

Question 21.

2019 WATER QUALITY DATA

- 2019 DRMS Water Quality Monitoring Plan Evaluation
- Table 1: Indicator Parameters 5-Year Groundwater Quality Monitoring Data
- Table 2: Indicator Parameters 5-Year Surface Water Quality Monitoring Data
- Trend Evaluations 1-35: POC Trend Graphs (Metals, pH, Sulfate, TDS, Fluoride)
- Map 5: WQMP Sites Eagle River Watershed
- Map 6: WQMP Sites Tenmile Creek Watershed
- Map 7: WQMP Sites Arkansas River Watershed

Climax Mine Water Quality Monitoring Plan Evaluation - 2019

Sampling Locations

Groundwater

Sample Locations: ARwell, ARK-MW-001D, EVMW-3S, EVMW-3D, EV-MW-004, TM-MW-002D, GW#2, TM-MW-001D, GW#1, ARK-MW-002S, ARK-MW-002D, EVMW-1D, EVMW-1S, EVMW-2, EVS-1, EVS-2, EVS-3

Internal Surface Water

Sample Locations: CC-SW1, EI-SW1

Surface Water

Sample Locations: Arkansas #1, Arkansas #2, AI, BI, EPR Outlet

Duplicate Sample Locations:

- First Quarter: ARK-MW-002D
- Third Quarter: ARwell
- Fourth Quarter: EVMW-2

During 2019 water quality samples were successfully collected from the above sample locations with the exception of the following:

First Quarter:

- Inaccessible or frozen due to winter conditions:
 - EVMW-3S, EVMW-3D, EV-MW-004, EVMW-2, EVS-1, EVS-2, EVS-3, EI-SW1, CC-SW1, AI, BI, CC-SW1

Third Quarter:

- Dry
 - EVS-1, AI, BI

Fourth Quarter:

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- Inaccessible or frozen due to winter conditions:
 - EVS-3, EI-SW1, ARK-MW-001D, CC-SW1

Discussion of Results: POC Wells

Numeric Protection Limits (NPLs) were implemented at point of compliance (POC) wells in the new Water Quality Monitoring Plan (WQMP) for the indicator parameter list. Section 5.0 of the WQMP discusses the rationale for selection of the NPLs. A comparison of results to applicable NPLs is provided in Table 1. Trend Evaluation Graphs 1-35 show a 5-year data set for all of the indicator parameters. In 2019, all indicator parameter results were within the applicable NPLs with the exception of pH at monitoring well GW#2 (described below).

GW#2 pH discussion:

On 4/16/18, the pH at GW#2 was measured at 6.18 standard units (exceeding the NPL range of 6.5 to 8.5). Climax notified DRMS on 4/17/18, per section 5.2.1.1 of the WQMP. Climax and DRMS agreed that the site should be monitored on a monthly basis until the pH was measured within the NPL range for three consecutive months. Table 1 and Trend Evaluation Graph #32 present pH results from 2015-2019 indicating no consistent trend. As of 12/31/2019, the pH at GW#2 has not exceeded the NPL range for consecutive months. Monthly pH monitoring is continuing at this location in 2020, including additional investigation in the surrounding area during the summer months.

Discussion of Results: Trend Evaluation of Groundwater and Surface Water Data

Per section 4.2.2.1 of the WQMP, Climax will “routinely evaluate indicator parameter water quality trends for the groundwater monitoring sites identified above on an annual basis, and report findings in the Annual Report to DRMS.”

As requested by DRMS, 5-year trend graphs and data tables attached. The graph titles are color coordinated, matching the color of the data table of the corresponding POC well.

The 2019 evaluation of trends does not indicate any decline in water quality at monitoring locations.

Discussion of Results: Outlier Identification and Data Validation

The 2019 groundwater and surface water data were analyzed for outliers. No outliers or invalid data were observed in 2019 data.

Table 1 - Indicator Parameters
5-Year Groundwater Quality Monitoring Data
Climax Mine

Location	Sample Date	Cadmium, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Iron, Dissolved (mg/L)	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)	Zinc, Dissolved (mg/L)	pH, Field Measurement (Standard Units)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Fluoride, Dissolved (mg/L)
ARwell	03/10/2015	0.00005	0.00025	0.03	0.267	0.0076	0.005	7.2	33.2	168	0.54
	06/16/2015	0.00005	0.0008	0.01	0.022	0.0028	0.005	6.85	13.7	120	0.21
	08/31/2015	0.00005	0.0008	0.03	0.039	0.0029	0.005	7.43	25.5	160	0.18
	11/12/2015	0.00005	0.0006	0.05	0.167	0.005	0.005	7	30.5	161	0.38
	03/15/2016	0.00005	0.00025	0.02	0.225	0.0073	0.005	7.67	31.8	164	0.46
	05/26/2016	0.00005	0.00025	0.06	0.063	0.0069	0.005	7.1	22.2	157	0.37
	08/01/2016	0.00005	0.00025	0.06	0.045	0.006	0.005	6.75	25.8	152	0.3
	11/10/2016	0.00005	0.00025	0.05	0.125	0.0064	0.005	7.62	28.8	162	0.6
	03/20/2017	0.00005	0.00025	0.07	0.319	0.0077	0.005	7.63	29.9	166	0.51
	05/24/2017	0.00005	0.0002	0.01	0.109	0.0076	0.005	7.38	26.7	160	2
	08/14/2017	0.00005	0.0002	0.08	0.061	0.0076	0.005	7.26	26.4	157	2.5
	11/20/2017	0.00005	0.0002	0.01	0.122	0.0078	0.005	7.68	28.8	162	0.51
	02/26/2018	0.00005	0.0002	0.08	0.361	0.0127	0.005	7.93	31.1	174	0.51
	06/05/2018	0.00005	0.0006	0.05	0.066	0.0052	0.005	7.11	19.8	142	0.25
	09/16/2019	0.000025	0.0004	0.015	0.07	0.0046	0.005	7.16	33.1	158	0.4
	09/16/2019	0.000025	0.0004	0.015	0.07	0.004	0.005	7.16	32.3	168	0.4
	12/17/2018	0.000025	0.0004	0.01	0.171	0.0058	0.005	7.42	30.8	182	0.52
	03/20/2019	0.000025	0.0004	0.01	0.255	0.0063	0.005	7.25	30.8	184	0.5
	06/12/2019	0.000025	0.0013	0.015	0.02	0.003	0.005	7.01	17.8	156	0.2
	09/16/2019	0.000025	0.0004	0.015	0.07	0.004	0.005	7.16	32.3	168	0.4
	12/11/2019	0.000025	0.0004	0.015	0.1	0.0052	0.005	7.16	28.8	168	0.5
Numeric Protection Limit (NPL)		0.005	0.2	0.3	TBD	0.210	2.0	6.5 - 8.5	250	400	2.0

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

Note: Green data were non-detect results so 1/2 MDL was used. Lab used dilution factor of 100, resulting in elevated MDLs. Data is considered erroneous and was not used in trending graphs.

Note: Purple data from 9/16/19 is our 2019 Q3 duplicate sample.

Location	Sample Date	Cadmium, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Iron, Dissolved (mg/L)	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)	Zinc, Dissolved (mg/L)	pH, Field Measurement (Standard Units)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Fluoride, Dissolved (mg/L)
ARK-MW-001D	03/10/2015	0.00005	0.00025	0.11	0.016	0.0326	0.005	7.79	45.6	210	1.89
	06/16/2015	0.00005	0.00025	0.09	0.022	0.0317	0.005	7.56	43.5	214	1.64
	09/22/2015	0.00005	0.00025	0.1	0.013	0.0299	0.005	7.34	45.1	218	1.75
	11/12/2015	0.00005	0.00025	0.1	0.073	0.03	0.005	7.77	45.8	210	1.77
	03/15/2016	0.00005	0.00025	0.08	0.011	0.0339	0.005	8.18	50.8	214	1.79
	06/02/2016	0.00005	0.00025	0.08	0.015	0.0307	0.005	8.14	44.8	226	1.9
	09/07/2016	0.00005	0.00025	0.14	0.204	0.0294	0.005	7.86	39.8	202	1.81
	12/21/2016	0.00005	0.00025	0.14	0.182	0.0301	0.005	8.13	43	228	1.86
	03/20/2017	0.00005	0.00025	0.12	0.062	0.0288	0.005	8.05	42.7	209	1.77
	06/29/2017	0.00005	0.0002	0.13	0.149	0.0317	0.005	7.98	41.4	208	1.83
	07/19/2017	0.00005	0.0002	0.13	0.152	0.0294	0.005	8.03	46.9	214	1.83
	12/18/2017	0.00005	0.0002	0.1	0.029	0.0296	0.005	7.81	44	206	1.96
	02/26/2018	0.00005	0.0002	0.1	0.057	0.0298	0.005	8.22	31.2	193	1.72
	05/14/2018	0.00005	0.0002	0.11	0.055	0.03	0.005	7.66	37.3	203	1.83
	09/18/2018	0.000025	0.0004	0.14	0.132	0.0329	0.005	7.98	41.2	224	1.79
	12/18/2018	0.000025	0.0004	0.12	0.029	0.0303	0.005	7.97	44.5	216	1.9
	03/20/2019	0.000025	0.0004	0.11	0.039	0.0306	0.005	7.87	29.5	220	1.7
	06/12/2019	0.000025	0.0004	0.08	0.005	0.0303	0.005	7.72	41.2	214	1.9
	09/16/2019	0.000025	0.0004	0.09	0.005	0.0324	0.005	7.78	41.2	218	1.7
	12/11/2019	***	***	***	***	***	***	***	***	***	***
Numeric Protection Limit (NPL)		0.005	0.2	0.3	TBD	0.210	2.0	6.5 - 8.5	250	400	2.0

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

*** = No Sample Collected - Not Accessible (or Frozen) due to Winter Conditions

Table 1 - Indicator Parameters
5-Year Groundwater Quality Monitoring Data
Climax Mine

Location	Sample Date	Cadmium, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Iron, Dissolved (mg/L)	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)	Zinc, Dissolved (mg/L)	pH, Field Measurement (Standard Units)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Fluoride, Dissolved (mg/L)
EVMW-3S	03/26/2015	0.0002	0.0034	0.01	0.018	0.0019	0.03	7.65	7.3	166	0.025
	06/16/2015	0.00005	0.00025	0.01	0.109	0.0022	0.005	7.06	8.6	160	0.08
	08/19/2015	0.00005	0.00025	0.03	0.064	0.012	0.005	6.65	7	226	0.1
	11/10/2015	0.0001	0.00025	0.09	0.119	0.0035	0.005	7.06	12.1	229	0.08
	01/26/2016	0.00005	0.00025	0.01	0.064	0.0023	0.005	7.76	13.5	222	0.08
	06/08/2016	0.00005	0.0007	0.01	0.06	0.0034	0.005	7.23	7.7	155	0.09
	08/31/2016	0.0008	0.0027	0.01	0.047	0.0035	0.02	7.26	6.7	221	0.09
	10/18/2016	0.00005	0.00025	0.03	0.042	0.0048	0.005	7.17	9.5	227	0.025
	03/14/2017	0.00005	0.0012	0.01	0.081	0.0035	0.005	7.27	11.8	194	0.09
	06/19/2017	0.00005	0.0006	0.01	0.017	0.0025	0.005	7.2	5.9	158	5
	08/28/2017	0.00005	0.0005	0.01	0.021	0.0047	0.03	nd	10.6	222	2.5
	10/30/2017	0.00005	0.0002	0.04	0.043	0.006	0.01	7.68	8.6	218	2.5
	02/28/2018	0.00005	0.0008	0.03	0.034	0.0039	0.01	6.7	18.8	215	0.08
	06/11/2018	0.00005	0.0002	0.01	0.0025	0.0015	0.005	7.39	6	180	0.05
	08/22/2018	0.00005	0.0011	0.03	0.071	0.006	0.005	7.34	17.8	234	0.07
	12/17/2018	0.000025	0.0004	0.01	0.006	0.0012	0.005	7.17	11	234	0.07
	01/23/2019	***	***	***	***	***	***	***	***	***	***
	06/18/2019	0.000025	0.0004	0.015	0.08	0.0014	0.005	7.26	6.2	180	0.05
	09/17/2019	0.000025	0.0004	0.015	0.01	0.0018	0.005	7.68	11.2	244	0.05
	11/20/2019	0.000025	0.0011	0.015	0.02	0.0026	0.005	7.07	10.1	236	0.05
Numeric Protection Limit (NPL)		0.005	0.2	0.3	TBD	0.210	2.0	6.5 - 8.5	250	400	None

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

Note: Green data were non-detect data, 1/2 MDL used. Lab used dilution factor of 100, resulting in elevated MDLs. Data is not representative and considered erroneous.

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nd = no data collected for parameter at location during sampling event

Location	Sample Date	Cadmium, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Iron, Dissolved (mg/L)	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)	Zinc, Dissolved (mg/L)	pH, Field Measurement (Standard Units)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Fluoride, Dissolved (mg/L)
EVMW-3D	03/26/2015	0.00005	0.00025	0.03	0.023	0.0008	0.005	7.67	2.4	212	0.17
	06/16/2015	0.00005	0.00025	0.02	0.029	0.0009	0.02	7.66	2.1	222	0.32
	08/19/2015	0.00005	0.0014	0.01	0.012	0.0008	0.02	7.45	2.6	230	0.4
	11/10/2015	0.00005	0.00025	0.02	0.015	0.0008	0.005	7.89	2.8	221	0.31
	01/26/2016	0.00005	0.00025	0.03	0.02	0.0009	0.005	7.89	3.5	228	0.33
	06/08/2016	0.00005	0.00025	0.01	0.046	0.001	0.005	7.85	4.3	248	0.32
	08/31/2016	0.00005	0.0006	0.01	0.05	0.0011	0.02	7.89	4.6	232	0.26
	10/18/2016	0.00005	0.00025	0.01	0.068	0.0014	0.005	7.9	3.5	221	0.2
	03/13/2017	0.00005	0.0016	0.01	0.043	0.0008	0.03	7.57	8.7	237	0.26
	06/19/2017	0.00005	0.0002	0.01	0.077	0.0018	0.005	7.88	6.1	244	5
	09/11/2017	0.00005	0.0005	0.01	0.066	0.0013	0.005	7.66	5.2	254	2.5
	10/30/2017	0.00005	0.0002	0.01	0.071	0.0021	0.06	7.6	35.6	266	2.5
	02/12/2018	0.00005	0.0012	0.01	0.024	0.0011	0.005	7.66	2.8	233	0.27
	06/11/2018	0.00005	0.0007	0.01	0.027	0.0009	0.005	7.74	2.8	235	0.22
	08/22/2018	0.00005	0.0002	0.01	0.079	0.0025	0.005	7.6	4.1	246	0.26
	11/13/2018	0.000025	0.0012	0.01	0.006	0.0007	0.005	7.77	3	246	0.3
	03/15/2019	***	***	***	***	***	***	***	***	***	***
	06/18/2019	0.000025	0.0004	0.015	0.03	0.0011	0.005	7.69	2.5	238	0.4
	09/17/2019	0.000025	0.0014	0.015	0.02	0.0014	0.005	7.88	5.4	208	0.3
	11/20/2019	0.000025	0.0004	0.015	0.03	0.0011	0.005	7.48	2.3	244	0.3
Numeric Protection Limit (NPL)		0.005	0.2	0.3	TBD	0.210	2.0	6.5 - 8.5	250	400	None

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

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Table 1 - Indicator Parameters
5-Year Groundwater Quality Monitoring Data
Climax Mine

Location	Sample Date	Cadmium, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Iron, Dissolved (mg/L)	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)	Zinc, Dissolved (mg/L)	pH, Field Measurement (Standard Units)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Fluoride, Dissolved (mg/L)
EV-MW-004	01/29/2015	0.00005	0.0007	0.01	0.024	0.0026	0.02	7.23	45	298	0.15
	06/22/2015	0.00005	0.00025	0.03	0.263	0.0032	0.01	7.08	50.1	284	0.13
	08/19/2015	0.00005	0.0006	0.03	0.03	0.0027	0.01	7.11	43.3	288	0.16
	11/12/2015	0.00005	0.00025	0.03	0.152	0.003	0.005	7.38	47.1	289	0.33
	03/09/2016	0.00005	0.00025	0.01	0.127	0.0034	0.04	7.71	57.1	294	0.14
	06/13/2016	0.00005	0.00025	0.01	0.176	0.0029	0.02	7.38	50.7	285	0.14
	09/01/2016	0.00005	0.00025	0.04	0.164	0.0033	0.02	7.52	45.6	278	0.12
	10/19/2016	0.00005	0.00025	0.01	0.094	0.0033	0.04	7.48	50.3	284	0.08
	03/06/2017	0.00005	0.00025	0.01	0.105	0.0029	0.02	7.7	45.4	276	0.14
	06/13/2017	0.00005	0.0002	0.02	0.109	0.0056	0.07	7.62	55.9	291	5
	08/21/2017	0.00005	0.0002	0.01	0.064	0.0032	0.005	7.39	52.6	295	2.5
	11/07/2017	0.00005	0.0002	0.01	0.023	0.0032	0.005	7.63	60.8	294	0.11
	03/12/2018	0.00005	0.0002	0.01	0.06	0.0033	0.005	7.08	43.3	281	0.1
	06/18/2018	0.00005	0.0002	0.02	0.054	0.003	0.01	7.24	47.2	287	0.14
	08/27/2018	0.00005	0.0008	0.01	0.036	0.0031	0.01	7.38	55.4	286	0.14
	11/28/2018	0.00007	0.0034	0.01	0.011	0.0026	0.03	7.29	51.8	316	0.27
	03/15/2019	***	***	***	***	***	***	***	***	***	***
	06/20/2019	0.000025	0.0004	0.015	0.09	0.0028	0.02	7.43	49.3	304	0.2
	08/28/2019	0.000025	0.0004	0.015	0.02	0.0028	0.005	7.64	48.9	322	0.1
	11/12/2019	0.000025	0.0004	0.015	0.005	0.0027	0.005	7.23	43.7	288	0.2
Numeric Protection Limit (NPL)		0.005	0.2	0.3	TBD	0.210	2.0	6.5 - 8.5	250	400	None

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

Note: Green data were non-detect data, 1/2 MDL used. Lab used dilution factor of 100, resulting in elevated MDLs. Data is not representative and considered erroneous.

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Location	Sample Date	Cadmium, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Iron, Dissolved (mg/L)	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)	Zinc, Dissolved (mg/L)	pH, Field Measurement (Standard Units)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Fluoride, Dissolved (mg/L)
TM-MW-002D	03/09/2015	0.00005	0.00025	0.01	0.0025	0.0094	0.005	7.9	60.2	164	0.3
	05/19/2015	0.00005	0.00025	0.01	0.0025	0.0067	0.005	7.78	60.6	160	0.51
	09/24/2015	0.00005	0.00025	0.01	0.009	0.0067	0.02	7.95	57.5	182	0.45
	12/07/2015	0.00005	0.00025	0.01	0.0025	0.0079	0.005	8.09	62.4	162	0.41
	03/03/2016	0.00005	0.00025	0.01	0.0025	0.0076	0.005	8.5	57	158	0.48
	05/26/2016	0.00005	0.00025	0.01	0.006	0.0082	0.005	8.26	56.9	159	0.46
	08/01/2016	***	***	***	***	***	***	***	***	***	***
	11/14/2016	0.00005	0.00025	0.01	0.006	0.0077	0.005	8.74	55.7	164	0.44
	03/08/2017	0.00005	0.00025	0.01	0.0025	0.0068	0.005	8.24	57.9	156	0.44
	05/15/2017	0.00005	0.00025	0.01	0.0025	0.0071	0.005	7.83	56.4	168	2
	08/07/2017	0.00005	0.0002	0.01	0.0025	0.0071	0.005	7.46	67.8	180	0.46
	10/04/2017	0.00005	0.0002	0.01	0.0025	0.0068	0.005	8.1	55.2	157	0.43
	01/24/2018	0.00005	0.0002	0.01	0.0025	0.0086	0.005	7.94	56.6	158	0.45
	04/16/2018	0.00005	0.0006	0.01	0.0025	0.0092	0.01	7.81	41.7	142	0.46
	07/23/2018	0.00005	0.0002	0.01	0.0025	0.0063	0.005	8.15	59.6	174	0.44
	11/20/2018	0.000025	0.0004	0.01	0.0025	0.0066	0.005	8.32	55.4	186	0.42
	01/16/2019	0.000025	0.0004	0.01	0.005	0.0064	0.005	8.43	63.2	180	0.43
	05/30/2019	0.000025	0.0004	0.015	0.005	0.0068	0.005	8.14	54	152	0.5
	08/26/2019	0.000025	0.0004	0.015	0.005	0.0066	0.005	8.14	57.8	176	0.6
	10/22/2019	0.000025	0.0004	0.015	0.005	0.0072	0.01	7.88	58.6	182	0.4
Numeric Protection Limit (NPL)		0.005	0.2	0.3	0.050	0.210	2.0	6.5 - 8.5	250	400	None

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

Note: Green data were non-detect data, 1/2 MDL used. Lab used dilution factor of 100, resulting in elevated MDLs. Data is not representative and considered erroneous.

*** = No Sample Collected - Not Accessible (or Frozen) due to Winter Conditions

Table 1 - Indicator Parameters
5-Year Groundwater Quality Monitoring Data
Climax Mine

Location	Sample Date	Cadmium, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Iron, Dissolved (mg/L)	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)	Zinc, Dissolved (mg/L)	pH, Field Measurement (Standard Units)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Fluoride, Dissolved (mg/L)
GW#2	03/09/2015	0.00005	0.0027	0.01	0.0025	0.0014	0.01	6.6	24.3	96	0.025
	05/19/2015	0.00005	0.0006	0.01	0.0025	0.0014	0.02	6.5	21.4	104	0.12
	09/24/2015	0.00005	0.00025	0.01	0.0025	0.0013	0.02	6.7	23.8	114	0.09
	12/07/2015	0.00005	0.00025	0.01	0.0025	0.0013	0.01	6.4	27.2	88	0.07
	03/03/2016	0.00005	0.0011	0.01	0.0025	0.0015	0.01	6.8	30.4	100	0.23
	05/26/2016	0.00005	0.0022	0.01	0.0025	0.0012	0.03	6.6	24.1	87.5	0.08
	08/03/2016	0.00005	0.00025	0.01	0.0025	0.0013	0.005	5.9	24.7	92.3	0.08
	11/14/2016	0.00005	0.0007	0.01	0.0025	0.0012	0.01	6.8	28.6	92.2	0.09
	03/01/2017	0.00005	0.0034	0.01	0.0025	0.0013	0.03	6.5	38.5	106	0.1
	04/19/2017	*	*	*	*	*	*	6.7	*	*	*
	05/15/2017	0.00005	0.0023	0.01	0.0025	0.0011	0.02	6.9	37.4	107	5
	06/26/2017	*	*	*	*	*	*	6.7	*	*	*
	07/20/2017	*	*	*	*	*	*	6.7	*	*	*
	08/07/2017	0.00005	0.0007	0.01	0.0025	0.0012	0.005	6.4	26.4	94.4	0.08
	09/11/2017	*	*	*	*	*	*	6.7	*	*	*
	10/04/2017	0.00005	0.0004	0.01	0.0025	0.0014	0.005	7.2	26	86.2	0.07
	11/22/2017	*	*	*	*	*	*	6.7	*	*	*
	12/18/2017	*	*	*	*	*	*	6.7	*	*	*
	01/24/2018	0.00005	0.0002	0.01	0.0025	0.0011	0.005	6.9	33.6	98.2	0.08
	04/16/2018	0.00005	0.0002	0.01	0.0025	0.0011	0.005	6.2	35.5	110	0.08
	05/09/2018	*	*	*	*	*	*	6.7	*	*	*
	06/14/2018	*	*	*	*	*	*	6.7	*	*	*
	07/23/2018	0.00005	0.0006	0.01	0.0025	0.0013	0.005	6.1	34.5	108	0.08
	08/20/2018	*	*	*	*	*	*	6.7	*	*	*
	09/27/2018	*	*	*	*	*	*	6.7	*	*	*
	10/18/2018	*	*	*	*	*	*	6.7	*	*	*
	11/20/2018	0.000025	0.0004	0.01	0.0025	0.001	0.005	6.5	35.1	138	0.07
	12/05/2018	*	*	*	*	*	*	6.7	*	*	*
	01/16/2019	0.00005	0.0004	0.01	0.0025	0.0013	0.005	6.4	46.6	144	0.08
	02/13/2019	*	*	*	*	*	*	6.7	*	*	*
	03/28/2019	*	*	*	*	*	*	6.7	*	*	*
	04/24/2019	*	*	*	*	*	*	6.7	*	*	*
	05/30/2019	*	*	*	*	*	*	6.7	*	*	*
	06/10/2019	0.000025	0.0004	0.015	0.005	0.0011	0.005	6.9	36.3	136	0.1
	07/22/2019	*	*	*	*	*	*	6.7	*	*	*
	08/26/2019	0.000025	0.0004	0.015	0.005	0.0011	0.005	7.0	37.7	136	0.05
	10/22/2019	0.000025	0.0014	0.015	0.005	0.0011	0.03	6.3	40.6	128	0.05
	11/21/2019	*	*	*	*	*	*	6.7	*	*	*
	12/19/2019	*	*	*	*	*	*	6.7	*	*	*
Numeric Protection Limit (NPL)		0.005	0.2	0.3	0.050	0.210	2.0	6.5 - 8.5	250	400	None

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

Note: Green data were non-detect data, 1/2 MDL used. Lab used dilution factor of 100, resulting in elevated MDLs. Data is not representative and considered erroneous.

Note: Red italicized data are NPL exceedances for site, which have been communicated to DRMS and investigations are currently ongoing.

* Monthly pH data collection at GW#2 did not include sampling for other parameters

Table 1 - Indicator Parameters
5-Year Groundwater Quality Monitoring Data
Climax Mine

Location	Sample Date	Cadmium, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Iron, Dissolved (mg/L)	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)	Zinc, Dissolved (mg/L)	pH, Field Measurement (Standard Units)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Fluoride, Dissolved (mg/L)
TM-MW-001D	03/09/2015	0.00005	0.00025	0.01	0.011	0.0396	0.005	8.11	188	336	3.44
	05/19/2015	0.00005	0.00025	0.01	0.01	0.0388	0.005	7.99	187	344	3.26
	09/24/2015	0.00005	0.00025	0.02	0.066	0.0392	0.005	8.06	200	332	3.26
	12/07/2015	0.00005	0.00025	0.01	0.023	0.0385	0.005	8.08	211	346	2.99
	03/03/2016	0.00005	0.00025	0.01	0.005	0.0375	0.005	8.66	184	319	3.11
	05/26/2016	0.00005	0.00025	0.01	0.008	0.0373	0.005	8.15	183	317	3.16
	08/03/2016	0.00005	0.00025	0.01	0.007	0.0406	0.005	7.59	194	330	3.12
	11/14/2016	0.00005	0.00025	0.01	0.01	0.0382	0.005	8.82	182	318	3.24
	03/01/2017	0.00005	0.00025	0.01	0.005	0.0361	0.005	8.35	180	314	3.15
	05/15/2017	0.00005	0.00025	0.01	0.01	0.0398	0.005	8.17	189	340	17
	09/11/2017	0.00005	0.0002	0.01	0.012	0.0358	0.005	8.39	180	314	2.5
	10/04/2017	0.00005	0.0002	0.01	0.005	0.0456	0.005	8.21	189	331	3.17
	01/24/2018	0.00005	0.0002	0.01	0.005	0.0423	0.005	8.22	178	313	3.08
	04/16/2018	0.00005	0.0002	0.01	0.0025	0.0405	0.005	7.92	176	322	3.16
	07/23/2018	0.00005	0.0002	0.01	0.0025	0.0391	0.005	8.07	182	346	3.28
	11/20/2018	0.000025	0.0004	0.01	0.0025	0.0361	0.005	8.37	184	354	3.29
	01/15/2019	0.00005	0.0004	0.01	0.01	0.0362	0.005	8.56	192	354	3.9
	06/10/2019	0.000025	0.0004	0.015	0.005	0.0413	0.005	8.06	187	354	3.2
	08/26/2019	0.00005	0.0004	0.015	0.005	0.0384	0.005	8.17	183	342	3.1
	10/23/2019	0.000025	0.0004	0.015	0.005	0.0399	0.005	8.06	194	348	3.2

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

Note: Green data were non-detect data, 1/2 MDL used. Lab used dilution factor of 100, resulting in elevated MDLs. Data is not representative and considered erroneous.

Location	Sample Date	Cadmium, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Iron, Dissolved (mg/L)	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)	Zinc, Dissolved (mg/L)	pH, Field Measurement (Standard Units)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Fluoride, Dissolved (mg/L)
GW#1	03/09/2015	0.0022	0.0011	0.01	0.0025	0.1959	0.45	6.49	237	424	1.08
	05/19/2015	0.0017	0.0014	0.01	0.0025	0.1877	0.35	6.34	181	344	1.14
	09/24/2015	0.0017	0.0005	0.02	0.0025	0.1812	0.41	6.53	207	364	1.02
	12/07/2015	0.0022	0.0007	0.01	0.0025	0.1937	0.38	6.26	243	380	1.07
	03/03/2016	0.0021	0.0026	0.01	0.0025	0.1837	0.4	6.66	225	370	1.09
	05/26/2016	0.0015	0.0011	0.01	0.0025	0.1671	0.32	6.37	172	297	1.07
	08/03/2016	0.002	0.0019	0.01	0.0025	0.1573	0.38	6.31	203	341	0.98
	11/14/2016	0.002	0.0016	0.01	0.0025	0.1662	0.4	6.62	203	347	1.05
	03/01/2017	0.0019	0.0016	0.01	0.0025	0.155	0.39	6.58	234	375	1.05
	05/15/2017	0.0017	0.0026	0.01	0.0025	0.144	0.33	6.53	153	282	2
	08/07/2017	0.0002	0.0002	0.01	0.0025	0.147	0.34	6.27	181	325	1.07
	10/04/2017	0.0019	0.0005	0.01	0.0025	0.154	0.38	7.56	192	337	1.01
	01/24/2018	0.0019	0.0011	0.01	0.0025	0.16	0.37	7.79	192	335	1.1
	04/16/2018	0.0013	0.0002	0.01	0.0025	0.145	0.35	5.95	189	332	1.02
	07/23/2018	0.0016	0.0002	0.01	0.0025	0.14	0.37	6.32	194	382	1.05
	11/20/2018	0.00193	0.0012	0.01	0.0025	0.132	0.36	6.2	199	394	1.14
	01/15/2019	0.00219	0.0016	0.01	0.0025	0.137	0.41	6.21	229	396	1.2
	06/10/2019	0.00152	0.0016	0.015	0.005	0.127	0.3	6.93	147	316	1
	08/26/2019	0.00037	0.0004	0.015	0.005	0.127	0.35	6.86	178	346	0.9
	10/23/2019	0.00196	0.0034	0.015	0.005	0.134	0.39	6.96	187	374	1.1

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

Note: Green data were non-detect data, 1/2 MDL used. Lab used dilution factor of 100, resulting in elevated MDLs. Data is not representative and considered erroneous.

Table 1 - Indicator Parameters
5-Year Groundwater Quality Monitoring Data
Climax Mine

Location	Sample Date	Cadmium, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Iron, Dissolved (mg/L)	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)	Zinc, Dissolved (mg/L)	pH (Standard Units)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Fluoride, Dissolved (mg/L)
ARK-MW-002S	03/10/2015	0.0001	0.00025	0.41	2.89	0.0114	0.005	6.82	10.4	628	0.13
	06/16/2015	0.0003	0.00025	0.42	2.94	0.0061	0.005	6.63	8.8	650	0.12
	08/31/2015	0.00005	0.00025	2.59	3.09	0.0139	0.005	7.07	2.8	680	0.13
	11/16/2015	0.0002	0.001	0.45	3.1	0.0087	0.01	6.84	11.4	626	0.11
	03/15/2016	0.00005	0.0007	1.85	3.69	0.0099	0.04	7.36	9.2	633	0.14
	05/26/2016	0.00005	0.0008	1.41	3.55	0.0066	0.01	6.93	3.8	640	0.14
	08/01/2016	0.0001	0.00025	0.72	3.16	0.0077	0.005	6.88	0.5	624	0.13
	11/10/2016	0.0001	0.0014	0.74	3.32	0.0102	0.01	7.09	1.6	635	0.12
	03/20/2017	0.0001	0.00025	1.23	3.14	0.0096	0.005	7.44	9.5	626	0.14
	05/24/2017	0.00005	0.0002	2.24	3.46	0.0141	0.005	7.28	4.6	654	2.5
	08/14/2017	0.0001	0.001	0.66	3.48	0.0139	0.005	6.84	2.8	621	2.5
	11/20/2017	0.00005	0.0002	1.25	3.53	0.0084	0.005	7.3	0.5	619	0.25
	03/12/2018	0.00005	0.0005	1.29	3.38	0.0118	0.01	6.53	1.9	601	0.11
	05/14/2018	0.00005	0.0002	3.17	3.6	0.0143	0.005	7.24	0.5	623	0.12
	09/17/2018	0.00006	0.0004	8.14	4.38	0.0081	0.005	6.89	0.5	680	0.14
	11/21/2018	0.000025	0.0004	6.08	3.45	0.0071	0.005	6.75	1.4	680	0.12
	03/28/2019	0.00006	0.0004	4.82	3.5	0.0076	0.01	7.1	8	638	0.14
	06/12/2019	0.000025	0.0004	1.78	3.74	0.0051	0.005	7.01	4.5	660	0.05
	09/17/2019	0.000025	0.0004	5.78	3.88	0.0041	0.005	7.1	0.5	648	0.1
	12/11/2019	0.000025	0.0004	6.21	4.04	0.0052	0.005	6.77	0.5	678	0.2

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

Note: Green data were non-detect data, 1/2 MDL used. Lab used dilution factor of 100, resulting in elevated MDLs. Data is not representative and considered erroneous.

Location	Sample Date	Cadmium, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Iron, Dissolved (mg/L)	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)	Zinc, Dissolved (mg/L)	pH, Field Measurement (Standard Units)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Fluoride, Dissolved (mg/L)
ARK-MW-002D	03/10/2015	0.00005	0.0025	0.04	0.005	0.0219	0.005	9.38	11.9	224	6.82
	06/16/2015	0.00005	0.00025	0.03	0.005	0.0194	0.005	9.01	10.9	216	6.27
	08/31/2015	0.00005	0.00025	0.08	0.057	0.0223	0.005	8.8	12.6	270	7.48
	11/12/2015	0.00005	0.00025	0.06	0.057	0.0221	0.01	8.84	10.9	245	7.25
	03/15/2016	0.00005	0.0005	0.04	0.006	0.0217	0.005	9.37	12.2	208	6.53
	05/26/2016	0.00005	0.00025	0.05	0.006	0.0196	0.005	9.35	10.1	218	6.69
	08/01/2016	0.00005	0.00025	0.09	0.047	0.0247	0.005	8.31	8.4	266	7.7
	11/10/2016	0.00005	0.0009	0.05	0.054	0.0322	0.005	9.56	44.5	294	7.59
	03/20/2017	0.00005	0.0009	0.1	0.055	0.0231	0.005	8.54	36	285	7.2
	05/24/2017	0.00005	0.0024	0.56	0.064	0.0239	0.005	8.39	42.9	288	12
	08/14/2017	0.0005	0.0002	0.01	0.067	0.0245	0.005	8.12	36.8	287	2.5
	11/20/2017	0.00005	0.0002	0.01	0.067	0.0214	0.005	8.41	27.2	283	7.79
	03/12/2018	0.00005	0.0002	0.01	0.047	0.0237	0.005	8.74	22.7	249	7.22
	05/14/2018	0.00005	0.0002	0.01	0.054	0.0232	0.04	8.3	29.9	283	7.95
	09/17/2018	0.000025	0.0004	0.01	0.006	0.0256	0.005	8.59	15.4	262	7.47
	11/21/2018	0.000025	0.0004	0.01	0.037	0.0238	0.005	8.57	28.7	308	7.72
	03/28/2019	0.000025	0.0004	0.01	0.045	0.0245	0.005	8.65	28.3	336	7.83
	03/28/2019	0.000025	0.0004	0.01	0.046	0.0242	0.005	8.65	24.7	348	7.83
	06/12/2019	0.000025	0.0004	0.015	0.02	0.0238	0.005	8.81	17.3	288	8.2
	09/17/2019	0.000025	0.0012	0.11	0.005	0.0233	0.005	8.97	14.6	270	7.4
	12/11/2019	0.000025	0.0004	0.06	0.03	0.0298	0.005	8.31	24.9	286	8

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

Note: Purple data from 3/28/19 is our 2019 Q1 duplicate sample.

Table 1 - Indicator Parameters
5-Year Groundwater Quality Monitoring Data
Climax Mine

Location	Sample Date	Cadmium, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Iron, Dissolved (mg/L)	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)	Zinc, Dissolved (mg/L)	pH (Standard Units)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Fluoride, Dissolved (mg/L)
EVMW-1D	01/29/2015	0.00005	0.001	0.05	0.168	0.0032	0.04	7.83	387	682	0.19
	06/16/2015	0.00005	0.00025	0.15	0.183	0.003	0.01	7.26	392	676	0.17
	08/19/2015	0.00005	0.00025	0.05	0.25	0.0028	0.005	7.19	371	680	0.31
	11/10/2015	0.00005	0.00025	0.03	0.214	0.0028	0.005	7.57	373	635	0.18
	03/09/2016	0.00005	0.00025	0.03	0.205	0.0029	0.005	7.98	363	627	0.21
	06/13/2016	0.00005	0.0005	0.06	0.226	0.0025	0.05	7.71	406	675	0.17
	09/01/2016	0.00005	0.00025	0.01	0.19	0.0026	0.01	7.67	371	639	0.16
	10/18/2016	0.00005	0.00025	0.01	0.105	0.0026	0.005	7.71	399	673	0.1
	03/20/2017	0.00005	0.00025	0.03	0.186	0.0025	0.005	7.62	369	630	0.14
	06/13/2017	0.00005	0.0002	0.01	0.186	0.0019	0.005	7.8	382	644	5
	08/21/2017	0.0001	0.0011	0.01	0.2	0.0034	0.01	7.64	375	652	2.5
	11/07/2017	0.00005	0.0002	0.01	0.111	0.0032	0.005	7.75	426	689	0.15
	01/29/2018	0.00005	0.0002	0.01	0.155	0.0035	0.02	7.49	379	650	0.15
	04/23/2018	0.00005	0.0002	0.03	0.126	0.0023	0.04	7.41	406	674	0.15
	08/27/2018	0.00005	0.0006	0.05	0.187	0.003	0.005	7.68	398	664	0.2
	11/13/2018	0.000025	0.0011	0.01	0.168	0.0022	0.005	7.64	382	718	0.15
	01/22/2019	0.000025	0.0004	0.06	0.181	0.0031	0.01	7.67	356	702	0.2
	06/20/2019	0.000025	0.0004	0.04	0.18	0.0021	0.06	7.94	384	706	0.1
	08/28/2019	0.000025	0.0012	0.19	0.21	0.0031	0.03	7.75	409	712	0.1
	11/12/2019	0.000025	0.0004	0.18	0.13	0.0022	0.005	7.46	433	716	0.1

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

Note: Green data were non-detect data, 1/2 MDL used. Lab used dilution factor of 100, resulting in elevated MDLs. Data is not representative and considered erroneous.

Location	Sample Date	Cadmium, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Iron, Dissolved (mg/L)	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)	Zinc, Dissolved (mg/L)	pH, Field Measurement (Standard Units)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Fluoride, Dissolved (mg/L)
EVMW-1S	01/29/2015	0.00005	0.003	1.65	0.633	0.437	0.005	7.23	470	882	0.21
	06/16/2015	0.00005	0.00025	2	0.648	0.414	0.005	7.2	392	734	0.24
	08/19/2015	0.0001	0.00025	1.97	0.712	0.459	0.005	6.65	426	890	0.29
	11/10/2015	0.0001	0.00025	2.06	0.673	0.431	0.005	7.21	456	851	0.19
	03/09/2016	0.00005	0.00025	1.27	0.598	0.38	0.005	7.67	515	901	0.18
	06/13/2016	0.00005	0.00025	1.51	0.546	0.3872	0.005	7.21	456	819	0.19
	09/01/2016	0.00005	0.00025	2.55	0.952	0.402	0.005	7.05	444	860	0.29
	10/18/2016	0.00005	0.00025	1.5	0.732	0.4498	0.005	7.25	448	833	0.17
	03/20/2017	0.00005	0.00025	1.48	0.612	0.416	0.005	7.41	475	869	0.12
	06/13/2017	0.00005	0.0002	0.43	0.552	0.362	0.005	7.49	433	768	5
	08/21/2017	0.0001	0.0002	0.44	0.689	0.414	0.005	7.37	456	845	2.5
	11/07/2017	0.00005	0.0002	0.44	0.62	0.398	0.005	7.47	517	895	0.19
	01/29/2018	0.00005	0.0002	1.08	0.609	0.394	0.02	7.4	468	841	0.15
	04/23/2018	0.00005	0.0002	1.47	0.74	0.335	0.01	6.8	520	898	0.2
	09/18/2018	0.000025	0.0004	1.65	0.733	0.424	0.005	7.2	478	916	0.22
	12/17/2018	0.00007	0.0004	1.88	0.672	0.4	0.005	7.38	505	958	0.2
	01/22/2019	0.000025	0.0004	1.83	0.802	0.377	0.005	7.19	509	976	0.24
	06/18/2019	0.00008	0.0004	1.68	0.57	0.372	0.005	7.2	452	896	0.2
	08/28/2019	0.000025	0.0004	2.15	0.88	0.361	0.01	7.42	512	954	0.2
	11/12/2019	0.000025	0.0004	2.19	0.89	0.368	0.005	7.04	507	946	0.2

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

Note: Green data were non-detect data, 1/2 MDL used. Lab used dilution factor of 100, resulting in elevated MDLs. Data is not representative and considered erroneous.

Table 1 - Indicator Parameters
5-Year Groundwater Quality Monitoring Data
Climax Mine

Location	Sample Date	Cadmium, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Iron, Dissolved (mg/L)	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)	Zinc, Dissolved (mg/L)	pH, Field Measurement (Standard Units)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Fluoride, Dissolved (mg/L)
EVMW-2	01/29/2015	0.00005	0.0011	0.02	0.046	0.0025	0.02	7.84	27	282	0.06
	06/22/2015	0.00005	0.0006	0.01	0.025	0.0014	0.02	7.25	20.4	278	0.05
	08/19/2015	0.00005	0.00025	0.03	0.097	0.0019	0.01	7.14	22.7	282	0.09
	11/10/2015	0.00005	0.00025	0.01	0.043	0.0017	0.03	7.56	22.7	279	0.025
	03/09/2016	0.00005	0.0013	0.03	0.056	0.0035	0.02	7.91	35.9	300	0.16
	06/13/2016	0.00005	0.0006	0.01	0.024	0.0008	0.01	7.6	17.2	269	0.06
	09/01/2016	0.00005	0.001	0.01	0.04	0.002	0.02	7.8	24.6	276	0.025
	10/18/2016	0.00005	0.0012	0.01	0.132	0.0029	0.01	7.58	27	292	0.025
	03/14/2017	0.00005	0.0012	0.01	0.057	0.007	0.005	7.71	31.2	294	0.06
	06/13/2017	0.00005	0.0002	0.01	0.074	0.0033	0.005	7.7	28.1	296	5
	08/21/2017	0.00005	0.0014	0.01	0.039	0.0058	0.005	7.73	34.6	300	2.5
	10/30/2017	0.00005	0.0006	0.01	0.07	0.0045	0.01	7.85	30.3	302	2.5
	03/12/2018	0.00005	0.0015	0.01	0.033	0.0025	0.005	7.31	20	276	0.025
	06/05/2018	0.00005	0.0016	0.01	0.016	0.0006	0.01	7.58	16.2	277	0.025
	08/27/2018	0.00005	0.0022	0.01	0.021	0.0039	0.005	7.48	52.9	274	0.06
	11/29/2018	0.000025	0.0014	0.01	0.051	0.0045	0.005	7.69	40.4	304	0.11
	01/23/2019	***	***	***	***	***	***	***	***	***	***
	06/20/2019	0.000025	0.0004	0.015	0.06	0.0027	0.005	7.65	26.8	292	0.05
	08/28/2019	0.000025	0.0011	0.015	0.02	0.0013	0.005	7.81	19.4	288	0.05
	12/10/2019	0.000025	0.0019	0.015	0.06	0.0184	0.01	7.73	32	326	0.05
	12/10/2019	0.000025	0.0021	0.015	0.1	0.0263	0.01	7.73	34.6	328	0.05

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

Note: Green data were non-detect data, 1/2 MDL used. Lab used dilution factor of 100, resulting in elevated MDLs. Data is not representative and considered erroneous.

Note: Purple data from 12/10/19 is our 2019 Q4 duplicate sample.

*** = No Sample Collected - Not Accessible (or Frozen) due to Winter Conditions

Location	Sample Date	Cadmium, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Iron, Dissolved (mg/L)	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)	Zinc, Dissolved (mg/L)	pH, Field Measurement (Standard Units)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Fluoride, Dissolved (mg/L)
EVS-1	03/26/2015	***	***	***	***	***	***	***	***	***	***
	06/22/2015	0.00005	0.0012	0.01	0.005	0.0701	0.005	7.35	7.3	218	0.61
	08/18/2015	**	**	**	**	**	**	**	**	**	**
	10/29/2015	**	**	**	**	**	**	**	**	**	**
	03/21/2016	***	***	***	***	***	***	***	***	***	***
	06/13/2016	0.00005	0.0009	0.01	0.0025	0.0781	0.005	7.36	32.4	217	0.5
	09/01/2016	**	**	**	**	**	**	**	**	**	**
	03/22/2017	***	***	***	***	***	***	***	***	***	***
	06/19/2017	0.00005	0.0011	0.01	0.0025	0.0702	0.005	7.92	24	216	5
	08/28/2017	0.00005	0.0023	0.01	0.0025	0.0902	0.01	7.82	11.5	243	2.5
	10/16/2017	**	**	**	**	**	**	**	**	**	**
	03/19/2018	***	***	***	***	***	***	***	***	***	***
	06/11/2018	0.00005	0.0002	0.01	0.0025	0.0055	0.005	8.09	19.9	130	0.23
	08/27/2018	**	**	**	**	**	**	**	**	**	**
	11/13/2018	***	***	***	***	***	***	***	***	***	***
	03/15/2019	***	***	***	***	***	***	***	***	***	***
	06/26/2019	0.000025	0.0011	0.015	0.005	0.0921	0.005	7.83	37.7	226	0.4
	09/18/2019	**	**	**	**	**	**	**	**	**	**
	11/12/2019	0.000025	0.0004	2.19	0.89	0.368	0.005	7.04	507	946	0.2

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

Note: Green data were non-detect data, 1/2 MDL used. Lab used dilution factor of 100, resulting in elevated MDLs. Data is not representative and considered erroneous.

*** = No Sample Collected - Not Accessible (or Frozen) due to Winter Conditions

** = No Sample Collected - Insufficient flow (or dry) due to late summer dry conditions

Table 1 - Indicator Parameters
5-Year Groundwater Quality Monitoring Data
Climax Mine

Location	Sample Date	Cadmium, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Iron, Dissolved (mg/L)	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)	Zinc, Dissolved (mg/L)	pH, Field Measurement (Standard Units)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Fluoride, Dissolved (mg/L)
EVS-2	03/26/2015	***	***	***	***	***	***	***	***	***	***
	06/22/2015	0.00005	0.00025	0.01	0.0025	0.0089	0.005	6.65	9.4	112	0.26
	08/18/2015	0.00005	0.00025	0.01	0.0025	0.0096	0.005	7.77	35.5	202	0.4
	10/29/2015	0.00005	0.00025	0.01	0.0025	0.0074	0.005	7.67	58.2	233	0.26
	03/21/2016	***	***	***	***	***	***	***	***	***	***
	06/13/2016	0.00005	0.00025	0.01	0.0025	0.0089	0.005	7.52	10.2	109	0.25
	09/01/2016	0.00005	0.001	0.01	0.0025	0.0087	0.005	7.99	57.7	218	0.34
	10/10/2016	0.00005	0.00025	0.01	0.0025	0.0077	0.005	7.58	61.7	230	0.35
	03/22/2017	***	***	***	***	***	***	***	***	***	***
	06/19/2017	0.00005	0.0002	0.01	0.0025	0.0073	0.005	7.33	12.9	108	5
	08/28/2017	0.00005	0.0002	0.01	0.0025	0.0087	0.005	7.92	54.5	219	2.5
	10/16/2017	nd	0.0002	0.01	0.0025	0.0081	0.005	7.65	64.4	242	2.5
	03/19/2018	***	***	***	***	***	***	***	***	***	***
	06/11/2018	0.00005	0.0002	0.01	0.0025	0.0061	0.005	7.8	11.2	113	0.14
	08/27/2018	0.00005	0.0002	0.01	0.0025	0.0087	0.005	8.27	28.6	174	0.32
	11/13/2018	***	***	***	***	***	***	***	***	***	***
	03/15/2019	***	***	***	***	***	***	***	***	***	***
	06/26/2019	0.000025	0.0004	0.015	0.005	0.0071	0.005	7.87	10.7	116	nd
	09/18/2019	0.000025	0.0004	0.015	0.005	0.0077	0.005	8.26	30.4	184	0.3
	11/13/2019	0.000025	0.0004	0.015	0.005	0.006	0.005	7.85	39.2	220	0.2

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

Note: Green data were non-detect data, 1/2 MDL used. Lab used dilution factor of 100, resulting in elevated MDLs. Data is not representative and considered erroneous.

*** = No Sample Collected - Not Accessible (or Frozen) due to Winter Conditions

nd = no data collected for parameter at location during sampling event

Location	Sample Date	Cadmium, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Iron, Dissolved (mg/L)	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)	Zinc, Dissolved (mg/L)	pH, Field Measurement (Standard Units)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Fluoride, Dissolved (mg/L)
EVS-3	03/26/2015	***	***	***	***	***	***	***	***	***	***
	06/22/2015	0.00005	0.00025	0.01	0.0025	0.0039	0.005	6.77	9.8	92	0.2
	08/18/2015	0.00005	0.00025	0.01	0.0025	0.0121	0.005	7	44.7	210	0.76
	10/29/2015	0.00005	0.00025	0.01	0.0025	0.0061	0.005	7.15	98.8	298	0.36
	03/21/2016	***	***	***	***	***	***	***	***	***	***
	06/13/2016	0.00005	0.00025	0.01	0.0025	0.0058	0.005	8.23	20.2	121	0.38
	09/01/2016	0.00005	0.00025	0.01	0.0025	0.009	0.02	8.16	77	257	0.52
	10/10/2016	0.00005	0.00025	0.01	0.0025	0.006	0.005	7.79	97.3	308	0.46
	03/22/2017	***	***	***	***	***	***	***	***	***	***
	06/19/2017	0.00005	0.0002	0.01	0.0025	0.0051	0.005	7.88	28.3	140	5
	08/28/2017	0.00005	0.0002	0.01	0.0025	0.0073	0.005	7.77	62.3	239	2.5
	10/17/2017	0.00005	0.0002	0.01	0.0025	0.0079	0.005	7.38	84.2	281	2.5
	03/19/2018	***	***	***	***	***	***	***	***	***	***
	06/11/2018	0.00005	0.0015	0.01	0.0025	0.0751	0.005	7.84	20.9	247	0.44
	08/27/2018	0.00005	0.0007	0.01	0.0025	0.0065	0.005	8.08	45.5	210	0.38
	11/13/2018	***	***	***	***	***	***	***	***	***	***
	03/15/2019	***	***	***	***	***	***	***	***	***	***
	06/26/2019	0.000025	0.0004	0.01	0.0025	0.0064	0.005	7.86	18.7	128	0.3
	09/18/2019	0.000025	0.0004	0.01	0.0025	0.0065	0.005	8.34	37.5	214	0.4
	11/13/2019	***	***	***	***	***	***	***	***	***	***

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

Note: Green data were non-detect data, 1/2 MDL used. Lab used dilution factor of 100, resulting in elevated MDLs. Data is not representative and considered erroneous.

*** = No Sample Collected - Not Accessible (or Frozen) due to Winter Conditions

Table 2 - Indicator Parameters
5-Year Internal Surface Water Quality Monitoring Data
Climax Mine

Location	Sample Date	Cadmium, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Iron, Dissolved (mg/L)	Iron, Total Recoverable (mg/L)	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)
Arkansas #1	03/26/2015	***	***	***	***	***	***
	06/22/2015	0.00005	0.0007	0.01	0.09	0.0025	0.0017
	08/31/2015	0.00005	0.00025	0.07	0.12	0.014	0.0023
	10/28/2015	0.00005	0.00025	0.06	0.1	0.014	0.002
	03/21/2016	***	***	***	***	***	***
	06/14/2016	0.00005	0.00025	0.04	0.09	0.009	0.0015
	08/01/2016	0.00005	0.00025	0.07	0.13	0.018	0.0017
	10/04/2016	0.00005	0.00025	0.1	0.13	0.015	0.0021
	03/22/2017	***	***	***	***	***	***
	06/26/2017	0.0477	0.0107	0.03	0.06	0.0025	0.0109
	08/14/2017	0.00005	0.0007	0.06	0.09	0.013	0.0019
	10/16/2017	0.00005	0.0002	0.08	0.12	0.02	0.0018
	03/15/2018	***	***	***	***	***	***
	06/18/2018	0.00005	0.0008	0.04	0.09	0.012	0.0013
	09/10/2018	0.00005	0.0002	0.08	0.1	0.012	0.0019
	07/15/2019	0.000025	0.0004	0.015	0.06	0.005	0.0014
	11/06/2019	0.000025	0.0004	0.05	0.08	0.02	0.002

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

*** = No Sample Collected - Not Accessible (or Frozen) due to Winter Conditions

Location	Sample Date	Molybdenum, Total Recoverable (mg/L)	Zinc, Dissolved (mg/L)	pH, Field Measurement (Standard Units)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Hardness (mg/L)
Arkansas #1	03/26/2015	***	***	***	***	***	***
	06/22/2015	nd	0.005	5.94	1.8	16	18
	08/31/2015	nd	0.005	6.99	11.1	38	42
	10/28/2015	nd	0.03	6.78	17.8	62	48
	03/21/2016	***	***	***	***	***	***
	06/14/2016	nd	0.01	7.13	11.5	24	18
	08/01/2016	nd	0.005	6.98	6.8	22	32
	10/04/2016	nd	0.005	7.8	17.1	54	50
	03/22/2017	***	***	***	***	***	***
	06/26/2017	nd	0.005	6.48	3.6	24	19
	08/14/2017	nd	0.005	8.1	10.1	52	35
	10/16/2017	nd	0.005	7.76	21.1	54	49
	03/15/2018	***	***	***	***	***	***
	06/18/2018	nd	0.01	7.02	5.7	24	19
	09/10/2018	0.0019	0.005	7.33	23.7	140	65
	07/15/2019	0.0014	0.01	7.51	4.4	24	18
	11/06/2019	0.0019	0.02	8.46	20.1	70	51

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

*** = No Sample Collected - Not Accessible (or Frozen) due to Winter Conditions

nd = No Data. Pre-dates data collection at location.

Table 2 - Indicator Parameters
5-Year Internal Surface Water Quality Monitoring Data
Climax Mine

Location	Sample Date	Cadmium, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Iron, Dissolved (mg/L)	Iron, Total Recoverable (mg/L)	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)
Arkansas #2	03/27/2015	0.0001	0.0005	0.08	0.19	0.425	0.0151
	06/22/2015	0.00005	0.0008	0.02	0.14	0.011	0.0029
	08/31/2015	0.00005	0.0006	0.08	0.1	0.056	0.007
	10/28/2015	0.00005	0.00025	0.04	0.12	0.078	0.0082
	03/21/2016	***	***	***	***	***	***
	06/14/2016	0.00005	0.00025	0.04	0.09	0.013	0.0029
	08/01/2016	0.00005	0.00025	0.04	0.1	0.017	0.0051
	10/04/2016	0.00005	0.00025	0.05	0.13	0.072	0.0079
	03/20/2017	0.00005	0.00025	0.17	0.27	0.48	0.0164
	06/26/2017	0.0248	0.0056	0.03	0.06	0.013	0.0054
	08/14/2017	0.00005	0.0008	0.03	0.08	0.027	0.0054
	10/16/2017	0.00005	0.0005	0.05	0.12	0.048	0.0086
	03/15/2018	***	***	***	***	***	***
	06/18/2018	0.00005	0.0007	0.05	0.08	0.021	0.0029
	09/10/2018	0.00005	0.0004	0.07	0.1	0.049	0.0075
	07/15/2019	0.000025	0.0004	0.03	0.07	0.02	0.0027
	11/06/2019	0.000025	0.0004	0.05	0.13	0.14	0.0143

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

*** = No Sample Collected - Not Accessible (or Frozen) due to Winter Conditions

Location	Sample Date	Molybdenum, Total Recoverable (mg/L)	Zinc, Dissolved (mg/L)	pH, Field Measurement (Standard Units)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Hardness (mg/L)
Arkansas #2	03/27/2015	nd	0.05	6.6	46.8	156	107
	06/22/2015	nd	0.01	5.75	3	28	21
	08/31/2015	nd	0.02	7.72	12.1	48	43
	10/28/2015	nd	0.005	7.45	19.1	66	57
	03/21/2016	***	***	***	***	***	***
	06/14/2016	nd	0.02	7.41	5.2	34	22
	08/01/2016	nd	0.005	7.08	11.8	32	35
	10/04/2016	nd	0.005	8.36	19.5	66	57
	03/20/2017	nd	0.03	7.94	32	144	98
	06/26/2017	nd	0.01	7.13	0.5	18	23
	08/14/2017	nd	0.005	7.92	13.1	56	40
	10/16/2017	nd	0.005	7.94	24.2	88	59
	03/15/2018	***	***	***	***	***	***
	06/18/2018	nd	0.01	7.58	6.2	36	25
	09/10/2018	0.0081	0.005	8.2	0.5	76	58
	07/15/2019	0.0031	0.01	7.39	16.5	26	20
	11/06/2019	0.0132	0.01	7.82	25.1	94	64

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

*** = No Sample Collected - Not Accessible (or Frozen) due to Winter Conditions

nd = No Data. Pre-dates data collection at location.

Table 2 - Indicator Parameters
5-Year Internal Surface Water Quality Monitoring Data
Climax Mine

Location	Sample Date	Cadmium, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Iron, Dissolved (mg/L)	Iron, Total Recoverable (mg/L)	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)
AI	03/26/2015	***	***	***	***	***	***
	06/23/2015	0.00005	0.00025	0.03	0.3	0.0025	0.0052
	08/18/2015	0.00005	0.00025	0.01	0.01	0.0025	0.004
	10/29/2015	0.00005	0.00025	0.01	0.01	0.0025	0.0014
	01/26/2016	***	***	***	***	***	***
	06/08/2016	0.00005	0.00025	0.07	0.41	0.0025	0.0006
	08/31/2016	0.00005	0.00025	0.01	0.04	0.0025	0.0027
	10/10/2016	0.00005	0.00025	0.01	0.01	0.0025	0.0009
	03/13/2017	0.00005	0.0025	0.01	0.01	0.0025	0.0006
	06/20/2017	0.00005	0.0002	0.04	0.53	0.0025	0.003
	08/28/2017	0.00005	0.0002	0.01	0.01	0.0025	0.0082
	10/16/2017	0.00005	0.0002	0.01	0.01	0.0025	0.0005
	02/12/2018	0.00005	0.0002	0.01	0.01	0.0025	0.0006
	06/11/2018	0.00005	0.0002	0.04	0.07	0.0025	0.0006
	09/10/2018	0.00005	0.0002	0.01	0.01	0.0025	0.00025
	06/26/2019	0.000025	0.0004	0.04	0.13	0.005	0.0006
	11/20/2019	0.000025	0.0004	0.015	0.015	0.01	0.0315

Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

*** = No Sample Collected - Not Accessible (or Frozen) due to Winter Conditions

Location	Sample Date	Molybdenum, Total Recoverable (mg/L)	Zinc, Dissolved (mg/L)	pH, Field Measurement (Standard Units)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Hardness (mg/L)
AI	03/26/2015	***	***	***	***	***	***
	06/23/2015	nd	0.005	7.68	3.8	52	43
	08/18/2015	nd	0.005	7.74	10.4	82	73
	10/29/2015	nd	0.005	7.33	11.9	88	76.1
	01/26/2016	***	***	***	***	***	***
	06/08/2016	nd	0.005	7.65	0.5	40	31
	08/31/2016	nd	0.005	7.75	9.1	84	76
	10/10/2016	nd	0.005	7.36	0.5	82	78
	03/13/2017	nd	0.005	7.68	17.3	88	87
	06/20/2017	nd	0.005	7.32	1.5	72	42
	08/28/2017	nd	0.005	7.12	13.7	92	82
	10/16/2017	nd	0.005	8.1	11.5	64	68
	02/12/2018	nd	0.01	7.92	9.5	100	83
	06/11/2018	nd	0.005	7.47	0.5	258	43
	09/10/2018	0.00025	0.005	7.68	1.1	92	74
	06/26/2019	0.0009	0.005	7.84	0.5	50	36
	11/20/2019	0.0319	0.005	7.81	30.2	120	54

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

*** = No Sample Collected - Not Accessible (or Frozen) due to Winter Conditions

nd = No Data. Pre-dates data collection at location.

Table 2 - Indicator Parameters
5-Year Internal Surface Water Quality Monitoring Data
Climax Mine

Location	Sample Date	Cadmium, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Iron, Dissolved (mg/L)	Iron, Total Recoverable (mg/L)	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)
BI	03/26/2015	***	***	***	***	***	***
	06/23/2015	0.00005	0.00025	0.03	0.24	0.0025	0.0055
	08/18/2015	0.00005	0.00025	0.01	0.01	0.0025	0.0044
	10/29/2015	0.00005	0.00025	0.01	0.01	0.0025	0.0164
	01/26/2016	0.00005	0.00025	0.01	0.03	0.0025	0.0413
	06/08/2016	0.00005	0.0006	0.07	0.43	0.0025	0.001
	08/31/2016	0.00005	0.00025	0.01	0.05	0.0025	0.0122
	10/10/2016	0.00005	0.001	0.01	0.12	0.0025	0.0285
	03/13/2017	0.00005	0.00025	0.01	0.01	0.0025	0.0037
	06/20/2017	0.00005	0.0002	0.04	1.04	0.0025	0.0045
	08/28/2017	0.00005	0.0002	0.01	0.49	0.0025	0.0177
	10/16/2017	0.00005	0.0002	0.01	0.01	0.0025	0.0134
	02/12/2018	0.00005	0.0002	0.01	0.02	0.0025	0.0318
	06/11/2018	0.00005	0.0002	0.04	0.08	0.0025	0.0012
	09/10/2018	0.00005	0.0006	0.01	0.07	0.0025	0.0218
	06/26/2019	0.000025	0.0004	0.04	0.13	0.005	0.0016
	11/20/2019	0.000025	0.0004	0.015	0.015	0.005	0.0004

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

*** = No Sample Collected - Not Accessible (or Frozen) due to Winter Conditions

Location	Sample Date	Molybdenum, Total Recoverable (mg/L)	Zinc, Dissolved (mg/L)	pH, Field Measurement (Standard Units)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Hardness (mg/L)
BI	03/26/2015	nd	na	na	na	na	na
	06/23/2015	nd	0.005	7.69	5.2	46	45
	08/18/2015	nd	0.005	7.71	10.1	84	75
	10/29/2015	nd	0.005	6.97	18.8	106	93
	01/26/2016	nd	0.005	8.1	29.9	148	109
	06/08/2016	nd	0.005	7.78	0.5	58	36
	08/31/2016	nd	0.005	7.53	14.6	94	86
	10/10/2016	nd	0.005	7.64	5.9	118	103
	03/13/2017	nd	0.005	7.81	12.5	84	92
	06/20/2017	nd	0.005	7.52	4.1	74	47
	08/28/2017	nd	0.005	7.5	18.1	98	91
	10/16/2017	nd	0.005	7.85	16.2	98	85
	02/12/2018	nd	0.005	7.94	24.9	132	107
	06/11/2018	nd	0.005	7.64	0.5	64	46
	09/10/2018	0.0221	0.005	8.07	0.5	108	89
	06/26/2019	0.002	0.005	7.9	3.7	60	42
	11/20/2019	0.0004	0.005	7.49	13.1	84	80

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

*** = No Sample Collected - Not Accessible (or Frozen) due to Winter Conditions

nd = No Data. Pre-dates data collection at location.

Table 2 - Indicator Parameters
5-Year Internal Surface Water Quality Monitoring Data
Climax Mine

Location	Sample Date	Cadmium, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Iron, Dissolved (mg/L)	Iron, Total Recoverable (mg/L)	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)
EPR Outlet	03/26/2015	***	***	***	***	***	***
	06/24/2015	0.00005	0.00025	0.01	0.12	0.006	0.0324
	08/18/2015	***	***	***	***	***	***
	09/14/2015	0.00005	0.00025	0.01	0.07	0.0025	0.0335
	10/29/2015	0.00005	0.0005	0.01	0.06	0.0025	0.0278
	01/26/2016	0.00005	0.0007	0.01	0.03	0.0025	0.0463
	06/16/2016	0.00005	0.0005	0.01	0.13	0.0025	0.0339
	08/31/2016	0.00005	0.0008	0.01	0.05	0.0025	0.0306
	10/10/2016	0.00005	0.0006	0.01	0.01	0.0025	0.0285
	03/20/2017	0.00005	0.00025	0.01	0.01	0.0025	0.0381
	06/20/2017	0.00005	0.0004	0.01	0.12	0.0025	0.0276
	08/28/2017	0.00005	0.0002	0.01	0.03	0.0025	0.0318
	10/16/2017	0.00005	0.0005	0.01	0.02	0.0025	0.0308
	02/12/2018	0.00005	0.0005	0.01	0.01	0.0025	0.0361
	06/11/2018	***	***	***	***	***	***
	09/10/2018	0.00005	0.0005	0.01	0.02	0.0025	0.0231
	09/25/2019	0.000025	0.0004	0.015	0.015	0.005	0.028
	09/30/2019	0.000025	0.0004	0.015	0.03	0.005	0.0292
	12/18/2019	0.000025	0.001	0.015	0.015	0.005	0.0322

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

*** = No Sample Collected - Not Accessible (or Frozen) due to Winter Conditions

Location	Sample Date	Molybdenum, Total Recoverable (mg/L)	Zinc, Dissolved (mg/L)	pH, Field Measurement (Standard Units)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Hardness (mg/L)
EPR Outlet	03/26/2015	***	***	***	***	***	***
	06/24/2015	nd	0.02	7.24	24.8	108	105
	08/18/2015	***	***	***	***	***	***
	09/14/2015	nd	0.005	8.03	27.3	110	111
	10/29/2015	nd	0.005	7.2	23.2	116	101
	01/26/2016	nd	0.005	7.98	33.6	152	114
	06/16/2016	nd	0.005	7.65	26.1	128	98
	08/31/2016	nd	0.005	7.75	25.9	118	103
	10/10/2016	nd	0.005	7.84	0.5	116	102
	03/20/2017	nd	0.005	7.24	27.3	120	108
	06/20/2017	nd	0.005	7.6	24.7	122	101
	08/28/2017	nd	0.005	7.87	24.2	104	97
	10/16/2017	nd	0.005	8.04	22.6	96	101
	02/12/2018	nd	0.005	8.08	27.3	138	109
	06/11/2018	***	***	***	***	***	***
	09/10/2018	0.0235	0.005	8.01	0.5	116	88
	09/25/2019	0.0288	0.005	7.67	24.3	92	94
	09/30/2019	0.0311	0.005	7.59	25.2	114	101
	12/18/2019	0.0305	0.005	7.76	23.1	118	99

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

*** = No Sample Collected - Not Accessible (or Frozen) due to Winter Conditions

nd = No Data. Pre-dates data collection at location.

Table 2 - Indicator Parameters
5-Year Internal Surface Water Quality Monitoring Data
Climax Mine

Location	Sample Date	Cadmium, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Iron, Dissolved (mg/L)	Iron, Total Recoverable (mg/L)	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)
CC-SW1	03/27/2015	***	***	***	***	***	***
	06/23/2015	0.00005	0.0008	0.01	<i>nd</i>	0.0025	0.0011
	08/18/2015	0.00005	0.00025	0.01	<i>nd</i>	0.0025	0.0015
	10/14/2015	0.00005	0.00025	0.01	<i>nd</i>	0.0025	0.0017
	03/21/2016	***	***	***	***	***	***
	06/14/2016	0.00005	0.00025	0.01	<i>nd</i>	0.0025	0.0009
	08/04/2016	0.00005	0.00025	0.03	0.04	0.005	0.0017
	10/04/2016	0.00005	0.00025	0.01	<i>nd</i>	0.005	0.0021
	03/22/2017	***	***	***	***	***	***
	06/26/2017	0.0451	0.0101	0.02	<i>nd</i>	0.005	0.0103
	08/22/2017	0.00005	0.0002	0.01	<i>nd</i>	0.0025	0.0018
	10/16/2017	0.00005	0.0004	0.04	<i>nd</i>	0.01	0.0018
	03/19/2018	***	***	***	***	***	***
	06/18/2018	0.00005	0.0007	0.03	<i>nd</i>	0.01	0.0012
	08/20/2018	0.00005	0.0002	0.03	0.04	0.0025	0.002
	10/24/2018	0.00008	0.0004	0.01	0.97	0.0025	0.0018
	06/25/2019	0.00008	0.0008	0.015	0.15	0.005	0.001
	09/24/2019	0.00007	0.0004	0.015	0.015	0.005	0.0019
	12/17/2019	***	***	***	***	***	***

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

*** = No Sample Collected - Not Accessible (or Frozen) due to Winter Conditions

nd = No Data. Pre-dates data collection at location.

Location	Sample Date	Molybdenum, Total Recoverable (mg/L)	Zinc, Dissolved (mg/L)	pH, Field Measurement (Standard Units)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Hardness (mg/L)
CC-SW1	03/27/2015	***	***	***	***	***	***
	06/23/2015	<i>nd</i>	0.02	7.08	11.6	22	26
	08/18/2015	<i>nd</i>	0.02	6.92	21.6	66	46
	10/14/2015	<i>nd</i>	0.01	7.38	33.8	78	61
	03/21/2016	***	***	***	***	***	***
	06/14/2016	<i>nd</i>	0.04	7.24	10.2	44	27
	08/04/2016	<i>nd</i>	0.01	6.65	21.9	60	46
	10/04/2016	<i>nd</i>	0.02	7.52	37.6	76	69
	03/22/2017	***	***	***	***	***	***
	06/26/2017	<i>nd</i>	0.02	6.96	12.2	38	31
	08/22/2017	<i>nd</i>	0.01	7.67	23.6	66	49
	10/16/2017	<i>nd</i>	0.01	7.92	33.1	82	63
	03/19/2018	***	***	***	***	***	***
	06/18/2018	<i>nd</i>	0.02	7.96	11.4	32	31
	08/20/2018	0.0022	0.01	8.24	27.9	68	57
	10/24/2018	0.0107	0.01	7.58	38.1	98	63
	06/25/2019	0.002	0.02	7.44	11.1	50	33
	09/24/2019	0.0021	0.01	7.64	31.9	62	65
	12/17/2019	***	***	***	***	***	***

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

na = Not Accessible (or Frozen) due to Winter Conditions

nd = No Data. Pre-dates data collection at location.

Table 2 - Indicator Parameters
5-Year Internal Surface Water Quality Monitoring Data
Climax Mine

Location	Sample Date	Cadmium, Dissolved (mg/L)	Copper, Dissolved (mg/L)	Iron, Dissolved (mg/L)	Iron, Total Recoverable (mg/L)	Manganese, Dissolved (mg/L)	Molybdenum, Dissolved (mg/L)
EI-SW1	03/24/2015	0.00005	0.00025	0.01	0.03	0.0025	0.0011
	06/23/2015	0.00005	0.00025	0.01	nd	0.0025	0.0017
	08/18/2015	0.00005	0.00025	0.01	nd	0.0025	0.0011
	10/14/2015	0.00005	0.00025	0.01	nd	0.0025	0.001
	03/21/2016	***	***	***	***	***	***
	06/14/2016	0.00005	0.00025	0.01	nd	0.0025	0.0016
	08/04/2016	0.00005	0.00025	0.01	0.01	0.0025	0.0011
	10/04/2016	0.00005	0.00025	0.01	nd	0.0025	0.001
	03/22/2017	***	***	***	***	***	***
	06/26/2017	0.0459	0.0115	0.01	nd	0.0025	0.0105
	08/22/2017	0.00005	0.0002	0.01	nd	0.0025	0.0013
	10/16/2017	0.00005	0.0002	0.01	nd	0.0025	0.0013
	03/26/2018	***	***	***	***	***	***
	06/18/2018	0.00005	0.0002	0.01	nd	0.005	0.0014
	08/20/2018	0.00005	0.0002	0.01	0.01	0.0025	0.0013
	10/24/2018	***	***	***	***	***	***
	06/25/2019	0.000025	0.0004	0.015	0.13	0.005	0.0016
	09/24/2019	0.000025	0.0004	0.015	0.03	0.005	0.0015
	12/17/2019	***	***	***	***	***	***

Note: Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

*** = No Sample Collected - Not Accessible (or Frozen) due to Winter Conditions

nd = No Data. Pre-dates data collection at location.

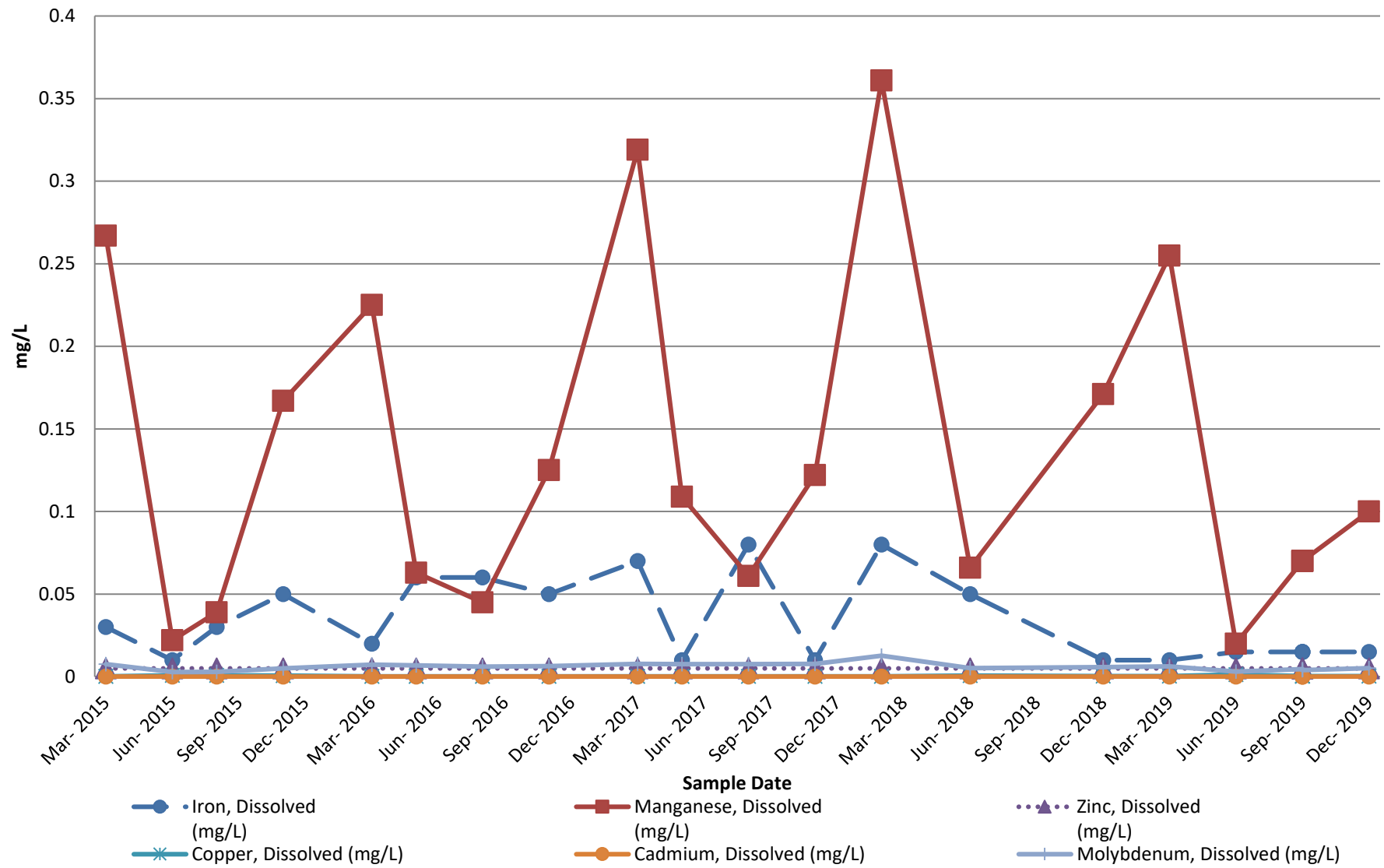
Location	Sample Date	Molybdenum, Total Recoverable (mg/L)	Zinc, Dissolved (mg/L)	pH, Field Measurement (Standard Units)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Hardness (mg/L)
EI-SW1	03/24/2015	nd	0.07	5.05	8.3	170	165
	06/23/2015	nd	0.005	7.69	4.4	94	89
	08/18/2015	nd	0.005	8.38	7.1	166	152
	10/14/2015	nd	0.005	7.86	11.3	174	161
	03/21/2016	***	***	***	***	***	***
	06/14/2016	nd	0.005	7.92	0.5	88	79
	08/04/2016	nd	0.005	8.25	12	148	151
	10/04/2016	nd	0.005	7.88	8.7	160	163
	03/22/2017	***	***	***	***	***	***
	06/26/2017	nd	0.005	7.85	4.2	100	101
	08/22/2017	nd	0.005	7.6	28.1	154	150
	10/16/2017	nd	0.005	7.31	10	174	167
	03/26/2018	***	***	***	***	***	***
	06/18/2018	nd	0.005	7.67	5.6	116	114
	08/20/2018	0.0014	0.005	7.84	6	178	166
	10/24/2018	***	***	***	***	***	***
	06/25/2019	0.0028	0.005	7.74	5	102	88
	09/24/2019	0.0019	0.005	8.01	7.2	158	180
	12/17/2019	***	***	***	***	***	***

Bold italicized data are results below Lab Method Detection Limits (MDL) and are reported as 1/2 the MDL.

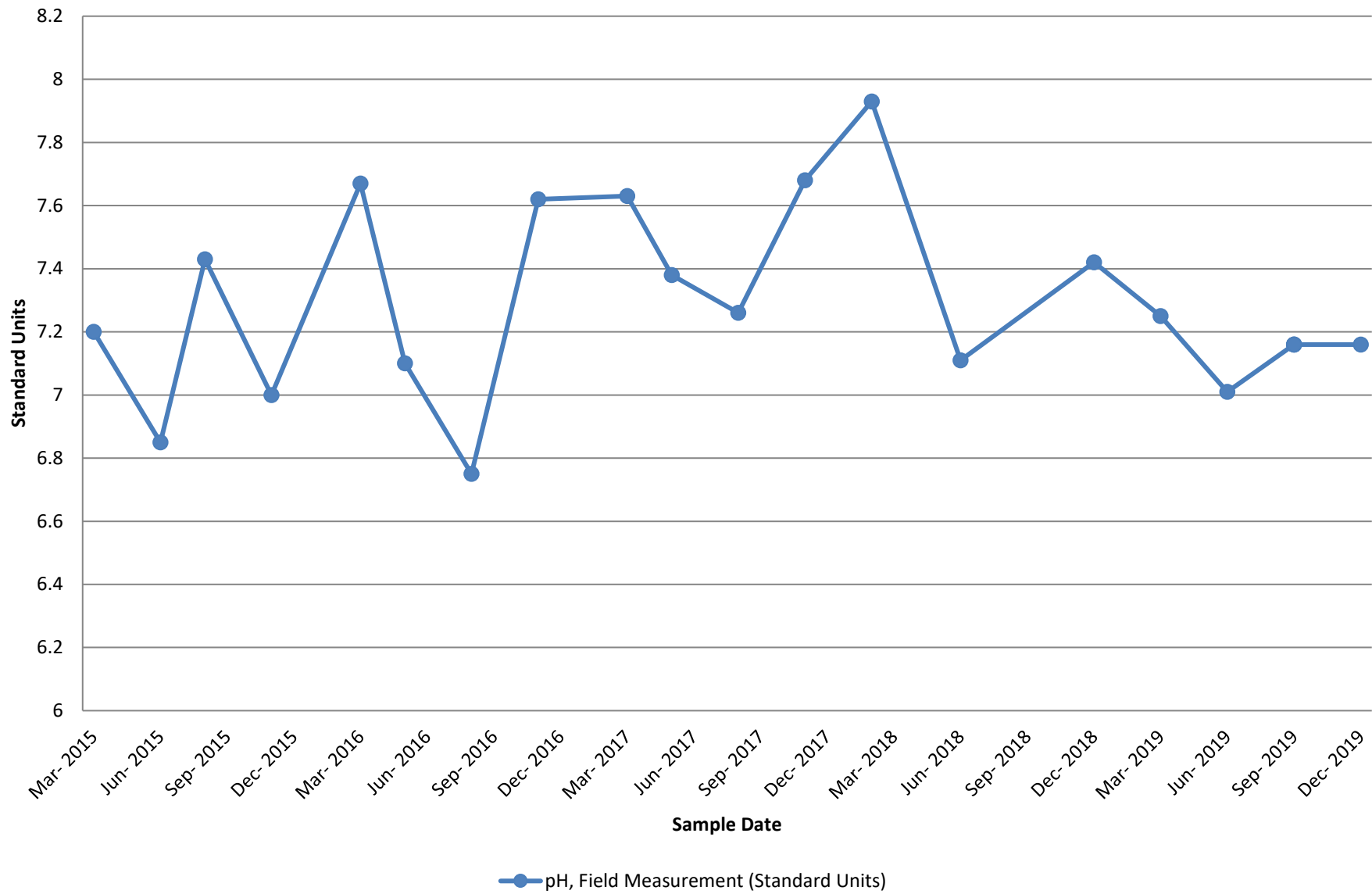
*** = No Sample Collected - Not Accessible (or Frozen) due to Winter Conditions

nd = No Data. Pre-dates data collection at location.

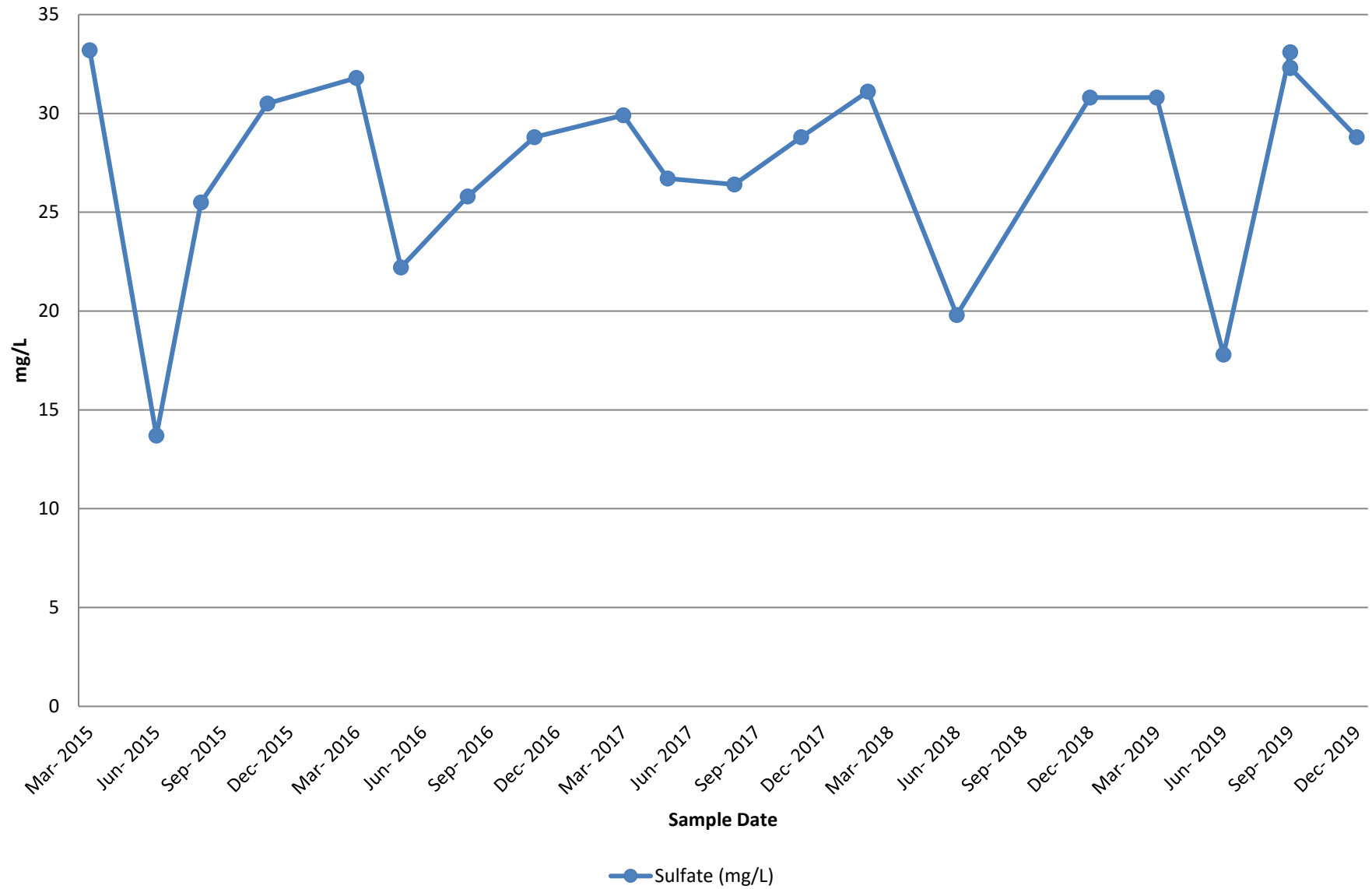
Trend Evaluation 1
ARwell: Metals
Climax Mine



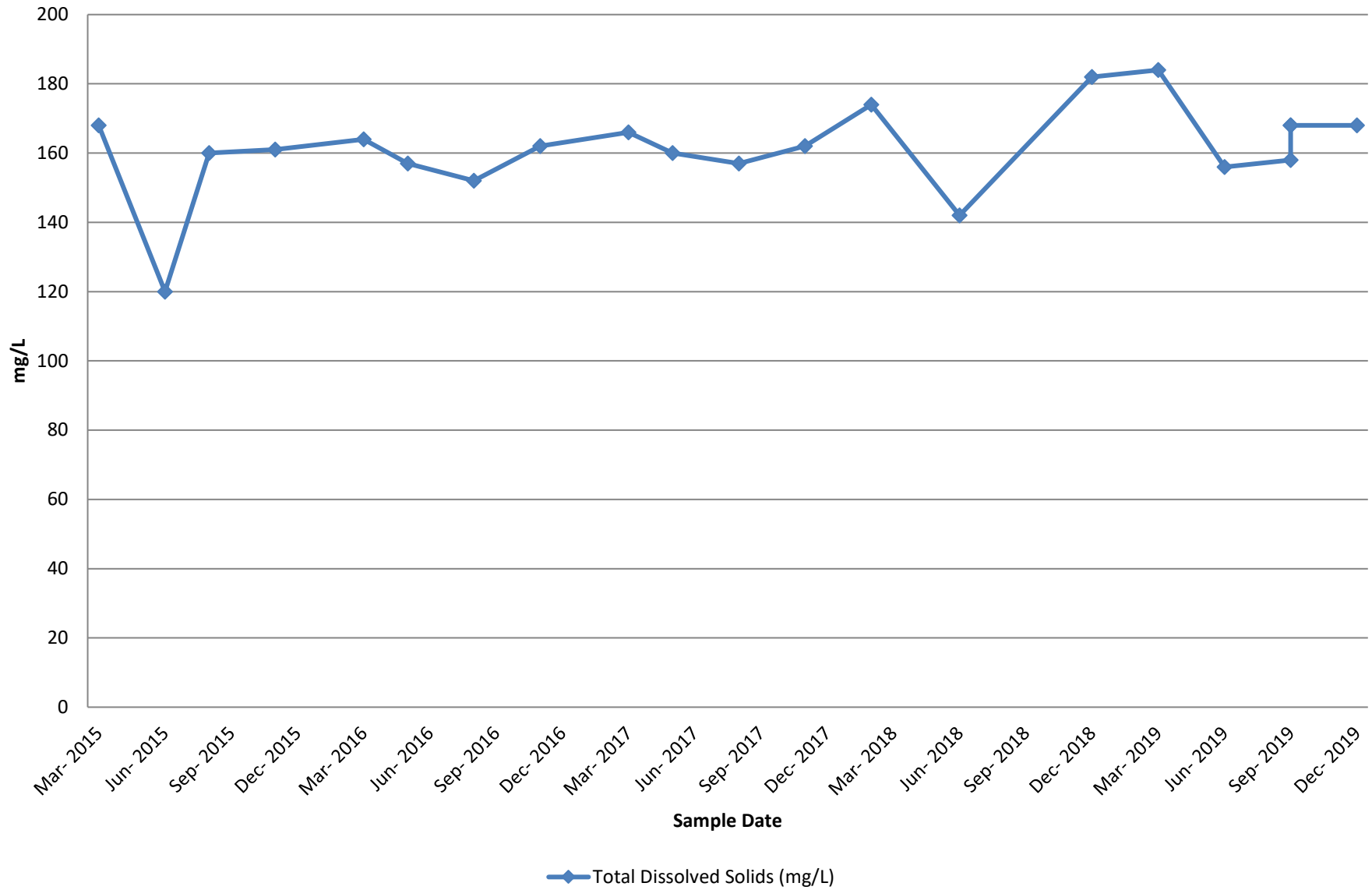
Trend Evaluation 2
ARwell: pH
Climax Mine



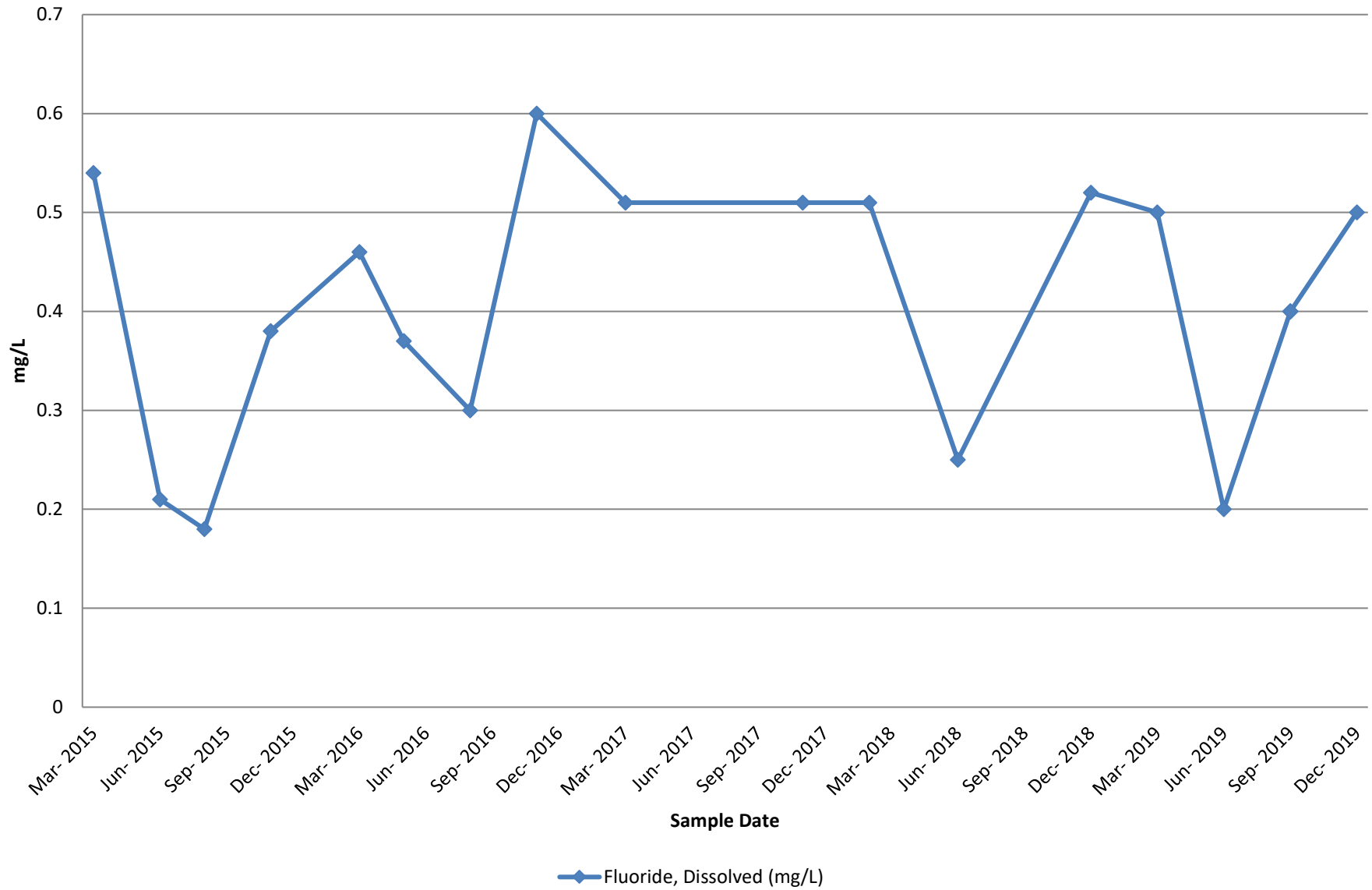
Trend Evaluation 3
ARwell: Sulfate
Climax Mine



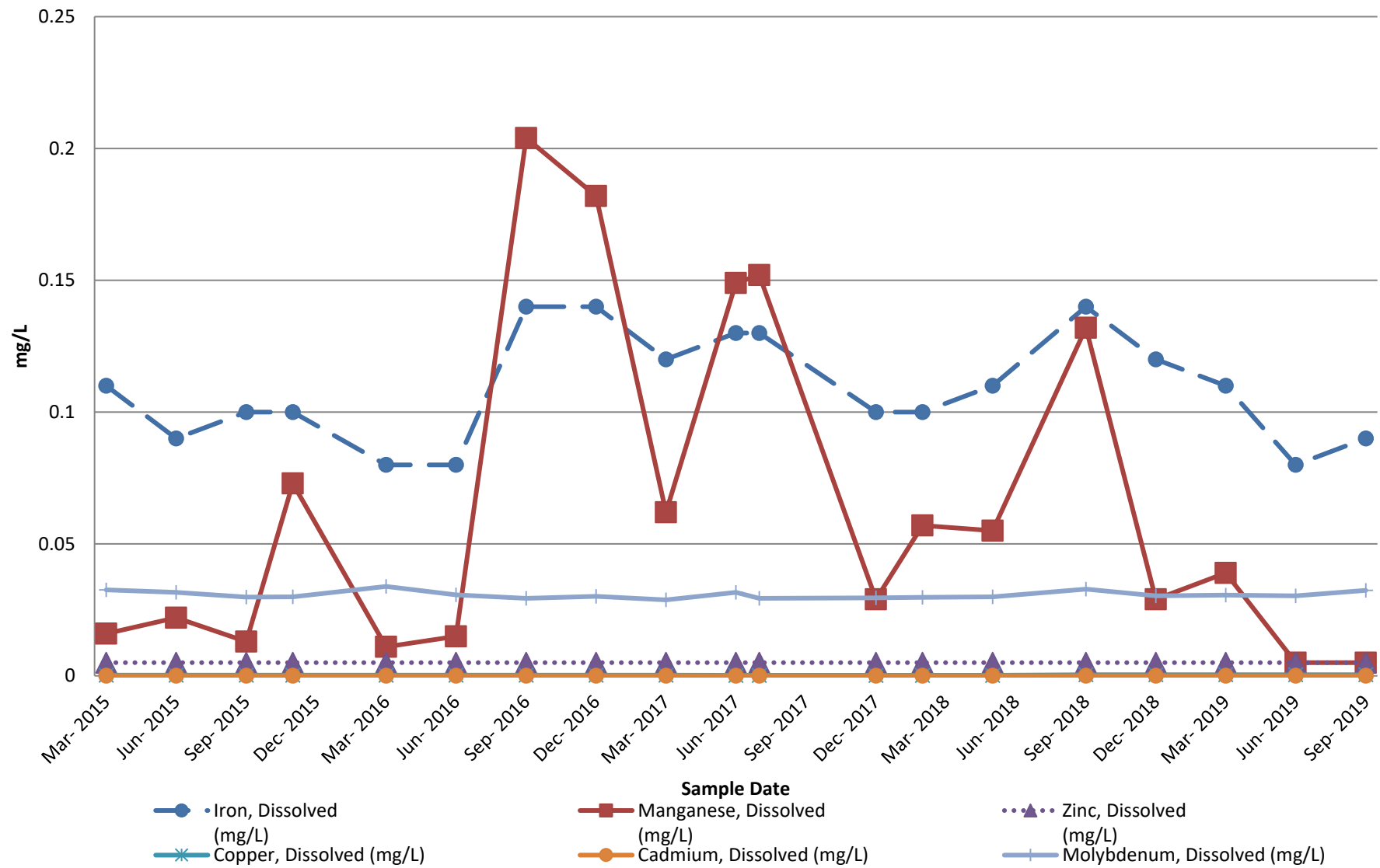
Trend Evaluation 4
ARwell: TDS
Climax Mine



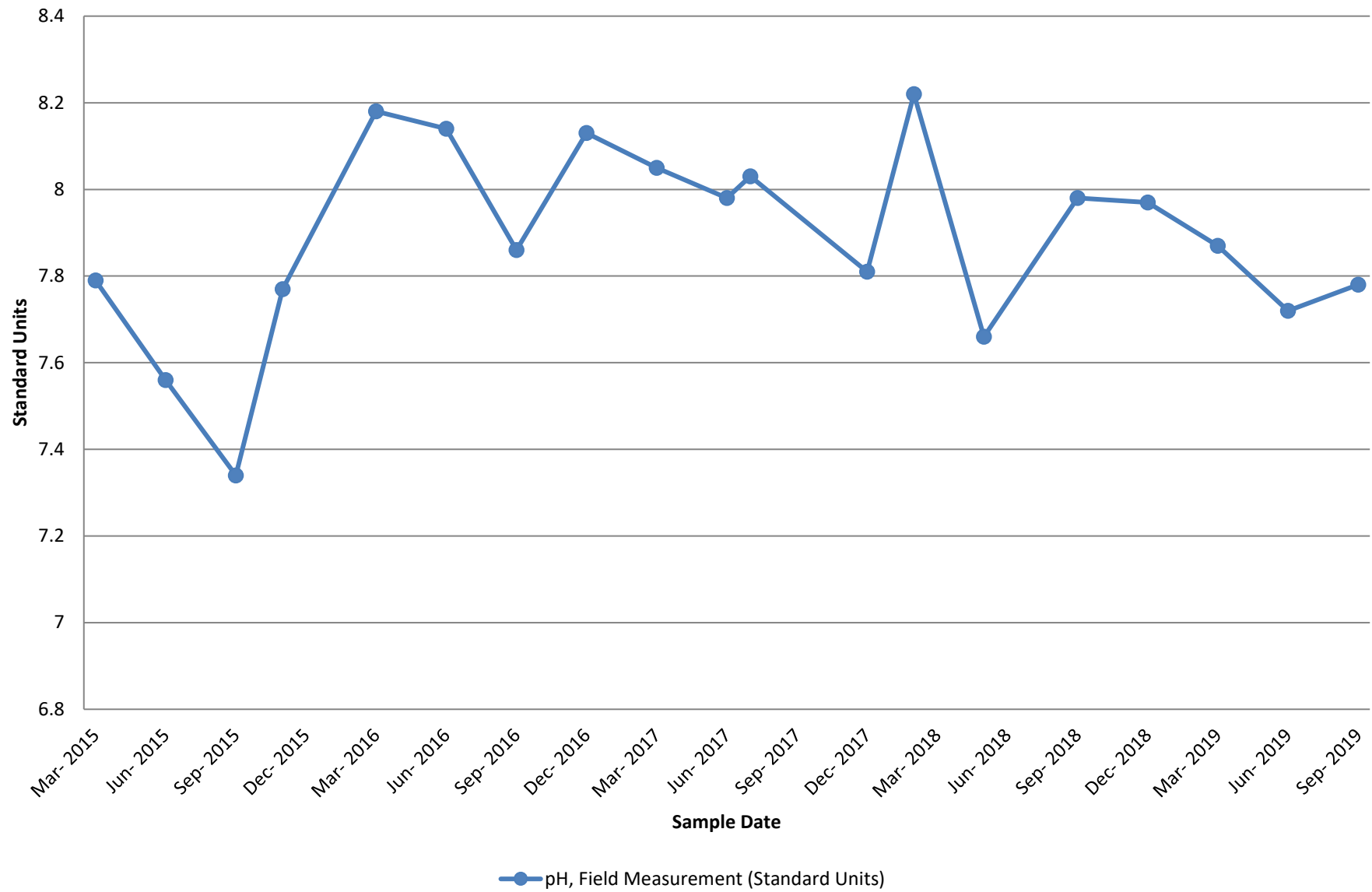
Trend Evaluation 5
ARwell: Fluoride
Climax Mine



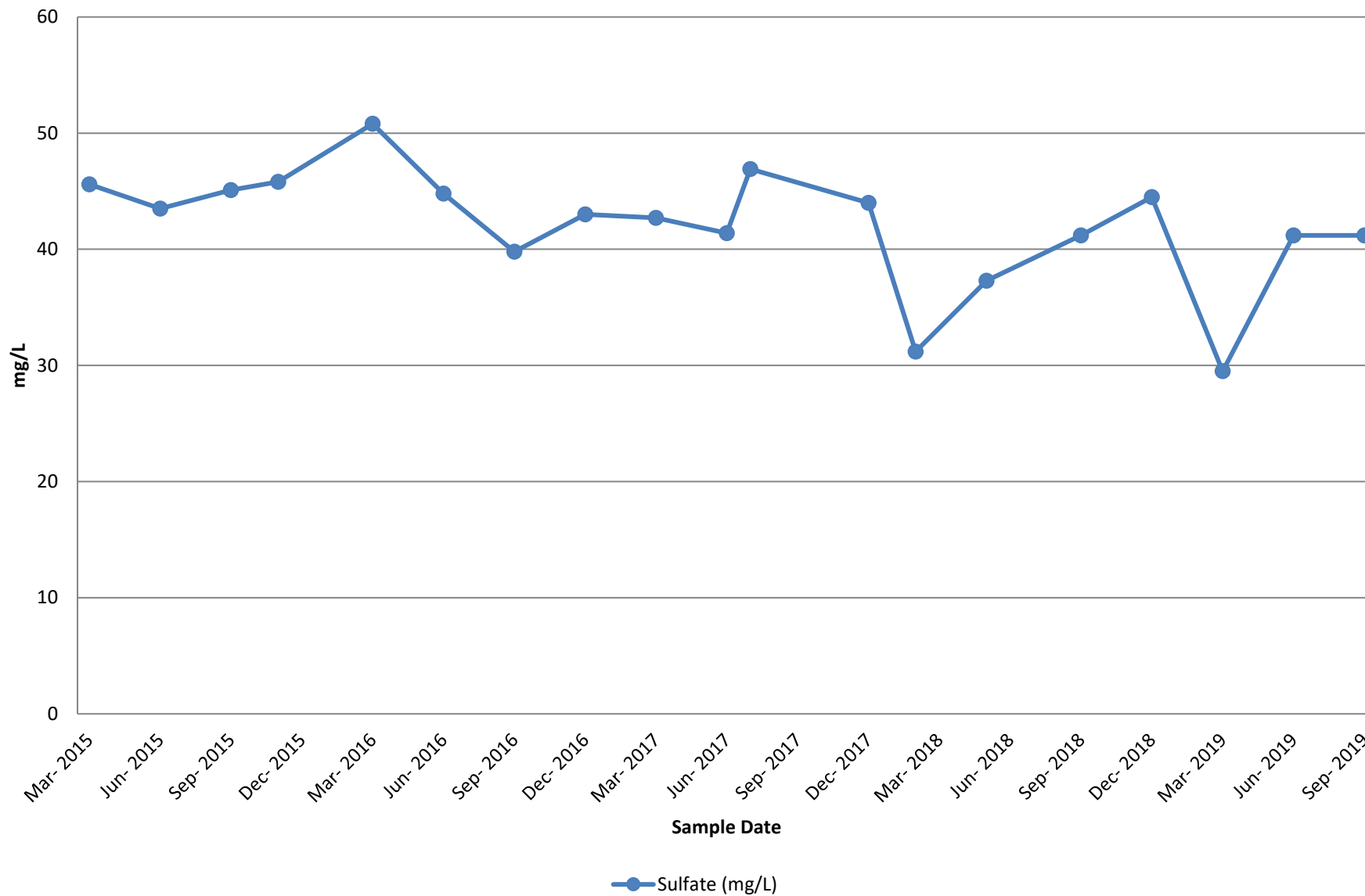
Trend Evaluation 6
ARK-MW-001D: Metals
Climax Mine



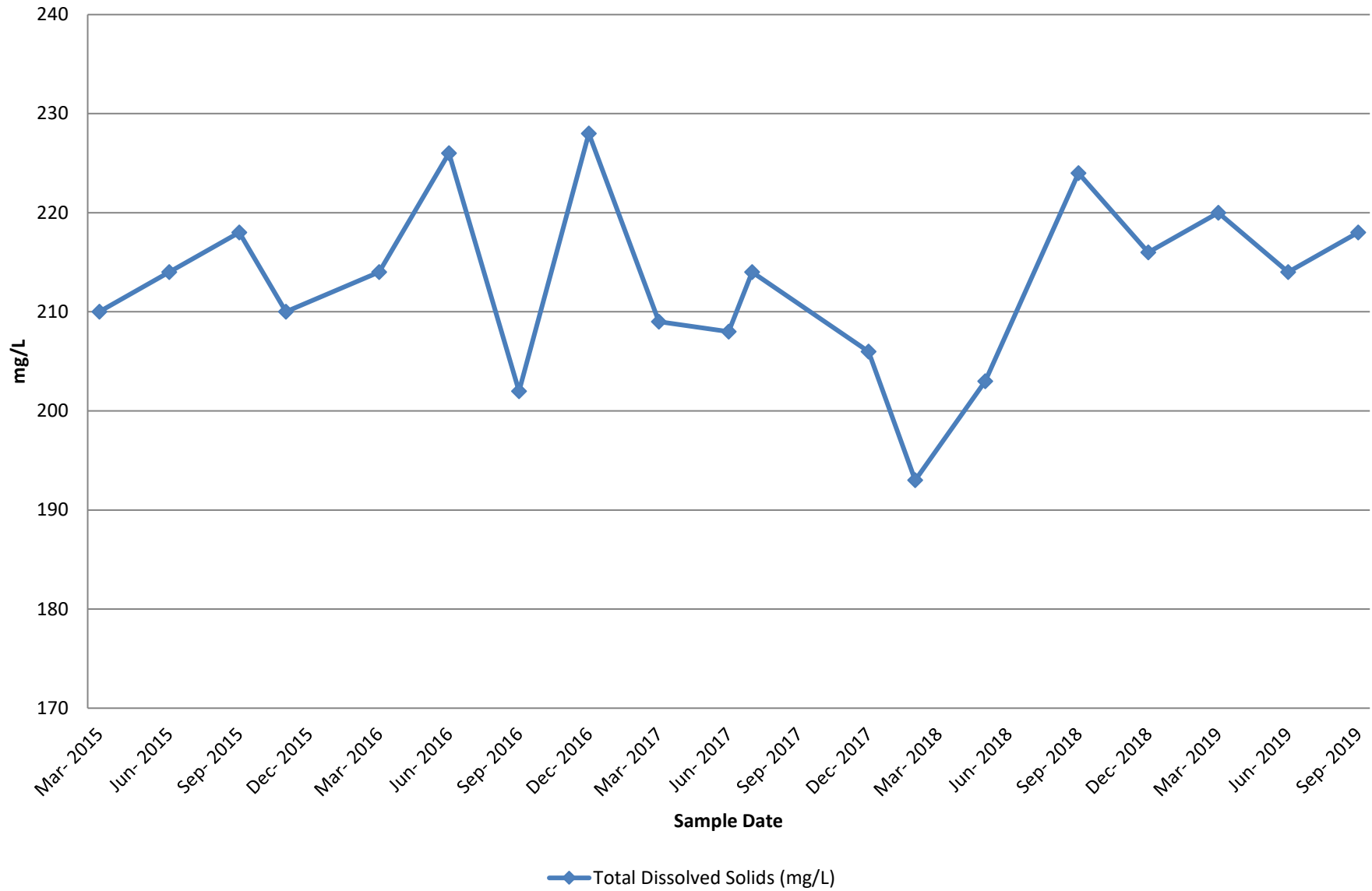
Trend Evaluation 7
ARK-MW-001D: pH
Climax Mine



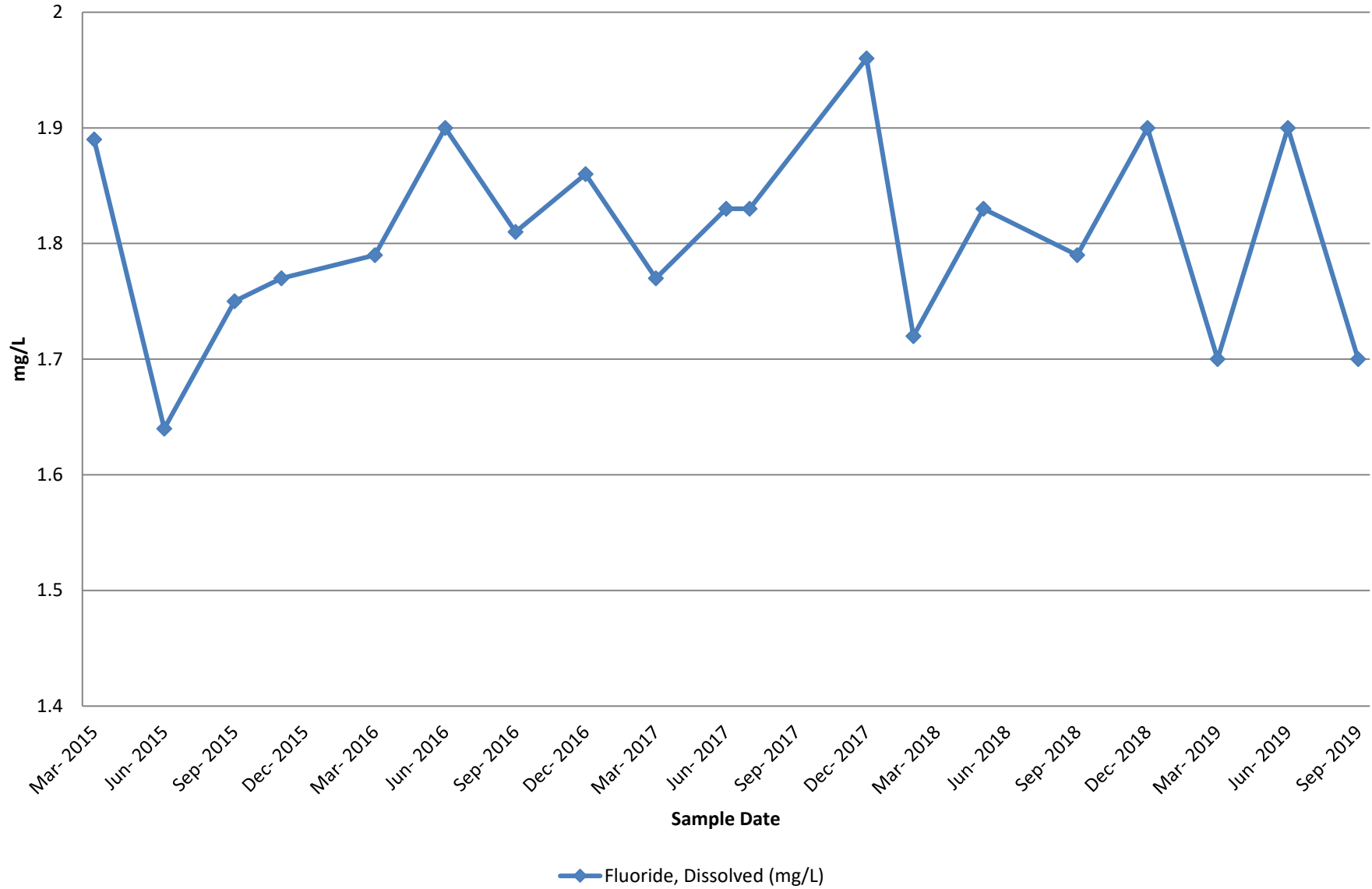
Trend Evaluation 8
ARK-MW-001D: Sulfate
Climax Mine



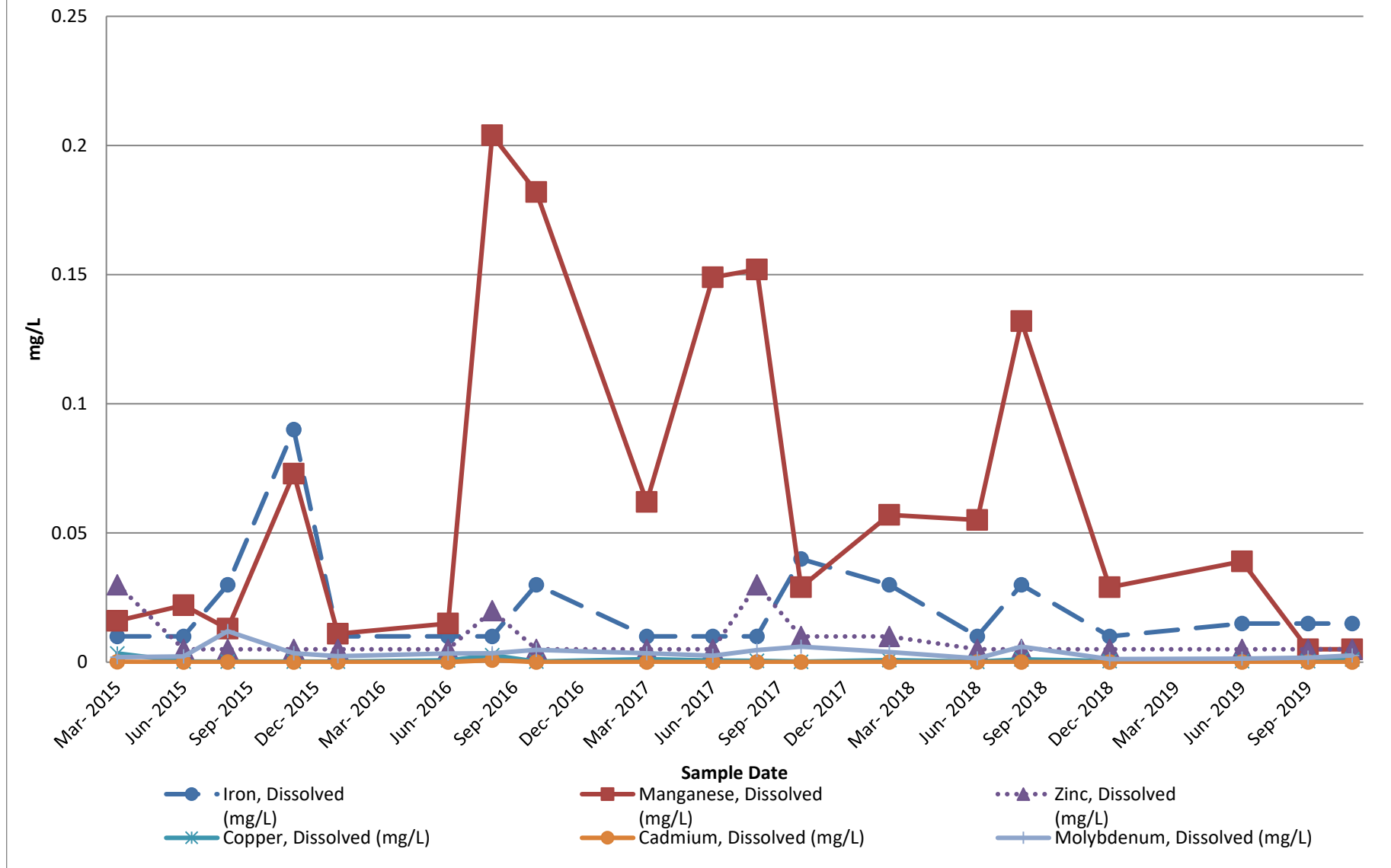
Trend Evaluation 9
ARK-MW-001D: TDS
Climax Mine



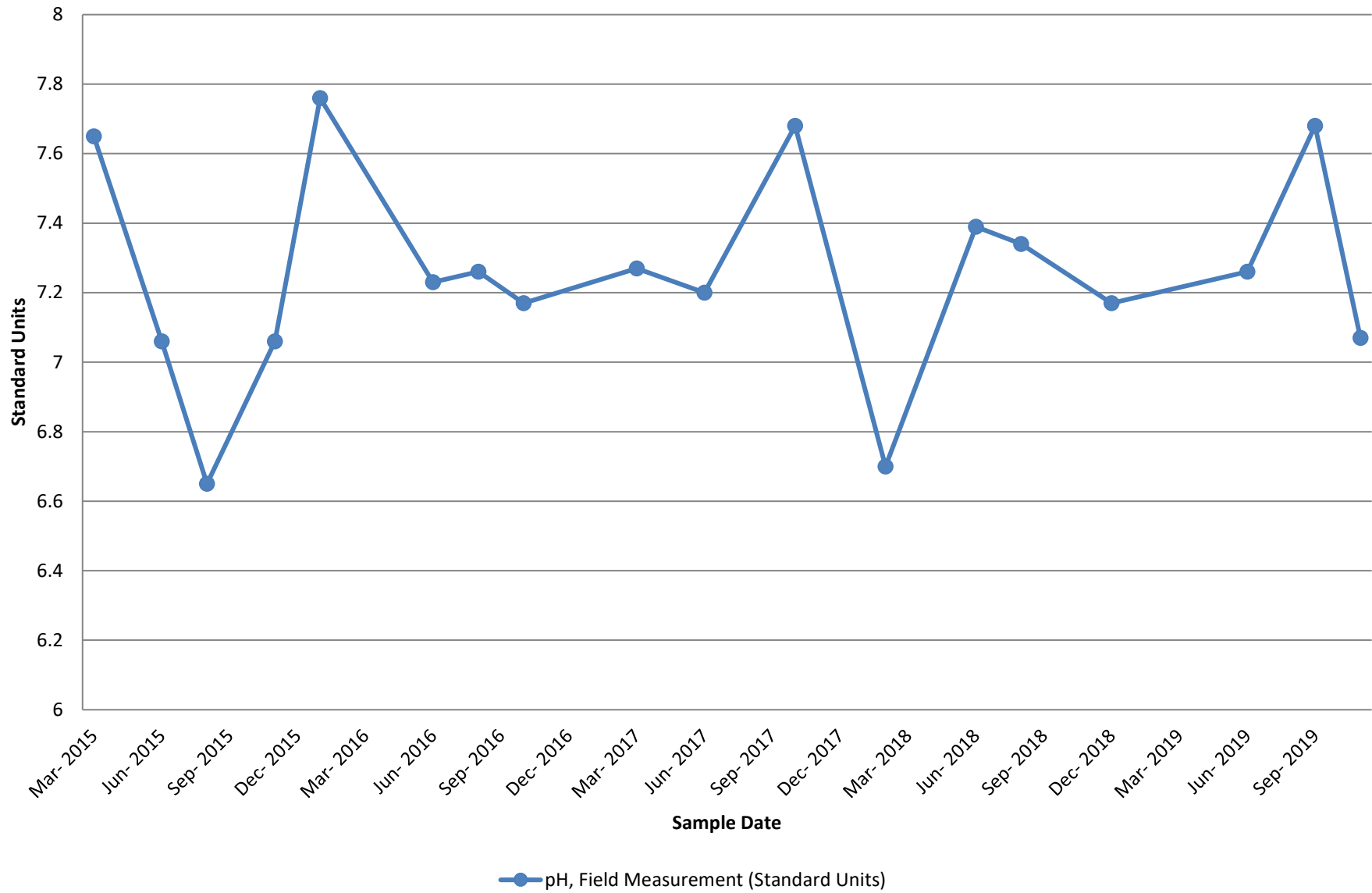
Trend Evaluation 10
ARK-MW-001D: Fluoride
Climax Mine



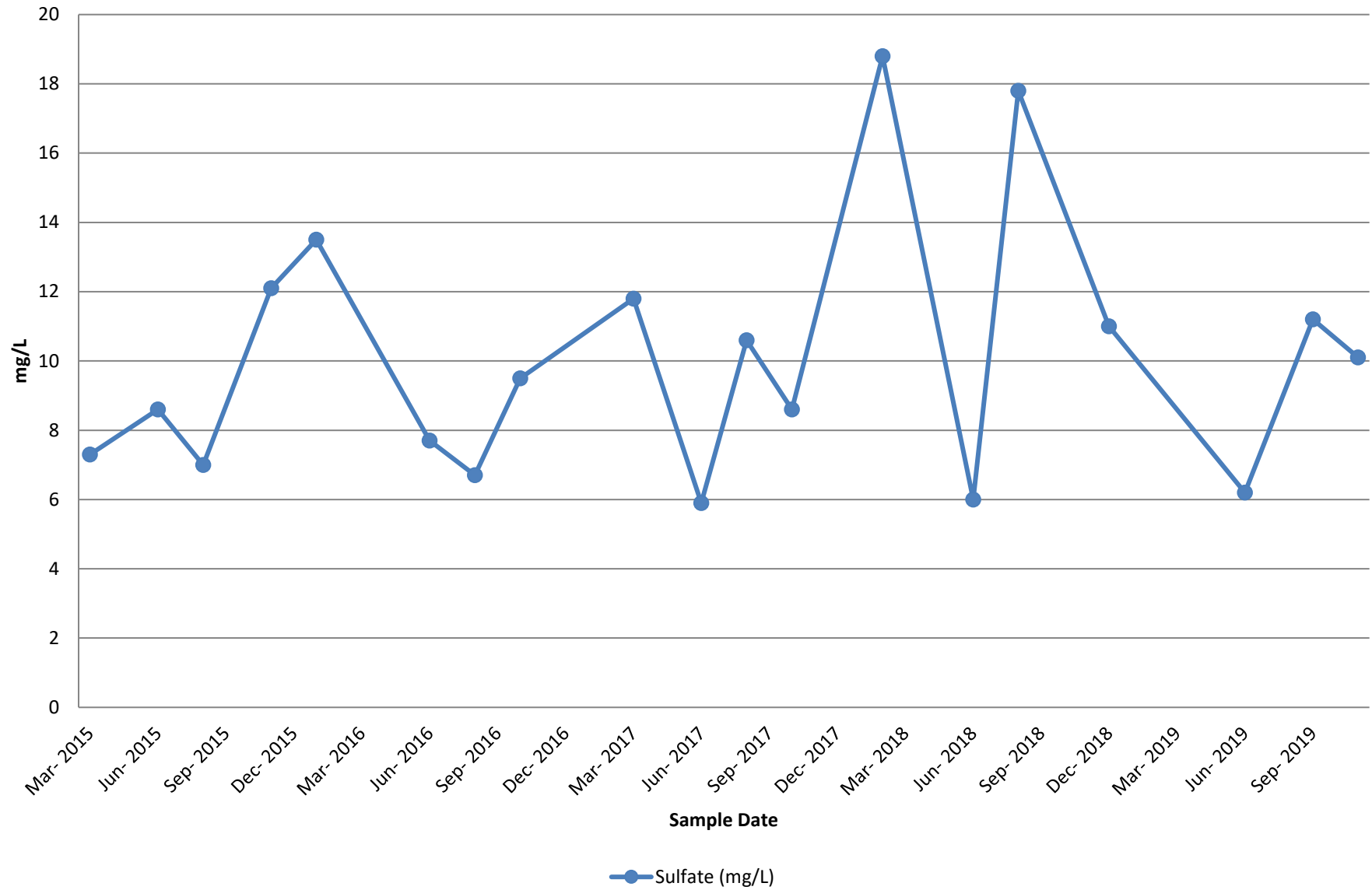
Trend Evaluation 11
EVMW-3S: Metals
Climax Mine



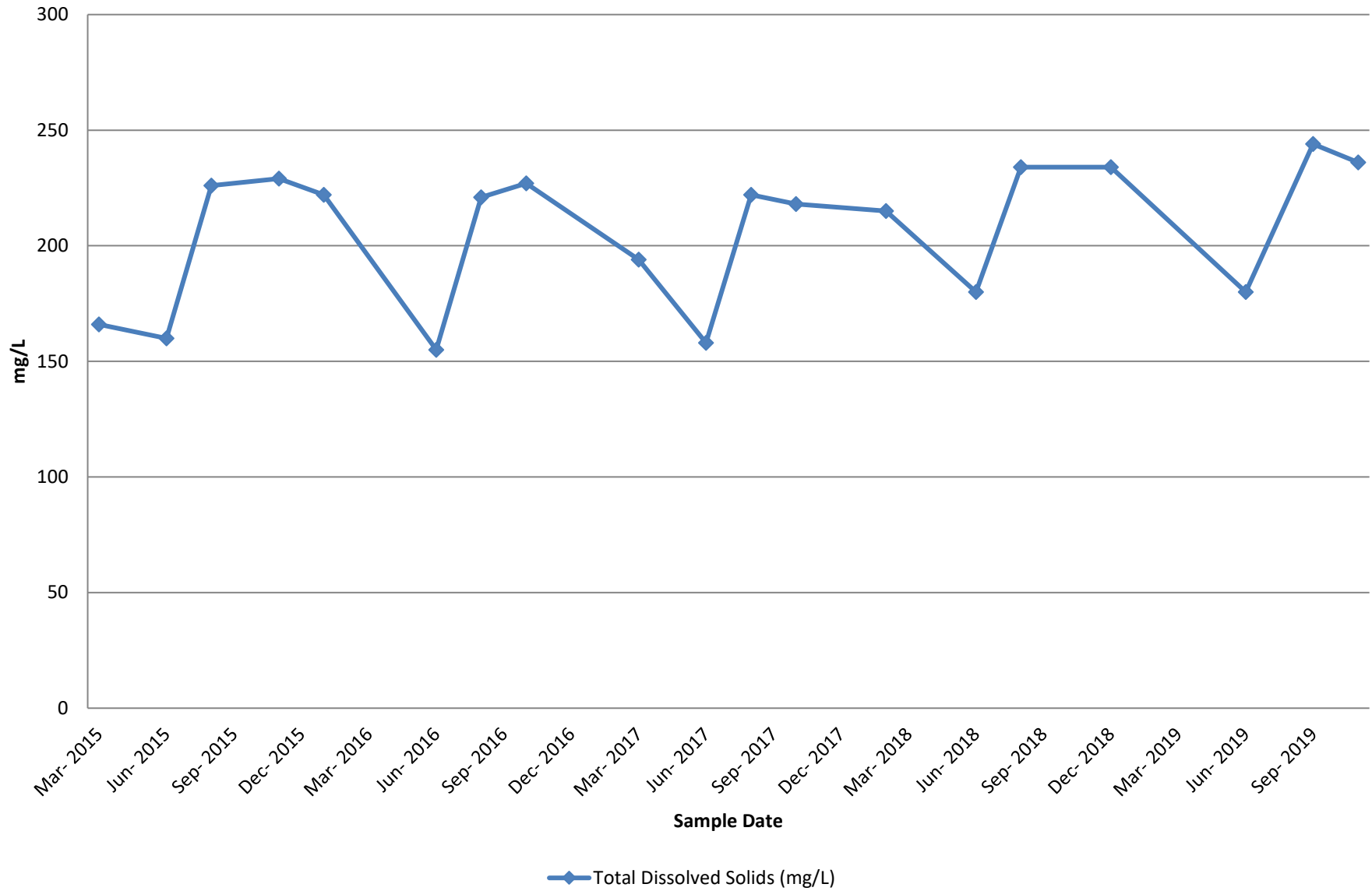
Trend Evaluation 12
EVMW-3S: pH
Climax Mine



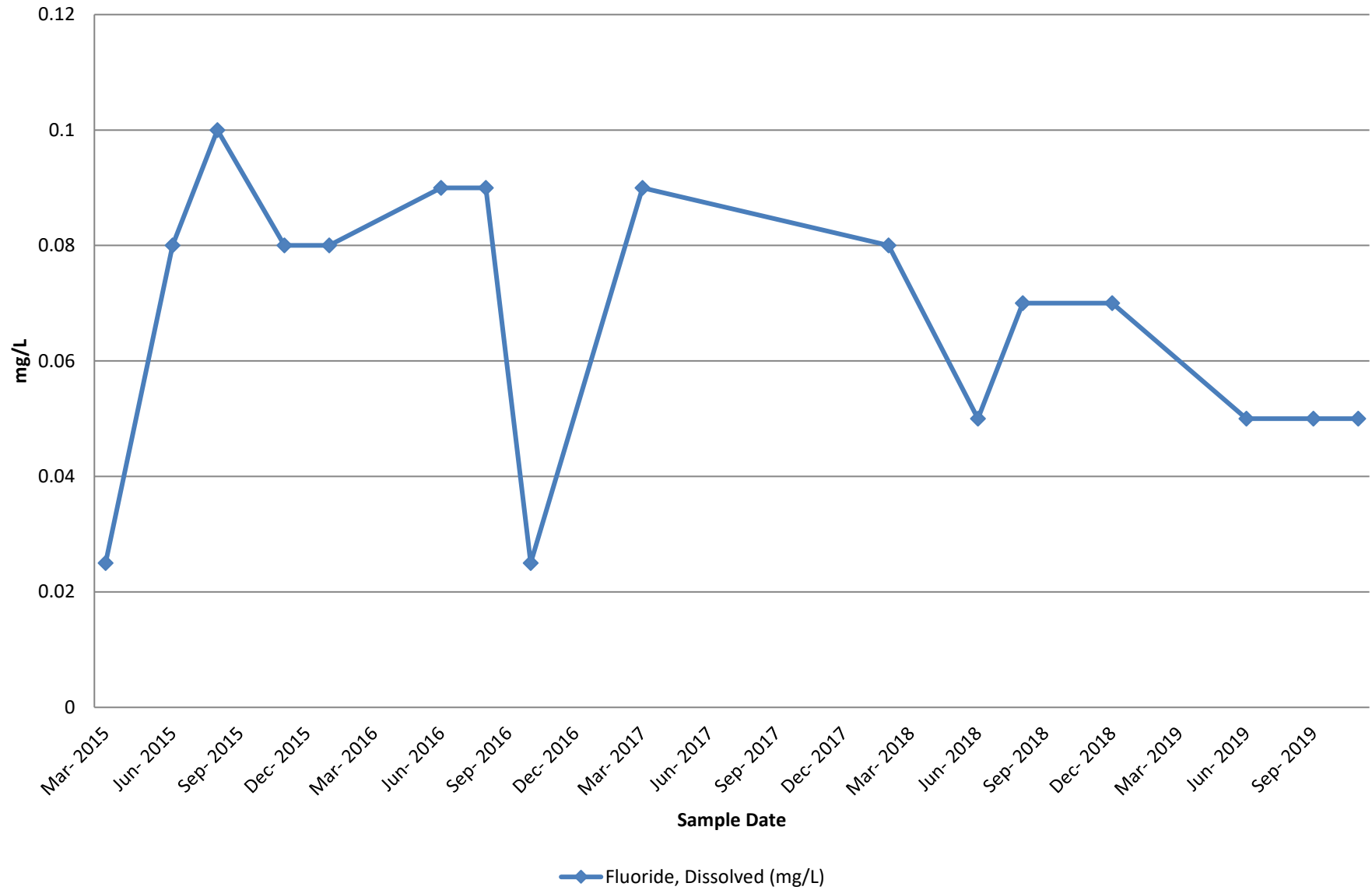
Trend Evaluation 13
EVMW-3S: Sulfate
Climax Mine



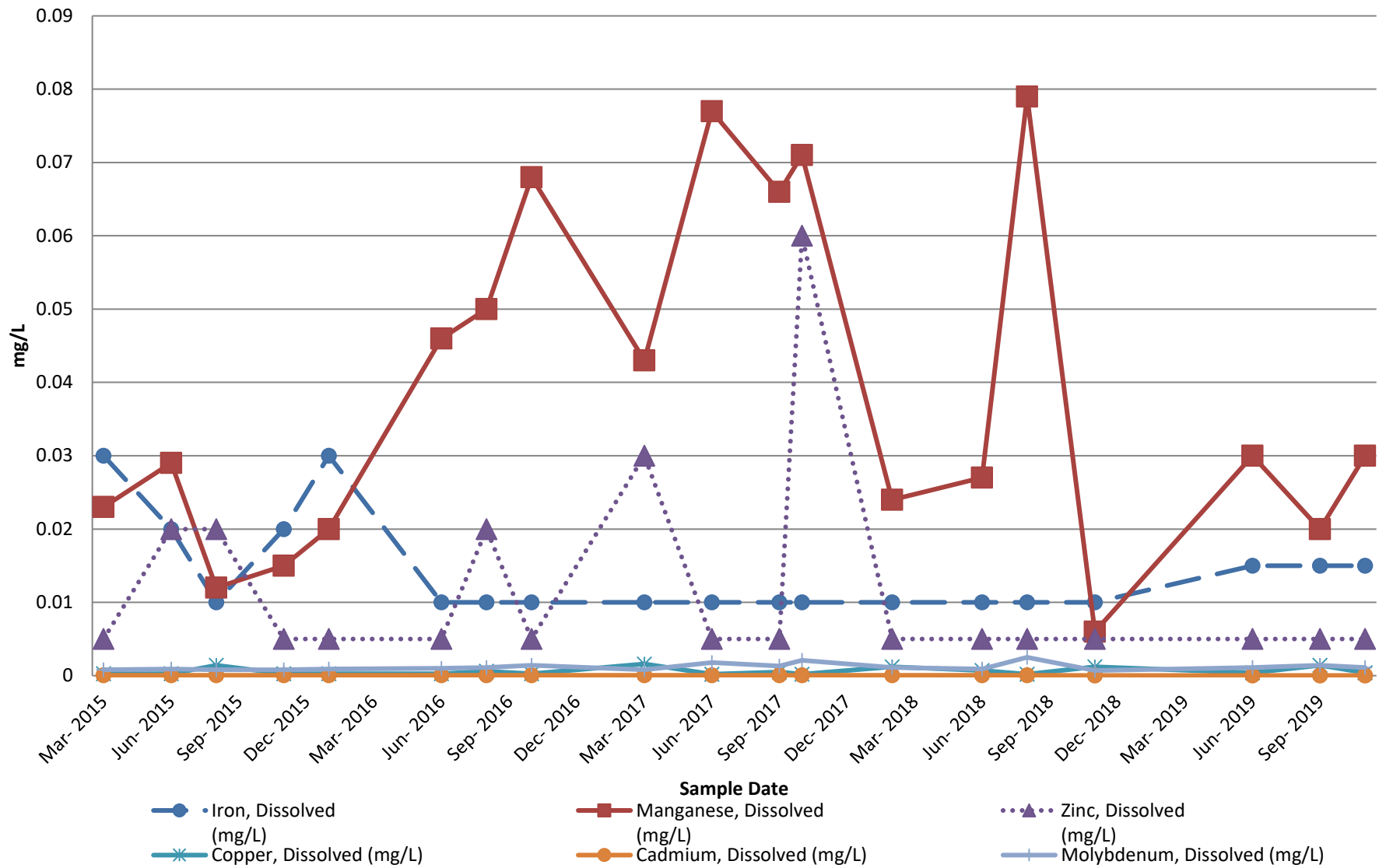
Trend Evaluation 14
EVMW-3S: TDS
Climax Mine



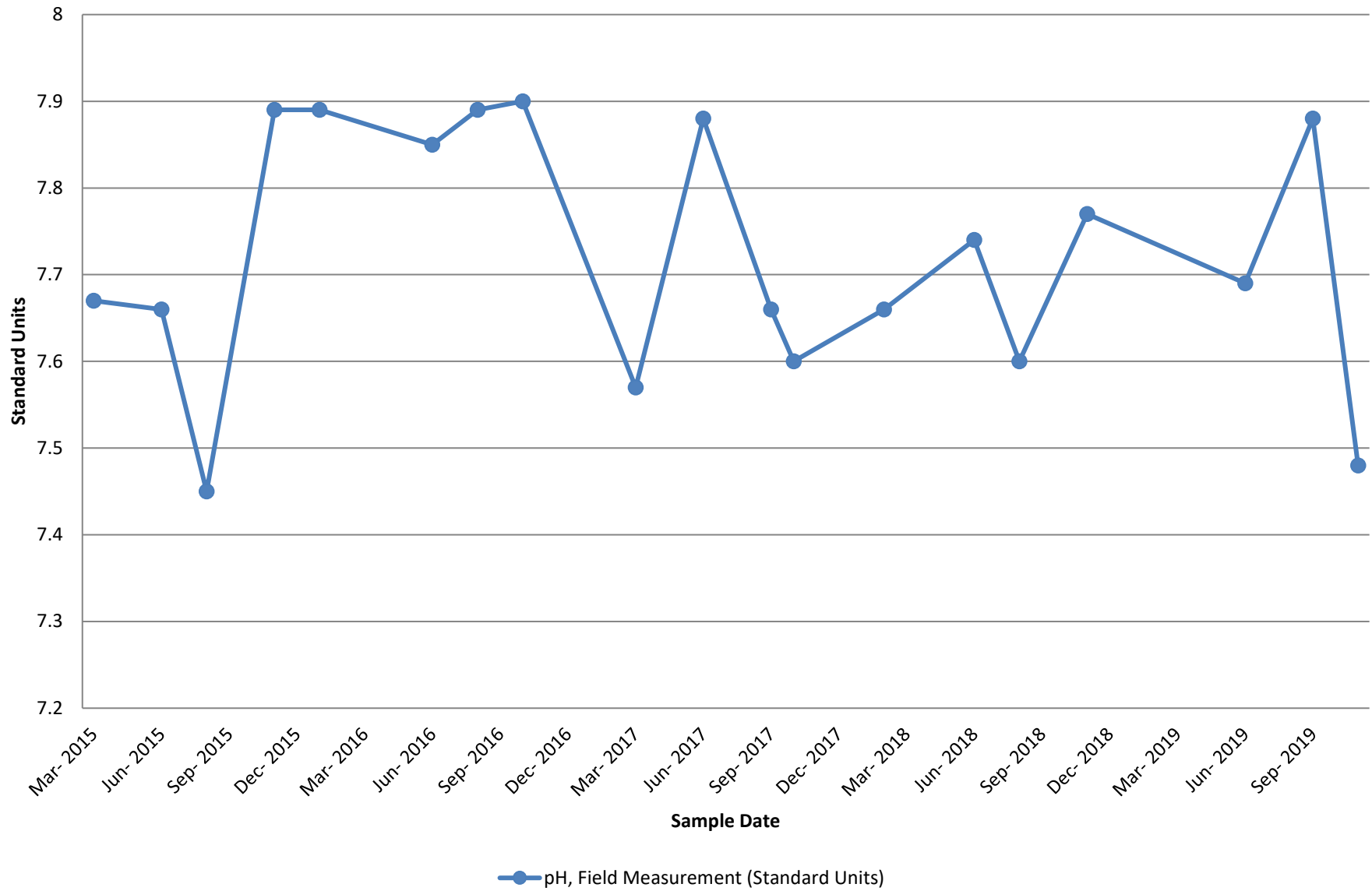
Trend Evaluation 15
EVMW-3S: Fluoride
Climax Mine



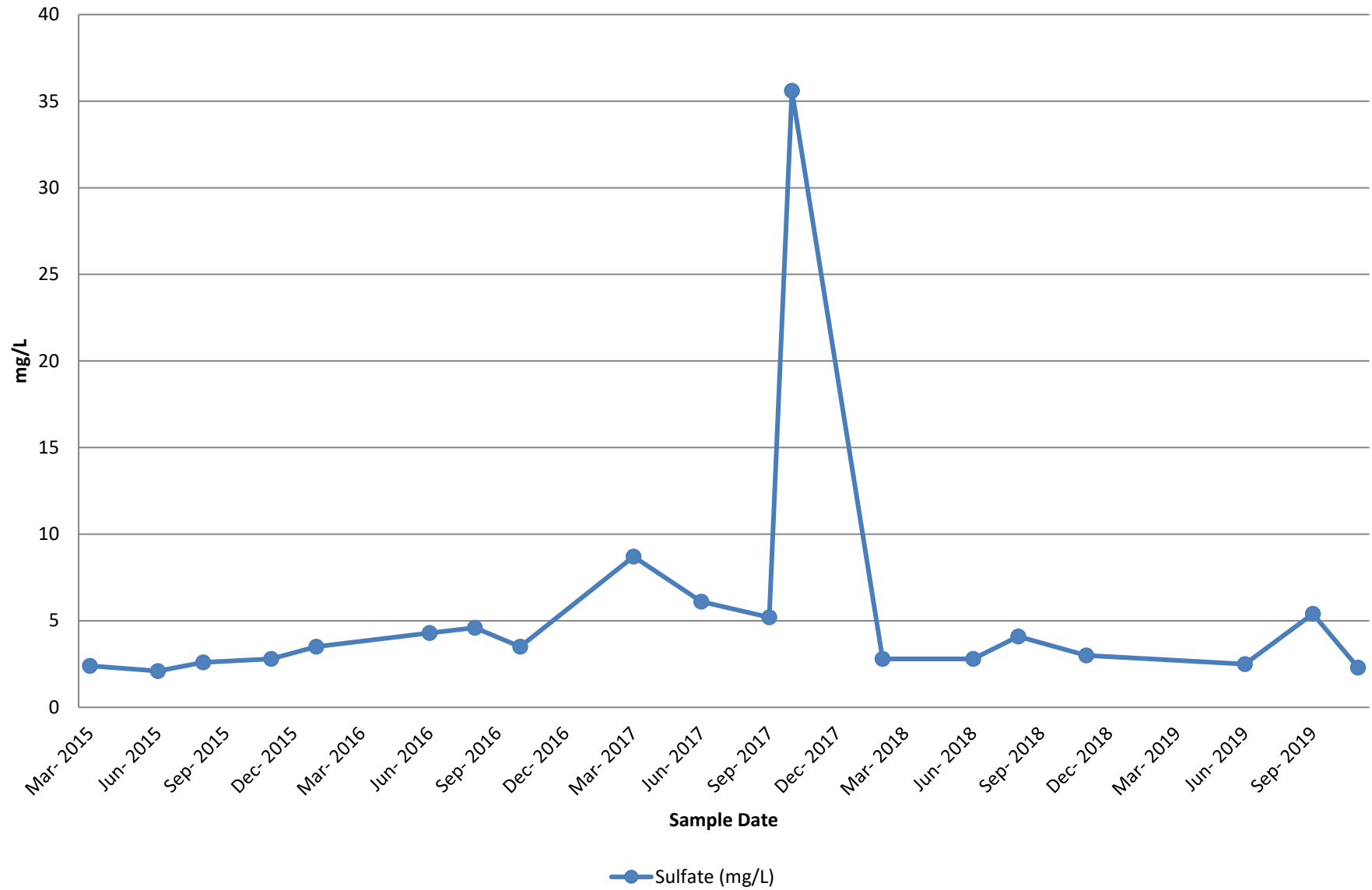
Trend Evaluation 16
EVMW-3D: Metals
Climax Mine



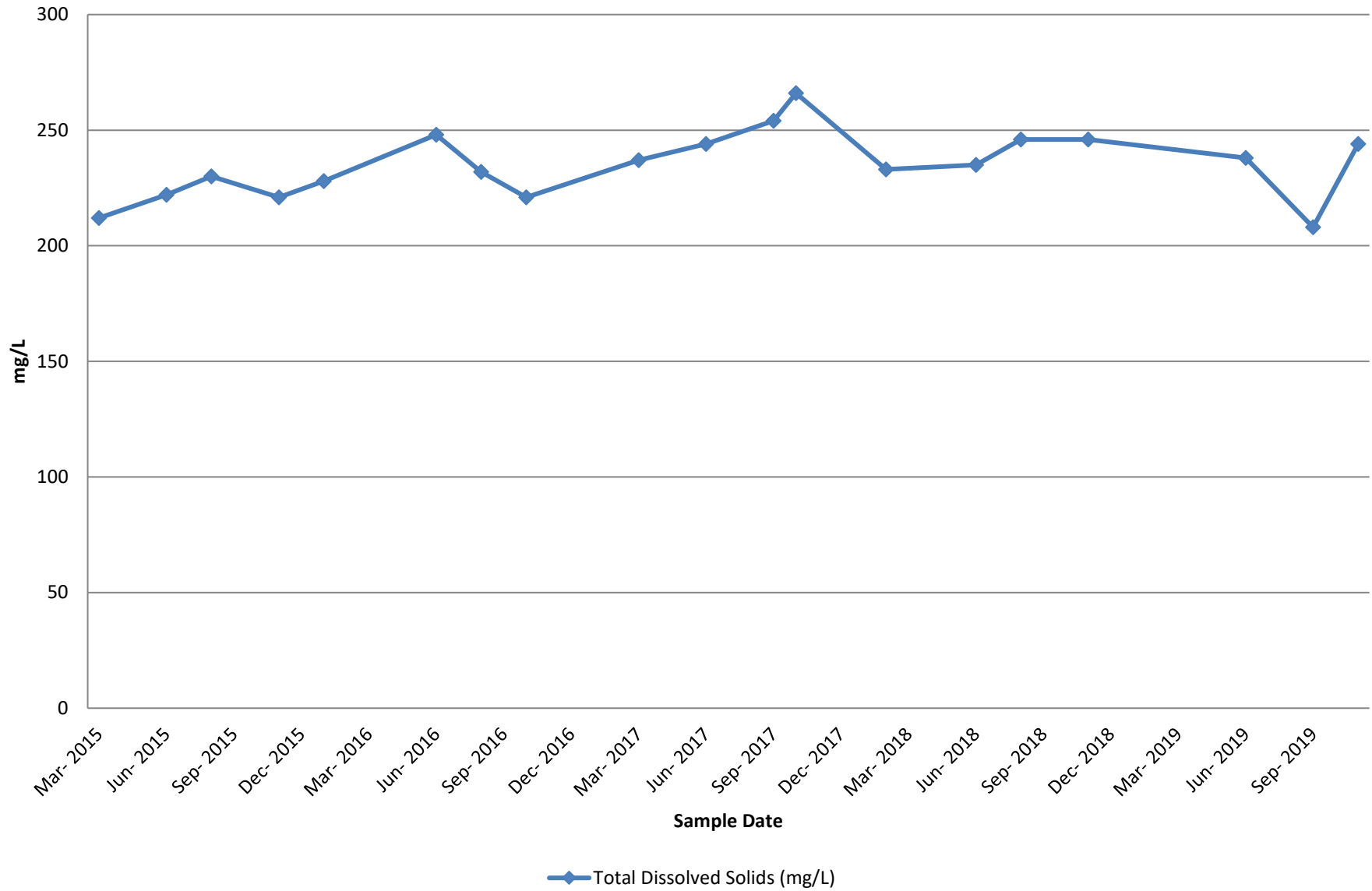
Trend Evaluation 17
EVMW-3D: pH
Climax Mine



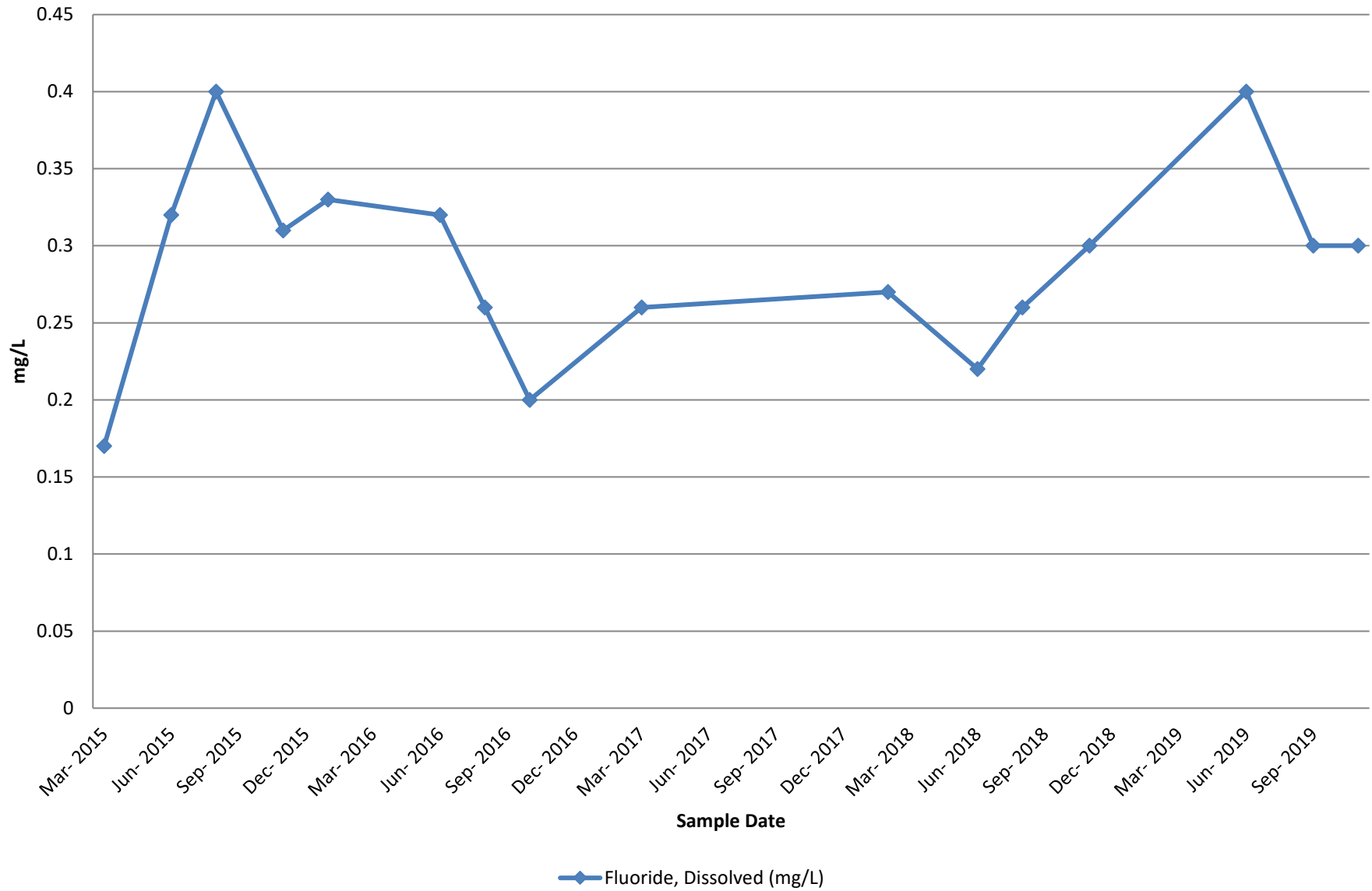
Trend Evaluation 18
EVMW-3D: Sulfate
Climax Mine



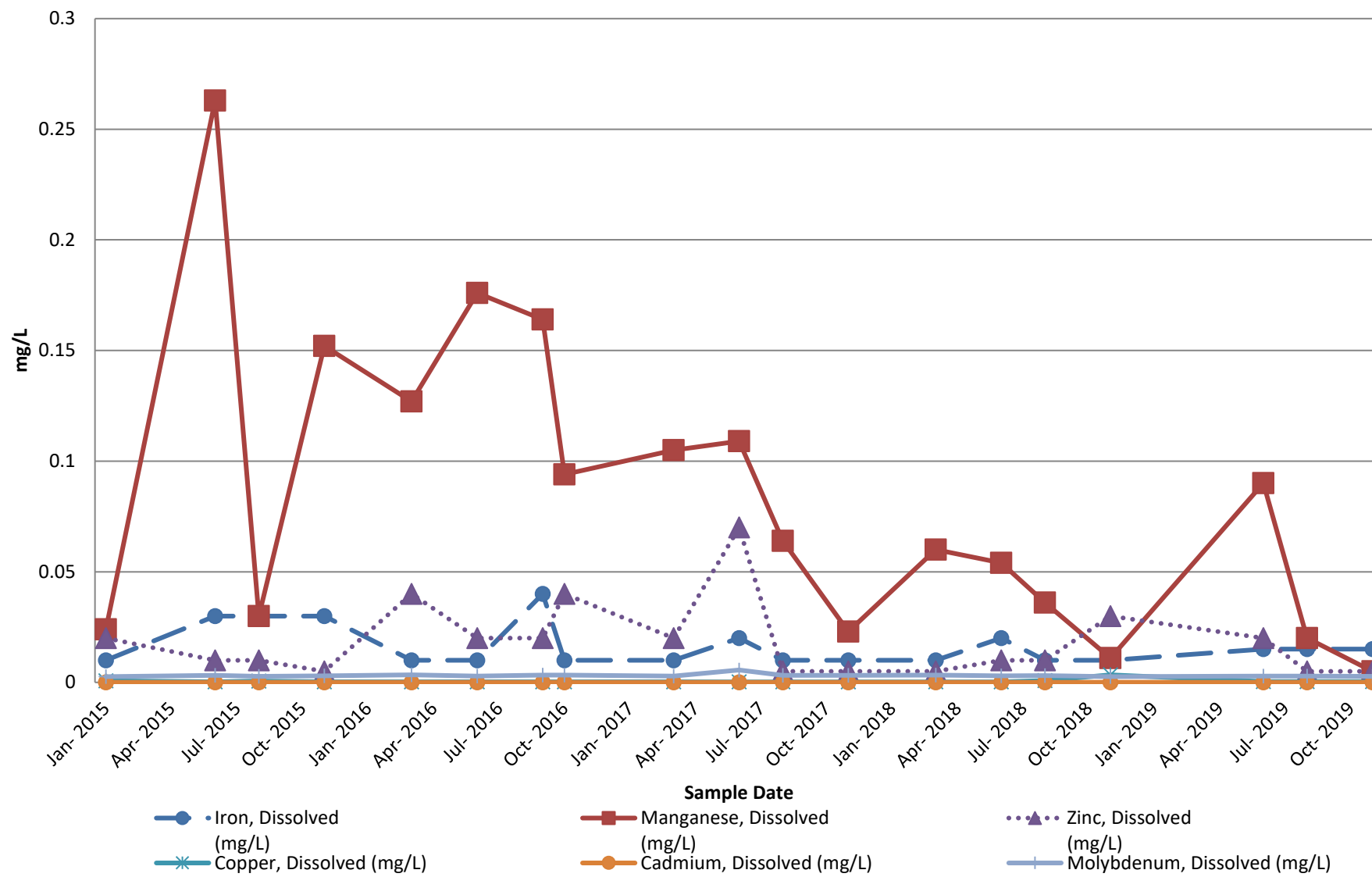
Trend Evaluation 19
EVMW-3D: TDS
Climax Mine



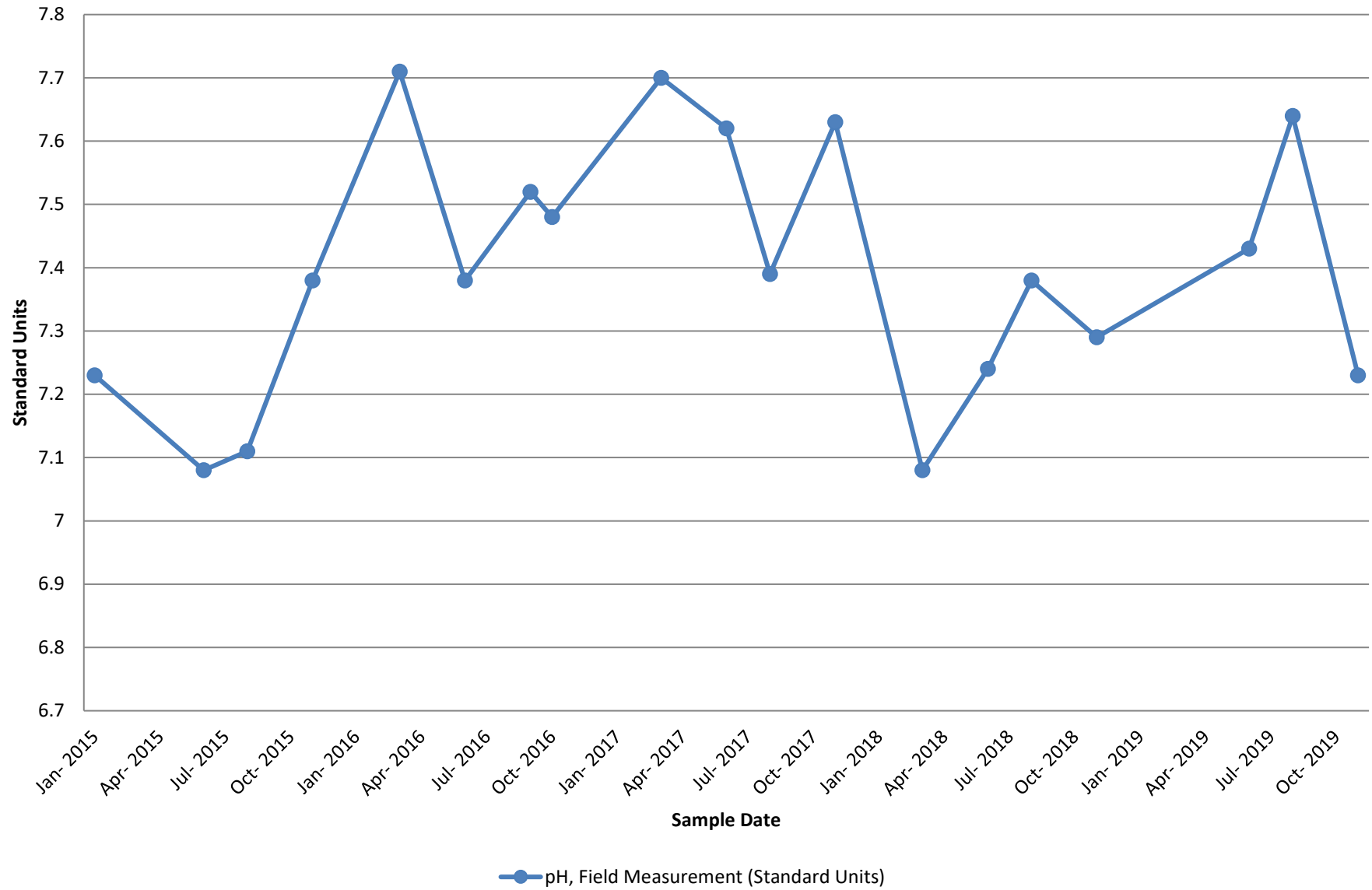
Trend Evaluation 20
EVMW-3D: Fluoride
Climax Mine



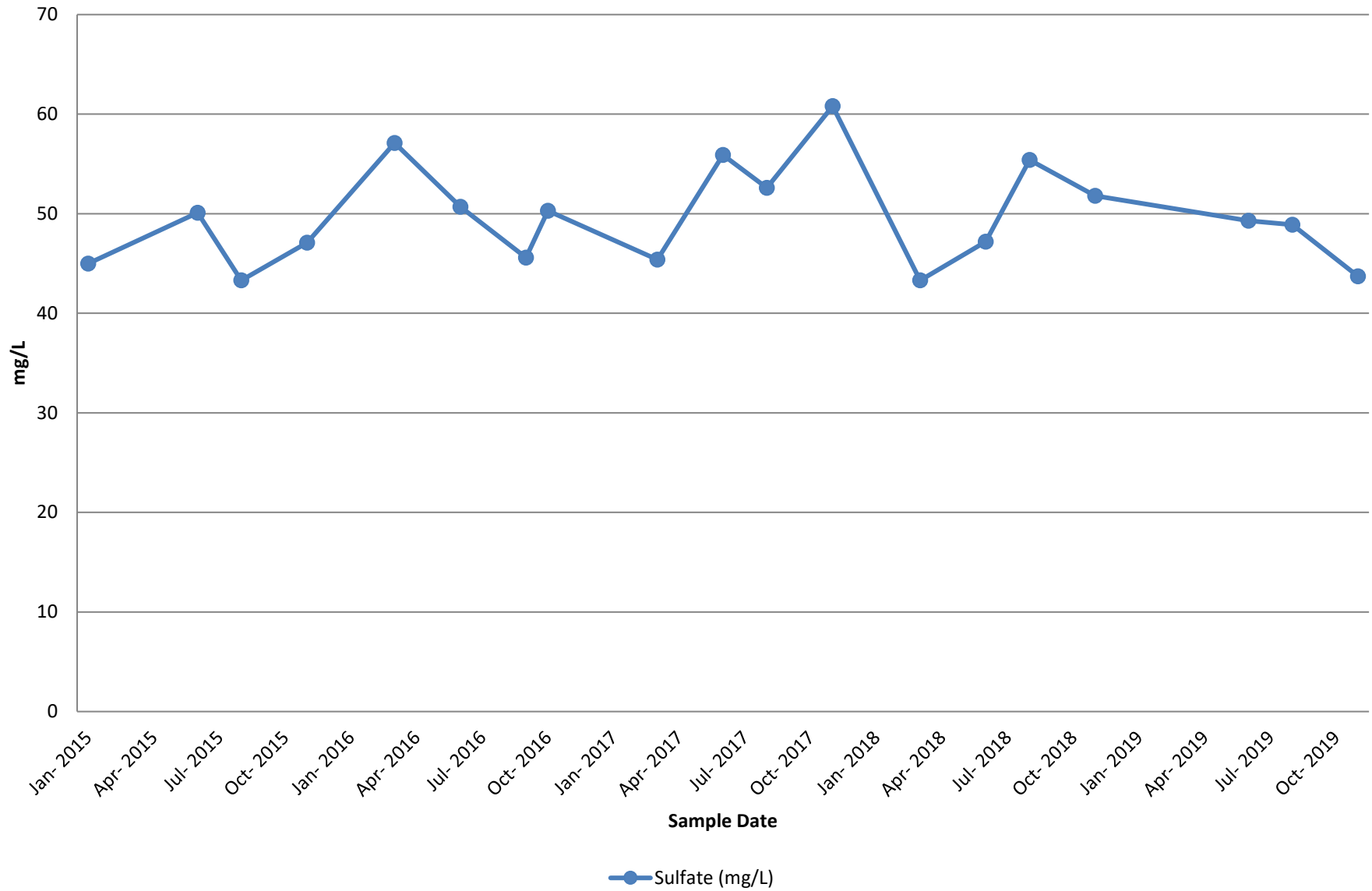
Trend Evaluation 21
EV-MW-004: Metals
Climax Mine



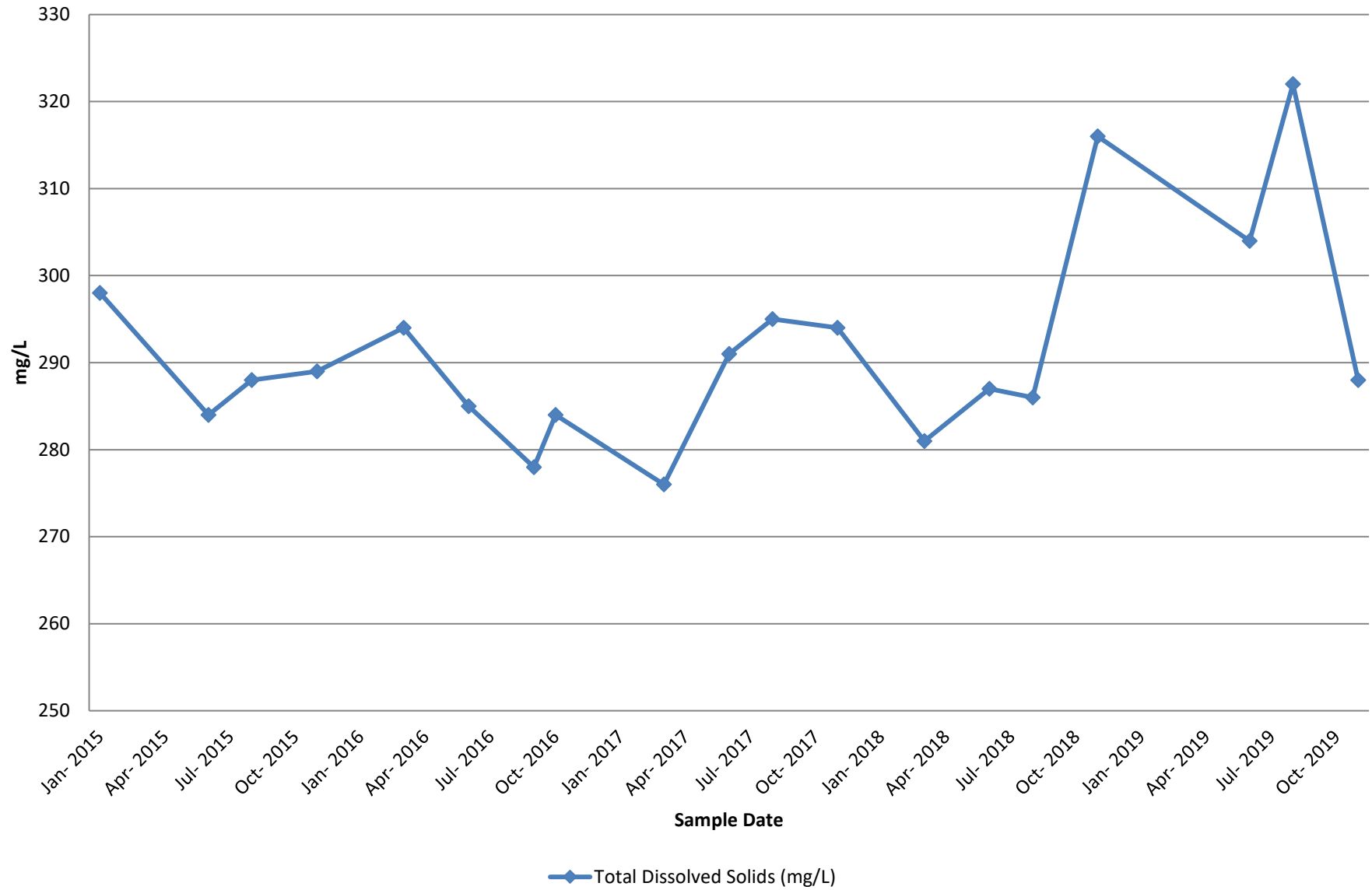
Trend Evaluation 22
EV-MW-004: pH
Climax Mine



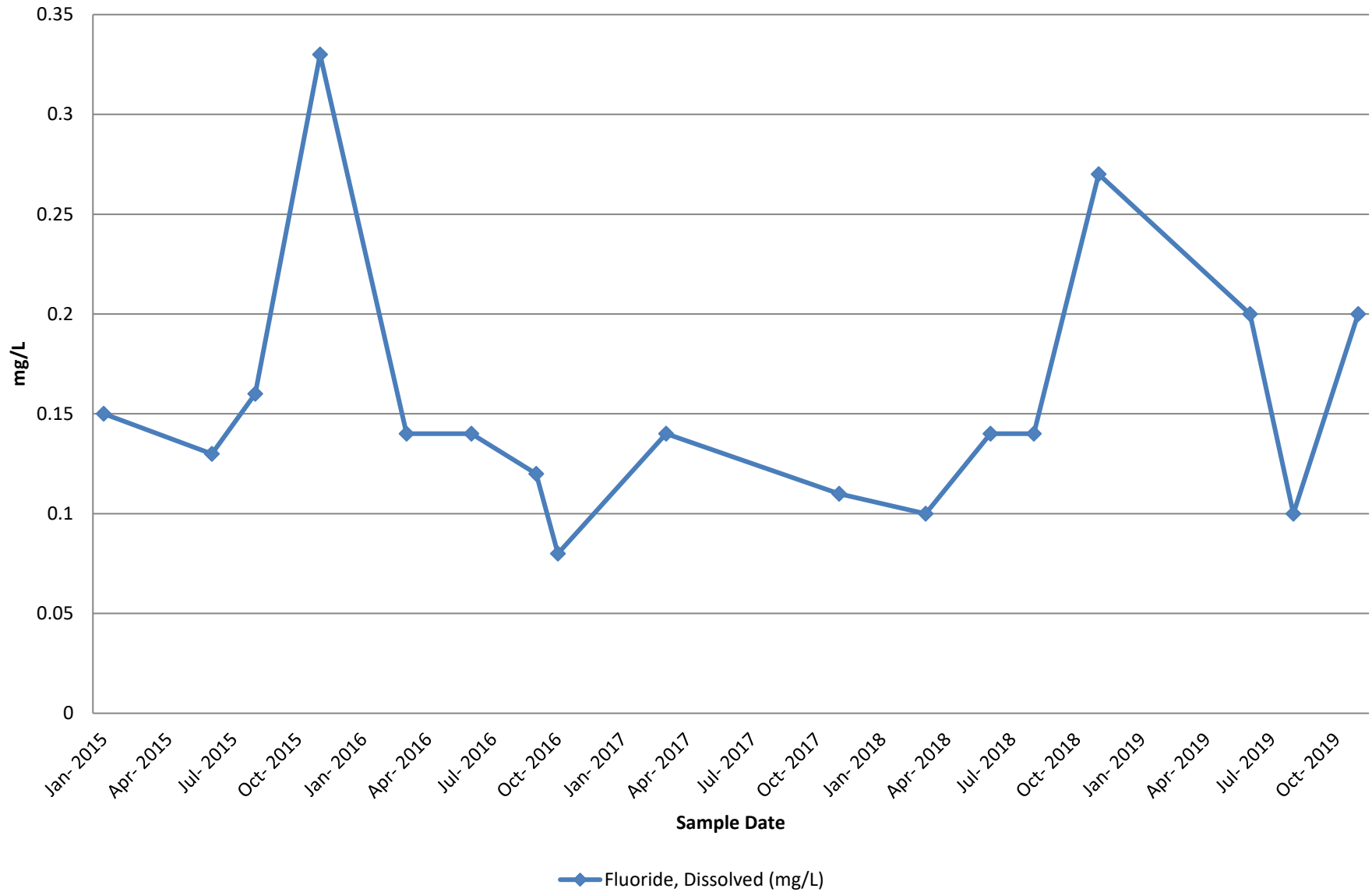
Trend Evaluation 23
EV-MW-004: Sulfate
Climax Mine



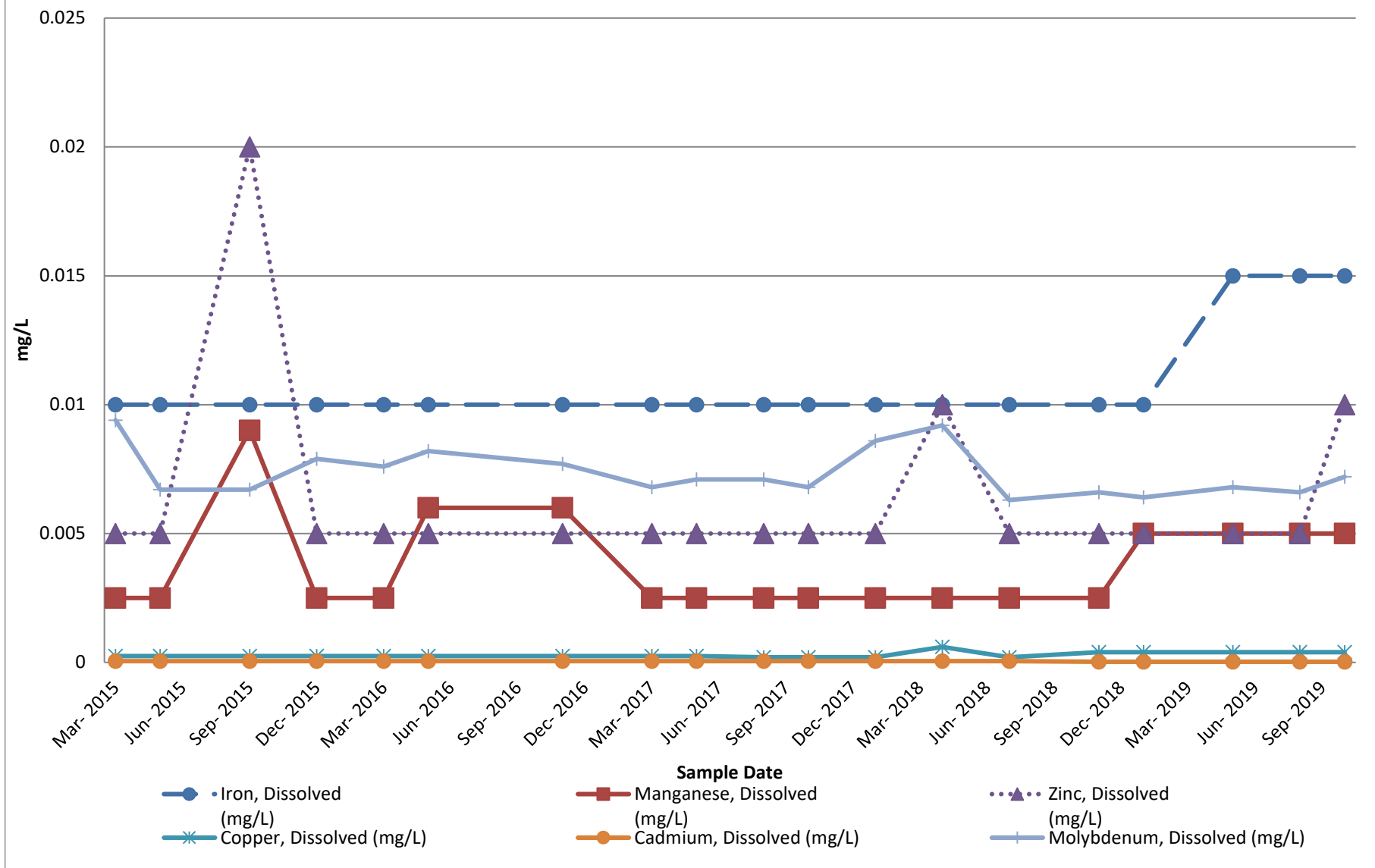
Trend Evaluation 24
EV-MW-004: TDS
Climax Mine



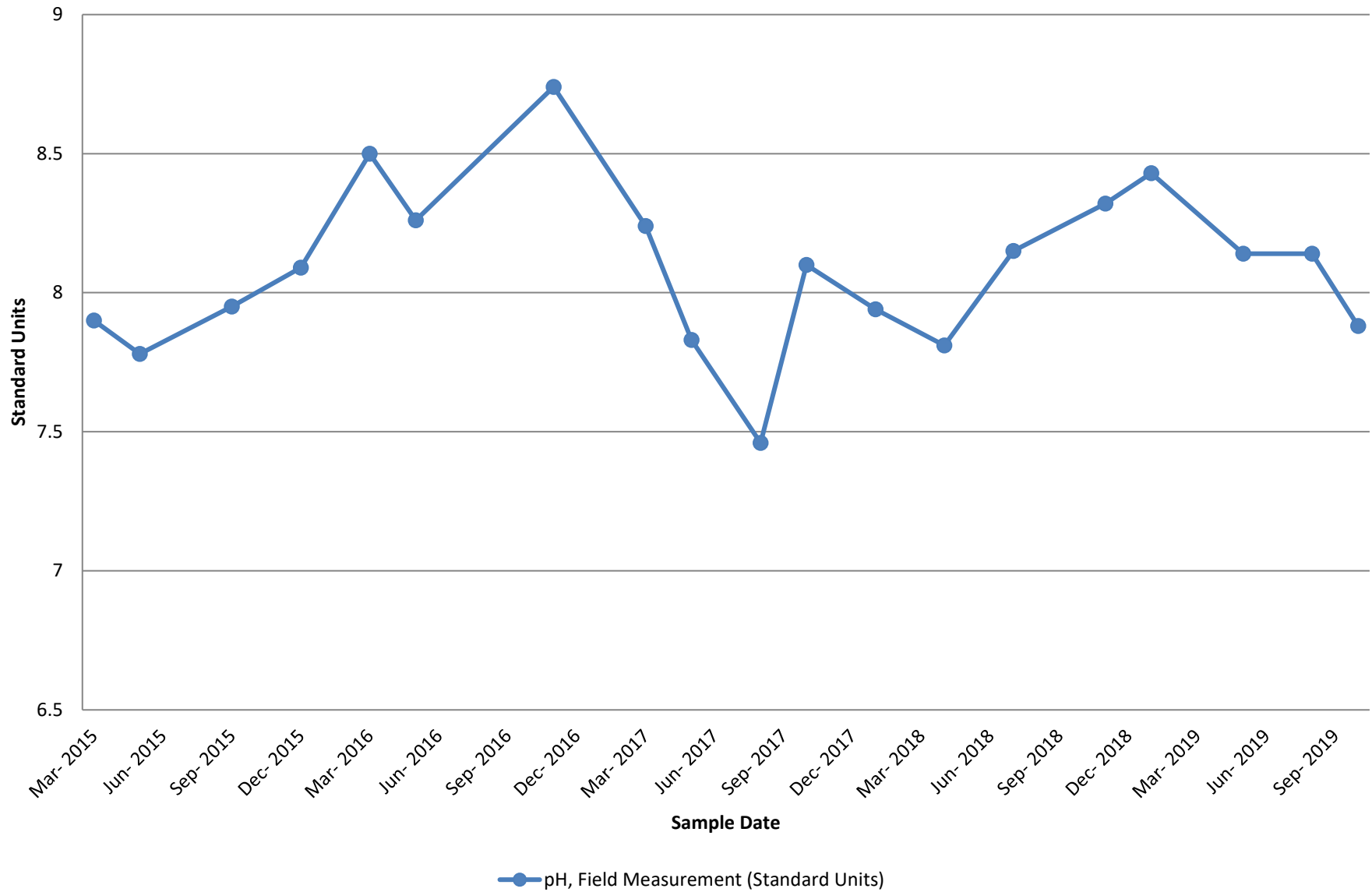
Trend Evaluation 25
EV-MW-004: Fluoride
Climax Mine



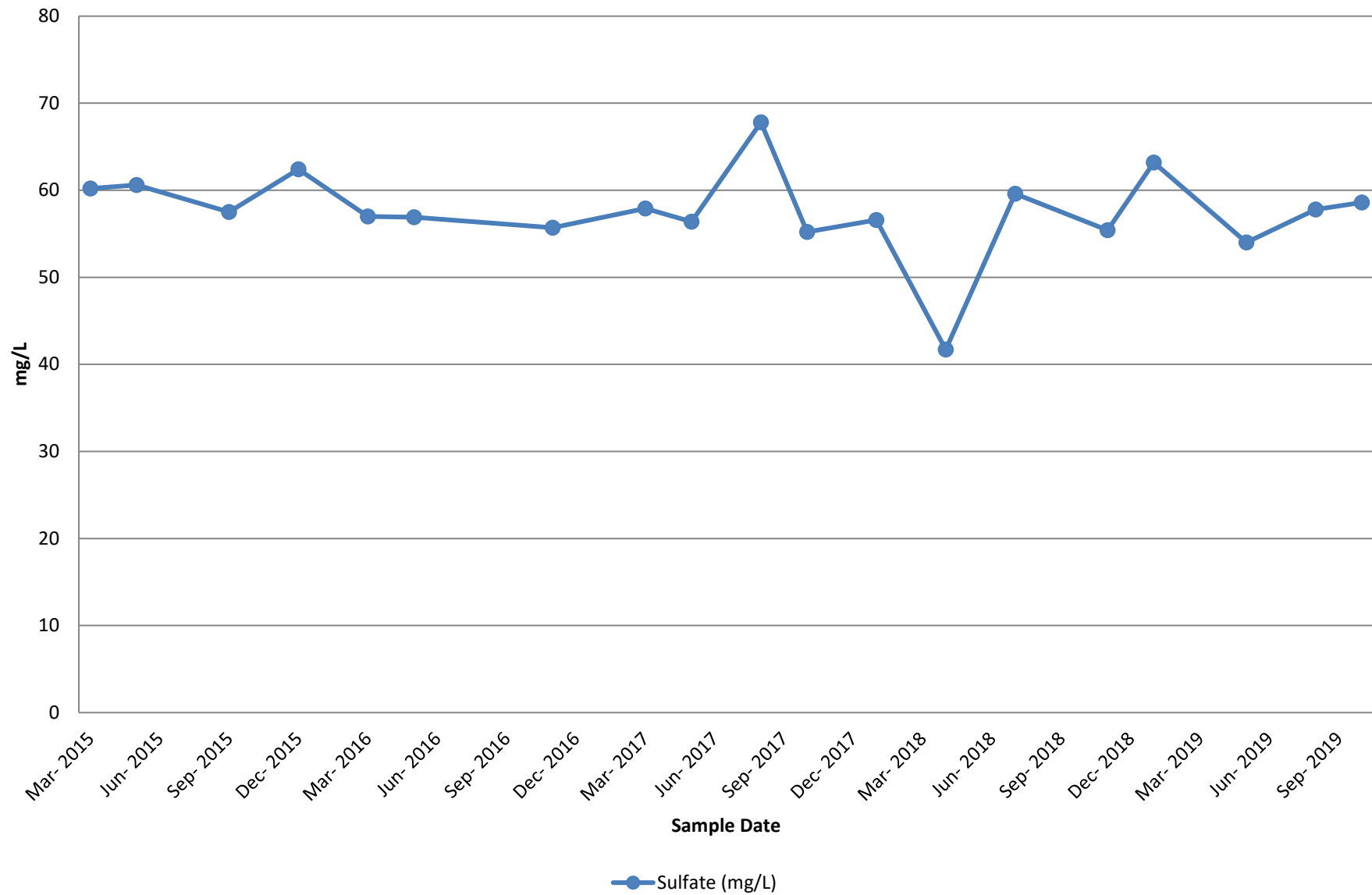
Trend Evaluation 26
TM-MW-002D: Metals
Climax Mine



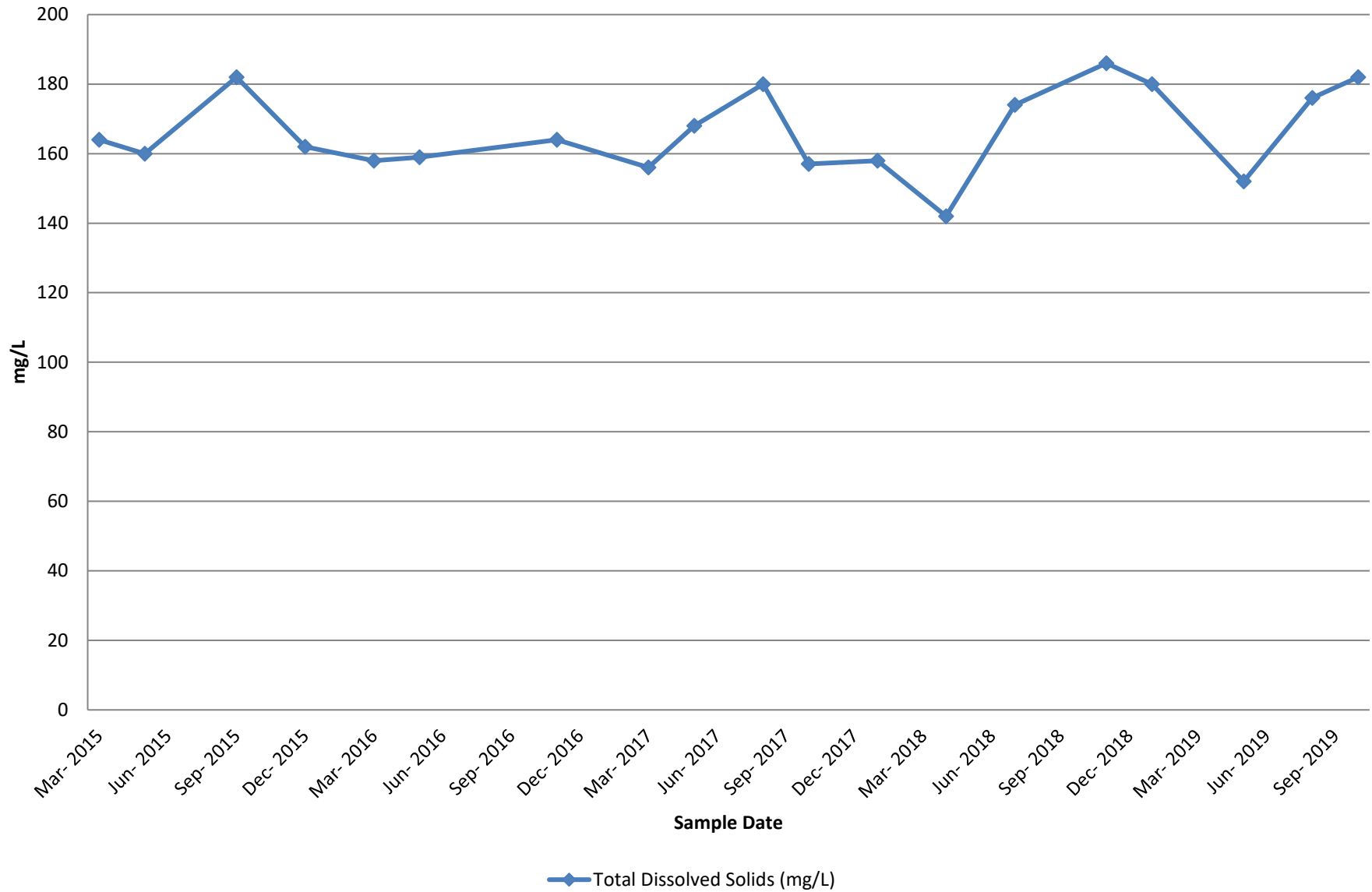
Trend Evaluation 27
TM-MW-002D: pH
Climax Mine



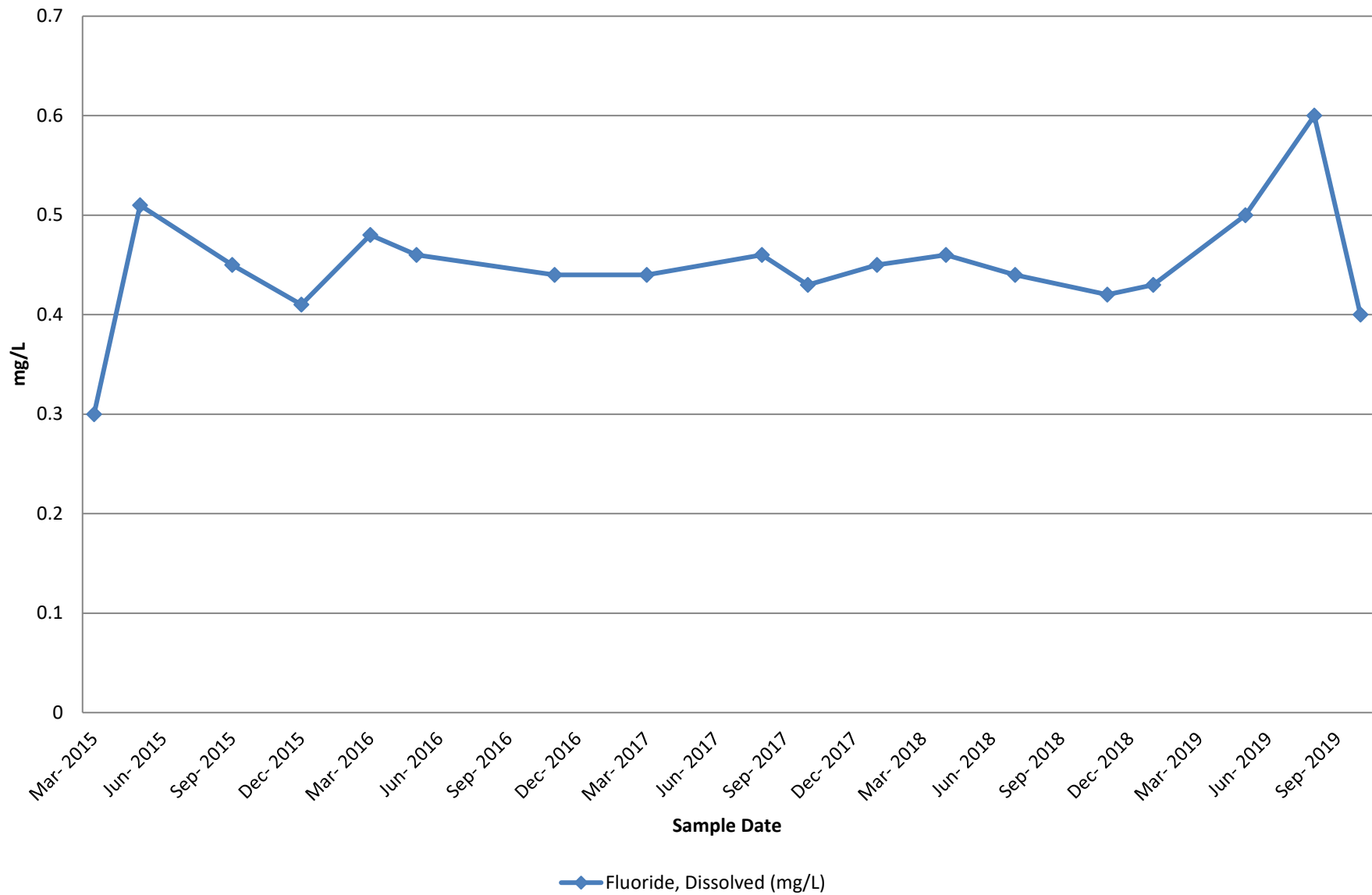
Trend Evaluation 28
TM-MW-002D: Sulfate
Climax Mine



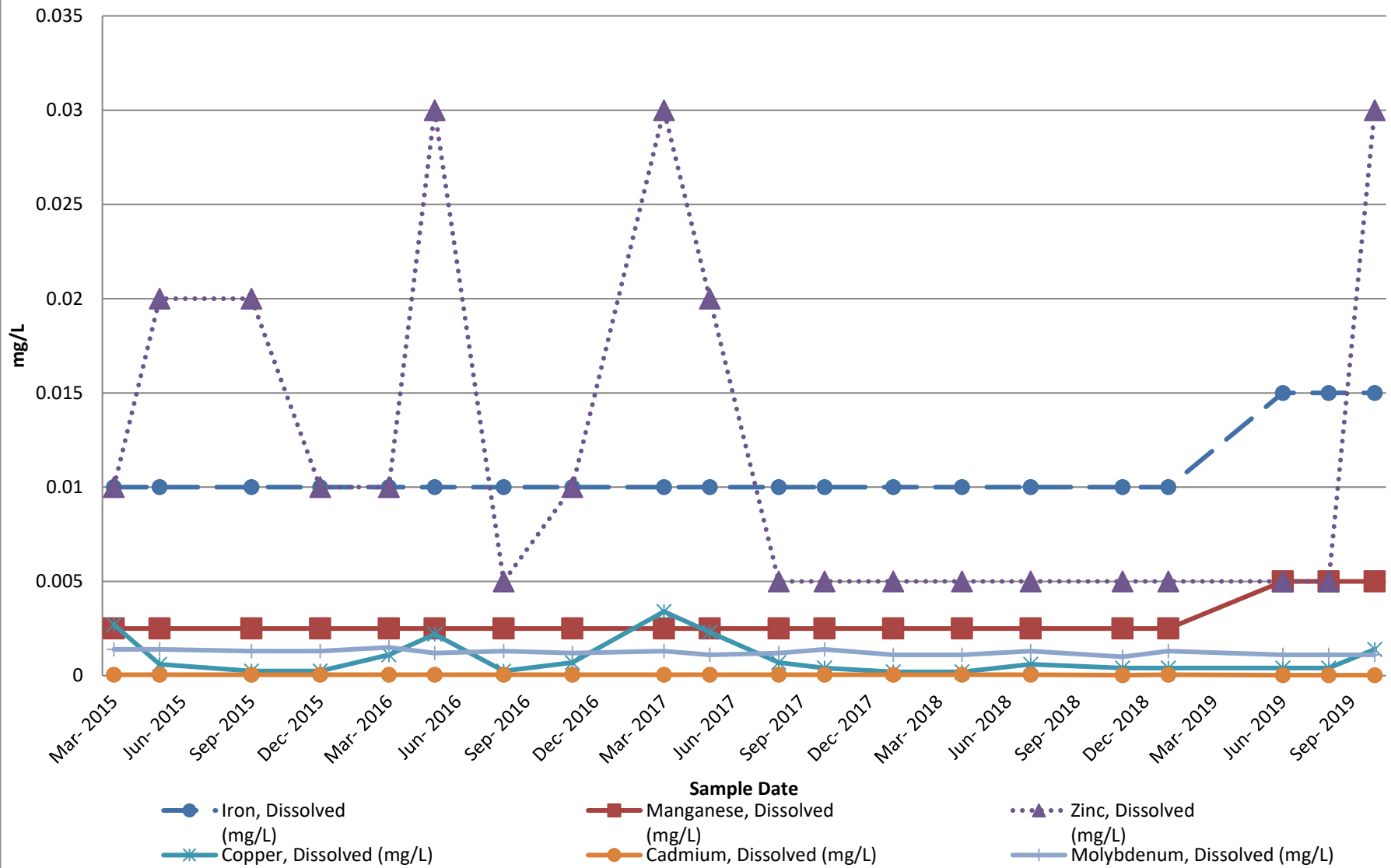
Trend Evaluation 29
TM-MW-002D: TDS
Climax Mine



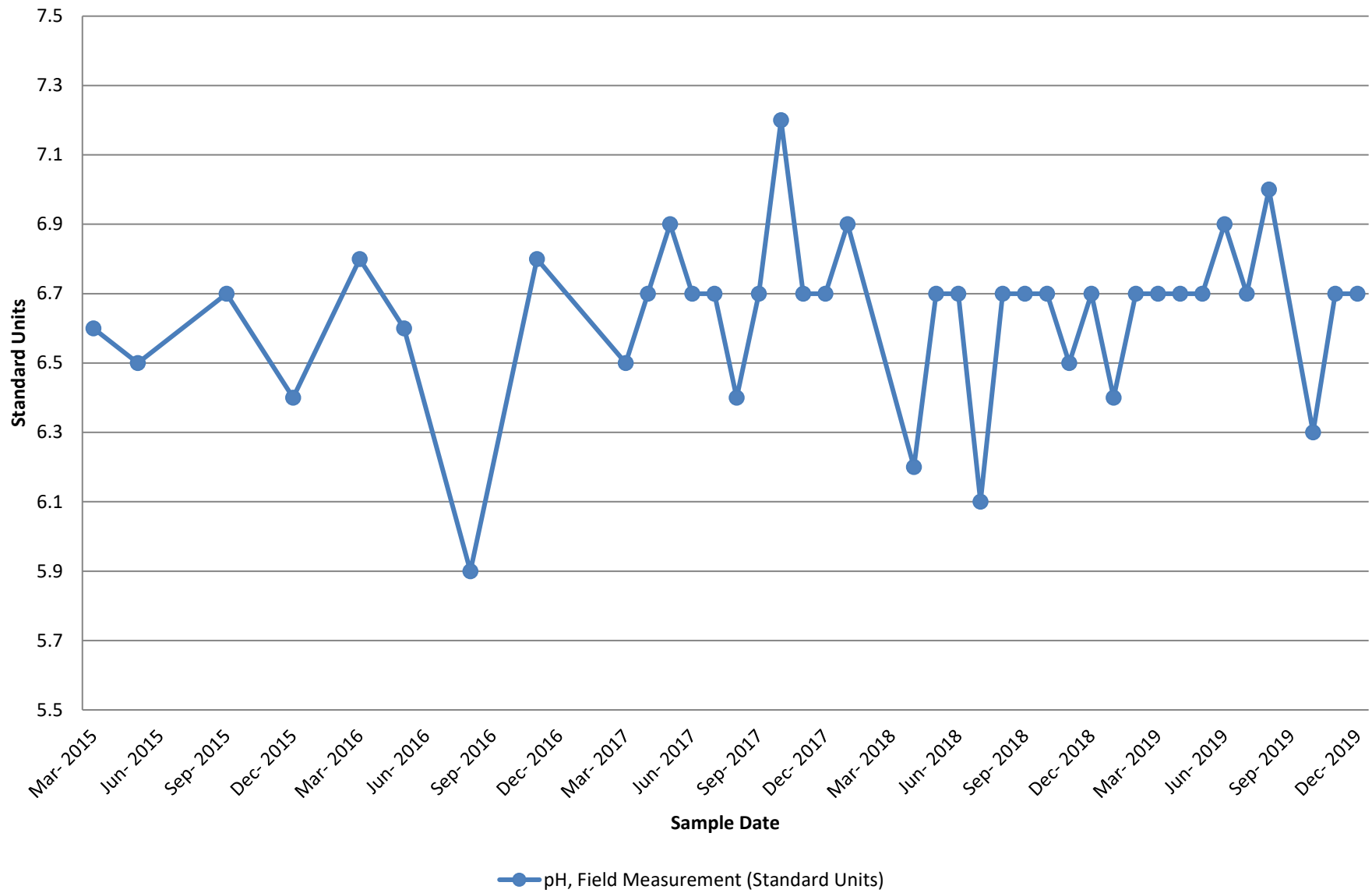
Trend Evaluation 30
TM-MW-002D: Fluoride
Climax Mine



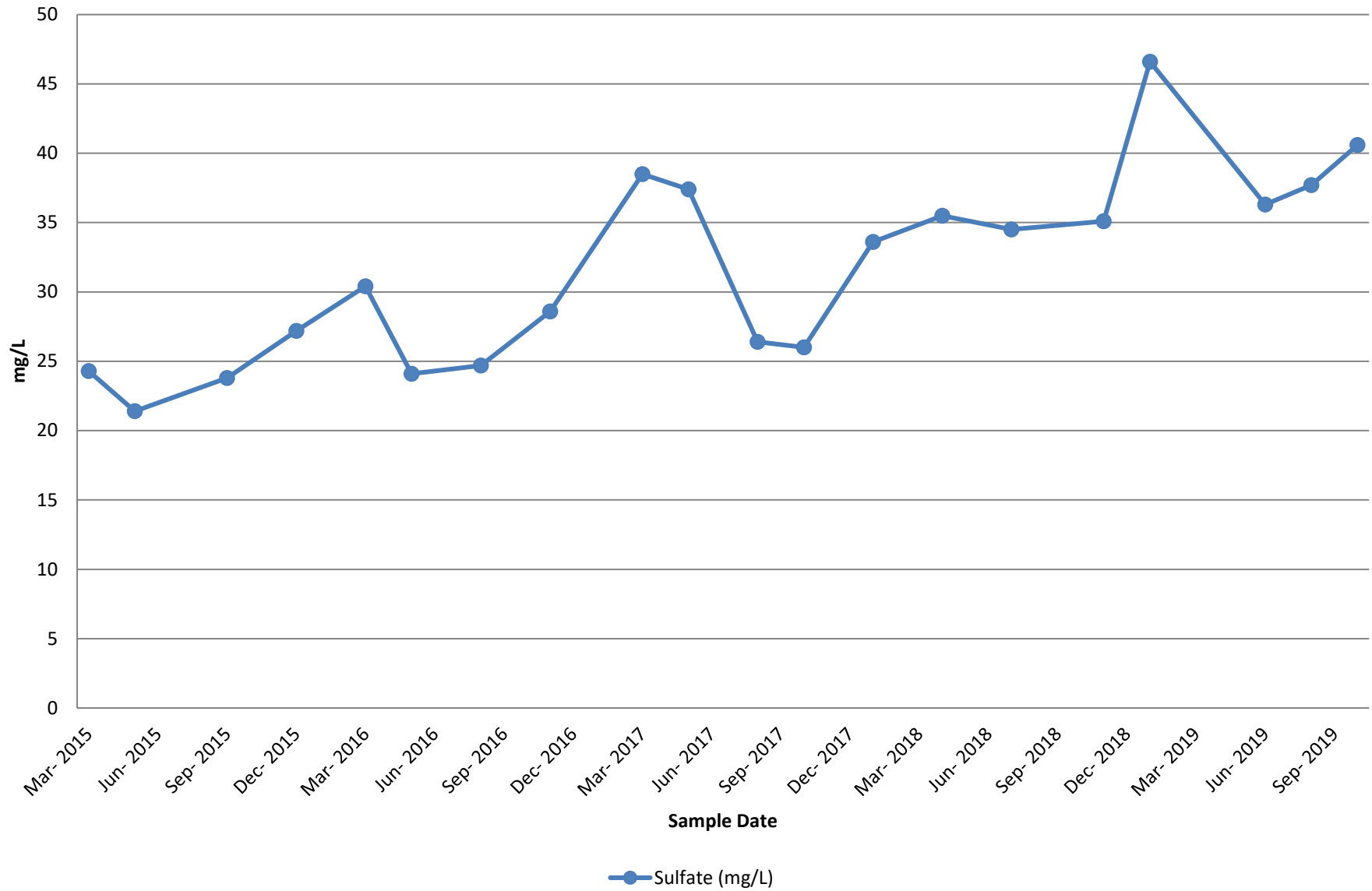
Trend Evaluation 31
GW#2: Metals
Climax Mine



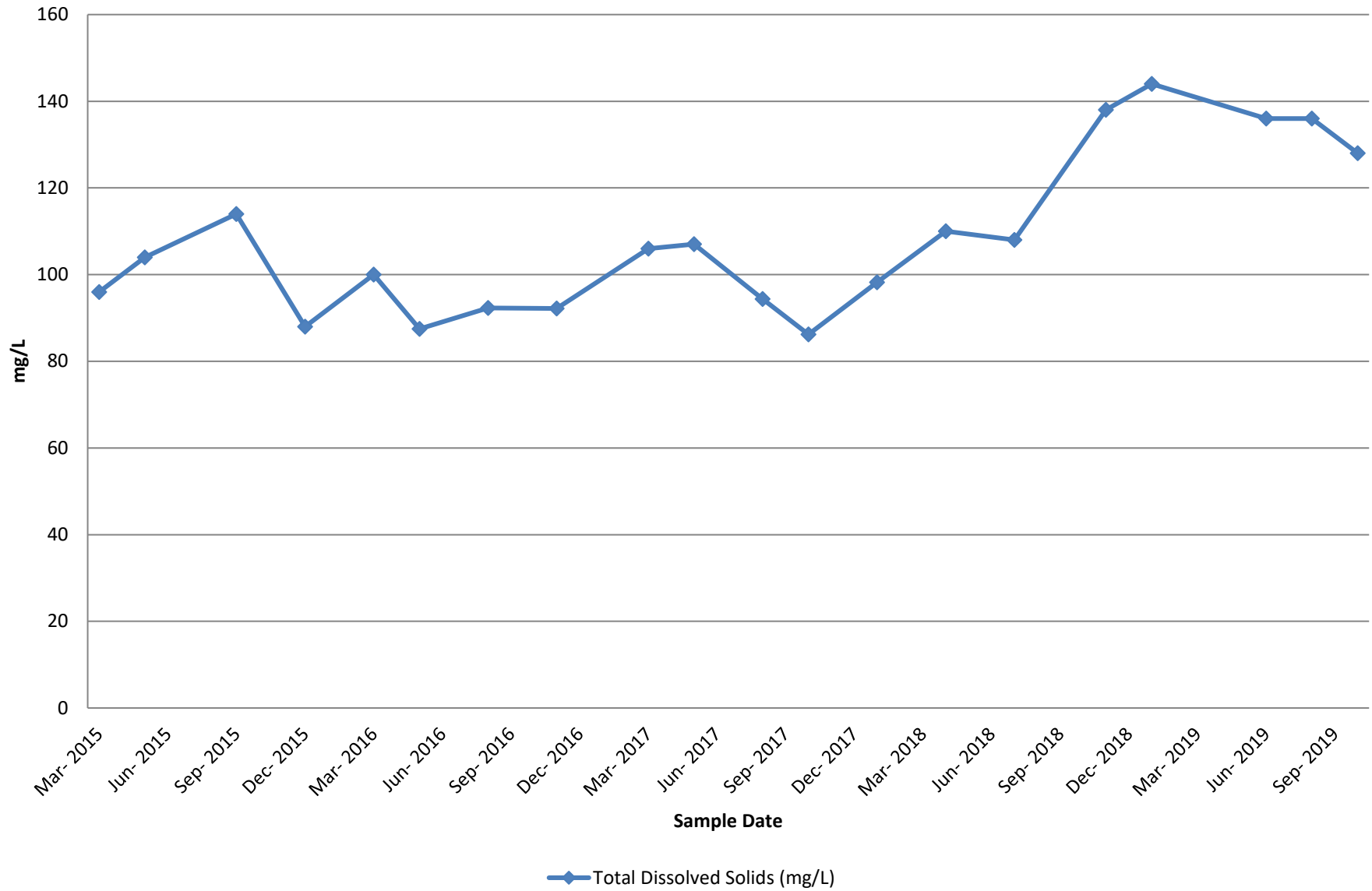
Trend Evaluation 32
GW#2: pH
Climax Mine



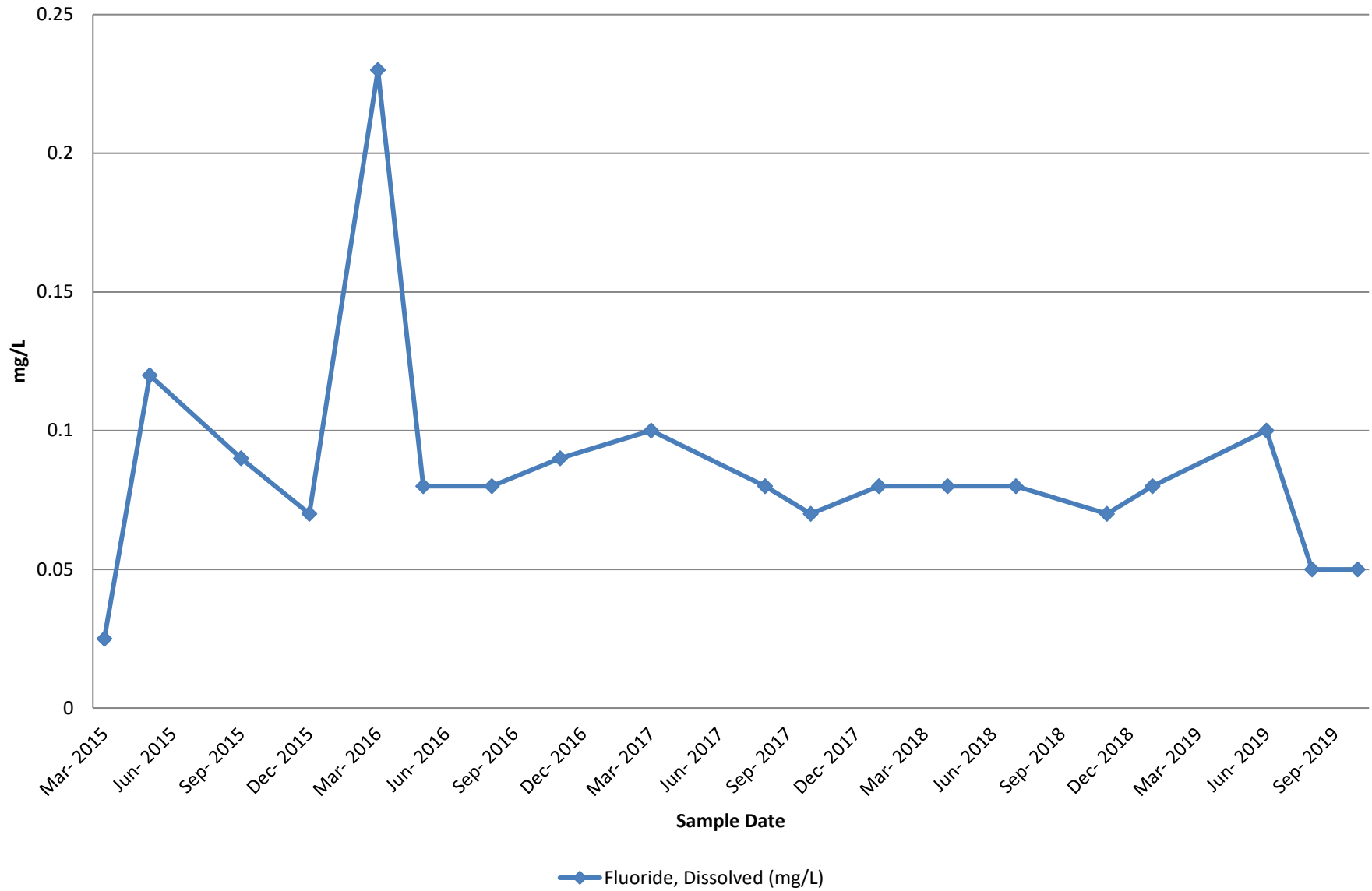
Trend Evaluation 33
GW#2: Sulfate
Climax Mine



Trend Evaluation 34
GW#2: TDS
Climax Mine



Trend Evaluation 35
GW#2: Fluoride
Climax Mine





REVISIONS				CLIMAX OPERATIONS		DIVISION: ENVIRONMENTAL DEPT.		
REV No		BY	DATE	SCALE: 1:13,655	SHEET SIZE: ANSIB	AREA:		
1	MODIFIED LAYOUT	JD	1/23/18	ENG'D BY:	DATE:	TITLE:	ANNUAL REPORT	
2				DWN BY: JD	DATE: 1/23/18		MAP 5 - WQMP SITES	
3				CHKD BY: JH	DATE: 2/8/18		EAGLE RIVER WATERSHED	
				APVD BY: JH	DATE: 2/8/18		DWG. NO.	
							REVISION:	
							SHT.	OF



REVISIONS				CLIMAX OPERATIONS		ENVIRONMENTAL DEPT.	
REV No		BY	DATE	SCALE: 1:30,000	SHEET SIZE: ANSIB	AREA:	DWG. NO.
A	MODIFIED LAYOUT	JD	1/23/18	ENG'D BY:	DATE:	TITLE:	REVISION:
1				DWN BY: JD	DATE: 1/23/18	ANNUAL REPORT MAP 6 - WQMP SITES TENMILE CREEK WATERSHED	SHT. OF
2				CHKD BY: JH	DATE: 2/8/18		
3				APVD BY: JH	DATE: 2/8/18		

Climax Molybdenum

A Freeport-McMoRan Company

DIVISION: ENVIRONMENTAL DEPT.
AREA:
TITLE: ANNUAL REPORT
MAP 6 - WQMP SITES
TENMILE CREEK WATERSHED
DWG. NO.:
REVISION:
SHT. OF



REVISIONS				SCALE: 1:20,000		SHEET SIZE: ANSIB		DIVISION: ENVIRONMENTAL DEPT.		
REV No		BY	DATE	ENGD BY:	DATE:			AREA:		
A	MODIFIED LAYOUT	JD	1/23/18					TITLE:		
1				DWN BY: JD	DATE: 1/23/18	Climax Molybdenum A Freeport-McMoRan Company		ANNUAL REPORT MAP 7 - WQMP SITES ARKANSAS RIVER WATERSHED		DWG. NO.
2				CHKD BY: JH	DATE: 2/8/18					REVISION:
3				APVD BY: JH	DATE: 2/8/18					SHT. OF