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Department of Energy
Savannah River Operations Office
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JUN 19 2023

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Federal Facility Agreement Section
Division of Site Assessment, Remediation and Revitalization
Bureau of Land and Waste Management
South Carolina Department of Health and Environmental Control
2600 Bull Street
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Mr. Jon Richards
Savannah River Site Remedial Project Manager
Superfund Division
U. S. Environmental Protection Agency, Region 4
61 Forsyth Street, SW
Atlanta, Georgia 30303

Dear Ms. Fulmer and Mr. Richards:

SUBJECT: 2022 K-Area Burning/Rubble Pit and Rubble Pile (131-K and 631-20G) (KBRP) and P-Area Burning/Rubble Pit (131-P) (PBRP) Operable Units Combined Groundwater Monitoring Report (Sampling Summary), SEMS Numbers: 40 and 59

Reference: *Submittal of the Proposal to Standardize Sampling and Reporting Requirements of Groundwater Data for P, L, and K Area Burning/Rubble Pit Operable Units, CERCLIS Numbers 59, 56, 40* (ACP-08-133, dated January 15, 2008)

In accordance with the terms of the Federal Facility Agreement, the U. S. Department of Energy (DOE) is submitting the combined groundwater monitoring report (sampling summary) for your review. Per the referenced letter, combined sampling summaries are submitted annually via letter, with detailed groundwater reports submitted every five (5) years. The combined sampling summary reporting began in June 2008 and the first detailed groundwater report was submitted in June 2012. The last detailed groundwater report was submitted in June 2022. This letter is transmitting the 2022 annual sampling summary, *2022 K-Area and P-Area Burning/Rubble Pits Annual Groundwater Data Summary Report*.

The combined groundwater monitoring report (sampling summary) formerly included the L-Area Burning/Rubble Pit and Rubble Pile (131-L, 131-3L, and 131-2L) (LBRP) Operable Unit (OU). In October 2017, the South Carolina Department of Health and Environmental Control (SCDHEC) and the U. S. Environmental Protection Agency (EPA) agreed to discontinue groundwater monitoring and reporting for the LBRP OU. Therefore, LBRP OU is not included in this report.

Please review the information and provide any comments that you may have within one hundred twenty (120) days of receipt. The effort and time that the SCDHEC and the EPA have given on the subject operable units are greatly appreciated.

2022 K-AREA AND P-AREA BURNING/RUBBLE PITS ANNUAL GROUNDWATER DATA SUMMARY REPORT

K-Area Burning/Rubble Pit (KBRP) Operable Unit (OU)

Sampling optimizations that were developed and approved by U. S. Environmental Protection Agency (EPA) and South Carolina Department of Health and Environmental Control (SCDHEC) as presented in the *K-Area Burning/Rubble Pit and Rubble Pile (131-K and 631-20G) (KBRP), L-Area Burning/Rubble Pit and Rubble Pile (131-L, 131-3L, and 131-2L) (LBRP), and P-Area Burning/Rubble Pit (131-P) (PBRP) Operable Units (OUs) Detailed Combined Groundwater Monitoring Report (U)* (SRNS-RP-2012-00200, Revision 1, December 2012) continued at KBRP in 2022. Due to the limited plume distribution, sampling wells in the AA aquifer (portion of the upper aquifer zone) and a subset of wells in the transmissive zone (TZ) on an annual basis is sufficient to monitor the groundwater contaminants at the KBRP OU. An increase in sampling frequency from annual to semi-annual at well KRP 9 was initiated beginning in the second quarter of 2021 based on exceeding the maximum contaminant levels (MCLs) for tetrachlorethylene (PCE) and trichloroethylene (TCE) in 2018. Well KRP 9 is the only well within the KBRP monitoring network that has exceeded an MCL since 2008.

In 2022, samples were collected from six AA aquifer wells (i.e., KRP 4 through KRP 9) and two TZ aquifer wells (i.e., KRP 10D and KRP 11D) in accordance with the revised sampling schedule (Table 1). All wells were below their respective trigger levels (mixing zone concentration limit [MZCL] or MCL) as shown in Table 2. TCE and PCE concentrations at well KRP 9 remained below the MCL of 5 μg/L after an increase above the MCL was recorded in the fourth quarter of 2018. Associated degradation products were not detected at the remaining KBRP OU monitoring wells in 2022. Figure 1 shows the monitoring well network, the PCE and TCE concentrations, and water elevation measurements for the fourth quarter of 2022 (4Q22). Figures 2 and 3 display the time-series plots for PCE and TCE concentrations at plume well KRP 9, respectively.

Water elevation measurements were collected from all eleven wells within both the AA and TZ aquifers. Water table elevations decreased from 2021 values by an average of 2.31 feet (ft) (0.70 meters [m]) in the AA aquifer and 2.09 (0.64 m) in the TZ aquifer. All wells yielded adequate sampling volumes. In all currently monitored aquifers, groundwater flow is to the southwest (Figure 1).

No additional sampling was triggered based on the 2022 results (Table 2). All wells display results below the established MCLs over the last four years as shown in the enclosed KBRP Time-Series Plots. Sampling results confirm that the approved groundwater mixing zone remedy is performing as intended and remains effective for the KBRP unit.

Based on the 2013 EPA guidance, *Guidance for Evaluating Completion of Groundwater Restoration Remedial Actions* (Office of Solid Waste and Emergency Response [OSWER] 9355.0-129, dated November 25, 2013) and the 2014 EPA guidance, *Recommended Approach for Evaluating Completion of Groundwater Restoration Remedial Actions at a Groundwater Monitoring Well* (OSWER 9283.1-44, dated August 2014) the remediation monitoring phase at the KBRP OU is complete. The 2013 and 2014 guidance documents suggest that the remediation monitoring phase at a monitoring well is typically completed when the data collected and evaluated demonstrate that the groundwater has reached the cleanup levels for all constituents of concern (COCs) set forth in the Record of Decision (WSRC-RP-97-

862, Revision 1, July 2000). The 2014 guidance recommends a minimum number of data points (i.e., four during the remediation monitoring phase and eight during the attainment monitoring phase) that should be used to evaluate each phase of the remedial action completion. The guidance also states that if a non-statistical review of the data indicates that all COCs are either non-detect, detected below the approved cleanup level, or a combination of the two, then it may be appropriate to conclude that the remediation monitoring phase is complete based on a non-statistical or visual analysis of the data. Therefore, as indicated by the enclosed KBRP Time-Series Plots (i.e., a non-statistical/visual analysis of the data shows at least four data points in all wells below the cleanup levels set forth in the approved *Record of Decision Remedial Alternative Selection for the K-Area Burning/Rubble Pit (131-K) and Rubble Pile (631-20G) Operable Unit* [WSRC-RP-97-862, Revision 1, July 2000]), the remediation monitoring phase at the KBRP OU is complete and groundwater is currently being evaluated under the attainment monitoring phase.

Table 1. KBRP OU Sampling Schedule and Trigger Levels

Station ID	Data Collected	Sampling Frequency	Sampling Quarter	PCE Trigger Level (μg/L)	TCE Trigger Level (μg/L)
KRP 4	Analytical, Field and Water Elevation	Annual	2Q	43[a]	61[a]
KRP 5	Analytical, Field and Water Elevation	Annual	2Q	43[a]	61[a]
KRP 6	Analytical, Field and Water Elevation	Annual	2Q	43[a]	61[a]
KRP 7	Analytical, Field and Water Elevation	Annual	2Q	5[b]	5[b]
KRP 8	Analytical, Field and Water Elevation	Annual	2Q	43[a]	61[a]
KRP 9	Analytical, Field and Water Elevation	Semiannual	2Q and 4Q	43[a]	61[a]
KRP 10C	Suspended	Suspended	NA	5[b]	5[b]
KRP 10D	Analytical, Field and Water Elevation	Annual	2Q	5[b]	5[b]
KRP 11C	Suspended	Suspended	NA	5[b]	5[b]
KRP 11D	Analytical, Field and Water Elevation	Annual	2Q	5[b]	5[b]
KRP 12C	Suspended	Suspended	NA	5[b]	5[b]
KRP 12D	Water Elevation Only	Annual	2Q	5[b]	5[b]
KRP 13D	Water Elevation Only	Annual	2Q	5[b]	5[b]
KRP 15C	Suspended	Suspended	NA	5[b]	5[b]
KRP 15D	Water Elevation Only	Annual	2Q	5[b]	5[b]

2Q = Second Quarter of Calendar Year
4Q = Fourth Quarter of Calendar Year
NA = Not Applicable
SS = Suspended Sampling
[a] = MZCL
[b] = MCL

Table 2. KBRP OU Monitoring Well Data for 2022

2022 KBRP OU Monitoring Well Data			Field Data													KBRP Constituents of Concern: VOC					
			SAMPLE COLLECTION DATE	WATER TEMPERATURE	AIR TEMPERATURE	FLOW RATE	PHENOLPHTHALEIN ALKALINITY (AS CACO3)	TOTAL ALKALINITY (AS CACO3)	PH	SPECIFIC CONDUCTANCE	TURBIDITY	DEPTH TO WATER	SAMPLING EVENT WATER ELEVATION	FIELD CONDITIONS	Constituent	1,1-DICHLOROETHYLENE	CHLOROETHENE (VINYL CHLORIDE)	CIS-1,2-DICHLOROETHYLENE	TETRACHLOROETHYLENE (PCE)	TRANS-1,2-DICHLOROETHYLENE	TRICHLOROETHYLENE (TCE)
			day-month-year	degC	degC	gal/min	mg/L	mg/L	pH	uS/cm	NTU	ft	ft		Unit	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Station	Well Use	Aquifer Zone									15				MCL (ACL/MZCL)	7	2	70	5 (43)	100	5 (61)
KRP 4	Plume Definition Well	AA_UAZ_UTRAU	25-Oct-2022	21.1	17	1	0	5	5.1	46	2.3	50.53	212.31	No Comments	Concentration	<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1.2)	<EQL (1)	<EQL (1)
KRP 5	Plume Definition Well	AA_UAZ_UTRAU	25-Oct-2022	20.1	21	0.2	0	51	5.8	84	1.7	57.66	210.44	No Comments		<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1.2)	<EQL (1)	<EQL (1)
KRP 6	Plume Definition Well	AA_UAZ_UTRAU	25-Oct-2022	16.5	15	0	0	0	4.6	89	35.7	59.3	211	No Comments		<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1.2)	<EQL (1)	<EQL (1)
KRP 7	Boundary Compliance	AA_UAZ_UTRAU	25-Oct-2022	21.4	20	0.2	0	7	4.8	31	3.5	60.5	210.06	No Comments		<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1.2)	<EQL (1)	<EQL (1)
KRP 8	Plume Definition Well	AA_UAZ_UTRAU	25-Oct-2022	19.1	8	0.2	0	0	4.6	29	1.9	56.33	211.24	No Comments		<EQL (1)	<EQL (1)	<EQL (1)	1.78	<EQL (1)	<EQL (1)
KRP 9	Plume Definition Well	AA_UAZ_UTRAU	25-May-2022	19	28.8	0.1	0	37	5.9	108	0.6	55.55	212.82	No Comments		<EQL (1)	<EQL (1)	<EQL (1)	3.38	<EQL (1)	1.8
			25-Oct-2022	18.6	10	0.2	0	28	5.9	95	0.8	56.33	212.04	No Comments		<EQL (1)	<EQL (1)	<EQL (1)	4.05	<EQL (1)	2.2
KRP 10C	Intermediate	LAZ_UTRAU	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	No Comments		NS	NS	NS	NS	NS	NS
KRP 10D	Intermediate	TZ_UAZ_UTRAU	25-Oct-2022	20.5	14	0.5	0	4	5.2	23	1.2	59.1	209.3	No Comments		<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1.2)	<EQL (1)	<EQL (1)
KRP 11C	Intermediate	LAZ_UTRAU	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	No Comments		NS	NS	NS	NS	NS	NS
KRP 11D	Intermediate	TZ_UAZ_UTRAU	25-Oct-2022	20.7	17	0.5	0	0	5	20	0.5	61.2	209.2	No Comments		<EQL (1)	<EQL (1)	<EQL (1)	<EQL (1.2)	<EQL (1)	<EQL (1)
KRP 12C	Boundary Compliance	LAZ_UTRAU	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	No Comments		NS	NS	NS	NS	NS	NS
KRP 12D	Boundary Compliance	TZ_UAZ_UTRAU	25-Oct-2022	NS	NS	NS	NS	NS	NS	NS	NS	61.44	208.36	No Comments		NS	NS	NS	NS	NS	NS
KRP 13D	Boundary Compliance	TZ_UAZ_UTRAU	25-Oct-2022	NS	NS	NS	NS	NS	NS	NS	NS	59.91	208.99	No Comments		NS	NS	NS	NS	NS	NS
KRP 15C	Boundary Compliance	LAZ_UTRAU	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	No Comments		NS	NS	NS	NS	NS	NS
KRP 15D	Boundary Compliance	TZ_UAZ_UTRAU	25-Oct-2022	NS	NS	NS	NS	NS	NS	NS	NS	61.65	208.58	No Comments		NS	NS	NS	NS	NS	NS

Explanation

[##]	EPA Functional Guideline Code of 'J' was applied to the result, indicating an estimated quanity.
<EQL(##)	Constituent was below detection. The sample-specific Estimated Quantitation Limit is in parentheses.
	Result exceeds GWPS.
	Result exceeds MCL but not ACL/MZCL for wells with ACL/MZCL.
REJ	Result Rejected.
	Result is less than the applicable limit and without EPA Functional Guidline qualifiers.
NS	Requested to be sampled but was not. See comments as to why not.
NS	Not a required sample analysis.

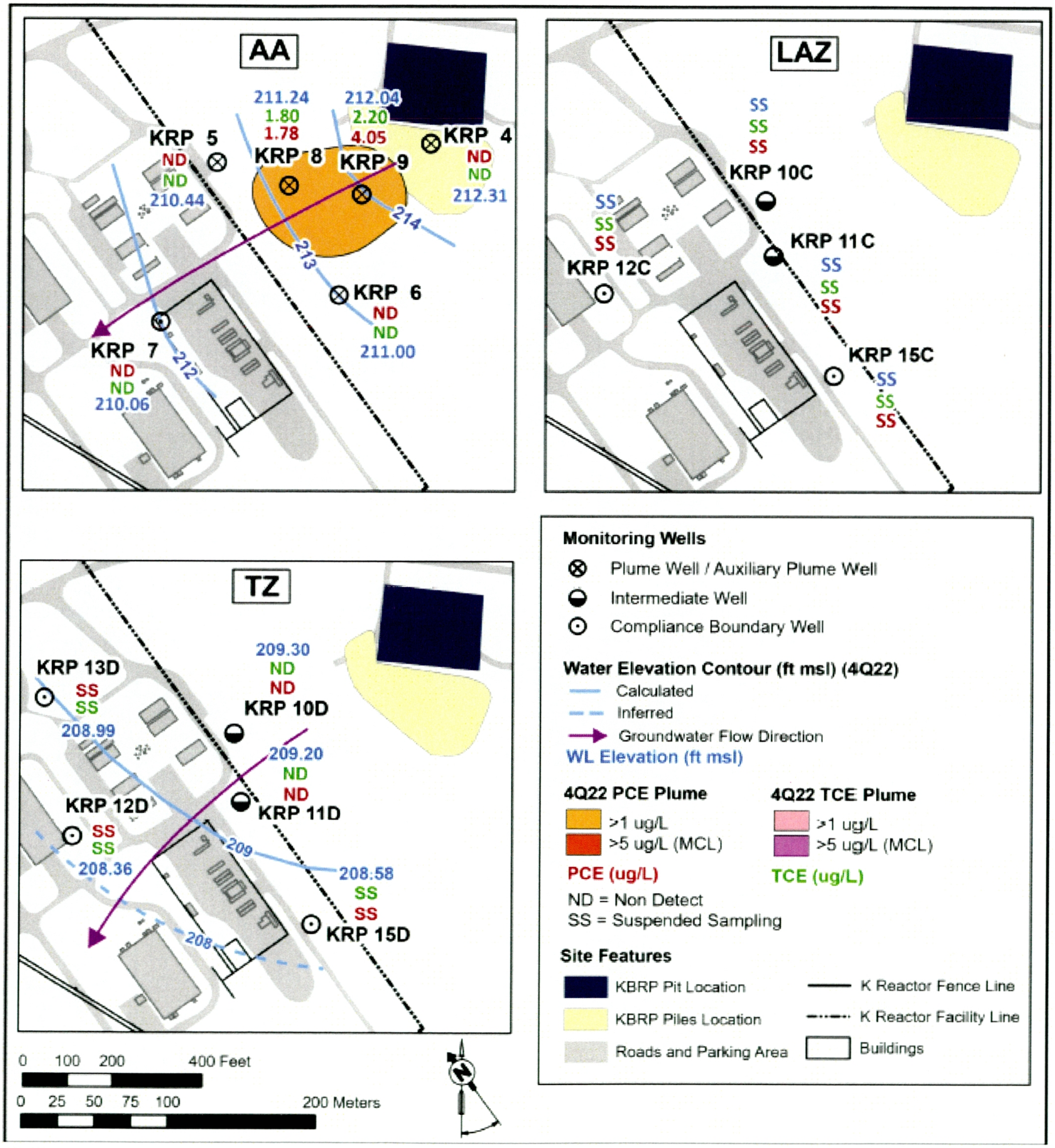
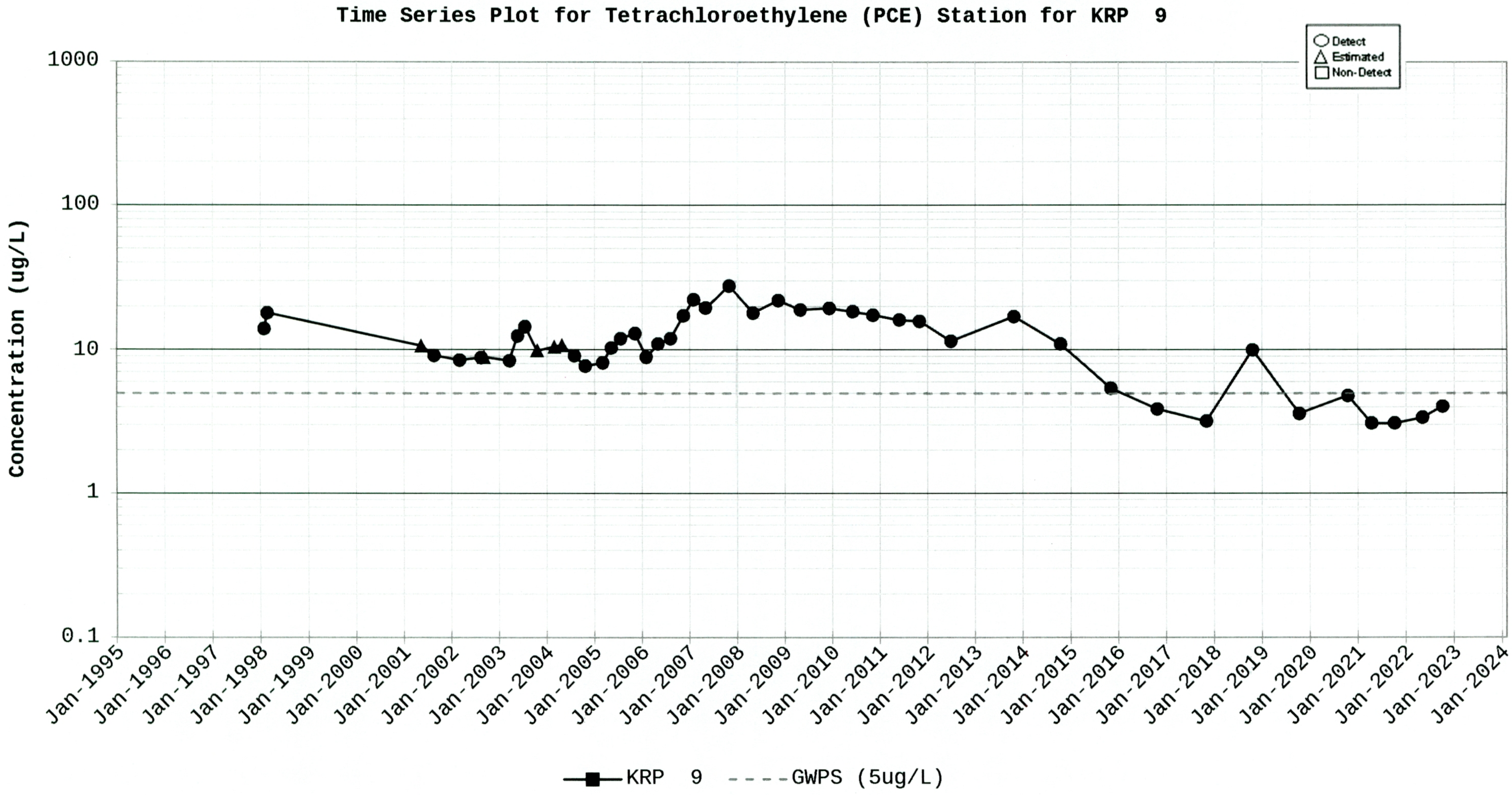
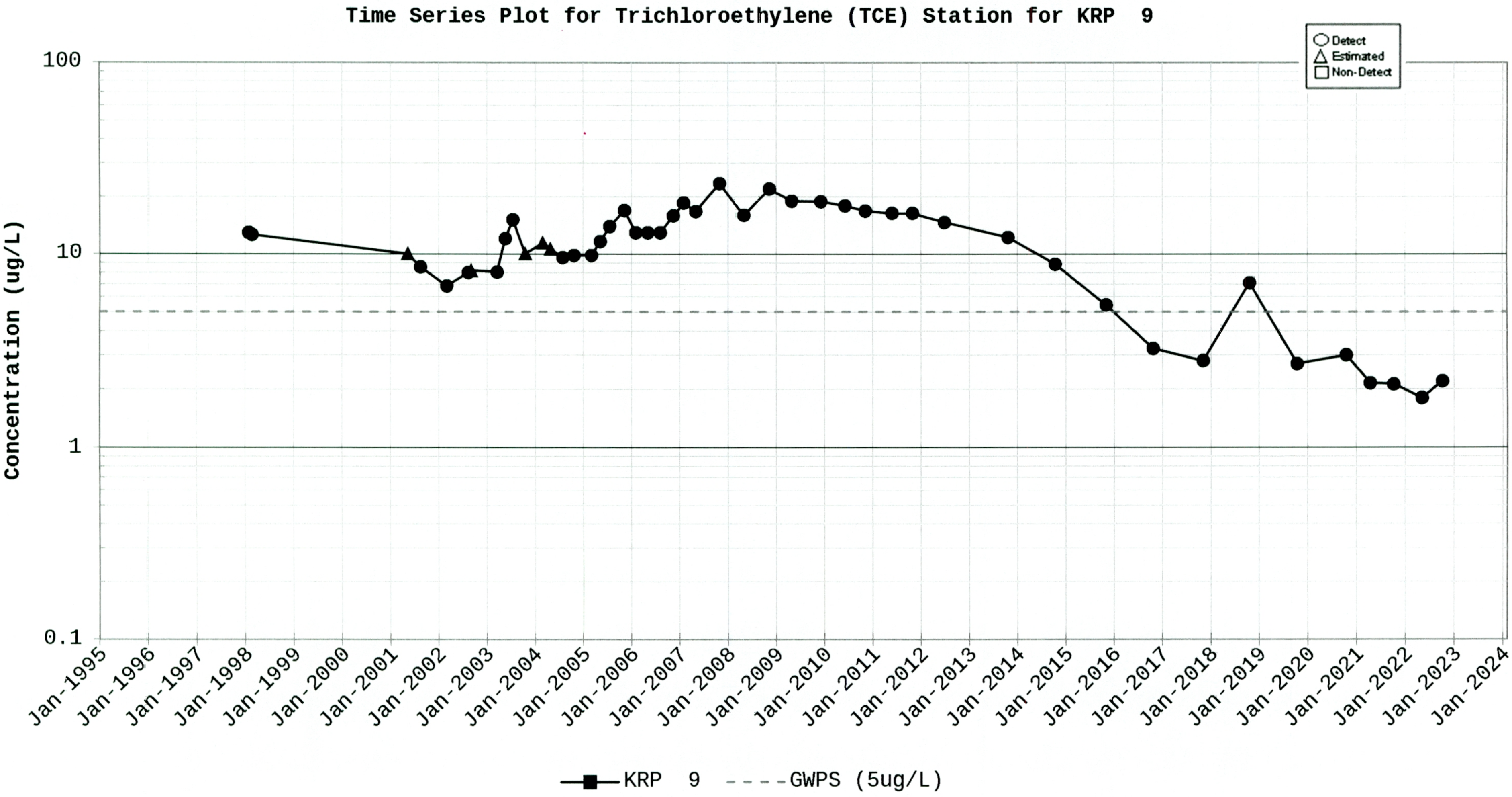


Figure 1. KBRP OU Monitoring Well Network, PCE and TCE Concentrations, and Water Elevation Measurements during 4Q22



JUN 19 2023

Figure 2. Time-Series Plot for PCE at KRP 9



JUN 19 2023

Figure 3. Time-Series Plot for TCE at KRP 9

P-Area Burning/Rubble Pit (PBRP) OU

Sampling optimizations that were developed and approved by EPA and SCDHEC as presented in the *Standardizing Sampling and Reporting Requirements P, L and K Area Burning Rubble Pits* (see ACP-08-133, dated January 15, 2008) continued at PBRP in 2022. 1,4-Dioxane was added to the list of monitored constituents at the PBRP OU based on a recommendation in the Fourth Five-Year Remedy Review Report for the Savannah River Site (SRS) (SRNS-RP-2012-00011, Revision 1.1, November 2013). As stated in the regulatory approved *Savannah River Site's Responses to the Regulatory Comments on the K-Area Burning/Rubble Pit and Rubble Pile (131-K and 631-20G) (KBRP) and P-Area Burning/Rubble Pit (131-P) (PBRP) Operable Units Combined Groundwater Monitoring Report (SRNS-RP-2022-00253, Revision 0, June 2022) SEMS Numbers: 40 and 59* (IACD-23-121, dated January 19, 2023), surface-water sampling for 1,1-dichloroethylene (1,1-DCE), 1,4-dioxane and TCE were conducted at Steel Creek surface-water stations SC-02, SC-03, and SC-04 beginning in the first quarter of 2023. In addition, a synchronous water level event was conducted beginning in the third quarter of 2022 as part of the P-Area Groundwater (PAGW) Operable Unit (OU) which also included wells from PRBP OU. The outcome is a more accurate depiction of the potentiometric surface at P Area, including at PBRP OU. Table 3 lists the currently approved PBRP monitoring wells and the additional supplemental wells and surface water stations from the PAGW OU monitoring network (Figure 4). The sampling schedule is also listed in Table 3.

On February 11, 2020, the EPA documented that the remedial action is complete (monitoring systems are installed and operational) for the selected Monitored Natural Attenuation remedy at the PBRP and noted the progress of the remedy towards meeting the remedial goals as documented in the *K-Area Burning/Rubble Pit and Rubble Pile (131-K and 631-20G) (KBRP), L-Area Burning/Rubble Pit and Rubble Pile (131-L, 131-3L, and 131-2L) (LBRP), and P-Area Burning/Rubble Pit (131-P) (PBRP) Operable Units (OUs) Detailed Combined Groundwater Monitoring Report (U)* (SRNS-RP-2017-00356, Revision 0, June 2017) (Letter, H. G. Adams (EPA) to B. Hennessey (DOE), dated February 11, 2020 [SRNS-OS-2020-00105]).

The three PBRP wells (PRP 5, PRP 6, and PRP 7) were sampled during 4Q22. The 4Q22 sampling results for wells PRP 5, PRP 6, and PRP 7 are presented in Table 4. All concentrations observed at well PRP 5 were non-detect. 1,1-DCE was detected slightly above the MCL (7 µg/L) in well PRP 6 at a concentration of 8.51 µg/L, a decrease from the fourth quarter of 2021 (4Q21) concentration of 15.0 µg/L. In well PRP 7, the 1,1-DCE concentration slightly increased from 4Q21 but remained below the MCL. TCE was detected above the MCL (5 µg/L) in well PRP 6 at a concentration of 8.68 µg/L, a significant decrease from the 4Q21 value of 32 µg/L. The TCE concentration in well PRP 7 slightly increased from 4Q21 but remained below the MCL. The recent increase in 1,1-DCE and TCE concentrations in well PRP 6 are believed to be associated with an increase in water elevations experienced during 2021 that possibly resolubilized contaminants that were entrained in sediments below the unit (Figure 5). 1,4-Dioxane does not have an MCL; therefore, the EPA tap water regional screening level (RSL) has been applied. However, the estimated quantitation limits (EQLs) are currently unable to meet the RSL under the certified EPA8260SIM method; therefore, SRS chose to also analyze by method EPA522, which can achieve a quantitation limit below the RSL, both results are shown on Table 4. 1,4-Dioxane samples that were analyzed by the certified EPA8260SIM method were non-detect in all wells. 1,4-Dioxane samples that were analyzed by the EPA522 method were detected at 4.60 µg/L and 4.33 µg/L in wells PRP 6 and PRP 7, respectively.

Samples analyzed by the EPA522 method appear to be more consistent with historical concentrations at the PBRP wells; and therefore, the EPA522 concentrations were used to create the contaminant distribution map (Figure 8) and time series plots (Figures 11 and 14). All other analytical concentrations were non-detect or significantly below the respective MCLs. Figures 6 through 8 depict the contaminant distribution of the 4Q22 data. Time series plots are provided in Figures 9 through 14.

Three PAGW OU surface water stations in Steel Creek (SC-02, SC-03 and SC-04) were sampled during the first quarter of 2023 (1Q23). The sampling results for the surface water stations are presented in Table 4. TCE is the main volatile contaminant of concern within the PAGW OU and is the driver for the elevated concentrations in the creek. The TCE plume associated with the PAGW OU is depicted on Figure 7. 1,1-DCE and 1,4-dioxane values were non-detect during the 1Q23 sampling event. 1Q23 surface water sampling confirms that PBRP OU is not currently affecting Steel Creek. Surface water sampling will continue at these locations to confirm that the recent elevated concentrations of volatile organic compounds do not impact within Steel Creek. Figures 6 through 8 shows the contaminant distribution from the data collected during the 1Q23 sampling event.

The recently added synchronous water level event occurred in the third quarter of 2022 and was used to generate the water elevations as shown on Figure 15. Water table elevations decreased in the three PBRP wells from the previous year by an average of 0.76 ft (0.23 m). Groundwater flow beneath the PBRP OU is to the southwest.

SRS will continue to monitor groundwater annually for the constituents of concern identified in Table 4. Monitoring will continue until it is agreed that the remedial goals have been met and monitoring is no longer necessary. To better align sampling events between PBRP and PAGW OUs, SRS is also proposing to move all sampling events associated with the PBRP OU to the first quarter of calendar year 2024. This will allow for consistency in sampling and provide for a more comprehensive data evaluation.

Table 3. PBRP OU Well Network, PAGW OU Supplemental Wells, and Sampling Schedule

Station	Station Type	Operable Unit	Well Use	Sampling Frequency	Analytical and Field Sampling Event	Synchronous Water Level Event	Easting (UTM NAD 27)	Northing (UTM NAD 27)
PGW014DU	Monitoring Well	PAGW	Synchronous Water Elevation	Annual	NA	3Q	445264.8	3676551.7
PRP 1A	Monitoring Well	PBRP	Synchronous Water Elevation	Annual	NA	3Q	445122.9	3676625.5
PRP 2	Monitoring Well	PBRP	Synchronous Water Elevation	Annual	NA	3Q	445164.1	3676670.5
PRP 5	Monitoring Well	PBRP	Analytical, Field, and Water Elevation	Semi-Annual	4Q	3Q	445281.4	3676683.9
PRP 6	Monitoring Well	PBRP	Analytical, Field, and Water Elevation	Semi-Annual	4Q	3Q	445186.9	3676616.7
PRP 7	Monitoring Well	PBRP	Analytical, Field, and Water Elevation	Semi-Annual	4Q	3Q	445156.2	3676605.5
PSC002D1	Monitoring Well	PAGW	Synchronous Water Elevation	Semi-Annual	NA	3Q	445157.9	3676510.7
SC-02	Surface Water Station	PAGW	Analytical and Field	Annual	1Q	NA	445190.9	3676552.3
SC-03	Surface Water Station	PAGW	Analytical and Field	Annual	1Q	NA	445100.3	3676454.7
SC-04	Surface Water Station	PAGW	Analytical and Field	Annual	1Q	NA	444728.5	3676234.9

1Q = First Quarter of Calendar Year
3Q = Third Quarter of Calendar Year
4Q = Fourth Quarter of Calendar Year
NA = Not applicable

JUN 19 2023

Table 4. PBRP OU Groundwater Data for 2022 and 2023

2022 and 2023 PBRP OU Data			Field Data															PBRP Constituents of concern VOC						
			SAMPLE COLLECTION DATE	DEPTH TO WATER	SAMPLING EVENT WATER ELEVATION	SYNCHRONOUS MEASUREMENT DATE	SYNCHRONOUS WATER ELEVATION	AIR TEMPERATURE	WATER TEMPERATURE	FLOW RATE	PH	PHENOLPHTHALEIN ALKALINITY (AS CACO3)	SPECIFIC CONDUCTANCE	TOTAL ALKALINITY (AS CACO3)	TURBIDITY	FIELD CONDITIONS	Constituent	1,1,1-TRICHLOROETHANE	1,1-DICHLOROETHYLENE	1,4-DIOXANE	CHLOROETHENE (VINYL CHLORIDE)	CIS-1,2-DICHLOROETHYLENE	TETRACHLOROETHYLENE (PCE)	TRICHLOROETHYLENE (TCE)
			day-month-year	ft	ft	day-month-year	ft	degC	degC	gal/min	pH	mg/L	uS/cm	mg/L	NTU		Unit	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Station	Well Use	Aquifer Zone															GWPS	200	7	0.46	2	70	5	5
PRP 5	Background Well	UAZ_UTRAU	07-Nov-2022	33.06	254.7	06-Jul-2022	254.91	17	19.2	0.5	4.9	0	28	0	0.9	No Comments	Concentration	<EQL (1)	<EQL (1)	<EQL (3)	<EQL (1)	<EQL (1)	<EQL (1.2)	<EQL (1)
																				<EQL (0.2)				
PRP 6	Plume Definition Well	AA_UAZ_UTRAU	07-Nov-2022	32.96	248.91	06-Jul-2022	249.17	17	20.5	0.5	4.8	0	50	0	0.7	No Comments		<EQL (1)	8.51	<EQL (3)	<EQL (1)	1.25	<EQL (1.2)	8.68
								17	20.5	0.5	4.8	0	50	0	0.7					4.6				
PRP 7	Plume Definition Well	UAZ_UTRAU	07-Nov-2022	42.26	239.73	06-Jul-2022	239.94	18	20.2	0.5	4.9	0	38	0	3.1	No Comments		<EQL (1)	4.32	<EQL (3)	<EQL (1)	1.3	2	2.18
																				4.33				
PGW014DU	PAGW Synchronous Water Elevation Well	UAZ_UTRAU	NS	NS	NS	05-Jul-2022	241.5	NS	NS	NS	NS	NS	NS	NS	NS	No Comments		NS	NS	NS	NS	NS	NS	NS
PRP 1A	PAGW Synchronous Water Elevation Well	UAZ_UTRAU	NS	NS	NS	06-Jul-2022	245.07	NS	NS	NS	NS	NS	NS	NS	NS	No Comments		NS	NS	NS	NS	NS	NS	NS
PRP 2	PAGW Synchronous Water Elevation Well	UAZ_UTRAU	NS	NS	NS	06-Jul-2022	251.5	NS	NS	NS	NS	NS	NS	NS	NS	No Comments		NS	NS	NS	NS	NS	NS	NS
PSC002D1	PAGW Synchronous Water Elevation Well	UAZ_UTRAU	NS	NS	NS	11-Jul-2022	235.17	NS	NS	NS	NS	NS	NS	NS	NS	No Comments		NS	NS	NS	NS	NS	NS	NS
SC-02	PAGW Surface Water Station	TZ_UAZ_UTRAU	09-Feb-2023	NS	NS	NS	NS	18.3	13.3	0.02	6.6	0	52	21	4.5	No Comments		NS	<EQL (1)	<EQL (3)	NS	NS	NS	<EQL (1)
																				<EQL (0.2)				
SC-03	PAGW Surface Water Station	TZ_UAZ_UTRAU	09-Feb-2023	NS	NS	NS	NS	18.2	15.4	0.09	5.9	0	38	17	1.9	No Comments		NS	<EQL (1)	<EQL (3)	NS	NS	NS	25.8
								18.2	15.4	0.09	5.9	0	38	17	1.9					<EQL (0.2)				
SC-04	PAGW Surface Water Station	TZ_UAZ_UTRAU	09-Feb-2023	NS	NS	NS	NS	17.8	15.8	0.05	6.2	0	31	20	8.9	No Comments		NS	<EQL (1)	<EQL (3)	NS	NS	NS	1.4
								17.8	15.8	0.05	6.2	0	31	20	8.9					<EQL (0.2)				

Explanation

[##]	EPA Functional Guideline Code of 'J' was applied to the result, indicating an estimated quanity.
<EQL(##)	Constituent was below detection. The sample-specific Estimated Quantitation Limit is in parentheses.
	Result exceeds applicable limit.
REJ	Result Rejected.
	Result is less than the applicable limit and without EPA Functional Guidline qualifiers.
NS	Requested to be sampled but was not. See comments as to why not.
NS	Not a required sample analysis.

* 1,4-Dioxane does not have an MCL. The current groundwater protection standard used is the EPA RSL, which is 0.46 μg/L; however, EQLs are not able to accurately meet the RSL under the certified EPA8260SIM method, therefore SRS also chose to analyze by method EPA522. The first values displayed in the table were analyzed by the approved EPA8260SIM, the second values were analyzed by the EPA522 method.

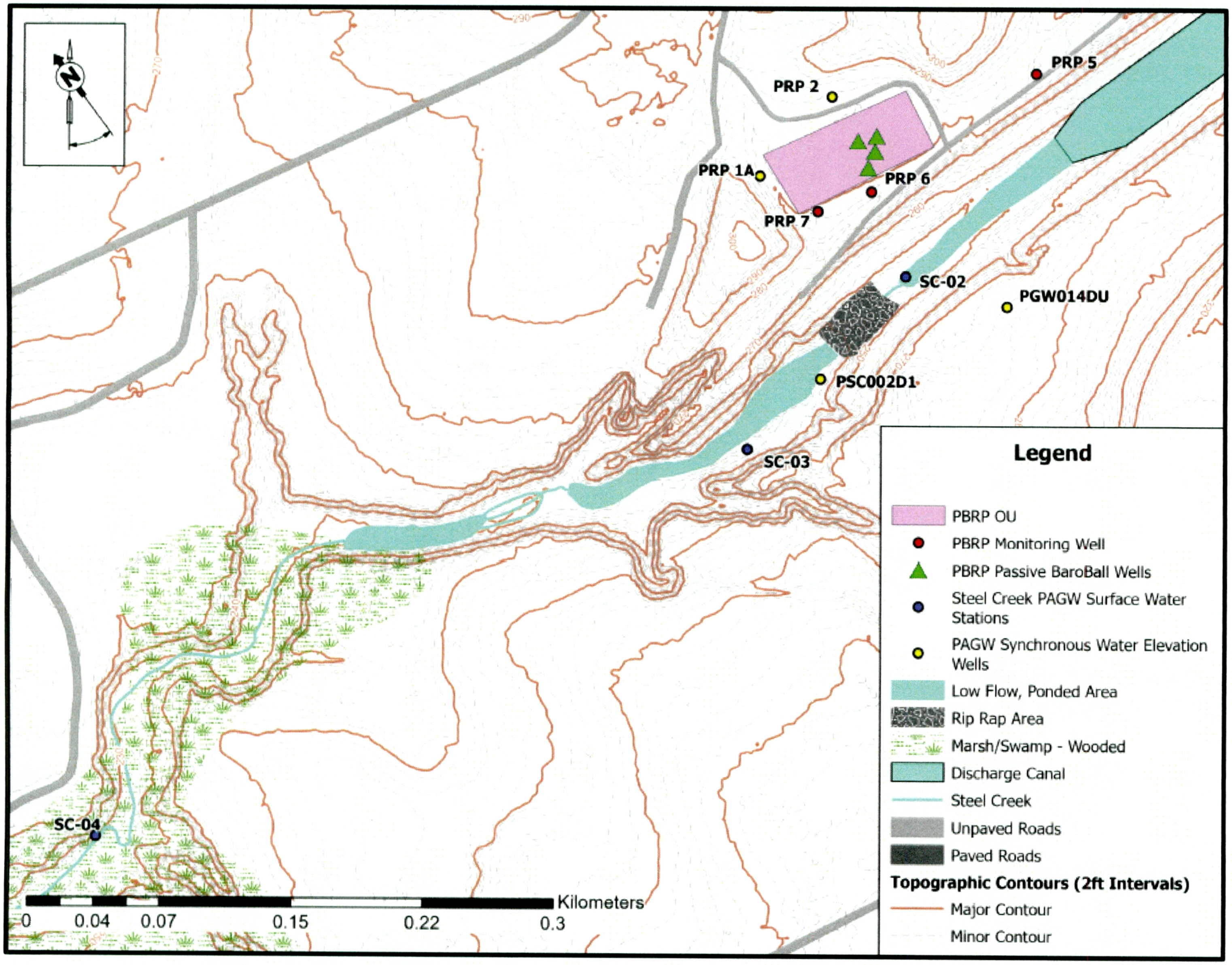
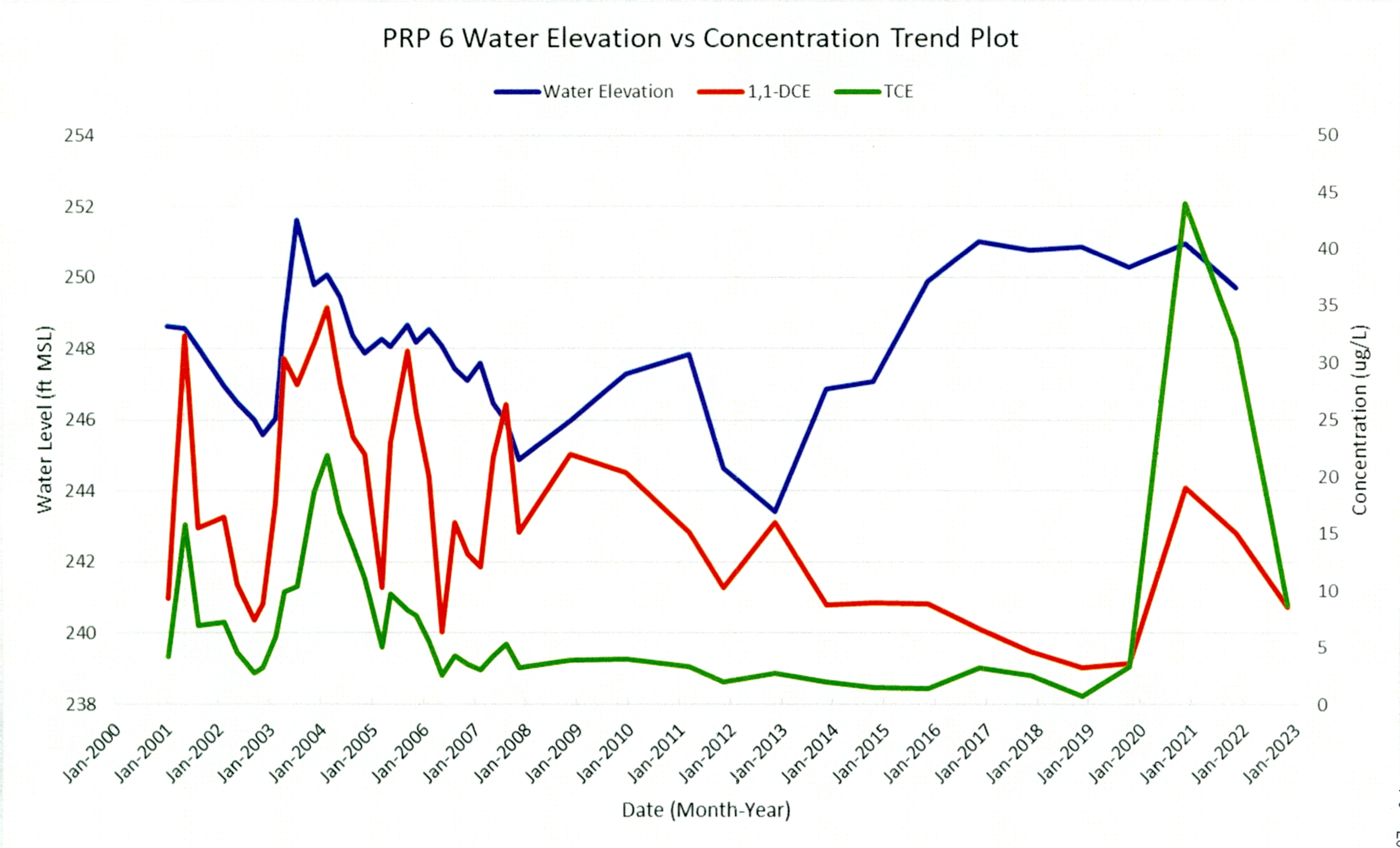


Figure 4. PBRP OU Well Network and PAGW OU Supplemental Wells



JUN 19 2023

Figure 5. PRP 6 Water Elevation vs Concentration Trend Plot

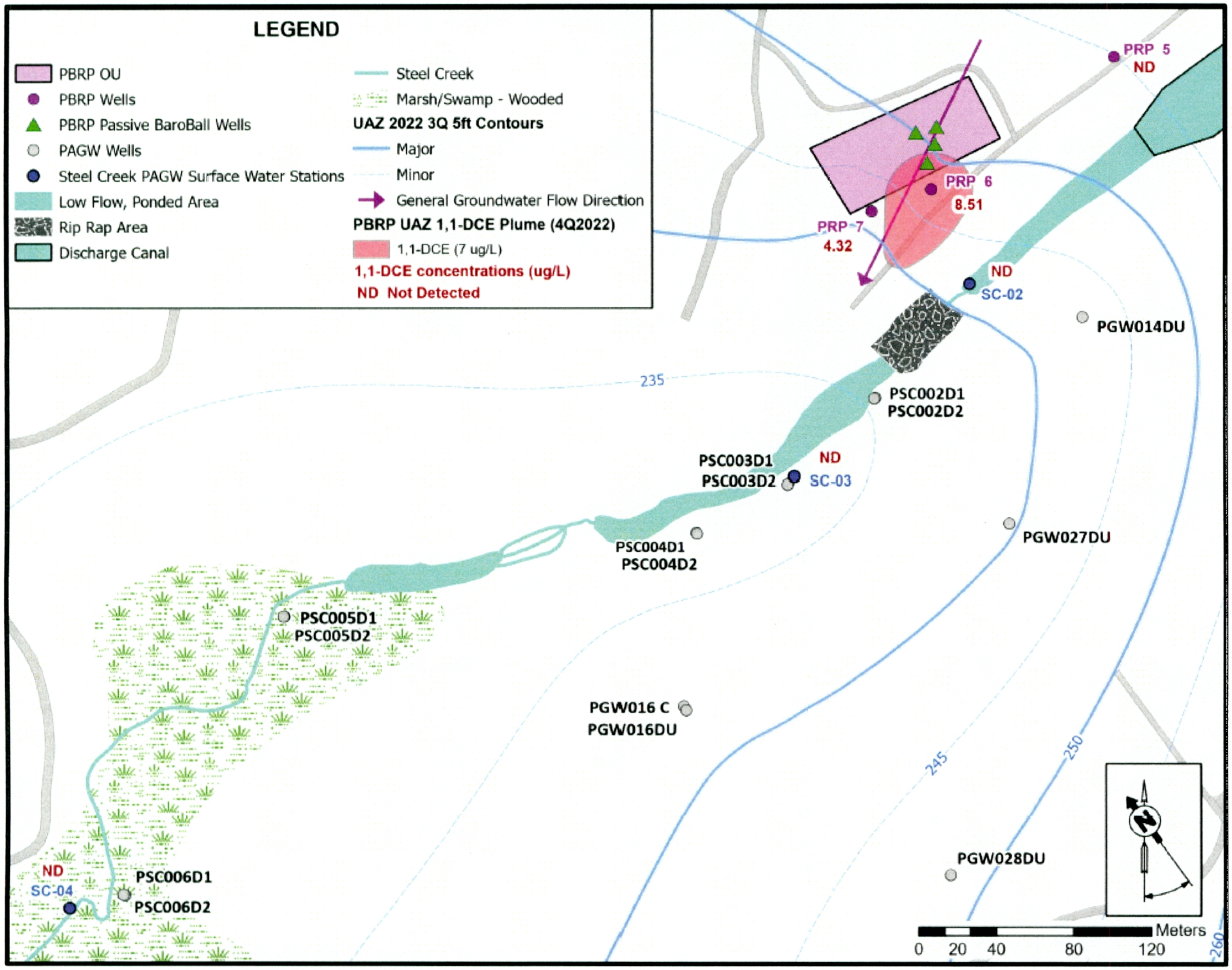


Figure 6. 1,1-DCE Contaminant Distribution

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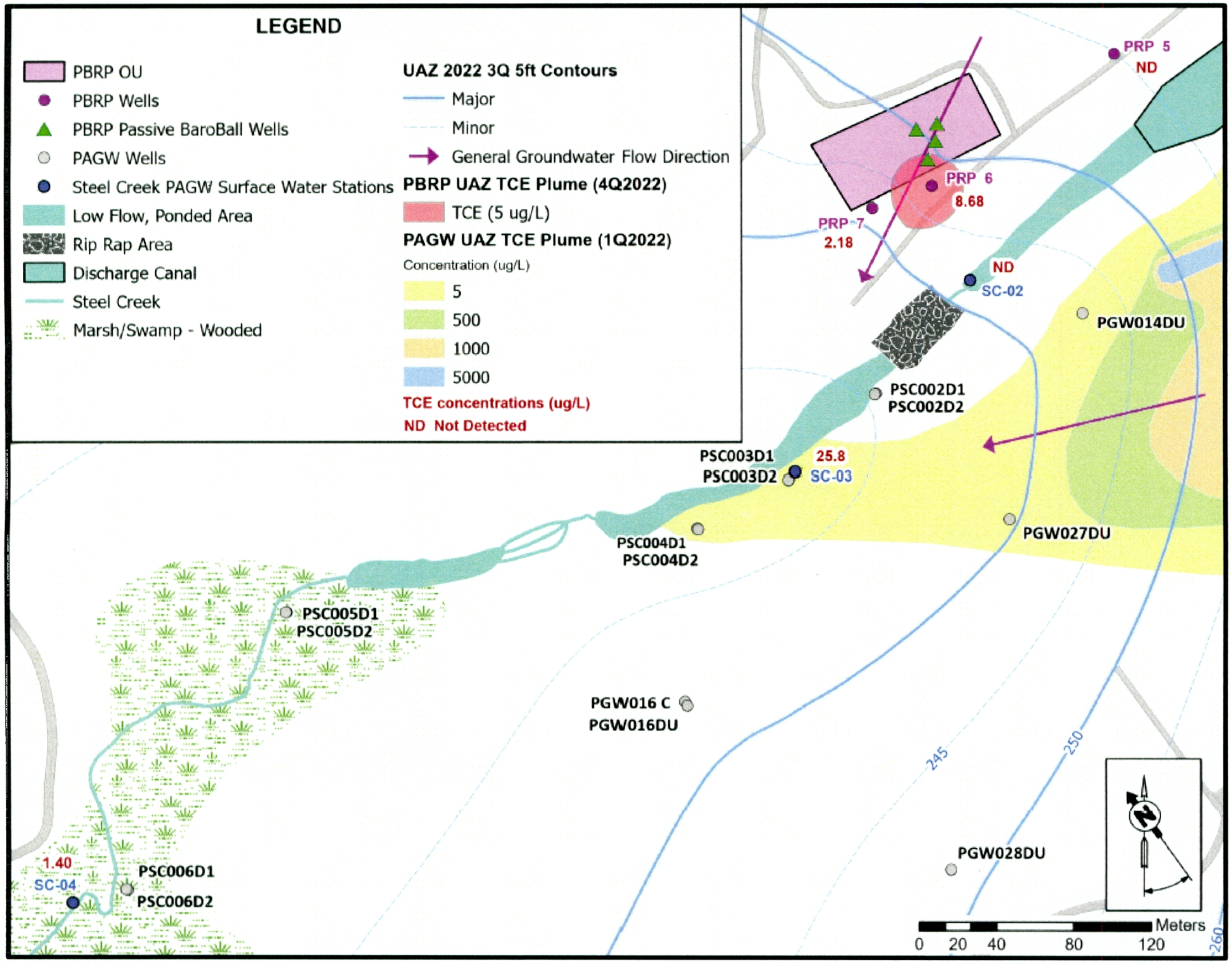

Figure 7. TCE Contaminant Distribution

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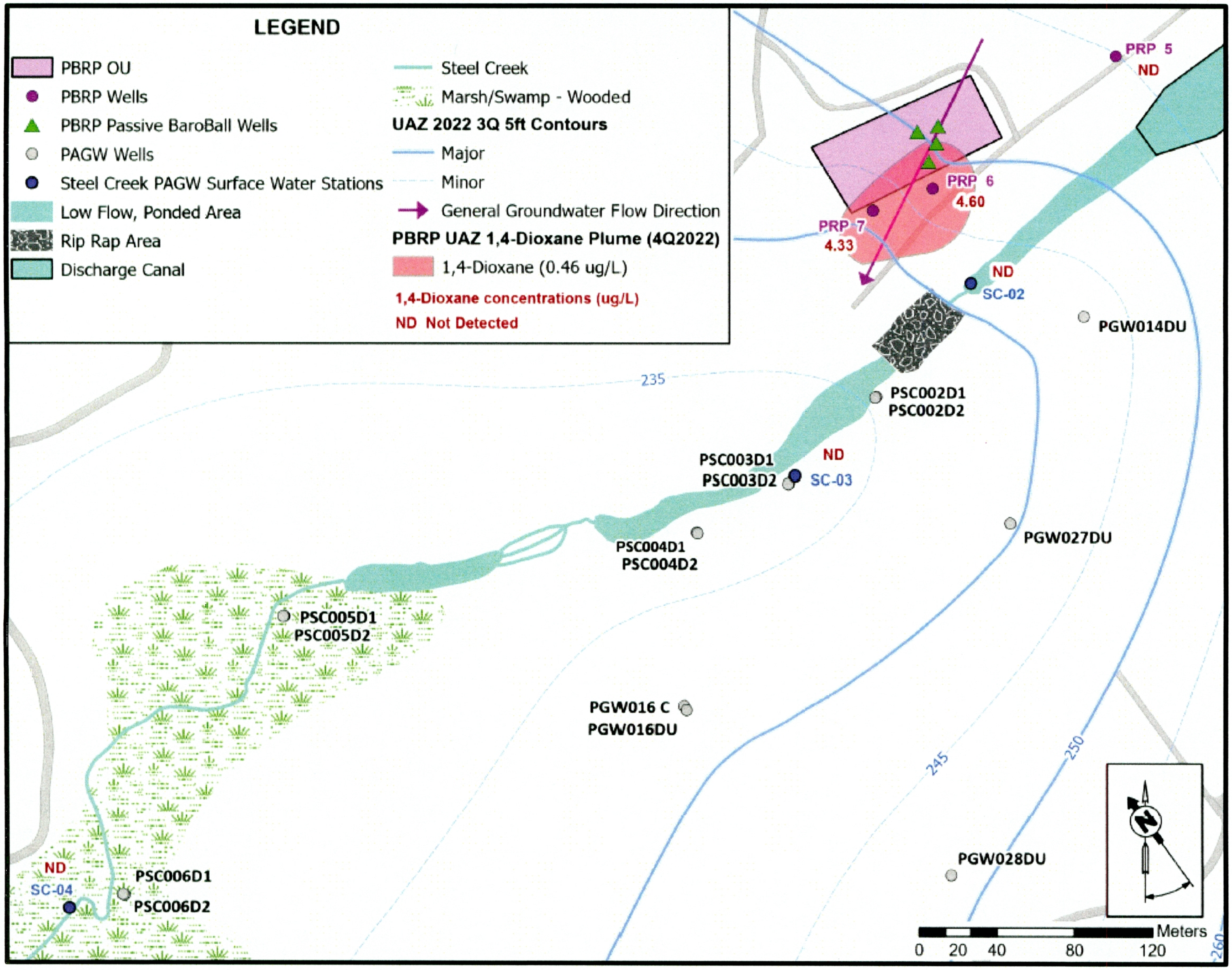

Figure 8. 1,4-Dioxane Contaminant Distribution

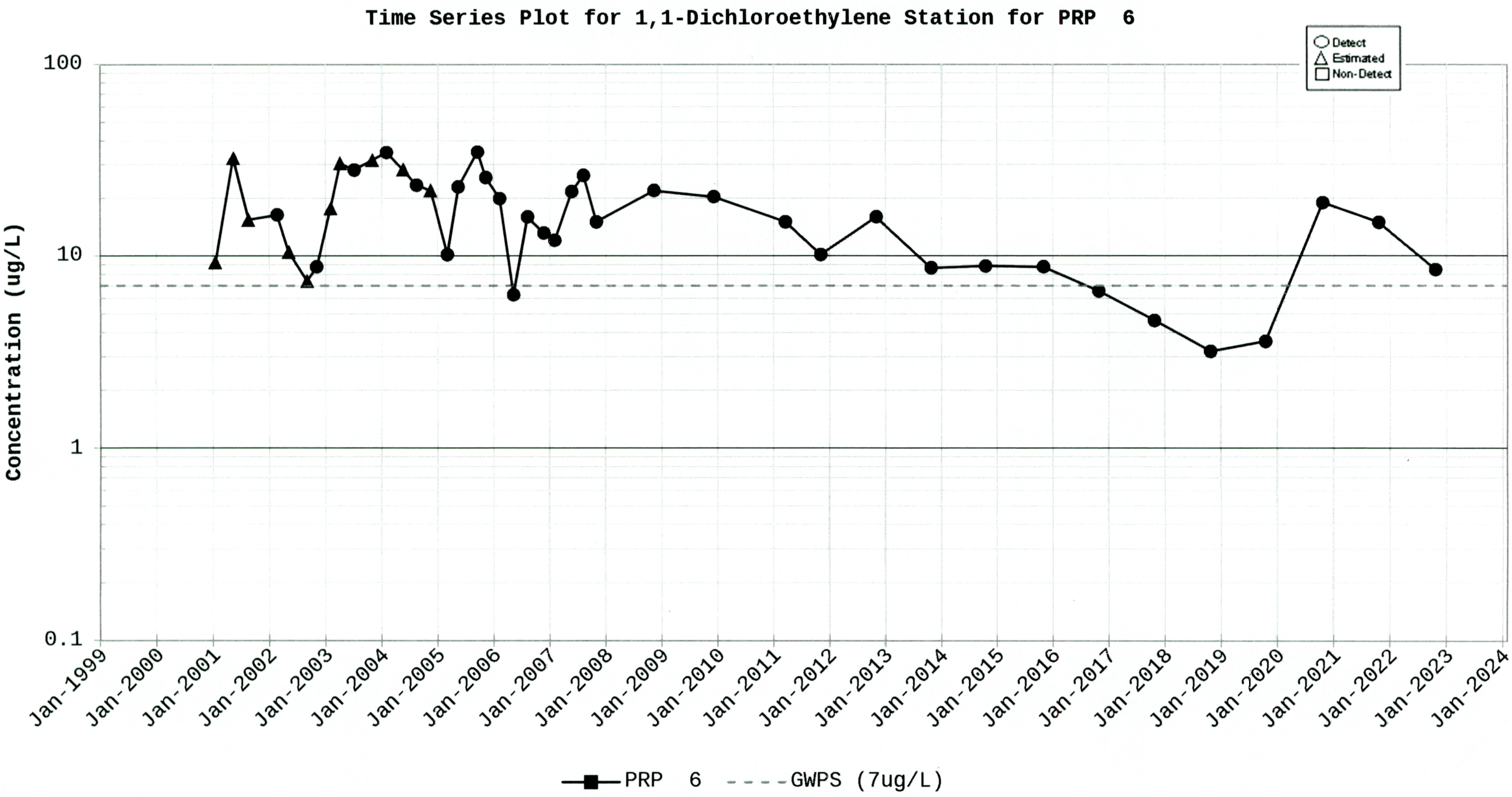

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Figure 9. Time-Series Plot for 1,1-DCE at PRP 6

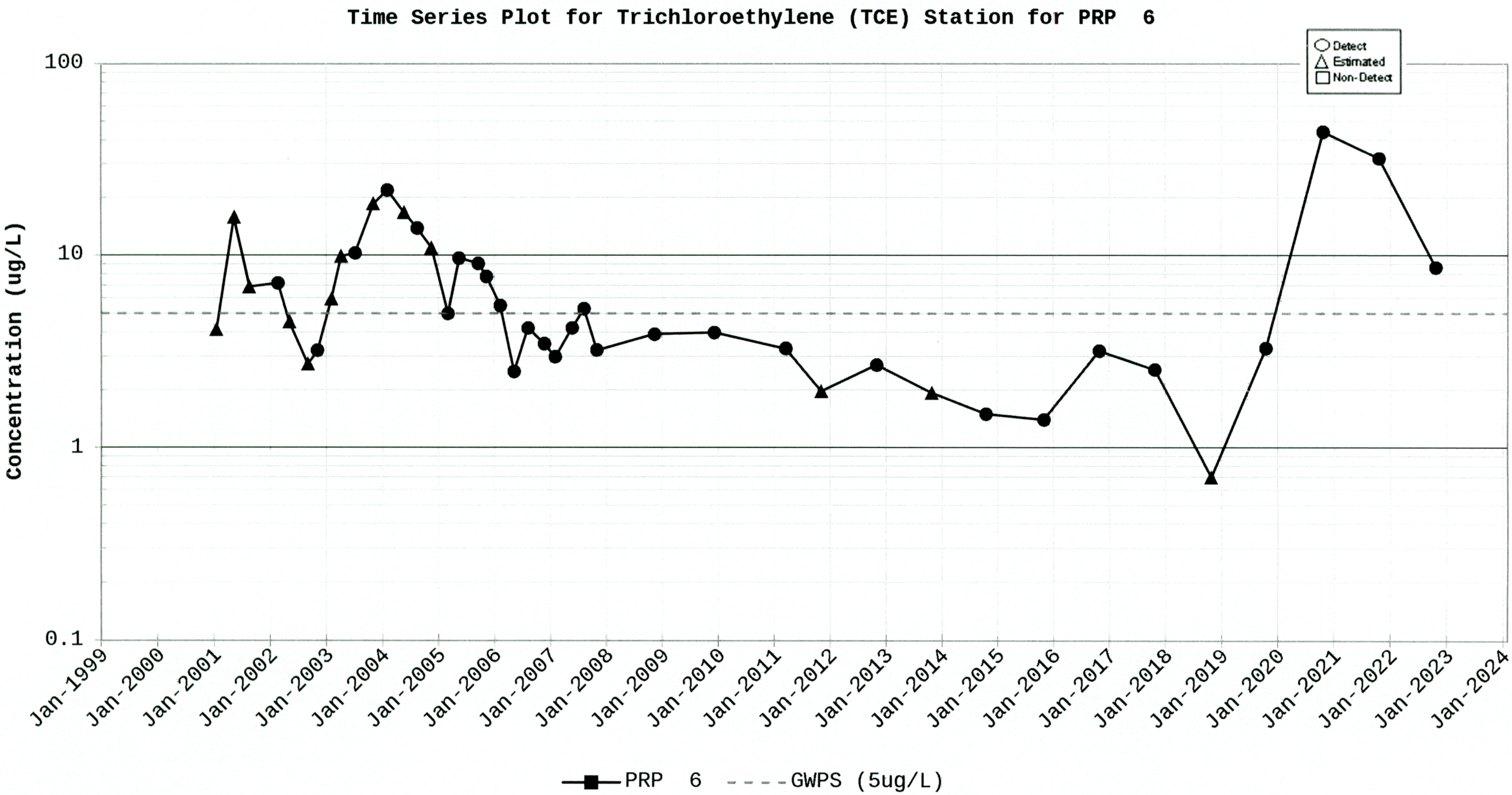


Figure 10. Time-Series Plot for TCE at PRP 6

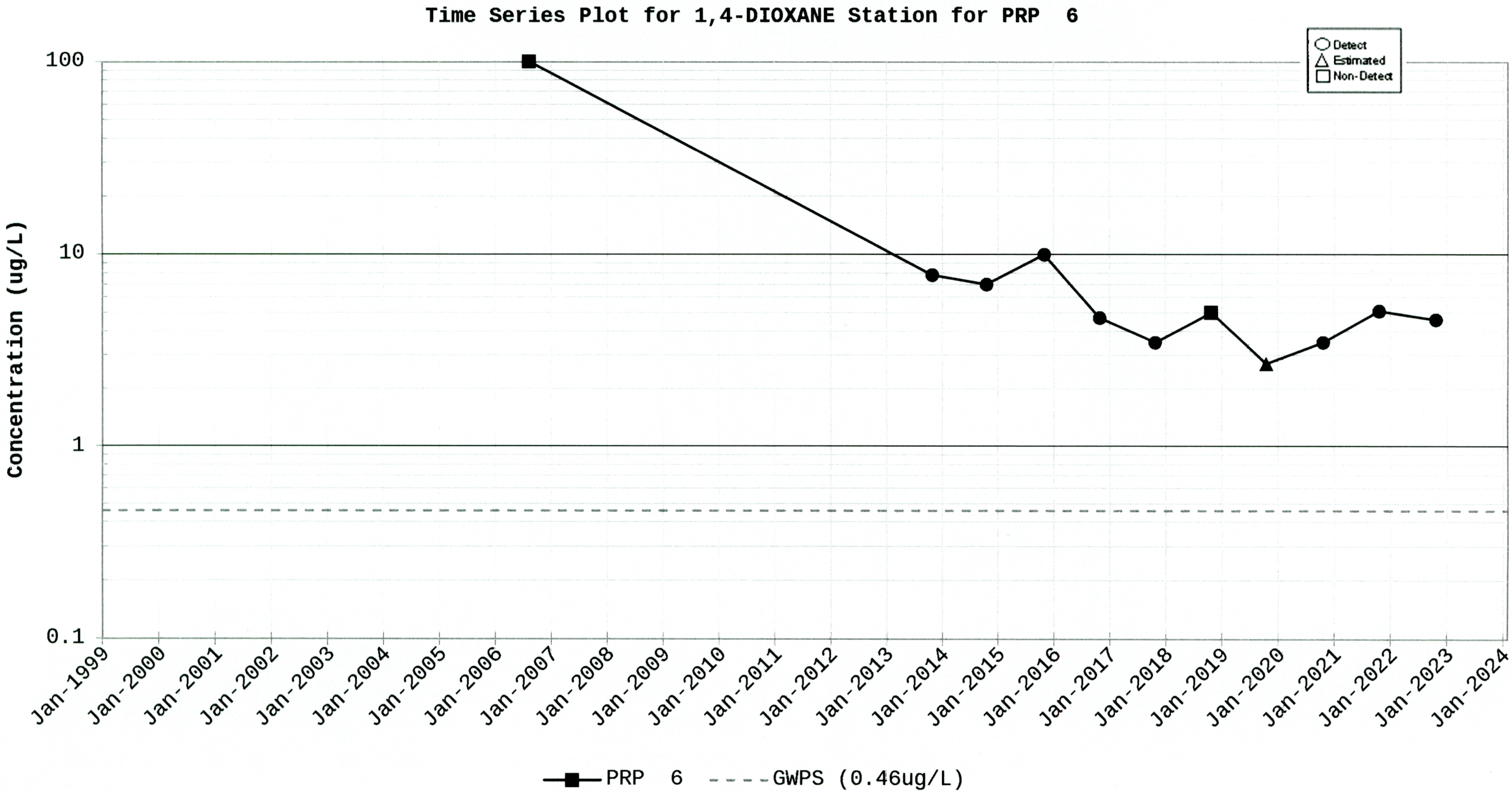


Figure 11. Time-Series Plot for 1,4-Dioxane at PRP 6

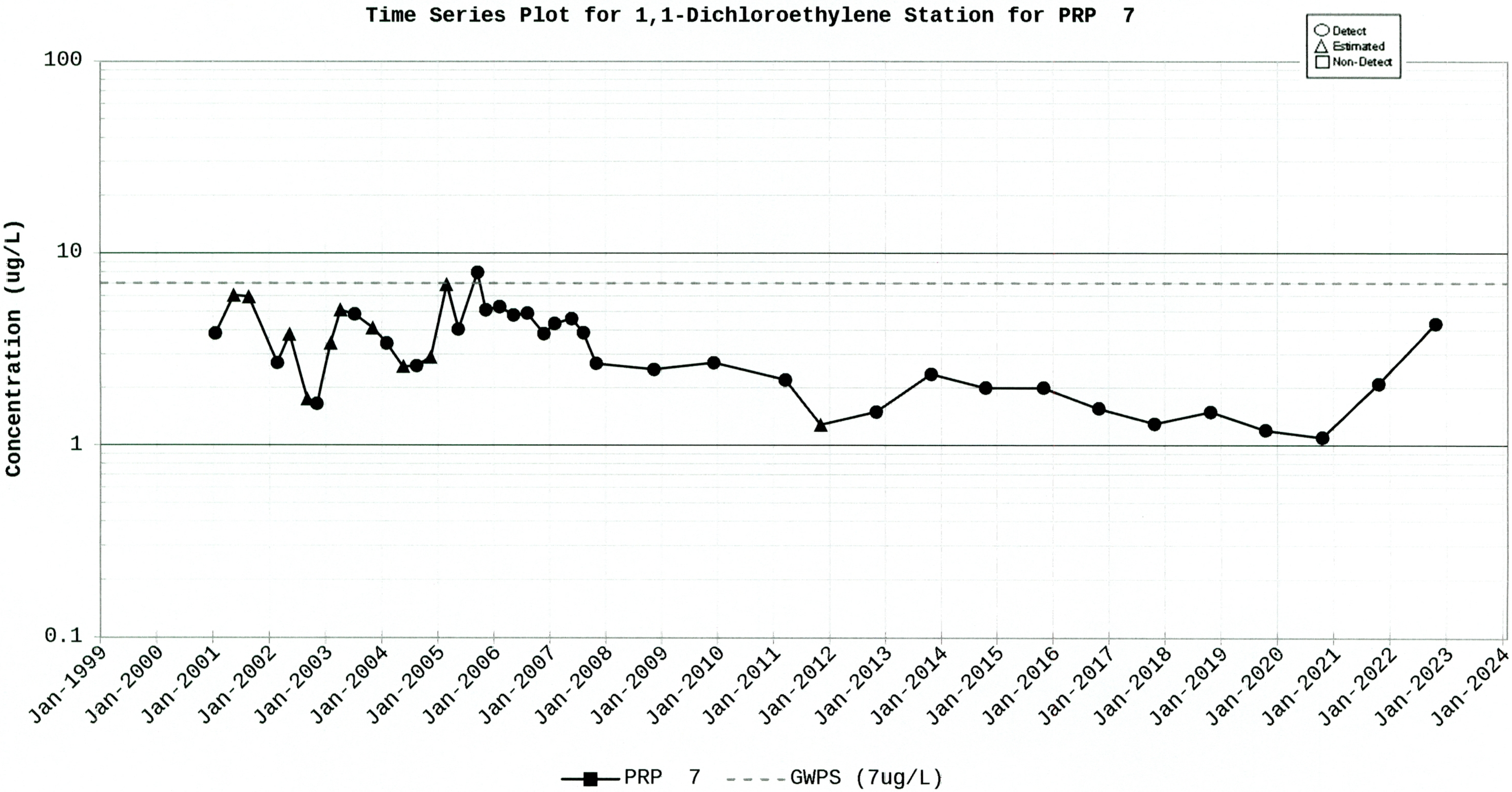


Figure 12. Time-Series Plot for 1,1-DCE at PRP 7

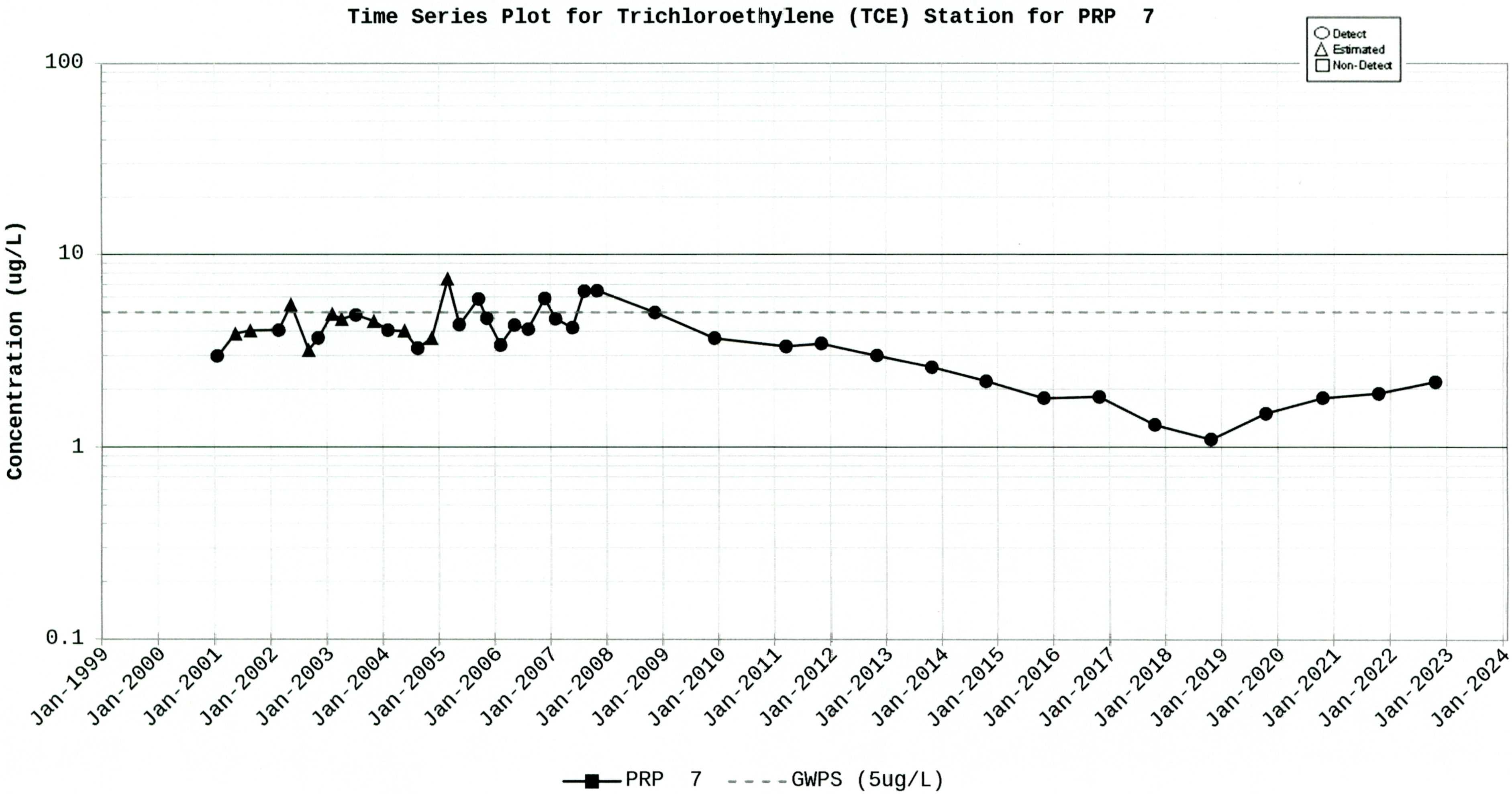
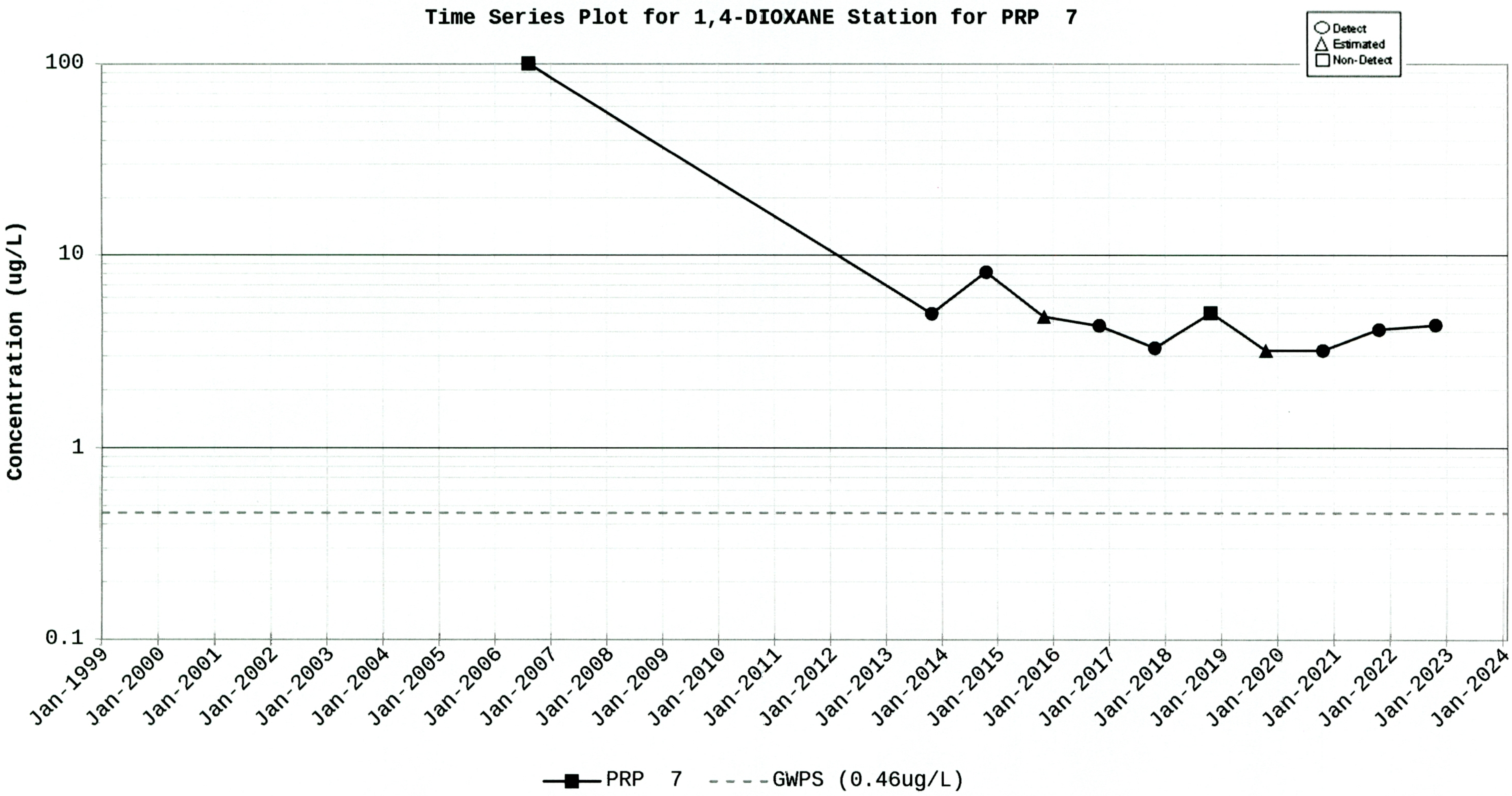


Figure 13. Time-Series Plot for TCE at PRP 7



JUN 19 2023

Figure 14. Time-Series Plot for 1,4-Dioxane at PRP 7

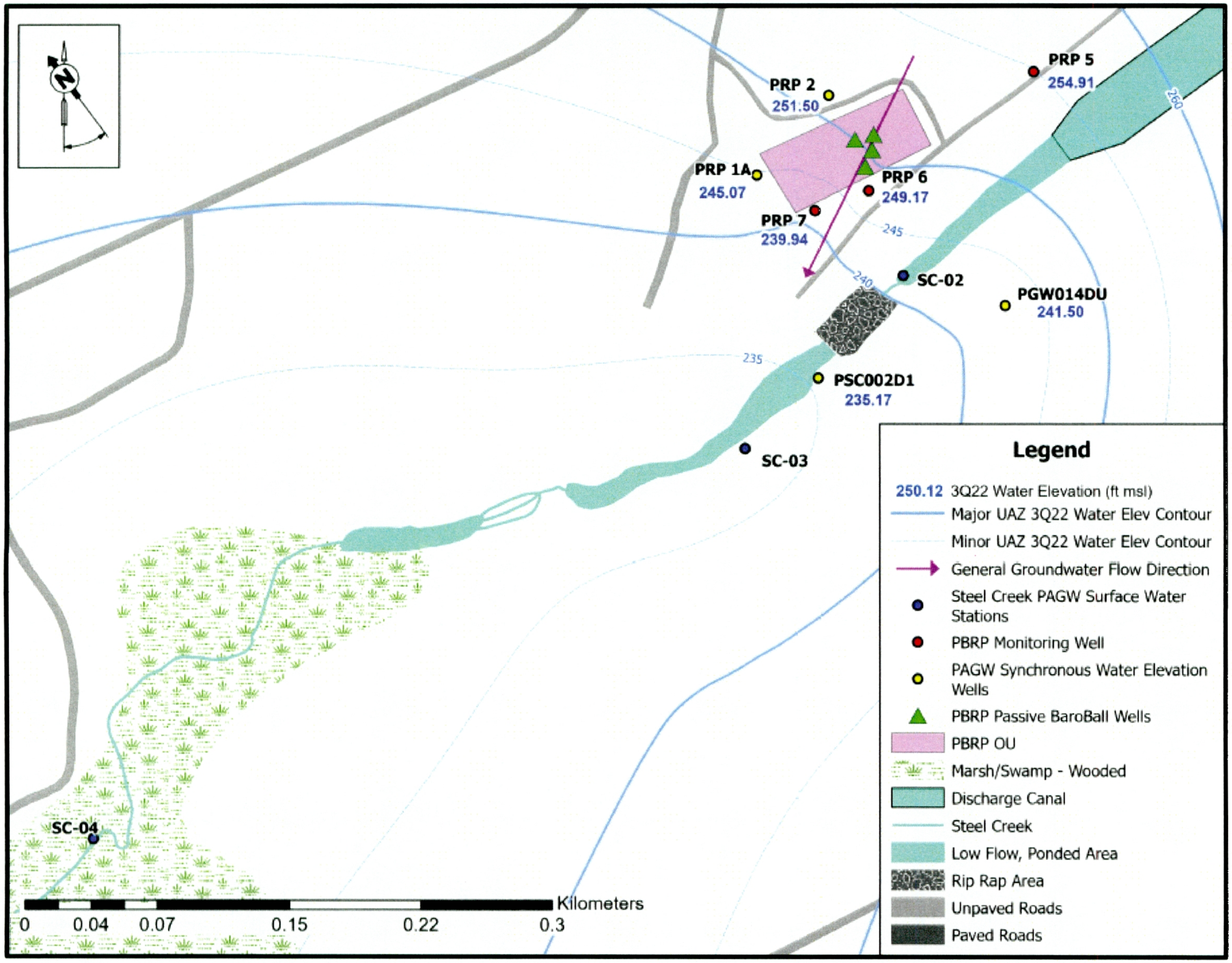


Figure 15. PBRP Synchronous Water Elevation Event (3Q22)

Questions from you or your staff may be directed to me at (803) 952-8365, or DOE Program Manager, Mr. Philip Prater, at (803) 952-9333.

Sincerely,

Brian T. Hennessey
Digitally signed by Brian T. Hennessey
Date: 2023.06.15 15:16:00 -04'00'

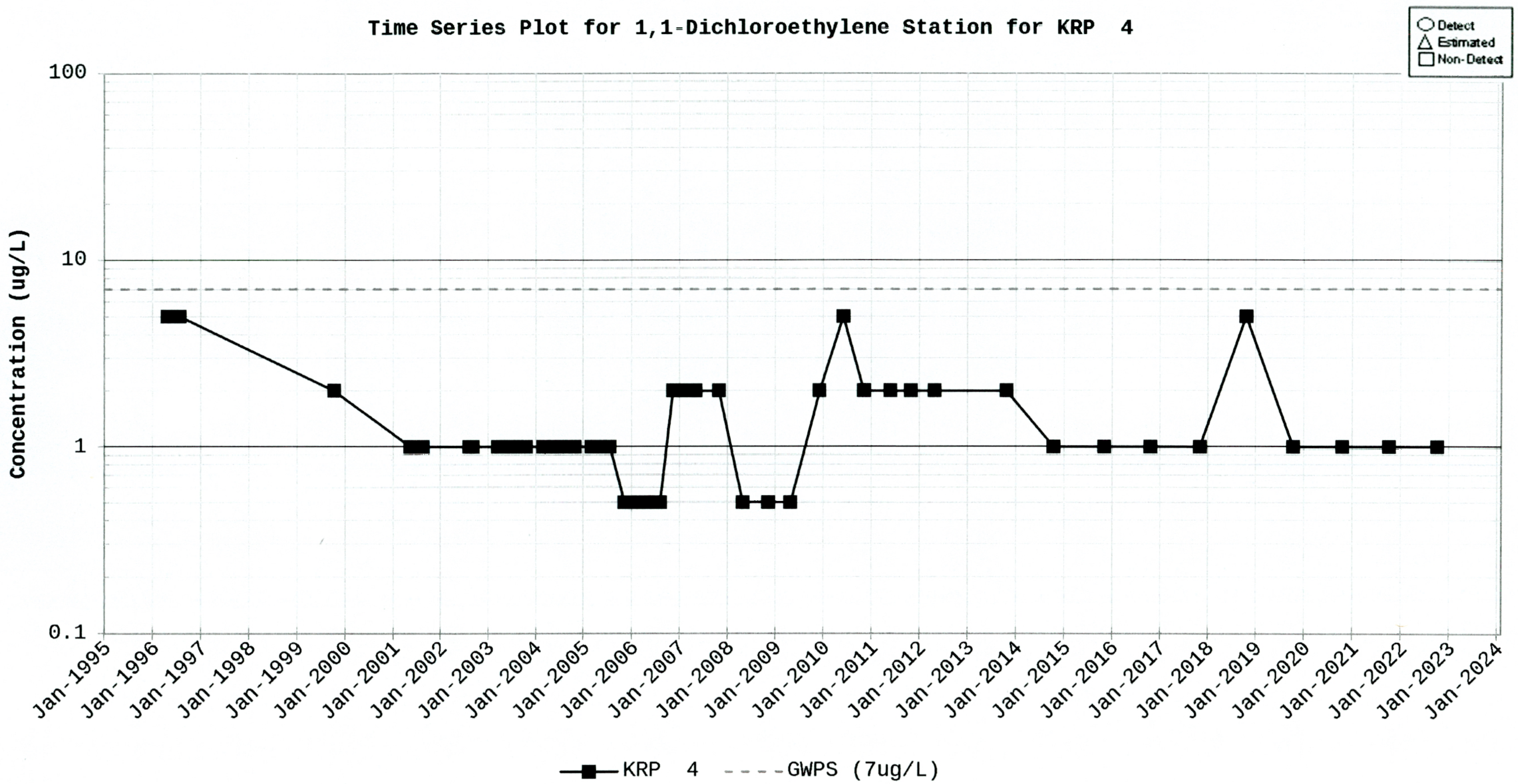
Brian T. Hennessey
FFA Project Manager, DOE-Savannah River
Remediation and Deactivation & Decommissioning Division

RDDD-23-017

Enclosure:
KBRP Time-Series Plots (48 pages)

cc w/o encl:
J. Blalock, SCDHEC-Columbia
S. French, SCDHEC-Columbia
M. Reece, SCDHEC-Columbia
G. K. Taylor, SCDHEC-Columbia
G. Stewart, SCDHEC-Columbia
T. R. Fuss, SCDHEC-Aiken Environmental Affairs Office
G. O'Quinn, SCDHEC-Aiken Environmental Affairs Office
B. A. Cameron, SCDHEC-Aiken Environmental Affairs Office
K. L. Beatty, SCDHEC-Aiken Environmental Affairs Office
H. L. Herlong, SCDHEC-Aiken Environmental Affairs Office

cc w/encl:
M. McRae, TechLaw, Inc.



Time Series Plot for 1,1-Dichloroethylene Station for KRP 4
Detect
Estimated
Non-Detect
Concentration (ug/L)
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-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
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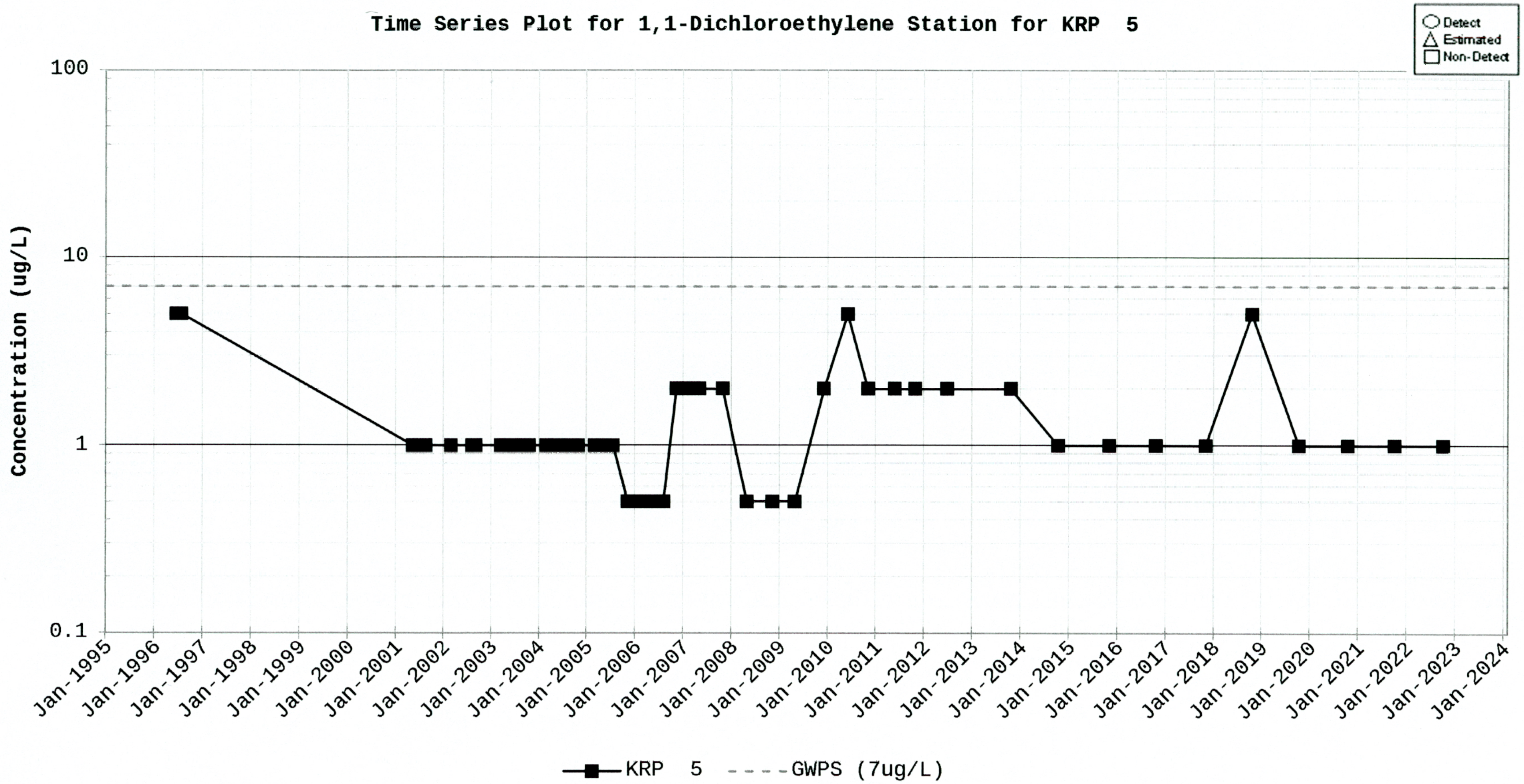
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
KRP 4
GWPS (7ug/L)


Time Series Plot for 1,1-Dichloroethylene Station for KRP 5
Detect
Estimated
Non-Detect
Concentration (ug/L)
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-2013
Jan-2014
Jan-2015
Jan-2016
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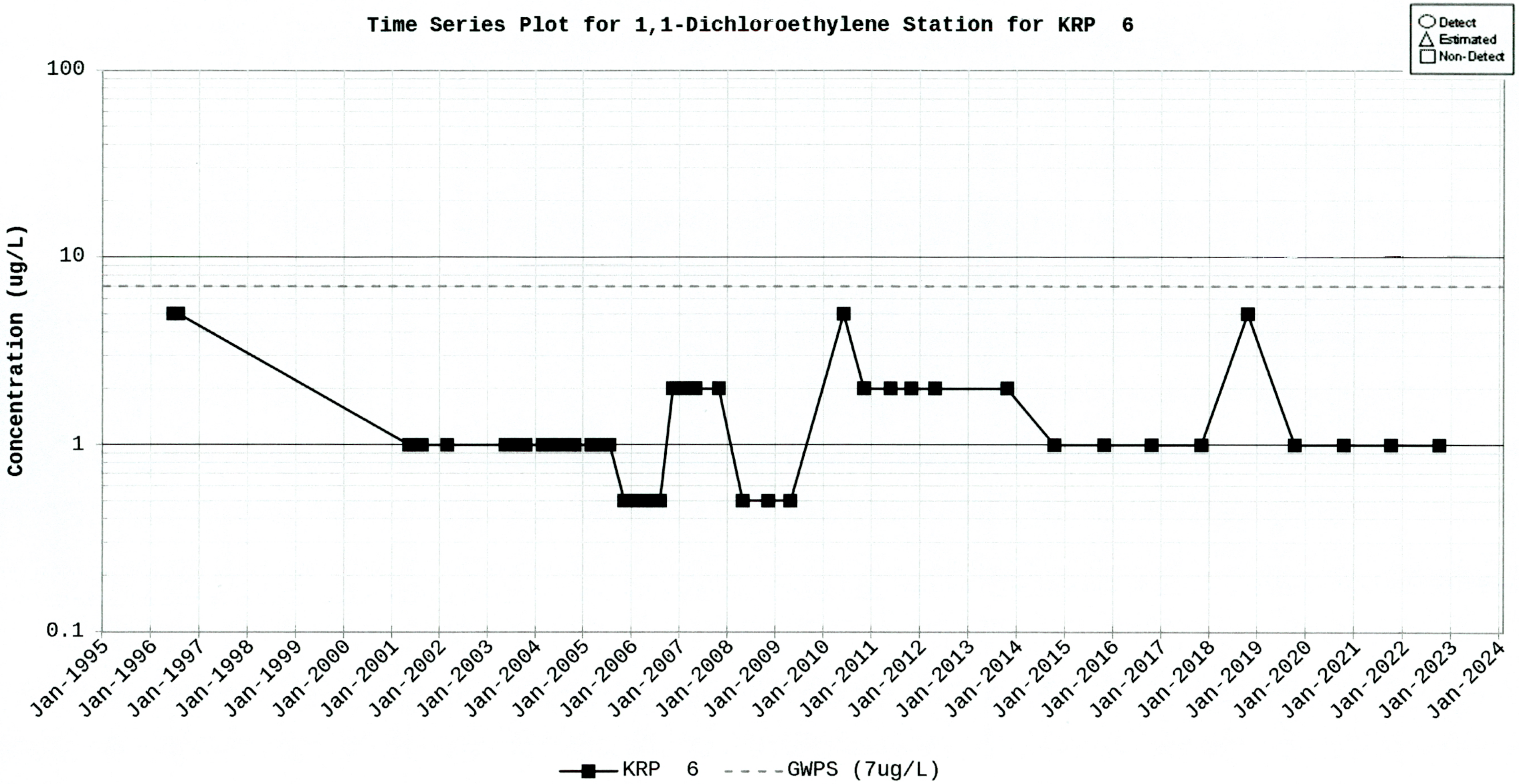
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
KRP 5
GWPS (7ug/L)


Time Series Plot for 1,1-Dichloroethylene Station for KRP 6
Detect
Estimated
Non-Detect
Concentration (ug/L)
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
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Jan-2016
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Jan-2019
Jan-2020
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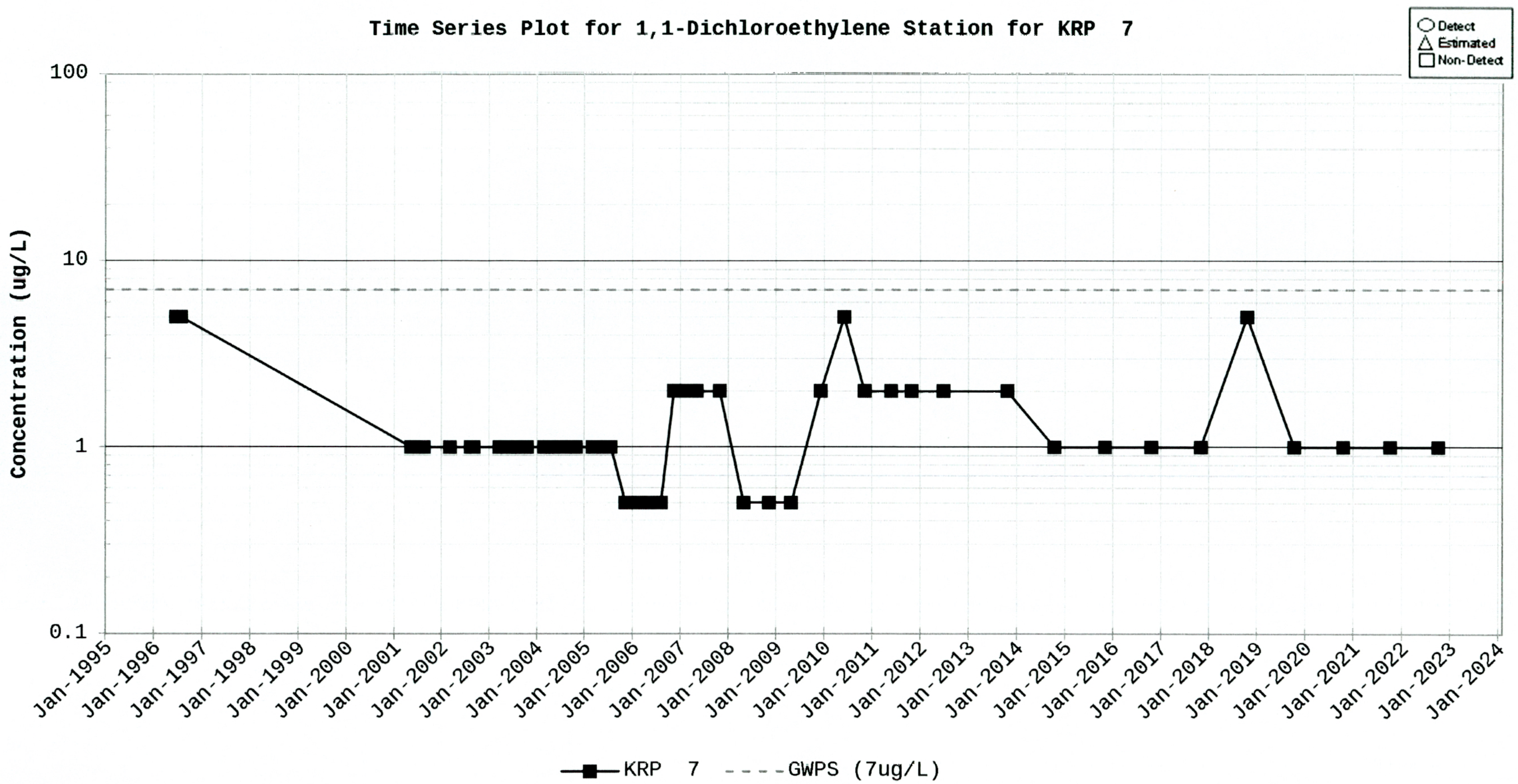
Jan-2022
Jan-2023
Jan-2024
KRP 6
GWPS (7ug/L)


Time Series Plot for 1,1-Dichloroethylene Station for KRP 7
Detect
Estimated
Non-Detect
100
10
1
0.1
Concentration (ug/L)
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
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
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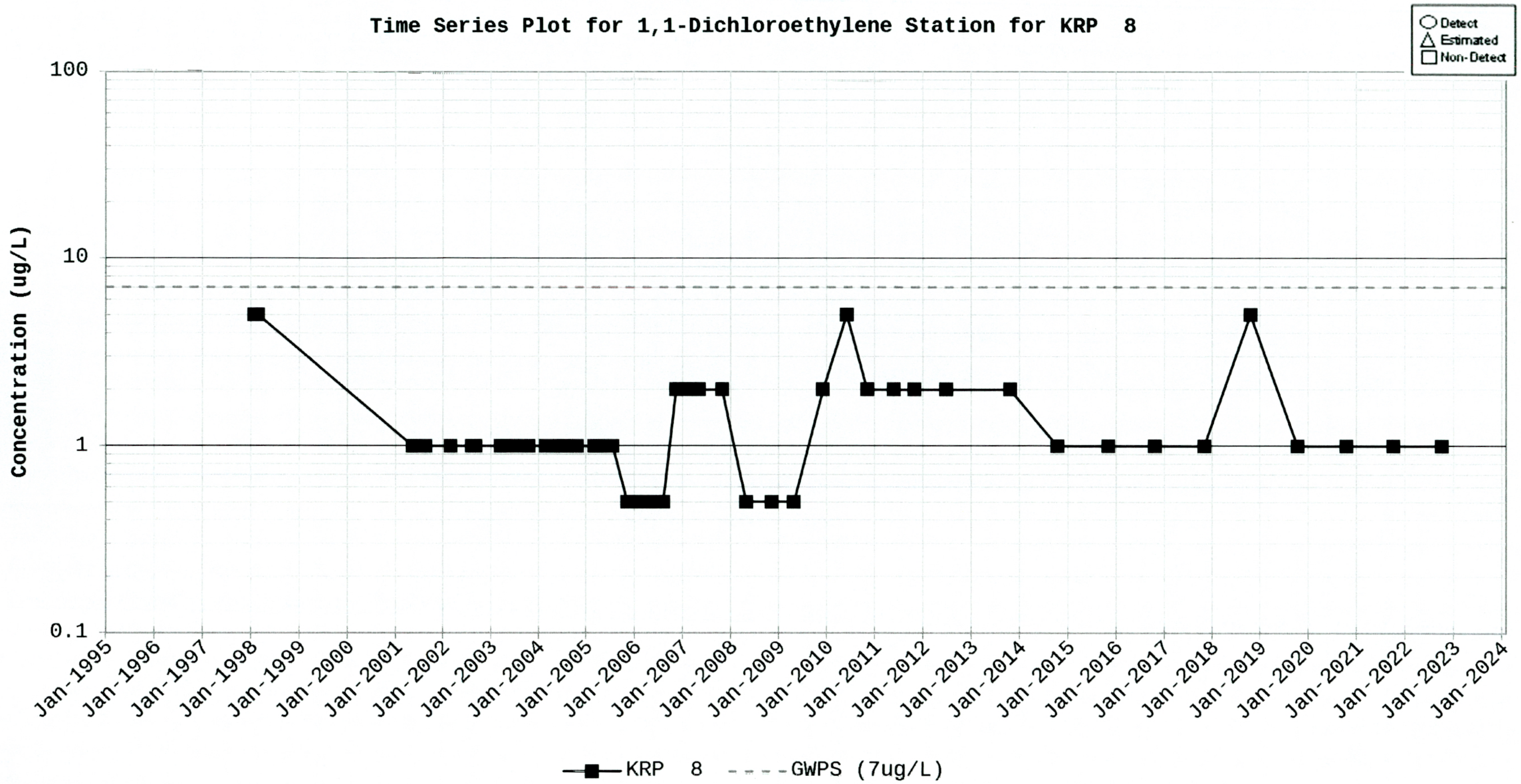
Jan-2024
KRP 7
GWPS (7ug/L)


Time Series Plot for 1,1-Dichloroethylene Station for KRP 8
Detect
Estimated
Non-Detect
Concentration (ug/L)
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
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Jan-2015
Jan-2016
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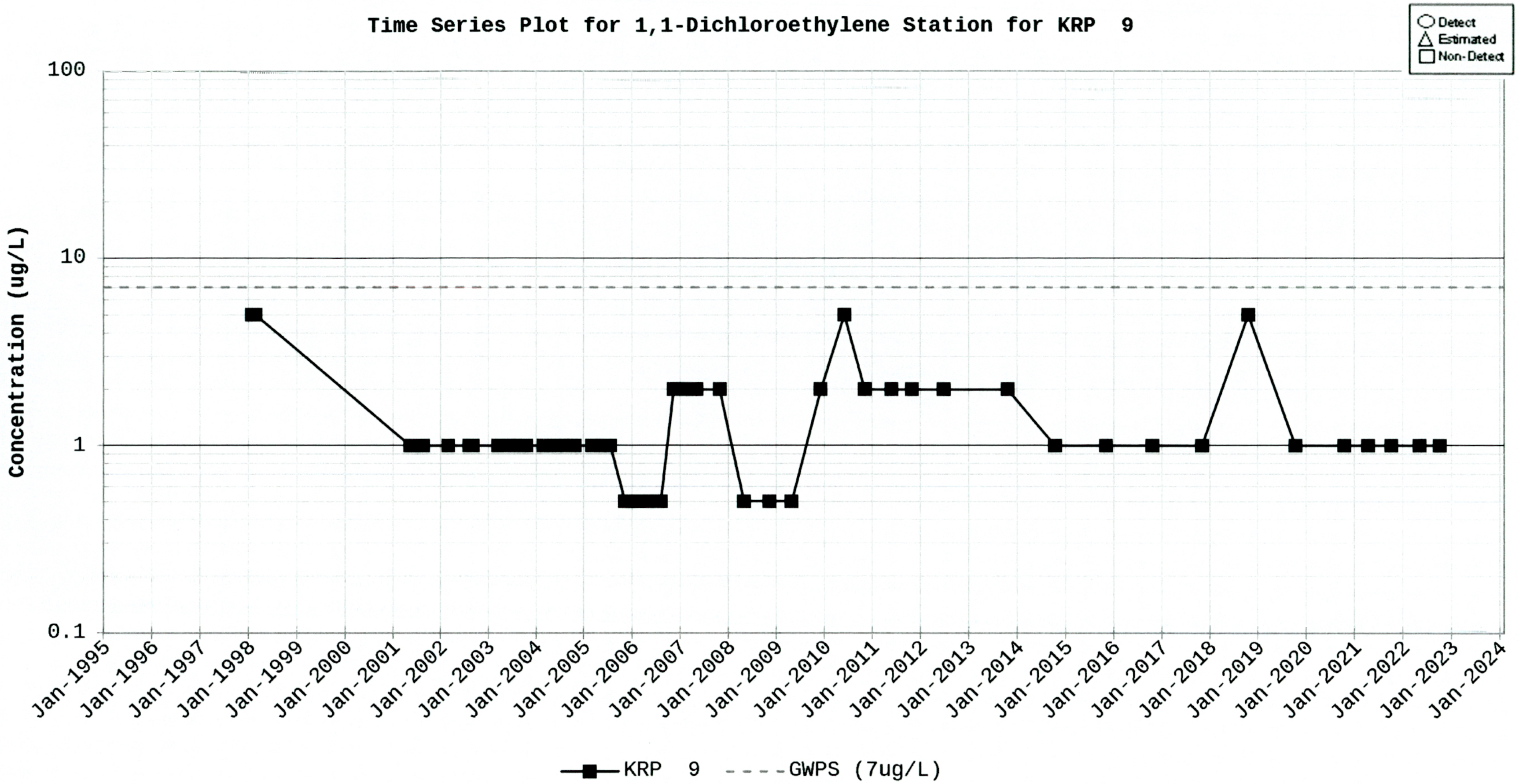
Jan-2021
Jan-2022
Jan-2023
Jan-2024
KRP 8
GWPS (7ug/L)


Time Series Plot for 1,1-Dichloroethylene Station for KRP 9
Detect
Estimated
Non-Detect
Concentration (ug/L)
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-2015
Jan-2016
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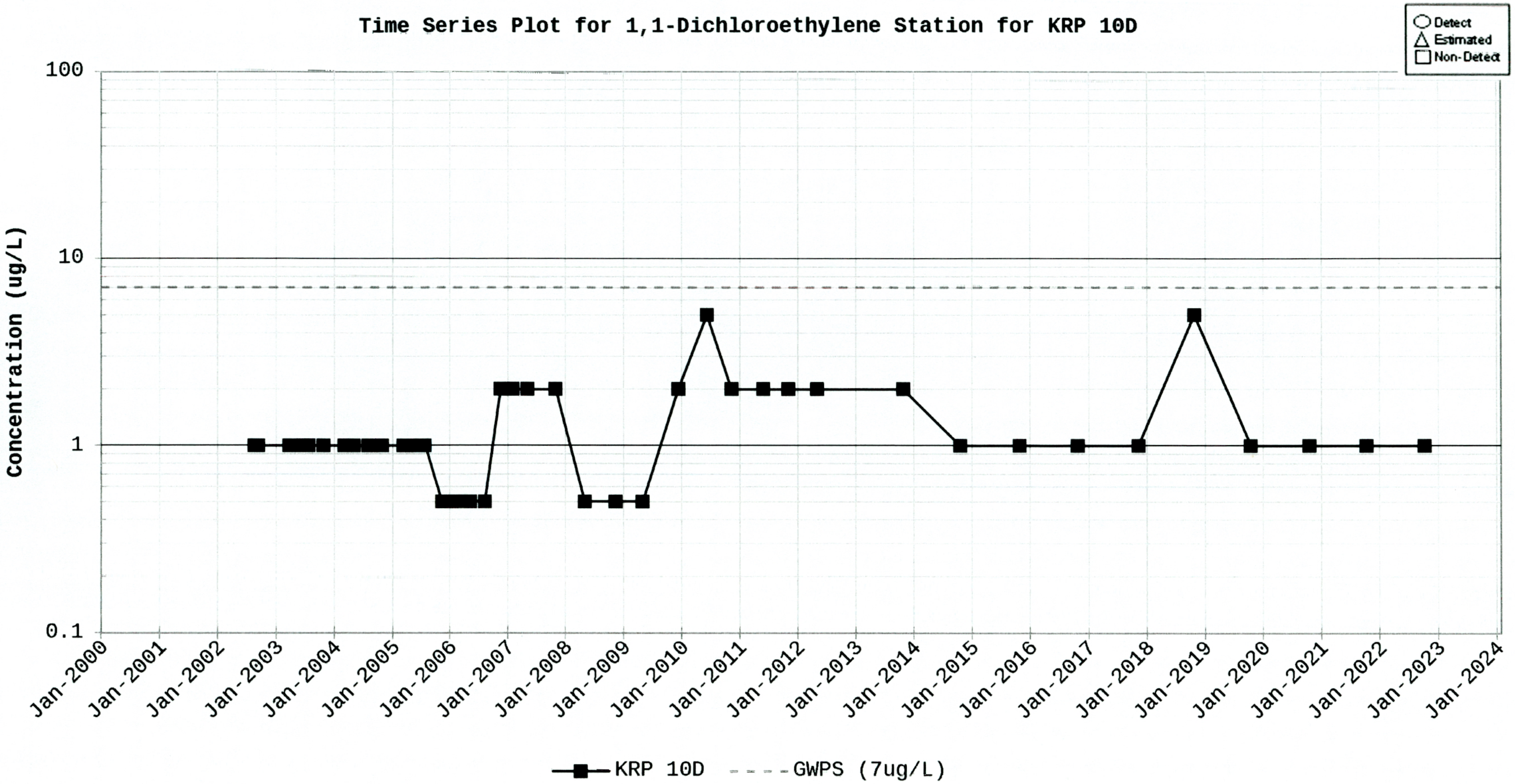
Jan-2021
Jan-2022
Jan-2023
Jan-2024
KRP 9
GWPS (7ug/L)


Time Series Plot for 1,1-Dichloroethylene Station for KRP 10D
Detect
Estimated
Non-Detect
100
10
1
0.1
Concentration (ug/L)
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
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Jan-2020
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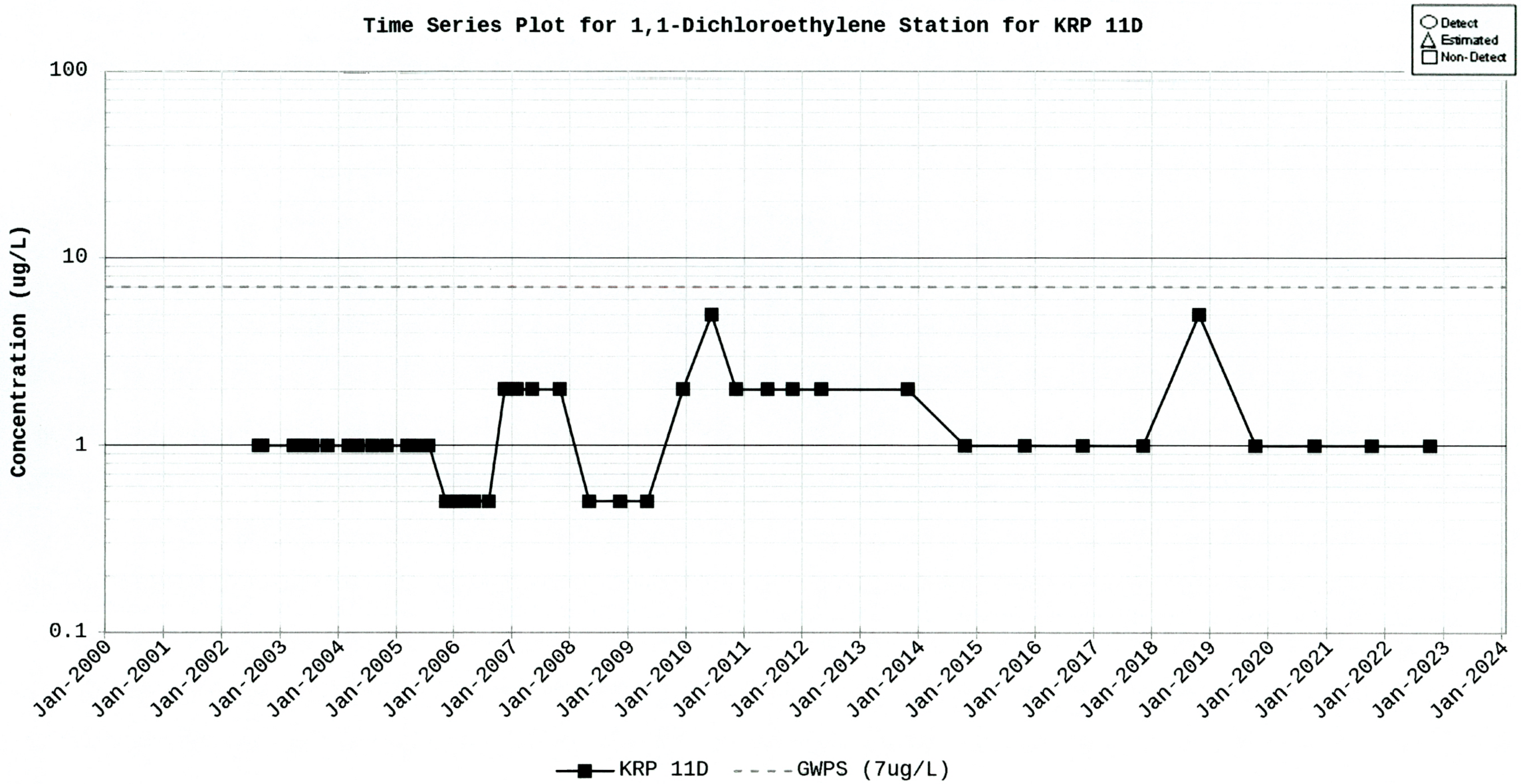
Jan-2022
Jan-2023
Jan-2024
KRP 10D
GWPS (7ug/L)


Time Series Plot for 1,1-Dichloroethylene Station for KRP 11D
Detect
Estimated
Non-Detect
100
10
1
0.1
Concentration (ug/L)
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
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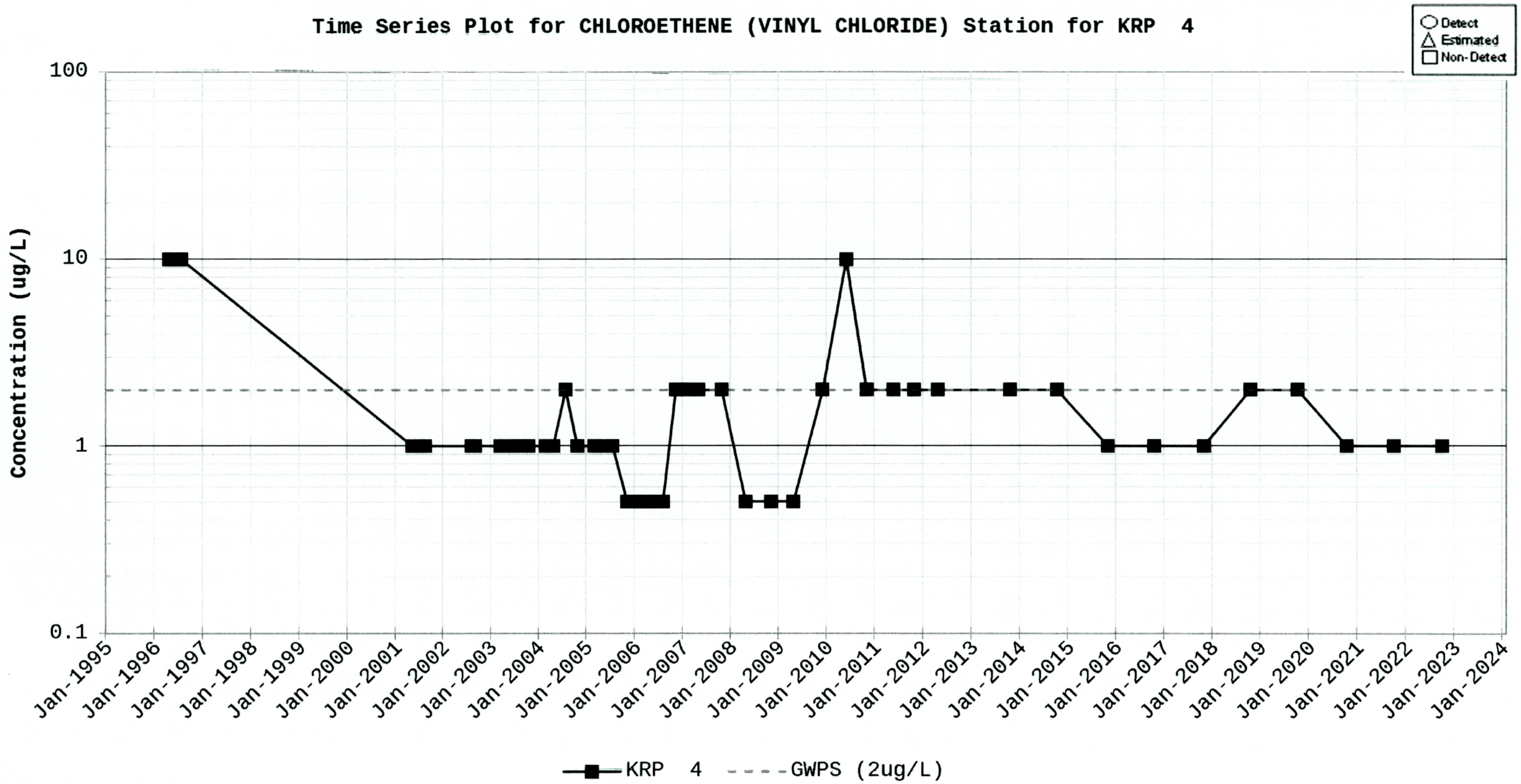
Jan-2023
Jan-2024
KRP 11D
GWPS (7ug/L)


Time Series Plot for CHLOROETHENE (VINYL CHLORIDE) Station for KRP 4
Detect
Estimated
Non-Detect
Concentration (ug/L)
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
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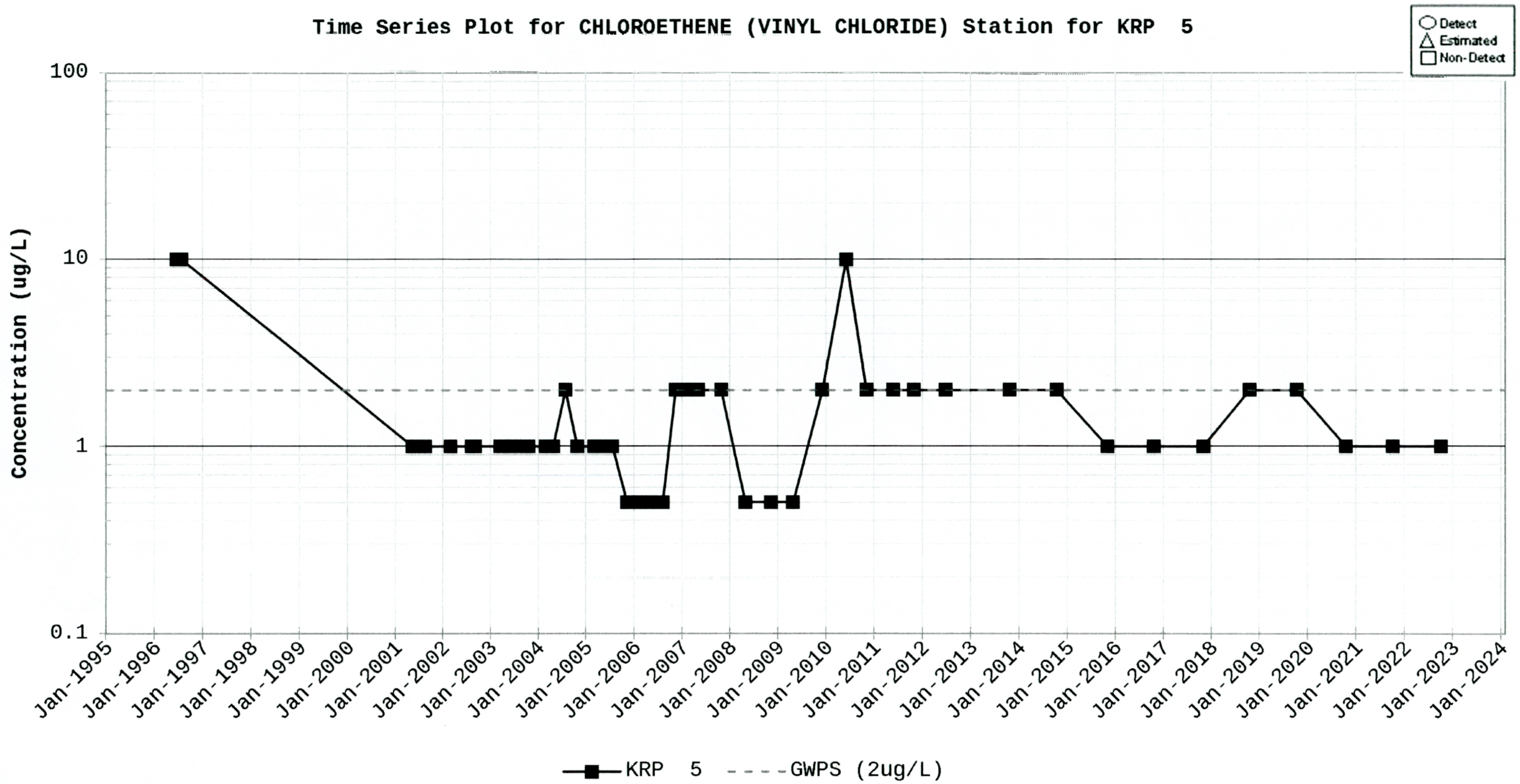
Jan-2023
Jan-2024
KRP 4
GWPS (2ug/L)


Time Series Plot for CHLOROETHENE (VINYL CHLORIDE) Station for KRP 5
Detect
Estimated
Non-Detect
Concentration (ug/L)
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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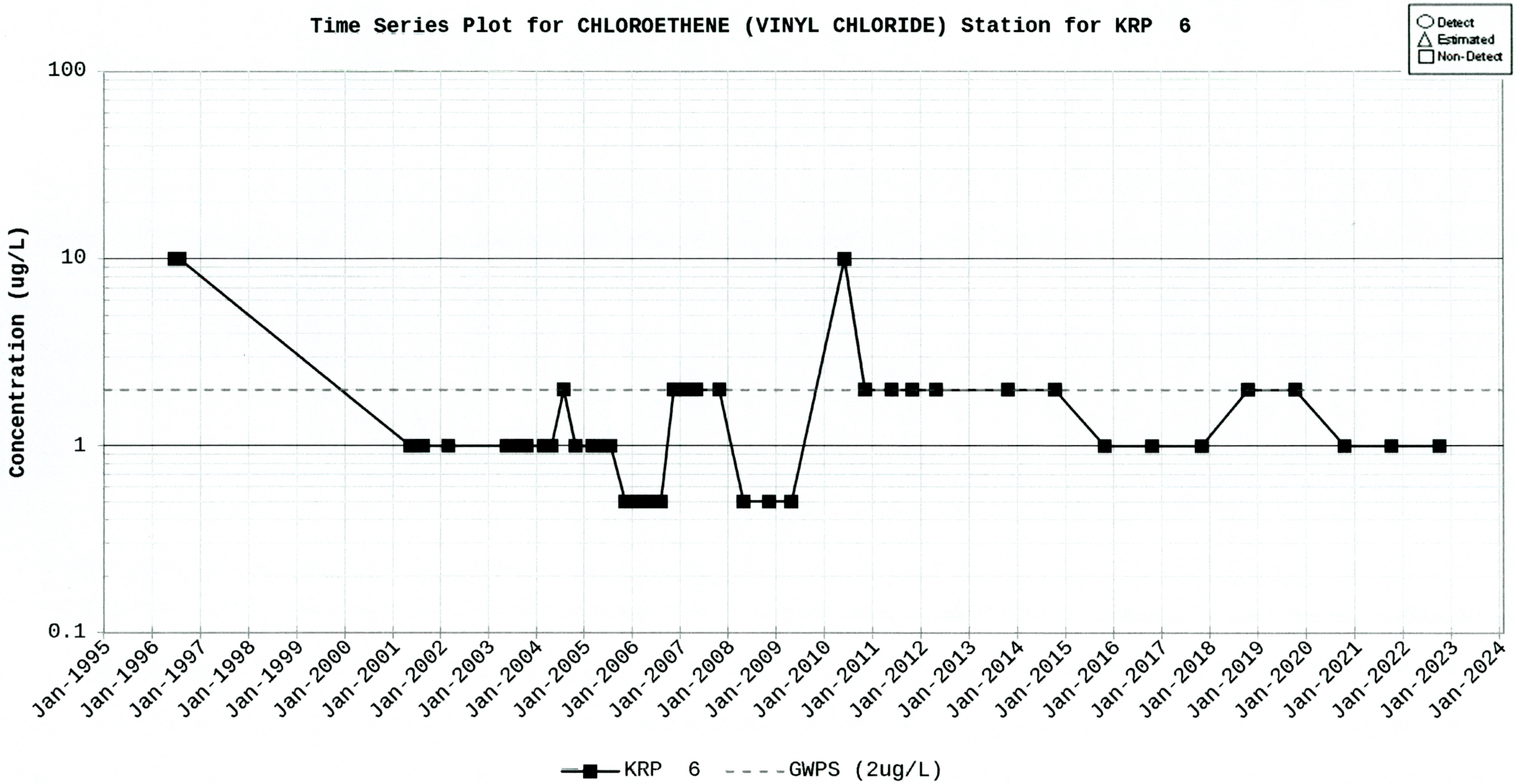
Jan-2024
KRP 5
GWPS (2ug/L)


Time Series Plot for CHLOROETHENE (VINYL CHLORIDE) Station for KRP 6
Detect
Estimated
Non-Detect
Concentration (ug/L)
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
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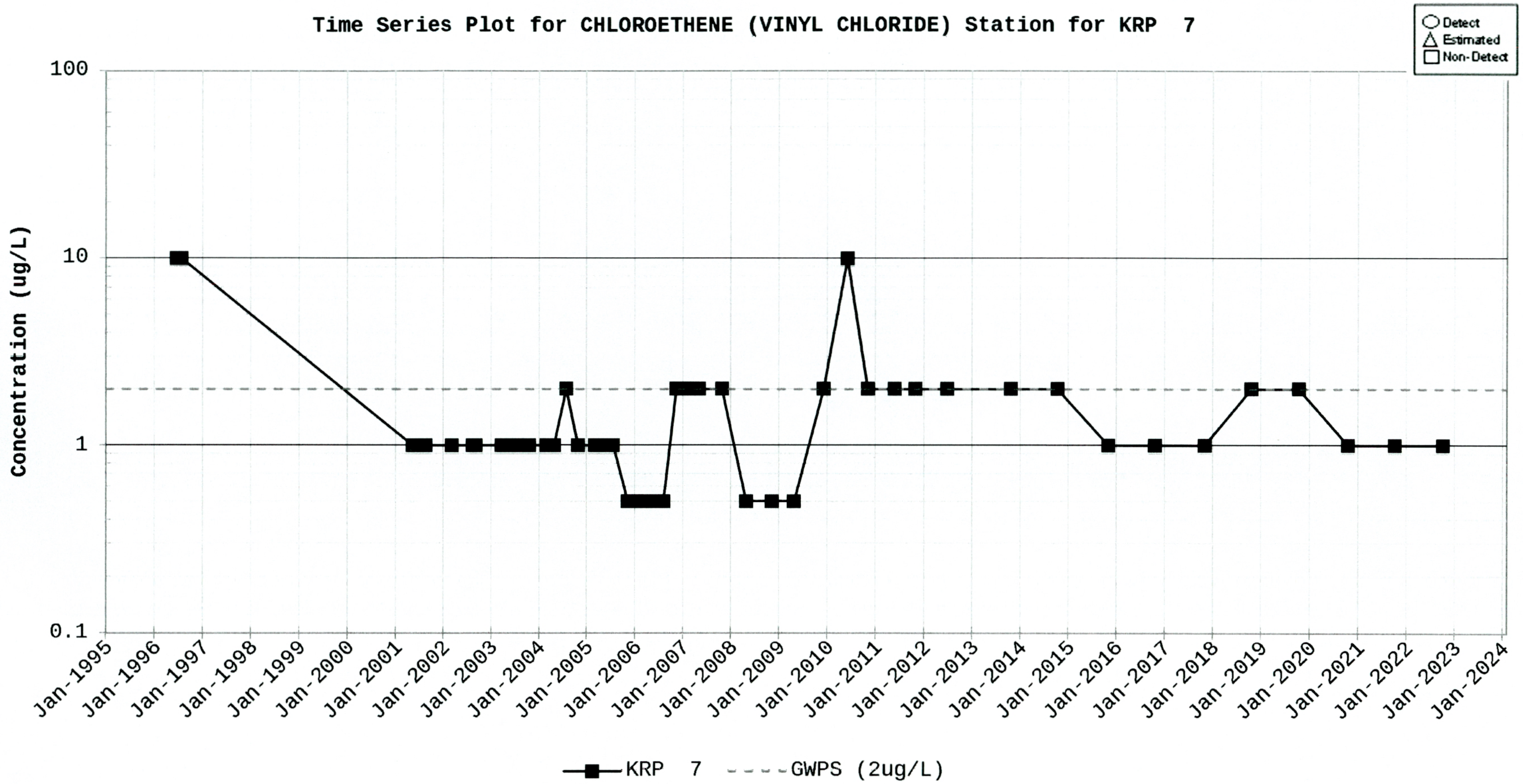
Jan-2024
KRP 6
GWPS (2ug/L)



Time Series Plot for CHLOROETHENE (VINYL CHLORIDE) Station for KRP 7
Detect
Estimated
Non-Detect
Concentration (ug/L)
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
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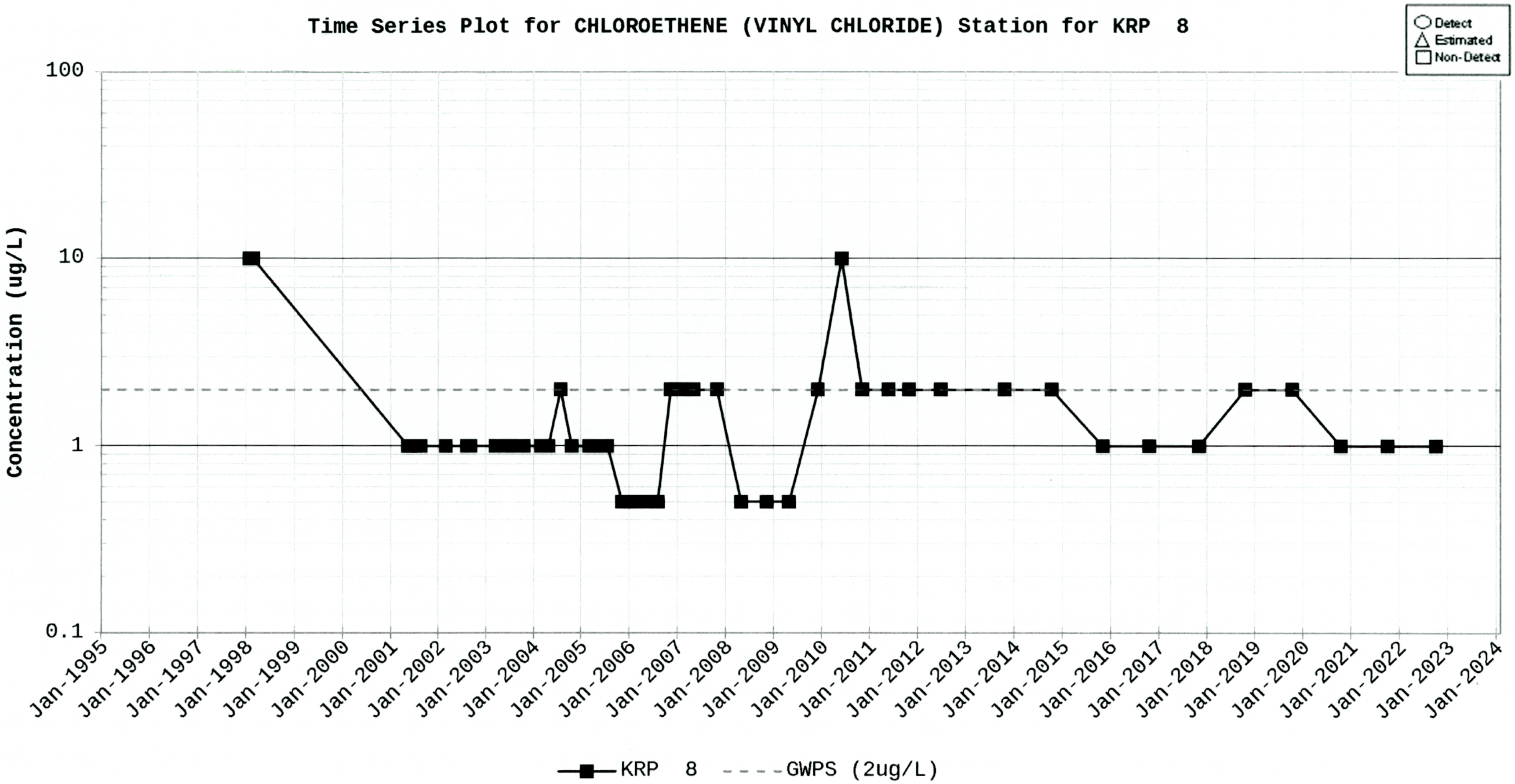
KRP 7
GWPS (2ug/L)


Time Series Plot for CHLOROETHENE (VINYL CHLORIDE) Station for KRP 8
Detect
Estimated
Non-Detect
Concentration (ug/L)
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
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Jan-2015
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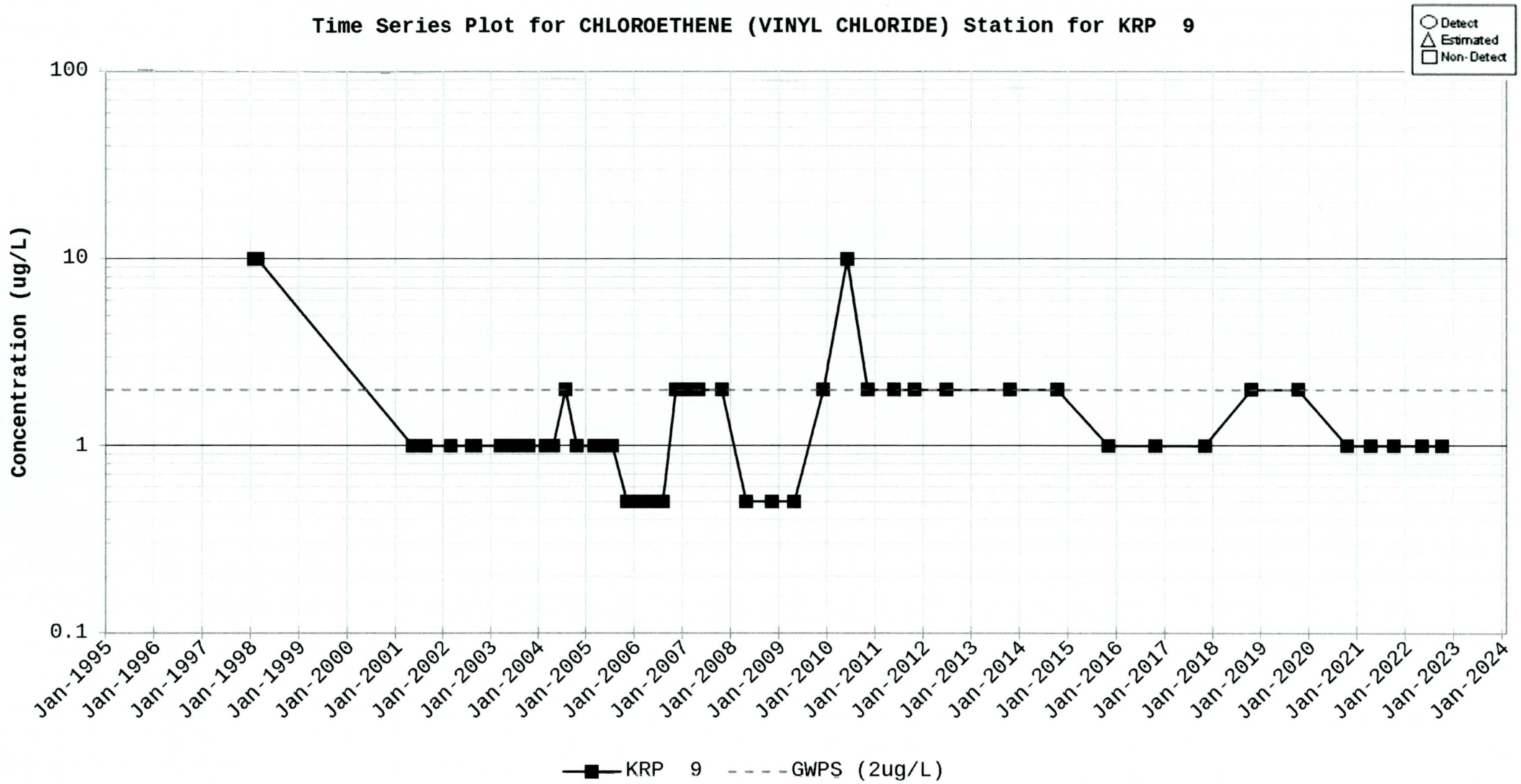
Jan-2024
KRP 8
GWPS (2ug/L)


Time Series Plot for CHLOROETHENE (VINYL CHLORIDE) Station for KRP 9
Detect
Estimated
Non-Detect
Concentration (ug/L)
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-2016
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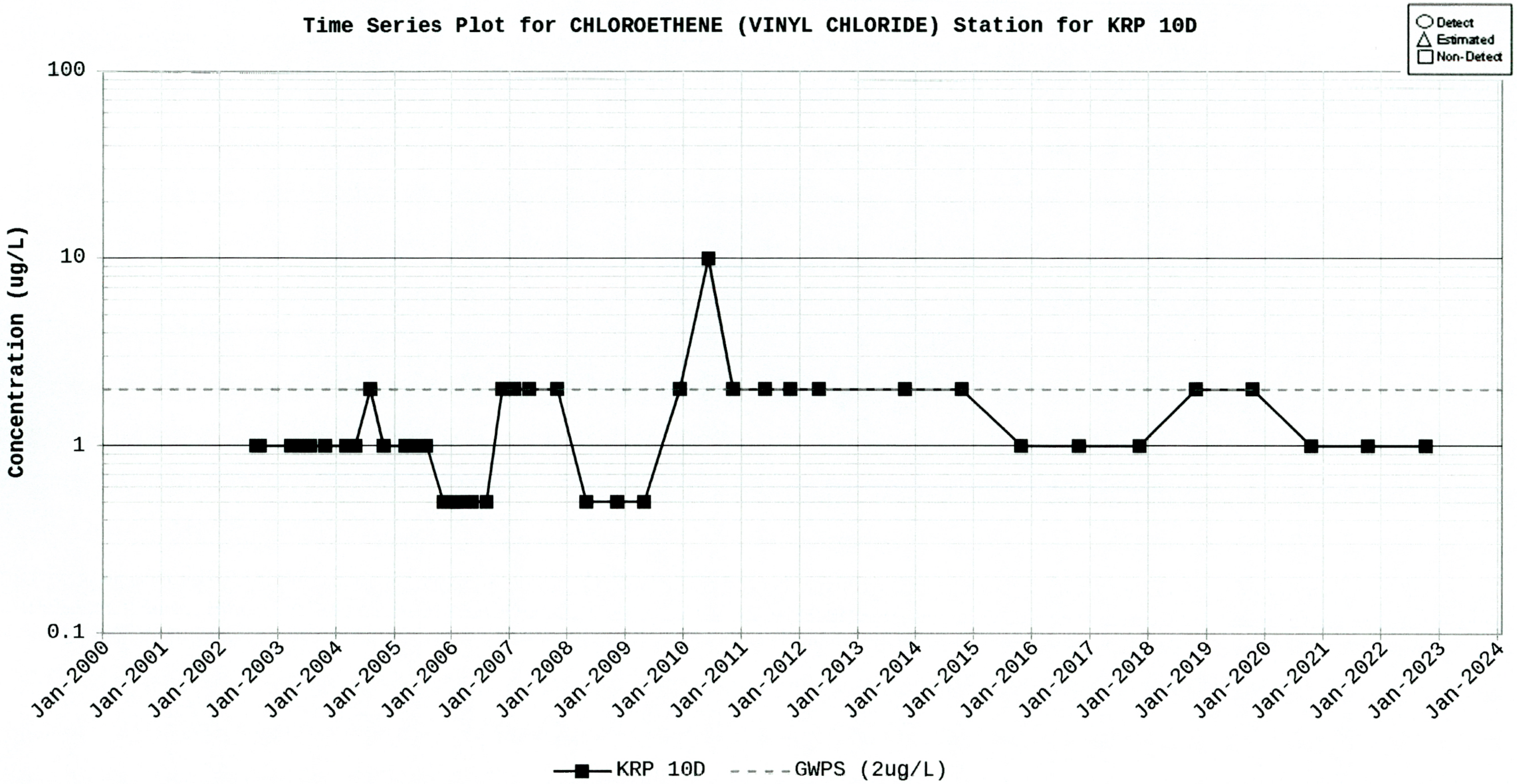
Jan-2024
KRP 9
GWPS (2ug/L)


Time Series Plot for CHLOROETHENE (VINYL CHLORIDE) Station for KRP 10D
Detect
Estimated
Non-Detect
Concentration (ug/L)
100
10
1
0.1
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
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Jan-2022
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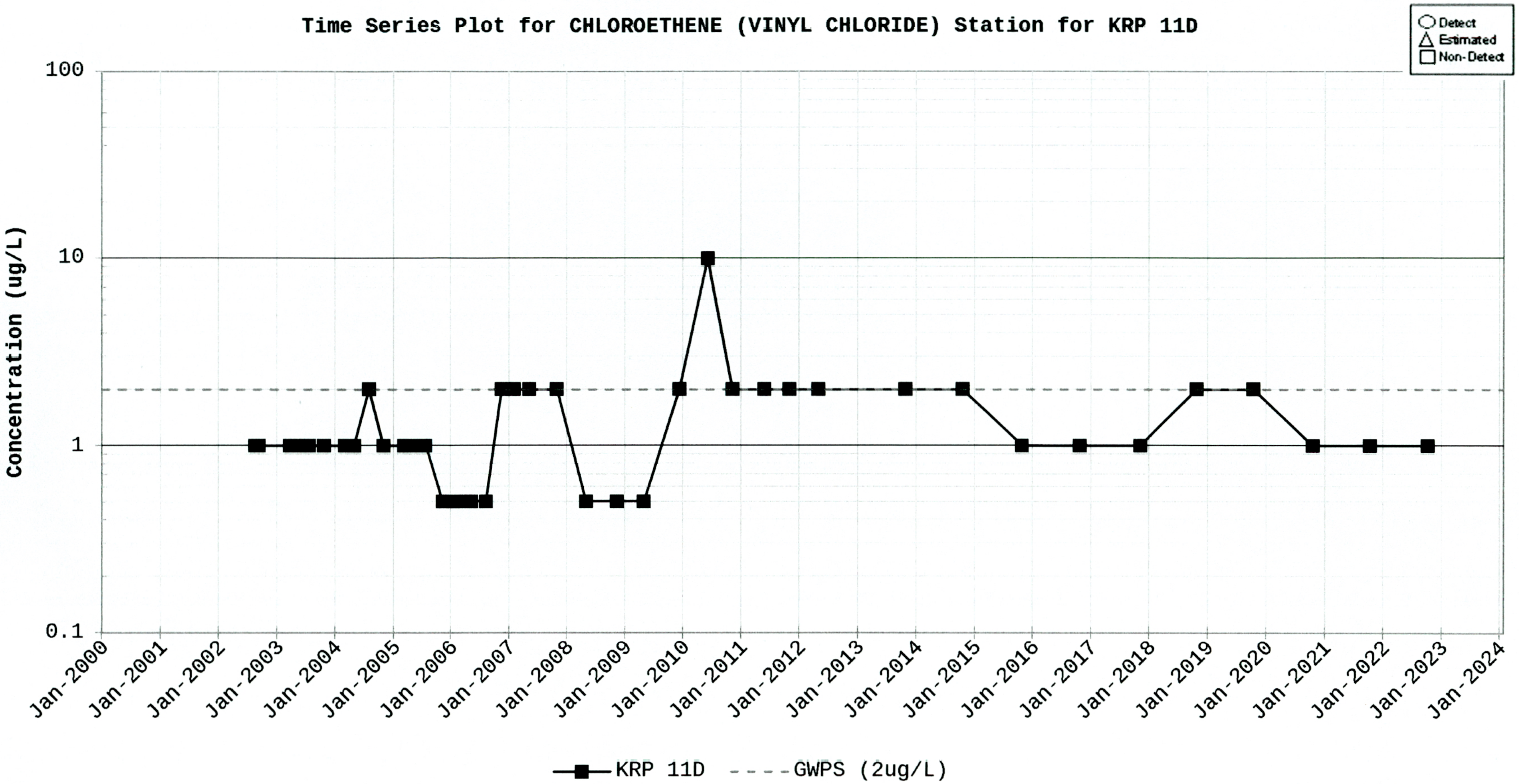
Jan-2024
KRP 10D
GWPS (2ug/L)


Time Series Plot for CHLOROETHENE (VINYL CHLORIDE) Station for KRP 11D
Detect
Estimated
Non-Detect
Concentration (ug/L)
100
10
1
0.1
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
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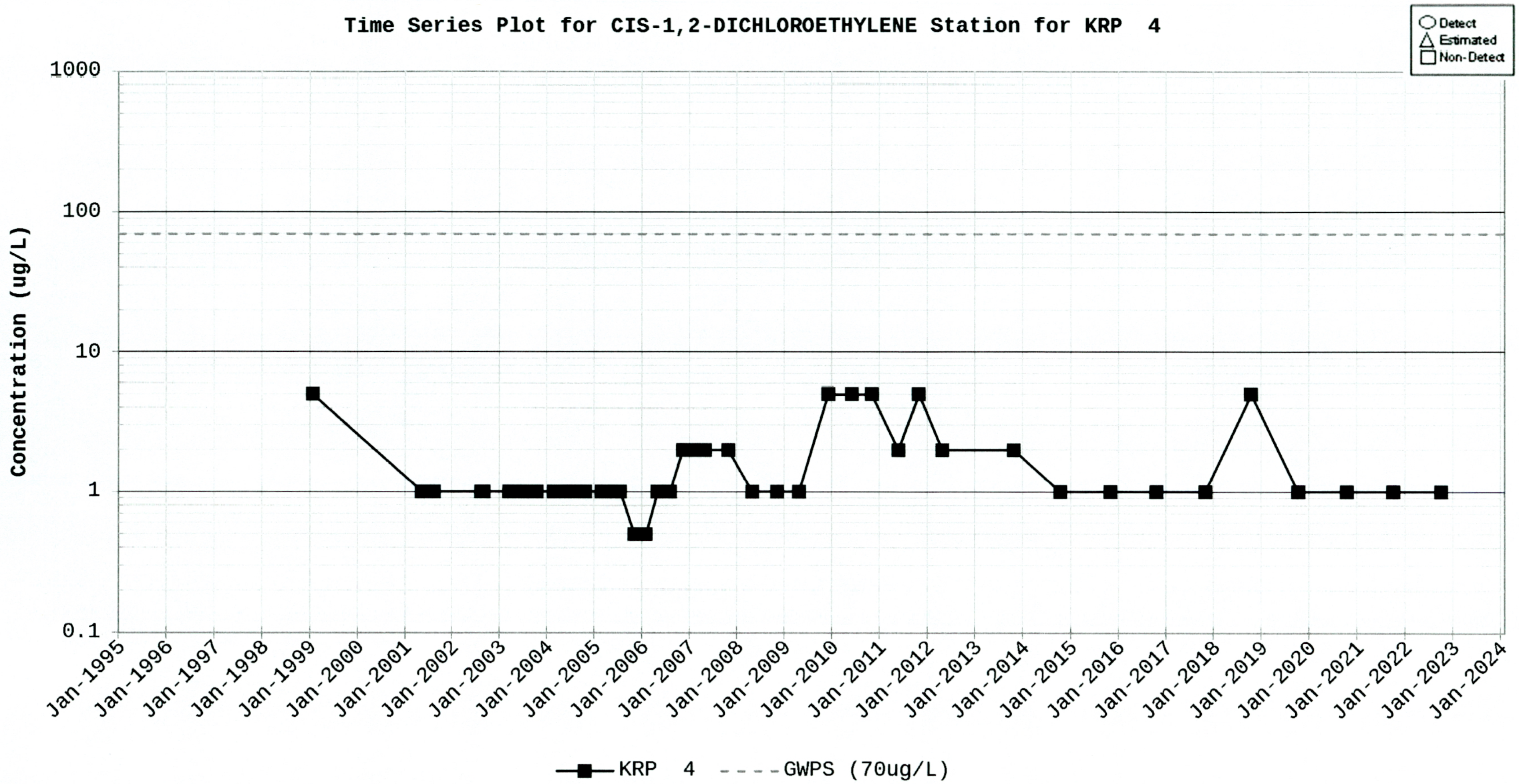
Jan-2024
KRP 11D
GWPS (2ug/L)


Time Series Plot for CIS-1,2-DICHLOROETHYLENE Station for KRP 4
Detect
Estimated
Non-Detect
Concentration (ug/L)
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-2013
Jan-2014
Jan-2015
Jan-2016
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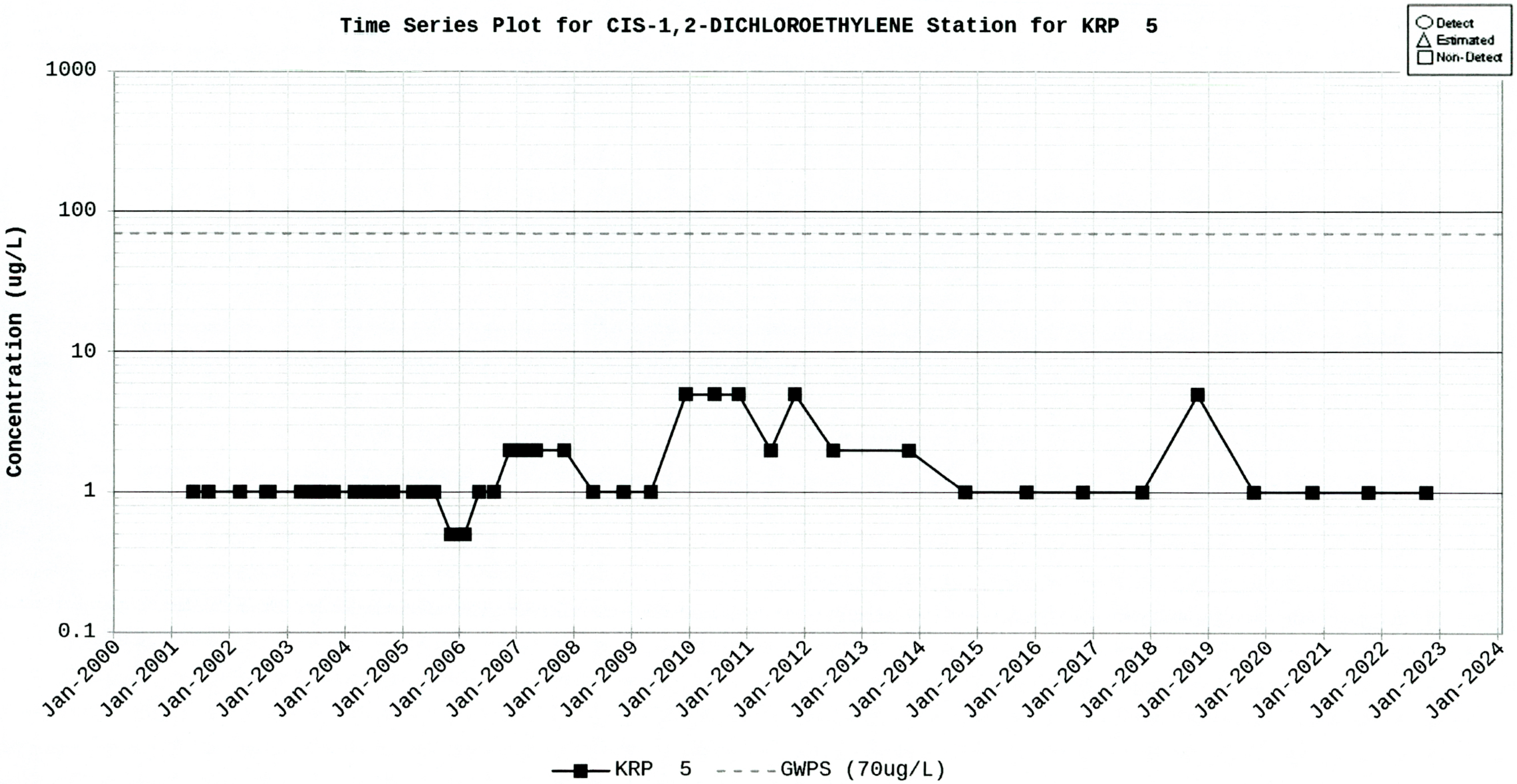
Jan-2024
KRP 4
GWPS (70ug/L)


Time Series Plot for CIS-1,2-DICHLOROETHYLENE Station for KRP 5
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
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
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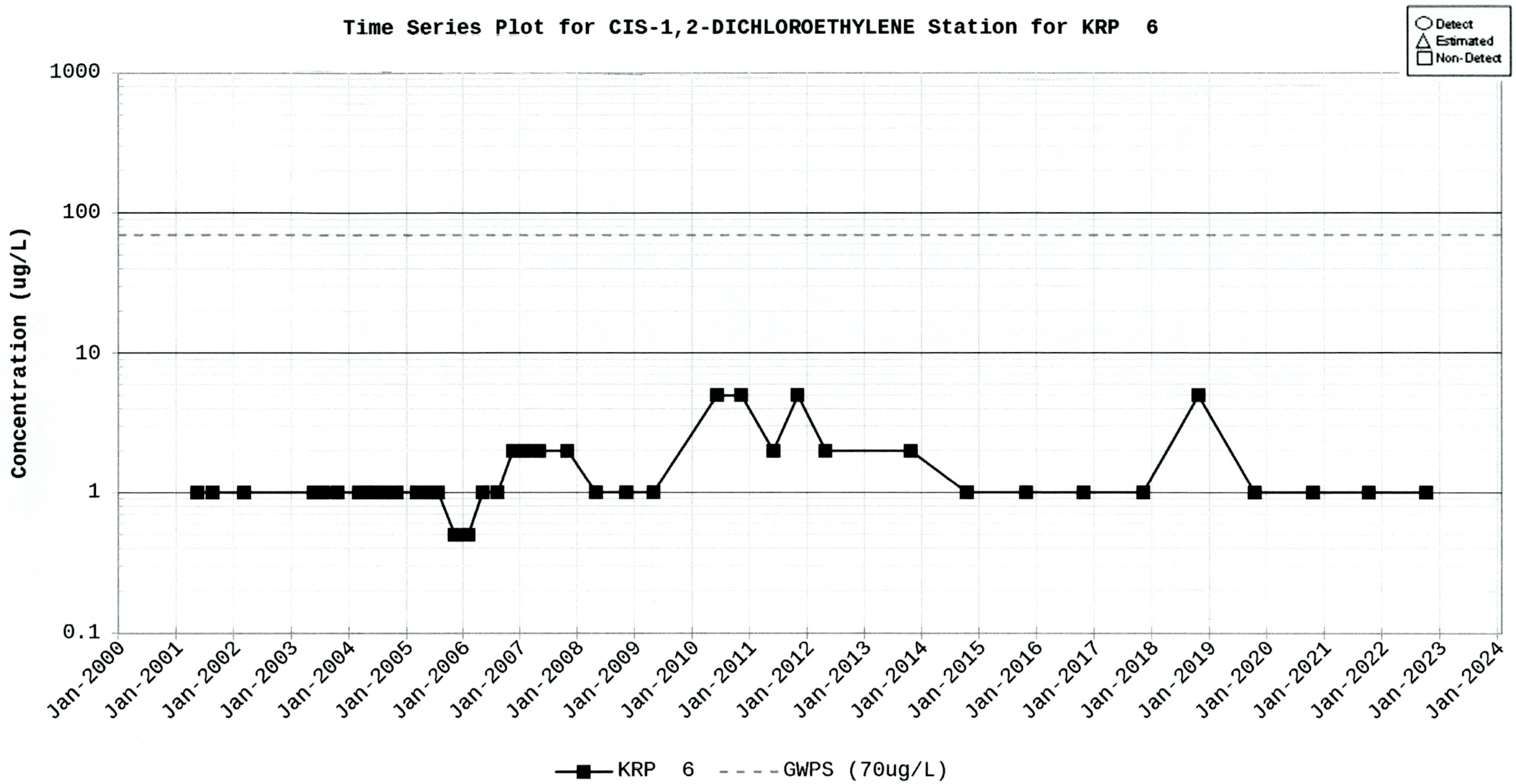
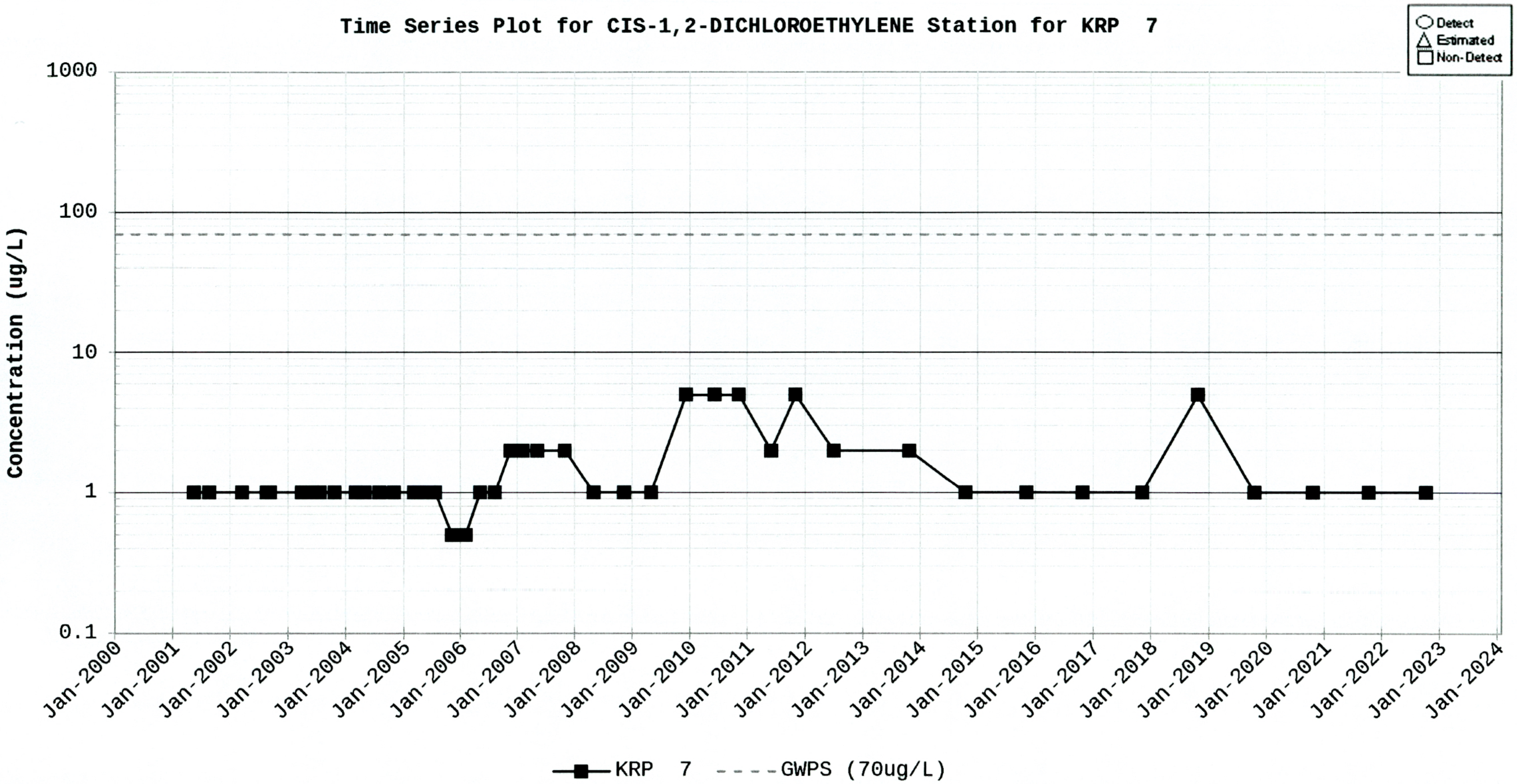
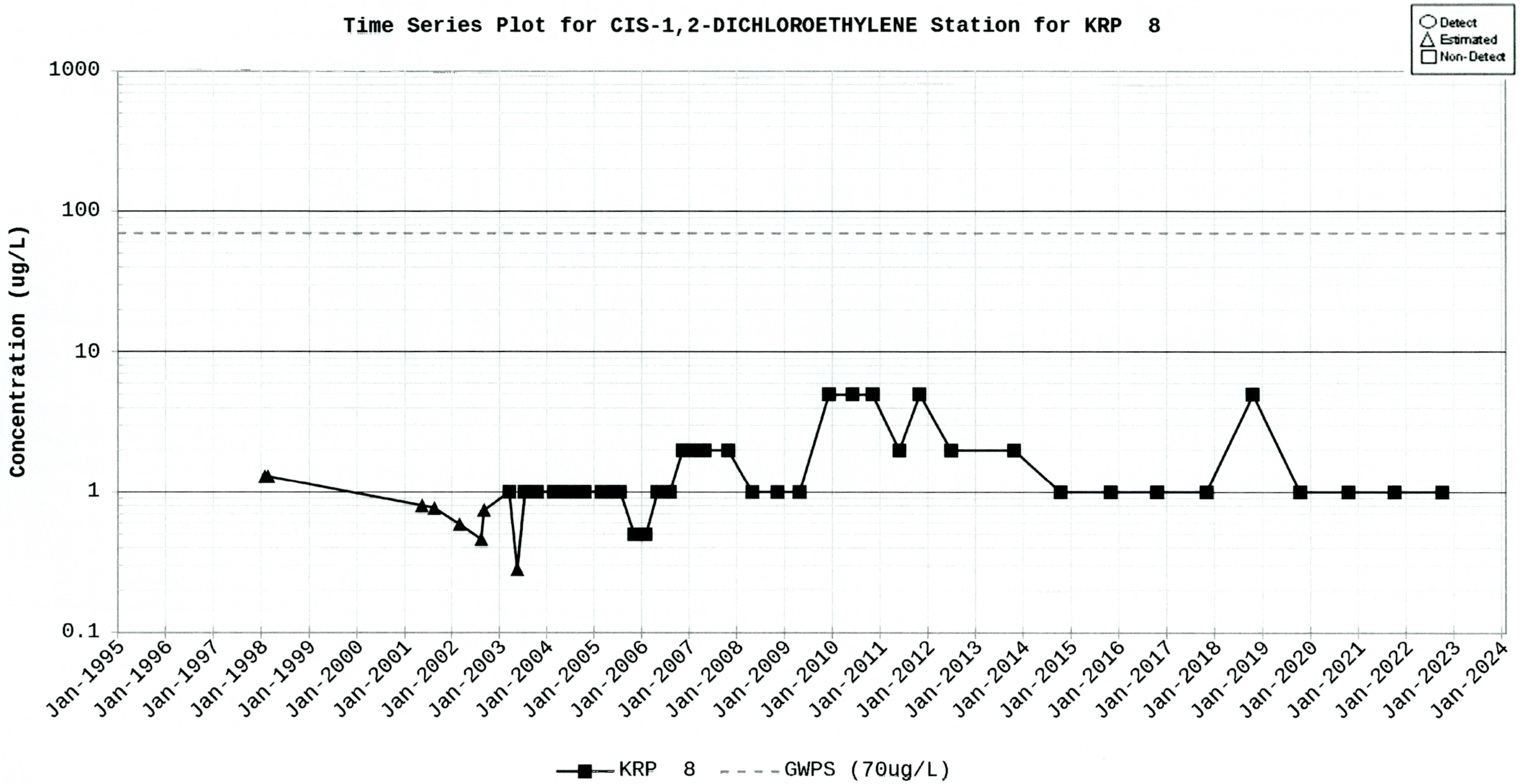
Jan-2024
KRP 5
GWPS (70ug/L)

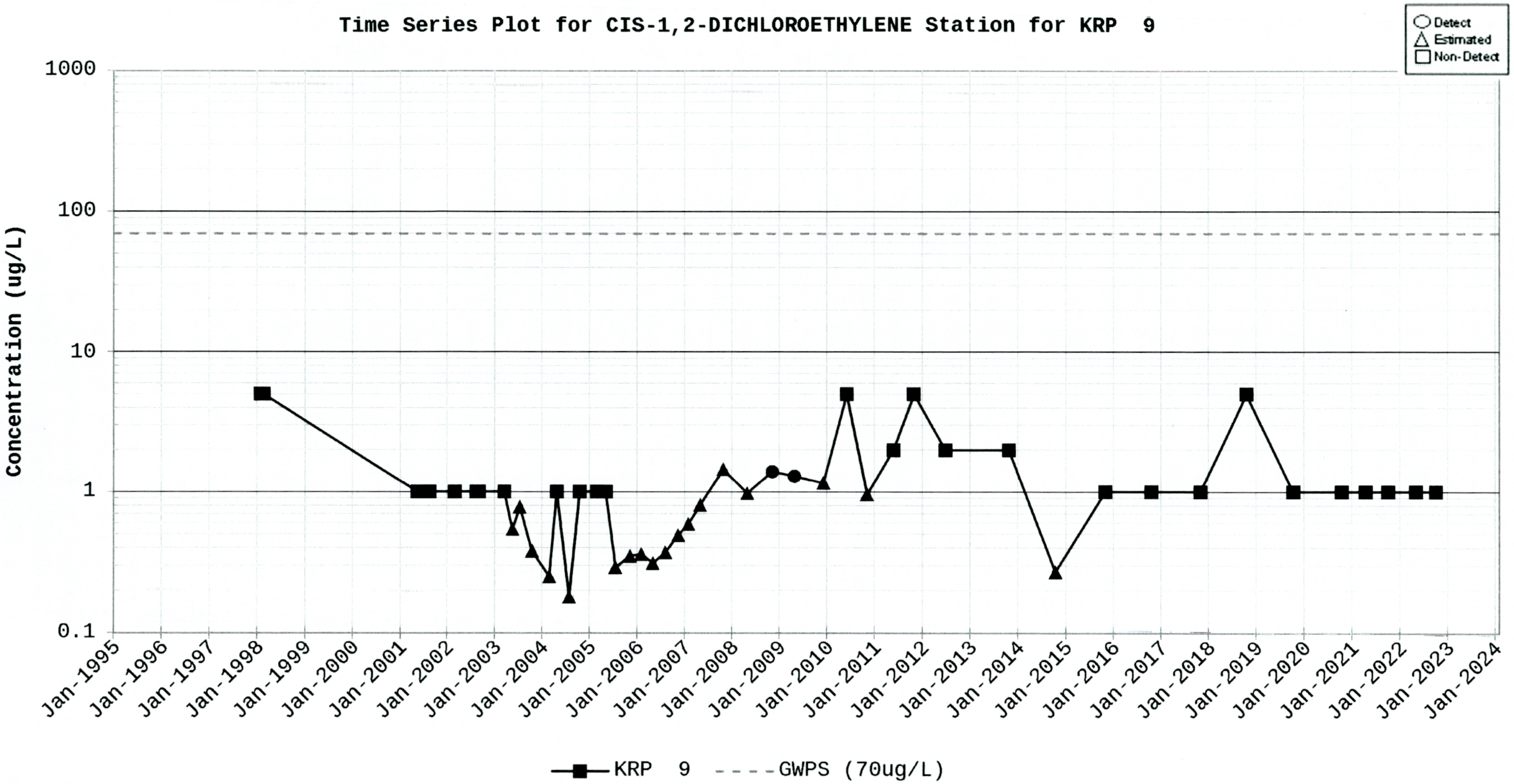


Time Series Plot for CIS-1,2-DICHLOROETHYLENE Station for KRP 6
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
KRP 6
GWPS (70ug/L)

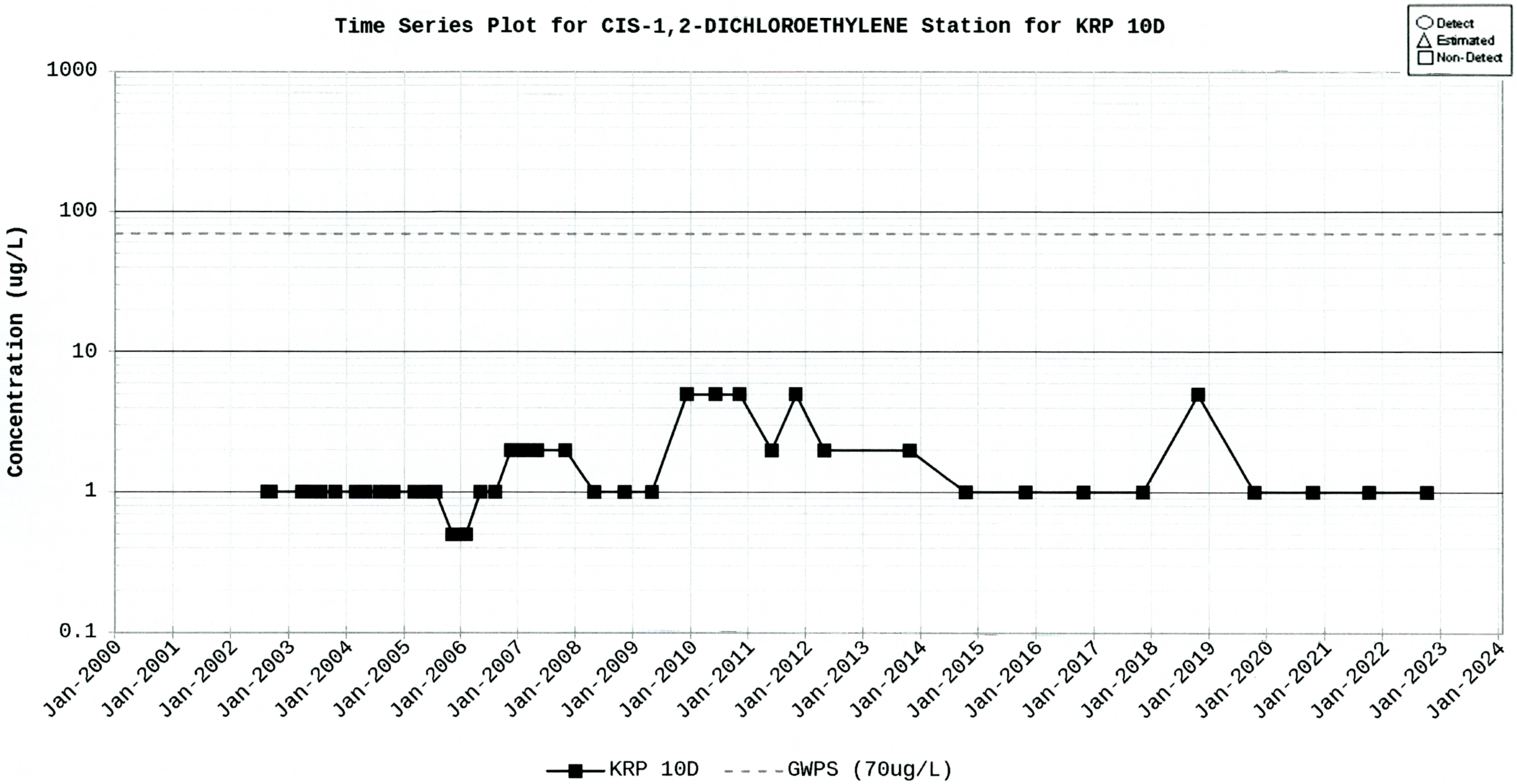


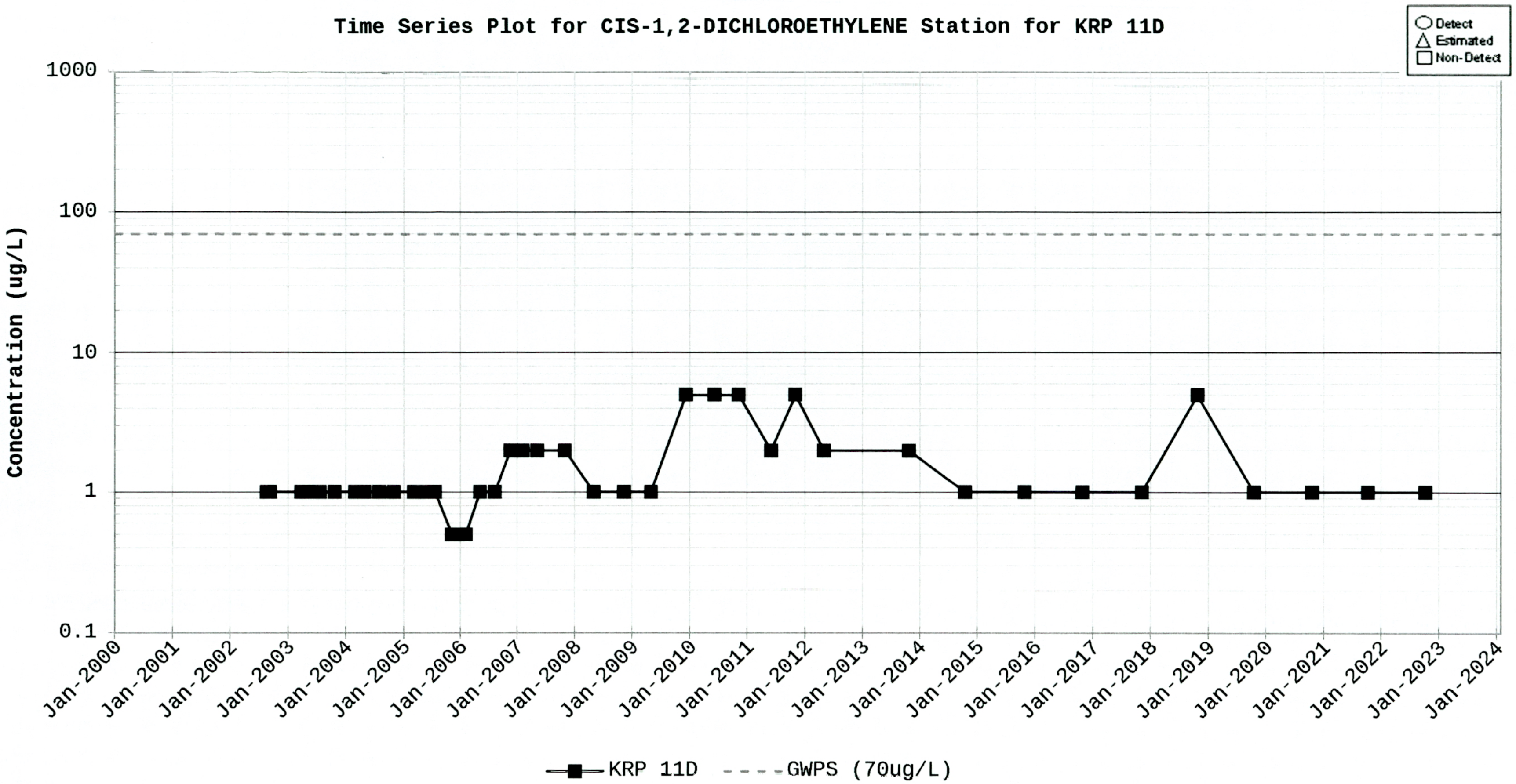
Time Series Plot for CIS-1,2-DICHLOROETHYLENE Station for KRP 7
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
KRP 7
GWPS (70ug/L)


Time Series Plot for CIS-1,2-DICHLOROETHYLENE Station for KRP 8
Detect
Estimated
Non-Detect
1000
100
10
1
0.1
Concentration (ug/L)
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
KRP 8
GWPS (70ug/L)

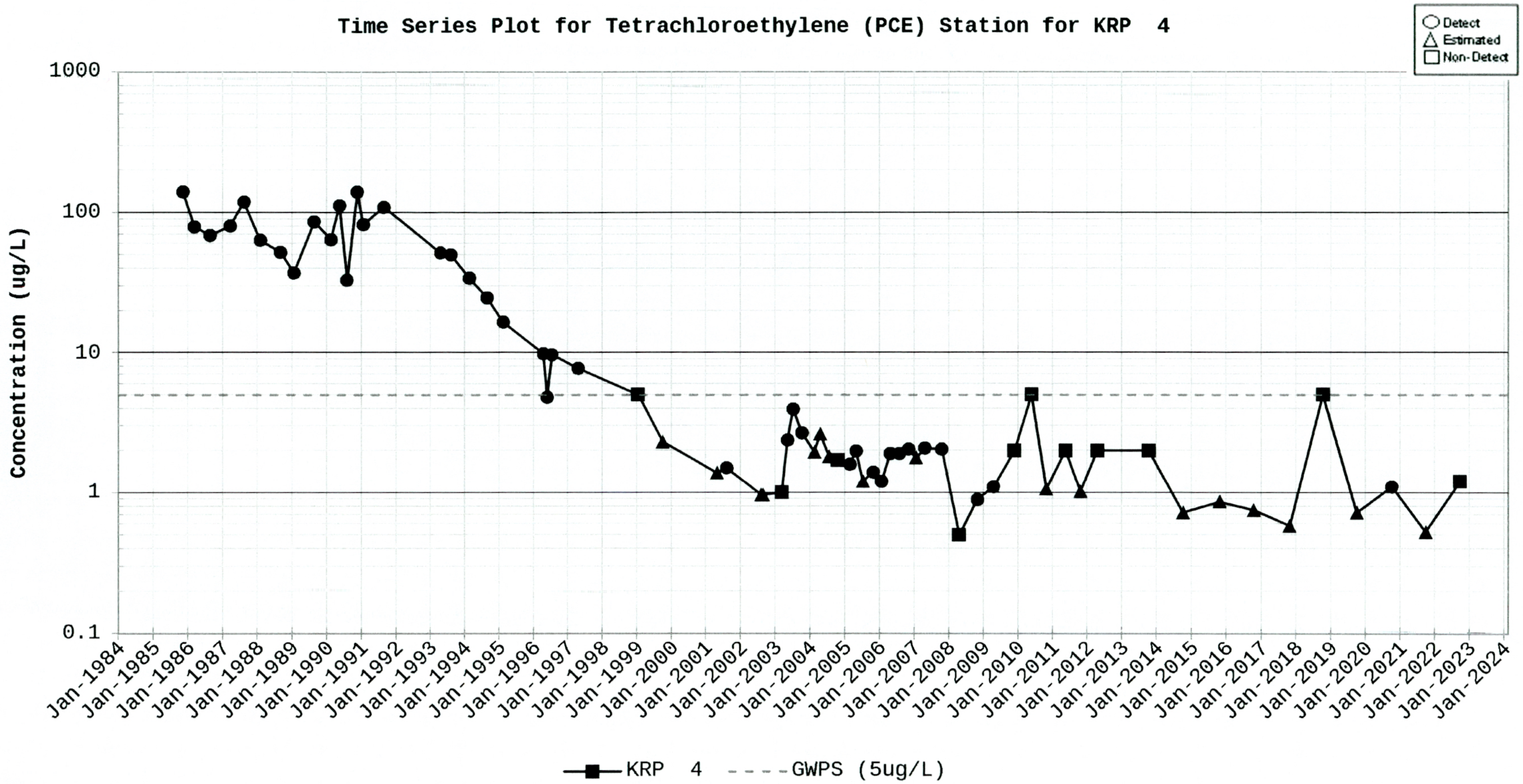


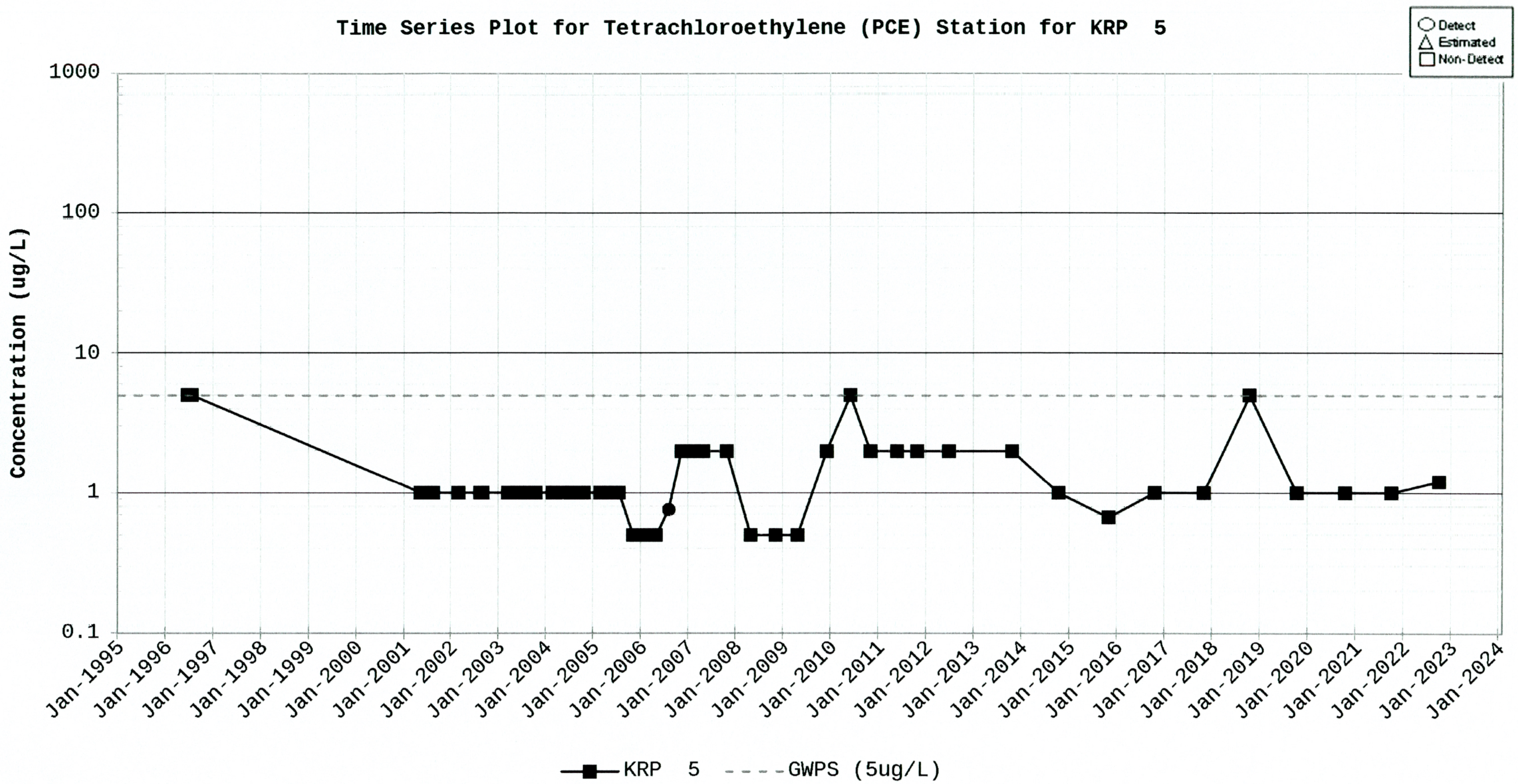
Time Series Plot for CIS-1,2-DICHLOROETHYLENE Station for KRP 9
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
KRP 9
GWPS (70ug/L)


Time Series Plot for CIS-1,2-DICHLOROETHYLENE Station for KRP 10D
Detect
Estimated
Non-Detect
1000
100
10
1
0.1
Concentration (ug/L)
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
KRP 10D
GWPS (70ug/L)

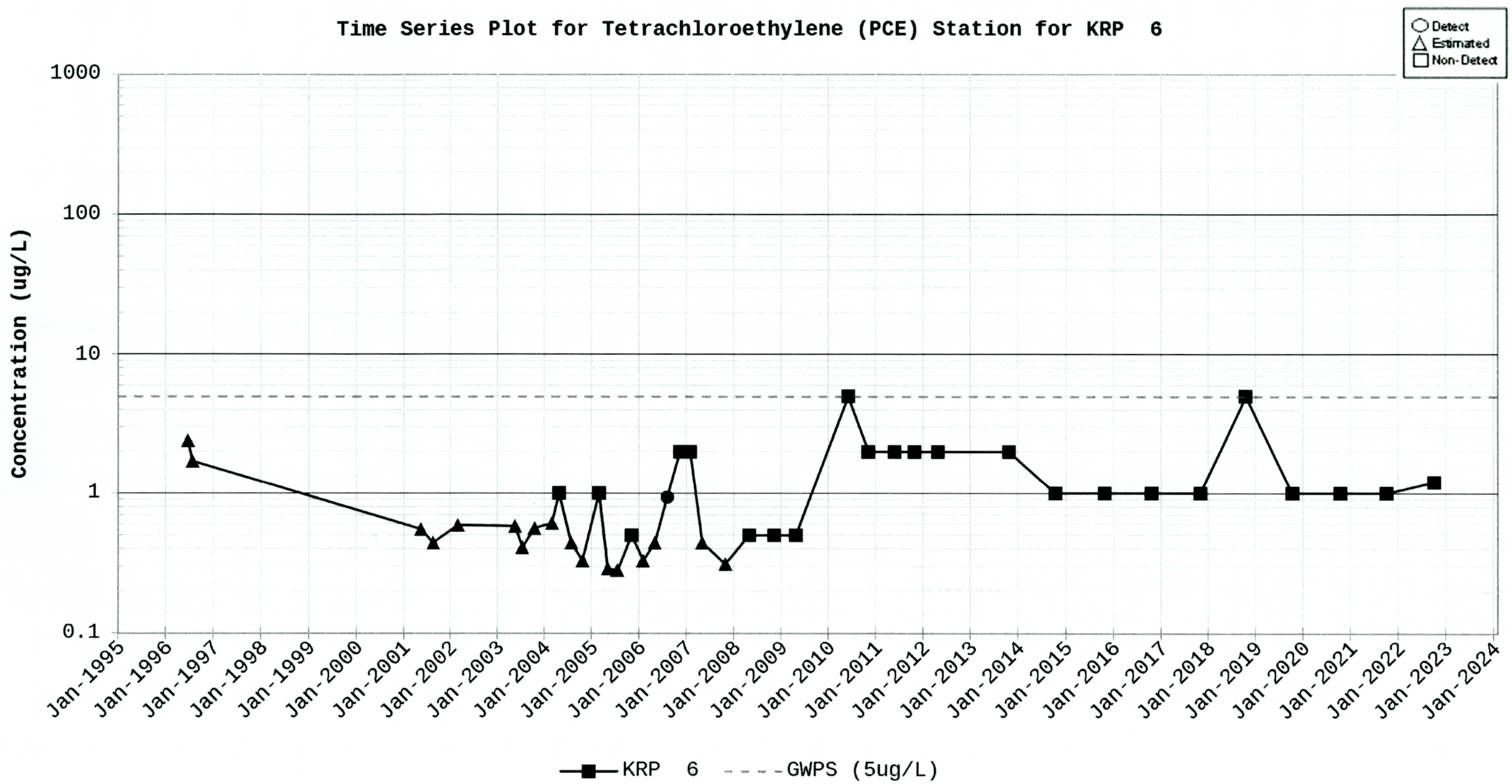


Time Series Plot for CIS-1,2-DICHLOROETHYLENE Station for KRP 11D
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
KRP 11D
GWPS (70ug/L)

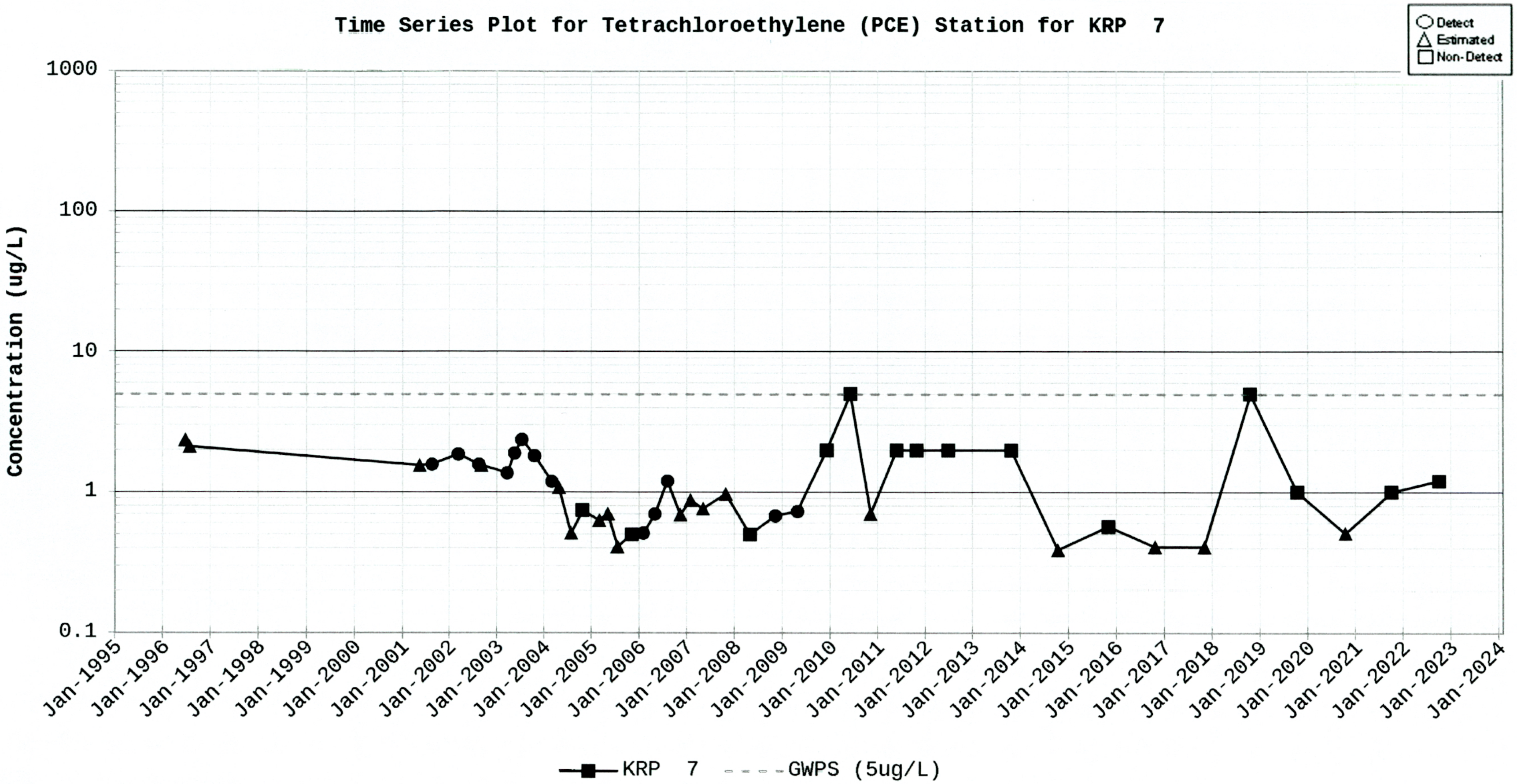

Time Series Plot for Tetrachloroethylene (PCE) Station for KRP 4
Detect
Estimated
Non-Detect
1000
100
10
1
0.1
Concentration (ug/L)
Jan-1984
Jan-1985
Jan-1986
Jan-1987
Jan-1988
Jan-1989
Jan-1990
Jan-1991
Jan-1992
Jan-1993
Jan-1994
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
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
KRP 4
GWPS (5ug/L)



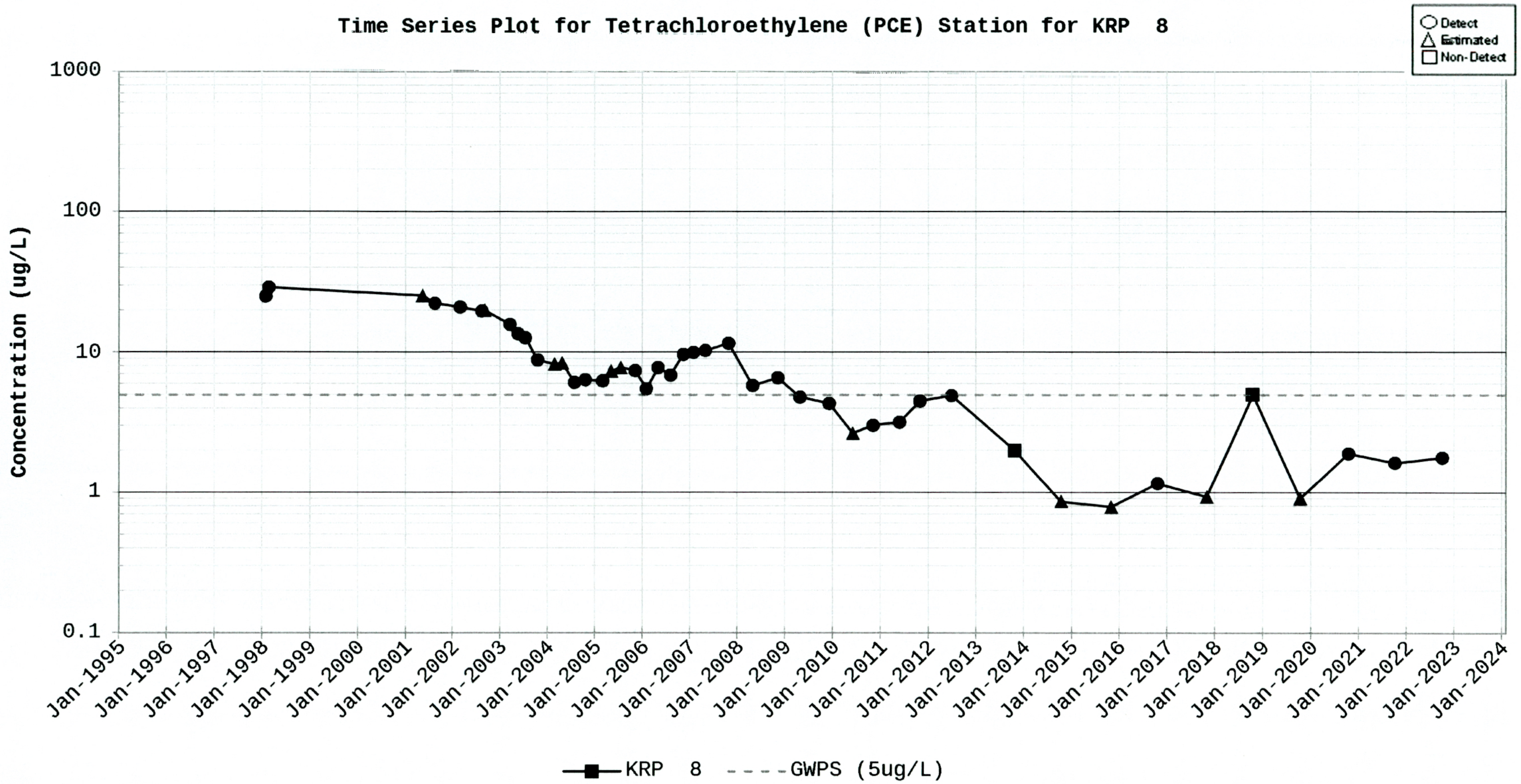
Time Series Plot for Tetrachloroethylene (PCE) Station for KRP 5
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-1995 Jan-1996 Jan-1997 Jan-1998 Jan-1999 Jan-2000 Jan-2001 Jan-2002 Jan-2003 Jan-2004 Jan-2005 Jan-2006 Jan-2007 Jan-2008 Jan-2009 Jan-2010 Jan-2011 Jan-2012 Jan-2013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

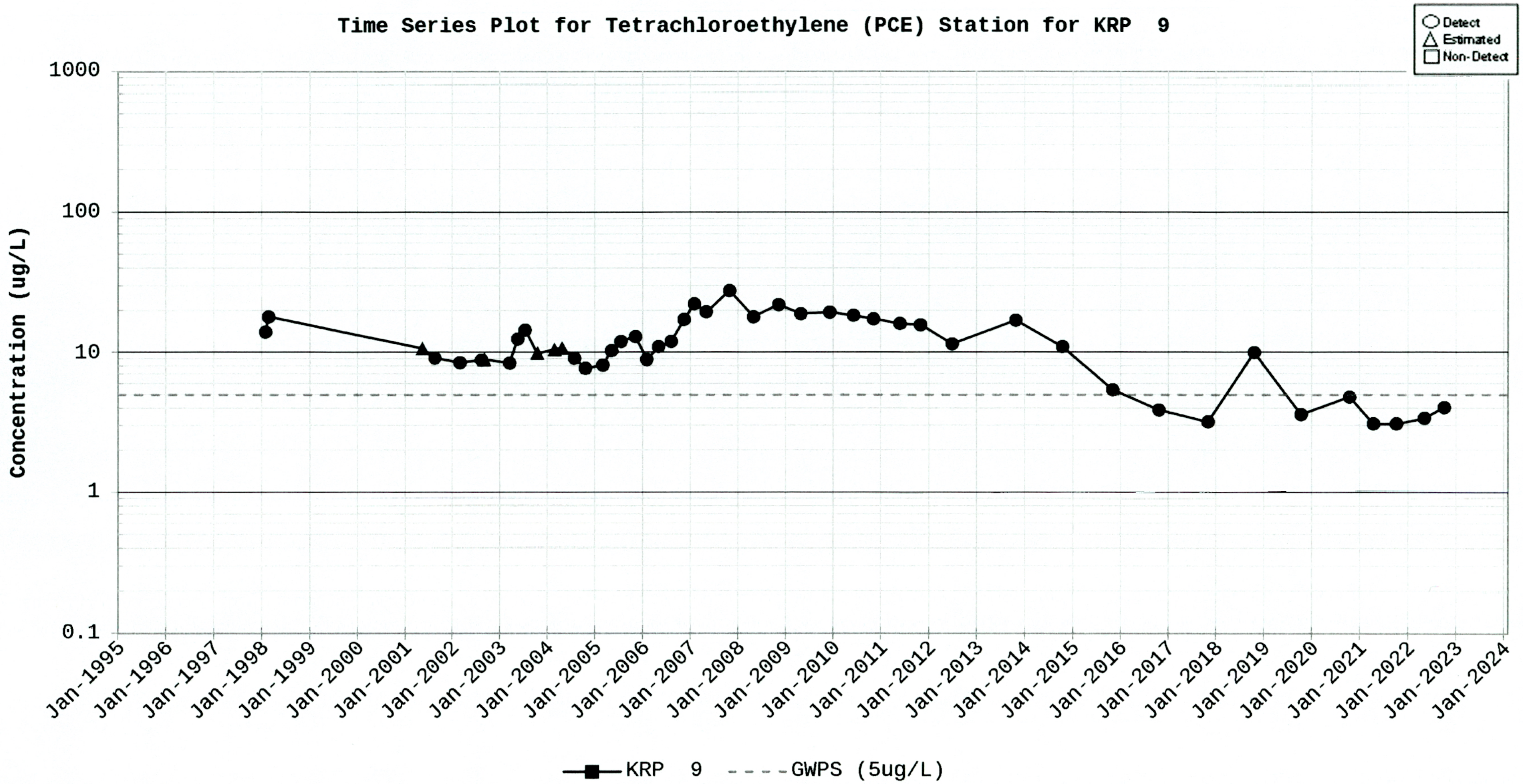


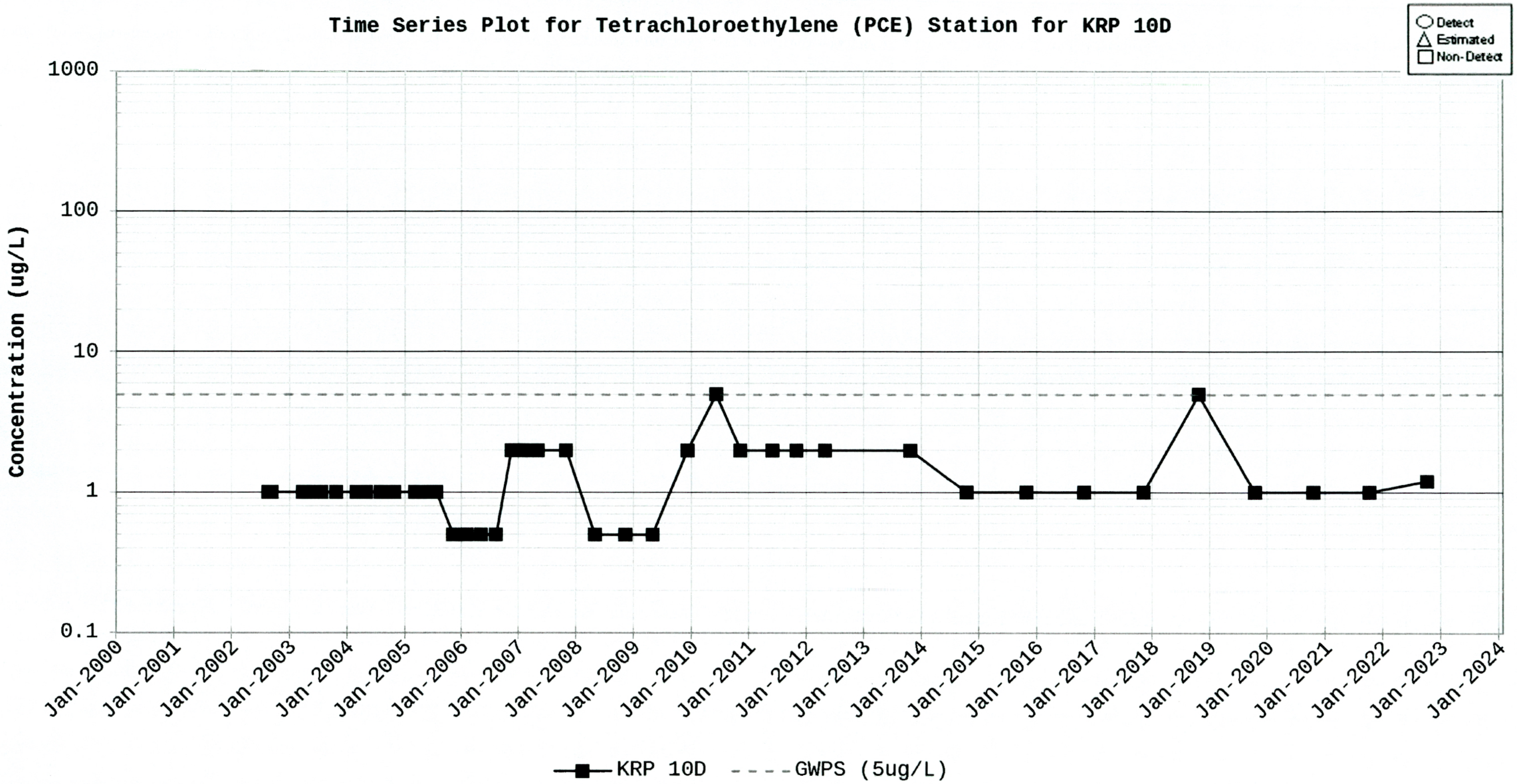
Time Series Plot for Tetrachloroethylene (PCE) Station for KRP 6
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
KRP 6
GWPS (5ug/L)

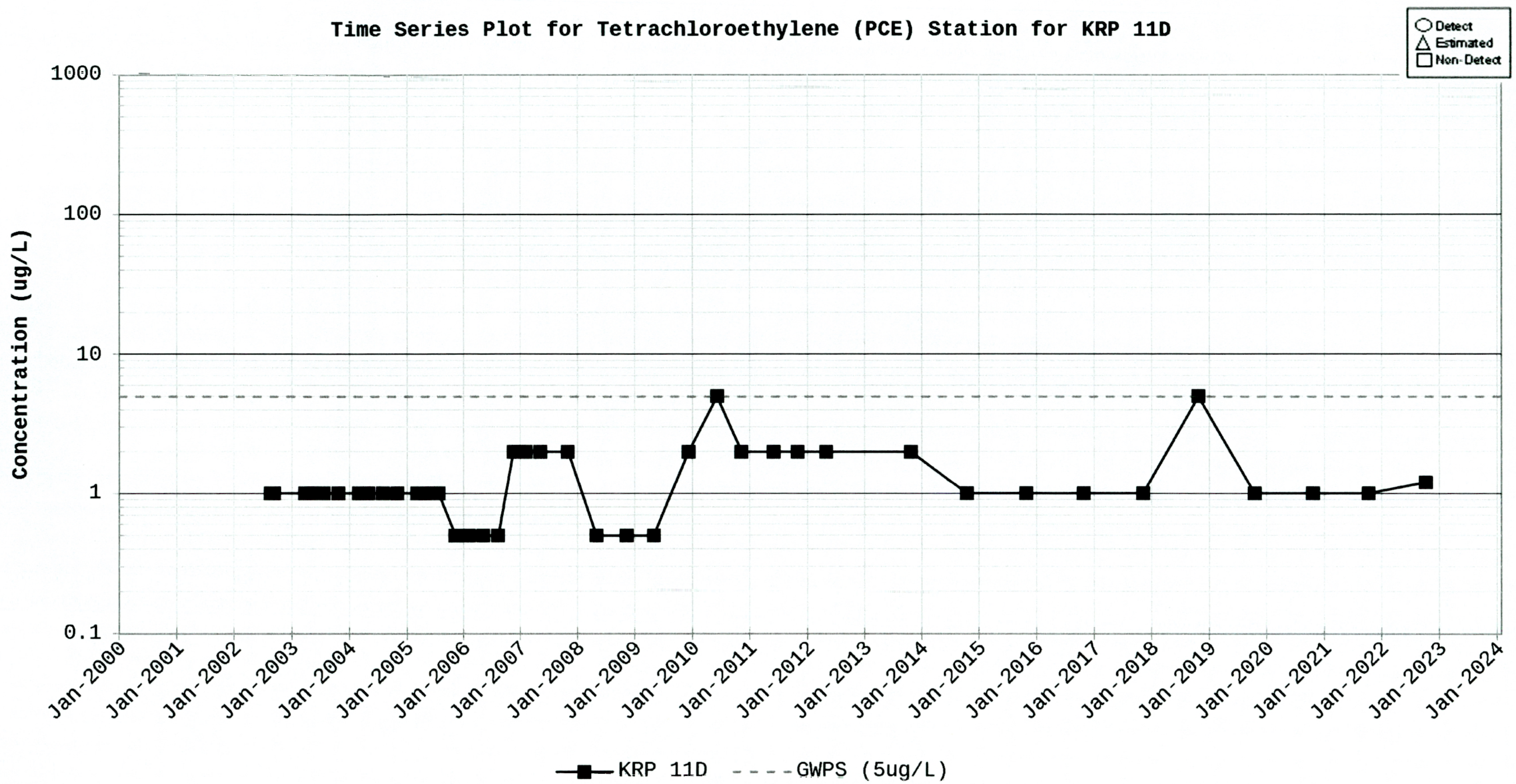


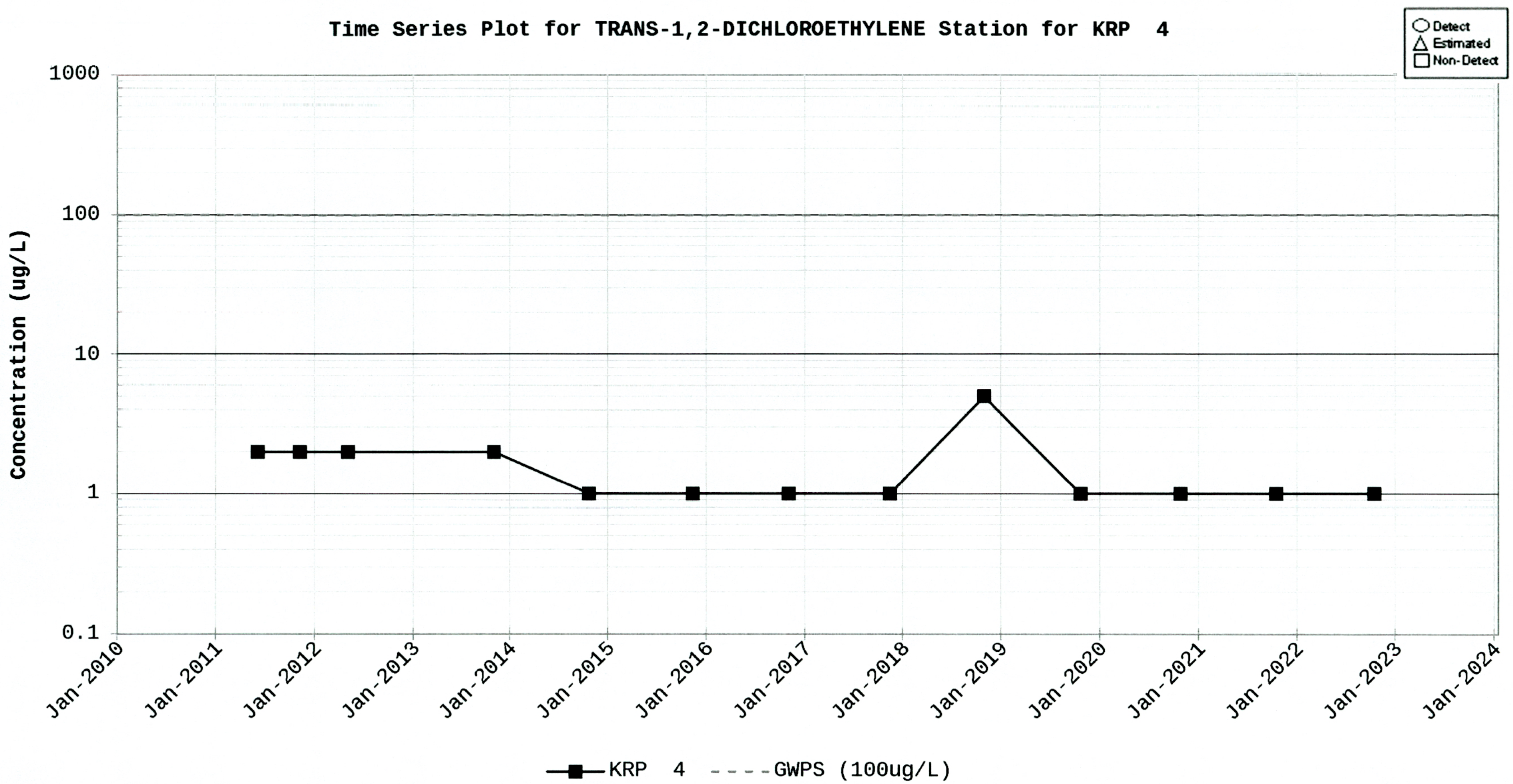
Time Series Plot for Tetrachloroethylene (PCE) Station for KRP 7
Detect
Estimated
Non-Detect
1000
100
10
1
0.1
Concentration (ug/L)
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
KRP 7
GWPS (5ug/L)


Time Series Plot for Tetrachloroethylene (PCE) Station for KRP 8
Detect
Estimated
Non-Detect
Concentration (ug/L)
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
KRP 8
GWPS (5ug/L)

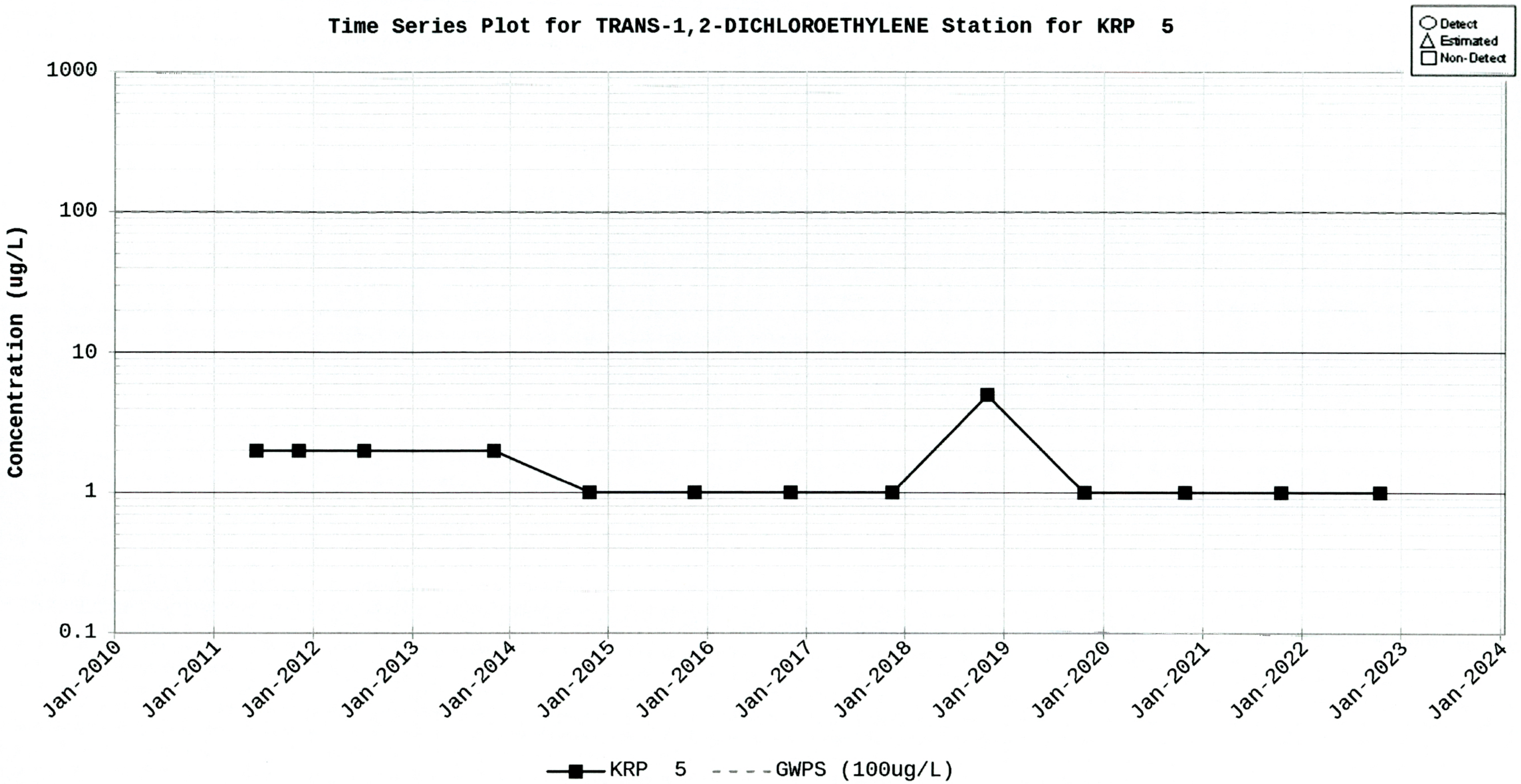

Time Series Plot for Tetrachloroethylene (PCE) Station for KRP 9
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-1995
Jan-1996
Jan-1997
Jan-1998
Jan-1999
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
KRP 9
GWPS (5ug/L)

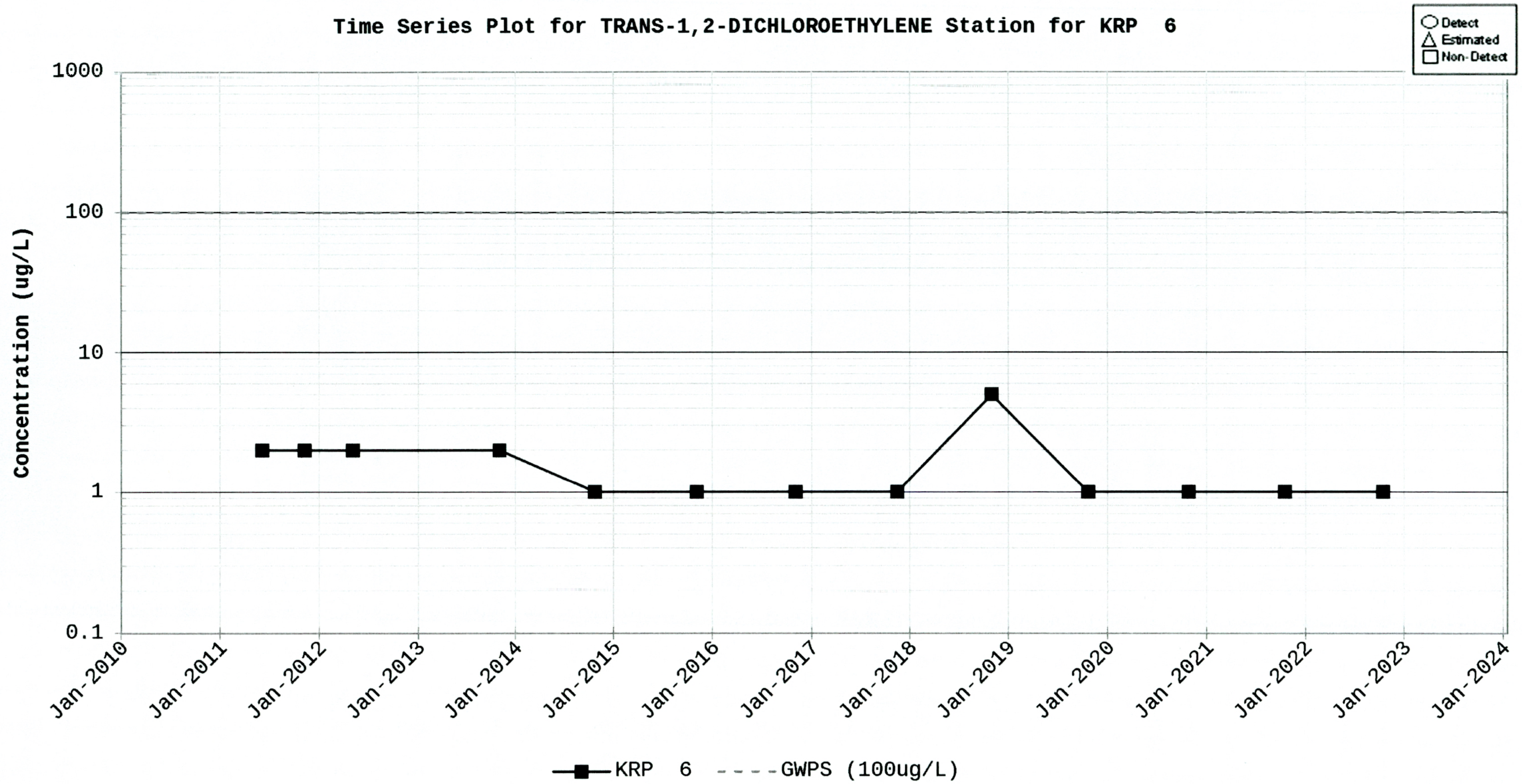

Time Series Plot for Tetrachloroethylene (PCE) Station for KRP 10D
Detect
Estimated
Non-Detect
1000
100
10
1
0.1
Concentration (ug/L)
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
KRP 10D
GWPS (5ug/L)

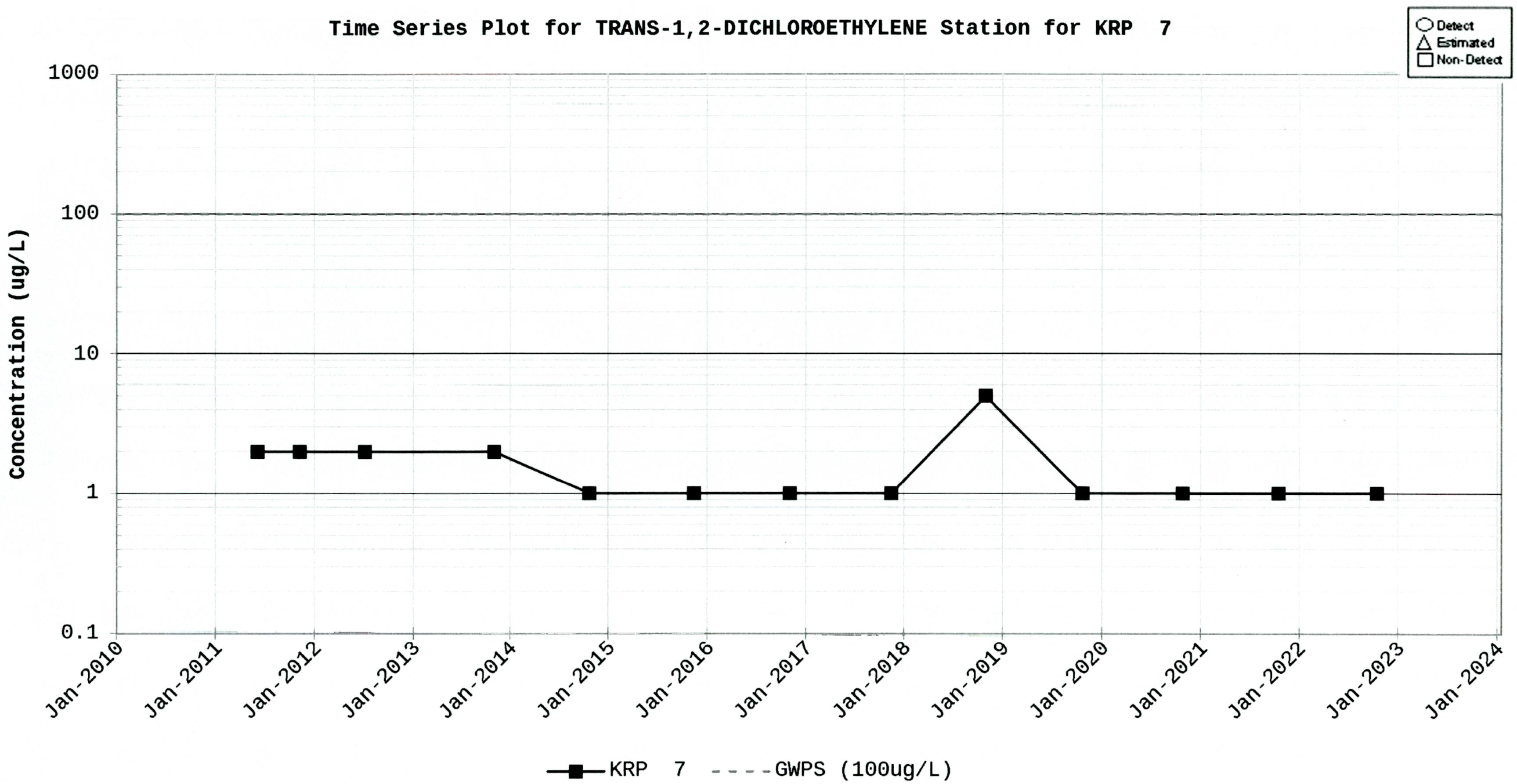

Time Series Plot for Tetrachloroethylene (PCE) Station for KRP 11D
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2000
Jan-2001
Jan-2002
Jan-2003
Jan-2004
Jan-2005
Jan-2006
Jan-2007
Jan-2008
Jan-2009
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
KRP 11D
GWPS (5ug/L)

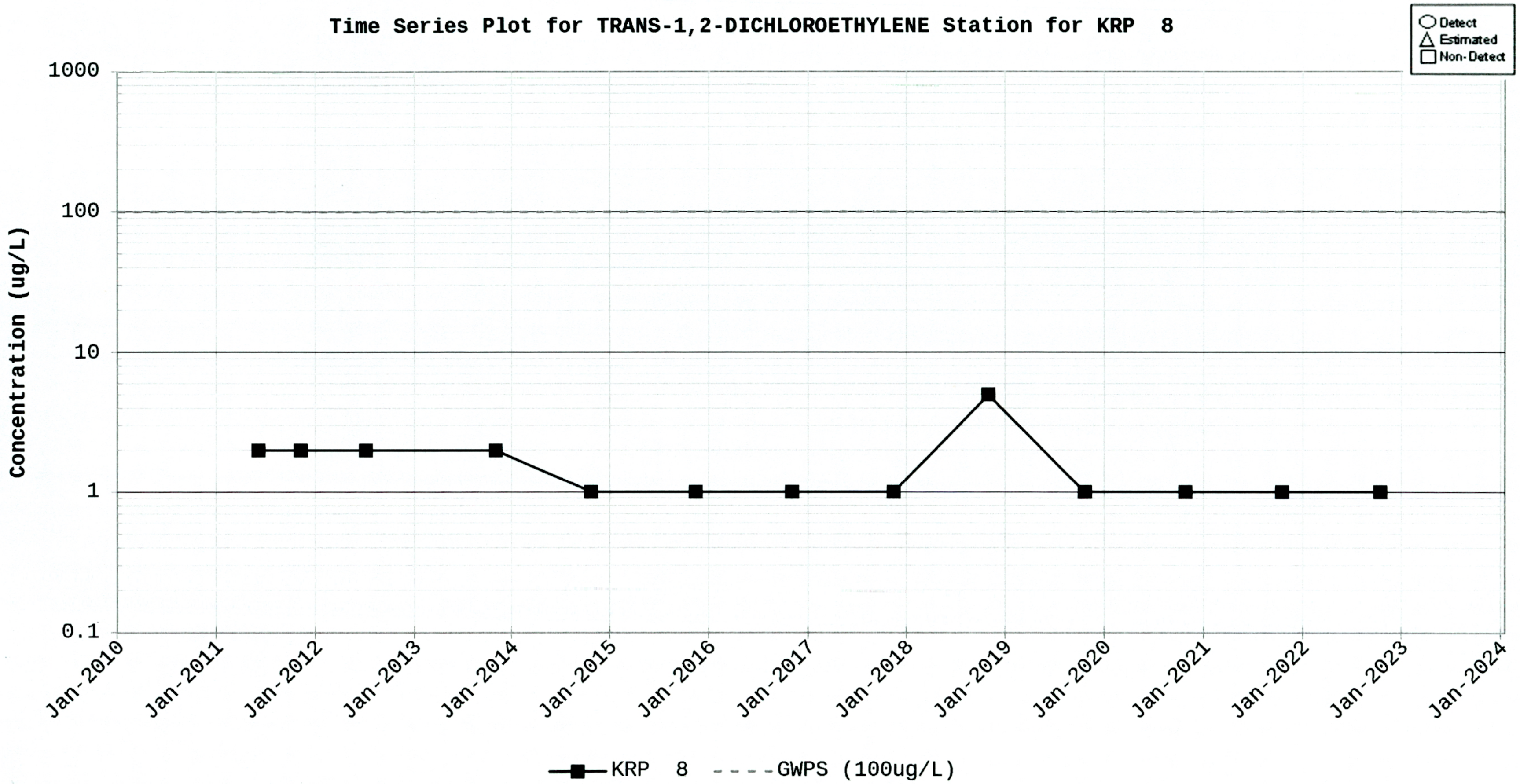


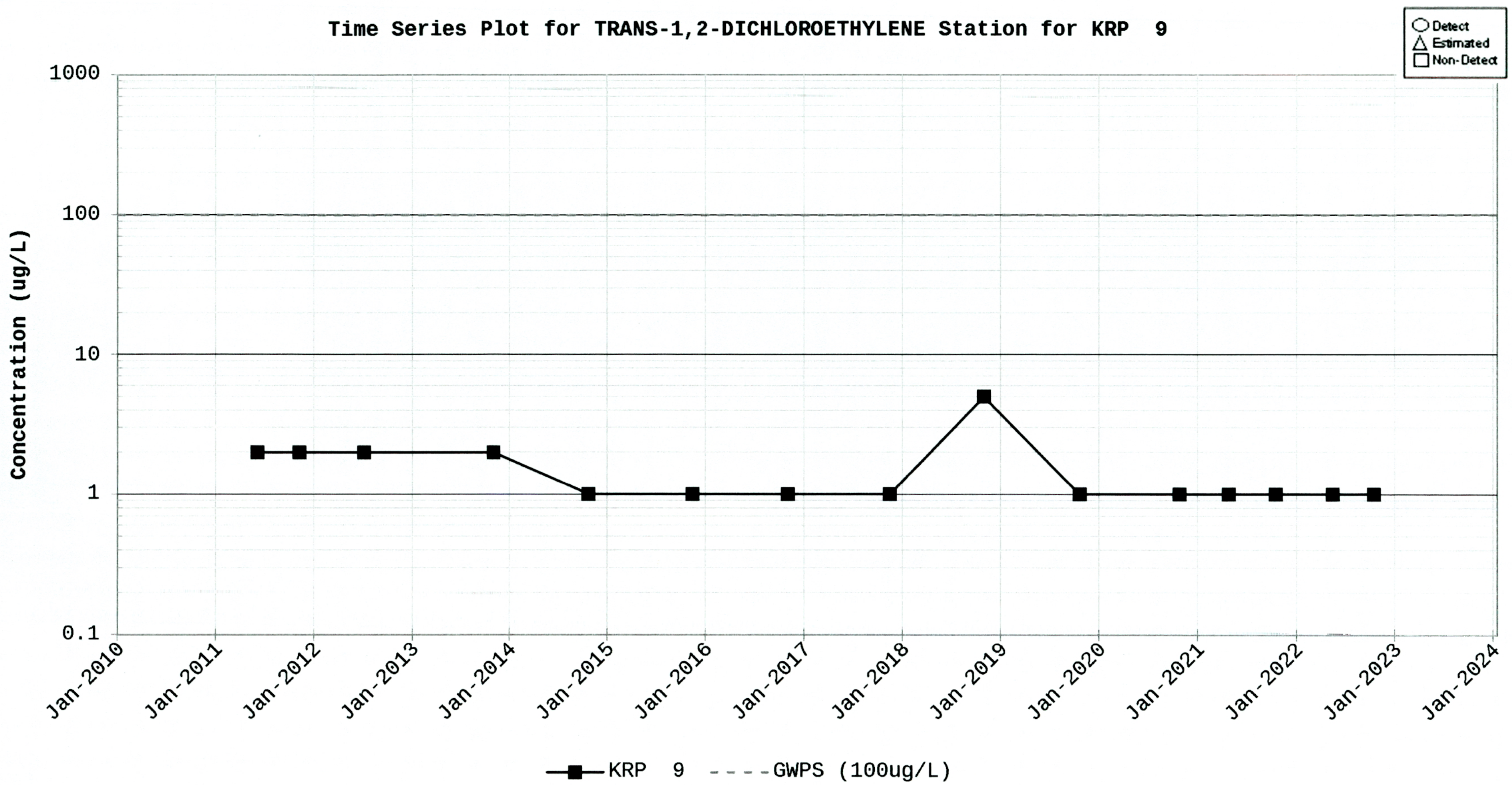
Time Series Plot for TRANS-1,2-DICHLOROETHYLENE Station for KRP 4
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
KRP 4
GWPS (100ug/L)


Time Series Plot for TRANS-1,2-DICHLOROETHYLENE Station for KRP 5
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
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
KRP 5
GWPS (100ug/L)

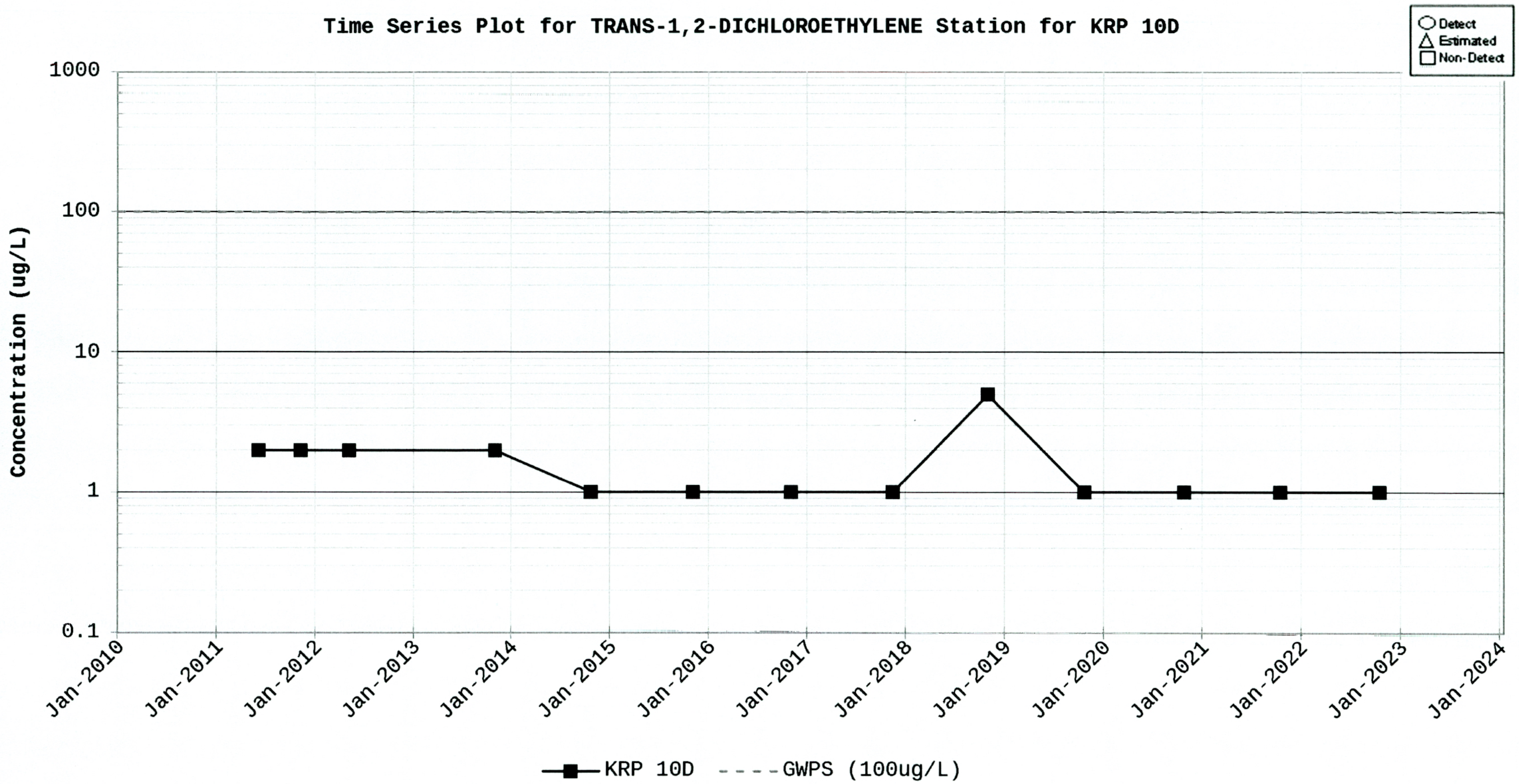

Time Series Plot for TRANS-1,2-DICHLOROETHYLENE Station for KRP 6
Detect
Estimated
Non-Detect
1000
100
10
1
0.1
Concentration (ug/L)
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
KRP 6
GWPS (100ug/L)

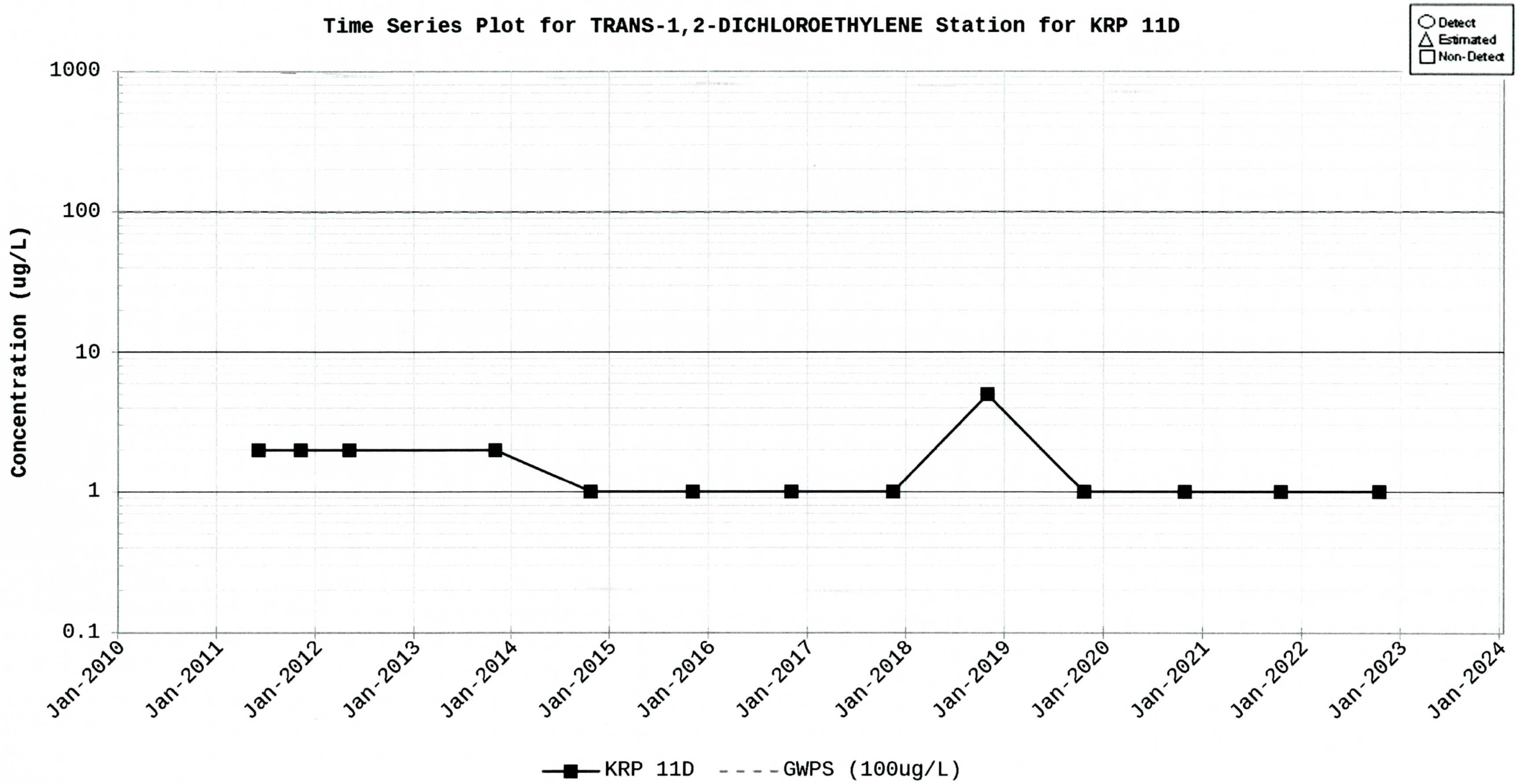

Time Series Plot for TRANS-1,2-DICHLOROETHYLENE Station for KRP 7
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
KRP 7
GWPS (100ug/L)


Time Series Plot for TRANS-1,2-DICHLOROETHYLENE Station for KRP 8
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
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
KRP 8
GWPS (100ug/L)

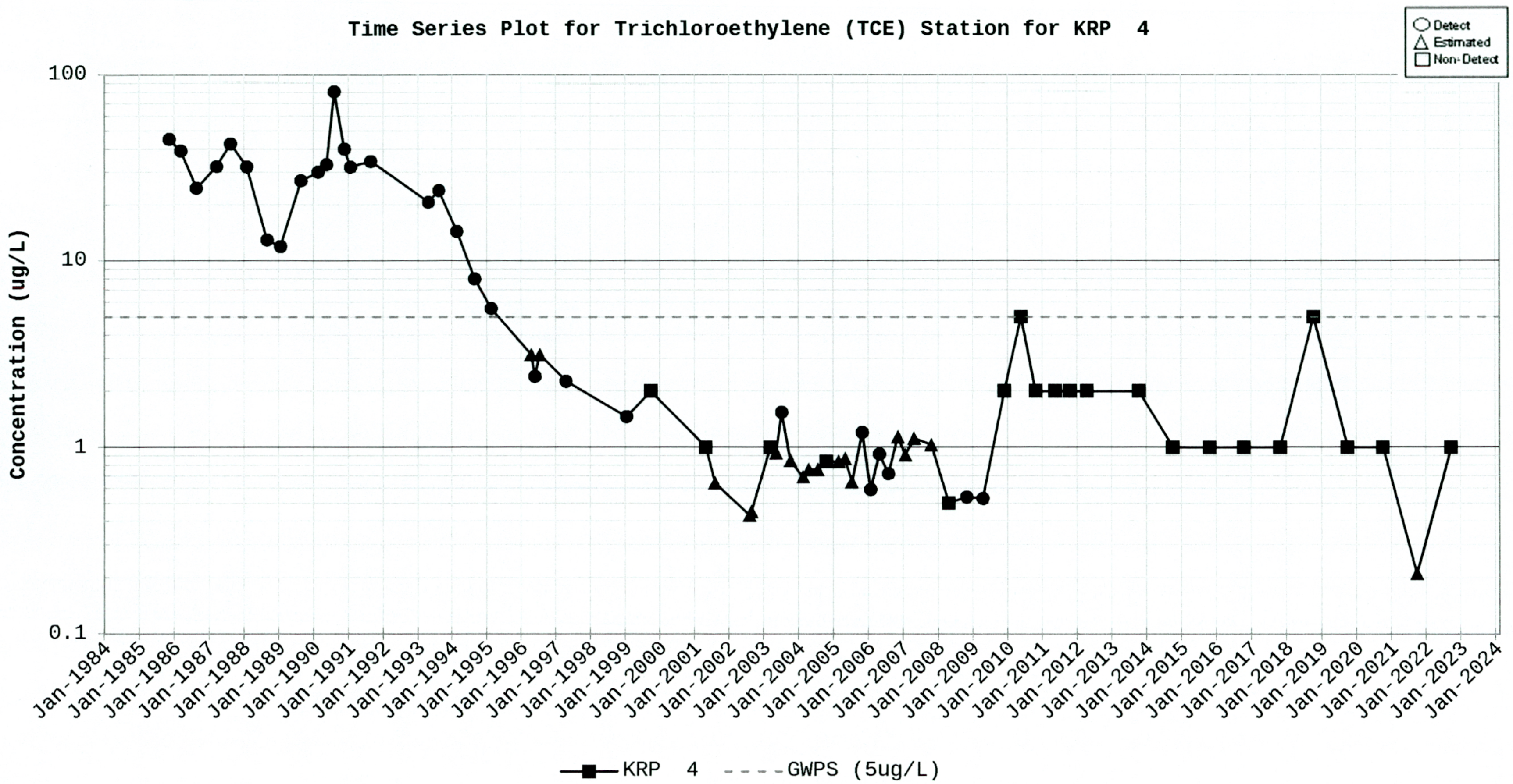


Time Series Plot for TRANS-1,2-DICHLOROETHYLENE Station for KRP 9
Detect
Estimated
Non-Detect
1000
100
10
1
0.1
Concentration (ug/L)
Jan-2010
Jan-2011
Jan-2012
Jan-2013
Jan-2014
Jan-2015
Jan-2016
Jan-2017
Jan-2018
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
KRP 9
GWPS (100ug/L)


Time Series Plot for TRANS-1,2-DICHLOROETHYLENE Station for KRP 10D
Detect
Estimated
Non-Detect
Concentration (ug/L)
1000
100
10
1
0.1
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
KRP 10D
GWPS (100ug/L)



Time Series Plot for TRANS-1,2-DICHLOROETHYLENE Station for KRP 11D
Detect
Estimated
Non-Detect
1000
100
10
1
0.1
Concentration (ug/L)
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
KRP 11D
GWPS (100ug/L)


Time Series Plot for Trichloroethylene (TCE) Station for KRP 4
Detect
Estimated
Non-Detect
Concentration (ug/L)
100
10
1
0.1
Jan-1984
Jan-1985
Jan-1986
Jan-1987
Jan-1988
Jan-1989
Jan-1990
Jan-1991
Jan-1992
Jan-1993
Jan-1994
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
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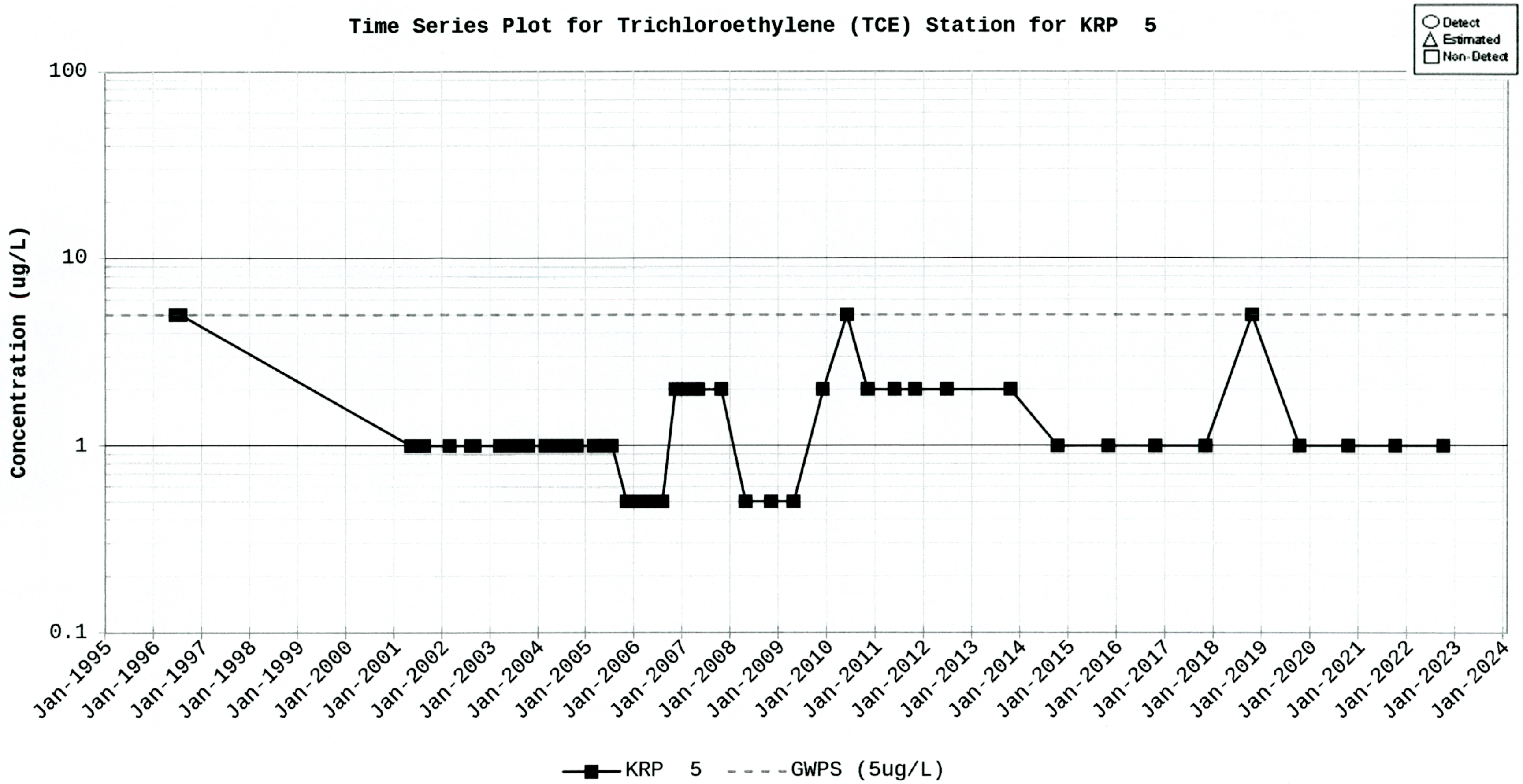
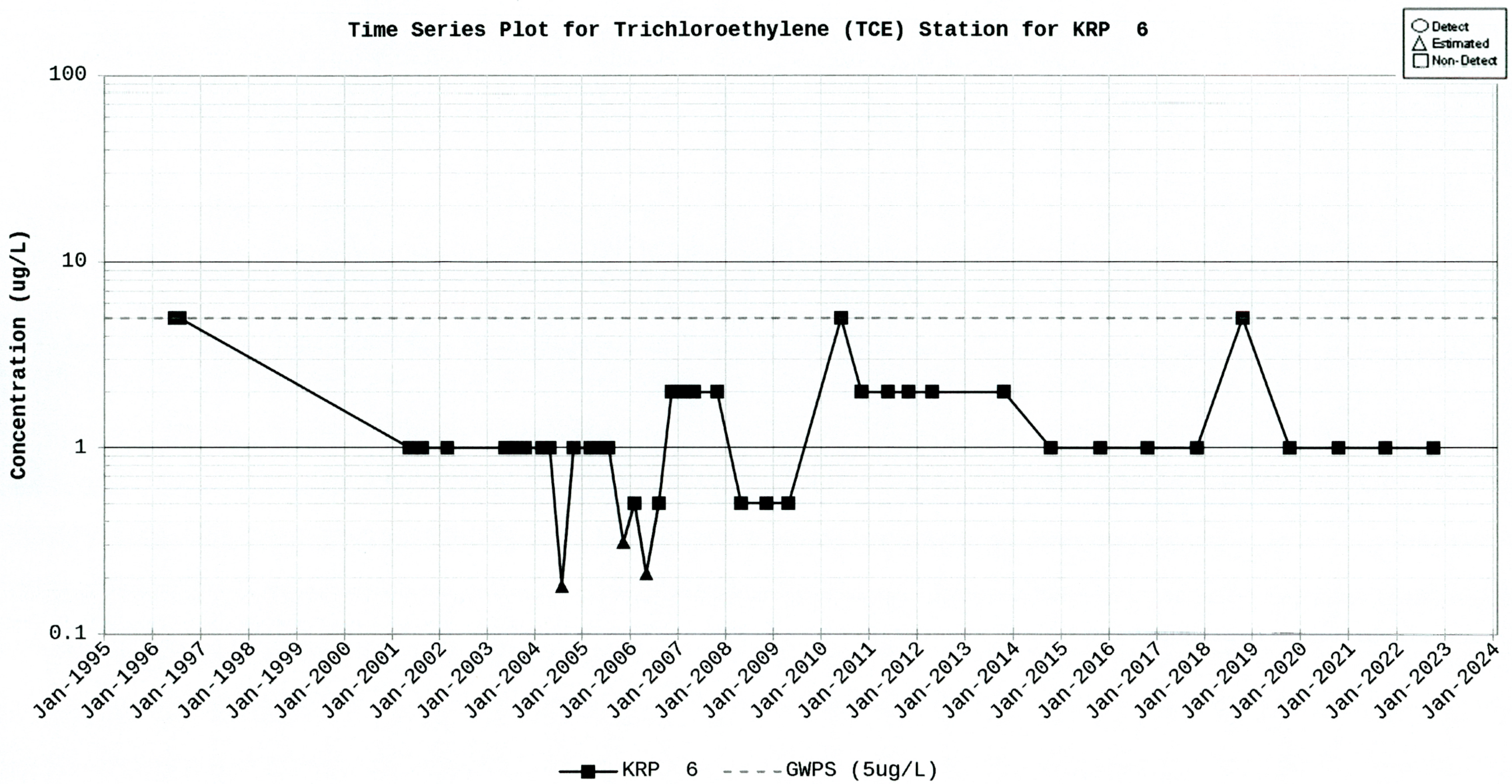
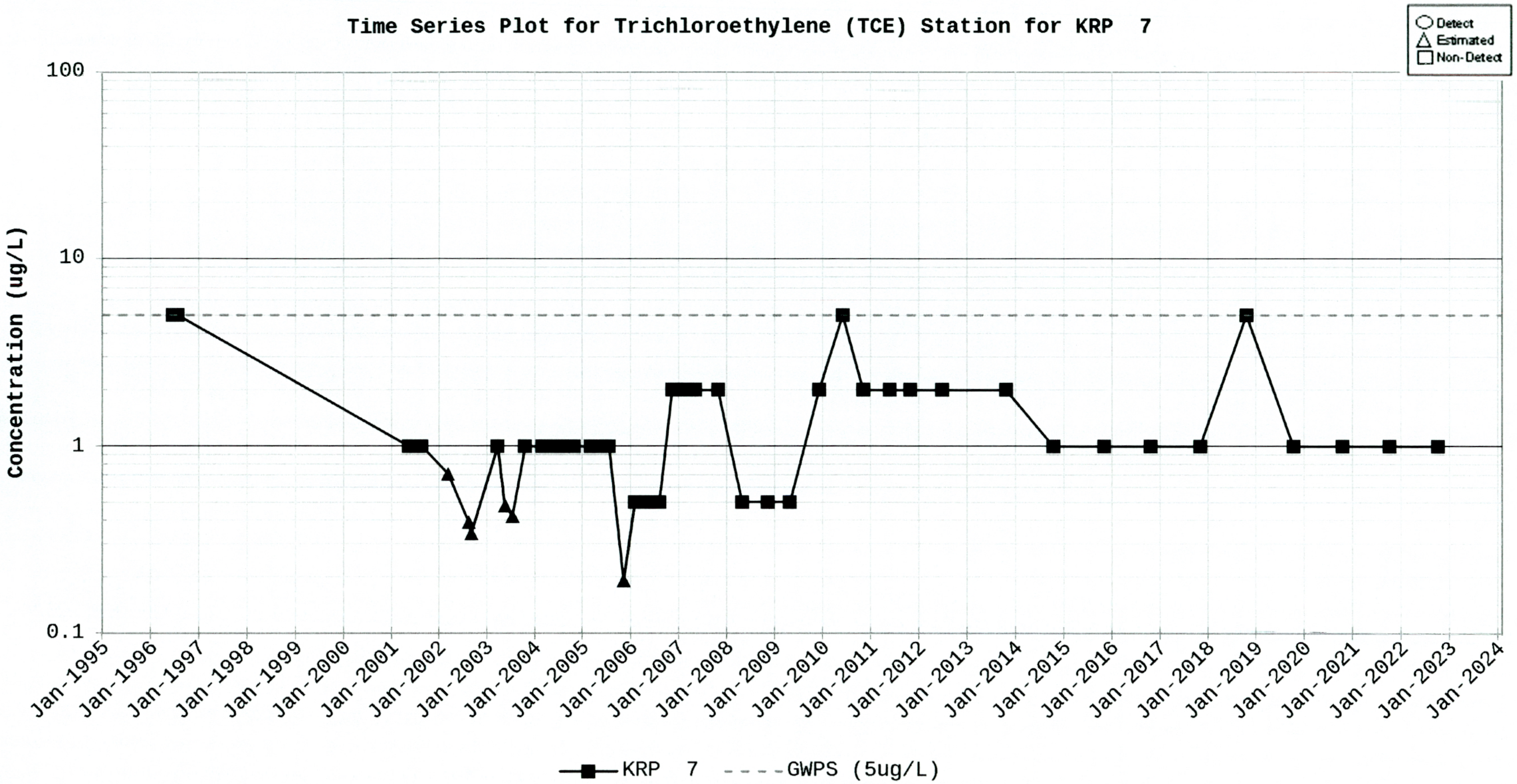
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
KRP 4
GWPS (5ug/L)


Time Series Plot for Trichloroethylene (TCE) Station for KRP 5
Detect
Estimated
Non-Detect
100
10
1
0.1
Concentration (ug/L)
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
KRP 5
GWPS (5ug/L)



Time Series Plot for Trichloroethylene (TCE) Station for KRP 6
Detect
Estimated
Non-Detect
Concentration (ug/L)
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
KRP 6
GWPS (5ug/L)


Time Series Plot for Trichloroethylene (TCE) Station for KRP 7
Detect
Estimated
Non-Detect
Concentration (ug/L)
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
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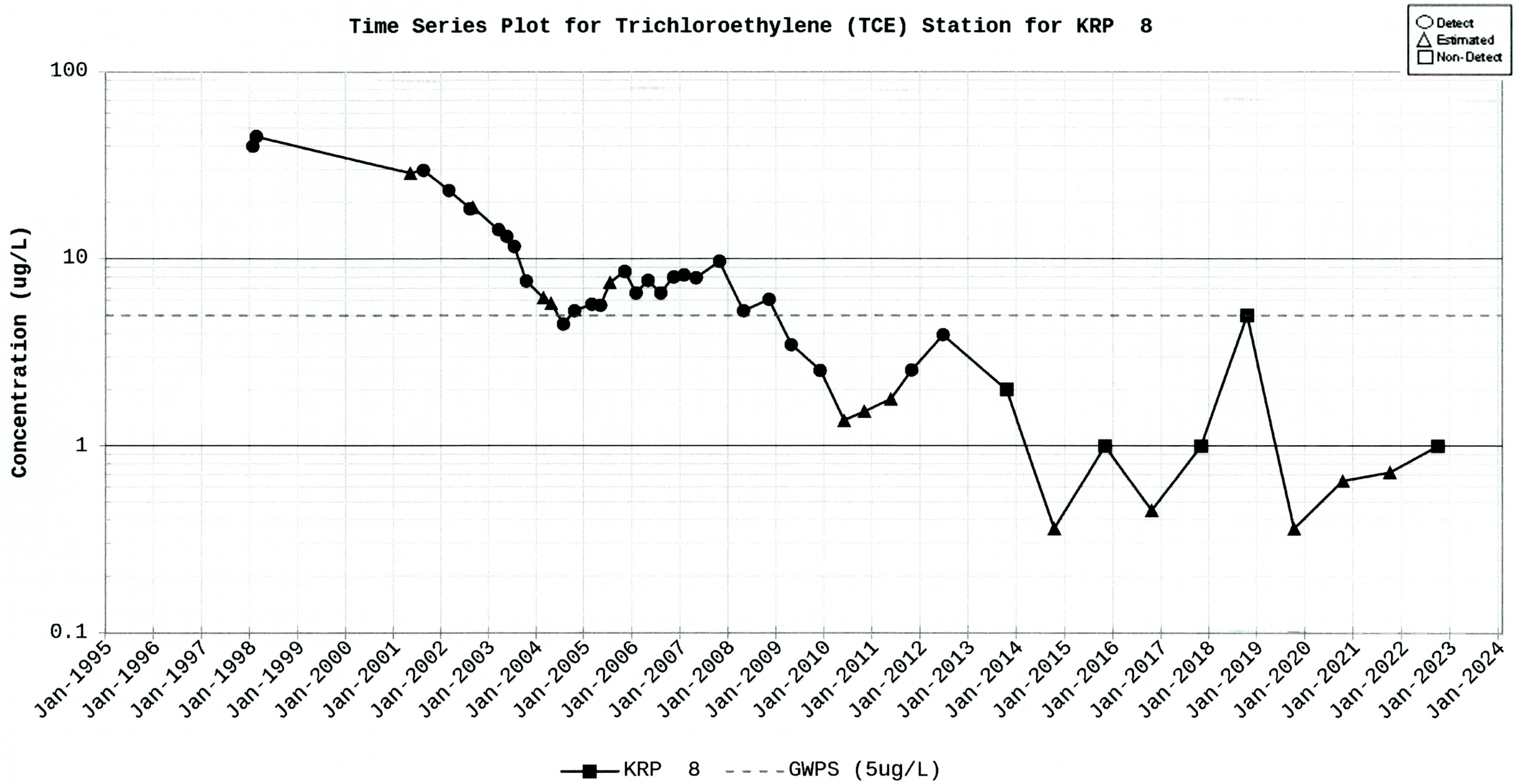
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
KRP 7
GWPS (5ug/L)


Time Series Plot for Trichloroethylene (TCE) Station for KRP 8
Detect
Estimated
Non-Detect
Concentration (ug/L)
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
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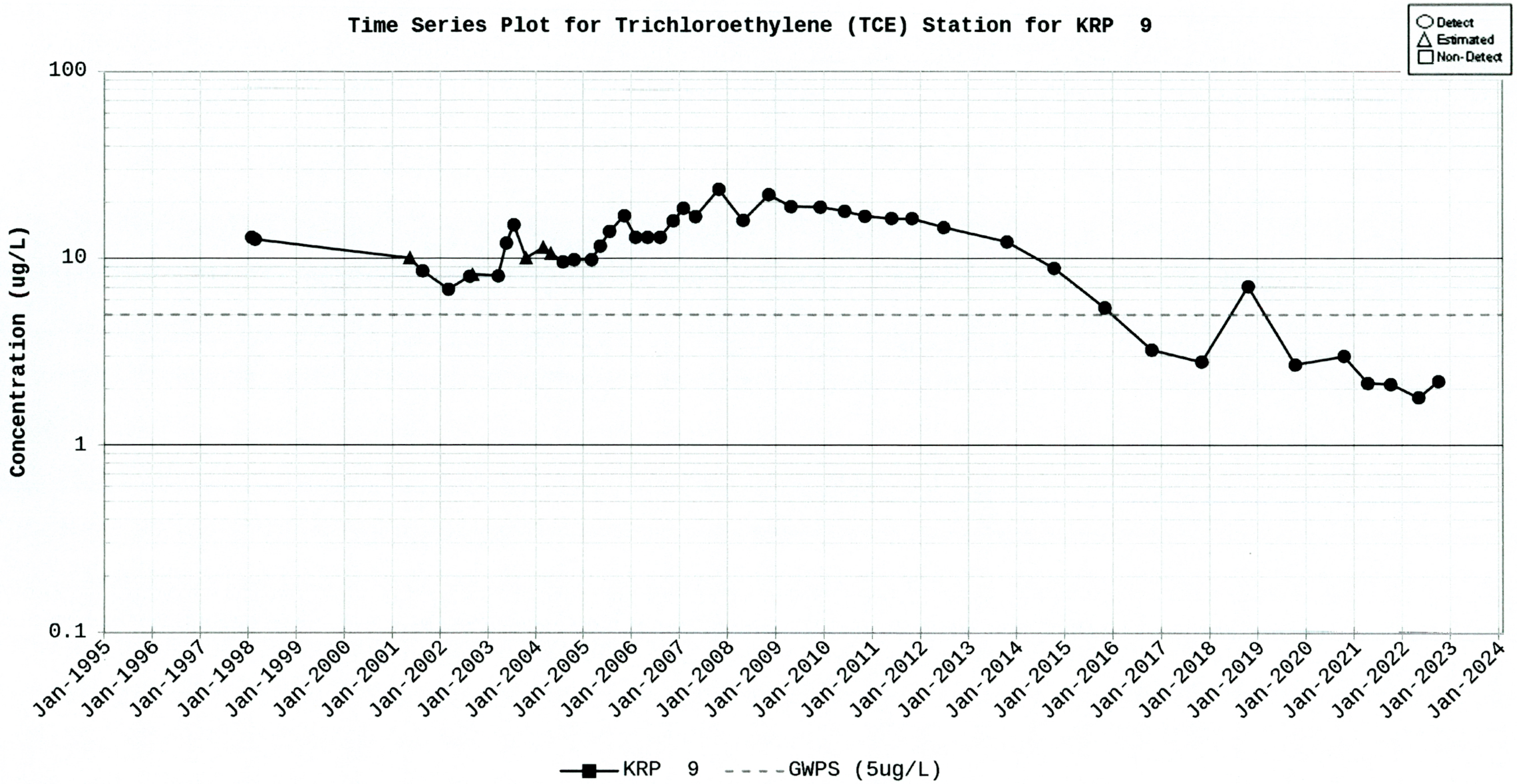
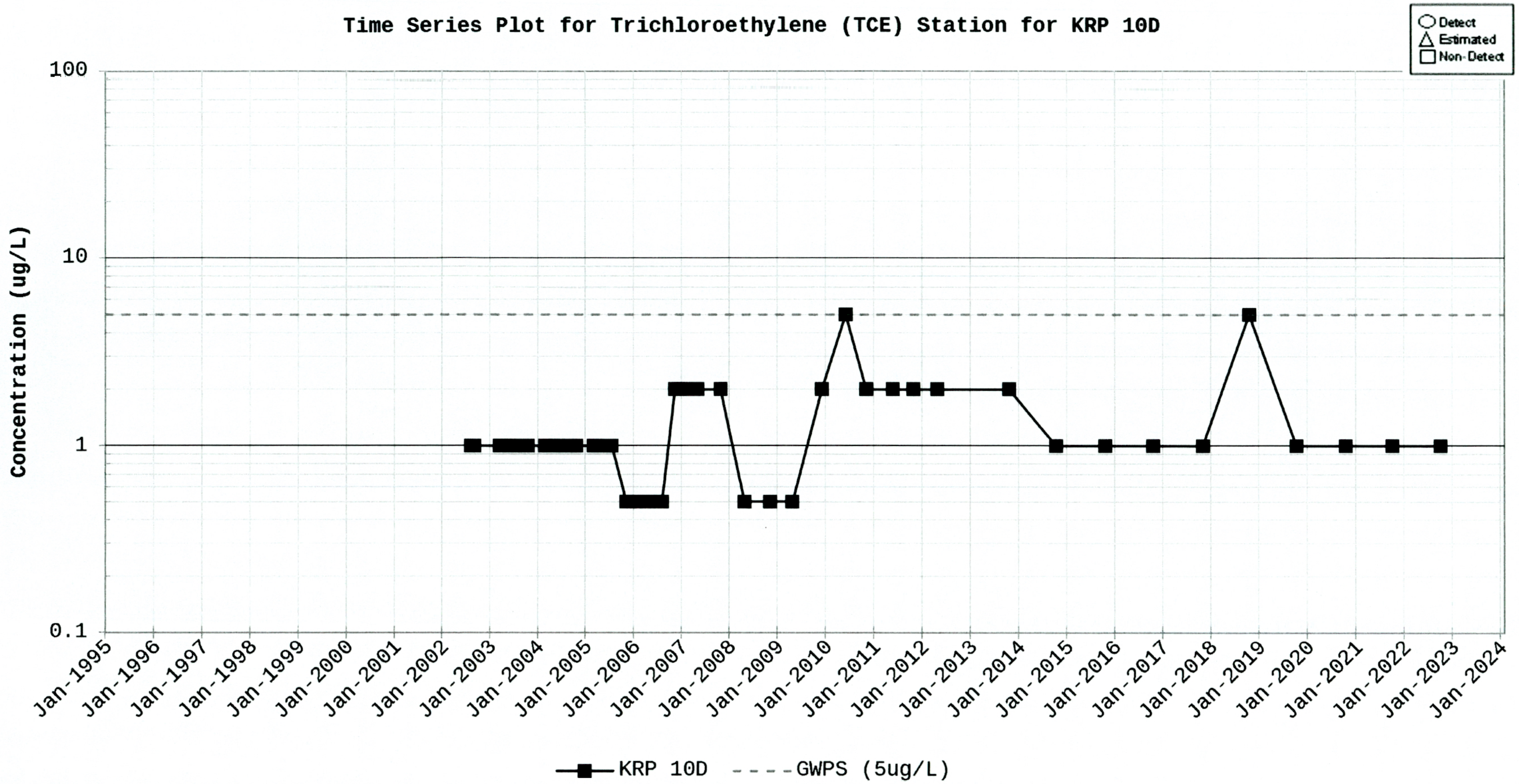
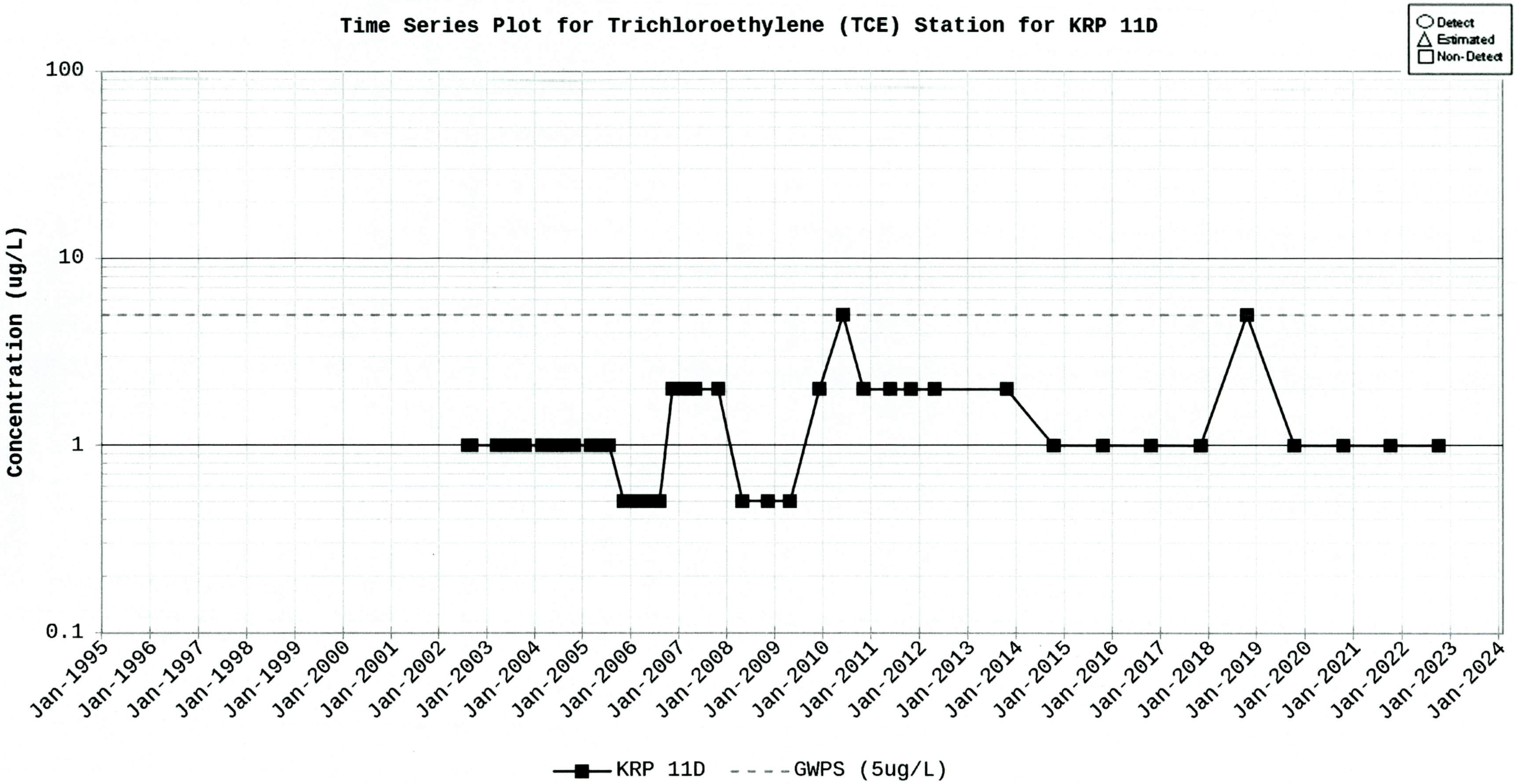
Jan-2019
Jan-2020
Jan-2021
Jan-2022
Jan-2023
Jan-2024
KRP 8
GWPS (5ug/L)


Time Series Plot for Trichloroethylene (TCE) Station for KRP 9
Detect
Estimated
Non-Detect
100
10
1
0.1
Concentration (ug/L)
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
KRP 9
GWPS (5ug/L)


Time Series Plot for Trichloroethylene (TCE) Station for KRP 10D
Detect
Estimated
Non-Detect
Concentration (ug/L)
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
KRP 10D
GWPS (5ug/L)


Time Series Plot for Trichloroethylene (TCE) Station for KRP 11D
Detect
Estimated
Non-Detect
Concentration (ug/L)
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
KRP 11D
GWPS (5ug/L)