ANNEX F5 GROUNDWATER MONITORING RESULTS

TABLE F5.1 GROUNDWATER MONITORING RESULTS (JULY 2023)

Parameters	Units	MWX-1	MWX-2	MWX-3	MWX-4	MWX-5	MWX-6	MWX-7	MWX-8	MWX-9	MWX-10	MWX-11	MWX-12	MWX-13	MWX-14
Water Level	mPD	4.71	3.81	3.44	3.97	3.72	3.41	3.54	3.36	4.14	4.13	3.77	6.99	37.02	43.41
Bicarbonate Alkalinity as CaCO3	mg/L	140	235	172	<1	37	<1	<1	<1	145	237	200	54	17	14
Carbonate Alkalinity as CaCO3	mg/L	<1	<1	<1	68	9	132	88	78	<1	<1	<1	<1	<1	<1
Total Alkalinity as CaCO3	mg/L	140	235	172	72	46	179	112	104	145	237	200	54	17	14
pH Value	pH Unit	7.7	8.1	8	10.4	8.9	11.3	10.9	11	8	7.8	7.9	7	5.8	5.7
Electrical Conductivity	µS/cm	944	3340	1080	692	1340	1250	1400	2070	7110	1200	641	300	91	101
Ammonia	mg/L	0.07	0.6	1.43	2.37	1.47	3.44	5.16	4.53	0.4	<0.01	<0.01	<0.01	<0.01	<0.01
Chloride	mg/L	173	752	177	125	270	194	243	466	2110	159	46	21	14	17
Nitrite	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
Phosphorus	mg/L	<0.01	0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	0.1	0.02	0.01	0.04	0.01	<0.01
Sulphate	mg/L	68	390	115	72	184	114	164	252	500	155	71	57	3	4
Sulphide	mg/L	<0.1	<0.1	<0.1	4.1	0.5	6.4	1.9	2.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Kjeldahl Nitrogen	mg/L	0.2	0.6	1.7	2.8	2	4.4	5.9	6.1	0.6	0.2	0.1	<0.1	<0.1	<0.1
Nitrate	mg/L	0.35	0.79	<0.01	<0.01	<0.01	0.01	<0.01	0.04	0.43	0.02	0.04	<0.01	0.12	0.08
Total Nitrogen	mg/L	0.6	1.4	1.7	2.8	2	4.5	5.9	6.1	1.1	0.2	0.2	<0.1	0.2	0.1
Boron	µg/L	120	460	200	210	210	190	220	170	1520	350	110	30	20	20
Calcium	mg/L	58.4	81.5	77.6	20	29.8	33.8	22.1	76.6	135	92.6	81.7	24.2	0.73	1.15
Mercury	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameters	Units	MWX-1	MWX-2	MWX-3	MWX-4	MWX-5	MWX-6	MWX-7	MWX-8	MWX-9	MWX-10	MWX-11	MWX-12	MWX-13	MWX-14
Magnesium	mg/L	7.88	78.2	4.78	0.66	0.48	<0.05	<0.05	<0.05	96.1	8.42	4.69	3.75	0.92	0.8
Sodium	mg/L	97	419	110	89.4	177	153	198	266	1180	127	36	22.9	12.4	13.3
Iron	mg/L	<0.04	<0.04	0.07	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.43	<0.04	<0.04
Potassium	mg/L	16.9	30.4	26	24.9	58.6	55.3	52.1	75.3	67.5	13.7	8.88	2.74	3.59	3.54
Cadmium	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Copper	µg/L	<1	<1	<1	<1	<1	<1	2	<1	2	1	3	<1	<1	<1
Lead	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Manganese	µg/L	176	157	962	2	6	<1	<1	2	162	795	47	755	18	9
Nickel	µg/L	<1	<1	<1	<1	<1	2	2	3	<1	<1	<1	<1	<1	<1
Zinc	µg/L	12	10	495	<10	<10	<10	<10	<10	<10	<10	17	20	<10	16
Biochemical Oxygen Demand	mg/L	<2	<2	<2	<2	<2	6	<2	<2	<2	<2	<2	<2	<2	<2
Chemical Oxygen Demand	mg/L	7	28	18	19	30	43	41	32	23	10	7	<2	<2	<2
Total Organic Carbon	mg/L	3	<1	4	5	9	10	12	10	4	3	2	<1	<1	<1

TABLE F5.2 GROUNDWATER MONITORING RESULTS (AUGUST 2023)

Parameters	Units	MWX-1	MWX-2	MWX-3	MWX-4	MWX-5	MWX-6	MWX-7	MWX-8	MWX-9	MWX-10	MWX-11	MWX-12	MWX-13	MWX-14
Water Level	mPD	3.11	3.71	2.94	3.57	3.02	2.81	3.04	3.36	4.24	3.33	3.37	6.89	36.52	44.01
Bicarbonate Alkalinity as CaCO3	mg/L	141	264	198	22	50	12	18	8	166	230	198	54	17	13
Carbonate Alkalinity as CaCO3	mg/L	<1	<1	<1	50	5	133	74	68	<1	<1	<1	<1	<1	<1
Total Alkalinity as CaCO3	mg/L	141	264	198	73	54	145	92	76	166	230	198	54	17	13
pH Value	pH Unit	7.6	8.4	8.3	10.4	8.6	11.3	10.7	11	8.2	8.2	8.3	7.4	5.8	5.7
Electrical Conductivity	µS/cm	1000	1420	987	794	1300	1100	1350	2240	10400	994	663	300	94	96
Ammonia	mg/L	0.14	0.05	1.33	3.47	1.6	4.32	4.94	7.52	0.72	<0.01	0.05	<0.01	<0.01	<0.01
Chloride	mg/L	201	146	140	159	257	205	263	548	3360	118	48	21	15	18
Nitrite	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.12	0.08	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Phosphorus	mg/L	<0.01	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.06	0.02	0.01	0.05	<0.01	<0.01
Sulphate	mg/L	64	315	94	79	167	96	170	240	637	117	73	57	3	4
Sulphide	mg/L	<0.1	<0.1	<0.1	3.9	<0.1	12.1	<0.1	2.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Kjeldahl Nitrogen	mg/L	0.2	<0.1	1.4	3.5	1.8	4.5	5.1	7.7	0.8	0.1	0.1	<0.1	<0.1	<0.1
Nitrate	mg/L	0.04	1.14	0.01	<0.01	<0.01	0.01	0.03	0.02	0.02	<0.01	<0.01	0.01	0.1	0.13
Total Nitrogen	mg/L	0.3	1.2	1.4	3.5	1.8	4.5	5.2	7.8	0.8	0.1	0.1	<0.1	0.1	0.1
Boron	µg/L	130	230	200	200	210	180	220	170	2120	270	110	30	20	20
Calcium	mg/L	59.3	76.9	76.1	23	23.6	31.3	19.5	79.4	115	88.2	80.6	23.9	0.79	0.88
Mercury	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameters	Units	MWX-1	MWX-2	MWX-3	MWX-4	MWX-5	MWX-6	MWX-7	MWX-8	MWX-9	MWX-10	MWX-11	MWX-12	MWX-13	MWX-14
Magnesium	mg/L	8.99	65.4	5.13	0.41	0.41	<0.05	<0.05	0.45	152	8.13	4.95	1.32	0.9	0.77
Sodium	mg/L	109	105	86.2	105	181	161	189	313	1800	95.8	37.8	23.2	12.6	12.8
Iron	mg/L	<0.04	<0.04	0.12	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.46	<0.04	<0.04
Potassium	mg/L	20	18.5	27.5	26	60.4	55.1	51.2	81.1	78.3	14.6	8.26	2.52	3.58	3.39
Cadmium	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Copper	µg/L	<1	<1	<1	<1	1	<1	4	<1	<1	<1	<1	<1	<1	<1
Lead	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Manganese	µg/L	426	142	901	<1	4	<1	<1	<1	239	812	436	735	16	6
Nickel	µg/L	<1	<1	<1	<1	<1	2	2	4	<1	<1	<1	<1	<1	<1
Zinc	µg/L	<10	<10	<10	<10	<10	29	12	<10	<10	<10	16	27	14	16
Biochemical Oxygen Demand	mg/L	<2	<2	<2	2	<2	9	<2	4	2	<2	<2	<2	<2	<2
Chemical Oxygen Demand	mg/L	4	3	13	24	24	49	28	30	54	4	6	<2	<2	<2
Total Organic Carbon	mg/L	2	<1	8	6	9	10	12	12	7	2	2	<1	<1	1

TABLE F5.3 GROUNDWATER MONITORING RESULTS (SEPTEMBER 2023)

Parameters	Units	MWX-1	MWX-2	MWX-3	MWX-4	MWX-5	MWX-6	MWX-7	MWX-8	MWX-9	MWX-10	MWX-11	MWX-12	MWX-13	MWX-14
Water Level	mPD	3.81	4.01	4.54	4.47	3.92	4.01	3.74	4.96	5.04	4.93	6.47	7.49	38.72	46.41
Bicarbonate Alkalinity as CaCO3	mg/L	141	264	198	22	50	12	18	8	166	230	198	54	17	13
Carbonate Alkalinity as CaCO3	mg/L	<1	<1	<1	<1	10	116	70	73	<1	<1	<1	<1	<1	<1
Total Alkalinity as CaCO3	mg/L	115	215	192	48	54	152	92	108	162	260	135	57	18	16
pH Value	pH Unit	8	8	7.9	8.3	9	11	10.6	11	8	7.3	7.8	6.9	5.7	5.7
Electrical Conductivity	µS/cm	1120	5770	1340	1800	900	1090	1460	2850	14400	1190	441	318	95	145
Ammonia	mg/L	0.12	0.95	1.6	0.6	0.48	2.86	4.8	5.32	0.55	<0.01	<0.01	<0.01	<0.01	<0.01
Chloride	mg/L	196	1550	210	338	148	156	310	693	4400	124	33	20	15	24
Nitrite	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.12	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Phosphorus	mg/L	0.01	0.02	0.01	0.02	<0.01	<0.01	<0.01	<0.01	0.06	0.02	<0.01	0.03	0.01	<0.01
Sulphate	mg/L	130	447	162	321	139	117	141	216	790	147	39	65	3	10
Sulphide	mg/L	<0.1	<0.1	<0.1	0.4	0.6	5.5	3.8	2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Kjeldahl Nitrogen	mg/L	0.4	1.9	1.8	1.1	1	4	6.4	6.3	0.6	0.2	0.1	0.1	<0.1	<0.1
Nitrate	mg/L	<0.01	1.74	0.02	<0.01	<0.01	<0.01	0.01	0.07	<0.01	<0.01	0.15	<0.01	0.13	0.21
Total Nitrogen	mg/L	0.4	3.7	1.8	1.1	1	4	6.4	6.5	0.6	0.2	0.3	0.1	0.1	0.2
Boron	µg/L	170	710	220	400	240	250	280	200	2560	430	100	30	20	20
Calcium	mg/L	58.4	101	117	76.9	24.8	17.4	23.3	116	127	103	52.1	28.8	0.82	2.6
Mercury	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameters	Units	MWX-1	MWX-2	MWX-3	MWX-4	MWX-5	MWX-6	MWX-7	MWX-8	MWX-9	MWX-10	MWX-11	MWX-12	MWX-13	MWX-14
Magnesium	mg/L	6.83	106	8.51	2.05	0.61	<0.05	0.2	223	223	8.91	3.03	4.24	0.96	1.67
Sodium	mg/L	140	903	127	259	118	158	223	386	2410	134	29.3	25.1	14.1	18.5
Iron	mg/L	<0.04	<0.04	0.14	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.24	<0.04	<0.04
Potassium	mg/L	24.3	53.7	32.5	42.6	52	61.8	62.4	100	135	16.2	8.29	3.53	4.34	5.31
Cadmium	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	µg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Copper	µg/L	<1	<1	<1	<1	1	1	<1	<1	<1	1	1	4	2	2
Lead	µg/L	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1
Manganese	µg/L	487	221	1180	28	6	<1	<1	<1	249	1100	18	746	10	9
Nickel	µg/L	<1	<1	<1	<1	<1	2	2	3	<1	<1	<1	<1	<1	<1
Zinc	µg/L	324	<10	68	<10	<10	<10	20	<10	12	11	<10	22	23	24
Biochemical Oxygen Demand	mg/L	<2	<2	<2	2	<2	4	3	2	<2	<2	<2	<2	<2	<2
Chemical Oxygen Demand	mg/L	15	14	18	19	20	36	40	32	<20	9	7	7	8	8
Total Organic Carbon	mg/L	7	2	6	9	6	10	11	9	<5	4	4	2	4	4

FIGURE F5.1 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-1)

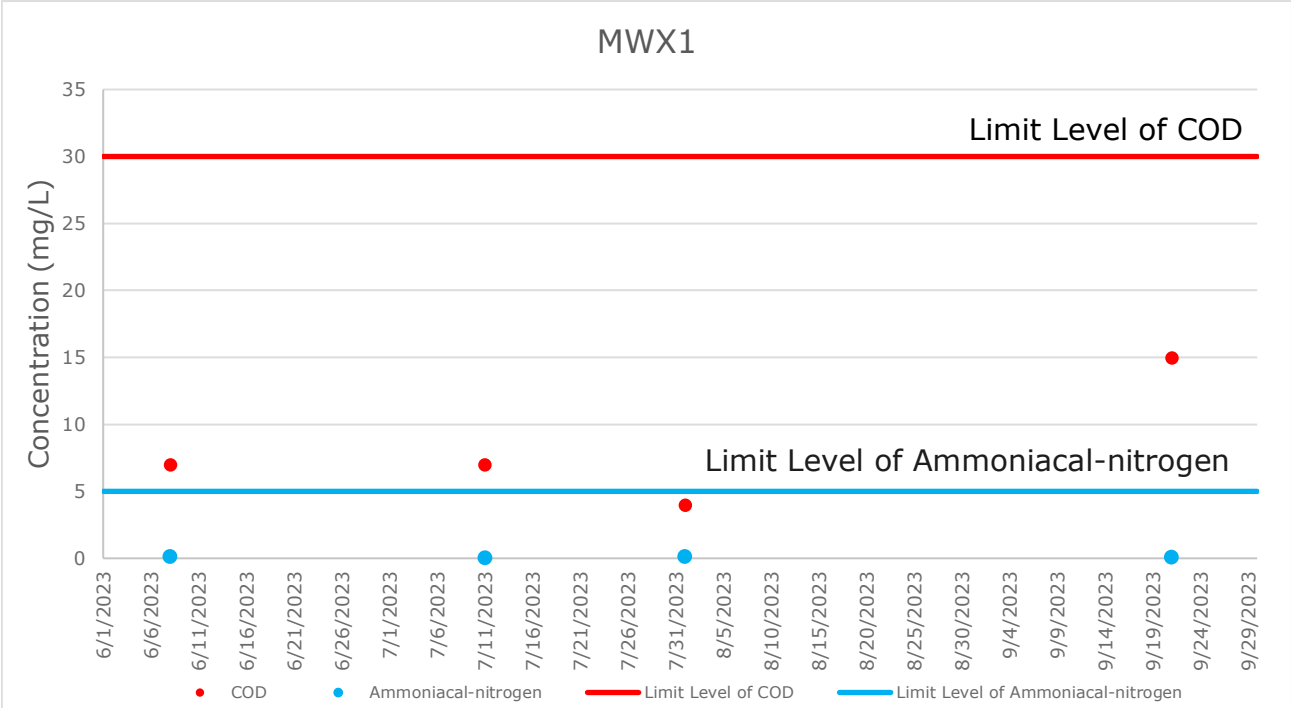

FIGURE F5.2 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-2)

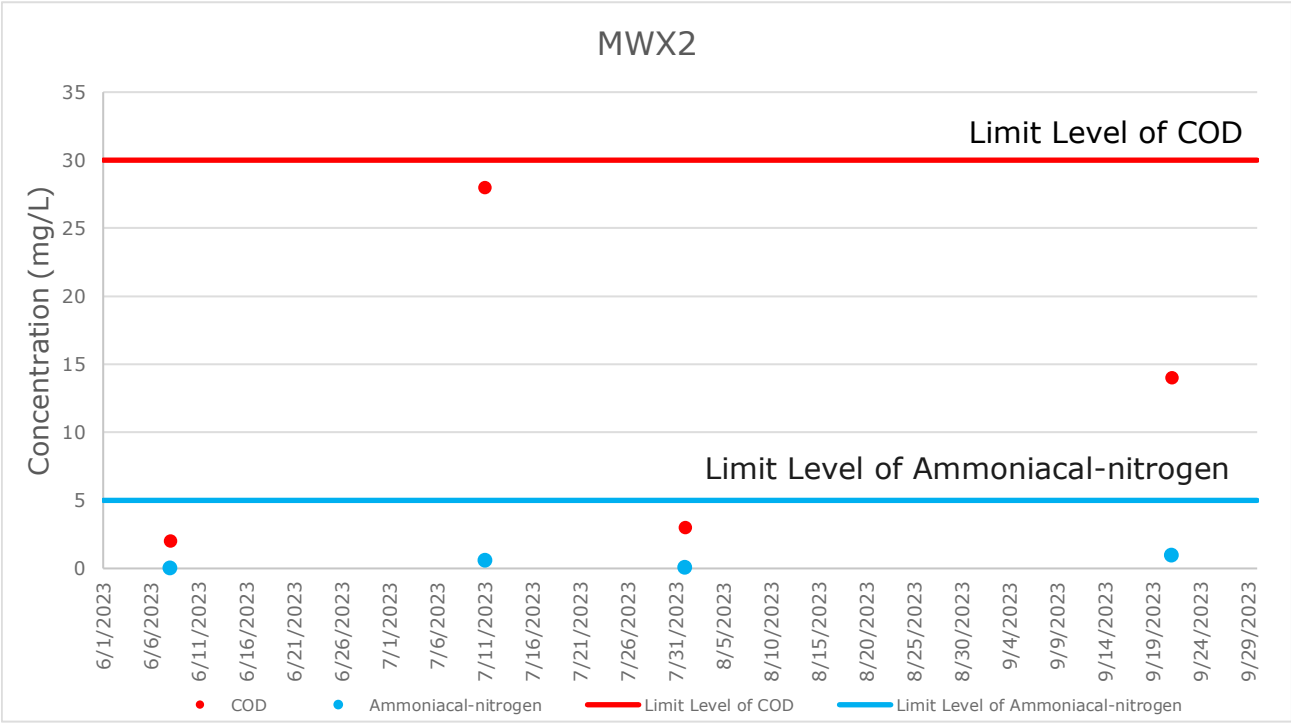

FIGURE F5.3 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-3)

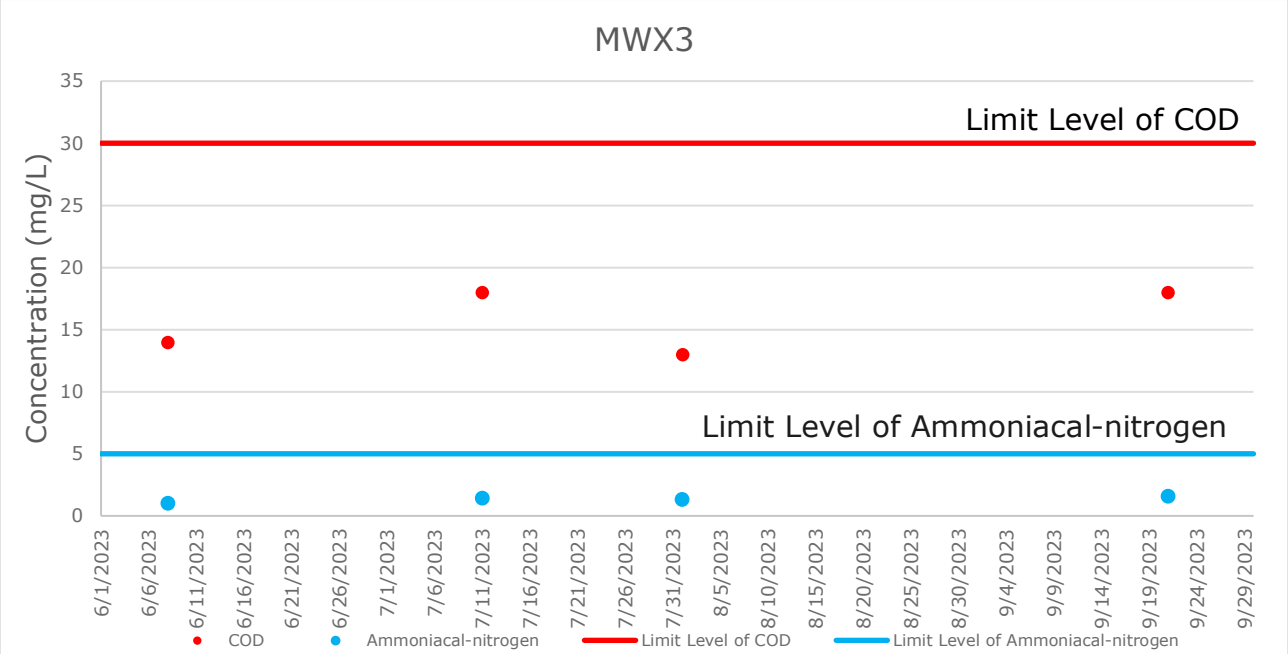

FIGURE F5.4 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-4)

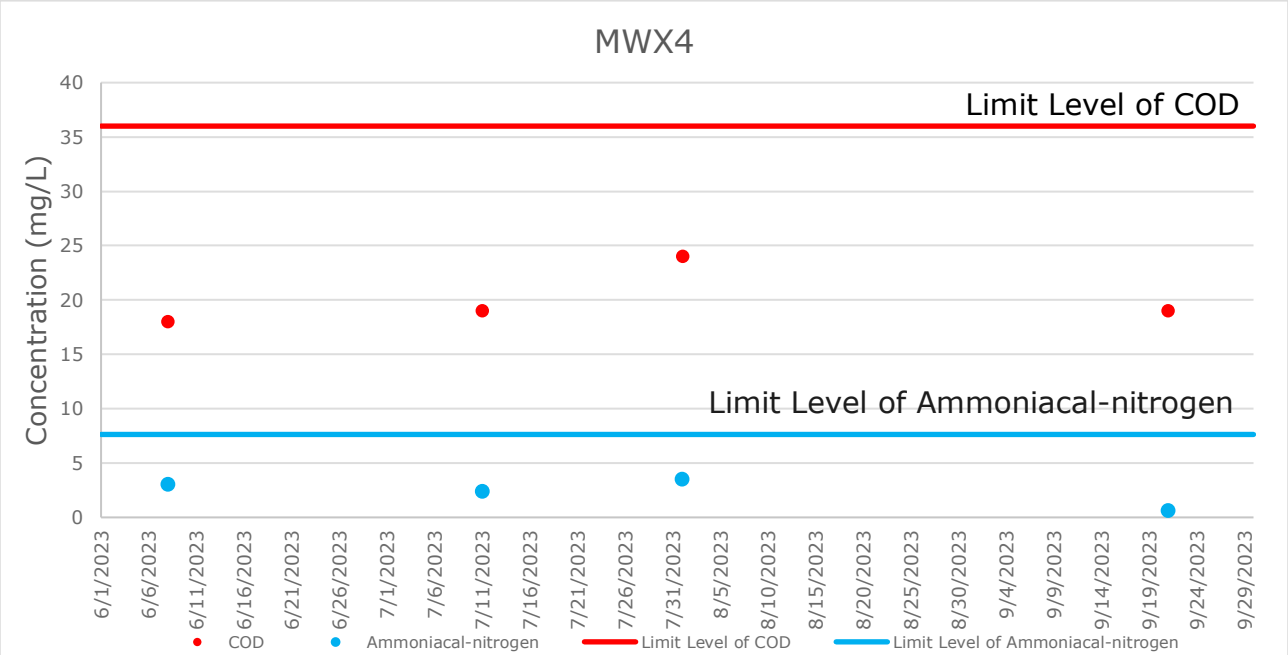

FIGURE F5.5 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-5)

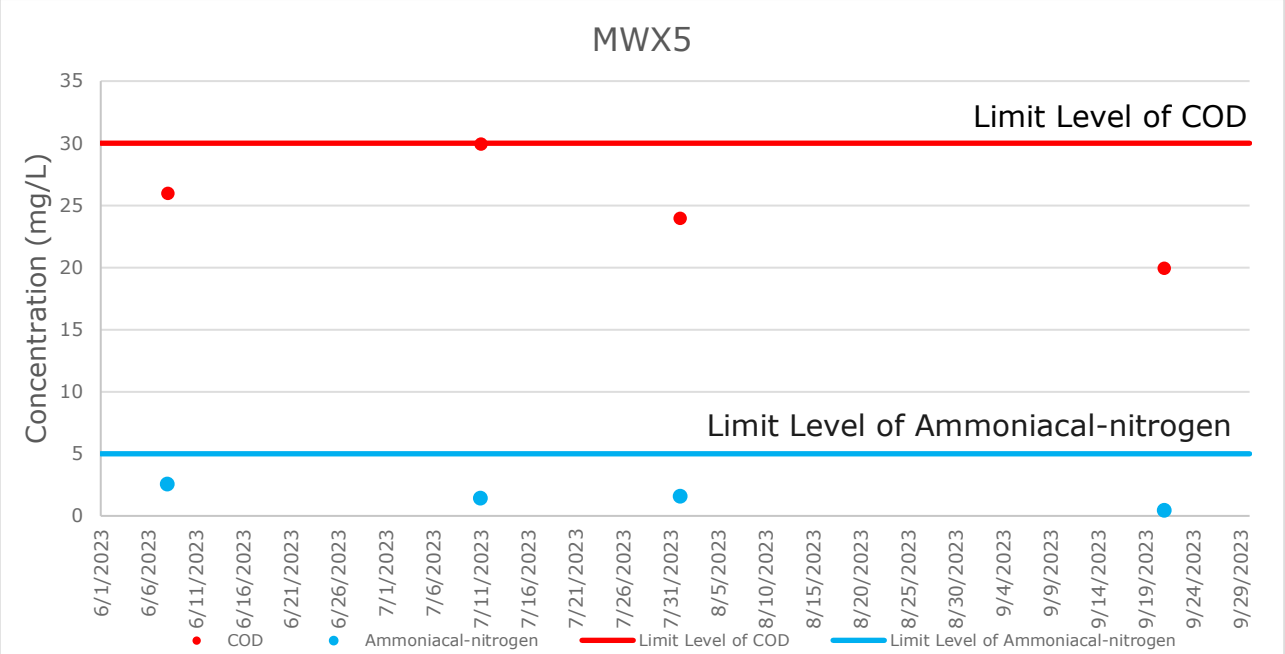

FIGURE F5.6 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-6)

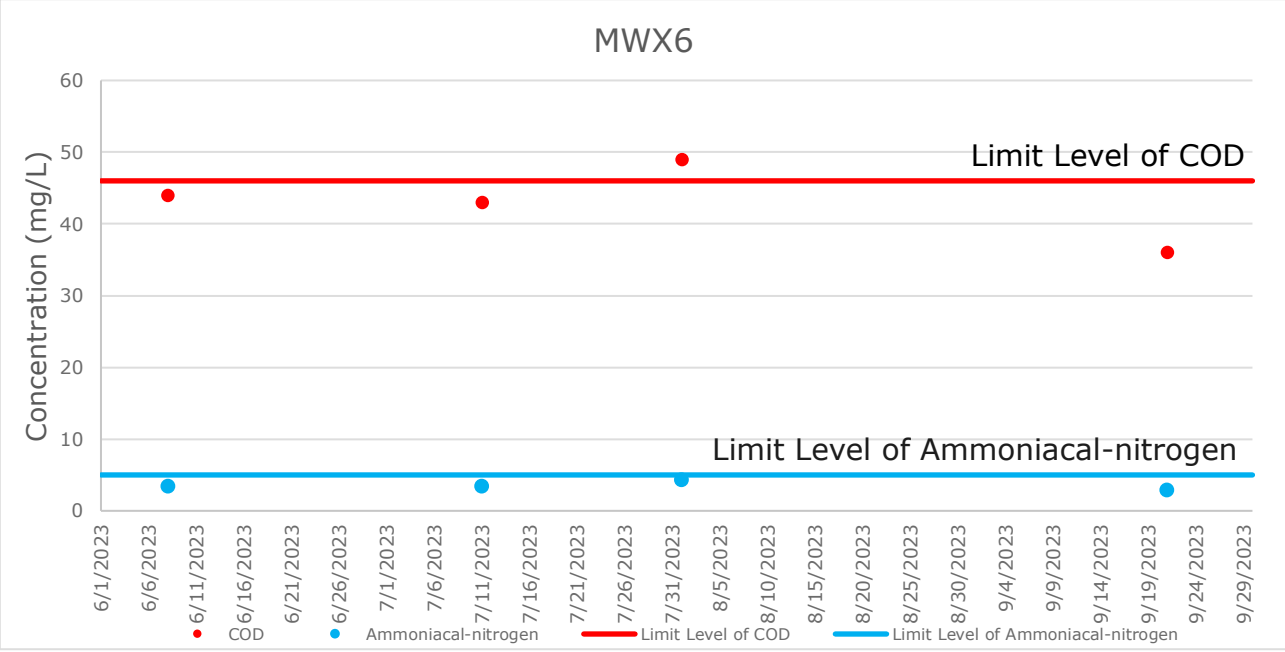

FIGURE F5.7 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-7)

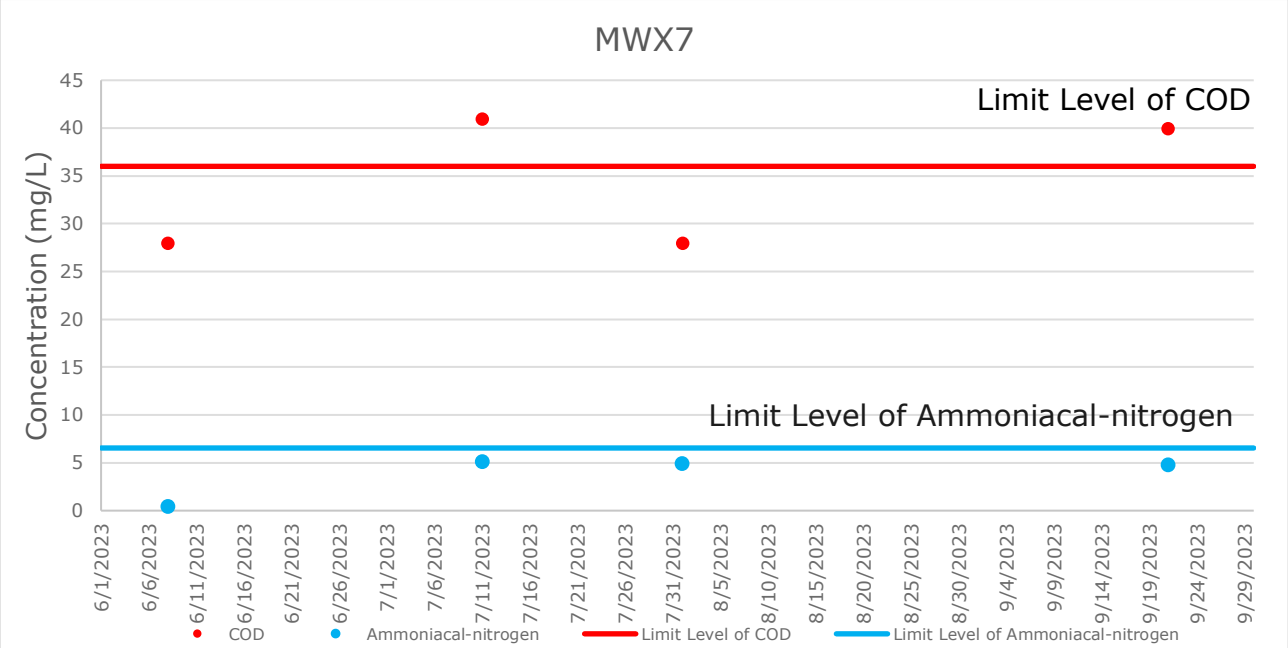

FIGURE F5.8 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-8)

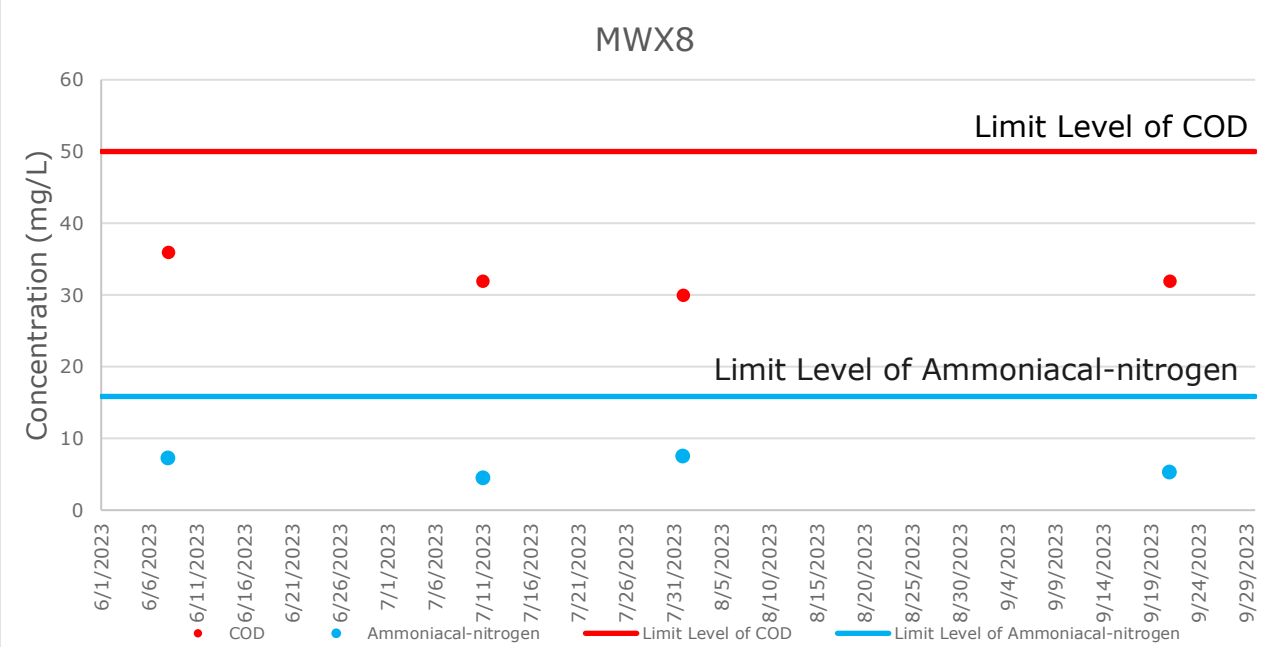

FIGURE F5.9 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-9)

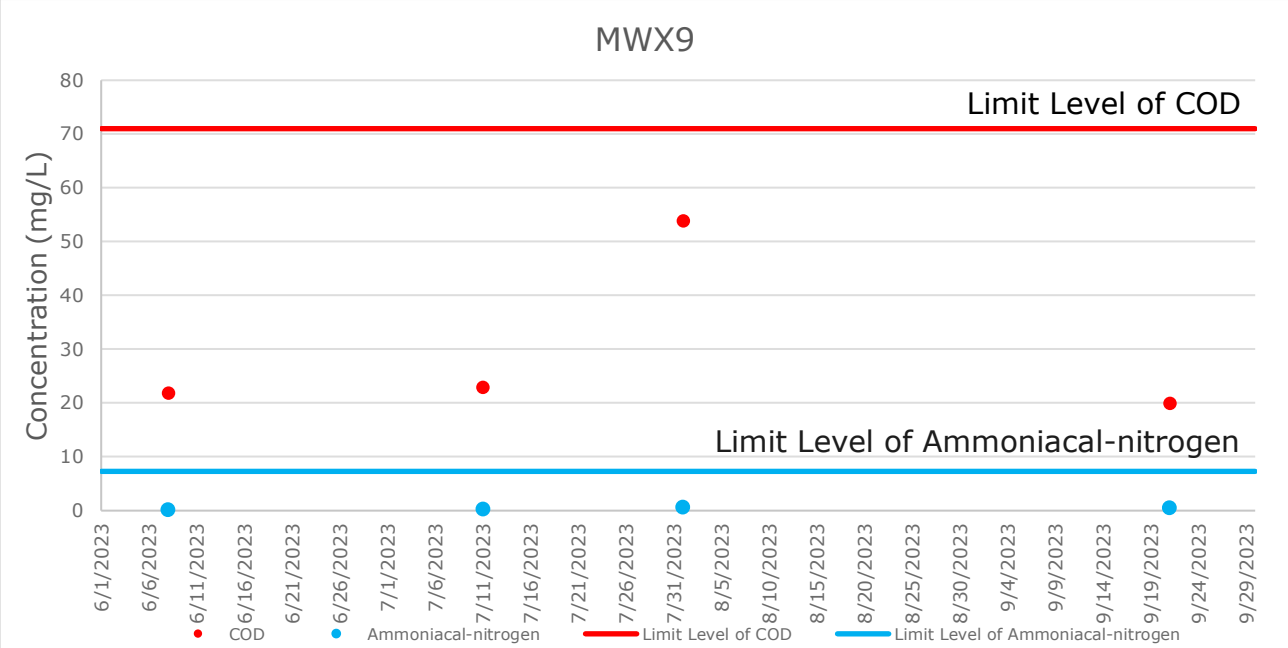

FIGURE F5.10 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-10)

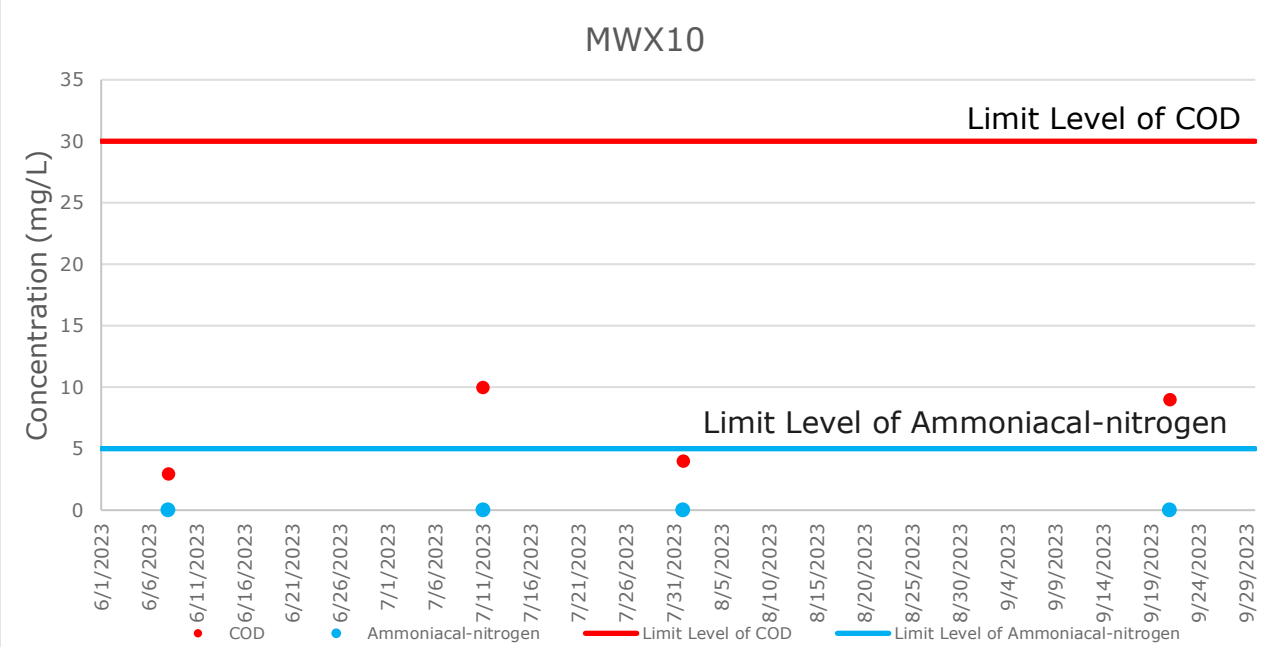

FIGURE F5.11 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-11)

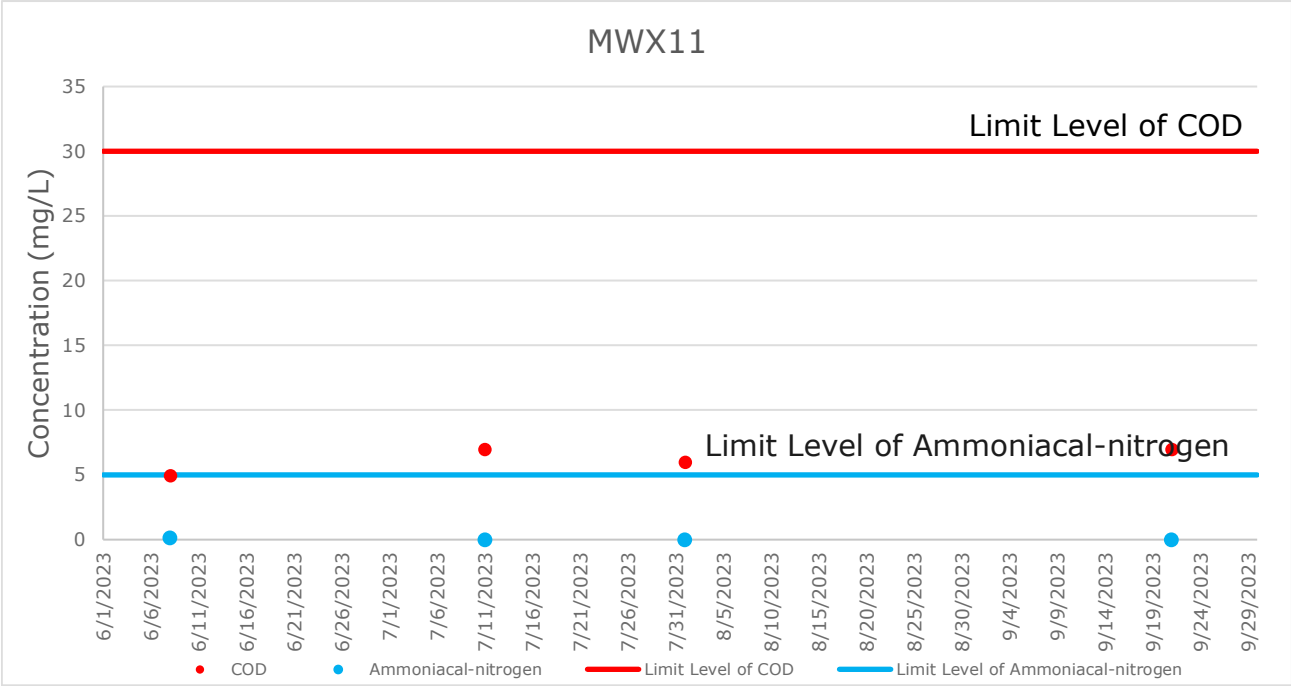

FIGURE F5.12 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-12)

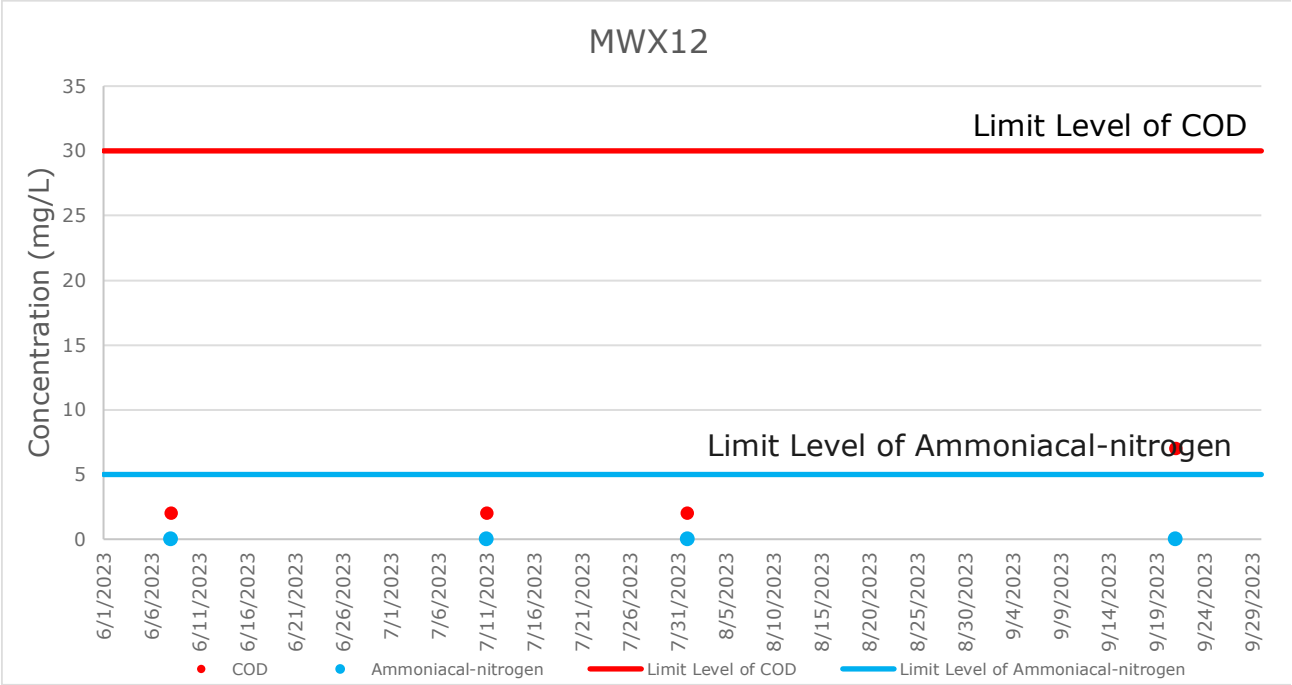

FIGURE F5.13 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-13)

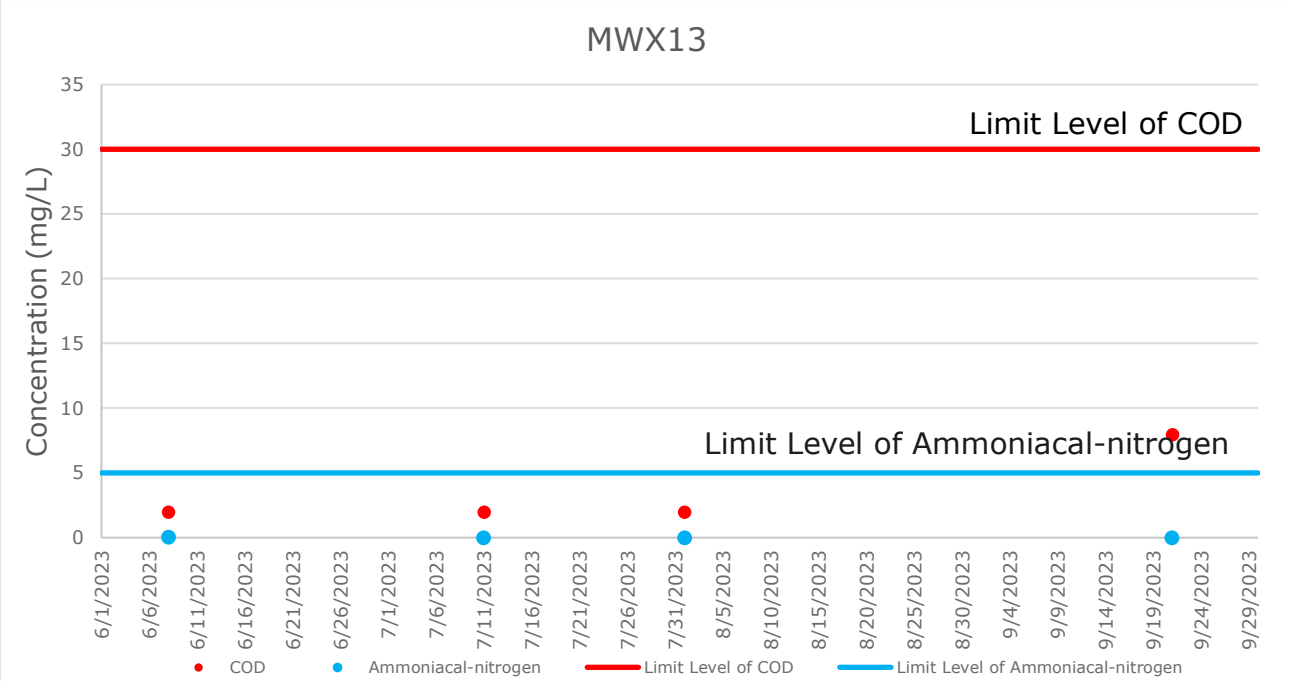

FIGURE F5.14 GRAPHICAL PRESENTATION FOR GROUNDWATER MONITORING (MWX-14)