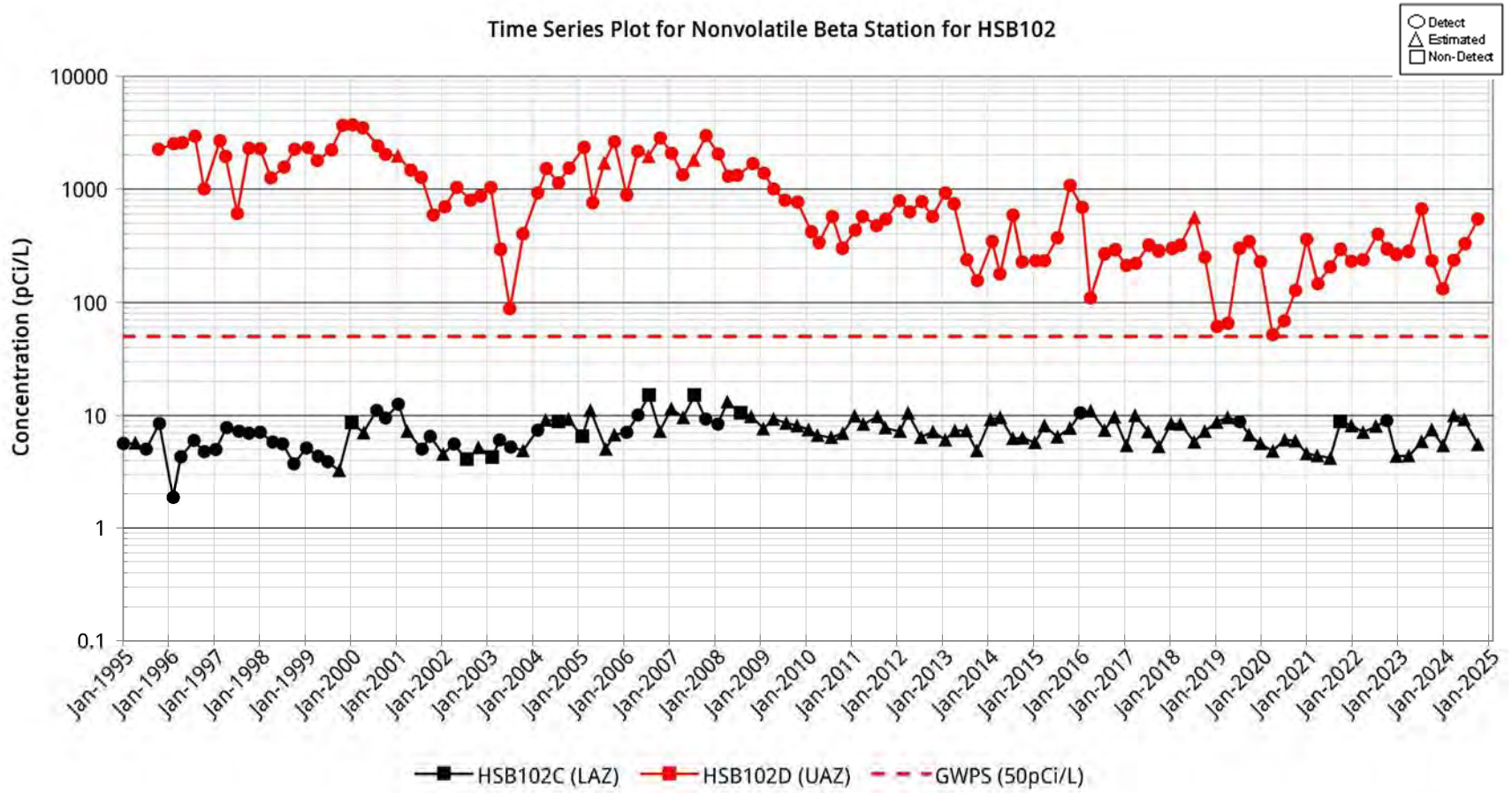

Time Series Plot for Nonvolatile Beta Station for FSB138
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB138D (UAZ)
GWPS (50pCi/L)

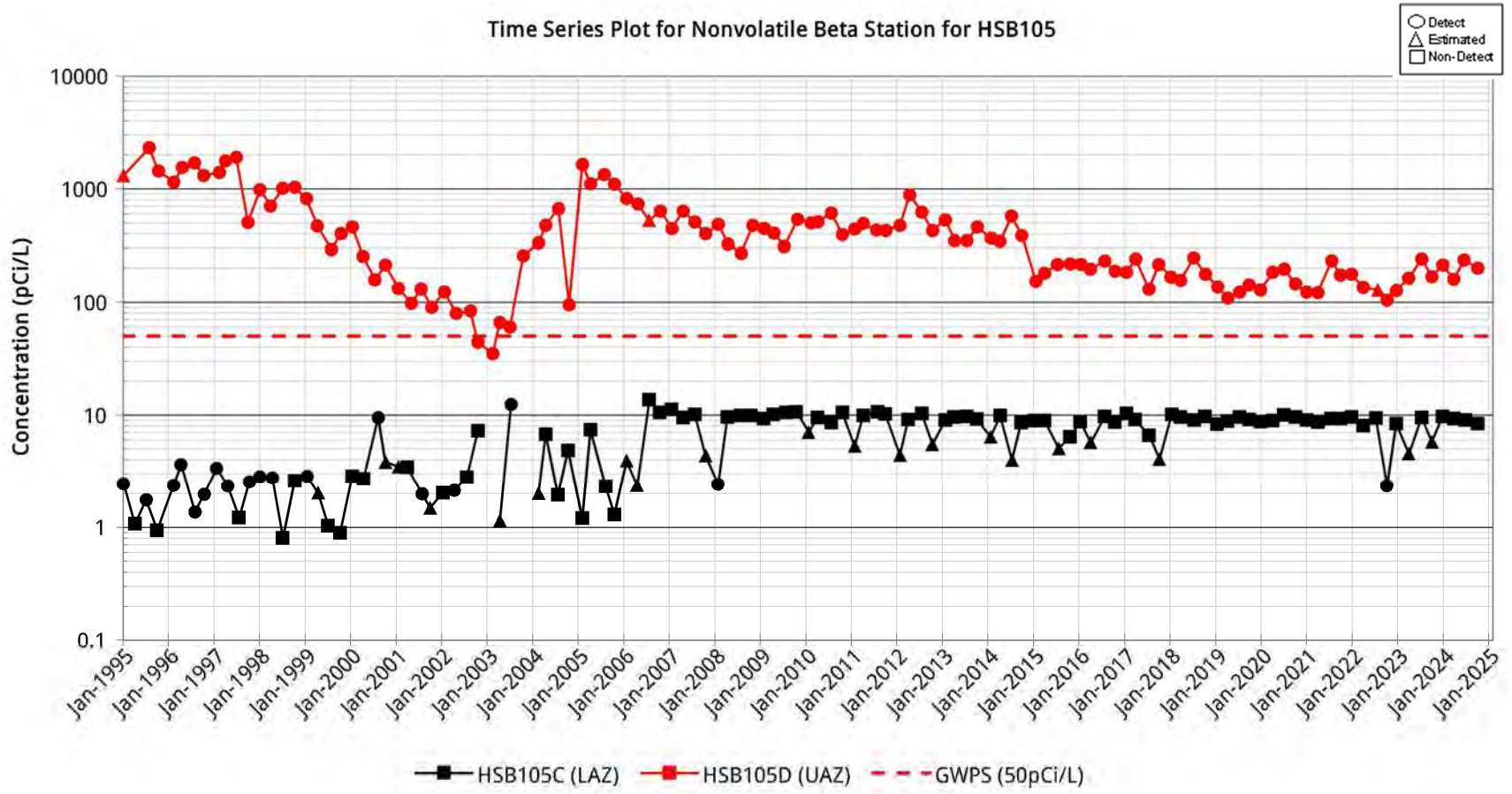

Time Series Plot for Nonvolatile Beta Station for HAS-10
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HAS-103 (UAZ)
HAS-106 (UAZ)
HAS-102 (UAZ)
HAS-107 (UAZ)
GWPS (50pCi/L)

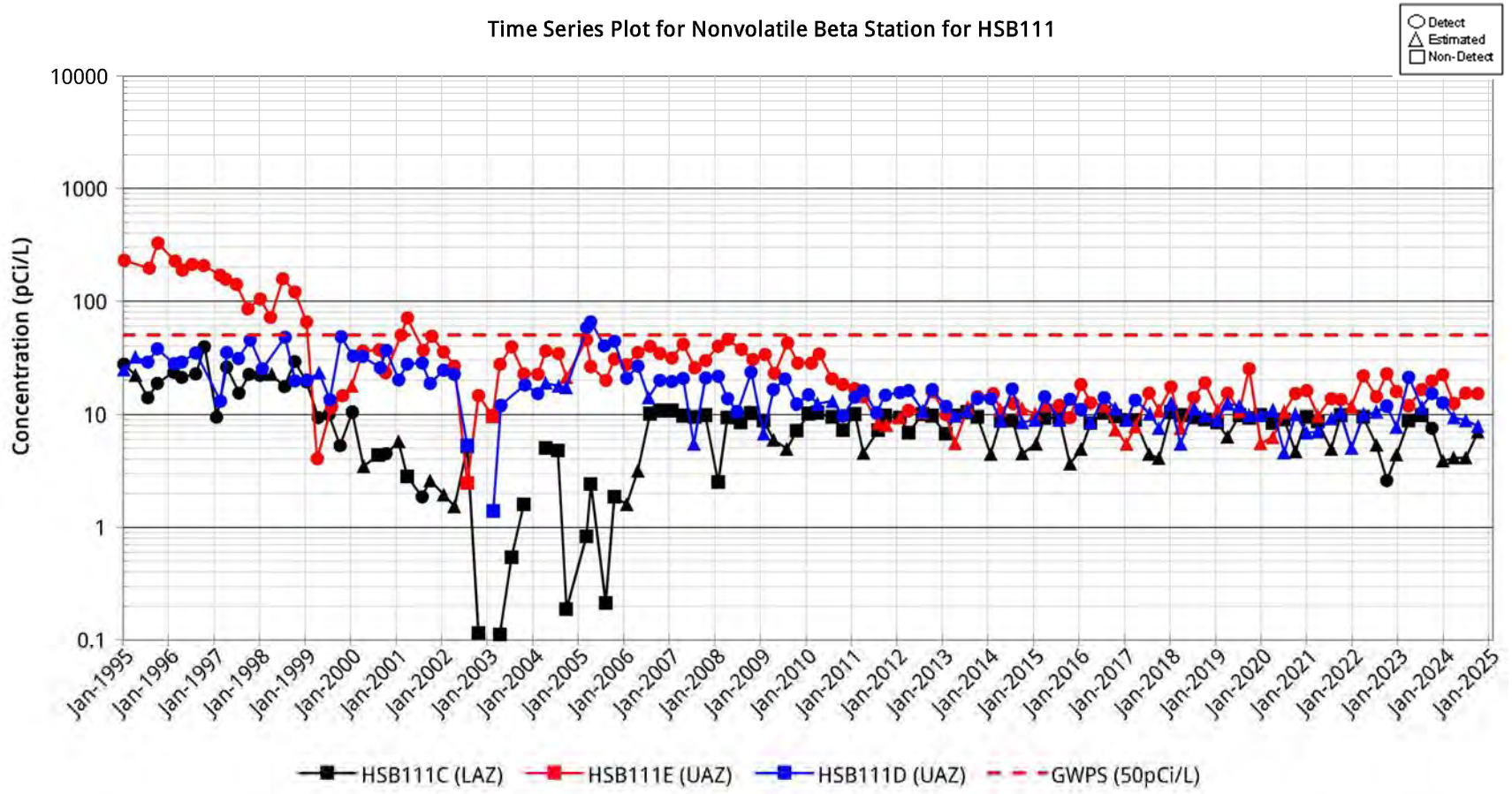

Time Series Plot for Nonvolatile Beta Station for HAS-11
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HAS-113 (UAZ)
GWPS (50pCi/L)

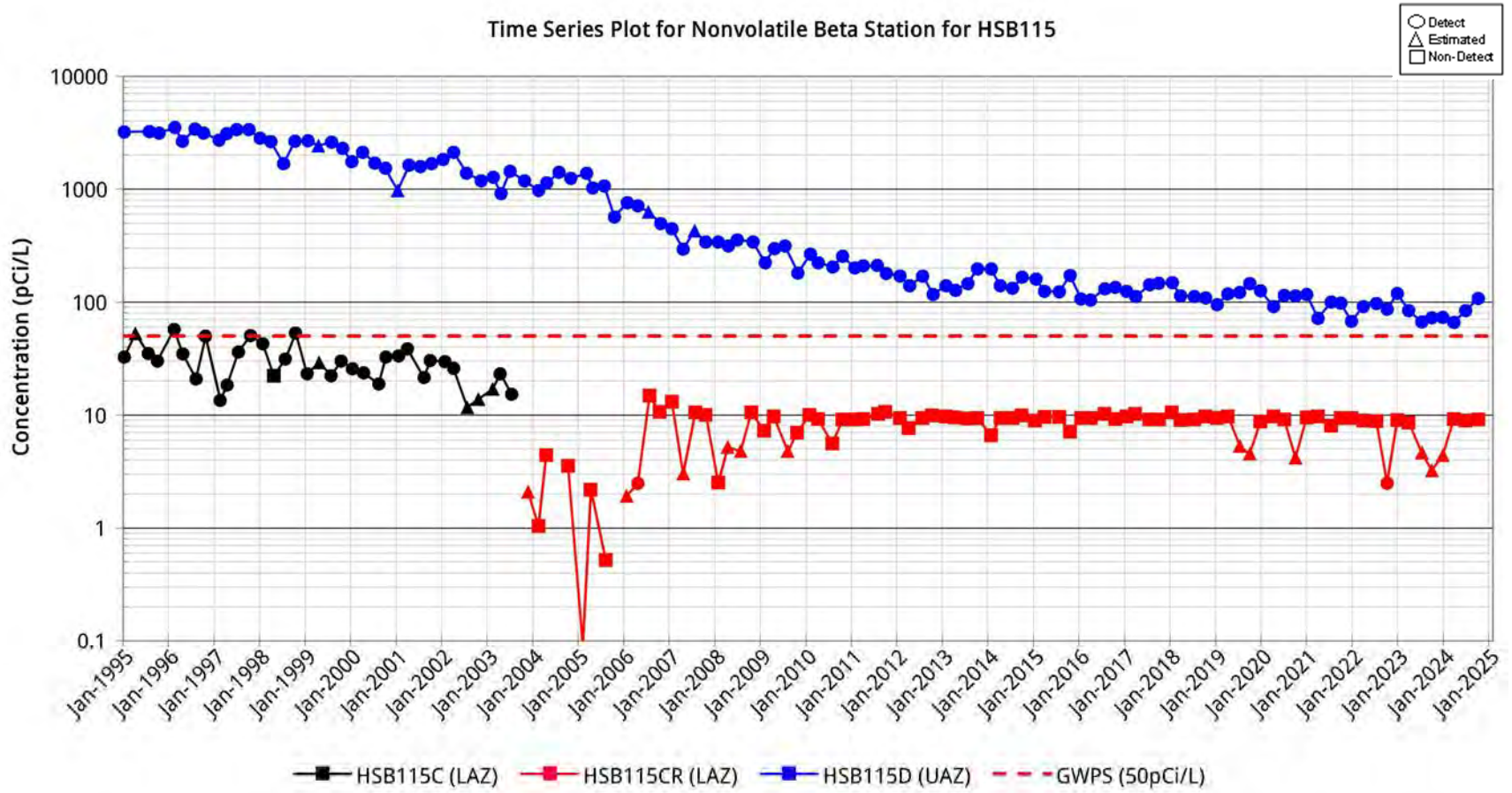

Time Series Plot for Nonvolatile Beta Station for HSB 66
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
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Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB 66 (UAZ)
HSB 66DR (UAZ)
GWPS (50pCi/L)

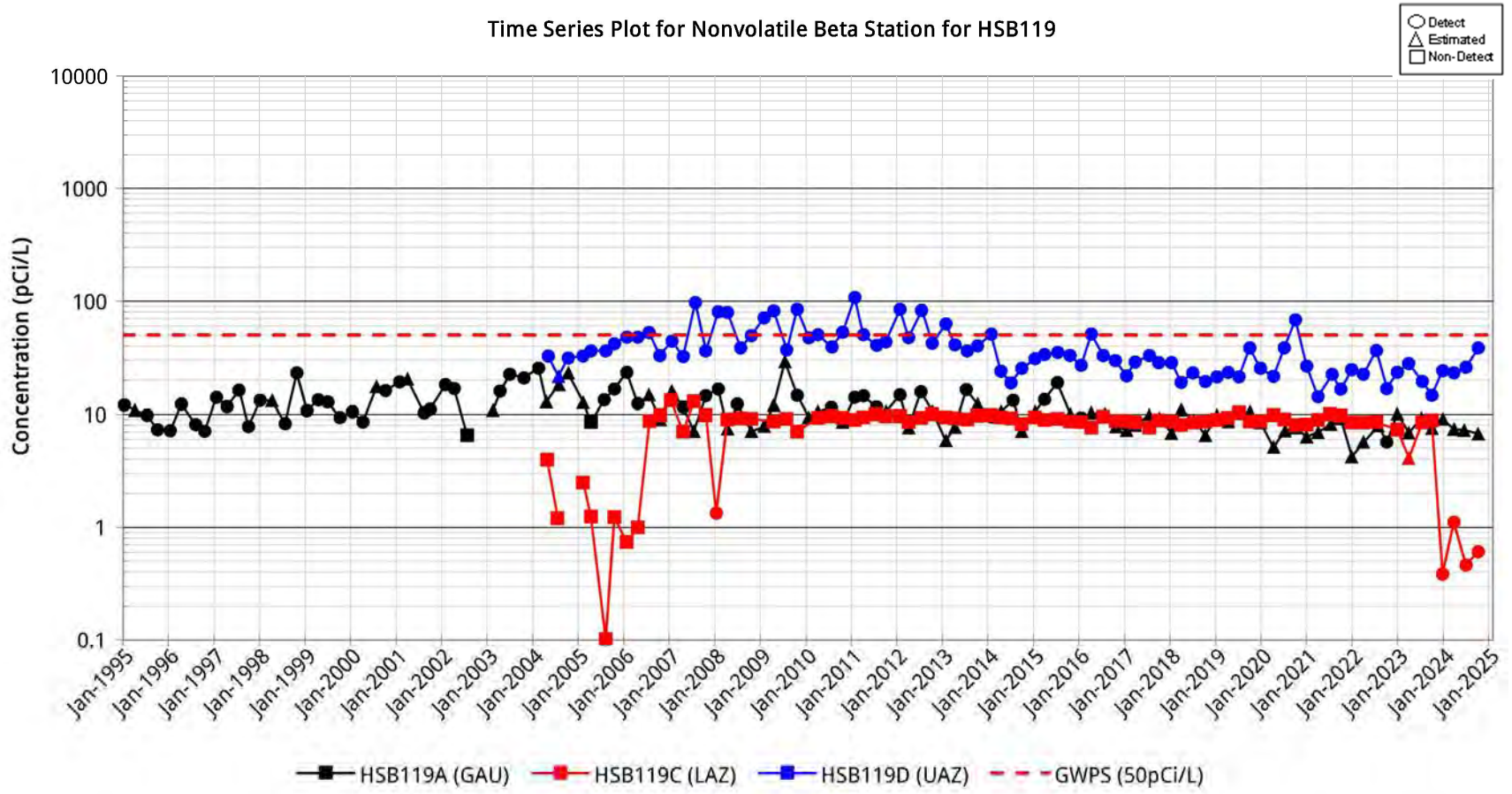

Time Series Plot for Nonvolatile Beta Station for HSB 84
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
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Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
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Jan-2024
Jan-2025
HSB 84A (GAU)
HSB 84D (UAZ)
HSB 84C (LAZ)
GWPS (50pCi/L)

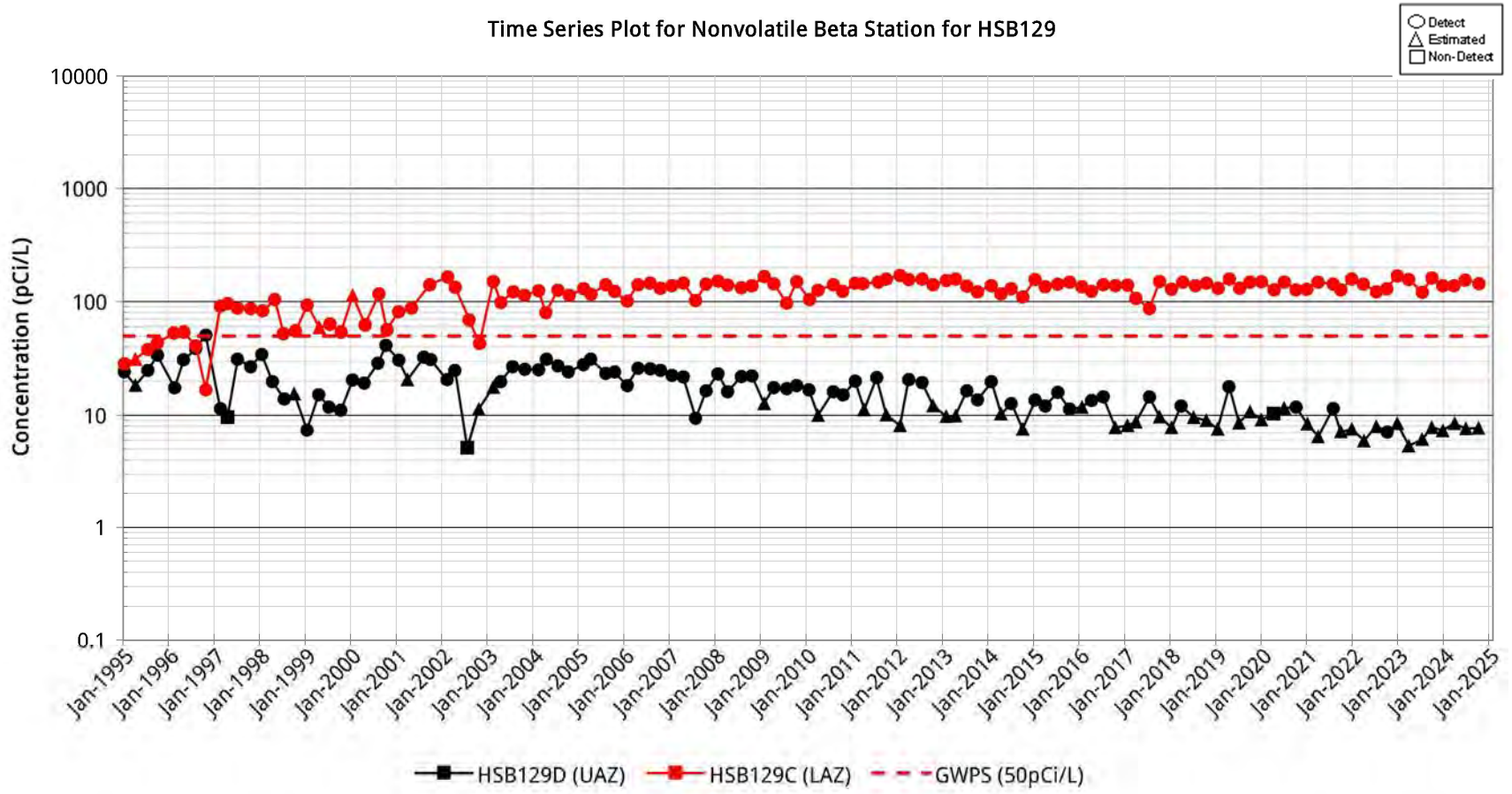

Time Series Plot for Nonvolatile Beta Station for HSB102
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB102C (LAZ)
HSB102D (UAZ)
GWPS (50pCi/L)

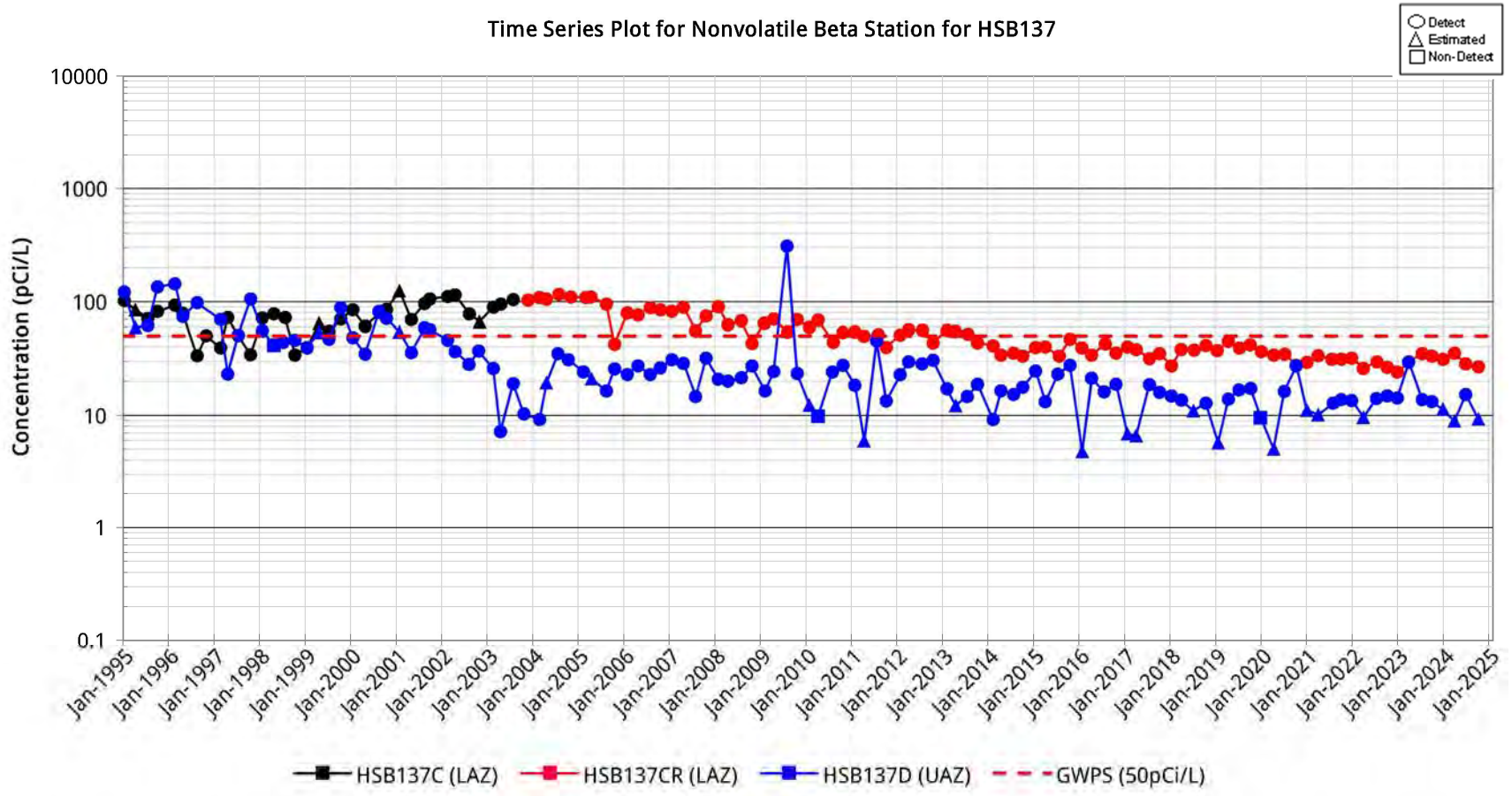

Time Series Plot for Nonvolatile Beta Station for HSB105
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB105C (LAZ)
HSB105D (UAZ)
GWPS (50pCi/L)

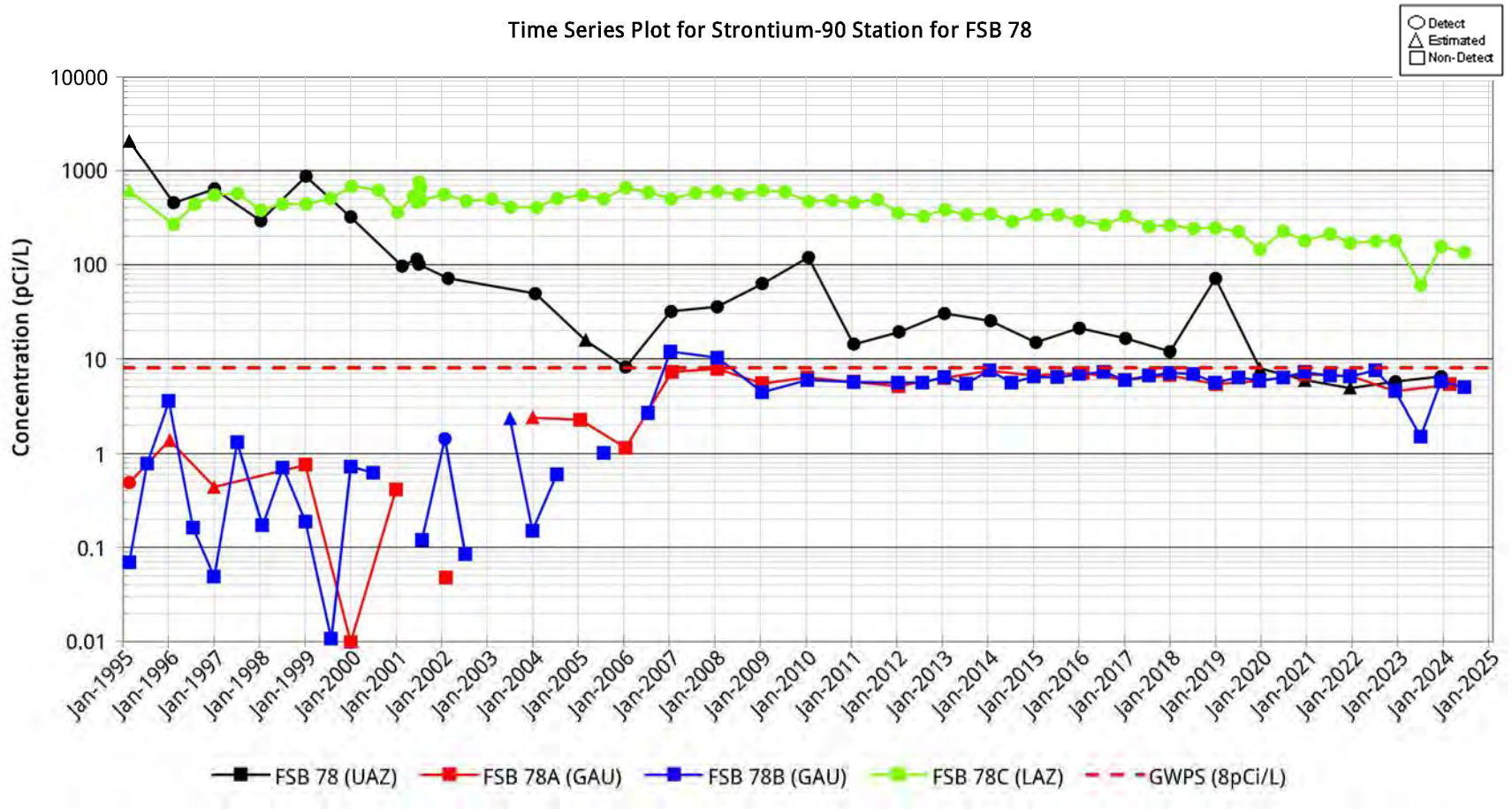

Time Series Plot for Nonvolatile Beta Station for HSB111
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2010
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Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB111C (LAZ)
HSB111E (UAZ)
HSB111D (UAZ)
GWPS (50pCi/L)

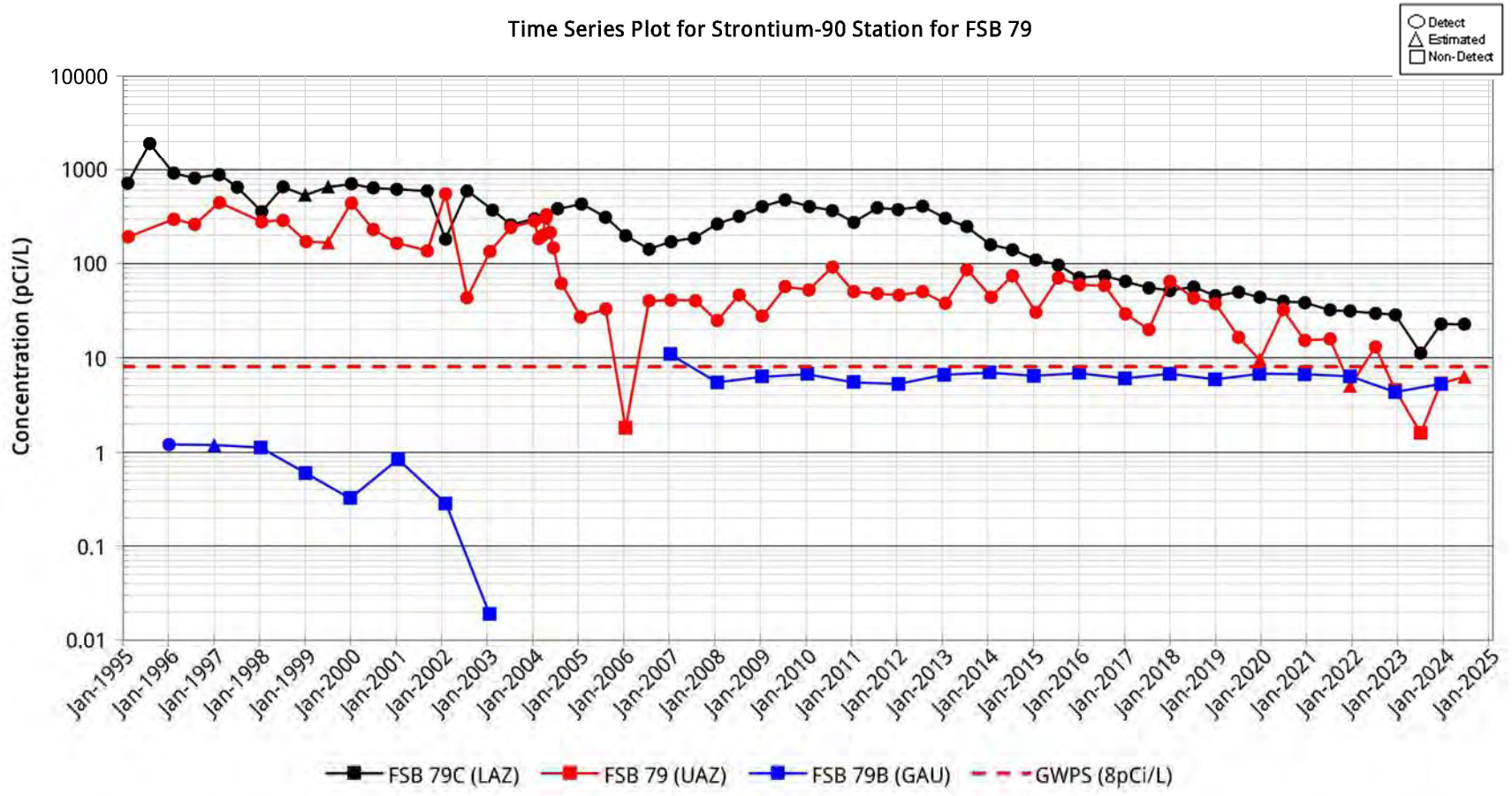

Time Series Plot for Nonvolatile Beta Station for HSB115
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2013
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Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB115C (LAZ)
HSB115CR (LAZ)
HSB115D (UAZ)
GWPS (50pCi/L)

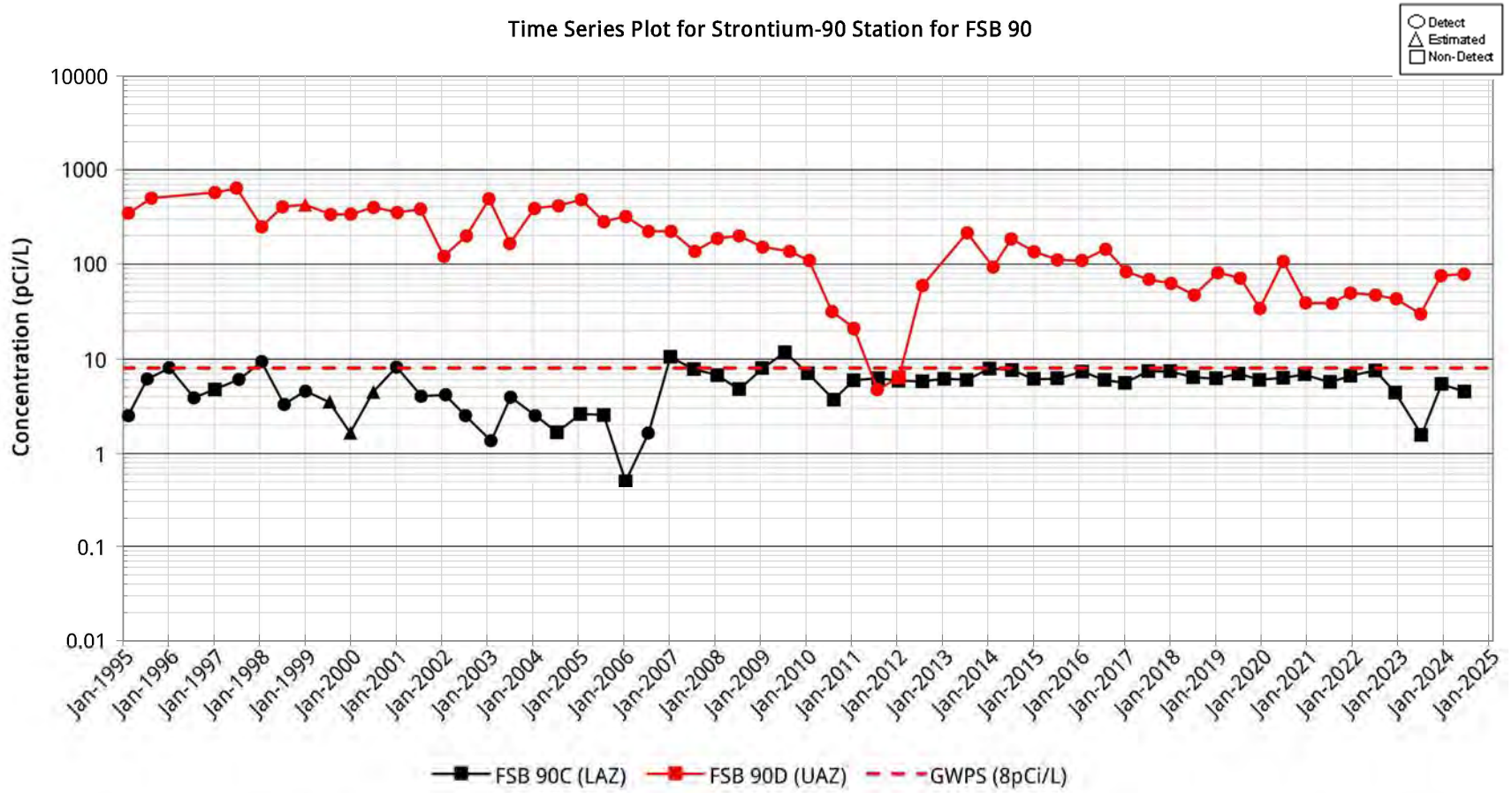

Time Series Plot for Nonvolatile Beta Station for HSB119
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB119A (GAU)
HSB119C (LAZ)
HSB119D (UAZ)
GWPS (50pCi/L)

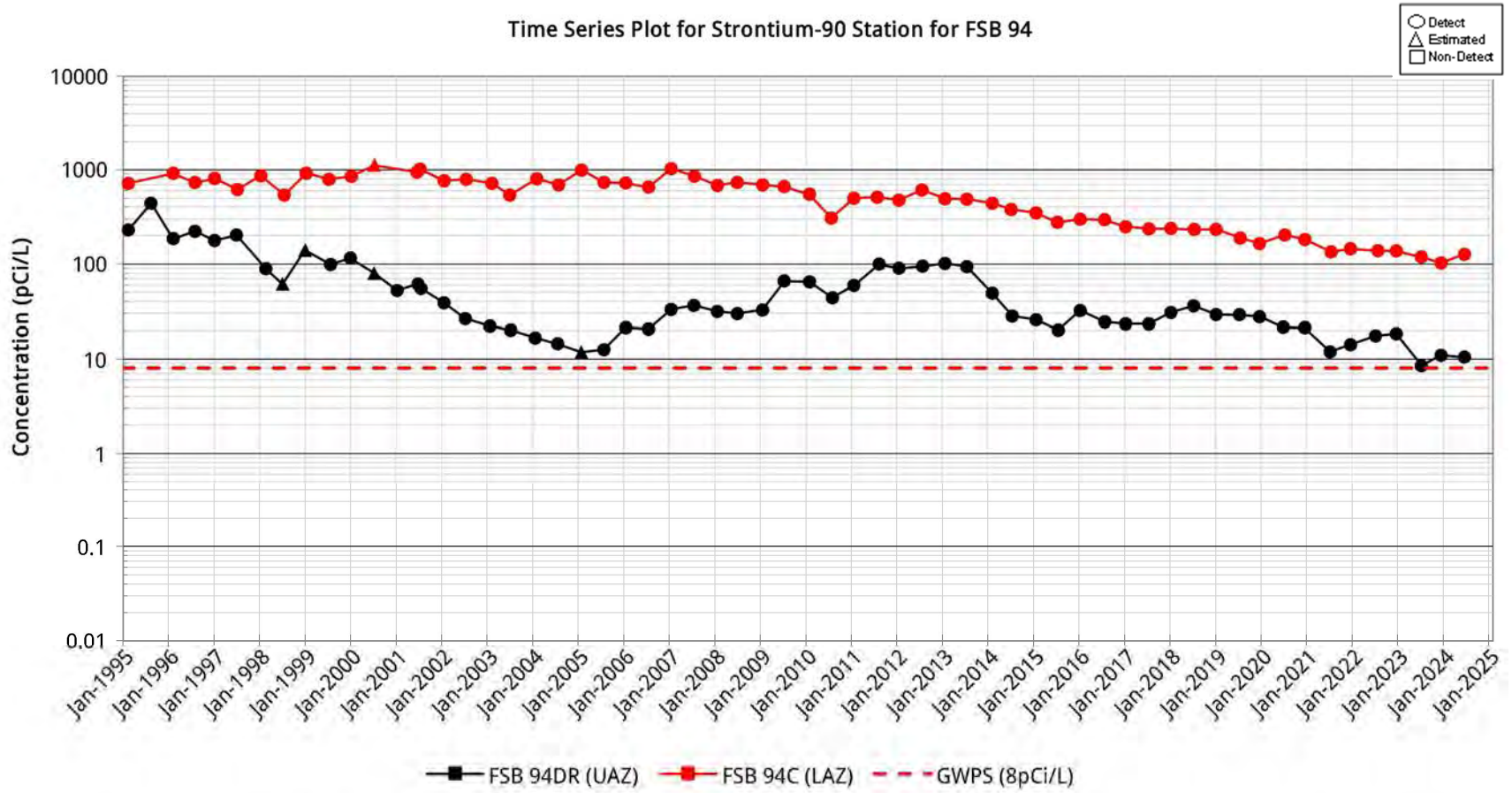

Time Series Plot for Nonvolatile Beta Station for HSB129
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB129D (UAZ)
HSB129C (LAZ)
GWPS (50pCi/L)

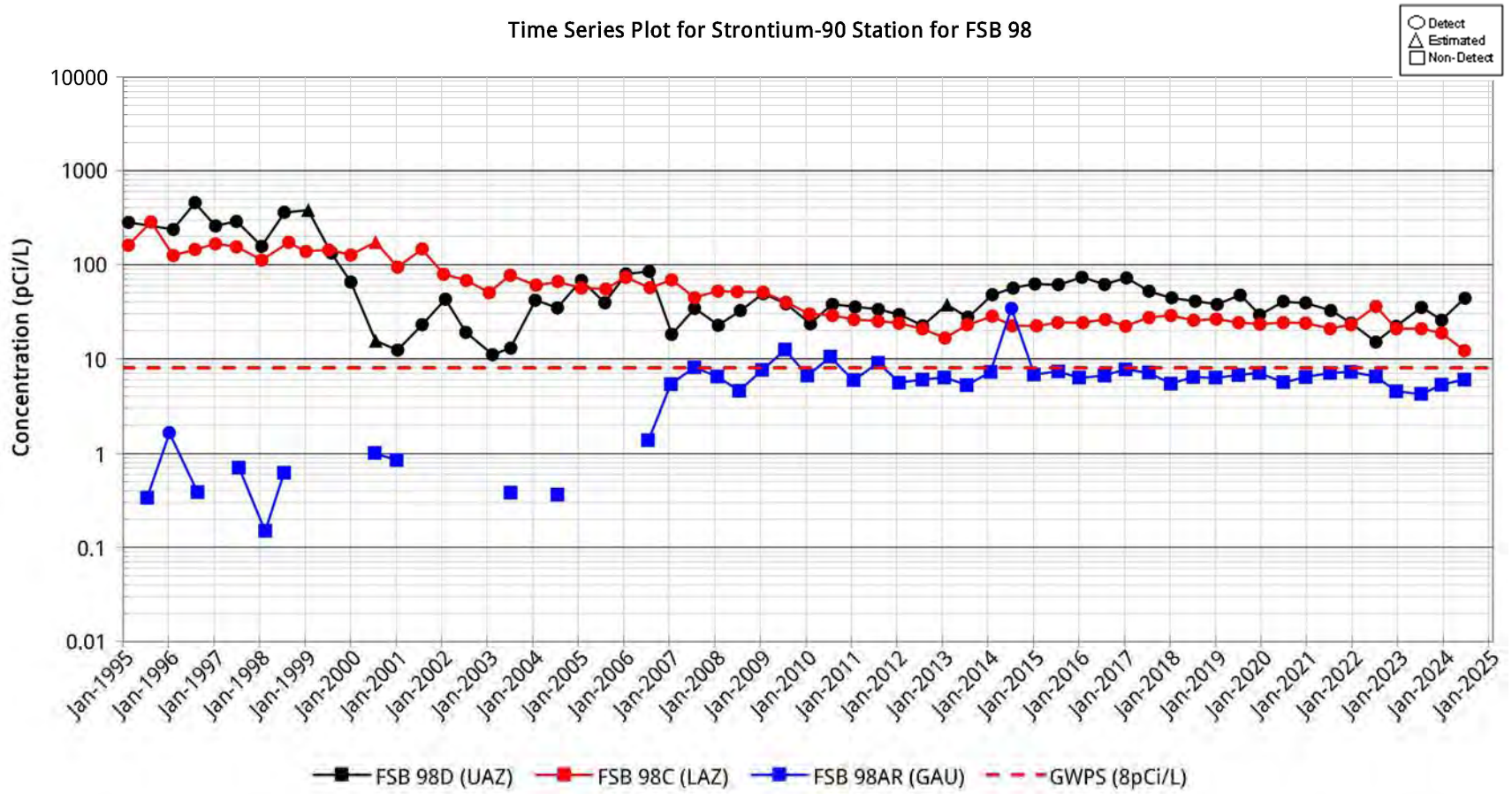

Time Series Plot for Nonvolatile Beta Station for HSB137
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB137C (LAZ)
HSB137CR (LAZ)
HSB137D (UAZ)
GWPS (50pCi/L)

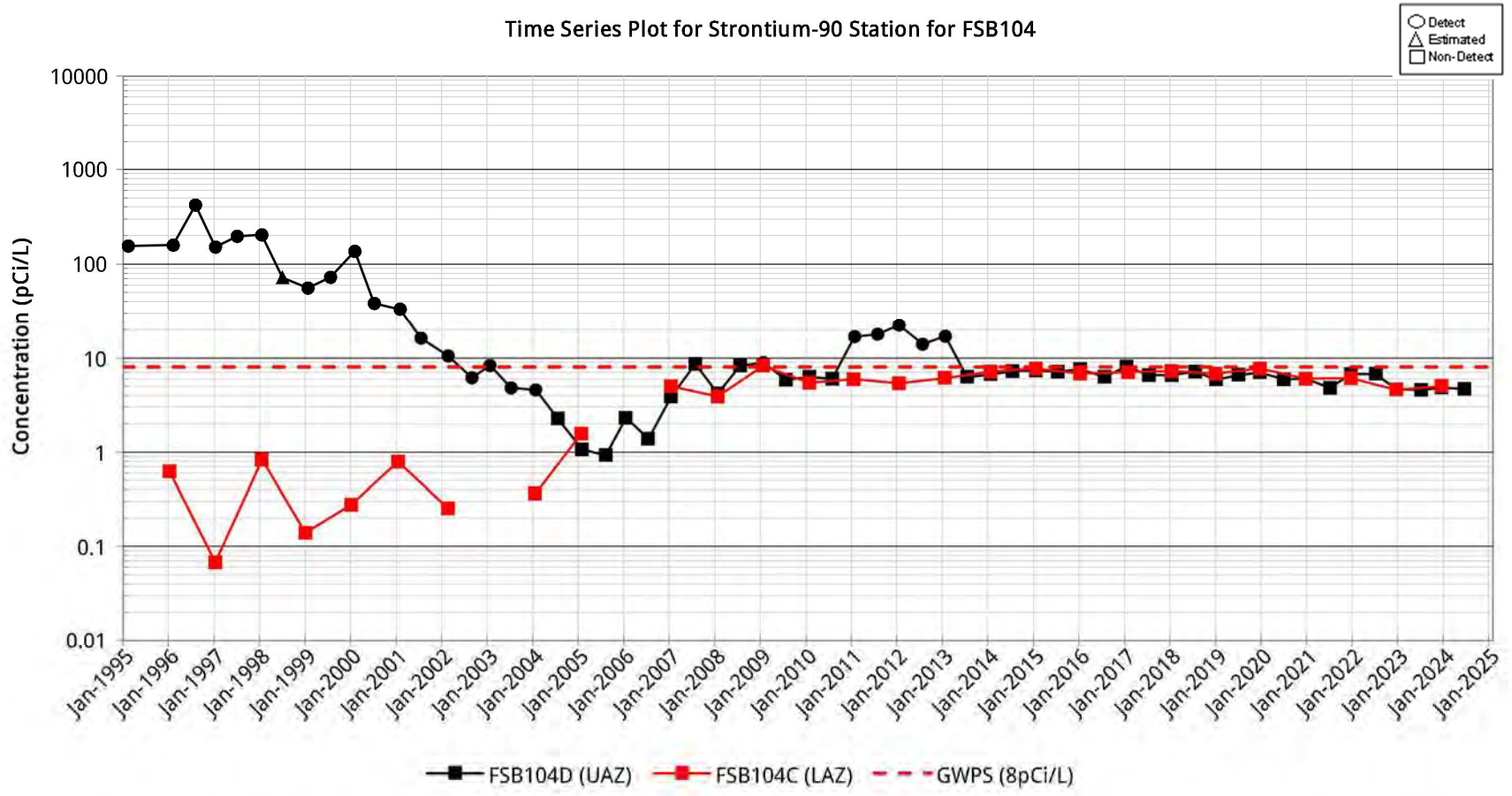

Time Series Plot for Strontium-90 Station for FSB 78
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 78 (UAZ)
FSB 78A (GAU)
FSB 78B (GAU)
FSB 78C (LAZ)
GWPS (8pCi/L)

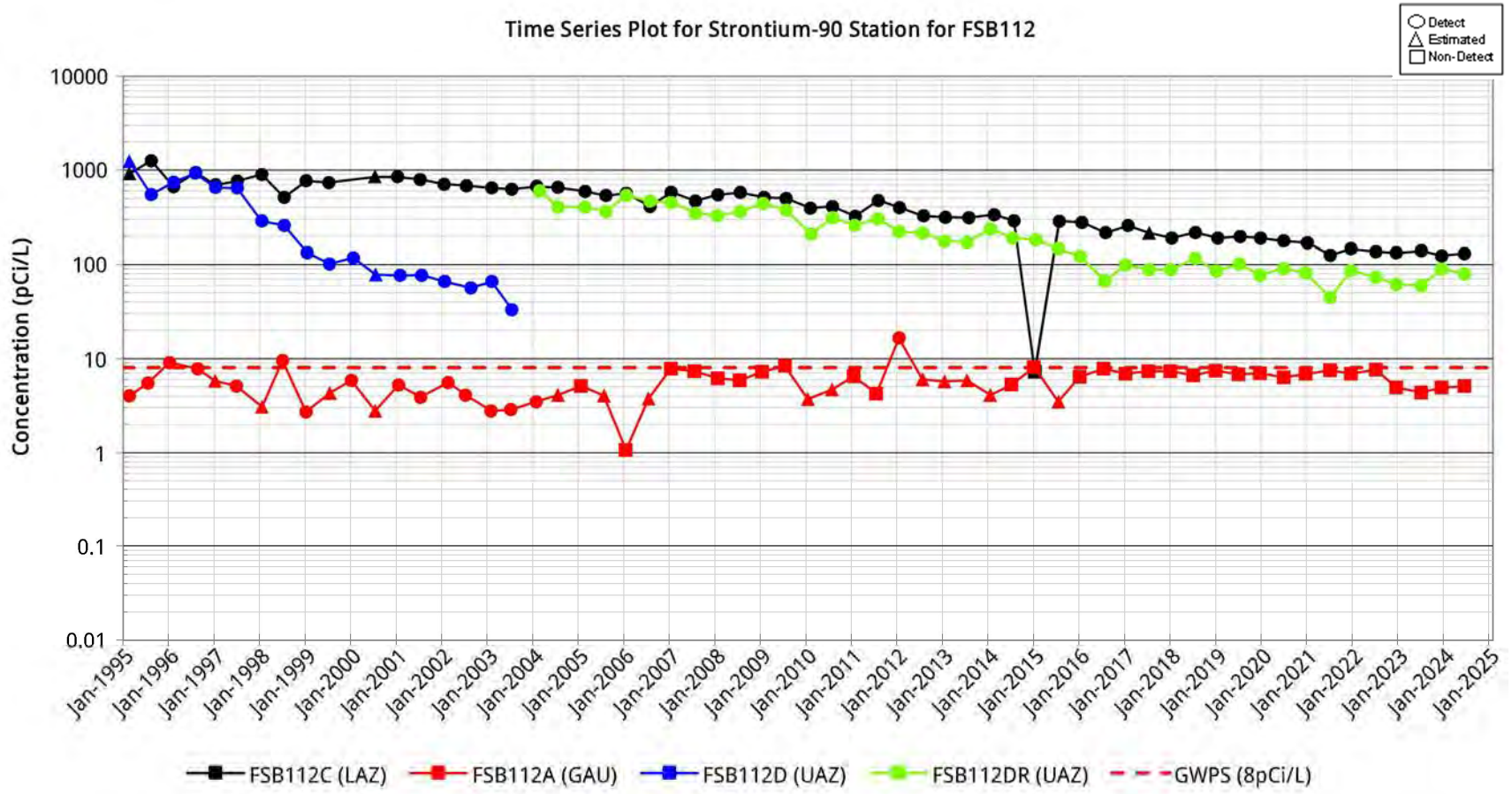

Time Series Plot for Strontium-90 Station for FSB 79
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 79C (LAZ)
FSB 79 (UAZ)
FSB 79B (GAU)
GWPS (8pCi/L)

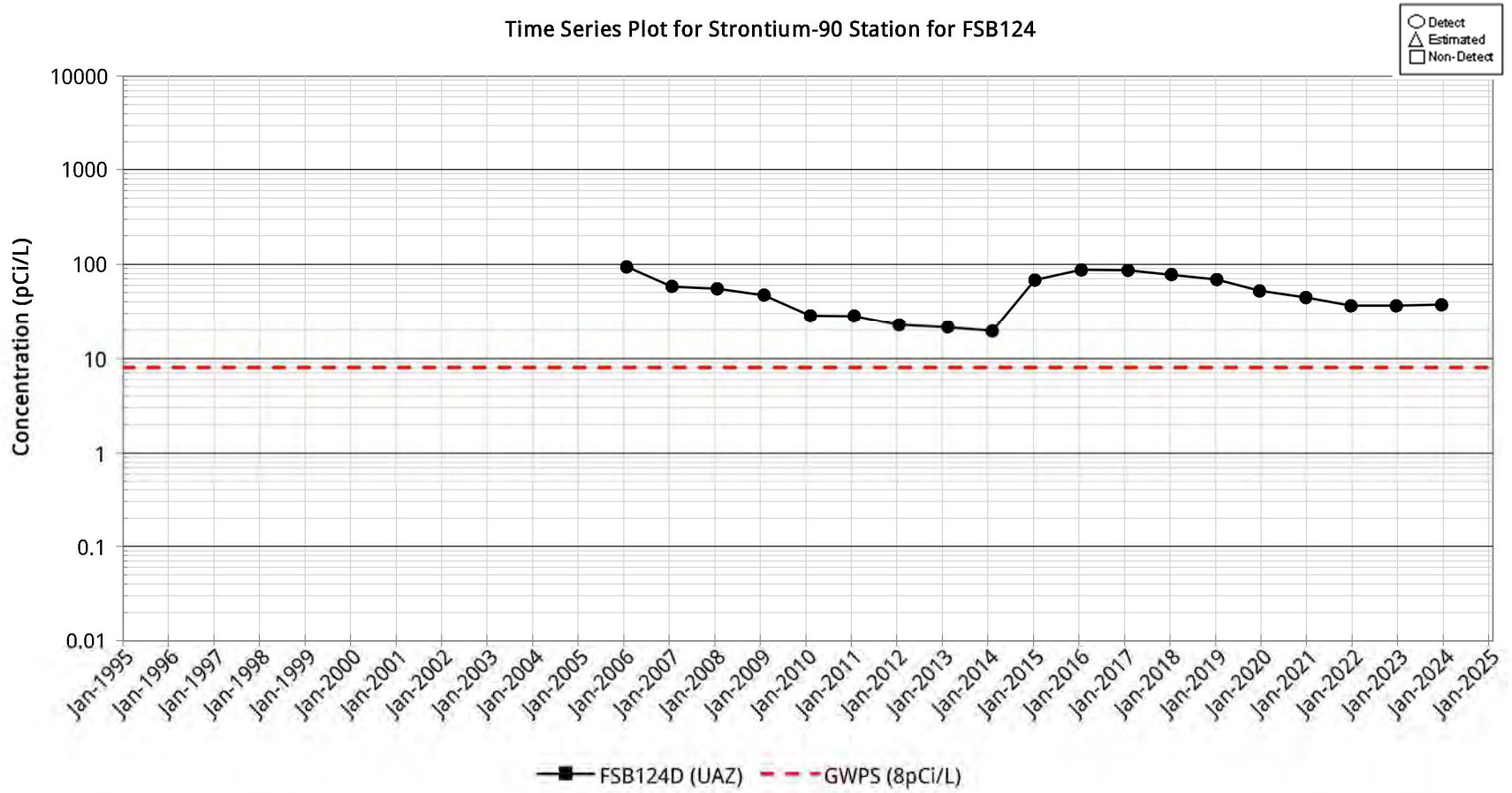

Time Series Plot for Strontium-90 Station for FSB 90
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 90C (LAZ)
FSB 90D (UAZ)
GWPS (8pCi/L)

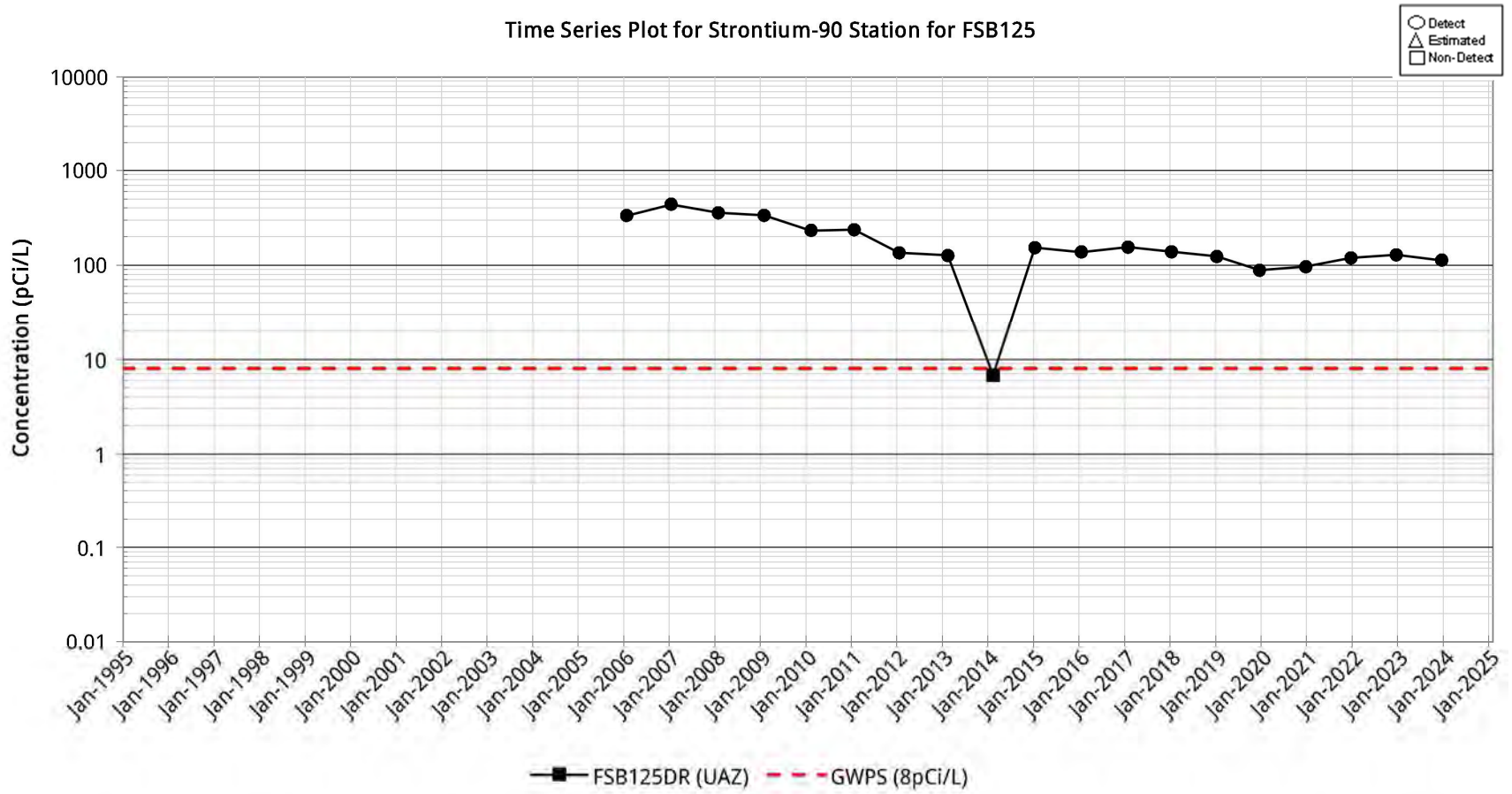

Time Series Plot for Strontium-90 Station for FSB 94
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 94DR (UAZ)
FSB 94C (LAZ)
GWPS (8pCi/L)

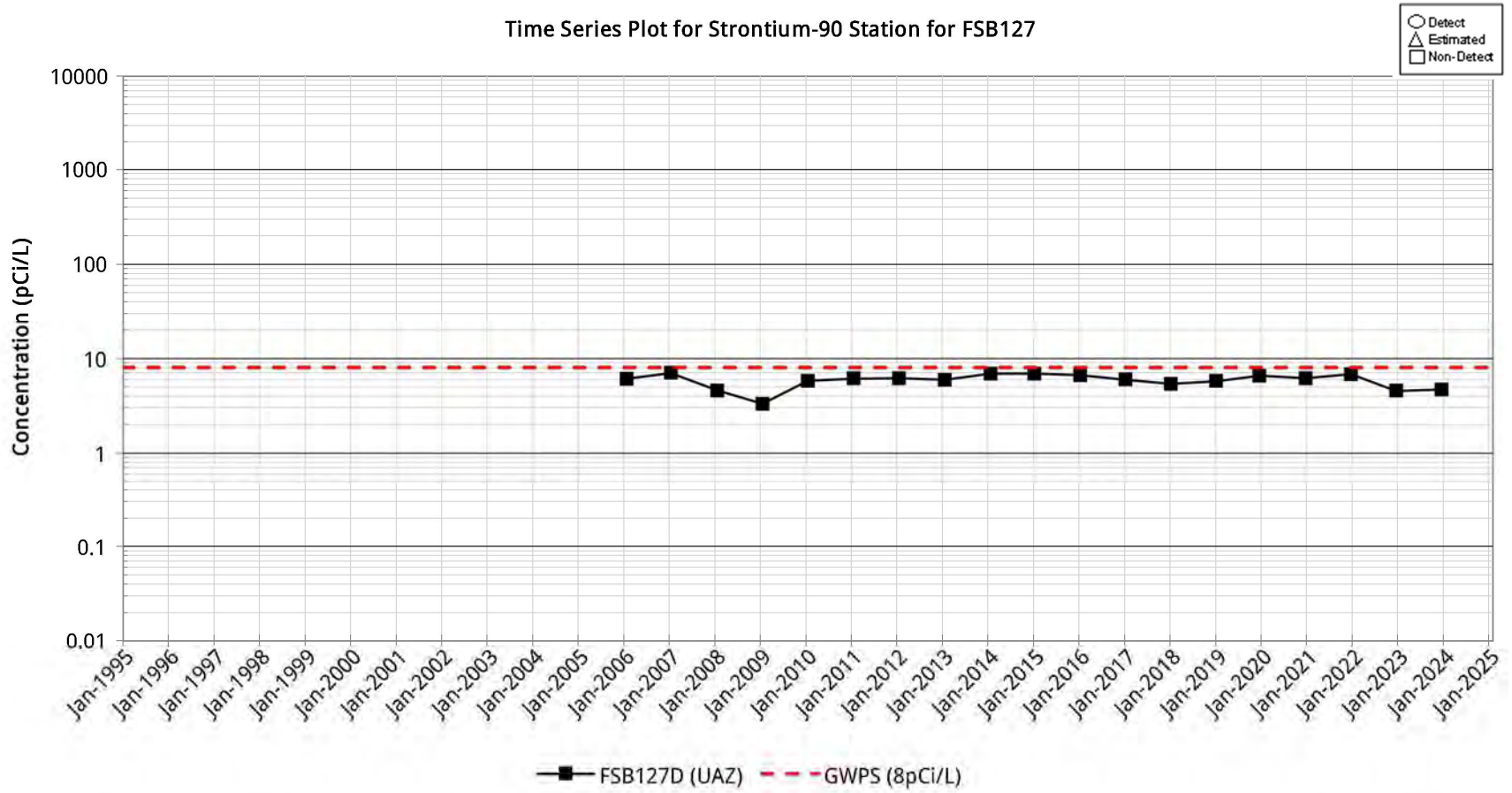

Time Series Plot for Strontium-90 Station for FSB 98
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 98D (UAZ)
FSB 98C (LAZ)
FSB 98AR (GAU)
GWPS (8pCi/L)

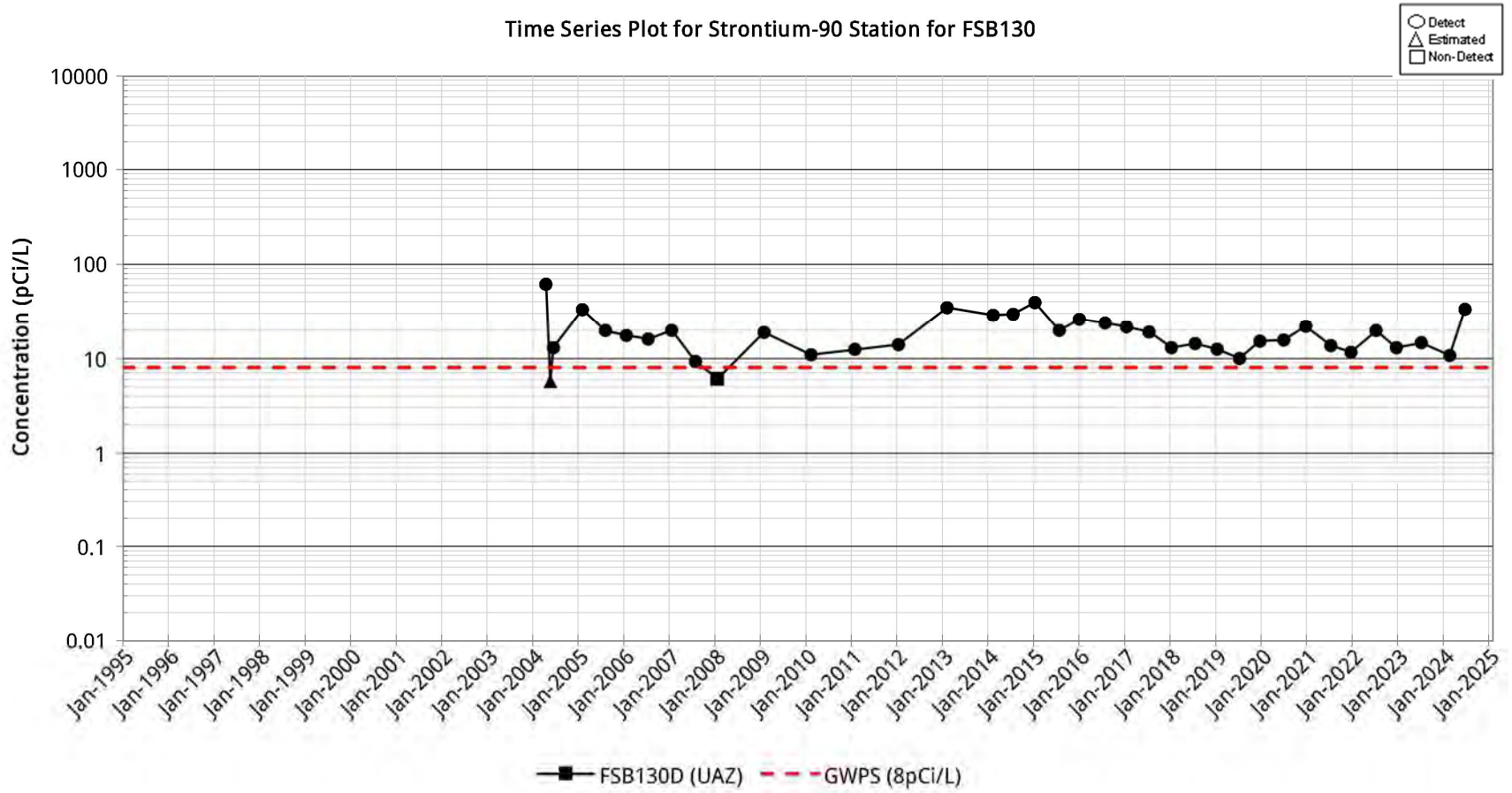

Time Series Plot for Strontium-90 Station for FSB104
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB104D (UAZ)
FSB104C (LAZ)
GWPS (8pCi/L)

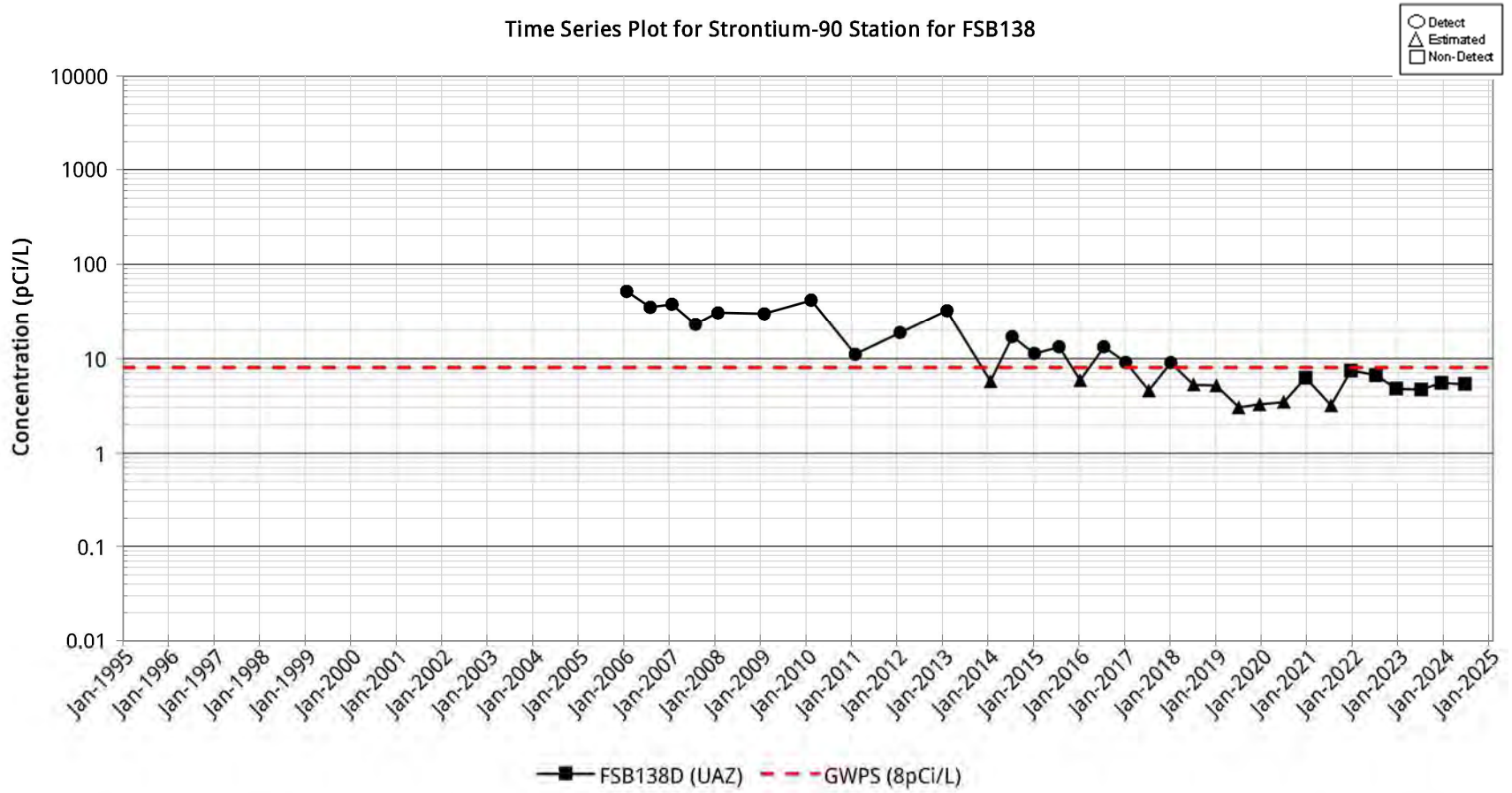

Time Series Plot for Strontium-90 Station for FSB112
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB112C (LAZ)
FSB112A (GAU)
FSB112D (UAZ)
FSB112DR (UAZ)
GWPS (8pCi/L)

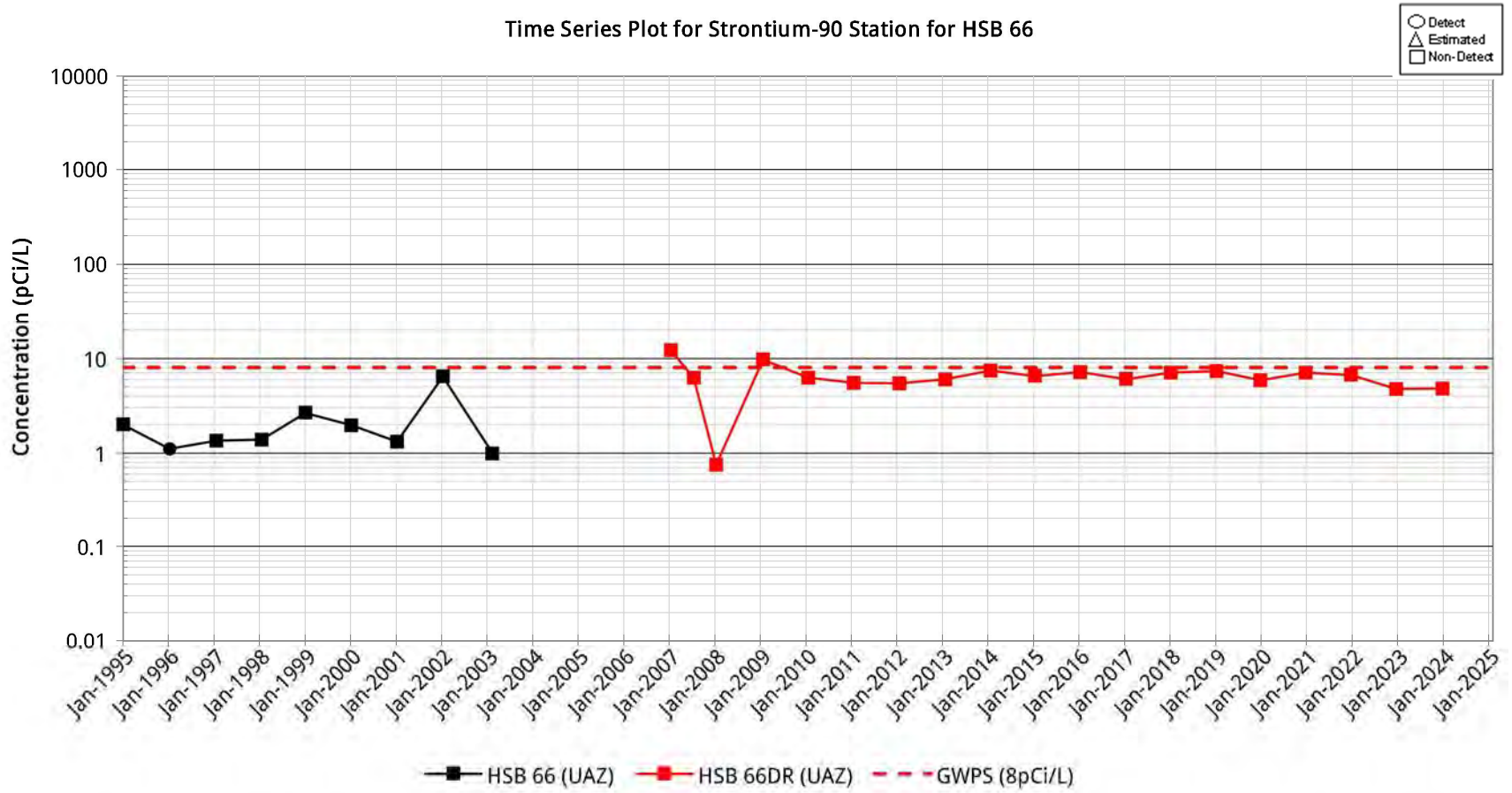

Time Series Plot for Strontium-90 Station for FSB124
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB124D (UAZ)
GWPS (8pCi/L)

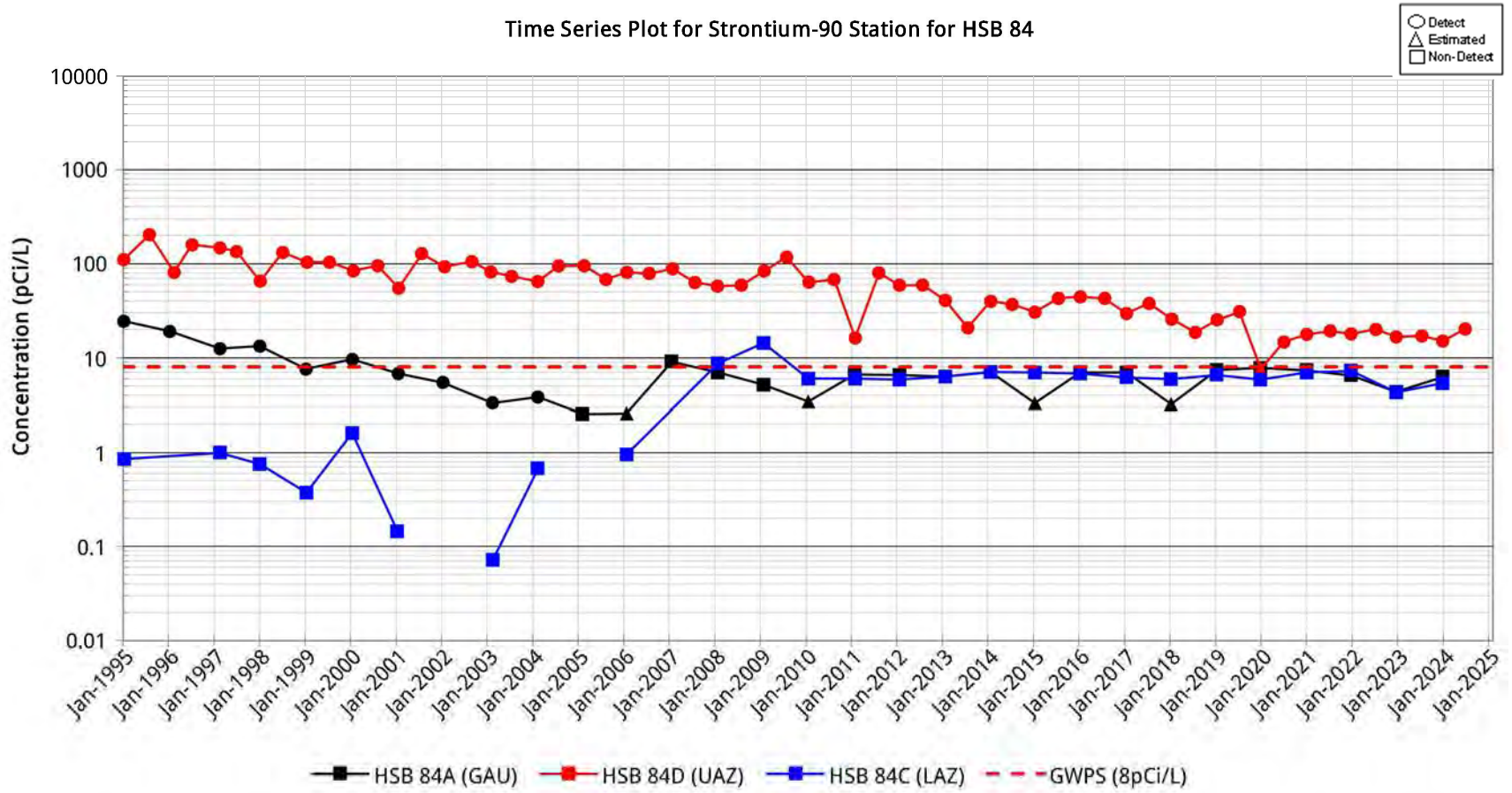

Time Series Plot for Strontium-90 Station for FSB125
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB125DR (UAZ)
GWPS (8pCi/L)

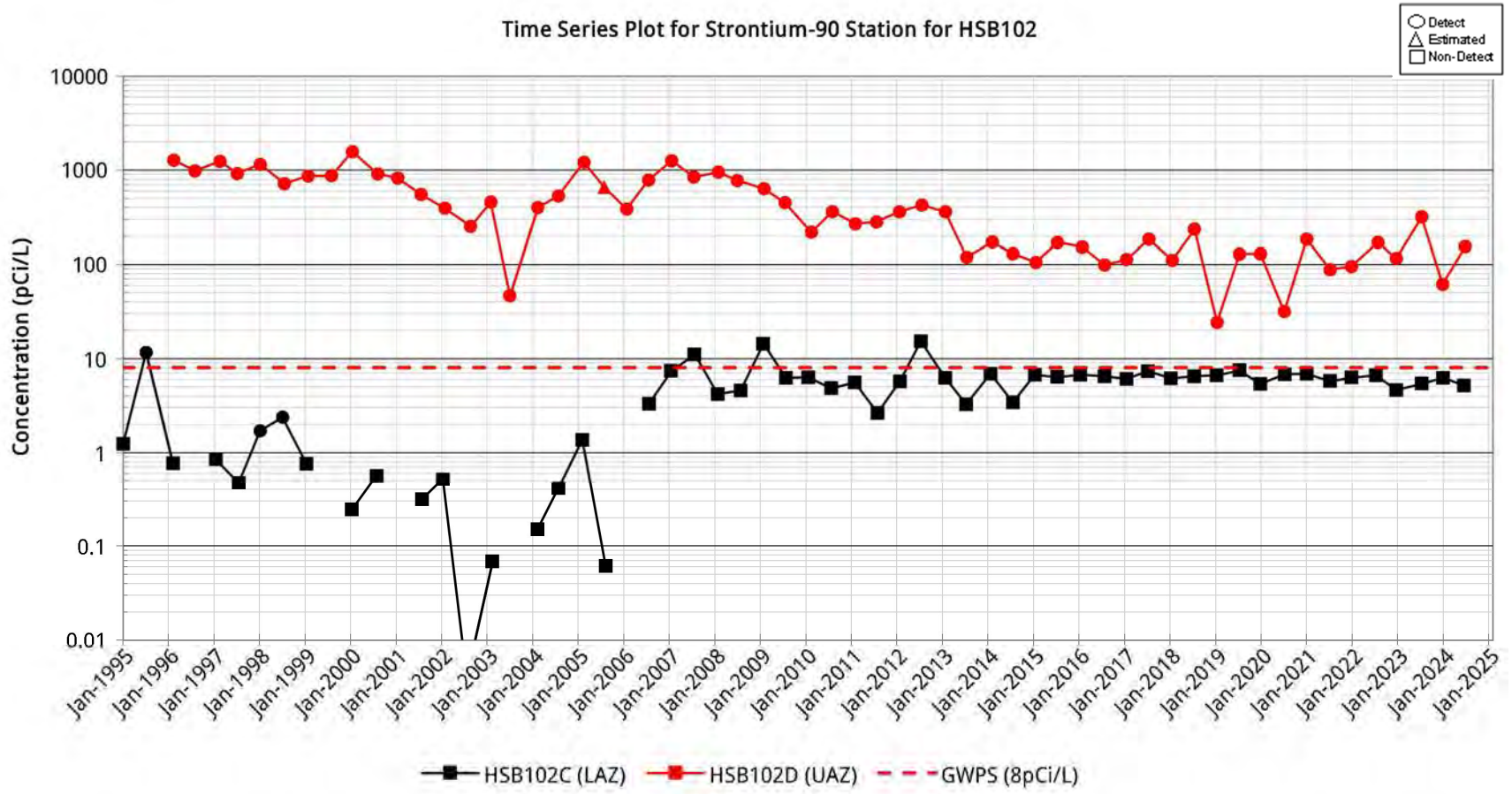

Time Series Plot for Strontium-90 Station for FSB127
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB127D (UAZ)
GWPS (8pCi/L)

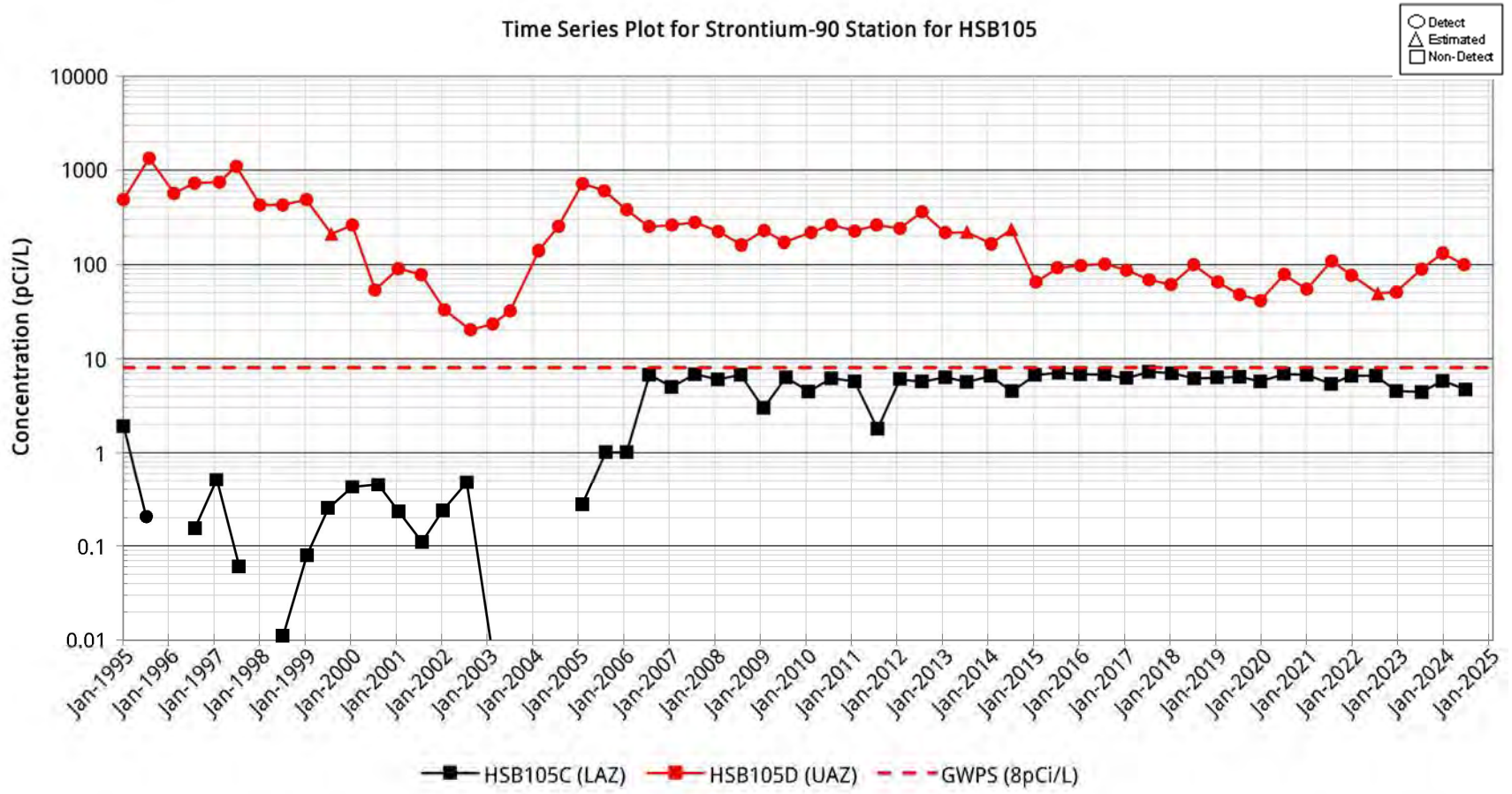

Time Series Plot for Strontium-90 Station for FSB130
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB130D (UAZ)
GWPS (8pCi/L)

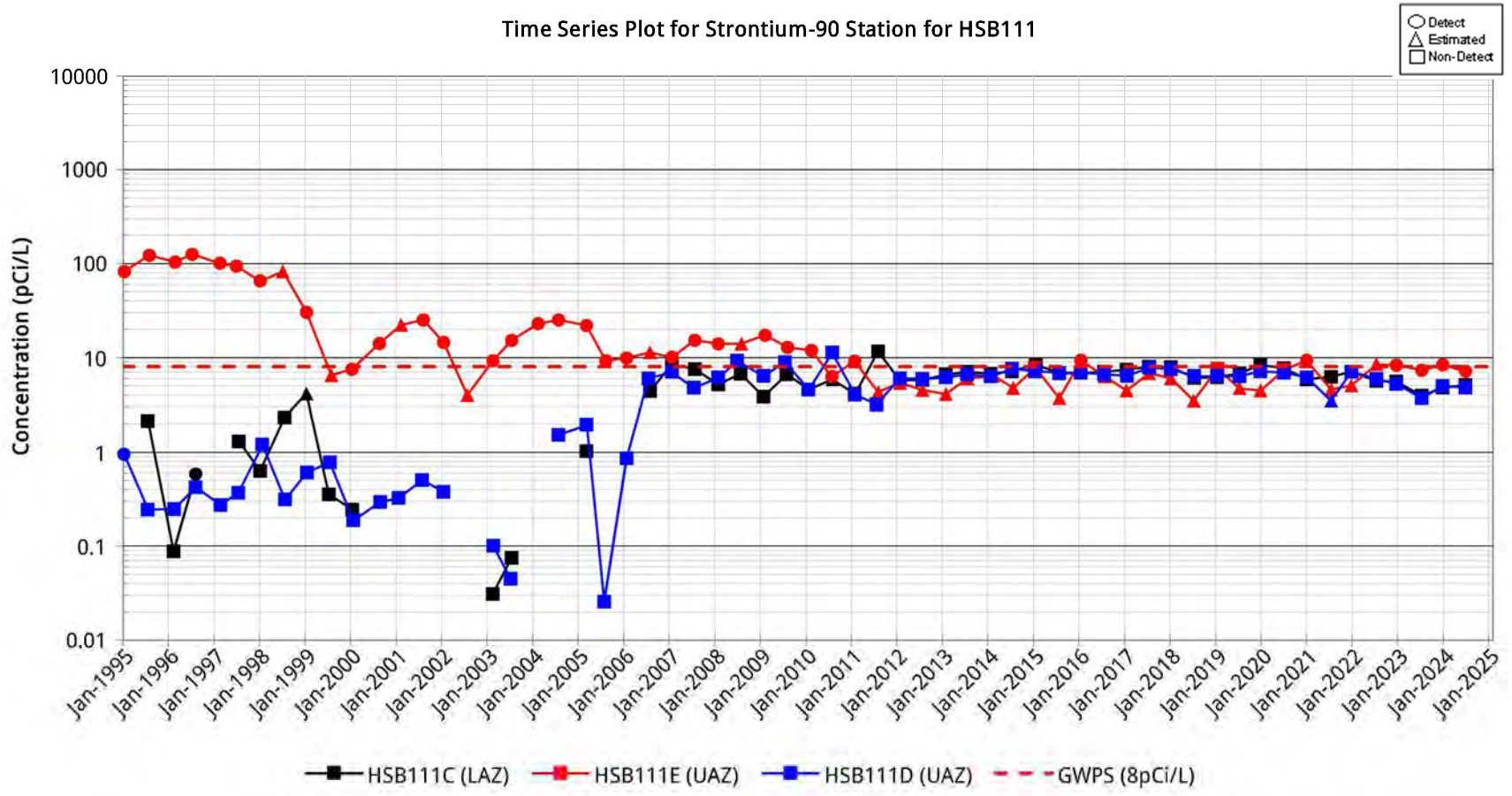

Time Series Plot for Strontium-90 Station for FSB138
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
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Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB138D (UAZ)
GWPS (8pCi/L)

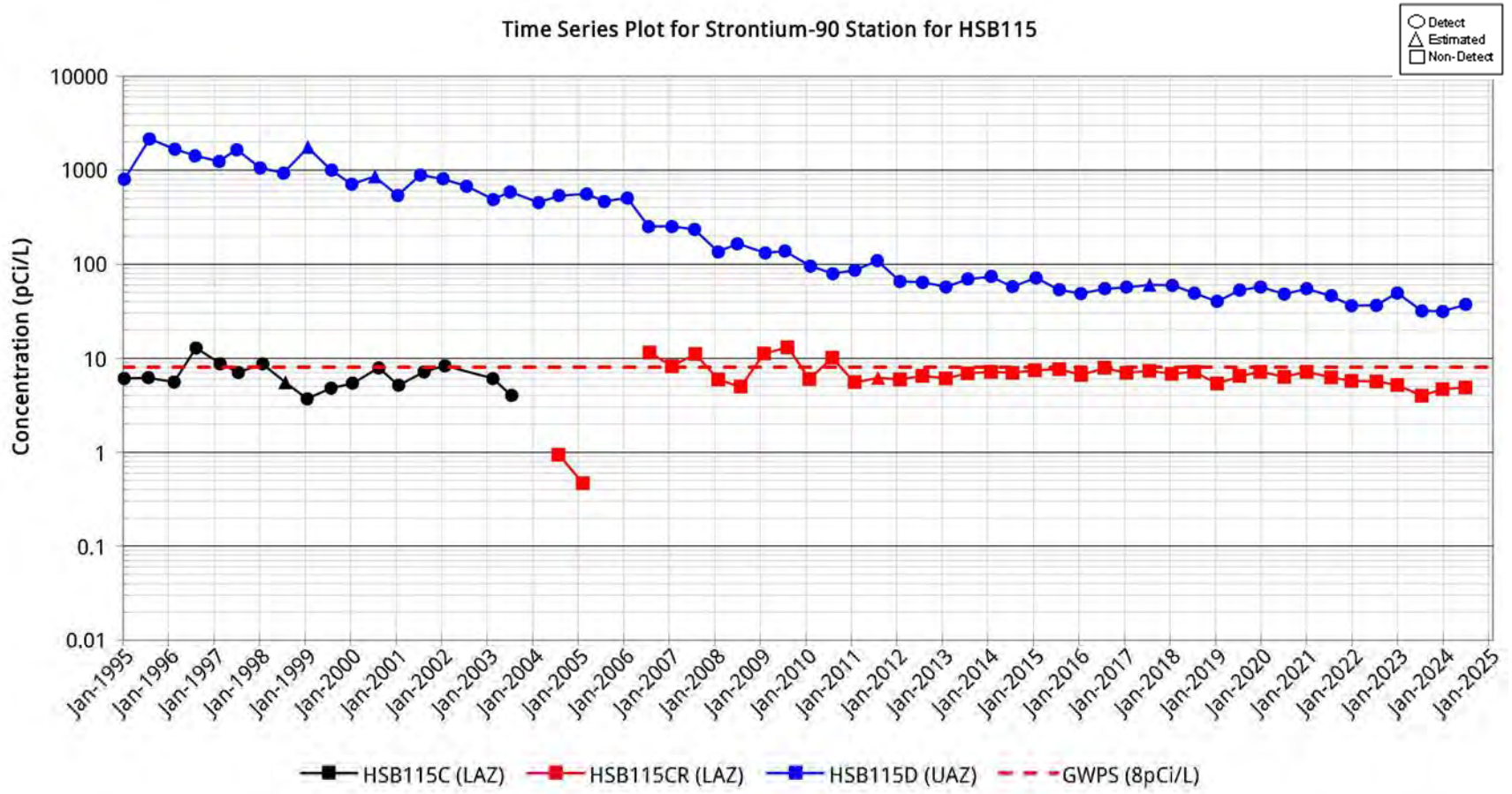

Time Series Plot for Strontium-90 Station for HSB 66
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB 66 (UAZ)
HSB 66DR (UAZ)
GWPS (8pCi/L)

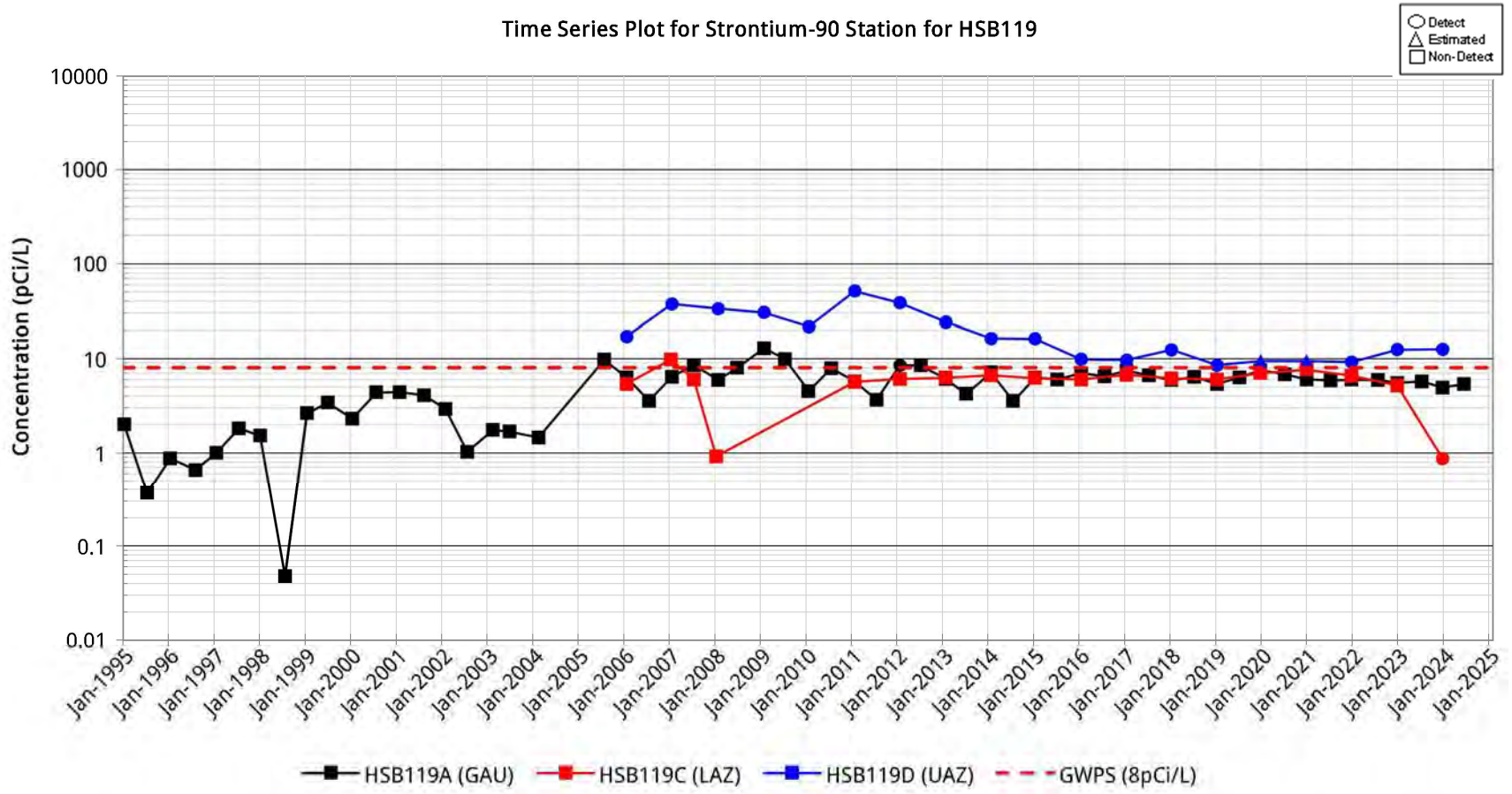

Time Series Plot for Strontium-90 Station for HSB 84
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2014
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Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB 84A (GAU)
HSB 84D (UAZ)
HSB 84C (LAZ)
GWPS (8pCi/L)

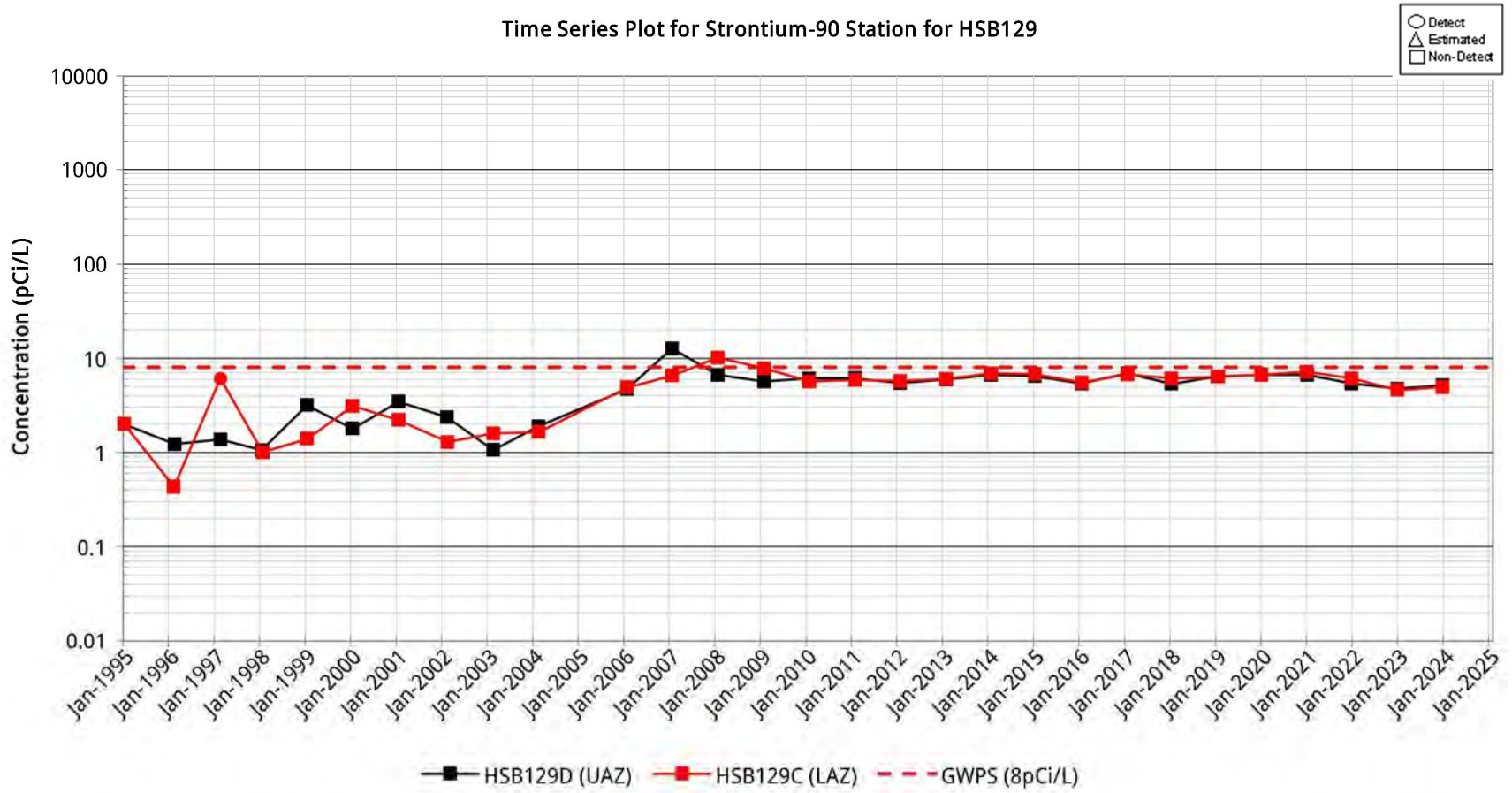

Time Series Plot for Strontium-90 Station for HSB102
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
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Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB102C (LAZ)
HSB102D (UAZ)
GWPS (8pCi/L)

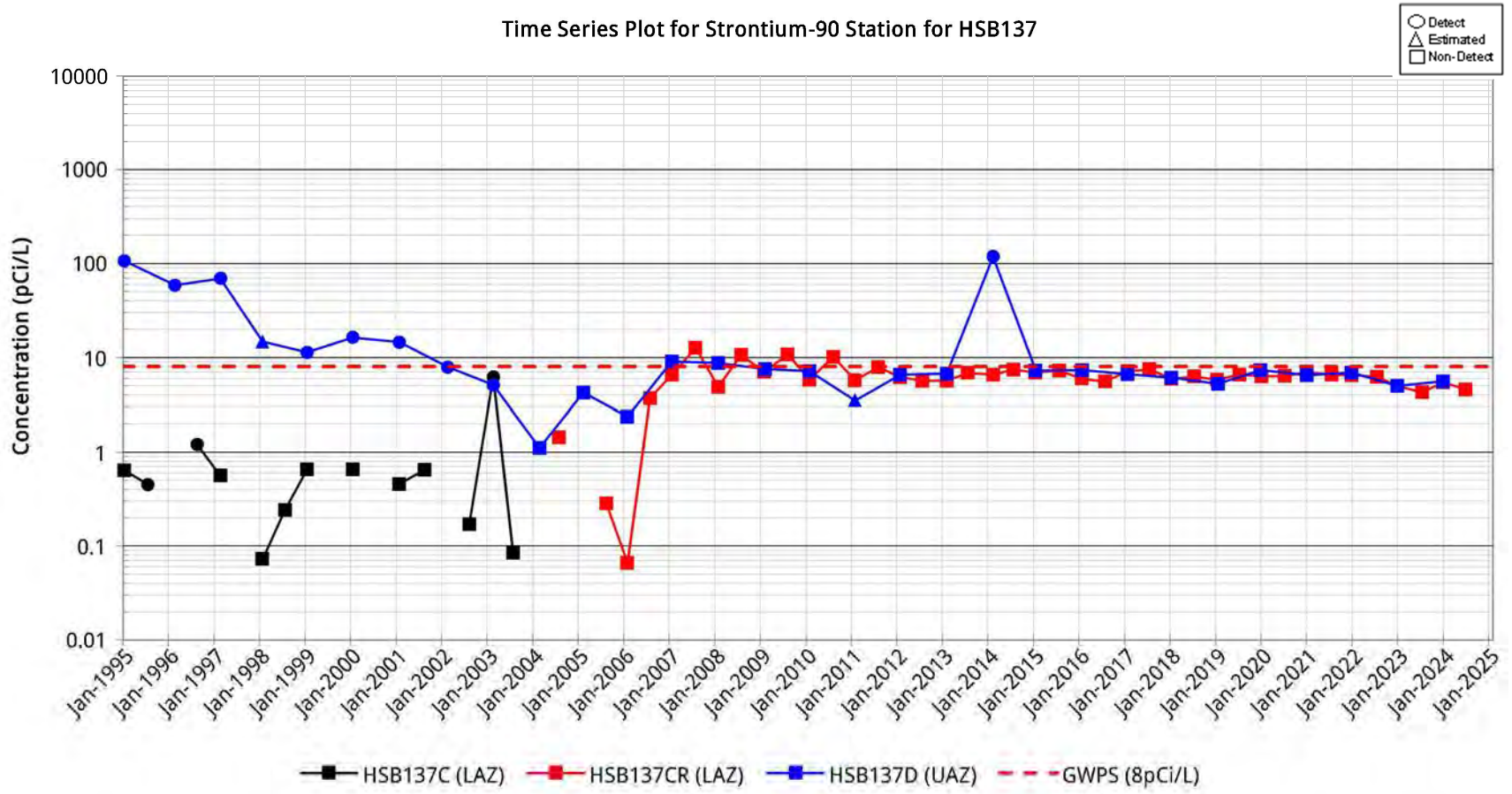

Time Series Plot for Strontium-90 Station for HSB105
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB105C (LAZ)
HSB105D (UAZ)
GWPS (8pCi/L)

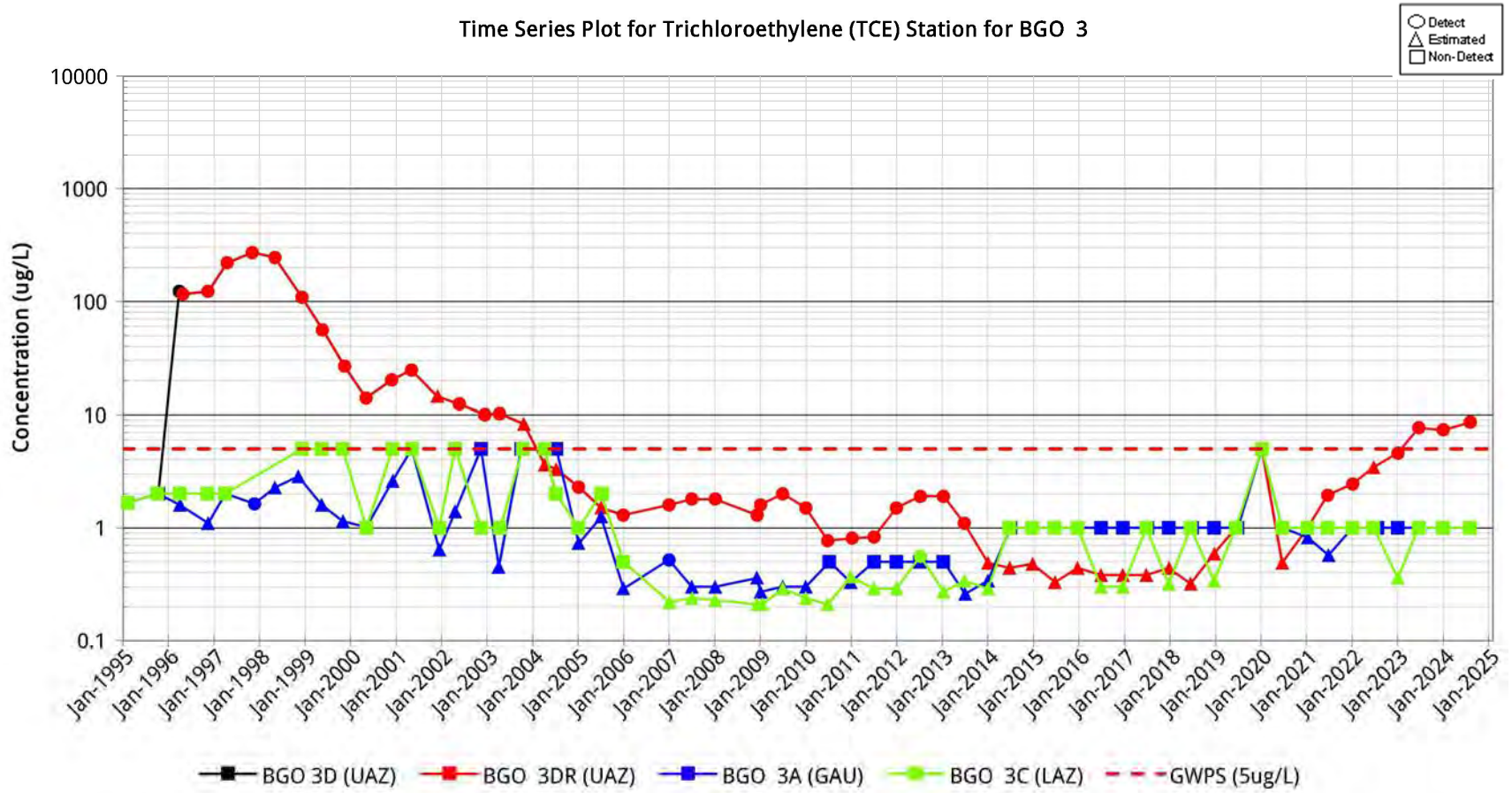

Time Series Plot for Strontium-90 Station for HSB111
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
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Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB111C (LAZ)
HSB111E (UAZ)
HSB111D (UAZ)
GWPS (8pCi/L)

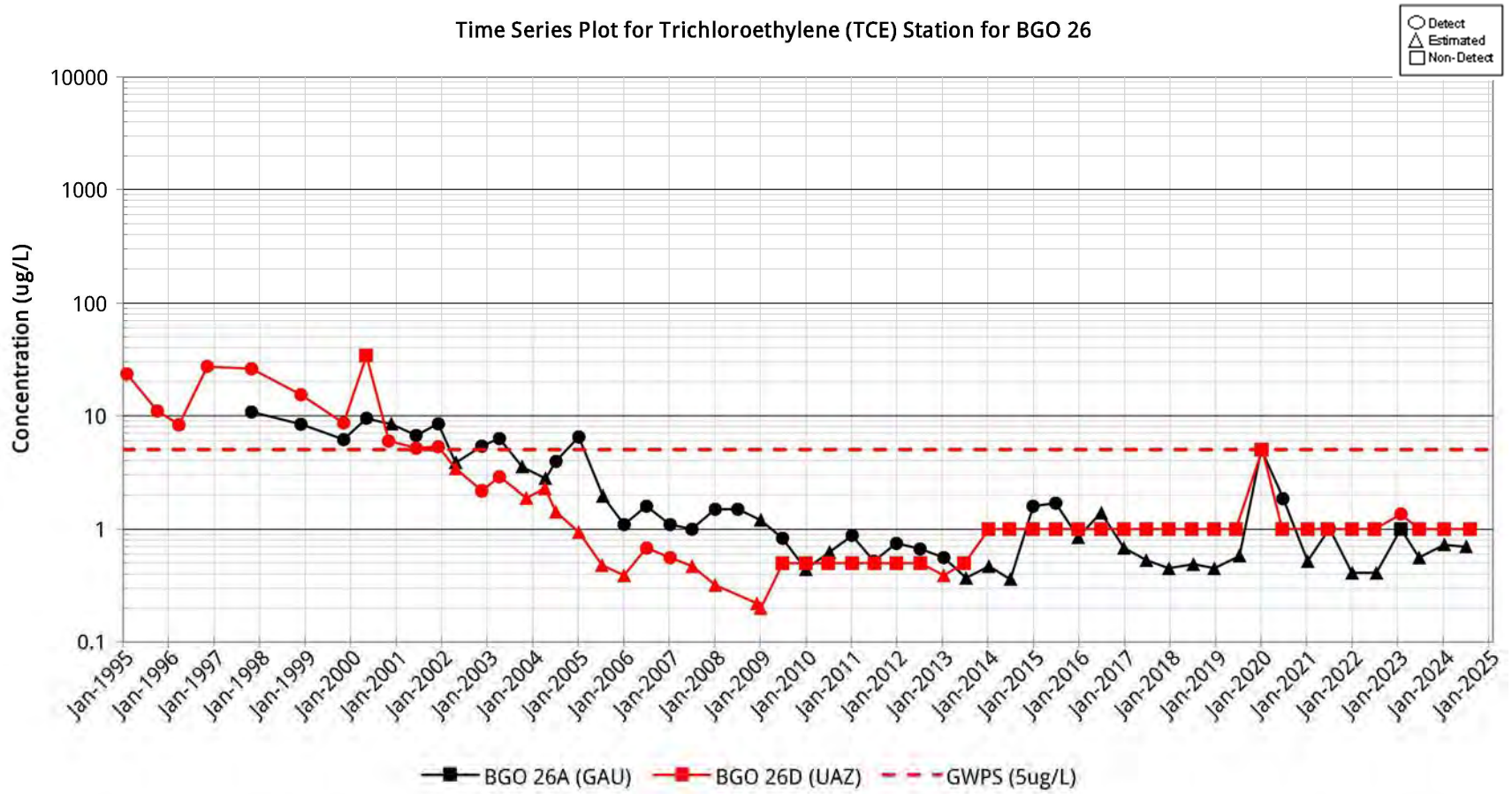

Time Series Plot for Strontium-90 Station for HSB115
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB115C (LAZ)
HSB115CR (LAZ)
HSB115D (UAZ)
GWPS (8pCi/L)

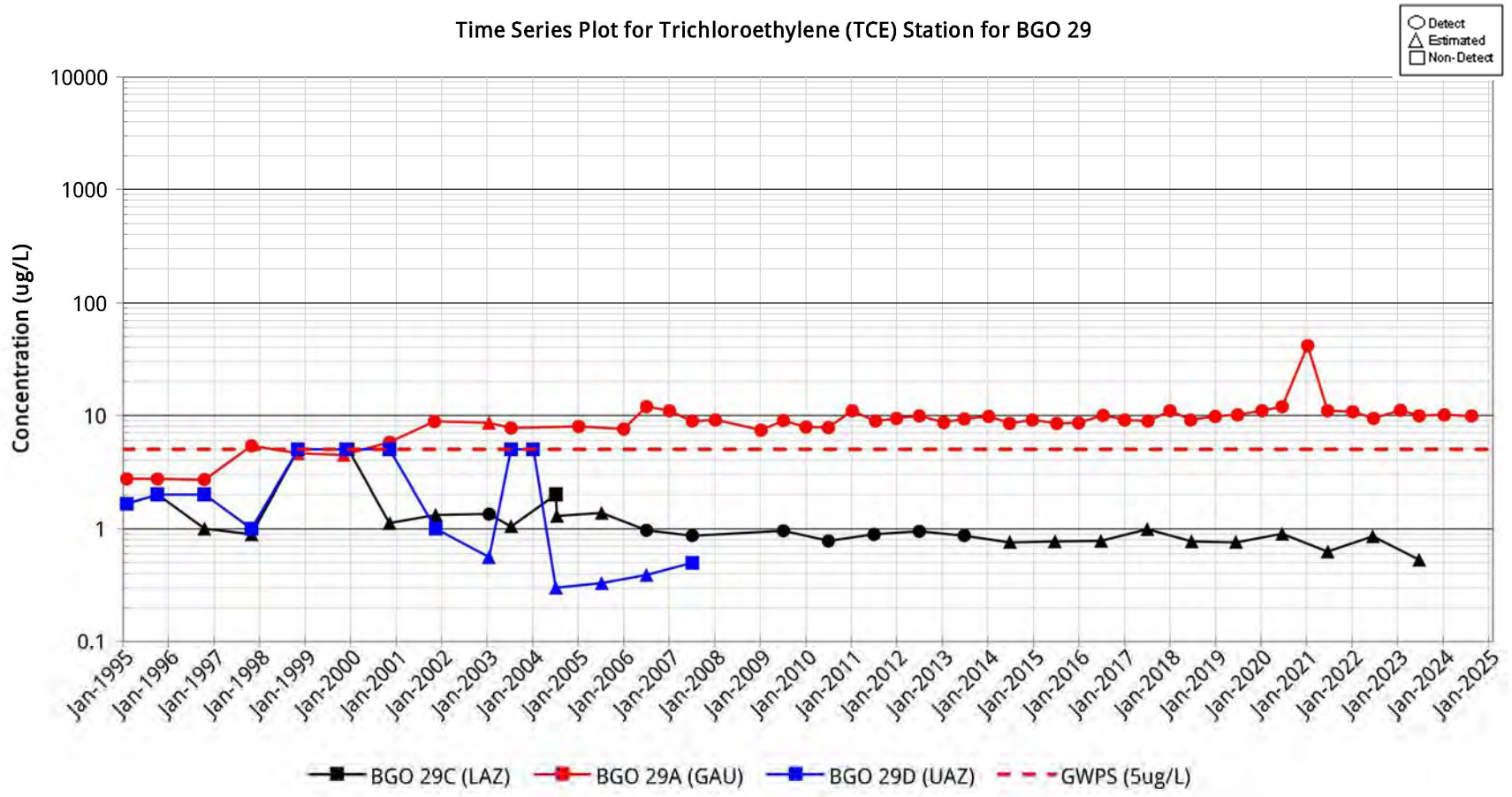

Time Series Plot for Strontium-90 Station for HSB119
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB119A (GAU)
HSB119C (LAZ)
HSB119D (UAZ)
GWPS (8pCi/L)

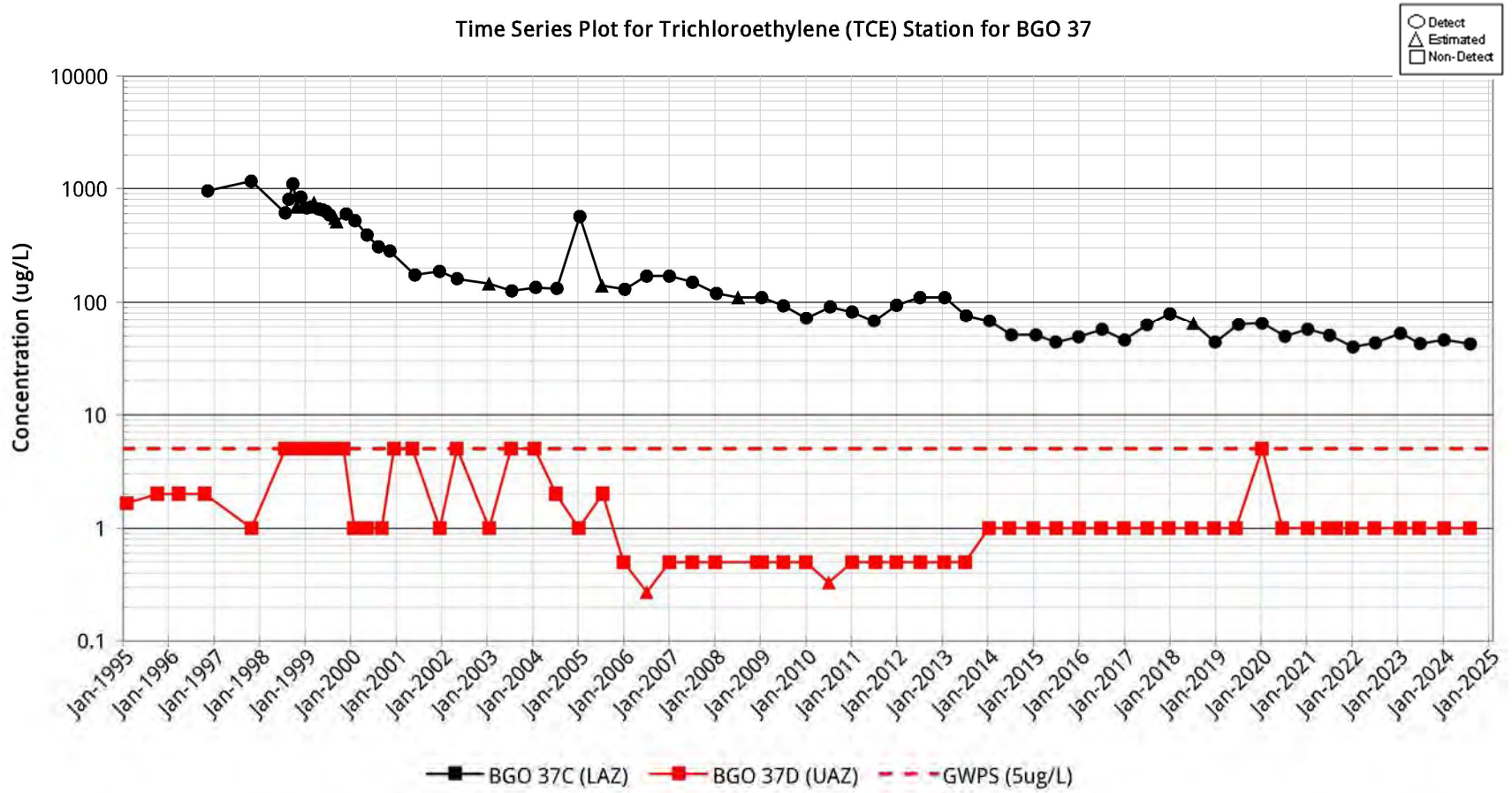

Time Series Plot for Strontium-90 Station for HSB129
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB129D (UAZ)
HSB129C (LAZ)
GWPS (8pCi/L)

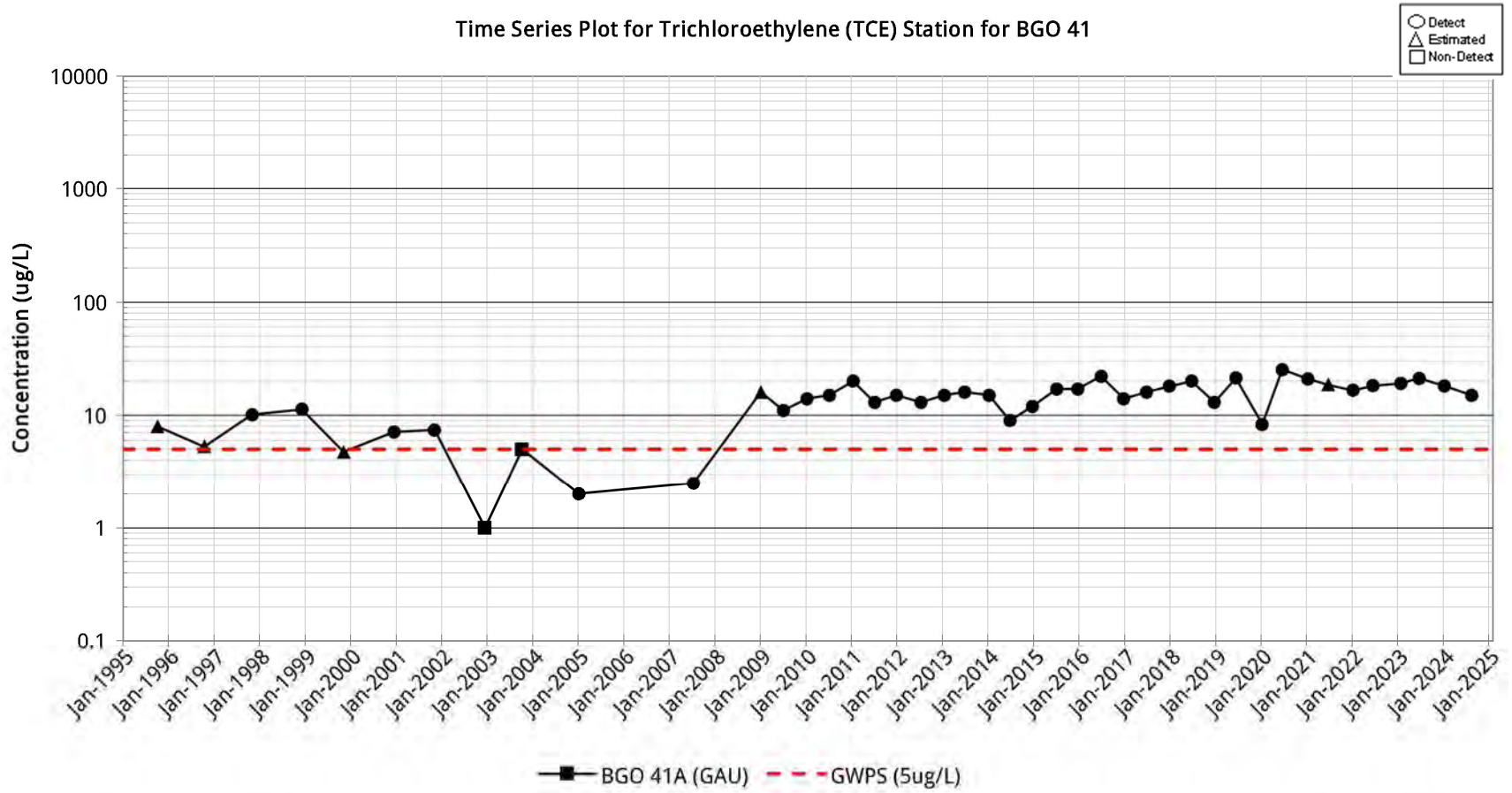

Time Series Plot for Strontium-90 Station for HSB137
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB137C (LAZ)
HSB137CR (LAZ)
HSB137D (UAZ)
GWPS (8pCi/L)

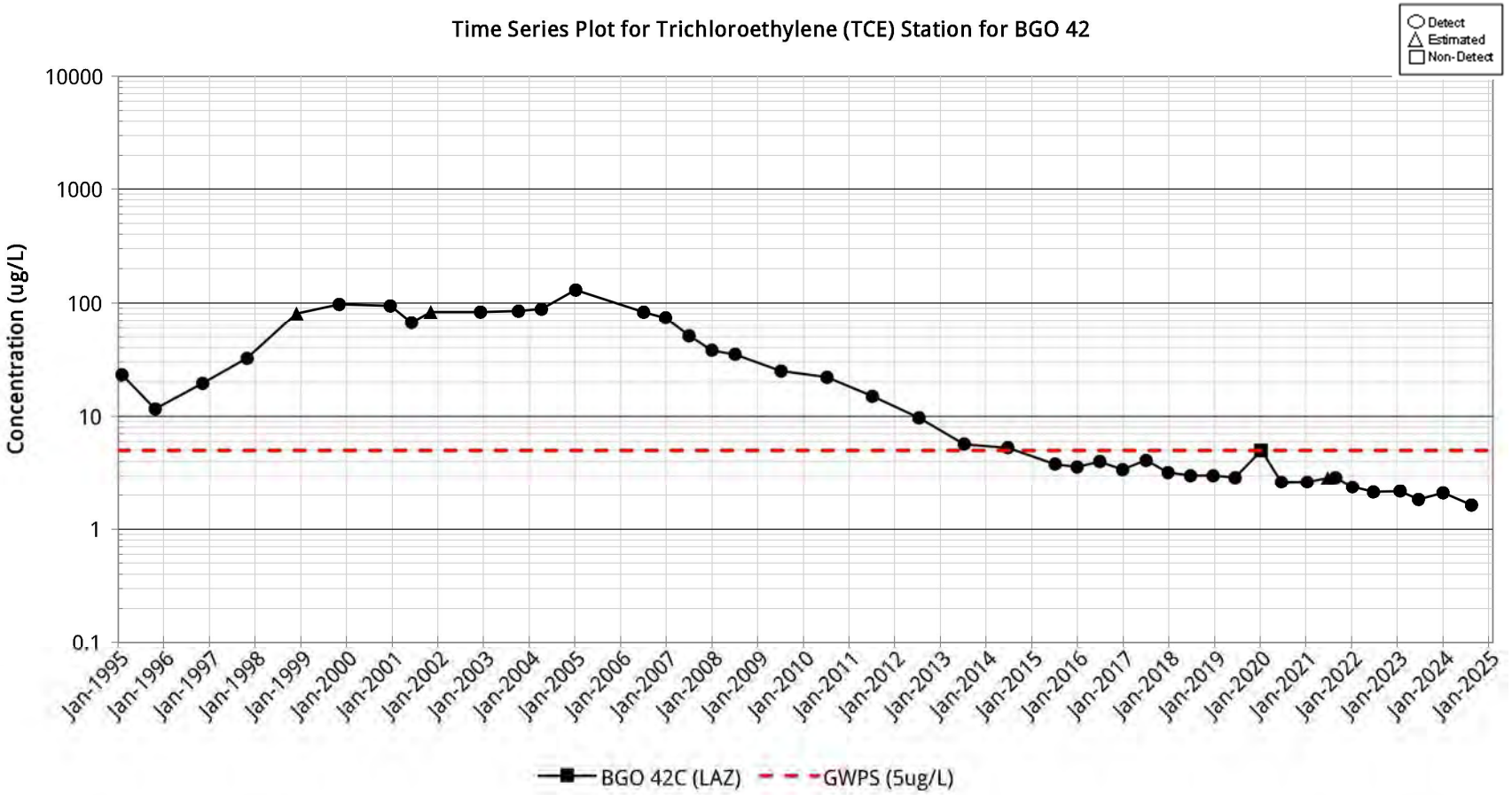

Time Series Plot for Trichloroethylene (TCE) Station for BGO 3
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BGO 3D (UAZ)
BGO 3DR (UAZ)
BGO 3A (GAU)
BGO 3C (LAZ)
GWPS (5ug/L)

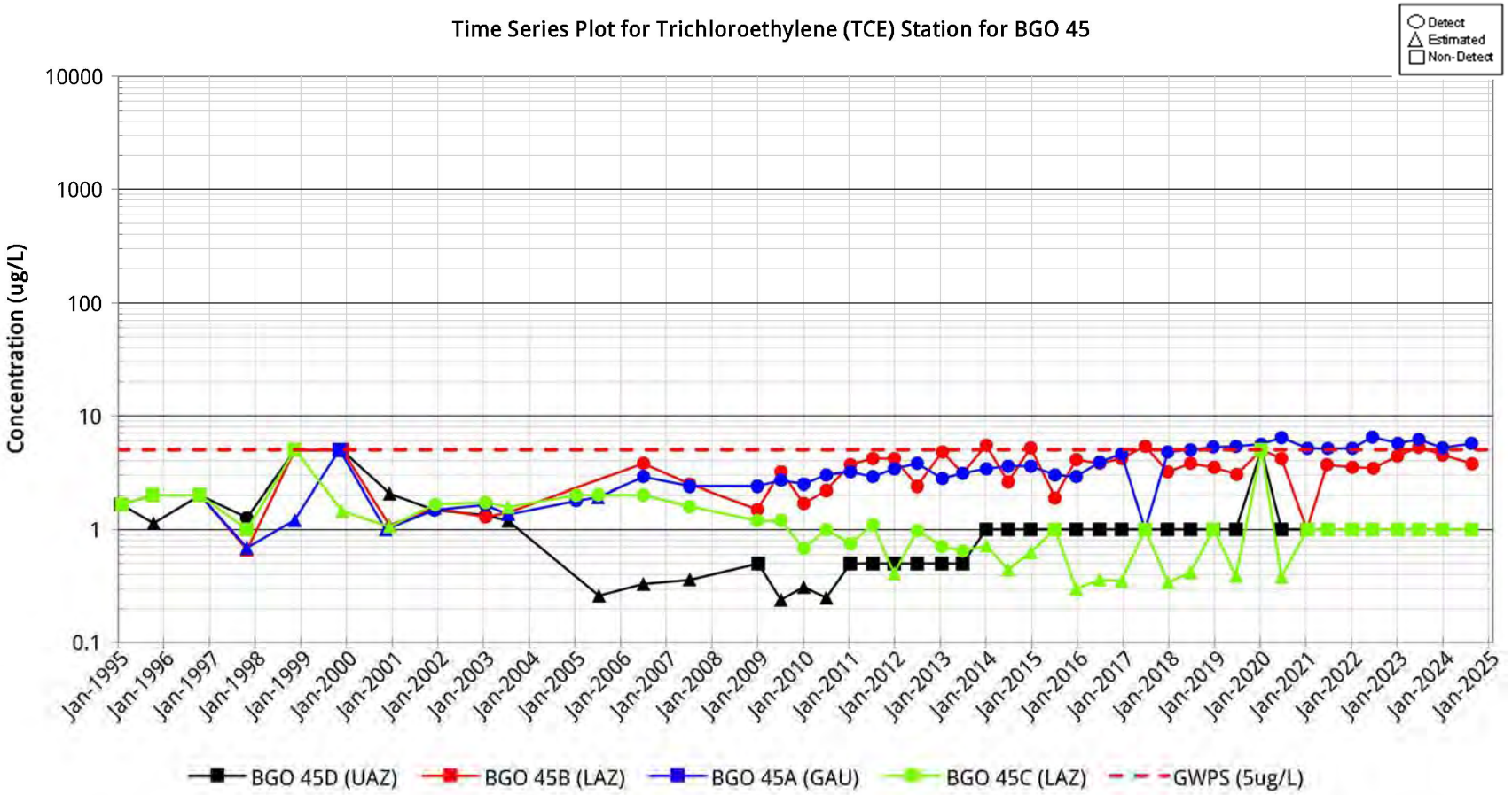

Time Series Plot for Trichloroethylene (TCE) Station for BGO 26
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BGO 26A (GAU)
BGO 26D (UAZ)
GWPS (5ug/L)

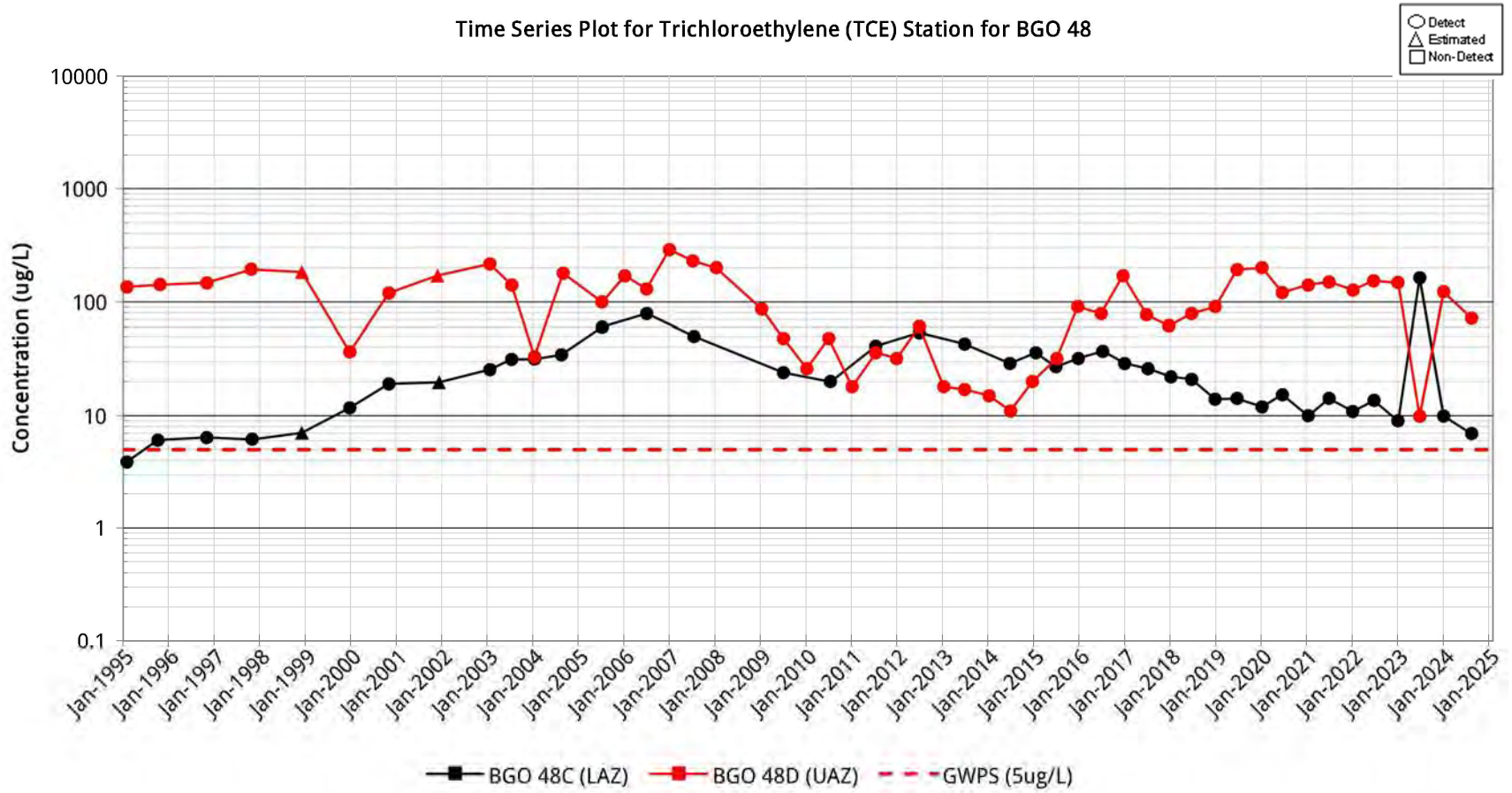

Time Series Plot for Trichloroethylene (TCE) Station for BGO 29
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BGO 29C (LAZ)
BGO 29A (GAU)
BGO 29D (UAZ)
GWPS (5ug/L)

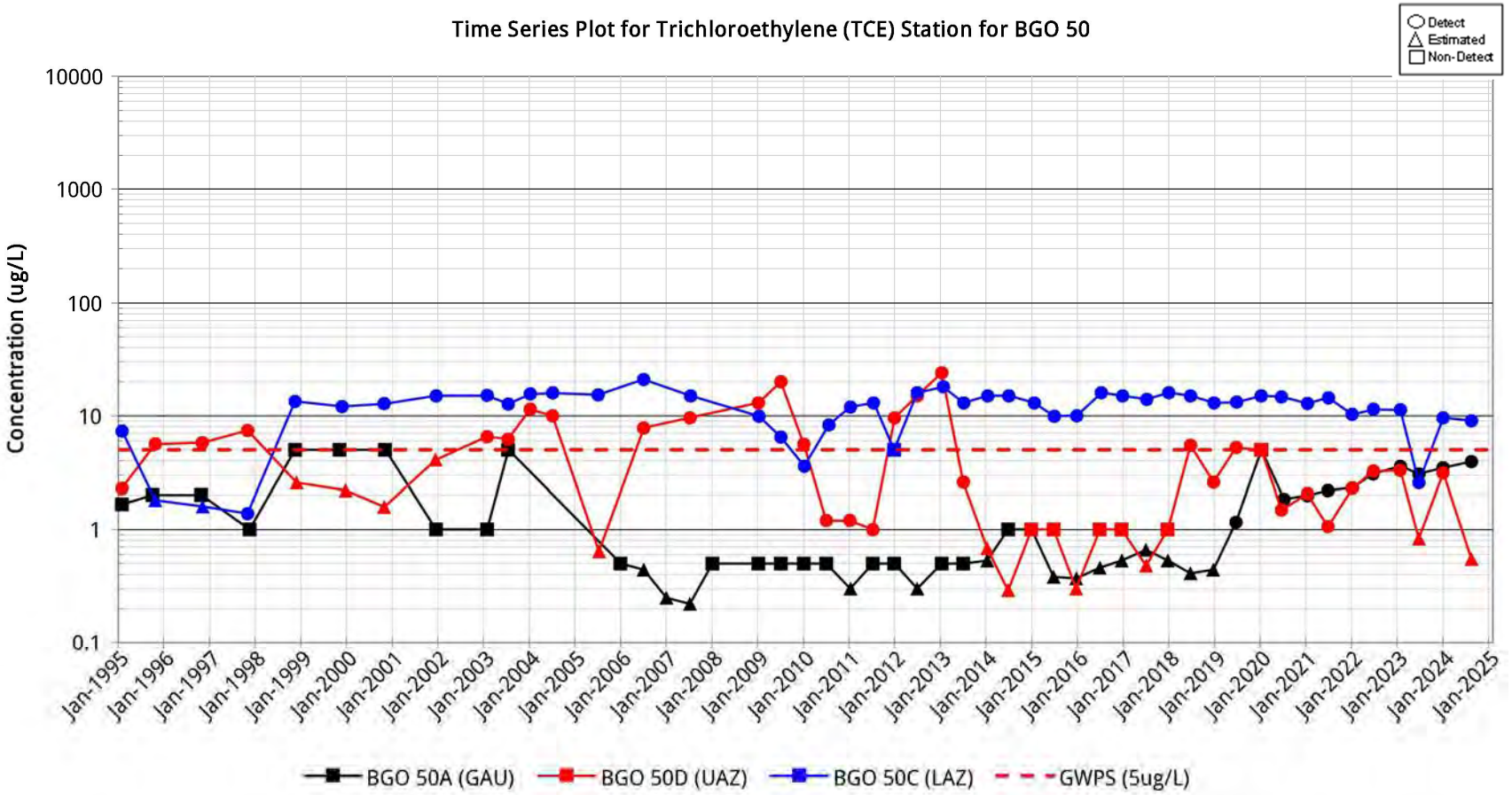

Time Series Plot for Trichloroethylene (TCE) Station for BGO 37
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BGO 37C (LAZ)
BGO 37D (UAZ)
GWPS (5ug/L)

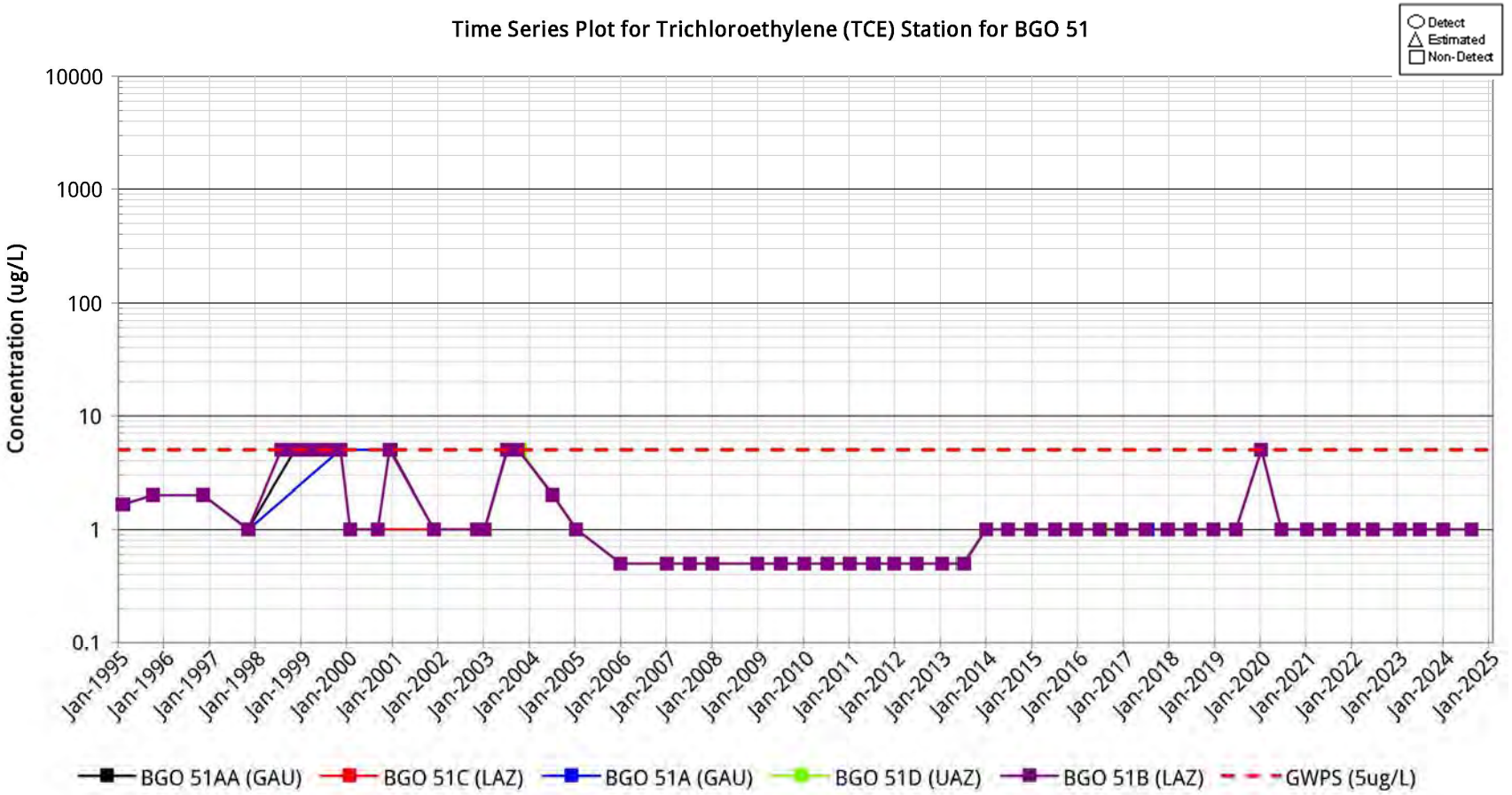

Time Series Plot for Trichloroethylene (TCE) Station for BGO 41
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2016
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Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BGO 41A (GAU)
GWPS (5ug/L)

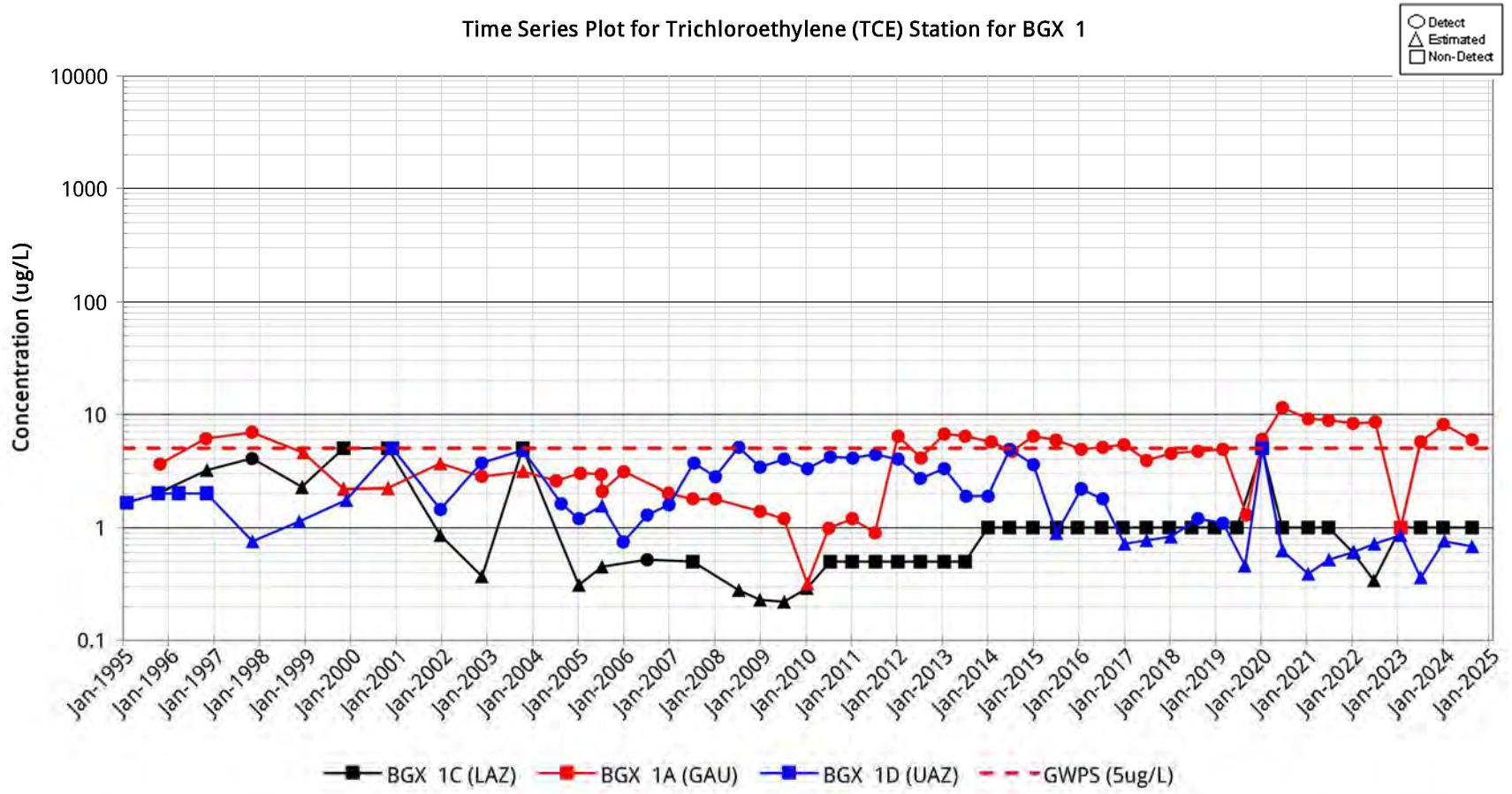

Time Series Plot for Trichloroethylene (TCE) Station for BGO 42
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BGO 42C (LAZ)
GWPS (5ug/L)

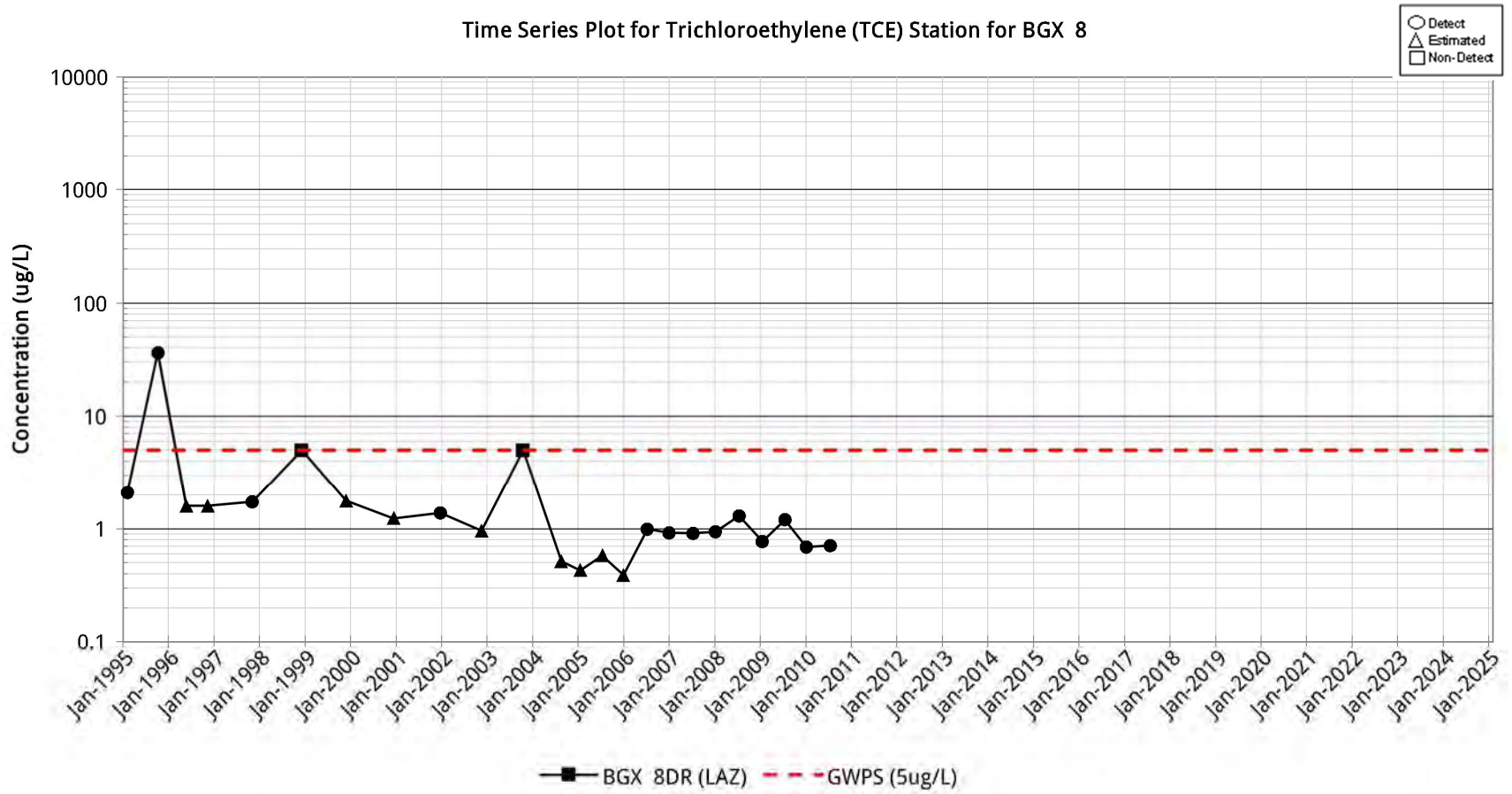

Time Series Plot for Trichloroethylene (TCE) Station for BGO 45
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2017
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Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BGO 45D (UAZ)
BGO 45B (LAZ)
BGO 45A (GAU)
BGO 45C (LAZ)
GWPS (5ug/L)

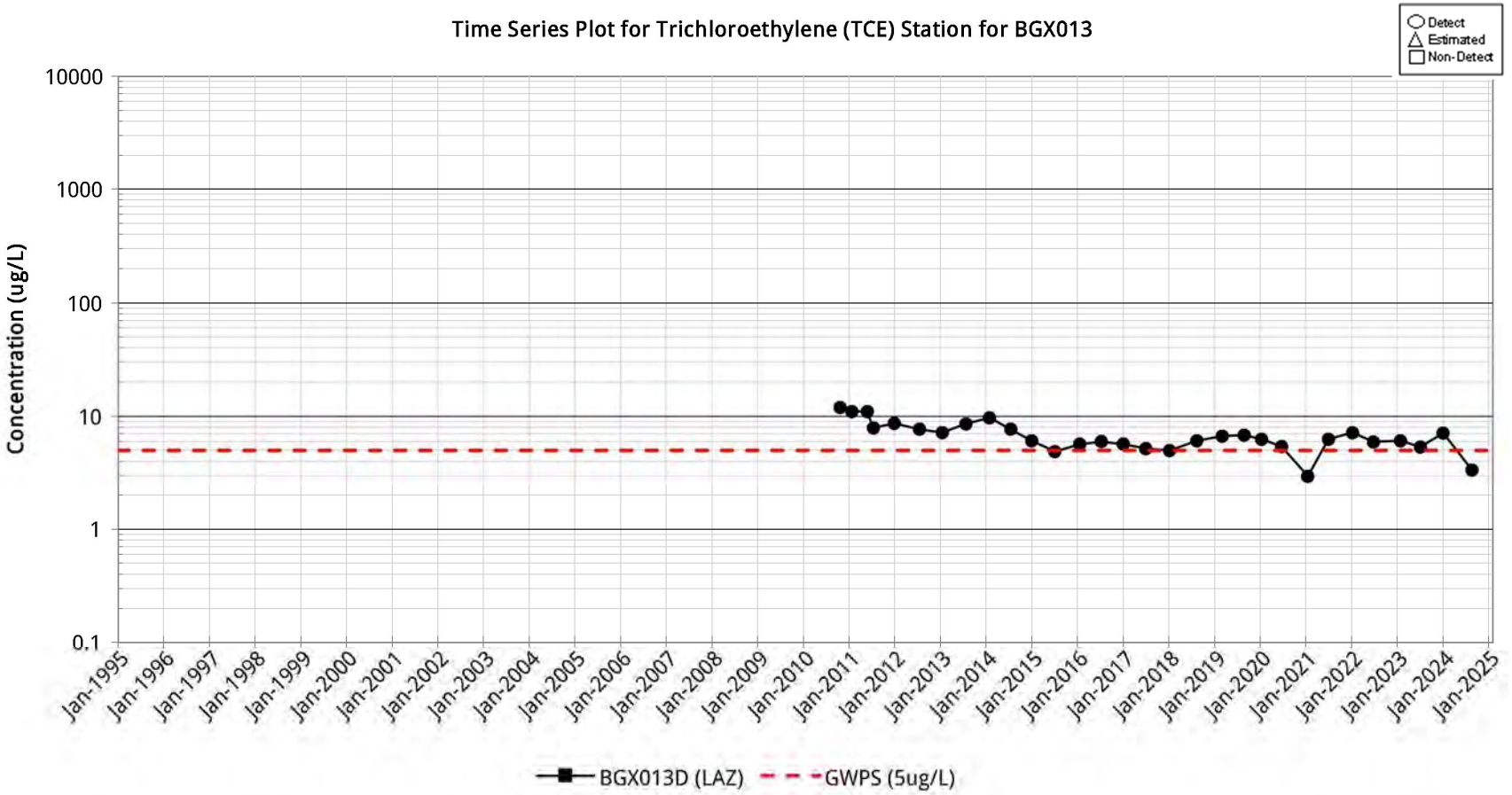

Time Series Plot for Trichloroethylene (TCE) Station for BGO 48
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BGO 48C (LAZ)
BGO 48D (UAZ)
GWPS (5ug/L)

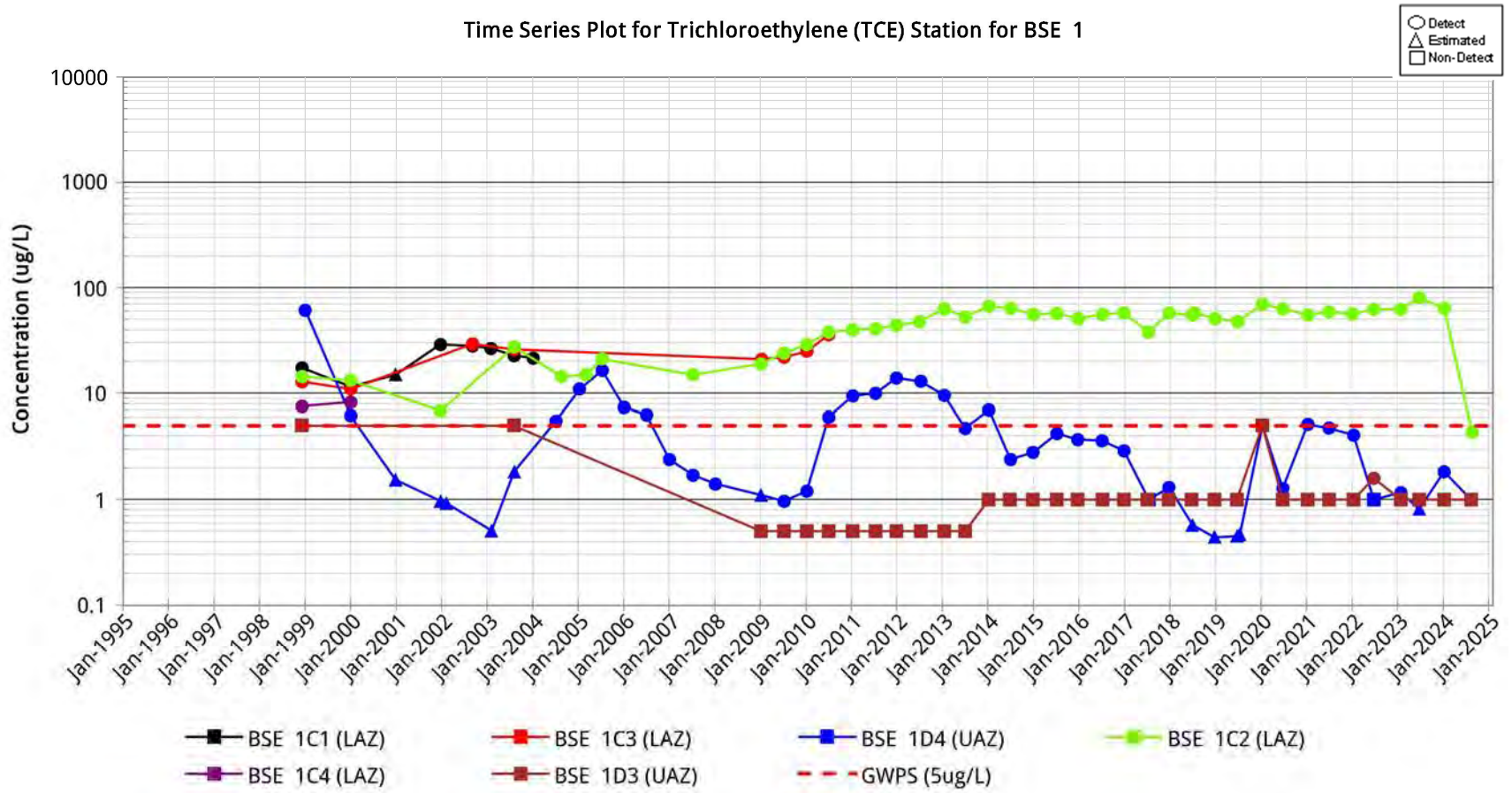

Time Series Plot for Trichloroethylene (TCE) Station for BGO 50
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BGO 50A (GAU)
BGO 50D (UAZ)
BGO 50C (LAZ)
GWPS (5ug/L)

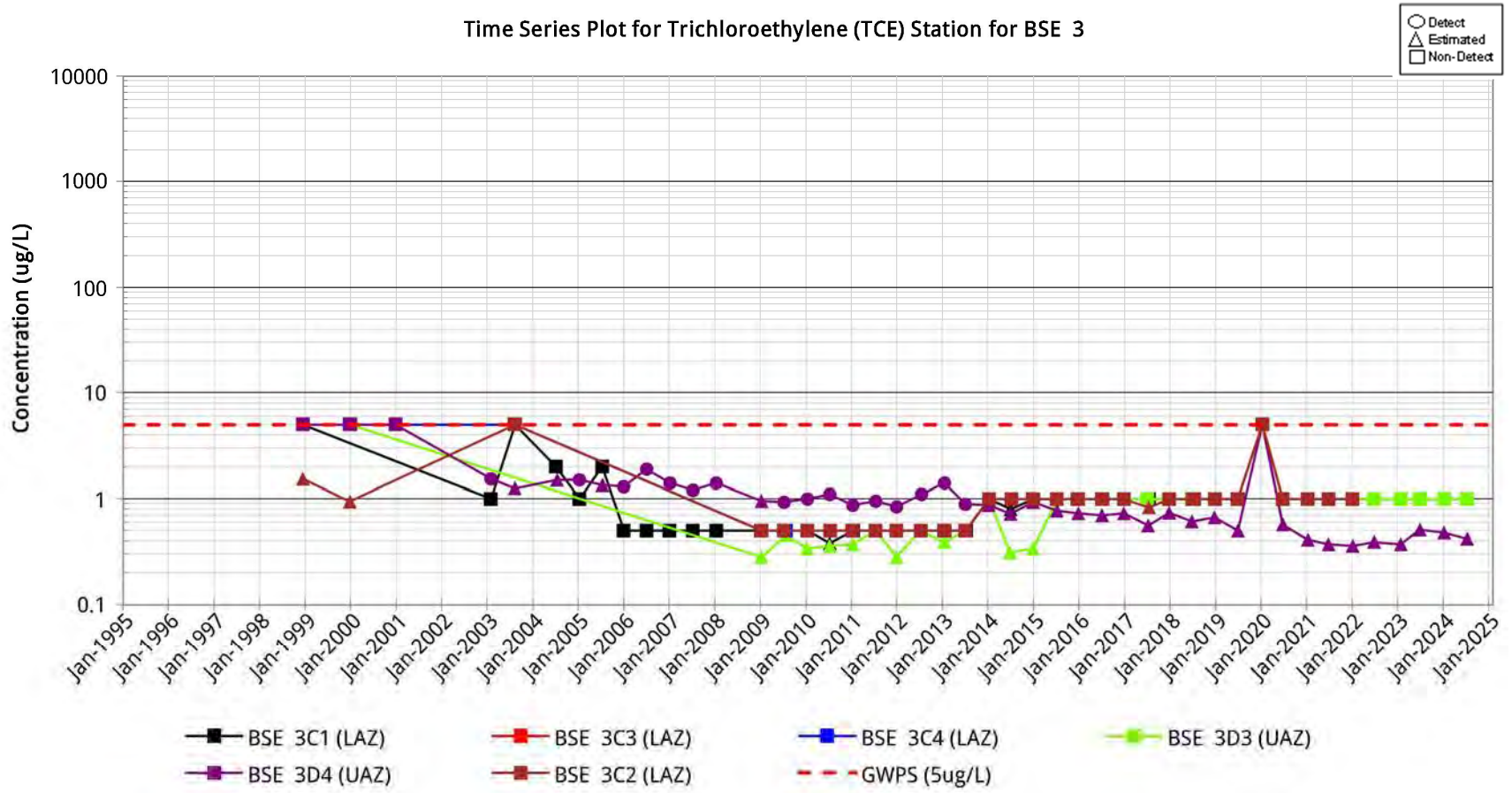

Time Series Plot for Trichloroethylene (TCE) Station for BGO 51
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BGO 51AA (GAU)
BGO 51C (LAZ)
BGO 51A (GAU)
BGO 51D (UAZ)
BGO 51B (LAZ)
GWPS (5ug/L)

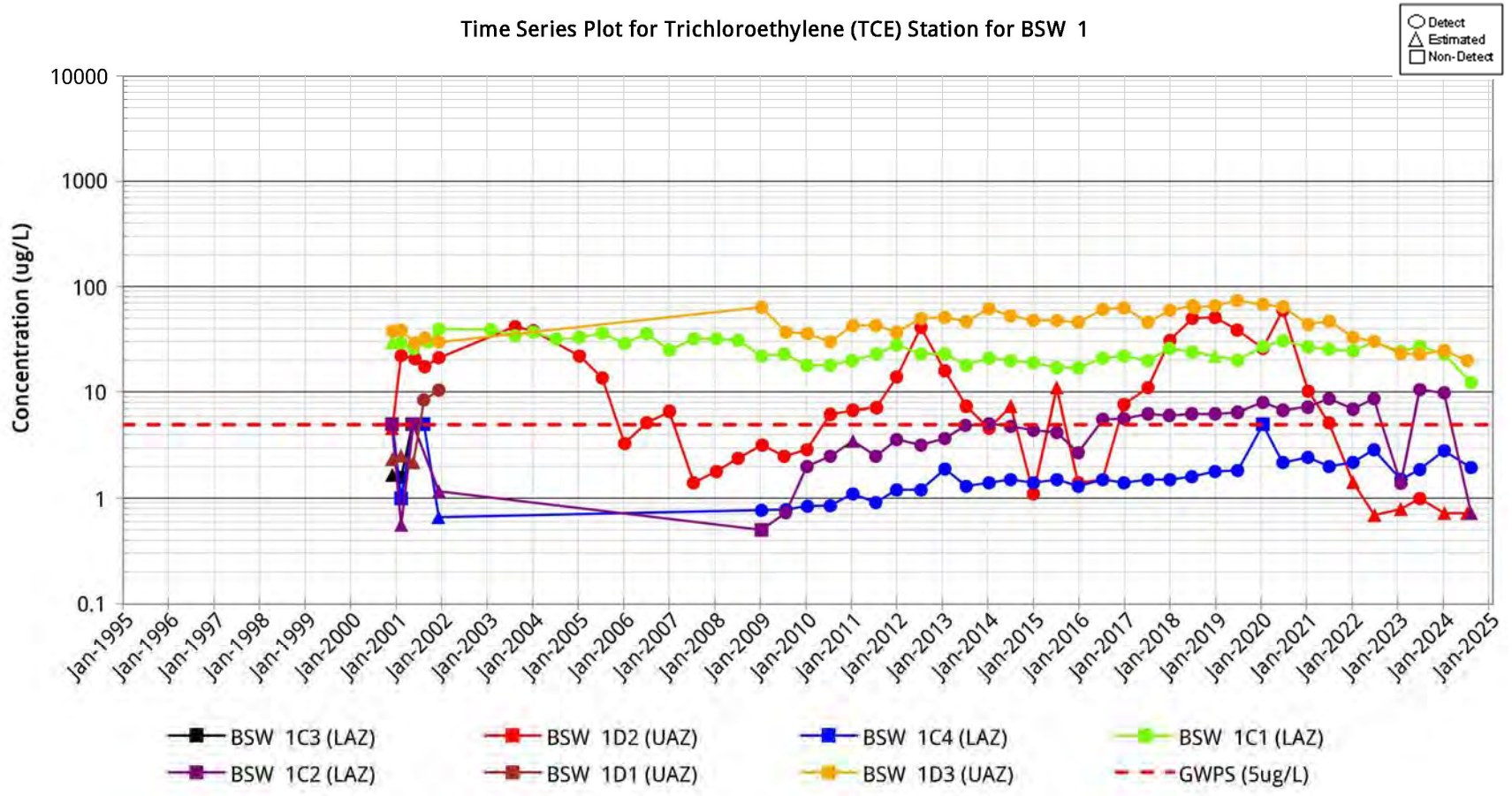

Time Series Plot for Trichloroethylene (TCE) Station for BGX 1
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
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Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BGX 1C (LAZ)
BGX 1A (GAU)
BGX 1D (UAZ)
GWPS (5ug/L)

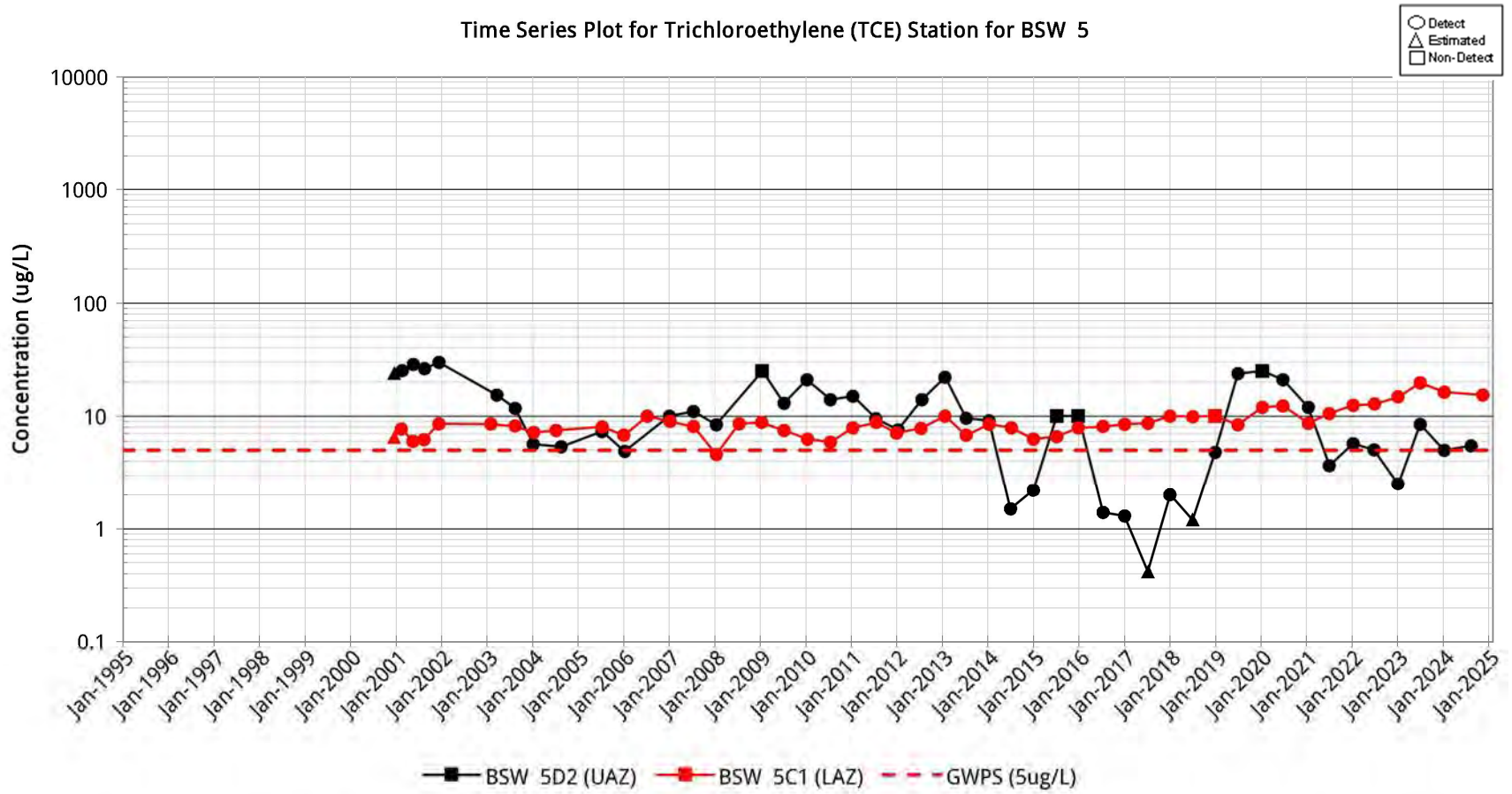

Time Series Plot for Trichloroethylene (TCE) Station for BGX 8
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
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Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BGX 8DR (LAZ)
GWPS (5ug/L)

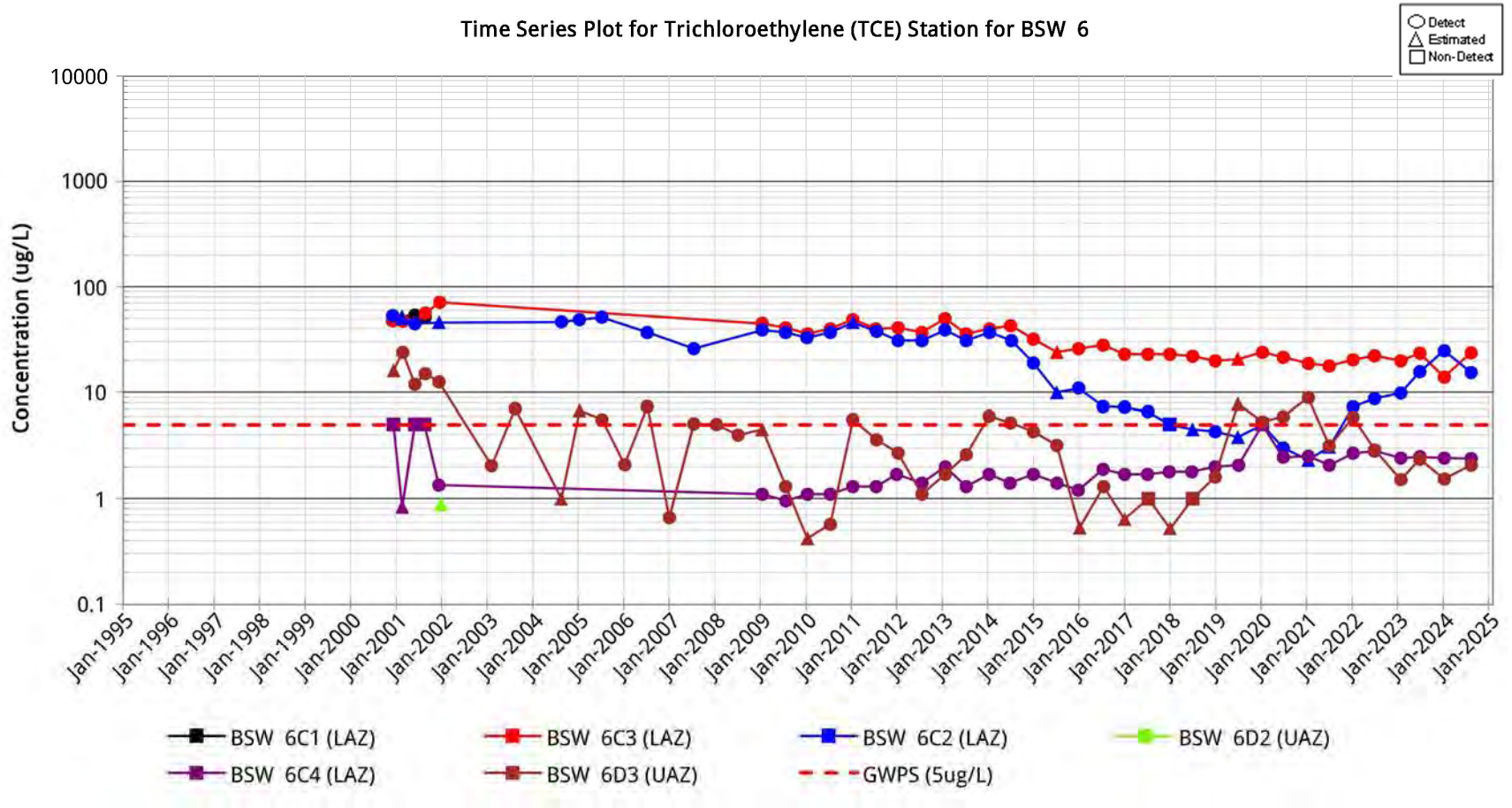

Time Series Plot for Trichloroethylene (TCE) Station for BGX013
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
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Jan-2022
Jan-2023
Jan-2024
Jan-2025
BGX013D (LAZ)
GWPS (5ug/L)

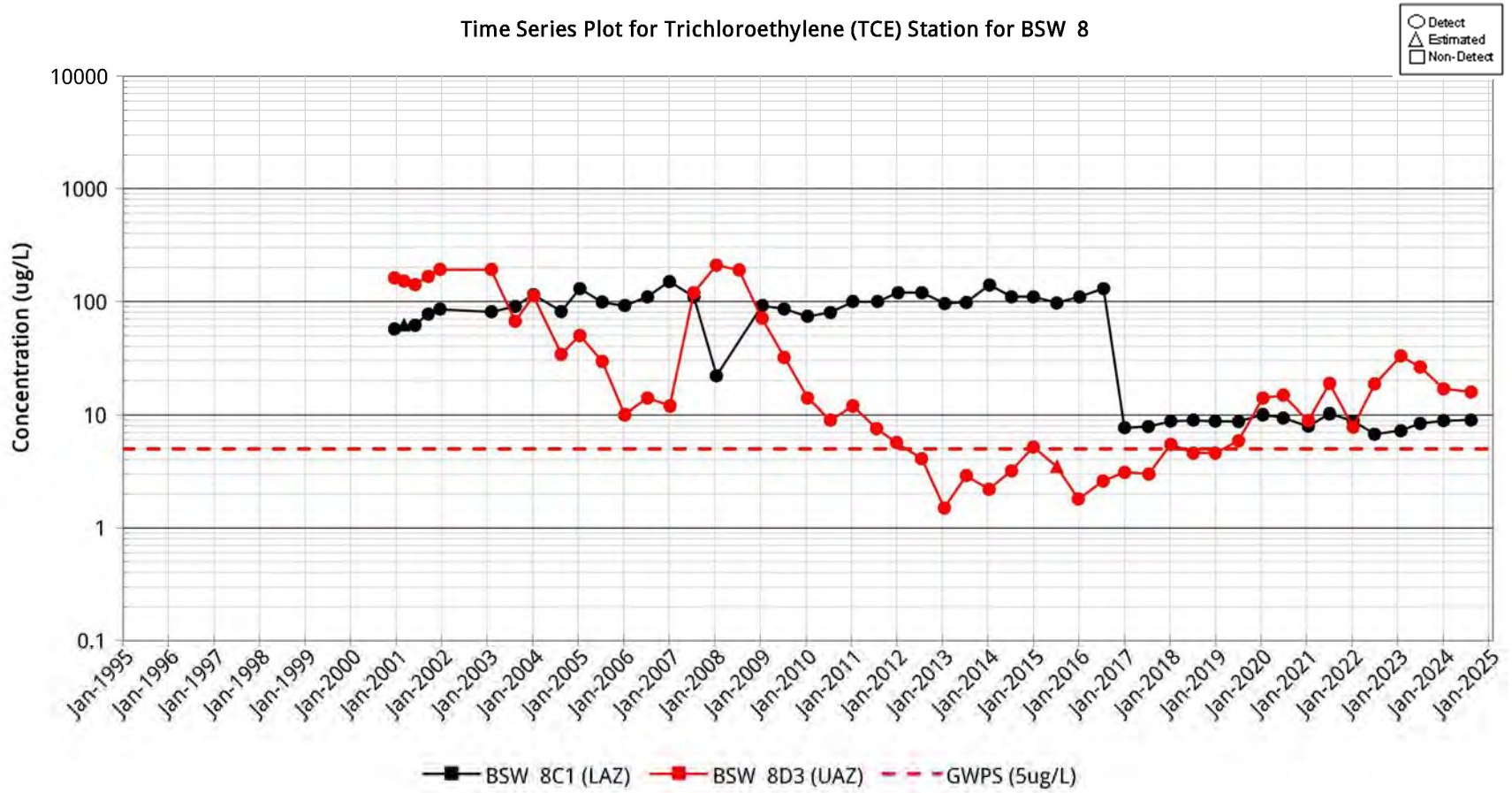

Time Series Plot for Trichloroethylene (TCE) Station for BSE 1
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BSE 1C1 (LAZ)
BSE 1C3 (LAZ)
BSE 1D4 (UAZ)
BSE 1C2 (LAZ)
BSE 1C4 (LAZ)
BSE 1D3 (UAZ)
GWPS (5ug/L)

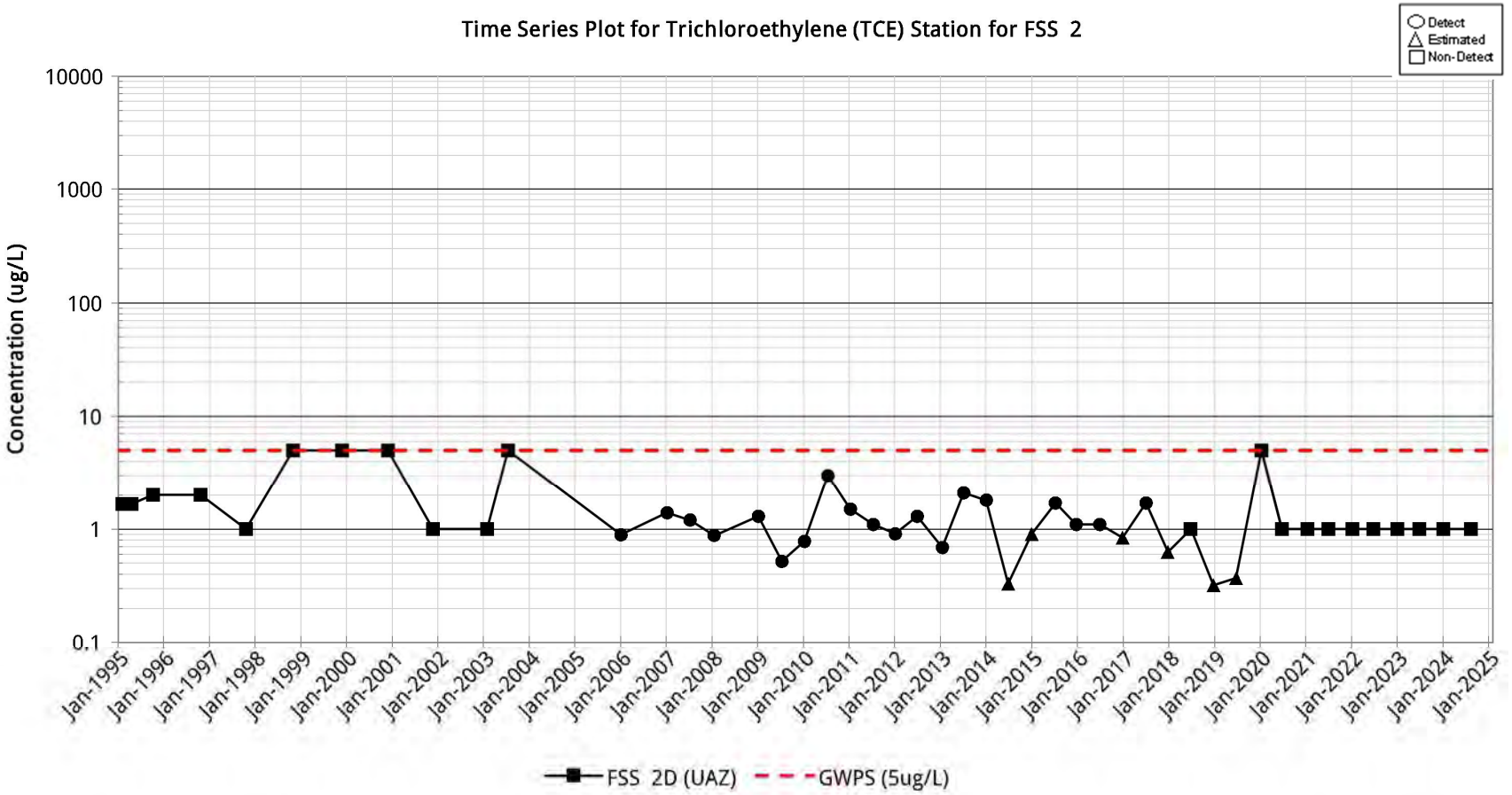

Time Series Plot for Trichloroethylene (TCE) Station for BSE 3
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BSE 3C1 (LAZ)
BSE 3C3 (LAZ)
BSE 3C4 (LAZ)
BSE 3D3 (UAZ)
BSE 3D4 (UAZ)
BSE 3C2 (LAZ)
GWPS (5ug/L)

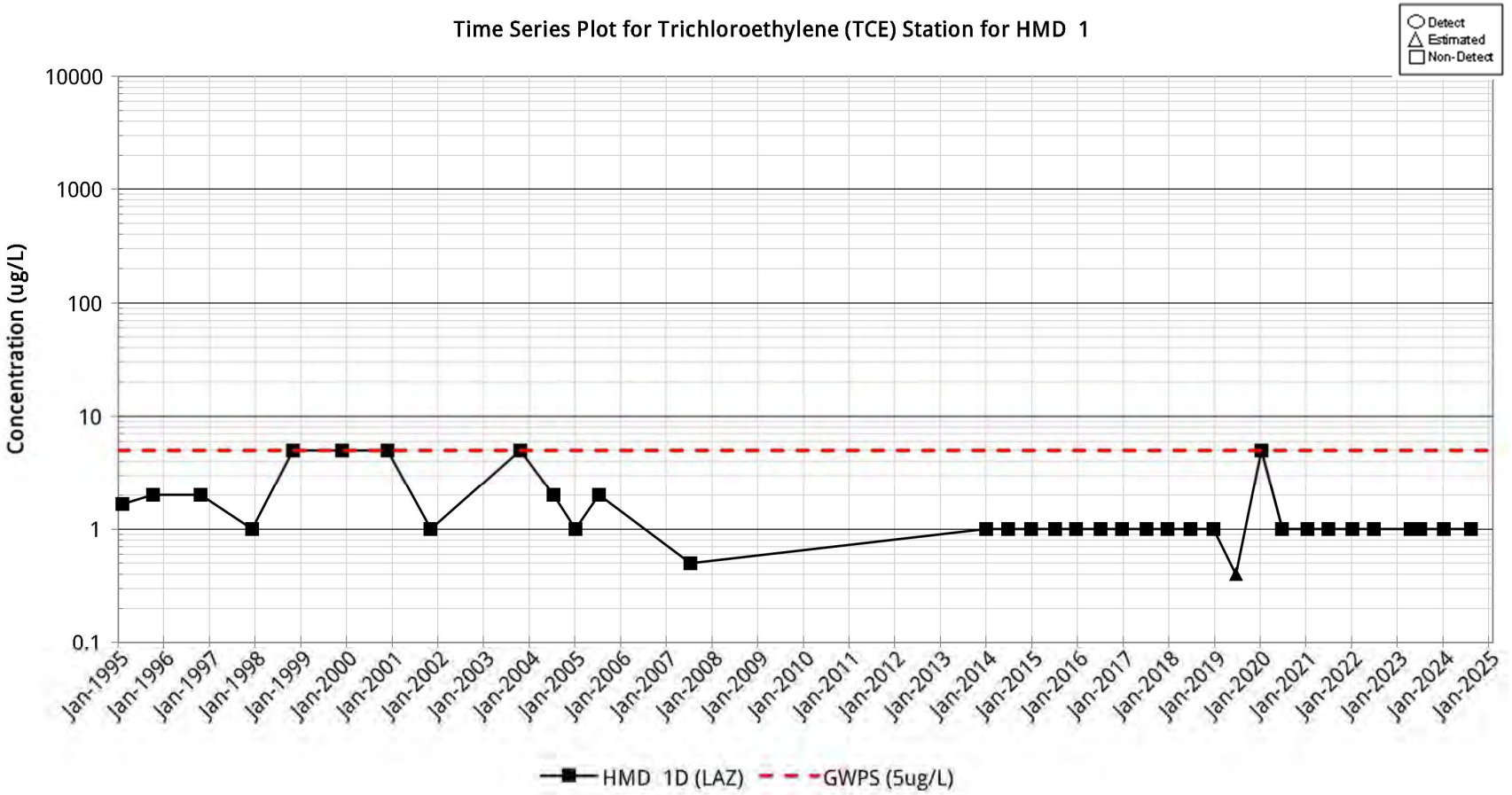

Time Series Plot for Trichloroethylene (TCE) Station for BSW 1
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BSW 1C3 (LAZ)
BSW 1D2 (UAZ)
BSW 1C4 (LAZ)
BSW 1C1 (LAZ)
BSW 1C2 (LAZ)
BSW 1D1 (UAZ)
BSW 1D3 (UAZ)
GWPS (5ug/L)

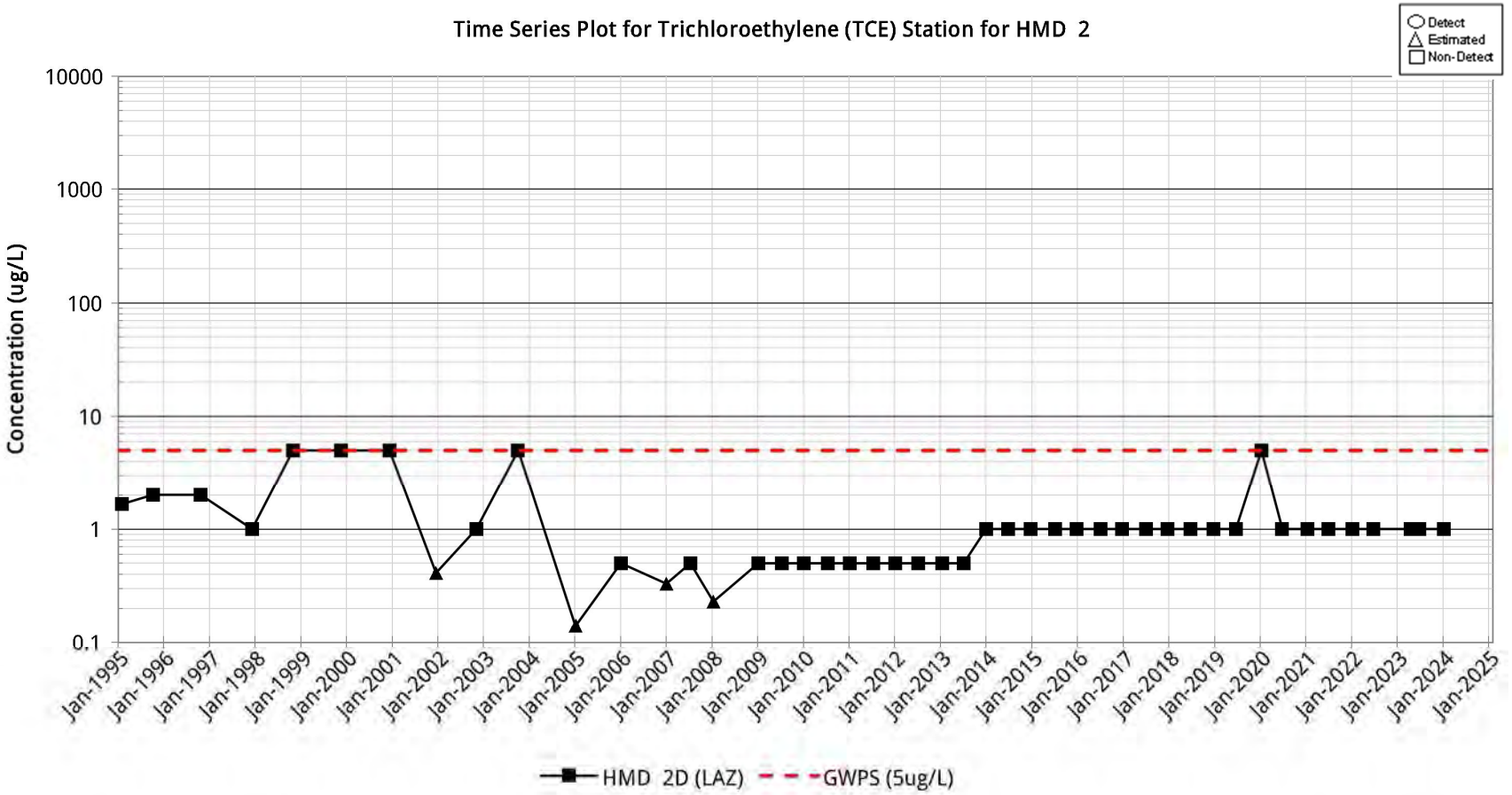

Time Series Plot for Trichloroethylene (TCE) Station for BSW 5
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BSW 5D2 (UAZ)
BSW 5C1 (LAZ)
GWPS (5ug/L)

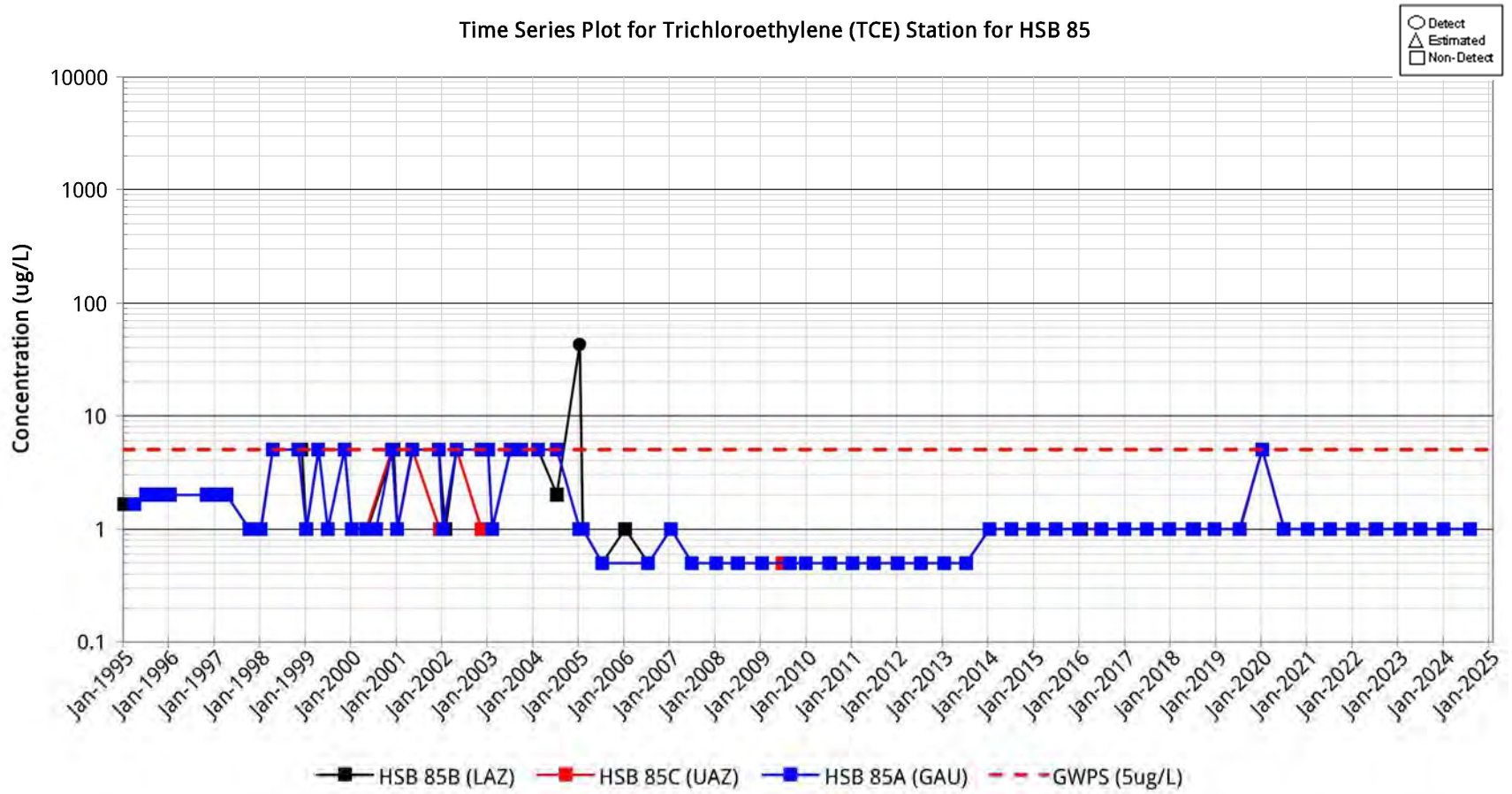

Time Series Plot for Trichloroethylene (TCE) Station for BSW 6
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BSW 6C1 (LAZ)
BSW 6C3 (LAZ)
BSW 6C2 (LAZ)
BSW 6D2 (UAZ)
BSW 6C4 (LAZ)
BSW 6D3 (UAZ)
GWPS (5ug/L)

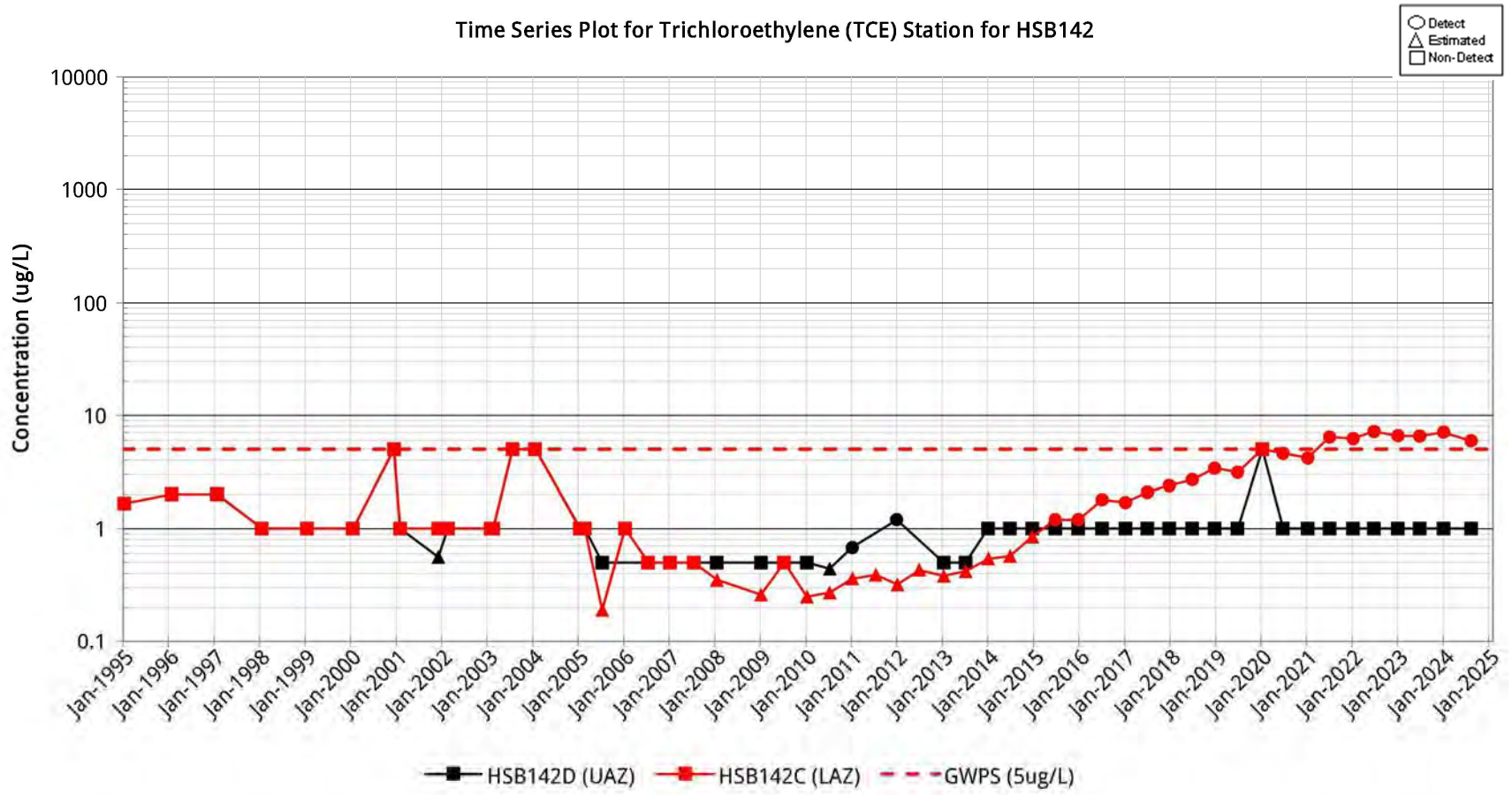

Time Series Plot for Trichloroethylene (TCE) Station for BSW 8
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
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Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BSW 8C1 (LAZ)
BSW 8D3 (UAZ)
GWPS (5ug/L)

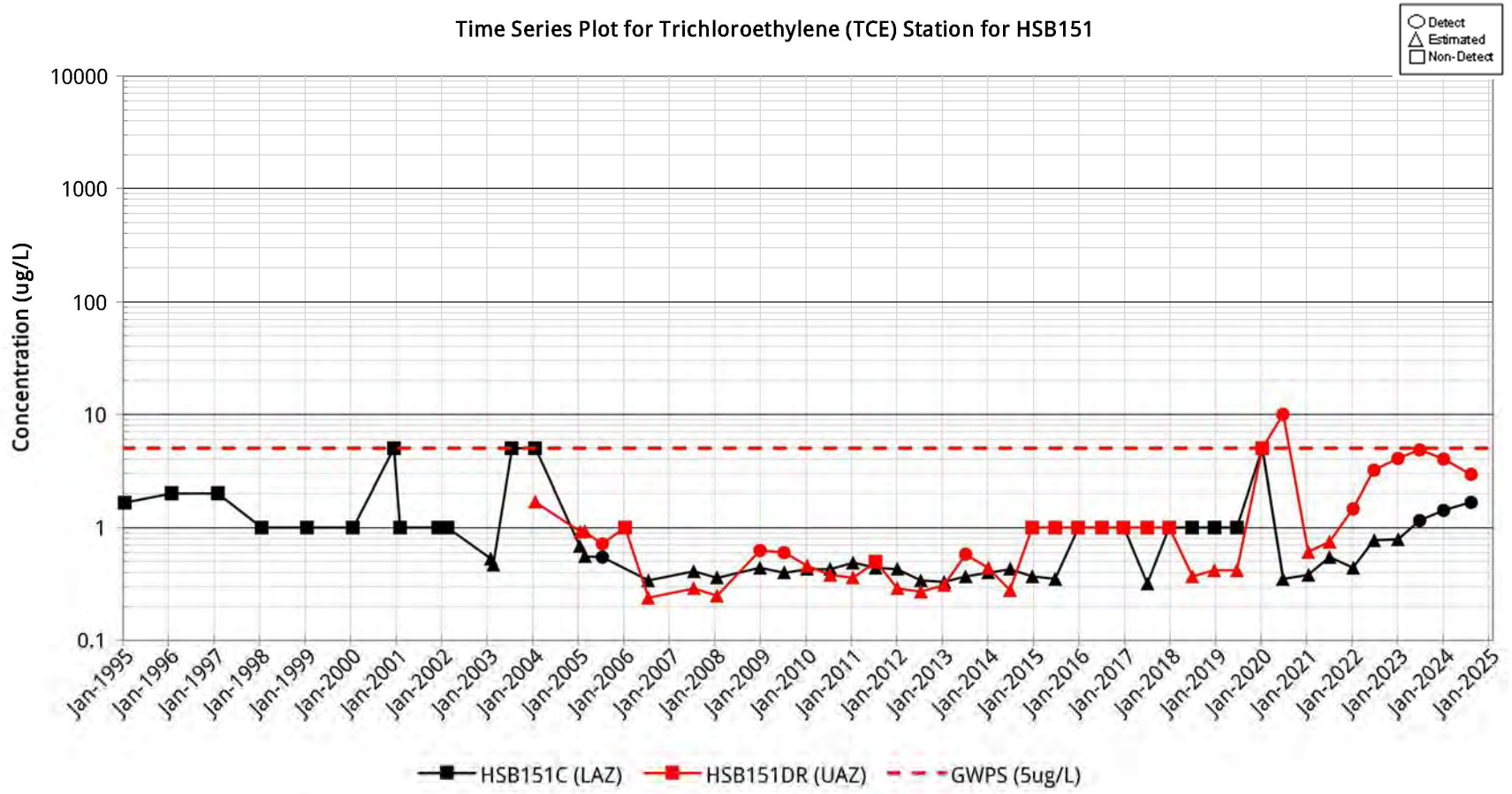

Time Series Plot for Trichloroethylene (TCE) Station for FSS 2
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
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Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
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Jan-2022
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Jan-2024
Jan-2025
FSS 2D (UAZ)
GWPS (5ug/L)

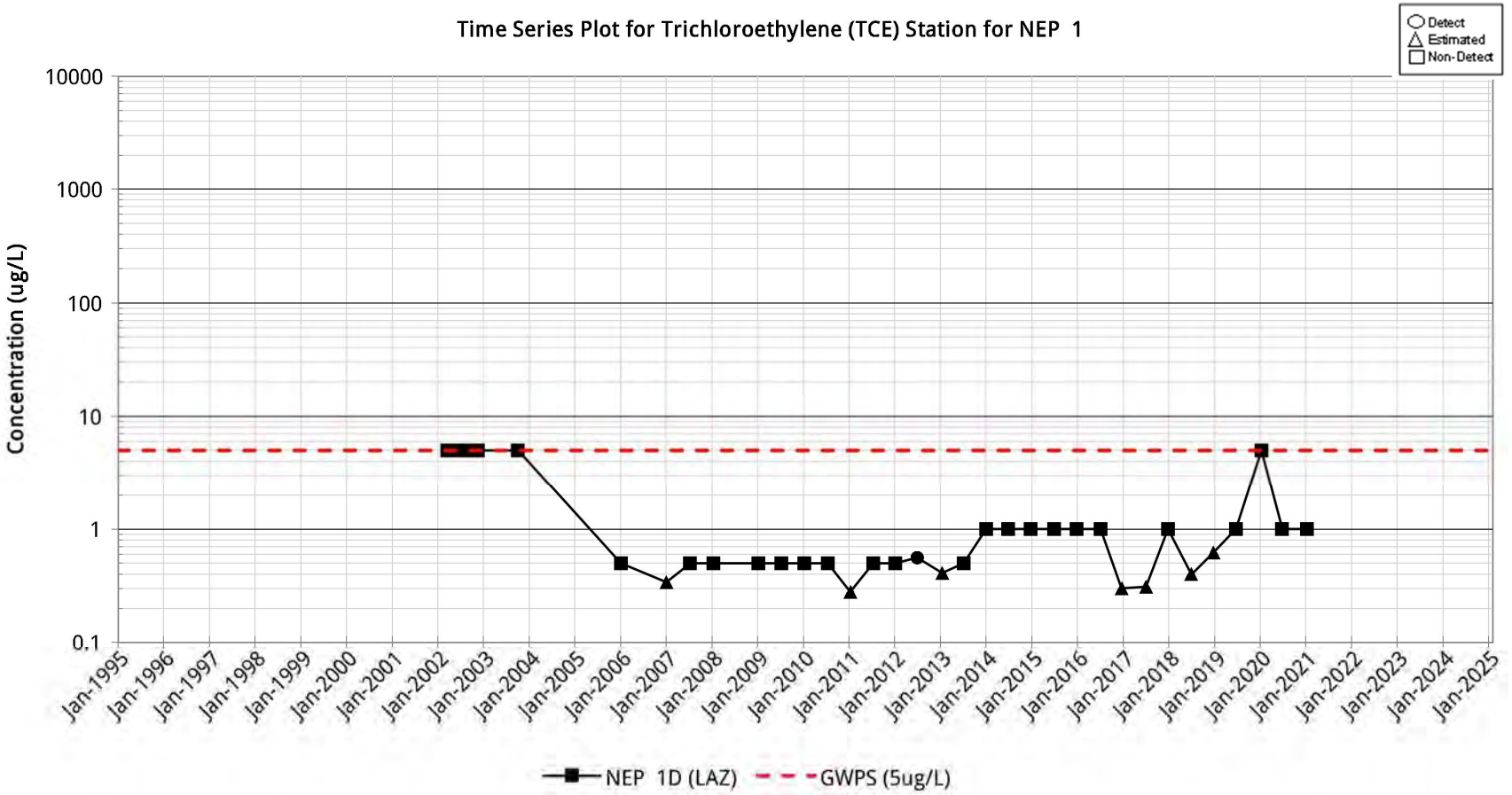

Time Series Plot for Trichloroethylene (TCE) Station for HMD 1
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HMD 1D (LAZ)
GWPS (5ug/L)

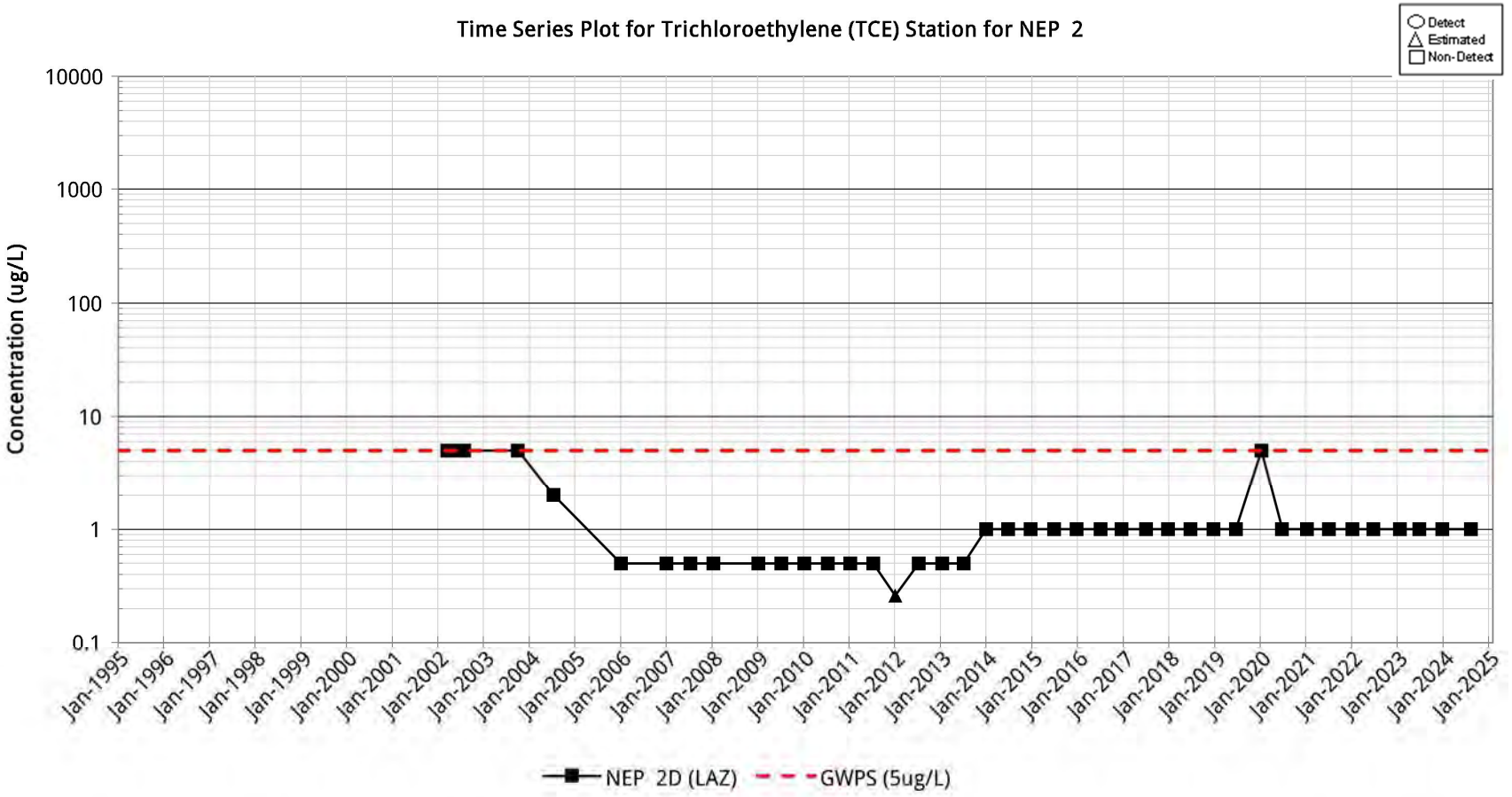

Time Series Plot for Trichloroethylene (TCE) Station for HMD 2
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
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Jan-2016
Jan-2017
Jan-2018
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Jan-2022
Jan-2023
Jan-2024
Jan-2025
HMD 2D (LAZ)
GWPS (5ug/L)

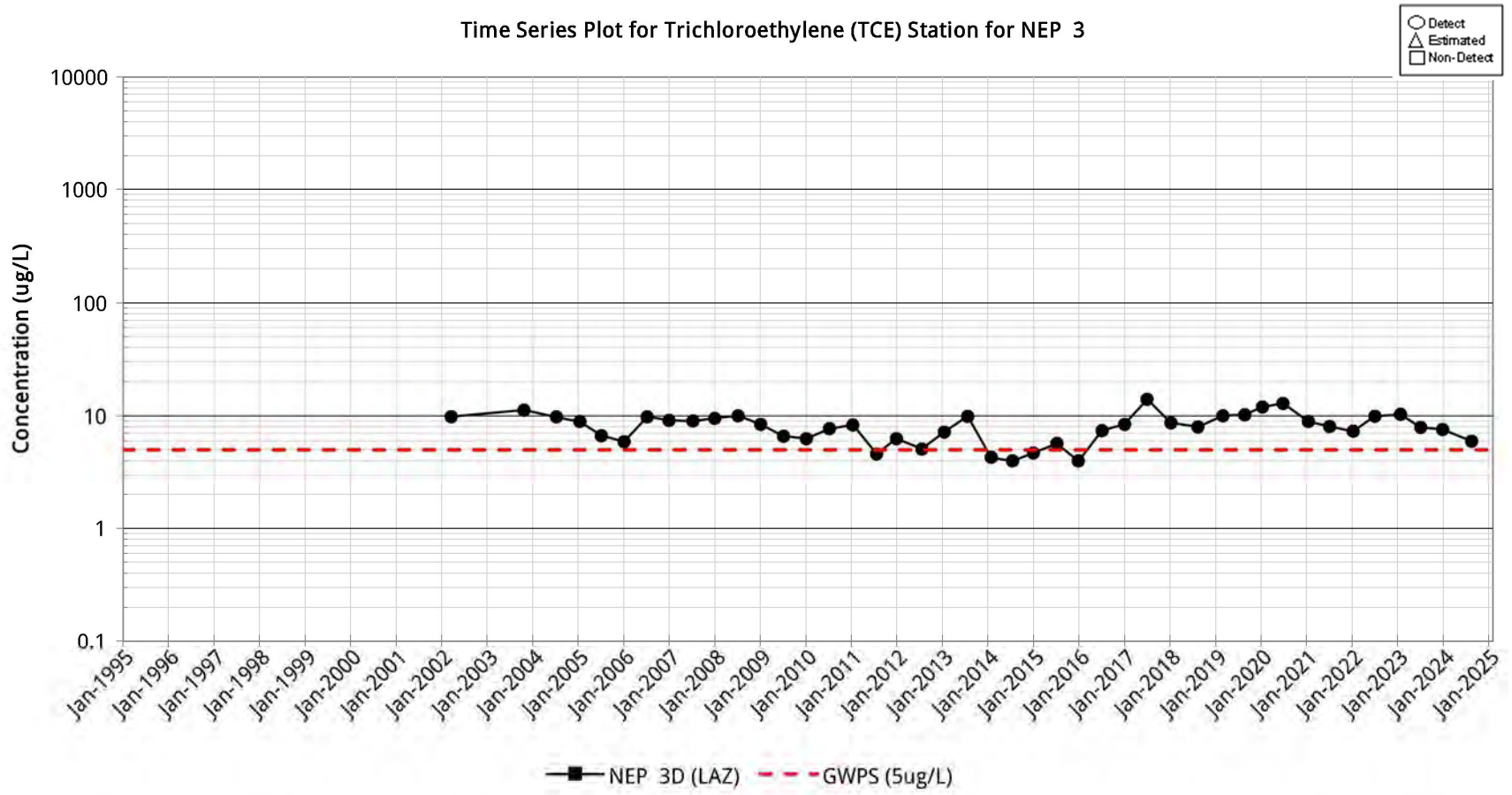

Time Series Plot for Trichloroethylene (TCE) Station for HSB 85
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
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Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
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Jan-2024
Jan-2025
HSB 85B (LAZ)
HSB 85C (UAZ)
HSB 85A (GAU)
GWPS (5ug/L)

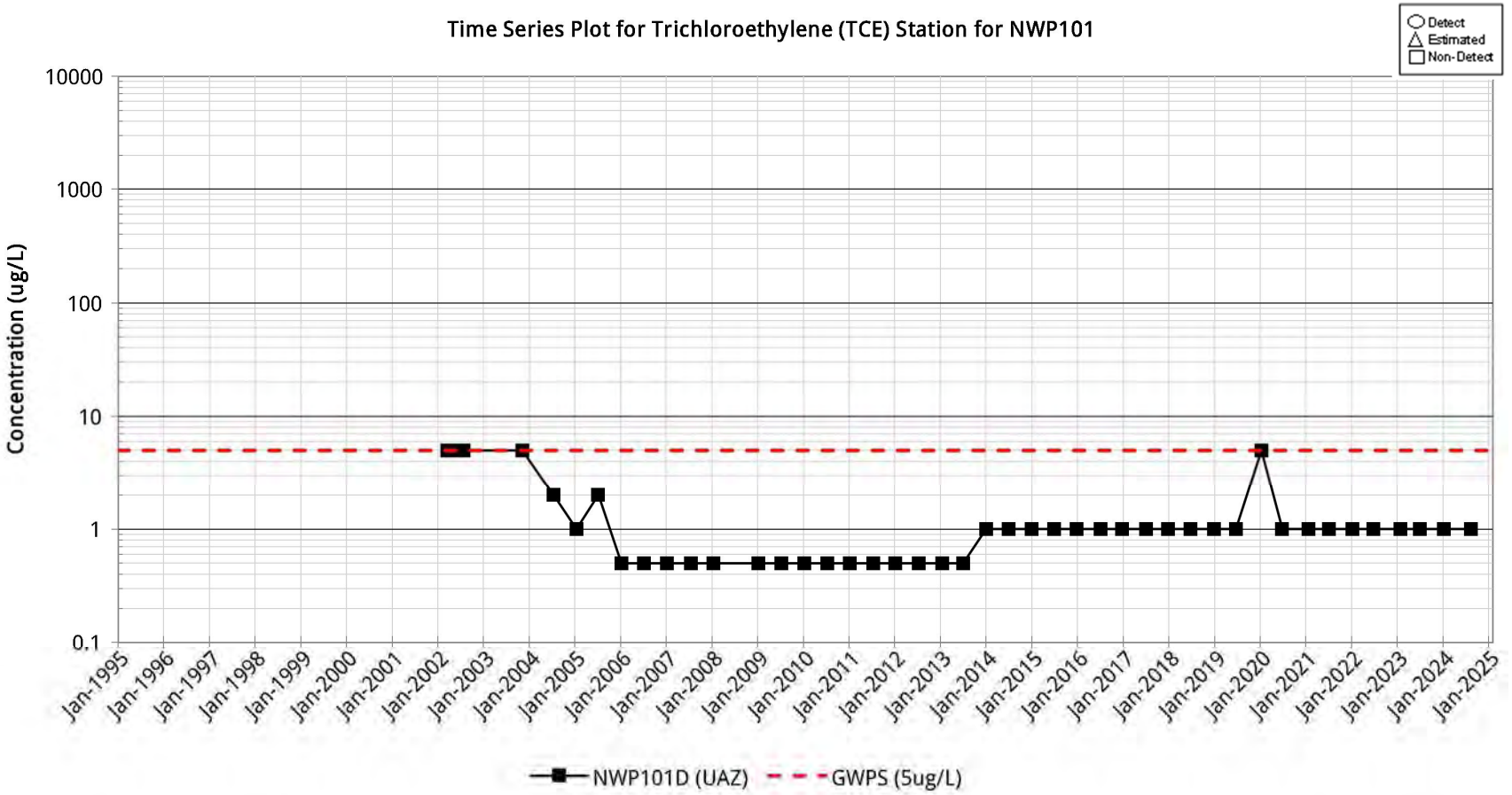

Time Series Plot for Trichloroethylene (TCE) Station for HSB142
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2020
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Jan-2024
Jan-2025
HSB142D (UAZ)
HSB142C (LAZ)
GWPS (5ug/L)

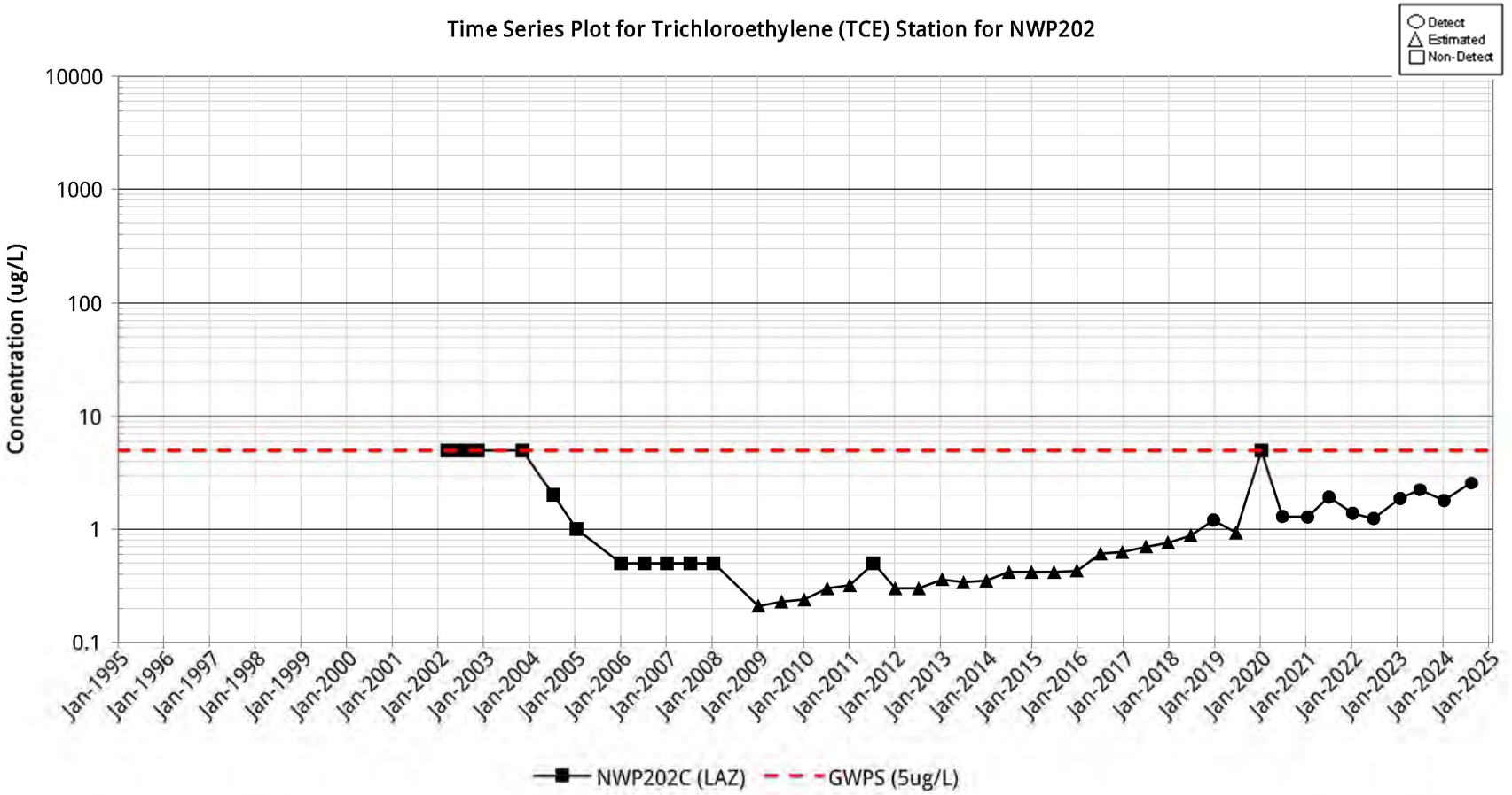

Time Series Plot for Trichloroethylene (TCE) Station for HSB151
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2024
Jan-2025
HSB151C (LAZ)
HSB151DR (UAZ)
GWPS (5ug/L)

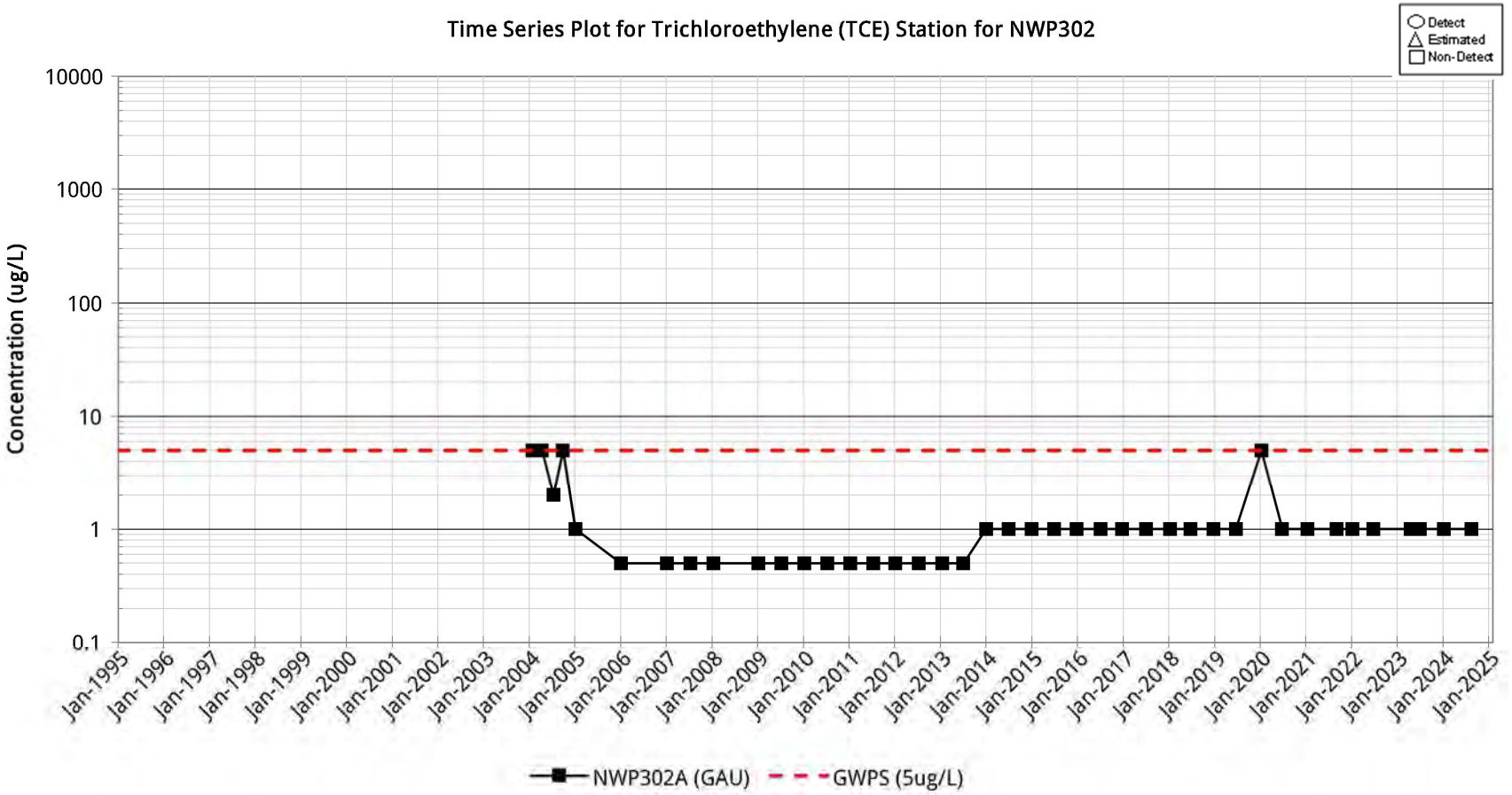

Time Series Plot for Trichloroethylene (TCE) Station for NEP 1
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2022
Jan-2023
Jan-2024
Jan-2025
NEP 1D (LAZ)
GWPS (5ug/L)

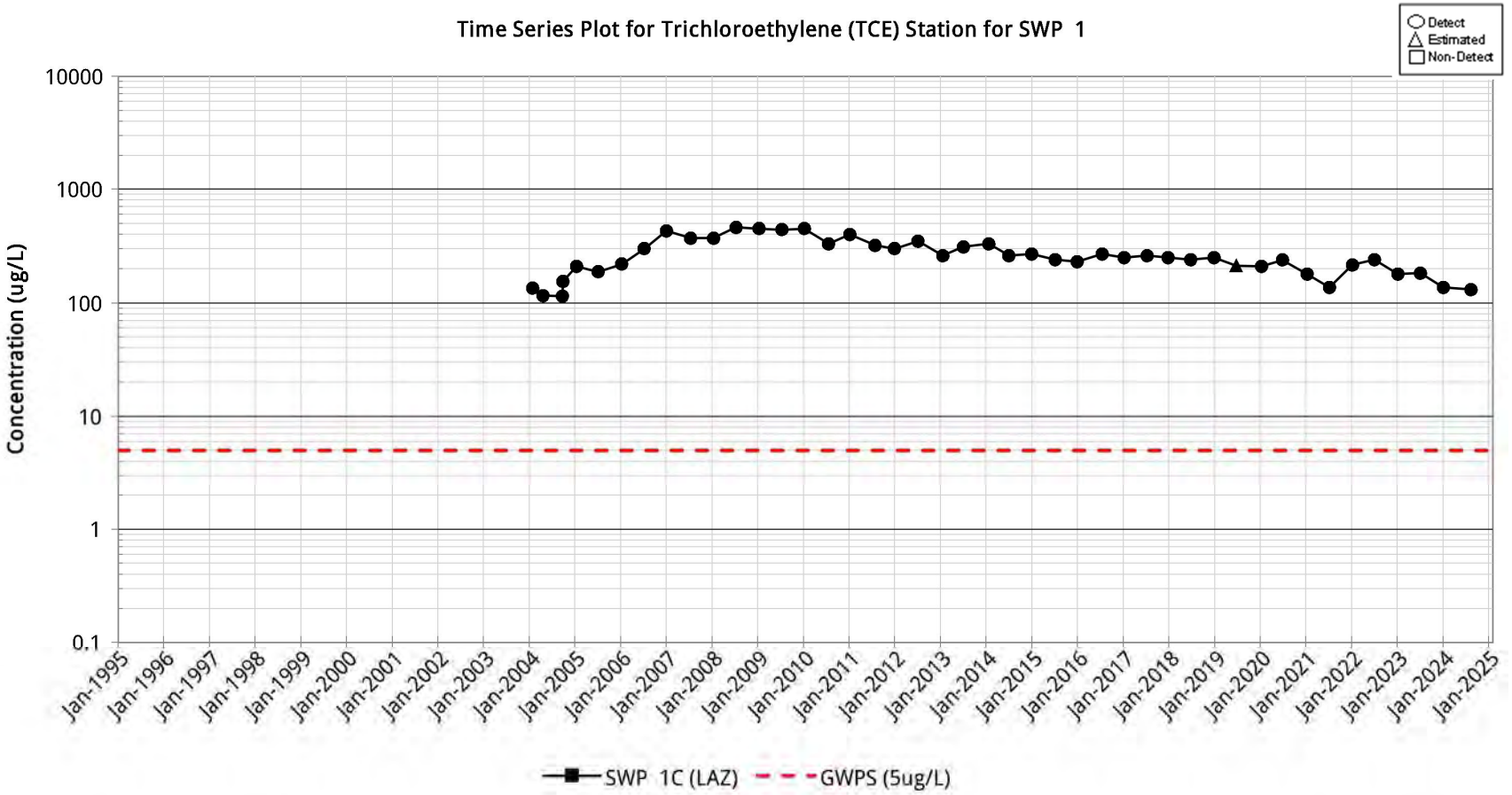

Time Series Plot for Trichloroethylene (TCE) Station for NEP 2
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
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Jan-2017
Jan-2018
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Jan-2022
Jan-2023
Jan-2024
Jan-2025
NEP 2D (LAZ)
GWPS (5ug/L)

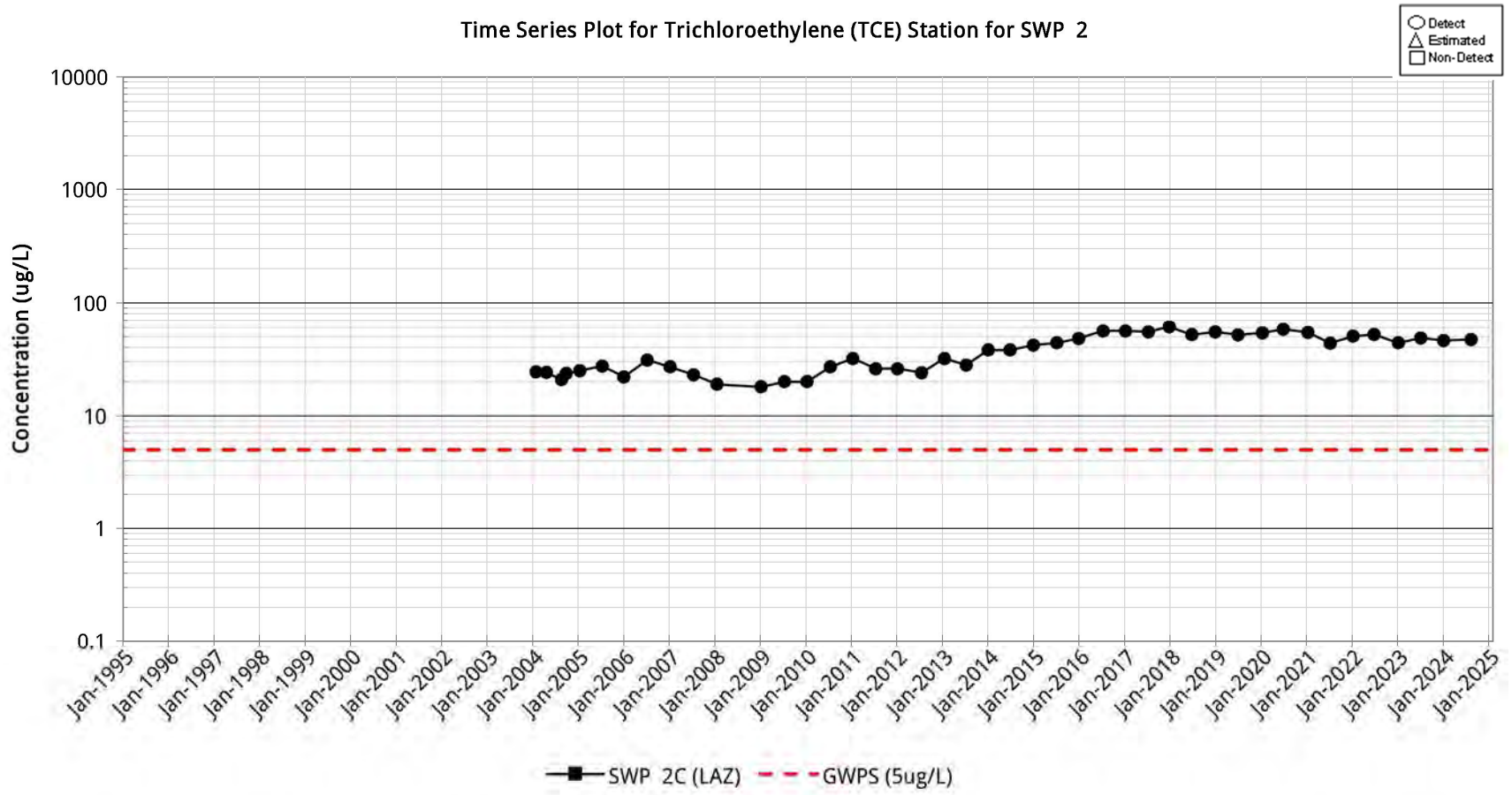

Time Series Plot for Trichloroethylene (TCE) Station for NEP 3
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
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Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
NEP 3D (LAZ)
GWPS (5ug/L)

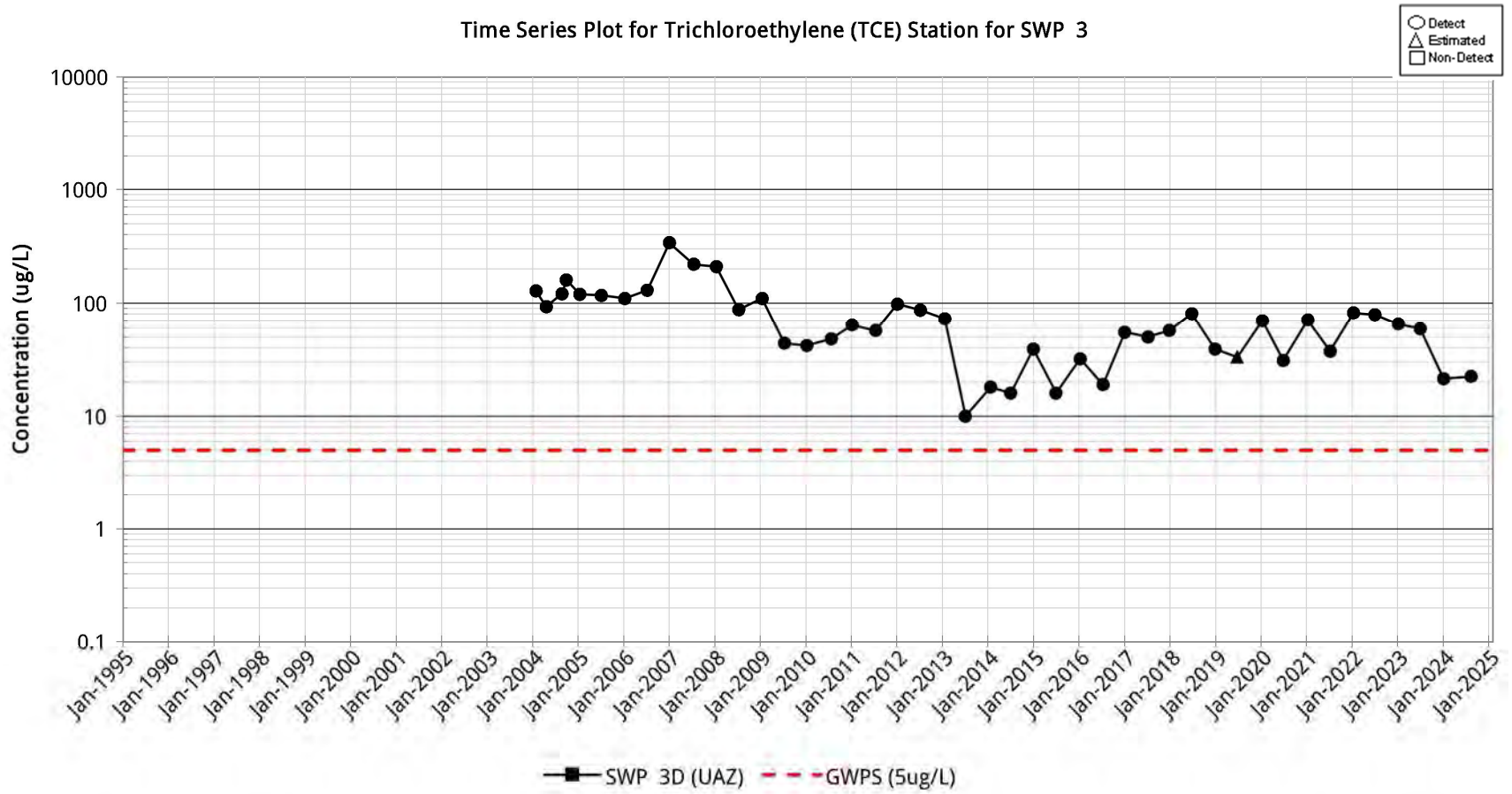

Time Series Plot for Trichloroethylene (TCE) Station for NWP101
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
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Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
NWP101D (UAZ)
GWPS (5ug/L)

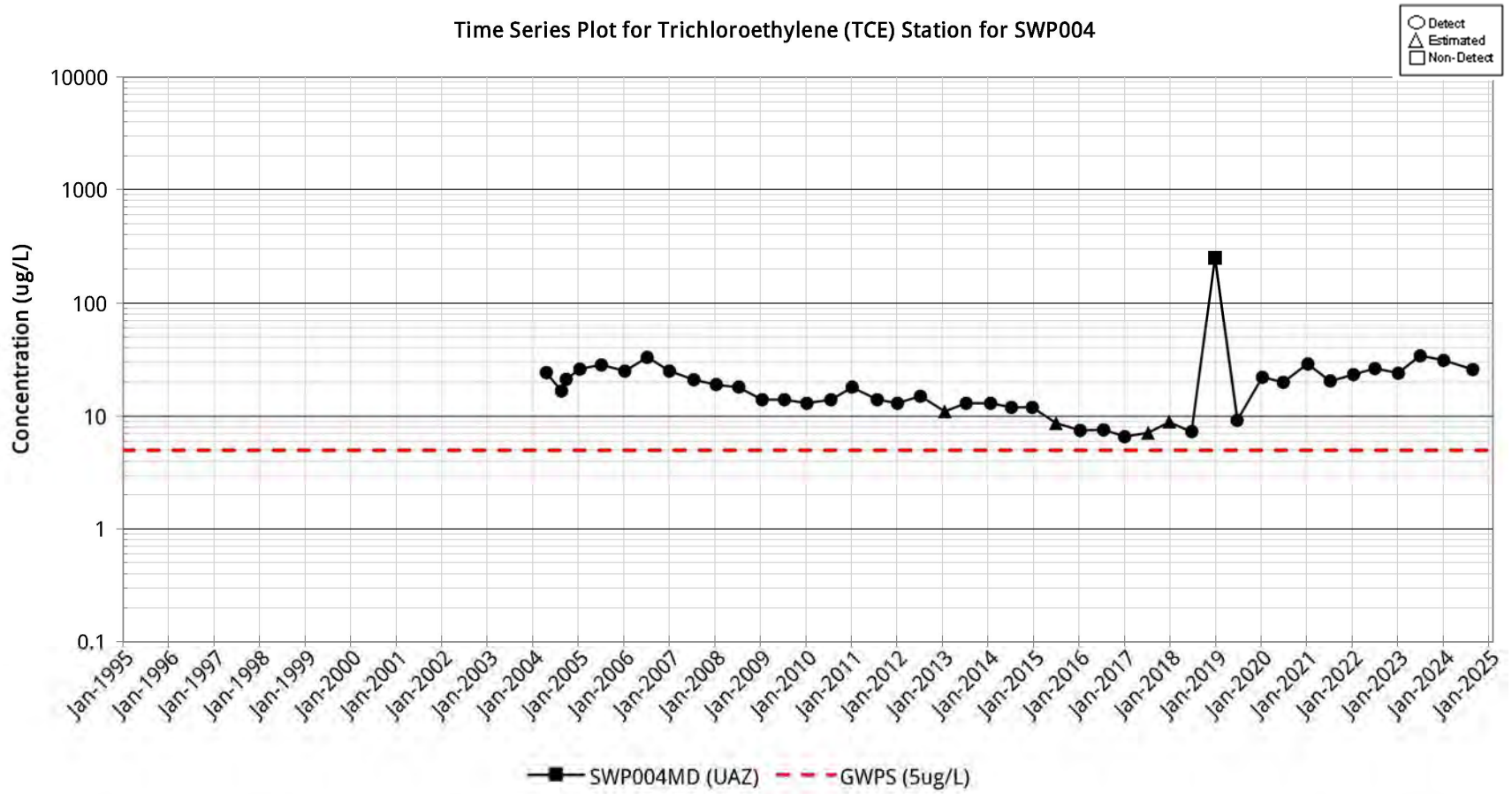

Time Series Plot for Trichloroethylene (TCE) Station for NWP202
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
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Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
NWP202C (LAZ)
GWPS (5ug/L)

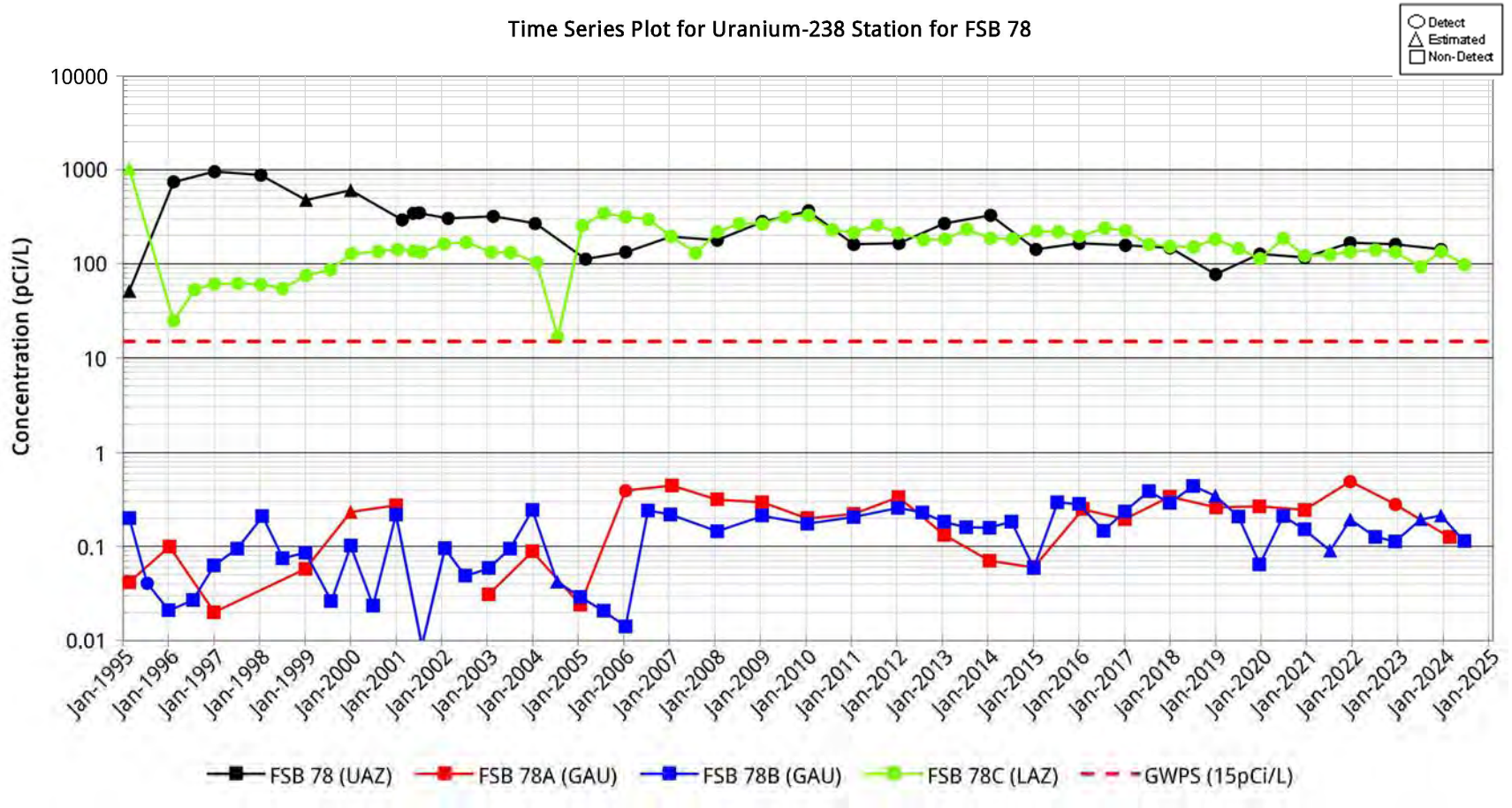

Time Series Plot for Trichloroethylene (TCE) Station for NWP302
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
NWP302A (GAU)
GWPS (5ug/L)

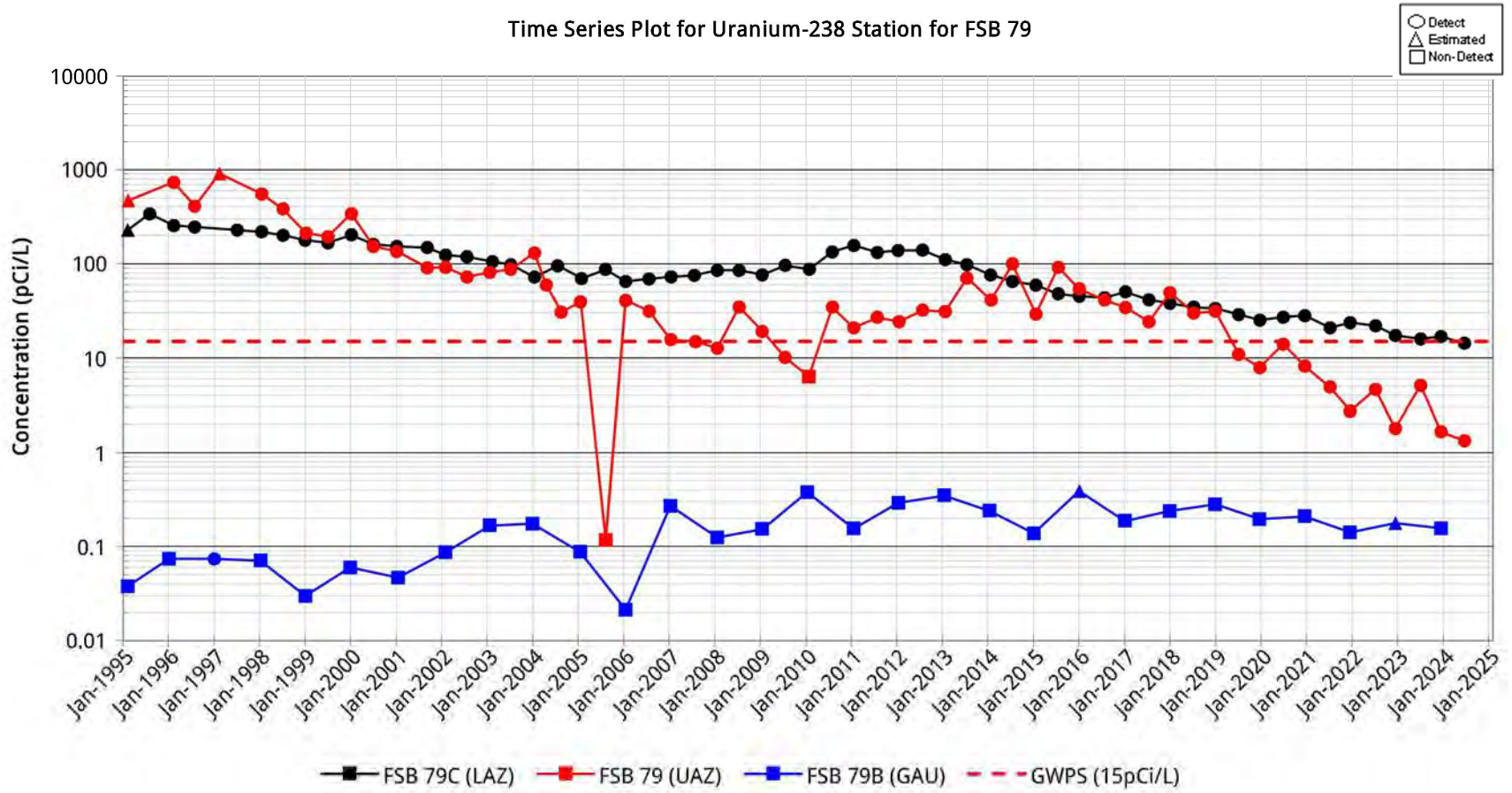

Time Series Plot for Trichloroethylene (TCE) Station for SWP 1
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
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Jan-2018
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Jan-2022
Jan-2023
Jan-2024
Jan-2025
SWP 1C (LAZ)
GWPS (5ug/L)

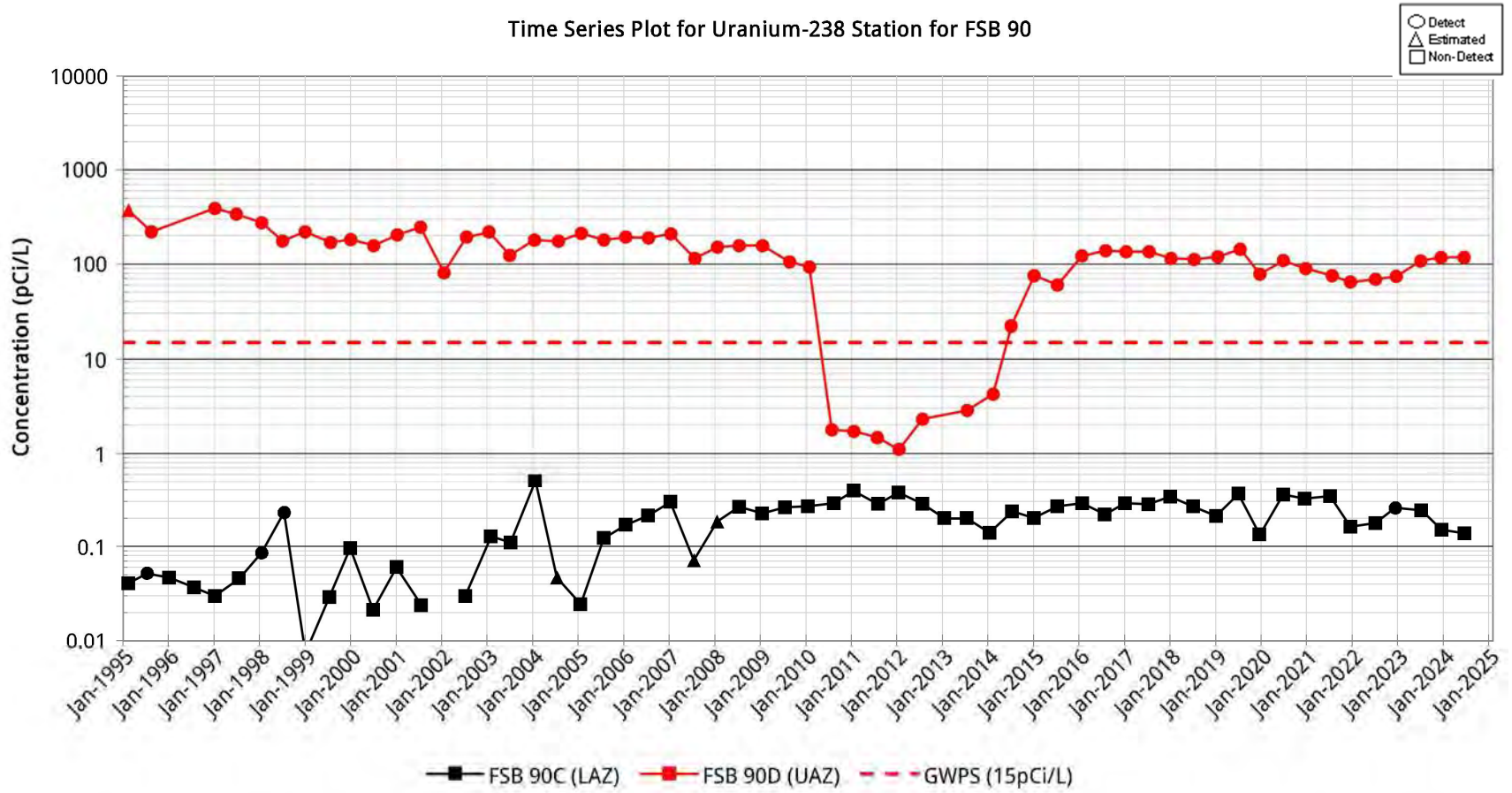

Time Series Plot for Trichloroethylene (TCE) Station for SWP 2
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
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Jan-2022
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Jan-2025
SWP 2C (LAZ)
GWPS (5ug/L)

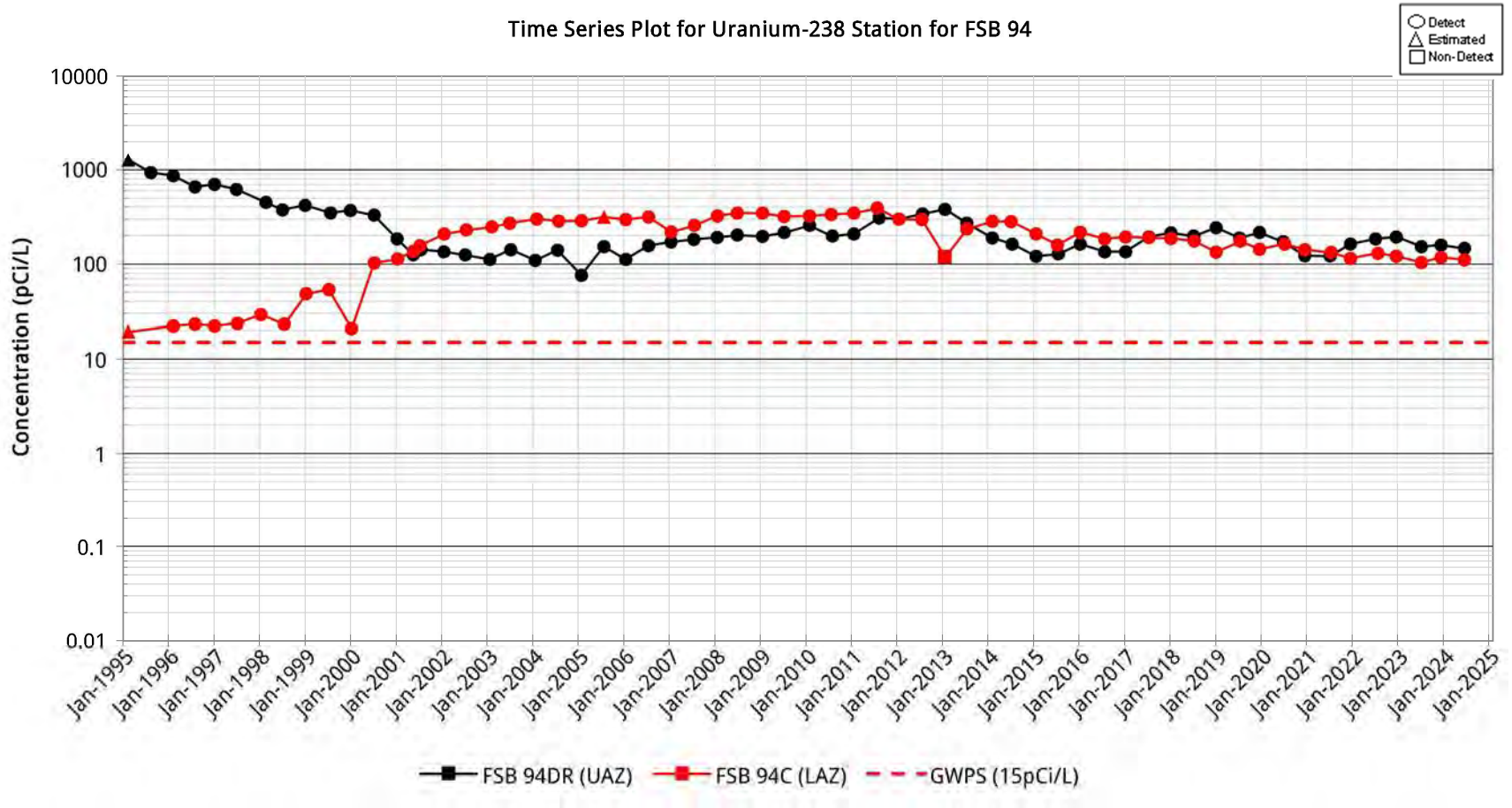

Time Series Plot for Trichloroethylene (TCE) Station for SWP 3
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
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Jan-2022
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Jan-2025
SWP 3D (UAZ)
GWPS (5ug/L)

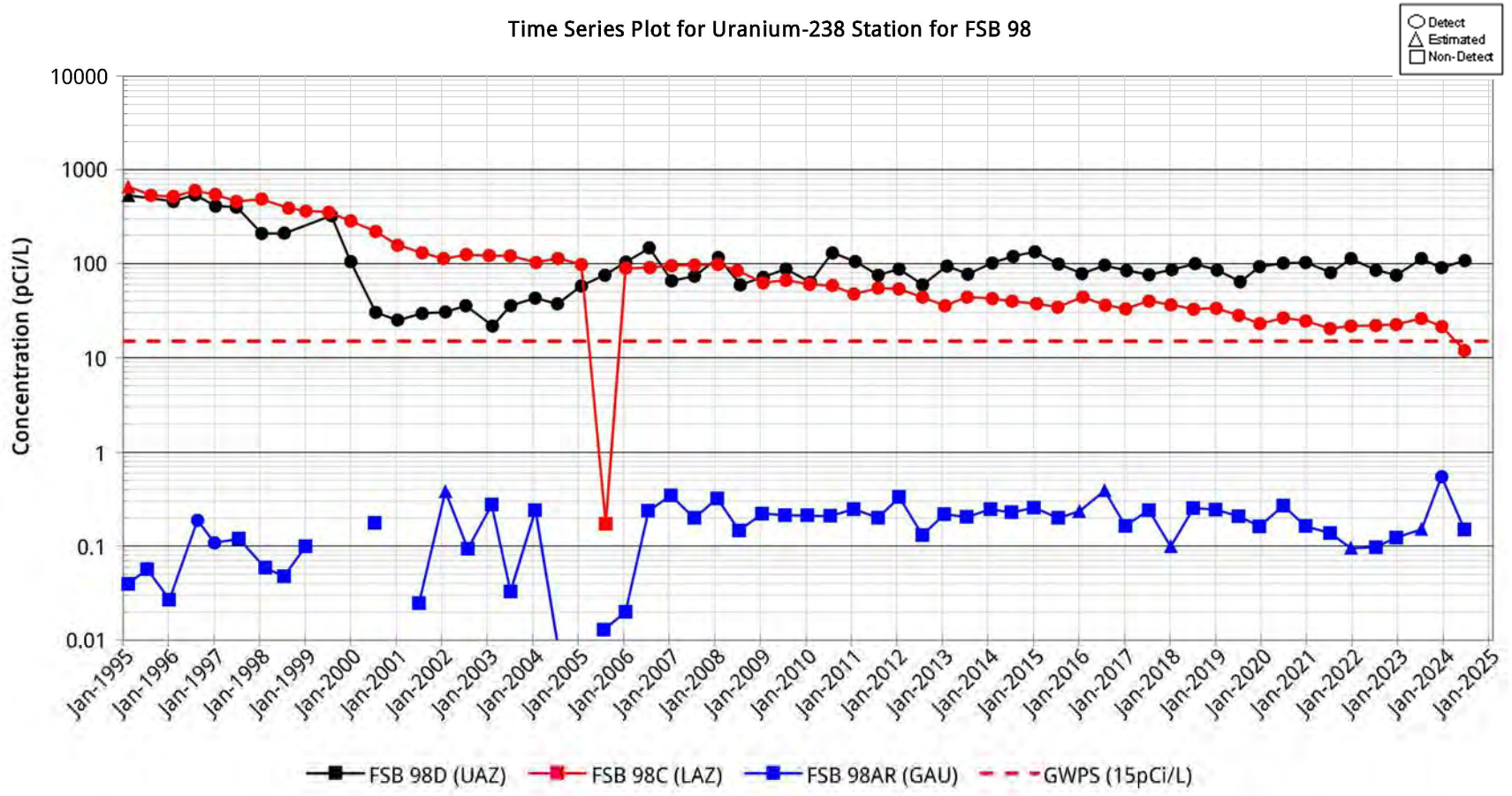

Time Series Plot for Trichloroethylene (TCE) Station for SWP004
Detect
Estimated
Non-Detect
Concentration (ug/L)
10000
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2025
SWP004MD (UAZ)
GWPS (5ug/L)

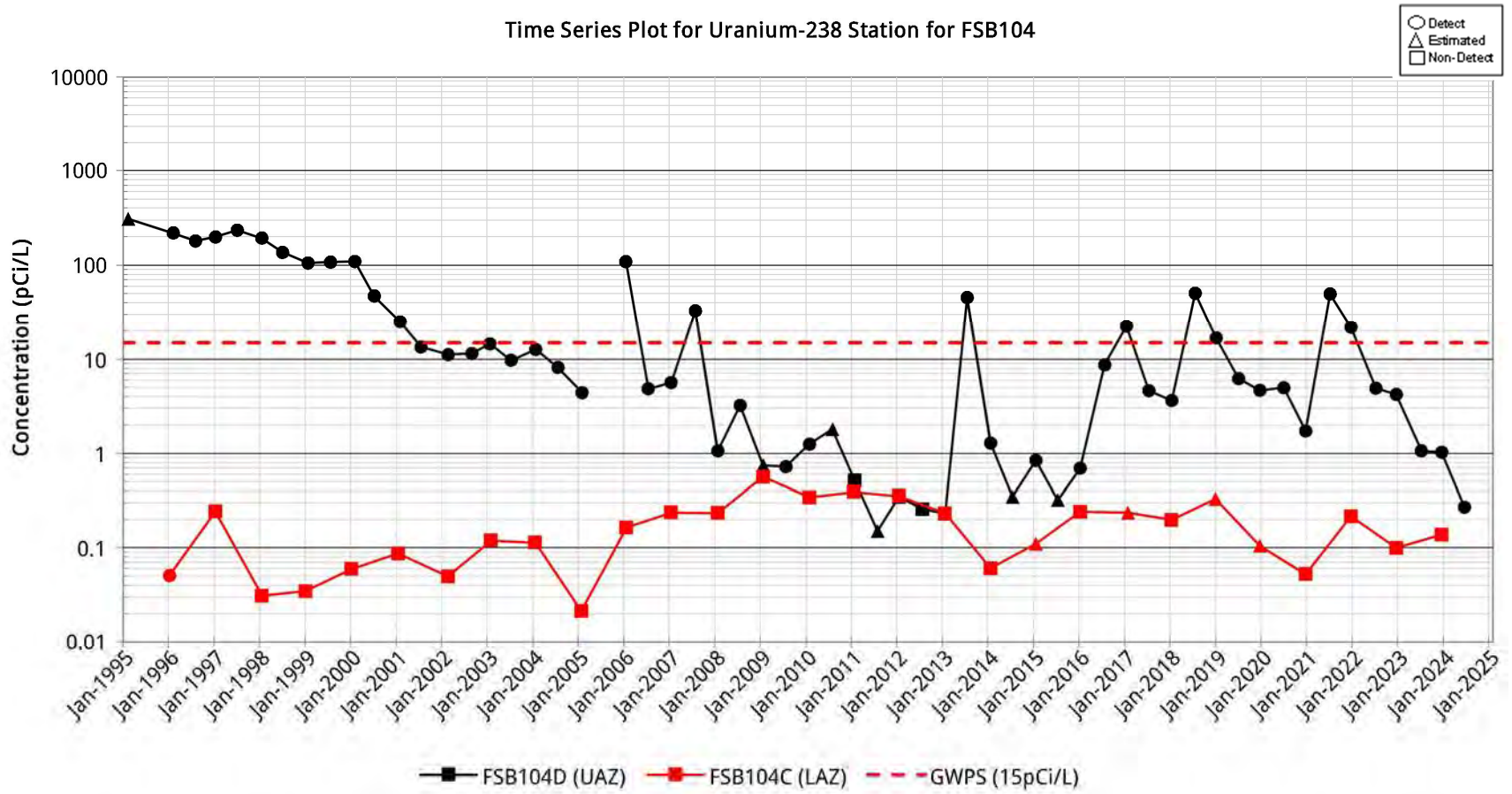

Time Series Plot for Uranium-238 Station for FSB 78
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
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Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 78 (UAZ)
FSB 78A (GAU)
FSB 78B (GAU)
FSB 78C (LAZ)
GWPS (15pCi/L)

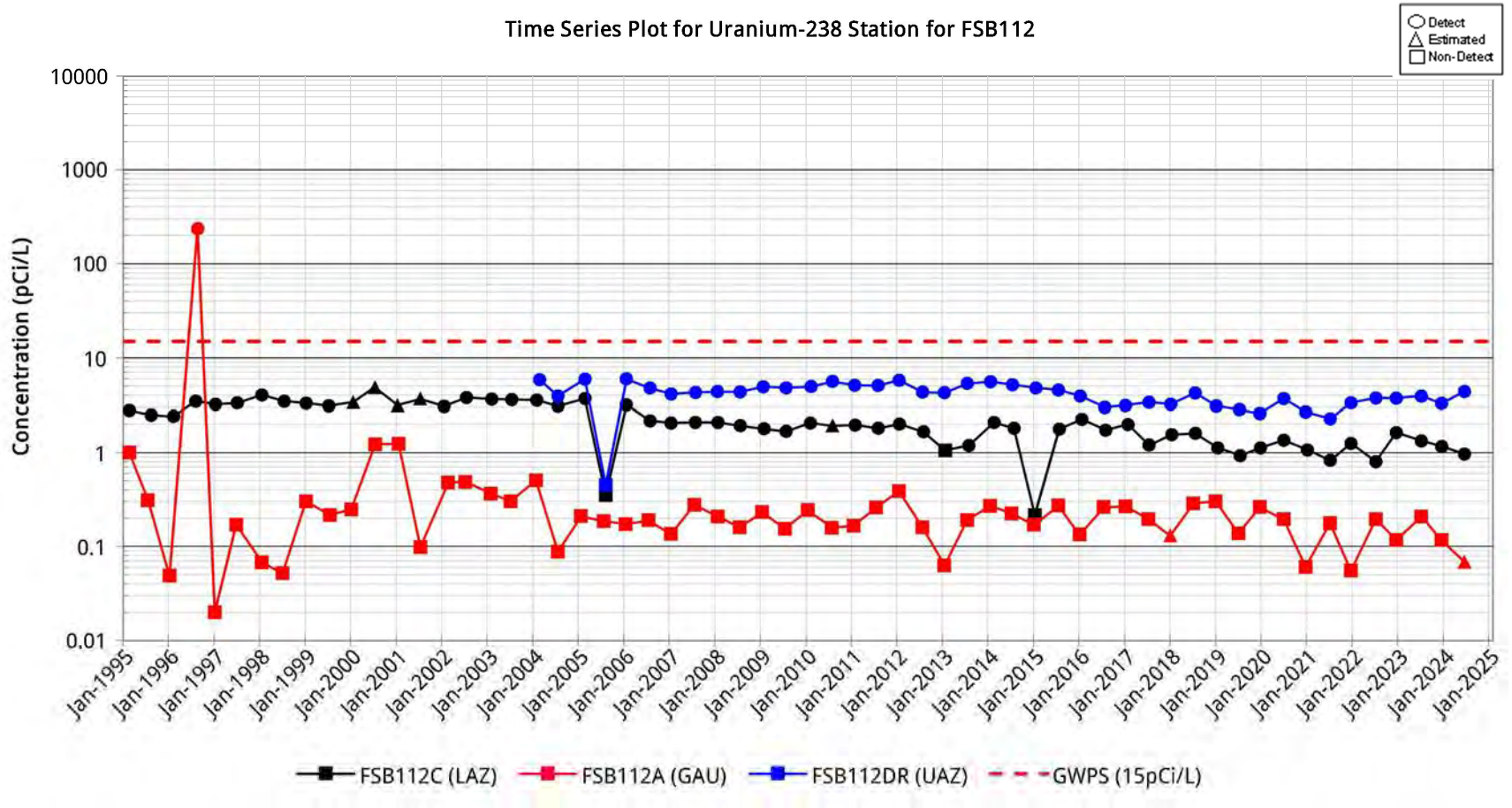

Time Series Plot for Uranium-238 Station for FSB 79
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
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Jan-2021
Jan-2022
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Jan-2024
Jan-2025
FSB 79C (LAZ)
FSB 79 (UAZ)
FSB 79B (GAU)
GWPS (15pCi/L)

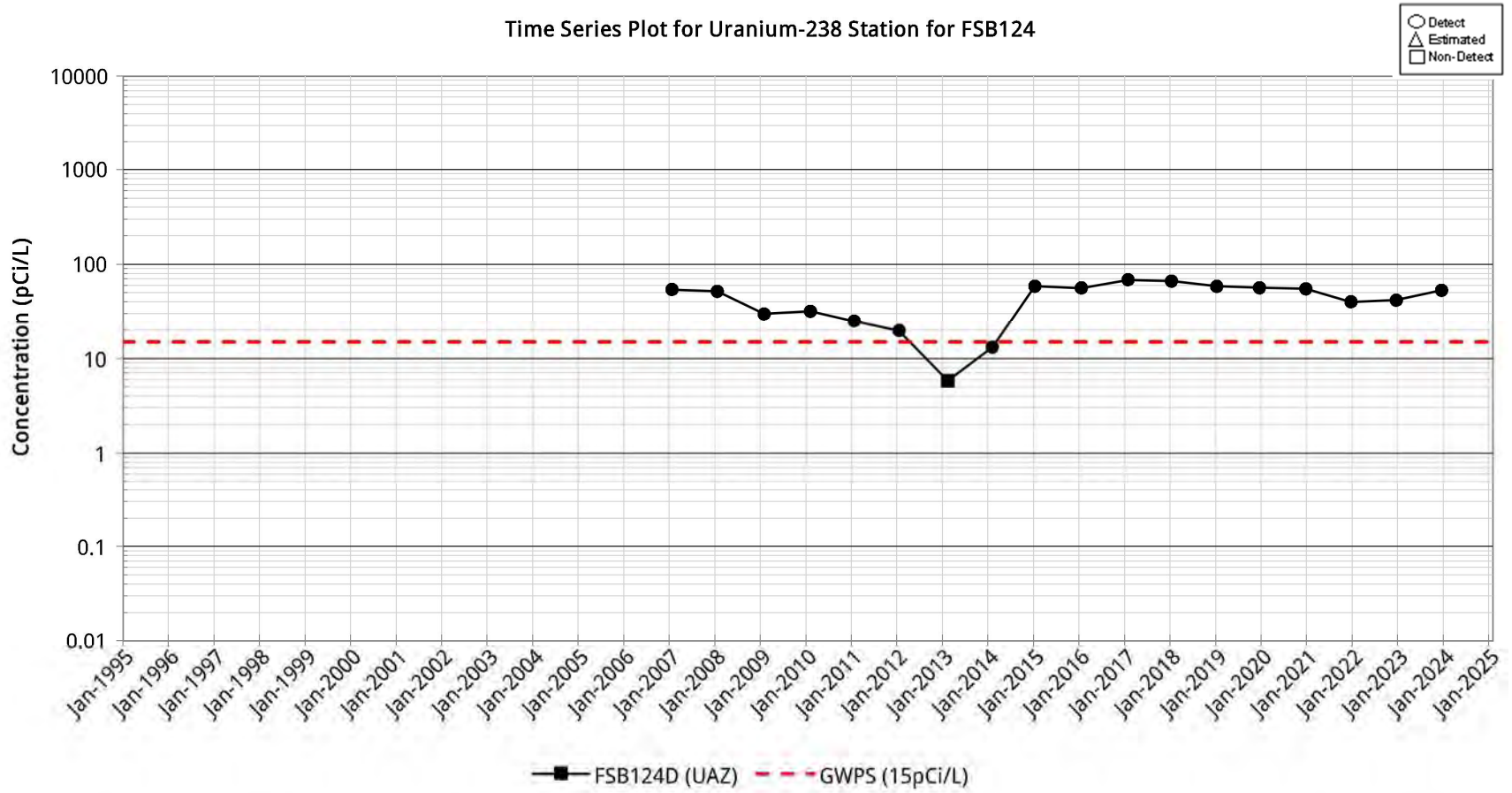

Time Series Plot for Uranium-238 Station for FSB 90
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
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Jan-2019
Jan-2020
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Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 90C (LAZ)
FSB 90D (UAZ)
GWPS (15pCi/L)

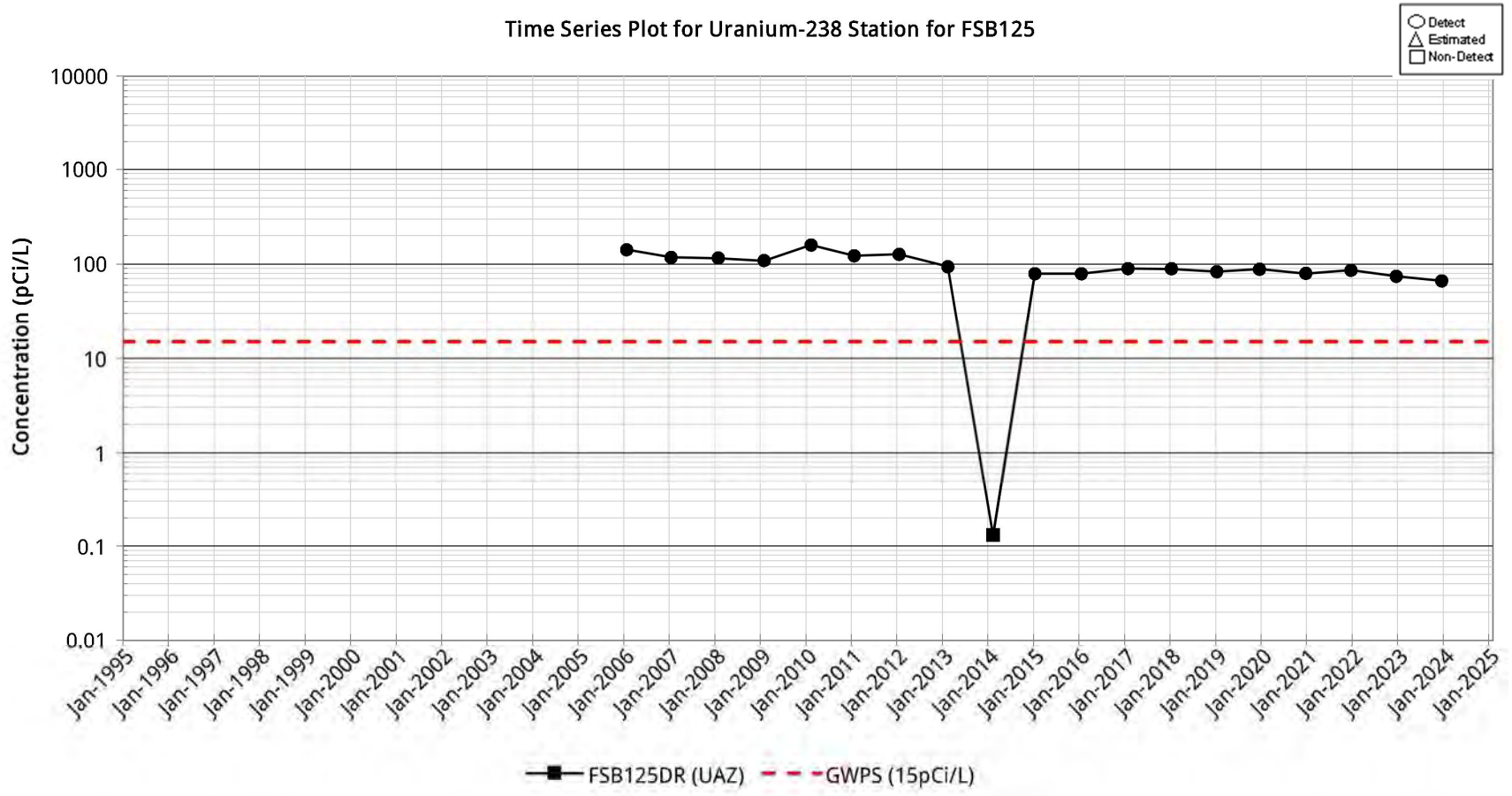

Time Series Plot for Uranium-238 Station for FSB 94
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
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Jan-2023
Jan-2024
Jan-2025
FSB 94DR (UAZ)
FSB 94C (LAZ)
GWPS (15pCi/L)

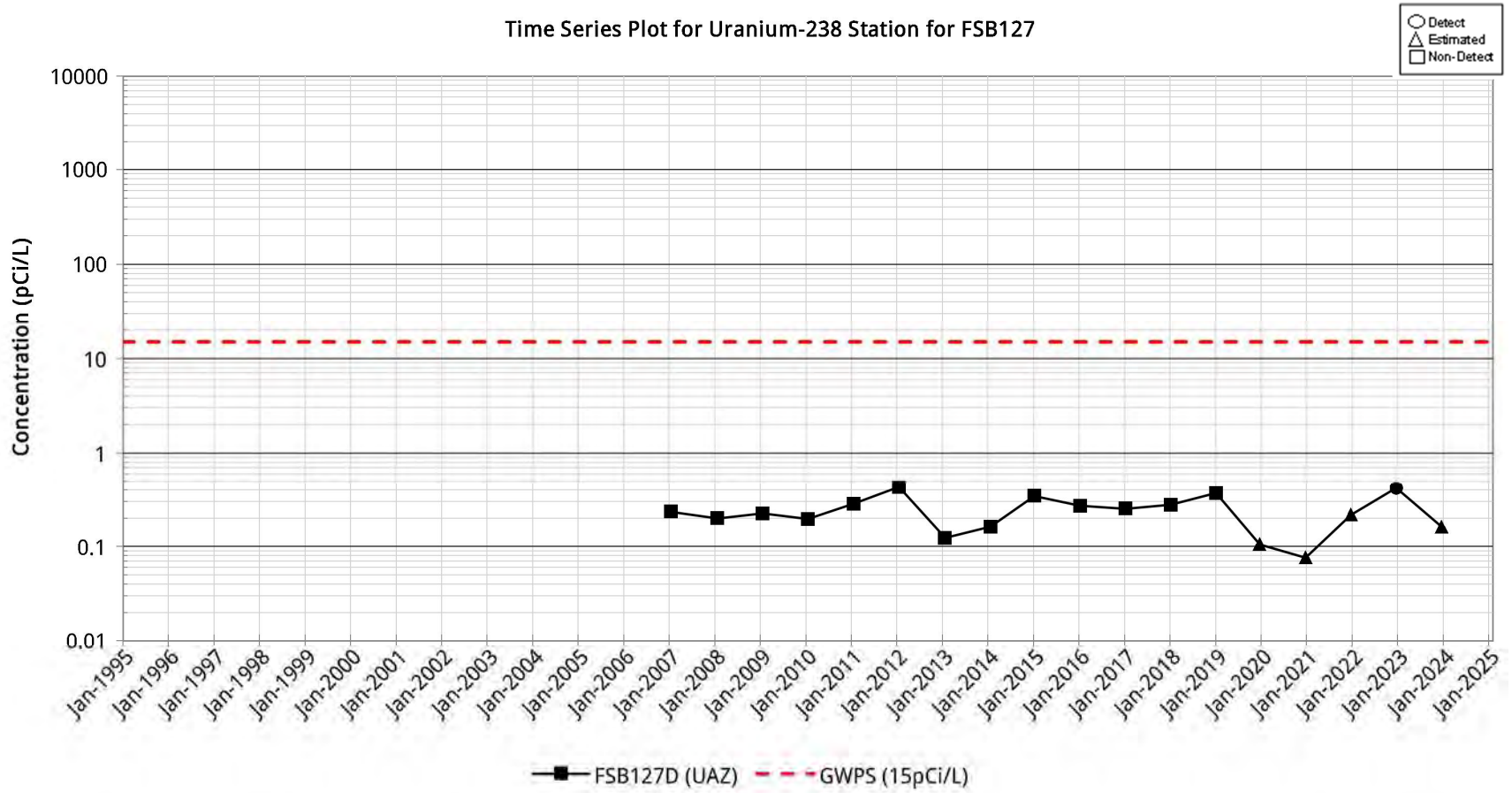

Time Series Plot for Uranium-238 Station for FSB 98
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 98D (UAZ)
FSB 98C (LAZ)
FSB 98AR (GAU)
GWPS (15pCi/L)

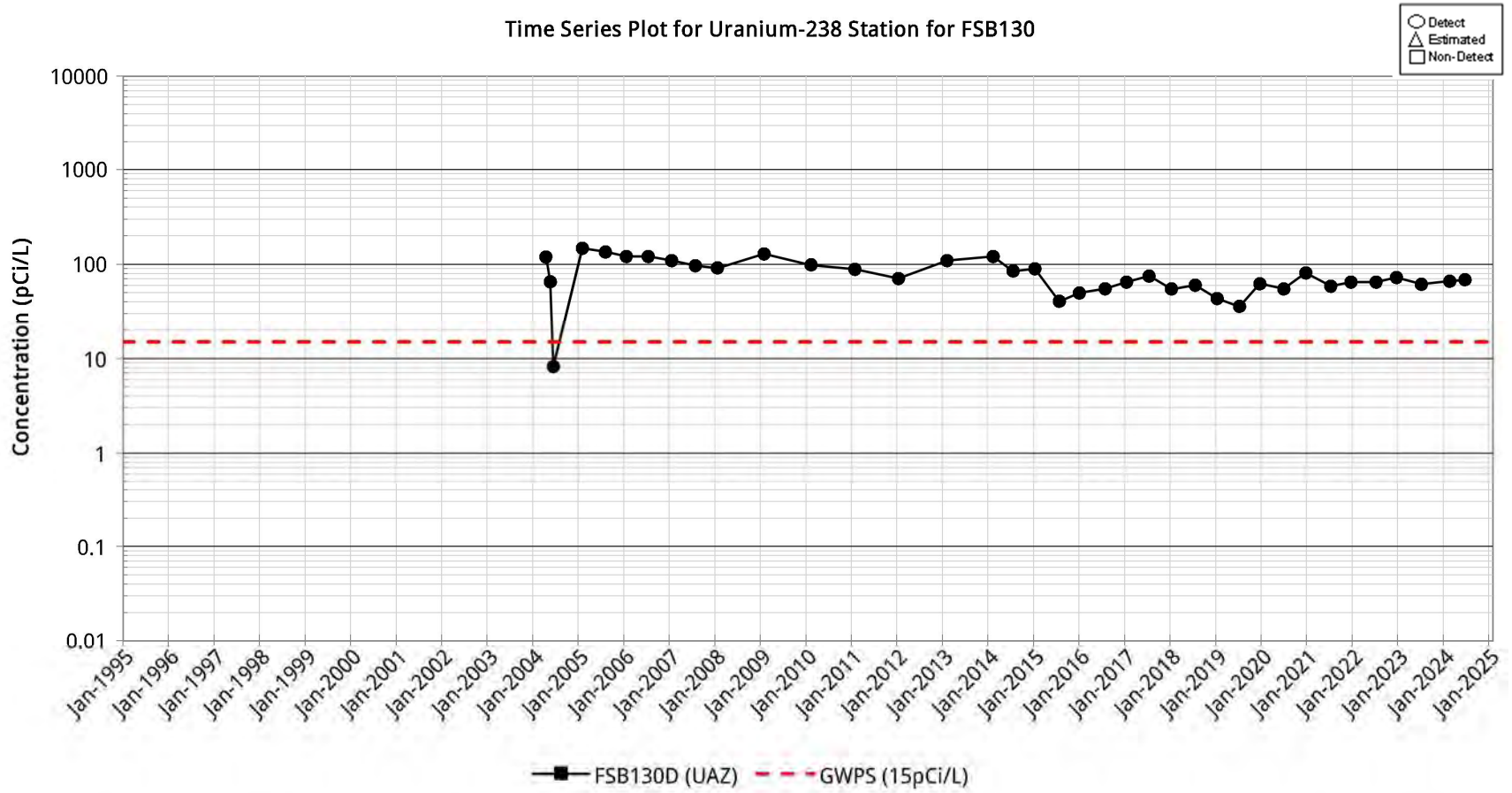

Time Series Plot for Uranium-238 Station for FSB104
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB104D (UAZ)
FSB104C (LAZ)
GWPS (15pCi/L)

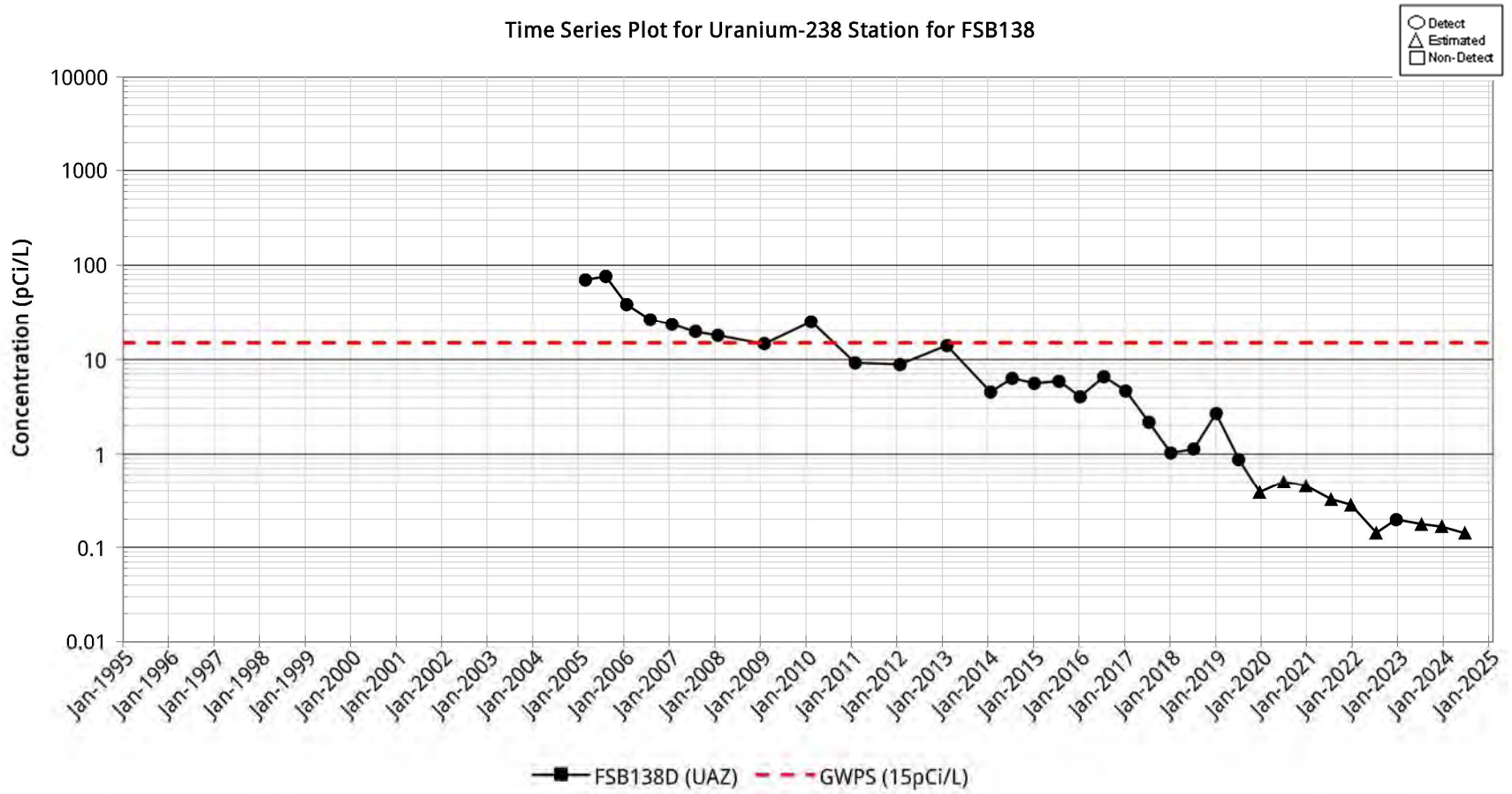

Time Series Plot for Uranium-238 Station for FSB112
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB112C (LAZ)
FSB112A (GAU)
FSB112DR (UAZ)
GWPS (15pCi/L)

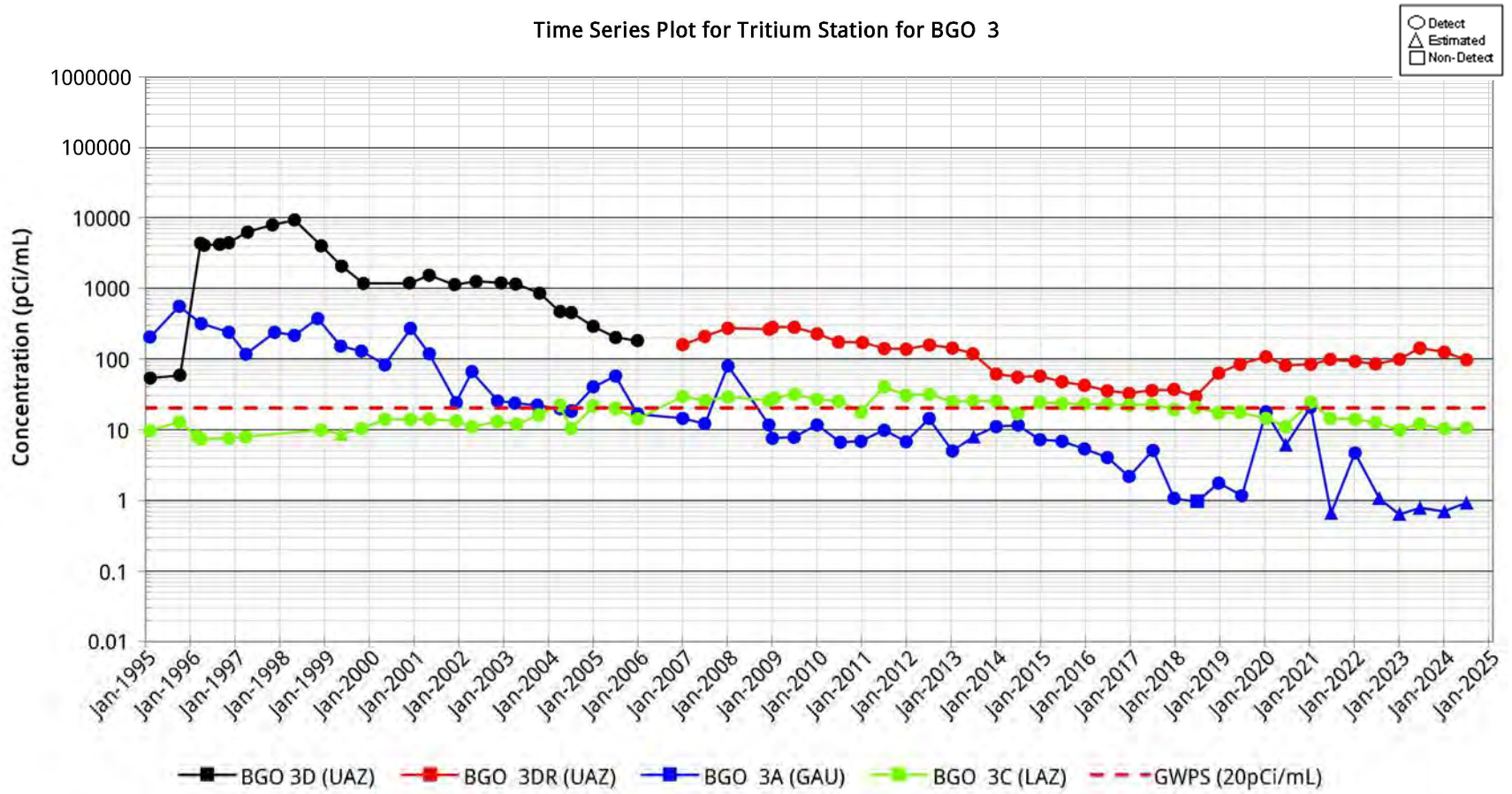

Time Series Plot for Uranium-238 Station for FSB124
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB124D (UAZ)
GWPS (15pCi/L)

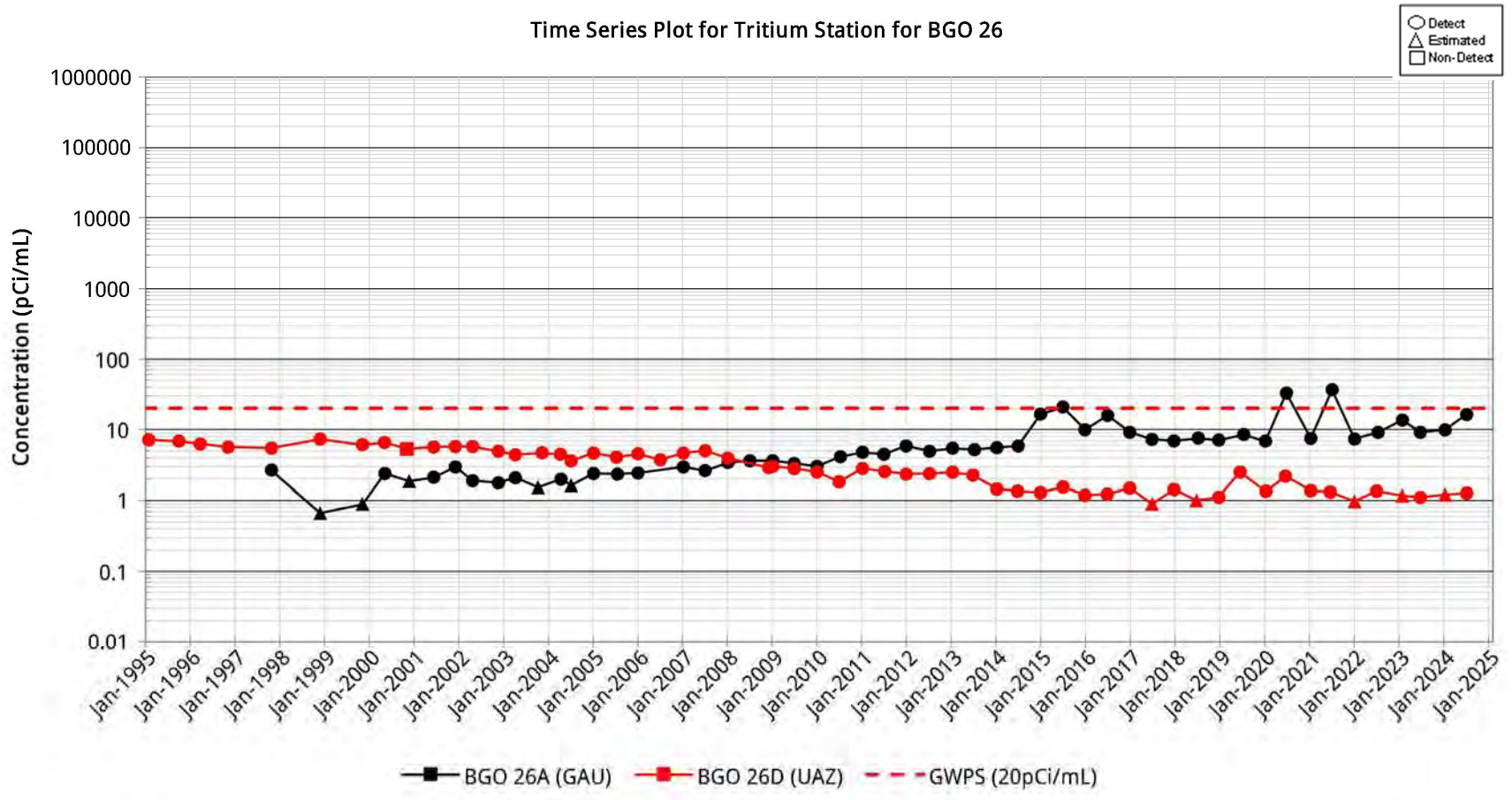

Time Series Plot for Uranium-238 Station for FSB125
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB125DR (UAZ)
GWPS (15pCi/L)

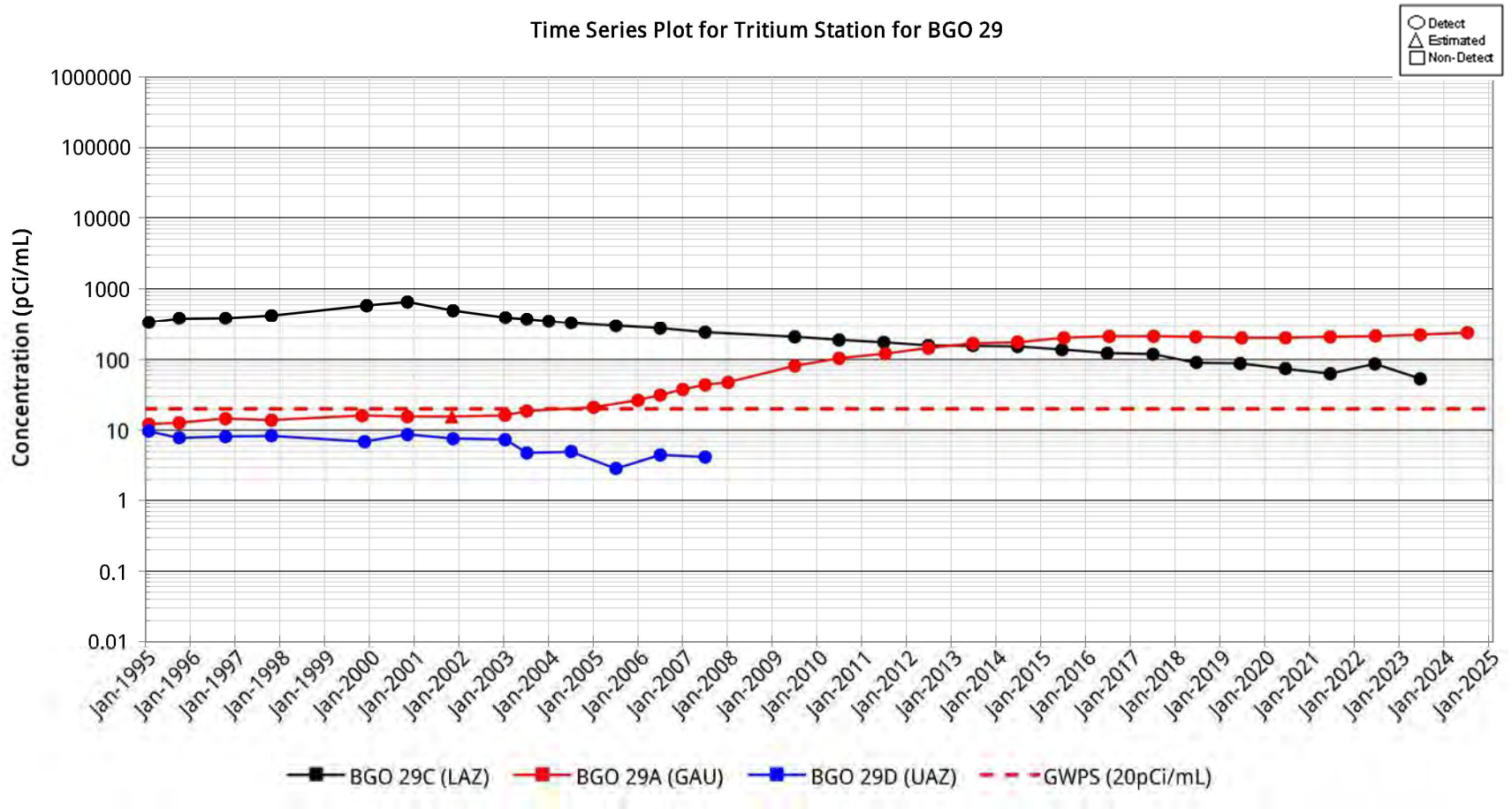

Time Series Plot for Uranium-238 Station for FSB127
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB127D (UAZ)
GWPS (15pCi/L)

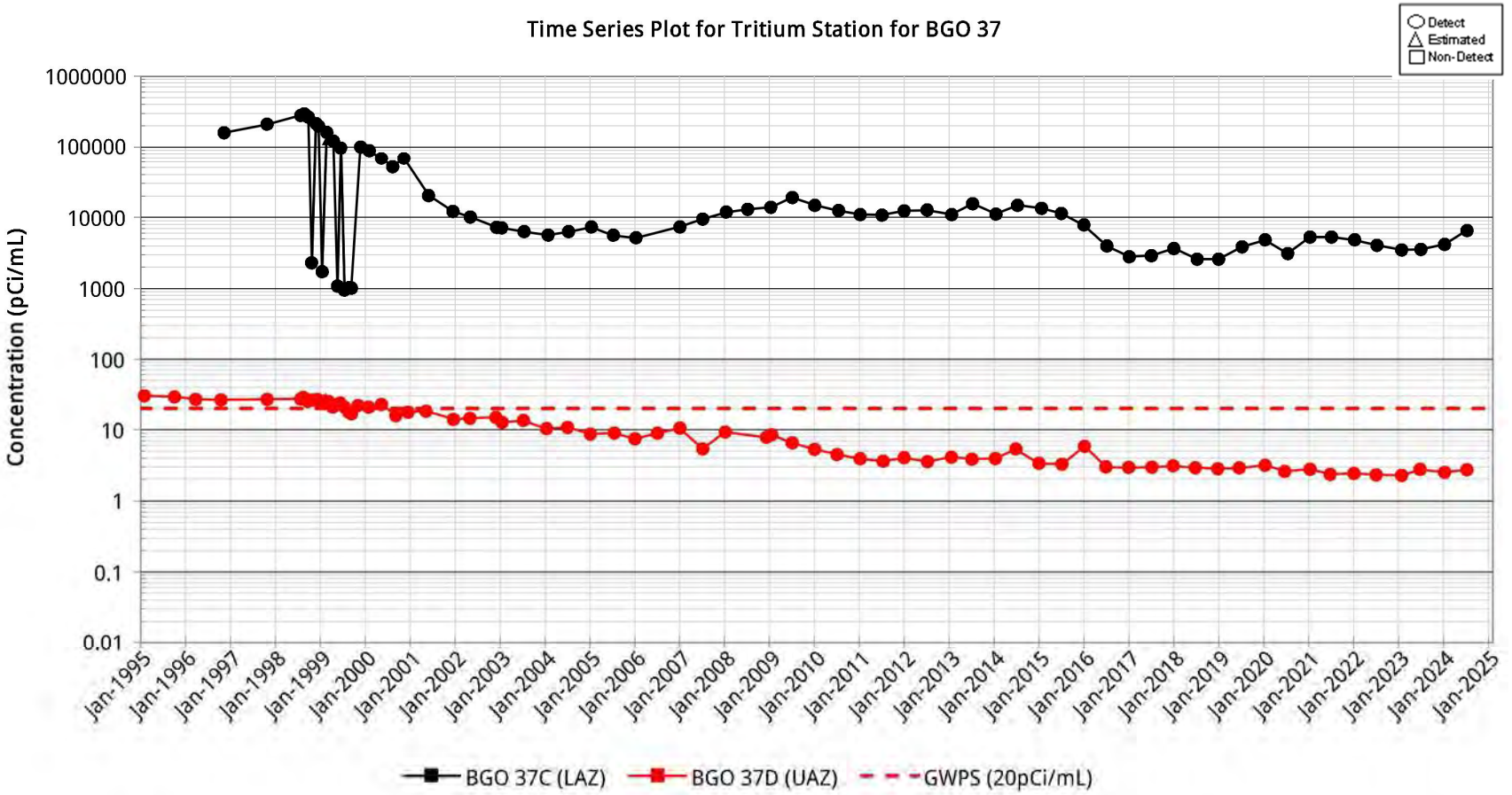

Time Series Plot for Uranium-238 Station for FSB130
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB130D (UAZ)
GWPS (15pCi/L)

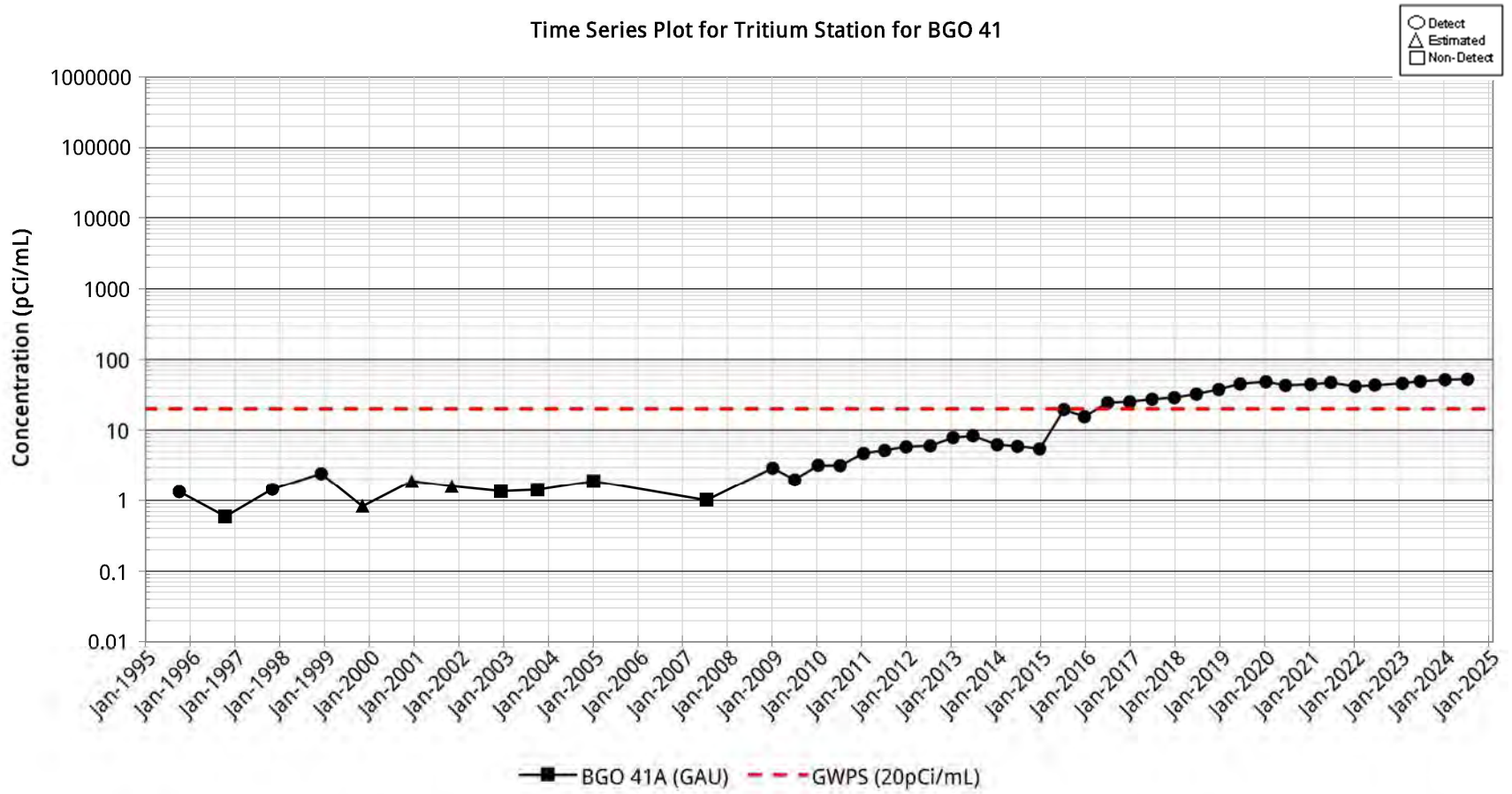

Time Series Plot for Uranium-238 Station for FSB138
Detect
Estimated
Non-Detect
Concentration (pCi/L)
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
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Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB138D (UAZ)
GWPS (15pCi/L)

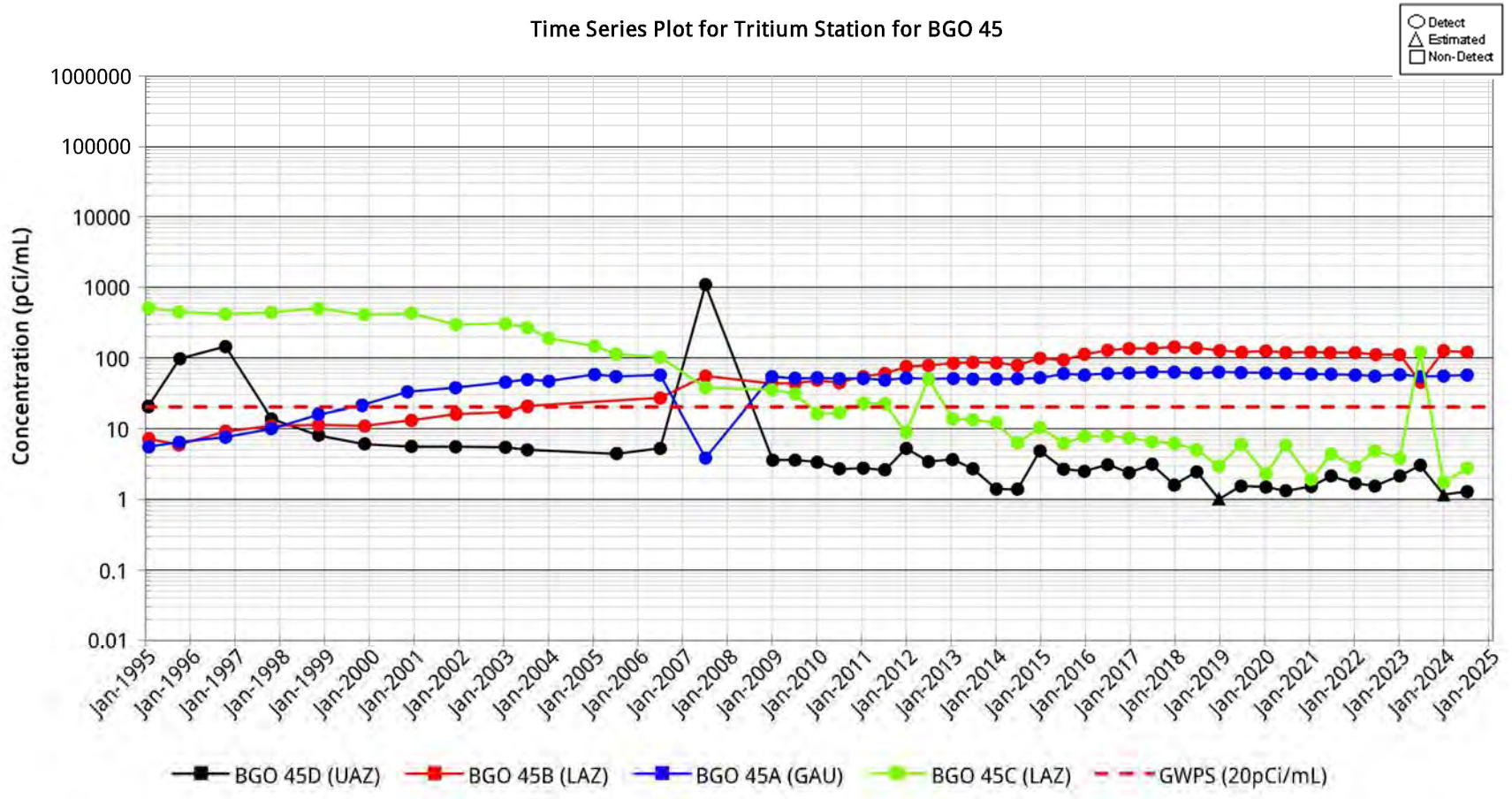

Time Series Plot for Tritium Station for BGO 3
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BGO 3D (UAZ)
BGO 3DR (UAZ)
BGO 3A (GAU)
BGO 3C (LAZ)
GWPS (20pCi/mL)

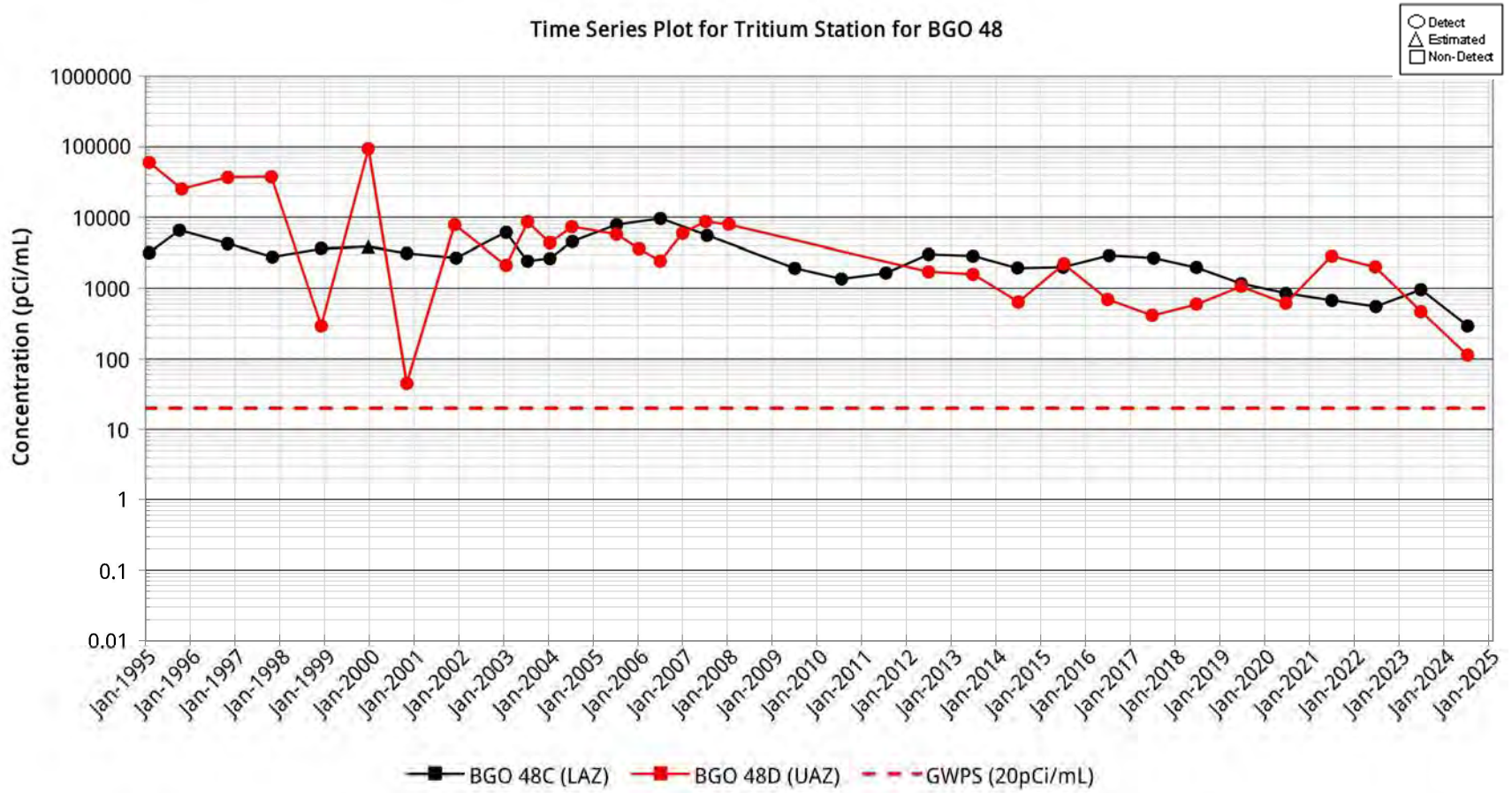

Time Series Plot for Tritium Station for BGO 26
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BGO 26A (GAU)
BGO 26D (UAZ)
GWPS (20pCi/mL)

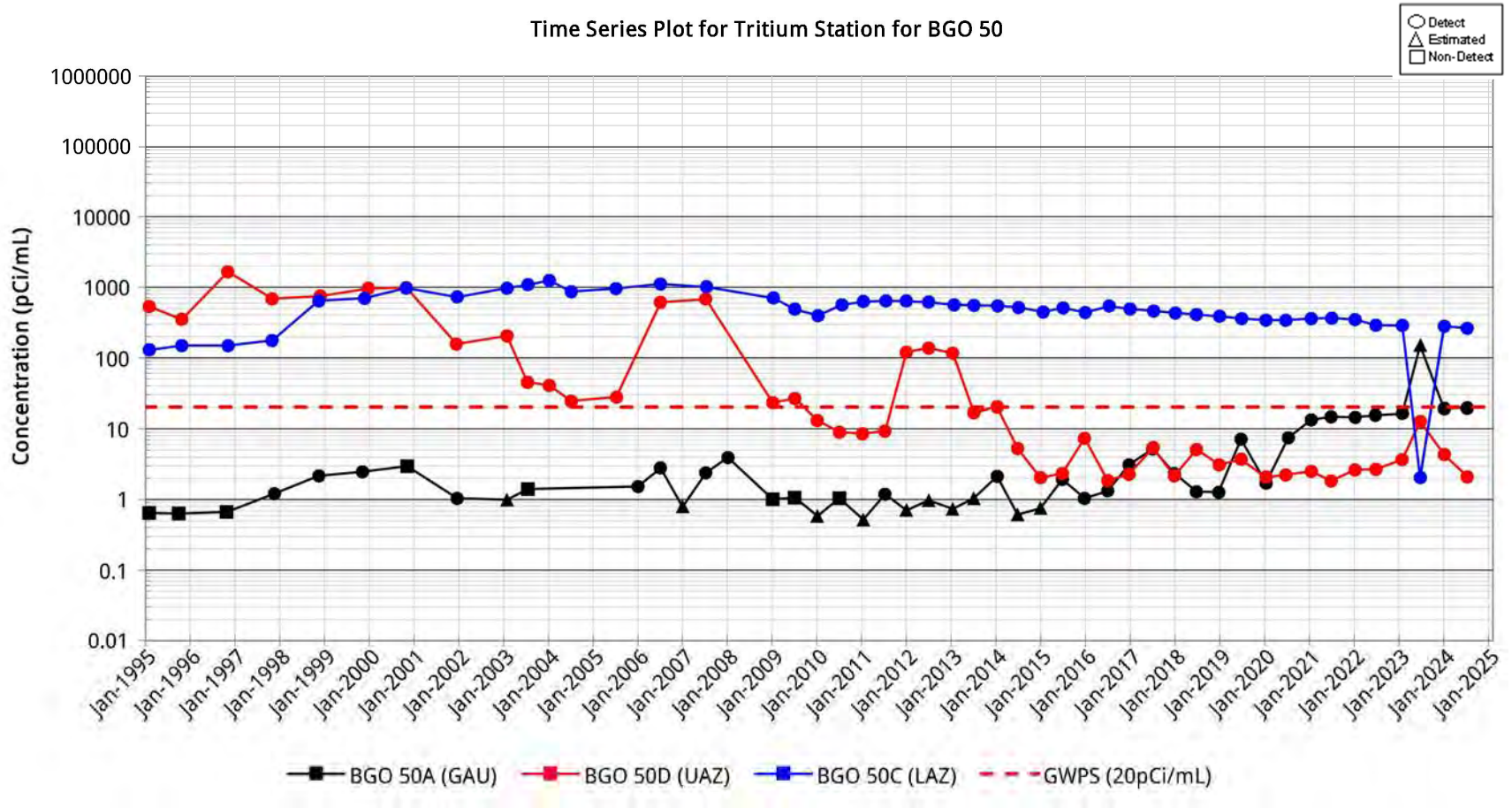

Time Series Plot for Tritium Station for BGO 29
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BGO 29C (LAZ)
BGO 29A (GAU)
BGO 29D (UAZ)
GWPS (20pCi/mL)

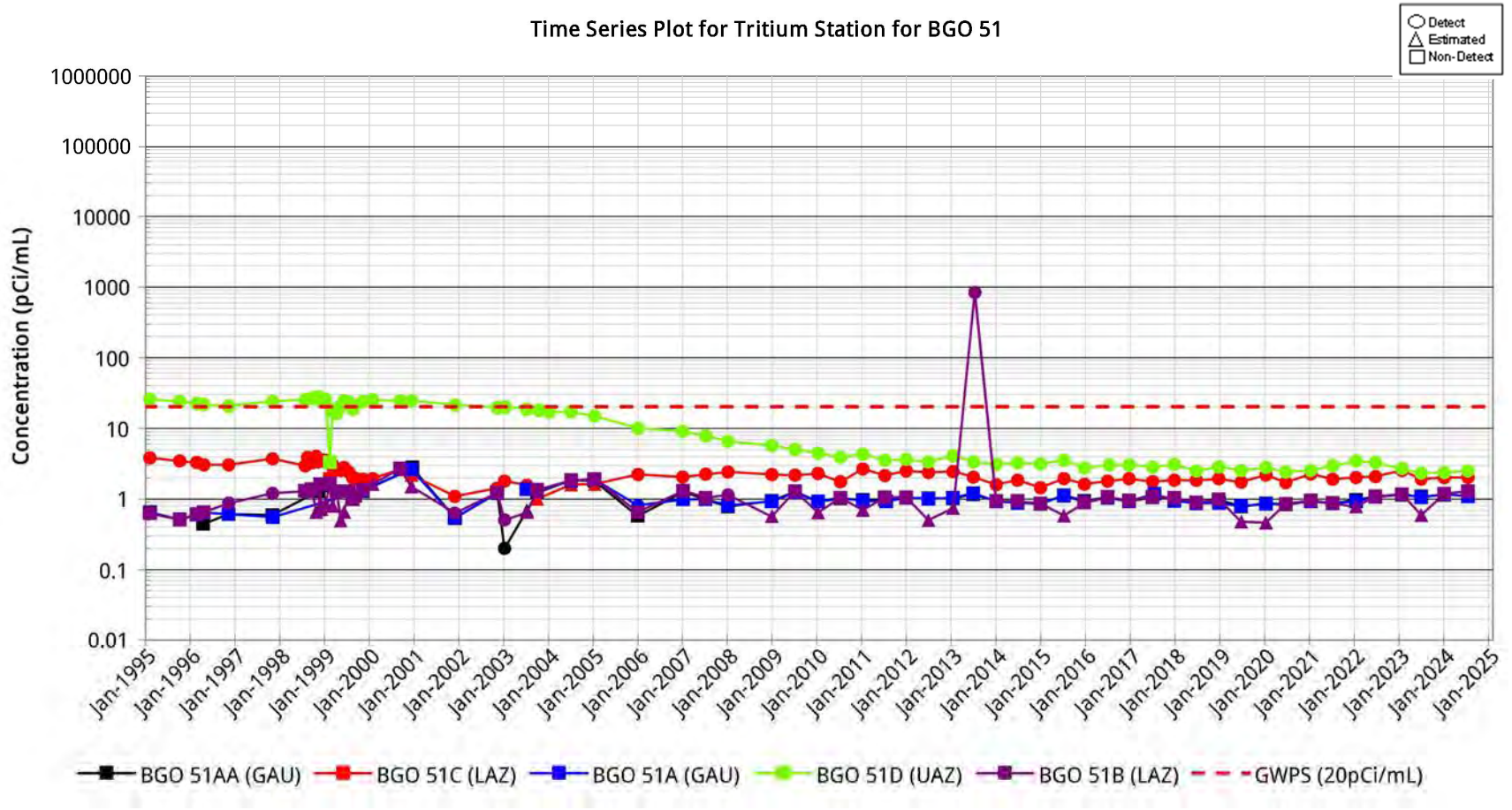

Time Series Plot for Tritium Station for BGO 37
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BGO 37C (LAZ)
BGO 37D (UAZ)
GWPS (20pCi/mL)

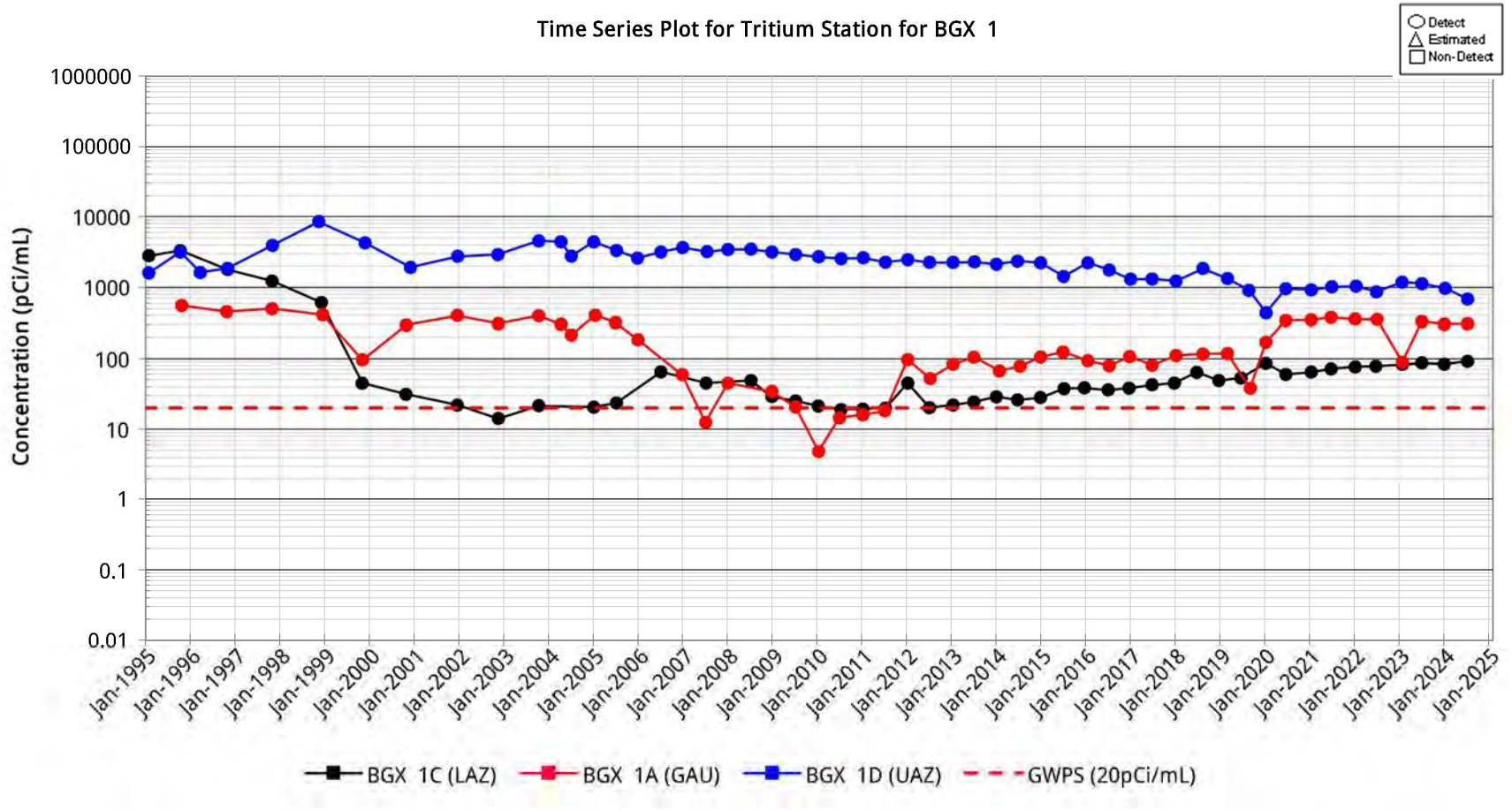

Time Series Plot for Tritium Station for BGO 41
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BGO 41A (GAU)
GWPS (20pCi/mL)

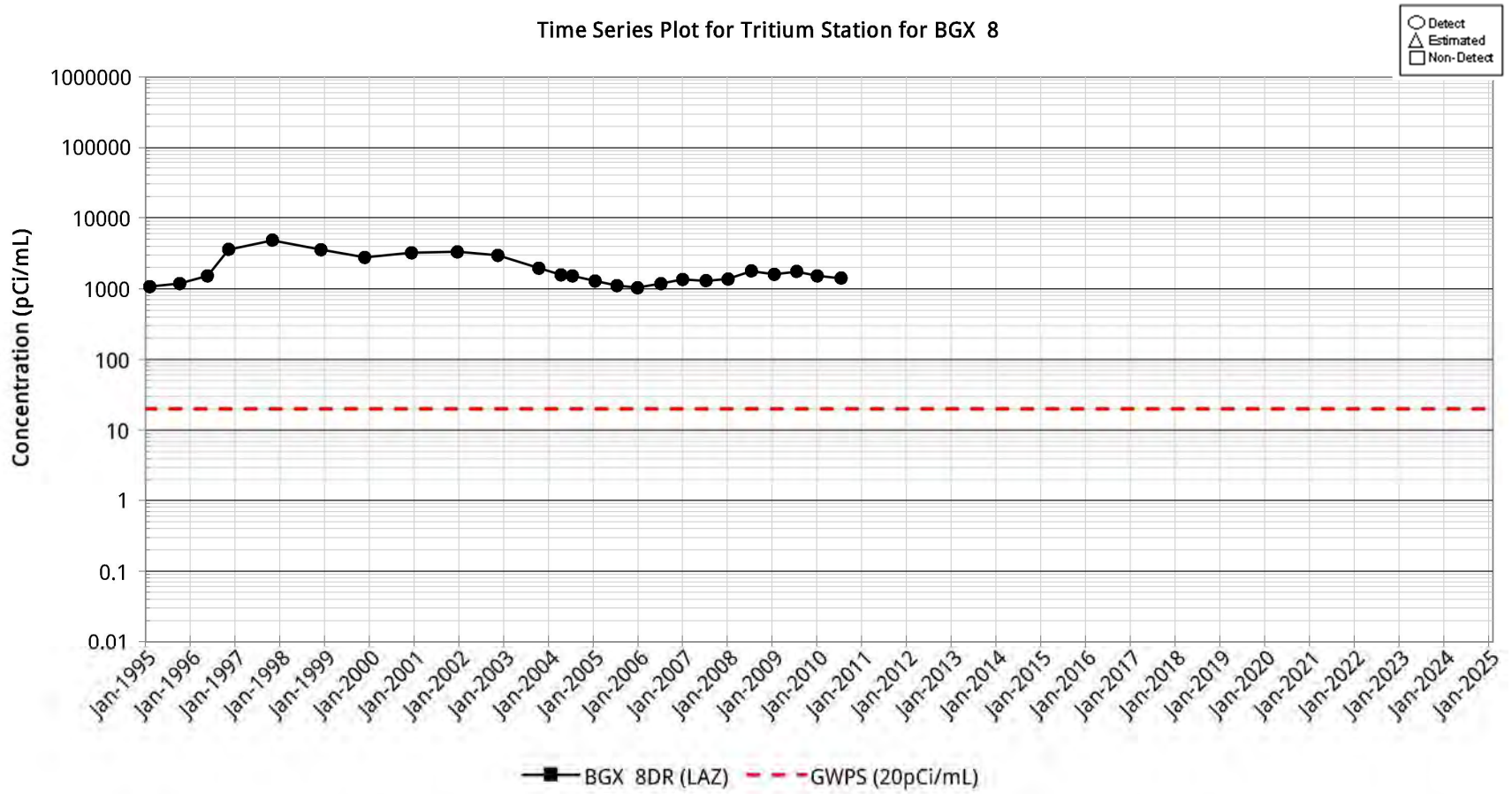

Time Series Plot for Tritium Station for BGO 45
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BGO 45D (UAZ)
BGO 45B (LAZ)
BGO 45A (GAU)
BGO 45C (LAZ)
GWPS (20pCi/mL)

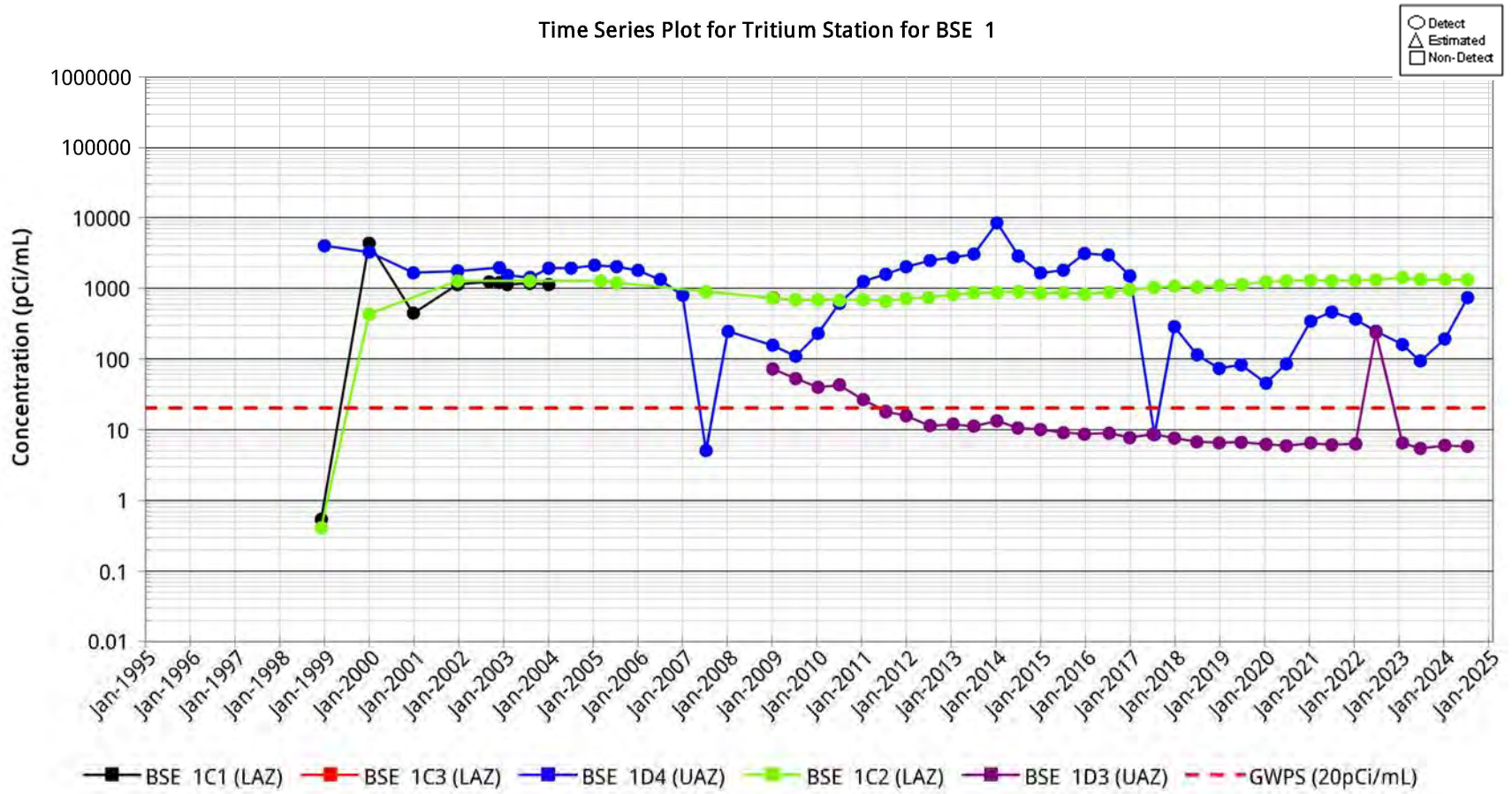

Time Series Plot for Tritium Station for BGO 48
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BGO 48C (LAZ)
BGO 48D (UAZ)
GWPS (20pCi/mL)

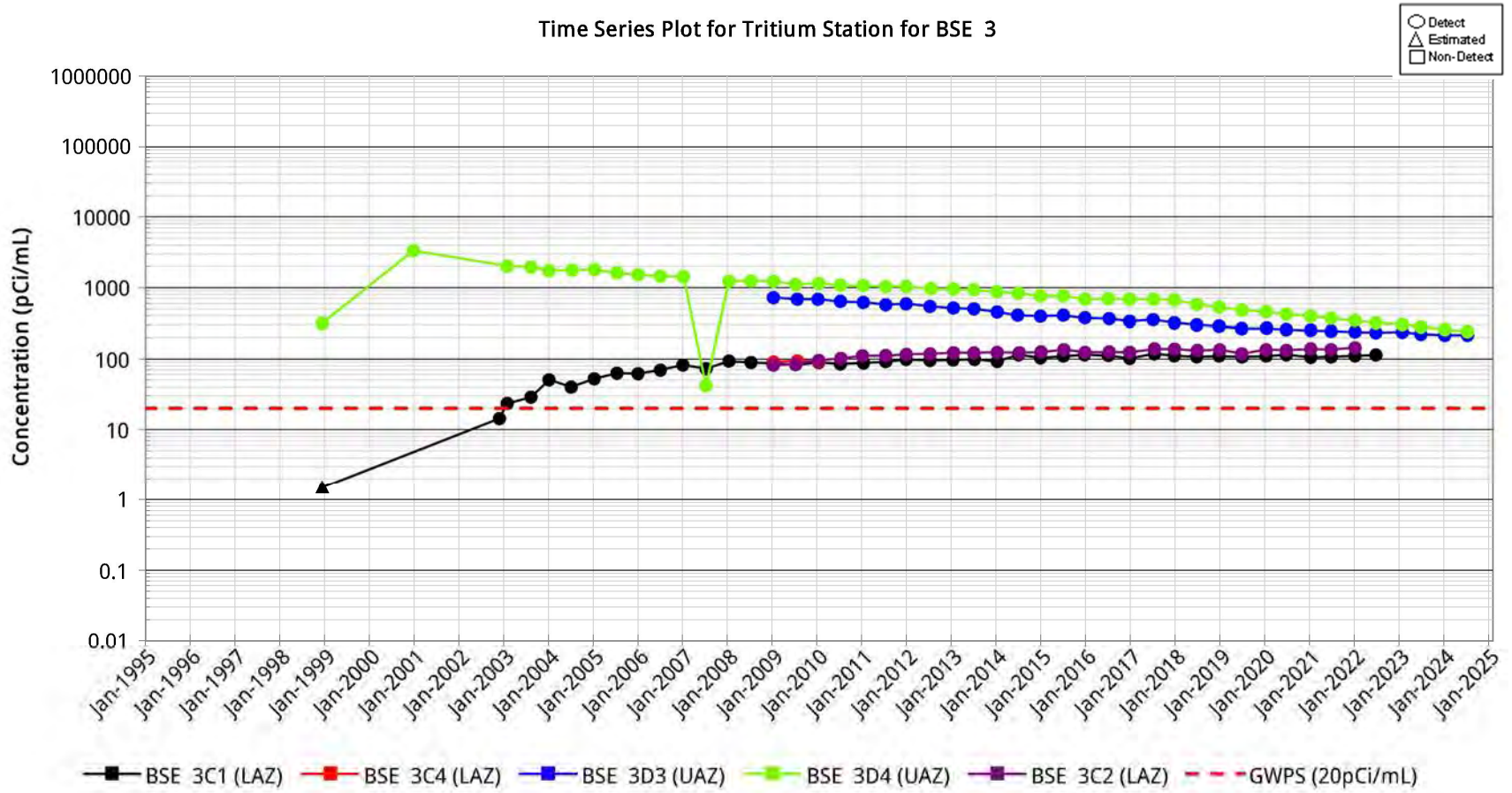

Time Series Plot for Tritium Station for BGO 50
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BGO 50A (GAU)
BGO 50D (UAZ)
BGO 50C (LAZ)
GWPS (20pCi/mL)

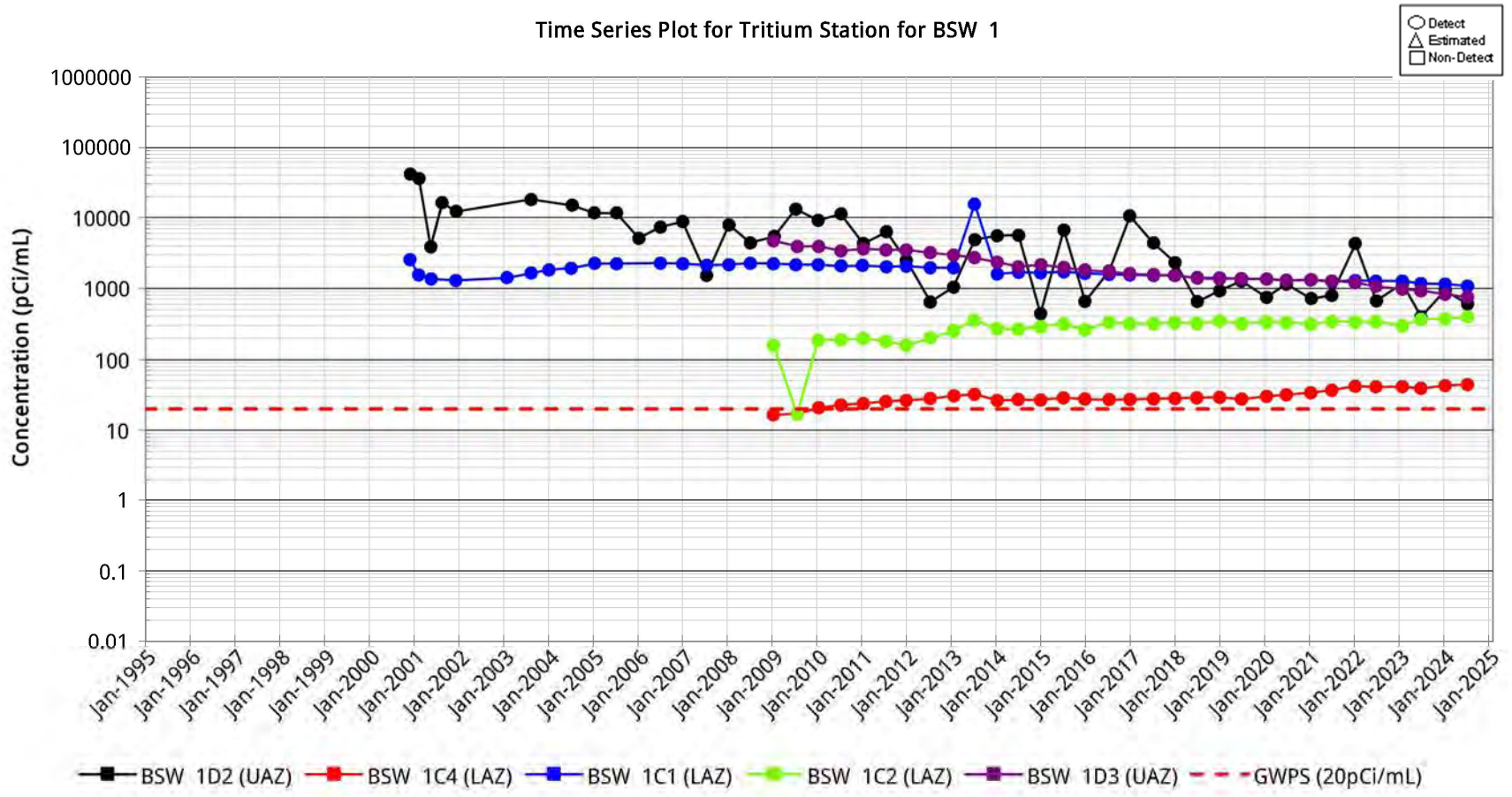

Time Series Plot for Tritium Station for BGO 51
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BGO 51AA (GAU)
BGO 51C (LAZ)
BGO 51A (GAU)
BGO 51D (UAZ)
BGO 51B (LAZ)
GWPS (20pCi/mL)

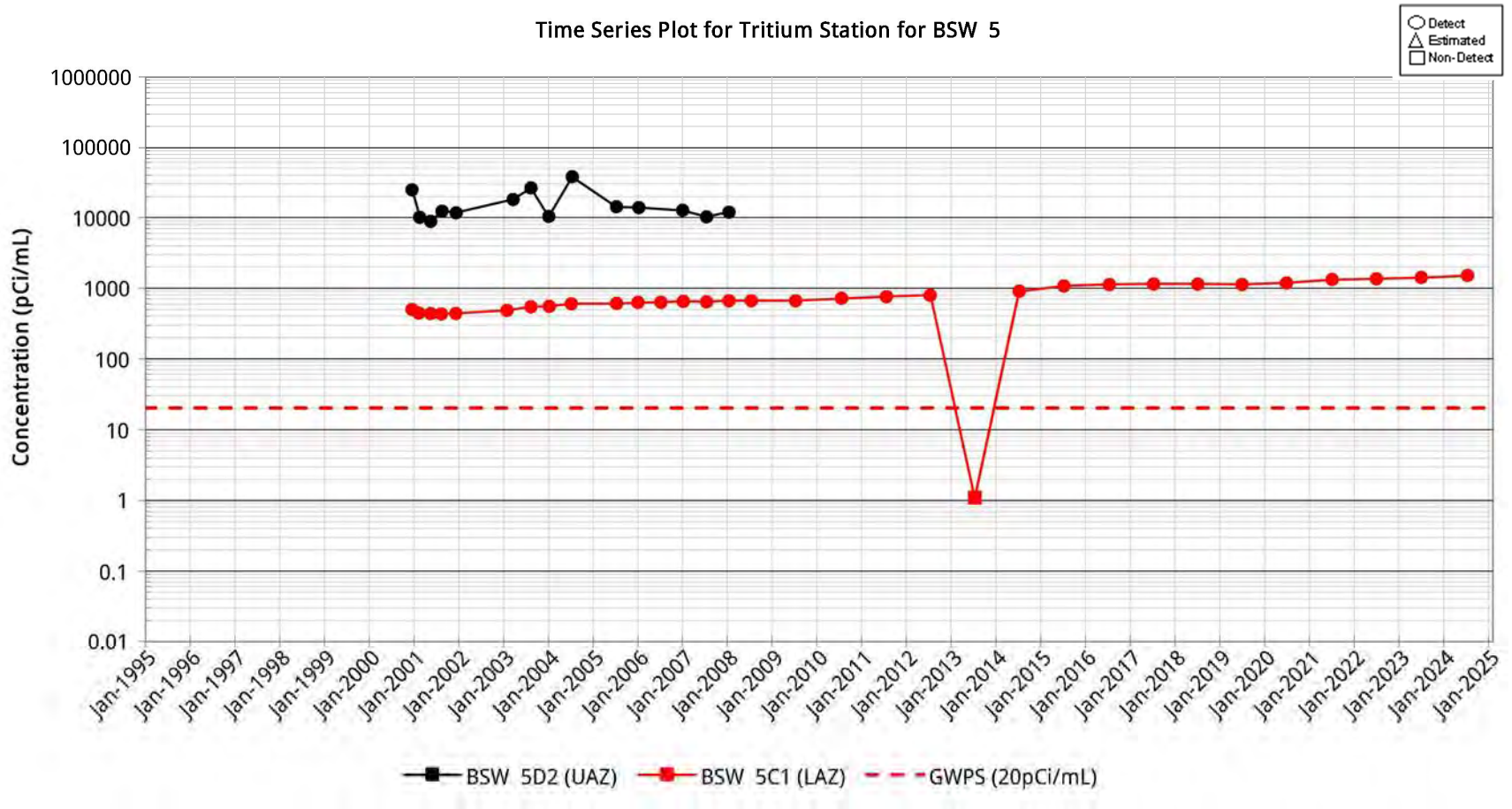

Time Series Plot for Tritium Station for BGX 1
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BGX 1C (LAZ)
BGX 1A (GAU)
BGX 1D (UAZ)
GWPS (20pCi/mL)

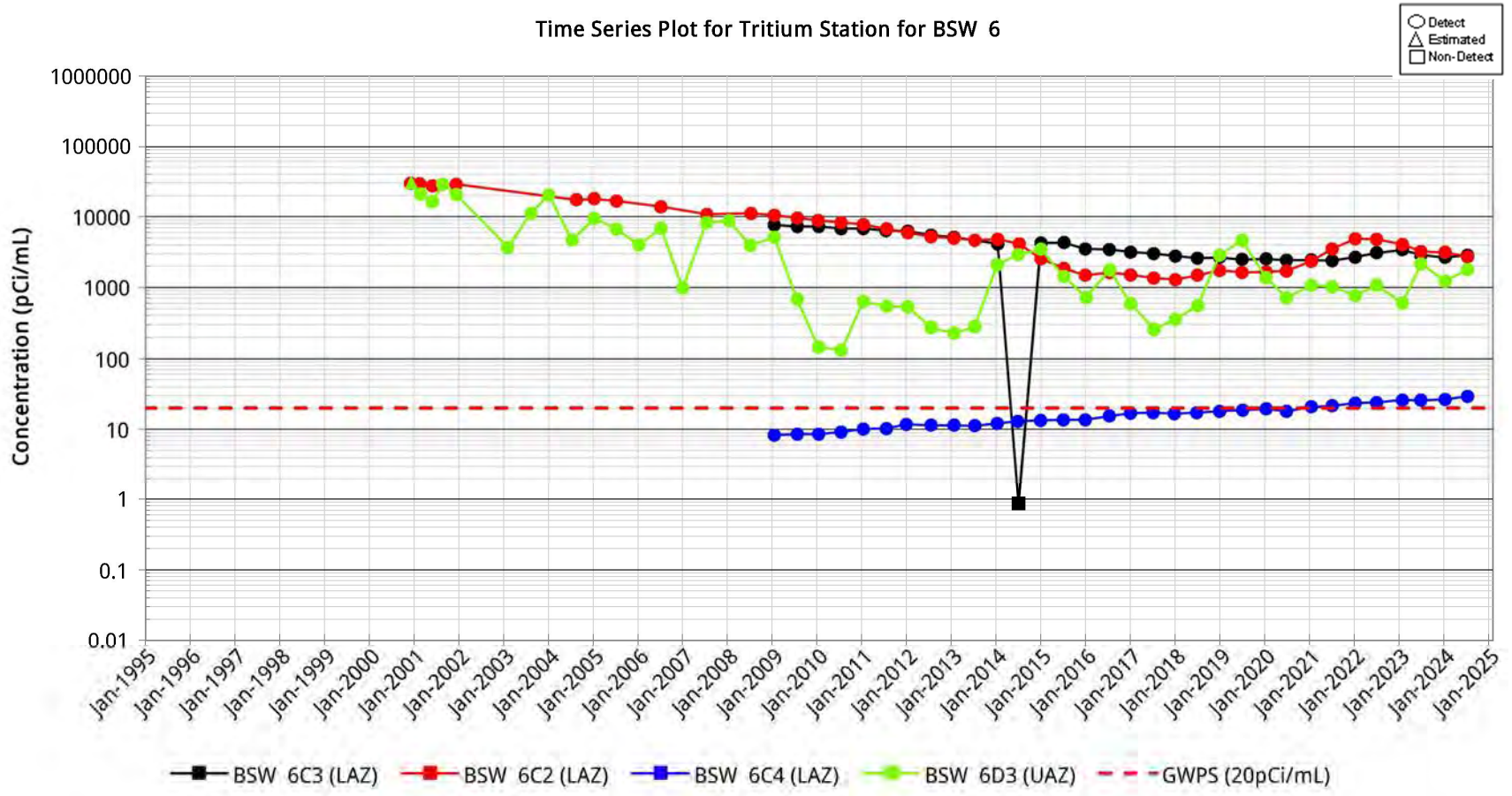

Time Series Plot for Tritium Station for BGX 8
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BGX 8DR (LAZ)
GWPS (20pCi/mL)

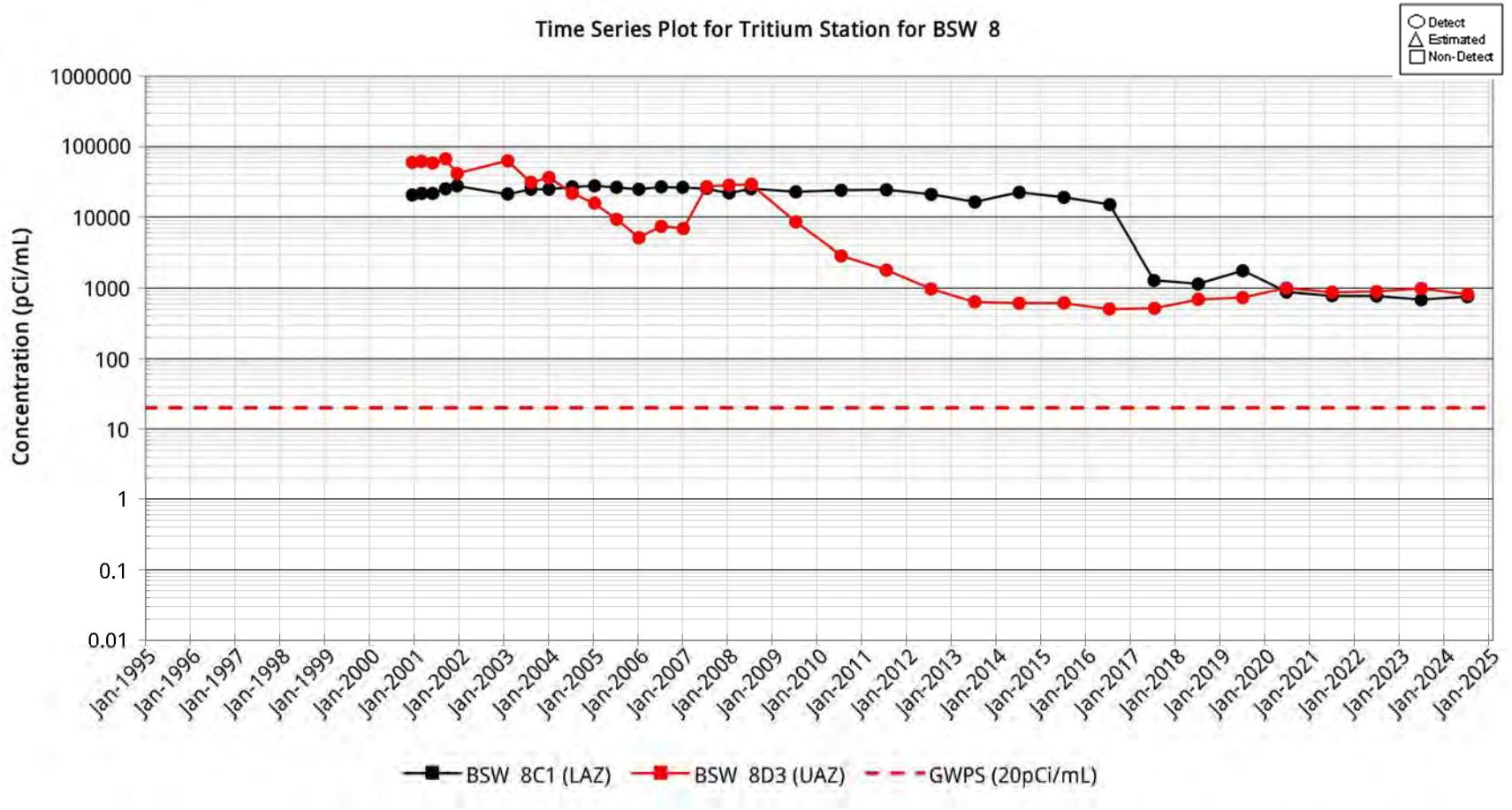

Time Series Plot for Tritium Station for BSE 1
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BSE 1C1 (LAZ)
BSE 1C3 (LAZ)
BSE 1D4 (UAZ)
BSE 1C2 (LAZ)
BSE 1D3 (UAZ)
GWPS (20pCi/mL)

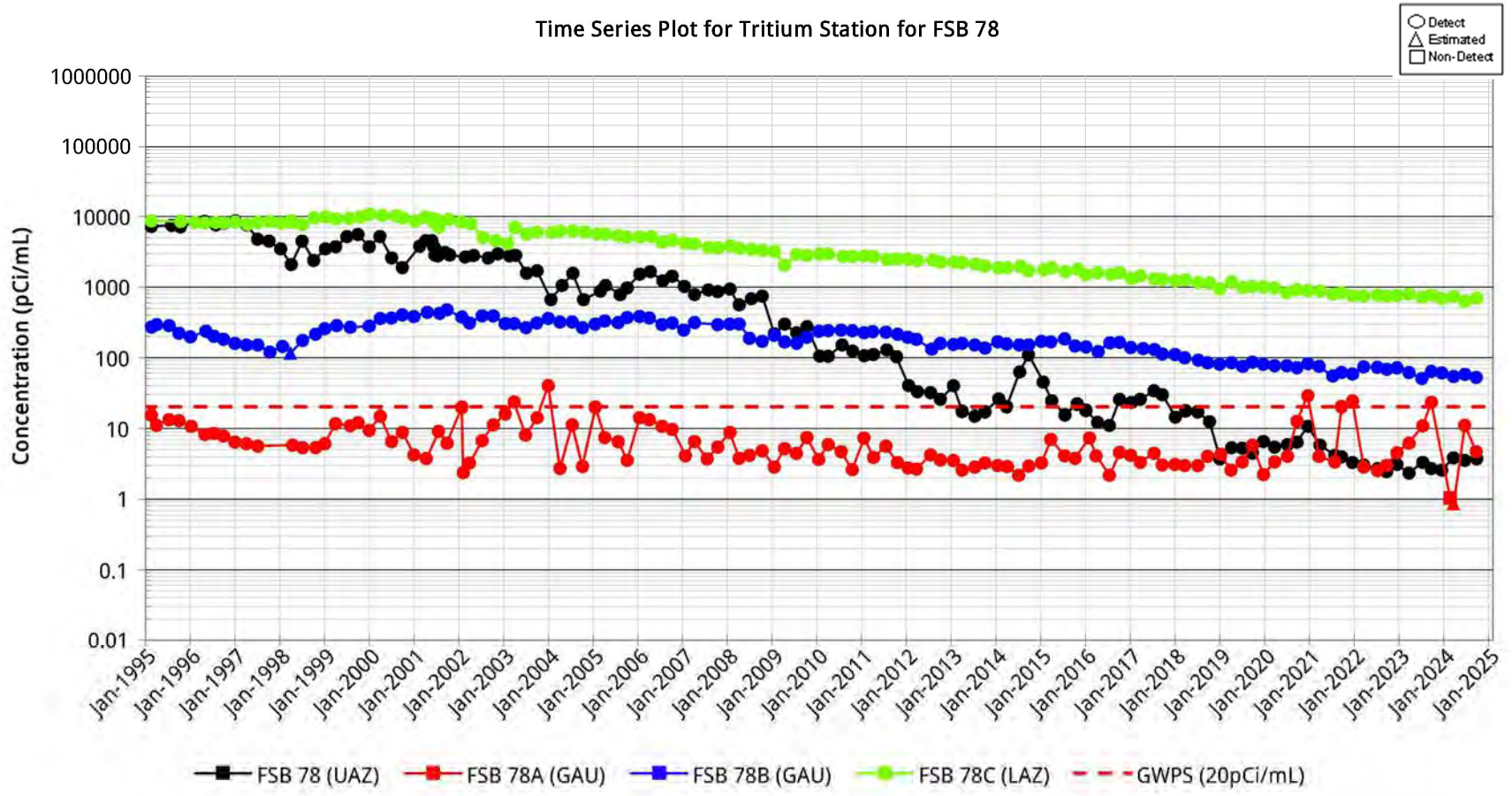

Time Series Plot for Tritium Station for BSE 3
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BSE 3C1 (LAZ)
BSE 3C4 (LAZ)
BSE 3D3 (UAZ)
BSE 3D4 (UAZ)
BSE 3C2 (LAZ)
GWPS (20pCi/mL)

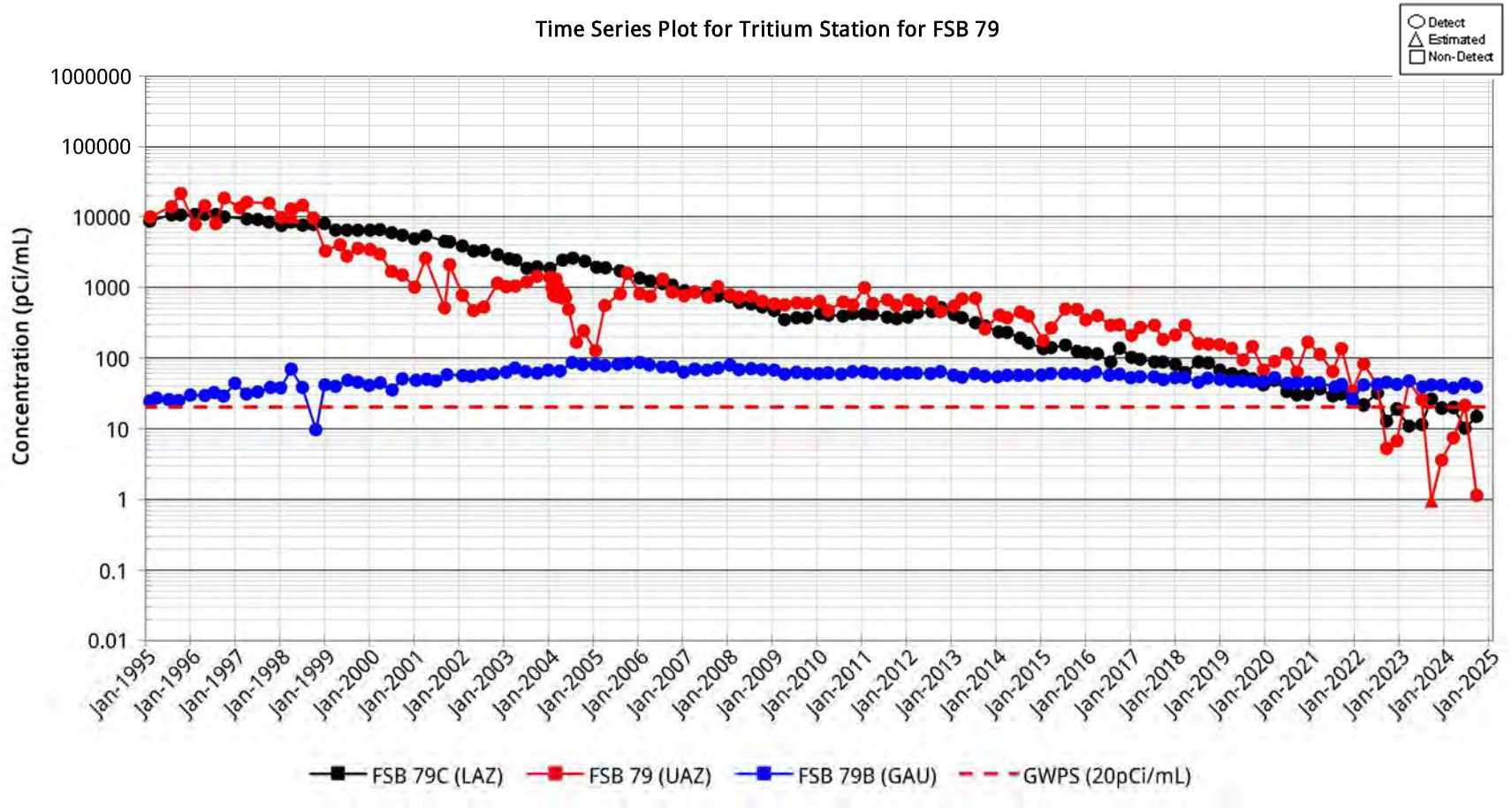

Time Series Plot for Tritium Station for BSW 1
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BSW 1D2 (UAZ)
BSW 1C4 (LAZ)
BSW 1C1 (LAZ)
BSW 1C2 (LAZ)
BSW 1D3 (UAZ)
GWPS (20pCi/mL)

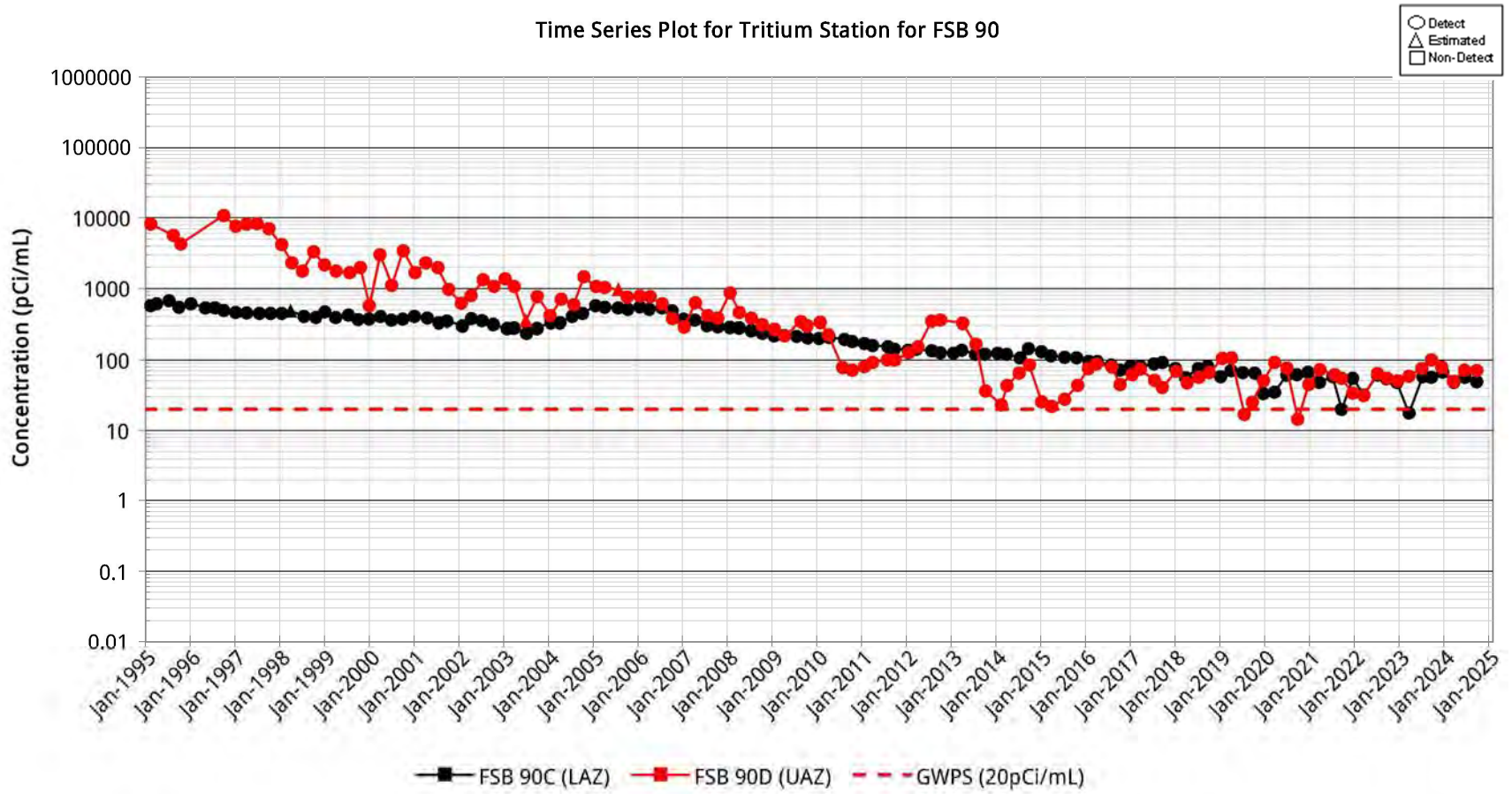

Time Series Plot for Tritium Station for BSW 5
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BSW 5D2 (UAZ)
BSW 5C1 (LAZ)
GWPS (20pCi/mL)

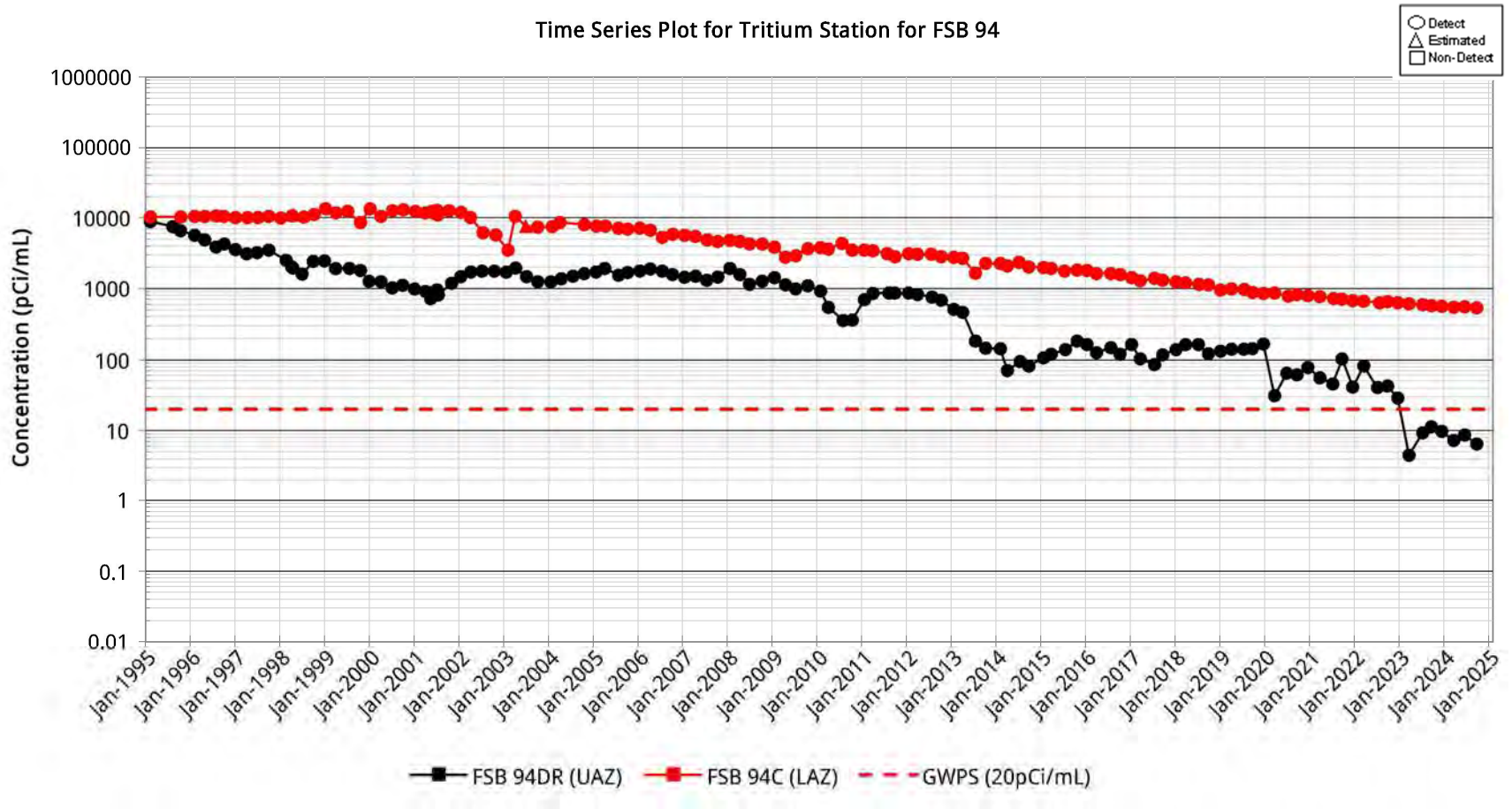

Time Series Plot for Tritium Station for BSW 6
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2010
Jan-2011
Jan-2012
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Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BSW 6C3 (LAZ)
BSW 6C2 (LAZ)
BSW 6C4 (LAZ)
BSW 6D3 (UAZ)
GWPS (20pCi/mL)

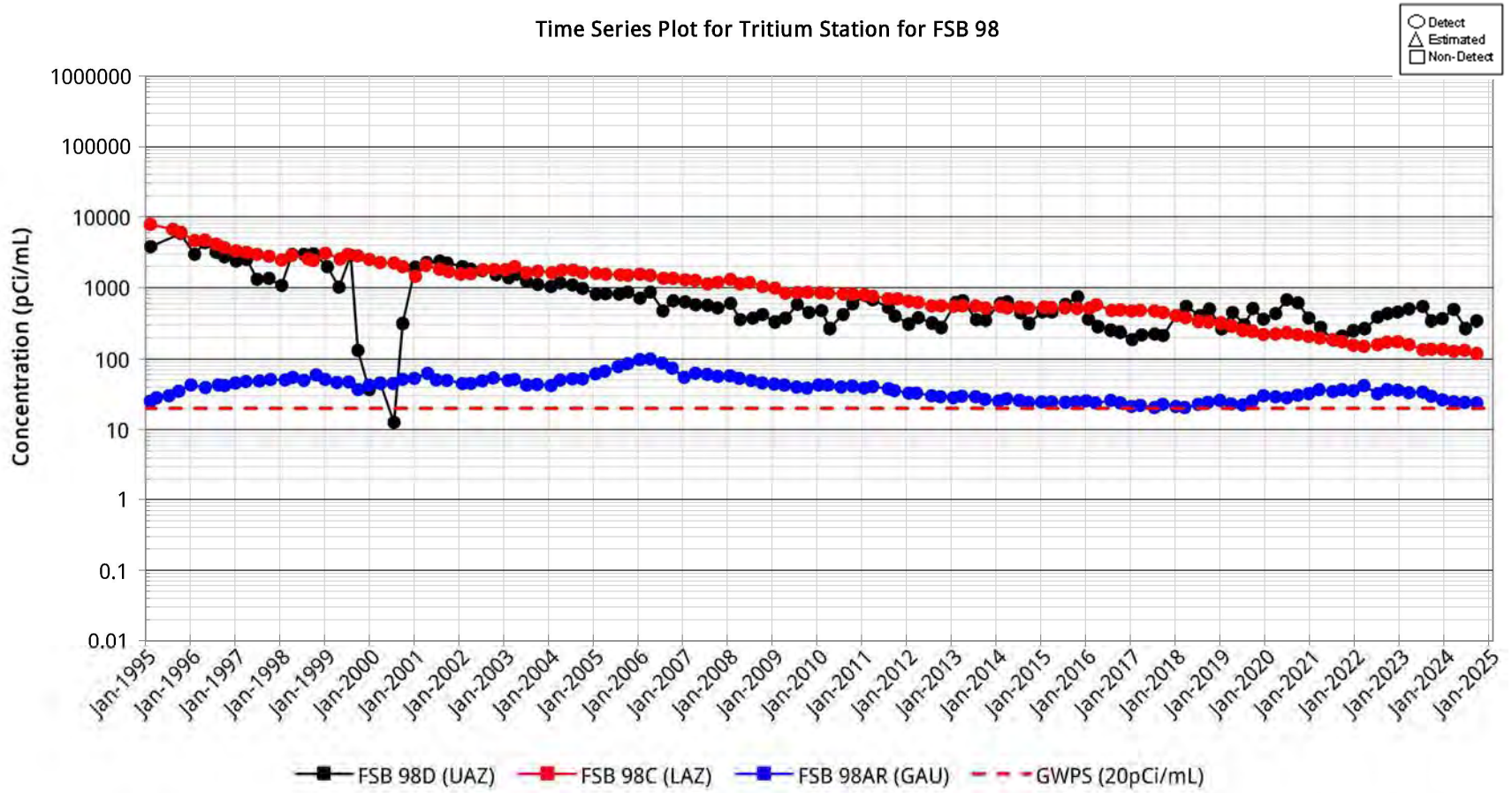

Time Series Plot for Tritium Station for BSW 8
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
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Jan-2011
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Jan-2014
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Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
BSW 8C1 (LAZ)
BSW 8D3 (UAZ)
GWPS (20pCi/mL)

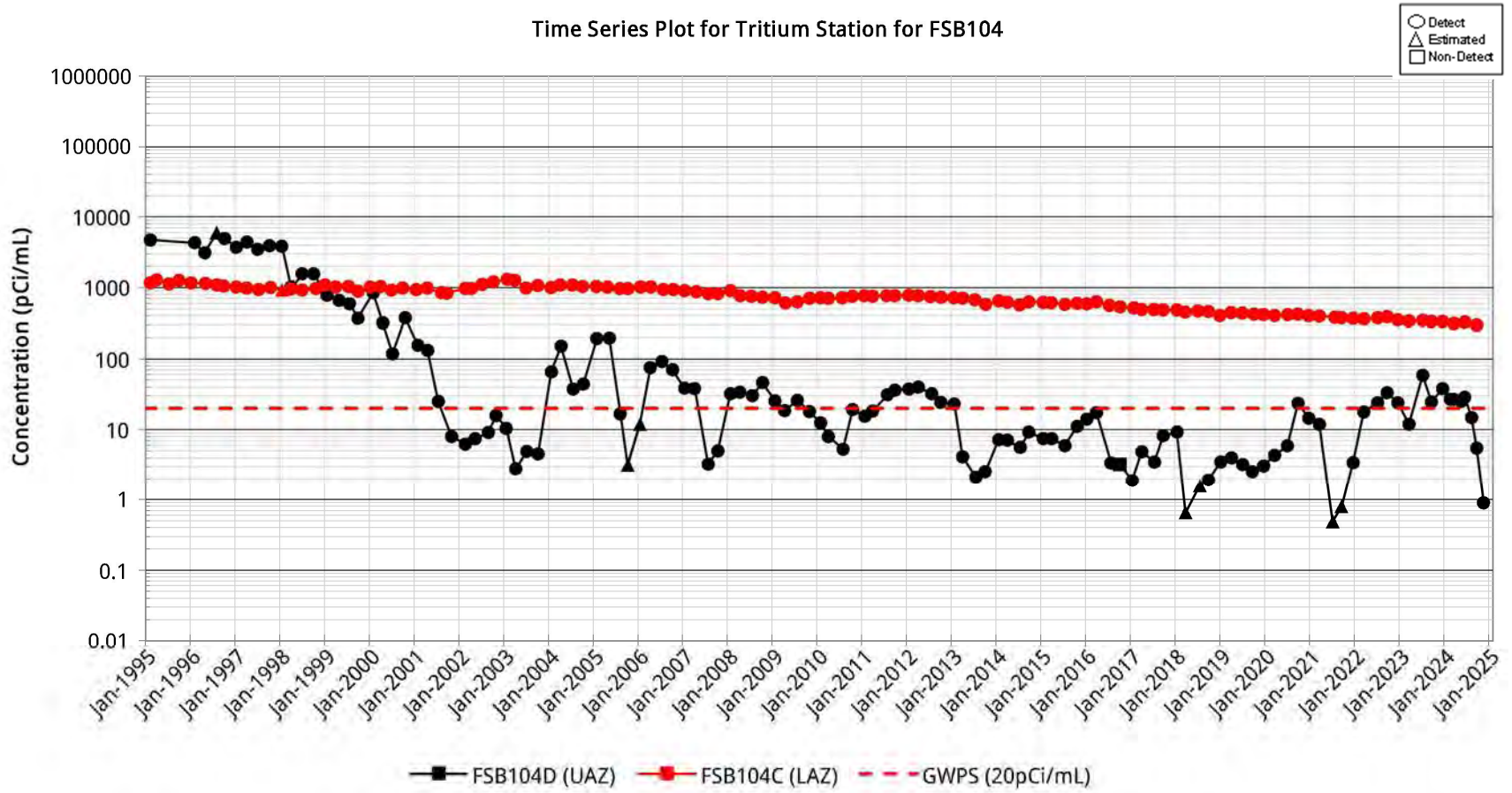

Time Series Plot for Tritium Station for FSB 78
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 78 (UAZ)
FSB 78A (GAU)
FSB 78B (GAU)
FSB 78C (LAZ)
GWPS (20pCi/mL)

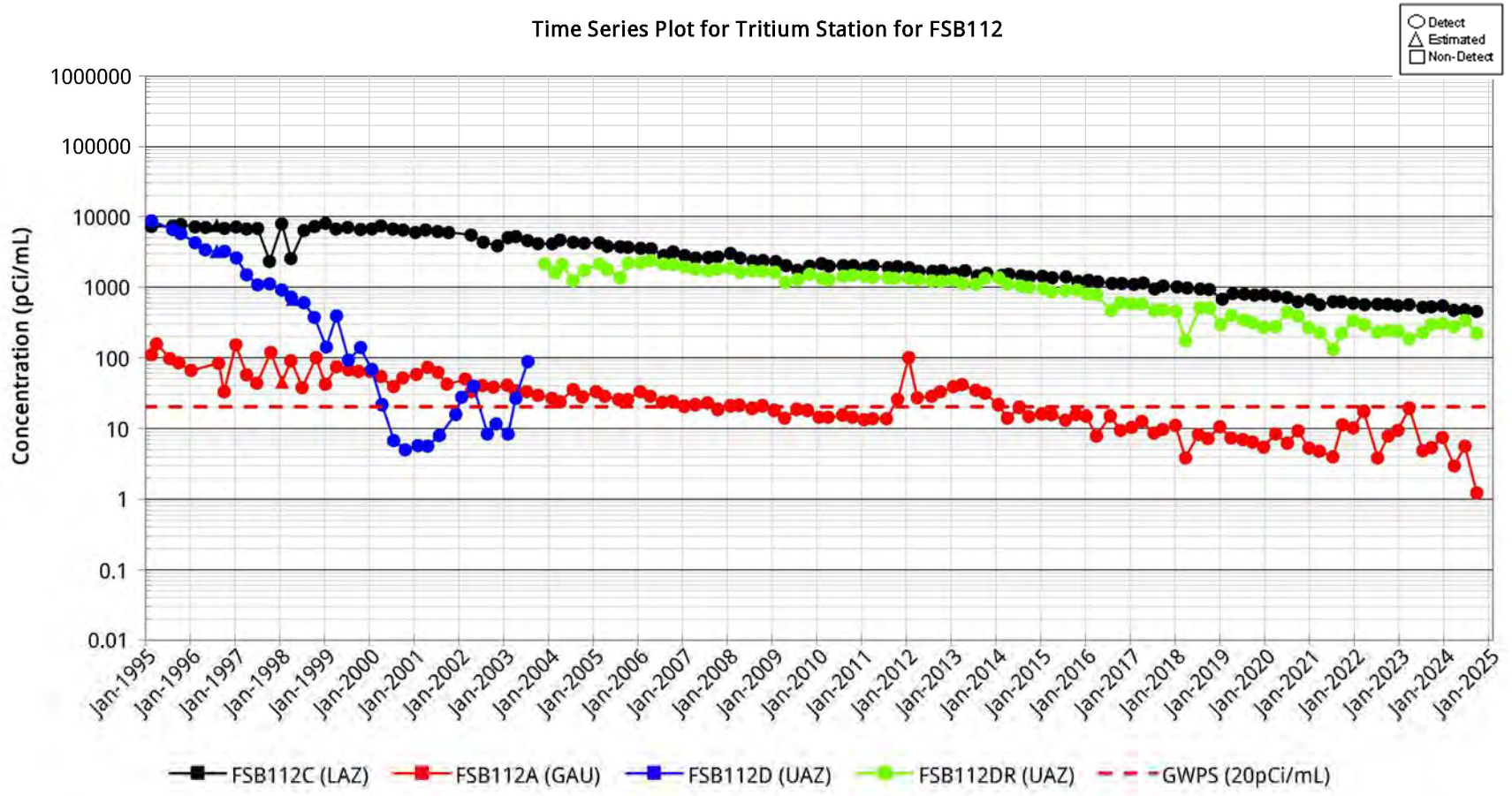

Time Series Plot for Tritium Station for FSB 79
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
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Jan-2007
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Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 79C (LAZ)
FSB 79 (UAZ)
FSB 79B (GAU)
GWPS (20pCi/mL)

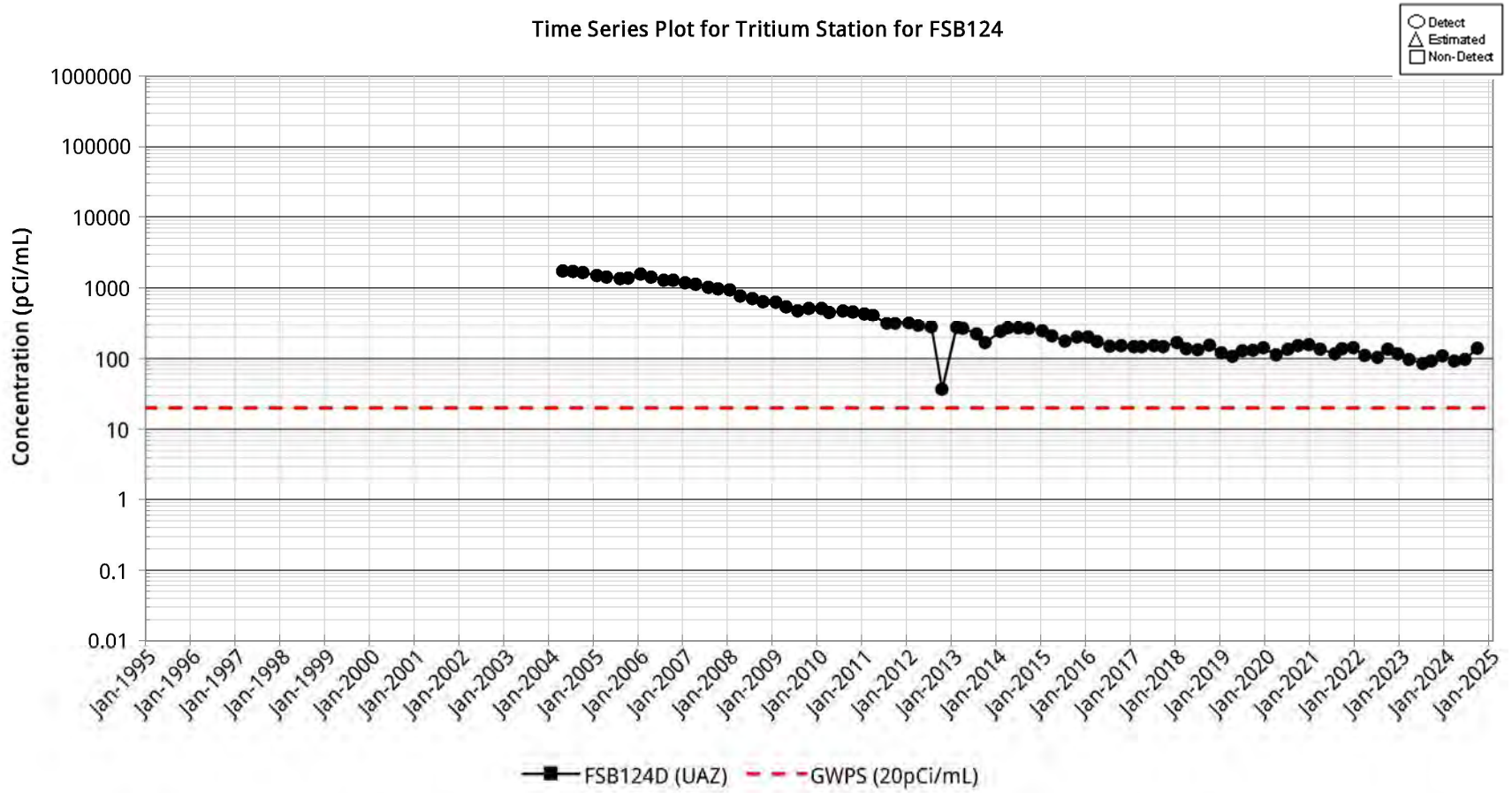

Time Series Plot for Tritium Station for FSB 90
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
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Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 90C (LAZ)
FSB 90D (UAZ)
GWPS (20pCi/mL)

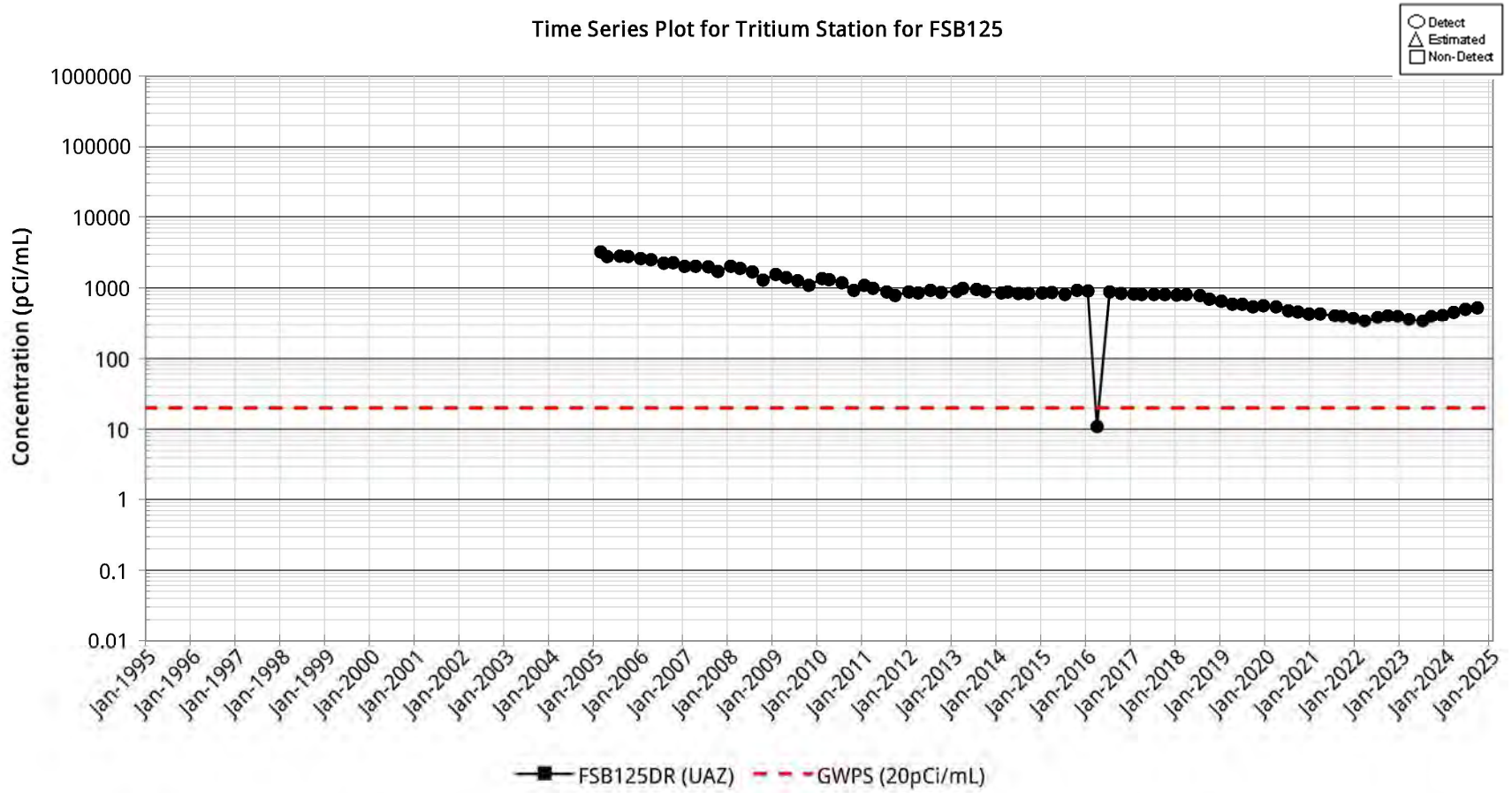

Time Series Plot for Tritium Station for FSB 94
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
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Jan-2007
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Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 94DR (UAZ)
FSB 94C (LAZ)
GWPS (20pCi/mL)

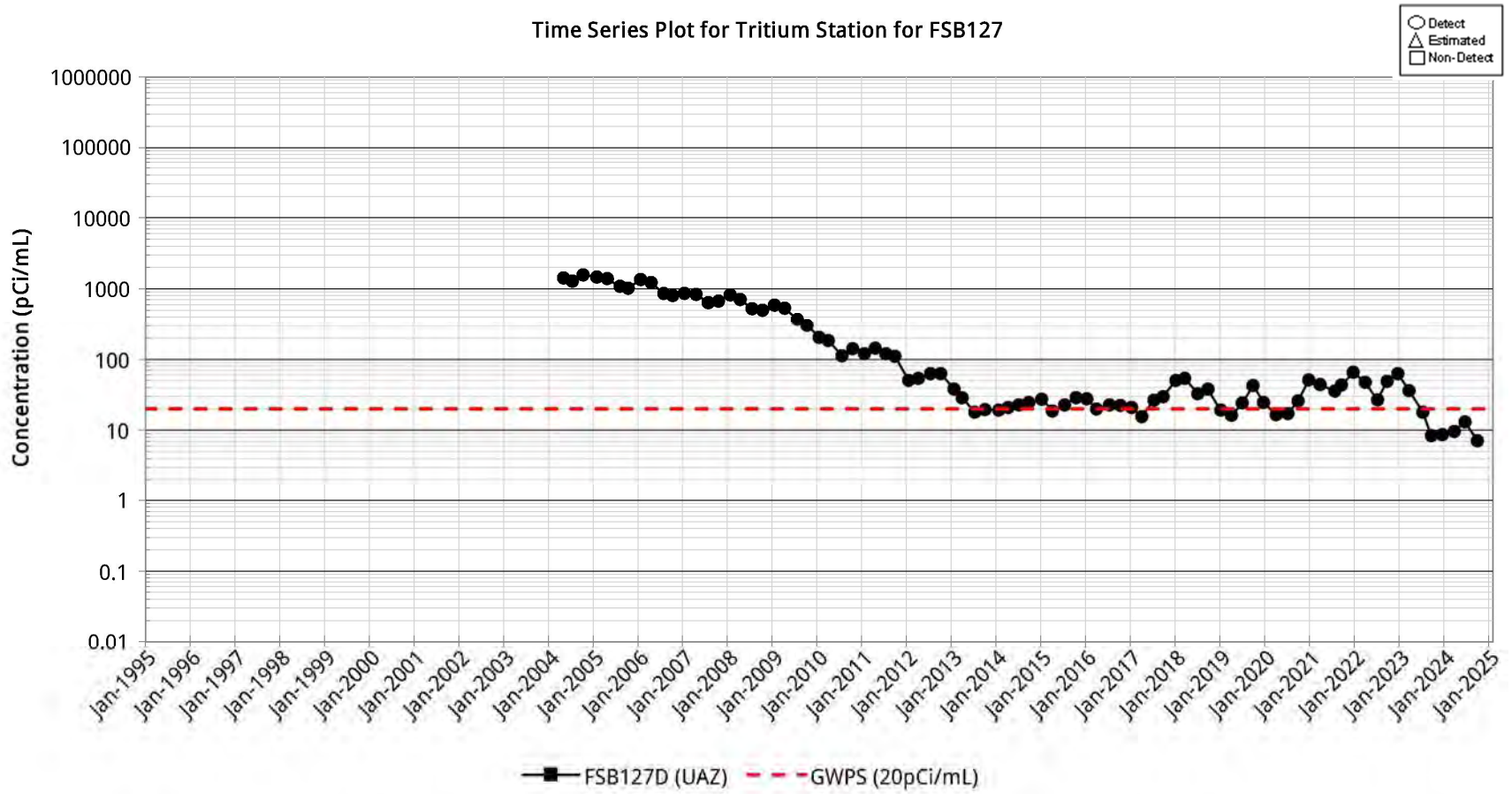

Time Series Plot for Tritium Station for FSB 98
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2010
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Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB 98D (UAZ)
FSB 98C (LAZ)
FSB 98AR (GAU)
GWPS (20pCi/mL)

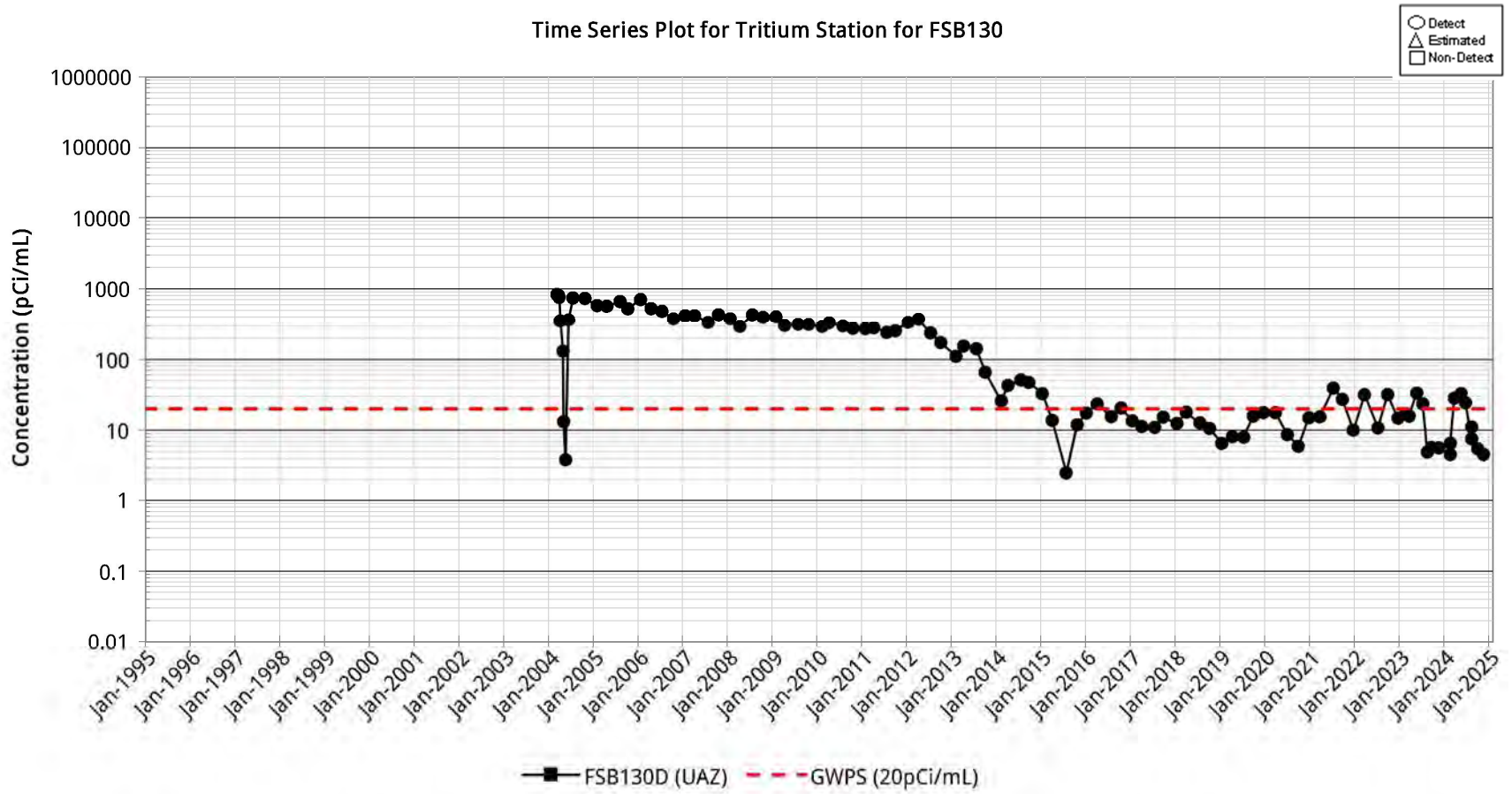

Time Series Plot for Tritium Station for FSB104
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
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Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB104D (UAZ)
FSB104C (LAZ)
GWPS (20pCi/mL)

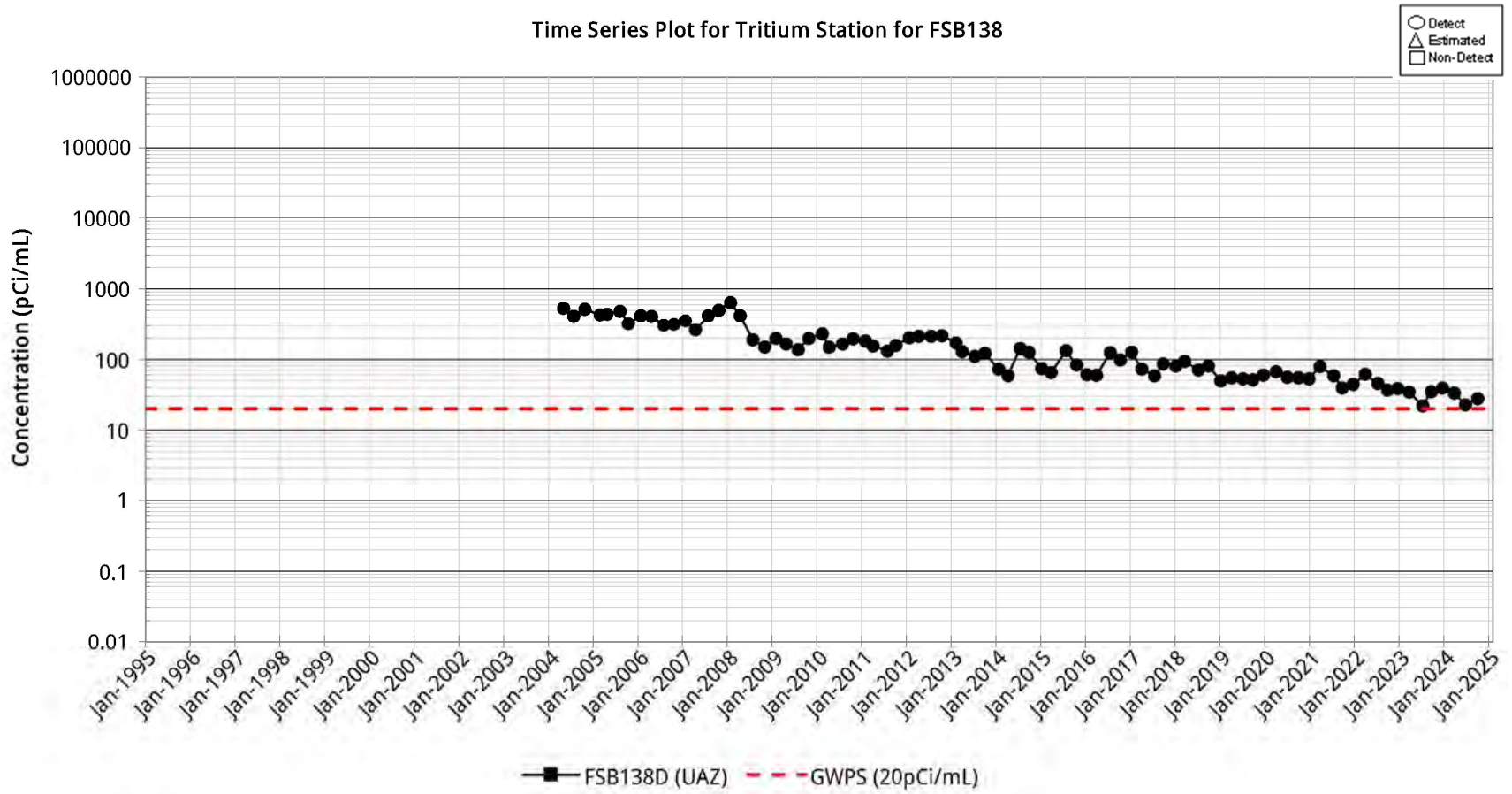

Time Series Plot for Tritium Station for FSB112
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB112C (LAZ)
FSB112A (GAU)
FSB112D (UAZ)
FSB112DR (UAZ)
GWPS (20pCi/mL)

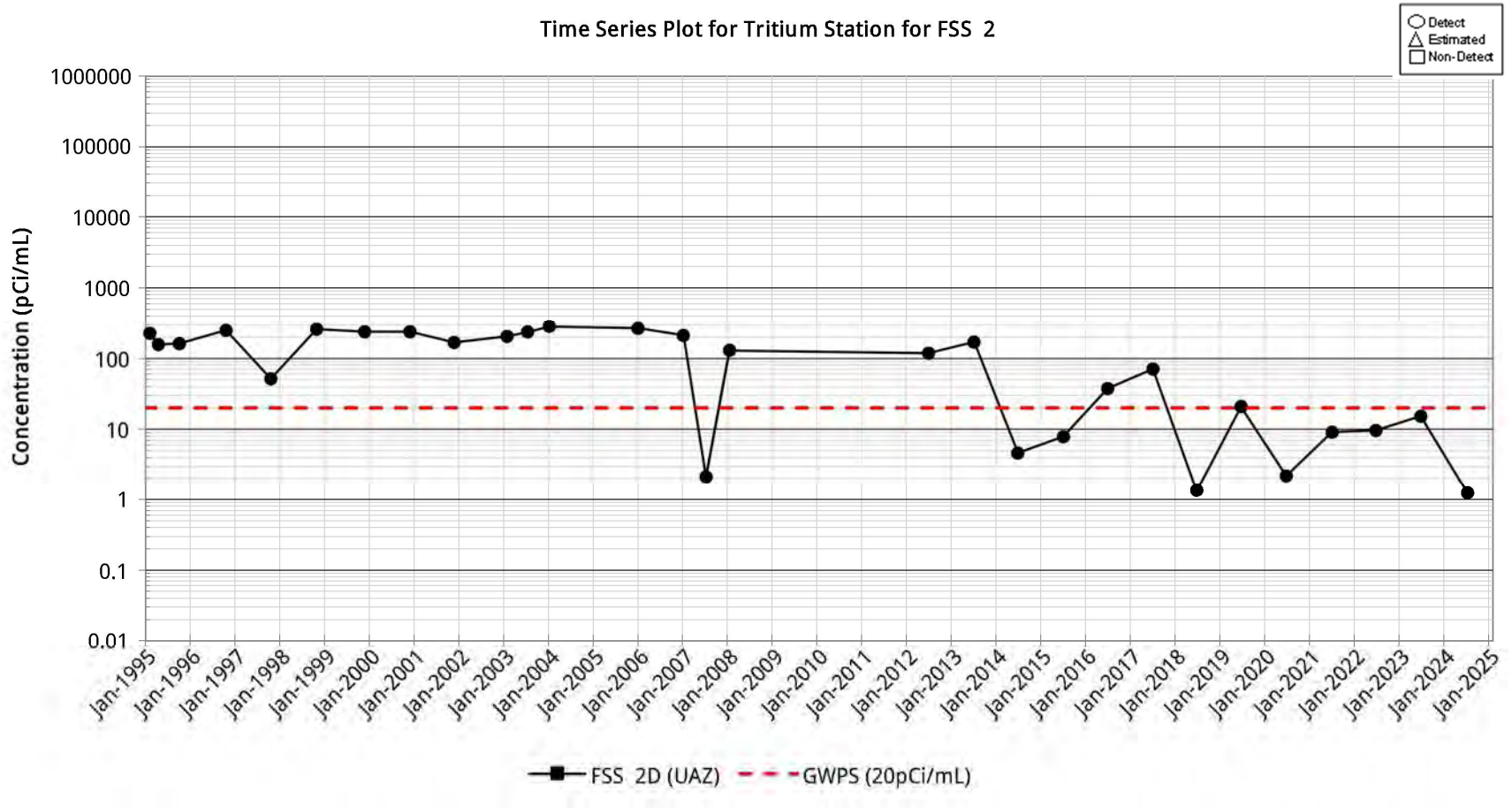

Time Series Plot for Tritium Station for FSB124
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
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Jan-2005
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Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB124D (UAZ)
GWPS (20pCi/mL)

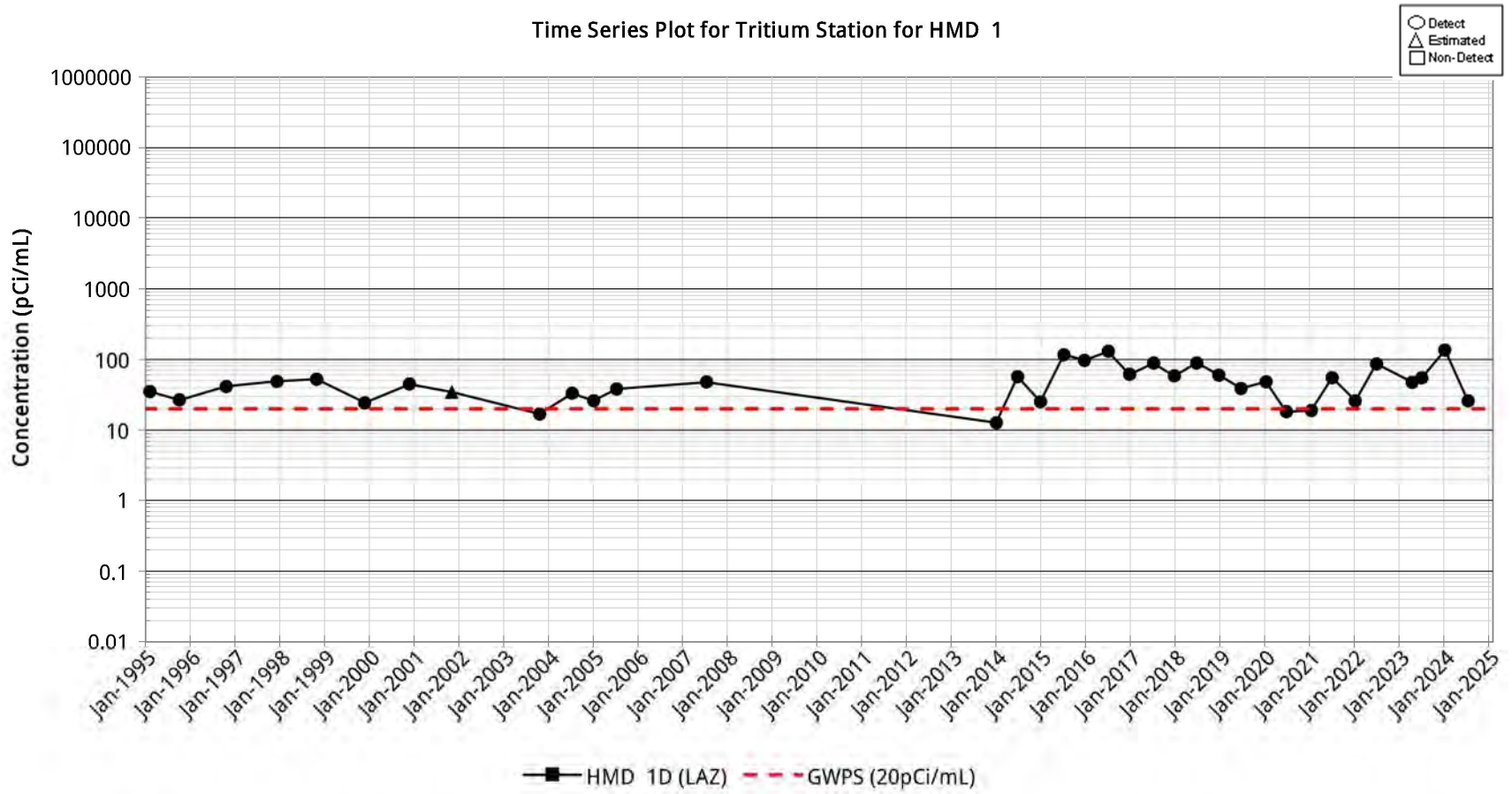

Time Series Plot for Tritium Station for FSB125
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB125DR (UAZ)
GWPS (20pCi/mL)

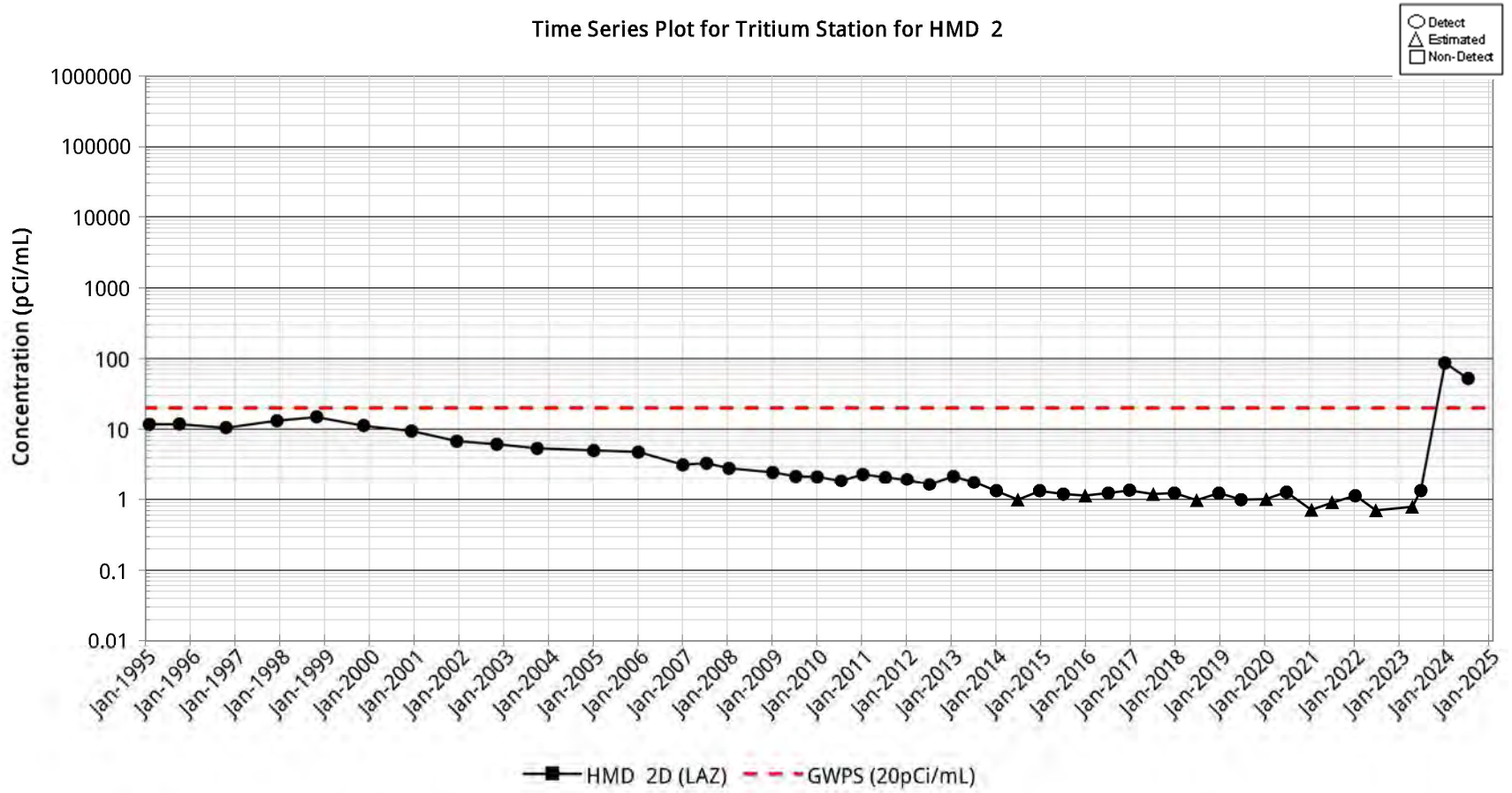

Time Series Plot for Tritium Station for FSB127
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
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Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB127D (UAZ)
GWPS (20pCi/mL)

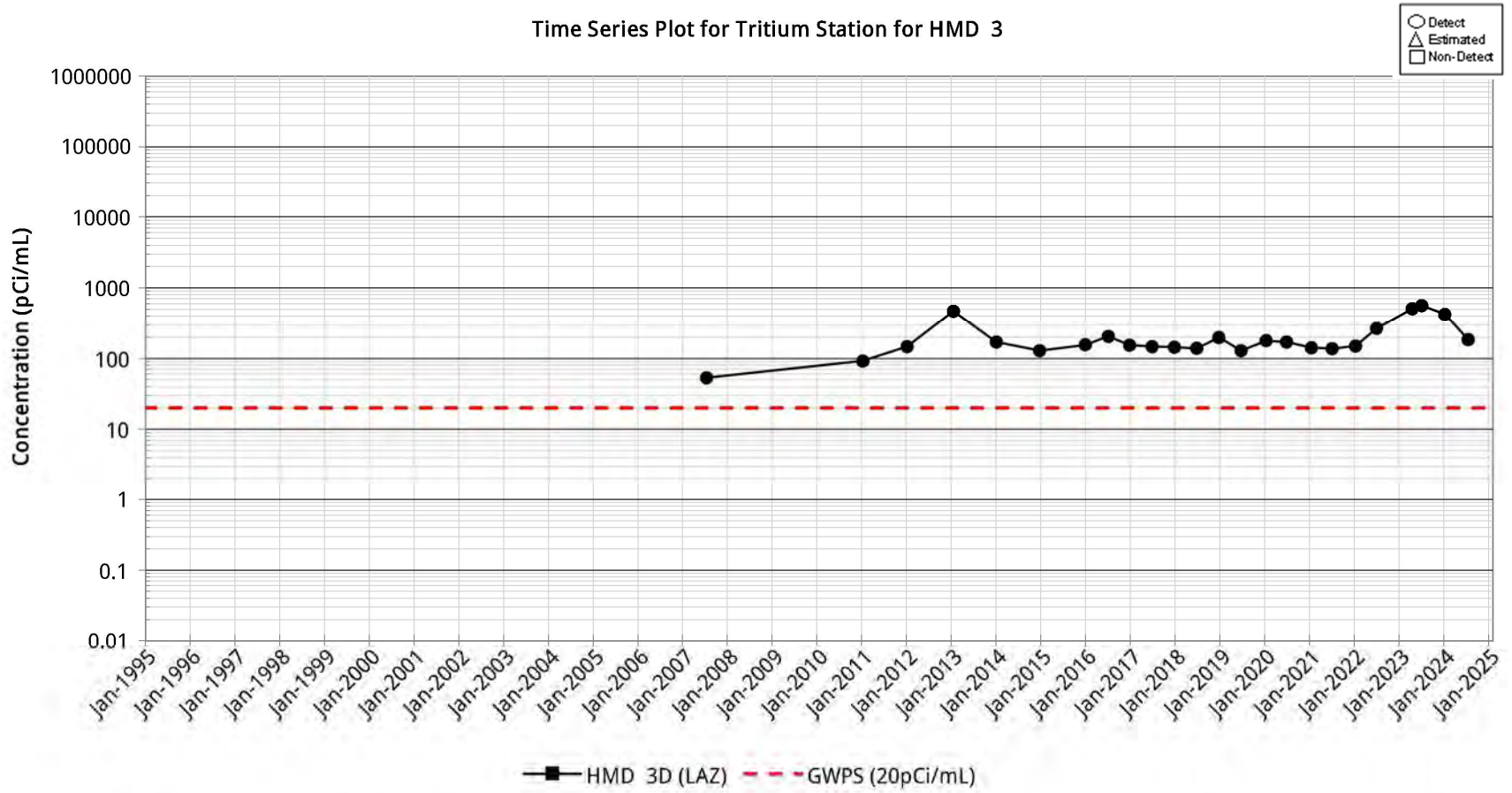

Time Series Plot for Tritium Station for FSB130
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB130D (UAZ)
GWPS (20pCi/mL)

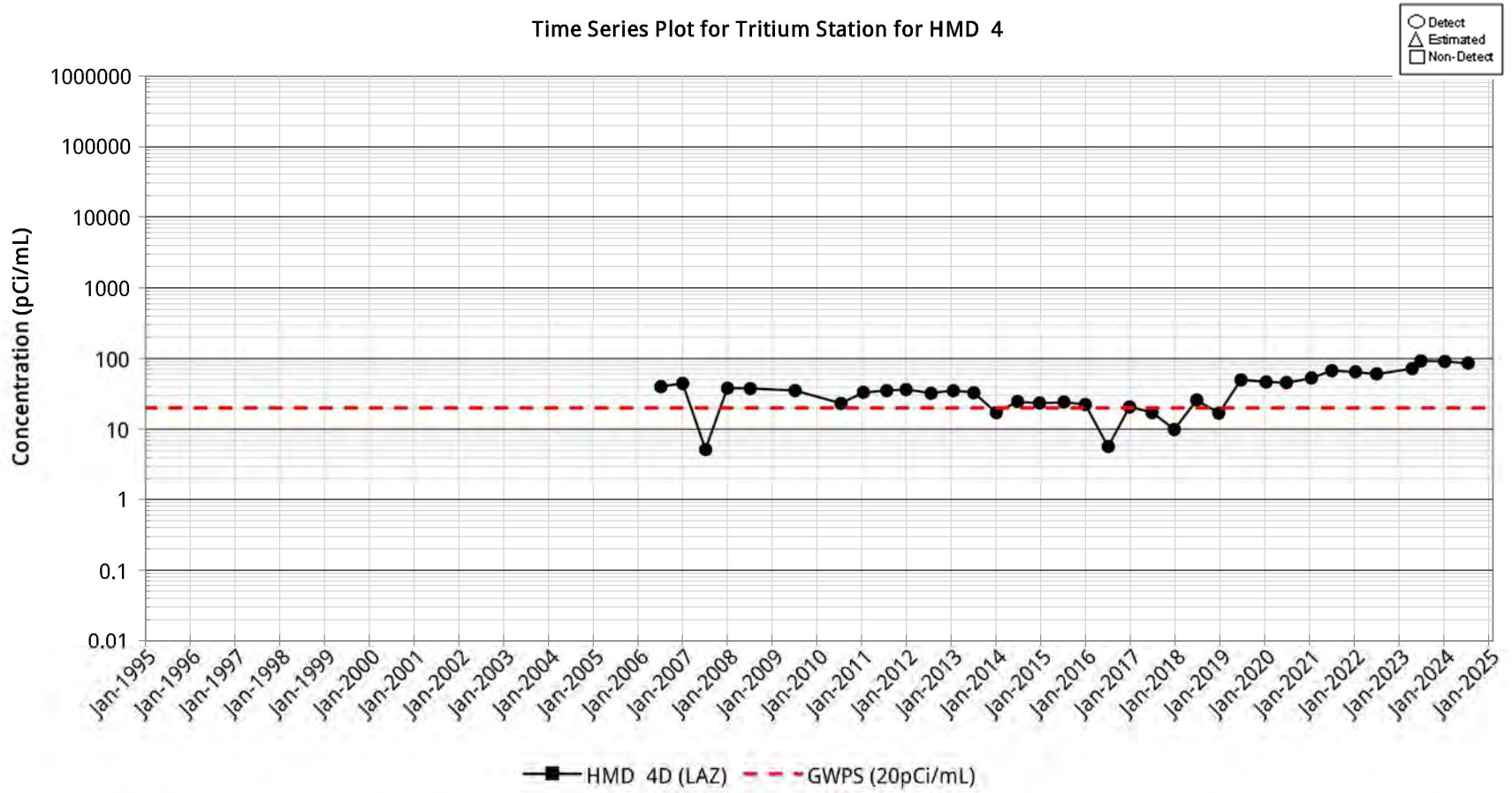

Time Series Plot for Tritium Station for FSB138
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
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Jan-2007
Jan-2008
Jan-2009
Jan-2010
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Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSB138D (UAZ)
GWPS (20pCi/mL)

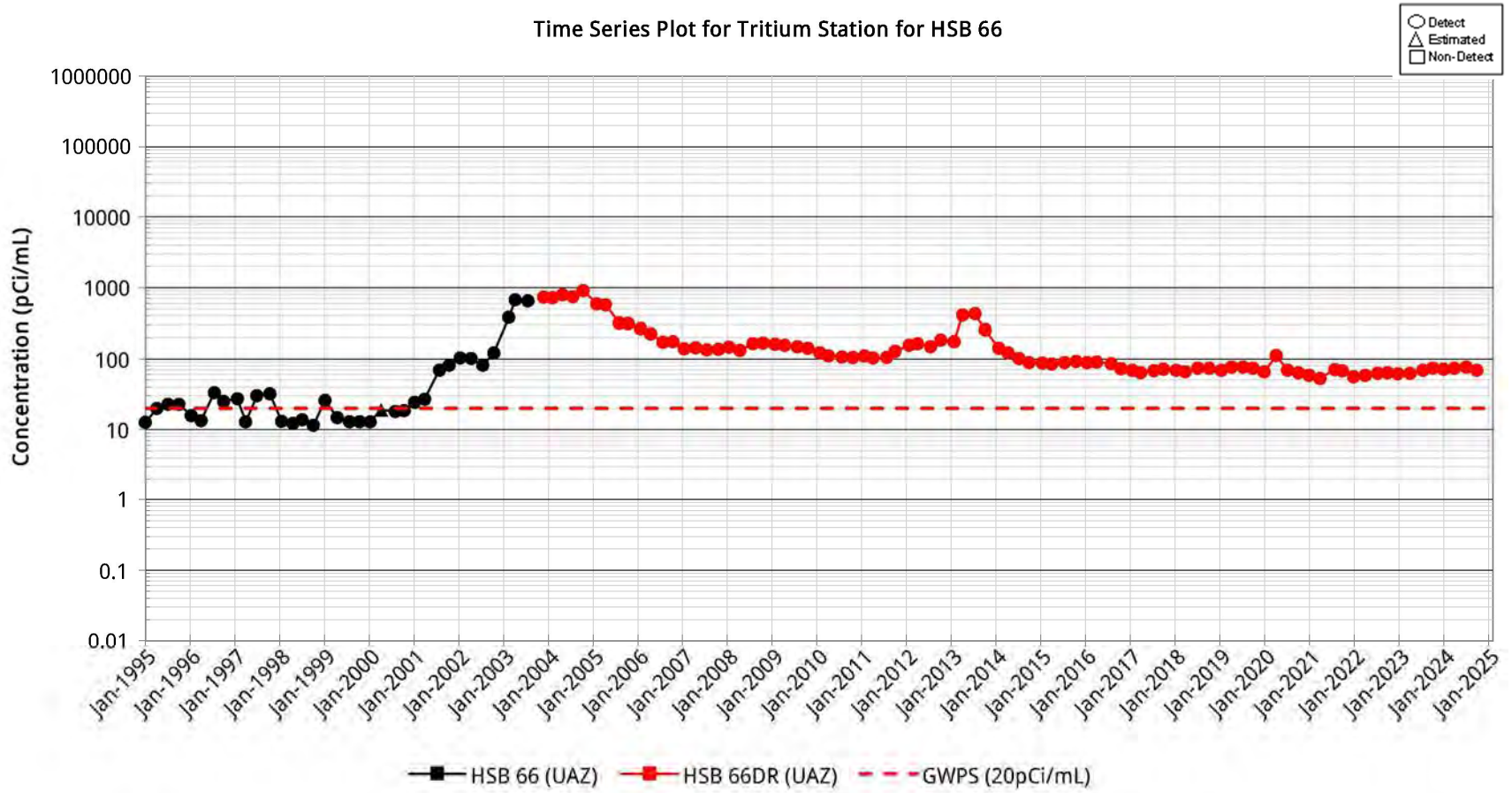

Time Series Plot for Tritium Station for FSS 2
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2010
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Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
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Jan-2022
Jan-2023
Jan-2024
Jan-2025
FSS 2D (UAZ)
GWPS (20pCi/mL)

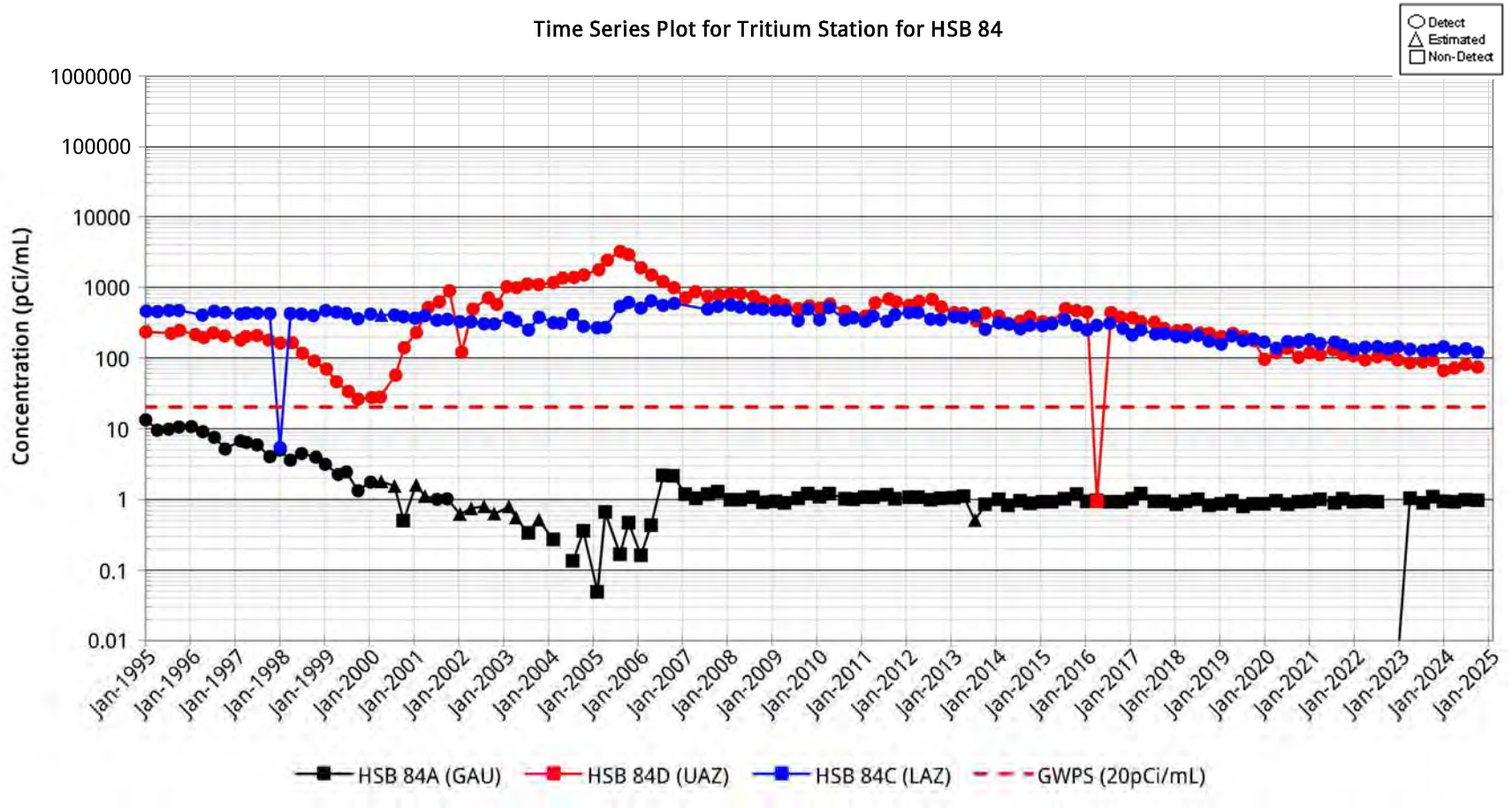

Time Series Plot for Tritium Station for HMD 1
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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Jan-2011
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Jan-2018
Jan-2019
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Jan-2022
Jan-2023
Jan-2024
Jan-2025
HMD 1D (LAZ)
GWPS (20pCi/mL)

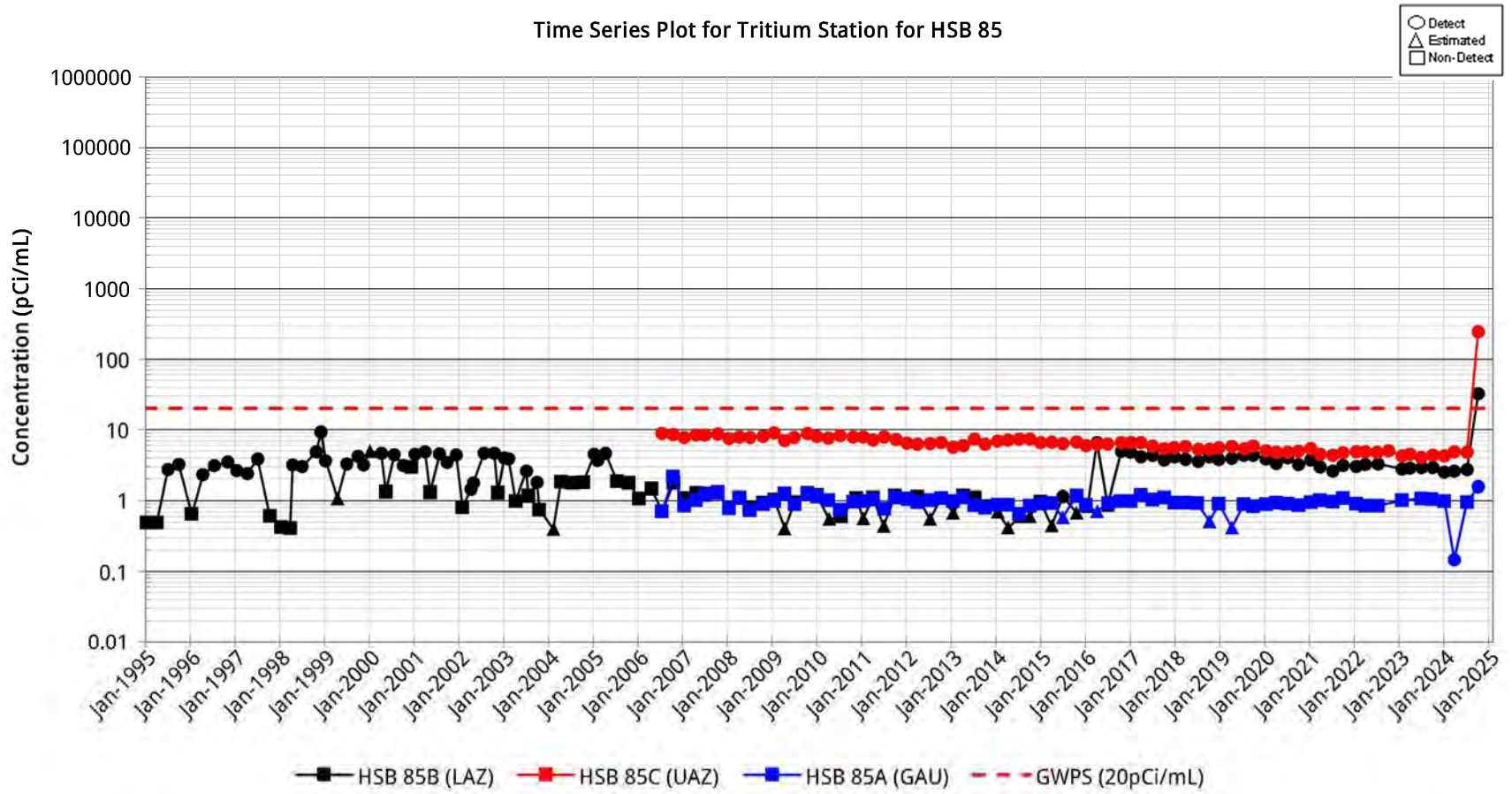

Time Series Plot for Tritium Station for HMD 2
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
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Jan-2008
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Jan-2016
Jan-2017
Jan-2018
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Jan-2022
Jan-2023
Jan-2024
Jan-2025
HMD 2D (LAZ)
GWPS (20pCi/mL)

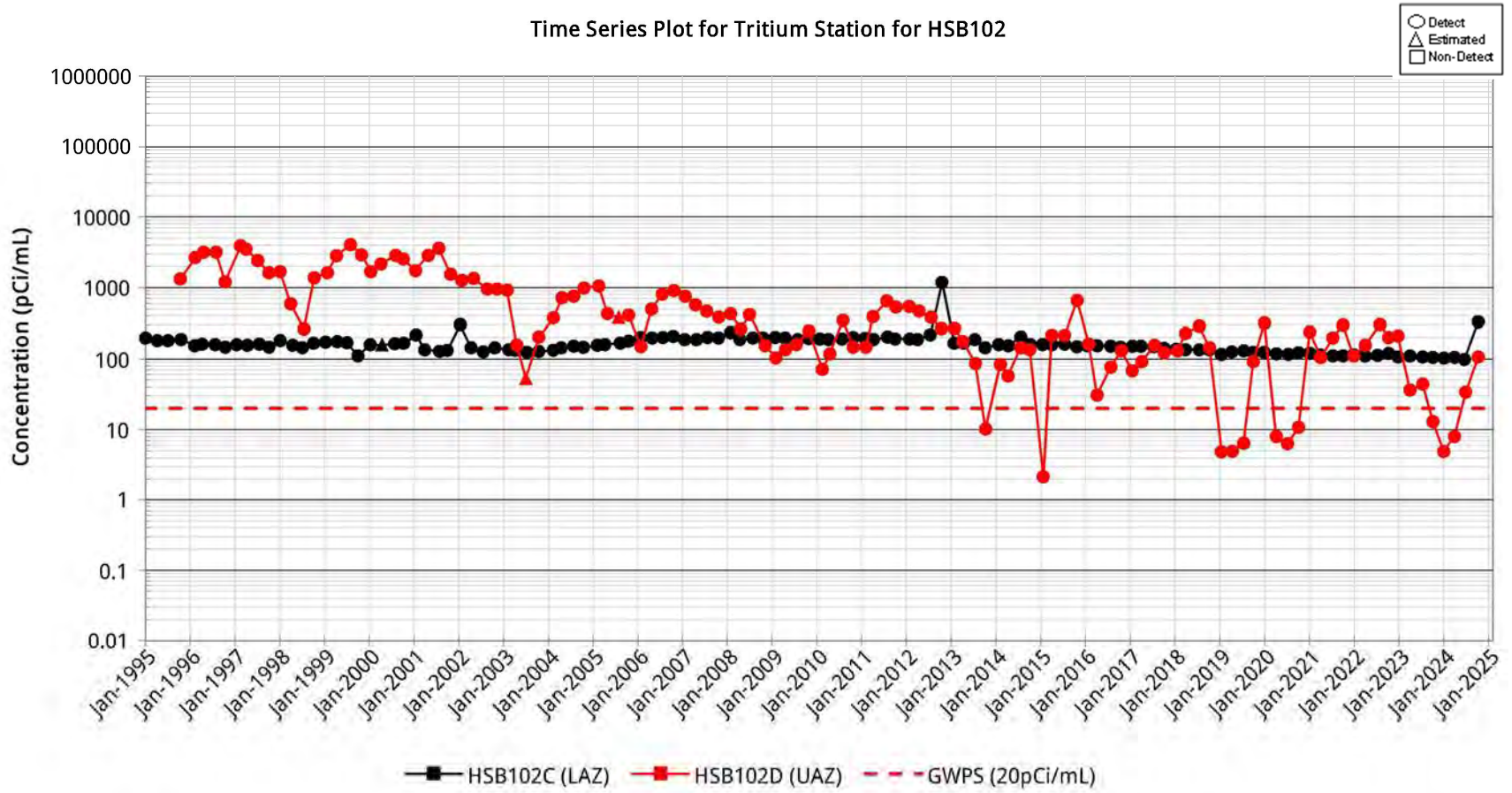

Time Series Plot for Tritium Station for HMD 3
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HMD 3D (LAZ)
GWPS (20pCi/mL)

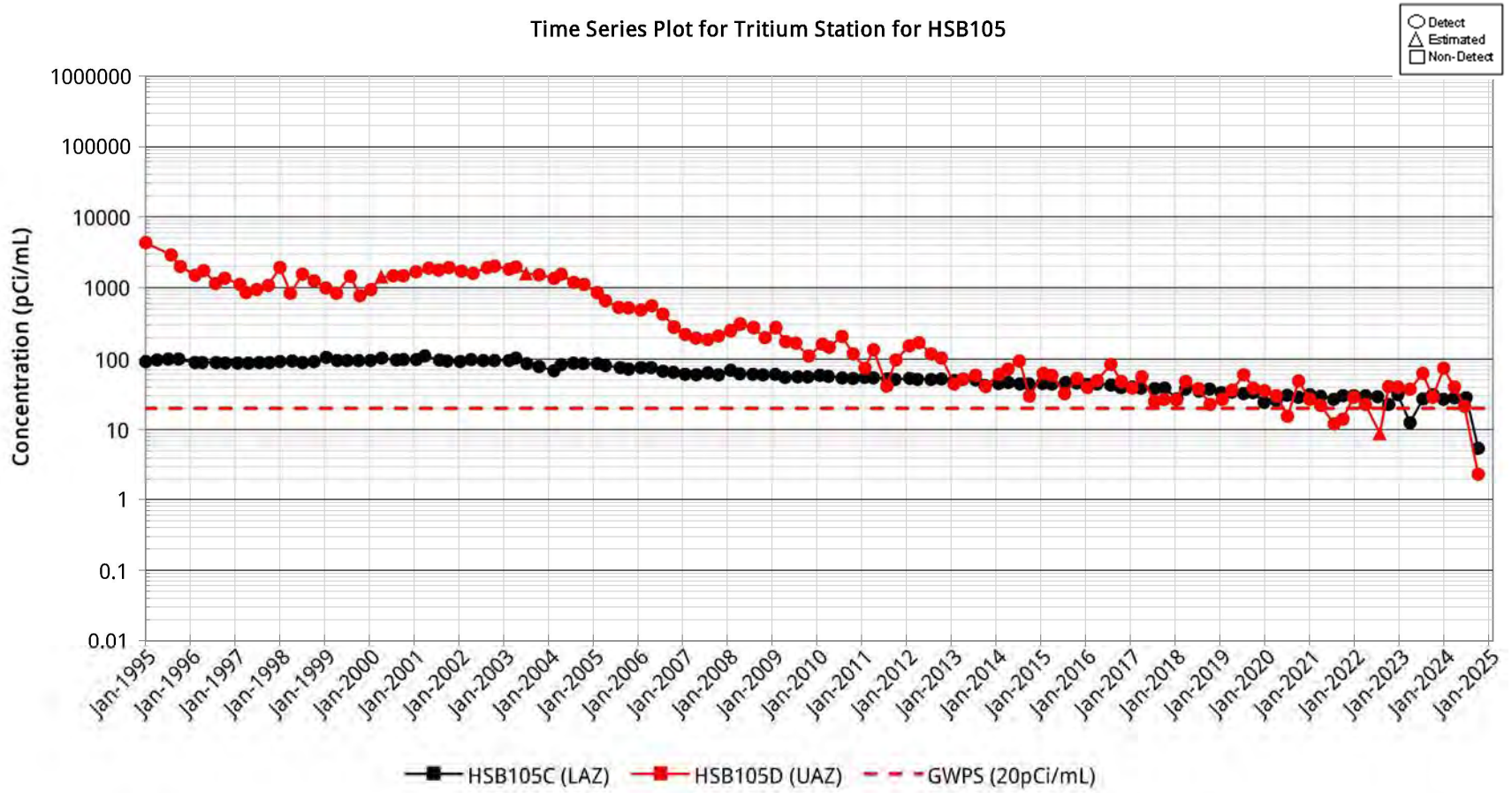

Time Series Plot for Tritium Station for HMD 4
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HMD 4D (LAZ)
GWPS (20pCi/mL)

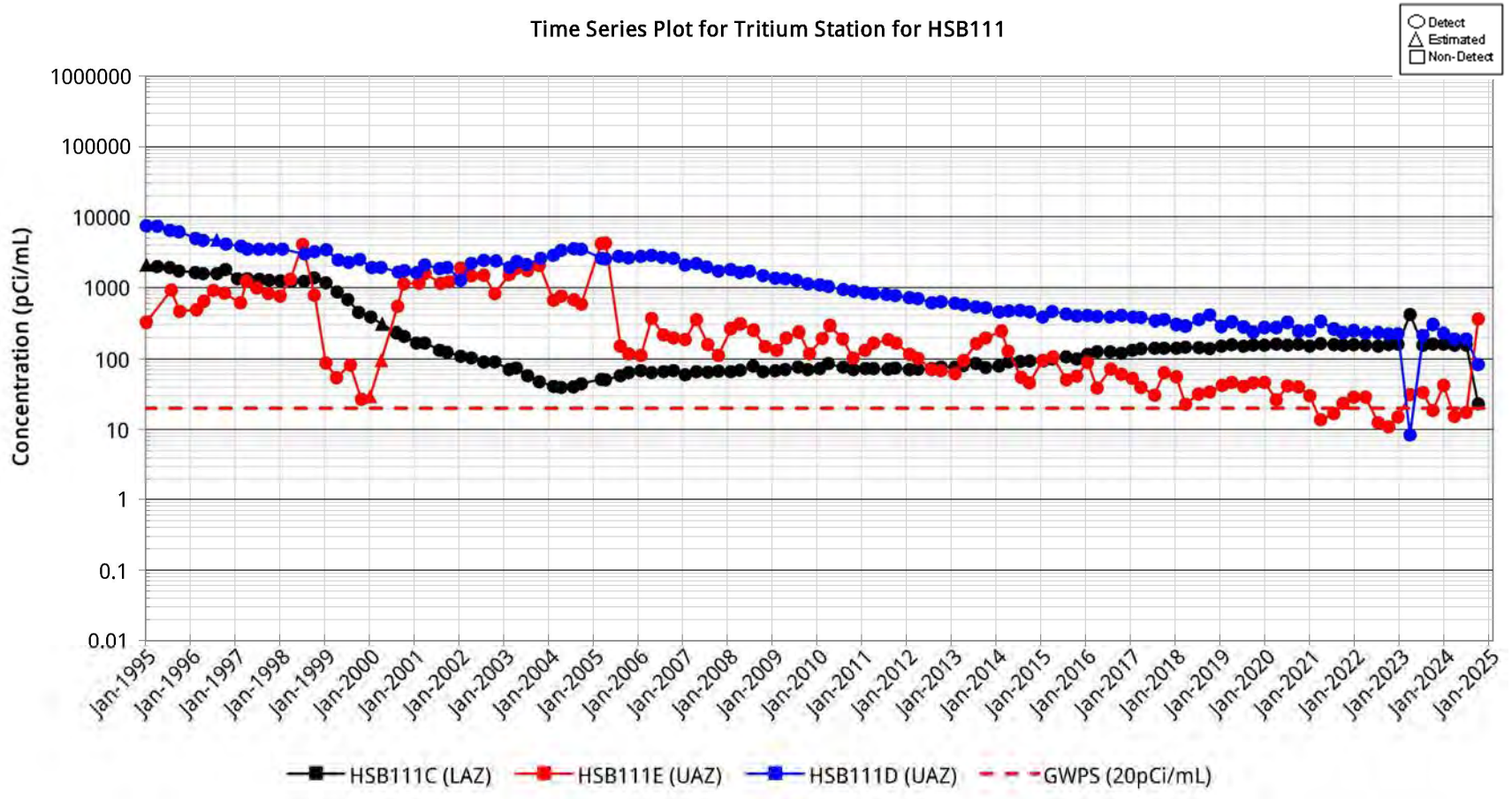

Time Series Plot for Tritium Station for HSB 66
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB 66 (UAZ)
HSB 66DR (UAZ)
GWPS (20pCi/mL)

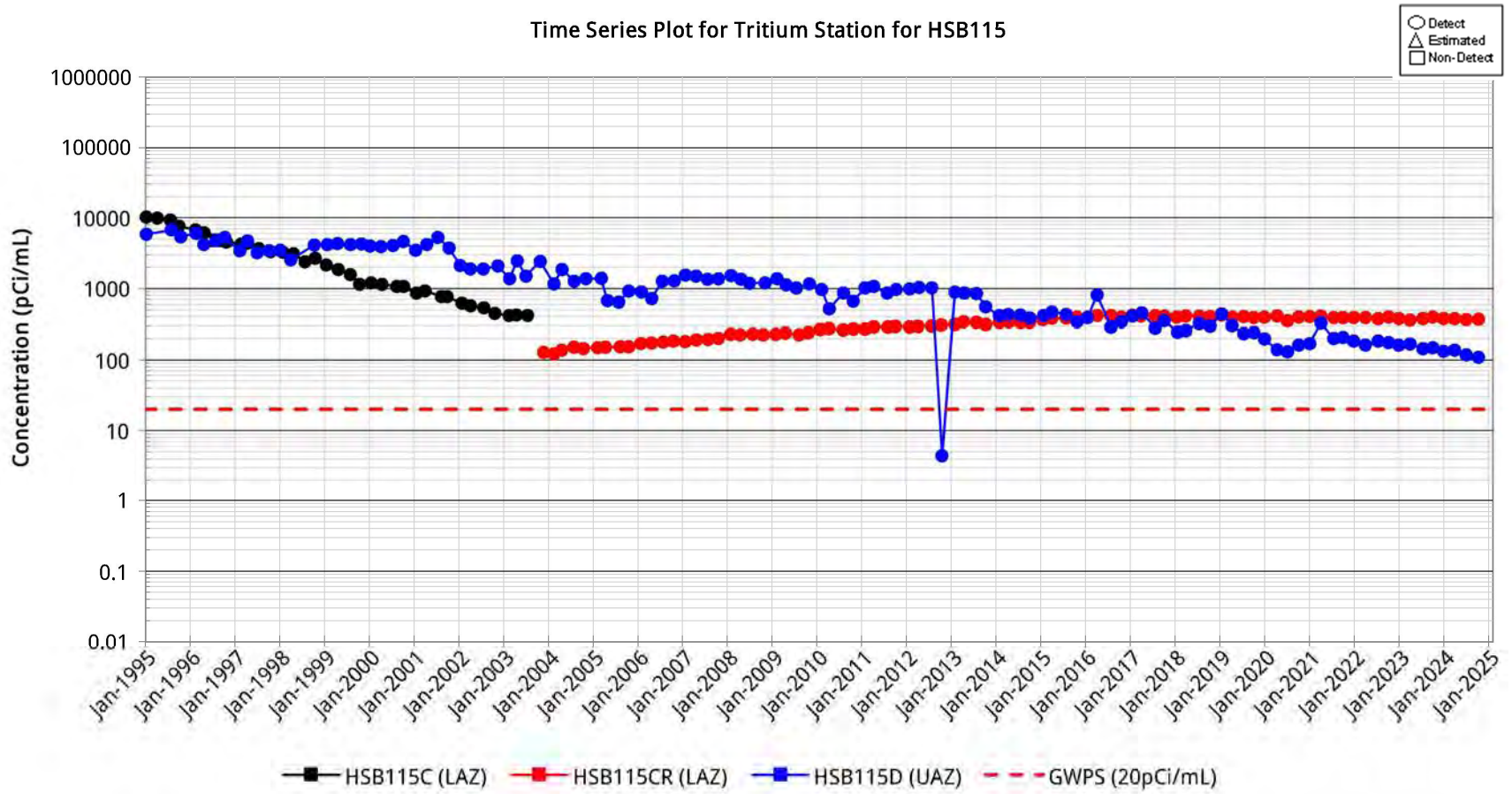

Time Series Plot for Tritium Station for HSB 84
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB 84A (GAU)
HSB 84D (UAZ)
HSB 84C (LAZ)
GWPS (20pCi/mL)

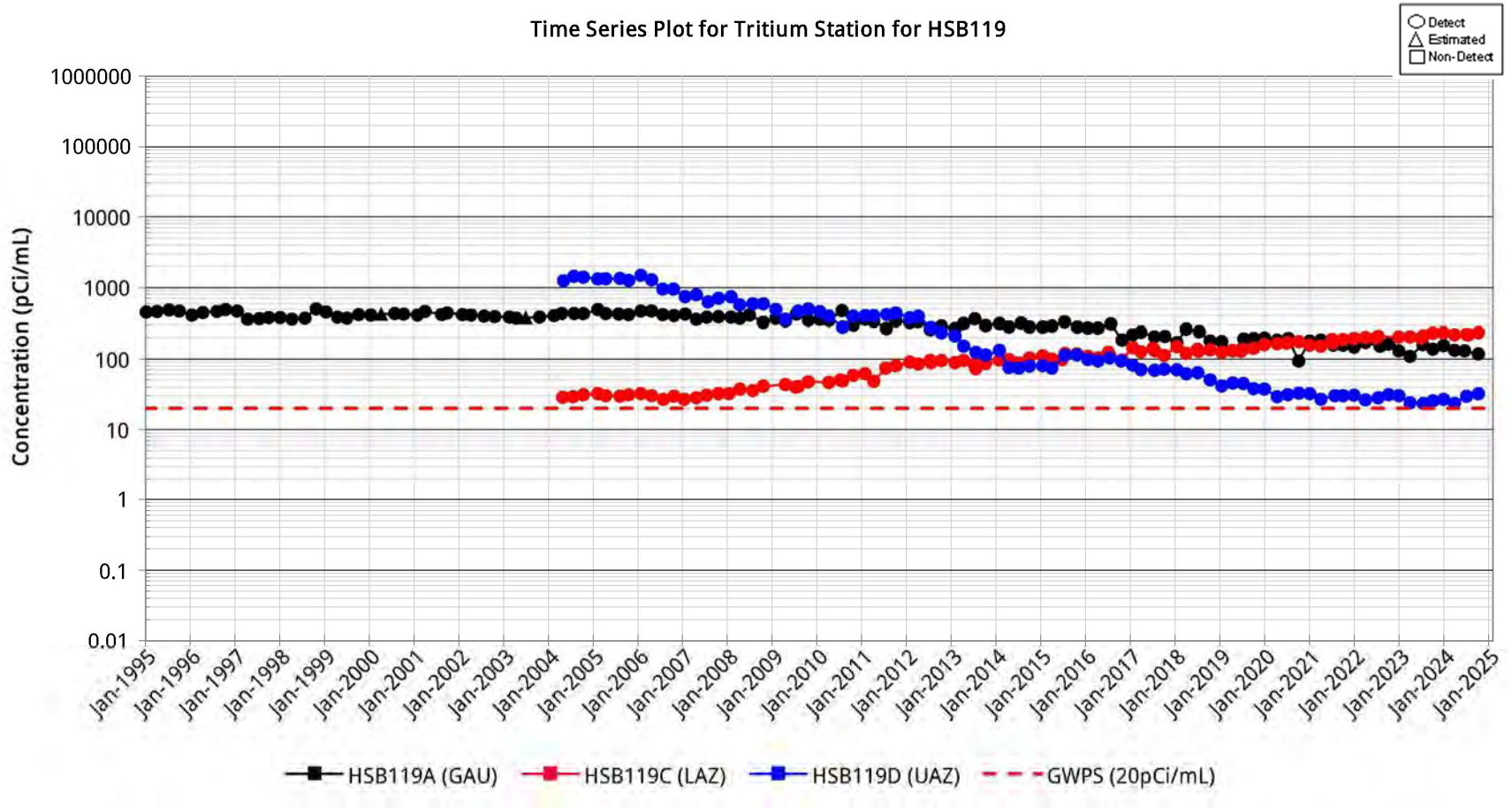

Time Series Plot for Tritium Station for HSB 85
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB 85B (LAZ)
HSB 85C (UAZ)
HSB 85A (GAU)
GWPS (20pCi/mL)

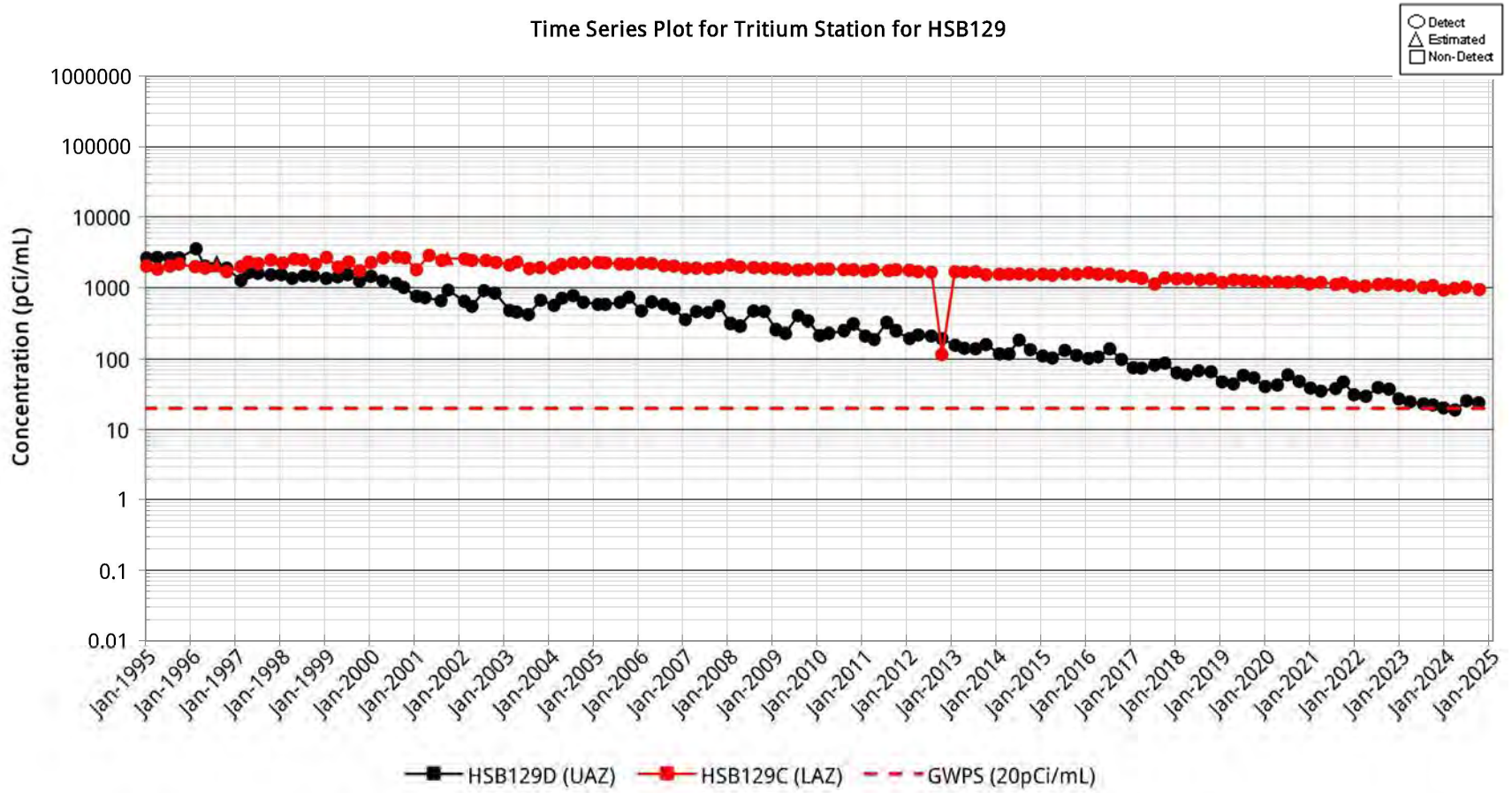

Time Series Plot for Tritium Station for HSB102
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB102C (LAZ)
HSB102D (UAZ)
GWPS (20pCi/mL)

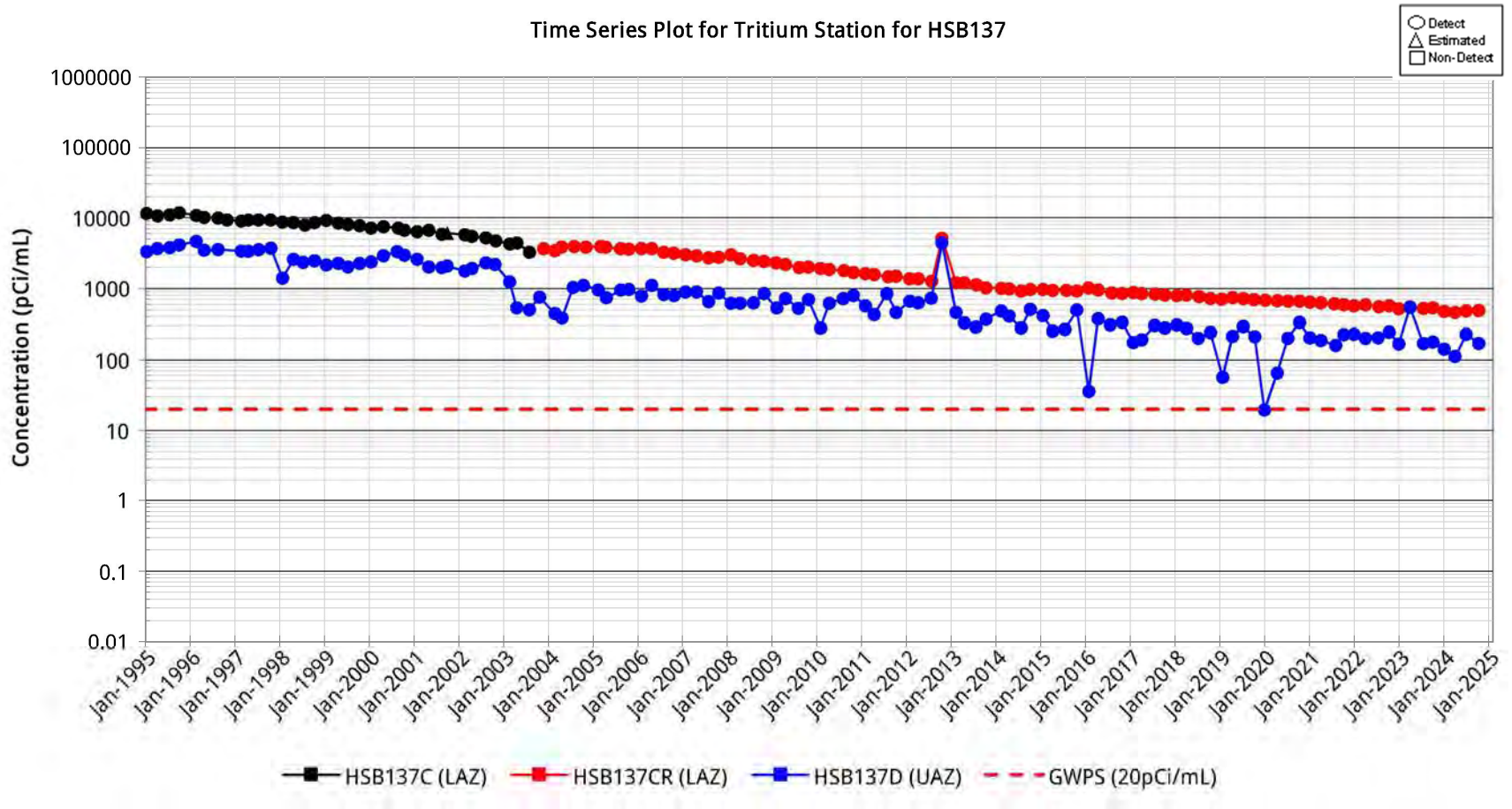

Time Series Plot for Tritium Station for HSB105
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB105C (LAZ)
HSB105D (UAZ)
GWPS (20pCi/mL)

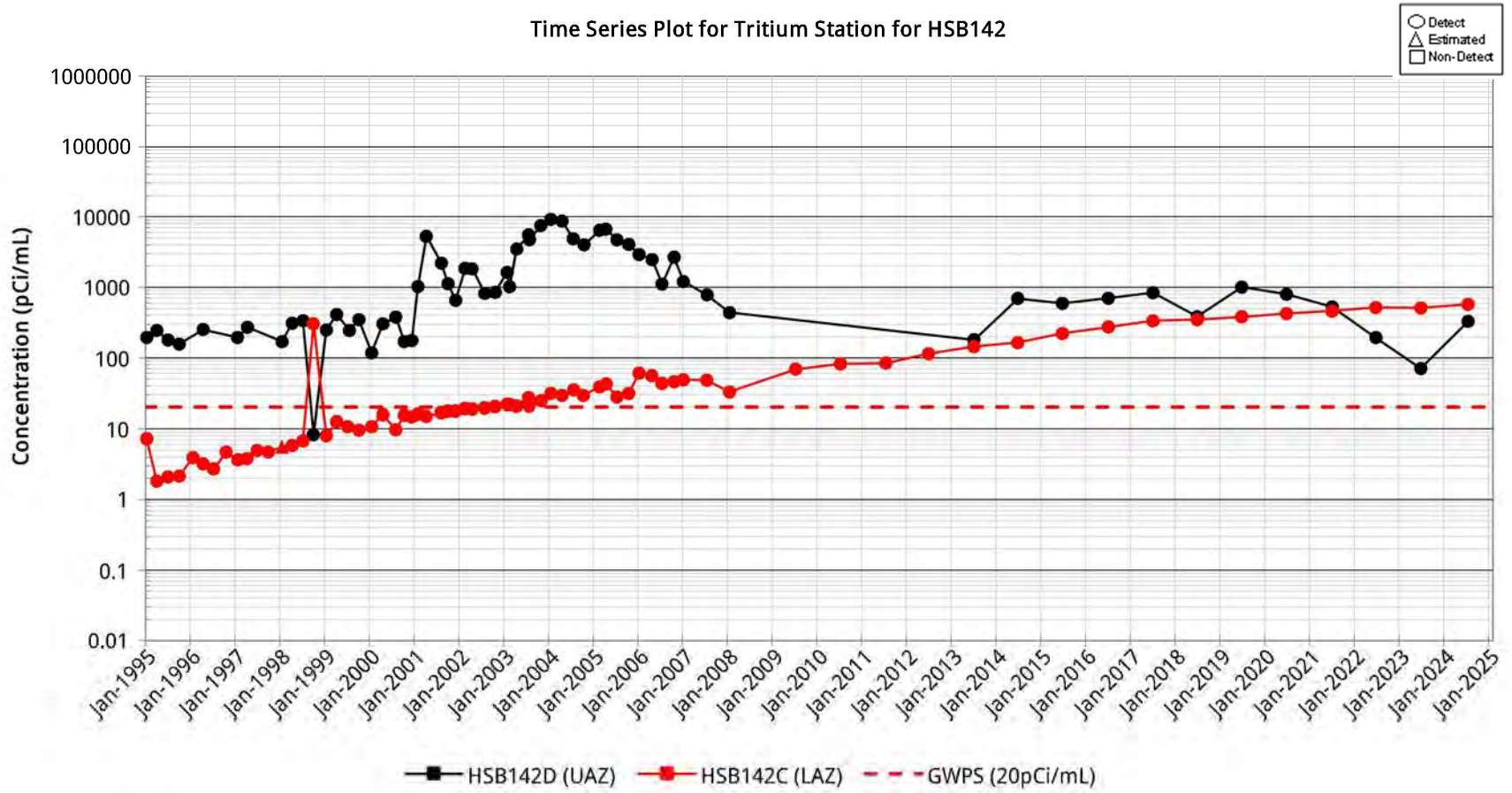

Time Series Plot for Tritium Station for HSB111
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB111C (LAZ)
HSB111E (UAZ)
HSB111D (UAZ)
GWPS (20pCi/mL)

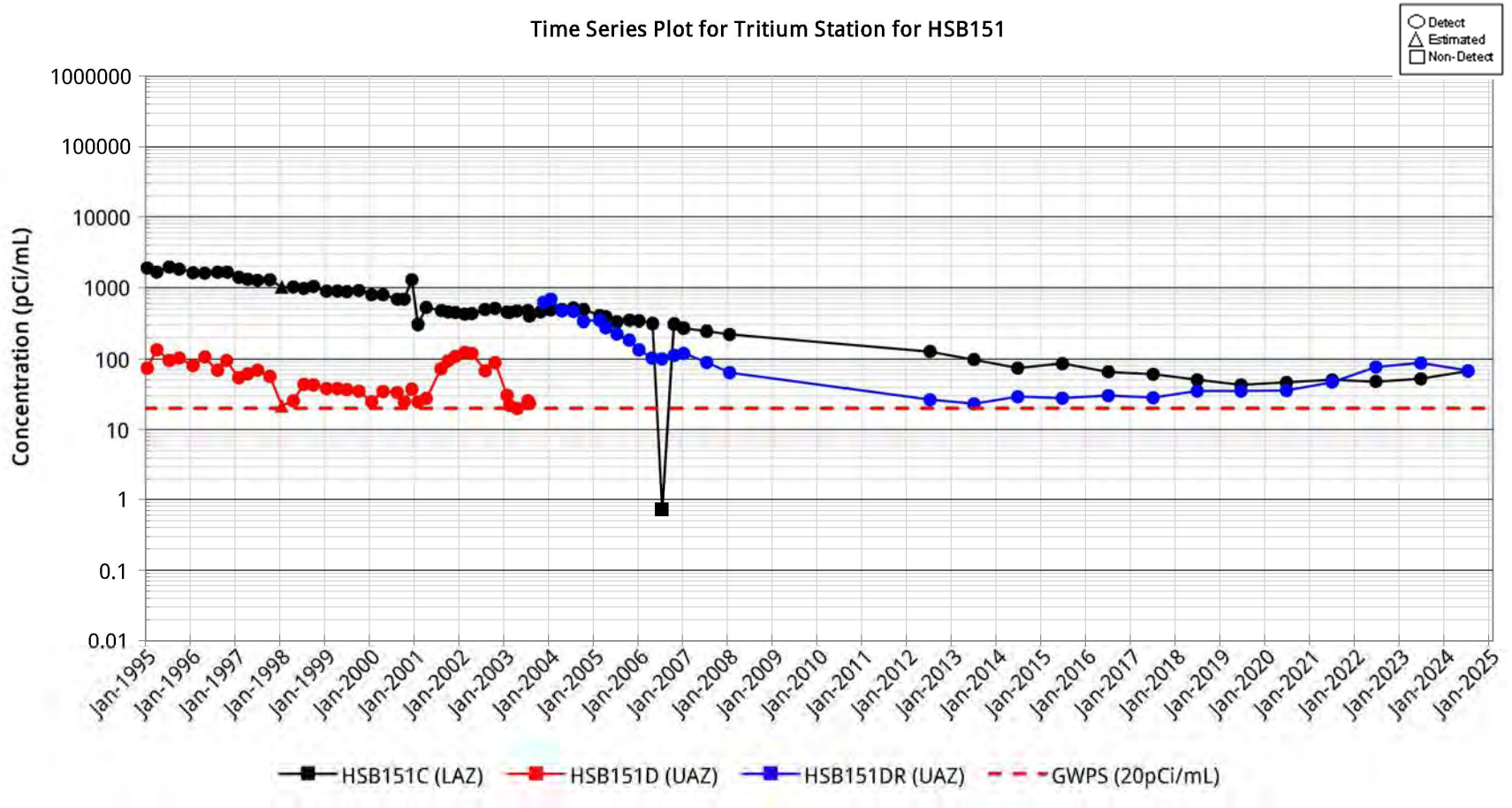

Time Series Plot for Tritium Station for HSB115
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB115C (LAZ)
HSB115CR (LAZ)
HSB115D (UAZ)
GWPS (20pCi/mL)

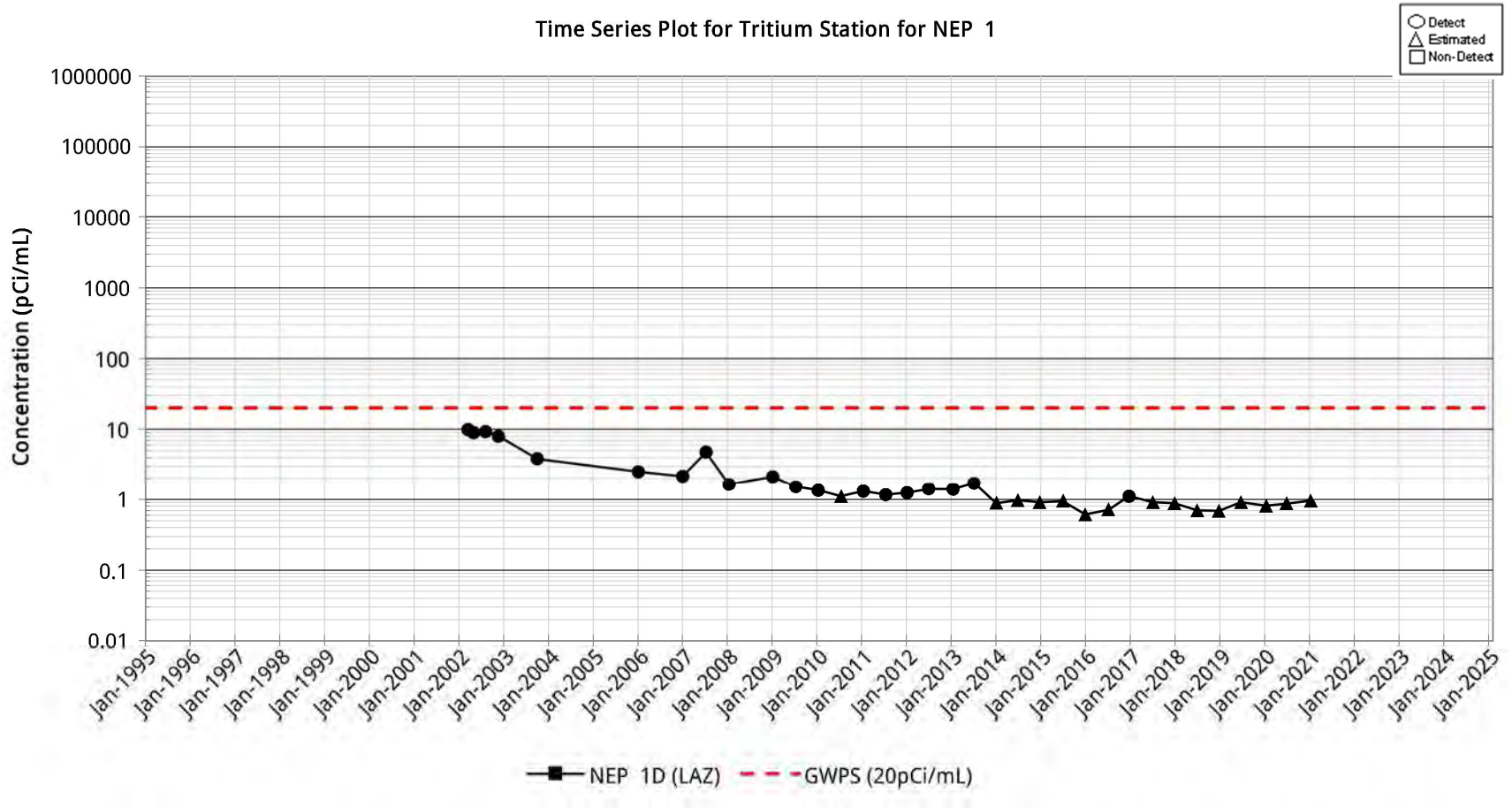

Time Series Plot for Tritium Station for HSB119
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
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Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB119A (GAU)
HSB119C (LAZ)
HSB119D (UAZ)
GWPS (20pCi/mL)

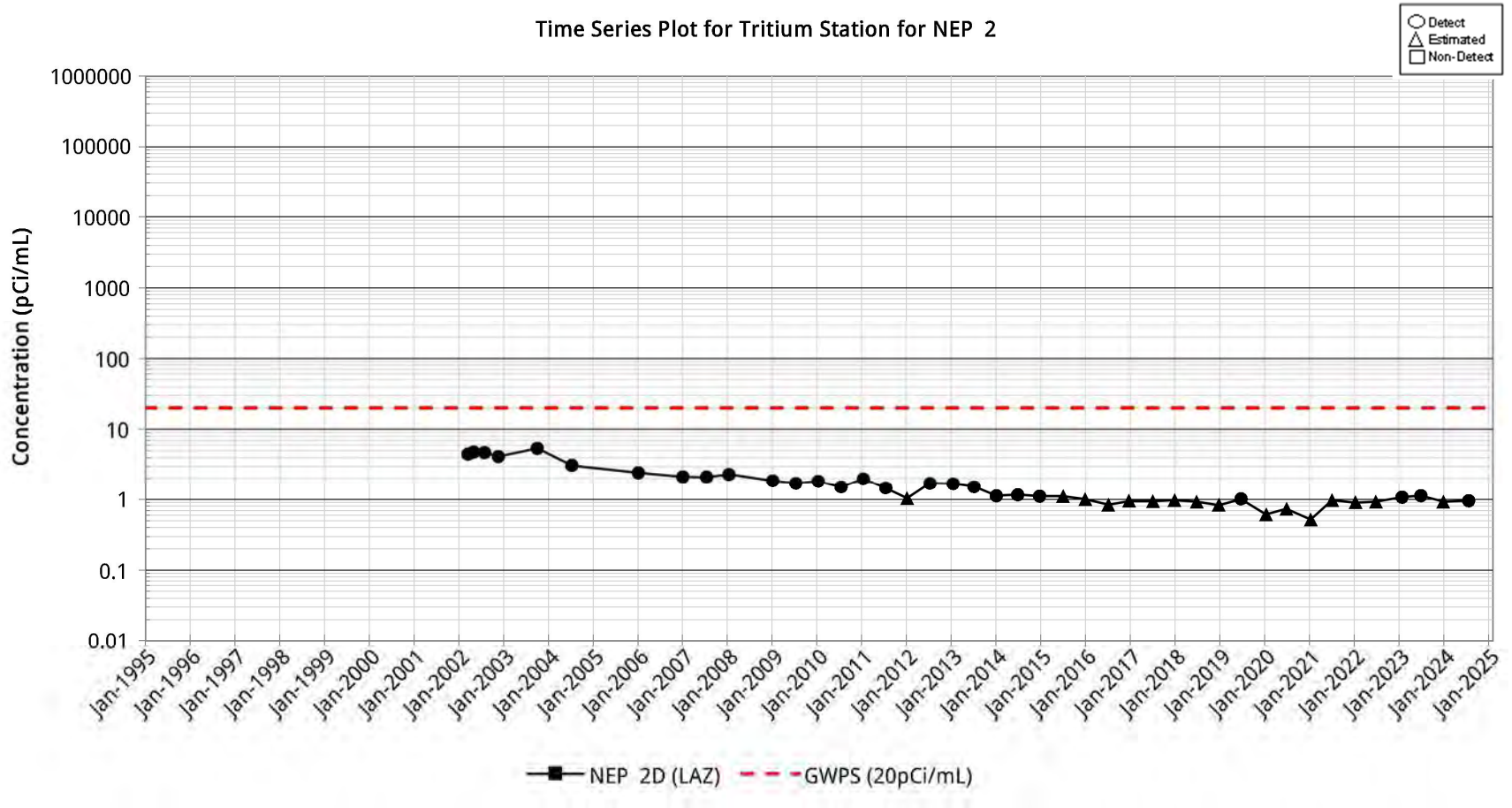

Time Series Plot for Tritium Station for HSB129
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB129D (UAZ)
HSB129C (LAZ)
GWPS (20pCi/mL)

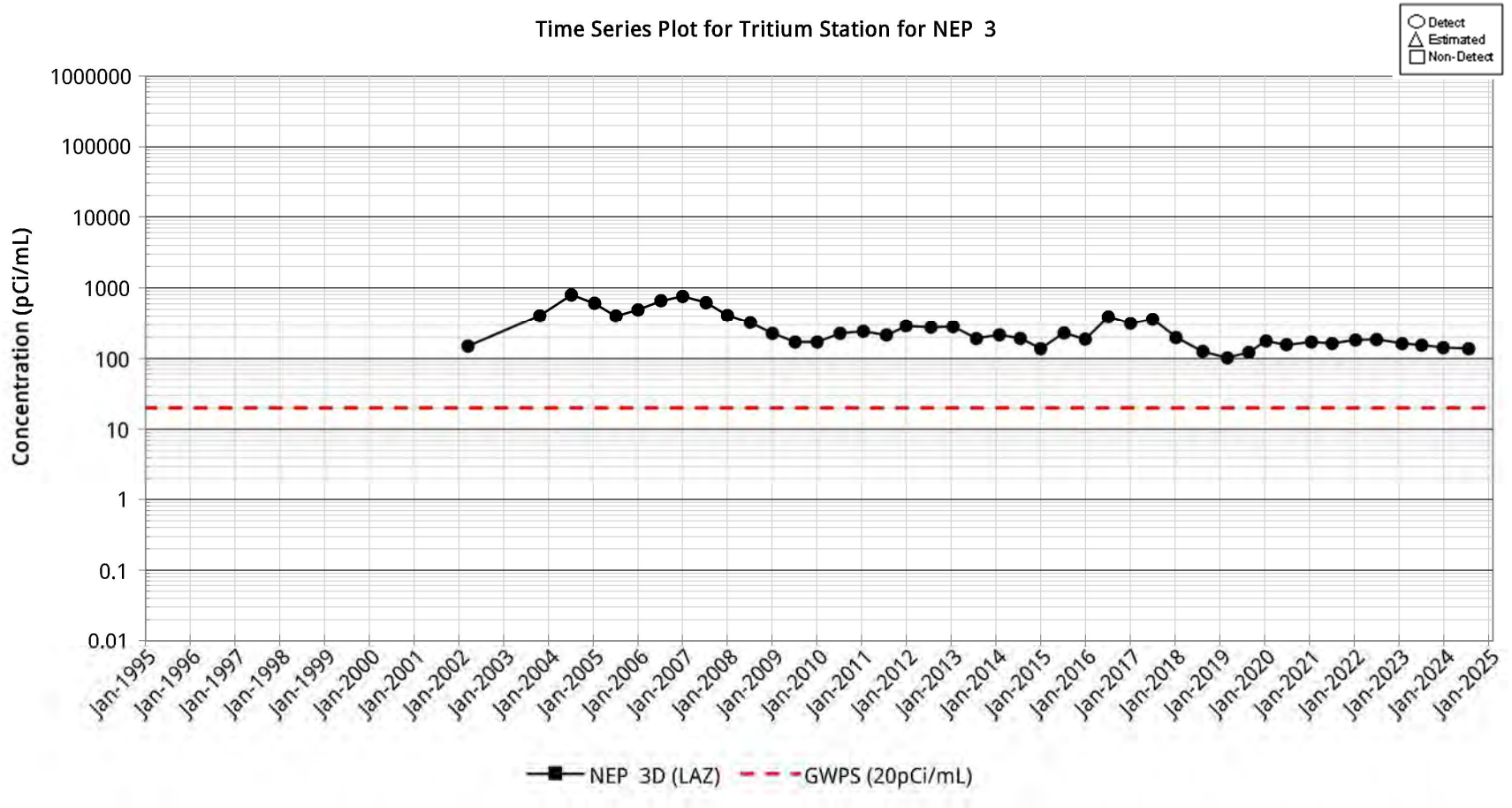

Time Series Plot for Tritium Station for HSB137
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB137C (LAZ)
HSB137CR (LAZ)
HSB137D (UAZ)
GWPS (20pCi/mL)

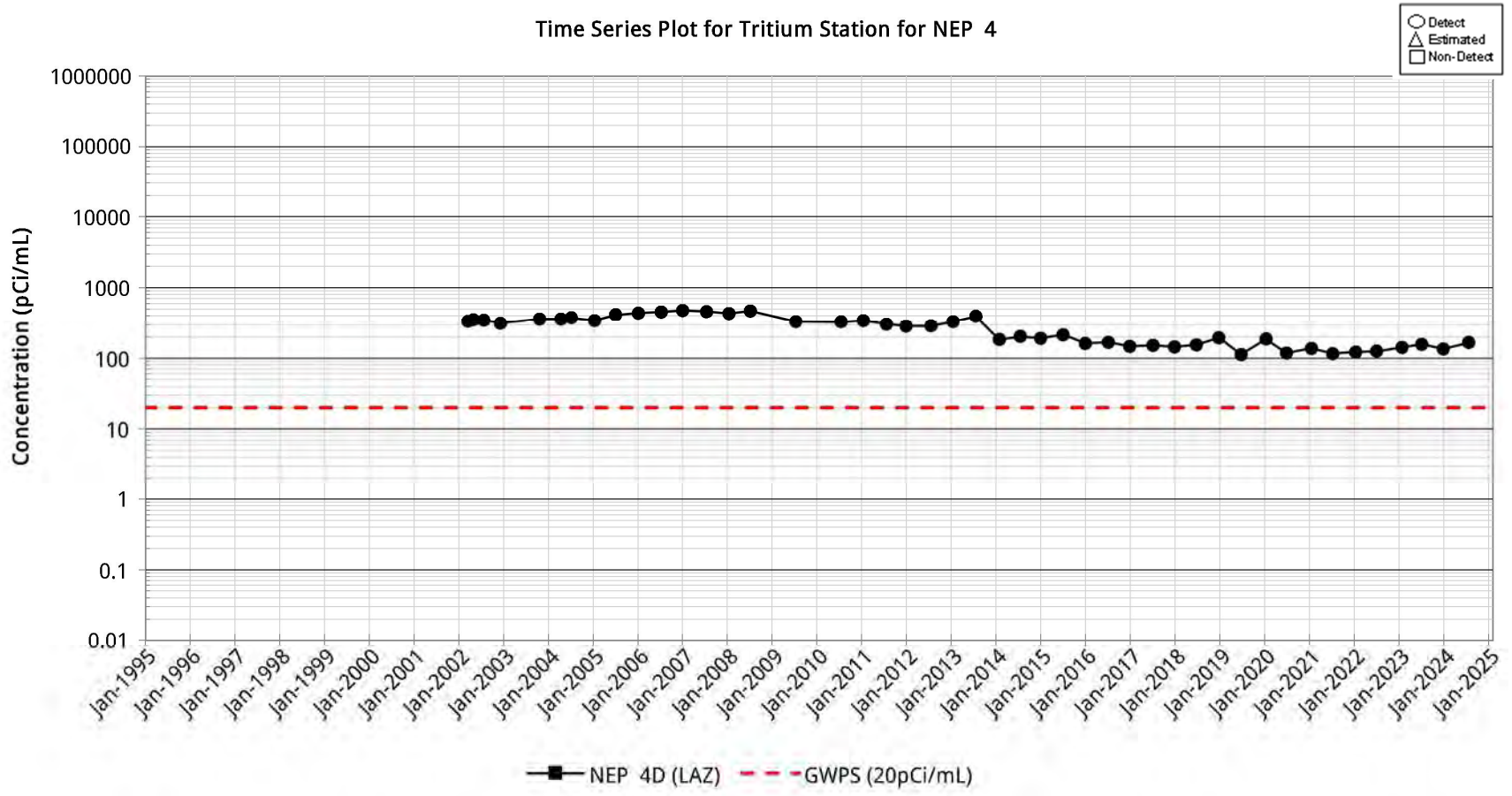

Time Series Plot for Tritium Station for HSB142
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB142D (UAZ)
HSB142C (LAZ)
GWPS (20pCi/mL)

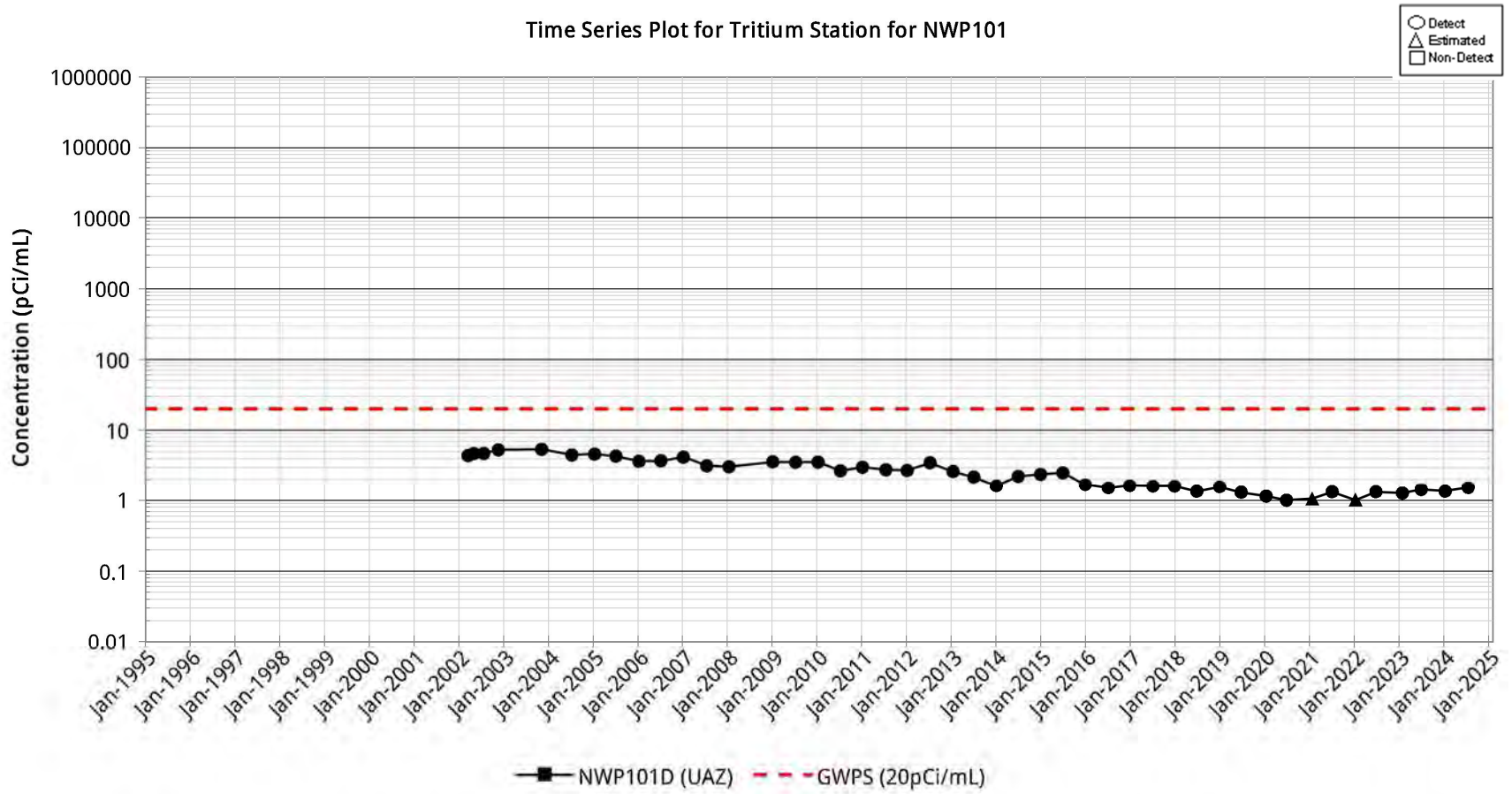

Time Series Plot for Tritium Station for HSB151
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
HSB151C (LAZ)
HSB151D (UAZ)
HSB151DR (UAZ)
GWPS (20pCi/mL)

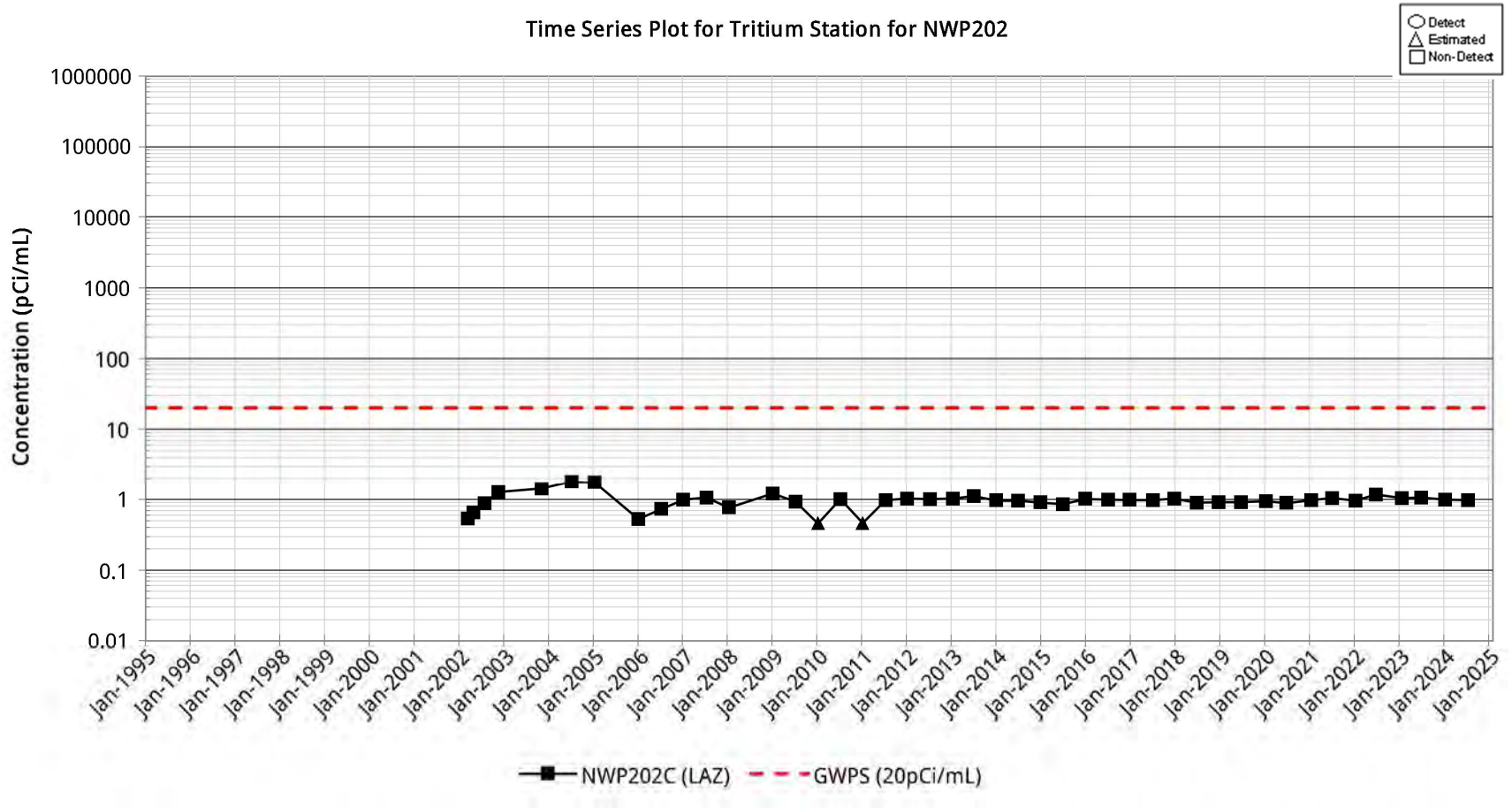

Time Series Plot for Tritium Station for NEP 1
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
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Jan-2013
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Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
NEP 1D (LAZ)
GWPS (20pCi/mL)

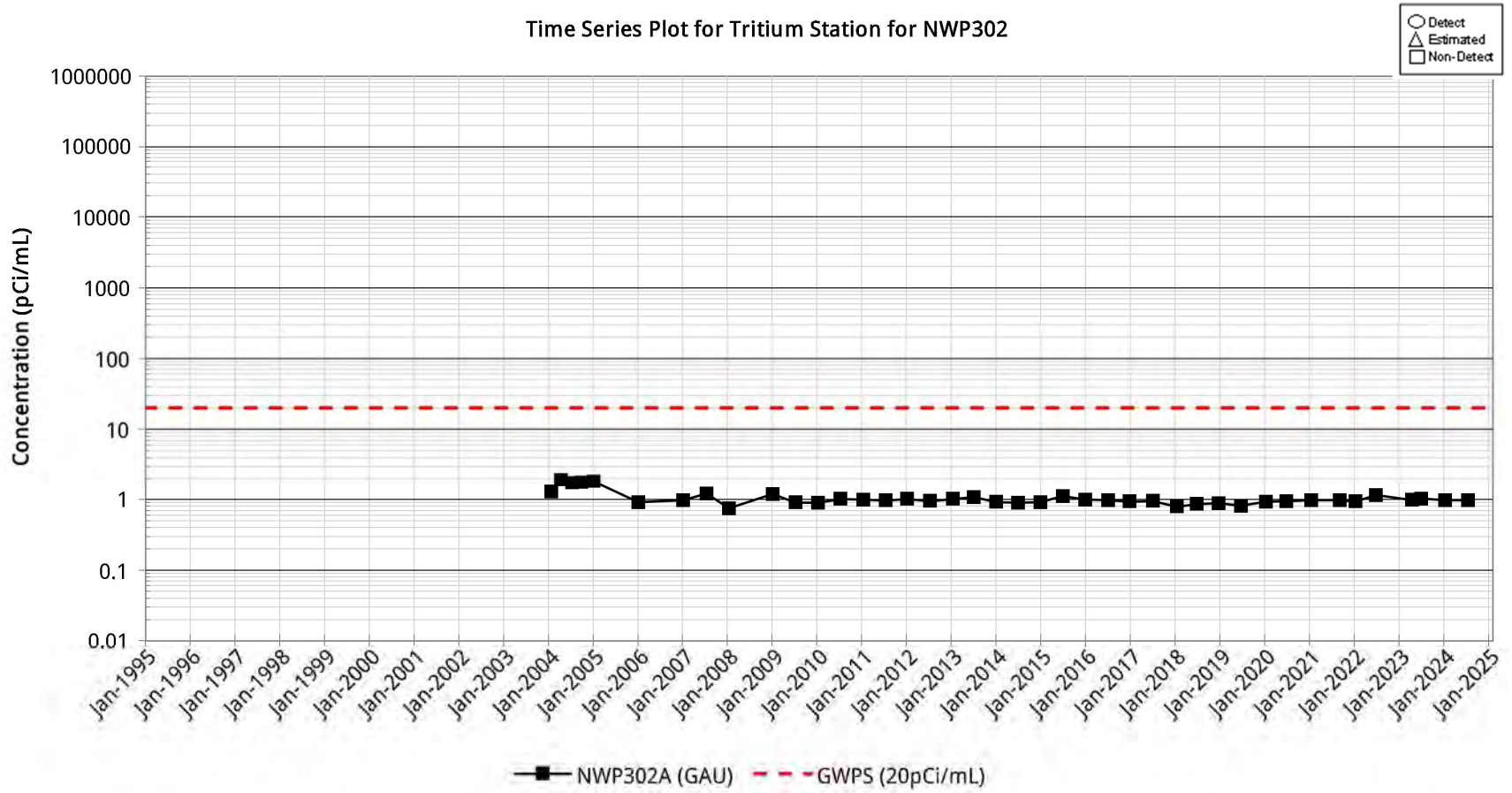

Time Series Plot for Tritium Station for NEP 2
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
NEP 2D (LAZ)
GWPS (20pCi/mL)

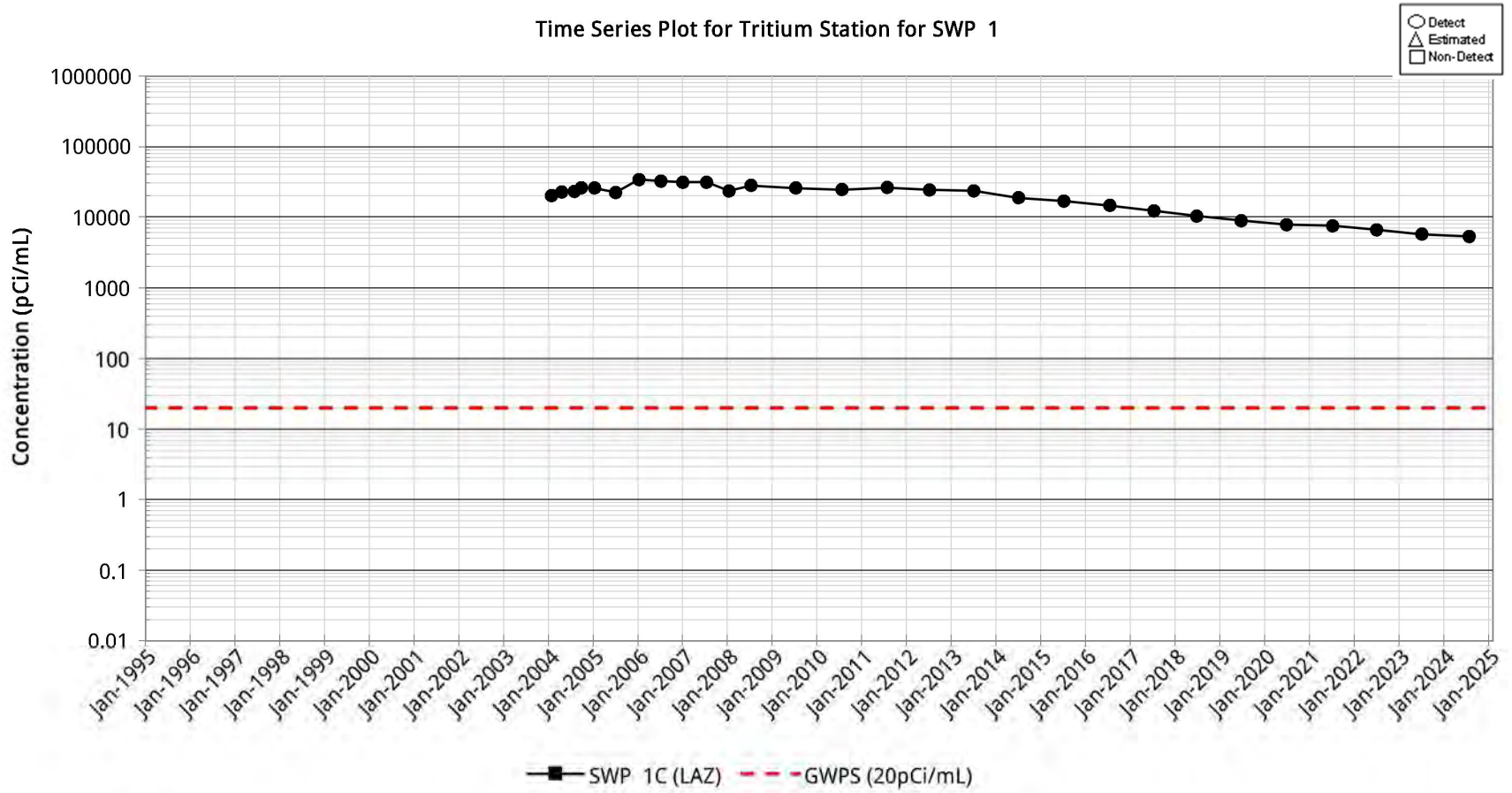

Time Series Plot for Tritium Station for NEP 3
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
NEP 3D (LAZ)
GWPS (20pCi/mL)

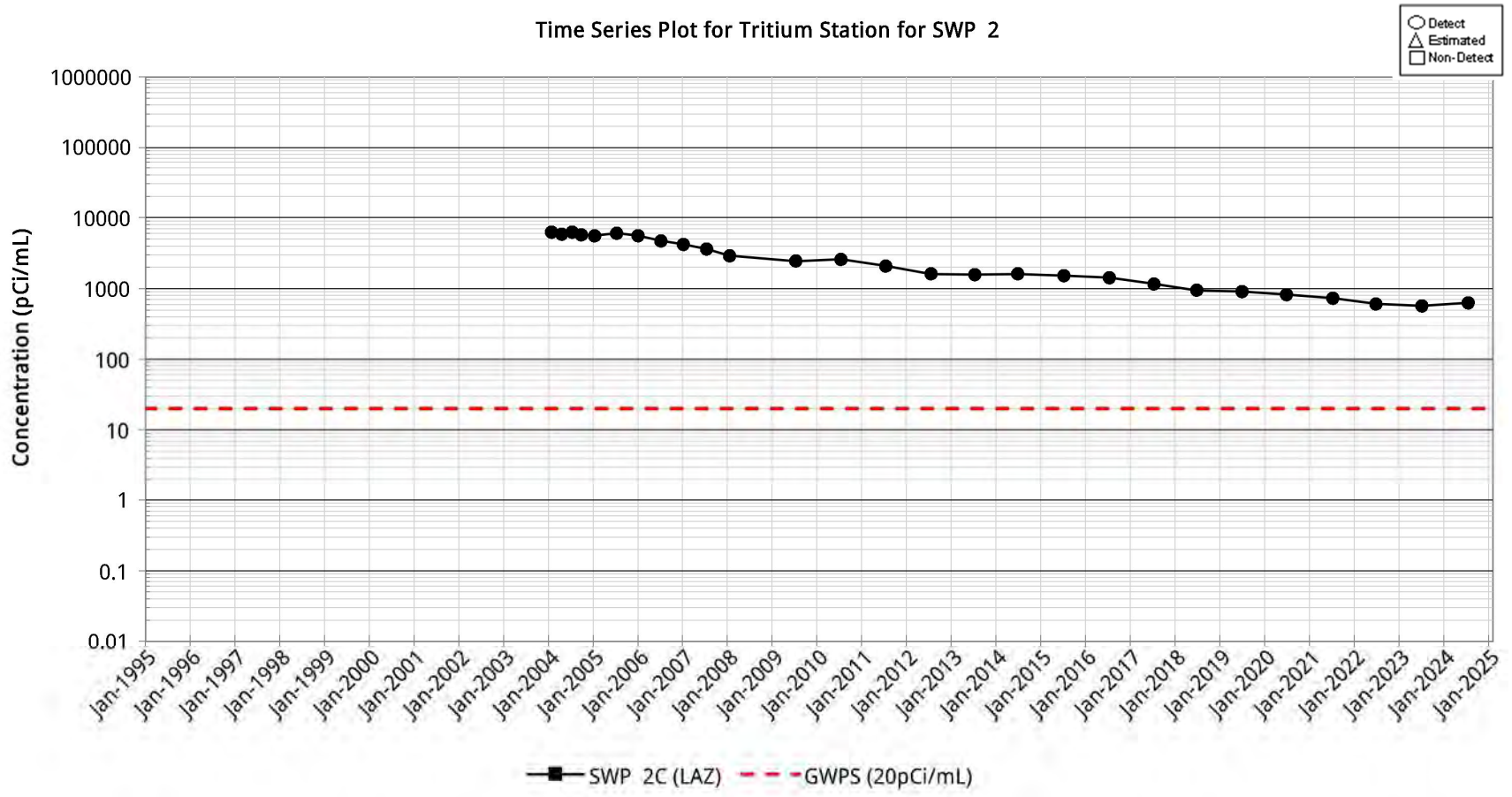

Time Series Plot for Tritium Station for NEP 4
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
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Jan-2022
Jan-2023
Jan-2024
Jan-2025
NEP 4D (LAZ)
GWPS (20pCi/mL)

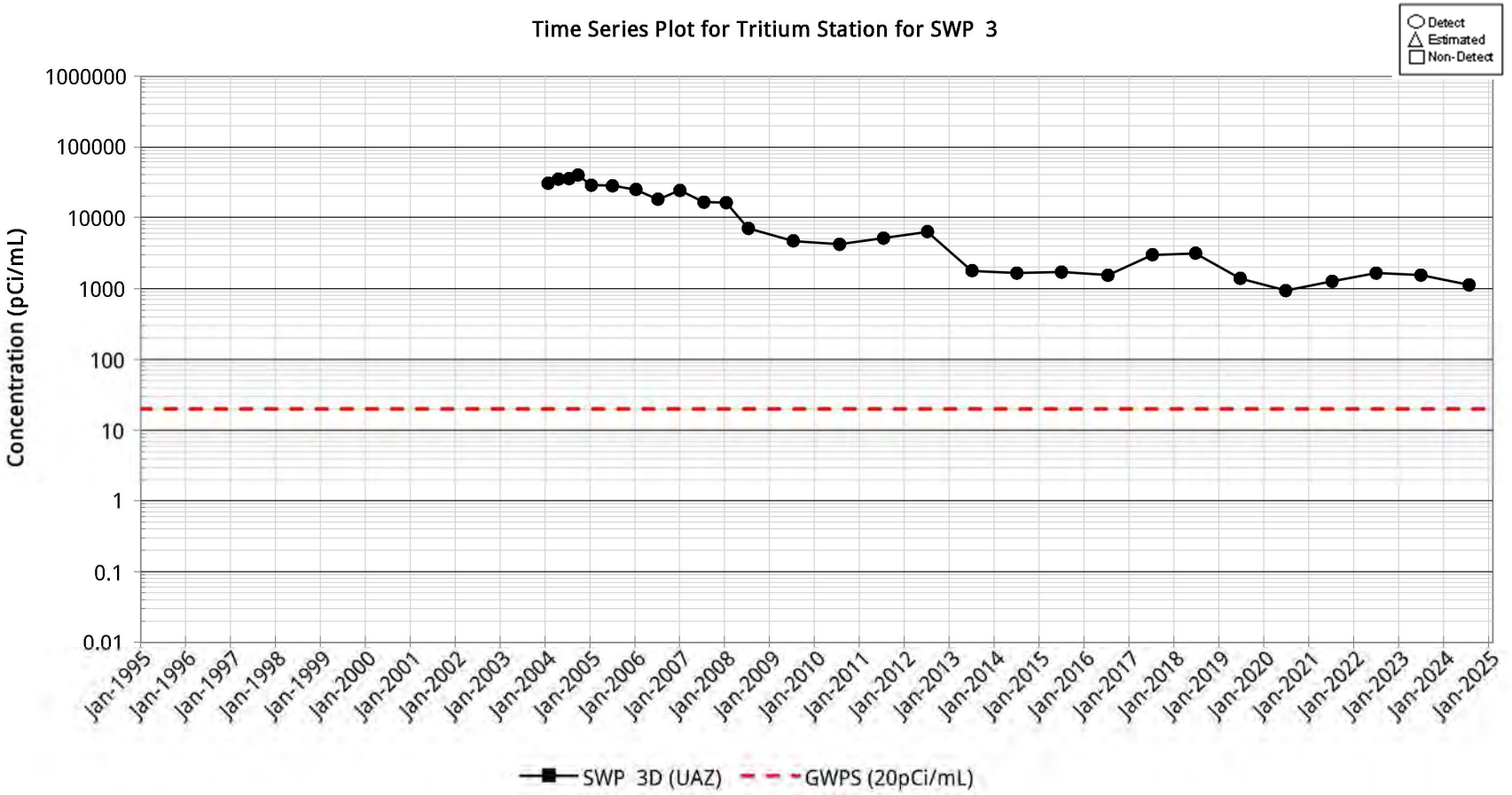

Time Series Plot for Tritium Station for NWP101
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
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Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
NWP101D (UAZ)
GWPS (20pCi/mL)

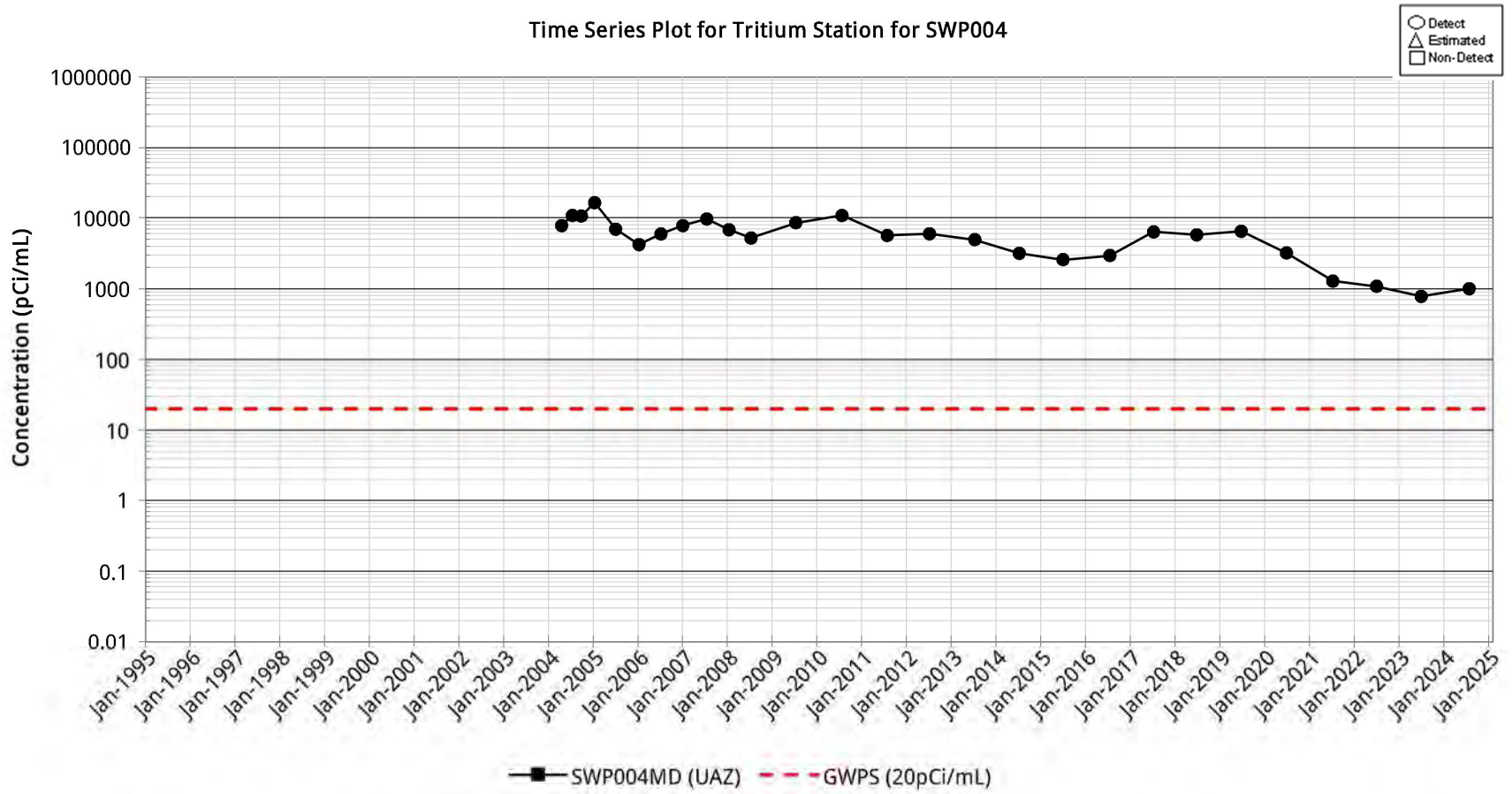

Time Series Plot for Tritium Station for NWP202
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
NWP202C (LAZ)
GWPS (20pCi/mL)


Time Series Plot for Tritium Station for NWP302
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
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Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
NWP302A (GAU)
GWPS (20pCi/mL)


Time Series Plot for Tritium Station for SWP 1
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
SWP 1C (LAZ)
GWPS (20pCi/mL)


Time Series Plot for Tritium Station for SWP 2
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
SWP 2C (LAZ)
GWPS (20pCi/mL)


Time Series Plot for Tritium Station for SWP 3
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
SWP 3D (UAZ)
GWPS (20pCi/mL)


Time Series Plot for Tritium Station for SWP004
Detect
Estimated
Non-Detect
Concentration (pCi/mL)
1000000
100000
10000
1000
100
10
1
0.1
0.01
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
Jan-2025
SWP004MD (UAZ)
GWPS (20pCi/mL)

APPENDIX F

F-AREA AND H-AREA HAZARDOUS WASTE MANAGEMENT FACILITIES STATISTICAL EVALUATION

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To statistically assess the impact of the barrier walls and base injection, a simple hypothesis test was performed on water level (F- and H-Areas) and pH (F-Area only) data from select wells. To assess water level changes across the barriers, gradients were calculated for select well pairs as shown in Figures 1 and 2. Figure 3 shows the individual wells selected for assessment of pH changes. A brief summary of the statistical analysis follows.

For purposes of these tests, it was assumed that the before/after cutoffs were 2/1/2004 (F-Base injection), 8/1/2004 (F-Barrier), and 9/1/2004 (H-Barrier). The data was averaged by month. The two-tailed hypothesis test used a null hypothesis that the difference between the means (before/after) was zero. A t-statistic was used at a confidence of 95%.

A t-test statistic was calculated using:

$$t = \frac{\bar{x}_b - \bar{x}_a}{\sqrt{s_t^2\left(\frac{1}{n_b} + \frac{1}{n_a}\right)}}$$

where

$$s_t^2 = \frac{(n_b - 1)s_b^2 + (n_a - 1)s_a^2}{n_b + n_a - 2}$$

and $\bar{x}_b$, s_b, and n_b refer to the sample mean, standard deviation, and number (data count) for the *before* dataset, and $\bar{x}_a$, s_a, and n_a refer to the sample mean, standard deviation, and number (data count) for the *after* dataset. At a α=95% confidence level (two-tailed), the test rejects the null hypothesis if either $t > t_{\alpha/2}$ or $t < -t_{\alpha/2}$.

The null hypothesis for the water level gradient statistical test was that the difference between the mean water level gradients for each well pair before and after the installation of the barrier was zero. The null hypothesis for the pH statistical tests was that the difference in well average pH before and after the base injection was zero.

The results of the statistical tests are given in Tables 1 through 3, and Figures 4 through 6. The results summaries indicate: when insufficient data is available for the test, when there is no statistical difference, and when there is a statistical difference.

There are many points within the F Area pH and water level gradient data where there is not enough data to make the statistical test. This is often times a function of the relatively short period of time that the monitoring points have been available for data collection. Under these circumstances it is expected that statistical differences will become more widespread, especially for the water level gradient analyses. The pH differences are a location specific and chemical buffering issue. It maybe that the best locations for monitoring pH change during the base injection TA were not monitored, that more base was required, or that additional time is needed to eventually see changes at the down-gradient locations. Also the down-gradient path of the injected base in several areas was somewhat different than initially expected.

The water level gradient statistical evaluation for the H Area shows three well pairs that have statistical differences in gradient even though the barrier has been in place for a relatively short period of time. There are three well pairs with no statistical difference. It is thought that statistical differences will eventually become apparent for two of the pairs, but not the HSB147D to HSB138D pairs (located outside of the barrier system).

Table 1. F-Area pH Statistical Test Results Summary

Not enough data to test.	No statistically significant indication that the before/after means are different.	Statistically significant indication that the before/after means are different.
FB I13D, FB I14D, FB I16D, FEX 1, FEX 2, FEX 3, FEX 5, FEX 6, FEX 7, FOB 1D, FOB 13D, FOB 14D, FOB 16D, FPZ 2A, FPZ 5A, FPZ 5B, FPZ 6A, FPZ 6B, FPZ 7A, FPZ 7B, FSB 106D, FSB 112D, FSB 112DR, FSB 124D, FSB 125D, FSB 125DR, FSB 126D, FSB 127D, FSB 128D, FSB 129D, FSB 130D, FSB 131D, FSB 132D, FSB 133D, FSB 134D, FSB 135D, FSB 136D, FSB 137D, FSB 138D, FSP 2A, FSP 2B, FSP 47A, FSP 12A, FSP 204A, FSP 226A, FSP 249A, FSP 249B	FEX 4, FSB 78, FSB 110D, FSB 117D, FSB 121DR, FSB 122D	FB I15D, FB I17D, FSB 79, FSB 104D, FSB 118D

Table 2. F-Area Water Level Gradient Statistical Test Results Summary

Not enough data to test.	No statistically significant indication that the before/after means are different.	Statistically significant indication that the before/after means are different.
FIB 8 to FBI 15D FIT 5 to FSB 135D FIT 5 to FSB 136D FOB 2D to FOB 14D	FSB 110D to FS B79, FSB 112DR to FSB 136D	FSB 126D to FSB 79

Table 3. H-Area Water Level Gradient Statistical Test Results Summary

Not enough data to test.	No statistically significant indication that the before/after means are different.	Statistically significant indication that the before/after means are different.
--	HSB 153D to HSB 68DR, HSB 66D to HSB 69, HSB 147D to HSB 138D	HSB 154D to HSB 115D, HSB 153D to HSB 108D, HSB 112D to HSB 69

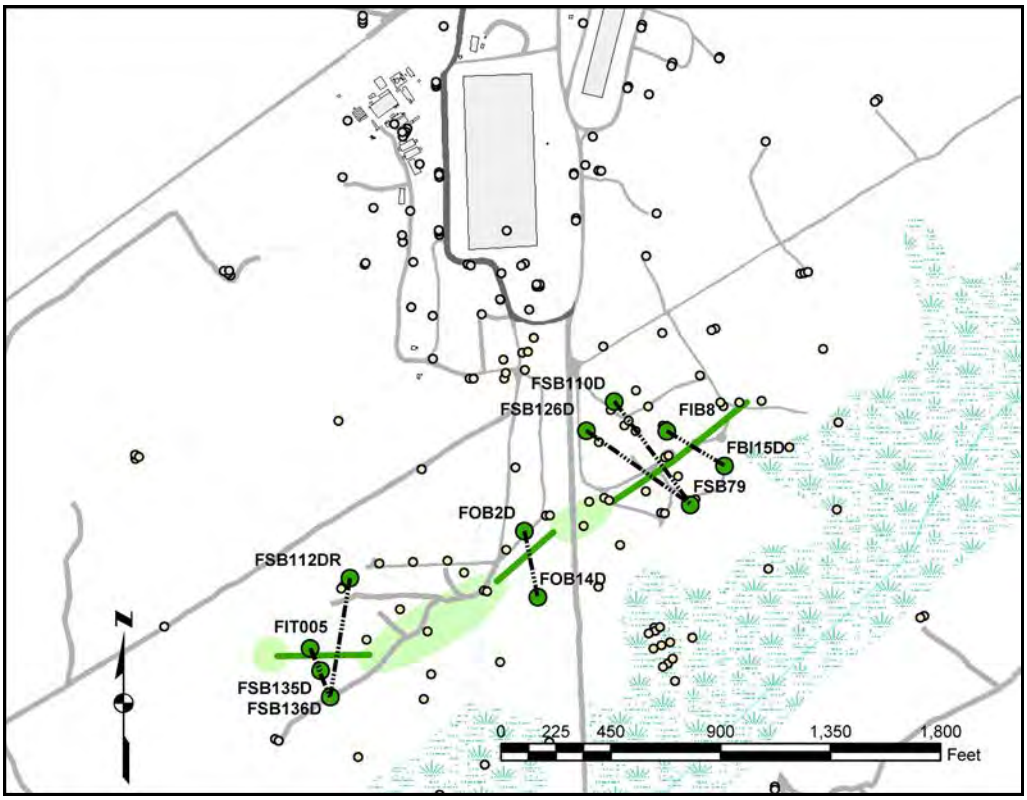


Figure 1. F-Area Well Pairs used for Statistical Analysis of Gradient

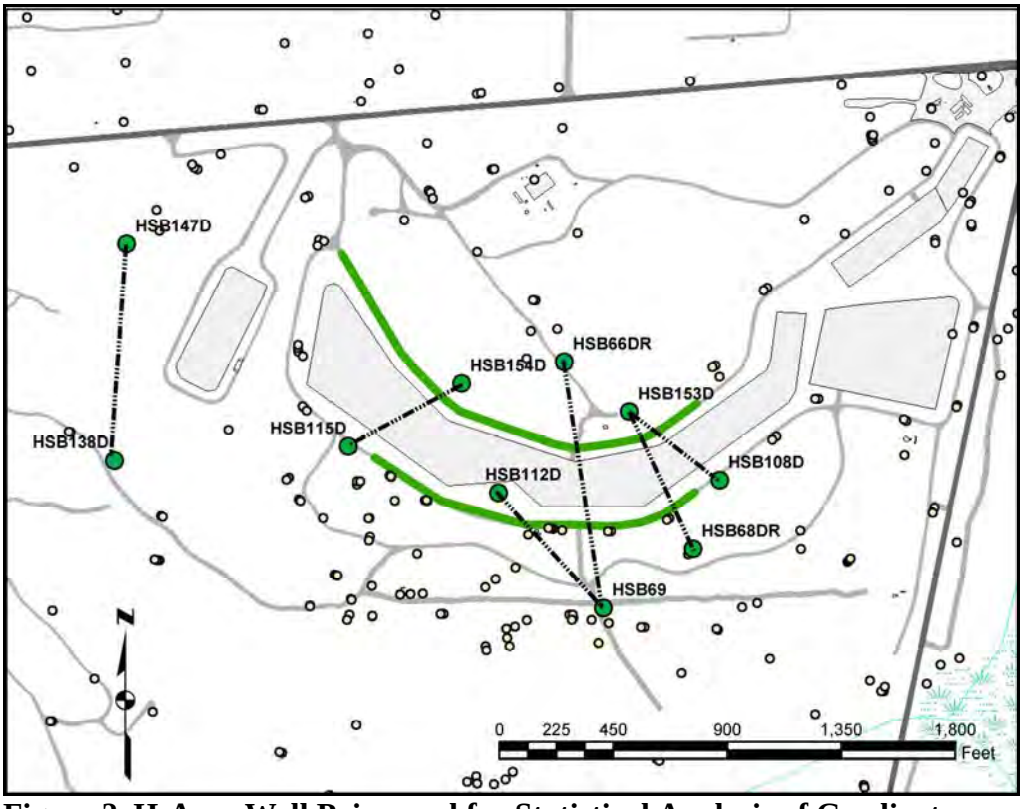


Figure 2. H-Area Well Pairs used for Statistical Analysis of Gradient

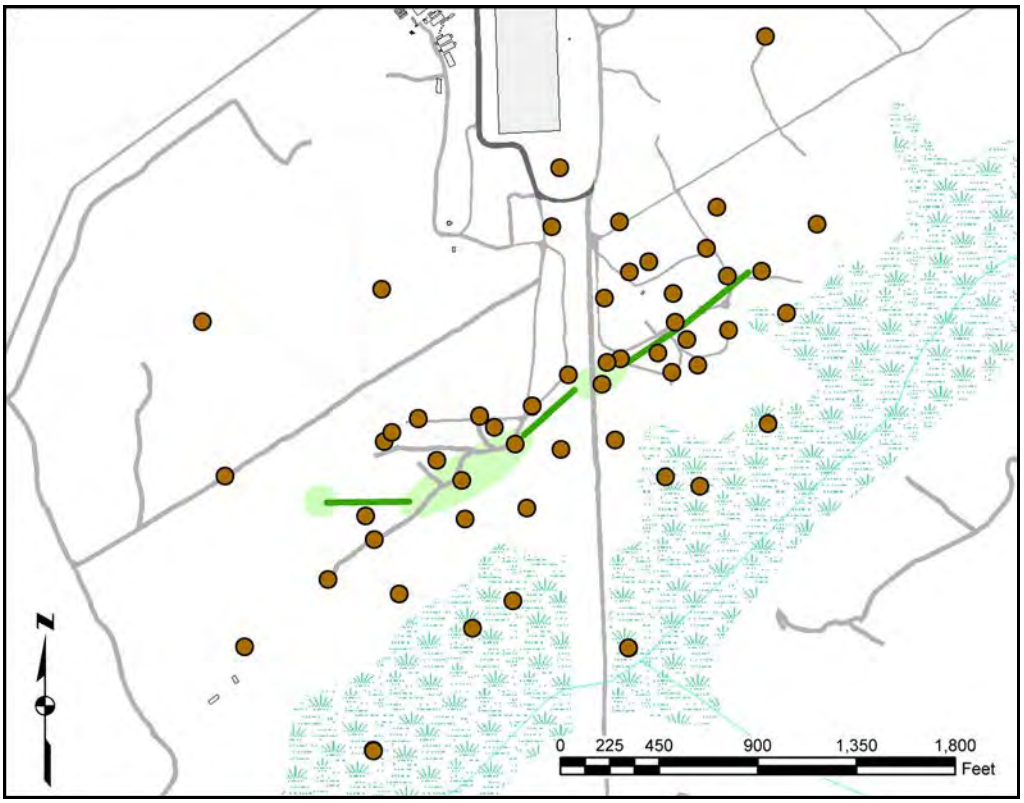


Figure 3. F-Area Wells used for Statistical Analysis of pH

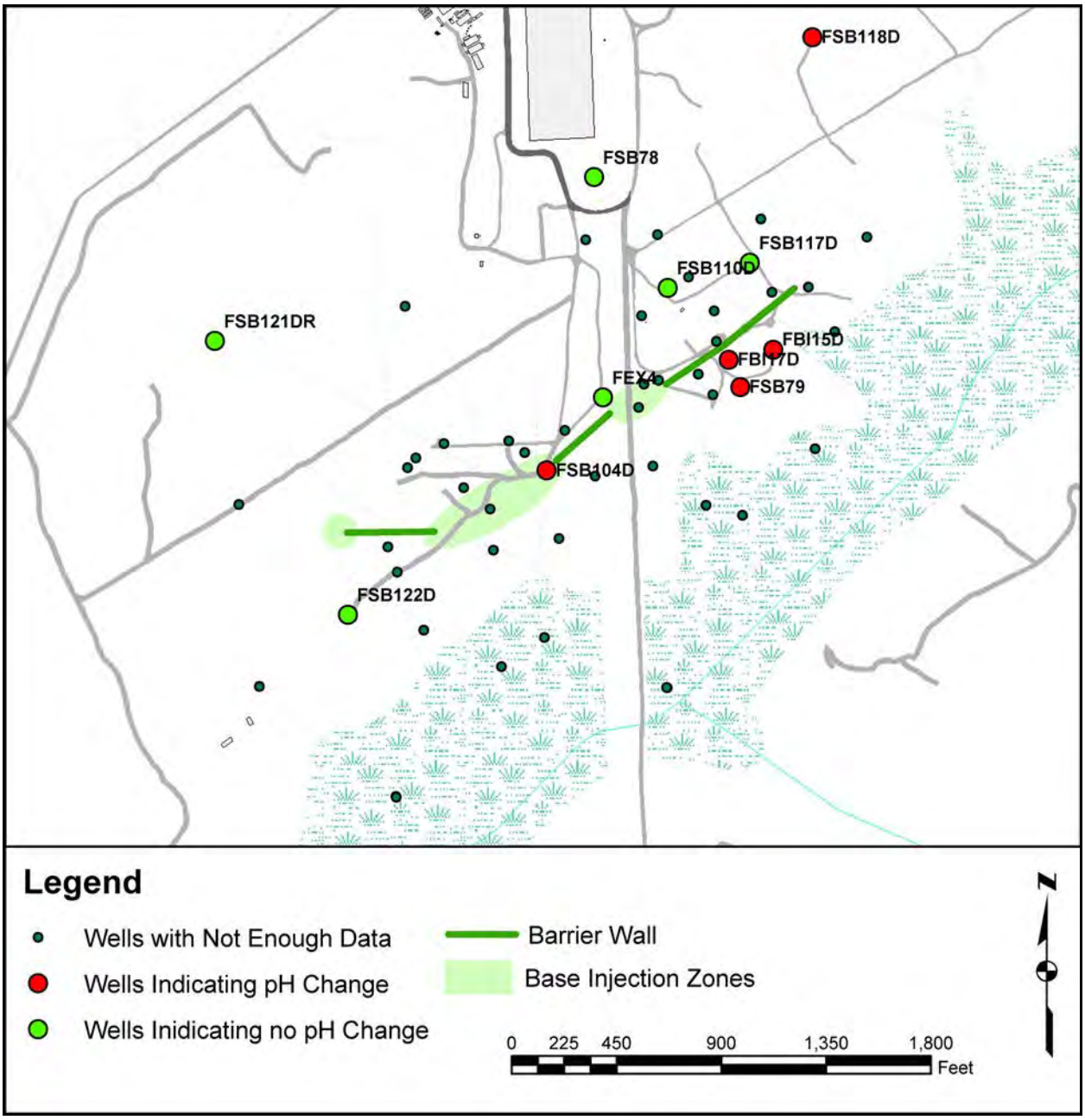


Figure 4. Statistical Analysis of pH Results

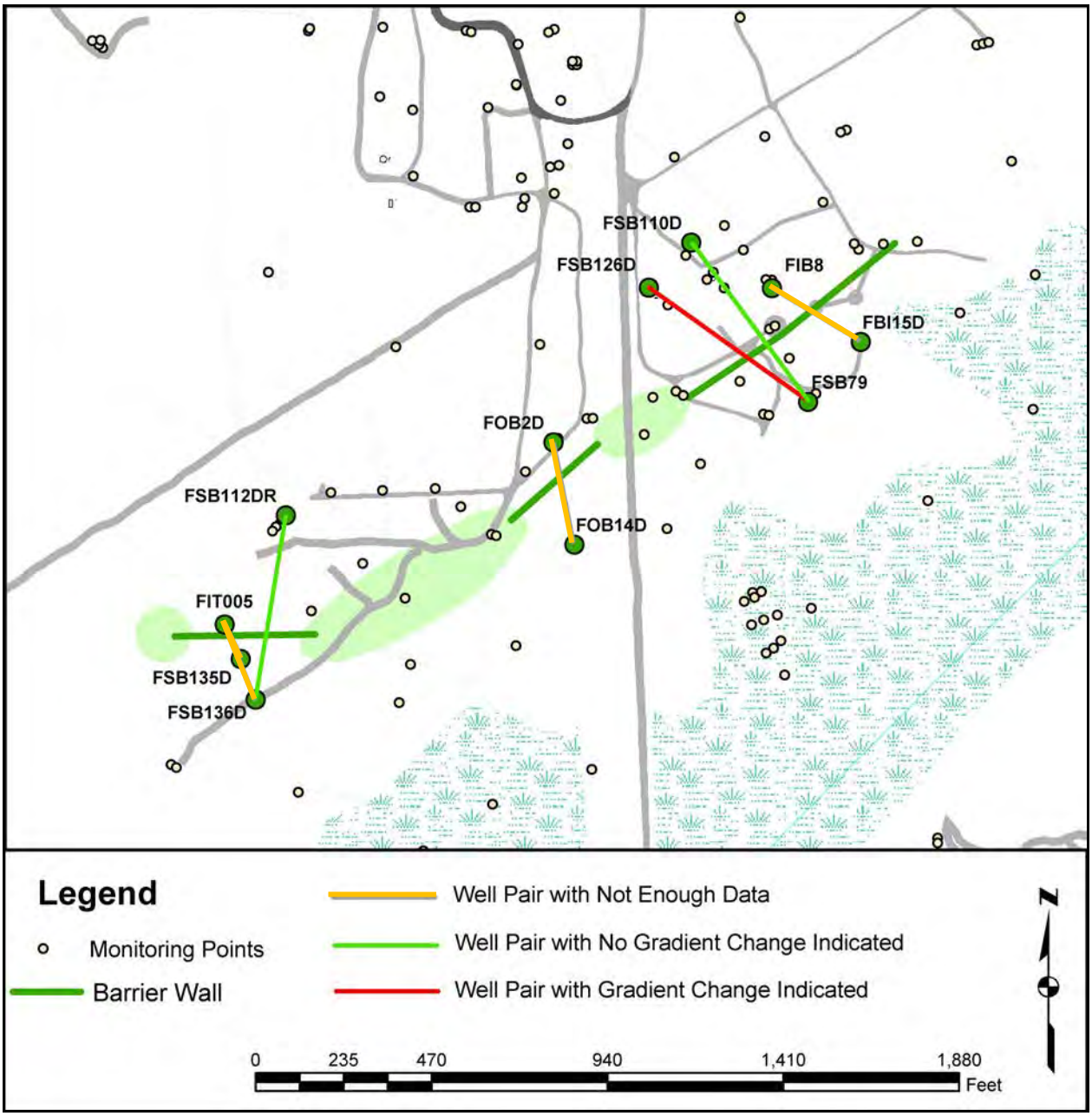


Figure 5. Statistical Analysis of F-Area Water Level Gradients Results

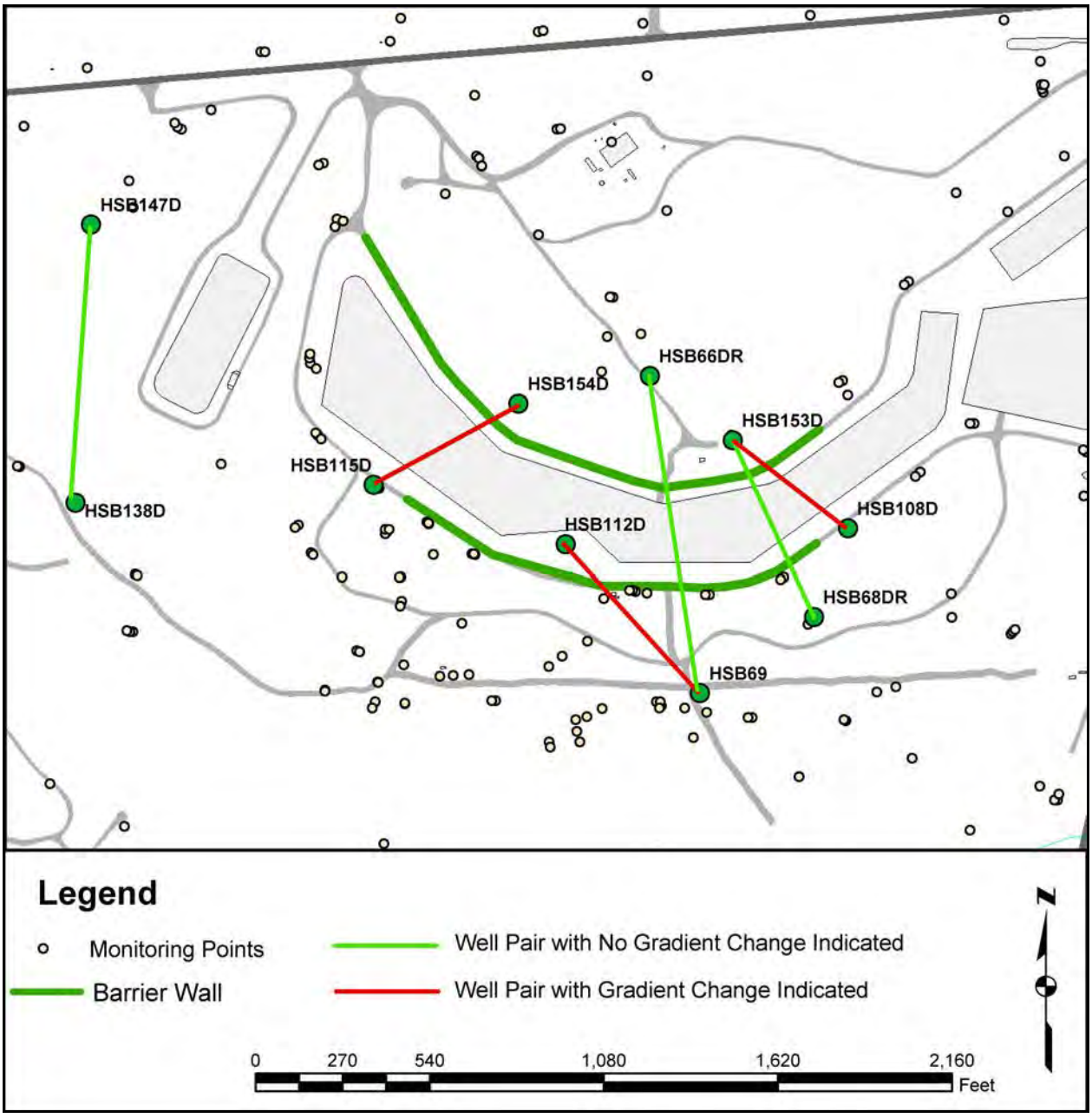


Figure 6. Statistical Analysis of H-Area Water Level Gradients Results

APPENDIX G

MIXED WASTE MANAGEMENT FACILITY

ESTIMATING EVAPO-TRANSPIRATION LOSSES FOR TRITIUM AT THE MWMF: 2024 ANNUAL DATA

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Key Words: Tritium
Phytoremediation
Old Rad Waste Burial Ground (ORWBG)
Mixed-Waste Management Facility (MWMF)
Evapotranspiration (ET)

Estimating Evapotranspiration Losses for Tritium at the MWMF: 2024 End of Year Summary Report

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SUMMARY

A series of tritium mass balance calculations were conducted in support of the Mixed Waste Management Facility (MWMF) to estimate the efficiency of the irrigation system based on soil cores that were collected in May and November of 2024. Results generated using the Cornell 1D (C1D) model for predicting irrigation water uptake efficiency are also provided for comparison. Prior to 2003, monitoring data indicated that tritium leaching was largely restricted to the instrumented sampling depth of 3 meters. Starting in 2003, an effort was made to account for tritium movement below the soil monitoring zone based on water balance calculations for each month of operation that considered irrigation rate, precipitation, and estimated evapotranspiration (ET).

When leaching below the rooting zone was neglected in the tritium mass balance calculations based on soil core data, the overall average ET efficiency across all plots was estimated to be 99.8 ± 0.23 and 99.6 ± 0.37 SD% (mean ± standard deviation) in May and November of 2024, respectively. When tritium leaching below the root zone was considered with the soil core data, the overall average ET efficiency for all plots was estimated to be 87.5 ± 11.9 and 87.4 ± 11.84 % for May and November, respectively, based on soil core data. The estimated ET efficiency for individual irrigation plots ranged from 54.4 to 95.9 % for May 2024, and from 54.4 to 95.5 % for November 2024. The lowest ET efficiency estimate was observed in Plot 48 (WEA) during both sampling periods. All other plots had ET efficiencies greater than 80%. Monthly ET efficiency estimates derived from the C1D model for December 2023 through December 2024 ranged from 66.9 to 88.8 % between plots, with lower efficiencies consistently observed for the WEA plots. The average annual C1D ET efficiency was 86.7 ± 1.2% for the original plots, 77.4 ± 3.3% for the EEA plots, and 68.3 ± 0.8% for the WEA plots, resulting in an overall annual efficiency of 80.8 ± 7.3% for all 11 monitored plots. As noted above, the lower ET efficiencies generally reflect the lower vegetation/crop factors used in adjusting the potential evapotranspiration estimates to account for lower vegetation coverages within the two expansion areas.

INTRODUCTION

Beginning in 2001, a project at the Department of Energy's (DOE) Savannah River Site (SRS) has relied on irrigating forest plots to remediate groundwater contaminated with tritium (a radioactive isotope of hydrogen; ^{3}H) at an area known as the Mixed Waste Management Facility (MWMF). Tritiated water molecules (HTO) behave as any other water molecule in the environment. The premise of the MWMF phytoremediation project is to irrigate plots with a volume of HTO equivalent to the volume of water the trees can potentially uptake from the soil and transpire into the atmosphere (i.e. potential ET, calculated from local micrometeorological measurements and forest stand characteristics). The MWMF is currently comprised of 51 forest plots, varying in size from 0.43 to 2.28 ac (Appendix 1). These plots are delineated into three different zones according to their geographic location and time of establishment. Plots 1 through 30 are the original (ORG) plots that are comprised of mixed forest species that were in place prior to the development of the phytoremediation project. Plots 31 through 42 are the eastern expansion area (EEA) plots that are comprised of loblolly pine plantations established in 2010. Plots 43 through 51 are the western expansion area (WEA) plots that are comprised of loblolly pine plantations established in 2013.

Since the beginning of this project, the Savannah River Ecology Laboratory (SREL) has conducted a series of tritium mass balance calculations in support of MWMF to estimate the effectiveness of ET in volatilizing tritium associated with irrigation water applied to a series of forested plots. Such calculations require estimates of the amount of tritium applied to each of the irrigation plots, as well as the tritium concentration levels and moisture contents throughout the soil profile, without specifically considering the ET potential. An important assumption underlying such an approach is that significant amounts of tritium have not leached below the deepest soil monitoring depth (i.e., 3.0 m). Despite some evidence for leaching in a limited number of monitoring clusters that was attributed to leaks in the irrigation system and preferential flow resulting from various monitoring activities, soil data through December 2002 generally supported the assumption that very little of the applied tritium had leached below the maximum monitoring depth.

In 2003, significant tritium levels were observed in the deepest sampling depths for many of the instrumented monitoring clusters, indicative of leaching below the rooting zone. Therefore, a simple conceptual model was developed to account for tritium losses due to leaching. Time-domain reflectometry (TDR) data was used to estimate water storage and leaching from the top 3.0 m of the soil profile, and suction lysimeters and soil vapor samplers were used to collect soil pore water for tritium analysis. Tritium losses due to evaporation and tree transpiration (i.e., evapotranspiration; ET) were based on the Penman-Monteith (PM) method of calculating potential ET (PET), with "crop factors" used to account for differences in vegetation cover between the various plots (Riha and Rebel, 2003). When precipitation plus the applied irrigation water minus ET for a given sampling interval exceeded the residual water content in the soil profile, leaching below the 3.0 m depth was included in the calculations. The tritium concentration in the pore-water moving below the sampling zone was assumed to be the average tritium level observed at the deepest sampling depth for that sampling interval, i.e., the time between the two latest rounds of sampling. Monthly sampling of the soil lysimeters and vapor wells, and monitoring of the TDR

systems (i.e., soil moisture content at a given monitoring cluster) was suspended in December 2003.

Soil core sampling has provided empirical data for residual soil tritium, which is used to estimate ET efficiency from 11 different plots across all three zones (ORG = 6; EEA = 3; WEA = 2). Soil cores have been collected in ORG plots (4, 13, 16, 19, 22, & 27) since 2003; in EEA plots (31, 36, & 41) since 2011, and in WEA plots (45 & 48) since 2013. Soil cores consist of a single, randomly selected profile in each plot where a hand auger is used to remove soil to a 3.0 m depth. The sample collection process occurs each spring and fall, in 2024 the plots were sampled in May and November. After removal, soil cores are transported to the lab and analyzed for tritiated water (HTO) and water content to estimate residual tritium within the soil profile of each plot. As noted above, estimates of tritium leaching were based on a simplified water balance assessment that accounted for: precipitation, irrigation rate, tritium concentration in the irrigation water, the estimated water holding capacity of the soil profile within each plot, and ET estimates on a plot-by-plot basis for each month of the year. Details of the tritium mass balance estimates, including leaching estimates below the soil monitoring depth, are provided below.

In addition to the conceptual model described above, the Cornell one-dimensional bucket-type (C1D) model was developed to estimate HTO uptake based on plot-specific water balances and tritium application rates (Riha and Rebel, 2003). The C1D model was optimized using 30 years of climate data as well as soil physical characteristics (i.e., soil texture) specific to each plot, vegetation type, soil moisture content, and tritium concentrations from lysimeter and vapor well sampling. Starting in 2014, the C1D model was revised to include the WEA using a shallower rooting depth and lower vegetation/crop factors than values used for the more-developed forest canopy within the EEA and the original irrigation area.

Mass Balance Calculations for Applied Tritium

Cumulative irrigation volumes for each plot were estimated based on USFS-Savannah River application logs for each month of operation starting in May 2001 and continuing through December 2024. Application totals for 2024 are summarized in Appendix 2. For example, given the gallons applied each month and the area of a specific plot (e.g., May 2024 for plot 4, see Appendix 2A):

$$\frac{7{,}857 \text{ gallons}}{0.62 \text{ acres}} \times \frac{1 \text{ acre}}{4050 \text{ m}^2} \times \frac{3.78 \text{ L}}{\text{gallon}} = \frac{11.82 \text{ L}}{\text{m}^2}$$

Application depth in cm for unit plot area (i.e., cm^2) is then calculated as (Appendix 2C):

$$\frac{11.82 \text{ L}}{\text{m}^2} \times \frac{1 \text{ m}^2}{10{,}000 \text{ cm}^2} \times \frac{1000 \text{ cm}^3}{1 \text{ L}} = 1.18 \text{ cm}$$

The average tritium level for pond samples collected within the month (Appendix 2B; 526.78 pCi mL^{-1}) of interest is then used to estimate total tritium applied to a cm^2 of each plot (Appendix 2D):

$$1.182 \text{ cm applied} \times \frac{526.77 \text{ pCi}}{\text{mL}} = \frac{623.05 \text{ pCi}}{\text{cm}^2}$$

The cumulative amount of tritium applied is then determined by summing the above calculation for each month up to the point when the ET efficiency is being calculated (Table 1D).

Estimating Residual Soil Tritium Based on Soil Core Data

Residual soil tritium was calculated based on its concentration in soil cores sampled at depths down to 300 cm. The soil pore water was extracted for tritium analysis by sublimation (i.e., freeze drying). The resulting solution was analyzed for tritium by liquid scintillation with an estimated detection limit of 0.36 pCi mL^{-1} and a counting error below 2% for elevated tritium concentrations (LS 6500 Multi-Purpose Scintillation Counter, Beckman Coulter, Inc.).

To estimate total tritium in the soil profile, the gravimetric water content for each soil core sample [(gm water/(gm water + gm soil)] was converted to a volumetric basis (example data from the first sample depth of Plot 4, May 2024 data; Appendix 4):

$$100 \text{ g moist soil} - 7.6 \text{ g water} = 92.4 \text{ g dry soil}$$

The soil volume for a given sample is calculated using the soil bulk density, assumed to be 1.59 gm cm^{-3} for the sandy soils of the SRS (Looney et al., 1990).

$$92.4 \text{ g dry soil} \times \frac{1 \text{ cm}^3 \text{ soil}}{1.59 \text{ g dry soil}} = 58.11 \text{ cm}^3 \text{ soil}$$

Using the results from above, the volumetric water content for the specific sampling depth is then estimated as follows:

$$\theta = \frac{7.6 \text{ cm}^3 \text{ water}}{58.11 \text{ cm}^3 \text{ soil}} = 0.13$$

As an example, the values for Plot 4 derived from soil cores collected in May 2024 are given below, with all soil data summarized in Table 1. Further details on water content for all plots can be found in Appendix 4.

The tritium concentration ($pCi\ cm^{-3}$) is multiplied by the representative depth interval and the volumetric water content for each sample to provide an estimate of total tritium within a given soil volume.

$$\frac{27.49 \text{ pCi}}{\text{cm}^3} \times 30.48 \text{ cm} \times \frac{0.13 \text{ cm}^3 \text{ water}}{\text{cm}^3 \text{ soil}} = \frac{107.52 \text{ pCi}}{\text{cm}^2}$$

Note that the resulting units are the same as those for tritium applied to a unit plot area, cm^2. Therefore, for a given unit area of an irrigation plot, the amount of water with a given tritium concentration is equal to the depth span (cm) for the sample in question multiplied by the volumetric water content, θ. The same calculation is then completed for each representative sampling depth and the values are summed to estimate the total residual tritium in the profile as a function of area at that sampling location (Appendix 3C).

Table 1. Residual soil tritium for Plot 4 based on soil samples collected November 2024. The mid-year 2024 and year-end 2024 data for all plots are provided in Appendix 3B. Soil water content data are provided in Appendix 4.

Sample Depth	Depth Span (cm)	Tritium Level pCi/mL	Gravimetric Water Content (%)	Volumetric Water Content	Tritium Sum (pCi cm^{-2})
A	30.48	27.49	7.47	0.128	107.52
B	30.48	9.977	8.41	0.146	44.34
C	25.4	11.24	7.05	0.121	34.41
D	25.4	13.10	6.01	0.102	33.84
E	30.48	13.47	7.01	0.120	49.21
F	27.94	10.62	9.90	0.175	51.83
G	30.48	11.53	11.66	0.210	73.70
H	27.94	9.93	11.20	0.201	55.65
I	25.4	10.43	11.83	0.213	56.54
J	22.86	12.10	13.24	0.243	67.11
			Total Soil Tritium (pCi cm^{-2}) =		574.16

For the November 2024 soil core data, all the samples for a given plot were used to estimate the tritium content within the depth interval each sample represents. The results for all the depths in each profile were then summed to estimate total tritium in the profile to a full monitoring depth of up to 300 cm. An example of the residual tritium results for Plot 4 is given above, with the cumulative summary for all plots given in Appendix 3.

Evapotranspiration Efficiency: No Leaching

If leaching is insignificant, the total residual tritium within Plot 4 for May 2024 can now be calculated by (Appendix 3; Plot 4):

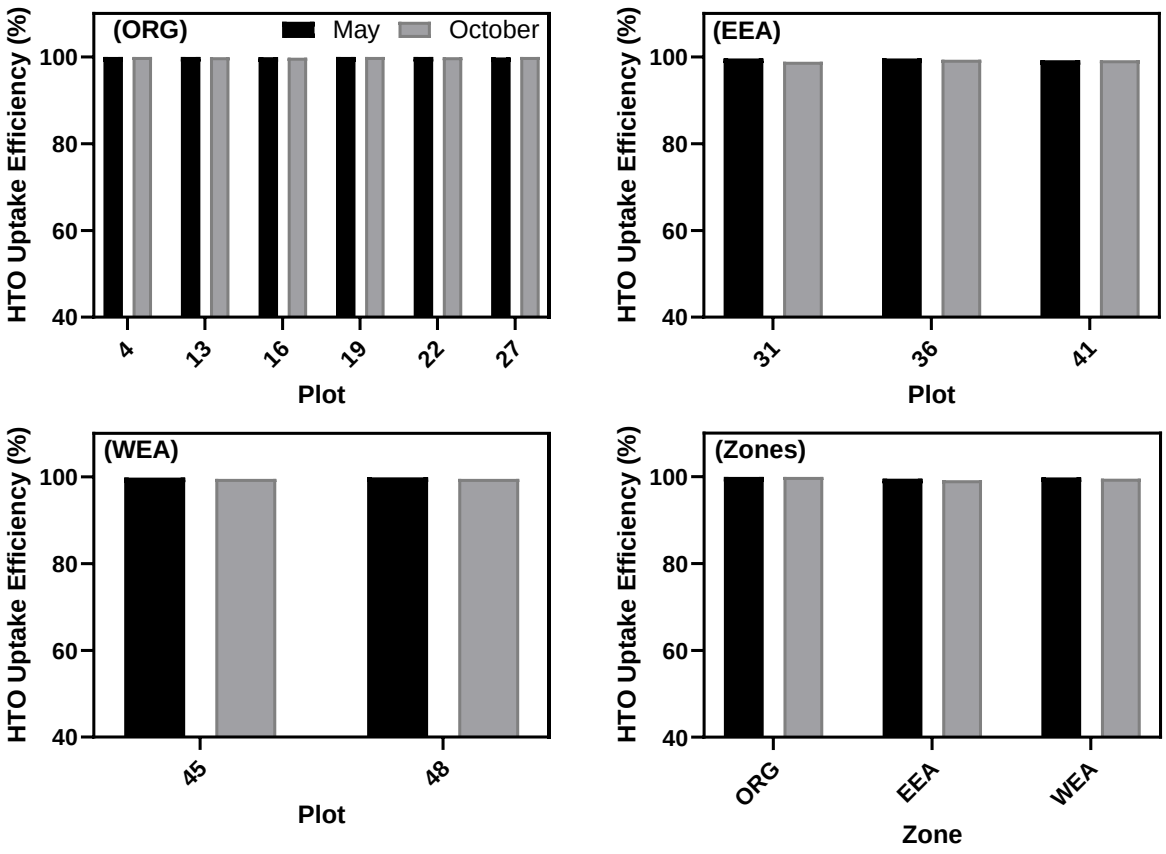
$$\frac{5.15 \times 10^{6}\ \text{pCi cm}^{-2}}{5.74 \times 10^{2}\ \text{pCi cm}^{-2}} = 0.0001\ \times 100 = 0.01\ \%$$

The tritium evapotranspiration efficiency for Plot 4 through May 2024 is then defined as total applied minus residual:

$$100\% - 0.01\% = 98.9\%$$

This approach yields unrealistically high efficiency rates that increasingly trend toward 100% with time because of the failure to account for tritium leaching below the root zone when precipitation plus irrigation exceeds the ET and the soil moisture storage capacity for a given plot. This can be seen in Figure 1.

Figure 1. Efficiency rates when leaching is not considered. These results tend to be unrealistically high. Plots 4 through 27 are in ORG, 31 through 41 are in EEA, 45 and 48 are in the WEA.



Water Balance Calculations

A simple water balance approach was used to estimate tritium leaching within the irrigation plots. Environmental data used in the water balance calculations is provided in Table 2. The potential ET is then adjusted using an empirical vegetation/crop factor to adjust for vegetation conditions. For the WEA, lower vegetation factors were used for the water balance calculations to reflect the immature vegetation within the newly planted irrigation plots.

Table 2. Precipitation data for the MWMF and PET estimates derived from the Priestly-Taylor method (cm).

Month	Precipitation	PET	ORG/EEA	WEA
	cm	cm	ET-CF*	ET-CF**
Jan. 2024	6.6	4.0	3.6	2.4
Feb.	9.4	5.7	5.2	3.4
March	14.1	9.7	8.8	5.8
April	4.8	15.6	14.0	10.9
May	12.1	19.6	17.6	13.7
June	3.3	23.8	21.5	16.7
July	18.5	25.4	22.9	17.8
Aug.	25.9	21.5	19.4	15.1
Sep.	17.7	13.8	12.4	9.7
Oct.	0.1	12.1	10.9	7.3
Nov.	22.3	5.6	5.0	3.3
Dec.	6.8	3.7	3.4	2.2

*PET multiplied by a crop factor of 0.9
**PET multiplied by a crop factor of 0.7 in Summer and 0.6 in Winter

Prior to 2004 (Seaman et al., 2004), the water balance for each sampling interval was calculated as follows:

$$\text{Moisture balance (cm)} = \text{soil moisture } t_i + \text{irrig.} + \text{precip.} - \text{ET} - \text{soil moisture } t_f$$

The initial (t_i) and final (t_f) moisture content values were based on TDR data for the initial and subsequent monitoring dates, respectively. Tritium losses due to ET were based on the average monthly estimates using the Priestly-Taylor (PT) and Penman-Monteith (PM) methods, as calculated by the SRFS, assuming a crop factor of 0.90 for the original 27 irrigation plots (Riha and Rebel, 2003). For example, a positive value is indicative of leaching, while a negative value means uptake and evaporation exceeded water inputs.

$$52.18 \text{ cm} + 2.29 \text{ cm} + 18.61 \text{ cm} - 3.06 \text{ cm} - 63.22 \text{ cm} = 6.8 \text{ cm}$$

In the current example, 6.8 cm of water leached below the 3.0 m sampling profile between two given monitoring intervals. These are legacy equations using previous numbers for reference. The amount of tritium leached below the profile for that monitoring period was then calculated as the

leaching depth times the average pore-water tritium concentration within soil samples from the deepest sampling depth for a given plot.

$$6.8\ \text{cm} \times \frac{1607\ \text{pCi}}{\text{mL}} = \frac{1.09 \times 10^4\ \text{pCi}}{\text{cm}^2}$$

Starting in 2004, this approach could no longer be used because TDR measurements were not available to estimate initial and final moisture contents within the soil profile. One simple approach would be to use the gravimetric soil moisture data from soil cores collected at the beginning and end of a given monitoring period to represent the initial and final moisture contents, respectively, with the cumulative precipitation, irrigation volumes and ET estimates for the intermediate monitoring period. Although the approach seems reasonable, it fails to account for the episodic nature of precipitation events and seasonal variations in ET. In this simplified approach, any potential leaching can be offset by high ET rates at some point during the monitoring interval, with typically wetter months offset by the high ET rates of the summer.

As an alternative, monthly water balances were calculated using an estimated soil pedon field capacity (FC) based on an idealized soil typical of the irrigation site (Riha and Rebel, 2003). In the current context, FC is defined as the total amount of moisture that can be retained against gravity within the upper 3 meters of the soil profile, i.e., 62.8 cm of water, and therefore assumed to be subject to continued evapotranspiration. For this approach, the water balance equation is modified as:

$$\text{Moisture balance (cm)} = \text{soil moisture } t_i + \text{irrig.} + \text{precip.} - \text{ET} - \text{FC}$$

with each of the values representing monthly estimates rather than the cumulative values for the entire time span between soil sampling events, typically 5-7 months. Monthly values are used to account for the episodic nature of precipitation and irrigation events, and their impact on leaching.

The initial soil moisture content for each monitoring period was based on soil core data from May 2024 and November 2024, available in Appendix 4. As before, a positive moisture value is indicative of leaching for that month, and the initial soil moisture content (t_i) is then set at FC (i.e., 62.8 cm) for the subsequent month. If the monthly moisture balance (cm) is positive, the value is then multiplied by the average tritium concentration (pCi mL^{-1}) in the soil profile to estimate the amount of tritium having been leached (pCi cm^{-2}) for that month. A negative moisture balance result is indicative of the added storage capacity within the soil profile during drier months, and the moisture content for the next month is equivalent to the FC with the moisture deficit subtracted from it. Using this approach, storage capacity can accumulate for dry months when the FC and ET is not exceeded by precipitation plus irrigation. To some degree this approach still fails to fully account for the episodic nature of precipitation events, as moisture balance calculations are based on average monthly inputs. Furthermore, it fails to account for the reduction in water uptake by plants as the soil gets increasingly drier.

Leaching estimates for each plot for January 2024 through December 2024 are summarized in Appendix 5. For 2024, leaching occurred in all plots during the months of January through March. Additionally, the Western Expansion Area experienced leaching during the months of September, November, and December.

Evapotranspiration Efficiency: With Leaching

Tritium loss due to ET and leaching is then calculated as the ratio of residual soil tritium plus cumulative tritium lost through leaching divided by the total amount that has been applied to a given plot. Using May 2024 data for Plot 4 as an example (Appendix 5C):

$$\frac{5.74 \times 10^{2}\ \text{pCi cm}^{-2} + 4.89 \times 10^{5}\ \text{pCi cm}^{-2}}{5.15 \times 10^{6}\ \text{pCi cm}^{-2}} = \frac{6.45 \times 10^{5}\ \text{pCi cm}^{-2}}{5.15 \times 10^{6}\ \text{pCi cm}^{-2}}$$

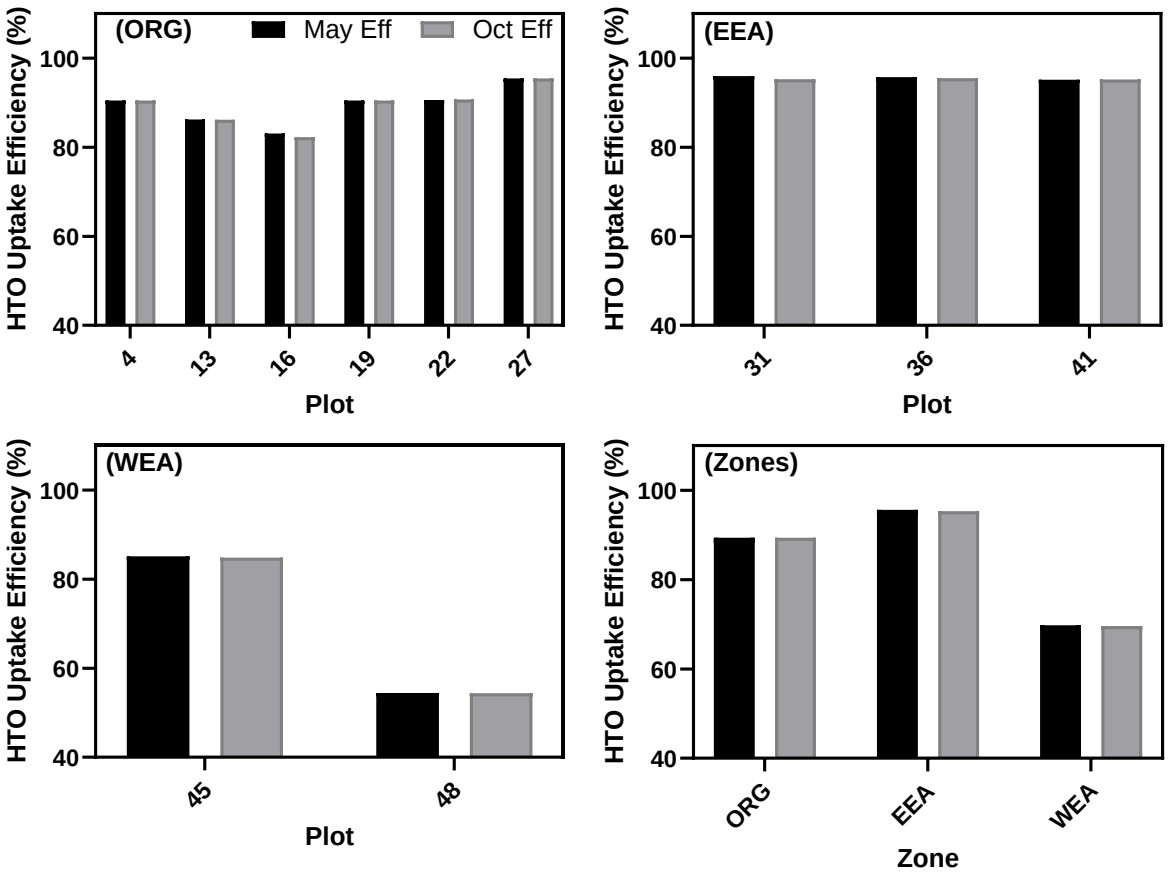
$$= 0.095 \times 100 = 9.5\%$$

Evapotranspiration efficiency is then defined as total applied minus leaching plus residual:

$$100\% - 9.5\% = 90.5\%$$

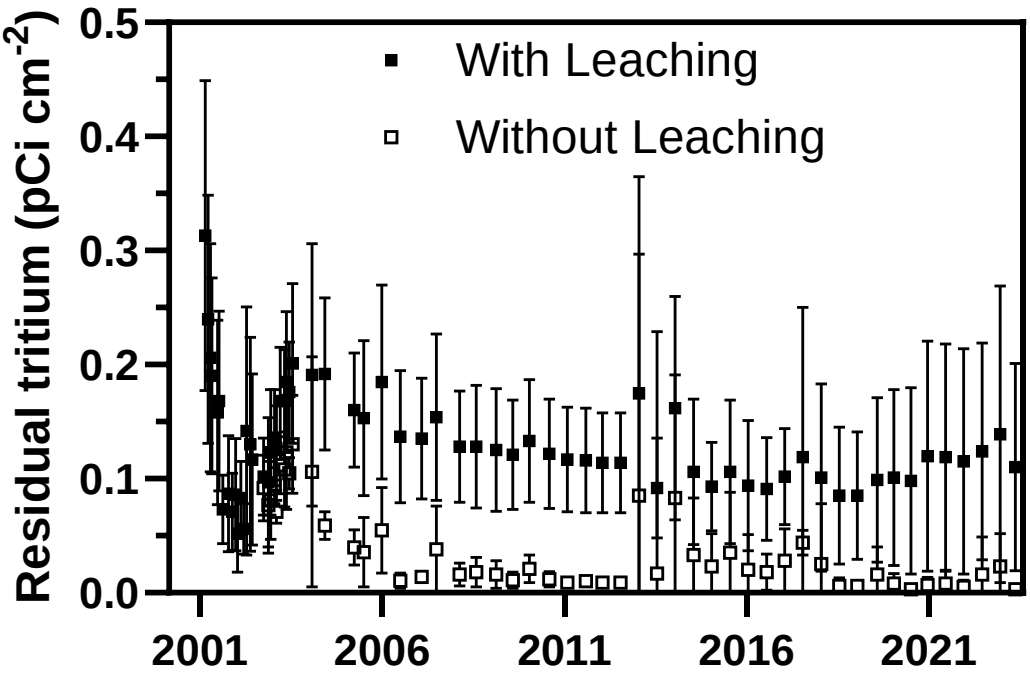
For Plot 4, 9.5% of the applied tritium remained in the soil profile or leached below the monitoring zone through May 2024, with approximately 90.5% presumably having been transpired (Appendix 5E). When leaching was neglected in the tritium mass balance, ET efficiencies at the MWMF through November 2024 were approximately 99.6% (Appendix 5E). However, when taking leaching into account, the estimated efficiency for November 2024 ranged from 54.5 to 95.5 %, with an average efficiency of approximately 87.4 ± 11.8 % (Appendix 5E). It is important to note that the lower efficiencies reflect data from the WEA (i.e., plots 45 and 48), where tritium uptake is presumably lower in the newly planted plots. The lowest estimated plot efficiency was observed for Plot 48 within the WEA, i.e., 54.37 % for November 2024 (see Appendix 5F). Results from 2024 can be seen in Figure 2.

Figure 2. Efficiency rates when the impacts of leaching are considered. Plots 4 through 27 are in ORG, 31 through 41 are in EEA, 45 and 48 are in the WEA.



General trends with respect to residual tritium estimates are presented in Figure 3 and Appendices 6 and 7. Starting in 2003, residual tritium estimates with and without considering leaching are provided. In general, the efficiency of the system initially increased as tritium became more thoroughly distributed within the soil profile and subject to plant uptake within the full rooting zone, reaching a plateau of approximately 95% during the drought of 2002. Throughout 2003, the efficiency decreased somewhat under more normal precipitation conditions. As expected, the difference between the two estimates has generally increased as the potential for leaching continues with extended operation and less of the total applied tritium remains in the root zone. The high efficiencies observed in the latter half of 2005 through 2007 are likely attributed to the suspension of irrigation from September 2005 through March 2006, decreasing the level of residual tritium in the soil cores, and generally drier conditions throughout 2007 that reduced tritium leaching within the soil profile. The high levels of efficiency experienced for 2010 through 2012 can generally be attributed to an extended drought period, which limited leaching below the sampled soil profile. The lower site-average efficiencies and higher standard deviations observed in more recent sampling events reflect the impact of site expansion to areas with limited, immature vegetation.

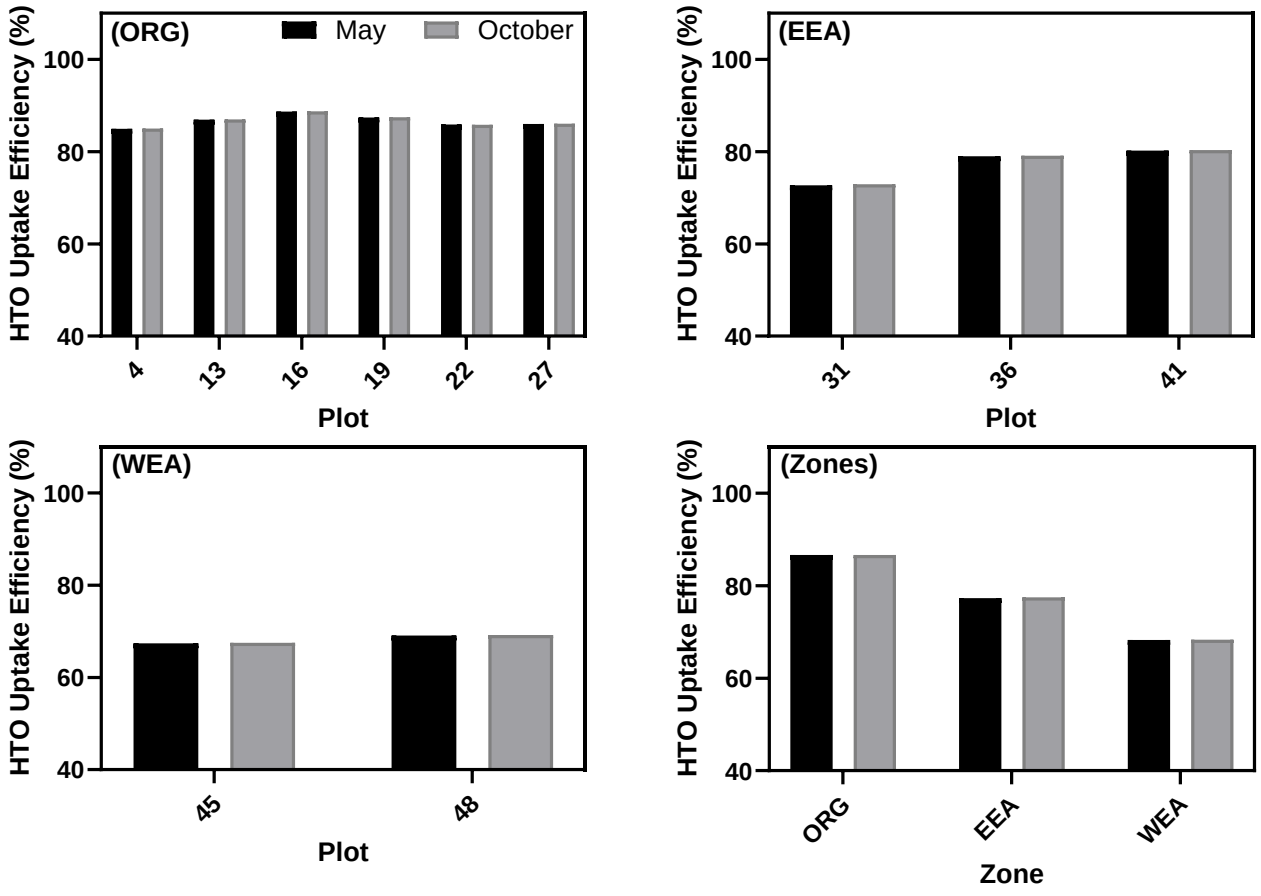
Figure 3. Residual soil tritium from May 2001 through December 2024, including estimates of tritium leached below the 3-meter sampling depth. Error bars reflect standard deviation of the means for the 11 sample irrigation plots, i.e., plots 4, 13, 16, 19, 22, 27, 31, 36, 41, 45, and 48.



Cornell 1D Model Results for 2024

For comparison, the Cornell 1D model was used to estimate the efficiency of tritium removed through ET at the site (Riha and Rebel, 2003). In 2014, the model was modified to include the WEA. Water budget estimates were modeled using weather data, irrigation volumes, and Penman-Monteith estimates for ET. These data were compiled for daily estimates of the water deficit/surplus. Tritium concentrations were sampled at the pond each month to estimate levels in applied irrigation water. The Cornell 1D model uses the water budget, tritium concentration, soil profile data specific to each plot, and a cropping factor to estimate tritium movement through the soil profile. The monthly averages of daily efficiency estimates of tritium removal through ET for the monitored plots are included in Appendix 8 and presented in Figure 4. The model derived efficiencies ranged from 67.38 to 88.7% between plots, with an overall average of 80.8 ± 7.3% for all plots. The yearly average efficiency was 86.6 ± 1.2 % for original plots, 77.4 ± 3.3% for the Eastern Expansion Area, and 68.3 ± 0.8% for the Western Expansion Area.

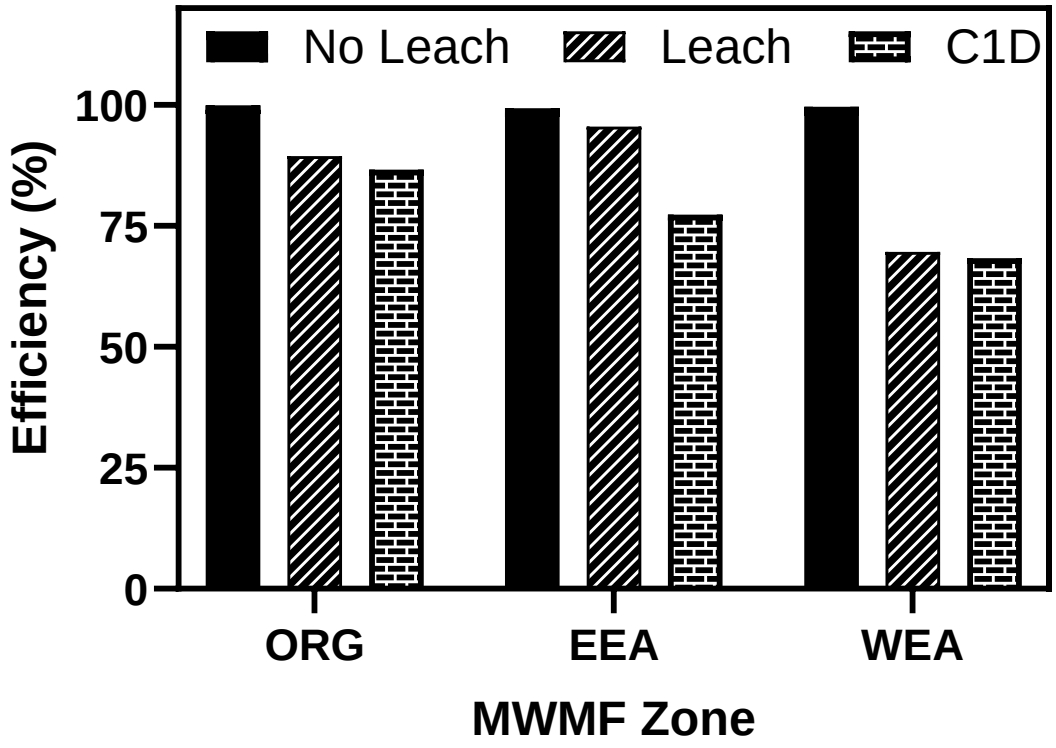
Figure 4. Average monthly ET efficiency estimates for 2024 derived from the C1D model for plots 4, 13, 16, 19, 22, 27, 31, 36, 41, 45, and 48.



Conclusion

HTO irrigation efficiency estimates based on residual soil tritium without consideration of leaching are unreasonably high, approaching an unrealistic 100% in all zones. The C1D modelling approach generally leads to lower estimates of HTO irrigation efficiency than estimates based on residual soil tritium, with or without leaching. HTO irrigation efficiency estimates based on residual soil tritium with consideration of leaching, and those from the C1D model were similar for the ORG and WEA but differed substantially for the EEA. The WEA exhibits the lowest HTO irrigation efficiency among the zones, especially plot 48, and this is consistent for estimation based on leaching and using the C1D model. The rank order of ORG and EEA HTO irrigation efficiencies differed between approaches based on residual soil tritium (EEA was highest) and C1D (ORG was highest) (Fig. 5).

Figure 5. A comparison of the estimated efficiencies in the ORG, EEA, and WEA resulting from each of the three models discussed.



Important Units and Conversion Factors

1 acre = 4,050 m^2
1 m^2 = 10,000 cm^2
1 gallon = 3.78 l
1 gallon = 3,780 cm^3
1 inch = 2.54 cm

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Appendix 1. Map of the Mixed Waste Management Facility (MWMF) plots, located at N2-W3 and N2-W2. Plot number (top) and plot acreage (below) are provided in yellow font. The original (ORG), mixed-forest plots (1-30) are located in the center and comprise 22.69 acres that were established in 2001. The eastern expansion area (EEA) of loblolly pine plantation plots (31-42) are located on the right and comprise 26.28 acres that were established in 2010. The western expansion area (WEA) of loblolly pine plantation plots (43-51) are located on the left and comprise 12.25 acres that were established in 2013. Yellow stars indicate plots where soil sampling occurs.



Appendix 2. Monthly irrigation for each plot in gallons of water (Table 2A), monthly tritium levels of MWMF pond water (Table 2B), monthly irrigation depth for each plot in cm (Table 2C), and monthly tritium applied (Table 2D) from January 2024 through December 2024.

Table 2A. Application Summary

Plot #	Acreage	Cummulative December 2023 (gallons)	Jan. 2024	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec. 2024	Sum (gallons)
4	0.62	4373791	2280	5966	1164	6936	**7857**	5820	8730	10476	6111	0	0	0	4429129
13	0.95	5341488	2938	7688	1500	8938	10125	7500	11250	13500	7875	0	0	0	5412800
16	0.63	3398351	1786	4674	912	5434	6156	4560	6840	8208	4788	0	0	0	3441709
19	0.8	4635251	2421	6335	1236	7365	8343	6180	9270	11124	6489	0	0	0	4694012
22	1.07	4570868	2515	6581	1284	12359	4494	6420	9630	11556	6741	0	0	0	4632446
27	0.75	3791617	1951	5105	996	9587	6723	4980	7470	8964	5229	0	0	0	3842621
31	2.04	3982118	0	0	8215	27280	41850	55800	27900	50220	58745	46035	11315	1550	4311028
36	2.08	4290508	0	0	8931	22242	45495	60660	30330	54594	63862	50045	12301	4213	4643179
41	1.96	3029758	0	0	6493	16170	33075	44100	22050	39690	46428	36383	8943	1225	3284313
45	1.97	3686375	0	1632	11016	32096	22032	40800	40800	14688	22984	65688	9928	5168	3953207
48	1.93	3090133	0	1344	9072	26432	18144	33600	33600	12096	18928	54096	8176	4256	3309877
		44190256												Total	45954320
Table 2B. Monthly Tritium Levels for MWMF Pond (pCi mL^{-1})			481.35	465.93	430.45	458.40	**526.77**	553.77	581.13	479.13	489.60	510.06	530.07	494.84	

Table 2C. Irrigation Depth (cm)

Plot #	Jan. 2024	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec. 2024	Sum (cm)
4	0.34	0.90	0.18	1.04	**1.18**	0.88	1.31	1.58	0.92	0.00	0.00	0.00	8.33
13	0.29	0.76	0.15	0.88	0.99	0.74	1.11	1.33	0.77	0.00	0.00	0.00	7.01
16	0.26	0.69	0.14	0.81	0.91	0.68	1.01	1.22	0.71	0.00	0.00	0.00	6.42
19	0.28	0.74	0.14	0.86	0.97	0.72	1.08	1.30	0.76	0.00	0.00	0.00	6.86
22	0.22	0.57	0.11	1.08	0.39	0.56	0.84	1.01	0.59	0.00	0.00	0.00	5.37
27	0.24	0.64	0.12	1.19	0.84	0.62	0.93	1.12	0.65	0.00	0.00	0.00	6.35
31	0.00	0.00	0.38	1.25	1.91	2.55	1.28	2.30	2.69	2.11	0.52	0.07	15.05
36	0.00	0.00	0.40	1.00	2.04	2.72	1.36	2.45	2.87	2.25	0.55	0.19	15.82
41	0.00	0.00	0.31	0.77	1.58	2.10	1.05	1.89	2.21	1.73	0.43	0.06	12.12
45	0.00	0.08	0.52	1.52	1.04	1.93	1.93	0.70	1.09	3.11	0.47	0.24	12.64
48	0.00	0.06	0.44	1.28	0.88	1.62	1.62	0.58	0.92	2.62	0.40	0.21	10.63

Table 2D. Monthly Tritium Applied for 2024 (pCi cm^{-2})

Plot #	Jan. 2024	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec. 2024	Sum (cm)
4	165	418	75	479	**623**	485	764	756	450	0	0	0	4216
13	139	352	63	403	524	408	642	635	379	0	0	0	3545
16	127	323	58	369	480	374	589	583	347	0	0	0	3250
19	136	344	62	394	513	399	628	622	371	0	0	0	3469
22	106	267	48	494	206	310	488	483	288	0	0	0	2691
27	117	296	53	547	441	343	540	534	319	0	0	0	3190
31	0	0	162	572	1009	1414	742	1101	1316	1074	274	35	7699
36	0	0	172	458	1075	1507	791	1174	1403	1145	293	94	8112
41	0	0	133	353	830	1163	610	906	1082	884	226	29	6215
45	0	36	225	697	550	1070	1123	333	533	1587	249	121	6526
48	0	30	189	586	462	900	944	280	448	1334	210	102	5486

Appendix 3. Cumulative tritium application totals by month from January 2024 through December 2024 (Table 3A) as well as residual soil tritium (Table 3B), residual tritium fraction without accounting for leaching (Table 3C), and tritium irrigation efficiency without accounting for leaching (Table 3D), all derived from soil cores collected in May and November 2024.

Table 3A. Cumulative tritium application totals

Plot #	Cumulative Through Fall 2023		Jan. 2024	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
4	5151602		5151767	5152186	5152261	5152740	**5153363**	5153848	5154612	5155367	5155818	5155818	5155818	5155818
13	4037947		4038086	4038438	4038501	4038904	4039428	4039836	4040478	4041114	4041492	4041492	4041492	4041492
16	3805314		3805441	3805764	3805822	3806191	3806672	3807046	3807635	3808217	3808564	3808564	3808564	3808564
19	4423392		4423528	4423872	4423934	4424328	4424841	4425240	4425869	4426491	4426861	4426861	4426861	4426861
22	3500205		3500310	3500578	3500626	3501120	3501327	3501637	3502125	3502608	3502896	3502896	3502896	3502896
27	3850153		3850270	3850566	3850619	3851166	3851607	3851950	3852490	3853025	3853343	3853343	3853343	3853343
31	349325		349325	349325	349487	350059	351068	352481	353223	354324	355640	356714	356989	357024
36	357778		357778	357778	357950	358408	359483	360990	361781	362955	364358	365503	365796	365889
41	264754		264754	264754	264887	265240	266069	267232	267843	268748	269831	270714	270940	270969
15	265358		265358	265394	265619	266316	266866	267936	269060	269393	269926	271513	271763	271884
48	230973		230973	231003	231192	231778	232240	233140	234084	234365	234813	236147	236357	236459

Table 3B. Residual Soil Tritium (pCi cm^{-2})

Plot #	Fall 2023		Jan. 2024	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
4	1268.09						**574.16**						997.47	
13	1623.15						1276.25						3001.70	
16	3756.28						2603.90						6837.32	
19	3394.13						286.33						863.19	
22	2391.24						5046.29						1405.58	
27	898.12						402.58						821.76	
31	2250.75						1232.75						3904.70	
36	1788.51						1169.77						2287.64	
41	597.95						2009.32						2050.05	
45	2148.06						514.08						1370.99	
48	2112.74						292.36						1101.09	

Table 3C. Residual tritium fraction without accounting for leaching (pCi cm-2)

Plot #	Fall 2023		Jan. 2024	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
4	0.00						**0.00**						0.00	
13	0.00						0.00						0.00	
16	0.00						0.00						0.00	
19	0.00						0.00						0.00	
22	0.00						0.00						0.00	
27	0.00						0.00						0.00	
31	0.01						0.00						0.01	
36	0.01						0.00						0.01	
41	0.00						0.01						0.01	
45	0.01						0.00						0.01	
48	0.01						0.00						0.00	

Table 3D. Efficiency without accounting for leaching (%)

Plot #	Fall 2023		Jan. 2024	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
4	99.98						**99.99**						99.98	
13	99.96						99.97						99.93	
16	99.90						99.93						99.82	
19	99.92						99.99						99.98	
22	99.93						99.86						99.96	
27	99.98						99.99						99.98	
31	99.36						99.65						98.91	
36	99.50						99.67						99.37	
41	99.77						99.24						99.24	
45	99.19	October 2023					99.81						99.50	
48	99.08	Efficiency %					99.87						99.53	
	Avg	**99.69**				Avg.	99.82					Avg.	99.65	
	Std Dev	0.34203356				Std Dev	0.23					Std Dev	0.37	

Appendix 4. Gravimetric water content, tritium levels, and volumetric soil moisture derived from soil samples collected in May 2024 (Table 4A), November 2024 (Table 4B).

Table 4A. May 2024 Soil Data

	Gravimetric Water Content (%)			Tritium (pCi mL^{-1})			Volumetric Soil Moisture		
	Depth (cm)			Depth (cm)			Depth (cm)		
Plot ID	100	200	300	100	200	300	100	200	300
4	**7.6**	7.6	12.0	16	12	11	0.132	0.132	0.217
13	17.5	15.0	11.8	12	20	22	0.338	0.280	0.213
16	5.7	7.8	10.2	130	30	46	0.115	0.161	0.217
19	5.8	11.1	12.5	2	4	8	0.099	0.201	0.228
22	9.0	14.6	15.4	140	52	67	0.157	0.272	0.289
27	5.9	12.0	13.6	12	8	7	0.101	0.217	0.251
31	10.4	13.4	15.2	16	25	18	0.185	0.245	0.286
36	8.4	8.2	10.3	18	8	41	0.146	0.143	0.183
41	11.3	11.1	11.2	16	20	62	0.203	0.198	0.201
45	6.0	10.9	10.4	13	6	14	0.101	0.194	0.185
48	6.5	4.4	10.0	9	4	11	0.110	0.074	0.177

Table 4B. November 2024 Soil Data

	Gravimetric Water Content (%)			Tritium (pCi mL^{-1})			Volumetric Soil Moisture		
	Depth (cm)			Depth (cm)			Depth (cm)		
Plot ID	100	200	300	100	200	300	100	200	300
4	8.7	11.6	9.4	7	15	35	0.153	0.210	0.165
13	7.3	8.0	13.2	7	14	88	0.125	0.139	0.242
16	5.9	9.5	12.0	15	29	234	0.100	0.168	0.218
19	6.7	11.4	13.8	7	5	25	0.114	0.205	0.255
22	9.9	16.5	18.1	7	14	23	0.179	0.315	0.352
27	13.8	9.6	9.1	41	10	27	0.256	0.170	0.158
31	12.9	17.1	20.5	22	55	36	0.239	0.327	0.416
36	10.9	16.5	15.8	24	27	36	0.198	0.302	0.298
41	9.6	16.3	21.8	21	32	25	0.171	0.311	0.443
45	6.4	12.4	11.5	20	22	28	0.110	0.227	0.206
48	4.9	9.4	13.2	11	26	21	0.083	0.168	0.244

Appendix 5. Monthly precipitation and soil water leaching in each plot (Table 5A), cumulative amount of water leached (Table 5B), amount of tritium leached plus residual soil tritium for May and November samples (Table 5C), total amount of applied tritium for May and November samples (Table 5D), residual soil tritium for May and November samples (Table 5E), and tritium irrigation efficiency for May and November samples (Table 5F).

Table 5A. Estimated Leaching Fraction (cm)

Plot #	Tritium Conc. 300 cm (pCi mL^{-1}) Dec. 2023	June 2024 (pCi mL^{-1})	Dec. 2024 (pCi mL^{-1})	Jan. 2024	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
4	29.96	11	35	3.28	5.17	5.54										
13	33.75	22	88	3.23	5.02	5.51										
16	158.57	46	234	3.20	4.96	5.50										
19	84.97	8	25	3.22	5.01	5.51										
22	58.20	67	23	3.16	4.84	5.48										
27	23.03	7	27	3.18	4.90	5.49										
31	39.17	18	36	2.94	4.27	5.74										
36	60.33	41	36	2.94	4.27	5.77										
41	11.06	62	25	2.94	4.27	5.68										
45	23.81	14	28	4.15	6.07	8.81						6.61		15.33	4.84	
48	43.01	11	21	4.15	6.06	8.72						5.30		14.76	4.80	
	Precipitation Levels (cm)			6.57	9.44	14.12	4.75	12.09	3.31	18.50	25.91	17.67	0.06	22.28	6.84	141.53

Table 5B. Cumulative Leaching (pCi cm^{-2})

Plot #	Total Tritium leached through Dec. 2023	Jan. 2024	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total through Dec. 2024
4	487989.84	98	155	166										488409
13	555773.40	109	170	186										556238
16	639438.33	508	787	872										641606
19	419496.42	274	426	468										420664
22	323008.75	184	282	319										323793
27	174898.46	73	113	126										175211
31	12385.36	115	167	225										12893
36	13346.67	177	258	348										14129
41	10745.53	33	47	63										10888
45	38784.92	99	145	210						157		365	115	39876
48	104775.39	178	260	375						228		635	207	106659

Table 5C. Leachate plus residual soil tritium (pCi cm-2)

Plot #	Soil Tritium Spring 2024	Total Spring (Soil + Leachate)	Soil Tritium Fall 2024	Total Fall (Soil + Leachate)
4	**574**	**488983**	997	489406
13	1276	557514	3002	559240
16	2604	644210	6837	648443
19	286	420950	863	421527
22	5046	328840	1406	325199
27	403	175614	822	176033
31	1233	14125	3905	16797
36	1170	15299	2288	16417
41	2009	12897	2050	12938
45	514	39752	1371	41247
48	292	105882	1101	107760

Table 5D. Total applied tritium (pCi cm-2)

Plot #	Spring 2024	Fall 2024
4	**5153363**	5155818
13	4039428	4041492
16	3806672	3808564
19	4424841	4426861
22	3501327	3502896
27	3851607	3853343
31	351068	356714
36	359483	365503
41	266069	270714
45	266866	271513
48	232240	236147

Table 5E. Residual Tritium (pCi cm-2)

Plot #	Residual Tritium	Residual Tritium
4	**0.09**	0.09
13	0.14	0.14
16	0.17	0.17
19	0.10	0.10
22	0.09	0.09
27	0.05	0.05
31	0.04	0.05
36	0.04	0.04
41	0.05	0.05
45	0.15	0.15
48	0.46	0.46

Table 5F. Efficiency (%)

Plot #	Residual Tritium	Residual Tritium
4	**90.51**	90.51
13	86.20	86.16
16	83.08	82.97
19	90.49	90.48
22	90.61	90.72
27	95.44	95.43
31	95.98	95.29
36	95.74	95.51
41	95.15	95.22
45	85.10	84.81
48	54.41	54.37
	Avg. **87.52**	**Avg.** **87.41**
	Std. Dev. **11.88**	**Std. Dev.** **11.84**
	Maximum **95.98**	**Maximum** **95.51**
	Minimum **54.41**	**Minimum** **54.37**

Appendix 6. Estimated residual soil tritium for 2001 through 2003.

Date	Vapor/TDR Data*	Corrected Vapor Data**	Lysimeter Data	Soil Cores
2001 Data				
26-Jul	0.313 (±0.136)		0.446	
24-Aug	0.204 (±0.109)			
17-Sep	0.206 (±0.100)			
1-Oct	0.190 (±0.086)	0.163		
27-Nov	0.158 (±0.081)			
7-Dec	0.168 (±0.079)			
2002 Data				
16-Jan	0.073 (±0.030)			
10-Feb				
13-March	0.087 (±0.051)			
19-April	0.071 (±0.034)			
23-May	0.086 (±0.049)			
12-June	0.052 (±0.034)			
17-July	0.083 (±0.032)			
1-Aug				0.047 (±0.015)[#]
14-Aug	0.056 (±0.022)			
11-Sep	0.142 (±0.109)			
17-Oct	0.130 (±0.094)			
9-Nov	0.117 (±0.075)			0.049 (±0.039)[##]

*residual moisture content based on TDR results

**suspect vapor data replaced with tritium levels from extracted soil cores.

[#]tritium data based on three cores collected to a depth of 4 meters and sectioned at ~ 15 cm intervals.

[##]tritium data based on soil samples collected from select specified depths (50, 150, 200, and 300 cm)

Appendix 7. Estimated residual soil tritium throughout the operation history of the MWMF for 2004 through 2024.

Date	Soil Core data, leaching not included	Soil Core data including leaching
June 2004	0.106 (±0.101)#	0.191 (±0.115)#
November 2004	0.059 (±0.012)#	0.192 (±0.067)#
August 2005	0.040 (±0.016)#	0.158 (±0.152)#
November 2005	0.036 (±0.030)#	0.153 (±0.068)#
May/June 2006	0.055 (±0.037)#	0.185 (±0.085)#
November 2006	0.011 (±0.007)#	0.137 (±0.056)#
July 2007	0.014 (±0.003)#	0.135 (±0.058)#
December 2007	0.038 (±0.038)#	0.154 (±0.073)#
June/August 2008	0.016 (±0.010)#	0.128 (±0.049)#
December 2008	0.018 (±0.013)#	0.128 (±0.054)#
June/August 2009	0.016 (±0.012)#	0.128 (±0.049)#
December 2009	0.011 (±0.007)#	0.121 (±0.048)#
June 2010	0.021 (±0.012)#	0.133 (±0.054)#
December 2010	0.012 (±0.007)#	0.122 (±0.048)#
June 2011	0.009 (±0.004)#	0.117 (±0.046)#
December 2011	0.010 (±0.005)#	0.116 (±0.046)#
June 2012	0.009 (±0.003)#	0.114 (±0.044)#
December 2012	0.009 (±0.004)#	0.114 (±0.044)#
July /August 2013	0.085 (±0.212)#	0.175 (±0.190)#
December 2013	0.017 (±0.212)#	0.092 (±0.044)#
June 2014	0.083 (±0.108)#	0.162 (±0.098)#
December 2014	0.033 (±0.050)#	0.106 (±0.064)#
June 2015	0.023 (±0.029)#	0.093 (±0.039)#
December 2015	0.035 (±0.053)#	0.106 (±0.063)#
May 2016	0.020 (±0.031)#	0.094 (±0.057)#
November 2016	0.018 (±0.016)#	0.091 (±0.045)#
June 2017	0.028 (±0.028)#	0.102 (±0.042)#
December 2017	0.044 (±0.111)#	0.119 (±0.131)#
June 2018	0.025 (±0.053)#	0.101 (±0.082)#
December 2018	0.006 (±0.007)##	0.085 (±0.060)##
June 2019	0.017 (±0.015)#	0.097 (±0.052)#
November 2019	0.016 (±0.024)#	0.099 (±0.072)#
June 2020	0.008 (±0.009)#	0.101 (±0.077)#
Nov./Dec. 2020	0.005 (±0.006)#	0.098 (±0.082)#
May 2021	0.007 (±0.007)#	0.120 (±0.101)#
November 2021	0.008 (±0.011)#	0.119 (±0.099)#
May 2022	0.005 (±0.005)#	0.115 (±0.099)#
November 2022	0.016 (±0.033)#	0.124 (±0.095)#
May 2023	0.023 (±0.029)#	0.139 (±0.13)#
October 2023	0.003 (±0.003)#	0.110 (±0.091)#
May 2024	0.002 (±0.002)#	0.125 (±0.118)#
October 2024	0.003 (±0.004)#	0.126 (±0.118)#
# tritum data based on soil samples collected from select specified depths (100, 200, and 300 cm)		
## tritium data based on soil samples collected throughout the entire profile (i.e., 0 to 300 cm)		

Appendix 8. 2024 Monthly ET efficiencies for 11 plots estimated with the Cornell 1D model.

	Plots											Total Monthly Avg	Std Dev
	Originals						Eastern			Western			
Month	4	13	16	19	22	27	31	36	41	45	48		
Jan	84.97	86.95	88.70	87.41	85.90	86.01	72.74	79.01	80.29	67.40	69.10	80.8	7.4
Feb	84.97	86.95	88.70	87.41	85.90	86.01	72.74	79.02	80.29	67.42	69.12	80.8	7.4
Mar	84.97	86.94	88.70	87.41	85.89	86.01	72.74	79.01	80.29	67.42	69.11	80.8	7.4
April	84.97	86.95	88.70	87.41	85.88	86.01	72.74	79.01	80.28	67.38	69.06	80.8	7.4
May	84.97	86.95	88.70	87.42	85.88	86.01	72.72	78.98	80.24	67.40	69.08	80.8	7.4
June	84.97	86.96	88.71	87.42	85.87	86.02	72.76	79.00	80.26	67.47	69.16	80.8	7.4
July	84.98	86.96	88.71	87.42	85.86	86.02	72.86	79.09	80.37	67.57	69.25	80.8	7.3
Aug	84.98	86.96	88.72	87.42	85.85	86.02	72.89	79.12	80.41	67.66	69.36	80.9	7.3
Sept	84.98	86.96	88.72	87.43	85.84	86.02	72.84	79.08	80.35	67.62	69.31	80.8	7.3
Oct	84.98	86.96	88.72	87.43	85.84	86.02	72.88	79.08	80.35	67.56	69.24	80.8	7.3
Nov	84.98	86.97	88.72	87.43	85.84	86.03	72.90	79.09	80.36	67.51	69.19	80.8	7.3
Dec	84.98	86.97	88.72	87.43	85.84	86.03	72.90	79.08	80.36	67.51	69.18	80.8	7.3
				Original Average		*86.66*	*Eastern Average*		*77.39*	*Western Average*	*68.34*	*Overall Average*	*80.80*
					Std Dev	*1.2*		*Std Dev*	*3.3*	*Std Dev*	*0.8*	*Std Dev*	*7.3*
					Min	84.97		*Min*	72.72	Min	*67.38*		
					Max	88.72		*Max*	80.41	Max	69.36		

Savannah River
NUCLEAR SOLUTIONS℠

Annual Corrective Action Report for the F-Area Hazardous Waste Management Facility, the H-Area Hazardous Waste Management Facility, and the Mixed Waste Management Facility (U)

SRNS-RP-2025-00773

Volume II

August 2025

SAVANNAH RIVER SITE • AIKEN, SOUTH CAROLINA

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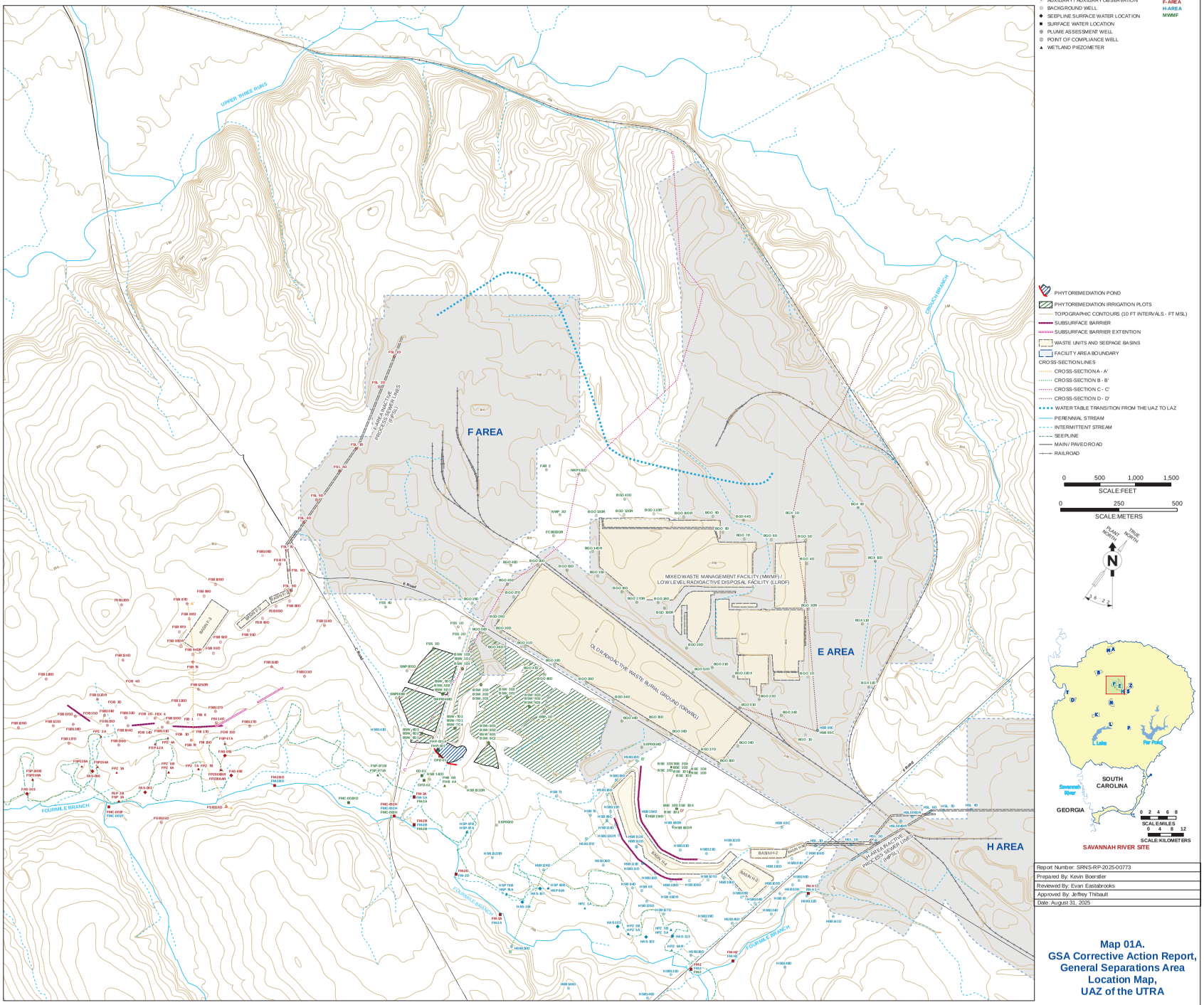
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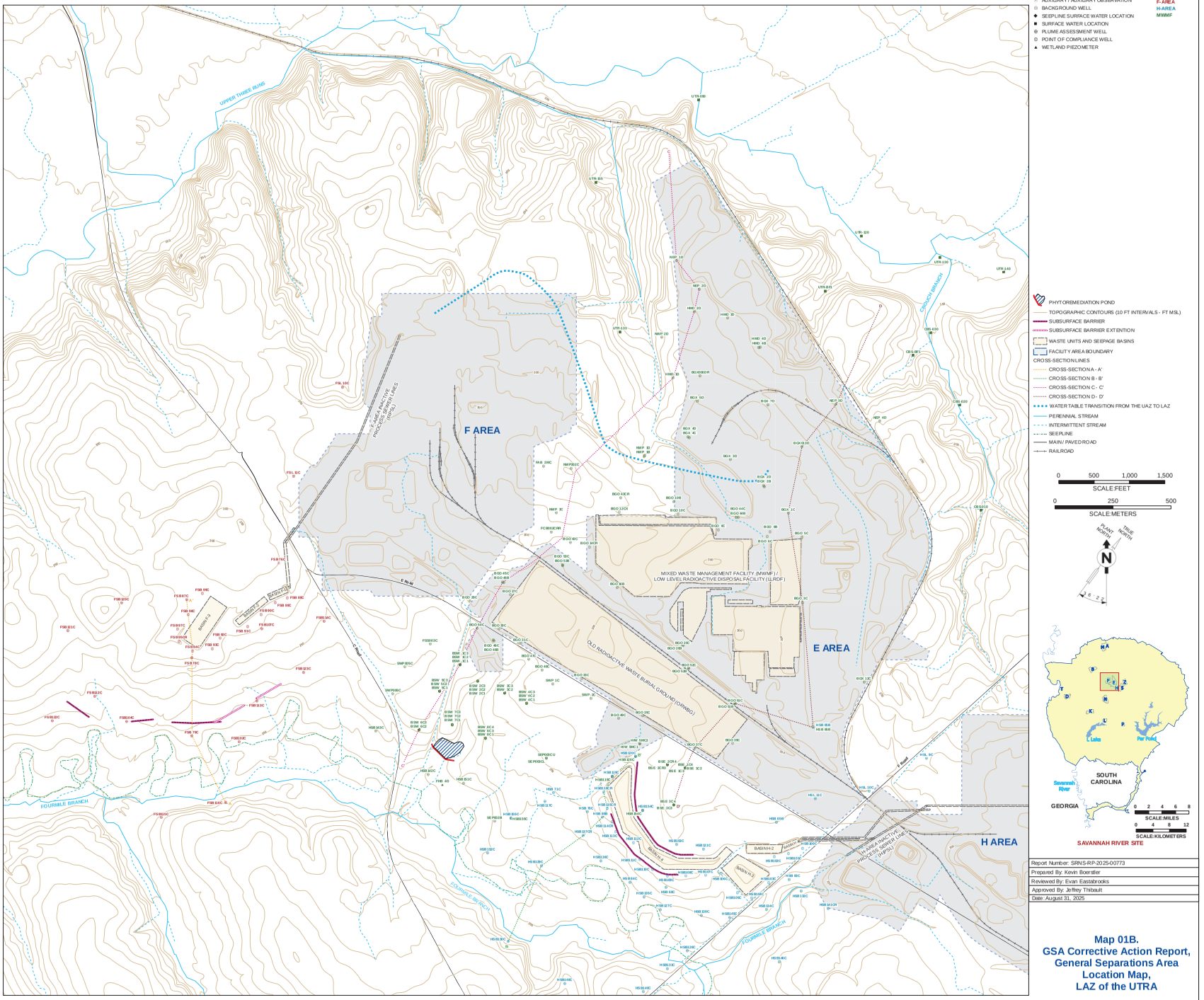


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Reviewed By: Evan Eastabrooks
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Date: August 31, 2025

Map 01A.
GSA Corrective Action Report, General Separations Area Location Map, UAZ of the UTRA

Map 01A. GSA Corrective Action Report, General Separations Area Location Map, UAZ of the UTRA

MAP01A

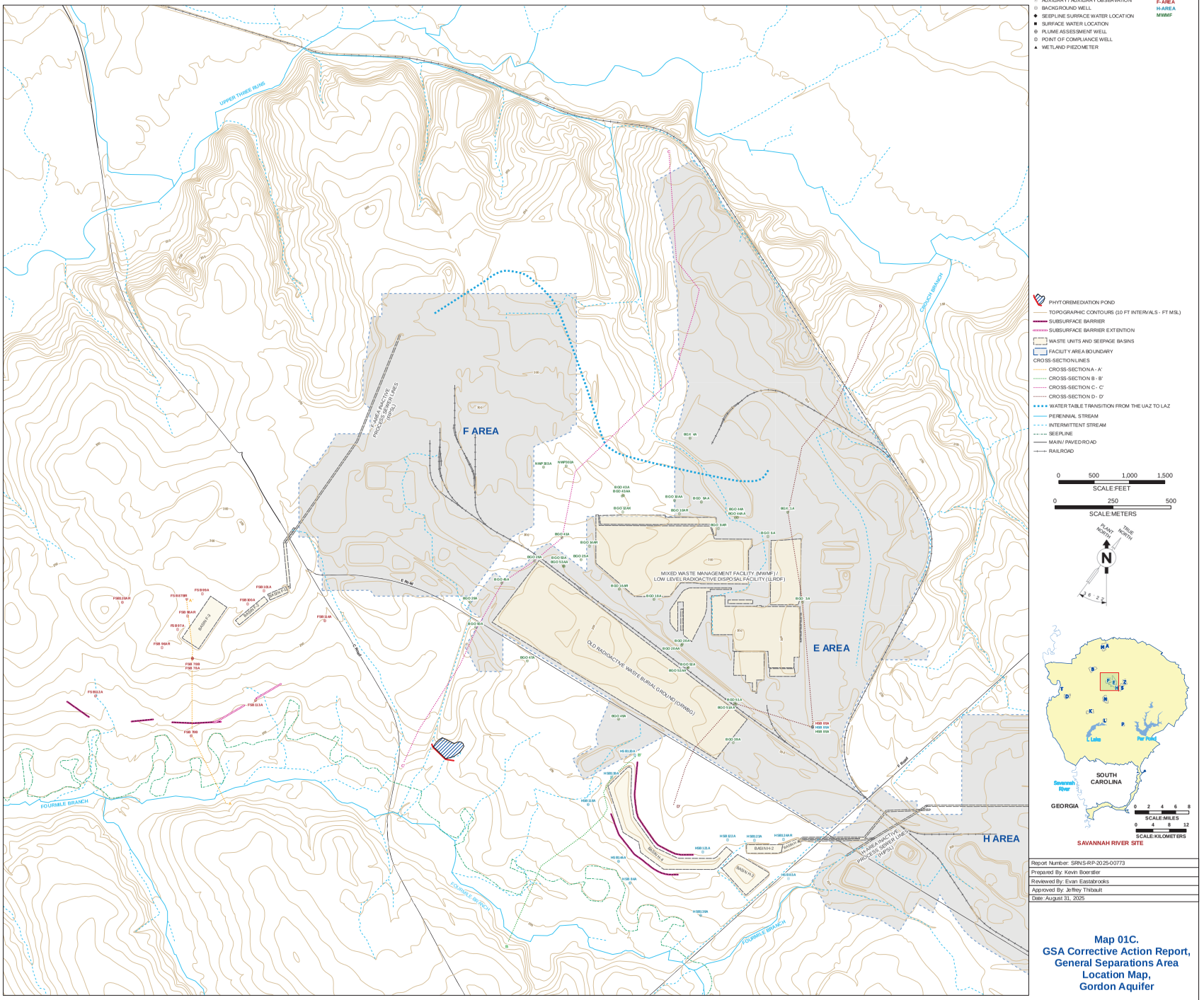


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Map 01B.
GSA Corrective Action Report, General Separations Area Location Map, LAZ of the UTRA

Map 01B. GSA Corrective Action Report, General Separations Area Location Map, LAZ of the UTRA

MAP01B

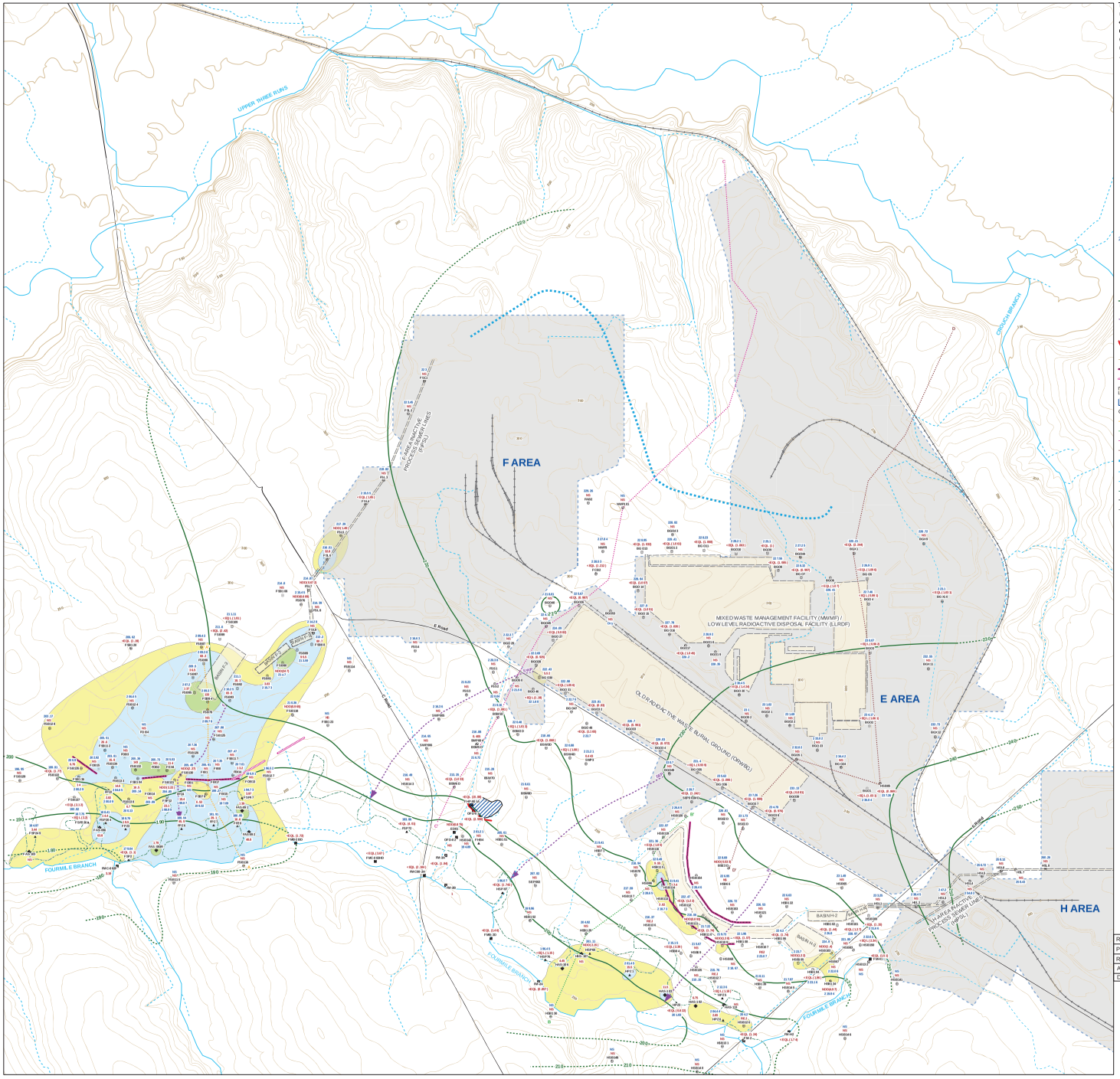


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Map 01C.
GSA Corrective Action Report, General Separations Area Location Map, Gordon Aquifer

Map 01C. GSA Corrective Action Report, General Separations Area Location Map, Gordon Aquifer

MAP01C



WELL USE

- AUXILIARY / AUXILIARY OBSERVATION
- BACKGROUND WELL
- SEEPLINE SURFACE WATER LOCATION
- SURFACE WATER LOCATION
- PLUME ASSESSMENT WELL
- POINT OF COMPLIANCE WELL
- WETLAND PIEZOMETER

100.5 IODINE-129 VALUE (3Q24) pCi/L
EQL ESTIMATED QUANTITATION LIMIT
NDD NOT DECISION DATA
REJ REJECTED VALUE
DRY WELL DRY
NS NOT SAMPLED

SUSPECT VALUES ARE NOT IDENTIFIED ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

PLUME LEGEND

- 1 - 10 pCi/L GROUNDWATER PROTECTION STANDARD = 1 pCi/L
- 10 - 100 pCi/L
- >100 pCi/L

200.5 POTENTIOMETRIC SURFACE ELEVATION (3Q24) MSL
EQL ESTIMATED QUANTITATION LIMIT
NS NOT SAMPLED
SV SUSPECT VALUES
DRY WELL DRY

SUSPECT VALUES ARE IDENTIFIED AS SV ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

- POTENTIOMETRIC SURFACE CONTOUR CONTOUR INTERVAL = 10 FEET DASHED WHERE INFERRED
- GROUNDWATER FLOW PATH
- PHYTOREMEDIATION POND
- TOPOGRAPHIC CONTOURS (10 FT INTERVALS - FT MSL)
- SUBSURFACE BARRIER
- SUBSURFACE BARRIER EXTENTION
- WASTE UNITS AND SEEPAGE BASINS
- FACILITY AREA BOUNDARY

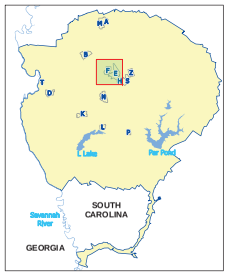
CROSS-SECTION LINES

- CROSS-SECTION A - A'
- CROSS-SECTION B - B'
- CROSS-SECTION C - C'
- CROSS-SECTION D - D'
- WATER TABLE TRANSITION FROM THE UAZ TO LAZ
- PERENNIAL STREAM
- INTERMITTENT STREAM
- SEEPLINE
- MAIN / PAVED ROAD
- RAILROAD

0 500 1,000 1,500
SCALE:FEET

0 250 500
SCALE:METERS

PLANT NORTH
TRUE NORTH
N



0 2 4 6 8
SCALE:MILES
0 4 8 12
SCALE:KILOMETERS

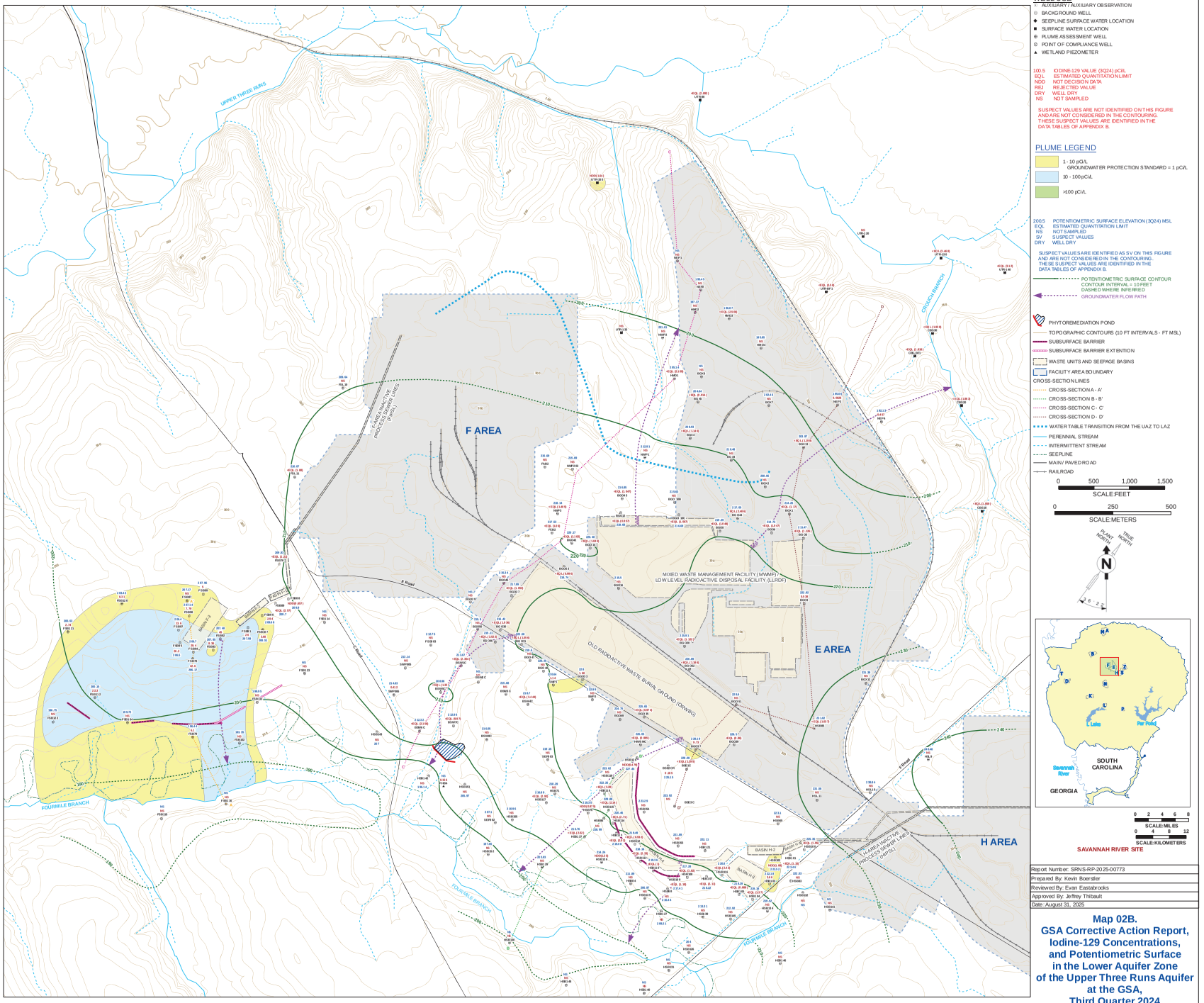
SAVANNAH RIVER SITE

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Map 02A. GSA Corrective Action Report, Iodine-129 Concentrations, and Potentiometric Surface in the Upper Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024

MAP02A

Map 02A. GSA Corrective Action Report, Iodine-129 Concentrations, and Potentiometric Surface in the Upper Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024



WELL USE

- AUXILIARY / AUXILIARY OBSERVATION
- BACKGROUND WELL
- SEEPLINE SURFACE WATER LOCATION
- SURFACE WATER LOCATION
- PLUME ASSESSMENT WELL
- POINT OF COMPLIANCE WELL
- WETLAND PIEZOMETER

100.5 IODINE-129 VALUE (3Q24) pCi/L
EQL ESTIMATED QUANTITATION LIMIT
NDD NOT DECISION DATA
REJ REJECTED VALUE
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PLUME LEGEND

- 1 - 10 pCi/L GROUNDWATER PROTECTION STANDARD = 1 pCi/L
- 10 - 100 pCi/L
- >100 pCi/L

200.5 POTENTIOMETRIC SURFACE ELEVATION (3Q24) MSL
EQL ESTIMATED QUANTITATION LIMIT
NS NOT SAMPLED
SV SUSPECT VALUES
DRY WELL DRY

SUSPECT VALUES ARE IDENTIFIED AS SV ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

- POTENTIOMETRIC SURFACE CONTOUR CONTOUR INTERVAL = 10 FEET DASHED WHERE INFERRED
- GROUNDWATER FLOW PATH
- PHYTOREMEDIATION POND
- TOPOGRAPHIC CONTOURS (10 FT INTERVALS - FT MSL)
- SUBSURFACE BARRIER
- SUBSURFACE BARRIER EXTENTION
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CROSS-SECTION LINES

- CROSS-SECTION A - A'
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- WATER TABLE TRANSITION FROM THE UAZ TO LAZ
- PERENNIAL STREAM
- INTERMITTENT STREAM
- SEEPLINE
- MAIN / PAVED ROAD
- RAILROAD

0 500 1,000 1,500
SCALE:FEET
0 250 500
SCALE:METERS

PLANT NORTH
TRUE NORTH

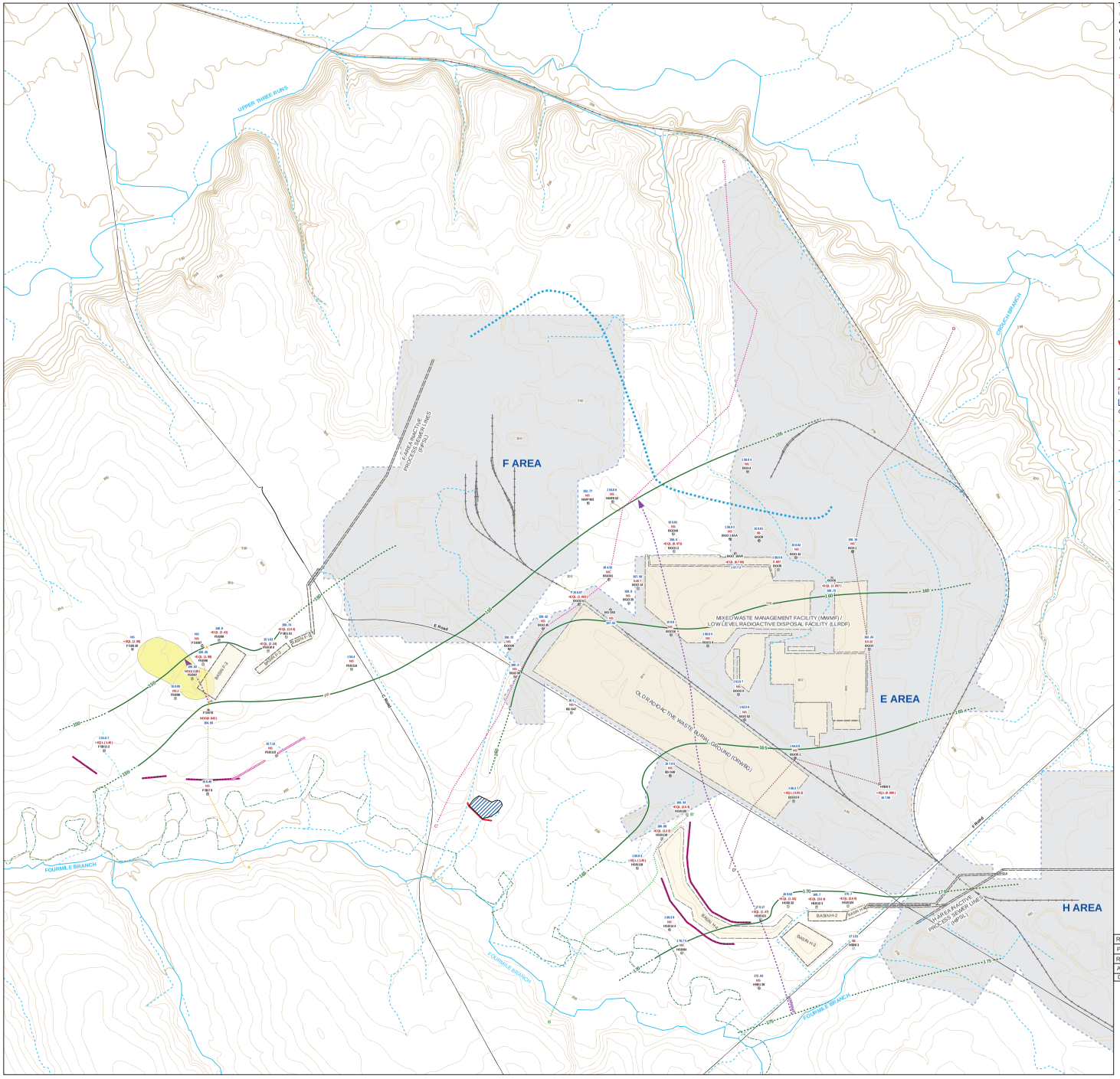
0 2 4 6 8
SCALE:MILES
0 4 8 12
SCALE:KILOMETERS
SAVANNAH RIVER SITE

Report Number:	SRNS-RP-2025-00773
Prepared By:	Kevin Boerstler
Reviewed By:	Evan Eastabrooks
Approved By:	Jeffrey Thibault
Date:	August 31, 2025

Map 02B.
GSA Corrective Action Report, Iodine-129 Concentrations, and Potentiometric Surface in the Lower Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024

MAP02B

Map 02B. GSA Corrective Action Report, Iodine-129 Concentrations, and Potentiometric Surface in the Lower Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024



WELL USE

- AUXILIARY / AUXILIARY OBSERVATION
- BACKGROUND WELL
- SEEPLINE SURFACE WATER LOCATION
- SURFACE WATER LOCATION
- PLUME ASSESSMENT WELL
- POINT OF COMPLIANCE WELL
- WETLAND PIEZOMETER

100.5 IODINE-129 VALUE (3Q24) pCi/L
EQL ESTIMATED QUANTITATION LIMIT
NDD NOT DECISION DATA
REJ REJECTED VALUE
DRY WELL DRY
NS NOT SAMPLED

SUSPECT VALUES ARE NOT IDENTIFIED ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

PLUME LEGEND

- 1 - 10 pCi/L GROUNDWATER PROTECTION STANDARD = 1 pCi/L
- 10 - 100 pCi/L
- >100 pCi/L

200.5 POTENTIOMETRIC SURFACE ELEVATION (3Q24) MSL
EQL ESTIMATED QUANTITATION LIMIT
NS NOT SAMPLED
SV SUSPECT VALUES
DRY WELL DRY

SUSPECT VALUES ARE IDENTIFIED AS SV ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

- POTENTIOMETRIC SURFACE CONTOUR CONTOUR INTERVAL = 5 FEET DASHED WHERE INFERRED
- GROUNDWATER FLOW PATH
- PHYTOREMEDIATION POND
- TOPOGRAPHIC CONTOURS (10 FT INTERVALS - FT MSL)
- SUBSURFACE BARRIER
- SUBSURFACE BARRIER EXTENTION
- WASTE UNITS AND SEEPAGE BASINS
- FACILITY AREA BOUNDARY

CROSS-SECTION LINES

- CROSS-SECTION A - A'
- CROSS-SECTION B - B'
- CROSS-SECTION C - C'
- CROSS-SECTION D - D'
- WATER TABLE TRANSITION FROM THE UAZ TO LAZ
- PERENNIAL STREAM
- INTERMITTENT STREAM
- SEEPLINE
- MAIN / PAVED ROAD
- RAILROAD

0 500 1,000 1,500 SCALE:FEET

0 250 500 SCALE:METERS

0 2 4 6 8 SCALE:MILES

0 4 8 12 SCALE:KILOMETERS

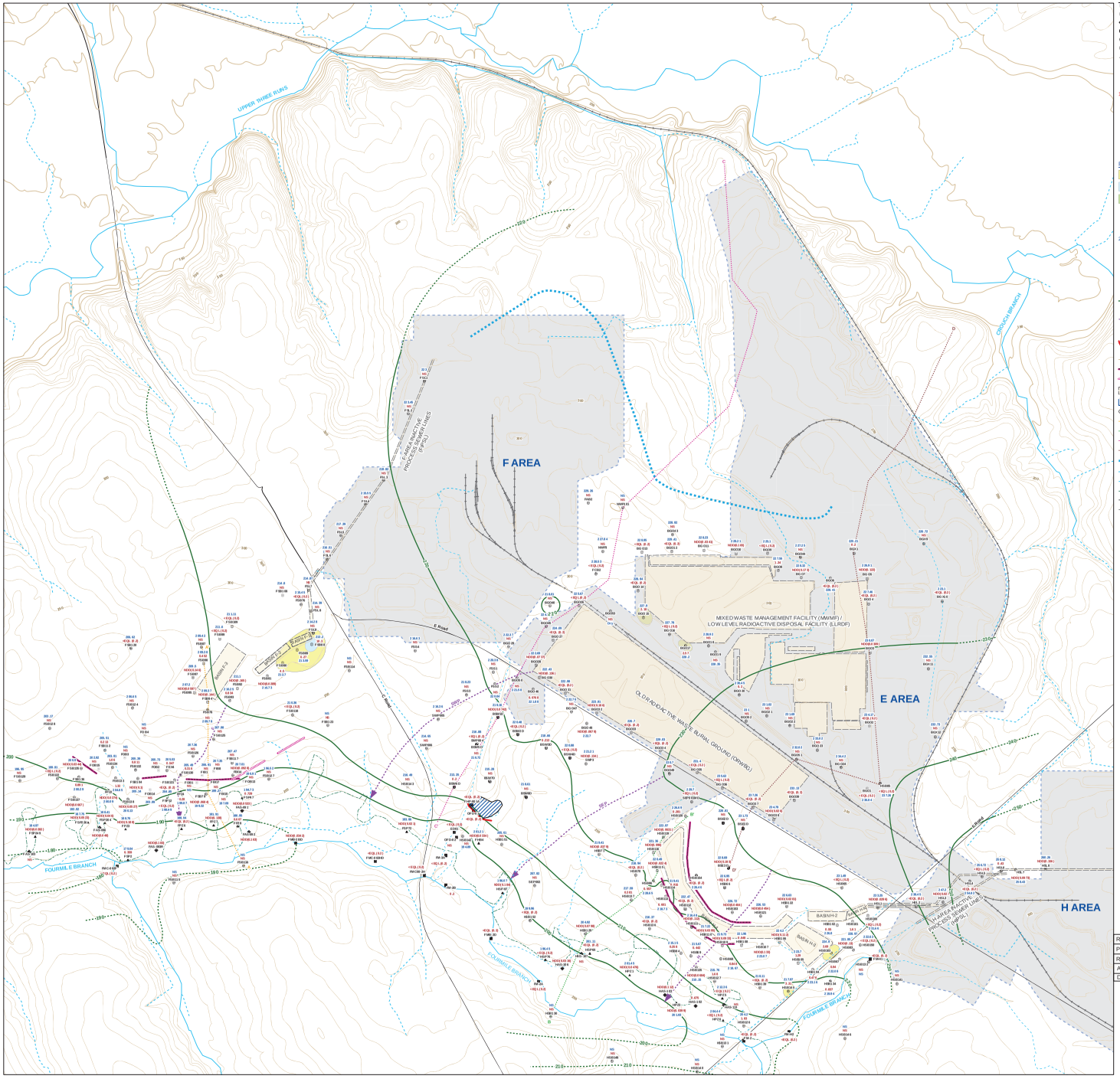
SAVANNAH RIVER SITE

Report Number:	SRNS-RP-2025-00773
Prepared By:	Kevin Boerstler
Reviewed By:	Evan Eastabrooks
Approved By:	Jeffrey Thibault
Date:	August 31, 2025

Map 02C. GSA Corrective Action Report, Iodine-129 Concentrations, and Potentiometric Surface in the Gordon Aquifer at the GSA, Third Quarter 2024

Map 02C. GSA Corrective Action Report, Iodine-129 Concentrations, and Potentiometric Surface in the Gordon Aquifer at the GSA, Third Quarter 2024

MAP02C

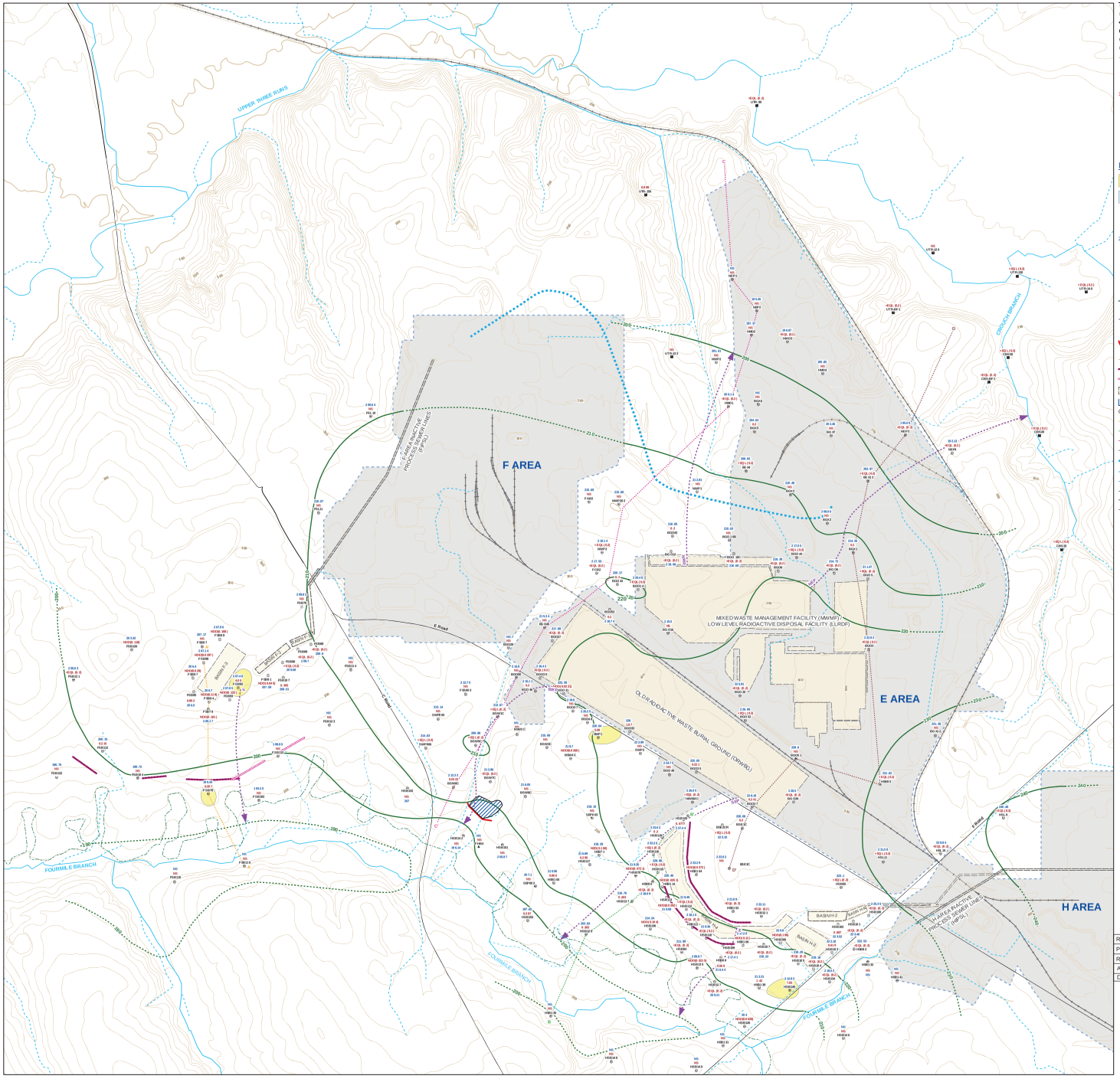


Report Number: SRNS-RP-2025-00773
Prepared By: Kevin Boerstler
Reviewed By: Evan Eastabrooks
Approved By: Jeffrey Thibault
Date: August 31, 2025

Map 03A.
GSA Corrective Action Report, Mercury Concentrations, and Potentiometric Surface in the Upper Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024

MAP03A

Map 03A. GSA Corrective Action Report, Mercury Concentrations, and Potentiometric Surface in the Upper Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024



WELL USE

- AUXILIARY / AUXILIARY OBSERVATION
- BACKGROUND WELL
- SEEPLINE SURFACE WATER LOCATION
- SURFACE WATER LOCATION
- PLUME ASSESSMENT WELL
- POINT OF COMPLIANCE WELL
- WETLAND PIEZOMETER

100.5 MERCURY VALUE (3Q24) ug/L
EQL ESTIMATED QUANTITATION LIMIT
NDO NOT DECISION DATA
REJ REJECTED VALUE
DRY WELL DRY
NS NOT SAMPLED

SUSPECT VALUES ARE NOT IDENTIFIED ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

PLUME LEGEND

- 2 - 10 ug/L
- GROUNDWATER PROTECTION STANDARD = 2 ug/L
- >10 ug/L

200.5 POTENTIOMETRIC SURFACE ELEVATION (3Q24) MSL
EQL ESTIMATED QUANTITATION LIMIT
NS NOT SAMPLED
SV SUSPECT VALUES
DRY WELL DRY

SUSPECT VALUES ARE IDENTIFIED AS SV ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

- POTENTIOMETRIC SURFACE CONTOUR
  CONTOUR INTERVAL = 10 FEET
  DASHED WHERE INFERRED
- GROUNDWATER FLOW PATH

- PHYTOREMEDIATION POND
- TOPOGRAPHIC CONTOURS (10 FT INTERVALS - FT MSL)
- SUBSURFACE BARRIER
- SUBSURFACE BARRIER EXTENTION
- WASTE UNITS AND SEEPAGE BASINS
- FACILITY AREA BOUNDARY

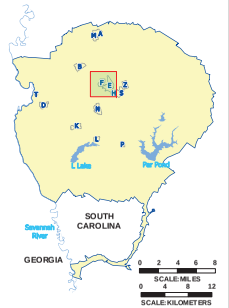
CROSS-SECTION LINES

- CROSS-SECTION A - A'
- CROSS-SECTION B - B'
- CROSS-SECTION C - C'
- CROSS-SECTION D - D'
- WATER TABLE TRANSITION FROM THE UAZ TO LAZ
- PERENNIAL STREAM
- INTERMITTENT STREAM
- SEEPLINE
- MAIN / PAVED ROAD
- RAILROAD

0 500 1,000 1,500
SCALE: FEET

0 250 500
SCALE: METERS

PLANT NORTH
TRUE NORTH



SAVANNAH RIVER SITE

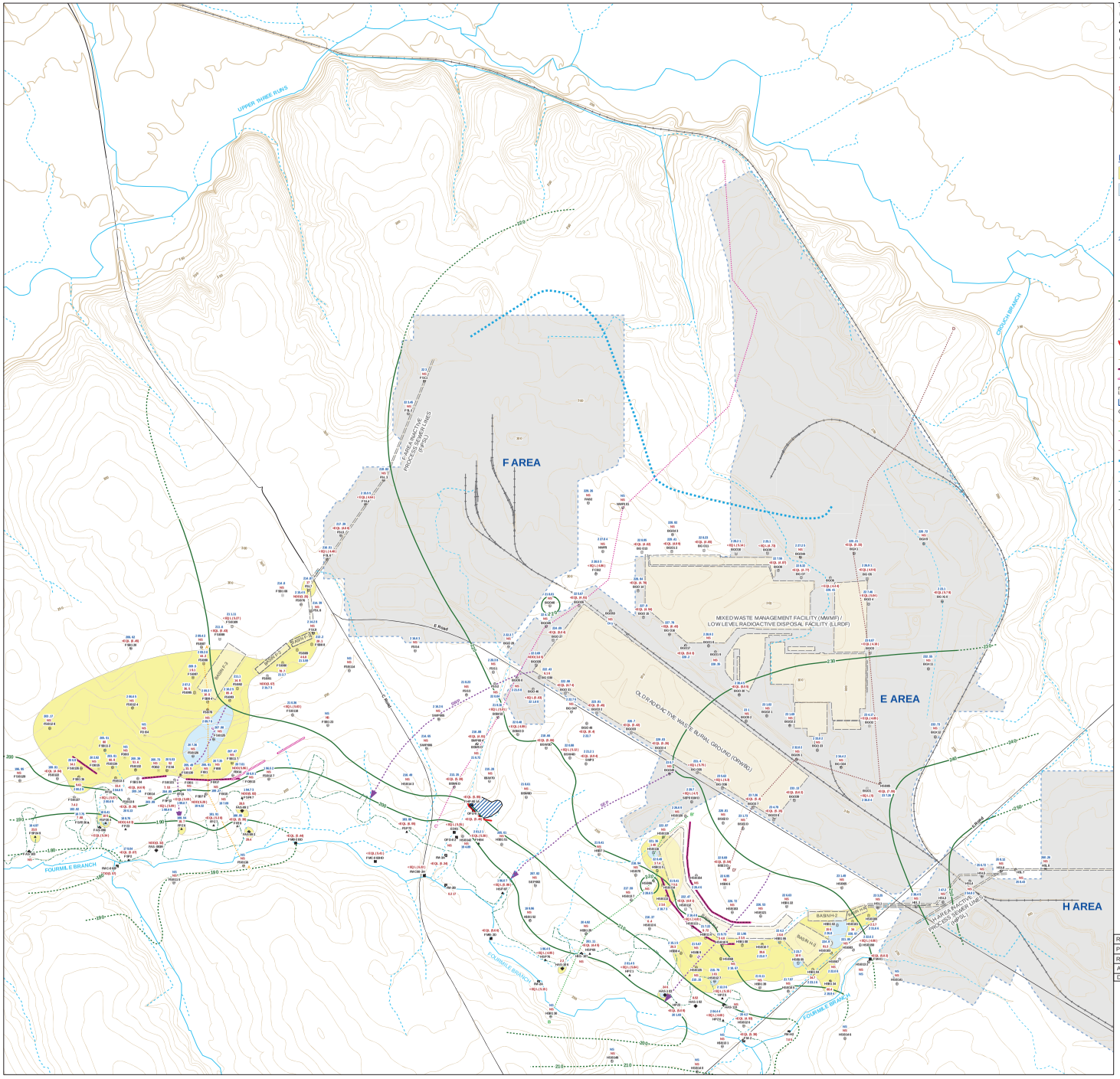
Report Number: SRNS-RP-2025-00773
Prepared By: Kevin Boerstler
Reviewed By: Evan Eastabrooks
Approved By: Jeffrey Thibault
Date: August 31, 2025

Map 03B.
GSA Corrective Action Report, Mercury Concentrations, and Potentiometric Surface in the Lower Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024

MAP03B

Map 03B. GSA Corrective Action Report, Mercury Concentrations, and Potentiometric Surface in the Lower Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024


150
200
250
300



WELL USE

- AUXILIARY / AUXILIARY OBSERVATION
- BACKGROUND WELL
- SEEPLINE SURFACE WATER LOCATION
- SURFACE WATER LOCATION
- PLUME ASSESSMENT WELL
- POINT OF COMPLIANCE WELL
- WETLAND PIEZOMETER

100.5 STRONTIUM-90 VALUE (3Q24) pCi/L
EQL ESTIMATED QUANTITATION LIMIT
NDD NOT DECISION DATA
REJ REJECTED VALUE
DRY WELL DRY
NS NOT SAMPLED

SUSPECT VALUES ARE NOT IDENTIFIED ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

PLUME LEGEND

- 8 - 100 pCi/L GROUNDWATER PROTECTION STANDARD = 8 pCi/L
- 100 - 1000 pCi/L

200.5 POTENTIOMETRIC SURFACE ELEVATION (3Q24) MSL
EQL ESTIMATED QUANTITATION LIMIT
NS NOT SAMPLED
SV SUSPECT VALUES
DRY WELL DRY

SUSPECT VALUES ARE IDENTIFIED AS SV ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

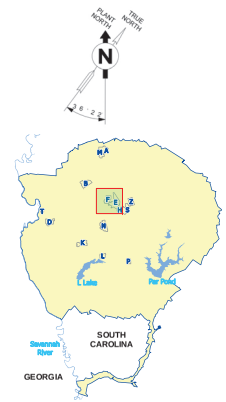
- POTENTIOMETRIC SURFACE CONTOUR CONTOUR INTERVAL = 10 FEET DASHED WHERE INFERRED
- GROUNDWATER FLOW PATH
- PHYTOREMEDIATION POND
- TOPOGRAPHIC CONTOURS (10 FT INTERVALS - FT MSL)
- SUBSURFACE BARRIER
- SUBSURFACE BARRIER EXTENTION
- WASTE UNITS AND SEEPAGE BASINS
- FACILITY AREA BOUNDARY

CROSS-SECTION LINES

- CROSS-SECTION A - A'
- CROSS-SECTION B - B'
- CROSS-SECTION C - C'
- CROSS-SECTION D - D'
- WATER TABLE TRANSITION FROM THE UAZ TO LAZ
- PERENNIAL STREAM
- INTERMITTENT STREAM
- SEEPLINE
- MAIN / PAVED ROAD
- RAILROAD

0 500 1,000 1,500
SCALE:FEET

0 250 500
SCALE:METERS



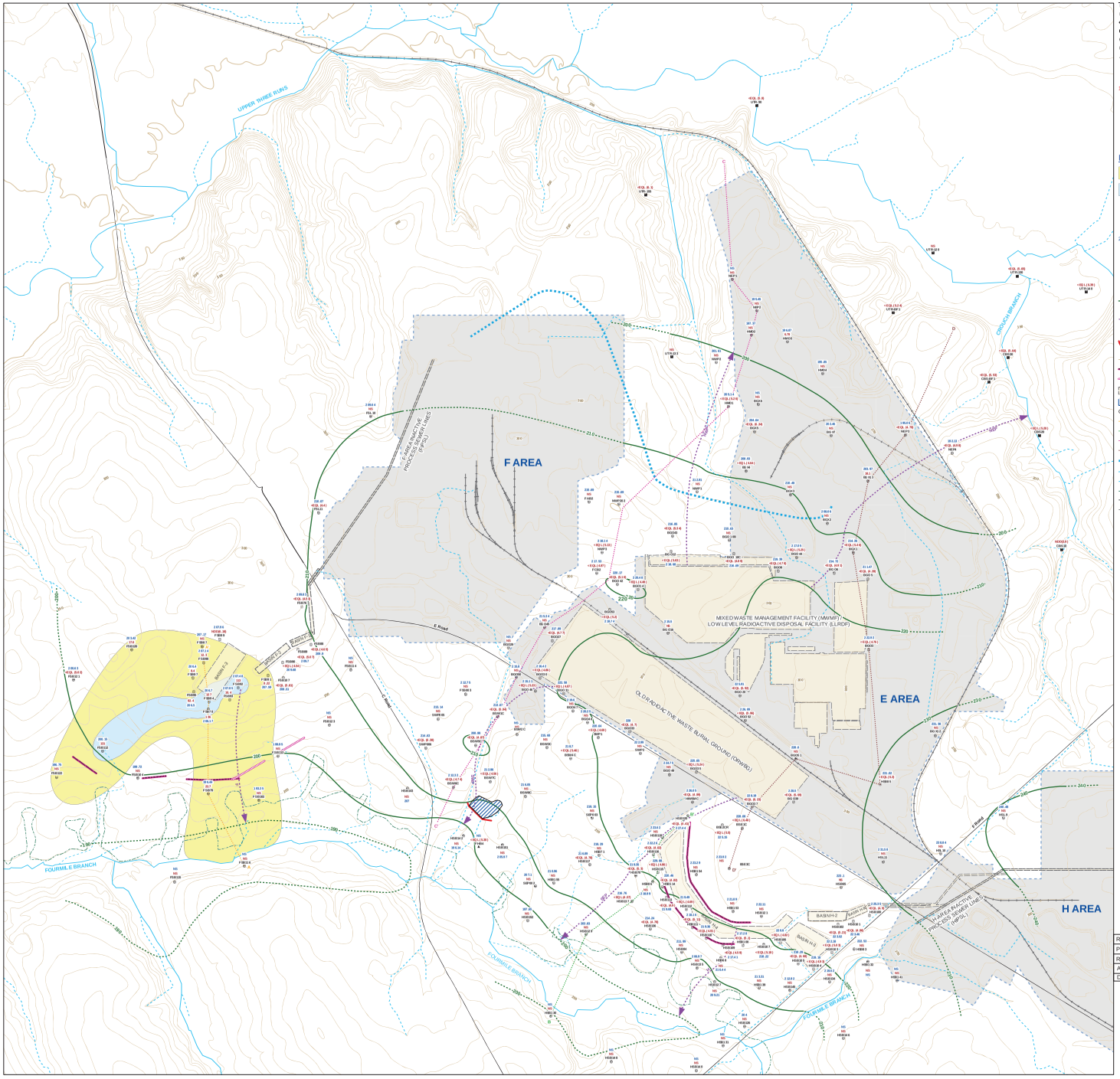
SAVANNAH RIVER SITE

Report Number:	SRNS-RP-2025-00773
Prepared By:	Kevin Boerstler
Reviewed By:	Evan Eastabrooks
Approved By:	Jeffrey Thibault
Date:	August 31, 2025

Map 04A. GSA Corrective Action Report, Strontium-90 Concentrations, and Potentiometric Surface in the Upper Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024

MAP04A

Map 04A. GSA Corrective Action Report, Strontium-90 Concentrations, and Potentiometric Surface in the Upper Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024



WELL USE

- AUXILIARY / AUXILIARY OBSERVATION
- BACKGROUND WELL
- SEEPLINE SURFACE WATER LOCATION
- SURFACE WATER LOCATION
- PLUME ASSESSMENT WELL
- POINT OF COMPLIANCE WELL
- WETLAND PIEZOMETER

100.5 STRONTIUM-90 VALUE (3Q24) pCi/L
EQL ESTIMATED QUANTITATION LIMIT
NDD NOT DECISION DATA
REJ REJECTED VALUE
DRY WELL DRY
NS NOT SAMPLED

SUSPECT VALUES ARE NOT IDENTIFIED ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

PLUME LEGEND

- 8 - 100 pCi/L GROUNDWATER PROTECTION STANDARD = 8 pCi/L
- 100 - 1000 pCi/L

200.5 POTENTIOMETRIC SURFACE ELEVATION (3Q24) MSL
EQL ESTIMATED QUANTITATION LIMIT
NS NOT SAMPLED
SV SUSPECT VALUES
DRY WELL DRY

SUSPECT VALUES ARE IDENTIFIED AS SV ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

- POTENTIOMETRIC SURFACE CONTOUR CONTOUR INTERVAL = 10 FEET DASHED WHERE INFERRED
- GROUNDWATER FLOW PATH
- PHYTOREMEDIATION POND
- TOPOGRAPHIC CONTOURS (10 FT INTERVALS - FT MSL)
- SUBSURFACE BARRIER
- SUBSURFACE BARRIER EXTENTION
- WASTE UNITS AND SEEPAGE BASINS
- FACILITY AREA BOUNDARY

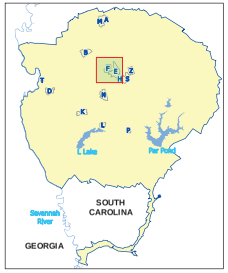
CROSS-SECTION LINES

- CROSS-SECTION A - A'
- CROSS-SECTION B - B'
- CROSS-SECTION C - C'
- CROSS-SECTION D - D'
- WATER TABLE TRANSITION FROM THE UAZ TO LAZ
- PERENNIAL STREAM
- INTERMITTENT STREAM
- SEEPLINE
- MAIN / PAVED ROAD
- RAILROAD

0 500 1,000 1,500
SCALE:FEET

0 250 500
SCALE:METERS

PLANT NORTH
TRUE NORTH



0 2 4 6 8
SCALE:MILES
0 4 8 12
SCALE:KILOMETERS

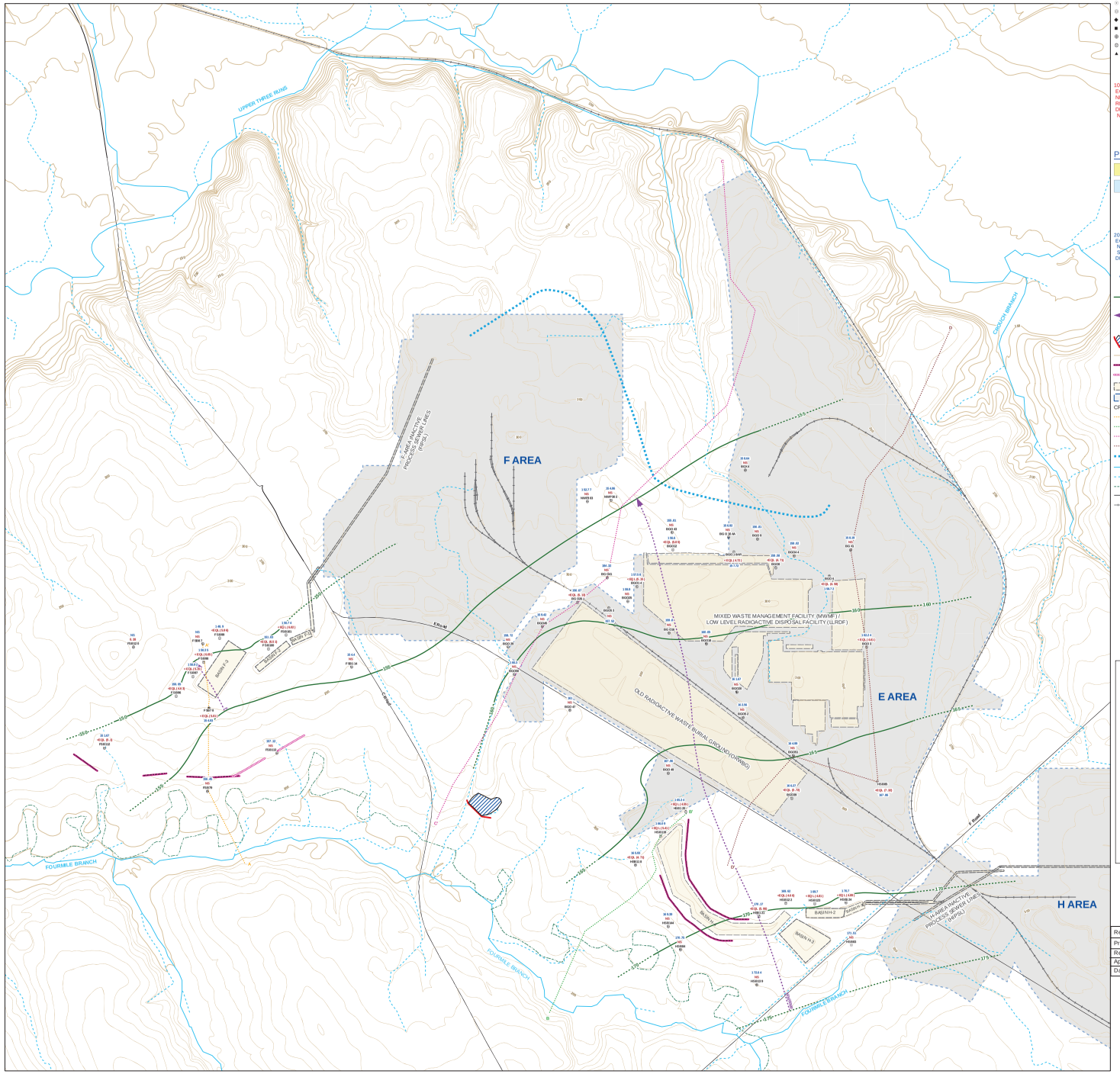
SAVANNAH RIVER SITE

Report Number:	SRNS-RP-2025-00773
Prepared By:	Kevin Boerstler
Reviewed By:	Evan Eastabrooks
Approved By:	Jeffrey Thibault
Date:	August 31, 2025

Map 04B. GSA Corrective Action Report, Strontium-90 Concentrations, and Potentiometric Surface in the Lower Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024

MAP04B

Map 04B. GSA Corrective Action Report, Strontium-90 Concentrations, and Potentiometric Surface in the Lower Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2023

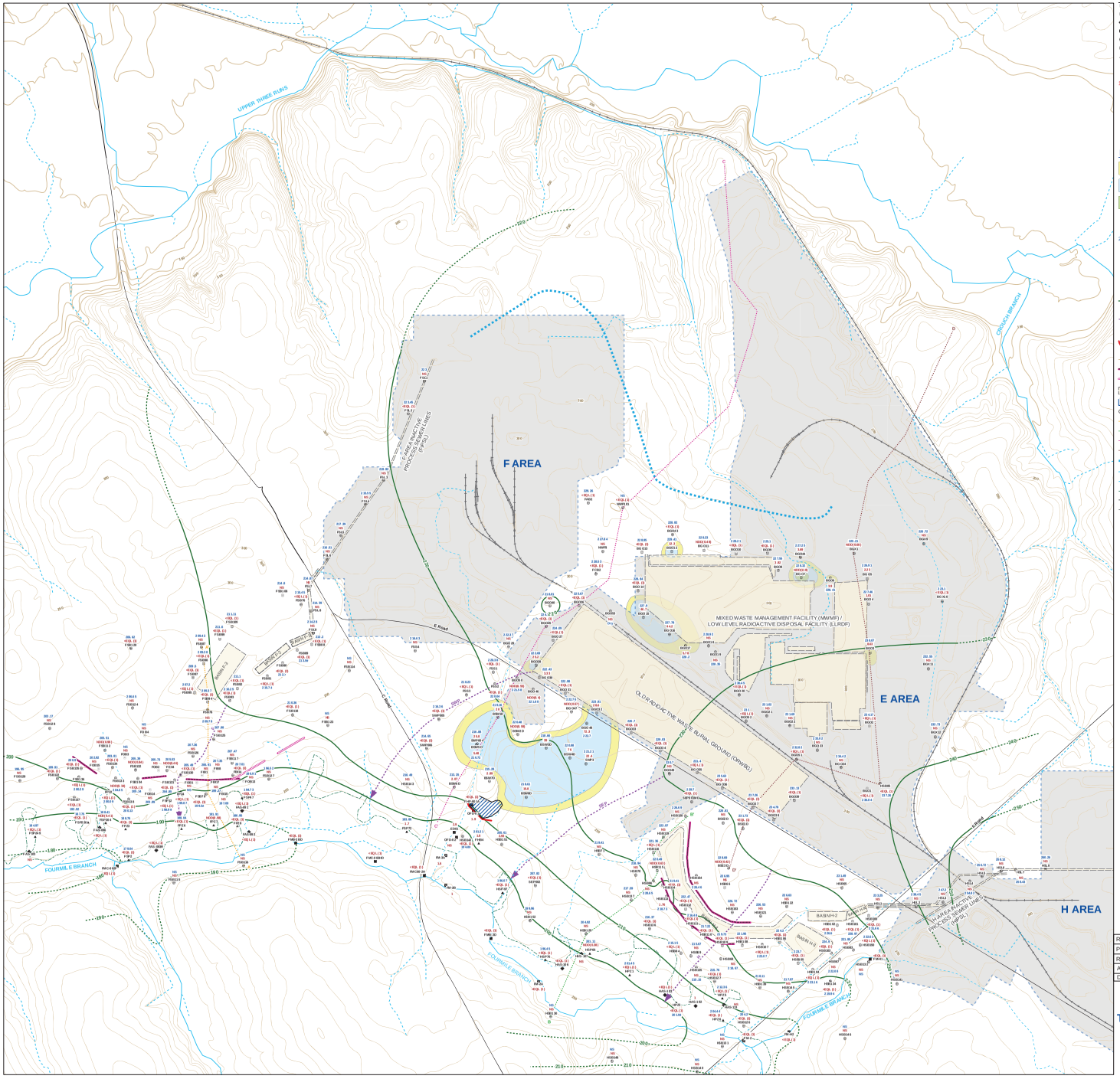


Report Number:	SRNS-RP-2025-00773
Prepared By:	Kevin Boerstler
Reviewed By:	Evan Eastabrooks
Approved By:	Jeffrey Thibault
Date:	August 31, 2025

Map 04C.
GSA Corrective Action Report, Strontium-90 Concentrations, and Potentiometric Surface in the Gordon Aquifer at the GSA, Third Quarter 2024

Map 04C. GSA Corrective Action Report, Strontium-90 Concentrations, and Potentiometric Surface in the Gordon Aquifer at the GSA, Third Quarter 2024

MAP04C



WELL USE

- AUXILIARY / AUXILIARY OBSERVATION
- BACKGROUND WELL
- SEEPLINE SURFACE WATER LOCATION
- SURFACE WATER LOCATION
- PLUME ASSESSMENT WELL
- POINT OF COMPLIANCE WELL
- WETLAND PIEZOMETER

100.5 TRICHLOROETHYLENE VALUE (3Q24) ug/L
EQL ESTIMATED QUANTITATION LIMIT
NDD NOT DECISION DATA
REJ REJECTED VALUE
DRY WELL DRY
NS NOT SAMPLED

SUSPECT VALUES ARE NOT IDENTIFIED ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

PLUME LEGEND

- 5 - 10 ug/L
- GROUNDWATER PROTECTION STANDARD = 5 ug/L
- 10 - 100 ug/L
- >100 ug/L

200.5 POTENTIOMETRIC SURFACE ELEVATION (3Q24) MSL
EQL ESTIMATED QUANTITATION LIMIT
NS NOT SAMPLED
SV SUSPECT VALUES
DRY WELL DRY

SUSPECT VALUES ARE IDENTIFIED AS SV ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

- POTENTIOMETRIC SURFACE CONTOUR
  CONTOUR INTERVAL = 10 FEET
  DASHED WHERE INFERRED
- GROUNDWATER FLOW PATH
- PHYTOREMEDIATION POND
- TOPOGRAPHIC CONTOURS (10 FT INTERVALS - FT MSL)
- SUBSURFACE BARRIER
- SUBSURFACE BARRIER EXTENTION
- WASTE UNITS AND SEEPAGE BASINS
- FACILITY AREA BOUNDARY

CROSS-SECTION LINES

- CROSS-SECTION A - A'
- CROSS-SECTION B - B'
- CROSS-SECTION C - C'
- CROSS-SECTION D - D'
- WATER TABLE TRANSITION FROM THE UAZ TO LAZ
- PERENNIAL STREAM
- INTERMITTENT STREAM
- SEEPLINE
- MAIN / PAVED ROAD
- RAILROAD

0 500 1,000 1,500
SCALE:FEET

0 250 500
SCALE:METERS

PLANT NORTH
TRUE NORTH

0 2 3 4 5 8
SCALE:MILES
0 4 8 12
SCALE:KILOMETERS

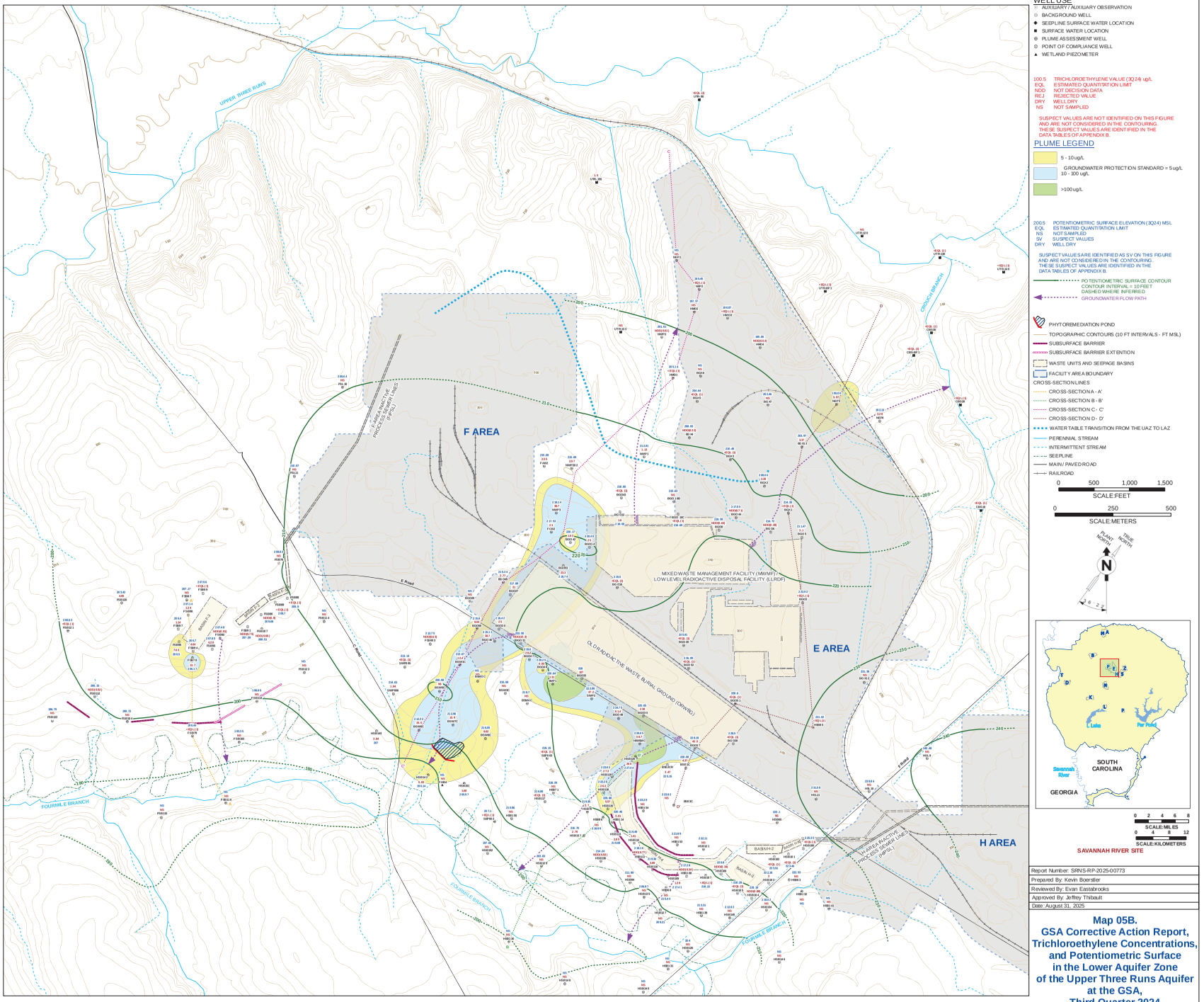
SAVANNAH RIVER SITE

Report Number:	SRNS-RP-2025-00773
Prepared By:	Kevin Boerstler
Reviewed By:	Evan Eastabrooks
Approved By:	Jeffrey Thibault
Date:	August 31, 2025

Map 05A.
GSA Corrective Action Report, Trichloroethylene Concentrations, and Potentiometric Surface in the Upper Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024

MAP05A

Map 05A. GSA Corrective Action Report, Trichloroethylene Concentrations, and Potentiometric Surface in the Upper Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024

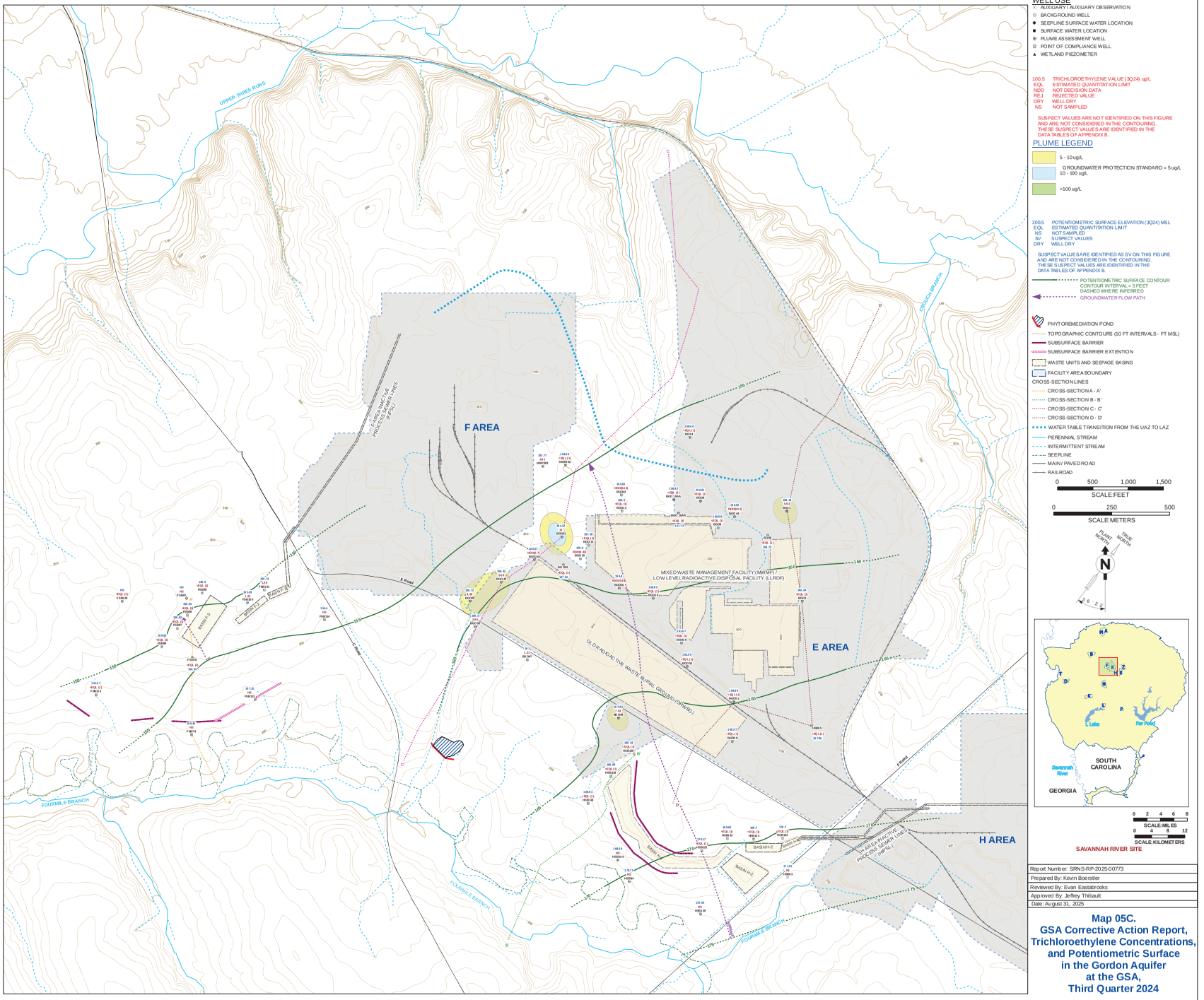


Report Number: SRNS-RP-2025-00773
Prepared By: Kevin Boerstler
Reviewed By: Evan Eastabrooks
Approved By: Jeffrey Thibault
Date: August 31, 2025

Map 05B.
GSA Corrective Action Report, Trichloroethylene Concentrations, and Potentiometric Surface in the Lower Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024

MAP05B

4Map 05B. GSA Corrective Action Report, Trichloroethylene Concentrations, and Potentiometric Surface in the Lower Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024

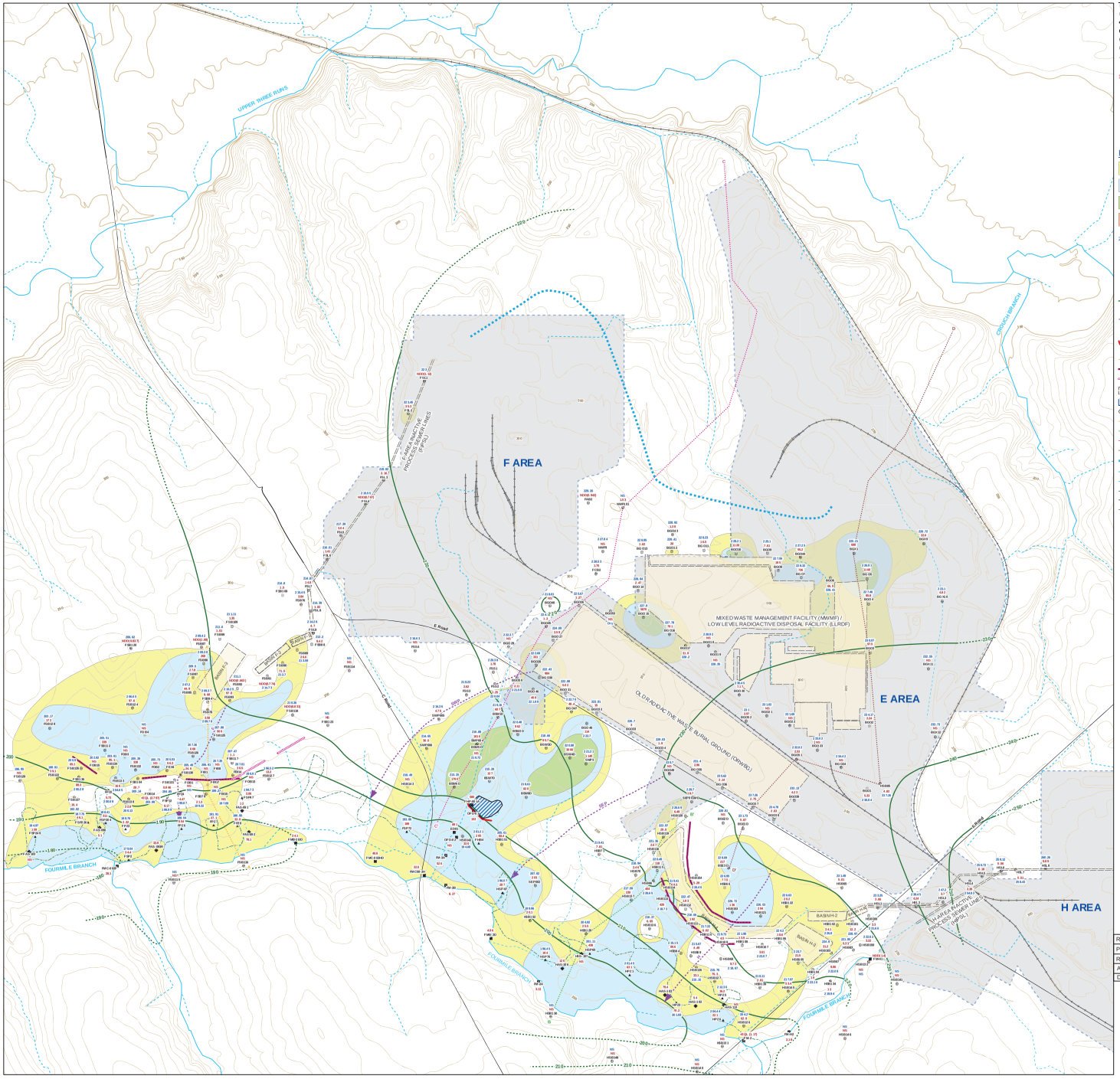


Report Number: SRNS-RP-2025-00773
Prepared By: Kevin Boerstler
Reviewed By: Evan Eastabrooks
Approved By: Jeffrey Thibault
Date: August 31, 2025

Map 05C. GSA Corrective Action Report, Trichloroethylene Concentrations, and Potentiometric Surface in the Gordon Aquifer at the GSA, Third Quarter 2024

Map 05C. GSA Corrective Action Report, Trichloroethylene Concentrations, and Potentiometric Surface in the Gordon Aquifer at the GSA, Third Quarter 2024

MAP05C



WELL USE

- AUXILIARY / AUXILIARY OBSERVATION
- BACKGROUND WELL
- SEEPLINE SURFACE WATER LOCATION
- SURFACE WATER LOCATION
- PLUME ASSESSMENT WELL
- POINT OF COMPLIANCE WELL
- WETLAND PIEZOMETER

100.5 TRITIUM VALUE (3Q24) pCi/L
EQL ESTIMATED QUANTITATION LIMIT
NDD NOT DECISION DATA
REJ REJECTED VALUE
DRY WELL DRY
NS NOT SAMPLED

SUSPECT VALUES ARE NOT IDENTIFIED ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

PLUME LEGEND

- 20 - 100 pCi/mL GROUNDWATER PROTECTION STANDARD = 20 pCi/mL
- 100 - 1000 pCi/mL
- 1000 - 10000 pCi/mL
- >10000 pCi/mL

200.5 POTENTIOMETRIC SURFACE ELEVATION (3Q24) MSL
EQL ESTIMATED QUANTITATION LIMIT
NS NOT SAMPLED
SV SUSPECT VALUES
DRY WELL DRY

SUSPECT VALUES ARE IDENTIFIED AS SV ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

- POTENTIOMETRIC SURFACE CONTOUR CONTOUR INTERVAL = 10 FEET DASHED WHERE INFERRED
- GROUNDWATER FLOW PATH

- PHYTOREMEDIATION POND
- TOPOGRAPHIC CONTOURS (10 FT INTERVALS - FT MSL)
- SUBSURFACE BARRIER
- SUBSURFACE BARRIER EXTENTION
- WASTE UNITS AND SEEPAGE BASINS
- FACILITY AREA BOUNDARY

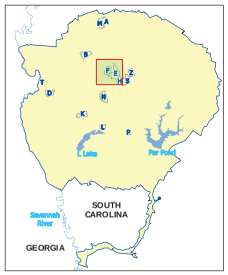
CROSS-SECTION LINES

- CROSS-SECTION A - A'
- CROSS-SECTION B - B'
- CROSS-SECTION C - C'
- CROSS-SECTION D - D'
- WATER TABLE TRANSITION FROM THE UAZ TO LAZ
- PERENNIAL STREAM
- INTERMITTENT STREAM
- SEEPLINE
- MAIN / PAVED ROAD
- RAILROAD

0 500 1,000 1,500
SCALE:FEET

0 250 500
SCALE:METERS

PLANT NORTH
TRUE NORTH
N



0 2 4 6 8
SCALE:MILES
0 4 8 12
SCALE:KILOMETERS

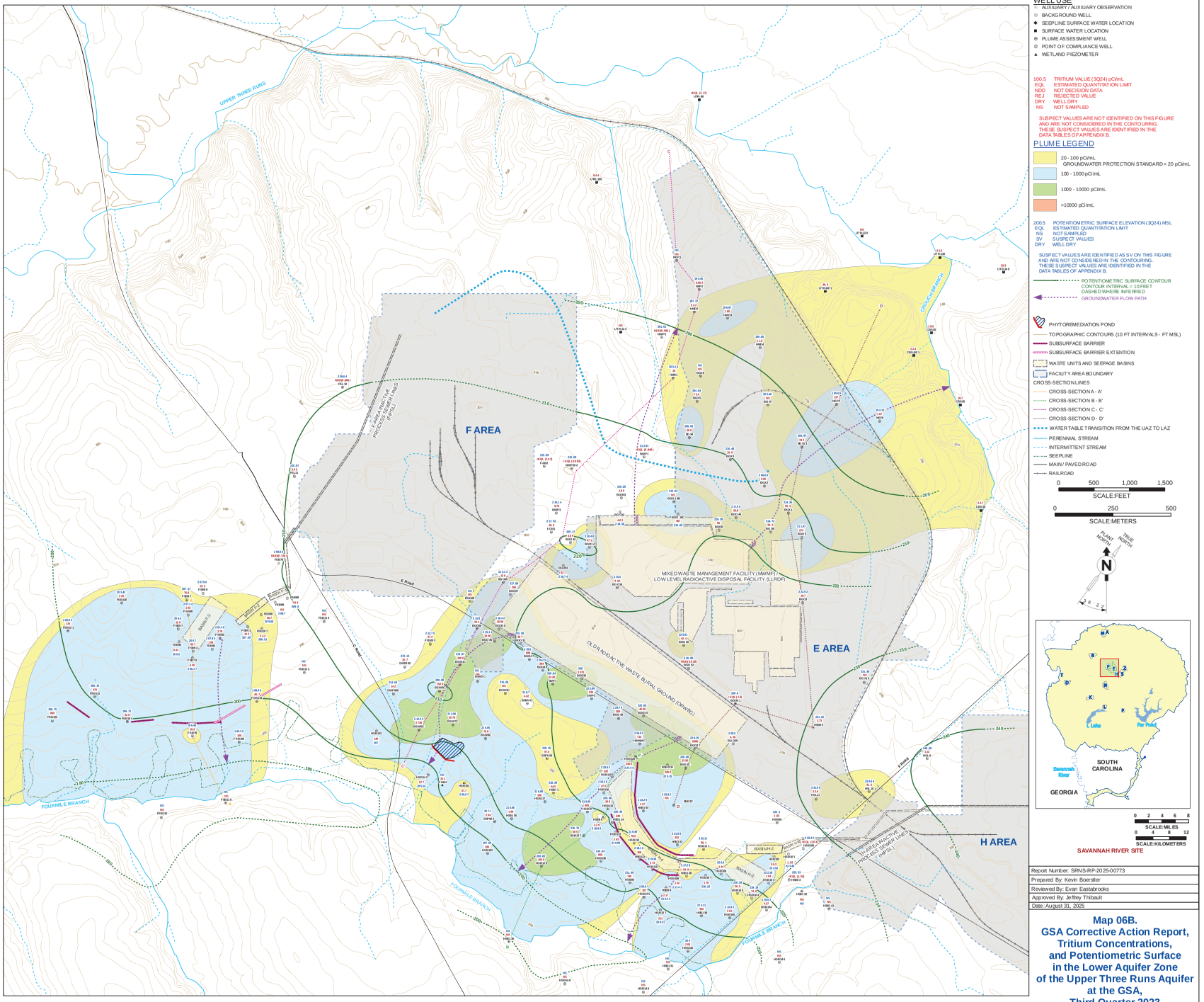
SAVANNAH RIVER SITE

Report Number:	SRNS-RP-2025-00773
Prepared By:	Kevin Boerstler
Reviewed By:	Bryce Garner
Approved By:	Jeffrey Thibault
Date:	August 31, 2025

Map 06A.
GSA Corrective Action Report, Tritium Concentrations, and Potentiometric Surface in the Upper Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024

MAP06A

Map 06A. GSA Corrective Action Report, Tritium Concentrations, and Potentiometric Surface in the Upper Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024

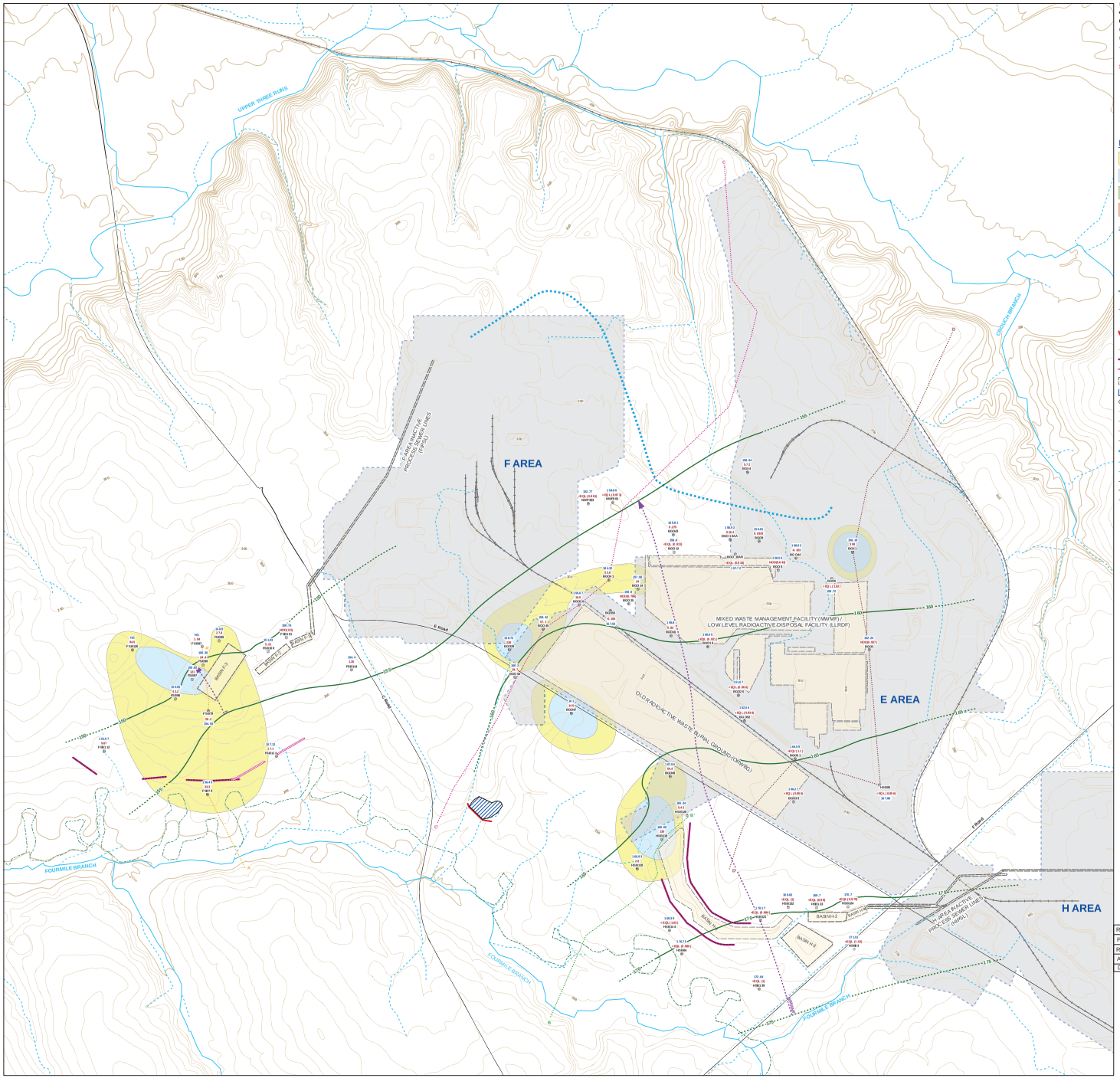


Report Number: SRNS-RP-2025-00773
Prepared By: Kevin Boerstler
Reviewed By: Evan Eastabrooks
Approved By: Jeffrey Thibault
Date: August 31, 2025

Map 06B. GSA Corrective Action Report, Tritium Concentrations, and Potentiometric Surface in the Lower Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2023

MAP06B

Map 06B. GSA Corrective Action Report, Tritium Concentrations, and Potentiometric Surface in the Lower Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024



WELL USE

- AUXILIARY / AUXILIARY OBSERVATION
- BACKGROUND WELL
- SEEPLINE SURFACE WATER LOCATION
- SURFACE WATER LOCATION
- PLUME ASSESSMENT WELL
- POINT OF COMPLIANCE WELL
- WETLAND PIEZOMETER

100.5 TRITIUM VALUE (3Q24) pCi/L
EQL ESTIMATED QUANTITATION LIMIT
NDD NOT DECISION DATA
REJ REJECTED VALUE
DRY WELL DRY
NS NOT SAMPLED

SUSPECT VALUES ARE NOT IDENTIFIED ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

PLUME LEGEND

- 20 - 100 pCi/mL (GROUNDWATER PROTECTION STANDARD = 20 pCi/mL)
- 100 - 1000 pCi/mL
- 1000 - 10000 pCi/mL
- >10000 pCi/mL

200.5 POTENTIOMETRIC SURFACE ELEVATION (3Q24) MSL
EQL ESTIMATED QUANTITATION LIMIT
NS NOT SAMPLED
SV SUSPECT VALUES
DRY WELL DRY

SUSPECT VALUES ARE IDENTIFIED AS SV ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

- POTENTIOMETRIC SURFACE CONTOUR (CONTOUR INTERVAL = 5 FEET; DASHED WHERE INFERRED)
- GROUNDWATER FLOW PATH
- PHYTOREMEDIATION POND
- TOPOGRAPHIC CONTOURS (10 FT INTERVALS - FT MSL)
- SUBSURFACE BARRIER
- SUBSURFACE BARRIER EXTENTION
- WASTE UNITS AND SEEPAGE BASINS
- FACILITY AREA BOUNDARY

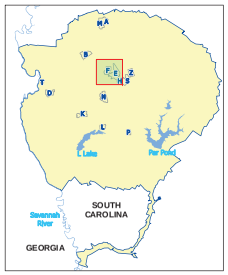
CROSS-SECTION LINES

- CROSS-SECTION A - A'
- CROSS-SECTION B - B'
- CROSS-SECTION C - C'
- CROSS-SECTION D - D'
- WATER TABLE TRANSITION FROM THE UAZ TO LAZ
- PERENNIAL STREAM
- INTERMITTENT STREAM
- SEEPLINE
- MAIN / PAVED ROAD
- RAILROAD

0 500 1,000 1,500
SCALE: FEET

0 250 500
SCALE: METERS

PLANT NORTH
TRUE NORTH



0 2 4 6 8
SCALE: MILES
0 4 8 12
SCALE: KILOMETERS

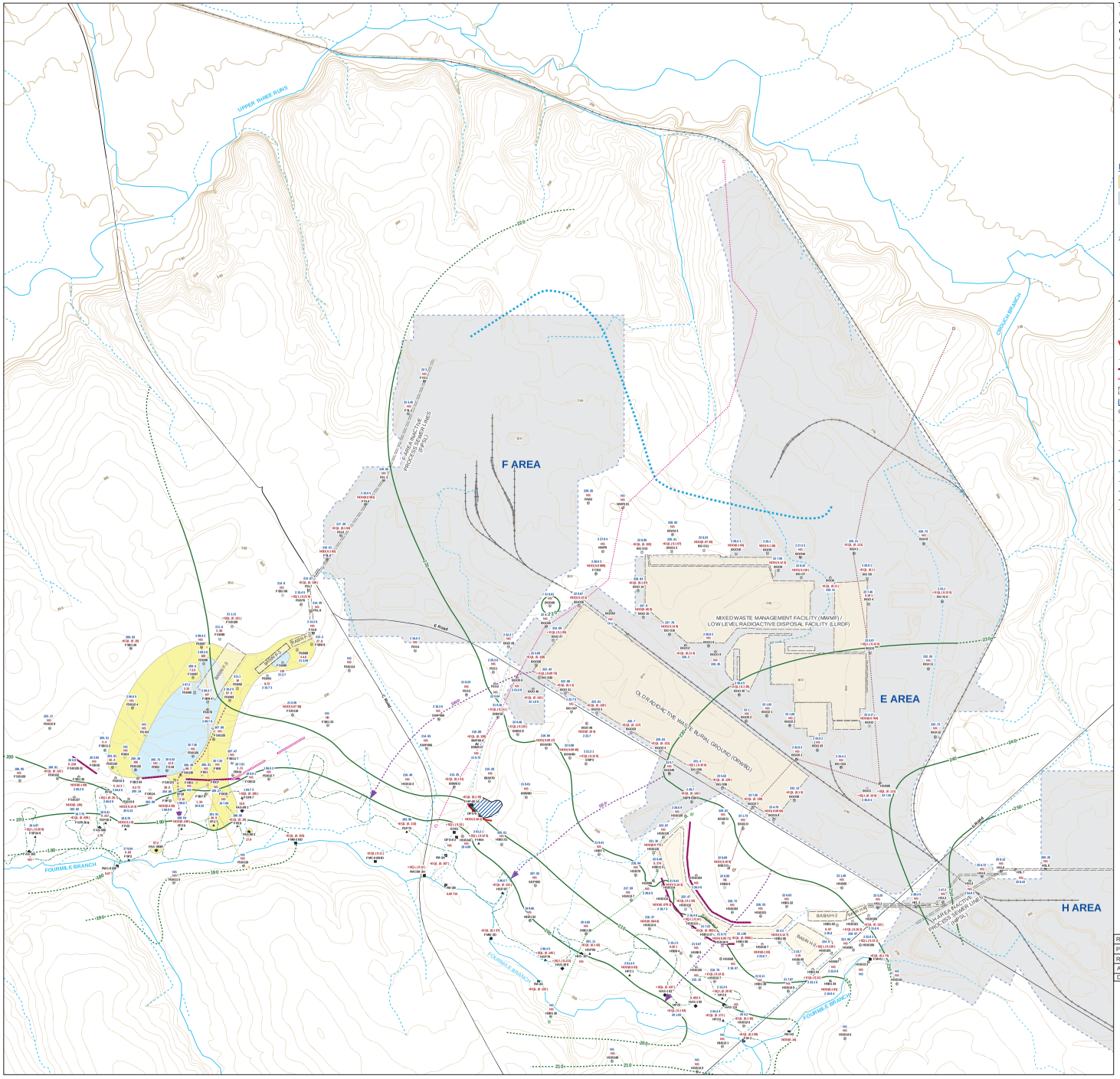
SAVANNAH RIVER SITE

Report Number:	SRNS-RP-2025-00773
Prepared By:	Kevin Boerstler
Reviewed By:	Evan Eastabrooks
Approved By:	Jeffrey Thibault
Date:	August 31, 2025

Map 06C. GSA Corrective Action Report, Tritium Concentrations, and Potentiometric Surface in the Gordon Aquifer at the GSA, Third Quarter 2024

Map 06C. GSA Corrective Action Report, Tritium Concentrations, and Potentiometric Surface in the Gordon Aquifer at the GSA, Third Quarter 2024

MAP06C



WELL USE

- AUXILIARY / AUXILIARY OBSERVATION
- BACKGROUND WELL
- SEEPLINE SURFACE WATER LOCATION
- SURFACE WATER LOCATION
- PLUME ASSESSMENT WELL
- POINT OF COMPLIANCE WELL
- WETLAND PIEZOMETER

100.5 URANIUM-238 VALUE (3Q24) pCi/L
EQL ESTIMATED QUANTITATION LIMIT
NDD NOT DECISION DATA
REJ REJECTED VALUE
DRY WELL DRY
NS NOT SAMPLED

SUSPECT VALUES ARE NOT IDENTIFIED ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

PLUME LEGEND

- 15 - 100 pCi/L
- GROUNDWATER PROTECTION STANDARD = 15 pCi/L >100 pCi/L

200.5 POTENTIOMETRIC SURFACE ELEVATION (3Q24) MSL
EQL ESTIMATED QUANTITATION LIMIT
NS NOT SAMPLED
SV SUSPECT VALUES
DRY WELL DRY

SUSPECT VALUES ARE IDENTIFIED AS SV ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

- POTENTIOMETRIC SURFACE CONTOUR CONTOUR INTERVAL = 10 FEET DASHED WHERE INFERRED
- GROUNDWATER FLOW PATH
- PHYTOREMEDIATION POND
- TOPOGRAPHIC CONTOURS (10 FT INTERVALS - FT MSL)
- SUBSURFACE BARRIER
- SUBSURFACE BARRIER EXTENTION
- WASTE UNITS AND SEEPAGE BASINS
- FACILITY AREA BOUNDARY

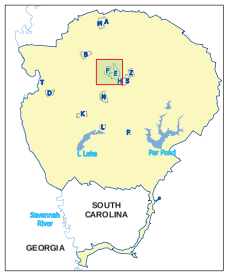
CROSS-SECTION LINES

- CROSS-SECTION A - A'
- CROSS-SECTION B - B'
- CROSS-SECTION C - C'
- CROSS-SECTION D - D'
- WATER TABLE TRANSITION FROM THE UAZ TO LAZ
- PERENNIAL STREAM
- INTERMITTENT STREAM
- SEEPLINE
- MAIN / PAVED ROAD
- RAILROAD

0 500 1,000 1,500
SCALE:FEET

0 250 500
SCALE:METERS

PLANT NORTH
TRUE NORTH
N
6 ° 2 '



0 2 4 6 8
SCALE:MILES
0 4 8 12
SCALE:KILOMETERS

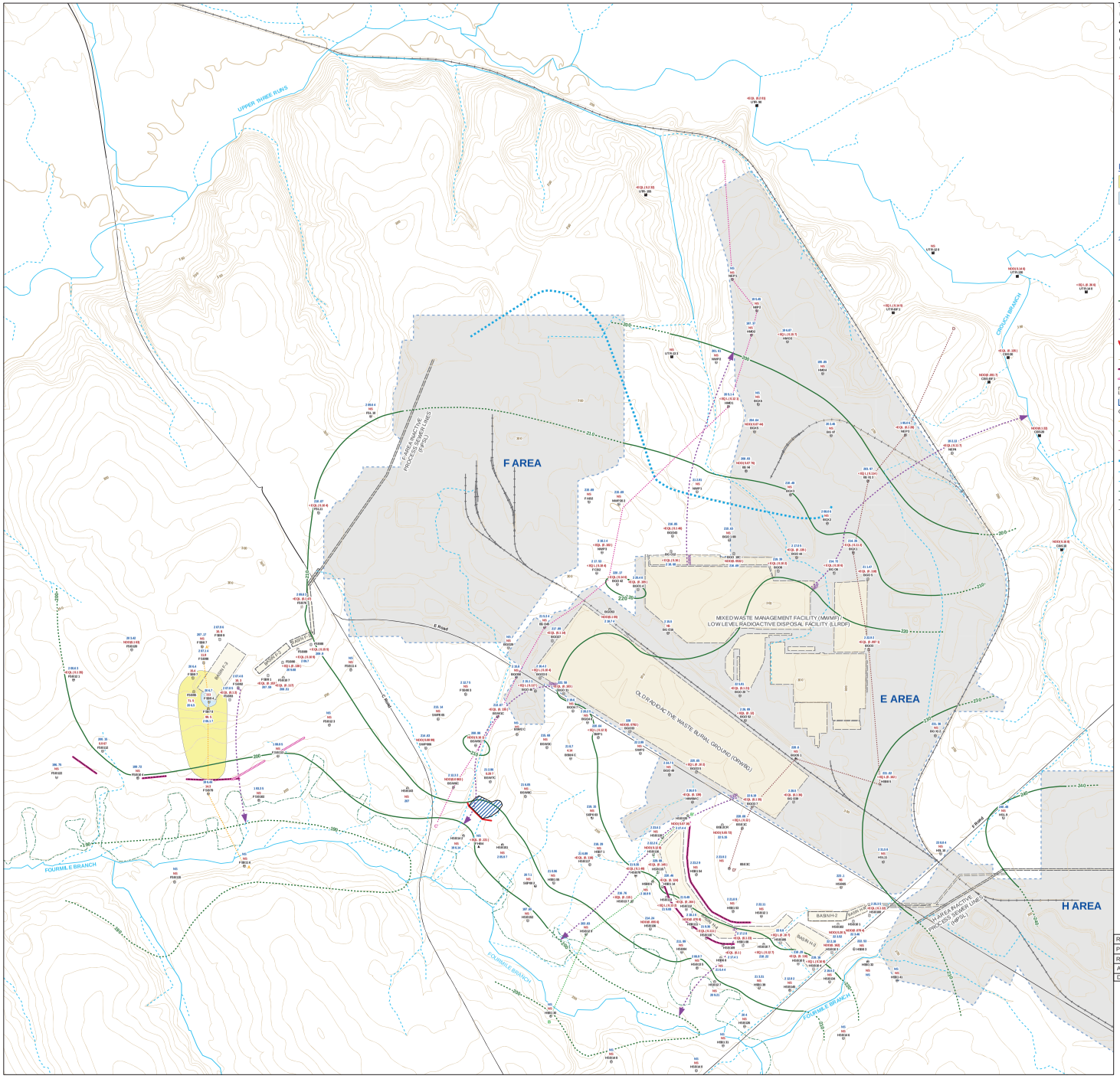
SAVANNAH RIVER SITE

Report Number:	SRNS-RP-2025-00773
Prepared By:	Kevin Boerstler
Reviewed By:	Evan Eastabrooks
Approved By:	Jeffrey Thibault
Date:	August 31, 2025

Map 07A. GSA Corrective Action Report, Uranium-238 Concentrations, and Potentiometric Surface in the Upper Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024

MAP07A

Map 07A. GSA Corrective Action Report, Uranium-238 Concentrations, and Potentiometric Surface in the Upper Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024



WELL USE

- AUXILIARY / AUXILIARY OBSERVATION
- BACKGROUND WELL
- SEEPLINE SURFACE WATER LOCATION
- SURFACE WATER LOCATION
- PLUME ASSESSMENT WELL
- POINT OF COMPLIANCE WELL
- WETLAND PIEZOMETER

100.5 URANIUM-238 VALUE (3Q24) pCi/L
EQL ESTIMATED QUANTITATION LIMIT
NDD NOT DECISION DATA
REJ REJECTED VALUE
DRY WELL DRY
NS NOT SAMPLED

SUSPECT VALUES ARE NOT IDENTIFIED ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

PLUME LEGEND

- 15 - 100 pCi/L
- GROUNDWATER PROTECTION STANDARD = 15 pCi/L
- >100 pCi/L

200.5 POTENTIOMETRIC SURFACE ELEVATION (3Q24) MSL
EQL ESTIMATED QUANTITATION LIMIT
NS NOT SAMPLED
SV SUSPECT VALUES
DRY WELL DRY

SUSPECT VALUES ARE IDENTIFIED AS SV ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

- POTENTIOMETRIC SURFACE CONTOUR CONTOUR INTERVAL = 10 FEET DASHED WHERE INFERRED
- GROUNDWATER FLOW PATH
- PHYTOREMEDIATION POND
- TOPOGRAPHIC CONTOURS (10 FT INTERVALS - FT MSL)
- SUBSURFACE BARRIER
- SUBSURFACE BARRIER EXTENTION
- WASTE UNITS AND SEEPAGE BASINS
- FACILITY AREA BOUNDARY

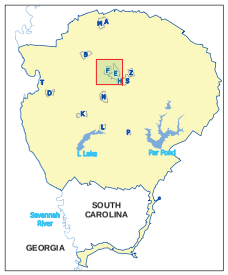
CROSS-SECTION LINES

- CROSS-SECTION A - A'
- CROSS-SECTION B - B'
- CROSS-SECTION C - C'
- CROSS-SECTION D - D'
- WATER TABLE TRANSITION FROM THE UAZ TO LAZ
- PERENNIAL STREAM
- INTERMITTENT STREAM
- SEEPLINE
- MAIN / PAVED ROAD
- RAILROAD

0 500 1,000 1,500
SCALE: FEET

0 250 500
SCALE: METERS

PLANT NORTH
TRUE NORTH



0 2 4 6 8
SCALE: MILES
0 4 8 12
SCALE: KILOMETERS

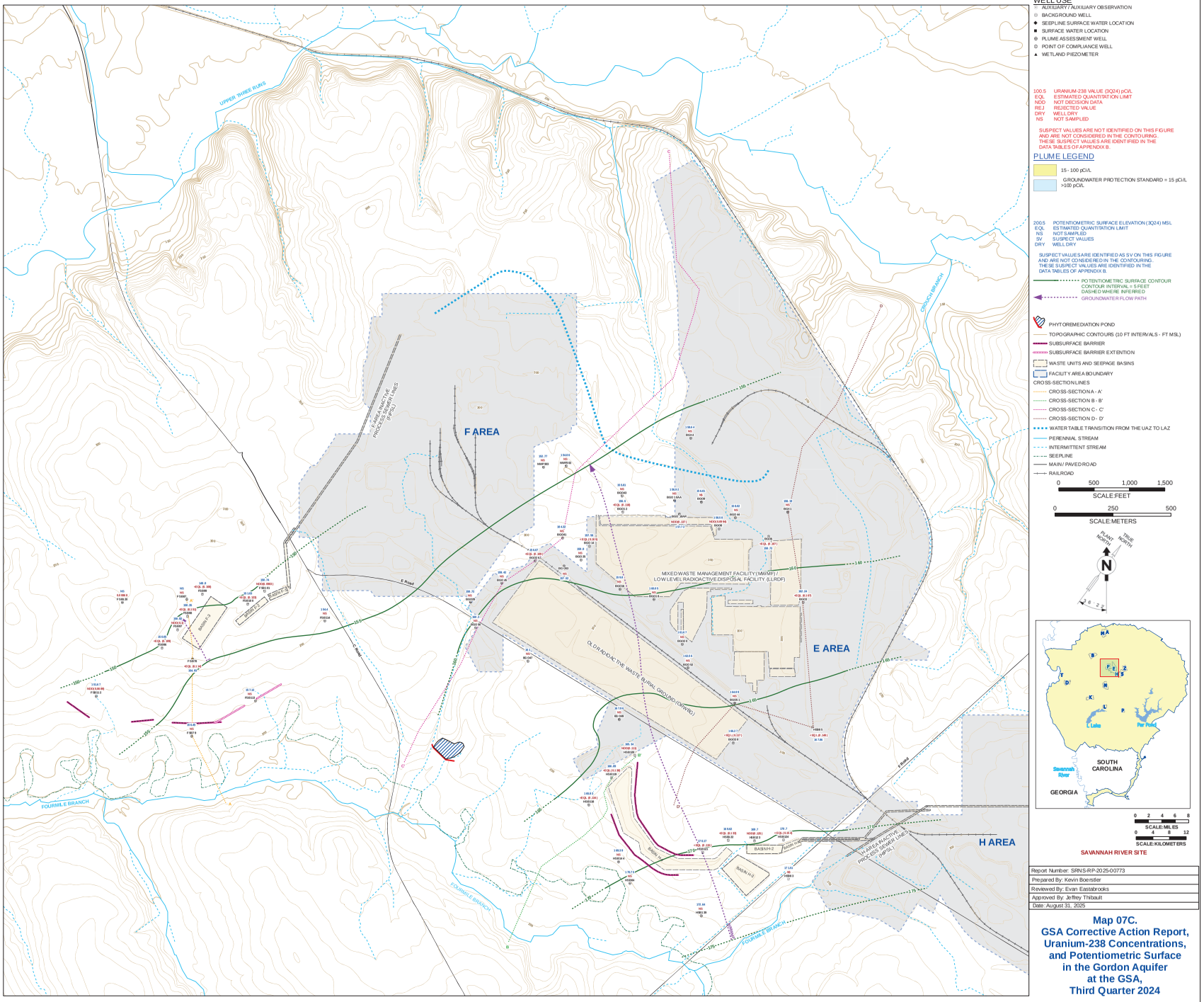
SAVANNAH RIVER SITE

Report Number:	SRNS-RP-2025-00773
Prepared By:	Kevin Boerstler
Reviewed By:	Evan Eastabrooks
Approved By:	Jeffrey Thibault
Date:	August 31, 2025

Map 07B.
GSA Corrective Action Report, Uranium-238 Concentrations, and Potentiometric Surface in the Lower Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024

MAP07B

Map 07B. GSA Corrective Action Report, Uranium-238 Concentrations, and Potentiometric Surface in the Lower Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024

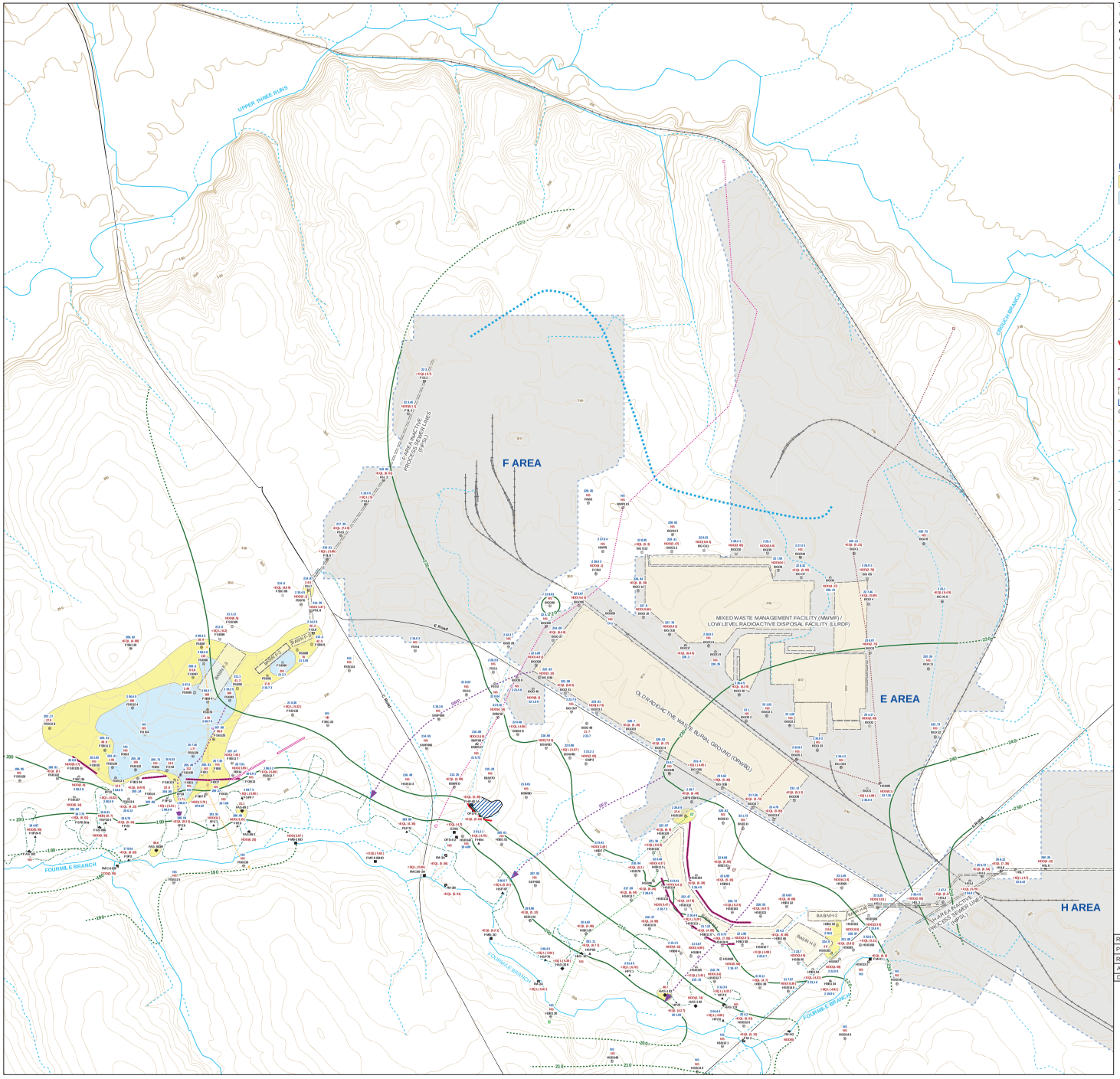


Report Number:	SRNS-RP-2025-00773
Prepared By:	Kevin Boerstler
Reviewed By:	Evan Eastabrooks
Approved By:	Jeffrey Thibault
Date:	August 31, 2025

Map 07C. GSA Corrective Action Report, Uranium-238 Concentrations, and Potentiometric Surface in the Gordon Aquifer at the GSA, Third Quarter 2024

Map 07C. GSA Corrective Action Report, Uranium-238 Concentrations, and Potentiometric Surface in the Gordon Aquifer at the GSA, Third Quarter 2024

MAP07C



WELL USE

- AUXILIARY / AUXILIARY OBSERVATION
- BACKGROUND WELL
- SEEPLINE SURFACE WATER LOCATION
- SURFACE WATER LOCATION
- PLUME ASSESSMENT WELL
- POINT OF COMPLIANCE WELL
- WETLAND PIEZOMETER

100.5 GROSS ALPHA VALUE (3Q24) pCi/L
EQL ESTIMATED QUANTITATION LIMIT
NDD NOT DECISION DATA
REJ REJECTED VALUE
DRY WELL DRY
NS NOT SAMPLED

SUSPECT VALUES ARE NOT IDENTIFIED ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

PLUME LEGEND

- 15 - 100 pCi/L
- GROUNDWATER PROTECTION STANDARD = 15 pCi/L >100 pCi/L

200.5 POTENTIOMETRIC SURFACE ELEVATION (3Q24) MSL
EQL ESTIMATED QUANTITATION LIMIT
NS NOT SAMPLED
SV SUSPECT VALUES
DRY WELL DRY

SUSPECT VALUES ARE IDENTIFIED AS SV ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

- POTENTIOMETRIC SURFACE CONTOUR CONTOUR INTERVAL = 10 FEET DASHED WHERE INFERRED
- GROUNDWATER FLOW PATH
- PHYTOREMEDIATION POND
- TOPOGRAPHIC CONTOURS (10 FT INTERVALS - FT MSL)
- SUBSURFACE BARRIER
- SUBSURFACE BARRIER EXTENTION
- WASTE UNITS AND SEEPAGE BASINS
- FACILITY AREA BOUNDARY

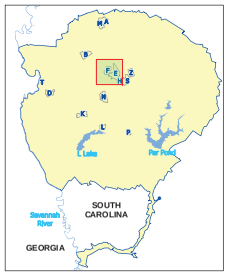
CROSS-SECTION LINES

- CROSS-SECTION A - A'
- CROSS-SECTION B - B'
- CROSS-SECTION C - C'
- CROSS-SECTION D - D'
- WATER TABLE TRANSITION FROM THE UAZ TO LAZ
- PERENNIAL STREAM
- INTERMITTENT STREAM
- SEEPLINE
- MAIN / PAVED ROAD
- RAILROAD

0 500 1,000 1,500
SCALE:FEET

0 250 500
SCALE:METERS

PLANT NORTH
TRUE NORTH
N



0 2 4 6 8
SCALE:MILES
0 4 8 12
SCALE:KILOMETERS

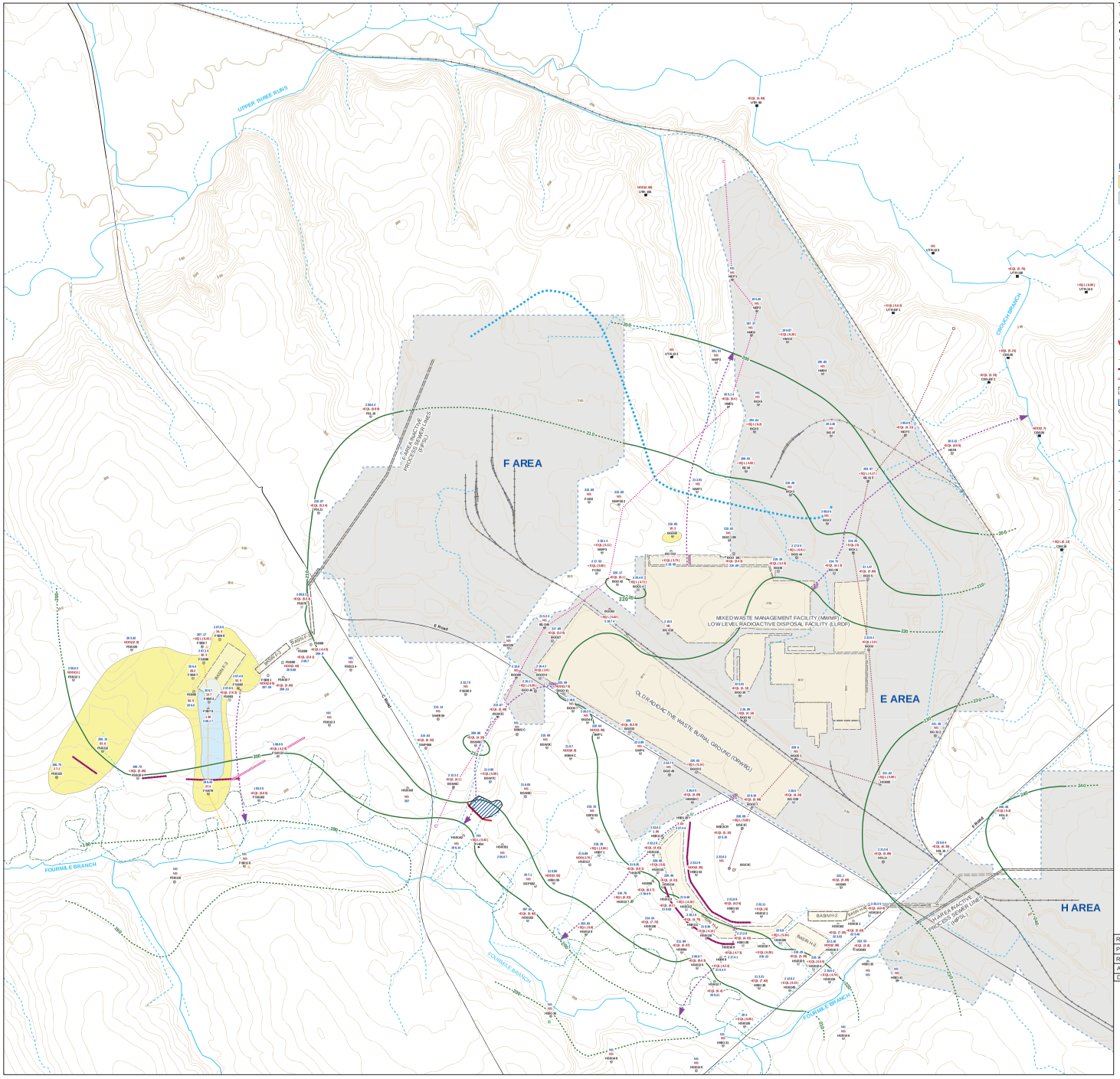
SAVANNAH RIVER SITE

Report Number: SRNS-RP-2025-0773
Prepared By: Kevin Boerstler
Reviewed By: Evan Eastabrooks
Approved By: Jeffrey Thibault
Date: August 31, 2025

Map 08A. GSA Corrective Action Report, Gross Alpha Concentrations, and Potentiometric Surface in the Upper Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024

MAP08A

Map 08A. GSA Corrective Action Report, Gross Alpha Concentrations, and Potentiometric Surface in the Upper Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024



WELL USE

- AUXILIARY / AUXILIARY OBSERVATION
- BACKGROUND WELL
- SEEPLINE SURFACE WATER LOCATION
- SURFACE WATER LOCATION
- PLUME ASSESSMENT WELL
- POINT OF COMPLIANCE WELL
- WETLAND PIEZOMETER

100.5 GROSS ALPHA VALUE (3Q24) pCi/L
EQL ESTIMATED QUANTITATION LIMIT
NDD NOT DECISION DATA
REJ REJECTED VALUE
DRY WELL DRY
NS NOT SAMPLED

SUSPECT VALUES ARE NOT IDENTIFIED ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

PLUME LEGEND

- 15 - 100 pCi/L
- GROUNDWATER PROTECTION STANDARD = 15 pCi/L
- >100 pCi/L

200.5 POTENTIOMETRIC SURFACE ELEVATION (3Q24) MSL
EQL ESTIMATED QUANTITATION LIMIT
NS NOT SAMPLED
SV SUSPECT VALUES
DRY WELL DRY

SUSPECT VALUES ARE IDENTIFIED AS SV ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

- POTENTIOMETRIC SURFACE CONTOUR CONTOUR INTERVAL = 10 FEET DASHED WHERE INFERRED
- GROUNDWATER FLOW PATH
- PHYTOREMEDIATION POND
- TOPOGRAPHIC CONTOURS (10 FT INTERVALS - FT MSL)
- SUBSURFACE BARRIER
- SUBSURFACE BARRIER EXTENTION
- WASTE UNITS AND SEEPAGE BASINS
- FACILITY AREA BOUNDARY

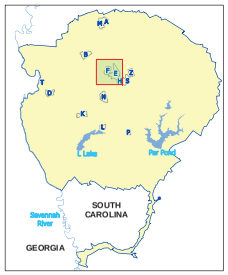
CROSS-SECTION LINES

- CROSS-SECTION A - A'
- CROSS-SECTION B - B'
- CROSS-SECTION C - C'
- CROSS-SECTION D - D'
- WATER TABLE TRANSITION FROM THE UAZ TO LAZ
- PERENNIAL STREAM
- INTERMITTENT STREAM
- SEEPLINE
- MAIN / PAVED ROAD
- RAILROAD

0 500 1,000 1,500
SCALE: FEET

0 250 500
SCALE: METERS

PLANT NORTH
TRUE NORTH



0 2 4 6 8
SCALE: MILES
0 4 8 12
SCALE: KILOMETERS

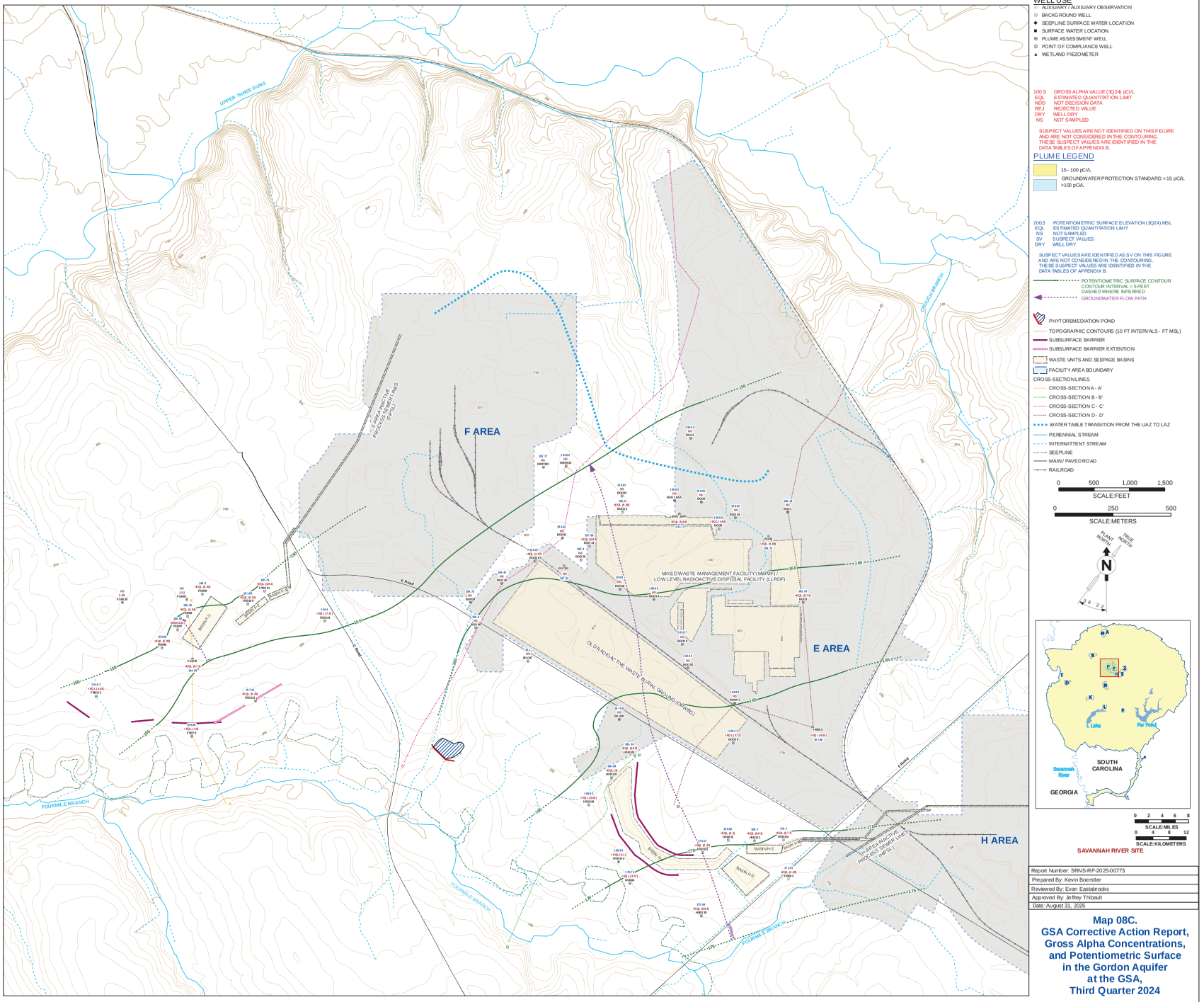
SAVANNAH RIVER SITE

Report Number:	SRNS-RP-2025-00773
Prepared By:	Kevin Boerstler
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Approved By:	Jeffrey Thibault
Date:	August 31, 2025

Map 08B. GSA Corrective Action Report, Gross Alpha Concentrations, and Potentiometric Surface in the Lower Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024

MAP08B

Map 08B. GSA Corrective Action Report, Gross Alpha Concentrations, and Potentiometric Surface in the Lower Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024

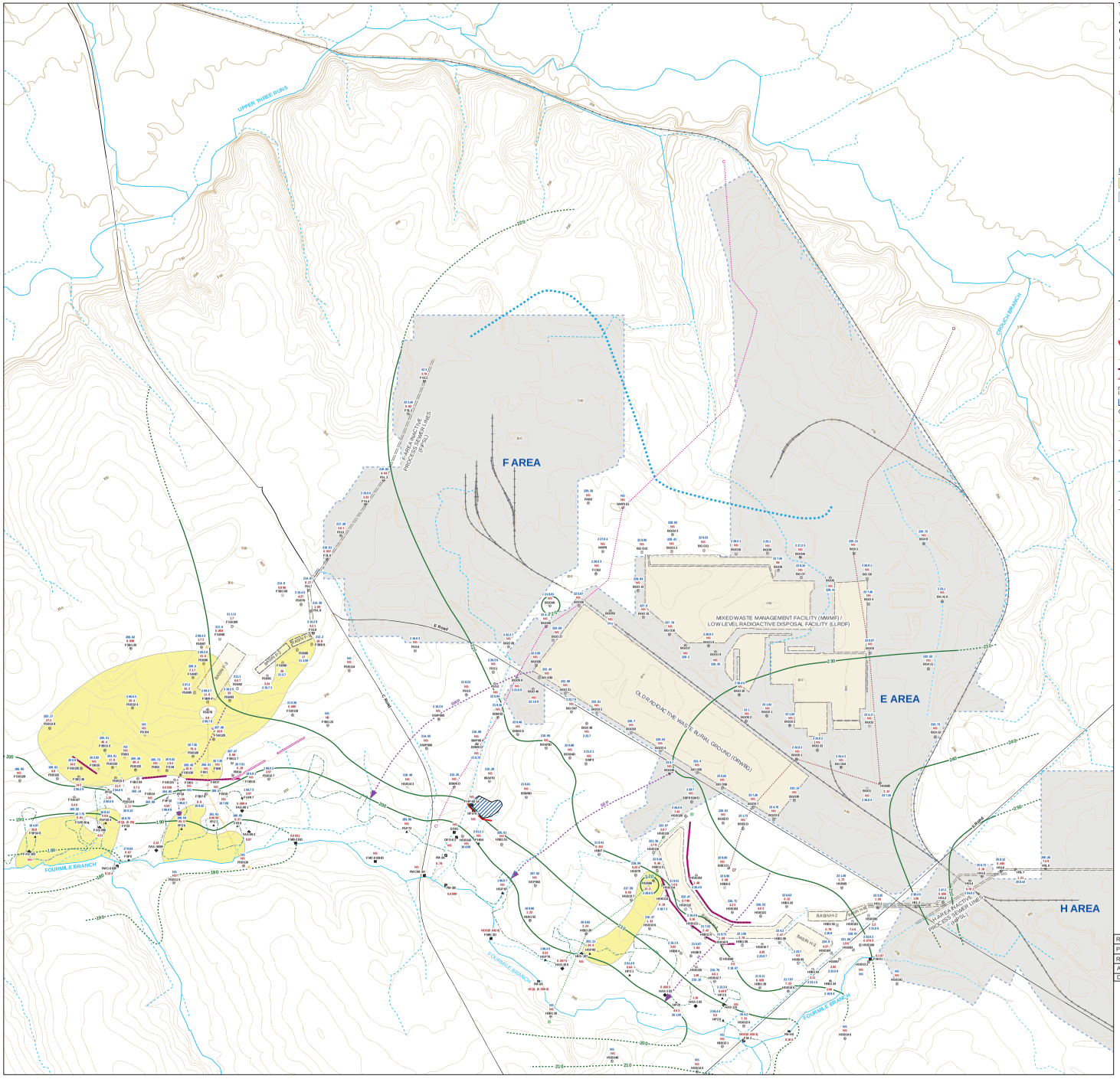


Report Number:	SRNS-RP-2025-00773
Prepared By:	Kevin Boerstler
Reviewed By:	Evan Eastabrooks
Approved By:	Jeffrey Thibault
Date:	August 31, 2025

Map 08C.
GSA Corrective Action Report, Gross Alpha Concentrations, and Potentiometric Surface in the Gordon Aquifer at the GSA, Third Quarter 2024

Map 08C. GSA Corrective Action Report, Gross Alpha Concentrations, and Potentiometric Surface in the Gordon Aquifer at the GSA, Third Quarter 2024

MAP08C



WELL USE

- AUXILIARY / AUXILIARY OBSERVATION
- BACKGROUND WELL
- SEEPLINE SURFACE WATER LOCATION
- SURFACE WATER LOCATION
- PLUME ASSESSMENT WELL
- POINT OF COMPLIANCE WELL
- WETLAND PIEZOMETER

100.5 NITRATE-NITRITE (3Q24) mg/L
EQL ESTIMATED QUANTITATION LIMIT
NDD NOT DECISION DATA
REJ REJECTED VALUE
DRY WELL DRY
NS NOT SAMPLED

SUSPECT VALUES ARE NOT IDENTIFIED ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

PLUME LEGEND

- 10 - 100 mg/L GROUNDWATER PROTECTION STANDARD = 10 mg/L
- >100 mg/L

200.5 POTENTIOMETRIC SURFACE ELEVATION (3Q24) MSL
EQL ESTIMATED QUANTITATION LIMIT
NS NOT SAMPLED
SV SUSPECT VALUES
DRY WELL DRY

SUSPECT VALUES ARE IDENTIFIED AS SV ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

- POTENTIOMETRIC SURFACE CONTOUR CONTOUR INTERVAL = 10 FEET DASHED WHERE INFERRED
- GROUNDWATER FLOW PATH

- PHYTOREMEDIATION POND
- TOPOGRAPHIC CONTOURS (10 FT INTERVALS - FT MSL)
- SUBSURFACE BARRIER
- SUBSURFACE BARRIER EXTENTION
- WASTE UNITS AND SEEPAGE BASINS
- FACILITY AREA BOUNDARY

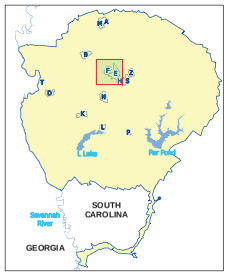
CROSS-SECTION LINES

- CROSS-SECTION A - A'
- CROSS-SECTION B - B'
- CROSS-SECTION C - C'
- CROSS-SECTION D - D'
- WATER TABLE TRANSITION FROM THE UAZ TO LAZ
- PERENNIAL STREAM
- INTERMITTENT STREAM
- SEEPLINE
- MAIN / PAVED ROAD
- RAILROAD

0 500 1,000 1,500
SCALE:FEET

0 250 500
SCALE:METERS

PLANT NORTH
TRUE NORTH



0 2 4 6 8
SCALE:MILES
0 4 8 12
SCALE:KILOMETERS

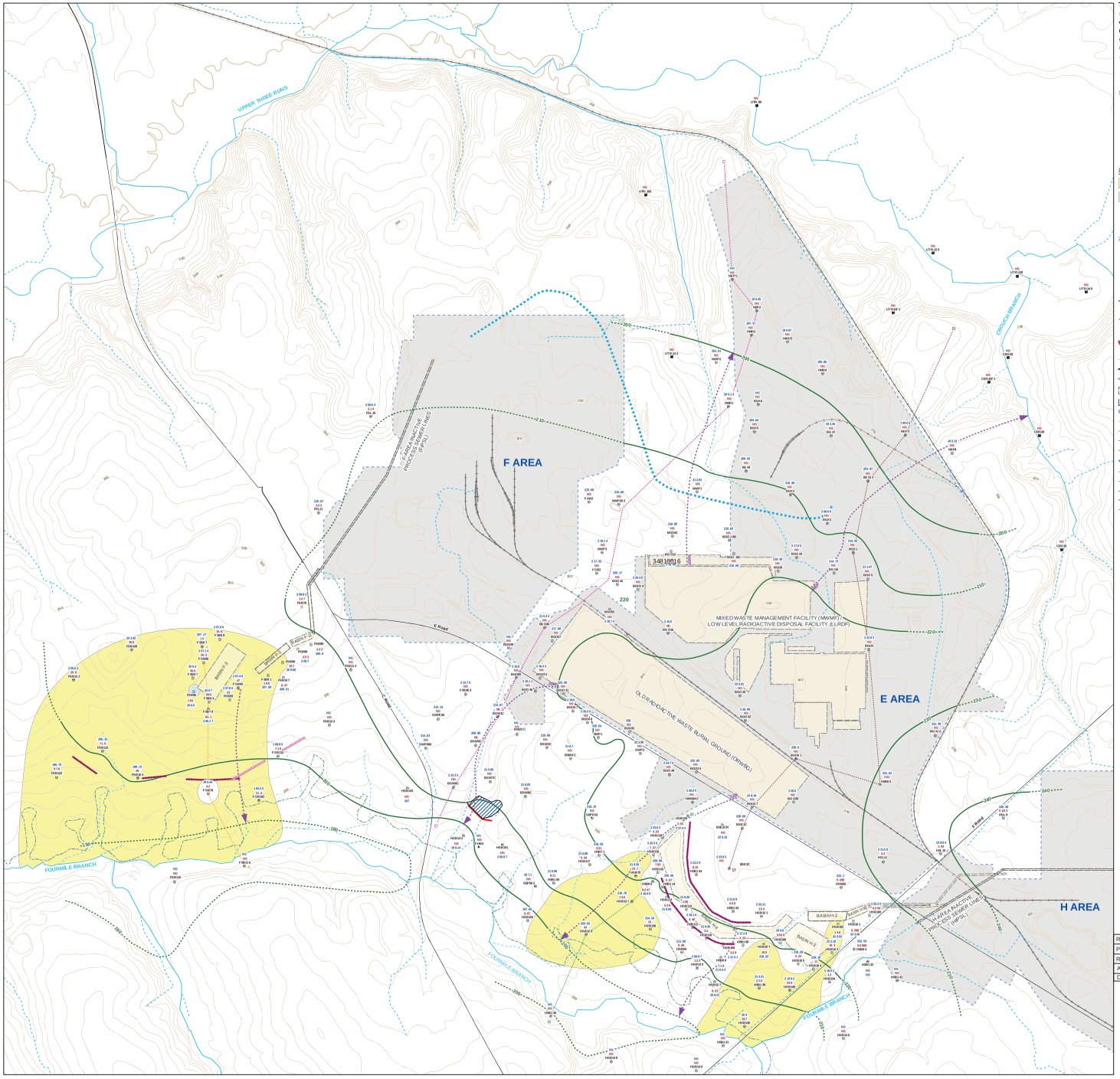
SAVANNAH RIVER SITE

Report Number:	SRNS-RP-2025-00773
Prepared By:	Kevin Boerstler
Reviewed By:	Evan Eastabrooks
Approved By:	Jeffrey Thibault
Date:	August 31, 2025

Map 09A. GSA Corrective Action Report, Nitrate-Nitrite Concentrations, and Potentiometric Surface in the Upper Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024

MAP09A

Map 09A. GSA Corrective Action Report, Nitrate-Nitrite Concentrations, and Potentiometric Surface in the Upper Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024



WELL USE

- AUXILIARY / AUXILIARY OBSERVATION
- BACKGROUND WELL
- SEEPLINE SURFACE WATER LOCATION
- SURFACE WATER LOCATION
- PLUME ASSESSMENT WELL
- POINT OF COMPLIANCE WELL
- WETLAND PIEZOMETER

100.5	NITRATE-NITRITE (3Q24) mg/L
EQL	ESTIMATED QUANTITATION LIMIT
NDD	NOT DECISION DATA
REJ	REJECTED VALUE
DRY	WELL DRY
NS	NOT SAMPLED

SUSPECT VALUES ARE NOT IDENTIFIED ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

PLUME LEGEND

- 10 - 100 mg/L GROUNDWATER PROTECTION STANDARD = 10 mg/L
- >100 mg/L

200.5	POTENTIOMETRIC SURFACE ELEVATION (3Q24) MSL
EQL	ESTIMATED QUANTITATION LIMIT
NS	NOT SAMPLED
SV	SUSPECT VALUES
DRY	WELL DRY

SUSPECT VALUES ARE IDENTIFIED AS SV ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

- POTENTIOMETRIC SURFACE CONTOUR CONTOUR INTERVAL = 10 FEET DASHED WHERE INFERRED
- GROUNDWATER FLOW PATH
- PHYTOREMEDIATION POND
- TOPOGRAPHIC CONTOURS (10 FT INTERVALS - FT MSL)
- SUBSURFACE BARRIER
- SUBSURFACE BARRIER EXTENTION
- WASTE UNITS AND SEEPAGE BASINS
- FACILITY AREA BOUNDARY

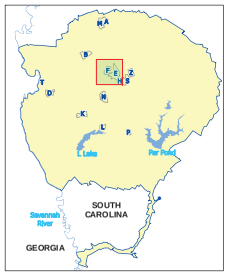
CROSS-SECTION LINES

- CROSS-SECTION A - A'
- CROSS-SECTION B - B'
- CROSS-SECTION C - C'
- CROSS-SECTION D - D'
- WATER TABLE TRANSITION FROM THE UAZ TO LAZ
- PERENNIAL STREAM
- INTERMITTENT STREAM
- SEEPLINE
- MAIN / PAVED ROAD
- RAILROAD

0 500 1,000 1,500
SCALE: FEET

0 250 500
SCALE: METERS

PLANT NORTH
TRUE NORTH



0 2 4 6 8
SCALE: MILES
0 4 8 12
SCALE: KILOMETERS

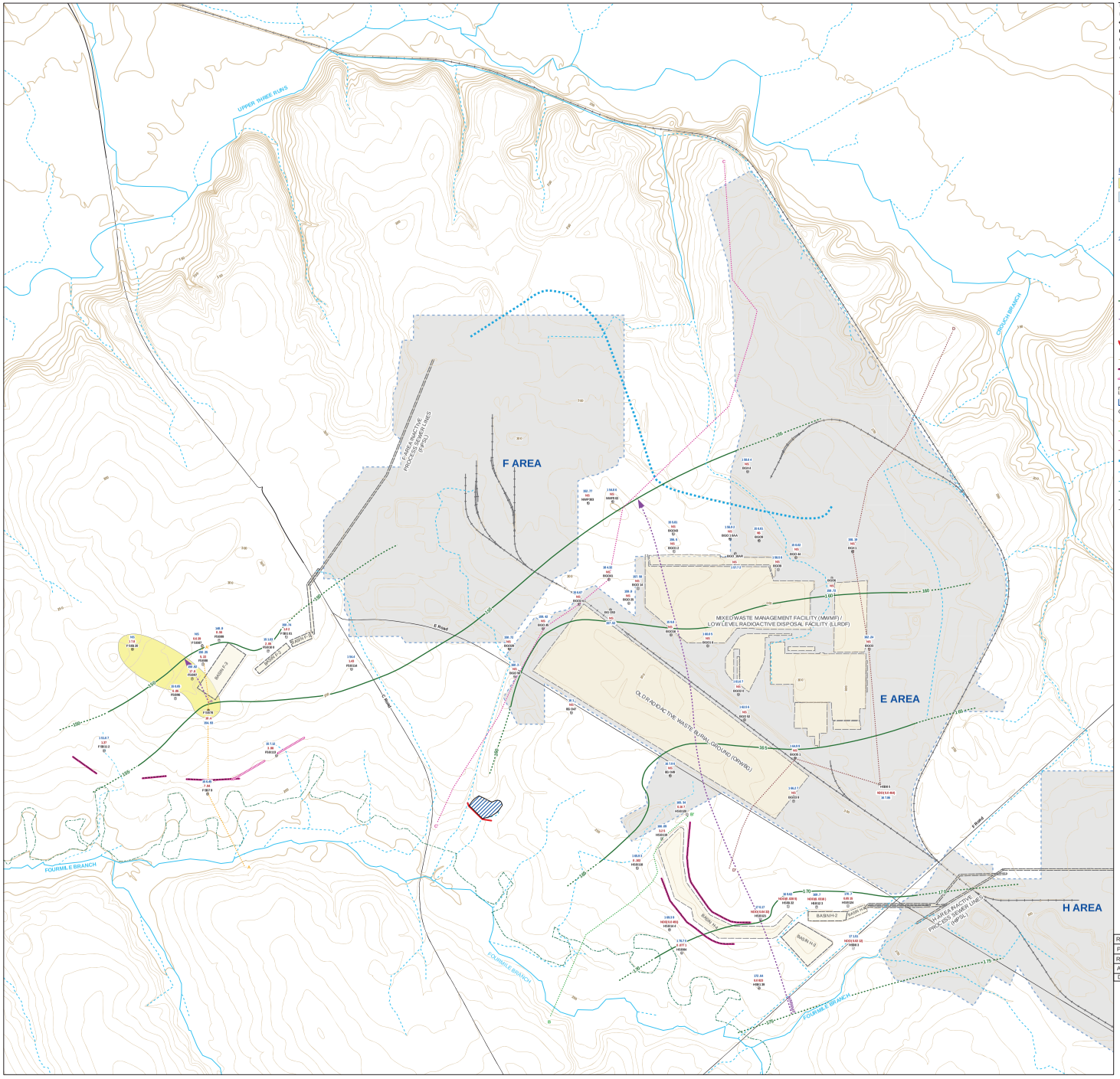
SAVANNAH RIVER SITE

Report Number:	SRNS-RP-2025-00773
Prepared By:	Kevin Boerstler
Reviewed By:	Evan Eastabrooks
Approved By:	Jeffrey Thibault
Date:	August 31, 2025

Map 09B.
GSA Corrective Action Report, Nitrate-Nitrite Concentrations, and Potentiometric Surface in the Lower Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024

MAP09B

Map 09B. GSA Corrective Action Report, Nitrate-Nitrite Concentrations, and Potentiometric Surface in the Lower Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024



WELL USE

- AUXILIARY / AUXILIARY OBSERVATION
- BACKGROUND WELL
- SEEPLINE SURFACE WATER LOCATION
- SURFACE WATER LOCATION
- PLUME ASSESSMENT WELL
- POINT OF COMPLIANCE WELL
- WETLAND PIEZOMETER

100.5 NITRATE-NITRITE (3Q24) mg/L
EQL ESTIMATED QUANTITATION LIMIT
NDD NOT DECISION DATA
REJ REJECTED VALUE
DRY WELL DRY
NS NOT SAMPLED

SUSPECT VALUES ARE NOT IDENTIFIED ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

PLUME LEGEND

- 10 - 100 mg/L
- GROUNDWATER PROTECTION STANDARD = 10 mg/L
- >100 mg/L

200.5 POTENTIOMETRIC SURFACE ELEVATION (3Q24) MSL
EQL ESTIMATED QUANTITATION LIMIT
NS NOT SAMPLED
SV SUSPECT VALUES
DRY WELL DRY

SUSPECT VALUES ARE IDENTIFIED AS SV ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

- POTENTIOMETRIC SURFACE CONTOUR CONTOUR INTERVAL = 5 FEET DASHED WHERE INFERRED
- GROUNDWATER FLOW PATH
- PHYTOREMEDIATION POND
- TOPOGRAPHIC CONTOURS (10 FT INTERVALS - FT MSL)
- SUBSURFACE BARRIER
- SUBSURFACE BARRIER EXTENTION
- WASTE UNITS AND SEEPAGE BASINS
- FACILITY AREA BOUNDARY

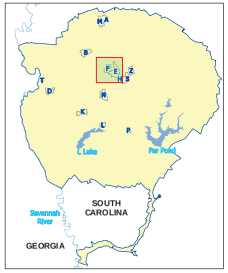
CROSS-SECTION LINES

- CROSS-SECTION A - A'
- CROSS-SECTION B - B'
- CROSS-SECTION C - C'
- CROSS-SECTION D - D'
- WATER TABLE TRANSITION FROM THE UAZ TO LAZ
- PERENNIAL STREAM
- INTERMITTENT STREAM
- SEEPLINE
- MAIN / PAVED ROAD
- RAILROAD

0 500 1,000 1,500
SCALE:FEET

0 250 500
SCALE:METERS

PLANT NORTH
TRUE NORTH
N



0 2 4 6 8
SCALE:MILES
0 4 8 12
SCALE:KILOMETERS

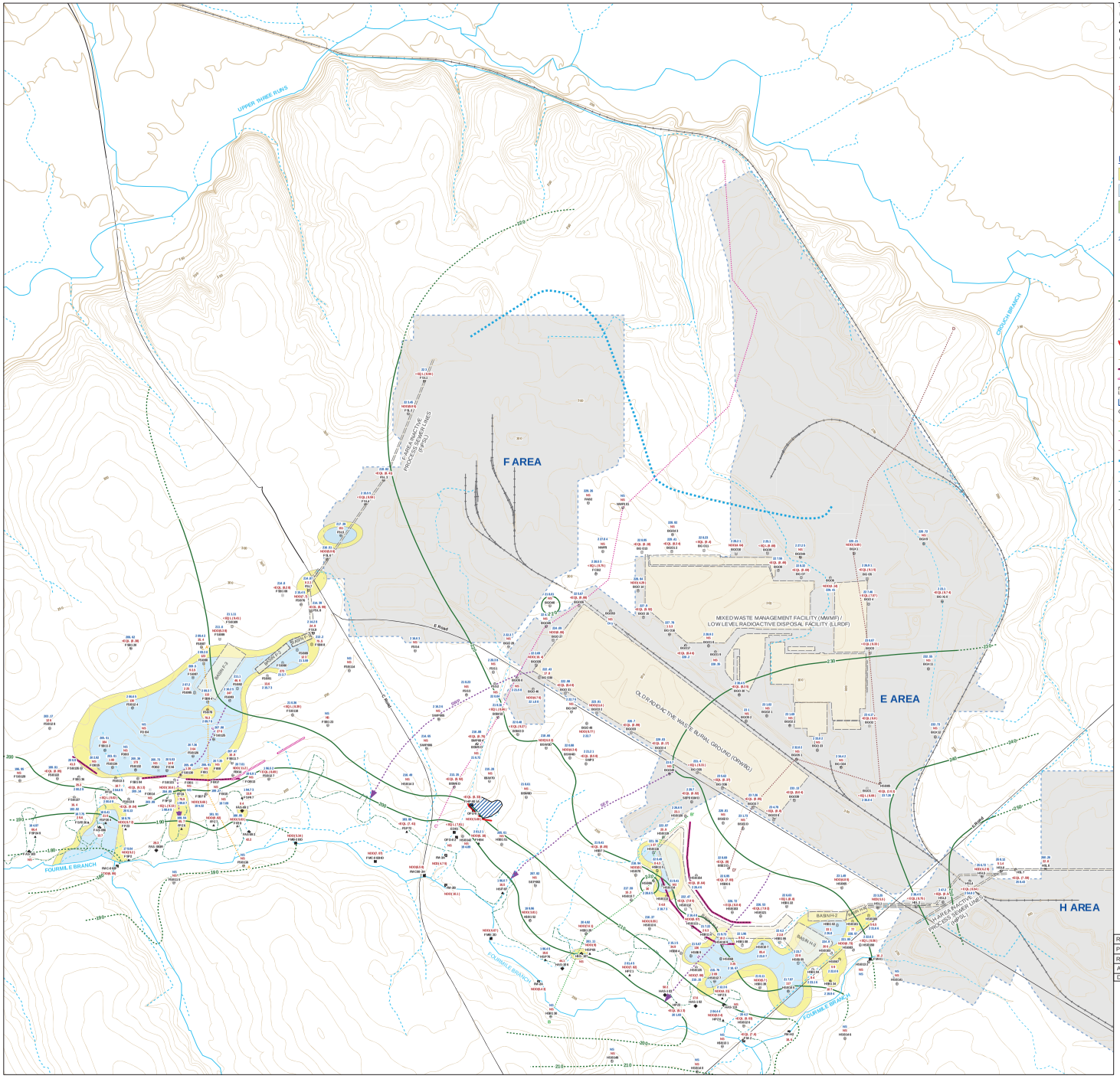
SAVANNAH RIVER SITE

Report Number:	SRNS-RP-2025-00773
Prepared By:	Kevin Boerstler
Reviewed By:	Evan Eastabrooks
Approved By:	Jeffrey Thibault
Date:	August 31, 2025

Map 09C. GSA Corrective Action Report, Nitrate-Nitrite Concentrations, and Potentiometric Surface in the Gordon Aquifer at the GSA, Third Quarter 2024

Map 09C. GSA Corrective Action Report, Nitrate-Nitrite Concentrations, and Potentiometric Surface in the Gordon Aquifer at the GSA, Third Quarter 2024

MAP09C



WELL USE

- AUXILIARY / AUXILIARY OBSERVATION
- BACKGROUND WELL
- SEEPLINE SURFACE WATER LOCATION
- SURFACE WATER LOCATION
- PLUME ASSESSMENT WELL
- POINT OF COMPLIANCE WELL
- WETLAND PIEZOMETER

100.5 NONVOLATILE BETA (3Q24) pCi/L
EQL ESTIMATED QUANTITATION LIMIT
NDD NOT DECISION DATA
REJ REJECTED VALUE
DRY WELL DRY
NS NOT SAMPLED

SUSPECT VALUES ARE NOT IDENTIFIED ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

PLUME LEGEND

- 50 - 100 pCi/L GROUNDWATER PROTECTION STANDARD = 50 pCi/L
- 100 - 1000 pCi/L
- >1000 pCi/L

200.5 POTENTIOMETRIC SURFACE ELEVATION (3Q24) MSL
EQL ESTIMATED QUANTITATION LIMIT
NS NOT SAMPLED
SV SUSPECT VALUES
DRY WELL DRY

SUSPECT VALUES ARE IDENTIFIED AS SV ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

- POTENTIOMETRIC SURFACE CONTOUR CONTOUR INTERVAL = 10 FEET DASHED WHERE INFERRED
- GROUNDWATER FLOW PATH
- PHYTOREMEDIATION POND
- TOPOGRAPHIC CONTOURS (10 FT INTERVALS - FT MSL)
- SUBSURFACE BARRIER
- SUBSURFACE BARRIER EXTENTION
- WASTE UNITS AND SEEPAGE BASINS
- FACILITY AREA BOUNDARY

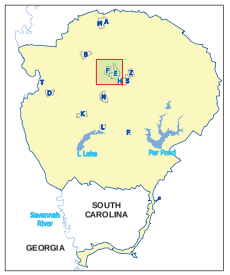
CROSS-SECTION LINES

- CROSS-SECTION A - A'
- CROSS-SECTION B - B'
- CROSS-SECTION C - C'
- CROSS-SECTION D - D'
- WATER TABLE TRANSITION FROM THE UAZ TO LAZ
- PERENNIAL STREAM
- INTERMITTENT STREAM
- SEEPLINE
- MAIN / PAVED ROAD
- RAILROAD

0 500 1,000 1,500
SCALE:FEET

0 250 500
SCALE:METERS

PLANT NORTH
TRUE NORTH
N



0 2 4 6 8
SCALE:MILES
0 4 8 12
SCALE:KILOMETERS

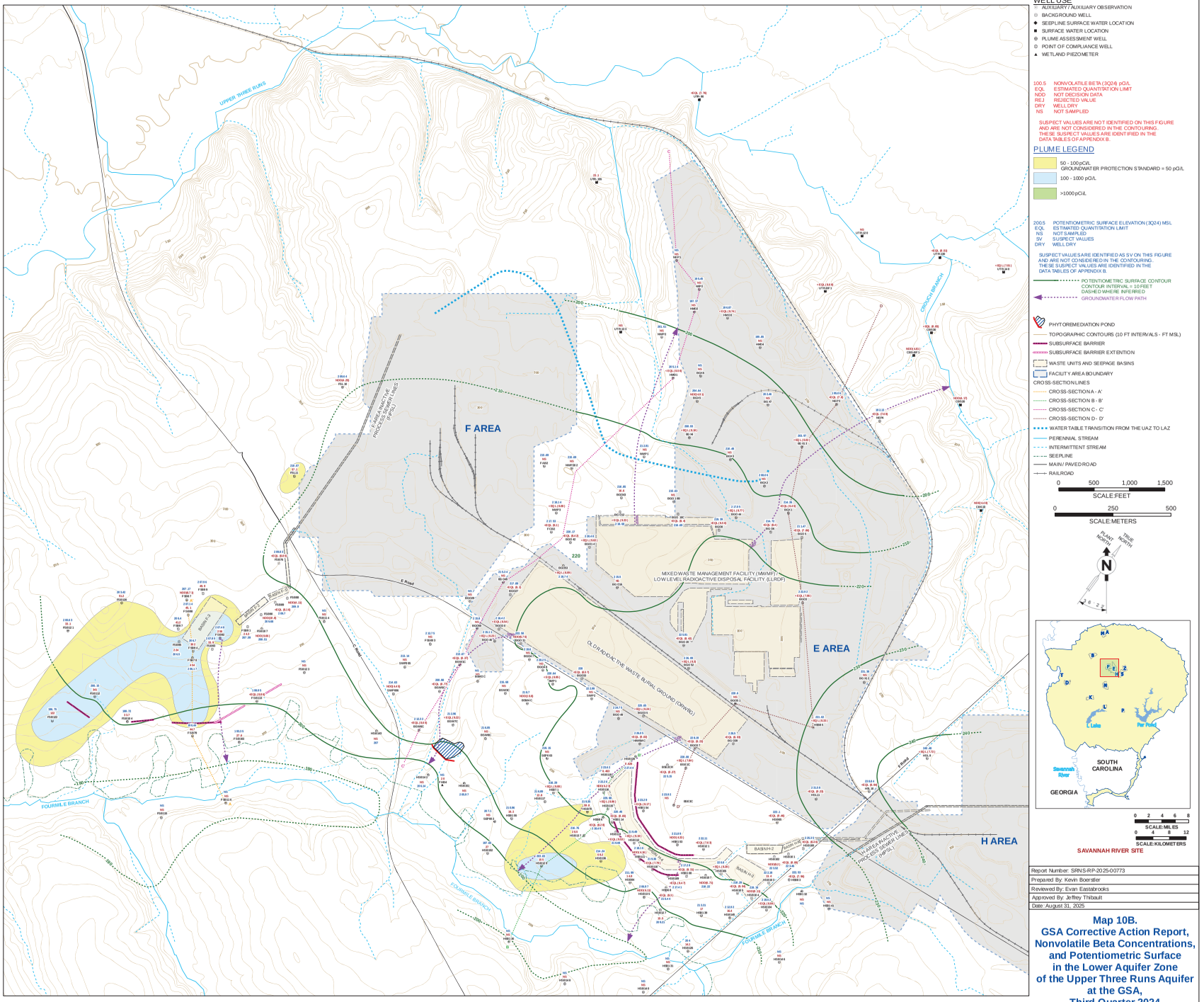
SAVANNAH RIVER SITE

Report Number:	SRNS-RP-2025-00773
Prepared By:	Kevin Boerstler
Reviewed By:	Bryce Garner
Approved By:	Jeffrey Thibault
Date:	August 31, 2025

Map 10A. GSA Corrective Action Report, Nonvolatile Beta Concentrations, and Potentiometric Surface in the Upper Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024

MAP10A

Map 10A. GSA Corrective Action Report, Nonvolatile Beta Concentrations, and Potentiometric Surface in the Upper Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024

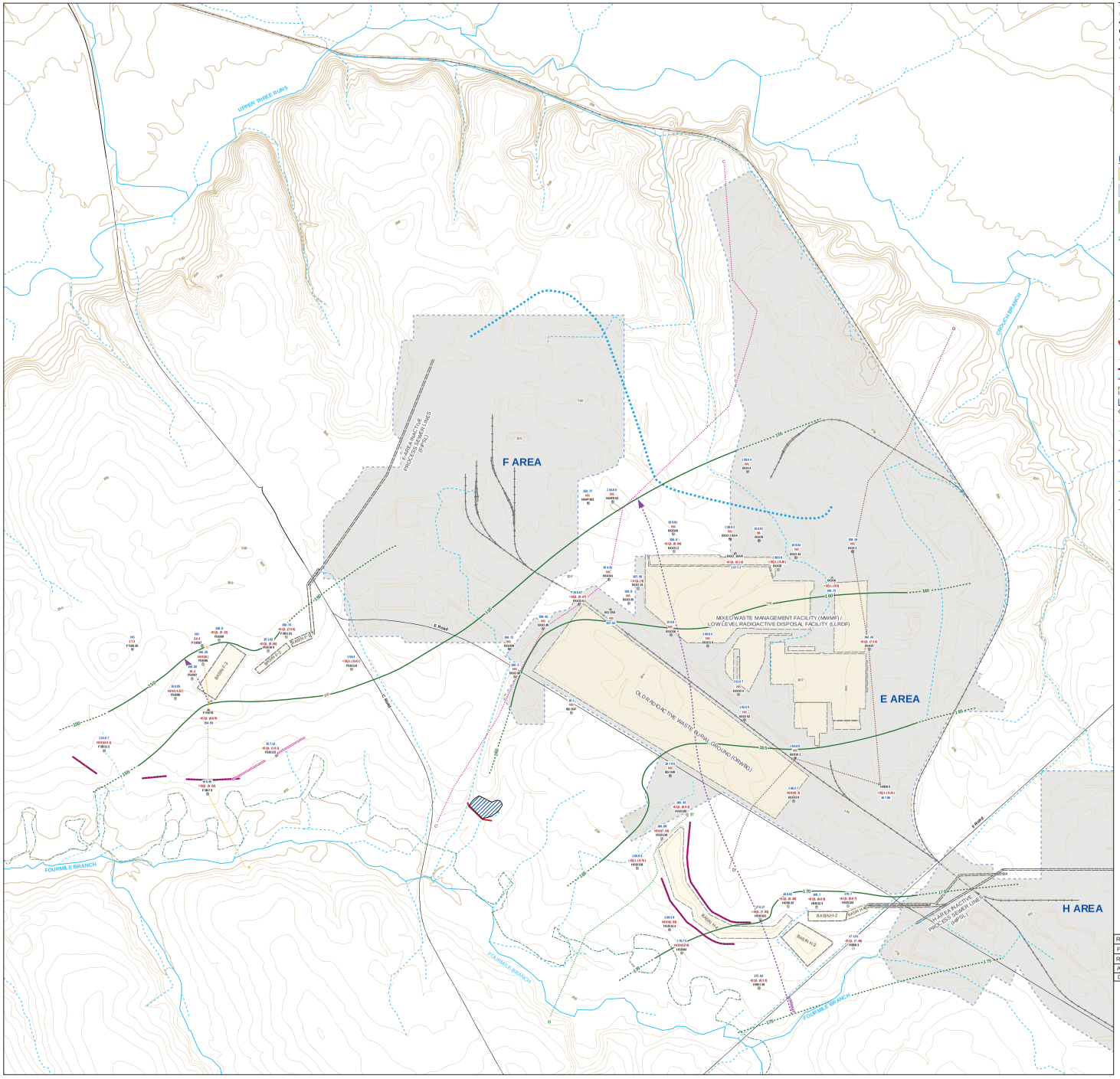


Report Number: SRNS-RP-2025-00773
Prepared By: Kevin Boerstler
Reviewed By: Evan Eastabrooks
Approved By: Jeffrey Thibault
Date: August 31, 2025

Map 10B.
GSA Corrective Action Report, Nonvolatile Beta Concentrations, and Potentiometric Surface in the Lower Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024

MAP10B

Map 10B. GSA Corrective Action Report, Nonvolatile Beta Concentrations, and Potentiometric Surface in the Lower Aquifer Zone of the Upper Three Runs Aquifer at the GSA, Third Quarter 2024



WELL USE

- AUXILIARY / AUXILIARY OBSERVATION
- BACKGROUND WELL
- SEEPLINE SURFACE WATER LOCATION
- SURFACE WATER LOCATION
- PLUME ASSESSMENT WELL
- POINT OF COMPLIANCE WELL
- WETLAND PIEZOMETER

100.5 NONVOLATILE BETA (3Q24) pCi/L
EQL ESTIMATED QUANTITATION LIMIT
NDD NOT DECISION DATA
REJ REJECTED VALUE
DRY WELL DRY
NS NOT SAMPLED

SUSPECT VALUES ARE NOT IDENTIFIED ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

PLUME LEGEND

- 50 - 100 pCi/L GROUNDWATER PROTECTION STANDARD = 50 pCi/L
- 100 - 1000 pCi/L
- >1000 pCi/L

200.5 POTENTIOMETRIC SURFACE ELEVATION (3Q24) MSL
EQL ESTIMATED QUANTITATION LIMIT
NS NOT SAMPLED
SV SUSPECT VALUES
DRY WELL DRY

SUSPECT VALUES ARE IDENTIFIED AS SV ON THIS FIGURE AND ARE NOT CONSIDERED IN THE CONTOURING. THESE SUSPECT VALUES ARE IDENTIFIED IN THE DATA TABLES OF APPENDIX B.

- POTENTIOMETRIC SURFACE CONTOUR CONTOUR INTERVAL = 5 FEET DASHED WHERE INFERRED
- GROUNDWATER FLOW PATH
- PHYTOREMEDIATION POND
- TOPOGRAPHIC CONTOURS (10 FT INTERVALS - FT MSL)
- SUBSURFACE BARRIER
- SUBSURFACE BARRIER EXTENTION
- WASTE UNITS AND SEEPAGE BASINS
- FACILITY AREA BOUNDARY

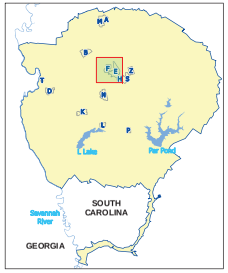
CROSS-SECTION LINES

- CROSS-SECTION A - A'
- CROSS-SECTION B - B'
- CROSS-SECTION C - C'
- CROSS-SECTION D - D'
- WATER TABLE TRANSITION FROM THE UAZ TO LAZ
- PERENNIAL STREAM
- INTERMITTENT STREAM
- SEEPLINE
- MAIN / PAVED ROAD
- RAILROAD

0 500 1,000 1,500
SCALE:FEET

0 250 500
SCALE:METERS

PLANT NORTH
TRUE NORTH



0 2 4 6 8
SCALE:MILES
0 4 8 12
SCALE:KILOMETERS

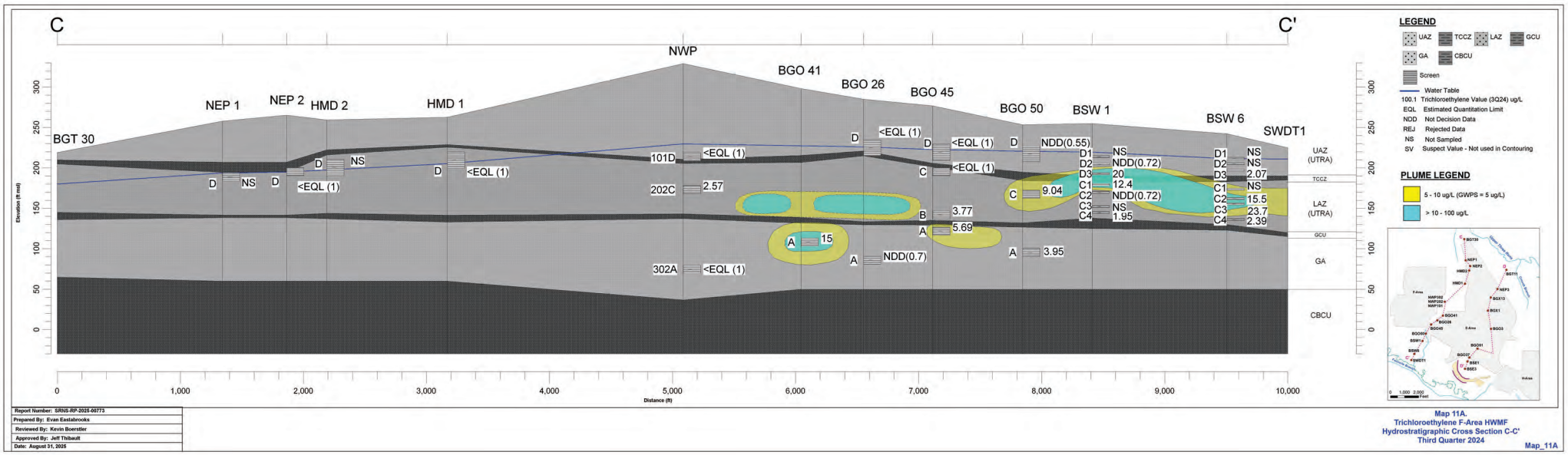
SAVANNAH RIVER SITE

Report Number:	SRNS-RP-2025-00773
Prepared By:	Kevin Boerstler
Reviewed By:	Evan Eastabrooks
Approved By:	Jeffrey Thibault
Date:	August 31, 2025

Map 10C. GSA Corrective Action Report, Nonvolatile Beta Concentrations, and Potentiometric Surface in the Gordon Aquifer at the GSA, Third Quarter 2024

Map 10C. GSA Corrective Action Report, Nonvolatile Beta Concentrations, and Potentiometric Surface in the Gordon Aquifer at the GSA, Third Quarter 2024

MAP10C



LEGEND

UAZ TCCZ LAZ GCU
GA CBCU
Screen
Water Table
100.1 Trichloroethylene Value (3Q24) ug/L
EQL Estimated Quantitation Limit
NDD Not Decision Data
REJ Rejected Data
NS Not Sampled
SV Suspect Value - Not used in Contouring

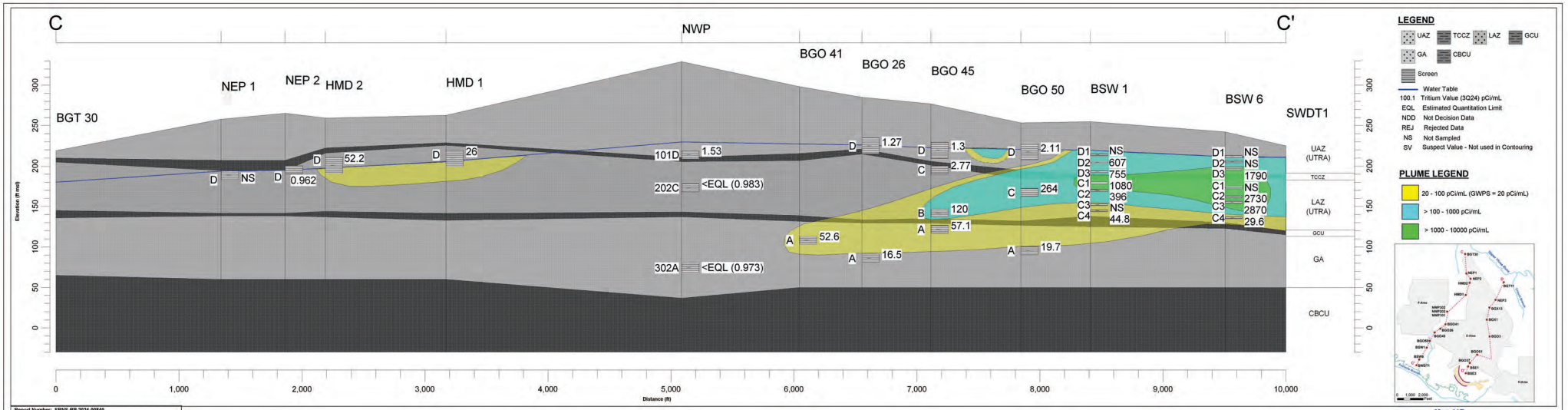
PLUME LEGEND

5 - 10 ug/L (GWPS = 5 ug/L)
> 10 - 100 ug/L

Report Number:	SRNS-RP-2025-00773
Prepared By:	Evan Eastabrooks
Reviewed By:	Kevin Boerstler
Approved By:	Jeff Thibault
Date:	August 31, 2025

Map 11A.
Trichloroethylene F-Area HWMF
Hydrostratigraphic Cross Section C-C'
Third Quarter 2024

Map_11A



LEGEND

UAZ TCCZ LAZ GCU
GA CBCU
Screen
Water Table
100.1 Tritium Value (3Q24) pCi/mL
EQL Estimated Quantitation Limit
NDD Not Decision Data
REJ Rejected Data
NS Not Sampled
SV Suspect Value - Not used in Contouring

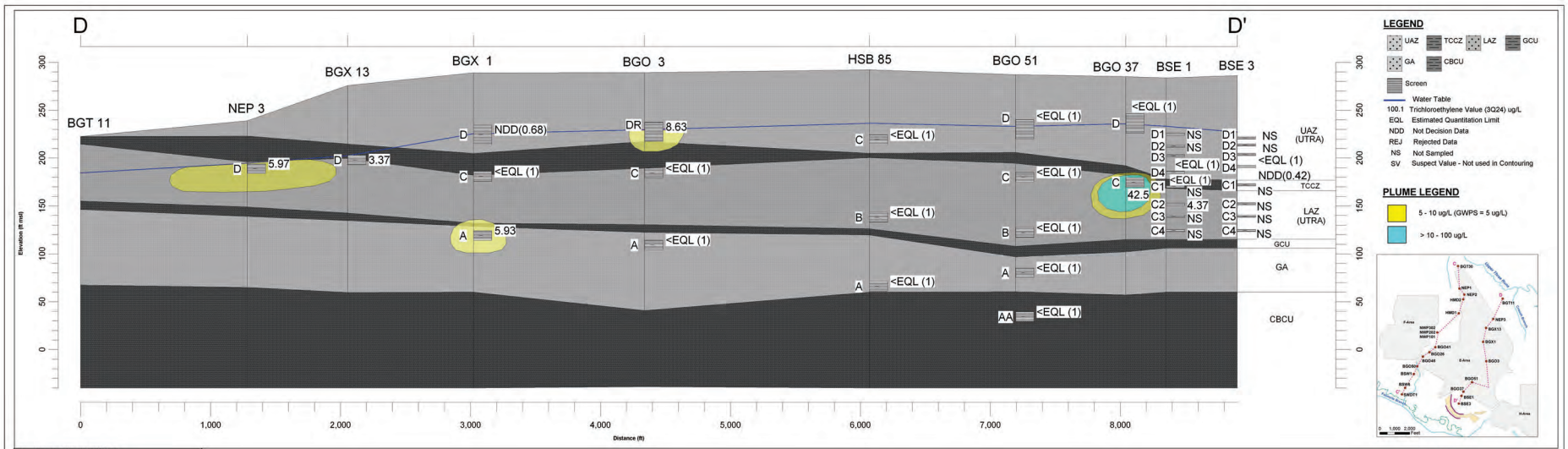
PLUME LEGEND

20 - 100 pCi/mL (GWPS = 20 pCi/mL)
> 100 - 1000 pCi/mL
> 1000 - 10000 pCi/mL

Report Number:	SRNS-RP-2024-00040
Prepared By:	Evan Eastabrooks
Reviewed By:	Kevin Boerstler
Approved By:	Jeff Thibault
Date:	August 31, 2025

Map 11B.
Tritium F-Area HWMF
Hydrostratigraphic Cross Section C-C'
Third Quarter 2024

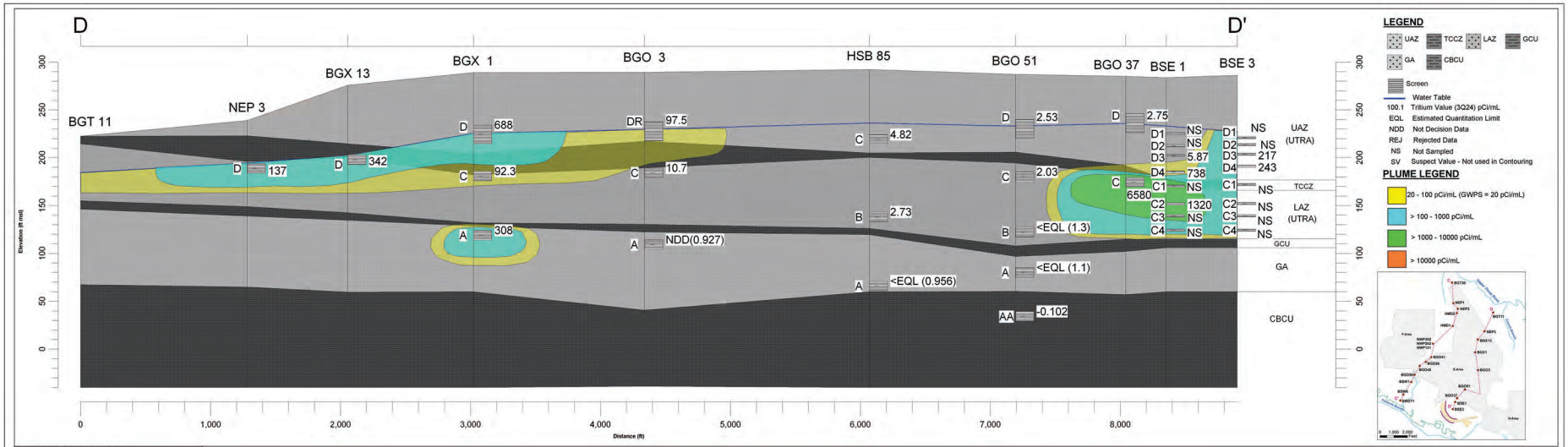
Map_11B



Report Number:	SRNS-RP-2024-00840
Prepared By:	Evan Eastabrooks
Reviewed By:	Kevin Boerstler
Approved By:	Jeff Thibault
Date:	August 31, 2025

Map 12A.
Trichloroethylene F-Area HWMF
Hydrostratigraphic Cross Section D-D'
Third Quarter 2024

Map_12A



LEGEND

UAZ TCCZ LAZ GCU
GA CBCU
Screen
Water Table
100.1 Tritium Value (3Q24) pCi/mL
EQL Estimated Quantitation Limit
NDD Not Decision Data
REJ Rejected Data
NS Not Sampled
SV Suspect Value - Not used in Contouring

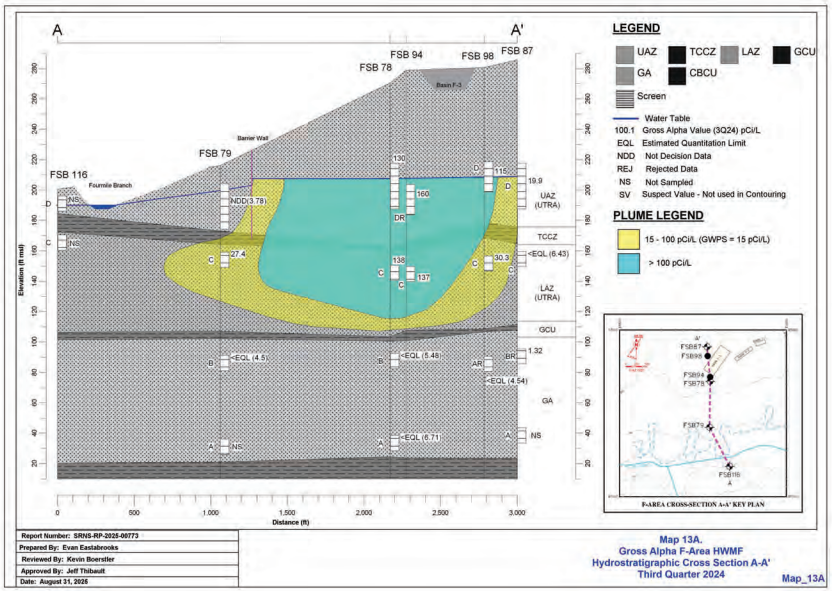
PLUME LEGEND

20 - 100 pCi/mL (GWPS = 20 pCi/mL)
> 100 - 1000 pCi/mL
> 1000 - 10000 pCi/mL
> 10000 pCi/mL

Report Number:	SRNS-RP-2024-00840
Prepared By:	Evan Eastabrooks
Reviewed By:	Kevin Boerstler
Approved By:	Jeff Thibault
Date:	August 31, 2025

Map 12B.
Tritium F-Area HWMF
Hydrostratigraphic Cross Section D-D'
Third Quarter 2024

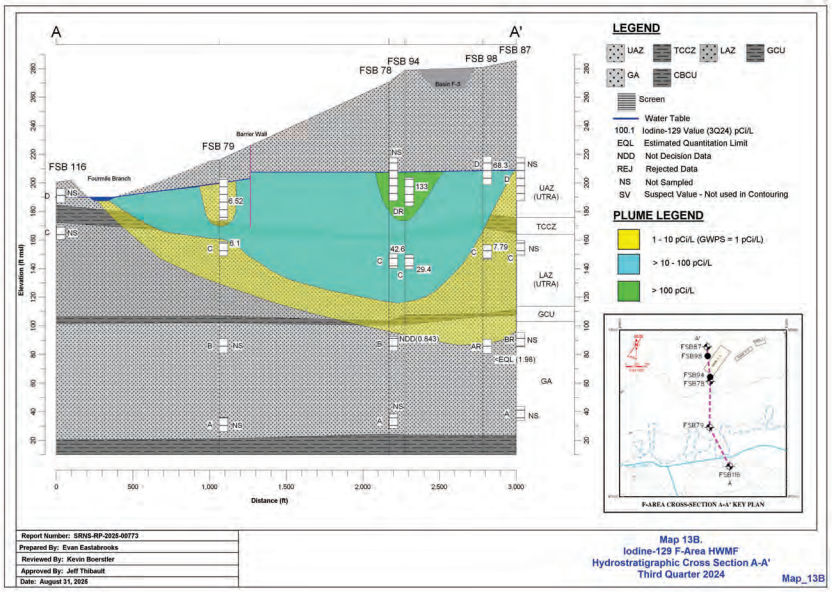
Map_12B



Report Number:	SRNS-RP-2025-00773
Prepared By:	Evan Eastabrooks
Reviewed By:	Kevin Boerstler
Approved By:	Jeff Thibault
Date:	August 31, 2025

Map 13A.
Gross Alpha F-Area HWMF
Hydrostratigraphic Cross Section A-A'
Third Quarter 2024

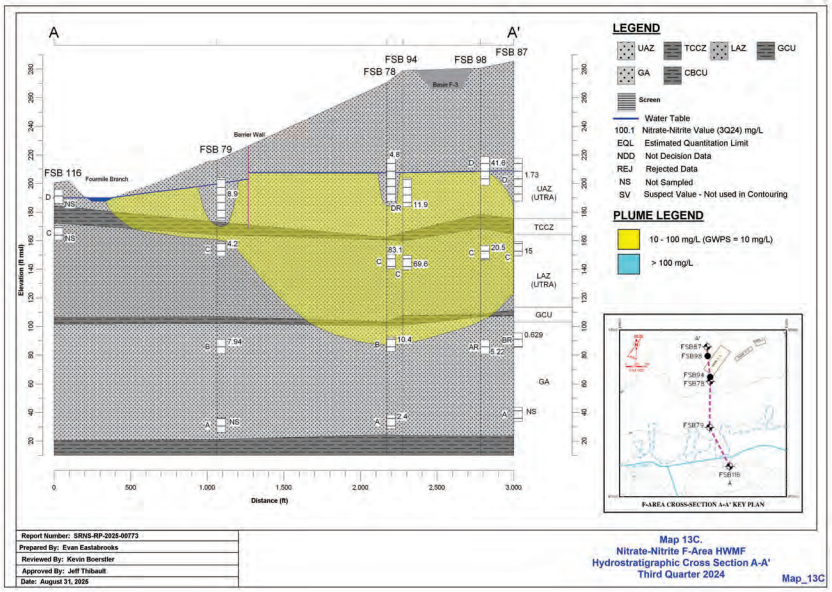
Map_13A



Report Number:	SRNS-RP-2025-00773
Prepared By:	Evan Eastabrooks
Reviewed By:	Kevin Boerstler
Approved By:	Jeff Thibault
Date:	August 31, 2025

Map 13B.
Iodine-129 F-Area HWMF
Hydrostratigraphic Cross Section A-A'
Third Quarter 2024

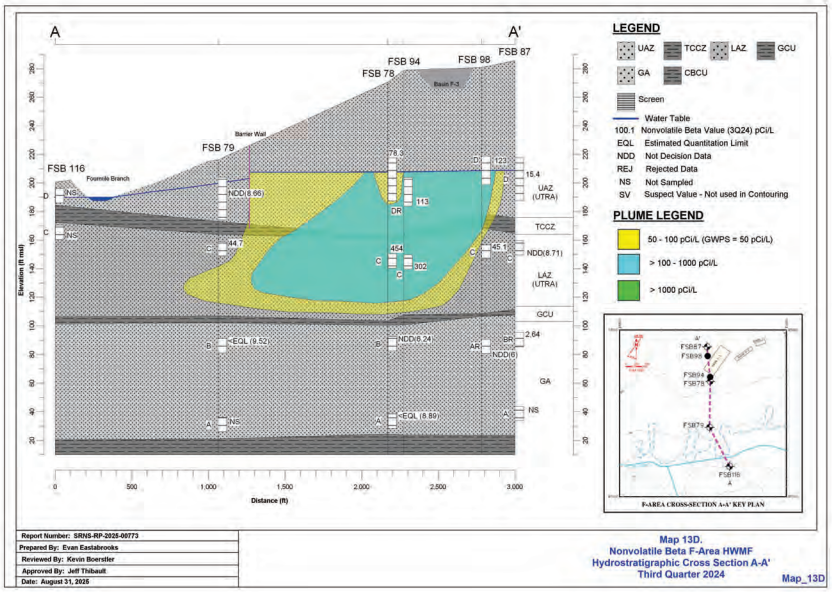
Map_13B



Report Number:	SRNS-RP-2025-00773
Prepared By:	Evan Eastabrooks
Reviewed By:	Kevin Boerstler
Approved By:	Jeff Thibault
Date:	August 31, 2025

Map 13C.
Nitrate-Nitrite F-Area HWMF
Hydrostratigraphic Cross Section A-A'
Third Quarter 2024

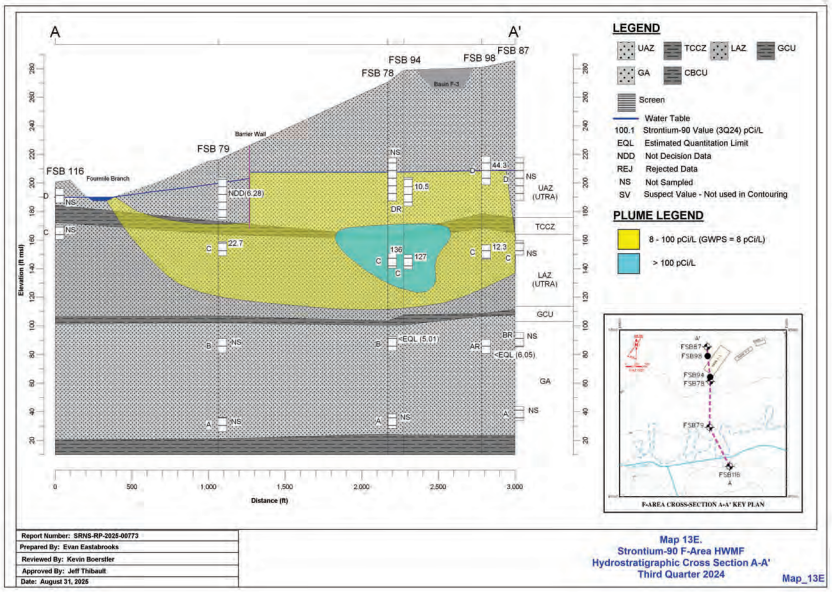
Map_13C



Report Number:	SRNS-RP-2025-00773
Prepared By:	Evan Eastabrooks
Reviewed By:	Kevin Boerstler
Approved By:	Jeff Thibault
Date:	August 31, 2025

Map 13D.
Nonvolatile Beta F-Area HWMF
Hydrostratigraphic Cross Section A-A'
Third Quarter 2024

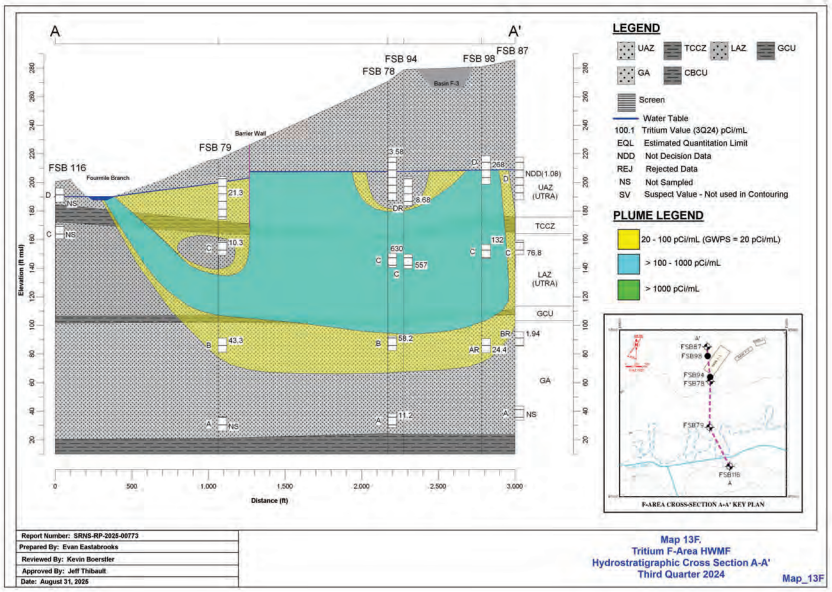
Map_13D



Report Number:	SRNS-RP-2025-00773
Prepared By:	Evan Eastabrooks
Reviewed By:	Kevin Boerstler
Approved By:	Jeff Thibault
Date:	August 31, 2025

Map 13E.
Strontium-90 F-Area HWMF
Hydrostratigraphic Cross Section A-A'
Third Quarter 2024

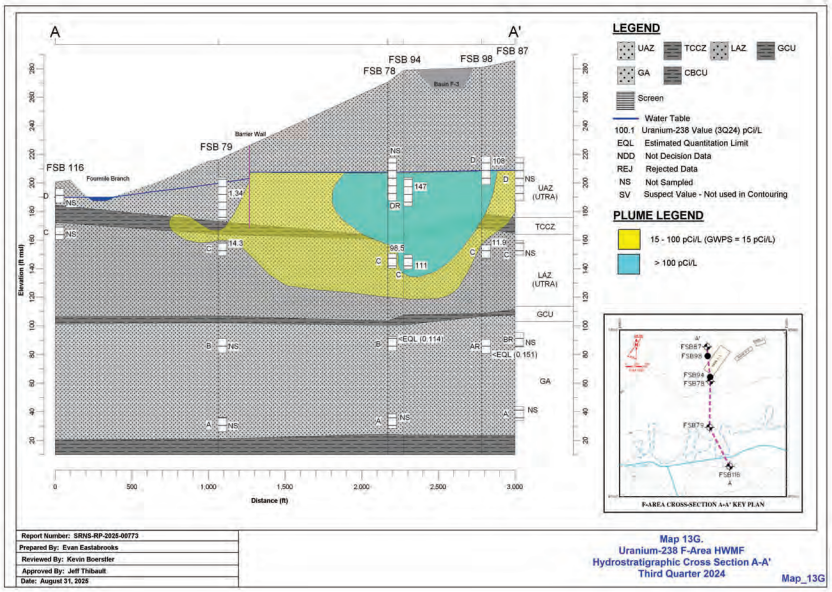
Map_13E



Report Number:	SRNS-RP-2025-00773
Prepared By:	Evan Eastabrooks
Reviewed By:	Kevin Boerstler
Approved By:	Jeff Thibault
Date:	August 31, 2025

Map 13F.
Tritium F-Area HWMF
Hydrostratigraphic Cross Section A-A'
Third Quarter 2024

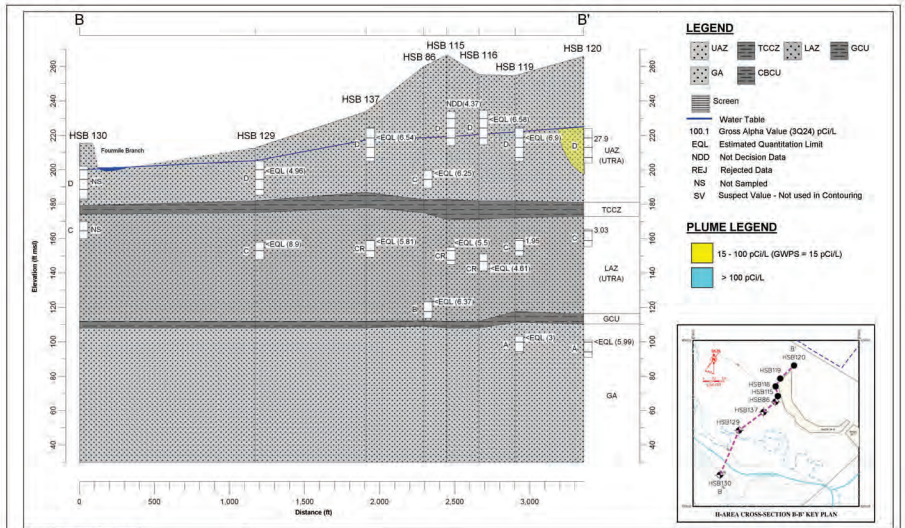
Map_13F



Report Number:	SRNS-RP-2025-00773
Prepared By:	Evan Eastabrooks
Reviewed By:	Kevin Boerstler
Approved By:	Jeff Thibault
Date:	August 31, 2025

Map 13G.
Uranium-238 F-Area HWMF
Hydrostratigraphic Cross Section A-A'
Third Quarter 2024

Map_13G



LEGEND

UAZ TCCZ LAZ GCU

GA CBCU

Screen

Water Table

100.1	Gross Alpha Value (3Q24) pCi/L
EQL	Estimated Quantitation Limit
NDD	Not Decision Data
REJ	Rejected Data
NS	Not Sampled
SV	Suspect Value - Not used in Contouring

PLUME LEGEND

15 - 100 pCi/L (GWPS = 15 pCi/L)

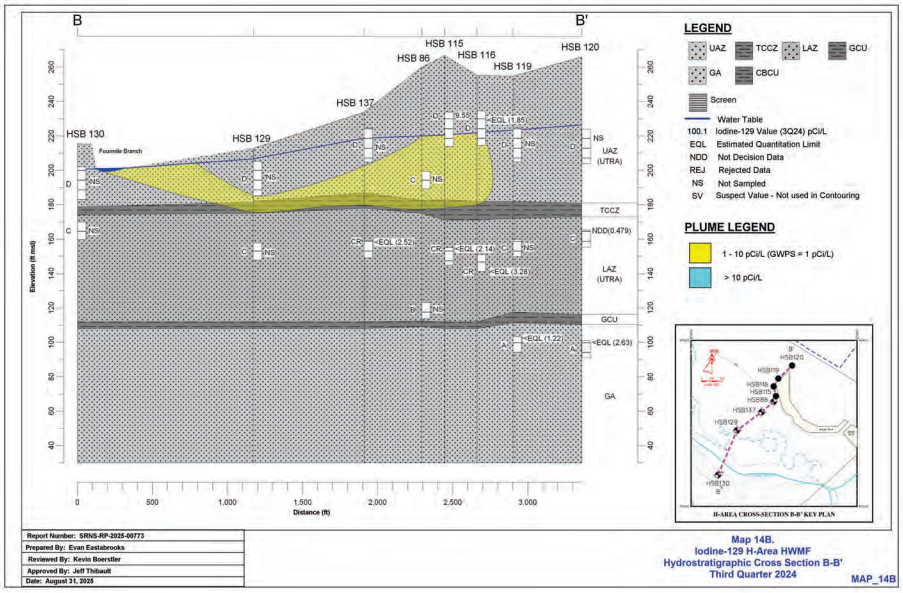
> 100 pCi/L

H-AREA CROSS-SECTION B-B' KEY PLAN

Report Number:	SRNS-RP-2025-00773
Prepared By:	Evan Eastabrooks
Reviewed By:	Kevin Boerstler
Approved By:	Jeff Thibault
Date:	August 31, 2025

Map 14A.
Gross Alpha H-Area HWMF
Hydrostratigraphic Cross Section B-B'
Third Quarter 2024

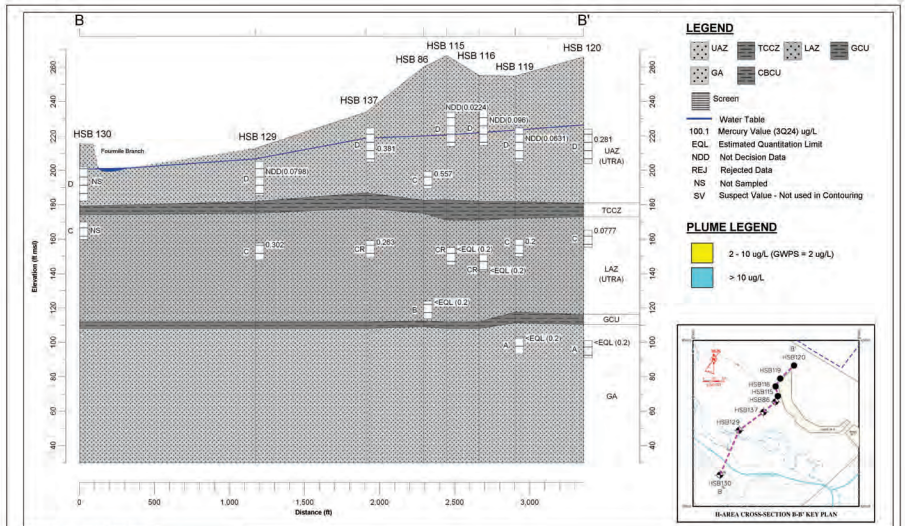
Map_14A



Report Number:	SRNS-RP-2025-00773
Prepared By:	Evan Eastabrooks
Reviewed By:	Kevin Boerstler
Approved By:	Jeff Thibault
Date:	August 31, 2025

Map 14B.
Iodine-129 H-Area HWMF
Hydrostratigraphic Cross Section B-B'
Third Quarter 2024

MAP_14B



LEGEND

UAZ TCCZ LAZ GCU

GA CBCU

Screen

Water Table

100.1 Mercury Value (3Q24) ug/L

EQL Estimated Quantitation Limit

NDD Not Decision Data

REJ Rejected Data

NS Not Sampled

SV Suspect Value - Not used in Contouring

PLUME LEGEND

2 - 10 ug/L (GWPS = 2 ug/L)

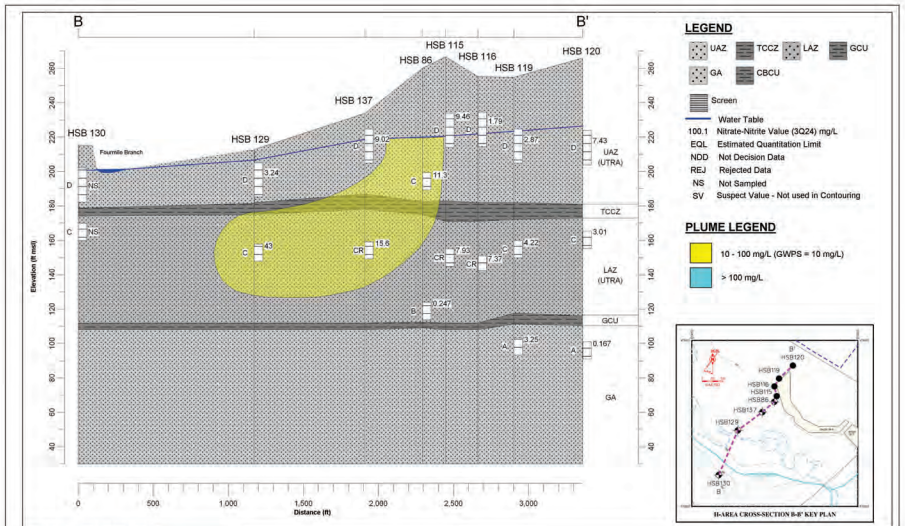
> 10 ug/L

H-AREA CROSS-SECTION B-B' KEY PLAN

Report Number:	SRNS-RP-2025-00773
Prepared By:	Evan Eastabrooks
Reviewed By:	Kevin Boerstler
Approved By:	Jeff Thibault
Date:	August 31, 2025

Map 14C.
Mercury H-Area HWMF
Hydrostratigraphic Cross Section B-B'
Third Quarter 2024

Map_14C



LEGEND

UAZ TCCZ LAZ GCU

GA CBCU

Screen

Water Table

100.1	Nitrate-Nitrite Value (3Q24) mg/L
EQL	Estimated Quantitation Limit
NDD	Not Decision Data
REJ	Rejected Data
NS	Not Sampled
SV	Suspect Value - Not used in Contouring

PLUME LEGEND

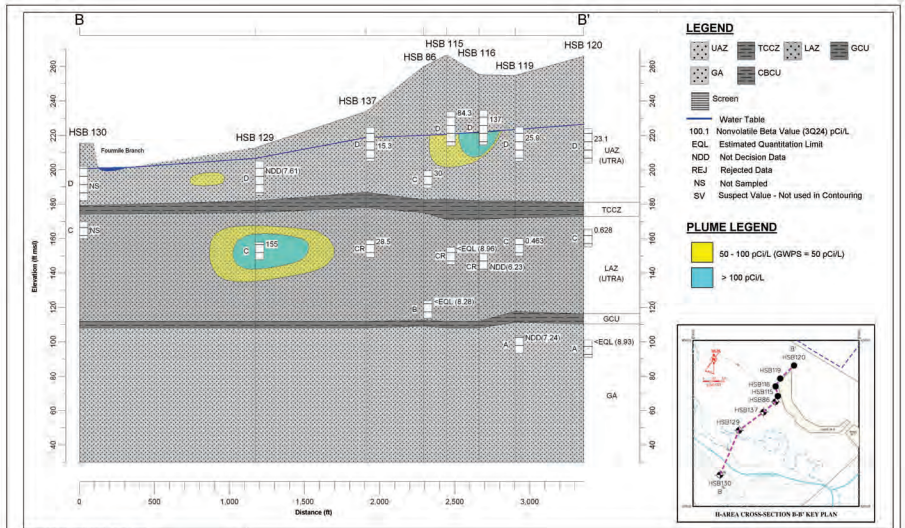
10 - 100 mg/L (GWPS = 10 mg/L)

> 100 mg/L

Report Number:	SRNS-RP-2025-00773
Prepared By:	Evan Eastabrooks
Reviewed By:	Kevin Boerstler
Approved By:	Jeff Thibault
Date:	August 31, 2025

Map 14D.
Nitrate-Nitrite H-Area HWMF
Hydrostratigraphic Cross Section B-B'
Third Quarter 2024

Map_14D



LEGEND

UAZ TCCZ LAZ GCU

GA CBCU

Screen

Water Table

100.1 Nonvolatile Beta Value (3Q24) pCi/L

EQL Estimated Quantitation Limit

NDD Not Decision Data

REJ Rejected Data

NS Not Sampled

SV Suspect Value - Not used in Contouring

PLUME LEGEND

50 - 100 pCi/L (GWPS = 50 pCi/L)

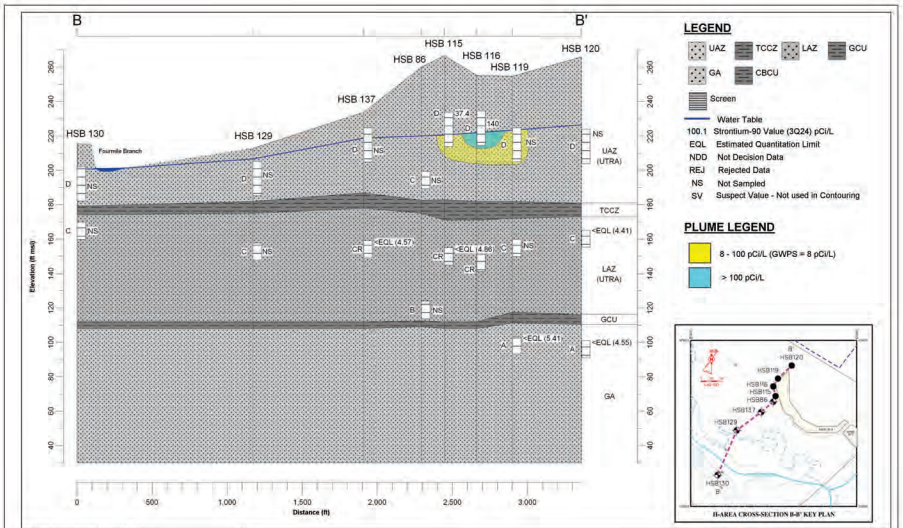
> 100 pCi/L

H-AREA CROSS-SECTION B-B' KEY PLAN

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Map 14E.
Nonvolatile Beta H-Area HWMF
Hydrostratigraphic Cross Section B-B'
Third Quarter 2024

Map_14E



LEGEND

UAZ TCCZ LAZ GCU

GA CBCU

Screen

Water Table

100.1	Strontium-90 Value (3Q24) pCi/L
EQL	Estimated Quantitation Limit
NDD	Not Decision Data
REJ	Rejected Data
NS	Not Sampled
SV	Suspect Value - Not used in Contouring

PLUME LEGEND

8 - 100 pCi/L (GWPS = 8 pCi/L)

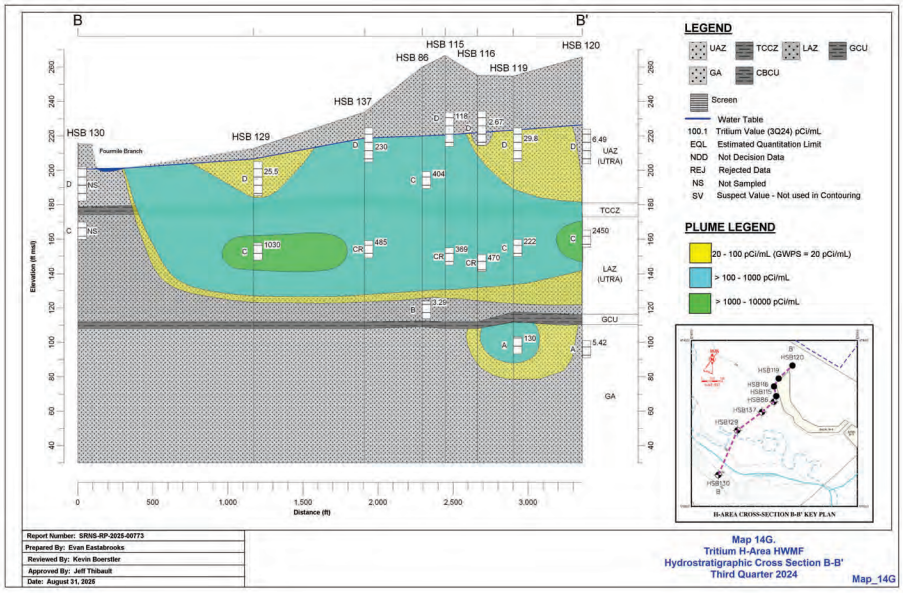
> 100 pCi/L

B-AREA CROSS-SECTION B-B' KEY PLAN

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Map 14F.
Strontium-90 H-Area HWMF
Hydrostratigraphic Cross Section B-B'
Third Quarter 2024

Map_14F



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Map 14G.
Tritium H-Area HWMF
Hydrostratigraphic Cross Section B-B'
Third Quarter 2024

Map_14G