



**GROUNDWATER
QUALITY
CONDITIONS
REPORT –
CUYAMA VALLEY
GROUNDWATER
BASIN**

August-September
2022

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**Cuyama Valley
Groundwater
Sustainability Agency**

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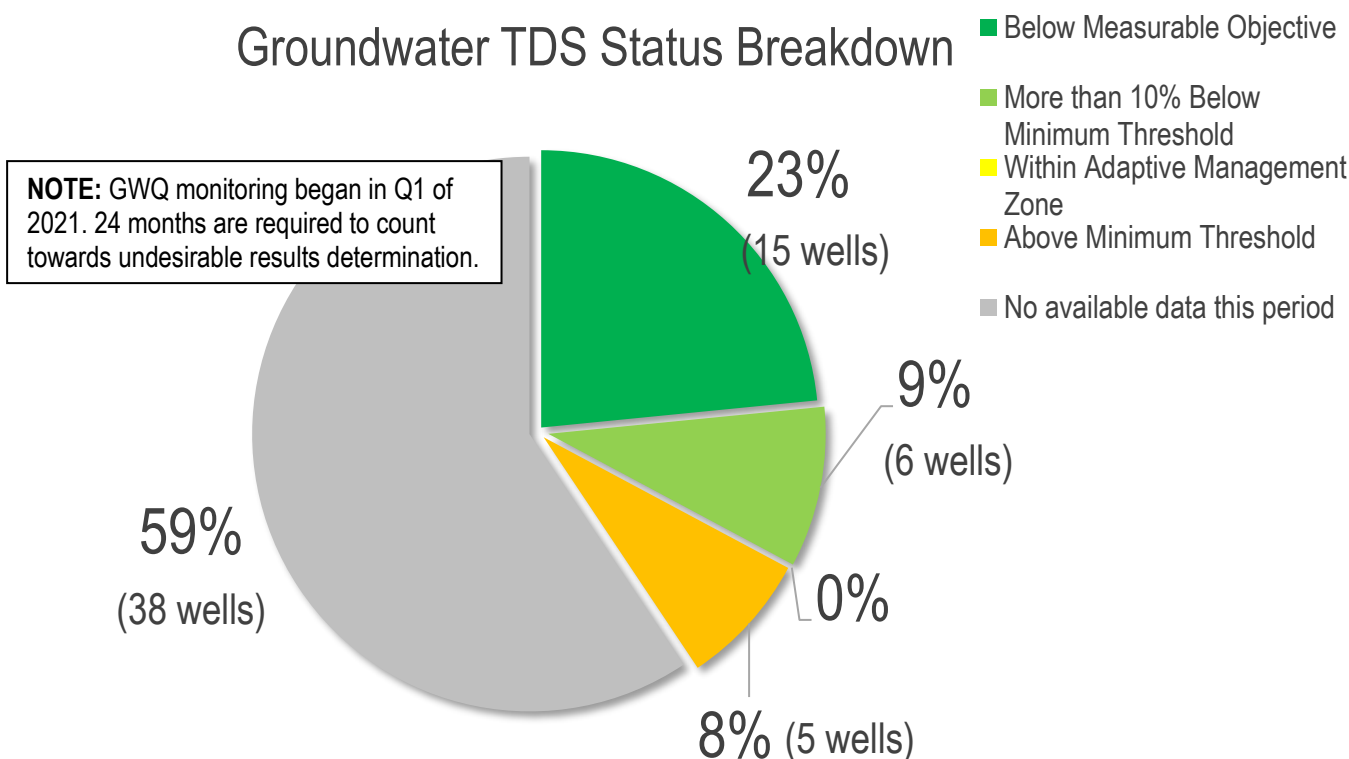
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1. INTRODUCTION

This report is intended to provide an update on the current groundwater quality as total dissolved solids (TDS), nitrate, and arsenic conditions in the Cuyama Valley Groundwater Basin. Groundwater quality measurements were taken during August and September, 2022. This work is completed by the Cuyama Basin Groundwater Sustainability Agency (CBGSA), in compliance with the Sustainable Groundwater Management Act.

2. SUMMARY STATISTICS

Groundwater TDS Status Breakdown



As outlined in the GSP, undesirable results for degraded water quality occurs, “when 30 percent of representative monitoring points... fall below their minimum groundwater elevation threshold for two consecutive years.” (Cuyama GSP, pg. 3-4).

Note there are 8 wells (900, 901, 902, 903, 904, 905, 907, and 908) which were installed after the GSP was submitted in January 2020 and therefore do not have minimum thresholds or measurable objectives. This report also contains information related to nitrate and arsenic, but the GSP did not call for regular monitoring of these constituents or include minimum thresholds or measurable objectives for them. In response to comments received on the GSP, the GSA has elected to collect nitrate and arsenic data as part of this year’s water quality monitoring to increase the understanding of Basin conditions related to these constituents.

3. CURRENT CONDITIONS

Table 1 includes the most recent TDS measurements taken in the Cuyama Basin from representative wells included in the Cuyama GSP Groundwater Quality Monitoring Network, which were taken during August and September, 2022. Per the plan described in the GSP, it is the intention of the GSA to take TDS measurements once per year. **Table 2**

includes all of the representative wells and their current status in relation to the thresholds applied to each well. This information is also shown on **Figure 1. Table 3** shows the most recent nitrate and arsenic measurements taken in the Cuyama Basin during August and September, 2022.

All measurements have also been incorporated into the Cuyama DMS, which may be accessed at <https://opti.woodardcurran.com/cuyama/login.php>.

Table 1: Recent Total Dissolved Solids Measurements for Monitoring Network

Well	Region	N/A	Q1, 2021	Q3, 2022
		GWQ TDS, mg/L	GWQ TDS, mg/L	GWQ TDS, mg/L
61	Southeastern		-	-
72	Central		559	980
73	Central		-	-
74	Central		1260	1700
76	Central		1270	-
77	Central		1070	-
79	Central		1790	-
81	Central		-	-
83	Eastern		1120	1400
85	Eastern		-	-
86	Eastern		-	-
87	Badlands		-	-
88	Badlands		330	300
90	Central		-	1400
91	Central		-	-
94	Central		964	-
95	Central		1290	1700
96	Central		1210	1500
98	Central		-	-
99	Central		1010	1300
101	Eastern		-	1400
102	Central		905	2100
130	Southeastern		-	-
131	Eastern		-	-
157	Southeastern		1360	-
196	Eastern		-	-
204	Badlands		364	340
226	Eastern		-	-
227	Eastern		-	-
242	Eastern		826	1100

Well	Region	N/A	Q1, 2021	Q3, 2022
		GWQ TDS, mg/L	GWQ TDS, mg/L	GWQ TDS, mg/L
269	Eastern		-	-
309	Central		-	-
316	Central		-	-
317	Central		692	-
318	Central		-	-
322	Central		1120	1500
324	Central		488	850
325	Central		746	1400
400	Central		1350	-
420	Central		-	-
421	Central		797	-
422	Central		-	-
424	Central		-	1600
467	Central		1140	1400
568	Central		872	920
702	Southeastern		-	-
703	Northwestern		-	-
710	Eastern		-	-
711	Central		-	-
712	Central		-	-
713	Central		-	-
721	Central		-	-
758	Badlands		-	-
840	Northwestern		-	-
841	Northwestern		-	-
842	Northwestern		-	-
843	Northwestern		-	-
844	Northwestern		-	-
845	Northwestern		-	-
846	Northwestern		-	-
847	Northwestern		-	-

Well	Region	N/A	Q1, 2021	Q3, 2022
		GWQ TDS, mg/L	GWQ TDS, mg/L	GWQ TDS, mg/L
848	Northwestern		-	-
849	Northwestern		-	-
850	Northwestern		-	-
900	Central		-	6200
901	Central		-	6700
902	Central		-	9200
903	Eastern		-	1500
904	Eastern		-	1500
905	Eastern		-	1400
907	Central		-	1600
908	Central		-	2400

Note: Previous year values and annual changes in TDS will be reported after the CBGSA monitoring program has completed a second round of monitoring in the next fiscal year.

Table 2: Well Status Related to TDS Thresholds

Well	Region	Current		Minimum Threshold	Within 10% Minimum Threshold	Measurable Objective	Status	GSA Action Required?
		TDS (mg/L)	Date					
61	Southeastern	-	-	615	612	585	No available data this period	No
72	Central	980	8/18/2022	1023	1020	996	Below Measurable Objective	No
73	Central	-	-	856	851	805	No available data this period	No
74	Central	1700	8/18/2022	1833	1800	1500	More than 10% Below Minimum Threshold	No
76	Central	-	-	2307	2226	1500	No available data this period (below MO in 2021)	No
77	Central	-	-	1592	1583	1500	No available data this period (below MO in 2021)	No
79	Central	-	-	2320	2238	1500	No available data this period (more than 10% below MT in 2021)	No
81	Central	-	-	2788	2659	1500	No available data this period	No
83	Eastern	1400	8/18/2022	1726	1703	1500	Below Measurable Objective	No
85	Eastern	-	-	1391	1314	618	No available data this period	No
86	Eastern	-	-	975	974	969	No available data this period	No
87	Badlands	-	-	1165	1157	1090	No available data this period	No
88	Badlands	300	8/17/2022	302	302	302	Below Measurable Objective	No
90	Central	1400	8/18/2022	1593	1584	1500	Below Measurable Objective	No
91	Central	-	-	1487	1479	1410	No available data this period	No
94	Central	-	-	1245	1226	1050	No available data this period (below MO in 2021)	No
95	Central	1700	8/23/2022	1866	1829	1500	More than 10% Below Minimum Threshold	No
96	Central	1500	8/17/2022	1632	1619	1500	More than 10% Below Minimum Threshold	No

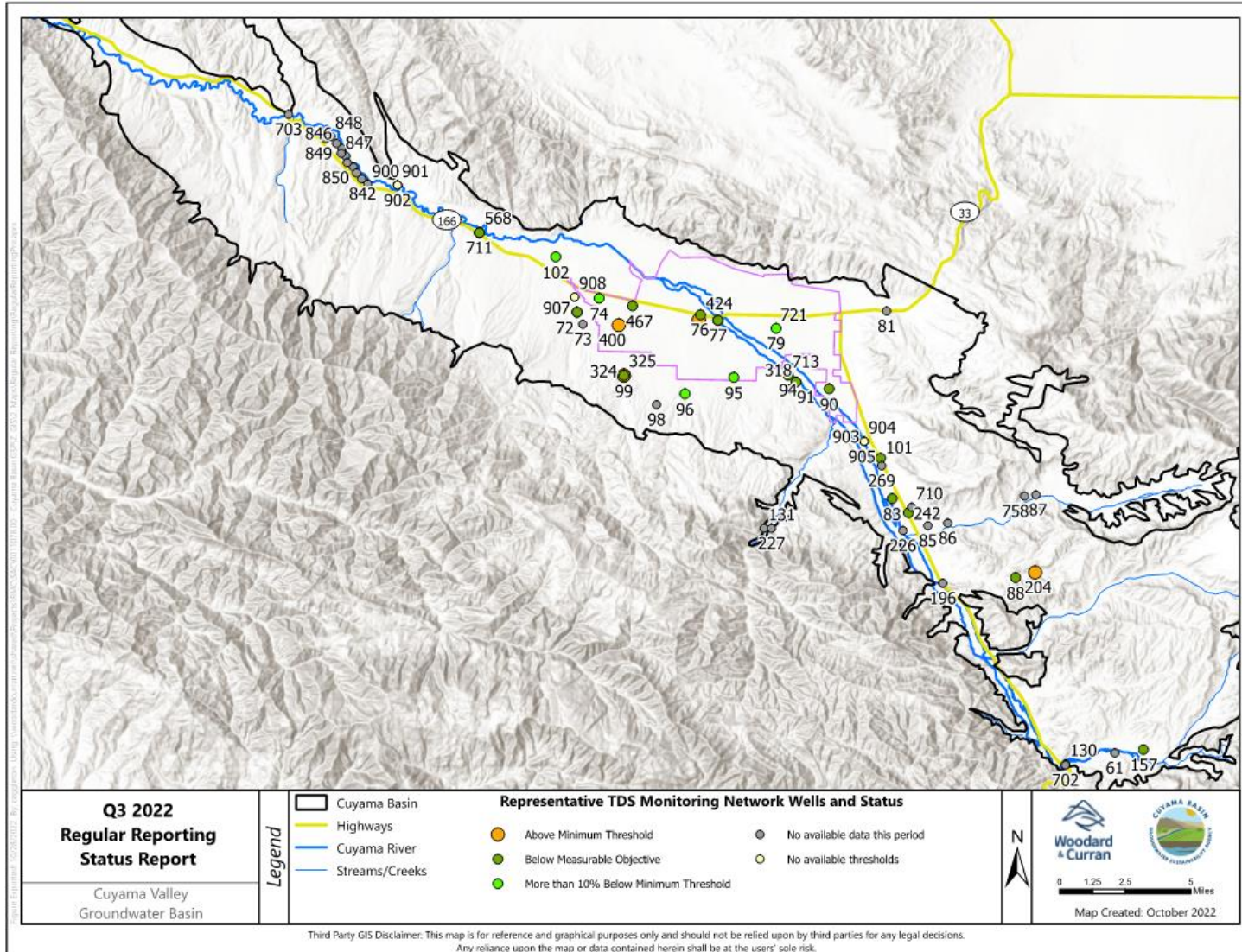
Well	Region	Current		Minimum Threshold	Within 10% Minimum Threshold	Measurable Objective	Status	GSA Action Required?
		TDS (mg/L)	Date					
98	Central	-	-	2400	2310	1500	No available data this period	No
99	Central	1300	9/8/2022	1562	1555	1490	Below Measurable Objective	No
101	Eastern	1400	8/17/2022	1693	1674	1500	Below Measurable Objective	No
102	Central	2100	8/17/2022	2351	2266	1500	More than 10% Below Minimum Threshold	No
130	Southeastern	-	-	1855	1820	1500	No available data this period	No
131	Eastern	-	-	1982	1934	1500	No available data this period	No
157	Southeastern	-	-	2360	2274	1500	No available data this period (below MO in 2021)	No
196	Eastern	-	-	904	898	851	No available data this period	No
204	Badlands	340	-	269	267	253	Above Minimum Threshold	No
226	Eastern	-	-	1844	1810	1500	No available data this period	No
227	Eastern	-	-	2230	2157	1500	No available data this period	No
242	Eastern	1100	8/17/2022	1518	1513	1470	Below Measurable Objective	No
269	Eastern	-	-	1702	1682	1500	No available data this period	No
309	Central	-	-	1509	1499	1410	No available data this period	No
316	Central	-	-	1468	1459	1380	No available data this period	No
317	Central	-	-	1337	1329	1260	No available data this period (below MO in 2021)	No
318	Central	-	-	1152	1145	1080	No available data this period	No
322	Central	1500	9/8/2022	1386	1382	1350	Above Minimum Threshold	No
324	Central	850	9/8/2022	777	774	746	Above Minimum Threshold	No

Well	Region	Current		Minimum Threshold	Within 10% Minimum Threshold	Measurable Objective	Status	GSA Action Required?
		TDS (mg/L)	Date					
325	Central	1400	9/8/2022	1569	1559	1470	Below Measurable Objective	No
400	Central	-	-	976	970	918	No available data this period (above MT in 2021)	No
420	Central	-	-	1490	1484	1430	No available data this period	No
421	Central	-	-	1616	1604	1500	No available data this period (below MO in 2021)	No
422	Central	-	-	1942	1898	1500	No available data this period	No
424	Central	1600	8/18/2022	1588	1579	1500	Above Minimum Threshold	No
467	Central	1400	8/18/2022	1764	1738	1500	Below Measurable Objective	No
568	Central	920	8/17/2022	1191	1159	871	More than 10% Below Minimum Threshold	No
702	Southeastern	-	-	2074	1878	110	No available data this period	No
703	Northwestern	-	-	4097	3727	400	No available data this period	No
710	Eastern	-	-	1040	1040	1040	No available data this period	No
711	Central	-	-	928	928	928	No available data this period	No
712	Central	-	-	978	977	977	No available data this period	No
713	Central	-	-	1200	1200	1200	No available data this period	No
721	Central	-	-	2170	2103	1500	No available data this period	No
758	Badlands	-	-	954	949	900	No available data this period	No
840	Northwestern	-	-	559	559	559	No available data this period	No
841	Northwestern	-	-	561	561	561	No available data this period	No
842	Northwestern	-	-	547	547	547	No available data this period	No

Well	Region	Current		Minimum Threshold	Within 10% Minimum Threshold	Measurable Objective	Status	GSA Action Required?
		TDS (mg/L)	Date					
843	Northwestern	-	-	569	569	569	No available data this period	No
844	Northwestern	-	-	481	481	481	No available data this period	No
845	Northwestern	-	-	1250	1250	1250	No available data this period	No
846	Northwestern	-	-	918	918	918	No available data this period	No
847	Northwestern	-	-	480	480	480	No available data this period	No
848	Northwestern	-	-	674	674	674	No available data this period	No
849	Northwestern	-	-	1780	1752	1500	No available data this period	No
850	Northwestern	-	-	472	472	472	No available data this period	No
900	Central	6200	8/17/2022	-	-	-	-	
901	Central	6700	8/23/2022	-	-	-	-	
902	Central	9200	8/23/2022	-	-	-	-	
903	Eastern	1500	8/23/2022	-	-	-	-	
904	Eastern	1500	8/23/2022	-	-	-	-	
905	Eastern	1400	8/23/2022	-	-	-	-	
907	Central	1600	8/23/2022	-	-	-	-	
908	Central	2400	8/23/2022	-	-	-	-	

Note: Wells only count towards the identification of undesirable results if the level measurement is below the minimum threshold for 24 consecutive months. Wells 900, 901, 902, 903, 904, 905, 907, and 908 do not have previous measurements, therefore no thresholds are available.

Figure 1: Groundwater Quality Representative Wells and Status



4. TOTAL DISSOLVED SOLIDS TIME SERIES FIGURES

The following figures provide an overview of TDS conditions in each of the six areas threshold regions identified in the GSP.

Figure 2: Southeast Region – Well 157

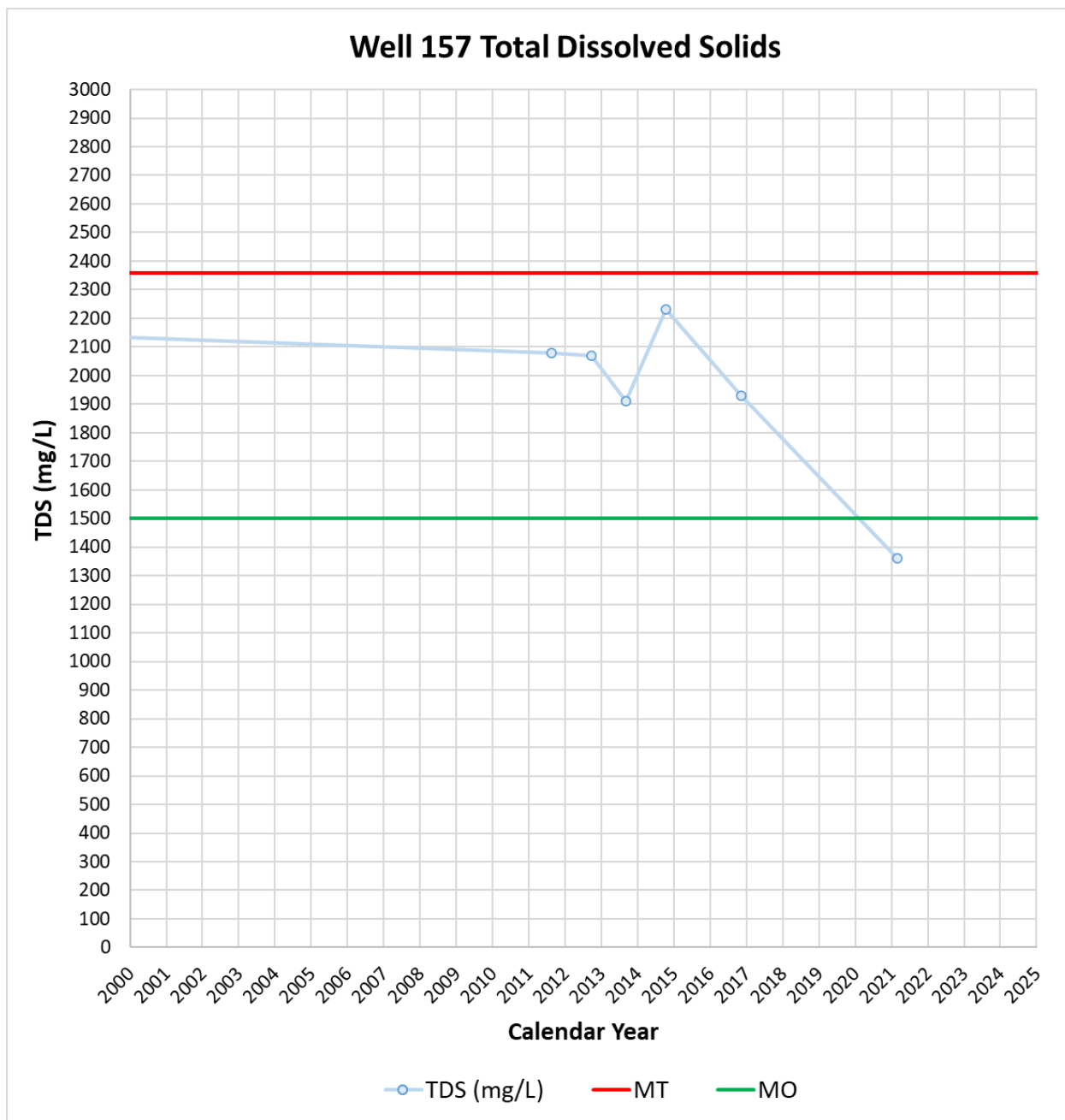


Figure 3: Eastern Region – Well 83

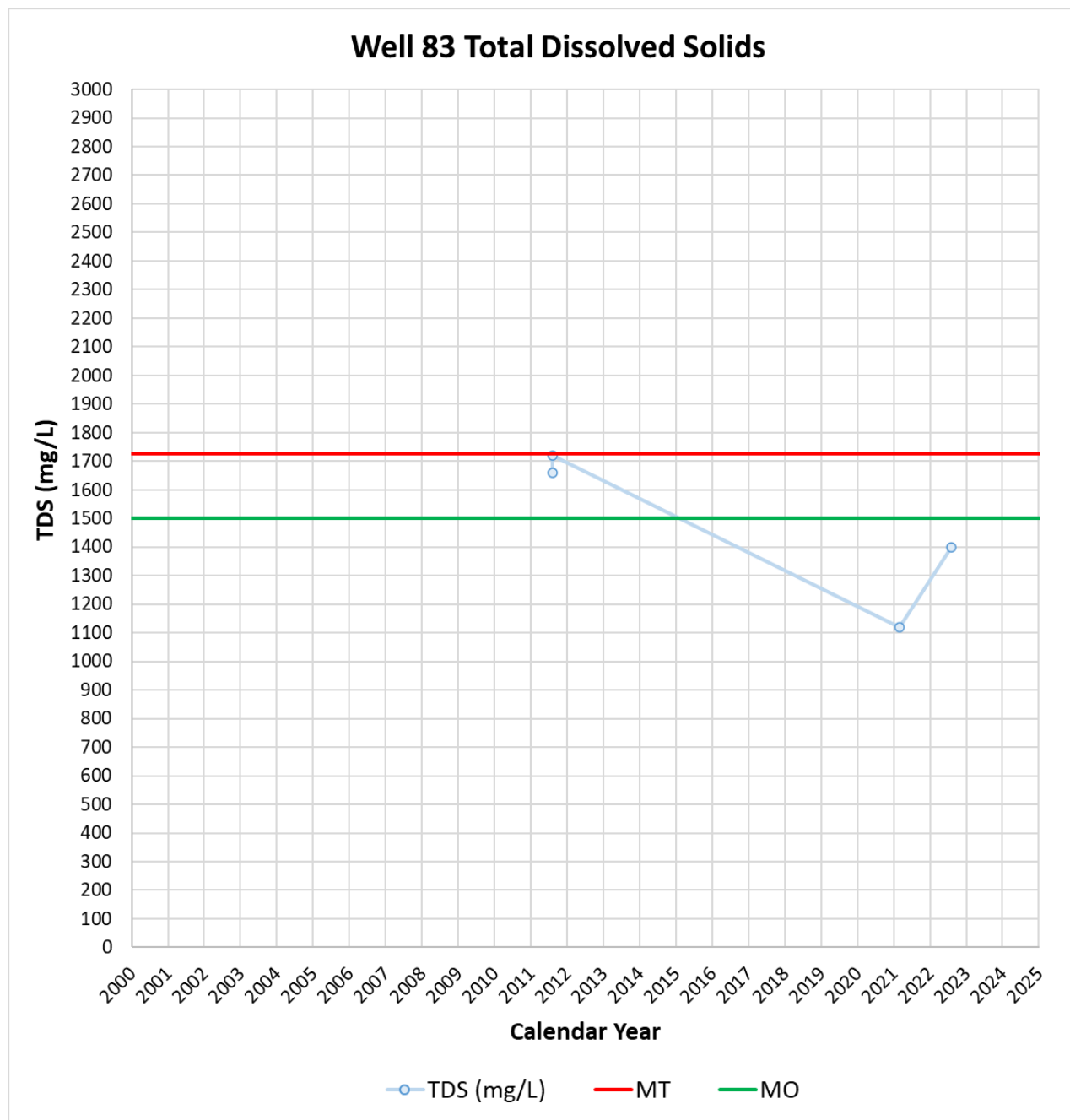


Figure 4: Central Region – Well 467

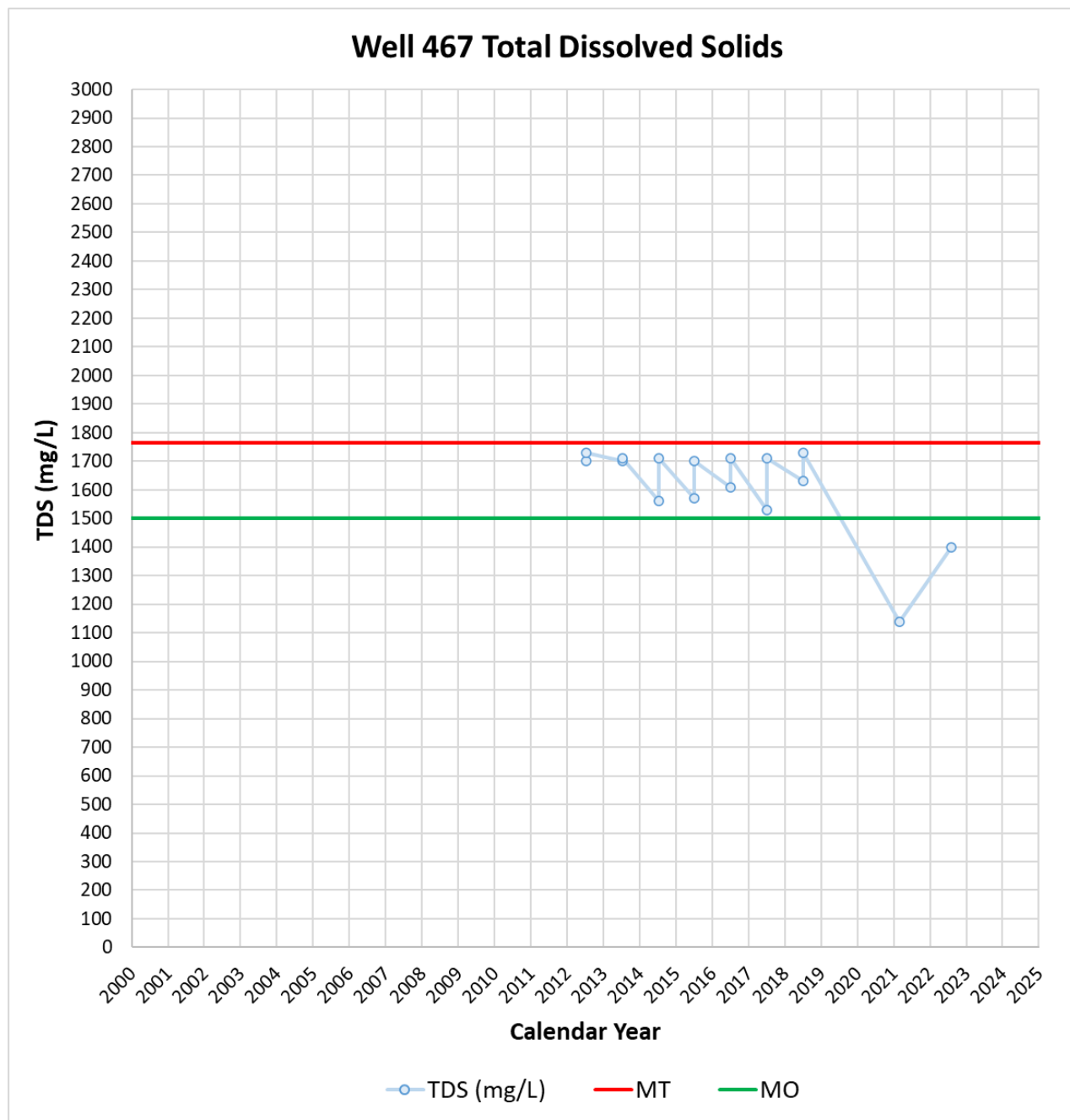


Figure 5: Central Region – Well 74

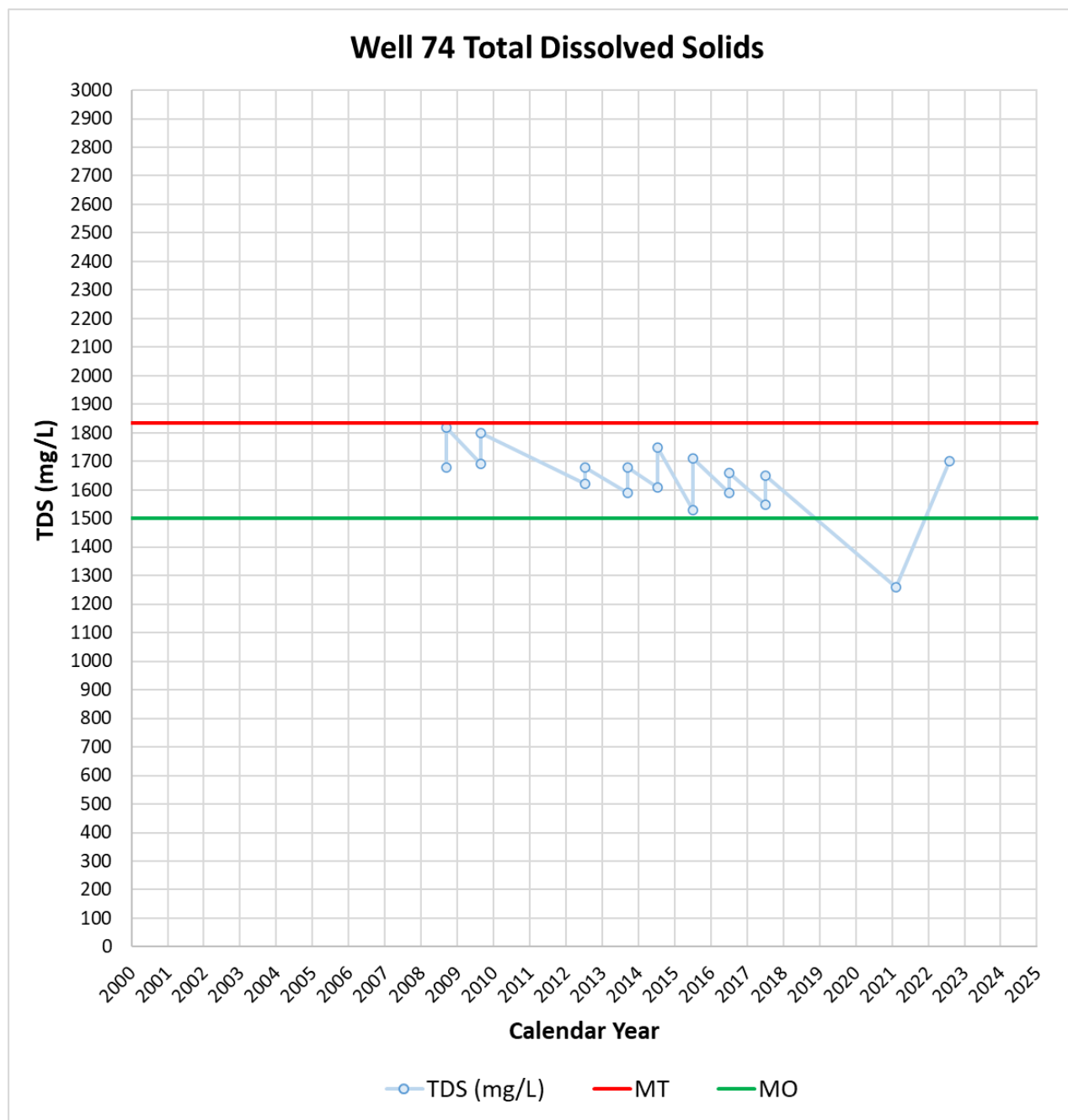


Figure 6: Western Region – Well TBD

No data from this Threshold Region at this time.

Figure 7: Northwestern Region – Well TBD

No data from this Threshold Region at this time.

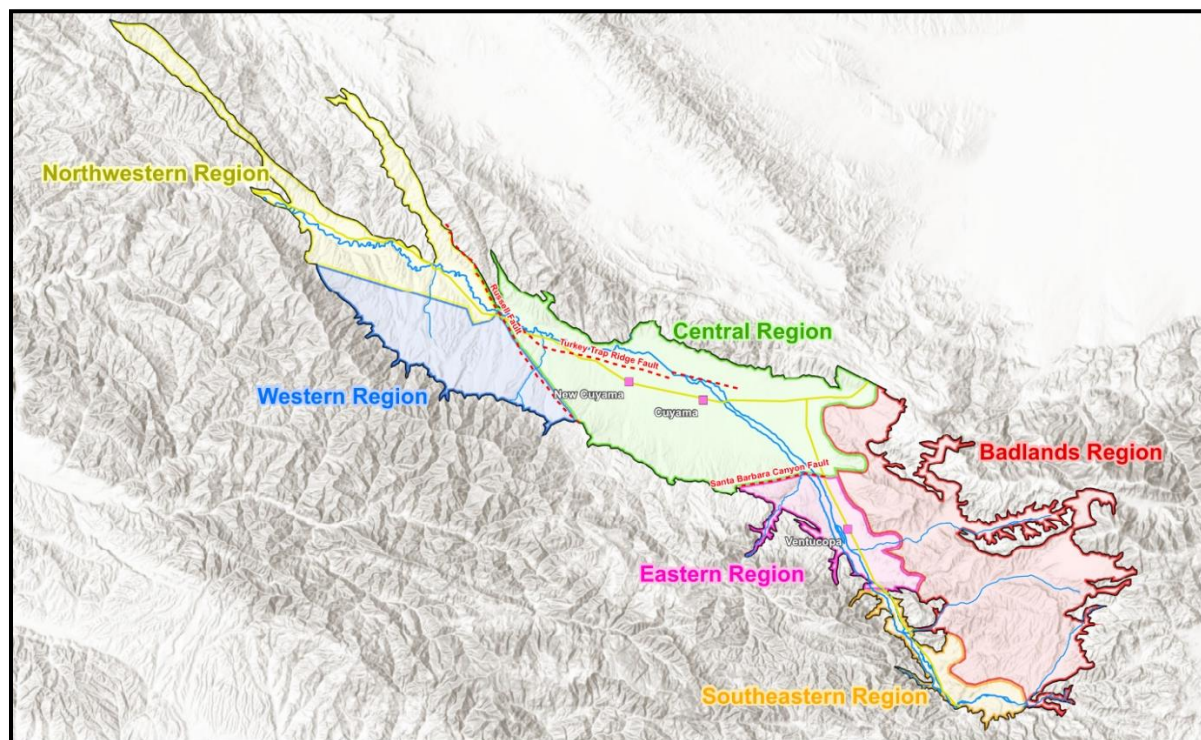


Figure 8: Threshold Regions in the Cuyama Groundwater Basin

5. MONITORING NETWORK UPDATES

As shown in the Summary Statistics Section, there are 46 wells without current measurements. These “no measurement codes” can have different causes as described below.

- Access agreements have not yet been established with the landowner, access has not been granted yet, or no access at time of measurement:
 - Wells 61, 73, 76, 77, 79, 81, 85, 86, 87, 94, 98, 130, 131, 157, 196, 226, 227, 269, 309, 400, 702, 703, 710, 711, 712, 713, 721, 758, 840, 842, 843, 844, 846, 847, 848, 849, 850
- Transducer data is not currently available:
 - Wells 91, 316, 317, 420, 421, 841, 845
- The well has gone dry:
 - Well 318, 422

6. NITRATE AND ARSENIC MEASUREMENTS

Measurements of Nitrate and Arsenic were taken by the CBGSA during August and September 2022 at the same locations as the TDS measurements described above. These measurements are shown in Table 3 and in Figures 9 and 10 below.

Table 3: 3Recent Arsenic and Nitrate Measurements

Well	Region	Q3, 2022	Q3, 2022
		GWQ Arsenic, ug/L	GWQ Nitrate, mg/L
72	Central	42	ND
74	Central	3.4	0.61
83	Eastern	ND	0.88
88	Badlands	ND	0.31
90	Central	ND	2
95	Central	ND	ND
96	Central	ND	0.39
99	Central	33	ND
101	Eastern	ND	8.1
102	Central	ND	3.5
204	Badlands	ND	0.27
242	Eastern	ND	7.8
322	Central	49	0.35
324	Central	9.5	ND
325	Central	2.6	ND
424	Central	ND	3.1
467	Central	25	ND
568	Central	ND	1.9
836	Northwestern	ND	0.76
900	Central	6.3	ND
901	Central	4.2	ND
902	Central	6	ND
903	Eastern	ND	1.1
904	Eastern	ND	1.1
905	Eastern	ND	1.1
907	Central	54	ND
908	Central	45	ND

Note: Previous year values and annual changes in nitrate and arsenic will be reported after the CBGSA monitoring program has completed a second round of monitoring in the next fiscal year. "ND" indicates that a measurement was taken, but no constituent was detected

Figure 9: Well Arsenic Measurements in Cuyama Basin

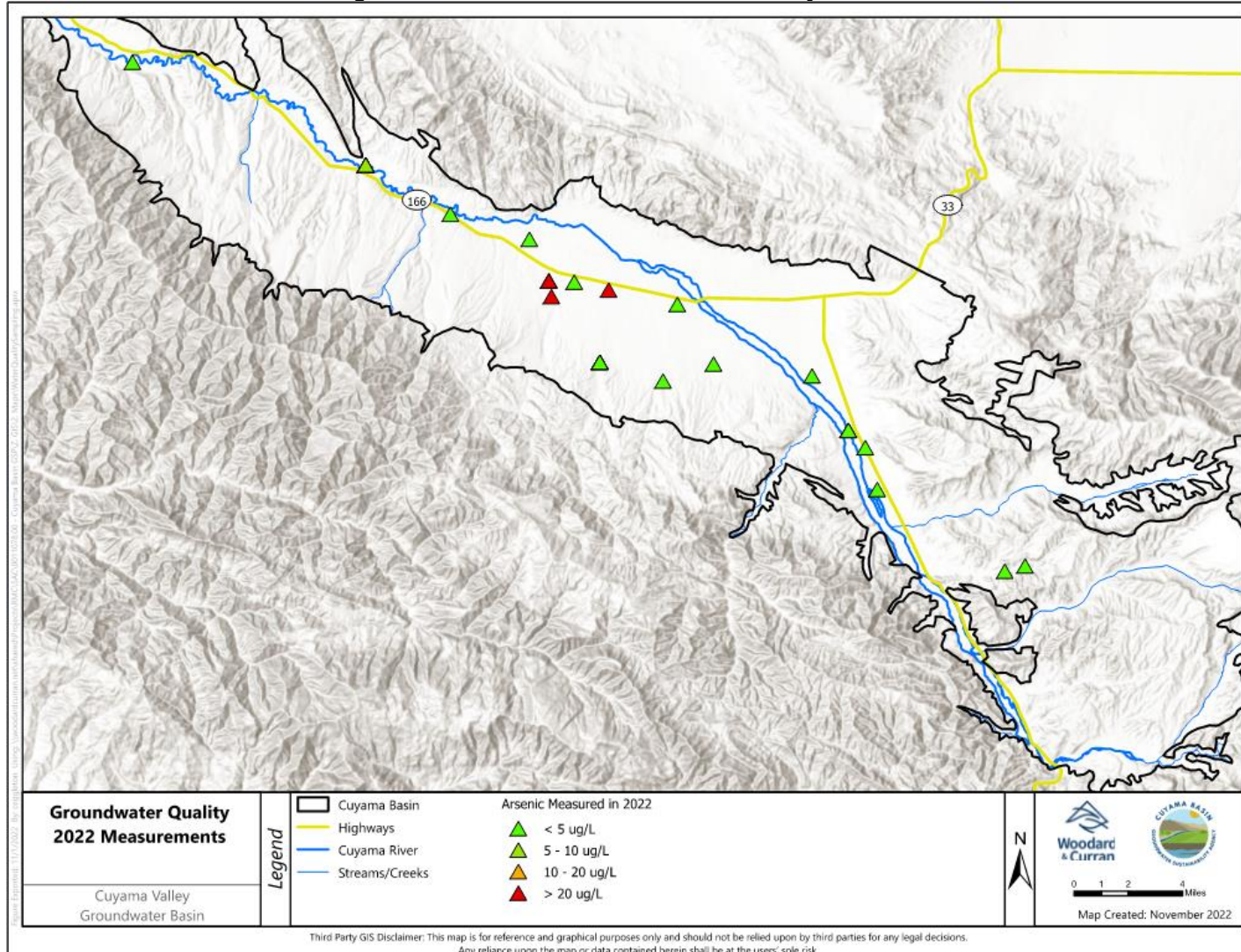


Figure 10: Well Nitrate Measurements in Cuyama Basin

