



November 18, 2024

Mr. Clayton Wein
Environmental Protection Specialist
Colorado Division of Reclamation, Mining and Safety
1313 Sherman Street, Room 215
Denver, CO 80203

**RE: Annual Hydrology Report
New Horizon Mine
Permit No. C-1981-008**

Dear Mr. Wein:

Enclosed please find the Annual Hydrology Report for the 2024 Water Year (October 2023 – September 2024) for Elk Ridge Mining and Reclamation, LLC (Elk Ridge) New Horizon Mine. Tri-State Generation and Transmission Association, Inc. (Tri-State) is the parent to Elk Ridge, and in accordance with Rule 4.05.13(4)(c) is submitting the Annual Hydrology Report on behalf of the New Horizon Mine.

If you have any questions about the enclosed minor revision, please contact Tony Tennyson at (970) 824-1232 or ttennyson@tristategt.org.

Sincerely,

DocuSigned by:

Chris Gilbreath

4BE980BE59E442F...

Chris Gilbreath
Senior Manager,
Remediation and Reclamation

CG:TT

Enclosures

cc: Tony Tennyson (via email)
File: G474-11.3(21)b-5

2024 Annual Hydrology Report

Water Year October 1, 2023 to September 30, 2024

Elk Ridge Mining and Reclamation, LLC

New Horizon Mine

Permit No. C-1981-008

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Rule 4.05.13(4)(c) Annual Hydrology Report Requirements

(i) Water quantity monitoring data for the water year is presented Appendix 1 and Appendix 2 of this report.

(ii) Water quality monitoring data for the water year is presented in Appendix 1 and Appendix 2 of this report. Discharge monitoring reports (DMR) are submitted to the Colorado Department of Public Health and Environment. Copies of each DMR are provided monthly to the Division during the report year and are included in this report by reference only.

(iii) A written interpretation of the data has been requested by the Division in accordance with Rule 4.05.13(4)(c)(iii) and is included within this annual hydrology report.

The monitoring timeframe for this annual hydrology report is from October 1, 2023 through September 30, 2024.

A description of the surface and ground water monitoring plan including the monitoring frequency is located in Section 2.04.7. All monitoring locations are shown on Map 2.04-7-1A. This information can be found in Permit No. C-1981-008.

Surface Water

Surface water monitoring is comprised of two monitoring locations, which are located up gradient and down gradient of mining and reclamation areas on Tuttle Draw. SW-N1 represents the upstream condition above mining and reclamation, and SW-N3 represents the downstream condition.

Surface water monitoring data for the water year for both sites can be found in Appendix 1.

New Horizon samples both surface water monitoring locations for a variety of quality parameters. Of all the parameters that are analyzed, several key indicator parameters have been identified and are addressed annually for the hydrology report. These parameters are lab pH, lab conductivity, TDS, sulfate, calcium, iron, magnesium, and sodium.

SW-N1 and SW-N3 – Tuttle Draw

Data for the indicator parameters for the up-gradient surface monitoring location SW-N1 and the down gradient surface water monitoring location SW-N3, has been compiled and are shown on the summary tables below. The summary data tables provided data for each surface water monitoring locations from 2001 to 2024 if available.

Surface water monitoring data for the water year for both sites can be found in Appendix 1. Appendix 2 contains a graphical representation of all surface water monitoring data with a linear regression to help define any applicable trends that may be apparent in the monitoring data.

Summary of the indicator parameters for each surface water monitoring location are provided as follows:

SW-N1							
Parameter	Mean	Std dev	Range	Max.	Min.	Max at	Min at
Lab pH	8.2	0.3	2.0	8.5	6.5	2/18/11	7/30/24
Lab Cond. (umhos/cm)	921	587	2,613	2,910	297	9/26/12	6/5/19
TDS (mg/l)	699	540	2,509	2,690	181	9/26/12	8/24/07
Sulfate (mg/l)	310	281	1,653	1,700	48	9/26/12	6/5/19
Calcium (mg/l)	121	84	455	496	41	9/26/12	6/5/19
Iron (ug/l)	1,163	1,575	8,8920	9,050	130	8/16/07	4/2/24
Magnesium (mg/l)	53	48	196	204	8	9/26/12	8/17/07
Sodium (mg/l)	21	17	61	66	5	2/17/06	8/20/07

SW-N3							
Parameter	Mean	Std dev	Range	Max.	Min.	Max at	Min at
Lab pH	8.1	0.3	2.0	8.6	6.6	9/4/08	7/30/24
Lab Cond. (umhos/cm)	1,783	919	3,240	3,640	400	2/10/15	8/13/07
TDS (mg/l)	1,560	968	3,208	3,440	232	2/10/15	8/24/17
Sulfate (mg/l)	882	598	2,130	2,220	90	2/10/15	8/17/07
Calcium (mg/l)	246	137	549	558	9	8/31/02	5/24/21
Iron (tot rec ug/l)	1,068	1,518	10,470	10,600	130	8/16/07	5/17/08
Magnesium (mg/l)	109	73	246	259	13	2/10/15	11/21/07
Sodium (mg/l)	56	43	204	212	8	2/20/12	8/20/07

A review of the water year data indicates two minimum values for laboratory pH and iron occurred at SW-N1, and a minimum value laboratory pH also occurred at SW-N3. All other indicator parameters sample results trended within previous results, with the mean of all the indicator parameters remaining relatively constant. Influences from irrigation water on Tuttle Draw are readily apparent during the irrigation season at and around New Horizon Mine.

Surface Water Data Interpretation

As shown on the graphs in Appendix 2 for the indicator parameters, when comparing the up gradient and down gradient locations, SW-N3 tends to historically trend higher for several of the indicator parameters including calcium, laboratory conductivity, magnesium, sodium, sulfate and TDS. Iron and pH tend to historically trend higher at the up-gradient location SW-N1. Iron is historically trending down at both locations.

Overall, the indicator parameters as shown in Appendix 2 for up gradient and down gradient of mining and reclamation areas are stable. Long term monitoring results indicate normal seasonal fluctuations within Tuttle Draw, with the seasonal influences from local irrigation water being readily apparent when active irrigation is occurring.

Groundwater

New Horizon currently samples each groundwater site for a variety of quality parameters. Of all the parameters that are analyzed for, several key indicator parameters are identified and are addressed annually for this hydrology report. These are lab pH, lab conductivity, TDS, sulfate, calcium, iron, manganese, sodium and magnesium.

Ground water monitoring data for the water year can be found in Appendix 3. Appendix 4 contains a graphical representation of all ground water monitoring data with a linear regression to help define any applicable trends that may be apparent in all the monitoring data. Groundwater elevations where data is available are provided in Appendix 5.

Wells GW-N36, GW-N37, and GW-N38

GW-N36 monitors the overburden aquifer, GW-N37 monitors the Dakota coal aquifer, and GW-N38 monitors the underburden aquifer. This cluster of wells represent the groundwater quality up gradient of the mining area.

Summary of the indicator parameters for each well are provided as follows:

GW-N36							
Parameter	Mean	Std dev	Range	Max.	Min.	Max at	Min at
Lab pH	7.4	0.6	3.2	8.5	5.3	2/19/14	6/21/22
Lab Cond. (umhos/cm)	1,385	473	1,480	1,940	406	11/20/07	6/9/20
TDS (mg/l)	1,011	362	1,240	1,600	360	1/10/23	6/9/20
Sulfate (mg/l)	413	111	406	572	166	11/16/16	6/9/20
Calcium (mg/l)	147	52	176	216	40	2/23/11	5/23/18
Iron (mg/l)	0.093	0.084	0.271	0.290	0.019	1/10/23	6/21/21
Manganese (mg/l)	0.11	0.07	0.37	0.40	0.032	8/29/08	5/20/15
Sodium (mg/l)	67	27	83	101	18	2/23/11	6/9/20
Magnesium (mg/l)	69	28	96	112	16	2/23/11	6/9/20

GW-N37							
Parameter	Mean	Std dev	Range	Max.	Min.	Max at	Min at
Lab pH	4.8	0.6	2.5	6.4	3.9	5/18/16	5/15/06
Lab Cond. (umhos/cm)	725	1,069	5,484	5,830	346	9/18/24	7/26/18
TDS (mg/l)	336	79	384	610	226	9/7/22	7/25/17
Sulfate (mg/l)	198	39	143	290	147	9/7/22	7/26/18
Calcium (mg/l)	47	13	60	90	30	9/7/22	7/26/18
Iron (mg/l)	0.042	0.028	0.071	0.098	0.027	9/7/22	6/21/22
Manganese (mg/l)	0.03	0.01	0.05	0.06	0.012	5/18/16	6/21/22
Sodium (mg/l)	18	3	11	25	14	9/7/22	5/20/15
Magnesium (mg/l)	19	5	21	32	11	9/7/22	7/26/18

GW-N38							
Parameter	Mean	Std dev	Range	Max.	Min.	Max at	Min at
Lab pH	8.0	0.1	0.3	8.1	7.8	8/25/08	6/24/19
Lab Cond. (umhos/cm)	1,261	191	475	1,410	935	6/24/19	5/13/11
TDS (mg/l)	933	191	525	1,160	525	6/24/19	5/23/11
Sulfate (mg/l)	406	79	202	472	270	6/24/19	5/18/11
Calcium (mg/l)	268	47	118	308	190	8/17/09	5/16/11
Iron (mg/l)	0	0	0	0	0	NA	NA
Manganese (mg/l)	0.0065	0.009	0.0201	0.0226	0.0025	6/24/19	8/29/08
Sodium (mg/l)	14	7	17	24	8	6/24/19	5/16/11
Magnesium (mg/l)	18	3	8	23	15	6/24/19	5/16/11

A review of the water year for this series of wells indicates one maximum occurred at GW-N37 for laboratory conductivity. GW-38 was dry all water year. These three wells are not influenced by the mining and reclamation activities at New Horizon and express the up-gradient condition above mining.

Wells GW-N44, GW-N45, and GW-N46

GW-N44 monitors the overburden aquifer, GW-N45 monitors the Dakota coal aquifer, and GW-N46 monitors the underburden aquifer. This cluster of wells monitors the groundwater quality down gradient of the mining area.

Summary of the indicator parameters for each well are provided as follows:

GW-N44							
Parameter	Mean	Std dev	Range	Max.	Min.	Max at	Min at
Lab pH	7.9	0.3	1.9	8.6	6.7	2/18/14	6/1/03
Lab Cond. (umhos/cm)	2,958	1,552	11,386	12,300	914	6/6/17	12/7/20
TDS (mg/l)	2,765	1,751	12,400	13,800	1,400	6/6/17	6/1/22
Sulfate (mg/l)	1,718	1,264	8,800	9,510	710	6/6/17	12/1/22
Calcium (mg/l)	357	79	362	514	152	3/13/02	6/6/17
Iron (mg/l)	0.017	0.021	0.088	0.095	0.007	4/24/24	12/7/20
Manganese (mg/l)	0.35	0.62	4.51	4.51	0.0006	2/27/18	6/23/21
Sodium (mg/l)	143	176	1,324	1,350	26	6/6/17	1/25/24
Magnesium (mg/l)	239	235	1,892	1,970	79	6/6/17	3/16/20

GW-N45							
Parameter	Mean	Std dev	Range	Max.	Min.	Max at	Min at
Lab pH	8.2	0.2	1.7	8.8	7.1	2/19/14	6/1/03
Lab Cond. (umhos/cm)	6,816	3,284	12,840	14,700	1,860	5/20/15	6/6/17
TDS (mg/l)	6,827	4,907	17,140	18,600	1,460	11/14/12	6/6/17
Sulfate (mg/l)	4,037	3,703	13,030	13,400	370	8/17/15	12/28/01
Calcium (mg/l)	95	66	288	307	19	11/14/12	12/1/21
Iron (mg/l)	0.1	0.175	0.687	0.700	.013	12/10/20	11/2/23
Manganese (mg/l)	0.38	0.57	1.92	1.92	0.003	3/14/17	6/6/17
Sodium (mg/l)	1,014	257	1,479	1,520	41	11/14/12	6/6/17
Magnesium (mg/l)	742	803	2,734	2,800	66	11/14/12	3/13/02

GW-N46							
Parameter	Mean	Std dev	Range	Max.	Min.	Max at	Min at
Lab pH	8.5	0.3	2.3	9.0	6.7	5/17/23	6/1/03
Lab Cond. (umhos/cm)	3,131	226	1,340	3,580	2,240	2/17/06	12/10/20
TDS (mg/l)	2,148	128	740	2,540	1,00	7/19/05	4/24/24
Sulfate (mg/l)	707	136	600	860	260	1/9/02	9/18/24
Calcium (mg/l)	14	28	259	264	5	6/4/05	5/17/23
Iron (mg/l)	0.032	0.027	0.109	0.116	0.007	6/1/22	11/2/23
Manganese (mg/l)	0.02	0.03	0.16	0.16	0.003	6/29/21	2/10/15
Sodium (mg/l)	741	46	216	833	617	3/9/05	2/9/16
Magnesium (mg/l)	8	3	26	30	4	6/4/05	7/19/23

A review of the water year for this series of wells down gradient to the mining and reclamation areas indicates one maximum value for iron occurred at GW-N44 and one minimum value for sodium. At GW-N45 one minimum value for iron occurred. Finally, at GW-46, three minimum values for TDS, sulfate, and iron occurred.

Groundwater Data Interpretation

The graphs in Appendix 4 provides the indicator parameters in comparison with the up-gradient and down-gradient locations with the overburden aquifer, coal aquifer, and underburden aquifer compared accordingly.

Overburden Aquifer

When comparing the up gradient (GW-N36) and down gradient (GW-N44) wells for the overburden aquifer, G-N44 tends to historically trend higher for the indicator parameters with the exceptions of iron, manganese, and sodium. The up-gradient conditions for the indicator parameters trend in a consistent manner with seasonal influences from local irrigation readily apparent in the data. The down gradient conditions are all trending downward and indicate water quality is stabilizing downgradient of mining and reclamation areas on Tuttle Draw.

Coal Aquifer

When comparing the up gradient (GW-N37) and down gradient (GW-N45) wells for the coal aquifer, GW-N37 historically trends lower for all the indicator parameters. Further, the data indicates that the coal aquifer up gradient of mining and reclamation trends in a stable manner. Data obtained from GW-45 historically trends higher than the up-gradient condition. All of the indicator parameters for GW-45 are trending upward; however, sampling results for the past twelve quarters of sampling (with the exception of pH and iron) are showing a significant downward trend. This indicates that impacts from mining and reclamation on the down gradient coal aquifer are stabilizing out. Seasonal influences from local irrigation are not apparent in the data obtained from either well.

Underburden Aquifer

When comparing the up gradient (GW-N38) and down gradient (GW-N46) wells for the underburden aquifer, G-N38 historically tends to be dry thus the data evaluation is limited. Data obtained from GW-46 reveals for that all the indicator parameters are stable with a few outliers of high analytical results. Seasonal influences from local irrigation are not apparent in the data obtained from either well.

Groundwater Elevations

Groundwater elevations from all the wells are presented in Appendix 5. Data for GW-N36 and GW-N44 indicates a stable static water levels with noticeable seasonal influences from irrigation. GW-N37 (when water is available) and GW-N45 also indicated a stable water level in the Dakota Aquifer. More variability is present in underburden aquifer as shown for GW-N46, especially in the years when mining occurred. Overall, since reclamation has occurred water levels in the underburden aquifer (GW-N46) are stabilizing.

Appendix 1
Surface Water Monitoring Data

New Horizon Mine

Analysis Results by Date (column) and Parameter (row)

Date Range: 10/01/2023 to 09/30/2024

Site: SW-N1

	10/23/2023	1/23/2024	4/2/2024	7/30/2024
Al, tot rec, ug/L	70	89	200	1840
As, tot rec, ug/L	0.88	0.66	0.57	1.5
Ca, diss, mg/L	170	180	81	73
Cd, tot rec, ug/L	<0.050	<0.050	<0.050	0.17
Cl, diss, mg/L	15	19	8.6	3.7
Cu, diss, mg/L	<0.00080	<0.00080	0.0011	0.0011
Fe, tot rec, ug/L	340	360	130	550
HCO3, mg/L	400	390	150	120
Hg, tot, mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Mg, diss, mg/L	86	110	20	11
Mn, diss, mg/L	0.048	0.14	0.024	<0.010
Na, diss, mg/L	34	42	12	6.5
NH3 as N, diss, mg/L	<0.10	0.1	<0.10	<0.10
NO2 + NO3, diss, mg/L	<0.020	0.02	<0.020	0.022
PO4, tot, mg/L	<0.030	0.03	<0.030	0.037
Pb, tot rec, ug/L	0.32	0.2	0.49	4.7
pH (field), pH	8.2	8.2	8.2	8.4
pH (lab), pH	8.4	8.1	7.9	6.5
SAR, ratio	0.54	0.62	0.31	0.19
Se, diss, mg/L	0.0002	0.00047	0.00066	0.00039
SO4, diss, mg/L	430	580	150	120
Spec. Cond. (field)	1330	831	569	458
Spec. Cond. (lab)	1410	1520	529	477
TDS, mg/L	1100	1100	390	330
TSS, mg/L	11	5	6	47
Zn, tot rec, ug/L	<20	<20	<20	23

New Horizon Mine
Analysis Results by Date (column) and Parameter (row)

Date Range: 10/01/2023 to 09/30/2024

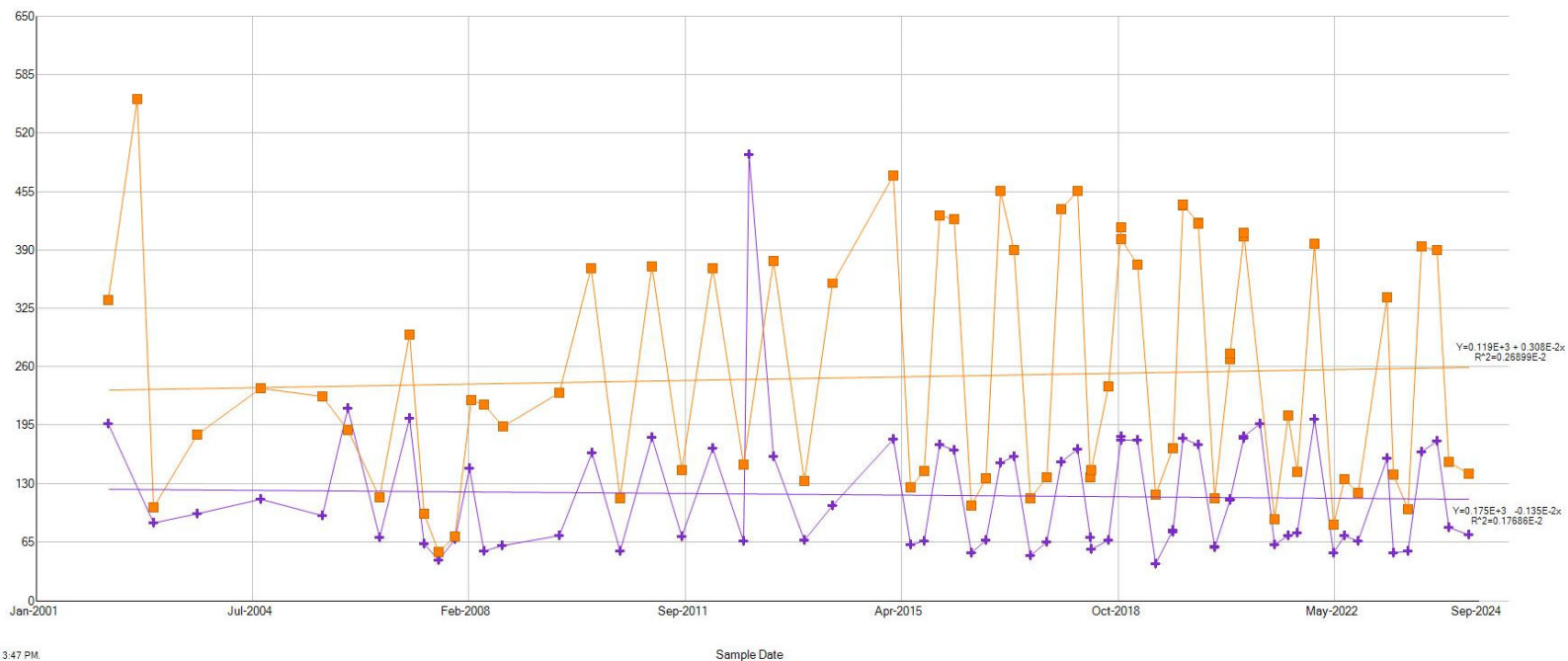
Site: SW-N3

	10/23/2023	1/23/2024	4/2/2024	7/30/2024
Al, tot rec, ug/L	120	180	200	1790
As, tot rec, ug/L	0.79	0.75	0.53	1.4
Ca, diss, mg/L	390	390	150	140
Cd, tot rec, ug/L	<0.10	0.1	<0.050	0.19
Cl, diss, mg/L	16	17	11	6.4
Cu, diss, mg/L	<0.0016	<0.0016	<0.00080	<0.00080
Fe, tot rec, ug/L	550	750	240	650
HCO3, mg/L	460	450	210	200
Hg, tot, mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Mg, diss, mg/L	180	180	58	47
Mn, diss, mg/L	0.56	0.75	0.15	0.068
Na, diss, mg/L	88	87	31	24
NH3 as N, diss, mg/L	1.1	1.1	<0.10	<0.10
NO2 + NO3, diss, mg/L	0.1	0.18	0.042	0.043
PO4, tot, mg/L	<0.030	<0.030	<0.030	0.037
Pb, tot rec, ug/L	0.24	0.2	0.37	4.7
pH (field), pH	7.3	7.7	7.9	7.8
pH (lab), pH	8.2	7.9	8	6.6
SAR, ratio	0.94	0.93	0.54	0.46
Se, diss, mg/L	<0.00020	0.00039	0.00038	0.00035
SO4, diss, mg/L	1500	1500	460	400
Spec. Cond. (field)	2791	1782	1163	1010
Spec. Cond. (lab)	2860	2720	1150	1060
TDS, mg/L	2600	2400	860	810
TSS, mg/L	5	7	<5.0	54
Zn, tot rec, ug/L	<40	<40	<20	21

Appendix 2
Surface Water Monitoring Graphs

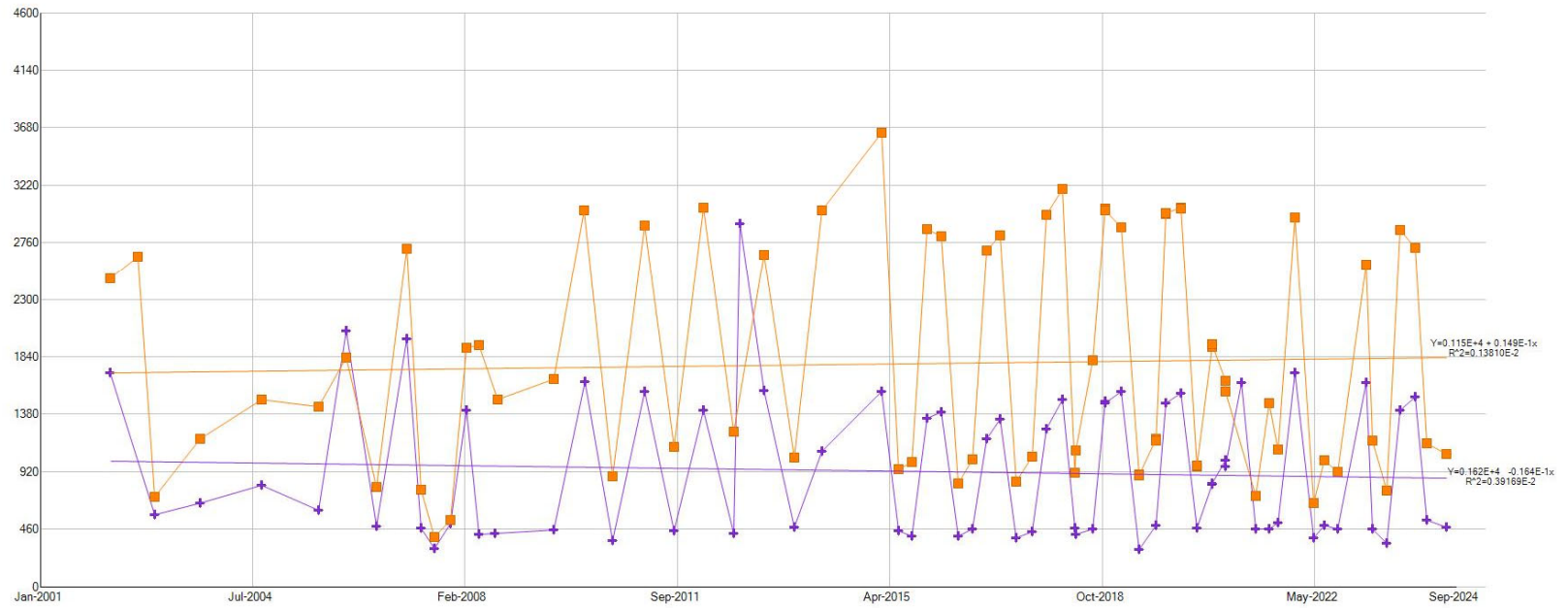
Calcium, dissolved (mg/L)

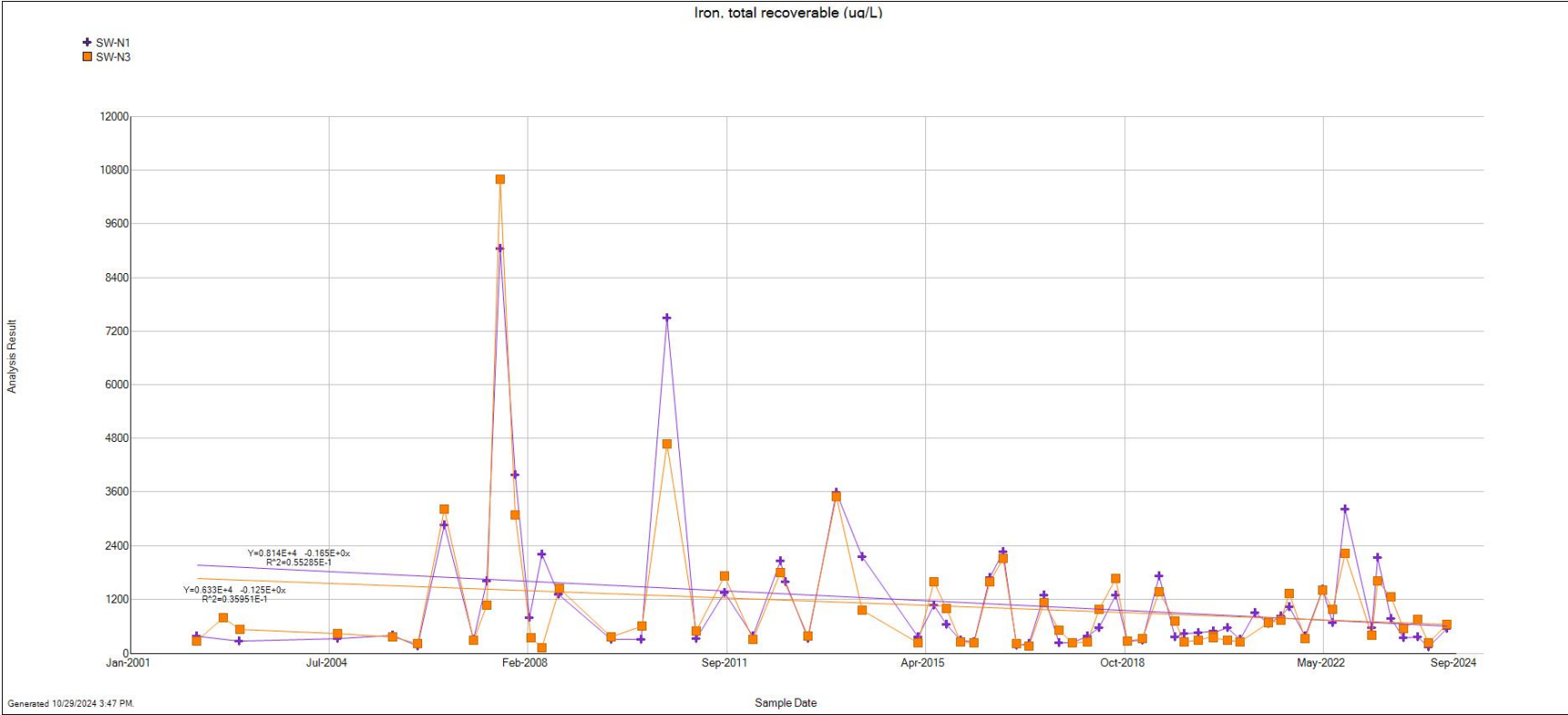
+ SW-N1
 ■ SW-N3



Specific Conductance @ 25C (lab) (umhos/cm)

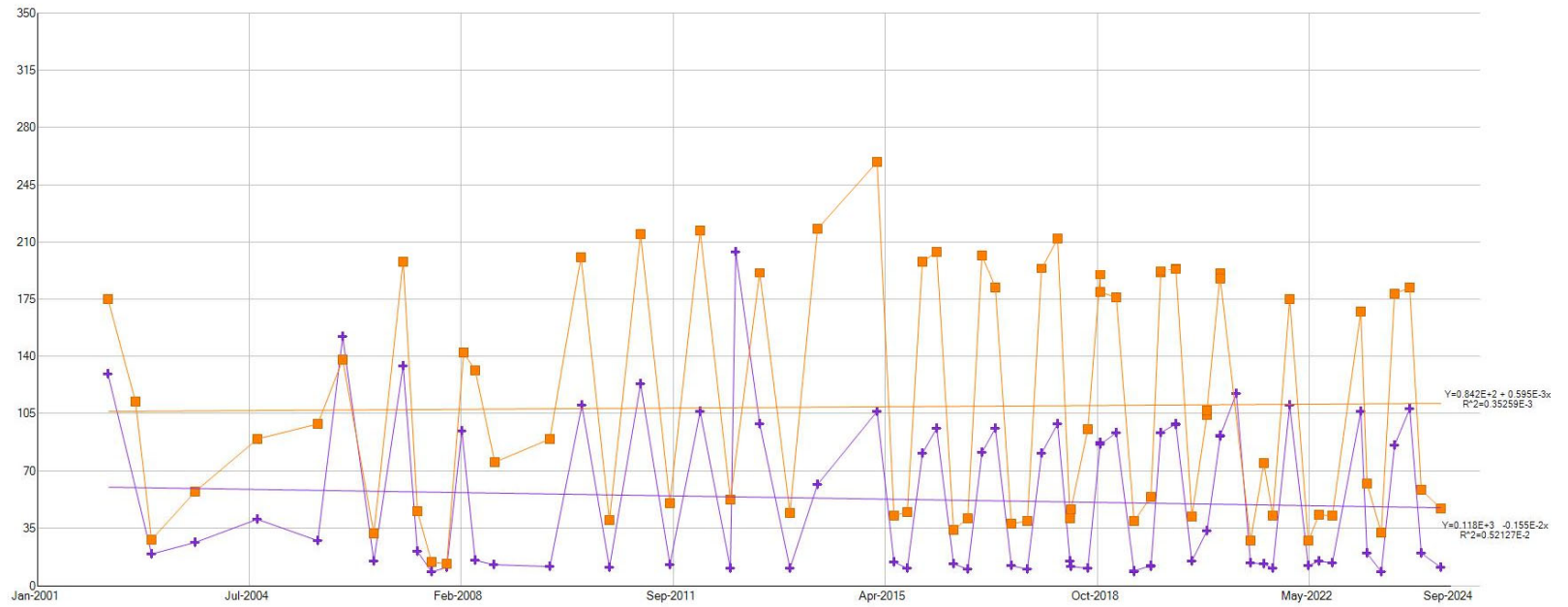
✦ SW-N1
■ SW-N3

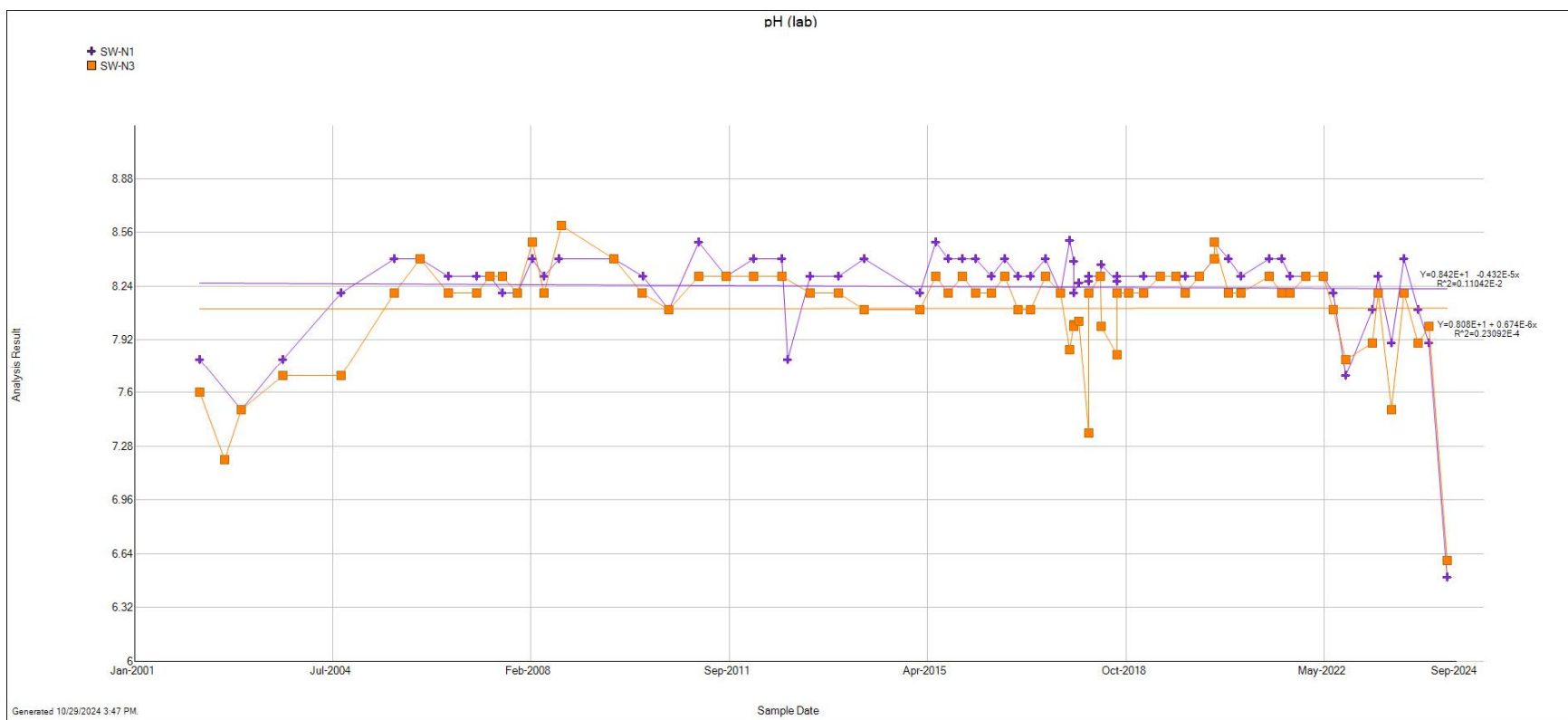


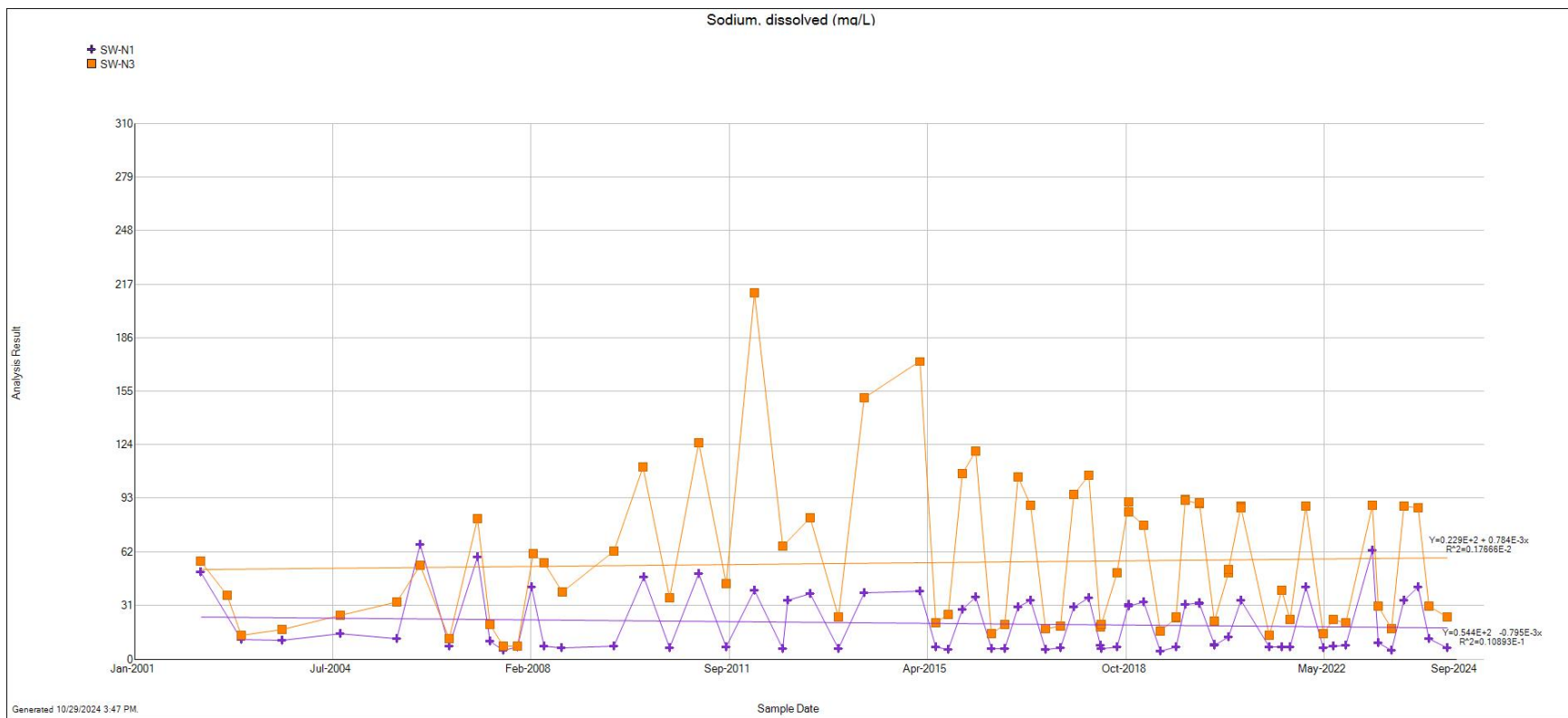


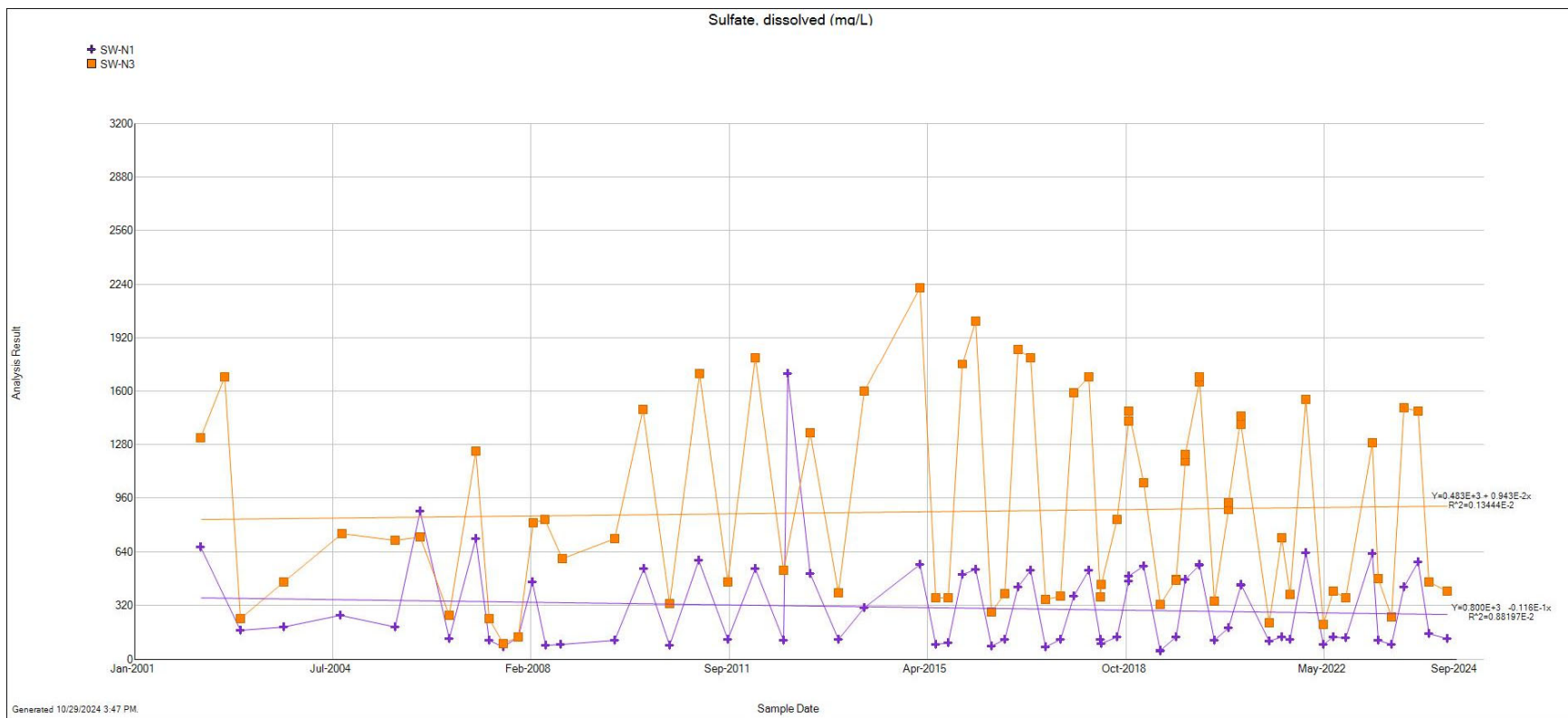
Magnesium, dissolved (mg/L)

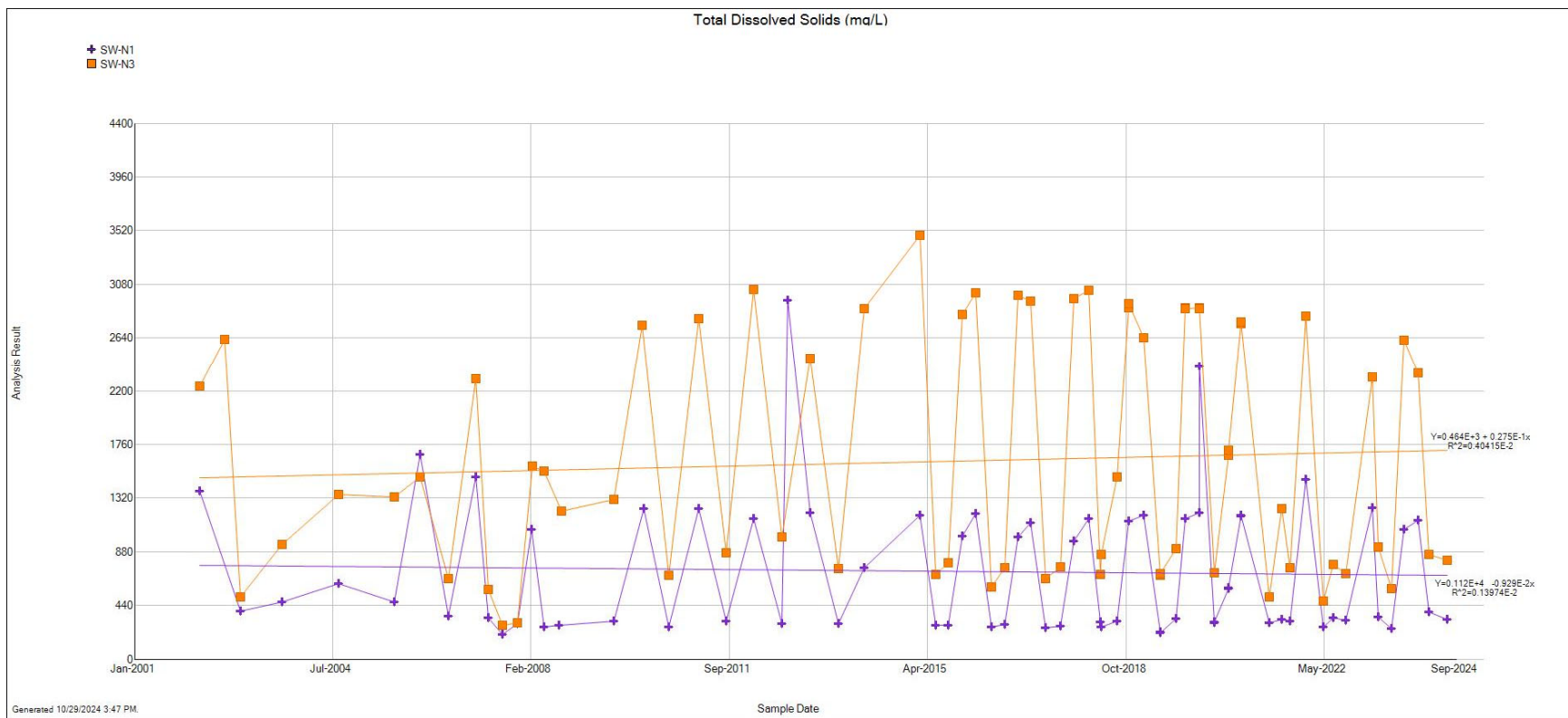
✦ SW-N1
■ SW-N3











Appendix 3
Groundwater Monitoring Data

New Horizon Mine

Analysis Results by Date (column) and Parameter (row)

Date Range: 10/01/2023 to 09/30/2024

Well: GW-N36

	11/1/2023	1/25/2024	5/6/2024	9/18/2024
Al, diss, mg/L	0.0055	0.024	0.012	0.2
Alkalinity, lab, mg/L	490	590	620	87
As, diss, mg/L	<0.00020	0.00021	<0.00020	<0.00020
Ca, diss, mg/L	180	170	180	69
Cation-Anion Bal, %	0	-9.5	-6.4	3.6
Cl, diss, mg/L	30	29	28	12
CO3, mg/L	<2.0	<2.0	<2.0	<2.0
Fe, diss, mg/L	0.035	0.08	0.057	0.14
HCO3, mg/L	490	590	620	87
Hg, diss, mg/L	<0.00020	<0.00020	<0.00020	<0.00020
K, diss, mg/L	28	27	32	7.8
Mg, diss, mg/L	82	79	94	28
Mn, diss, mg/L	0.16	0.1	0.06	0.088
Mo, diss, mg/L	<0.020	<0.020	<0.020	<0.020
Na, diss, mg/L	83	80	92	28
NH3 as N, diss, mg/L	0.86	0.87	0.96	0.13
NO2, diss, mg/L	0.011	<0.010	<0.010	<0.010
NO3, diss, mg/L	0.13	0.23	0.14	0.26
Orthophosphate, diss, mg/l	0.05	0.04	0.04	0.034
Pb, diss, mg/L	<0.00010	<0.00010	0.00017	0.00032
pH (field), pH	6.9	7	6.9	6.5
pH (lab), pH	7.7	7.6	7.3	6.2
Se, diss, mg/L	<0.00010	<0.00010	<0.00010	0.0016
SO4, diss, mg/L	450	480	550	220
Spec. Cond. (field), umhos/cm	1626	1756	1858	712
Spec. Cond. (lab), umhos/cm	1660	1740	1380	695
TDS, mg/L	1300	1400	1400	490
Temp (Celcius), degrees C	11.2	11.7	13.9	14.1
Zinc, diss, mg/l	0.035	0.025	0.04	0.072

New Horizon Mine**Analysis Results by Date (column) and Parameter (row)****Date Range: 10/01/2023 to 09/30/2024****Well: GW-N37**

	11/1/2023	1/25/2024	5/6/2024	9/18/2024
Al, diss, mg/L	Dry	Dry	Dry	0.95
Alkalinity, lab, mg/L				<2.0
As, diss, mg/L				0.0002
Ca, diss, mg/L				44
Cation-Anion Bal, %				3.4
Cl, diss, mg/L				9.4
CO3, mg/L				<2.0
Fe, diss, mg/L				0.036
HCO3, mg/L				<2.0
Hg, diss, mg/L				<0.00020
K, diss, mg/L				1.8
Mg, diss, mg/L				17
Mn, diss, mg/L				0.024
Mo, diss, mg/L				<0.020
Na, diss, mg/L				16
NH3 as N, diss, mg/L				<0.10
NO2, diss, mg/L				<0.010
NO3, diss, mg/L				0.27
Orthophosphate, diss, mg/l				0.034
Pb, diss, mg/L				0.0012
pH (field), pH				4.1
pH (lab), pH				4.6
Se, diss, mg/L				0.0025
SO4, diss, mg/L				180
Spec. Cond. (field),				476
Spec. Cond. (lab), umhos/cm				5830
TDS, mg/L				370
Temp (Celcius), degrees C				14.3
Zinc, diss, mg/l				0.049

New Horizon Mine
Analysis Results by Date (column) and Parameter (row)
Date Range: 10/01/2023 to 09/30/2024
Well: GW-N38

	11/1/2023	1/25/2024	5/6/2024	9/18/2024
Al, diss, mg/L	Dry	Dry	Dry	Dry
Alkalinity, lab, mg/L				
As, TD, mg/L				
Ca, diss, mg/L				
Cation-Anion Bal, %				
Cl, diss, mg/L				
CO3, mg/L				
Fe, diss, mg/L				
Fe, tot rec, ug/L				
HCO3, mg/L				
Hg, diss, mg/L				
K, diss, mg/L				
Mg, diss, mg/L				
Mn, TD, mg/L				
Mo, diss, mg/L				
Na, diss, mg/L				
NH3 as N, diss, mg/L				
NO2 + NO3, diss, mg/L				
NO2, diss, mg/L				
NO3, diss, mg/L				
pH (field), pH				
pH (lab), pH				
Se, TD, mg/L				
SO4, diss, mg/L				
Spec. Cond. (field), umhos/cm				
Spec. Cond. (lab), umhos/cm				
TDS, mg/L				
Temp (Celcius), degrees C				
Temp (Celcius), degrees C				
Zn, TD, mg/L				

New Horizon Mine**Analysis Results by Date (column) and Parameter (row)****Date Range: 10/01/2023 to 09/30/2024****Well: GW-N44**

	11/2/2023	1/25/2024	4/24/2024	9/18/2024
Al, diss, mg/L	0.013	0.009	0.02	0.0074
Alkalinity, lab, mg/L	380	360	370	400
As, diss, mg/L	<0.00020	0.00025	<0.0	0.00025
Ca, diss, mg/L	280	270	320	320
Cation-Anion Bal, %	-2.1	-4.3	0	0
Cl, diss, mg/L	11	8.1	9.3	6.9
CO3, mg/L	<2.0	<2.0	<0.0	<2.0
Fe, diss, mg/L	<0.0070	0.011	0.095	0.015
HCO3, mg/L	380	360	370	400
Hg, diss, mg/L	<0.00020	<0.00020	<0.0	<0.00020
K, diss, mg/L	1.9	1.7	1.9	2
Mg, diss, mg/L	88	82	100	130
Mn, diss, mg/L	<0.010	<0.010	0.033	<0.010
Mo, diss, mg/L	<0.020	<0.020	<0.0	<0.020
Na, diss, mg/L	28	26	30	58
NH3 as N, diss, mg/L	<0.10	<0.10	<0.0	<0.10
NO2, diss, mg/L	<0.010	<0.010	<0.0	<0.010
NO3, diss, mg/L	0.22	0.13	0.13	0.16
Orthophosphate, diss, mg/l	<0.030	0.043	<0.0	0.034
Pb, diss, mg/L	0.00036	<0.00010	<0.0	<0.00010
pH (field), pH	7.2	7.3	7.3	7.4
pH (lab), pH	8	7.7	7.6	7.4
Se, diss, mg/L	0.0056	0.0051	0.0039	0.0038
SO4, diss, mg/L	740	800	870	970
Spec. Cond. (field), umhos/cm	1840	1855	1915	1929
Spec. Cond. (lab), umhos/cm	1720	1800	2030	2050
TDS, mg/L	1500	1500	1700	1700
Temp (Celcius), degrees C	8.3	8.8	9.9	10.7
Zinc, diss, mg/l	<0.020	<0.020	0.052	<0.020

New Horizon Mine

Analysis Results by Date (column) and Parameter (row)

Date Range: 10/01/2023 to 09/30/2024

Well: GW-N45

	11/2/2023	1/25/2024	4/24/2024	9/18/2024
Al, diss, mg/L	0.0084	0.02	0.064	0.23
Alkalinity, lab, mg/L	1400	1300	1200	1200
As, diss, mg/L	<0.00020	0.00091	0.0011	0.0017
Ca, diss, mg/L	22	25	32	30
Cation-Anion Bal, %	-5	-6.7	-2.4	0
Cl, diss, mg/L	54	49	50	61
CO3, mg/L	100	110	180	<2.0
Fe, diss, mg/L	0.013	0.11	0.098	0.3
HCO3, mg/L	1300	1200	1100	1200
Hg, diss, mg/L	<0.00020	<0.00020	<0.0	<0.00020
K, diss, mg/L	6.7	7.1	8.4	7.6
Mg, diss, mg/L	170	180	250	200
Mn, diss, mg/L	0.14	0.14	0.19	0.2
Mo, diss, mg/L	<0.020	<0.040	<0.0	<0.020
Na, diss, mg/L	730	740	840	770
NH3 as N, diss, mg/L	1.2	1.2	1.1	1.2
NO2, diss, mg/L	<0.010	<0.010	<0.0	<0.010
NO3, diss, mg/L	<0.020	<0.020	<0.0	<0.020
Orthophosphate, diss, mg/l	0.6	0.33	0.33	0.33
Pb, diss, mg/L	<0.00010	<0.00020	0.00071	0.0017
pH (field), pH	8.1	8	8.1	8
pH (lab), pH	8.6	8.2	8.2	8
Se, diss, mg/L	0.034	0.086	<0.0	0.0011
SO4, diss, mg/L	1100	1300	1800	1200
Spec. Cond. (field), umhos/cm	4165	4359	4436	4050
Spec. Cond. (lab), umhos/cm	3910	4180	4730	4260
TDS, mg/L	2900	3200	3400	3200
Temp (Celcius), degrees C	10.2	9.7	12.4	11.3
Zinc, diss, mg/l	<0.020	<0.040	0.099	<0.020

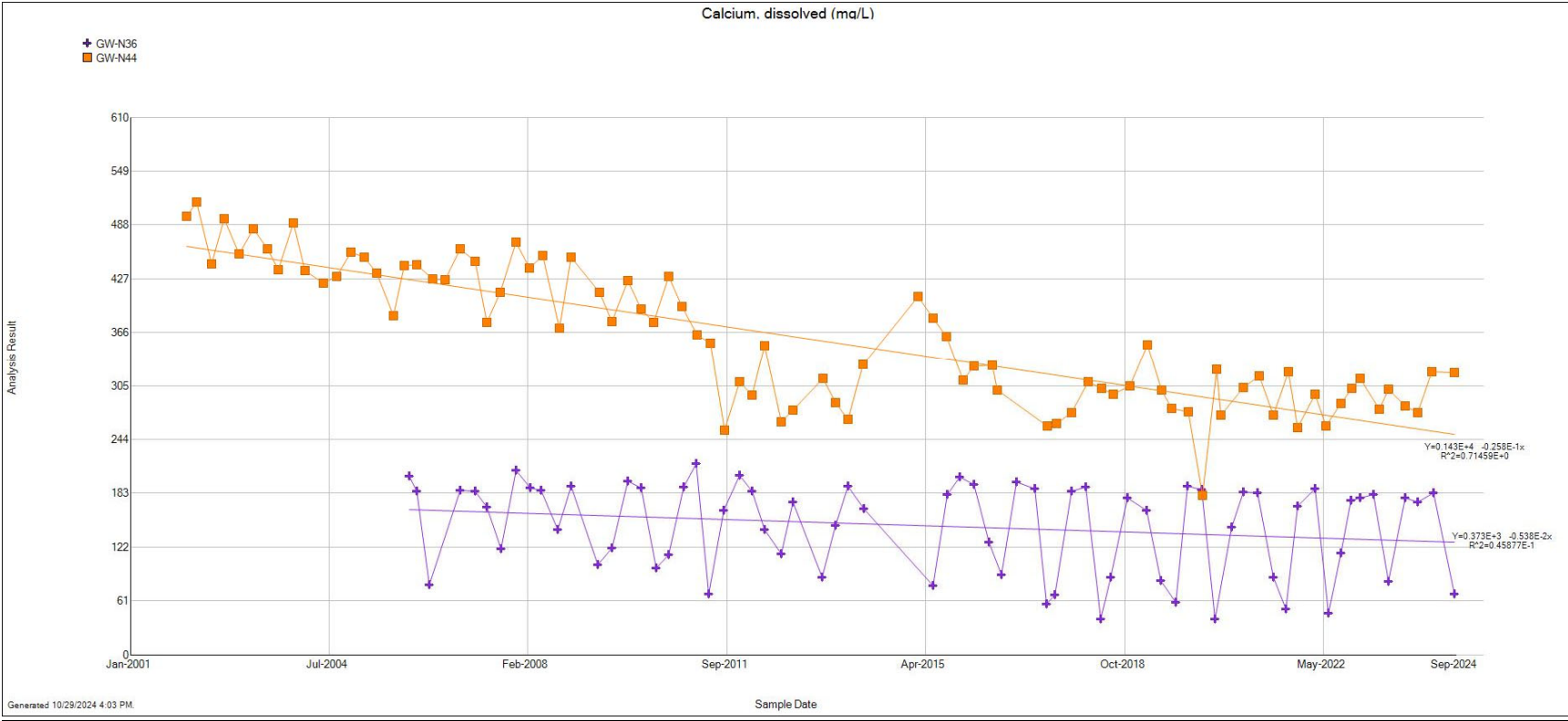
New Horizon Mine
Analysis Results by Date (column) and Parameter (row)

Date Range: 10/01/2023 to 09/30/2024

Well: GW-N46

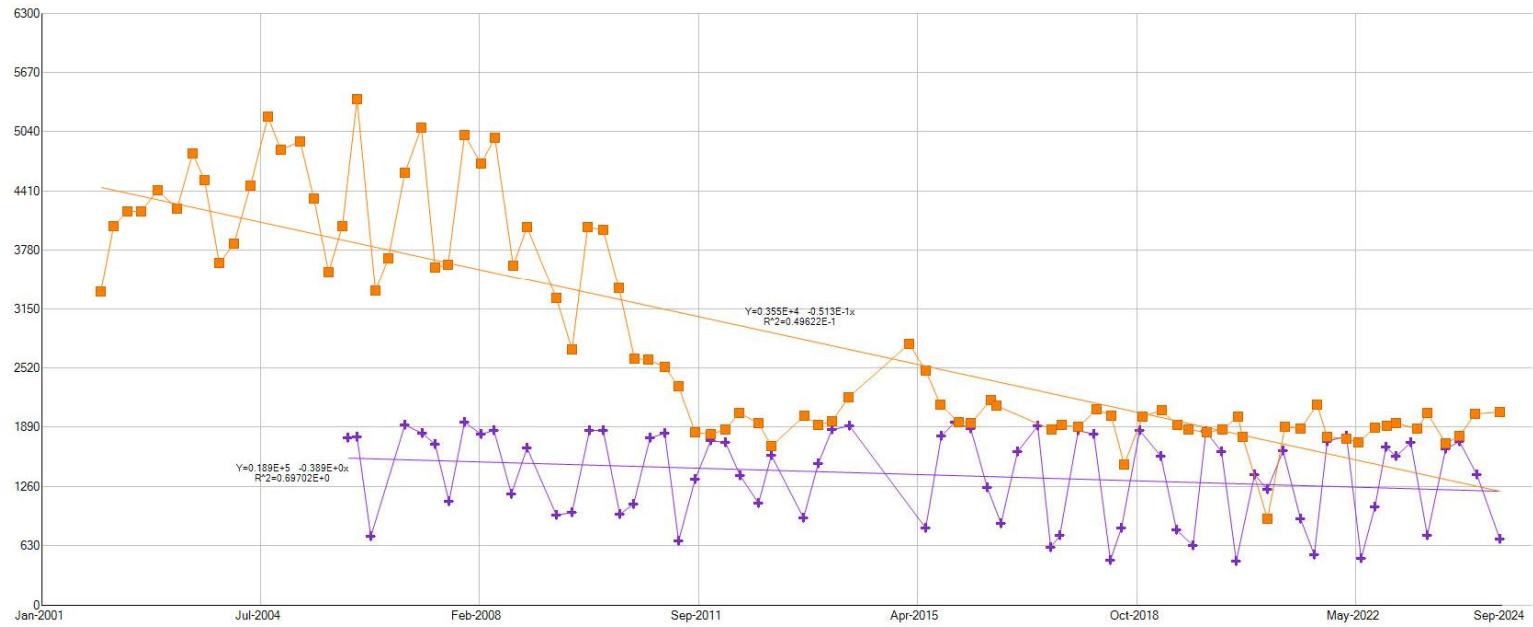
	11/2/2023	1/25/2024	4/24/2024	9/18/2024
Al, diss, mg/L	<0.0050	<0.010	0.0088	0.0088
Alkalinity, lab, mg/L	1400	1300	1200	1200
As, diss, mg/L	<0.00020	<0.00040	<0.0	<0.00020
Ca, diss, mg/L	5.1	4.9	5.4	5.2
Cation-Anion Bal, %	-4.5	-9.1	-4.5	-3.1
Cl, diss, mg/L	87	85	97	87
CO3, mg/L	170	180	340	280
Fe, diss, mg/L	<0.0070	0.017	0.023	0.015
HCO3, mg/L	1200	1200	900	950
Hg, diss, mg/L	<0.00020	<0.00020	<0.0	<0.00020
K, diss, mg/L	6.3	6	6.4	6.2
Mg, diss, mg/L	3.8	3.6	4.1	4
Mn, diss, mg/L	<0.010	<0.010	<0.0	<0.010
Mo, diss, mg/L	<0.020	<0.020	<0.0	<0.020
Na, diss, mg/L	710	660	700	690
NH3 as N, diss, mg/L	1.1	0.97	0.73	0.88
NO2, diss, mg/L	<0.010	<0.010	<0.0	<0.010
NO3, diss, mg/L	<0.020	<0.020	<0.0	<0.020
Orthophosphate, diss, mg/l	0.48	0.49	0.49	0.48
Pb, diss, mg/L	<0.00010	<0.00020	0.00021	0.00019
pH (field), pH	8.6	8.6	8.5	8.5
pH (lab), pH	9	8.7	8.7	8.6
Se, diss, mg/L	0.012	0.027	<0.0	0.0092
SO4, diss, mg/L	260	330	350	260
Spec. Cond. (field), umhos/cm	3010	2916	2808	2070
Spec. Cond. (lab), umhos/cm	2820	2880	3000	2920
TDS, mg/L	1900	1900	1800	1900
Temp (Celcius), degrees C	9.1	9.5	11.9	11.2
Zinc, diss, mg/l	<0.020	<0.020	0.09	<0.020

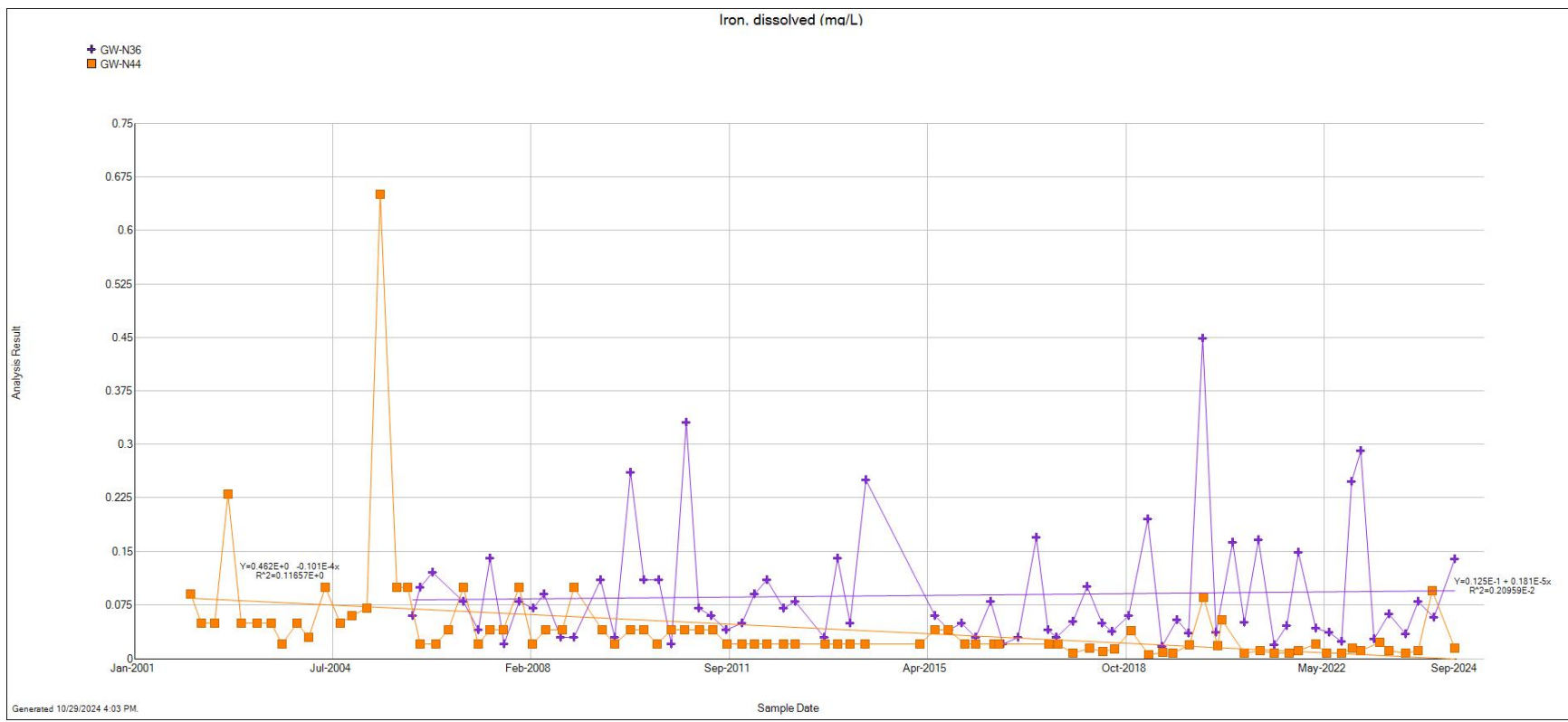
Appendix 4
Groundwater Monitoring Graphs



Specific Conductance @ 25C (lab) (umhos/cm)

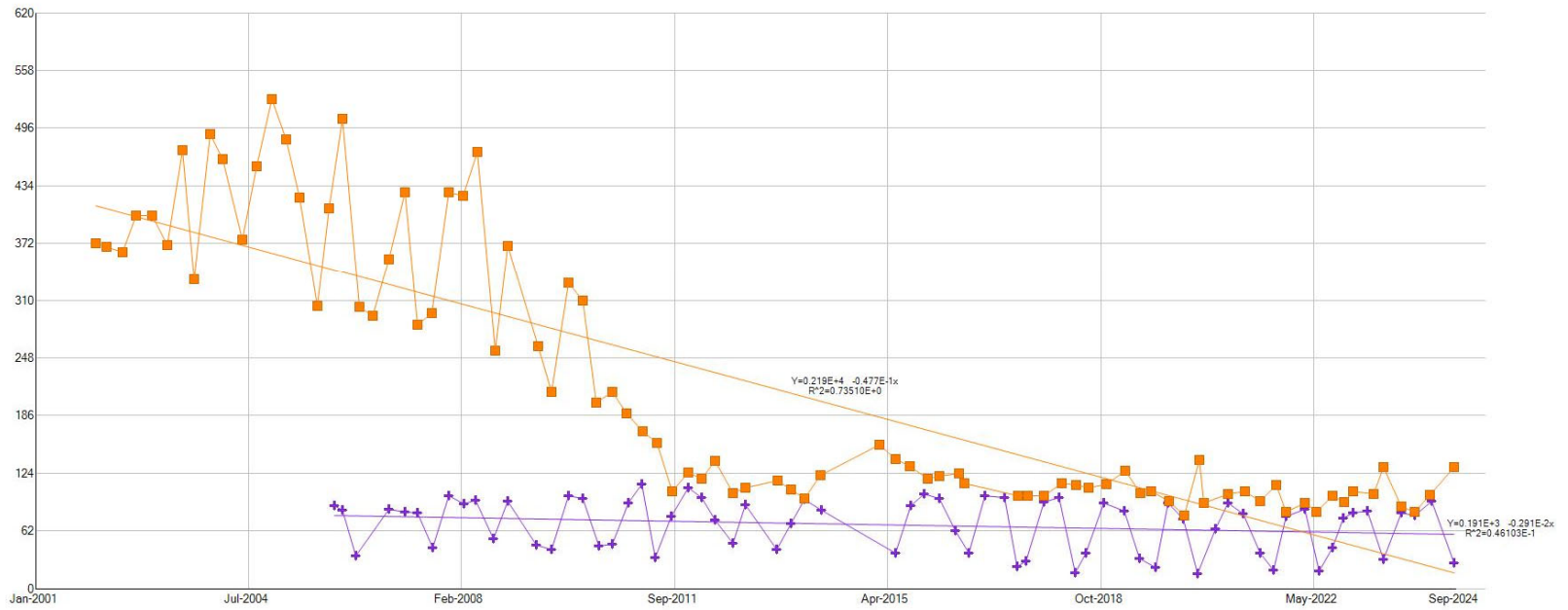
✦ GW-N36
■ GW-N44





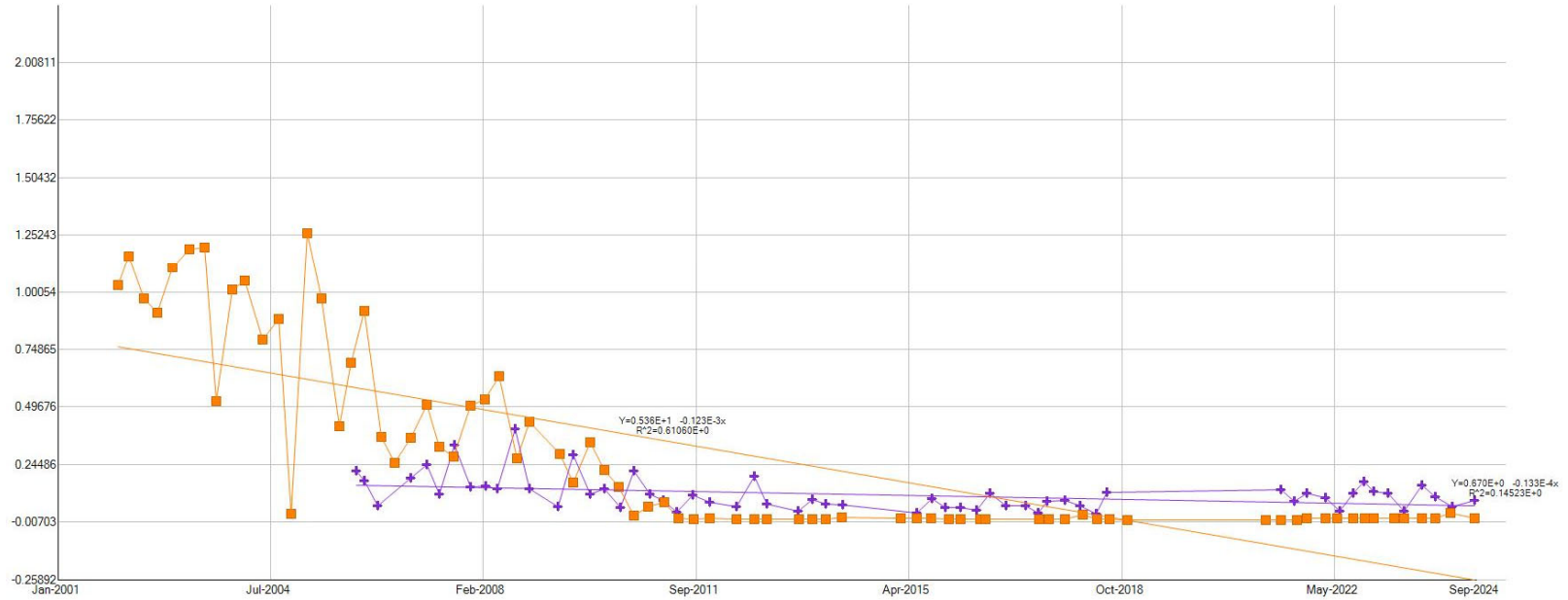
Magnesium, dissolved (mg/L)

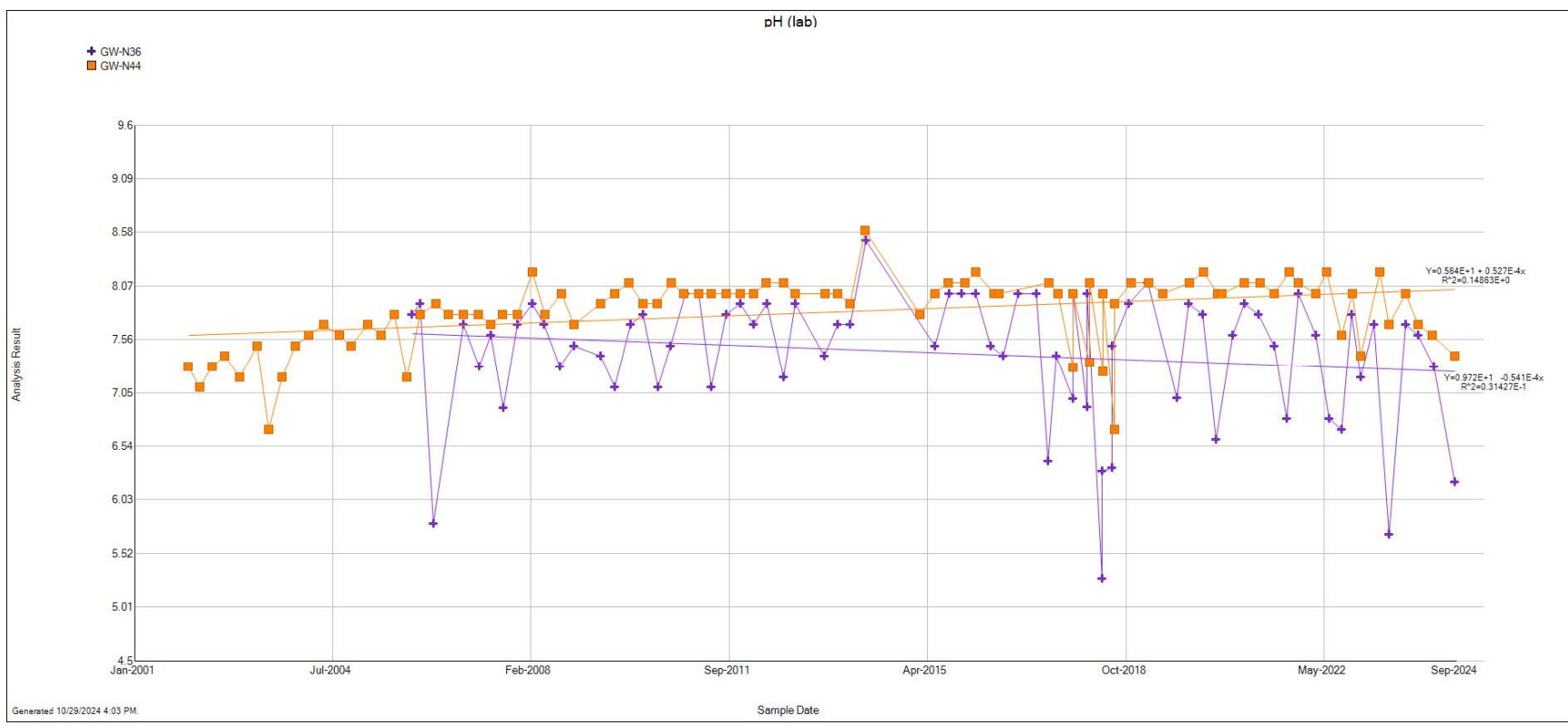
✚ GW-N36
■ GW-N44



Manganese, dissolved (mg/L)

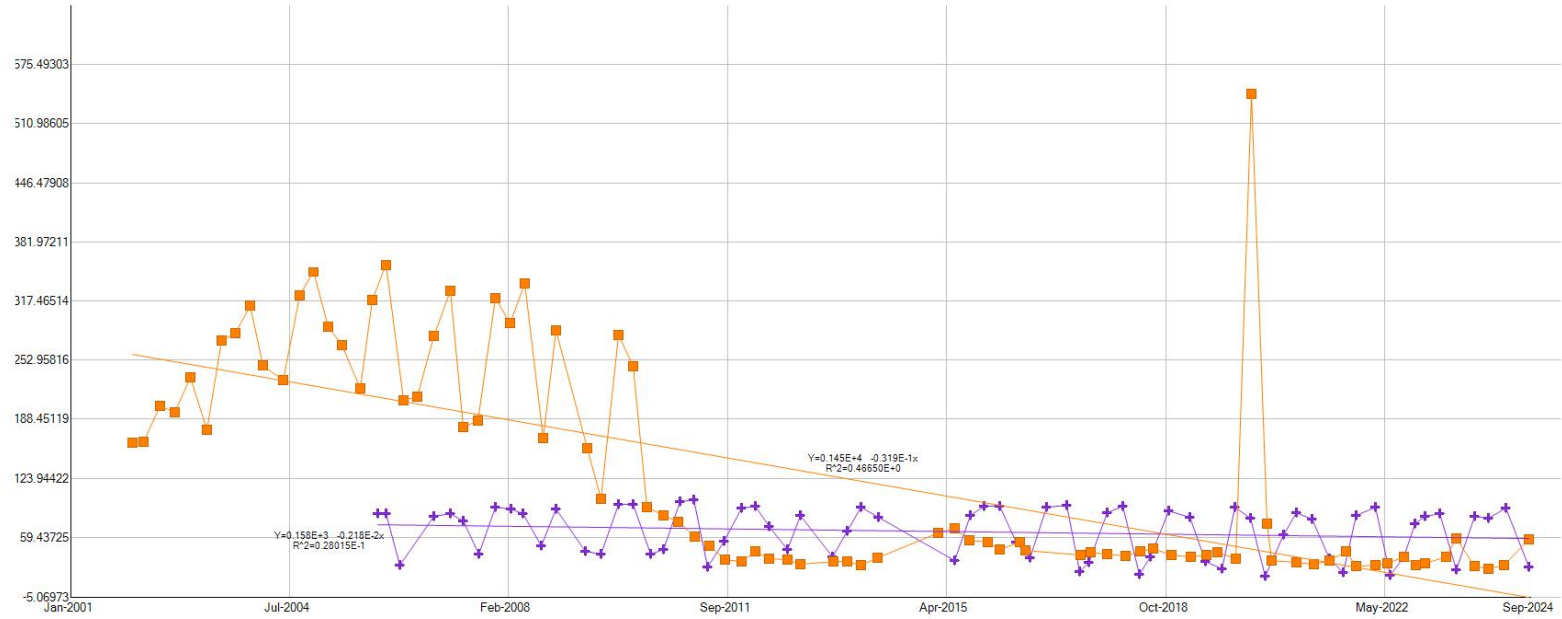
✦ GW-N36
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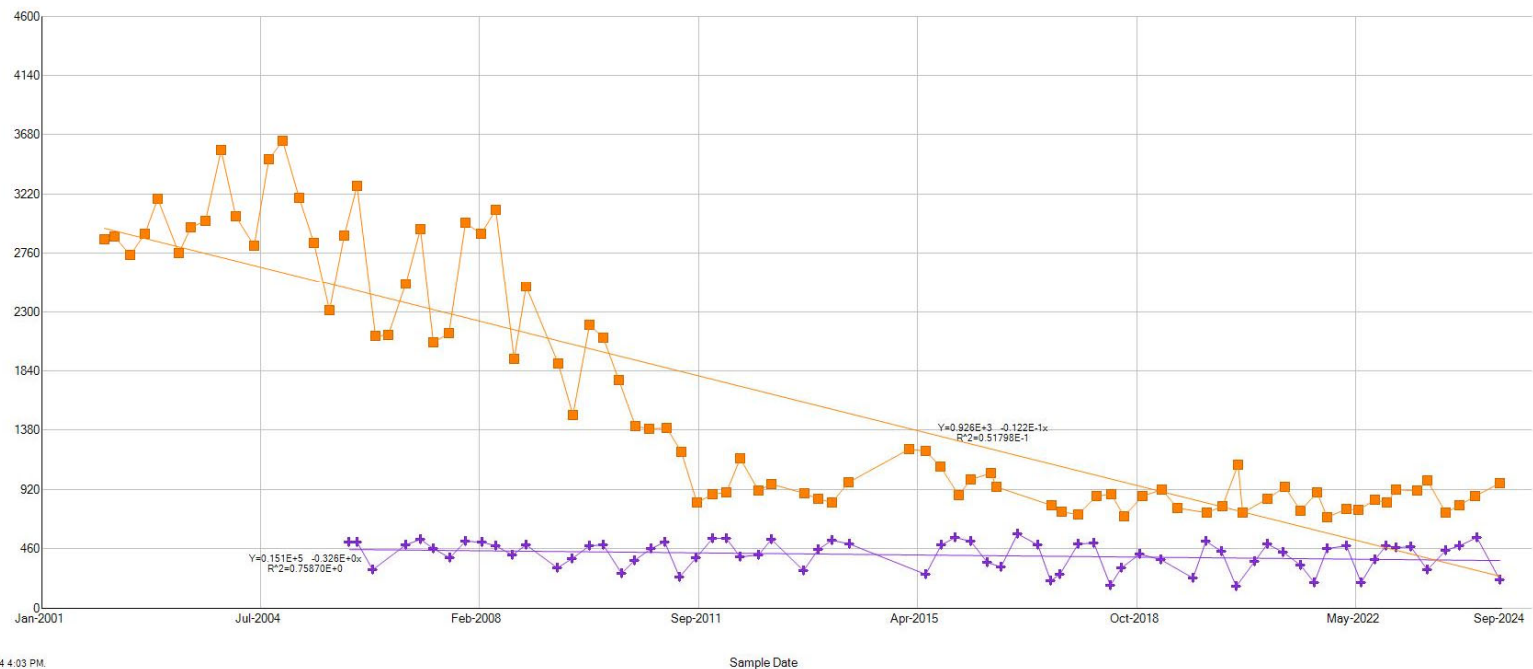
Sodium, dissolved (mg/L)

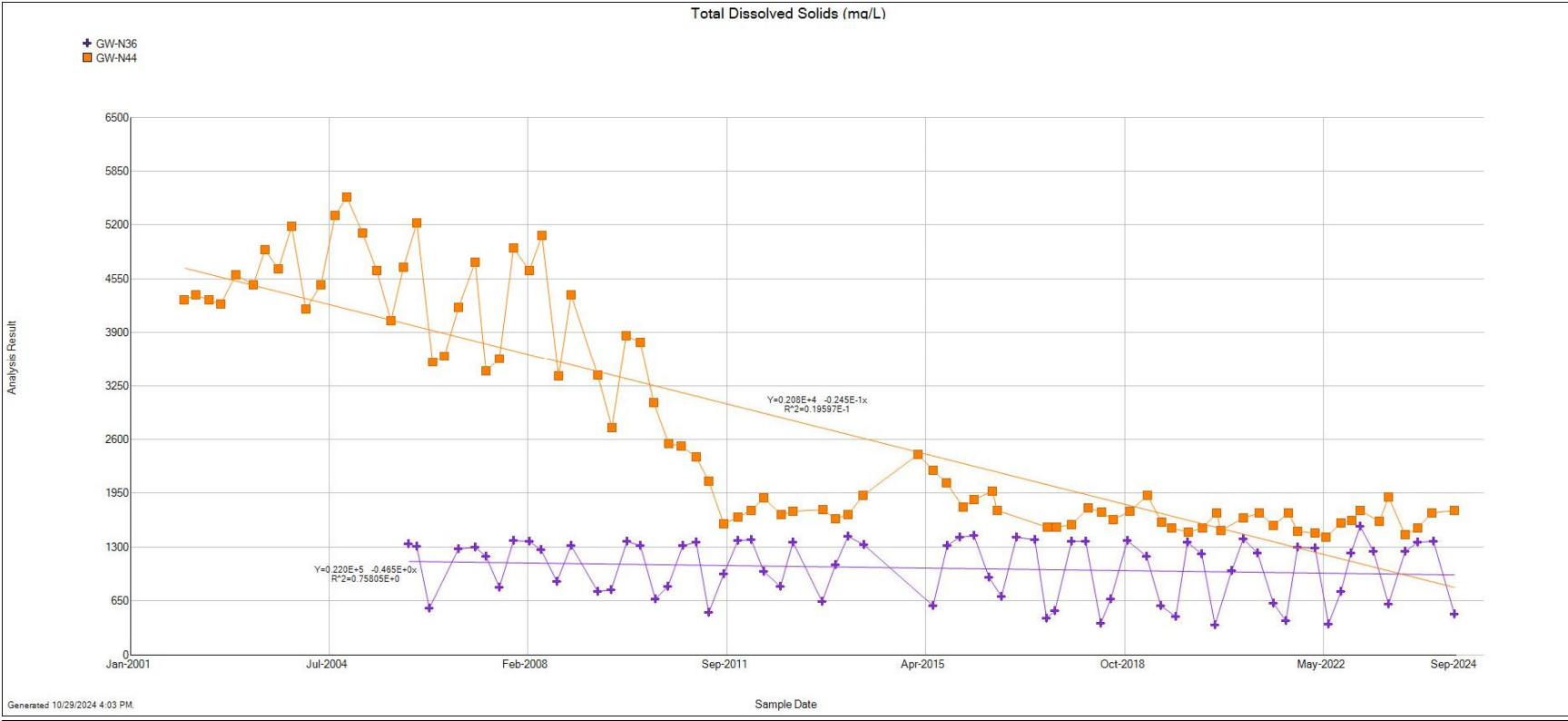
✦ GW-N36
■ GW-N44



Sulfate, dissolved (mg/L)

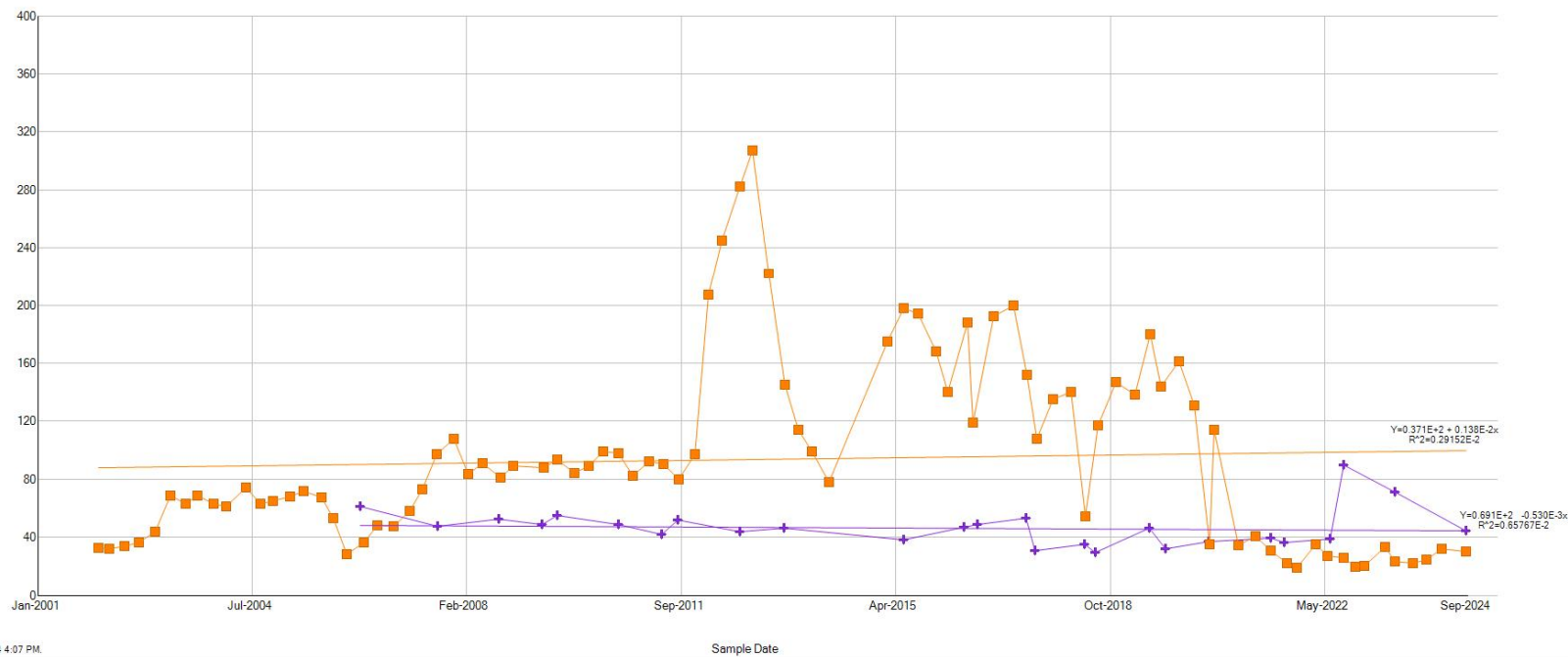
+ GW-N36
 ■ GW-N44





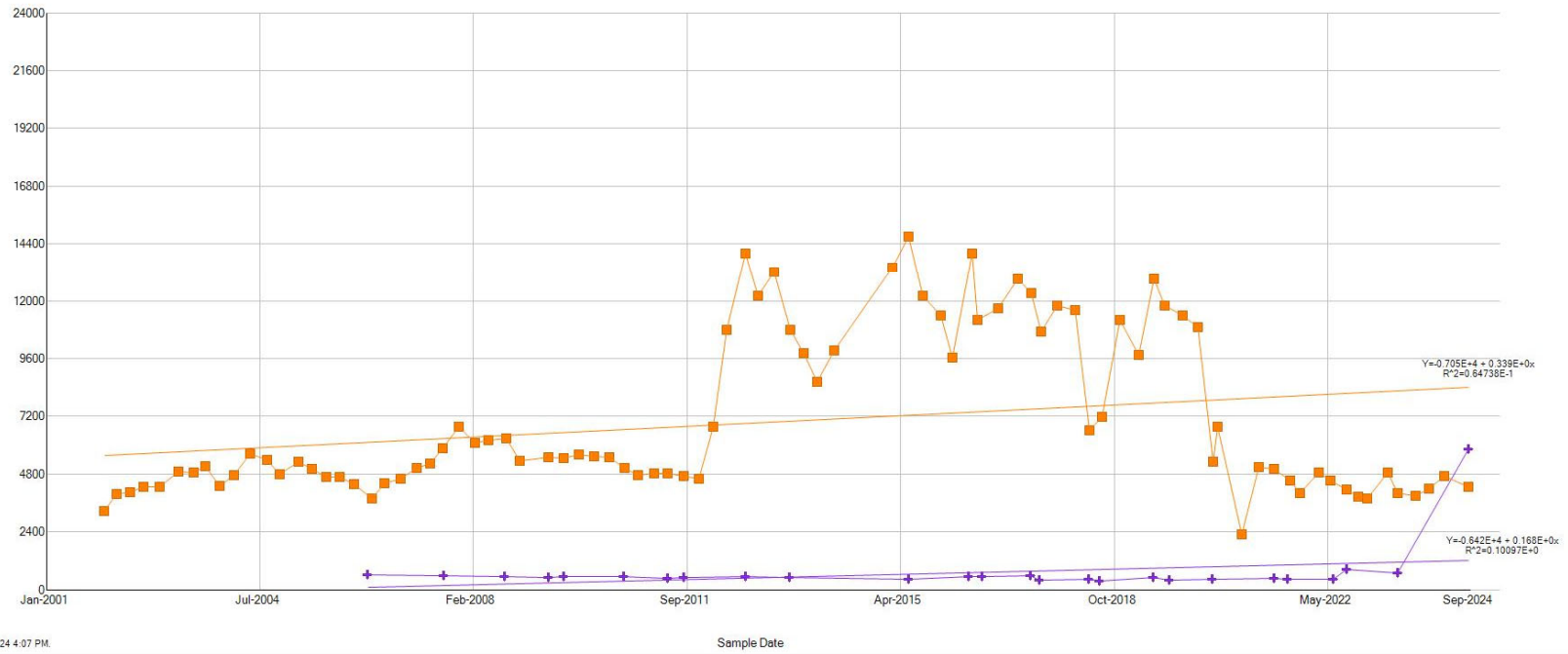
Calcium, dissolved (mg/L)

✦ GW-N37
■ GW-N45

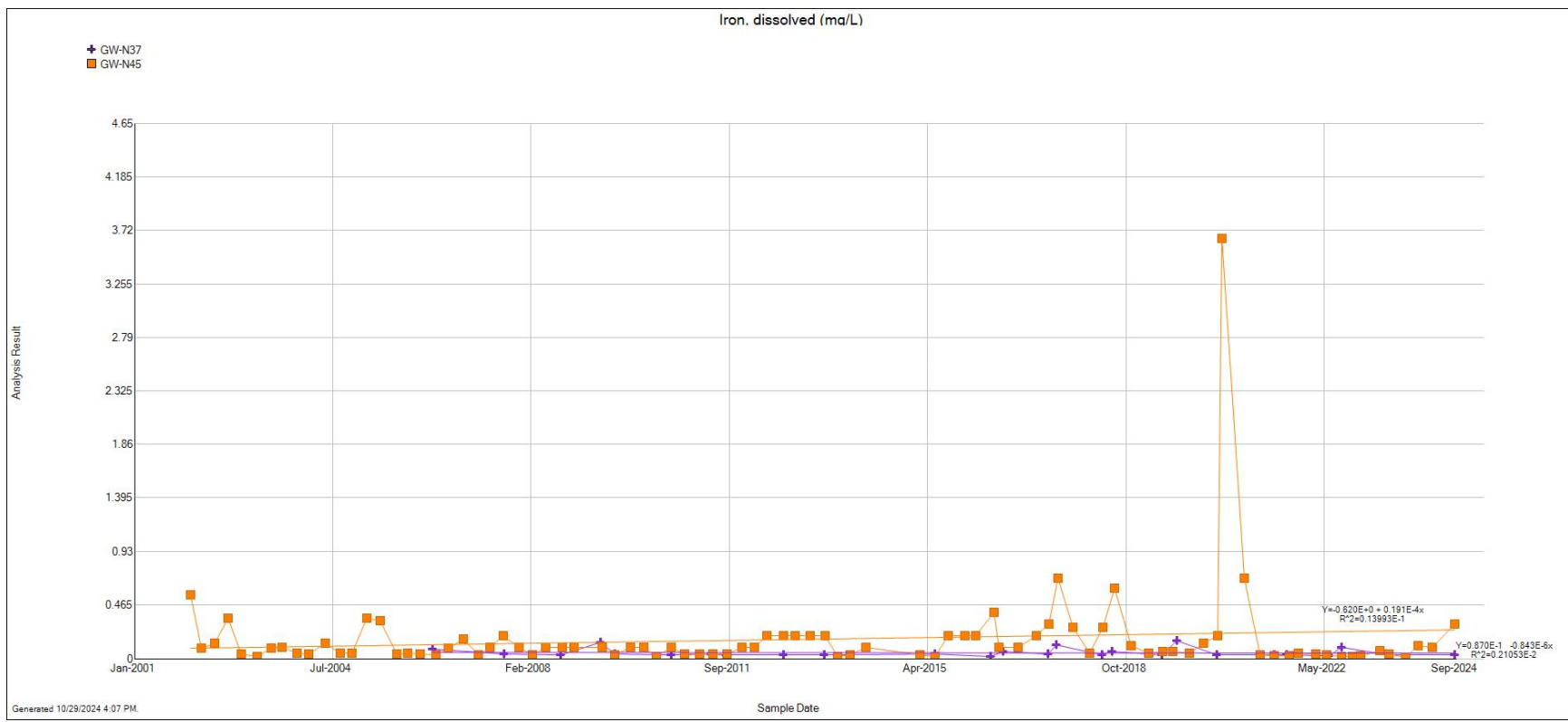


Specific Conductance @ 25C (lab) (umhos/cm)

✚ GW-N37
■ GW-N45

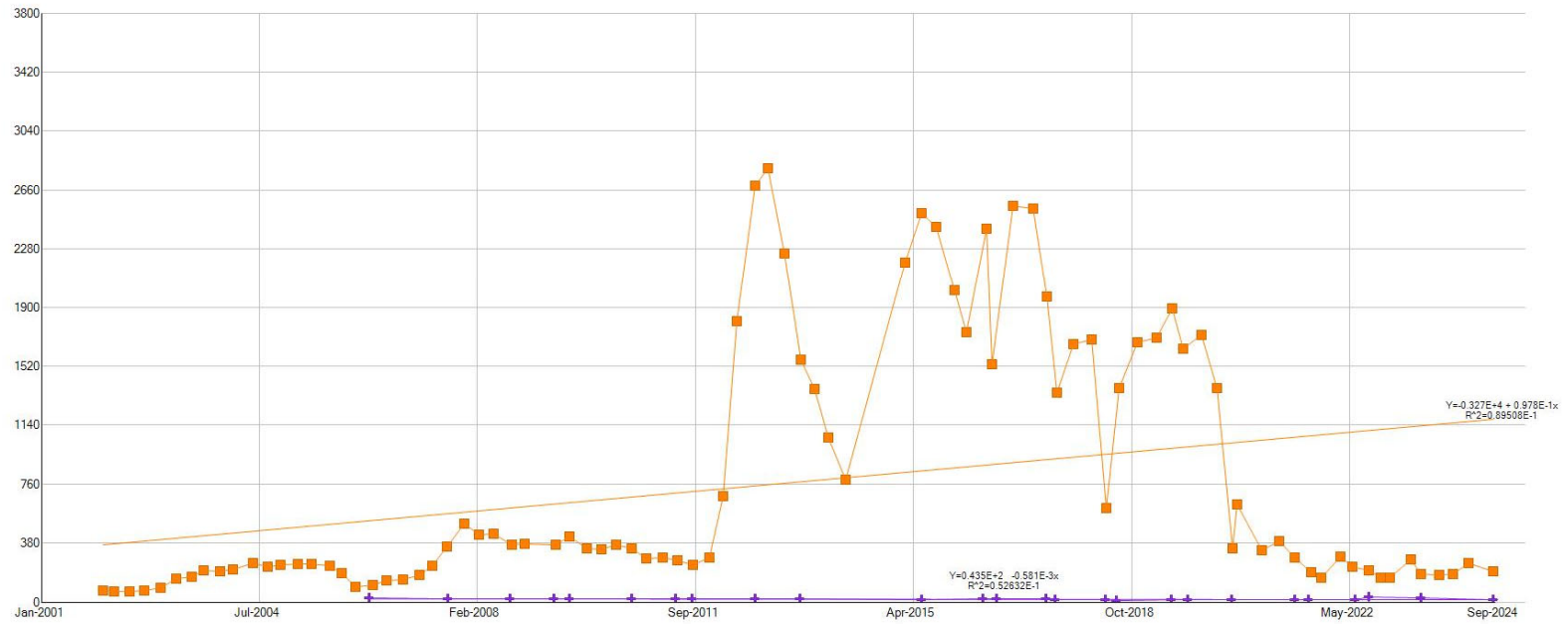


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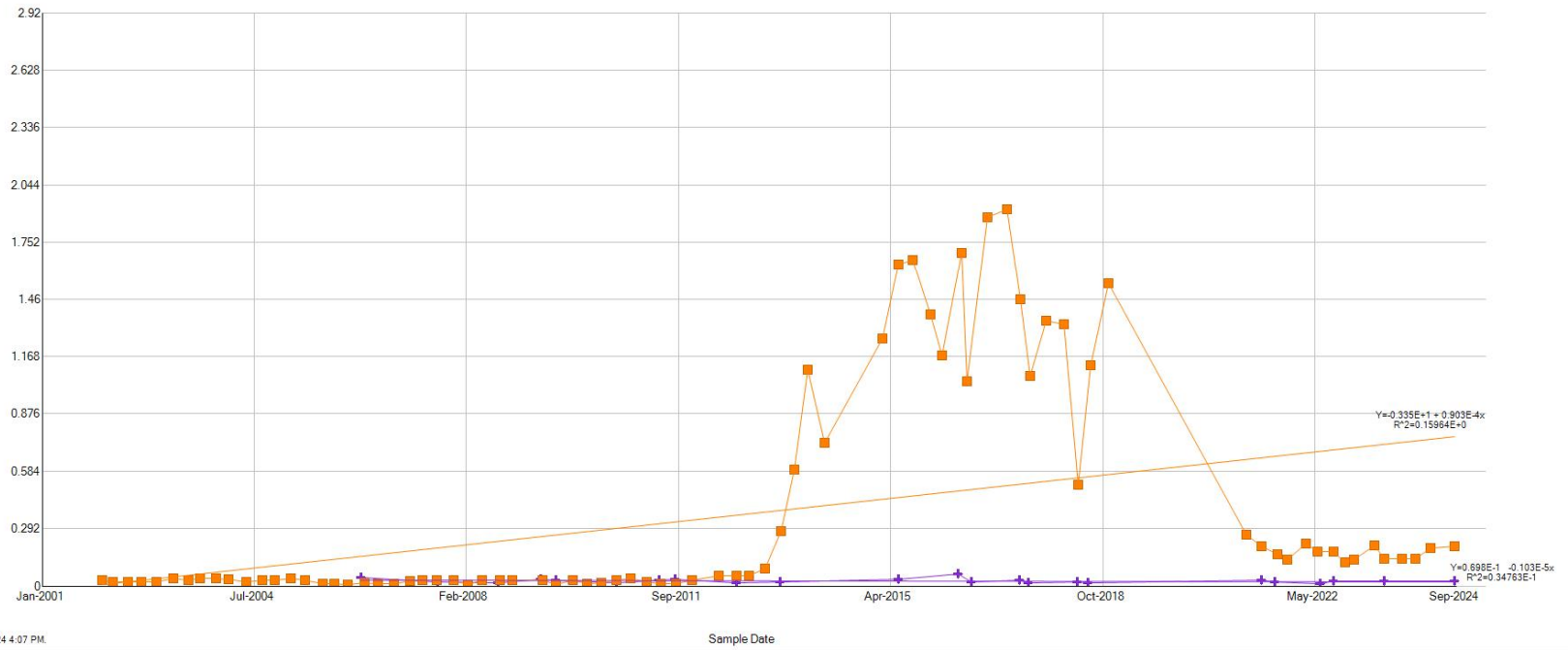
Magnesium, dissolved (mg/L)

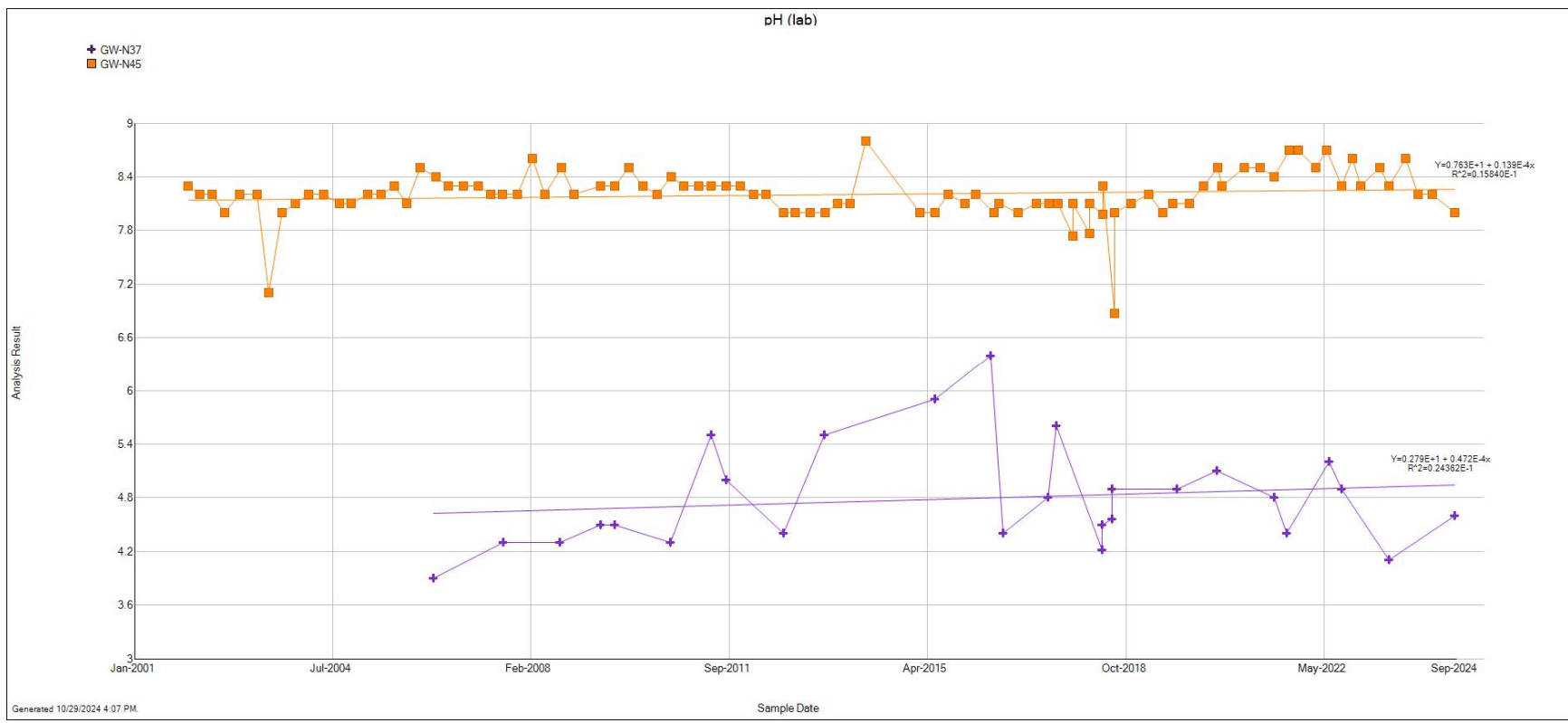
✚ GW-N37
■ GW-N45



Manganese, dissolved (mg/L)

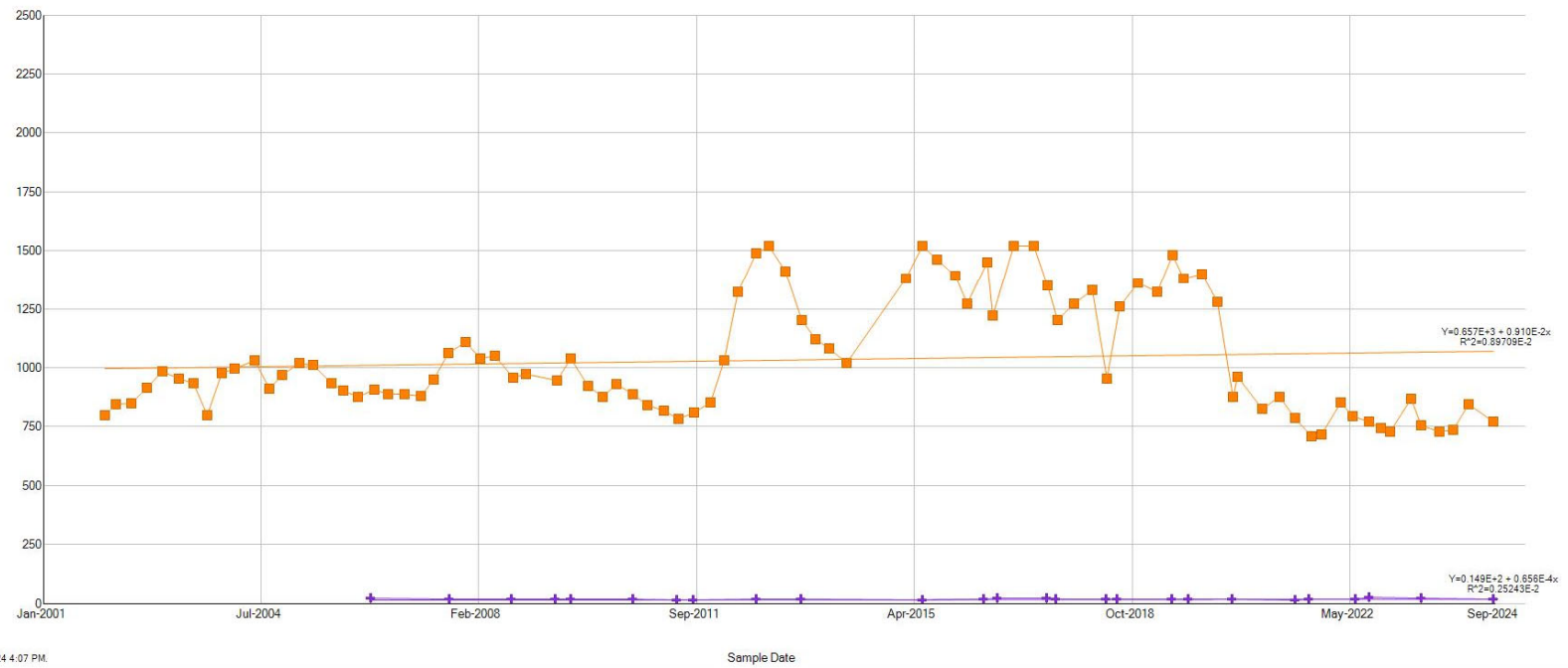
✚ GW-N37
■ GW-N45





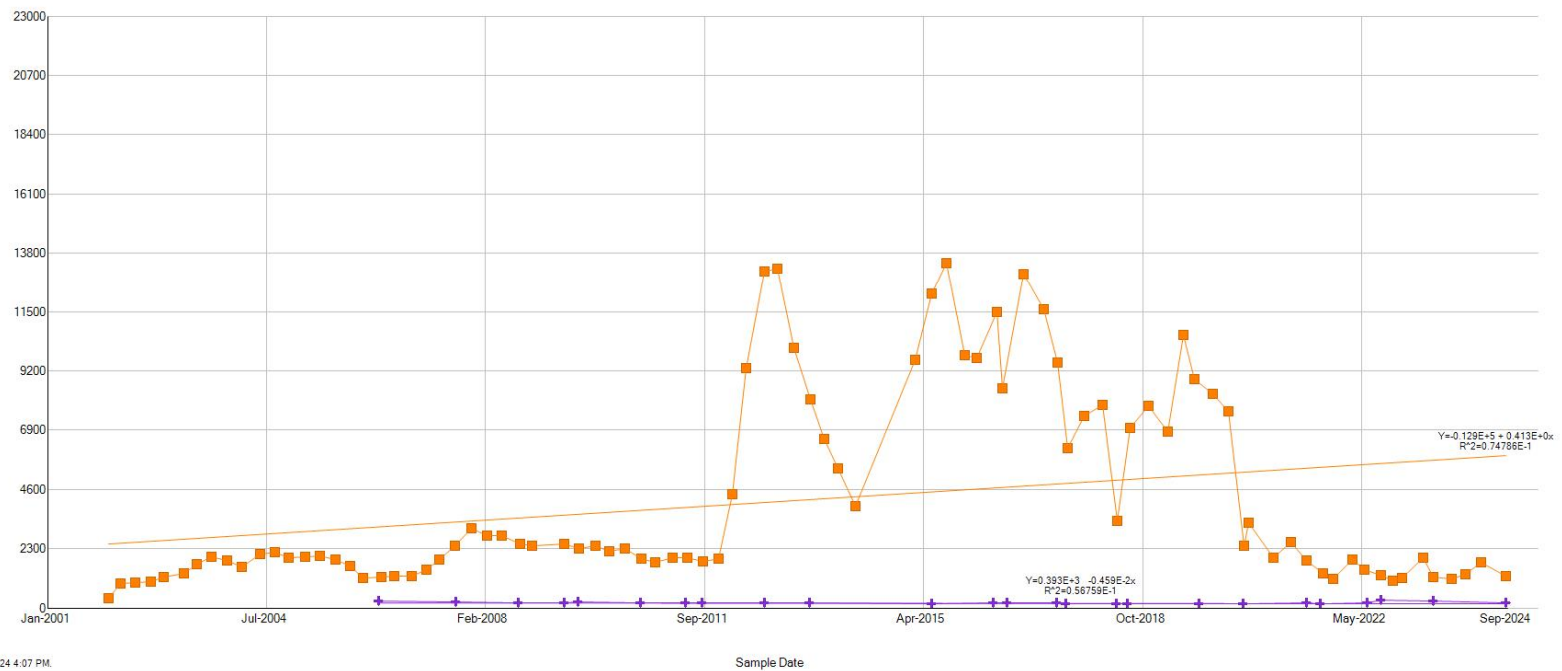
Sodium, dissolved (mg/L)

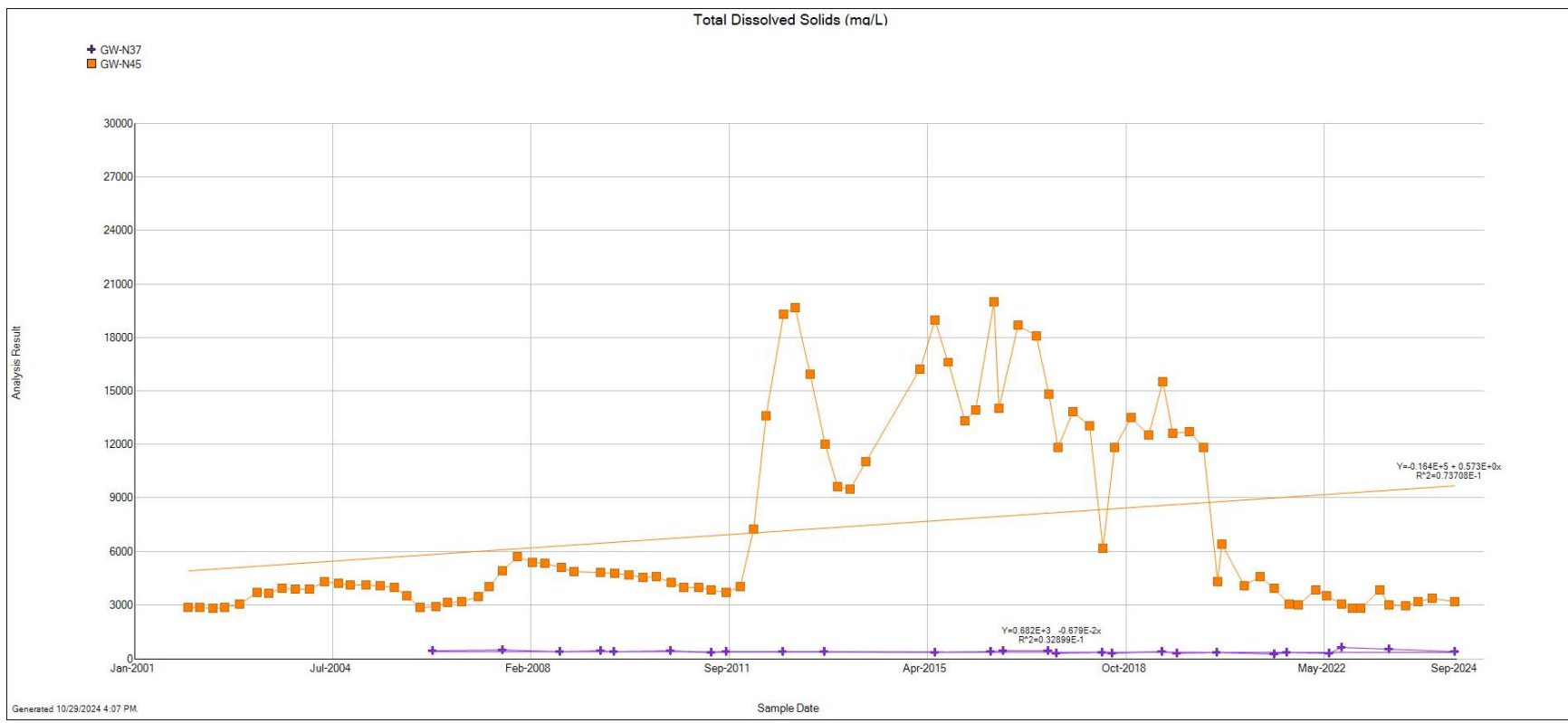
✚ GW-N37
■ GW-N45

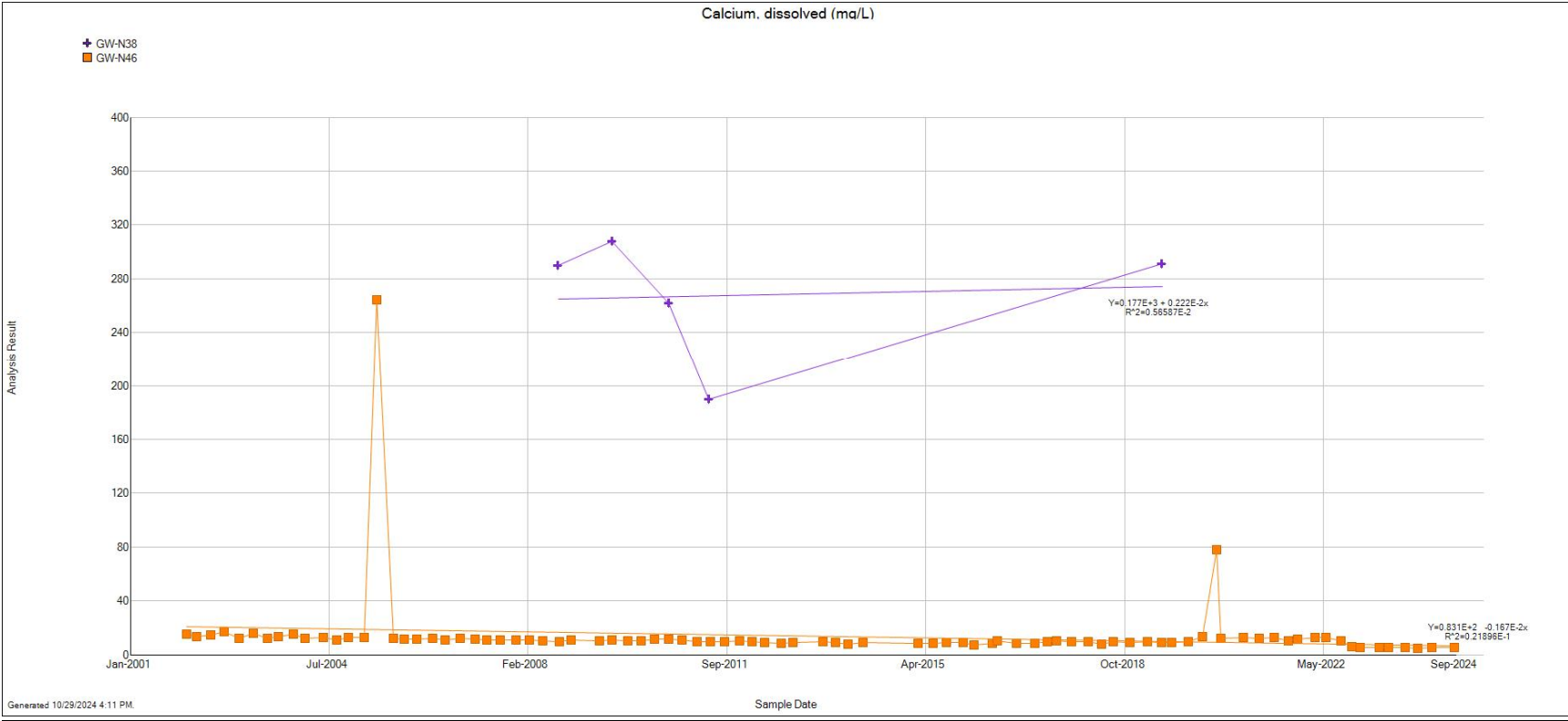


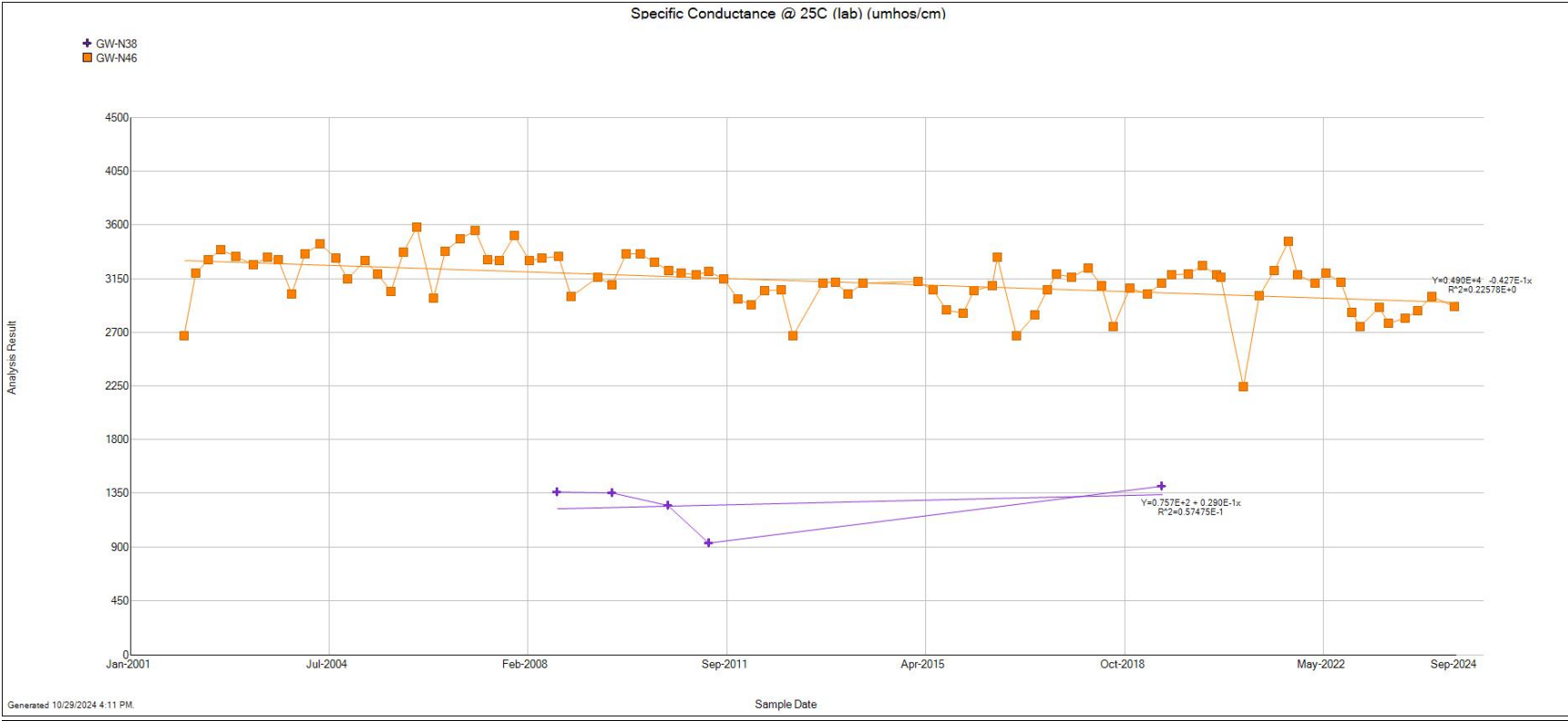
Sulfate, dissolved (mg/L)

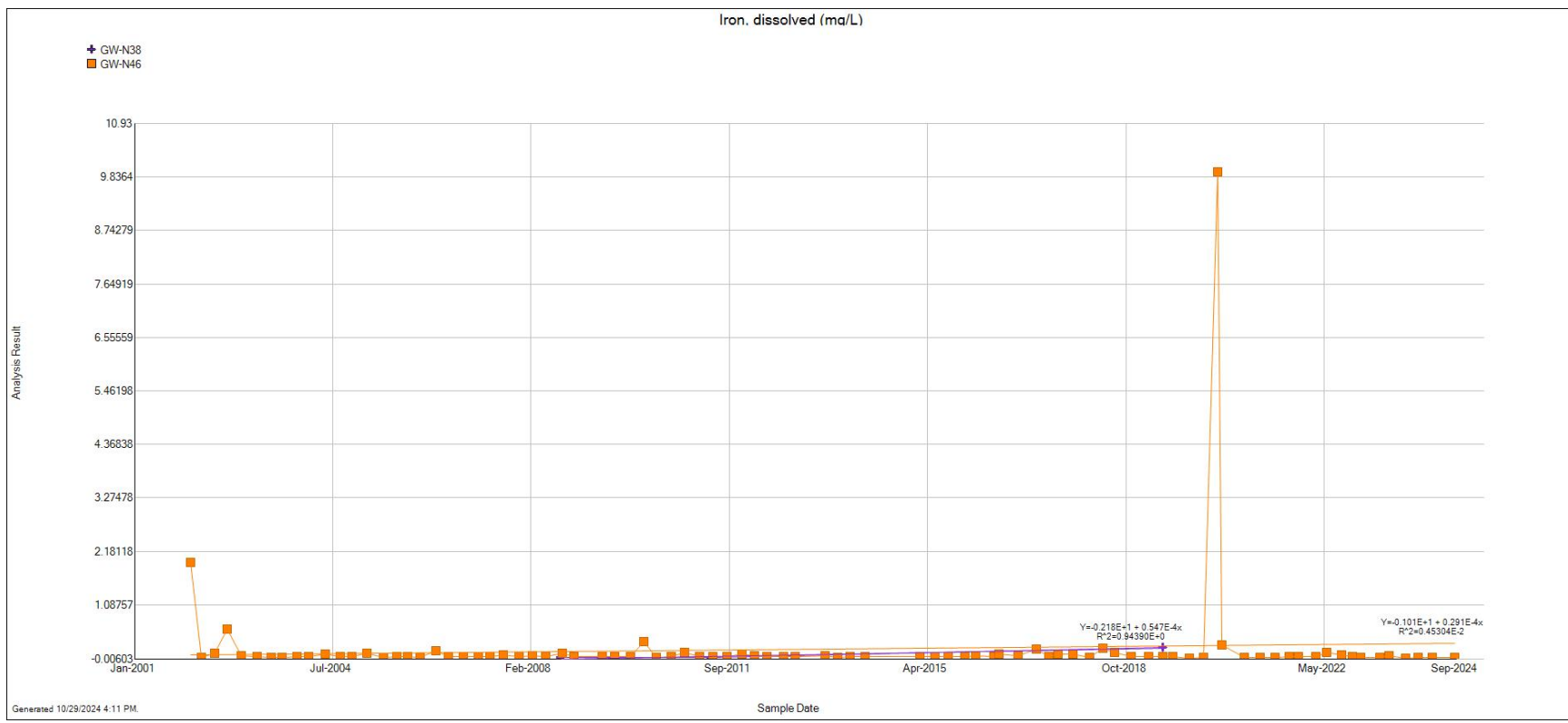
+ GW-N37
 ■ GW-N45





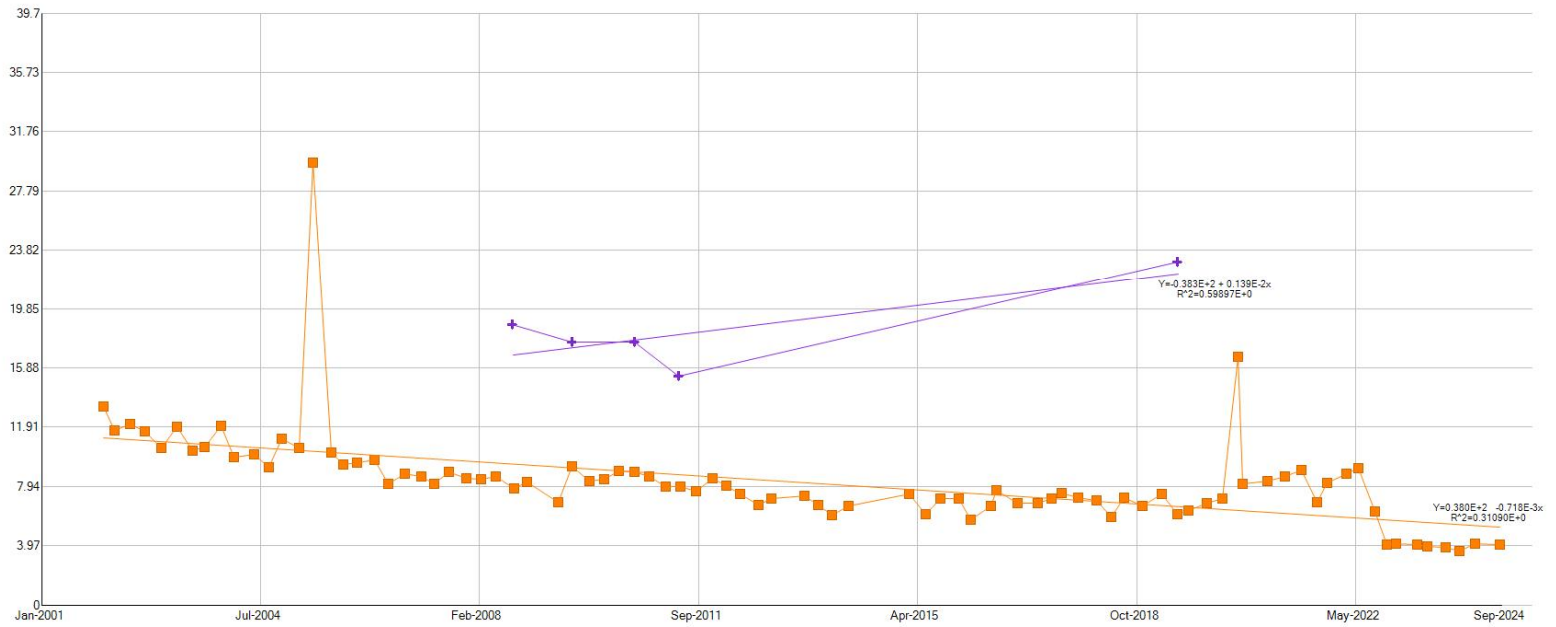


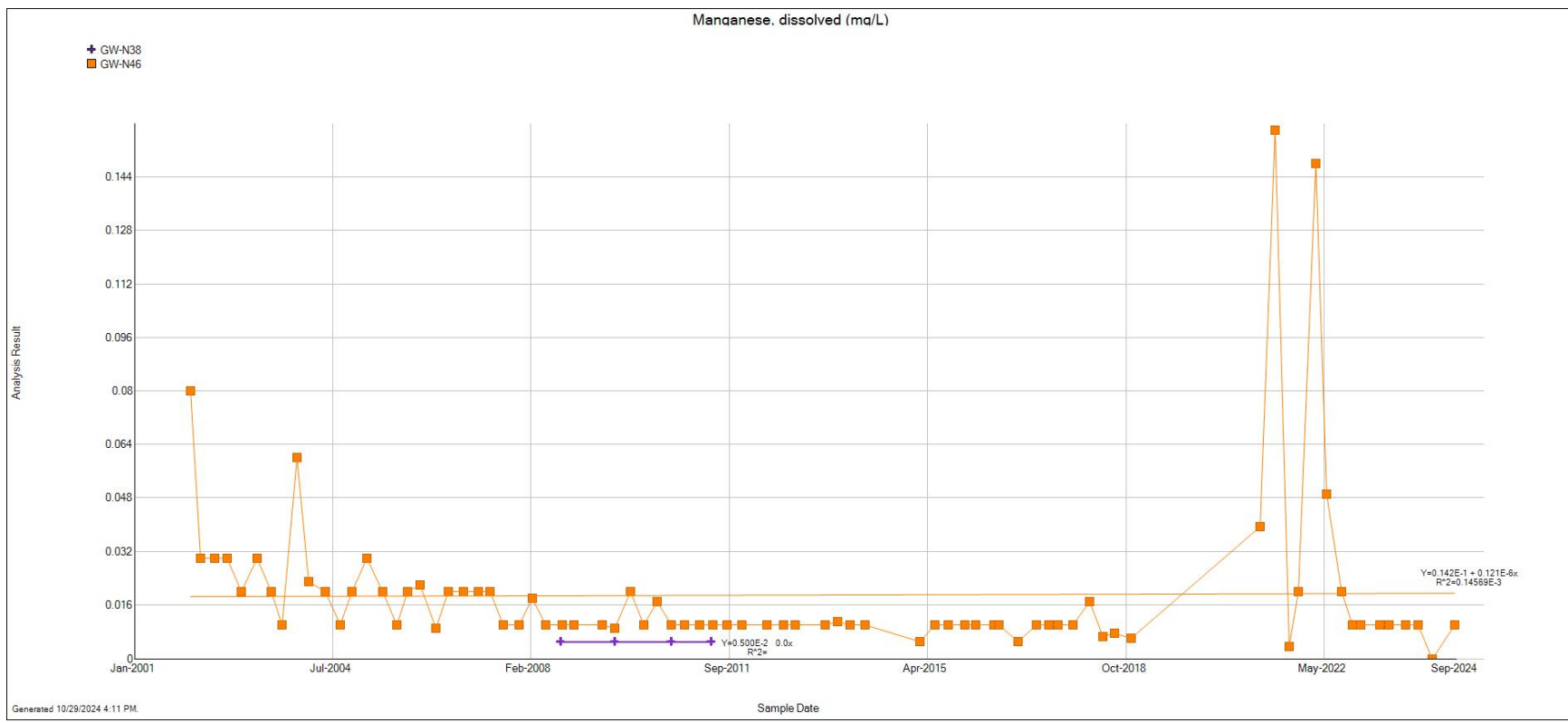




Magnesium, dissolved (mg/L)

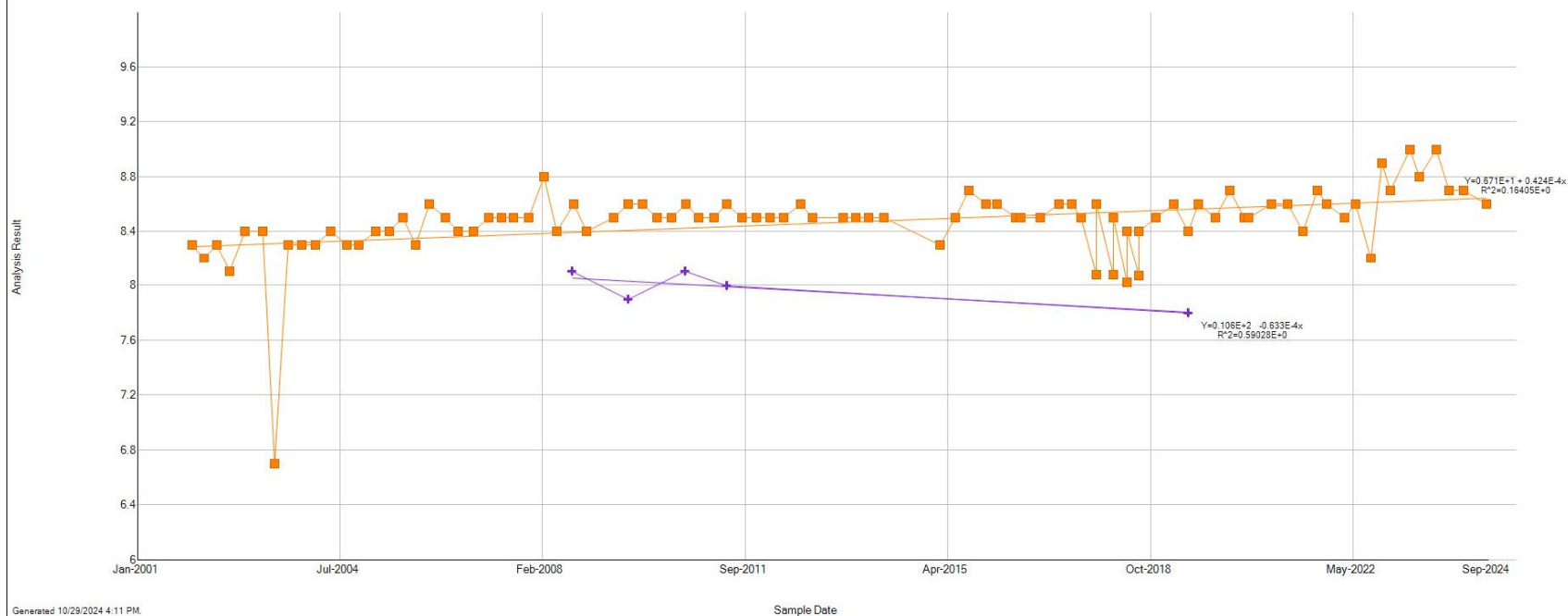
✦ GW-N38
■ GW-N46

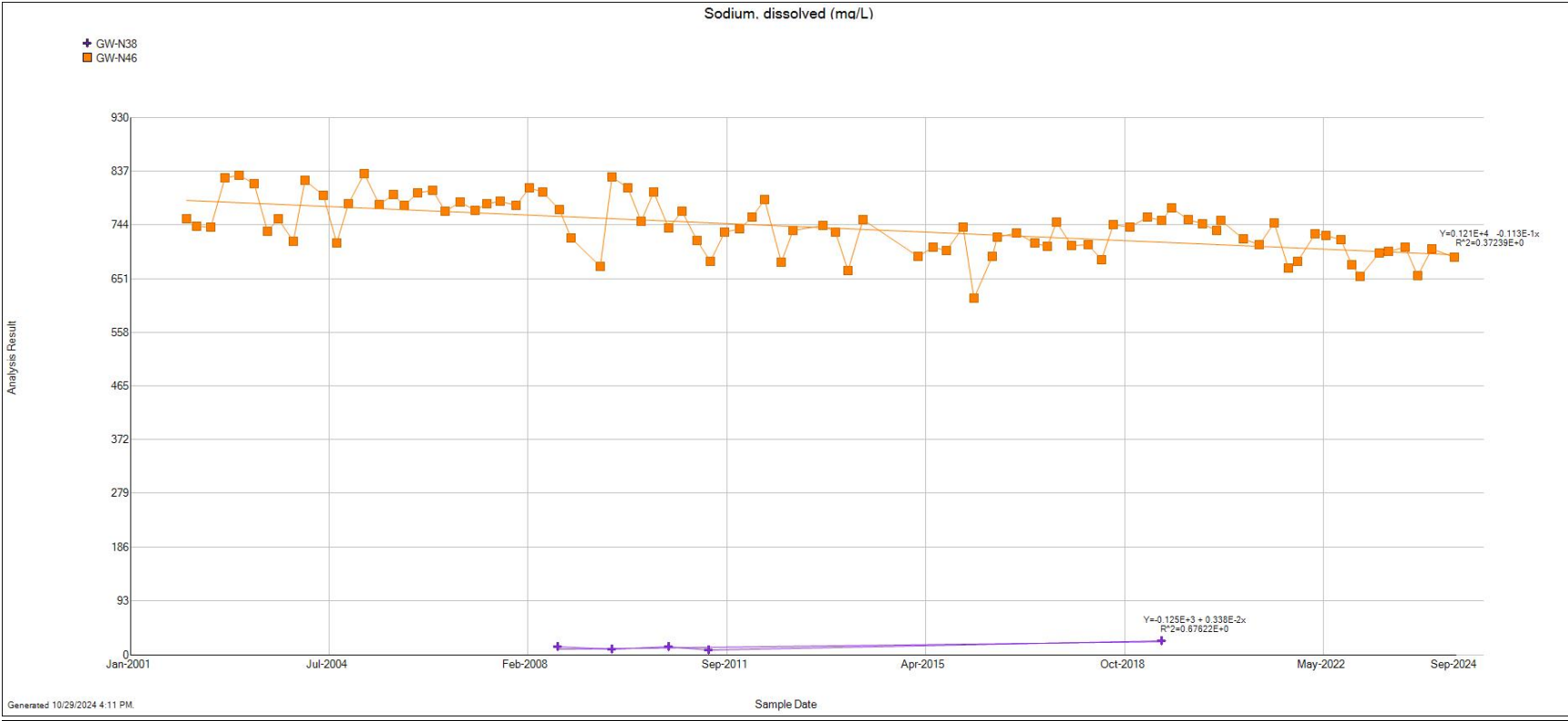


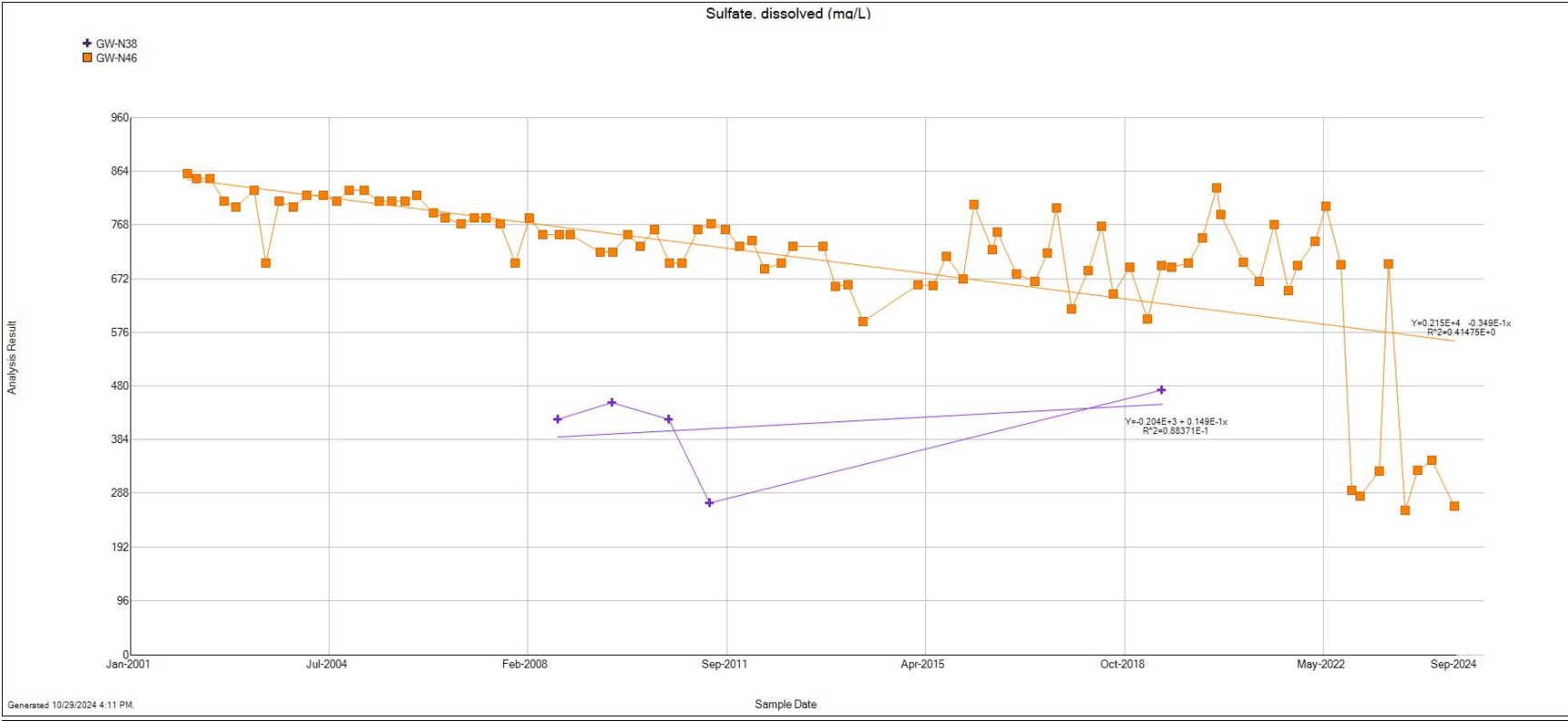


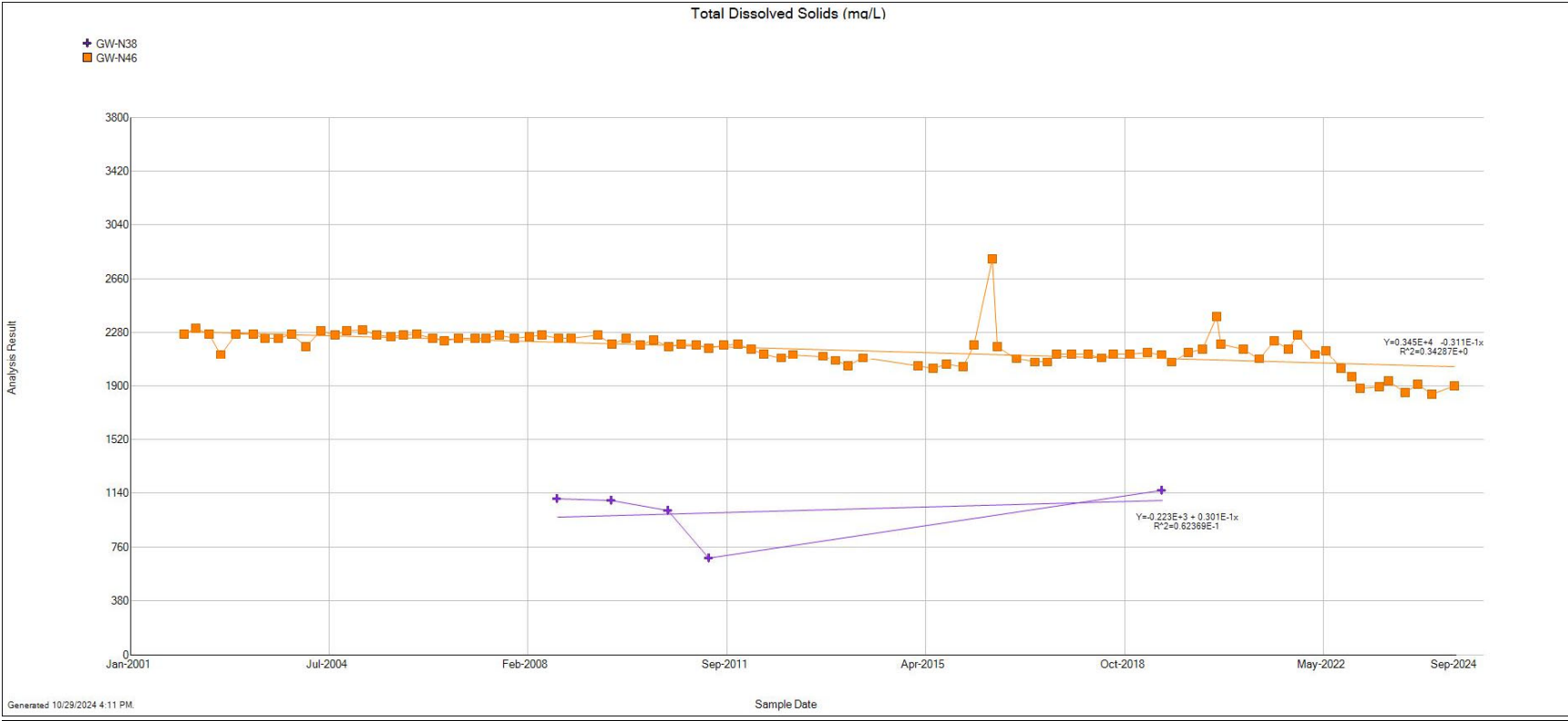
pH (lab)

✚ GW-N38
■ GW-N46









Appendix 5
Groundwater Elevations

