

DE BEERS GROUP

December 16, 2019

Angela Love
Regulatory Officer
Mackenzie Valley Land and Water Board
7th Floor, 4922 48th St.
PO Box 2130, Yellowknife, NT
Canada | X1A 2P6

Dear Ms. Love:

Re: Snap Lake Water License Renewal (MV2019L2-0004), Land Use Permit Amendment (MV2017D0032), and Final Closure and Reclamation Plan – Response to Undertakings

INTRODUCTION

The Mackenzie Valley Land and Water Board (MVLWB) hosted a public hearing on 26 and 27 November 2019 to review the De Beers Canada Inc. (De Beers) application for a Type A Water Licence renewal (MV2019L2-0004), Type A Land Use permit amendment (MV2017D0032), and submission of the Final Closure and Reclamation Plan.

At the public hearing, four undertakings were issued to De Beers. This submission includes responses to the four undertakings.

We trust this information will meet the intent of the undertakings, but should you require further information or have any questions or concerns, please feel free to contact me by phone at (403)-464-2596 or by email at colleen.prather@debeersgroup.com.

Sincerely,



Colleen Prather, Ph.D., P.Biol.
Regulatory Specialist

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A member of the Anglo American plc group

cc: Sarah McLean, De Beers
Michelle Peters, De Beers
Sean Whitaker, De Beers

Encl:

Attachment 1: Water Quality Data for the Five North Pile Perimeter Sumps

Attachment 2a: Memorandum of Security Estimate

Attachment 2b: Reclaim No Wetland Scenario

Attachment 2c: Reclaim Including Wetland Scenario

Attachment 3: Map of Mixing Zones

Attachment 4: Figures of Water Quality Data from the SNP Stations

Requested for Removal.

Attachment 4: Map of SNP Stations

Attachment 4A: SNP 02-03

Attachment 4B: SNP 02-04.01, 02-04.02, and 02-04.03

Attachment 4C: SNP 02-05

Attachment 4D: SNP 02-06

Attachment 4E: SNP 02-07

Attachment 4F: SNP 02-08

Attachment 4G: SNP 02-09

Attachment 4H: SNP 02-10

Attachment 4I: SNP 02-11 and 02-12

1. WATER QUALITY DATA

Undertaking:

De Beers to provide all available water quality data for sumps 1 through 5 for 2019.

De Beers Response:

Sump water quality data up to September 2018 were provided on 25 September 2019 in response to a request made at the effluent quality criteria technical workshop. Response to this intervention provides an update to the previous data submission, with the inclusion of 2019 data, in addition to the data previously provided, in one file:

- **Attachment 1:** Tables 1-1 to 1-5; Monitoring data for the five North Pile perimeter sumps

2. SECURITY ESTIMATE

Undertaking:

De Beers to provide an updated security estimate, in an Excel spreadsheet and as a PDF, to account for the updates made throughout this proceeding. This is to include a breakdown of the two proposed closure scenarios: 1) Constructed wetlands and 2) No constructed wetlands. A concordance table shall also be included that identifies the updates and the locations.

De Beers Response:

The security estimate for closure of the Snap Lake Mine has been updated to reflect comments and agreements made through this proceeding. Attached please find a memo outlining the breakdown of the cost estimate (Attachment 2A) and the updated RECLAIM estimates for the preferred closure option without a wetland (Scenario 2; Attachment 2B) and the contingency closure option with a wetland (Scenario 1; Attachment 2C).

The water related liability should be placed within the Water Licence and the land related liability within the Land Use Permit. De Beers is requesting Scenario 2 be applied by the MVLWB in the licence/permit since a no wetland scenario is the selected final closure condition. The wetland is a contingency closure option, and if it becomes required, the security should be adjusted to reflect Scenario 1 costing. The security estimate for each scenario are provided in the table below with the details in the attachments.

Table 2-1: Updated Security Estimate for the No Wetland and Wetland Scenarios

Scenario	Total Costs	Land Liability	Water Liability
Selected Closure Option No Wetland (Scenario 2) Security	\$71,081,458	\$42,087,834	\$28,993,624
Contingency Closure Option Including Wetland (Scenario 1) Security	\$80,287,612	\$39,831,442	\$40,456,170

3. MIXING ZONES

Undertaking:

De Beers to provide a digital copy, for the record, of the mixing zone map, as mentioned during De Beers' presentation at the Public Hearing.

De Beers Response:

In previous submissions, De Beers provided maps that outlined the locations of the existing edge of mixing zone monitoring stations (SNP 02-20e,f) and the proposed future edge of mixing zone monitoring stations in the main basin (SNP 02-20h,i) and in the northwest arm (SNP 02-20j,k). These previous submissions did not fully illustrate the size of the current and future proposed mixing zones. Included as Attachment 3 to this submission is a map that illustrates:

- The discharge SNP stations:
 - SNP 02-17b (current final discharge point via diffuser to main basin)
 - SNP 02-17c (proposed final discharge point from the East Influent Storage Pond to main basin)
 - SNP 02-17d (proposed final discharge point from the West Influent Storage Pond to the Northwest Arm)
- The three sets of mixing zones SNP stations:
 - SNP 02-20 d,e,f: currently approved mixing zones stations at 200m from diffuser. De Beers has agreed to retain all three.
 - SNP 02-20 h,i: proposed mixing zone stations at 200m from the discharge point from the East Influent Storage Pond to the main basin
 - SNP 02-20j,k: The proposed mixing zone stations at 200m from the discharge point from the West Influent Storage Pond to the northwest arm
- Highlighted the mixing zones at each discharge location
- Other SNP stations related to monitoring of controlled site water (note all SNP stations are not illustrated on this map; the map in Attachment 4 includes all current and future proposed SNP stations)

Physical dimensions of the mixing zones are summarized in Table 3-1.

Table 3-1: Physical Comparison of the Existing and Future Mixing Zones

Physical Metrics	Existing Mixing Zone (until decommissioned)	Future Mixing Zone	Future Mixing Zone
Discharge Location	Main Basin	Main Basin	Northwest Arm
Volume of Mixing Zone	1% of Snap Lake	0.3% of Snap Lake	0.3% of Snap Lake
Discharge Type	Submersed diffuser at 200 m from the lake shore ^(a)	Bankside channel ^(b)	Bankside channel ^(b)
Water Depth at Discharge Location	15.4 m ^(a)	0 m ^(b)	0 m ^(b)
Water Depth at Edge of Mixing Zone	12 to 29 m ^(a)	0 to 5 m ^(b)	0 to 6 m ^(b)

Reference:

- a) <http://registry.mvlwb.ca/Documents/MV2011L2-0004/Appendix%202-11%20Diffuser%20Drawing%20Diagram.PDF>
- b) Figure 4-1 from Golder 2019.

Golder 2019. Effluent Quality Criteria Report for Closure and Post-closure, Version 2. Prepared for De Beers Canada Inc. and Submitted to Mackenzie Valley Land and Water Board. August 2019.

4. SNP STATION REMOVAL

Undertaking:

De Beers to provide a temporal summary of all available data (preferably in graphical format) associated with the SNP stations that are proposed to be removed.

De Beers Response:

De Beers has recommended the removal of some SNP stations from the next water licence and the addition of others. This undertaking response provides further information to justify the request to remove stations from the SNP program. Specifically, this memo addresses stations:

- SNP Stations that are currently inactive: 02-01, 02-17, 02-22, 02-23, and 02-24
- SNP Stations that monitor for uncontrolled runoff for purposes related to placement of materials or use of the facility: 02-04.1, 02-04.2, 02-04.3, 02-05, 02-06, 02-07.1, 02-07.1, 02-07.3, 02-08, 02-09.1, 02-09.2, 02-09.3, 02-09.4, 02-09.5,
- SNP stations that monitor for seepage: 02-11, 02-13,

Additional rationale for the removal of stations is provided in the text below.

The SNP stations are illustrated in Attachment 4 (SNP stations for Snap Lake Mine). Figures illustrating the historical water quality data collected at these stations is provided in Attachments 4A through 4I.

SNP 02-01

SNP 02-01: Final Mine water collection Sump, underground
Station Description: This was an in-line station used to monitor underground mine water as it was pumped to the surface.
Recommendation: Eliminate this station.
Detailed Rationale to support request: As of February 2017, water is no longer pumped from the underground mine to surface. Water from the underground will never form part of the water managed at surface with discharge to the receiving environment. The infrastructure to pump water from the underground to surface has been dismantled (i.e., pumps and power were dismantled prior to flooding of the underground). Since water from the underground will not form part of the surface water at Snap Lake Mine in the future, continued sampling at this station is unwarranted (and not possible given that the infrastructure has been dismantled).

SNP 02-03

SNP 02-03: Core facilities area collection ditch east of the centre of the water management pond

Station Description:

This station was used primarily to provide information about the geochemical stability/rate of weathering of the rock used for construction of the site.

Recommendation:

Eliminate this station.

Detailed Rationale to support request:

The purpose of this station is to monitor runoff to the water management pond (WMP) from core facilities east of the WMP. The station is in a depression on the east side of the water management pond with the road berm to the east and south. There is no direct stream of water from this area to the receiving environment.

The water at SNP 02-03 typically occurs as small puddles and is subject to evaporation, and thus concentrations are variable, and may not be fully representative of overall runoff from site infrastructure.

Many years of monitoring during construction and operations have occurred at this site. There is no evidence of acid generation, or metal leaching which was the primary reason for monitoring this site. Concentrations of major ions, metals and metalloids are variable within a year, but overall are either stable over time or decreasing over time; there are no increasing trends in any parameter (Attachment 4A).

Parameter concentrations that were more variable in 2019 as compared to 2018, but with values still within the range observed since the start of data collection include: total molybdenum, total selenium, total strontium, total uranium, dissolved boron, dissolved chromium, dissolved iron, dissolved molybdenum, dissolved nickel, dissolved selenium, dissolved strontium, dissolved uranium, dissolved vanadium, and dissolved zinc. However, even though concentrations were more variable in 2019 as compared to 2018 for these parameters, there is no indication that trends are increasing because the concentrations recorded in 2019 were within the range recorded since 2007.

In addition, sedimentation and erosion measures will be included in the North Pile Management Plan and the Final Landform Plan. The Final Landform Plan will apply to the road to the water management pond area and will address, through monitoring and mitigation, any potential for sedimentation during closure activities.

Additional monitoring for acid generation or metal leaching is not warranted. The water that flows from the infrastructure areas on the east side of the Water Management Pond will continue to be captured in the water management pond, and monitored there as SNP-02-14. Continued monitoring at SNP 02-03 will not provide useful information to inform activities conducted during closure.

SNP 02-04.1, 02-04.2, AND 02-04.3

SNP 02-04.1: Uncontrolled surface runoff at culvert on north side of center of airstrip

SNP 02-04.2: Uncontrolled surface runoff at culvert on north side of western end of airstrip

SNP 02-04.3: Uncontrolled surface runoff at culvert on north side of airstrip

Station Description:

These sites were used to provide information about the geochemical stability/rate of weathering of the rock used for construction of the airstrip as part of the acid rock drainage and geochemical monitoring report.

Recommendation:

Eliminate these stations.

Detailed Rationale to support request:

The airstrip was constructed using granitic rock, and as of the most recent site inspection, there were no visible signs of sulphide oxidation or acid generation. Station SNP 02-04 includes three monitoring stations located off the edge of the runway in relatively boggy areas that are likely influenced by the bog water and potentially runoff from the airstrip.

Many years of monitoring during construction and operations have occurred at this site. There is no evidence of acid generation, which was the primary reason for monitoring this site. Concentrations of major ions, metals and metalloids are variable within a year, but overall are either stable over time or decreasing over time (Attachment 4B).

Parameter concentrations that were more variable in 2019 as compared to 2018, but with values still within the range observed since the start of data collection include: potassium, total and dissolved aluminum, arsenic, cobalt, lead, lithium, manganese, titanium, and uranium, total rubidium and vanadium, and dissolved chromium, molybdenum, nickel, and zinc. In general, the range of reported total arsenic concentrations has increased from 2017, to 2018, to 2019, but overall the concentrations reported in 2019 were less than concentrations reported in 2004, and 2013 to 2016.

Water quality concentrations recorded at these stations are similar to concentrations measured at the reference bog stations (sampled as part of the ARD and Geochemical characterization program; De Beers 2019a) suggesting water quality runoff is natural to the area.

Concentrations of aluminum, copper, and iron have remained relatively stable. A stable trend indicates the various stages of Mine life (e.g. construction, operations, care and maintenance) have had little impact on concentrations, suggesting elevated levels are likely a natural characteristic of the region. This is supported by geochemical analysis during the Environmental Assessment (EA) (De Beers, 2002), which found the natural rock types in the region (i.e., granite, metavolcanics) can produce elevated concentrations of aluminum, copper and iron in water.

The intent of these monitoring stations has been met – i.e., the data collected to date demonstrates that there is no metal leaching or acid generation from the airstrip and thus no impact on the surrounding environment.

In addition, sedimentation and erosion measures will be included in the North Pile Management Plan and the Final Landform Plan. The Final Landform Plan will apply to the

airstrip area and will address, through monitoring and mitigation, any potential for sedimentation during closure activities.

Continued monitoring for acid generation and metal leaching at the airstrip is not warranted.

SNP 02-05

SNP 02-05: Uncontrolled surface runoff at Bulk Sample Mine Rock Pad
Station Description: This station was to monitor surface runoff at the Bulk Sample Mine Rock Pad (BSMRP).
Recommendation: Eliminate this station.
Detailed Rationale to support request: <p>This station was established to monitor runoff from the BSMRP, the adjacent helipad, roads, and buildings. Additional mine rock, kimberlite, or other such materials will not be placed at this site. The intent for this site remains passive revegetation as per the Revegetation Plan.</p> <p>Concentrations of major ions, metals and metalloids are variable within a year, but overall are either stable over time or decreasing over time; there are no increasing trends in any parameter (Attachment 4C). Many years of monitoring during construction and operations have occurred at this site. Parameter concentrations that were more variable in 2019 as compared to 2018, but with values still within the range observed since the start of data collection include: calcium, fluoride, magnesium, potassium, sodium, sulphate, ammonia, total and dissolved cadmium, chromium, cobalt, copper, lithium, manganese, and rubidium, total barium, molybdenum, strontium, uranium, and dissolved aluminum, arsenic, cesium, iron, titanium, vanadium, and zinc. However, even though concentrations were more variable in 2019 as compared to 2018 for these parameters, there is no indication that trends are increasing because the concentrations recorded in 2019 were within the range recorded since 2004.</p> <p>The intent of this station has been met. For more than a decade, runoff monitoring has been conducted and there is no evidence of acid generation or metal leaching.</p> <p>Continued monitoring for acid generation and metal leaching at the BSMRP is not warranted.</p>

SNP 02-06

SNP 02-06: Uncontrolled surface runoff at Quarry Site on south side of North Pile

Station Description:

This station is used to monitor the quality of runoff from the quarry site. The purpose is to monitor for acid rock drainage and/or metal leaching. Monitoring is twice weekly during freshet or daily during heavy rainfall events if measurable flow is present.

Recommendation:

Eliminate this station.

Detailed Rationale to support request:

Many years of monitoring during construction and operations have occurred at this site. There is no evidence of acid generation or metal leaching. Concentrations of major ions, metals and metalloids are variable within a year, but overall are either stable over time or decreasing over time; there are no increasing trends in any parameter (Attachment 4D).

Parameter concentrations were more variable in 2019 as compared to 2018 (due to one outlier result), but with values still within the range observed since the start of data collection include: calcium, potassium, sulphate, total antimony, boron, strontium, and zinc, and dissolved aluminum, arsenic, barium, cesium, chromium, cobalt, iron, lead, nickel, titanium, uranium, and vanadium. However, even though concentrations were more variable in 2019 as compared to 2018 for these parameters, overall the concentrations recorded in 2019 were generally within the range recorded since 2014, and importantly there is no indication that trends are increasing.

Water quality concentrations recorded at this stations are similar to concentrations measured at the reference bog stations (sampled as part of the ARD and Geochemical characterization program; De Beers 2019a) suggesting water quality runoff is natural to the area. The intent for this area is grading and contouring followed by passive revegetation.

Continued monitoring for acid generation and metal leaching in the quarry area is not warranted.

SNP 02-07.1, 02-07.2, AND 02-07.3

SNP 02-07.1: Uncontrolled surface runoff and standing water at Road to Bulk Emulsion Plant, pond downstream of explosive magazine

SNP 02-07.2: Uncontrolled surface runoff and standing water at Road to Bulk Emulsion Plant, pond west of small Ammonium Nitrate (AN) Pad

SNP 02-07.3: Uncontrolled surface runoff and standing water at Road to Bulk Emulsion Plant, pond west side of small AN Pad

Station Description:

These stations are used to monitor uncontrolled surface runoff and standing water to evaluate potential spills of AN from trucks using the road.

Recommendation:

Eliminate these stations.

Detailed Rationale to support request:

The purpose of these stations was to monitor runoff from the road leading to the bulk emulsion plant and the AN storage area.

The SNP stations are located in small pockets of seasonal standing water subject to periodic, substantial evaporation and evaporative concentration and are not likely indicative of overall runoff from the general location. In addition, mining has ceased and bulk AN is no longer transported around the site in large quantities.

Concentrations of major ions, metals and metalloids are variable within a year, but overall are either stable over time or decreasing over time; there are no increasing trends in any parameter (Attachment 4E).

Parameter concentrations that were more variable in 2019 as compared to 2018, but with values still within the range observed since the start of data collection include: total dissolved solids, potassium, sulphate, total phosphorus, total and dissolved iron, lead, manganese, titanium, and vanadium, total lithium, rubidium, and thallium, and dissolved aluminum, arsenic, boron, chromium, cobalt, nickel, rubidium, and uranium. However, even though concentrations were more variable in 2019 as compared to 2018 for these parameters, there is no indication that trends are increasing. The concentrations recorded in 2019 were within the range recorded since 2006.

Water quality concentrations recorded at these stations are similar to concentrations measured at the reference bog stations (sampled as part of the ARD and Geochemical characterization program; De Beers 2019a) suggesting water quality runoff is natural to the area.

Since there will no longer be transport of large quantities of bulk AN around the site, continued monitoring for runoff related to potential spills from AN trucks is not warranted. In years when explosives are required, appropriate containment will be used. If a spill happens, the Spill Response Plan, which includes monitoring, clean-up, and confirmatory sampling, would be activated. In addition, sedimentation and erosion measures will be included in the North Pile Management Plan and the Final Landform Plan. The Final Landform Plan will apply to the road to the Bulk Emulsion Plant areas and will address, through monitoring and mitigation, any potential for sedimentation during closure activities.

Continued monitoring for uncontrolled runoff is not warranted.

SNP 02-08

SNP 02-08: Uncontrolled surface runoff at Winter Access Road
Station Description: This station was used to monitor uncontrolled surface at the winter access road
Recommendation: Eliminate this station.
Detailed Rationale to support request: <p>The purpose of this station is to monitor surface runoff in the area of the winter road access. Monitoring is conducted when water is flowing – so months after the end of the winter road season.</p> <p>Monitoring of previous winter roads has not resulted in any surface water quality concerns. Concentrations of major ions, metals and metalloids are variable within a year, but overall are either stable over time or decreasing over time; there are no increasing trends in any parameter (Attachment 4F). The last year there was a winter road to Snap Lake was winter 2017 (i.e., quarter 1 2017).</p> <p>Parameter concentrations that were more variable in 2019 as compared to 2018, but with values still within the range observed since the start of data collection include: calcium, chloride, fluoride, magnesium, sodium, total barium, boron, and strontium. However, even though concentrations were more variable in 2019 as compared to 2018 for these parameters, there is no indication that trends are increasing because the concentrations recorded in 2019 were within the range recorded since 2007.</p> <p>In addition, water quality concentrations recorded at this stations are within the range of concentrations measured at the reference bog stations (sampled as part of the ARD and Geochemical characterization program; De Beers 2019a) suggesting water quality runoff is natural to the area.</p> <p>There will not be a winter access road to Snap Lake in most years, and even for those years of winter road access, previous monitor data do not suggest a reason to monitor for runoff. If a spill were to occur at this area, the Spill Response Plan, which includes monitoring, clean-up, and confirmatory sampling, would be activated.</p> <p>Continued monitoring for uncontrolled runoff from this area is not warranted.</p>

SNP 02-09.1, 02-09.2, 02-09.3, 02-09.4, AND 02-09.5

SNP 02-09.1: Uncontrolled surface runoff and standing water at Emulsion Plant Area; pond north of Bulk Emulsion Ammonium Nitrate Pad

SNP 02-09.2: Pond downslope and north-northeast from Ammonium Nitrate Pad

SNP 02-09.3: Downslope from SNP station 02-09

SNP 02-09.4: Base of Ammonium Nitrate Pad Sump, south of Ammonium Nitrate Pad

SNP 02-09.5: Pond downslope of Ammonium Nitrate Pad

Station Description:

These stations were used to monitor uncontrolled surface runoff and standing water at the Emulsion Plant to evaluate water quality due to surface runoff over AN, and for acid rock drainage from construction of the pad itself.

Recommendation:

Eliminate these stations.

Detailed Rationale to support request:

The first purpose of these stations was to monitor runoff from the pad for potential acid drainage and metal leaching. The second purpose of these stations was to monitor for runoff from the bulk emulsion plant and standing water around the emulsion plant area.

After more than 15 years of monitoring, there is no evidence of acid generation or metal leaching at this site. Concentrations of metals and metalloids are variable within a year, but overall are either stable over time or decreasing over time; there are no increasing trends in any parameter (Attachment 4G).

Parameter concentrations that were more variable in 2019 as compared to 2018, but with values still within the range observed since the start of data collection include: fluoride, potassium, total phosphorus, total and dissolved cadmium, iron, lead, molybdenum, and vanadium, total copper, and titanium, and dissolved aluminum, boron, chromium, lithium, and zinc. However, even though concentrations were more variable in 2019 as compared to 2018 for these parameters, there is no indication that trends are increasing. The concentrations recorded in 2019 were within the range recorded since 2007.

A spill occurred at the former AN storage pad at the emulsion plant area. In 2011 and 2012, removal of contaminated granular material and confirmatory soil sampling and analysis was completed at the former AN storage pad (ARKTIS 2012, 2013). Concentrations of ammonia have continued to decrease since the remediation in 2011 and 2012.

Mining has ceased and bulk AN is no longer processed at the Emulsion Plant. This plant will not be used in Closure. Concentrations of ammonia are variable within a year, but overall are decreasing over time (Attachment 4G-11).

Continued monitoring for acid generation, metal leaching, and uncontrolled runoff is not warranted.

SNP 02-10

SNP 02-10: Any other points where observable flow to Snap Lake or Inland Lake 5 (IL5) is observed.

Station Description:

This station was for general monitoring of runoff wherever it occurs.

Recommendation:

Eliminate this station.

Detailed Rationale to support request:

The purpose of this station is to monitor where there is observable flow into Inland Lake 5 or other locations where there may be observable flow into Snap Lake. This is a general station downstream of the runway with no fixed coordinates. This location is typically sampled during freshet if there is open water. Access is generally down a steep slope from the laydown area and poses a health and safety concern to personnel.

Based on the historical dataset, samples collected under this station ID have been collected from runoff water, bog water, or lake water.

Concentrations of major ions, metals and metalloids are variable within a year, but overall are either stable over time or decreasing over time; there are no increasing trends in any parameter (Attachment 4H).

Parameter concentrations from this sampling station area were generally more variable in 2018 and 2019 as compared to previous years.

Patterns of surface runoff at Snap Lake are well established and controlled and well monitored via other SNP stations. Continued sampling at random locations, in areas that pose potential health and safety risks to access does not provide valuable information about the site.

If uncontrolled runoff is observed, the sedimentation and erosion measures (as outline in the Final Landform Plan) will be implemented. This plan outlines measures that need to be taken to control for surface runoff and sampling that is needed to confirm that the measures are effective.

Continued sampling under this station ID is unwarranted given that variable locations have been sampled over the years and safe access to the sampling area poses personal risks. Thus the station should be eliminated.

SNP 02-11

SNP_02-11: Seepage monitoring well down gradient from Water Management Pond Dam 1, near Snap Lake shoreline

Station Description:

This station was used to evaluate performance of the Water Management Pond Dam 1 near the Snap Lake shoreline.

Recommendation:

Eliminate this station.

Detailed Rationale to support request:

This station is located on the south side of the WMP (west of SNP 02-12) with the purpose to monitor for seepage and performance of the dam. The water management pond dam has not shown any indication of concern. This station is unnecessary. Engineered structures including the water management pond and other water retaining dykes at site are inspected by the Engineer of Record on an annual basis.

Every year as part of the seepage survey program, this area is investigated for seepage. As of the most recent survey (De Beers 2019b), there are no apparent signs of ARD or oxidation. This SNP station provides insight into the groundwater quality near the WMP; however, it is not considered a good indicator of surface water quality or the quality of water that would enter surface water. In contrast, station "Bog East", sampled as part of the seepage survey (De Beers 2014), provides a better measure of the surface water quality down gradient of the WMP as compared to SNP 02-11.

Concentrations of major ions, metals and metalloids at Bog East are variable within a year, but overall are either stable over time or decreasing over time; there are no increasing trends in any parameter (De Beers 2019a). Likewise, when it is possible to sample from SNP 02-11, concentrations of major ions, metals and metalloids have been variable with no increasing trends observed (Attachment 4I).

This station should be eliminated because the performance of the WMP Dam 1 has been achieved.

SNP 02-12

SNP 02-12: Seepage monitoring well down gradient from Water Management Pond Dam 1

Station Description:

This station was used to evaluate performance of the water management pond dam 1 near the Snap Lake shoreline.

Recommendation:

Eliminate this station.

Detailed Rationale to support request:

This station is located on the south side of the WMP (east of SNP 02-11) with the purpose to monitor for seepage and performance of the dam. The water management pond dam has not shown any indication of concern. Engineered structures including the water management pond and other water retaining dykes at site are inspected by the Engineer of Record on an annual basis.

Every year as part of the seepage survey program, this area is investigated for seepage. As of the most recent survey (De Beers 2019b), there are no apparent signs of ARD or oxidation, and no water in the immediate area on the downstream side of the dam. In addition, this station has remained frozen for its entire operational period; thus, no water quality data has been retrieved for this location.

This station should be eliminated because the performance of the WMP Dam 1 has been achieved and there has been no evidence to date that water is seeping from the WMP at this location.

SNP 02-13

SNP 02-13: Seepage monitoring well down gradient from Water Management Pond Dam 2
Station Description: This station was used to evaluate performance of the Water Management Pond Dam 2.
Recommendation: Eliminate this station.
Detailed Rationale to support request: <p>This station is located on the north side of the WMP with the purpose to monitor for seepage and performance of the dam. The standpipe at SNP 02-13 was damaged during snow clearing and water samples have not been collected at this station. Every year as part of the seepage survey program, this area is investigated for seepage. As of the most recent survey (De Beers 2019b), there are no apparent signs of ARD. In addition, this station has remained frozen throughout the life of mine preventing collection of water samples.</p> <p>This station should be eliminated because the performance of the WMP Dam 2 has been achieved and there has been no evidence to date that water is seeping north from the WMP.</p>

SNP 02-17

SNP 02-17: Final Combined Water Treatment Plant and Sewage Treatment Plant Effluent discharged via diffuser into Snap Lake

Station Description:

This station is only used if the Temporary Sewage Treatment Plant is operated. The Licence says 'temporary water treatment plant but there is no temporary water treatment plant, so it is assumed that this was a typo in the licence.

Recommendation:

Eliminate this station.

Detailed Rationale to support request:

This effluent discharge line still exists but is no longer in use. SNP02-17b is the primary discharge line and will continue to be used during closure until discharge switches to the East and West influent storage ponds.

SNP 02-18

SNP 02-18: Monitoring stations in the main basin of Snap Lake used to calculate a whole lake average concentration of TDS

Station Description: These stations were used to calculate whole lake average concentrations of TDS.

Recommendation:

Eliminate this station from the water licence and the requirement to calculate whole lake average but continue to collect water at the stations and report individually in the SNP reports and the aquatic effects monitoring program report.

Detailed Rationale to support request:

This requirement to calculate whole lake average concentration of TDS is a reflection of the water licence that was requested while the mine was in operations and large quantities of groundwater high in TDS were pumped to surface for management and discharge to Snap Lake. Approval was received in 2017 to flood the underground resulting in a change in water management at the mine. Groundwater is no longer pumped to surface. The quantity of effluent to be discharged in any year through Closure and Post-closure will be approximately 2% of the total volume discharged in 2016. In addition, discharge of effluent to Snap Lake is no longer continuous through the year, but seasonal and lasting for a few weeks (approximately 4 weeks but the actual length could vary up to 8 weeks).

Since the change in water management, and the decrease effluent loading, concentration of TDS in Snap Lake is starting to decrease (De Beers 2019c). In 2018, the maximum monthly average concentration of TDS in Snap Lake was 399 mg/L which is 40% of the approved aquatic effects monitoring program (AEMP) benchmark (De Beers 2019c).

There are eight stations used to calculate the whole lake average concentration of TDS for SNP 02-18 including:

- Three SNP stations near the diffuser (SNP 02-20d, 02-20e, 02-20f)
- One AEMP station at the outlet of Snap Lake (SNAP08)
- Four AEMP stations through the main basin of Snap Lake (SNAP03, SNAP05, SNAP06, SNAP11A)

All eight stations will continue to be monitored through the SNP and AEMP programs for the same list of water quality parameters. The improvement in water quality is predicted to continue.

The reporting of whole lake TDS (calculated from eight individual stations) is not warranted since the change in water management. Station SNP 02-18 (which is the requirement to report a whole lake average concentration) should be removed from the water licence. A thorough review and evaluation of results from these eight stations will continue to be included in the annual AEMP report which includes an evaluation of effects to aquatic life and continued traditional use.

SNP 02-19

SNP 02-19: Sewage discharge from the temporary Sewage Disposal Facility
Station Description: This station was removed from the water licence in 2007.
Recommendation: Eliminate this station.
Detailed Rationale to support request: Discharge from the Sewage Treatment Plant is already monitored at SNP 02-16j.

SNP 02-20

SNP 02-20 (SNP 02-20defg): Mixing Zone Stations (from Diffuser) within Snap Lake
Station Description: In Snap Lake, 3 stations located 200 meters from the diffuser, on the edge of the mixing zone (SNP 02-20d, SNP 02-20e, and 02-20f).
Recommendation: Retain three stations while this discharge location is used.
Detailed Rationale to support request: De Beers initially requested removal of station SNP 02-20d. Through discussions with the Government of the Northwest Territories, De Beers agreed to retain these three stations (SNP 02-20d, SNP 02-20e, and 02-20f) while there is discharge from the diffuser. Once discharge from the diffuser stops, these stations will not be required.

SNP 02-21

SNP 02-21: Outflow from Snap Lake flowing into the Lockhart River System
Station Description: This station was used to monitor the outlet of Snap Lake on an annual basis.
Recommendation: Eliminate this station.
Detailed Rationale to support request: This requirement to monitor flow at the outlet of Snap Lake is a reflection of the water licence for operations and the large quantities of effluent that were discharged over the year. Approval was received in 2017 to flood the underground resulting in a change in water management at the mine. Groundwater is no longer pumped to surface. The quantity of effluent to be discharged in any year through Closure and Post-closure will be approximately 2% of the total volume discharged in 2016. In addition, discharge of effluent to Snap Lake is no longer continuous through the year, but seasonal and lasting for a few weeks (approximately 4 weeks but the actual length could vary up to 8 weeks). Given the change in effluent quantity discharge, there is no concern for flow at the outlet of Snap Lake. This station will continue to be monitored as part of the AEMP (SNAP08).

SNP 02-22

SNP 02-22: Diffuser construction
Station Description: This station was used to monitor TSS and turbidity during the construction of the diffuser.
Recommendation: Eliminate this station.
Detailed Rationale to support request: No longer needed. Diffuser is already constructed and in place.

SNP 02-23

SNP 02-23: Water intake construction
Station Description: This station was established to monitor TSS and turbidity during the construction of the water intake.
Recommendation: Eliminate this station.
Detailed Rationale to support request: No longer needed. Water intake is constructed.

SNP 02-24

SNP 02-24: Snap Lake sites in close proximity to fisheries compensation works. Corresponds to AEMP stations SNAP05, and SNAP29 (Water intake).

Station Description:

This station was established to monitor TDS concentrations

Recommendation:

Eliminate this station from the water licence but continue to monitor stations as part of the aquatic effects monitoring program.

Detailed Rationale to support request:

Since 2017, and flooding of the underground, water management at the mine has changed. The quantity of effluent to be discharged in any year through Closure and Post-closure will be approximately 2% of the total volume discharged in 2016. In addition, discharge of effluent to Snap Lake is no longer continuous through the year, but seasonal and lasting for a few weeks (approximately 4 weeks but the actual length could vary up to 8 weeks). Water quality has started to improve with this change in water management and is expected to continue to improve.

There are two stations in close proximity to the fisheries compensation works (SNAP05 and SNAP29). These two stations are monitored as part of the AEMP program currently and through closure and post-closure.

Reporting of data collected from these stations under both the SNP and AEMP is redundant and does not add value as the mine progresses into active closure.

The requirement to report data from these stations in the SNP reporting should be removed because there is a more thorough review and evaluation of the data in the AEMP with evaluation of effects to aquatic life and continued traditional use.

SUMMARY

The SNP stations that should be eliminated, retained and created for the new water licence are summarized in the table below.

Station	Description	ECM	Closure	Post-Closure	Recommendation for New Water Licence
SNP 02-01	Final Mine water collection Sump, underground	Inactive	Inactive	Inactive	Eliminate
SNP 02-02	North Pile Drainage collection ditch north of Water Management Pond	Active	Active	Inactive	Retain
SNP 02-02b	East Influent Storage Pond	Inactive	Active	Active	Create

Station	Description	ECM	Closure	Post-Closure	Recommendation for New Water Licence
SNP 02-02c	West Influent Storage Pond	Inactive	Active	Active	Create
SNP 02-03	Core facilities area collection ditch east of the centre of the water management pond	Active	Inactive	Inactive	Eliminate
SNP 02-04.1	Uncontrolled surface runoff at culvert on north side of center of airstrip;	Active	Inactive	Inactive	Eliminate
SNP 02-04.2	Uncontrolled surface runoff at culvert on north side of western end of airstrip;	Active	Inactive	Inactive	Eliminate
SNP 02-04.3	Uncontrolled surface runoff at culvert on north side of airstrip	Active	Inactive	Inactive	Eliminate
SNP 02-05	Uncontrolled surface runoff at Bulk Sample Mine Rock Pad	Active	Inactive	Inactive	Eliminate
SNP 02-06	Uncontrolled surface runoff at Quarry Site on south side of North Pile	Active	Inactive	Inactive	Eliminate
SNP 02-07.1	Uncontrolled surface runoff and standing water at Road to Bulk Emulsion Plant, pond downstream of explosive magazine;	Active	Inactive	Inactive	Eliminate
SNP 02-07.2	Uncontrolled surface runoff and standing water at Road to Bulk Emulsion Plant, pond west of small AN Pad;	Active	Inactive	Inactive	Eliminate
SNP 02-07.3	Uncontrolled surface runoff and standing water at Road to Bulk Emulsion Plant, pond west side of small AN Pad	Active	Inactive	Inactive	Eliminate

Station	Description	ECM	Closure	Post-Closure	Recommendation for New Water Licence
SNP 02-08	Uncontrolled surface runoff at Winter Access Road	Active	Inactive	Inactive	Eliminate
SNP 02-09.1	Uncontrolled surface runoff and standing water at Emulsion Plant Area; pond north of Bulk Emulsion Ammonium Nitrate Pad;	Active	Inactive	Inactive	Eliminate
SNP 02-09.2	Pond downslope and north-northeast from Ammonium Nitrate Pad;	Active	Inactive	Inactive	Eliminate
SNP 02-09.3	Downslope from SNP station 02-09	Active	Inactive	Inactive	Eliminate
SNP 02-09.4	Base of Ammonium Nitrate Pad Sump, south of Ammonium Nitrate Pad	Active	Inactive	Inactive	Eliminate
SNP 02-09.5	Pond downslope of Ammonium Nitrate Pad	Active	Inactive	Inactive	Eliminate
SNP 02-10	Any other points where observable flow to Snap Lake or Inland Lake 5 (IL5) is observed.	Active	Inactive	Inactive	Eliminate
SNP 02-11	Seepage monitoring well down gradient from Water Management Pond Dam 1, near Snap Lake shoreline	Active	Inactive	Inactive	Eliminate
SNP 02-12	Seepage monitoring well down gradient from Water Management Pond Dam 1	Active	Inactive	Inactive	Eliminate
SNP 02-13	Seepage monitoring well down gradient from Water Management Pond Dam 2	Active	Inactive	Inactive	Eliminate

Station	Description	ECM	Closure	Post-Closure	Recommendation for New Water Licence
SNP 02-14	Water Management Pond	Active	Active	Inactive	Retain
SNP 02-15	Water Intake from Snap Lake	Active	Active	Inactive	Retain
SNP 02-16j	Sewage Treatment Plant Effluent	Active	Active	Inactive	Retain
SNP 02-17	Final Combined Water Treatment Plant and Sewage Treatment Plant Effluent discharged via diffuser into Snap Lake	Inactive	Inactive	Inactive	Eliminate
SNP 02-17b	Final Combined Water Treatment Plant and Sewage Treatment Plant Effluent	Active	Active	Inactive	Retain
SNP 02-17c	Discharge from the East side of the North Pile to the main basin of Snap Lake	Inactive	Inactive	Active	Create
SNP 02-17d	Discharge from West side of the North Pile to the Northwest arm of Snap Lake	Inactive	Inactive	Active	Create
SNP 02-18	Monitoring stations in the main basin of Snap Lake used to calculate a whole lake average concentration of TDS	Active	Inactive	Inactive	Eliminate
SNP 02-19	Sewage discharge from the temporary Sewage Disposal Facility	Active	Inactive	Inactive	Eliminate
SNP 02-20defg	Mixing Zone Stations (from Diffuser) within Snap Lake Four stations located in a radius of 120 degrees at 200 meters from the diffuser, on the edge of the mixing zone around the diffuser. Only three are active.	Active (3 of 4)	Active (3 of 4)	Inactive	Retain 3 of 4

Station	Description	ECM	Closure	Post-Closure	Recommendation for New Water Licence
SNP 02-20h,i	Mixing Zone Stations around passive discharge from the east side of the North Pile to the main basin of Snap Lake	Inactive	Active	Active	Create
SNP 02-20j,k	Mixing Zone Stations around passive discharge from the west side of the North Pile to (the Northwest arm of Snap Lake	Inactive	Active	Active	Create
SNP 02-21	Outflow from Snap Lake flowing into the Lockhart River System	Active	Inactive	Inactive	Eliminate
SNP 02-22	Diffuser construction	Inactive	Inactive	Inactive	Eliminate
SNP 02-23	Water intake construction	Inactive	Inactive	Inactive	Eliminate
SNP 02-24	Snap Lake sites in close proximity to fisheries compensation works. Corresponds to AEMP stations SNAP05, and SNAP29 (Water intake).	Inactive	Inactive	Inactive	Eliminate

REFERENCES

- ARKTIS (ARKTIS Solutions). 2012. Snap Lake Mine, Ammonium Nitrate Storage Pad Contaminated Soil Investigation. Submitted to Mackenzie Valley Land and Water Board by De Beers Canada, August 2012.
- ARKTIS 2013. Emulsion Plant Pad and Sump Assessment. Submitted to Mackenzie Valley Land and Water Board by De Beers Canada, March 2013.
- De Beers (De Beers Canada Inc.) 2002. Developer's Environmental Assessment Report, Snap Lake Diamond Project. Submitted to the Mackenzie Valley Environmental Impact Review Board. February 2002.
- De Beers 2014. Acid/Alkaline Rock Drainage and Geochemical Characterization Plan. Submitted to the Mackenzie Valley Environmental Impact Review Board. October 2014.
- De Beers 2019a. 2018 Annual Report, Type A Water Licence MV2011L2-0004; Attachment IV: ARD and Geochemical Characterization. Submitted to the Mackenzie Valley Land and Water Board. June 2019.
- De Beers 2019b. 2019 Geochemical Field Inspection Report, Snap Lake Mine. Submitted to the Mackenzie Valley Land and Water Board. September 2019.

De Beers 2019c. De Beers Canada Snap Lake Mine Aquatic Effects Monitoring Program 2018 Annual Report. Submitted to the Mackenzie Valley Land and Water Board. May 2019.

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ATTACHMENT 1. SNAP LAKE SUMP WATER QUALITY DATA

Provided as an excel file

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ATTACHMENT 2A. SECURITY MEMORANDUM

MEMORANDUM

File:	2019-De Beers Snap Lake
To:	De Beers Canada Inc.
Attention:	Colleen Prather, Regulatory Specialist
Subject:	Regulatory – RECLAIM Update for Closure of the Snap Lake Mine - Response to MVLWB Final Intervention Recommendations
Author:	Jamie Van Gulck, Ph.D., P.Eng., Principal Drew Stavinga, M.Sc., P.Geo. Environmental Geoscientist
Page Total:	8
Revision:	0
Date:	December 11, 2019

1.0 INTRODUCTION

De Beers Canada Inc. (De Beers) contracted ARKTIS Solutions Inc. (ARKTIS) to update the Snap Lake Mine (Mine) financial security estimate using the RECLAIM v7 model. A RECLAIM security estimate for the Snap Lake Mine was developed in March 2019¹ to support an updated Water Licence (MV2019L2-0004) and Land Use Permit (MV2017D0032) application to the Mackenzie Valley Land and Water Board (MVLWB) in preparation for Final Closure. The March 2019 security estimate included a passive wetland treatment system as a closure scenario. In July 2019, a revised RECLAIM security estimate² to reflect no construction of a passive wetland treatment system was also developed in response to Information Request #11 as issued by the MVLWB³.

As part of the application process, Interveners provided recommendations regarding the security estimate for the Mine⁴, to which De Beers provided responses⁵. In response to Undertaking #2 resulting the public hearing⁶, De Beers is required to update the security estimate to reflect the changes agreed to as documented in De Beers' response to interventions⁵.

This Memorandum presents the updated RECLAIM security estimate for two scenarios, a constructed wetland scenario (Scenario 1), and a no wetland scenario (Scenario 2). These two scenarios are summarized as follows:

- Scenario 1 – Wetland and Influent Storage Ponds included. Comparison to the former security estimate for this scenario as submitted in March 2019¹ is provided.

¹ ARKTIS, 2019. Snap Lake Mine 2019 Financial Security Estimate. March.

² De Beers, 2019. Technical Session (July 16 to 18, 2019) Information Request Responses – Snap Lake Water Licence (MV2019L2-0004) Application and Final Closure and Reclamation Plan. August.

³ MVLWB July 22, 2019. Information Requests – Response Required. Issued to De Beers Canada Inc.

⁴ GNWT, 2019. Technical Intervention for De Beers Canada Mining Inc. Snap Lake Diamond Mine Water Licence Renewal, MV2019L2-0004. October.

⁵ De Beers, 2019. Snap Lake Water Licence (MV2019L2-0004) Application and Final Closure and Reclamation Plan – Response to Interventions. October.

⁶ MVLWB November 29, 2019. RE: Undertakings Resulting from Public Hearing – Responses Required April 2019 Renewal Application for Water Licence MV2019L2-0004 May 2019 Amendment Application for Land Use Permit MV2017C0032 De Beers Canada Inc. – Closure and Reclamation Activities of the Snap Lake Mine.

- Scenario 2 – No wetland. Influent Storage Ponds included. Comparison to the former security estimate for this scenario as submitted in July 2019² is provided.

The layout of this Memorandum is as follows:

- Section 2.0 – Summarizes the adjustments made to the RECLAIM security estimates to reflect De Beers' response to intervention.
- Section 3.0 – Presents the results of the updated reclamation security estimate for both a wetland and no wetland scenario.
- Section 4.0 – Summarizes the recommendations.

2.0 RECLAIM SECURITY ESTIMATE UPDATE

Adjustments to the RECLAIM security estimate for both Scenario 1¹ and Scenario 2² are summarized in Table 1.

Table 1. Summary of the RECLAIM security estimate adjustments.

Line Item	Changes to Reclamation Activities	Change in Security Amount	
		Scenario 1: Wetland (from March 2019 version)	Scenario 2: No Wetland (from July 2019 version)
Snap Lake Mine, Attachment B: Response to Interventions from GNWT (October 22, 2019) - Section 1.24 ⁵			
1. Post-closure maintenance – increase amount per campaign.	<p>In response to the GNWT's Intervention^{4, 5}, De Beers agreed to increase the maintenance costs applied in the security estimate from a total cost of \$85,000 to \$468,000, resulting in an increase of \$383,000.</p> <p>As documented in De Beers' response to interventions, the revised costing applies four maintenance campaigns to occur during post-closure at a cost per campaign of \$117,000 and a total of \$468,000.</p> <p>Inclusion or exclusion of the wetland has no influence on this cost.</p>	+\$383,000	+\$383,000

Line Item	Changes to Reclamation Activities	Change in Security Amount	
		Scenario 1: Wetland (from March 2019 version)	Scenario 2: No Wetland (from July 2019 version)
2. Decrease in mobilization / demobilization costs.	<p>In response to the GNWT's Intervention^{4, 5}, De Beers agreed to adopt the GNWT's proposed mobilization / demobilization costs, which resulted in a decrease in total cost of \$1,721,256.</p> <p>The revised costing applies the following changes as documented in the GNWT's Intervention.</p> <ul style="list-style-type: none"> • Changed units for mobilization of heavy equipment from km tonnes to km. • Change unit rates for mobilizing heavy equipment from MHERL⁷ of \$3.40/km to MHERH⁸ of \$10.25/km. • Amalgamated mobilization of minor tools and equipment with truck tires such that costs are reduced from \$1,000,000 to \$500,000. The basis of this adjustment is that these costs are adopted from the Diavik mine security estimate which is a larger site, and with greater wear expected on tires in the activities planned. • Applied winter road tariff to total km tonnes for length administered by the Joint Venture. • Added one more construction of winter road than the three that have been included for the reason that a winter road would be needed to demobilize demolition equipment. <p>Inclusion or exclusion of the wetland has no influence on this cost.</p>	-\$1,721,256	-\$1,721,256

⁷ MHERL – RECLAIM unit cost code for mobilize heavy equipment by road access, low rate.

⁸ MHERH – RECLAIM unit cost code for mobilize heavy equipment by road access, high rate

Line Item	Changes to Reclamation Activities	Change in Security Amount	
		Scenario 1: Wetland (from March 2019 version)	Scenario 2: No Wetland (from July 2019 version)
Other Adjustments			
3. Revise quantity and unit rate for influent storage pond blasting /excavation	<p>The March 2019 and July 2019 security estimate utilized the excavation/blasting quantities for the influent storage ponds (ISPs) from the December 2018⁹ design report. This security estimate has been updated to utilize the excavation/blasting quantities for the ISPs from a more recent design report (March 2019)¹⁰.</p> <p>The value for the wetland scenario decreased by \$3,821,125 from March 2019 estimate. The March 2019 estimate assumed the majority of the ISPs required blasting of rock to construct. The updated design report notes that the total quantity of materials to be removed to construct the ISPs were general similar compared to that applied in the March 2019 estimate; however, the quantity of material that required blasting decreased and the quantity of material that required excavation increased. Since excavation has a lower unit cost than blasting, and there is less blasting in updated security estimate, there is an overall reduction in cost in this updated estimate compared to the March 2019 estimate.</p> <p>The value of the no wetland scenario increased by \$2,124,152 from July 2019 estimate. The July 2019 estimate assumed the majority of the ISPs required excavation of materials to construct, not blasting. The updated design report notes that the total quantity of materials to be removed to construct the ISPs were general similar compared to that applied in the July 2019 estimate; however, the quantity of material that required blasting increased and the quantity of material that required excavation decreased. Since blasting has a higher unit cost than excavation, there is an overall increase in the cost in this updated estimate compared to the March 2019 estimate.</p>	-\$3,008,760	+\$1,672,560

⁹ Golder, 2018. North Pile Passive Treatment Systems Detail Design Report – Snap Lake Mine. December.

¹⁰ Golder, 2019. North Pile Passive Treatment Systems Detail Design Report – Snap Lake Mine. March.

Line Item	Changes to Reclamation Activities	Change in Security Amount	
		Scenario 1: Wetland (from March 2019 version)	Scenario 2: No Wetland (from July 2019 version)
4. Cost correction to mobilization / demobilization	<p>The value increased by \$317,079 to correct an accounting error identified during preparation of this RECLAIM update.</p> <p>The accounting error identified that the total sum calculation for the mobilization / demobilization costs did not include all the line items within the RECLAIM excel sheet.</p> <p>Inclusion or exclusion of the wetland has no influence on this cost</p>	+\$317,079	+\$317,079

3.0 RESULTS

A summary of the updated reclamation security for the Mine in both wetland scenarios is provided in Table 2 and Table 3 along with a comparison to the initial RECLAIM estimates for Scenario 1¹ and Scenario 2².

Table 2. Summary of the total reclamation security for the Mine in Scenario 1 (wetland).

Capital Costs	March 2019 Estimate	December 2019 Estimate	Notes
	Total Costs		
Open pit	\$0	\$0	
Underground mine	\$240,102	\$240,102	
Processed kimberlite facility	\$6,766,283	\$6,766,283	
Rock pile	\$0	\$0	
Buildings and equipment	\$16,392,319	\$16,392,319	
Chemicals and contaminated soil management	\$4,541,172	\$4,541,172	
Surface and groundwater management	\$18,137,342	\$15,128,582	Decrease of \$3,008,760, see Table 1, line item 3
Interim care and maintenance	\$1,707,209	\$1,707,209	
SUBTOTAL: Capital Costs	\$47,784,426	\$44,775,666	
Indirect Costs	Total Costs		
Mobilization/demobilization	\$16,407,640	\$15,003,462	Decrease of \$1,404,177; see Table 1, line items 2 and 4
Post-closure monitoring and maintenance	\$8,036,055	\$8,419,055	Increase of \$383,000; see Table 1, line item 1
Engineering (5%)	\$2,389,221	\$2,238,783	These indirect costs are calculated as a percentage of the capital cost. The capital costs differ between the estimates and therefore these indirect costs are different.
Project management (5%)	\$2,389,221	\$2,238,783	
Health and safety plans/monitoring and quality assurance/quality control (1%)	\$477,844	\$447,757	
Bonding/insurance (1%)	\$477,844	\$447,757	
Contingency (15%)	\$7,167,664	\$6,716,350	
Market price factor adjustment (0%)	\$0	\$0	
SUBTOTAL: Indirect Costs	\$37,345,490	\$35,511,946	
TOTAL COSTS	\$85,129,915	\$80,287,612	

Table 3. Summary of the total reclamation security for the Mine in Scenario 2 (no wetland).

Capital Costs	July 2019 Estimate	December 2019 Estimate	Notes
	Total Costs		
Open pit	\$0	\$0	
Underground mine	\$240,102	\$240,102	
Processed kimberlite facility	\$6,766,283	\$6,766,283	
Rock pile	\$0	\$0	
Buildings and equipment	\$16,433,495	\$16,433,495	
Chemicals and contaminated soil management	\$4,541,172	\$4,541,172	
Surface and groundwater management	\$6,224,961	\$7,897,521	Increase of \$1,672,560, see Table 1, line item 3
Interim care and maintenance	\$1,707,209	\$1,707,209	
SUBTOTAL: Capital Costs	\$35,913,221	\$37,585,781	
Indirect Costs	Total Costs		
Mobilization/demobilization	\$16,407,640	\$15,003,462	Decrease of \$1,404,177; see Table 1, line items 2 and 4
Post-closure monitoring and maintenance	\$7,961,055	\$8,344,055	Increase of \$383,000; see Table 1, line item 1
Engineering (5%)	\$1,795,661	\$1,879,289	These indirect costs are calculated as a percentage of the capital cost. The capital costs differ between the estimates and therefore these indirect costs are different.
Project management (5%)	\$1,795,661	\$1,879,289	
Health and safety plans/monitoring and quality assurance/quality control (1%)	\$359,132	\$375,858	
Bonding/insurance (1%)	\$359,132	\$375,858	
Contingency (15%)	\$5,386,983	\$5,637,867	
Market price factor adjustment (0%)	\$0	\$0	
SUBTOTAL: Indirect Costs	\$34,065,265	\$33,495,678	
TOTAL COSTS	\$69,978,485	\$71,081,458	

4.0 RECOMMENDATIONS

It is recommended that the amount of reclamation security for the Mine be set at the amount listed in Table 4 for the selected closure scenario. The water related liability should be placed within the Water Licence and the land related liability within the Land Use Permit. De Beers is requesting Scenario 2 be applied by the MVLWB in the licence/permit since a no wetland scenario is the preferred final closure condition. The wetland is a contingency closure option, and if it becomes required, the security should be adjusted to reflect Scenario 1 costing.

Table 4. Total RECALIM security estimate for the Mine for each scenario.

Scenario	Total Costs	Land Liability	Water Liability
Scenario 1 (Wetland) security	\$80,287,612	\$39,831,442	\$40,456,170
Scenario 2 (No Wetland) security	\$71,081,458	\$42,087,834	\$28,993,624

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ATTACHMENT 2B. RECLAIM NO WETLAND SCENARIO

Provided as an excel file

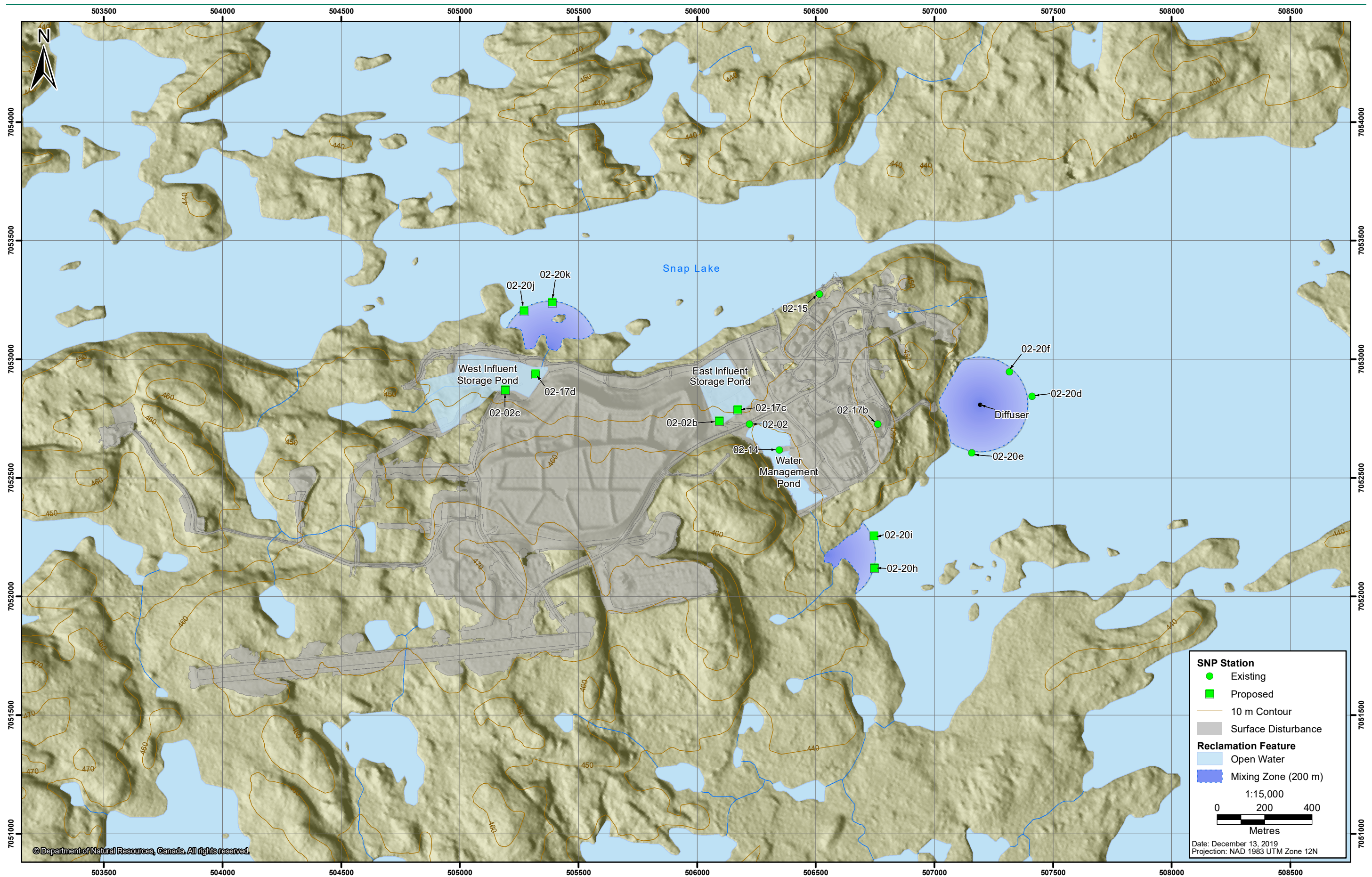
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ATTACHMENT 2C. RECLAIM INCLUDING WETLAND SCENARIO

Provided as an excel file

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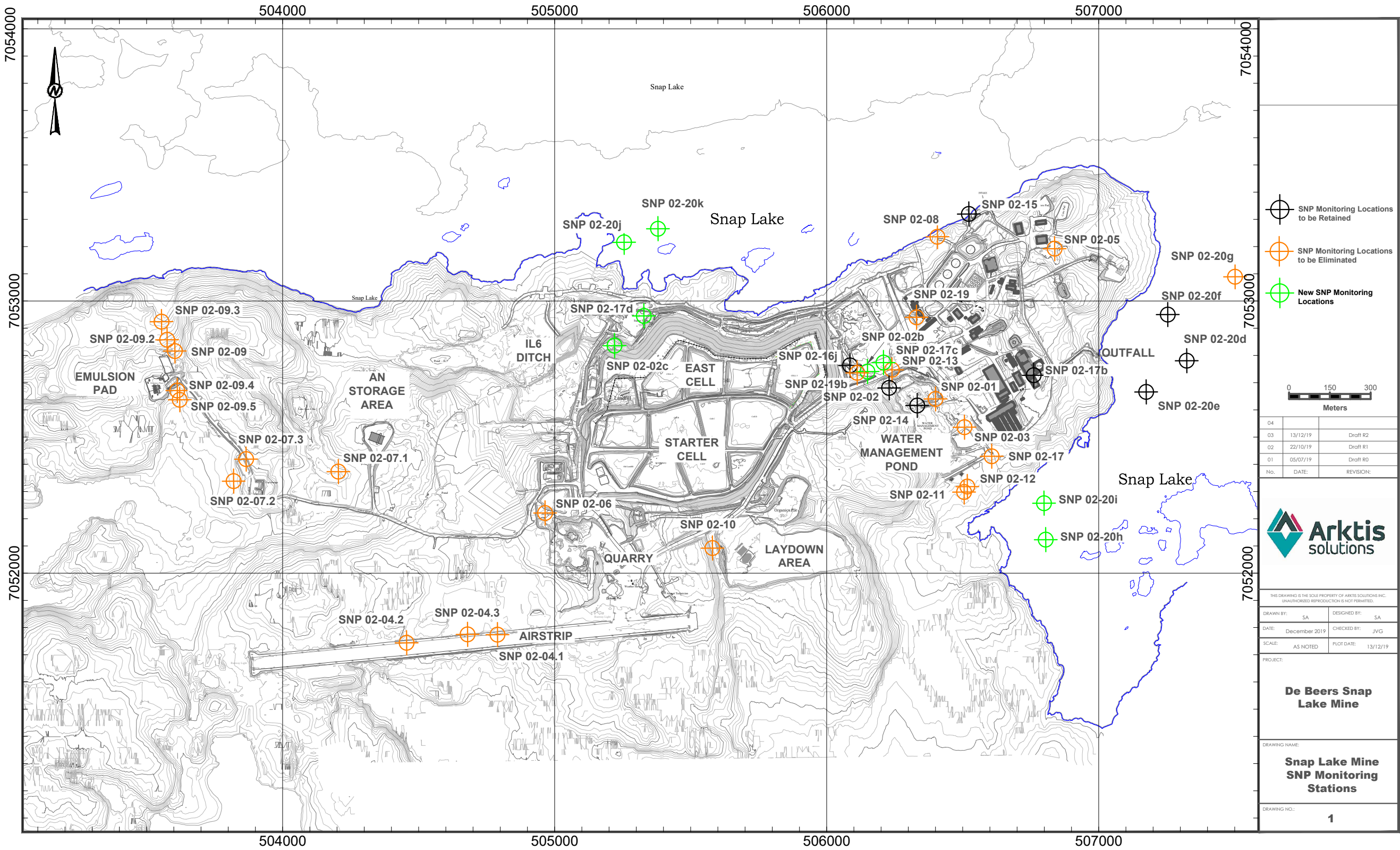
ATTACHMENT 3. MIXING ZONE MAP



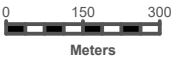
Snap Lake SNP Stations related to Discharge and Water Intake

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ATTACHMENT .U ° h\ 7SNAP LAKE oVh'ou° u@Vo



- SNP Monitoring Locations to be Retained
- SNP Monitoring Locations to be Eliminated
- New SNP Monitoring Locations



04		
03	13/12/19	Draft R2
02	22/10/19	Draft R1
01	05/07/19	Draft R0
No.	DATE:	REVISION:



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DRAWN BY:	SA	DESIGNED BY:	SA
DATE:	December 2019	CHECKED BY:	JVG
SCALE:	AS NOTED	PLOT DATE:	13/12/19

PROJECT:

De Beers Snap Lake Mine

DRAWING NAME:

**Snap Lake Mine
SNP Monitoring
Stations**

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ATTACHMENT 4A. FIGURES OF WATER QUALITY FOR SNP 02-03

Figure 4A-1: Total Dissolved Solids, calculated (lab) Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

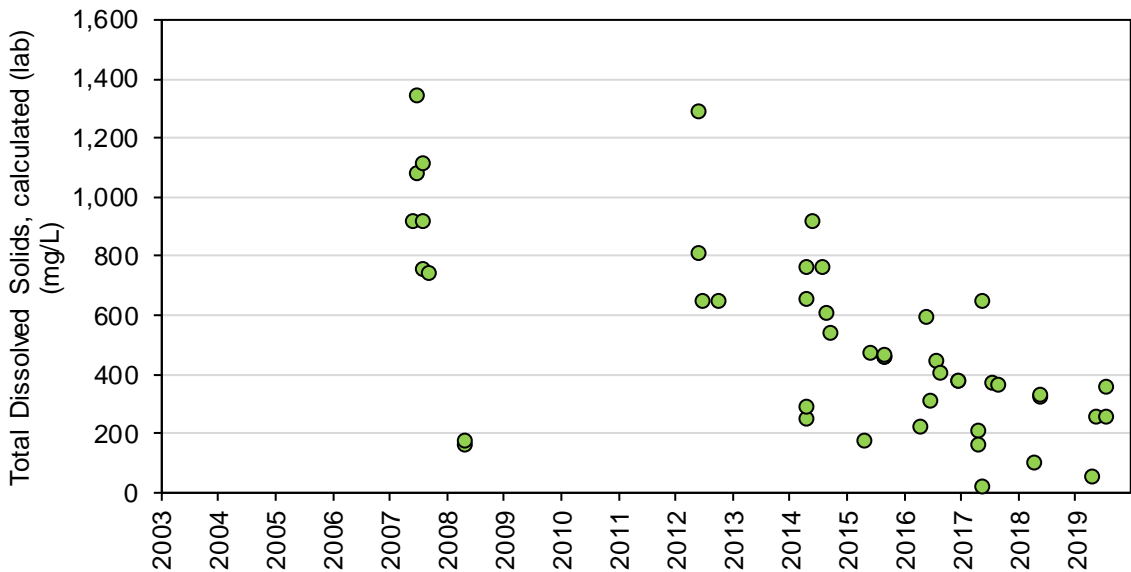


Figure 4A-2: Calcium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

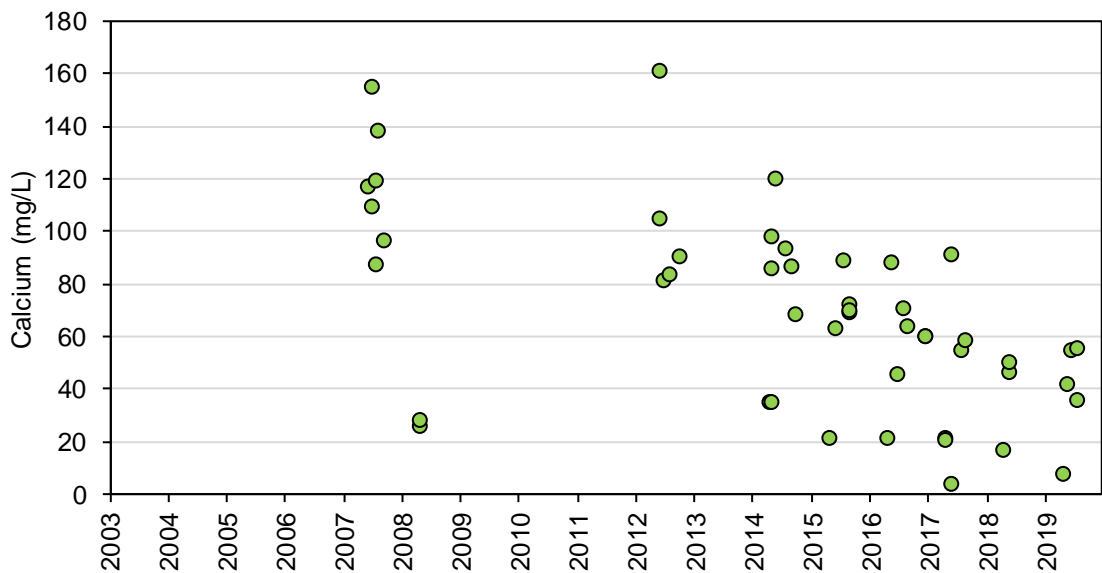


Figure 4A-3: Chloride Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

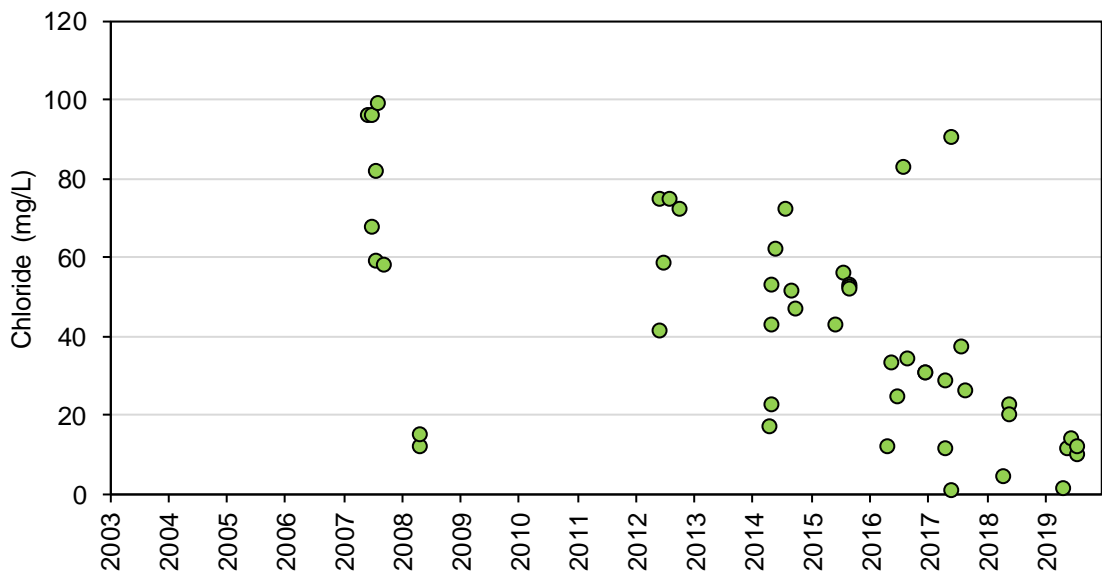


Figure 4A-4: Fluoride Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

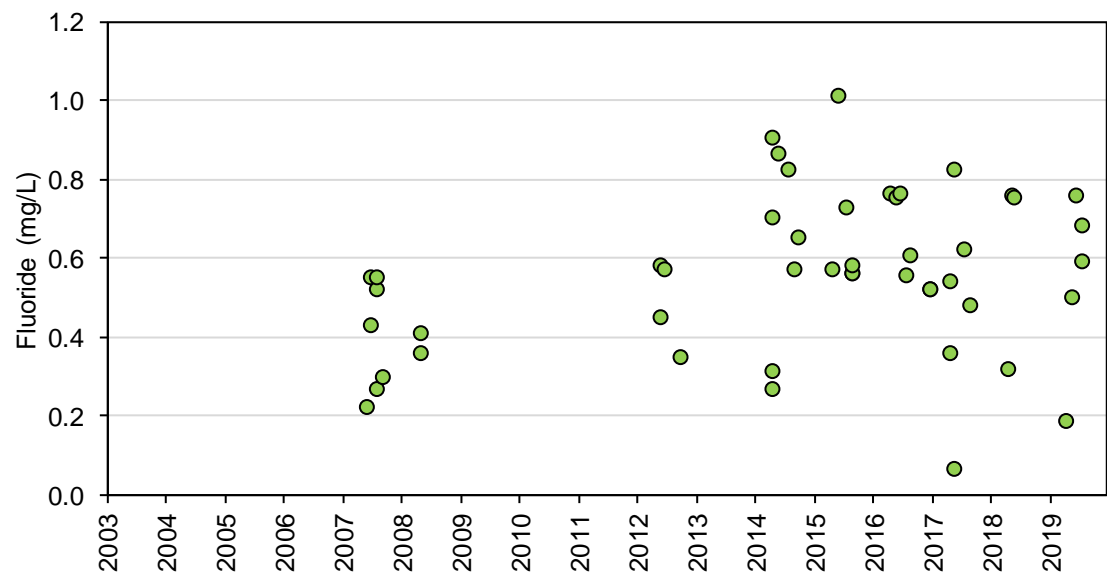


Figure 4A-5: Magnesium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

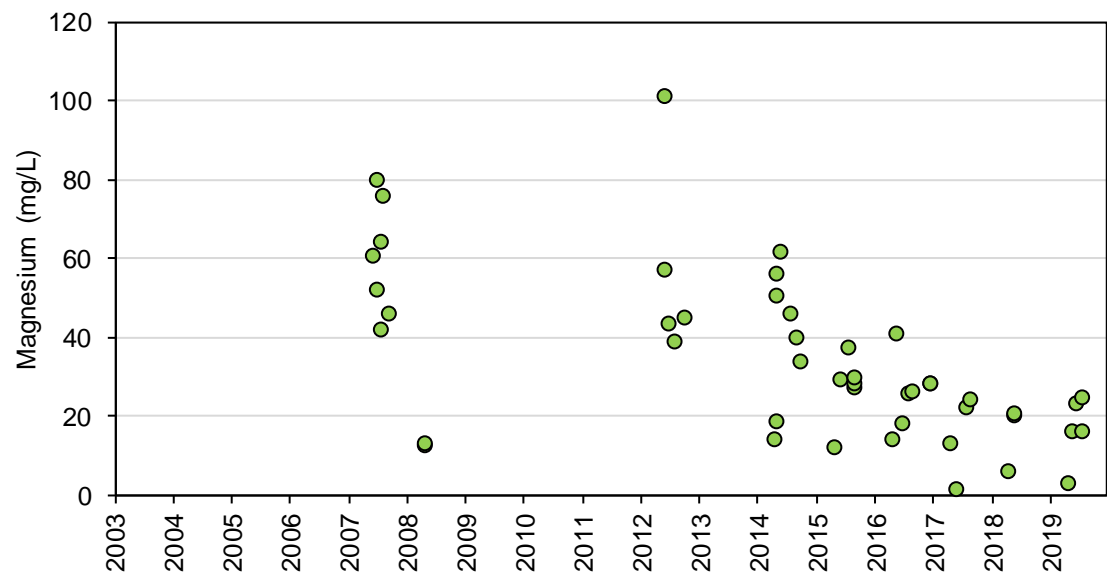


Figure 4A-6: Potassium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

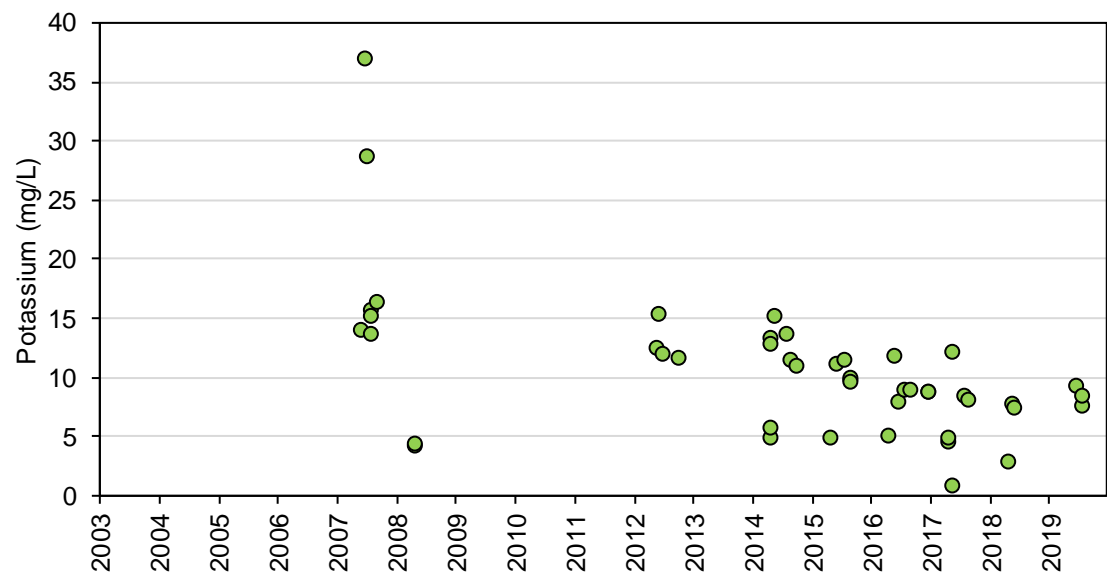


Figure 4A-7: Sodium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

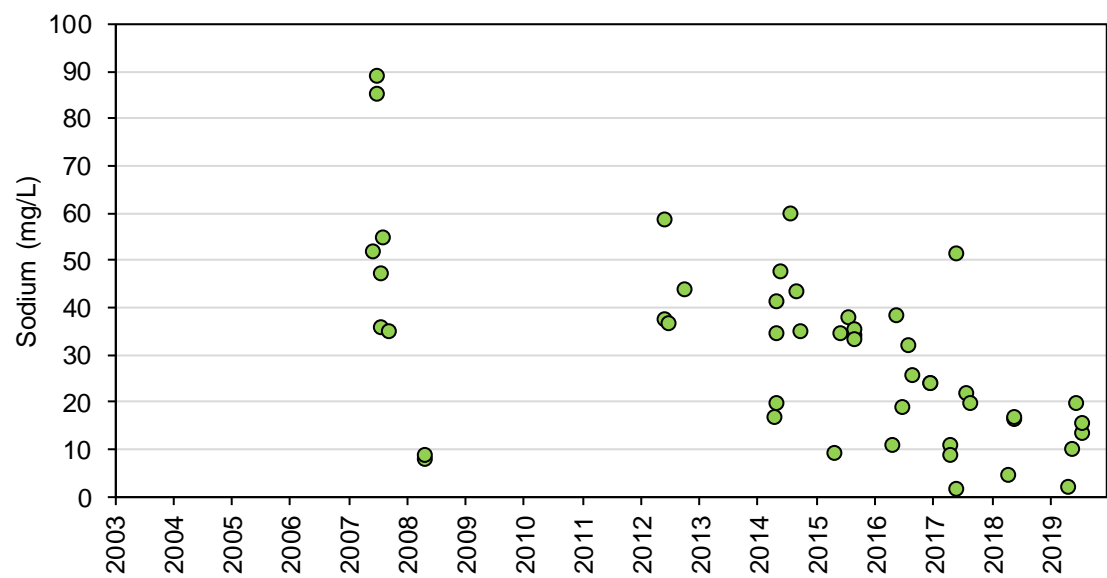


Figure 4A-8: Sulphate Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

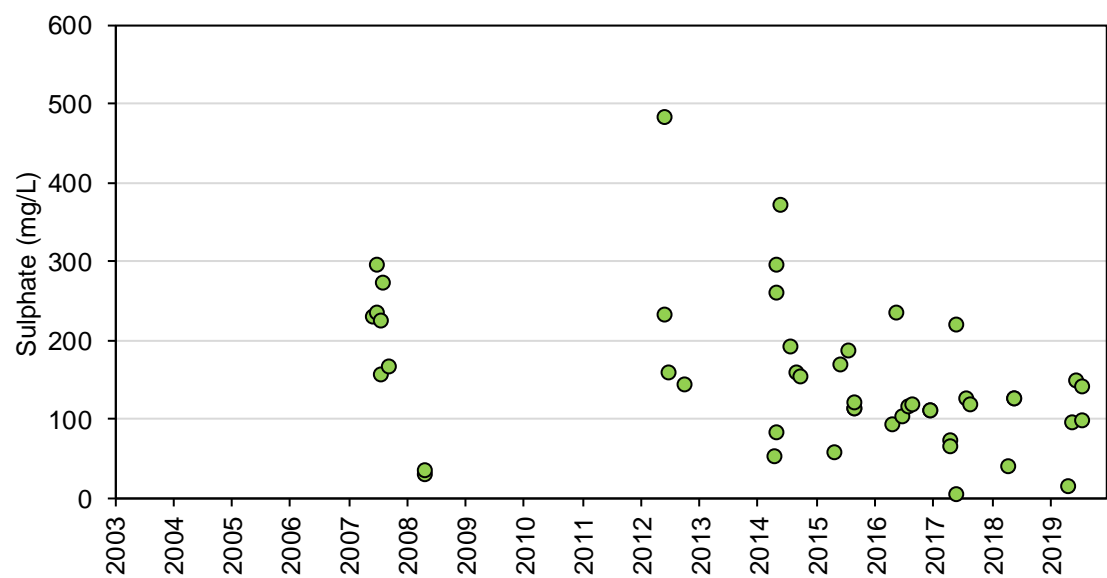


Figure 4A-9: Nitrate Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

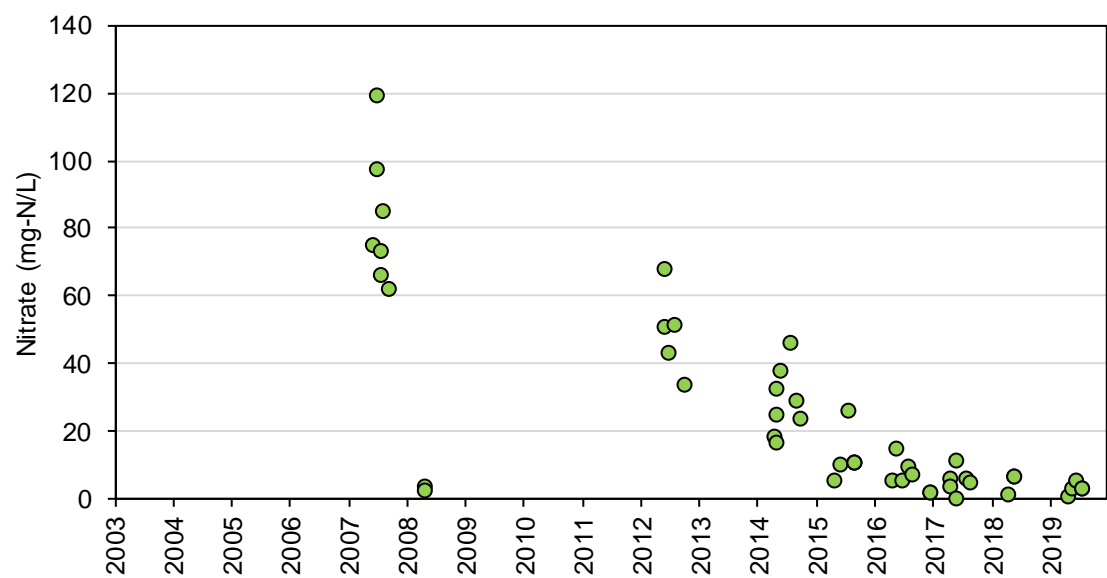


Figure 4A-10: Nitrite Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

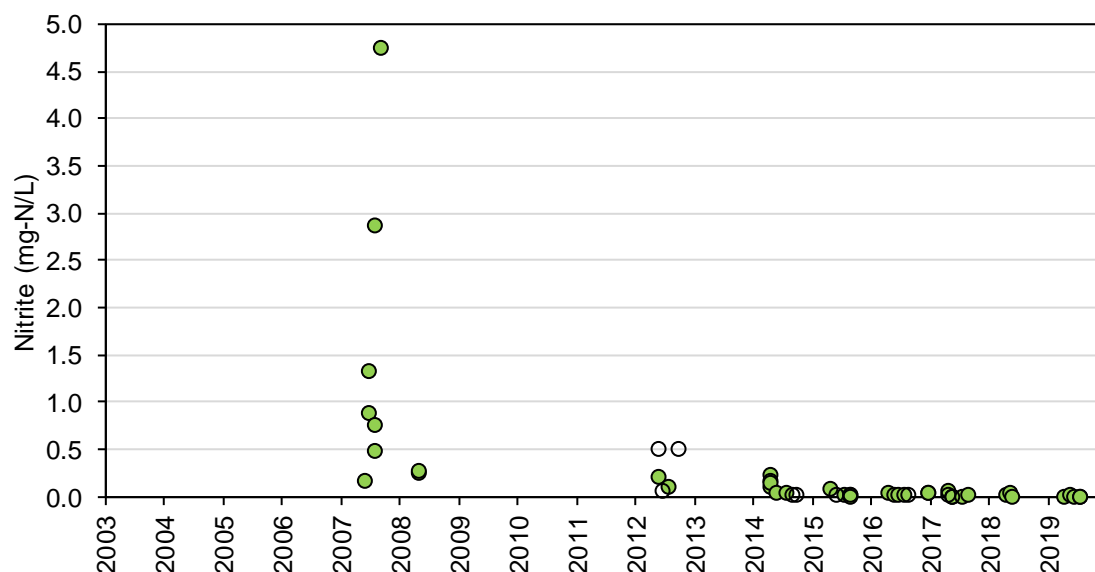


Figure 4A-11: Total Ammonia Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

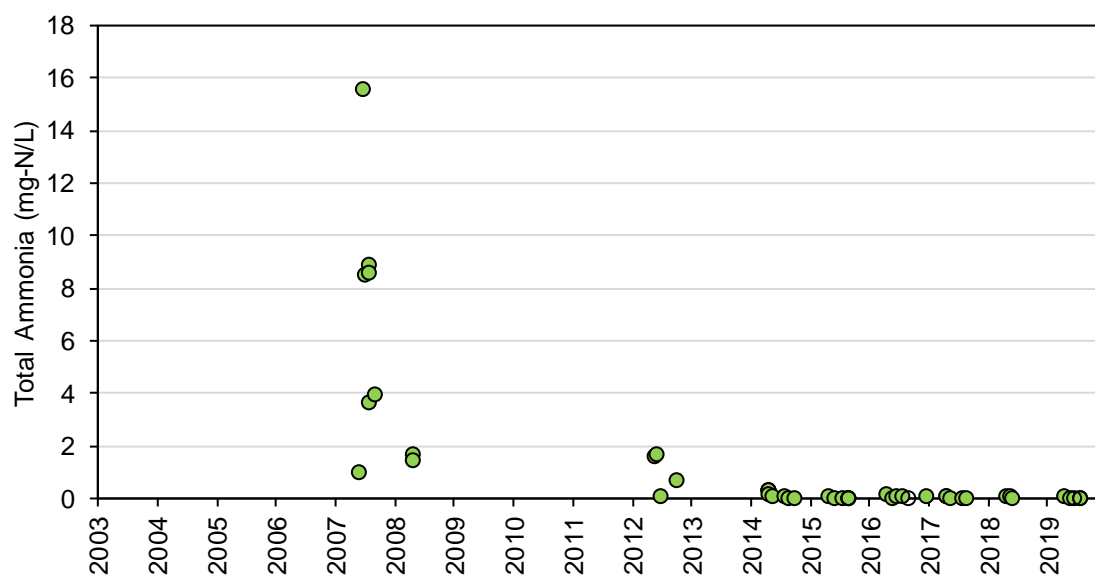


Figure 4A-12: Total Phosphorus Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

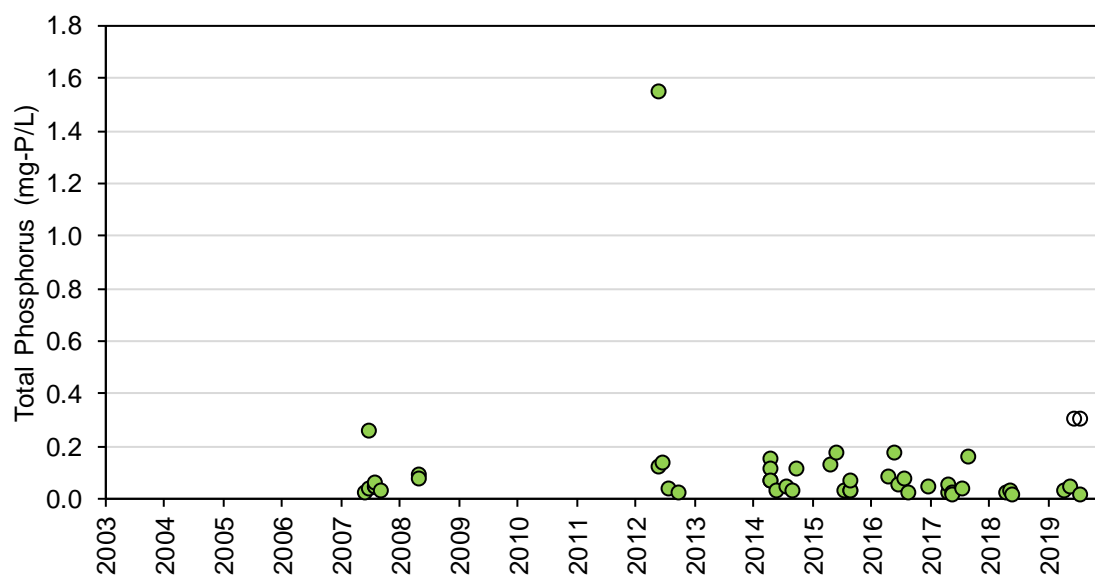


Figure 4A-13: Total Aluminum Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

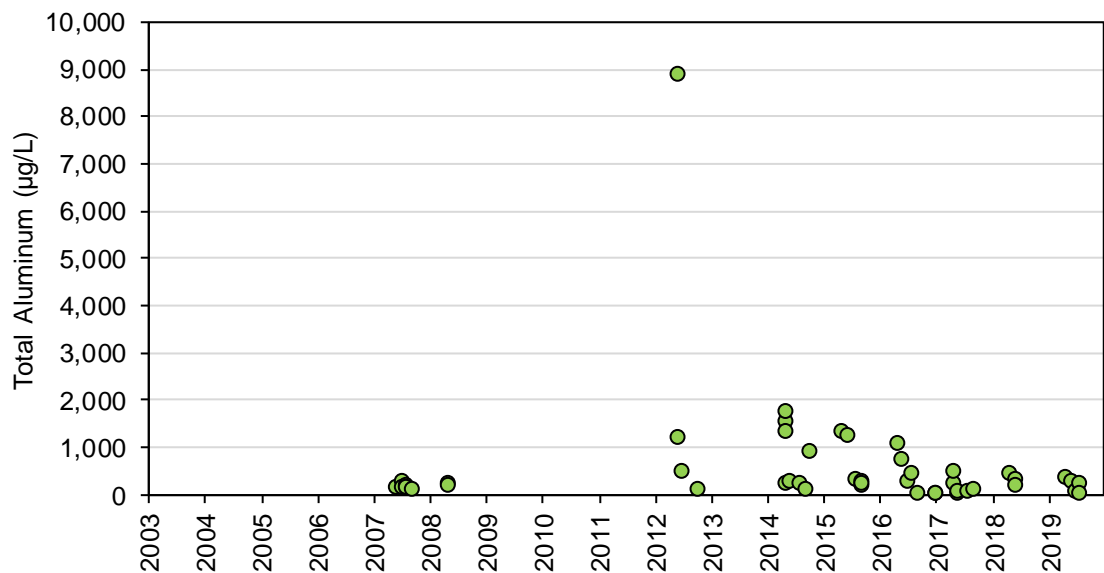


Figure 4A-14: Total Antimony Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

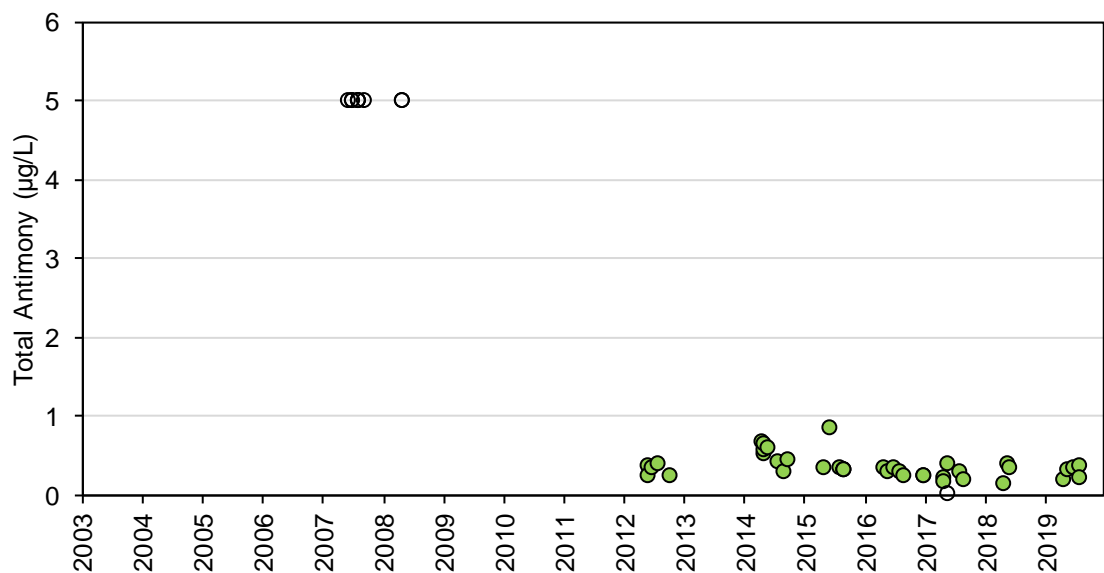


Figure 4A-15: Total Arsenic Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

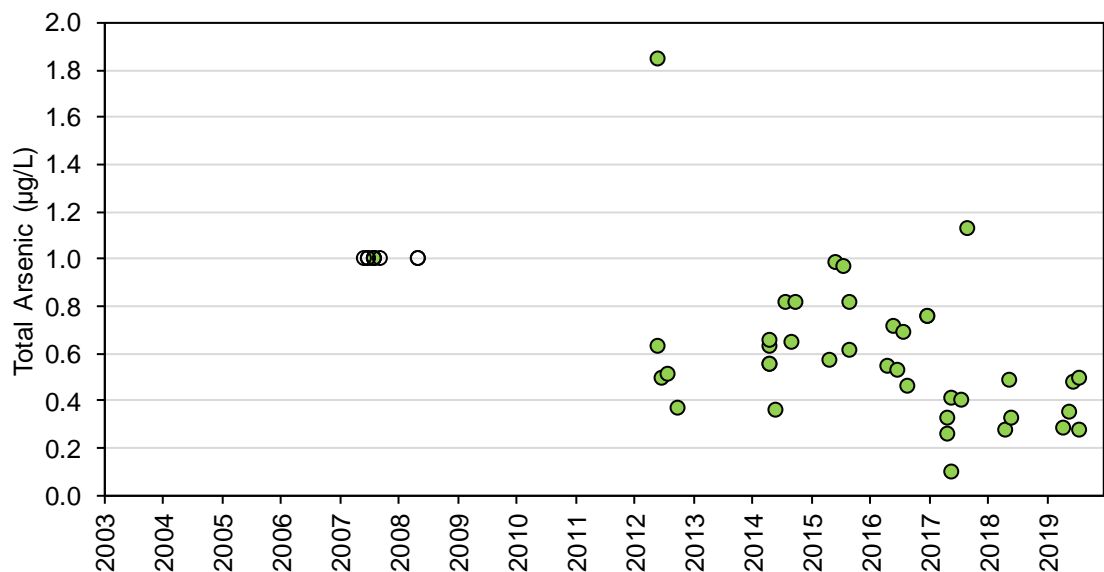


Figure 4A-16: Total Barium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

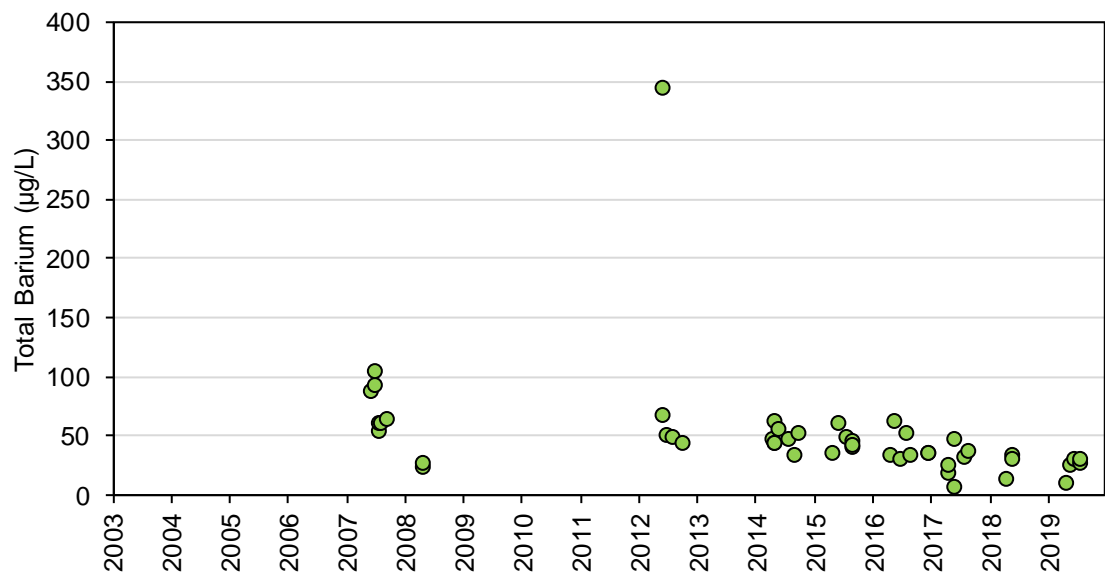


Figure 4A-17: Total Beryllium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

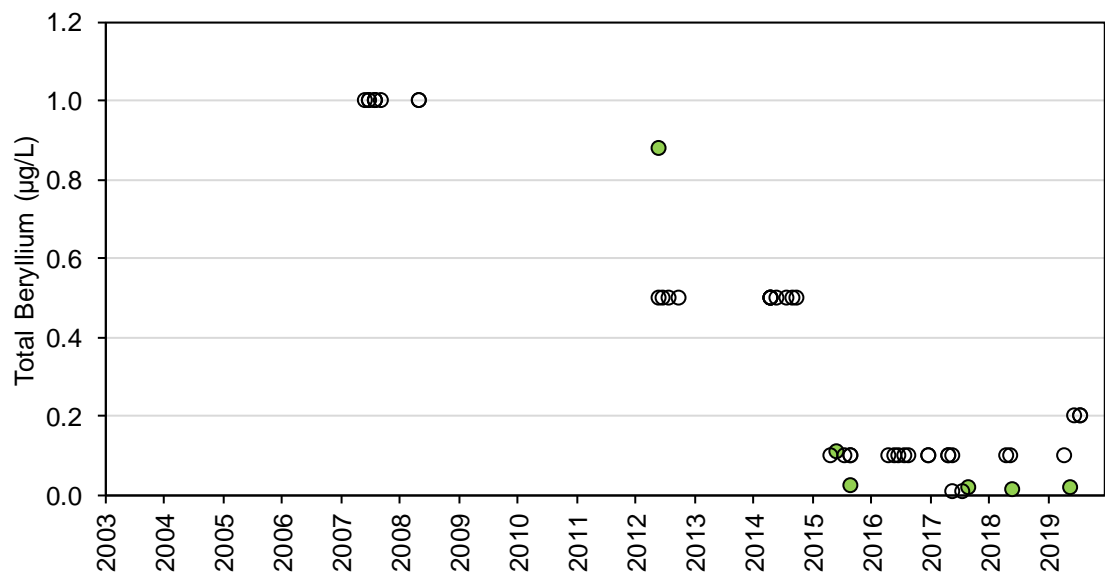


Figure 4A-18: Total Boron Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

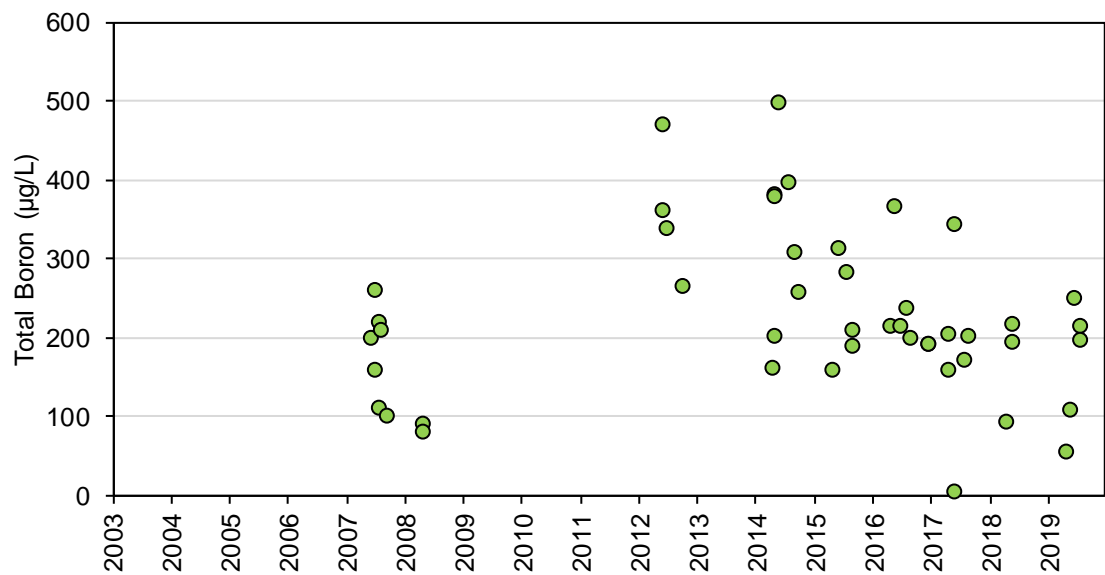


Figure 4A-19: Total Cadmium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

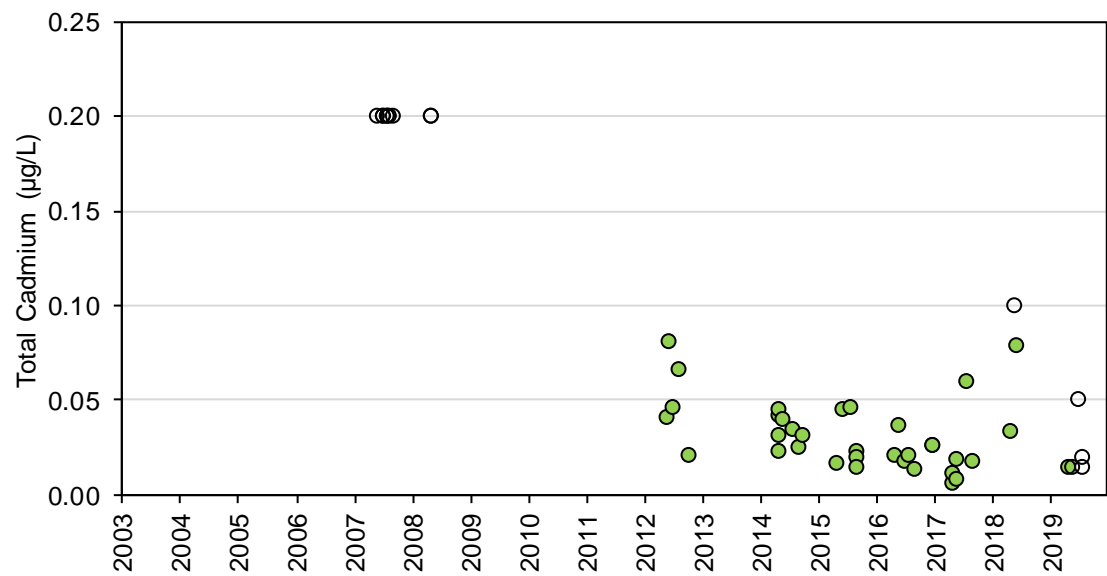


Figure 4A-20: Total Cesium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

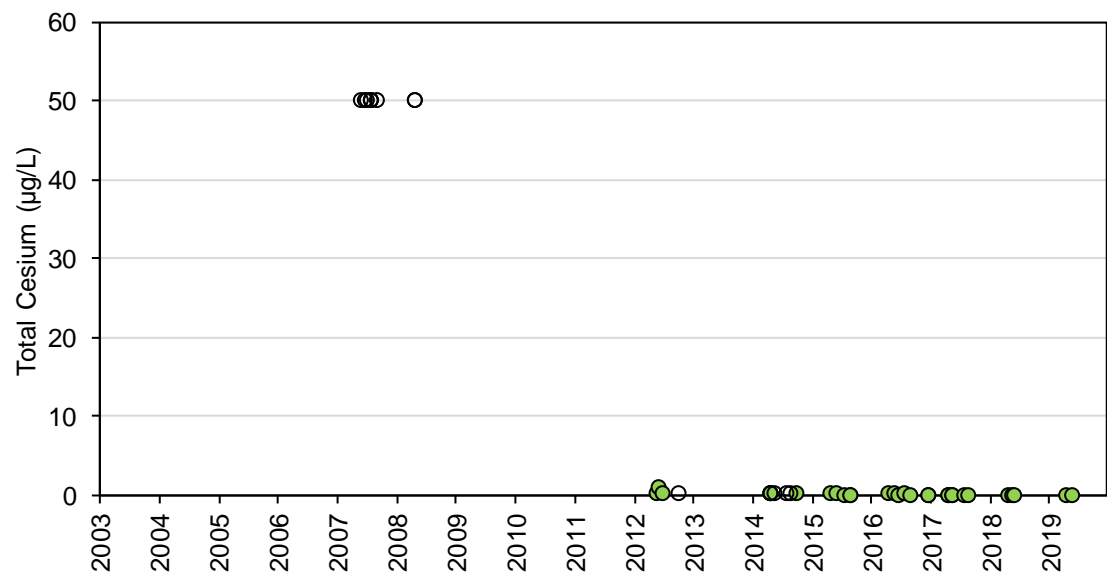


Figure 4A-21: Total Chromium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

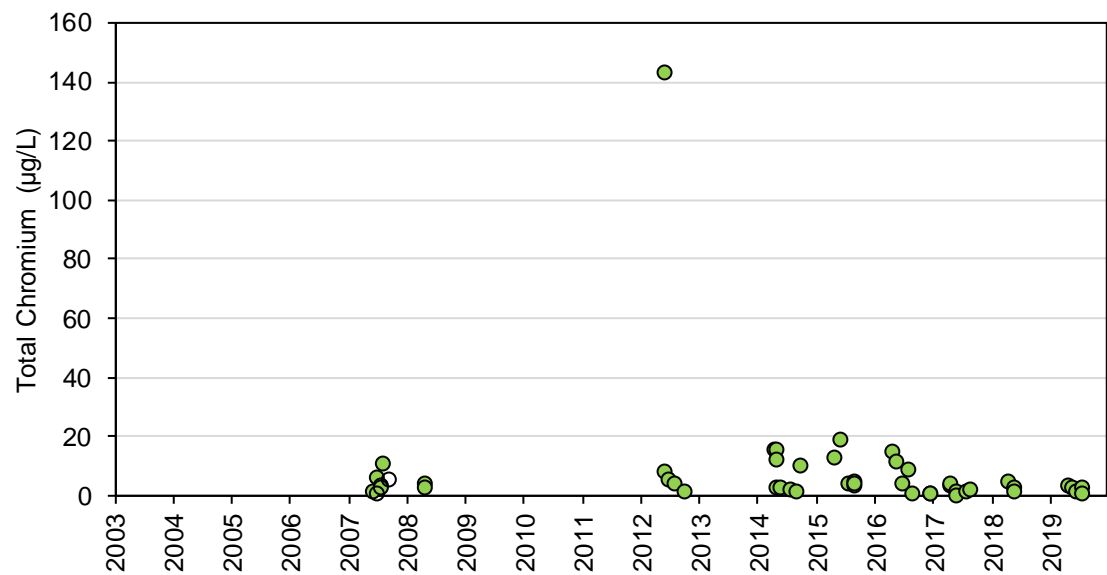


Figure 4A-22: Total Cobalt Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

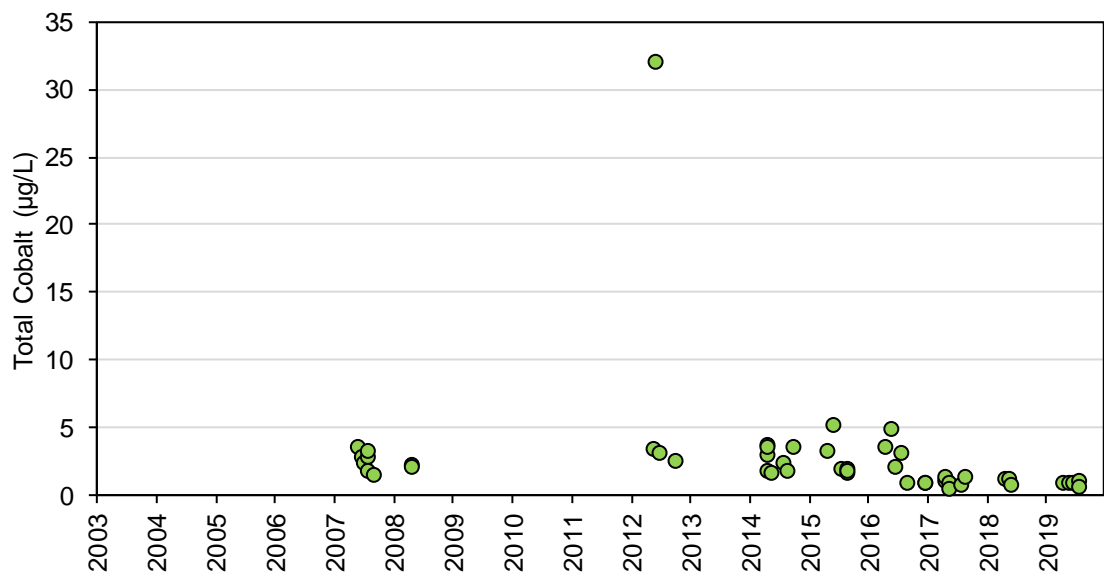


Figure 4A-23: Total Copper Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

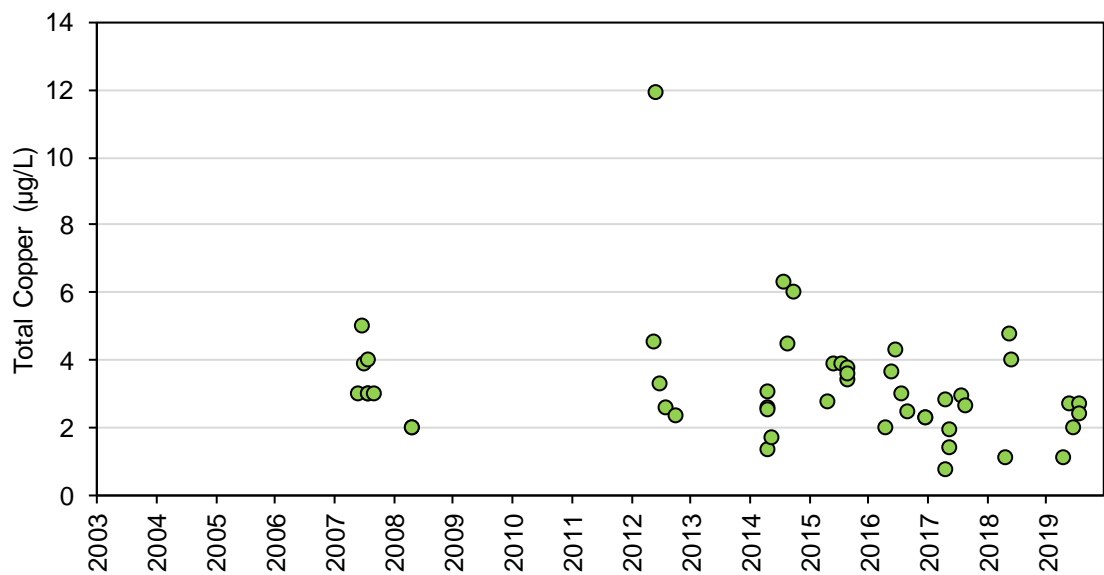


Figure 4A-24: Total Iron Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

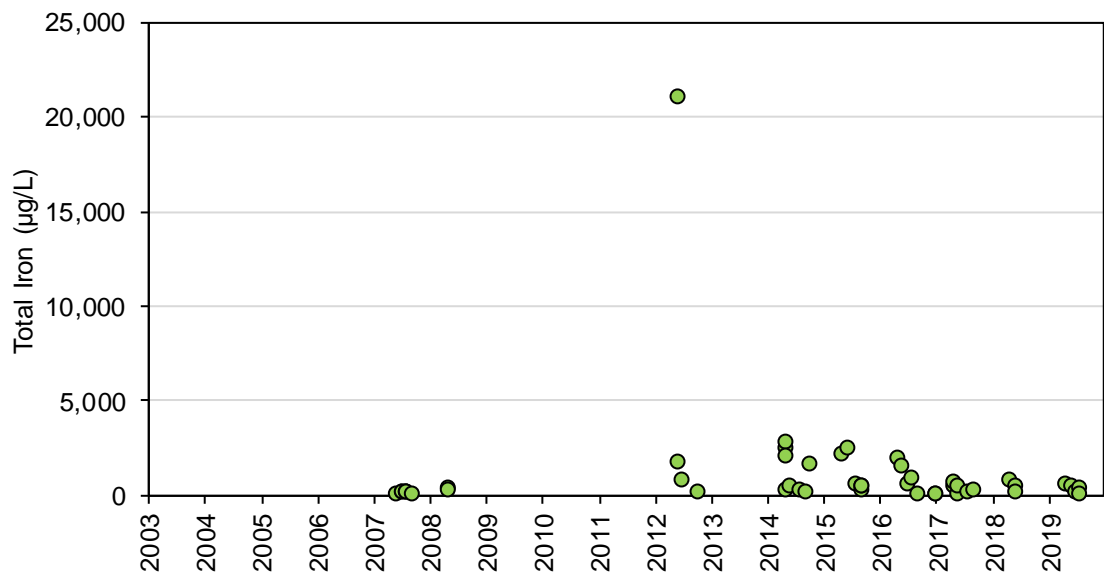


Figure 4A-25: Total Lead Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

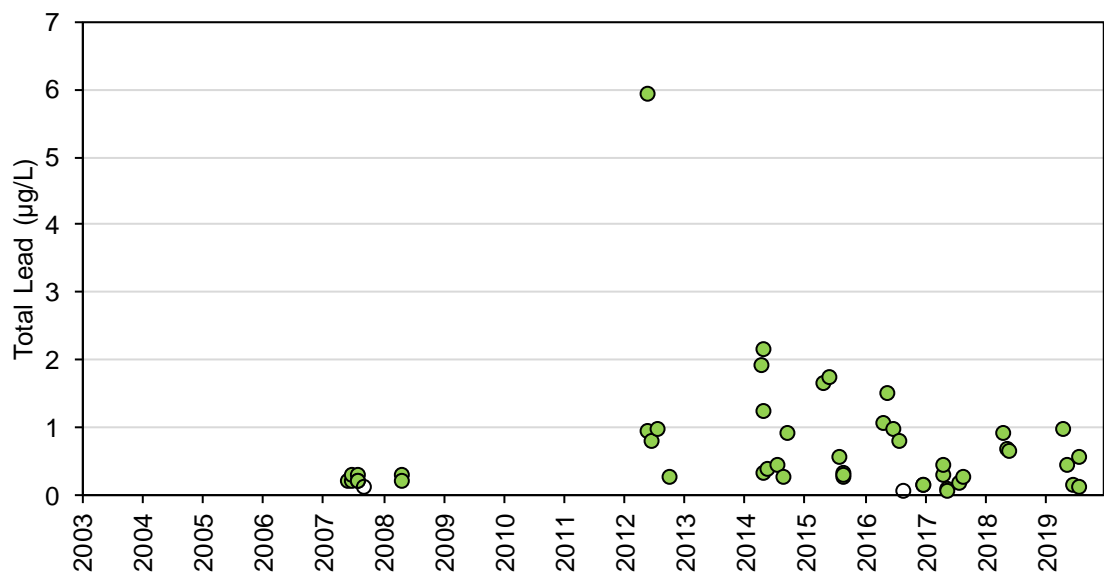


Figure 4A-26: Total Lithium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

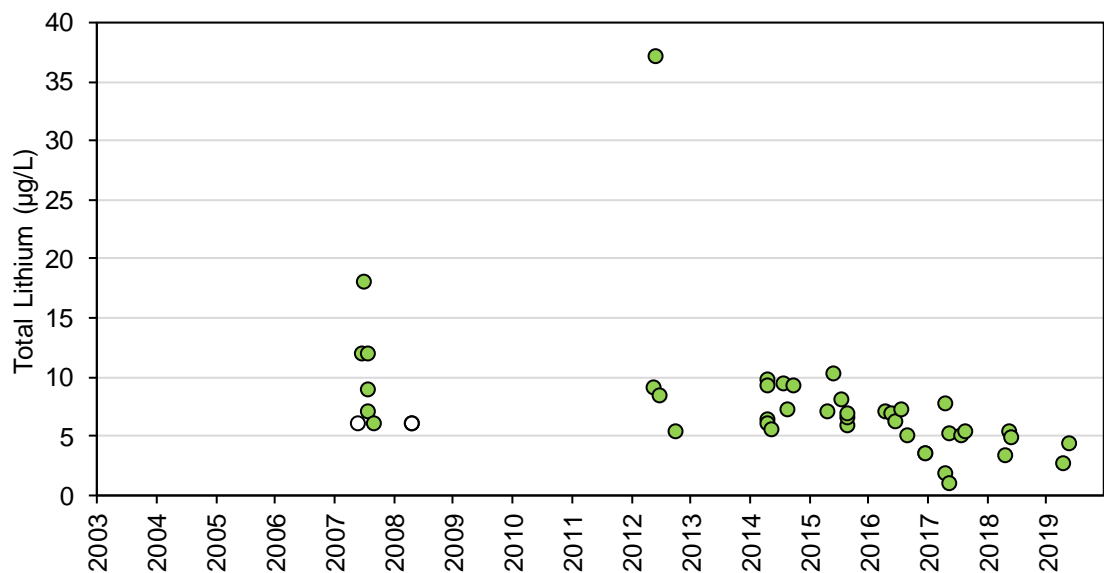


Figure 4A-27: Total Manganese Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

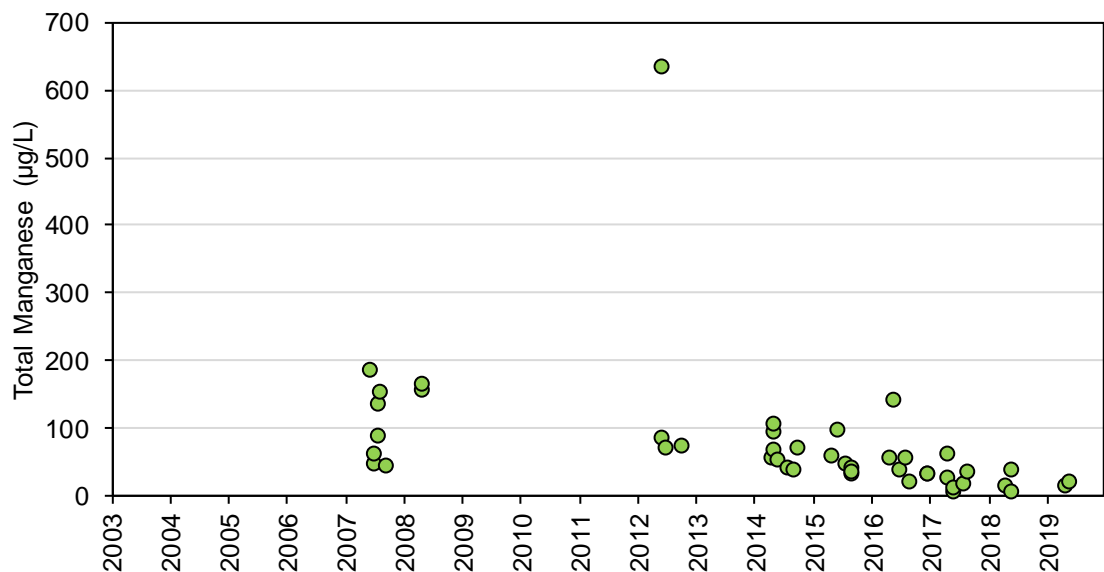


Figure 4A-28: Total Mercury Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

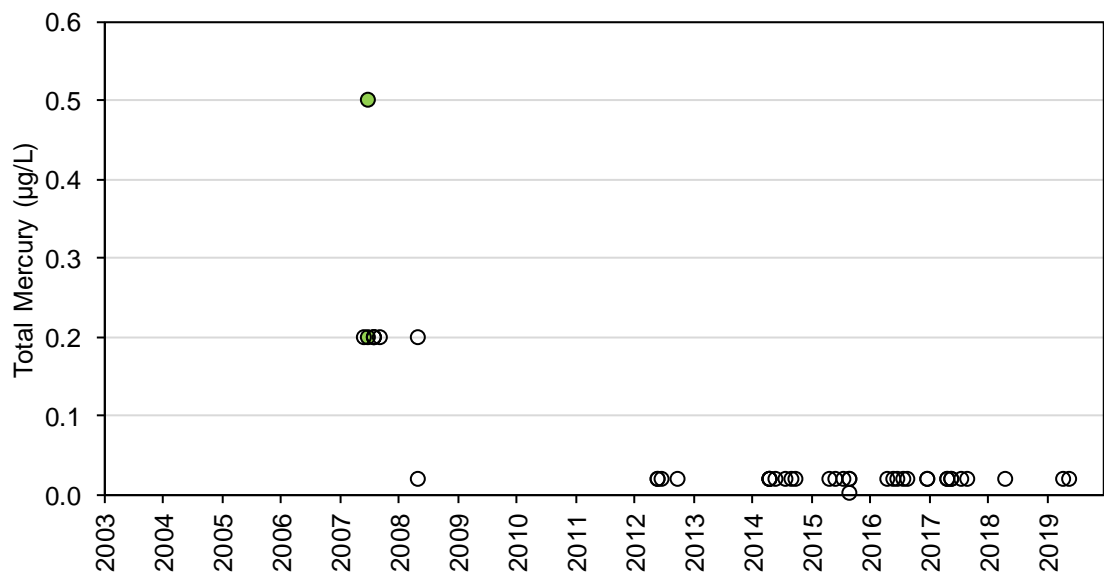


Figure 4A-29: Total Molybdenum Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

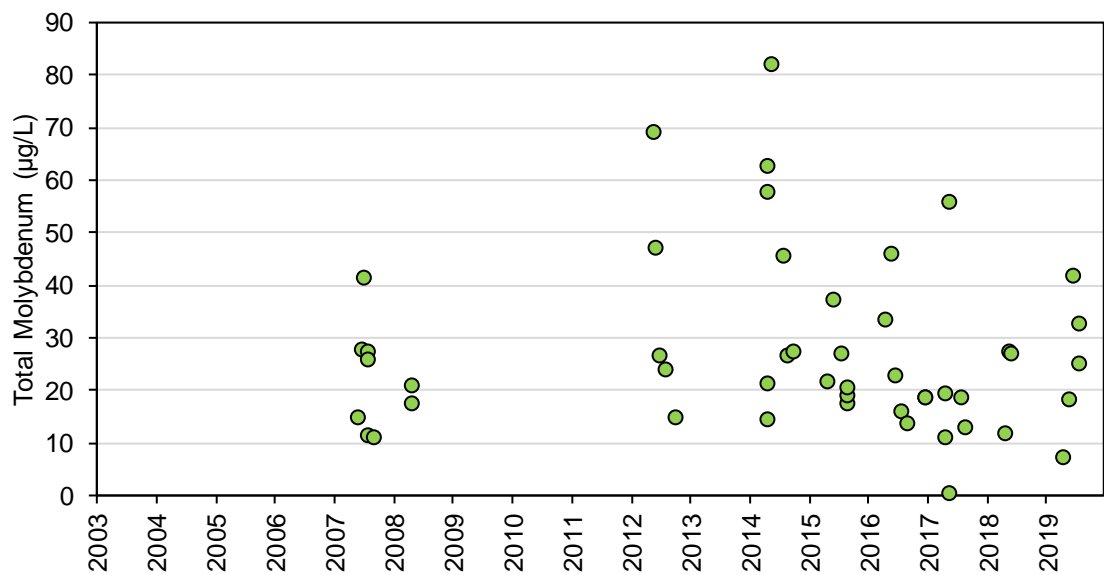


Figure 4A-30: Total Nickel Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

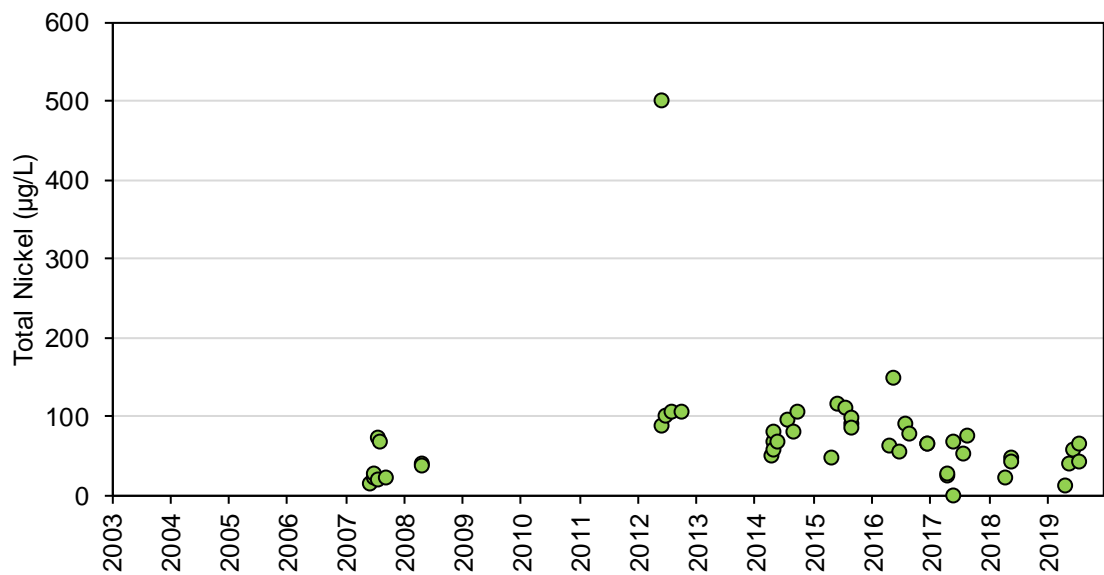


Figure 4A-31: Total Rubidium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

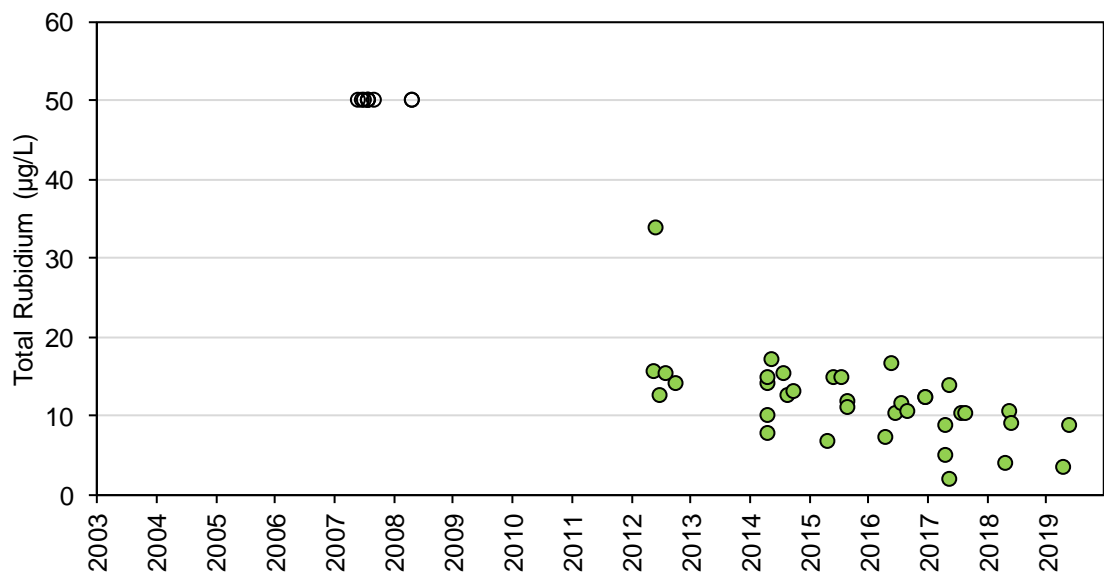


Figure 4A-32: Total Selenium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

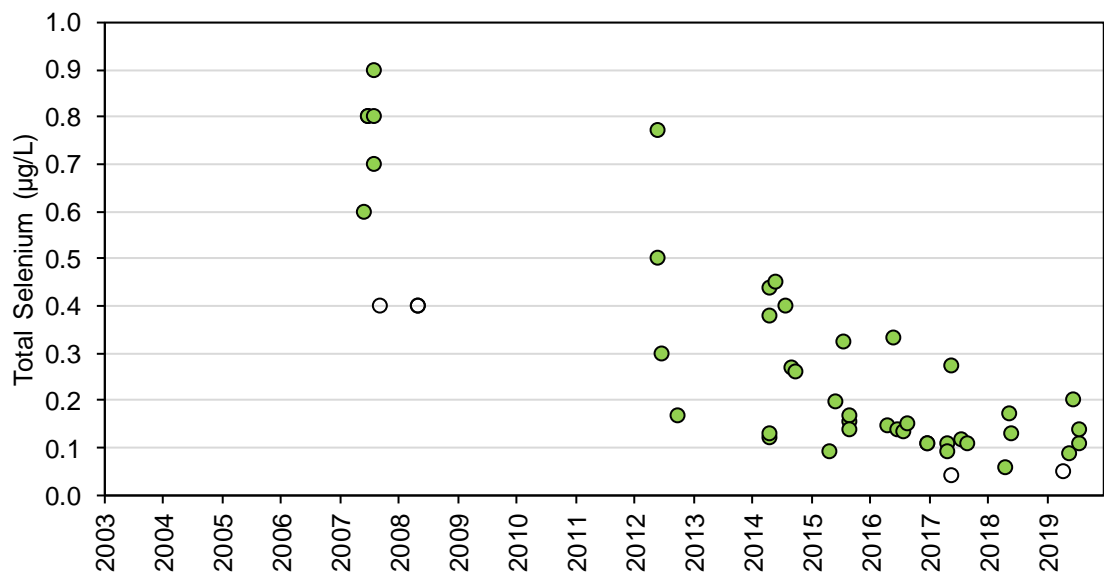


Figure 4A-33: Total Strontium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

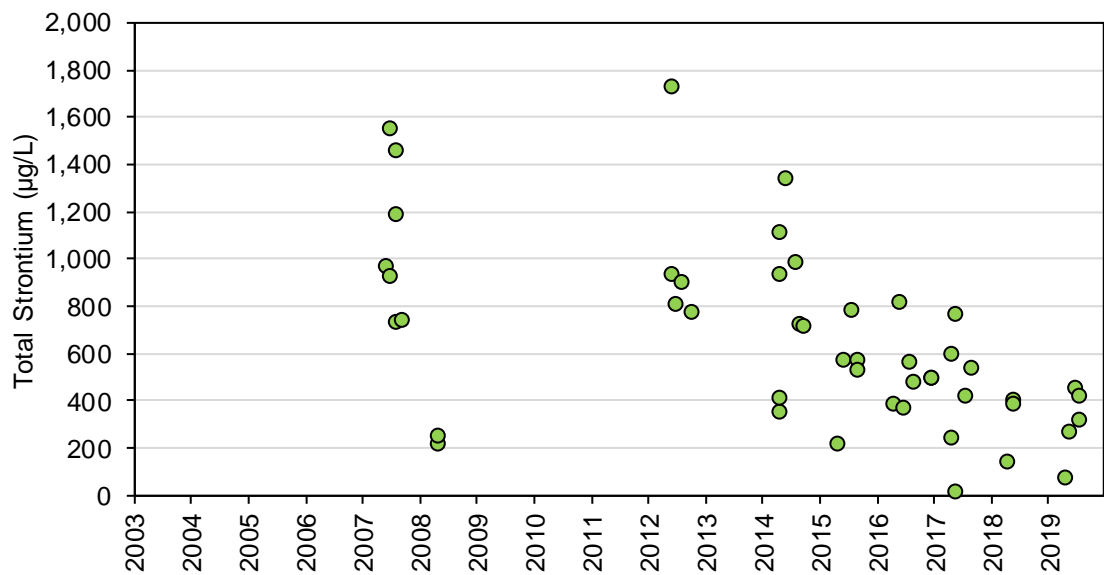


Figure 4A-34: Total Thallium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

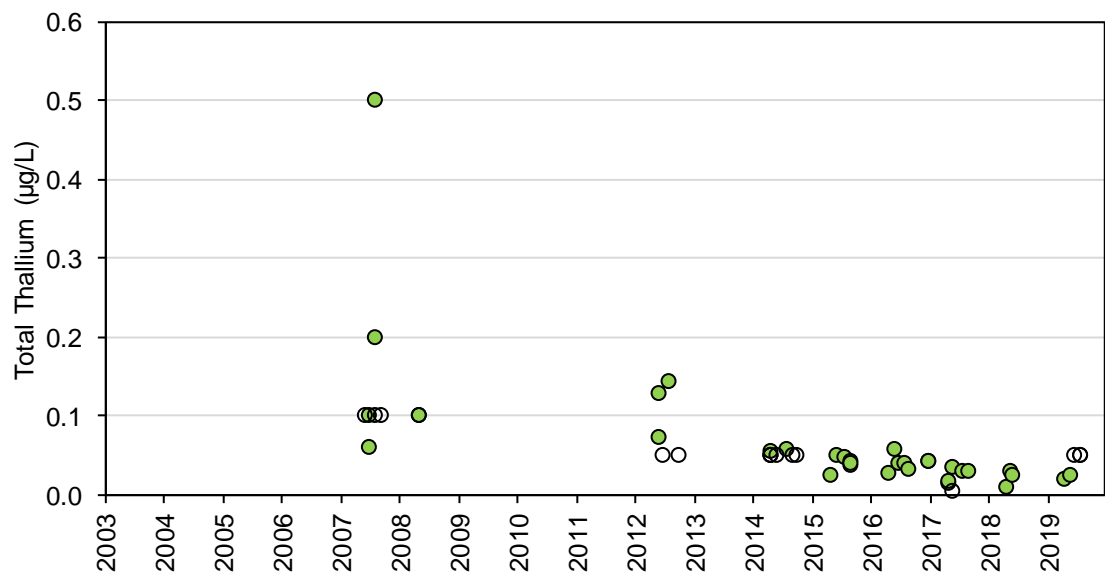


Figure 4A-35: Total Titanium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

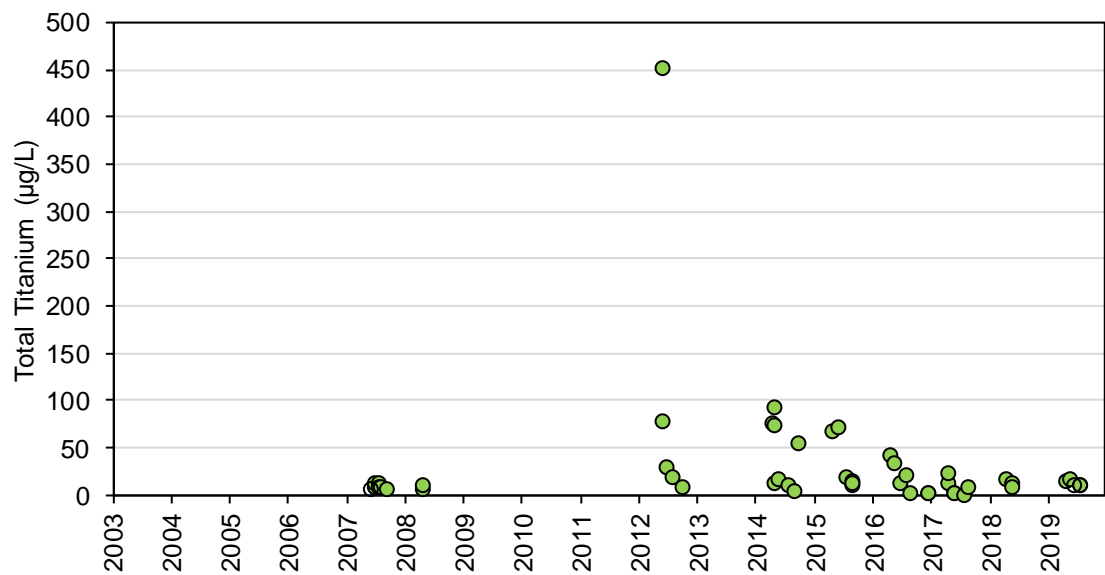


Figure 4A-36: Total Uranium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

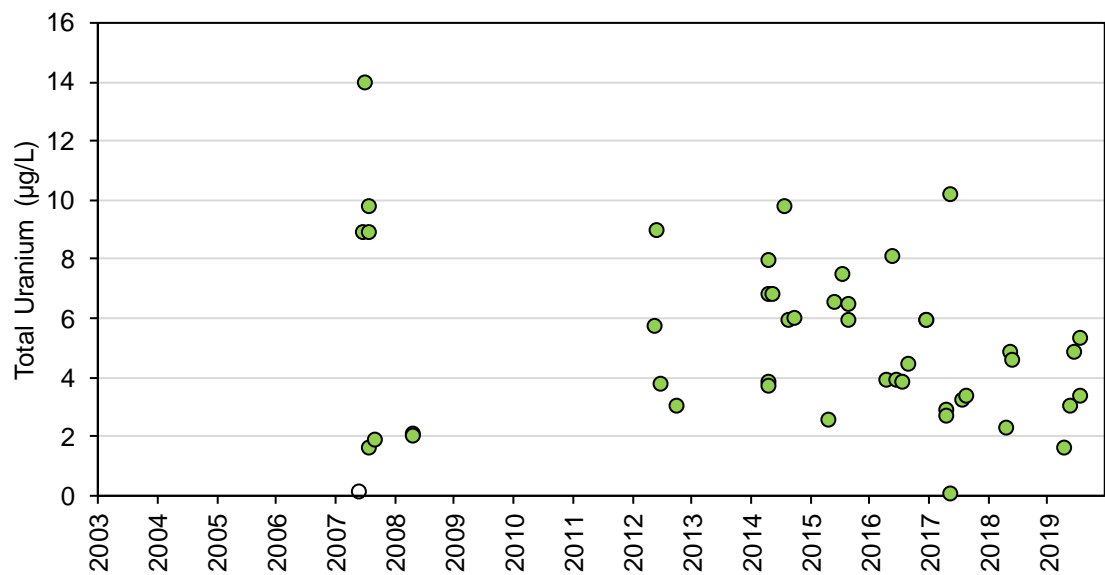


Figure 4A-37: Total Vanadium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

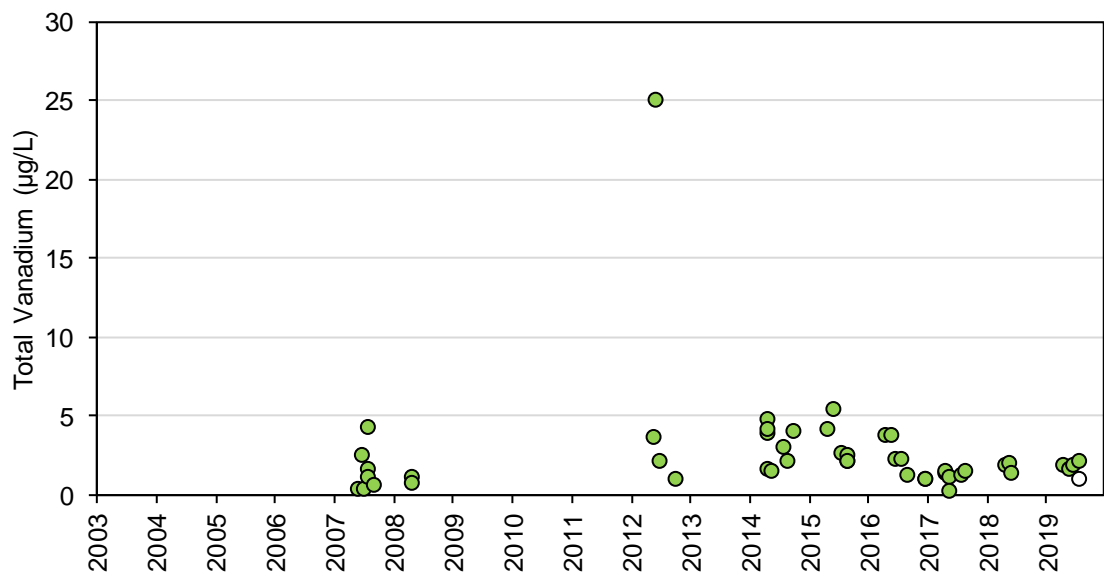


Figure 4A-38: Total Zinc Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

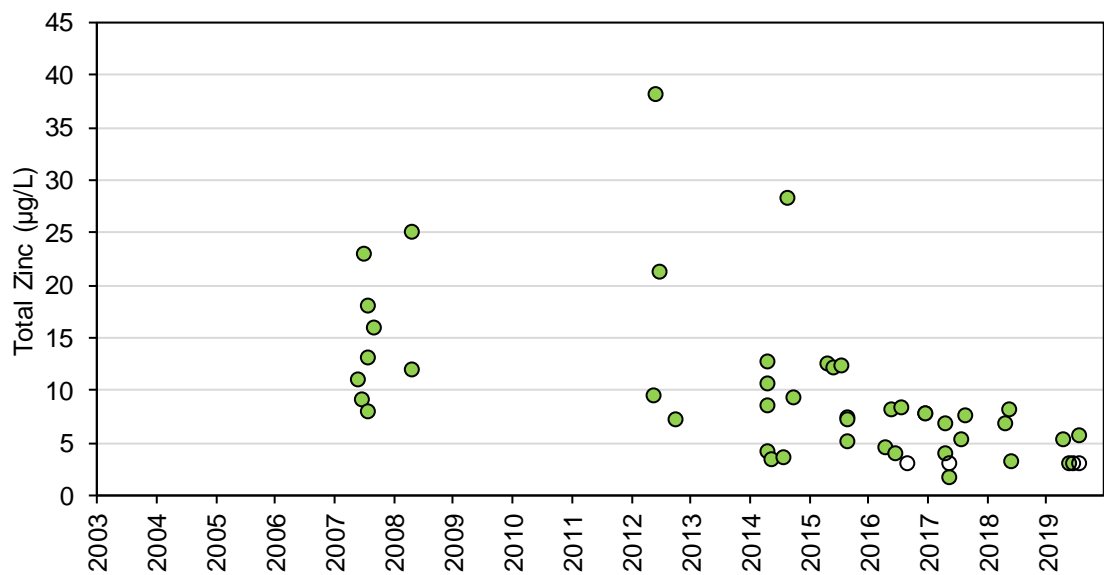


Figure 4A-39: Dissolved Aluminum Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

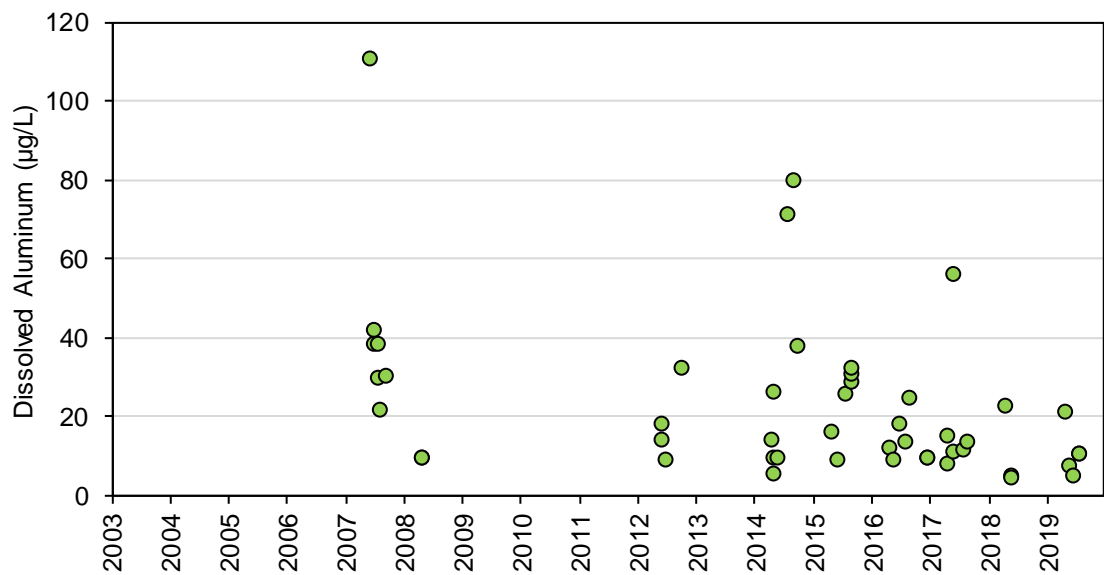


Figure 4A-40: Dissolved Antimony Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

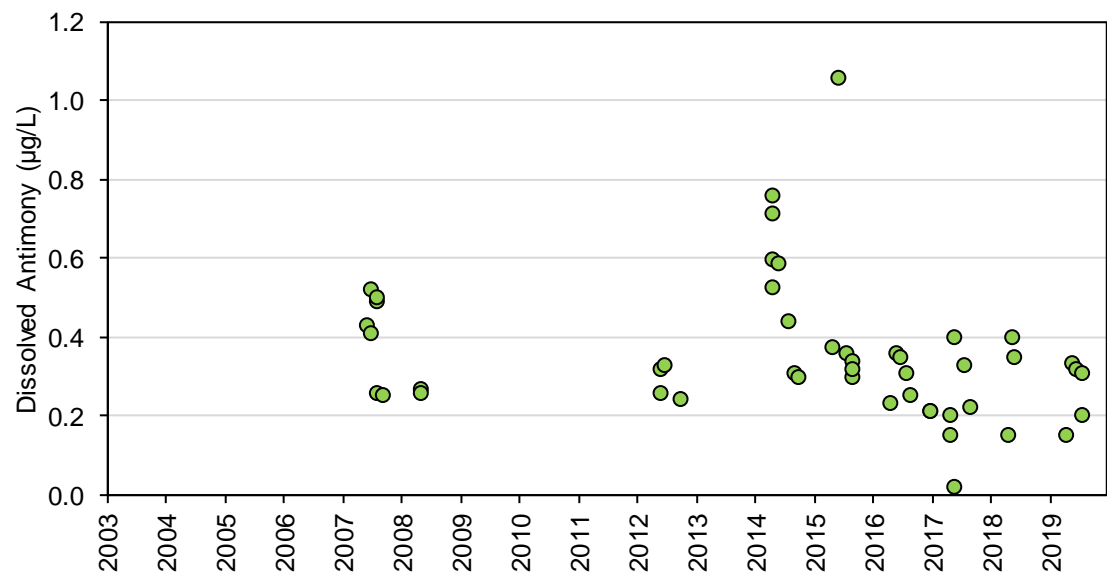


Figure 4A-41: Dissolved Arsenic Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

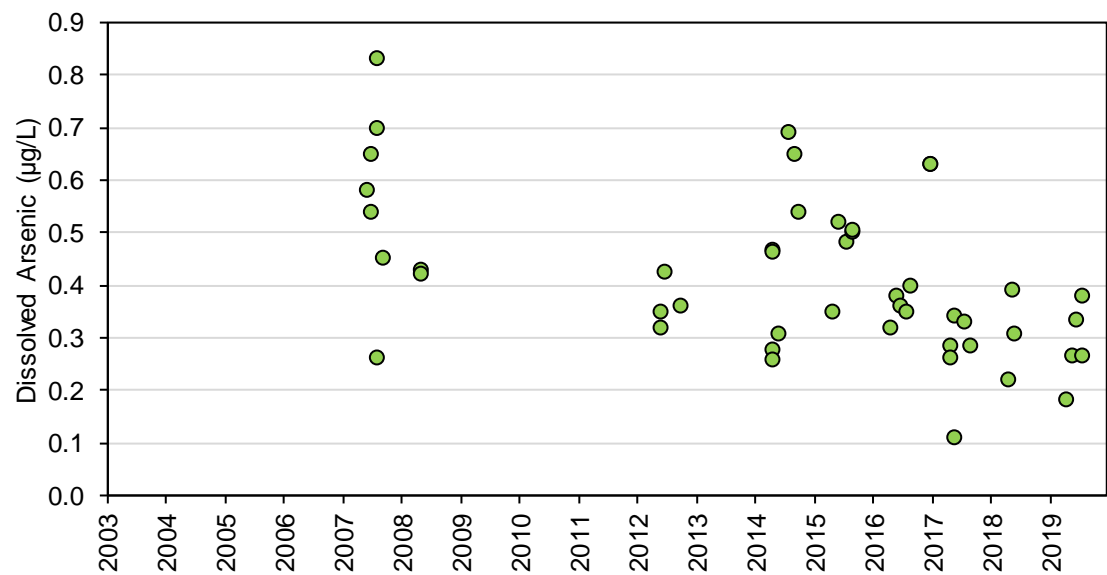


Figure 4A-42: Dissolved Barium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

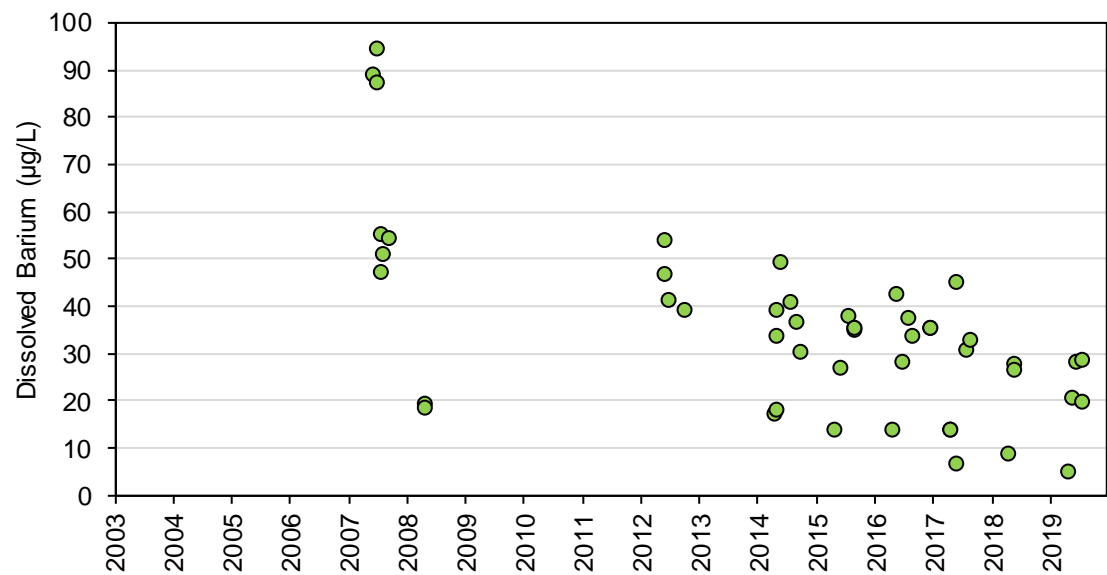


Figure 4A-43: Dissolved Beryllium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

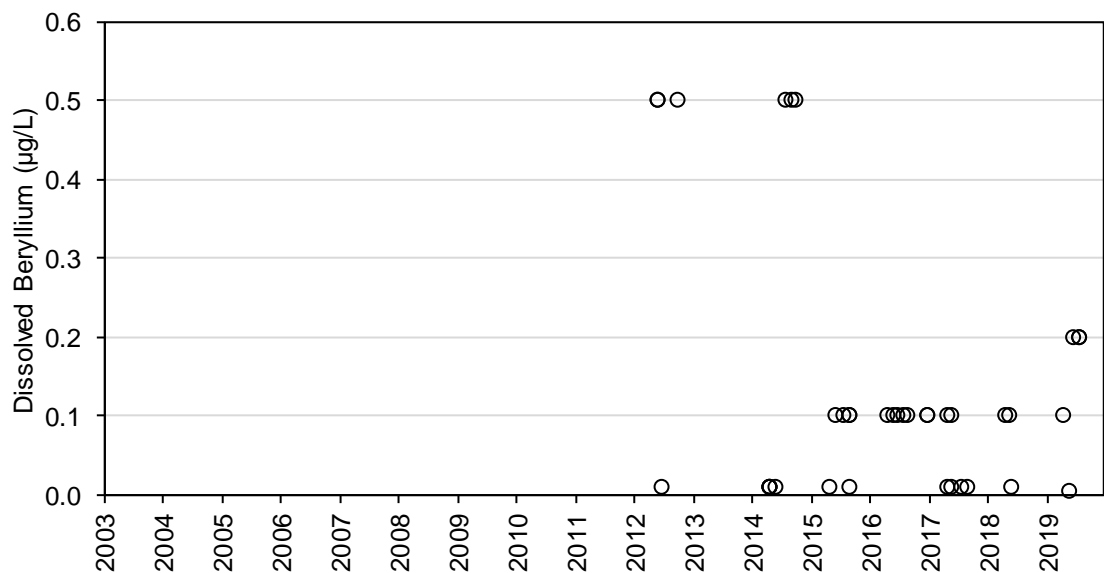


Figure 4A-44: Dissolved Boron Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

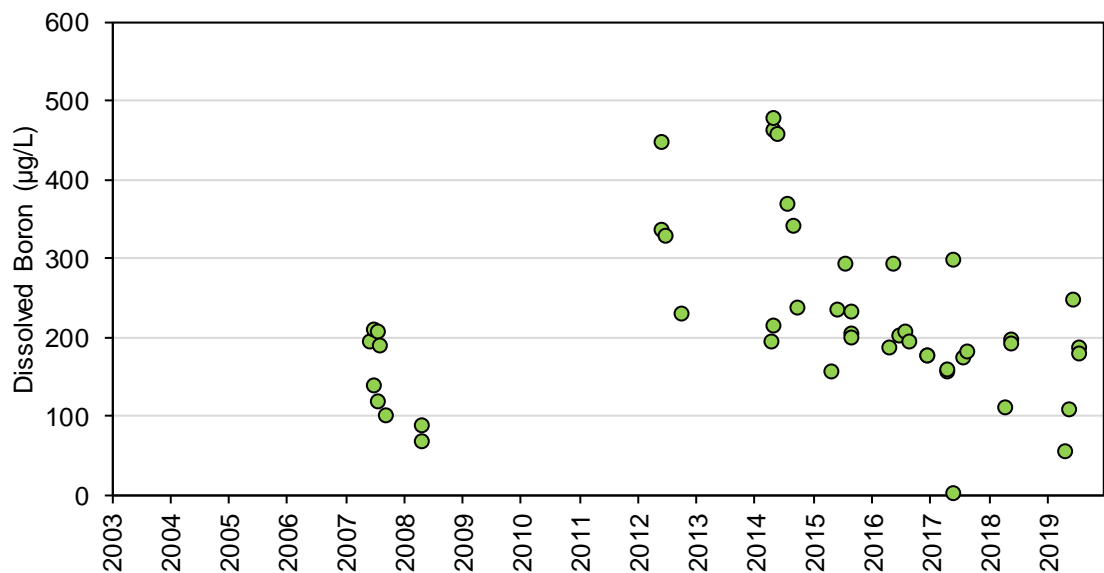


Figure 4A-45: Dissolved Cadmium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

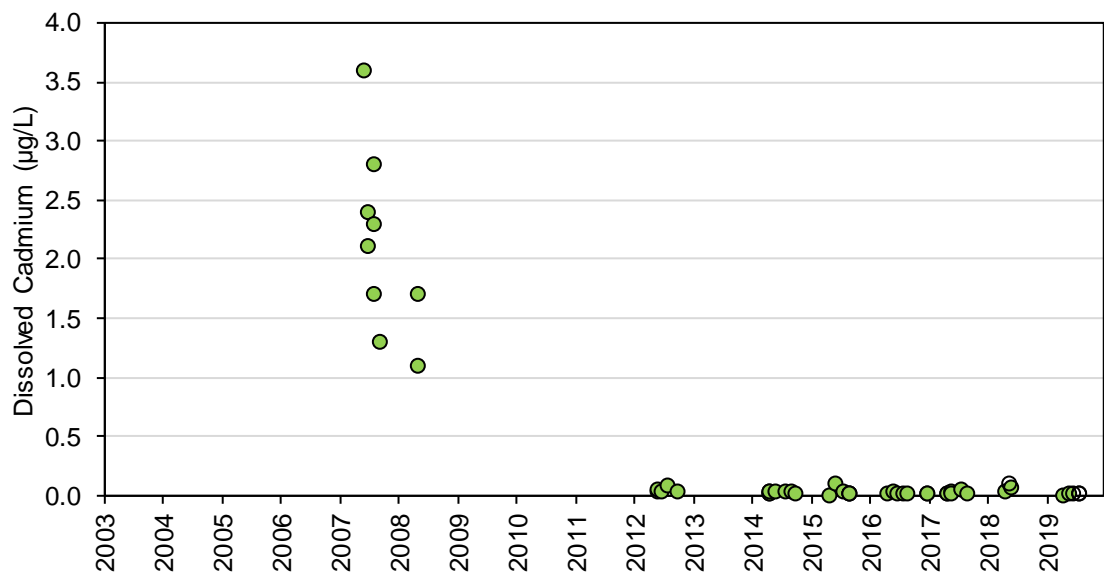


Figure 4A-46: Dissolved Cesium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

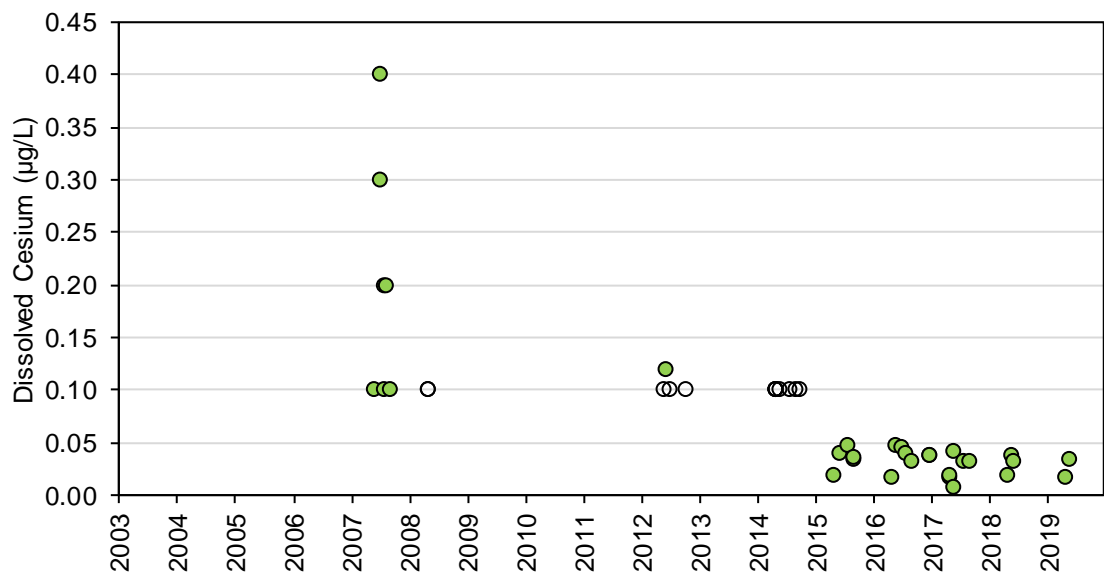


Figure 4A-47: Dissolved Chromium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

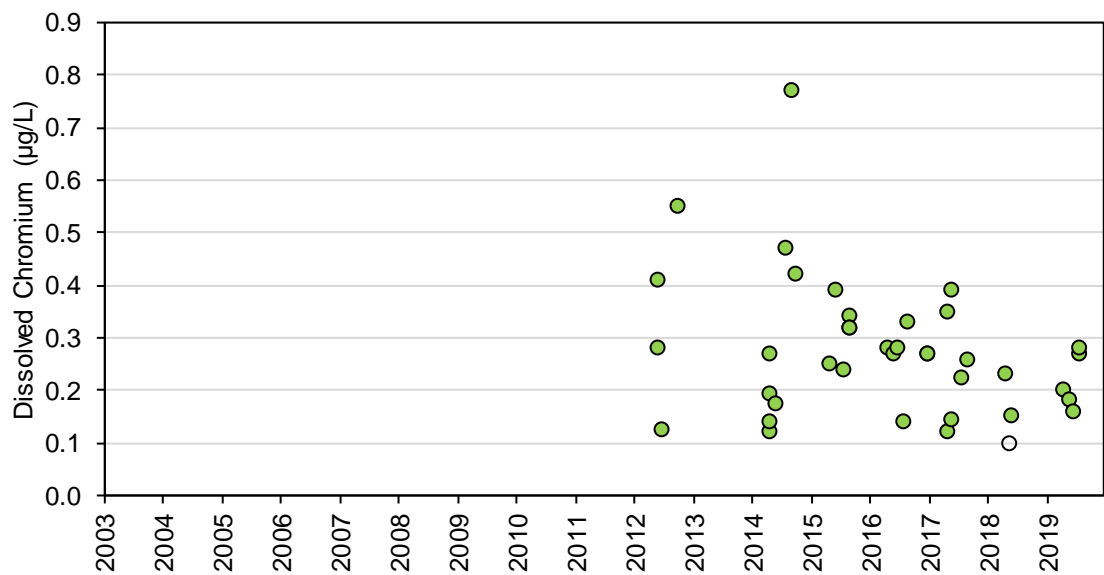


Figure 4A-48: Dissolved Cobalt Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

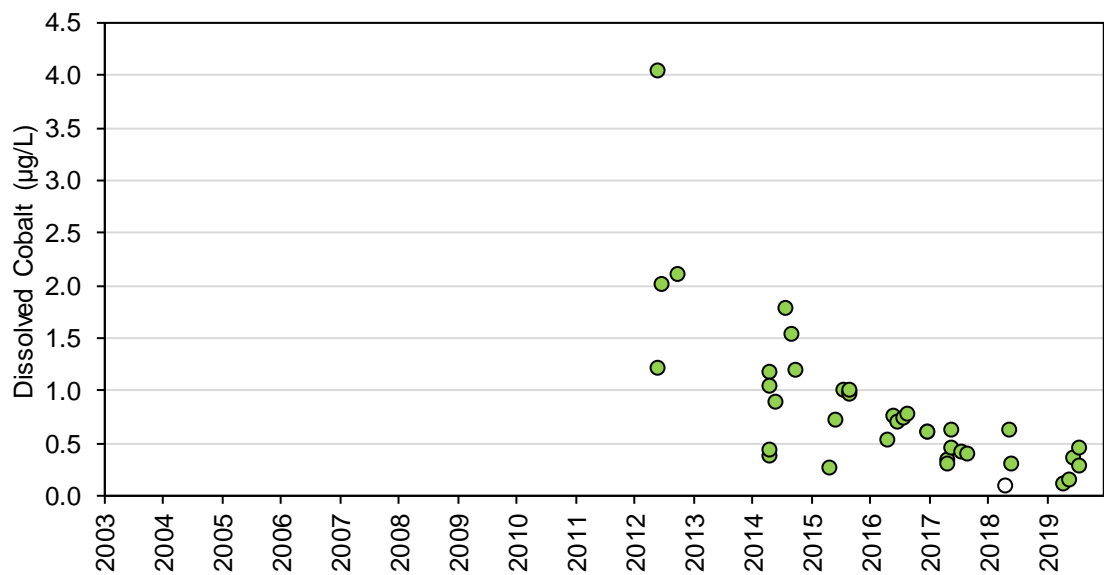


Figure 4A-49: Dissolved Copper Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

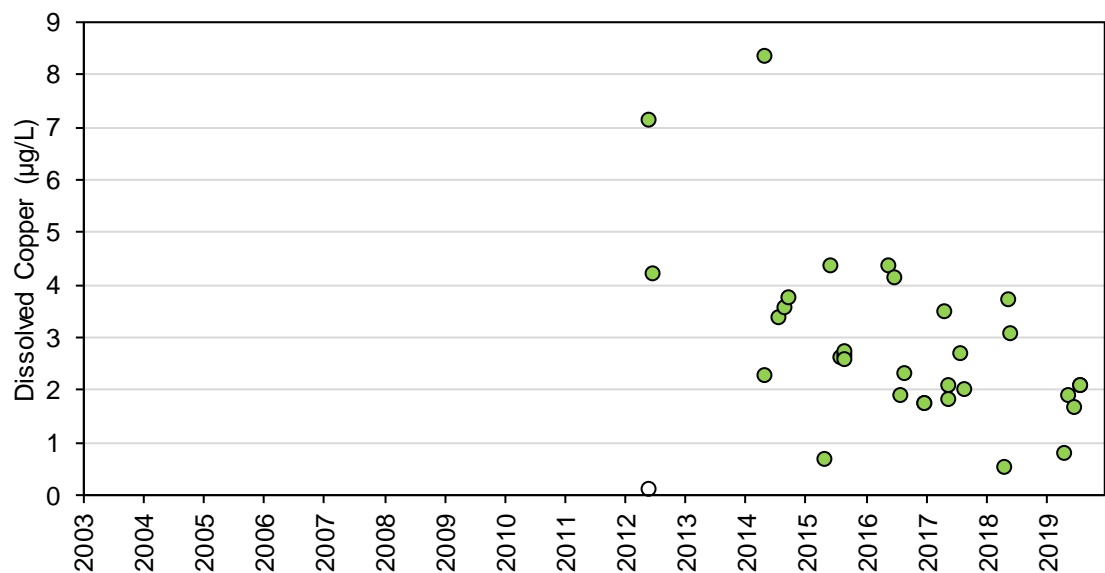


Figure 4A-50: Dissolved Iron Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

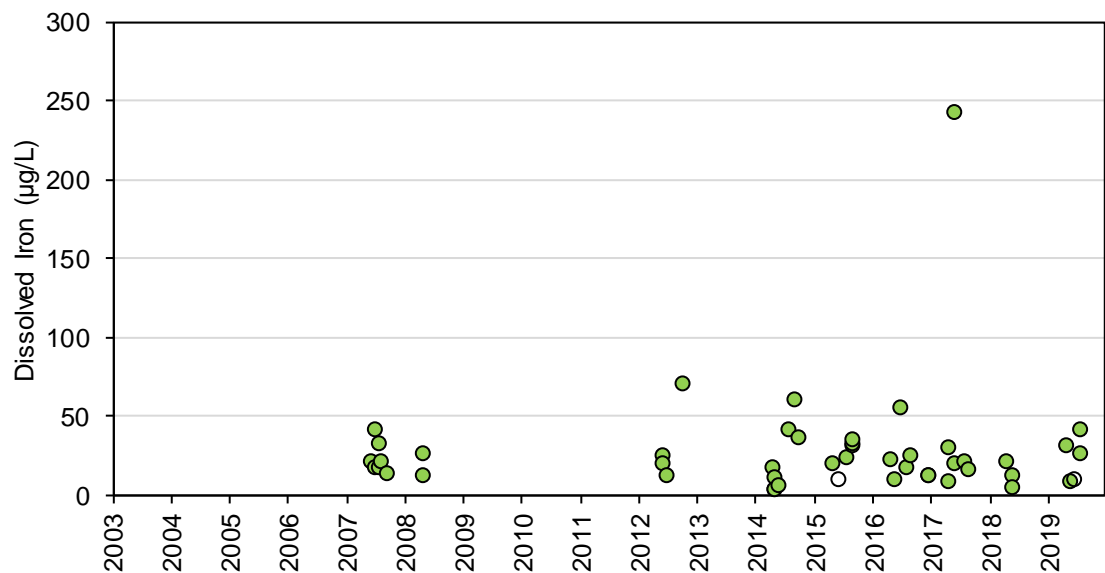


Figure 4A-51: Dissolved Lead Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

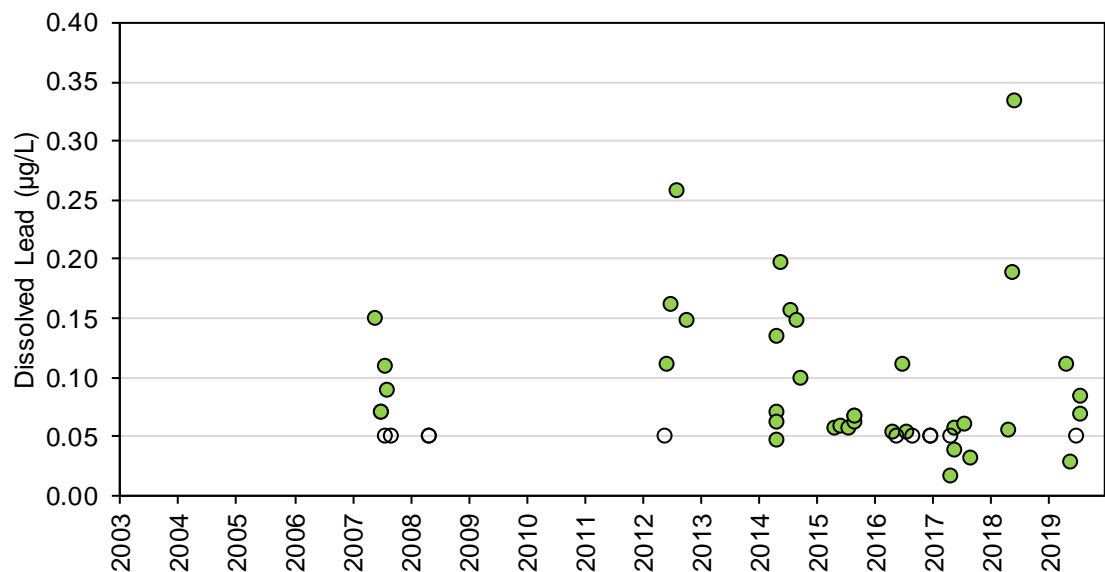


Figure 4A-52: Dissolved Lithium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

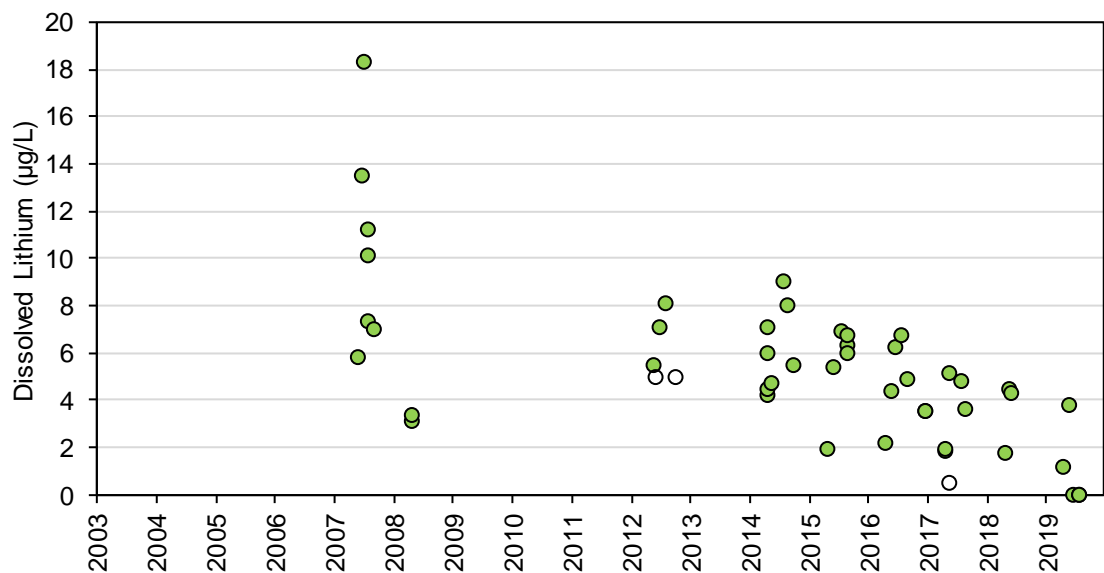


Figure 4A-53: Dissolved Manganese Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

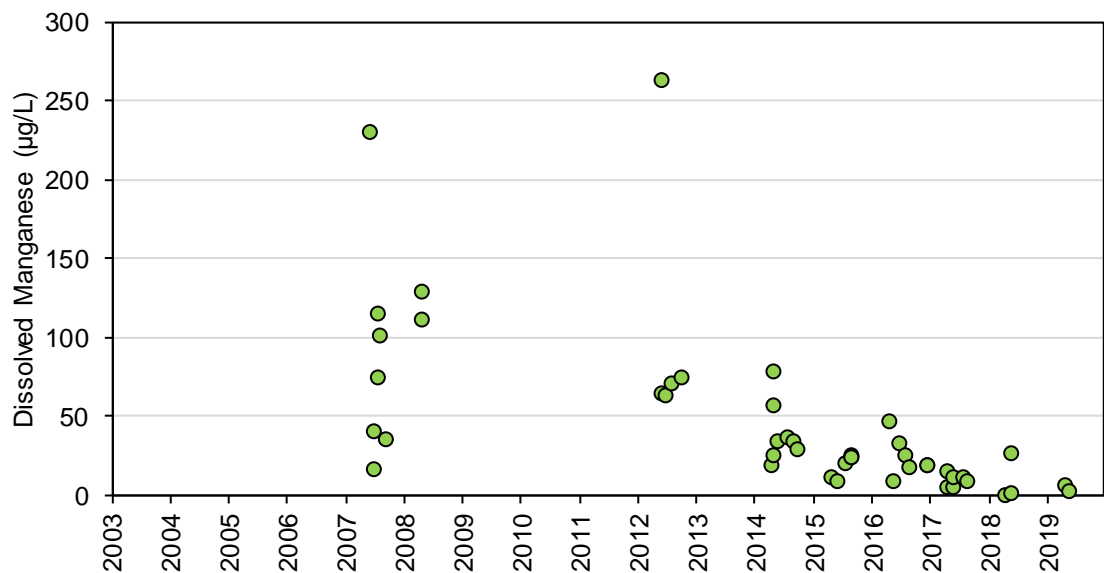


Figure 4A-54: Dissolved Mercury Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

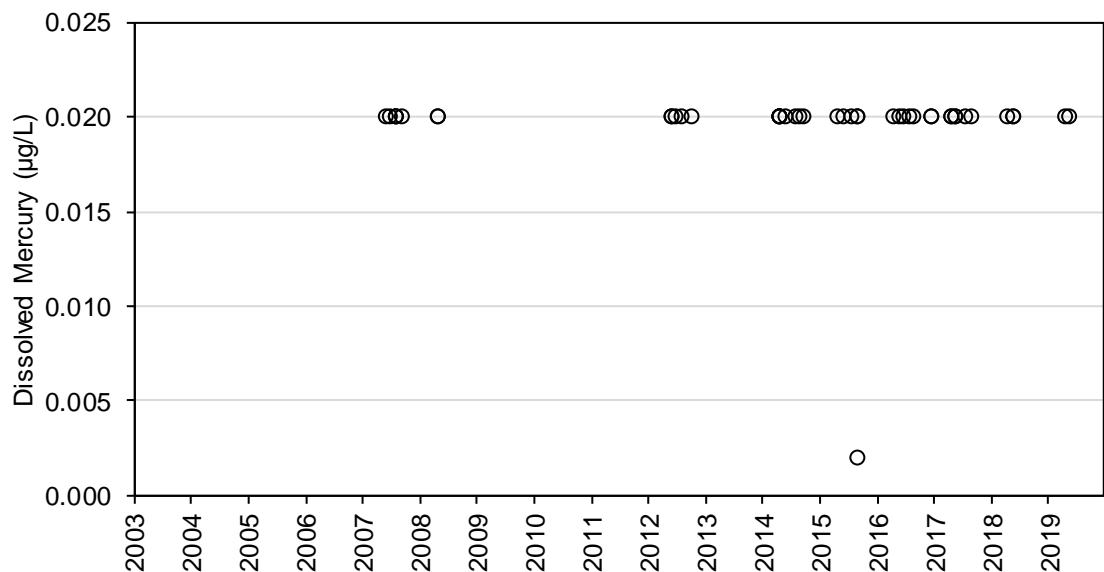


Figure 4A-55: Dissolved Molybdenum Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

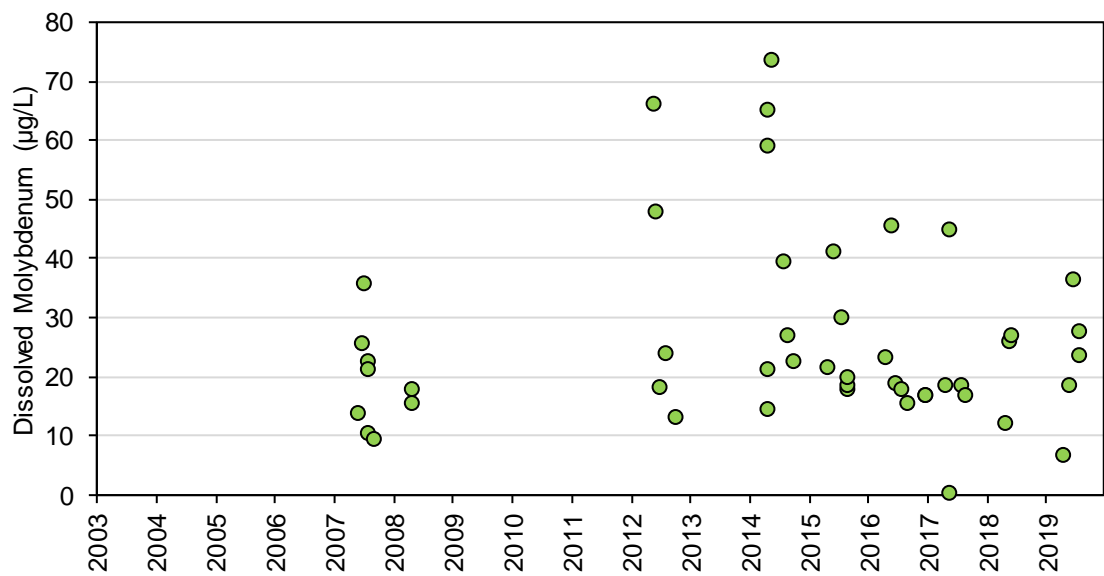


Figure 4A-56: Dissolved Nickel Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

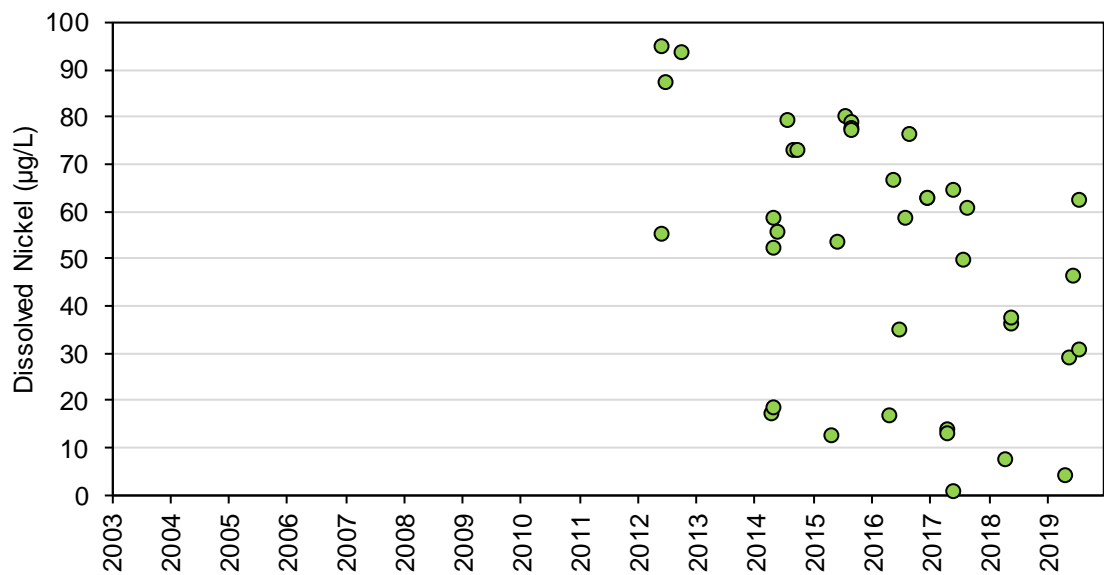


Figure 4A-57: Dissolved Rubidium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

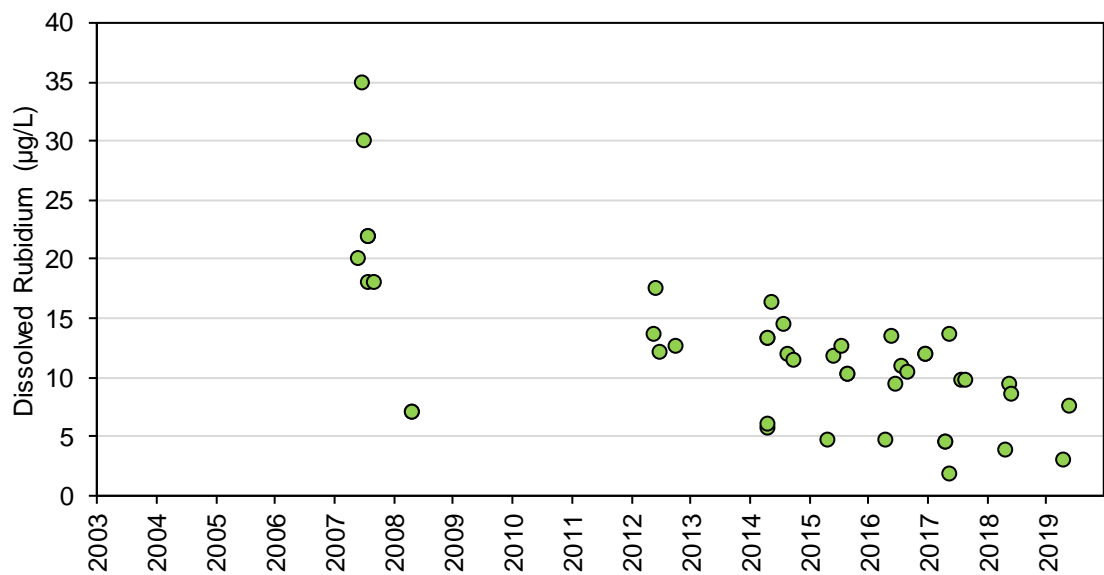


Figure 4A-58: Dissolved Selenium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

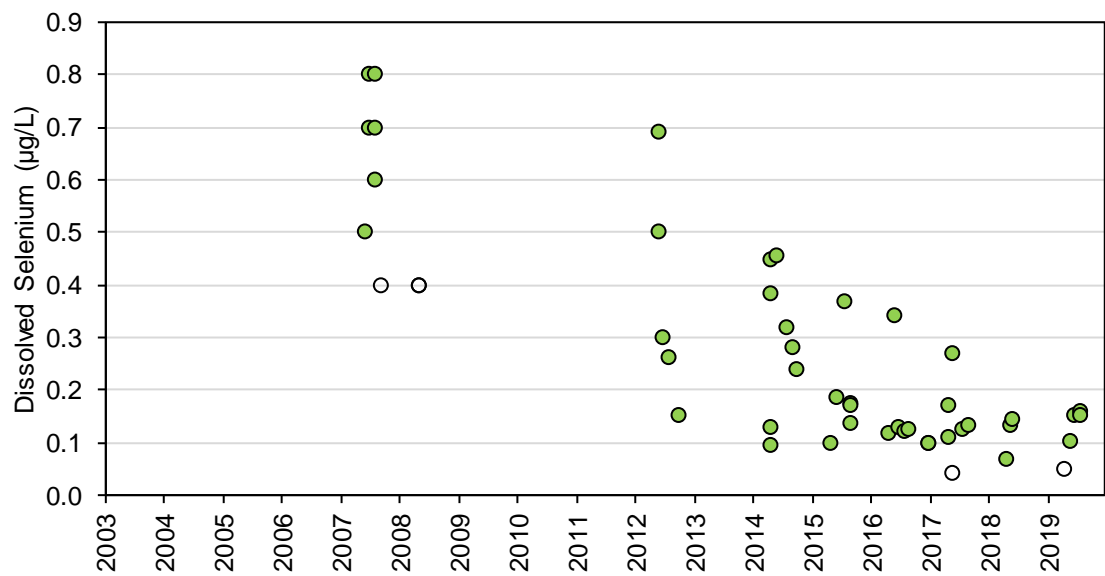


Figure 4A-59: Dissolved Strontium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

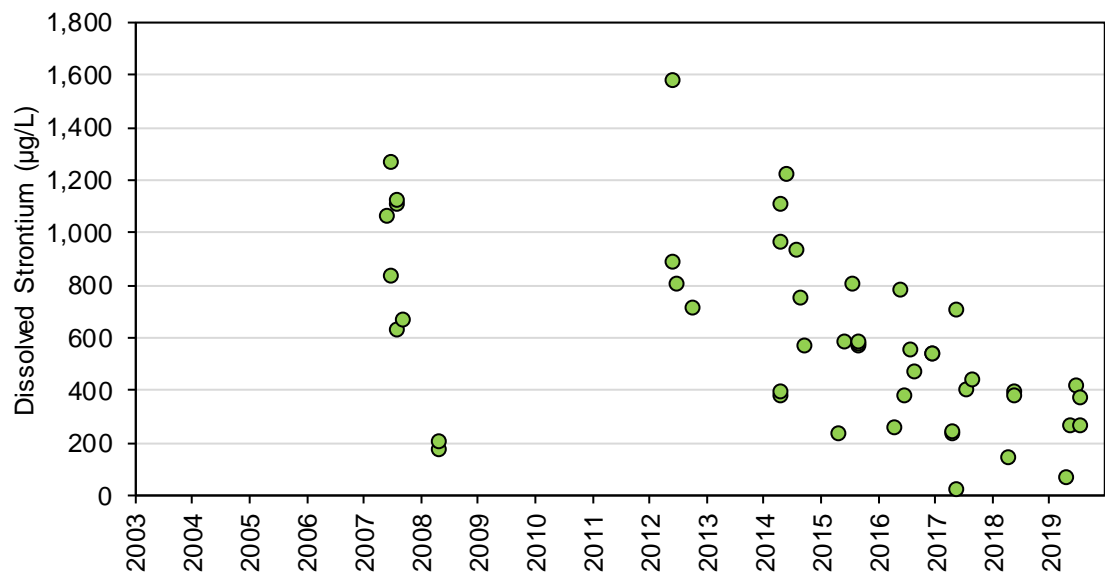


Figure 4A-60: Dissolved Thallium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

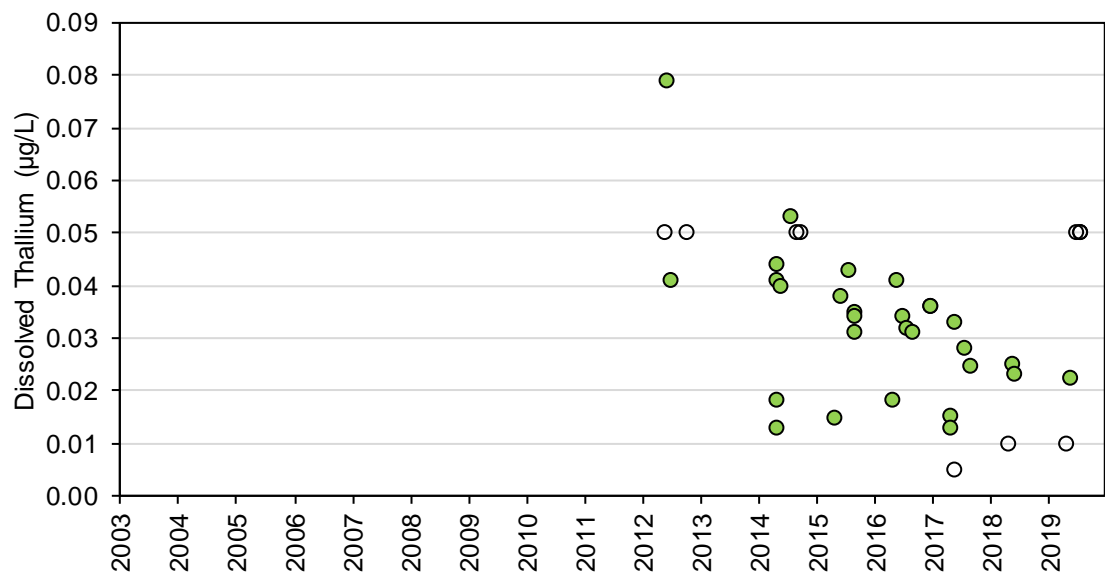


Figure 4A-61: Dissolved Titanium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

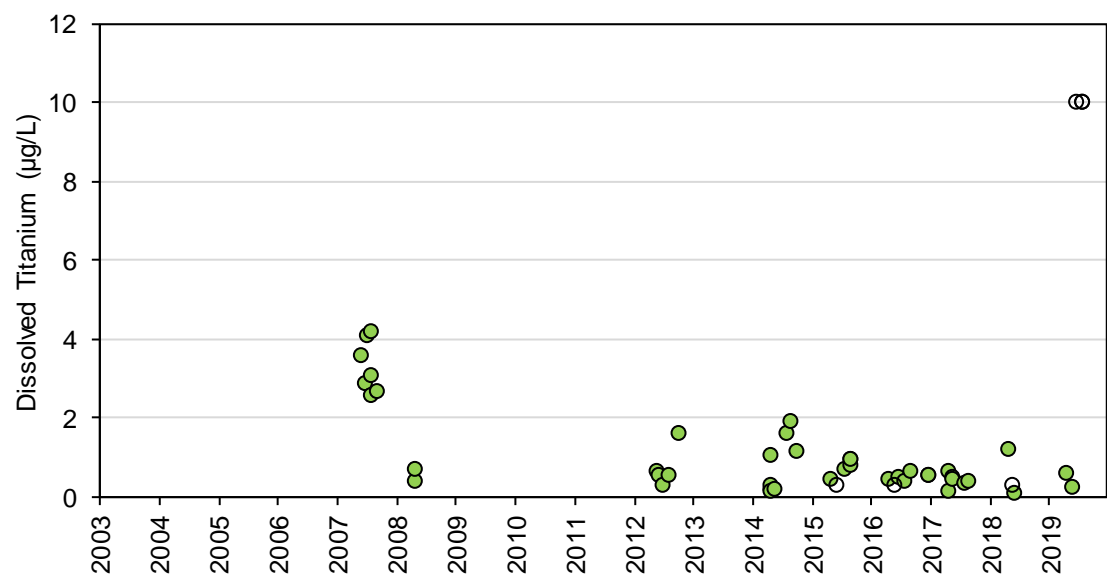


Figure 4A-62: Dissolved Uranium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

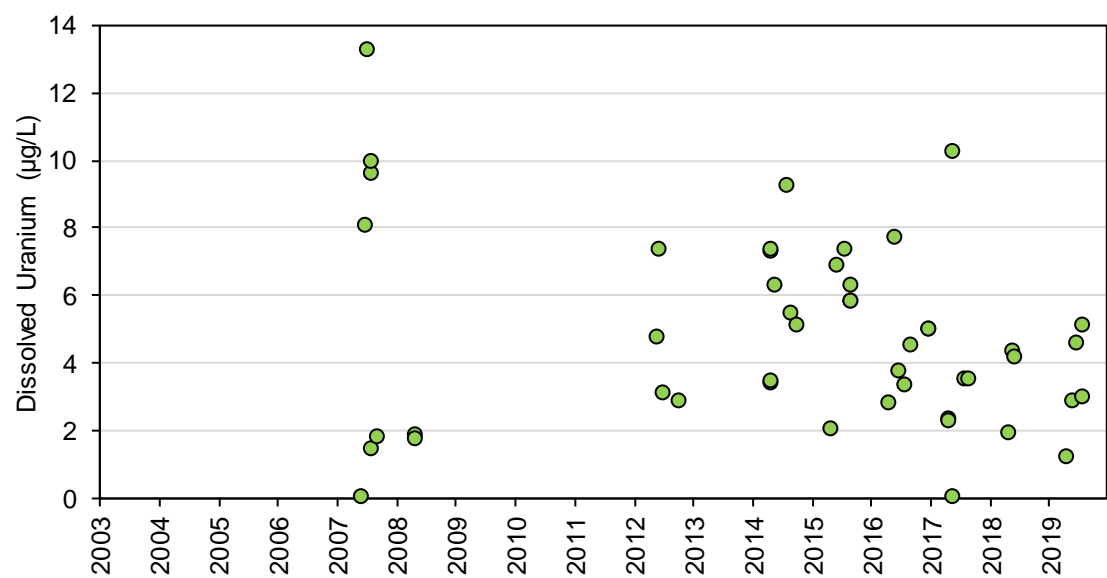


Figure 4A-63: Dissolved Vanadium Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance

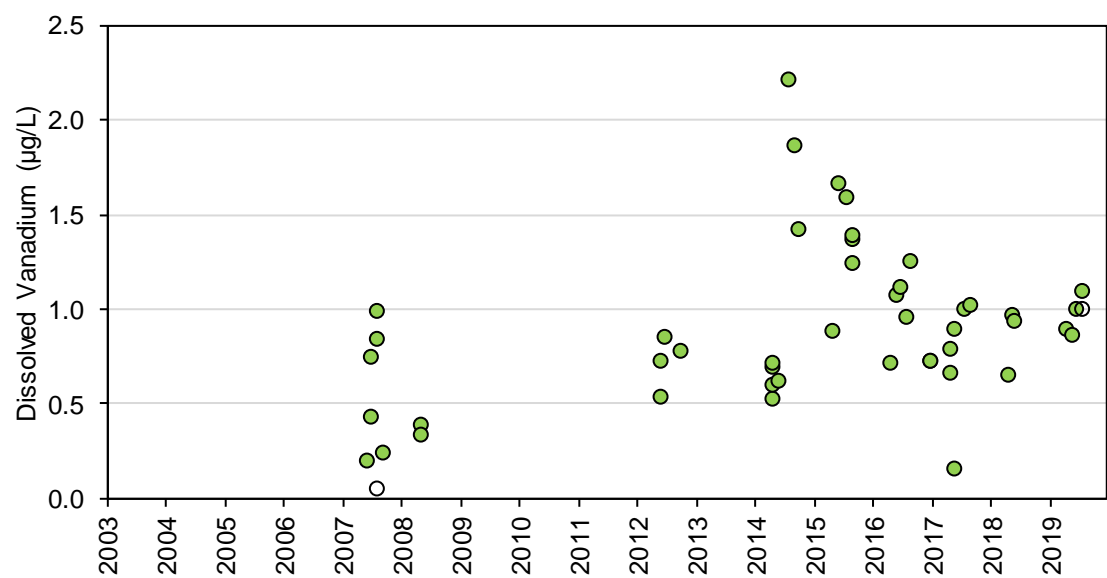
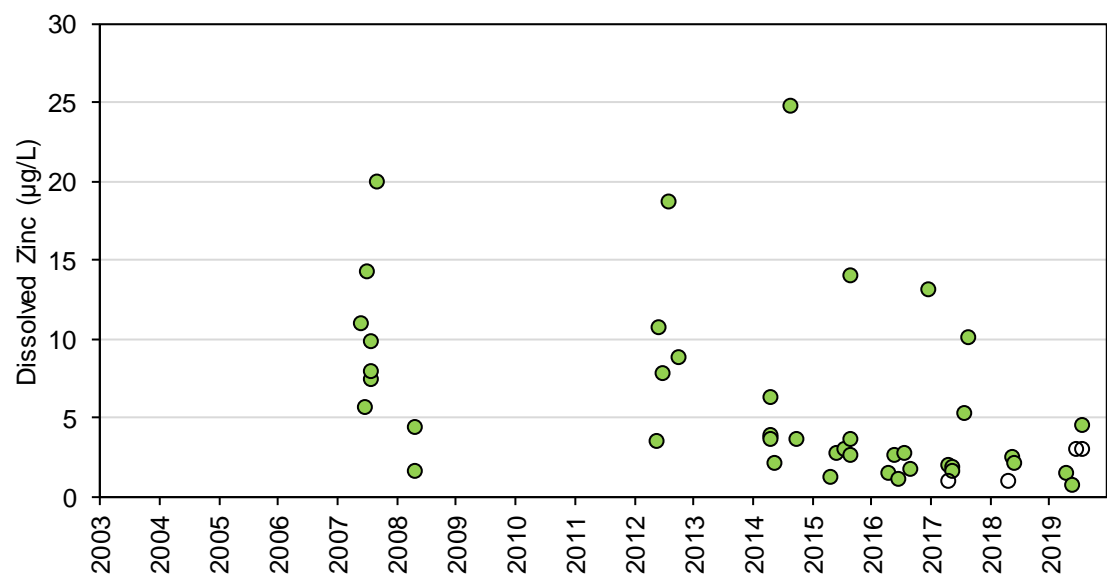


Figure 4A-64: Dissolved Zinc Concentrations at Station SNP 02-03 during Construction, Operations, and Extended Care and Maintenance



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ATTACHMENT 4B. FIGURES OF WATER QUALITY FOR SNP 02-04

Figure 4B-1: Total Dissolved Solids, calculated (lab) Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

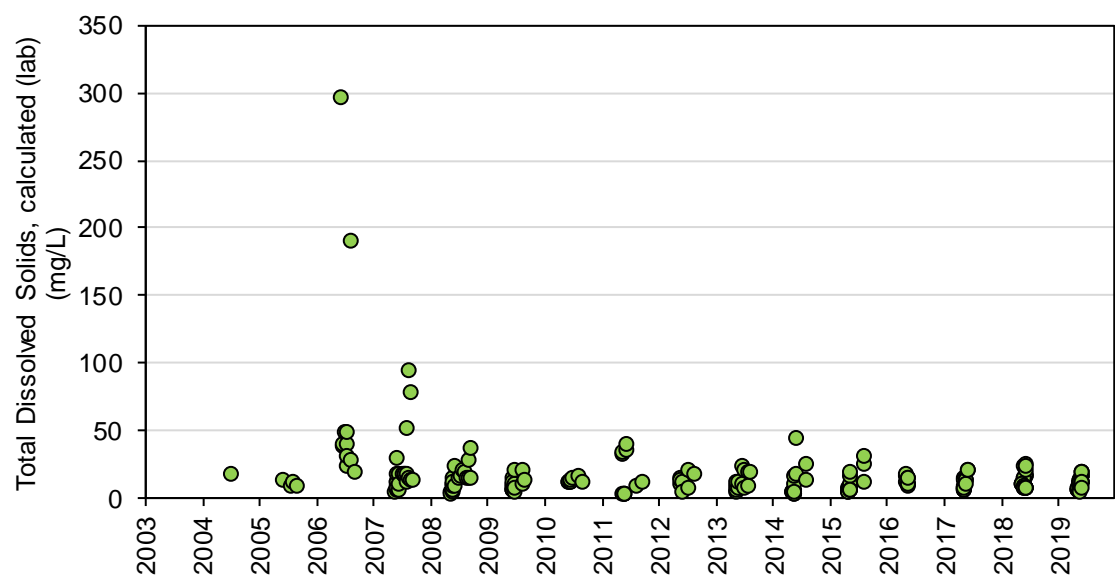


Figure 4B-2: Calcium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

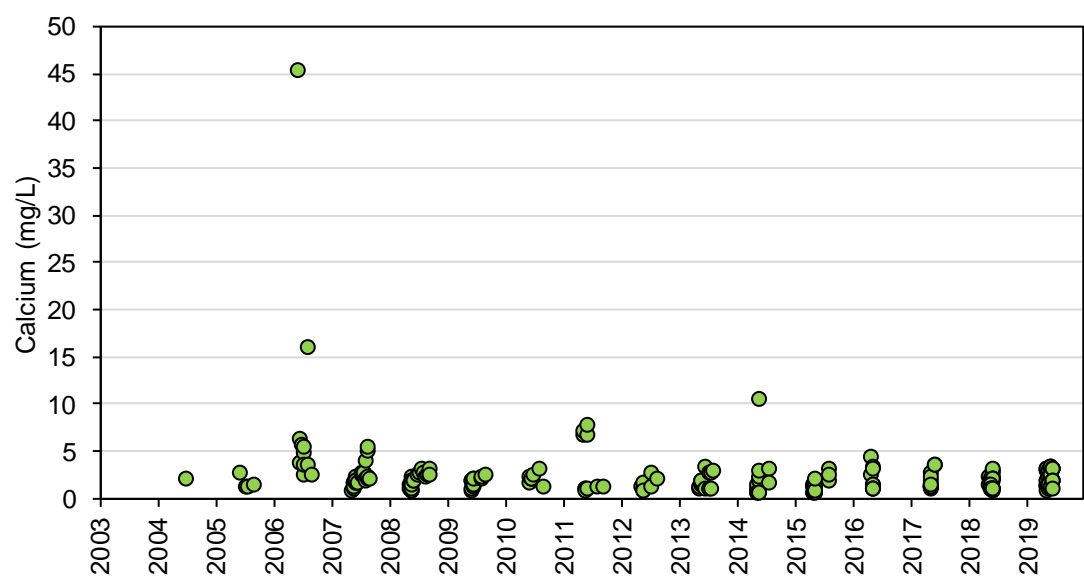


Figure 4B-3: Chloride Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

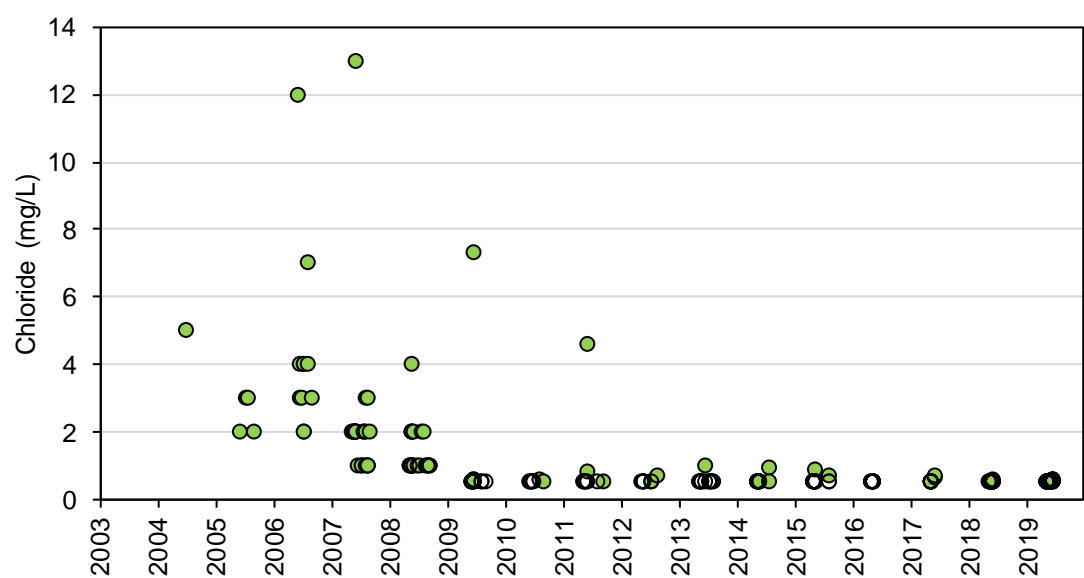


Figure 4B-4: Fluoride Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

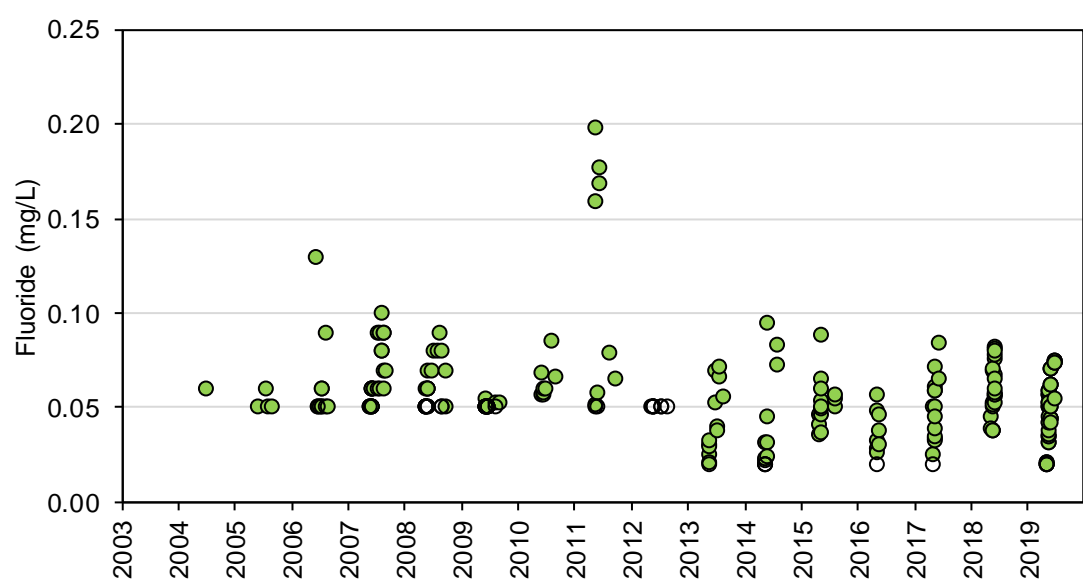


Figure 4B-5: Magnesium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

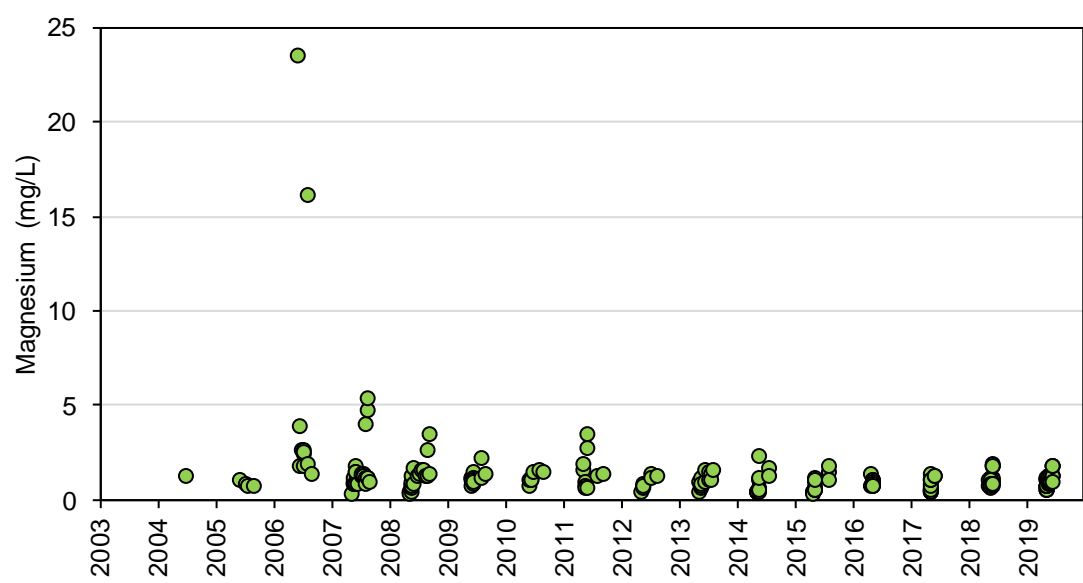


Figure 4B-6: Potassium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

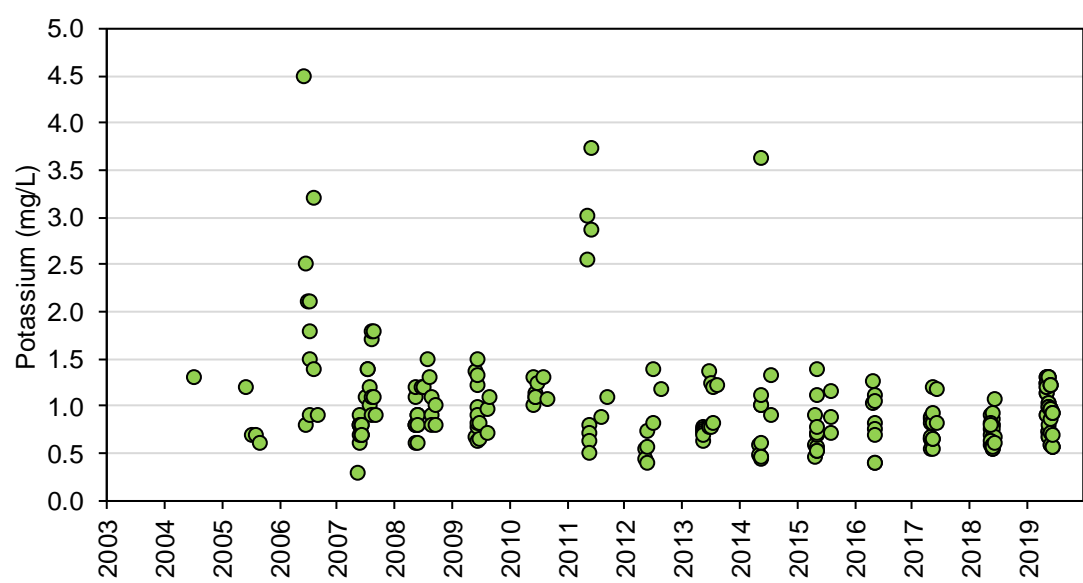


Figure 4B-7: Sodium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

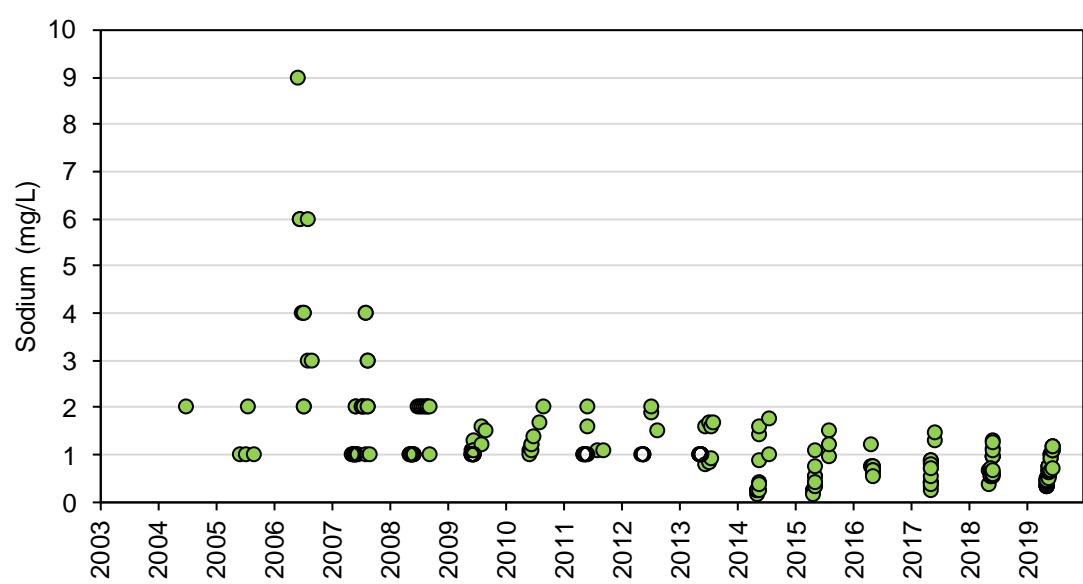


Figure 4B-8: Sulphate Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

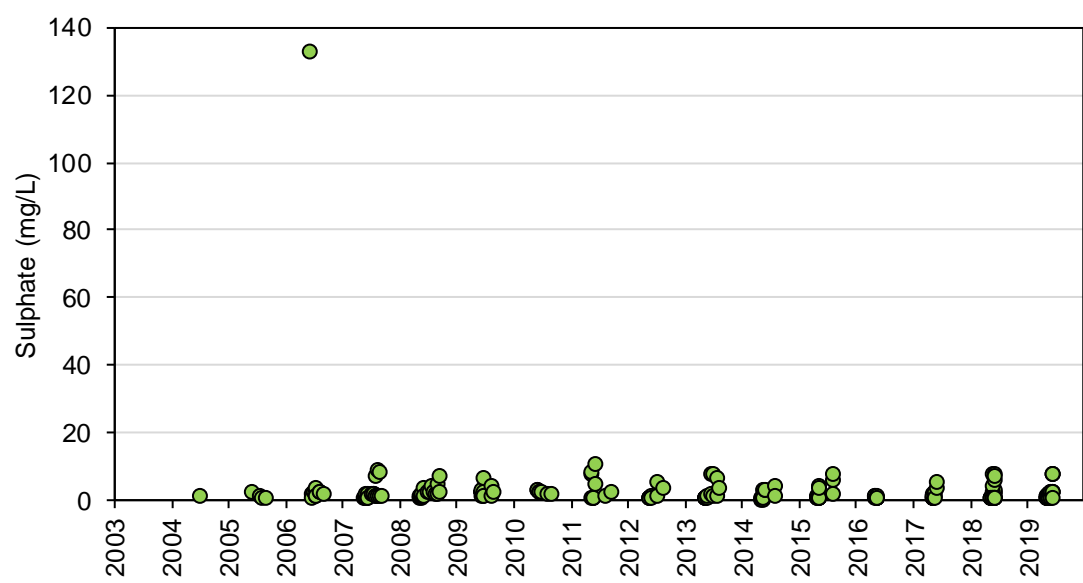


Figure 4B-9: Nitrate Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

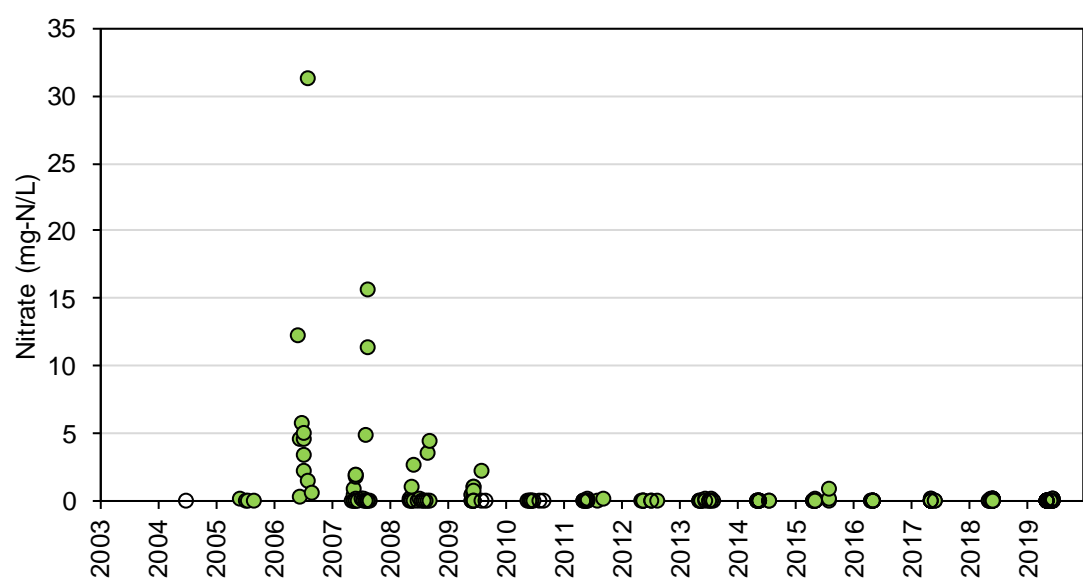


Figure 4B-10: Nitrite Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

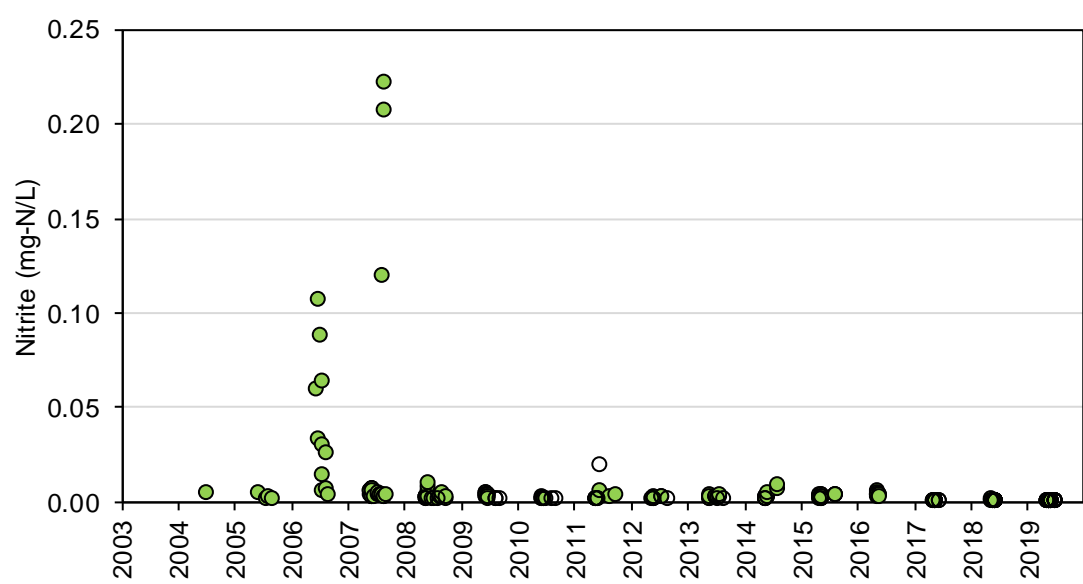


Figure 4B-11: Total Ammonia Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

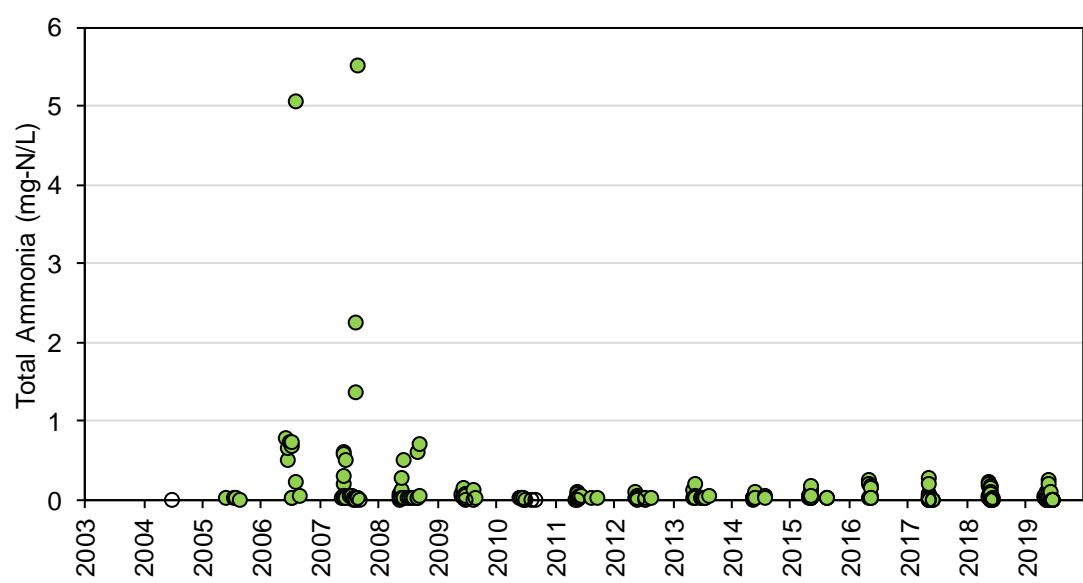


Figure 4B-12: Total Phosphorus Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

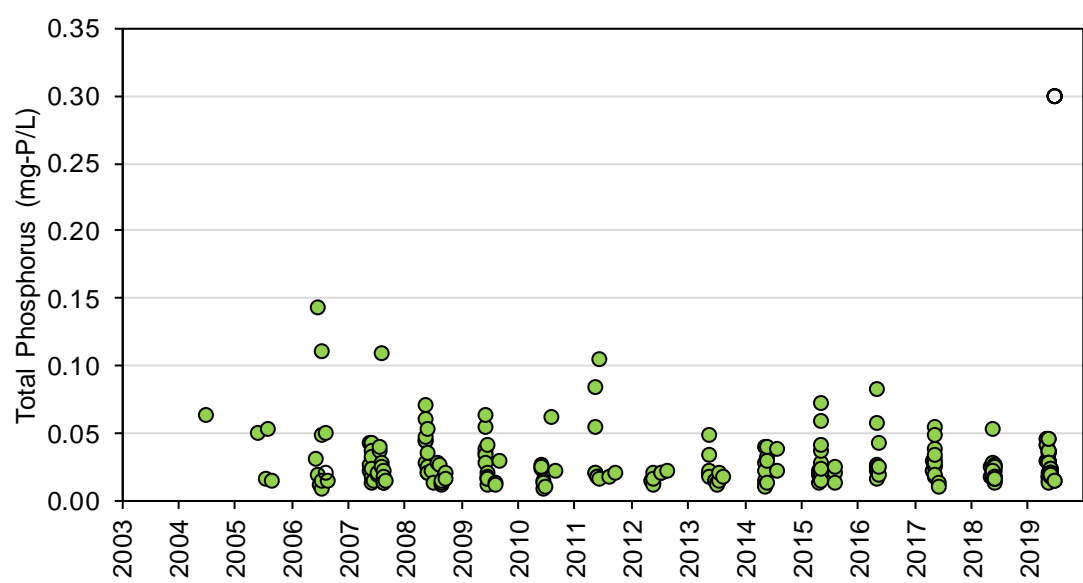


Figure 4B-13: Total Aluminum Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

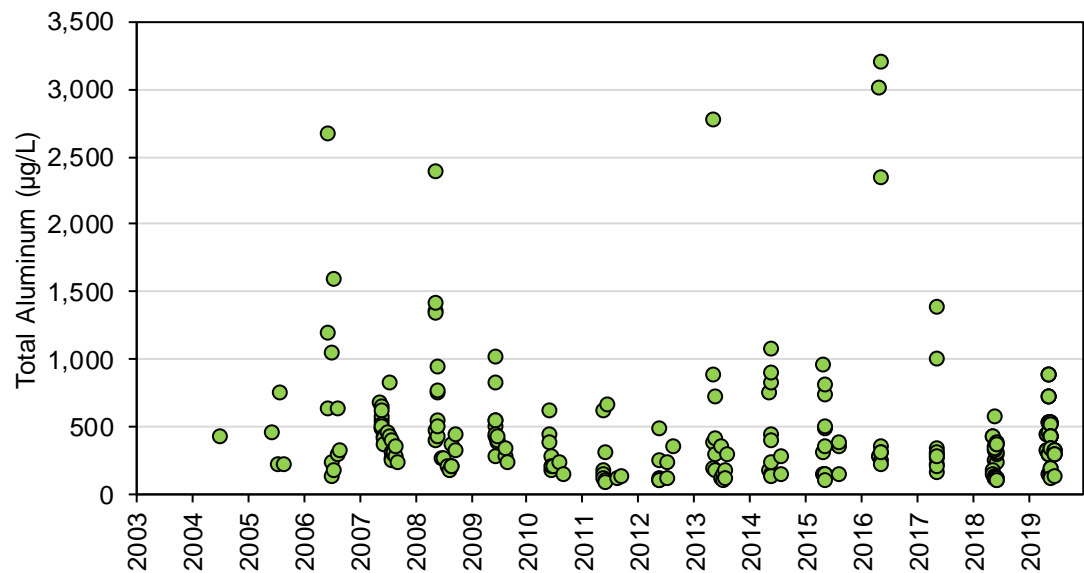


Figure 4B-14: Total Antimony Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

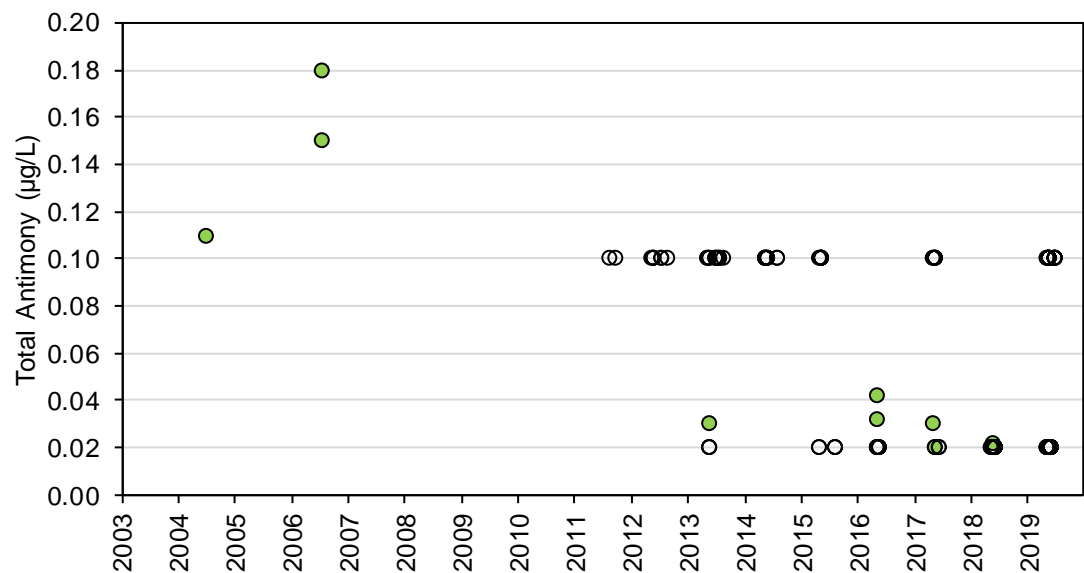


Figure 4B-15: Total Arsenic Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

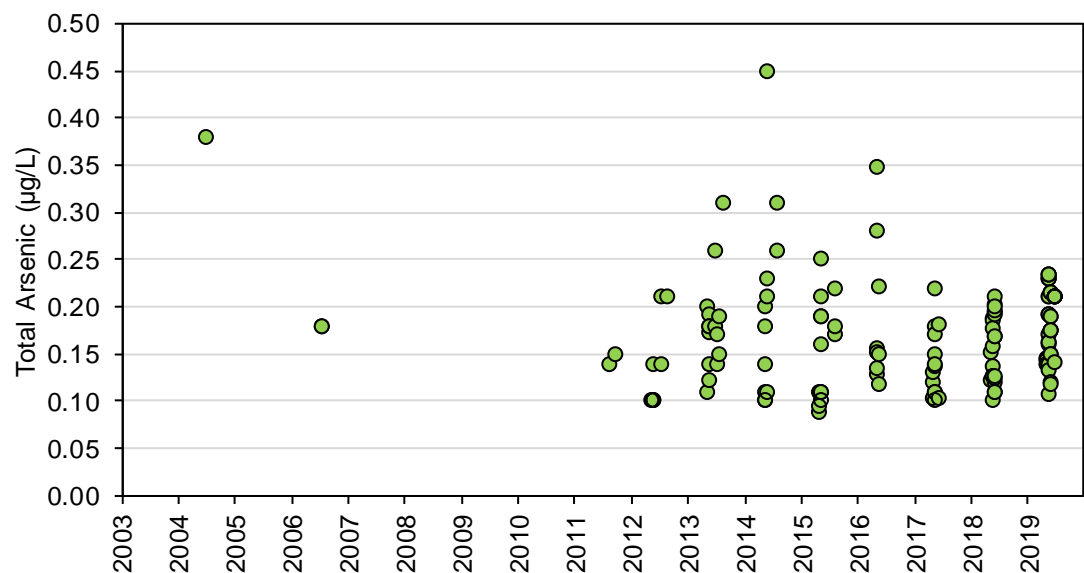


Figure 4B-16: Total Barium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

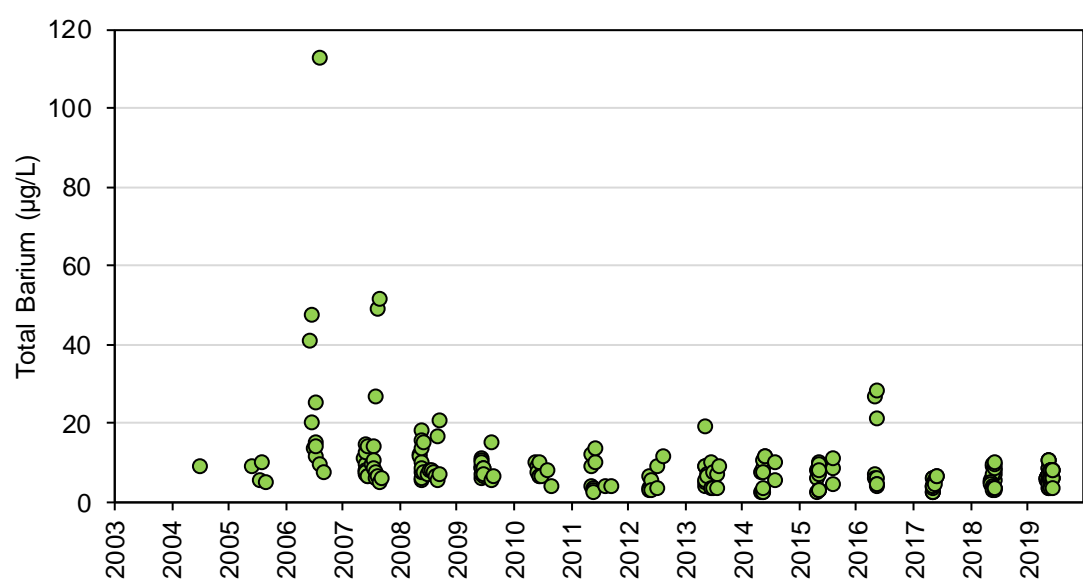


Figure 4B-17: Total Beryllium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

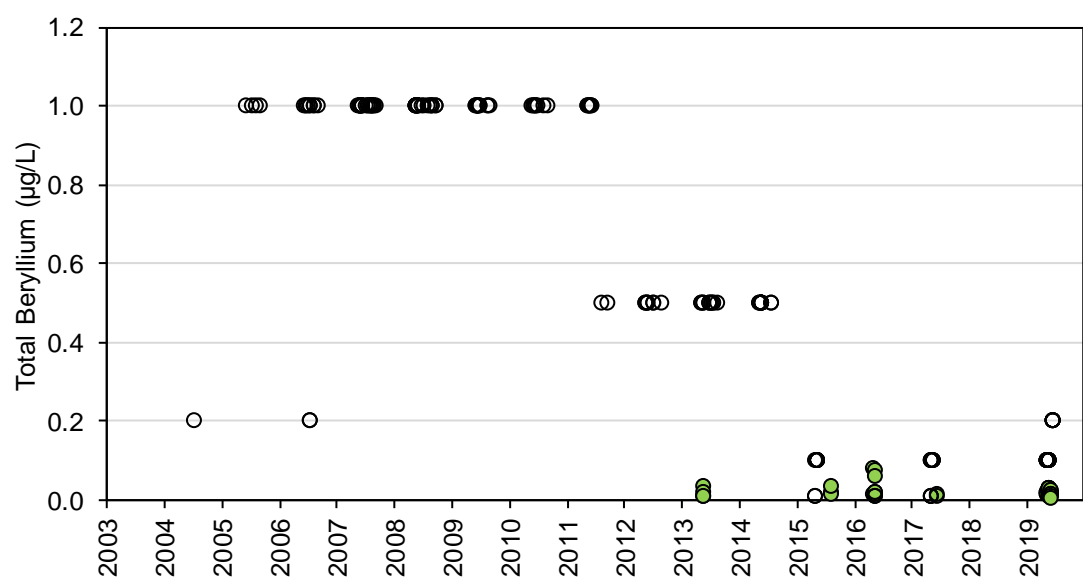


Figure 4B-18: Total Bismuth Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

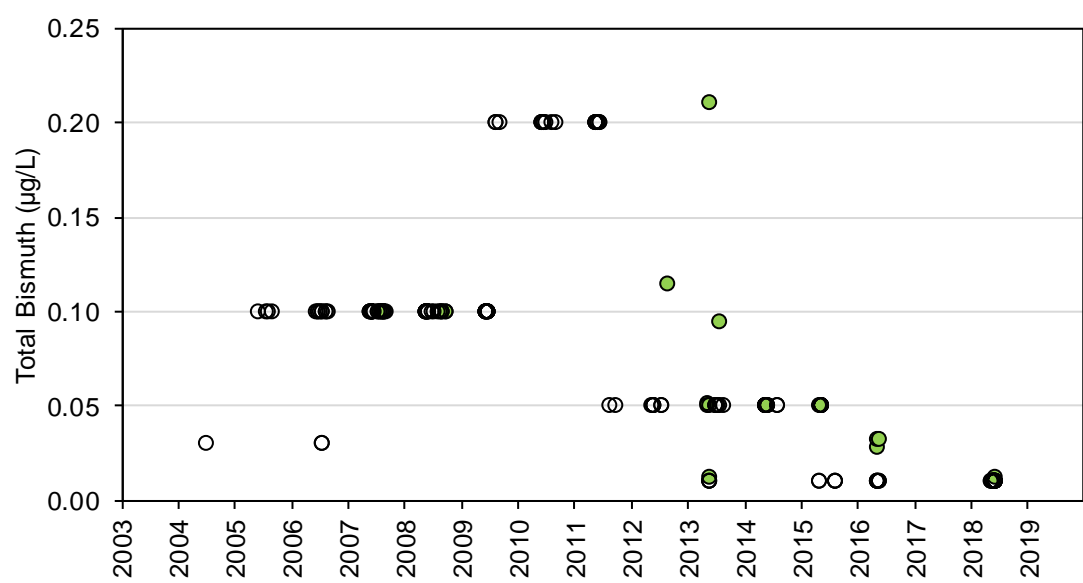


Figure 4B-19: Total Boron Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

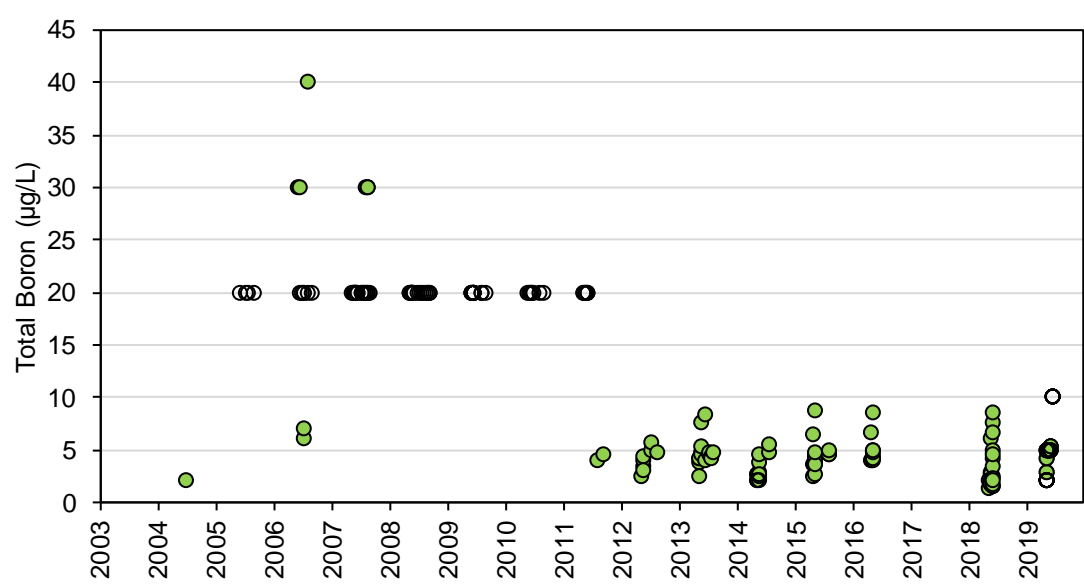


Figure 4B-20: Total Cadmium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

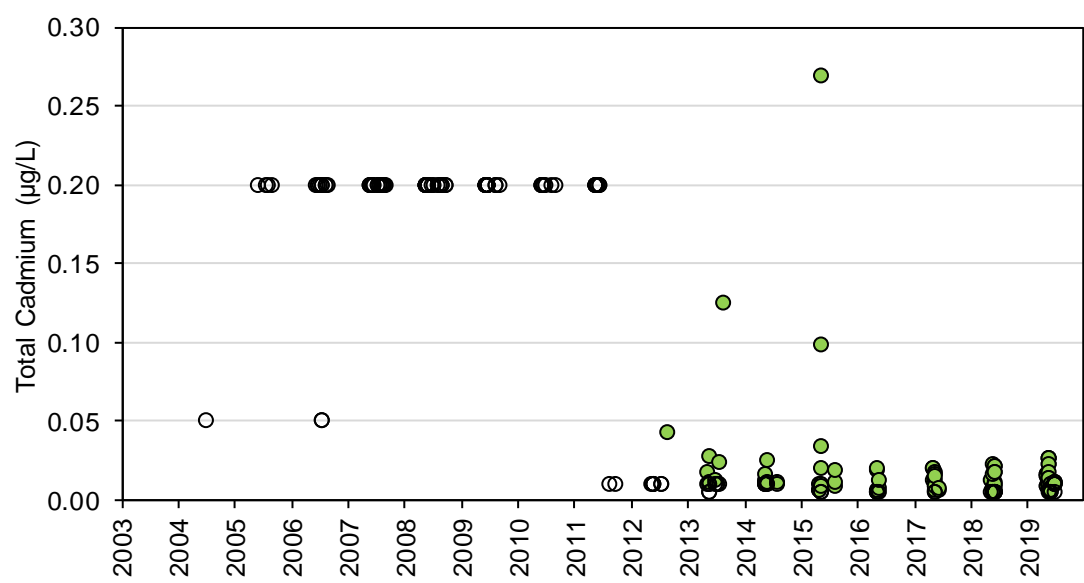


Figure 4B-21: Total Cesium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

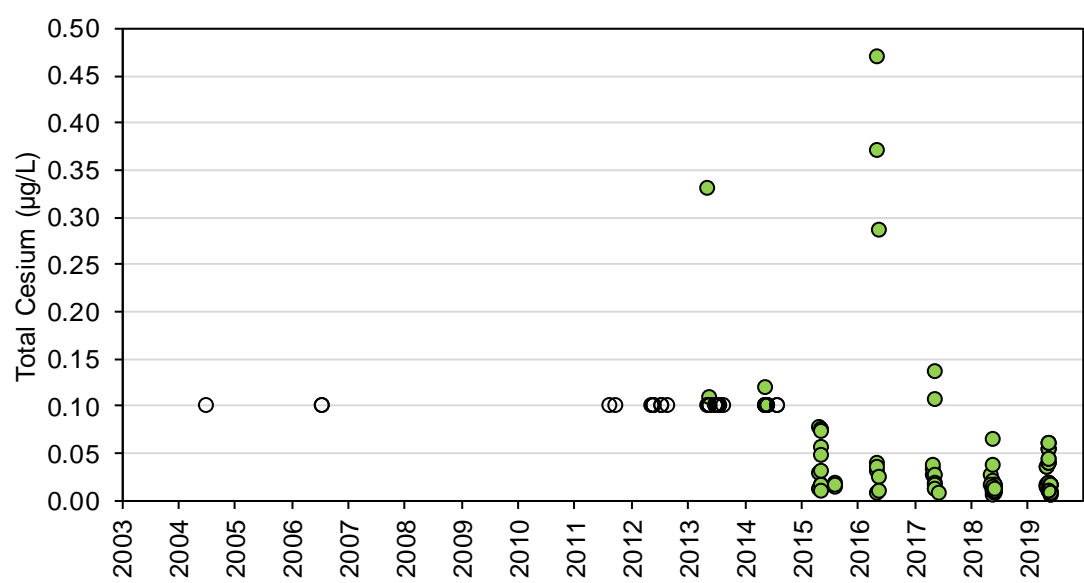


Figure 4B-22: Total Chromium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

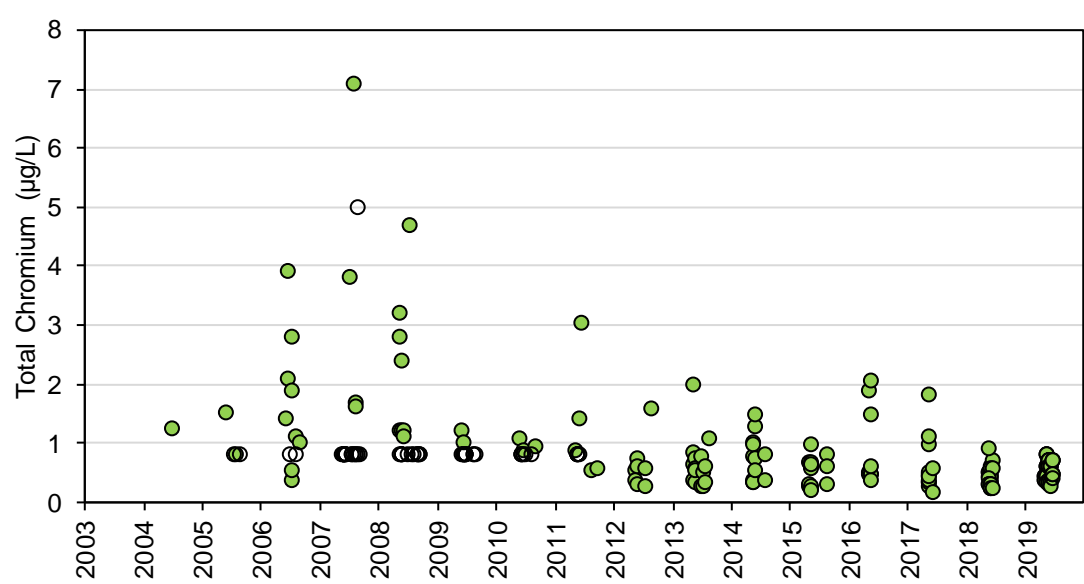


Figure 4B-23: Total Cobalt Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

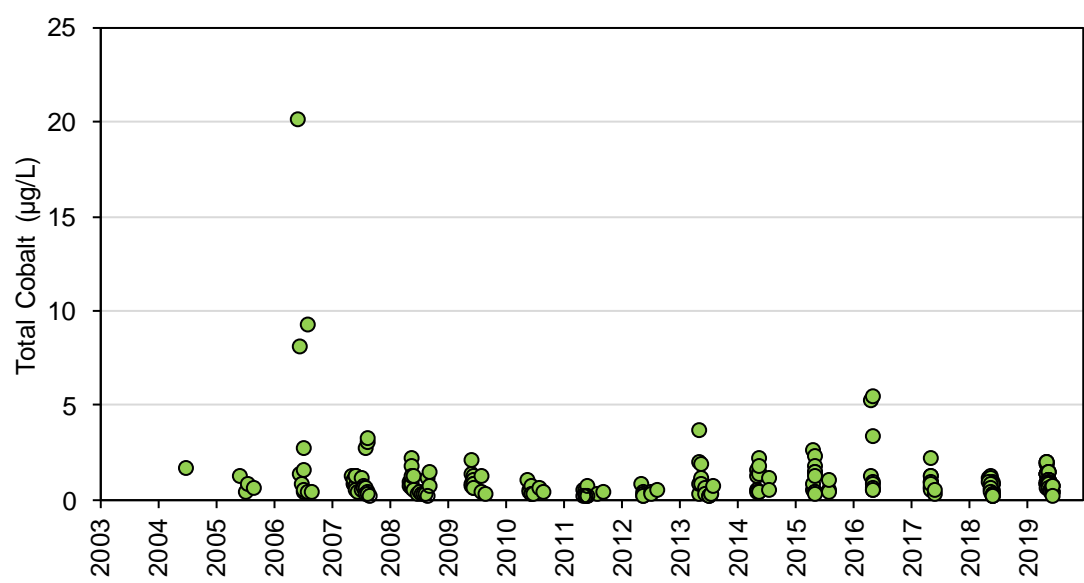


Figure 4B-24: Total Copper Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

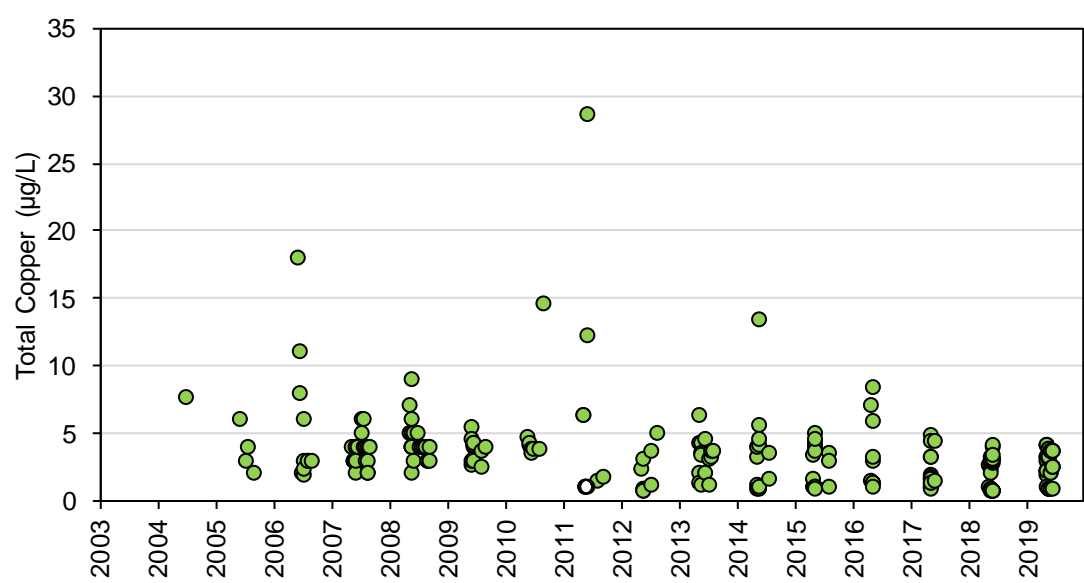


Figure 4B-25: Total Iron Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

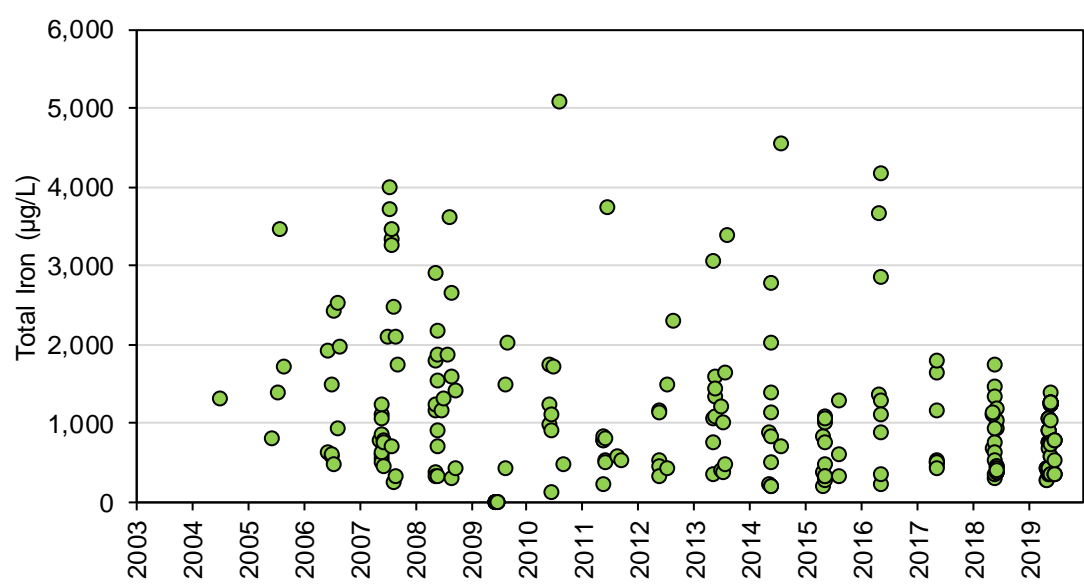


Figure 4B-26: Total Lead Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

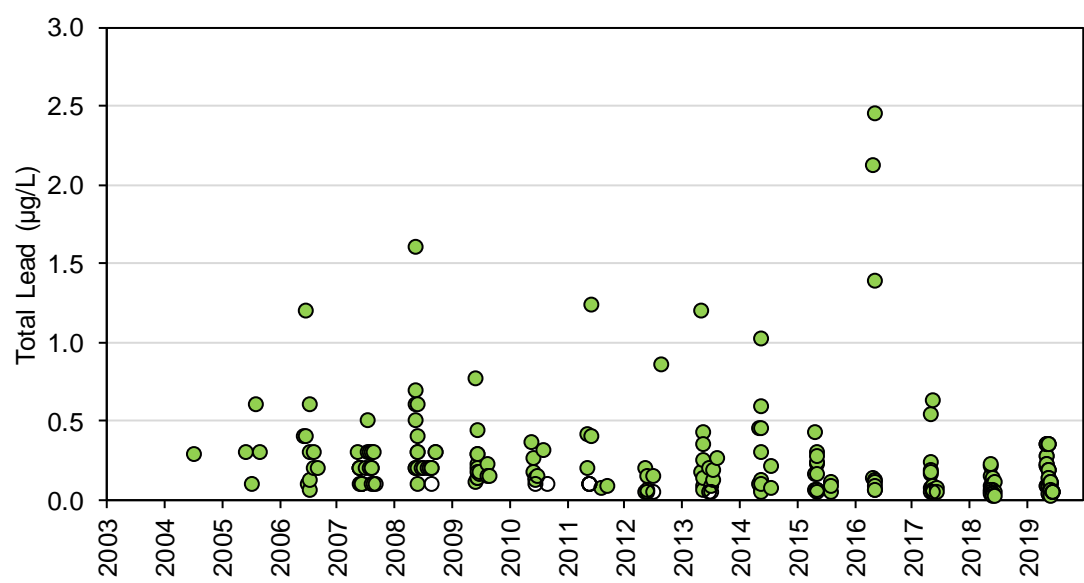


Figure 4B-27: Total Lithium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

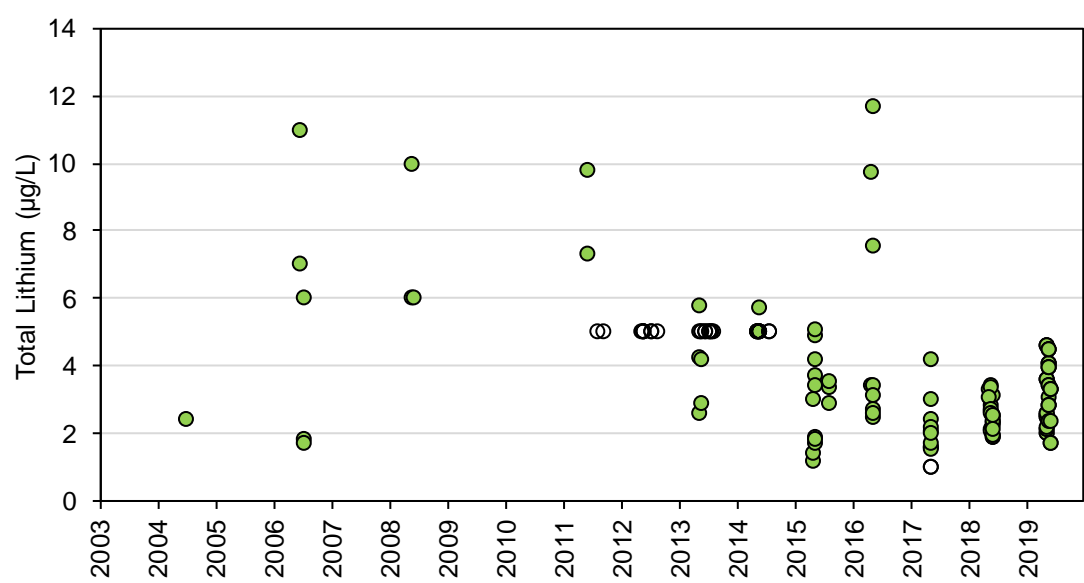


Figure 4B-28: Total Manganese Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

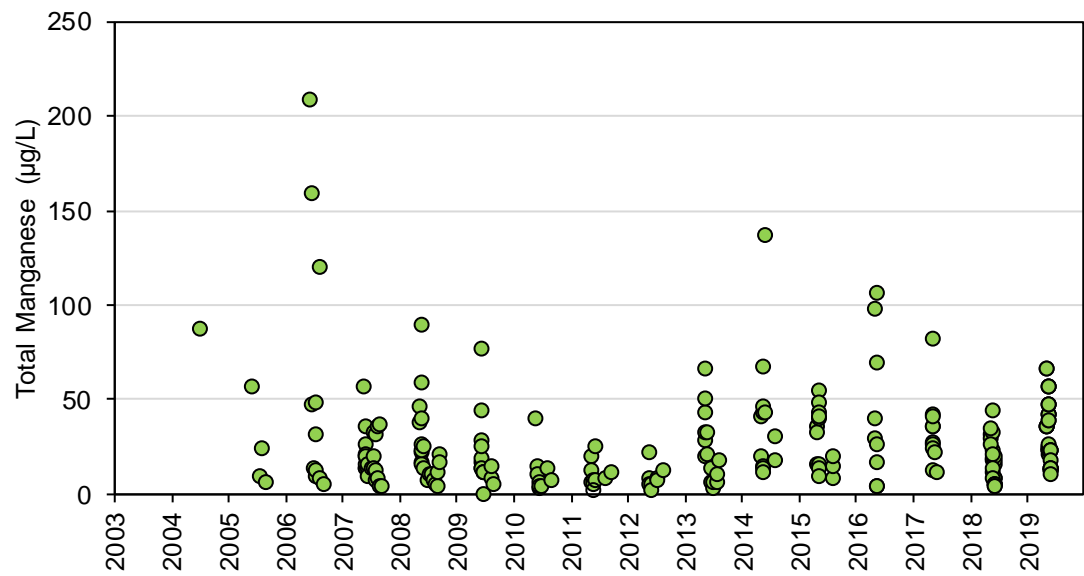


Figure 4B-29: Total Mercury Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

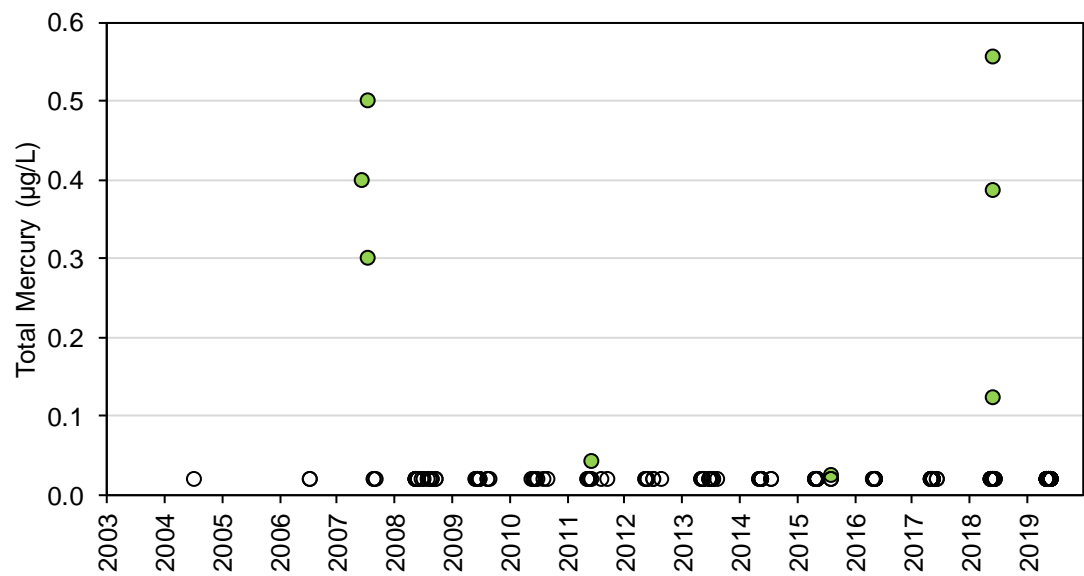


Figure 4B-30: Total Molybdenum Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

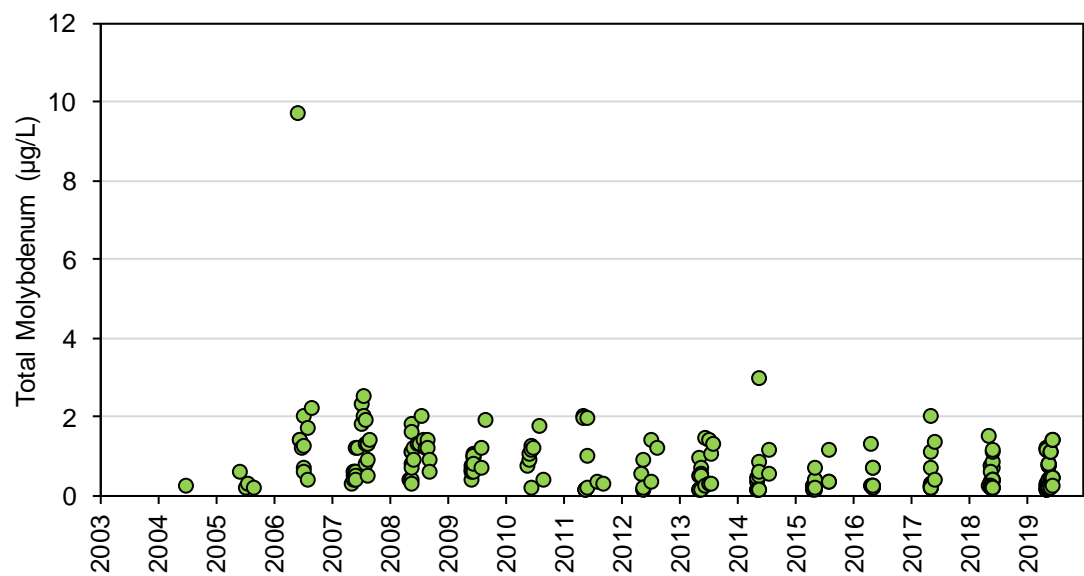


Figure 4B-31: Total Nickel Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

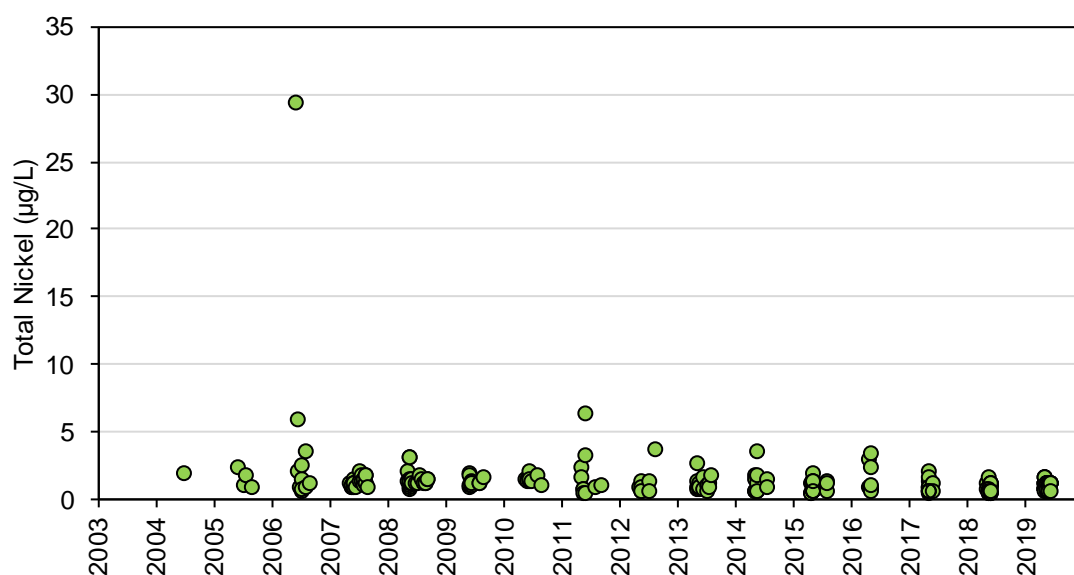


Figure 4B-32: Total Rubidium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

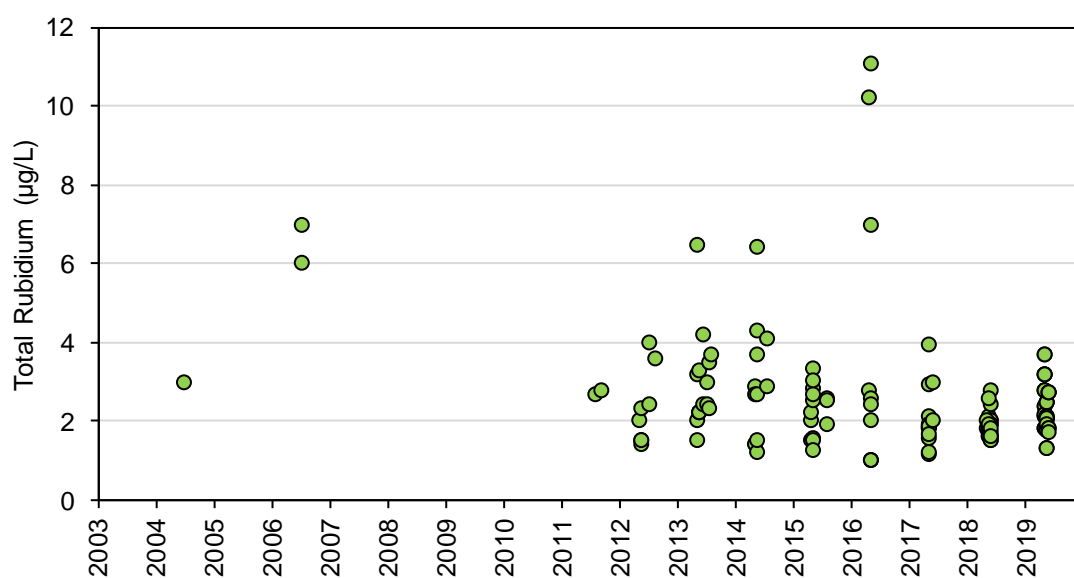


Figure 4B-33: Total Selenium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

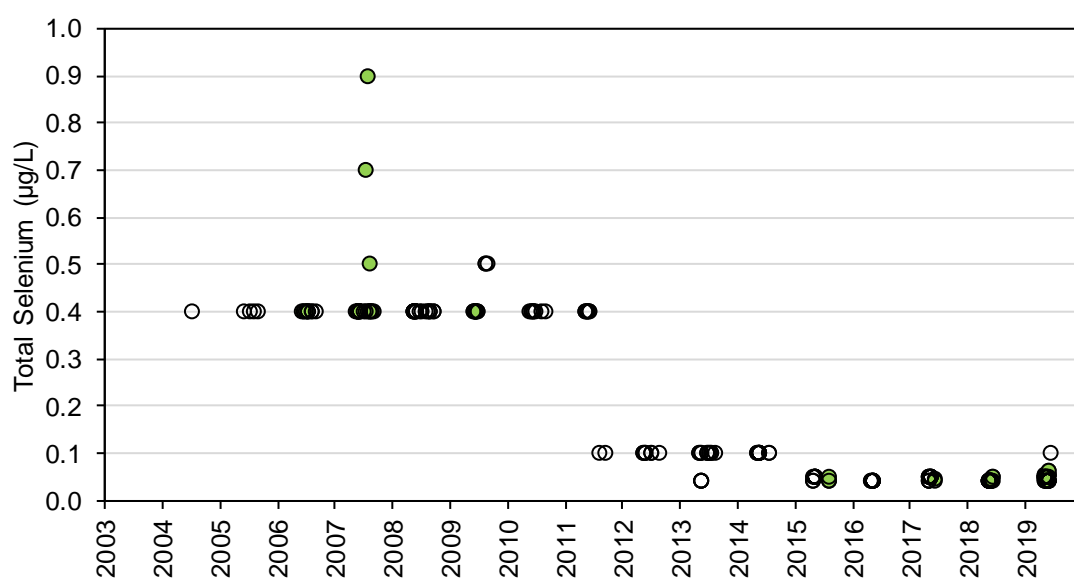


Figure 4B-34: Total Silver Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

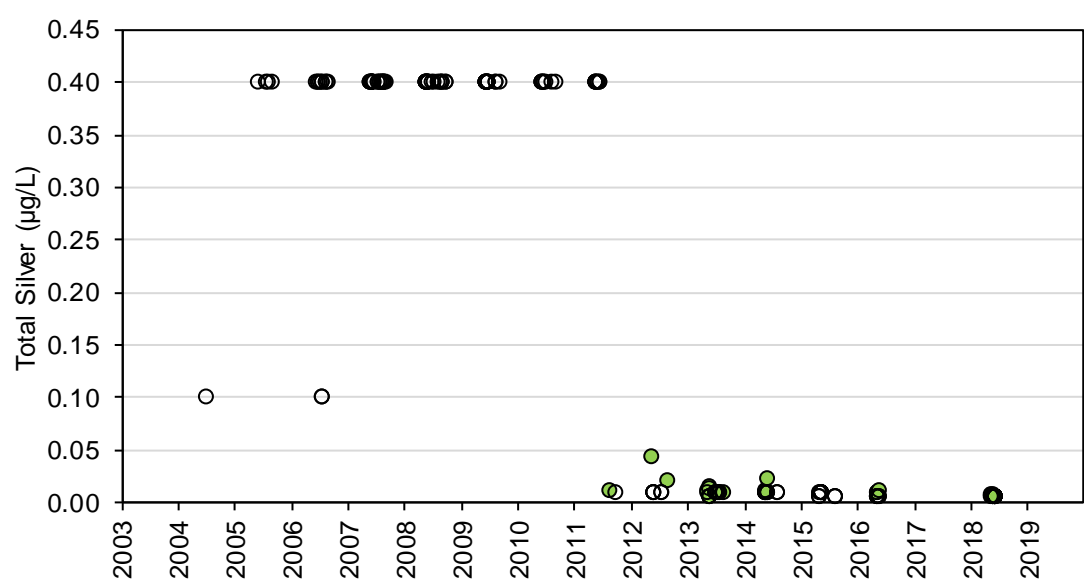


Figure 4B-35: Total Strontium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

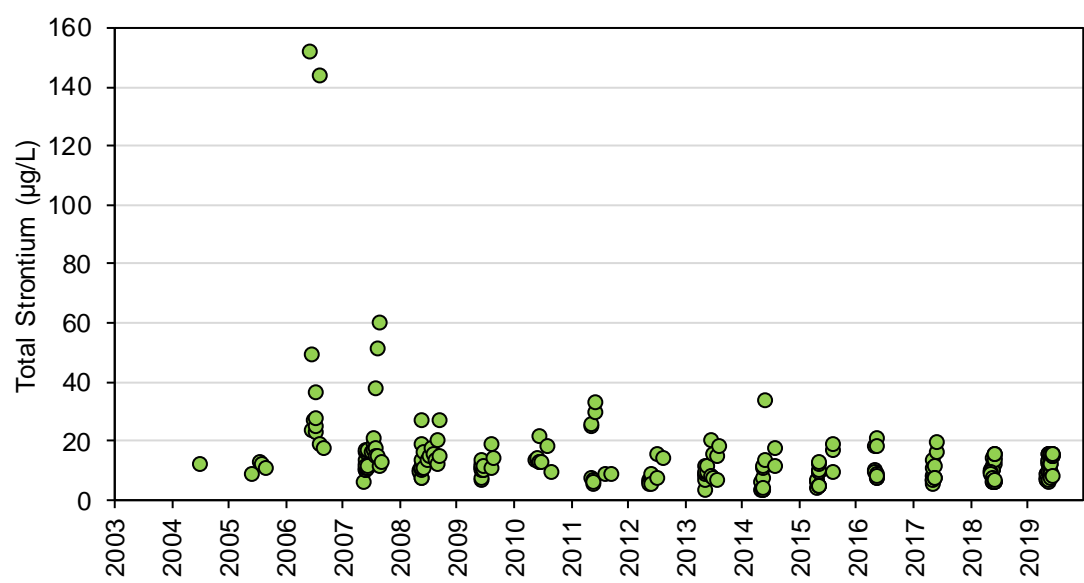


Figure 4B-36: Total Thallium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

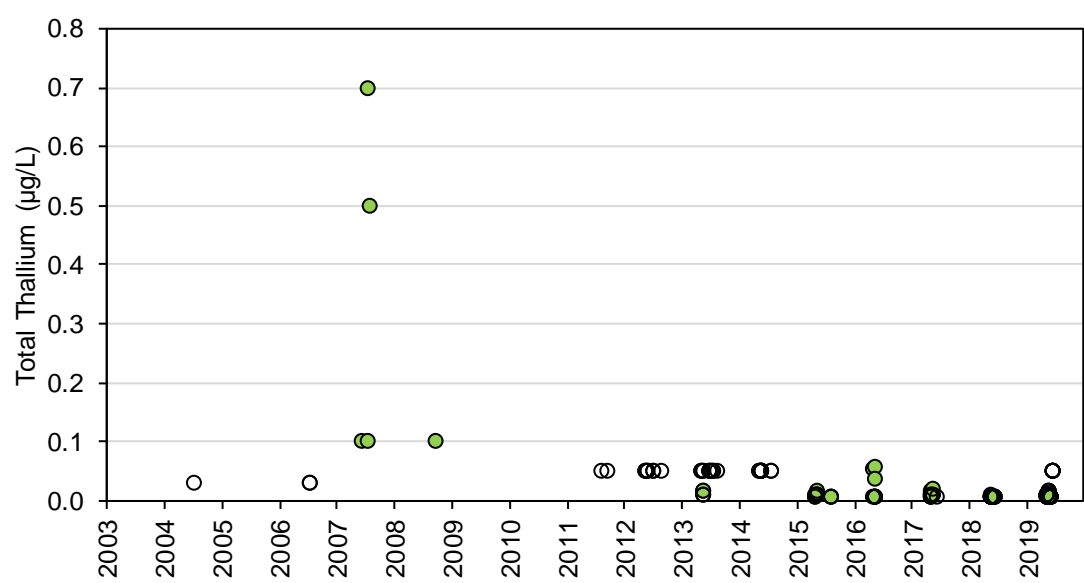


Figure 4B-37: Total Titanium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

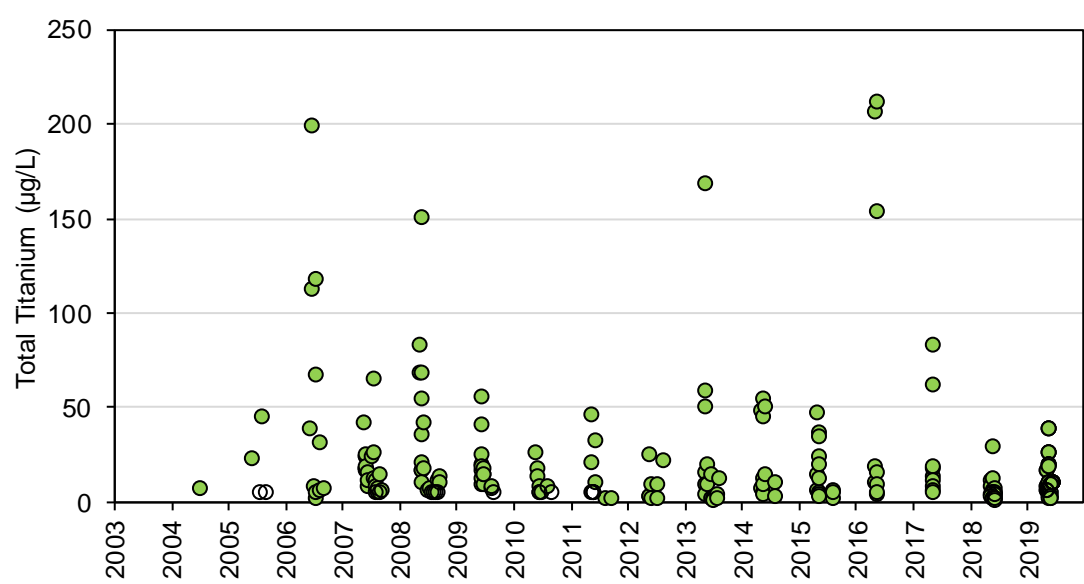


Figure 4B-38: Total Uranium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

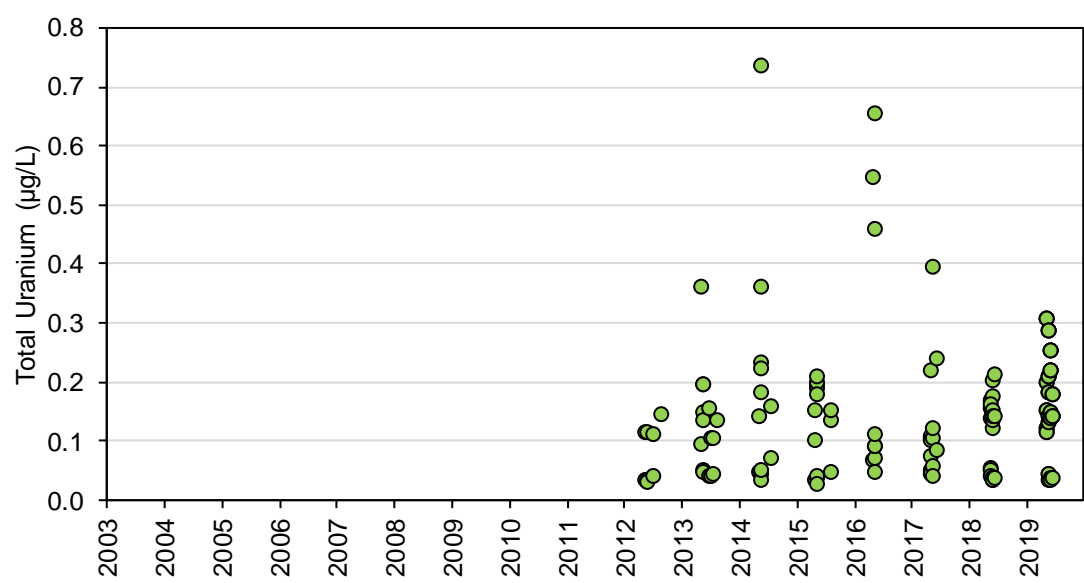


Figure 4B-39: Total Vanadium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

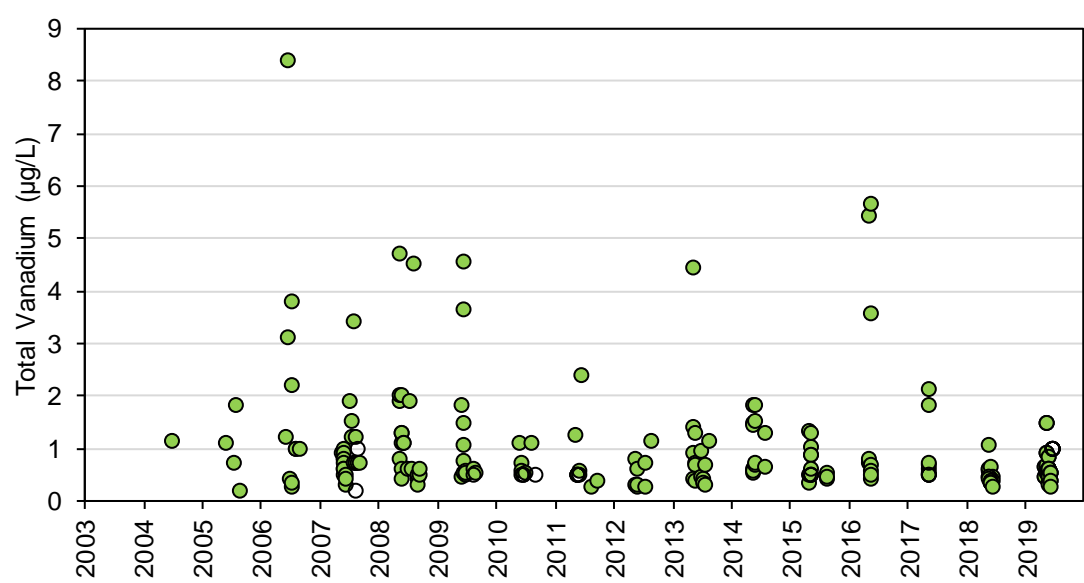


Figure 4B-40: Total Zinc Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

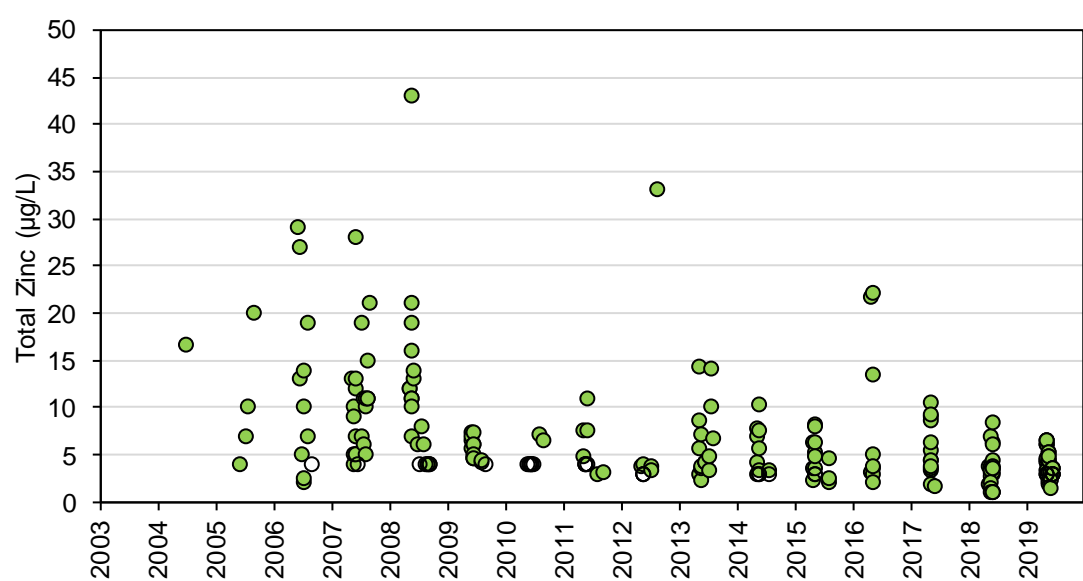


Figure 4B-41: Dissolved Aluminum Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

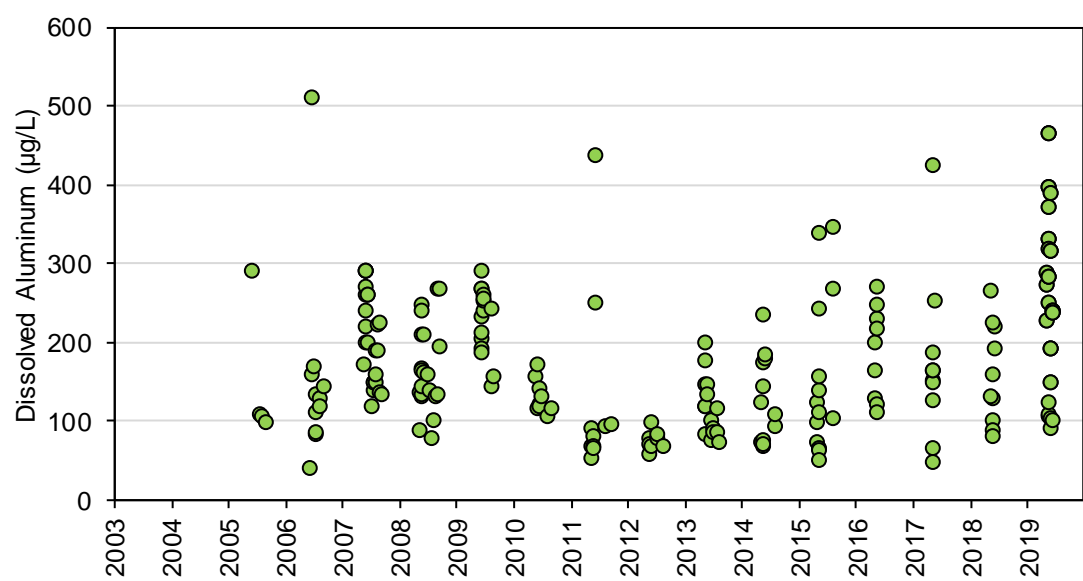


Figure 4B-42: Dissolved Antimony Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

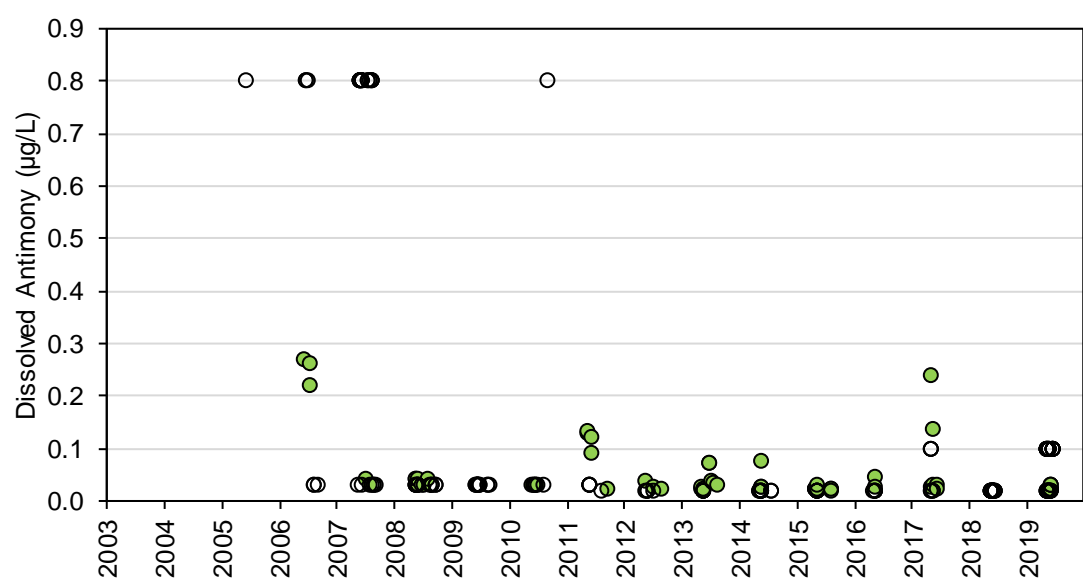


Figure 4B-43: Dissolved Arsenic Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

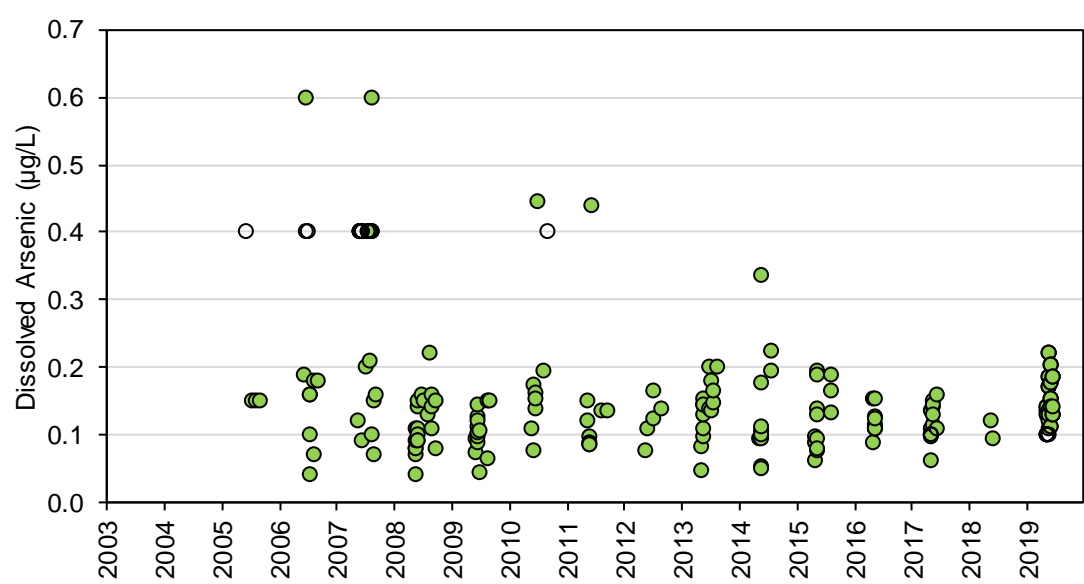


Figure 4B-44: Dissolved Barium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

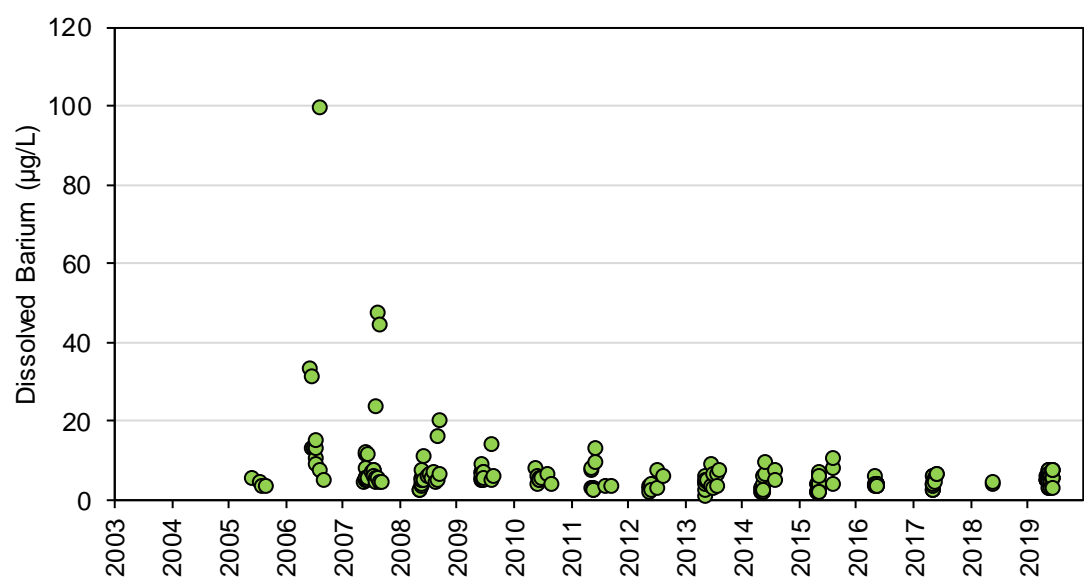


Figure 4B-45: Dissolved Beryllium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

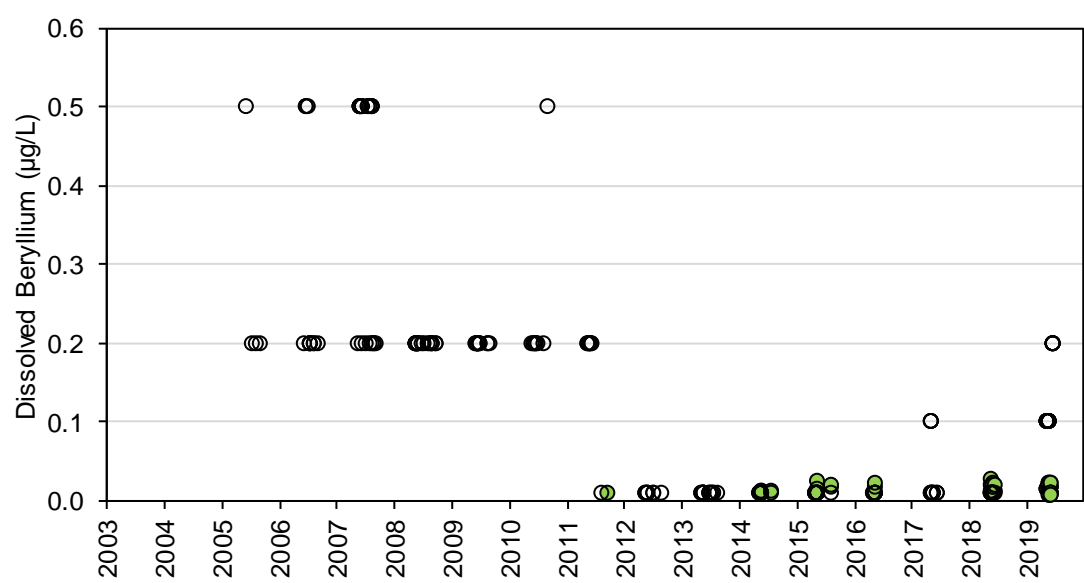


Figure 4B-46: Dissolved Bismuth Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

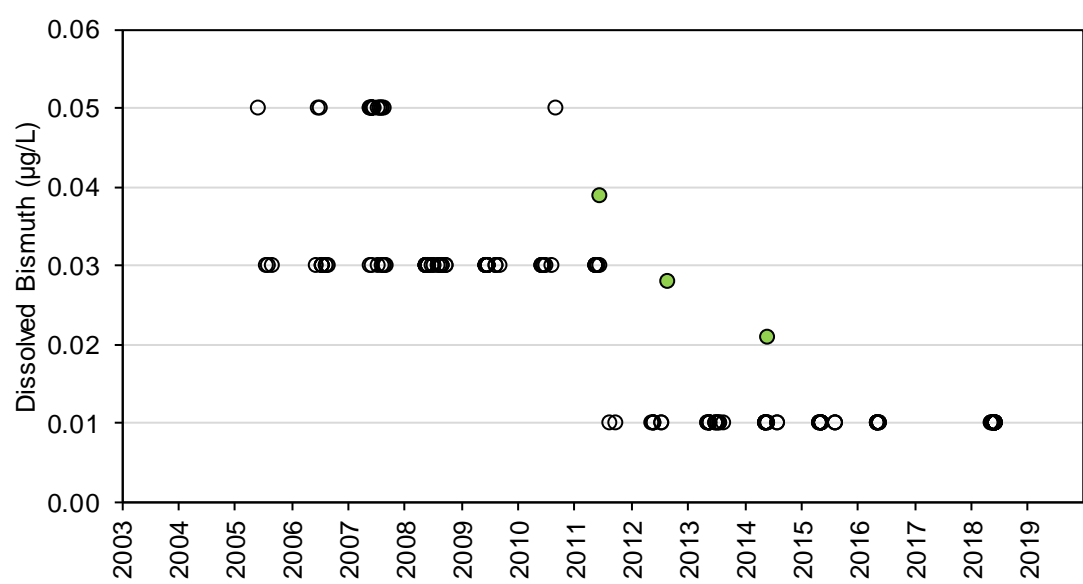


Figure 4B-47: Dissolved Boron Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

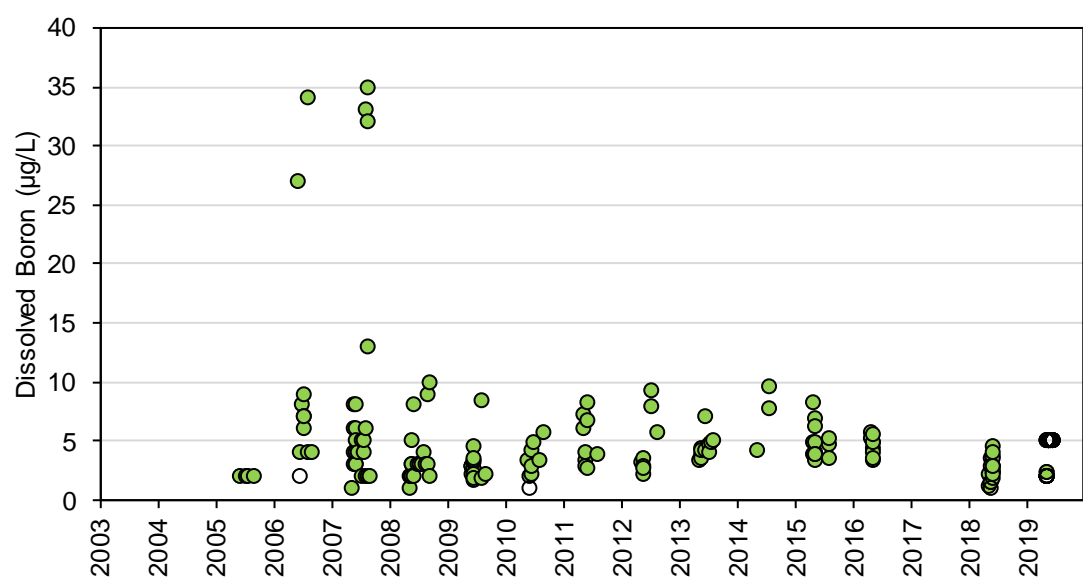


Figure 4B-48: Dissolved Cadmium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

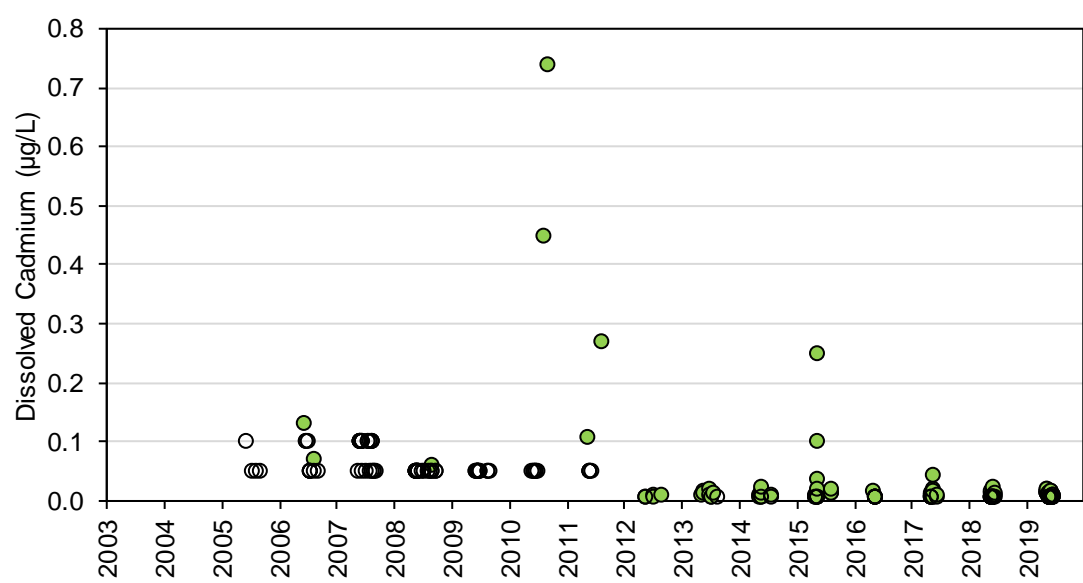


Figure 4B-49: Dissolved Cesium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

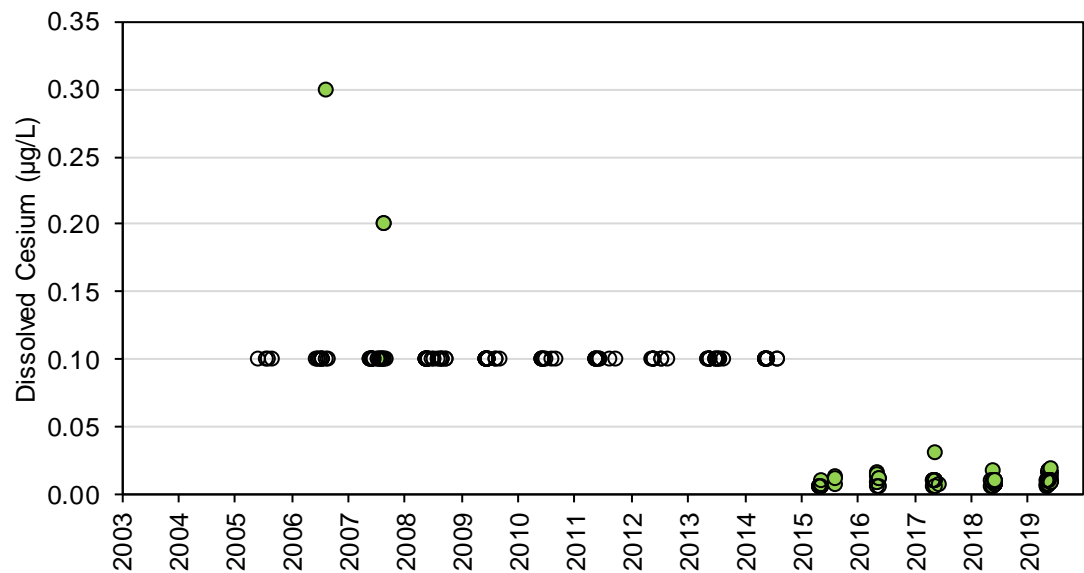


Figure 4B-50: Dissolved Chromium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

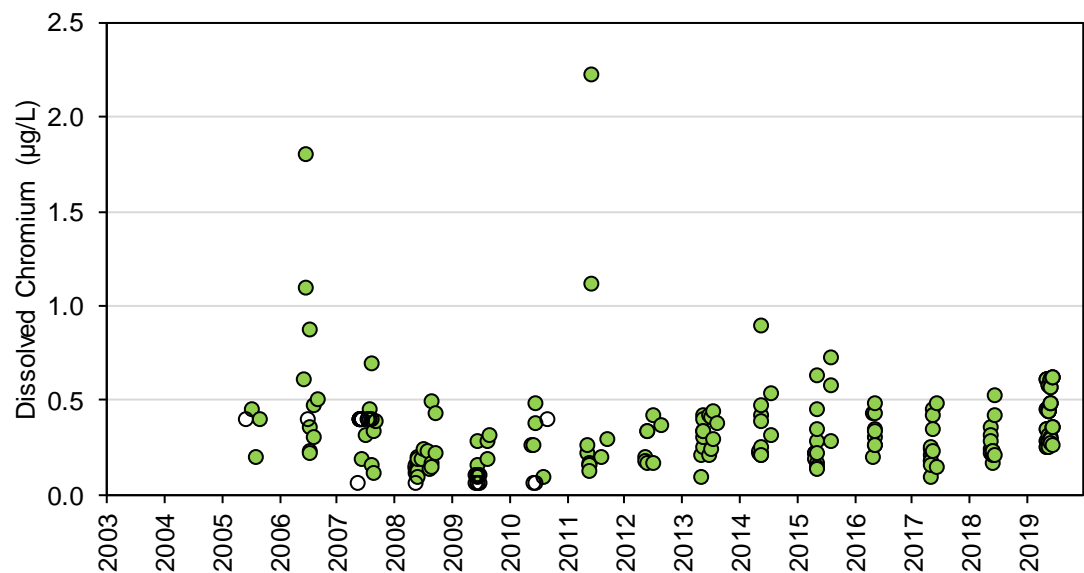


Figure 4B-51: Dissolved Cobalt Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

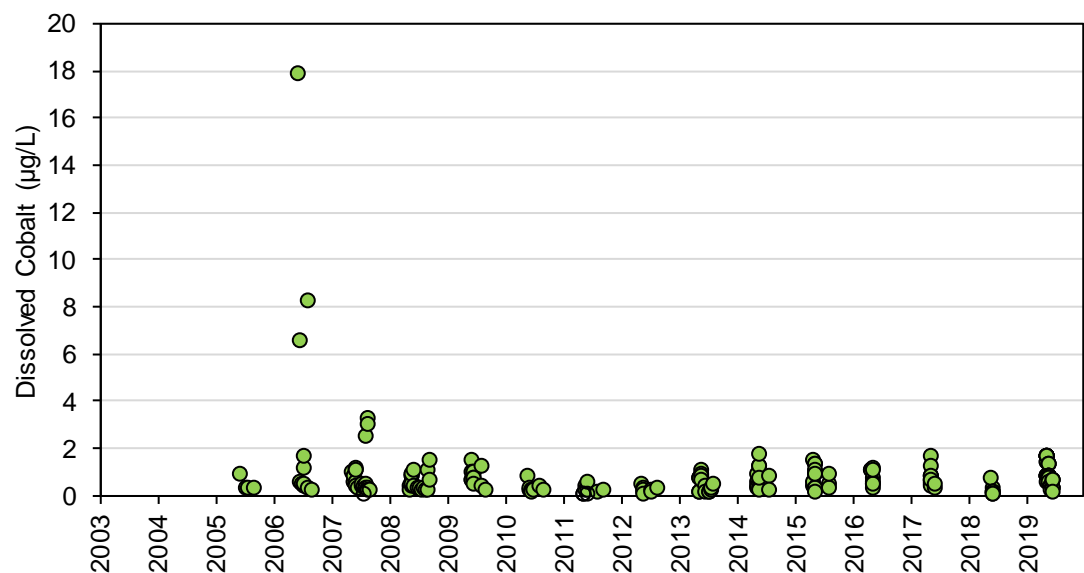


Figure 4B-52: Dissolved Copper Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

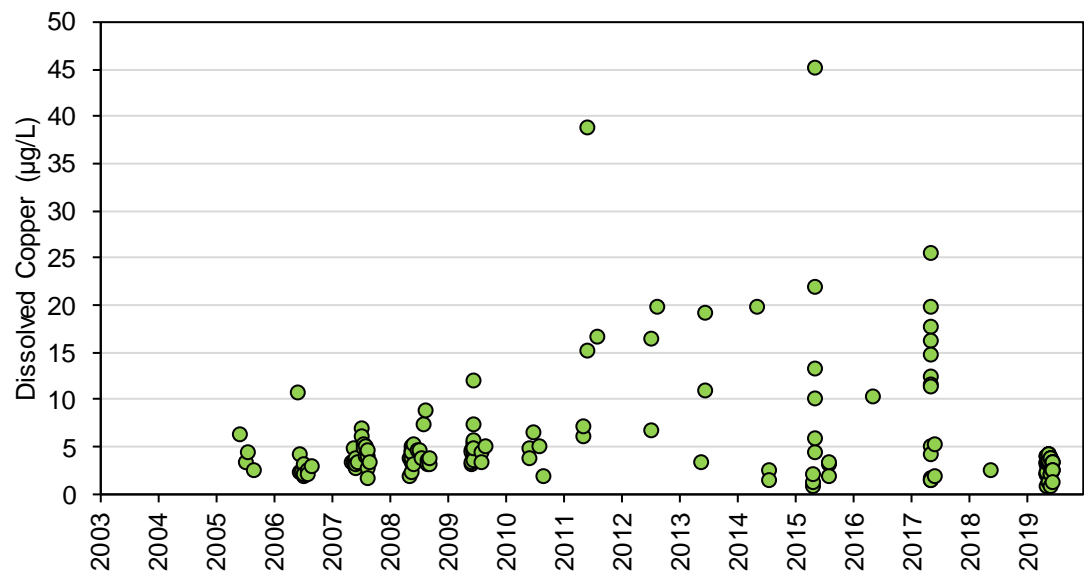


Figure 4B-53: Dissolved Iron Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

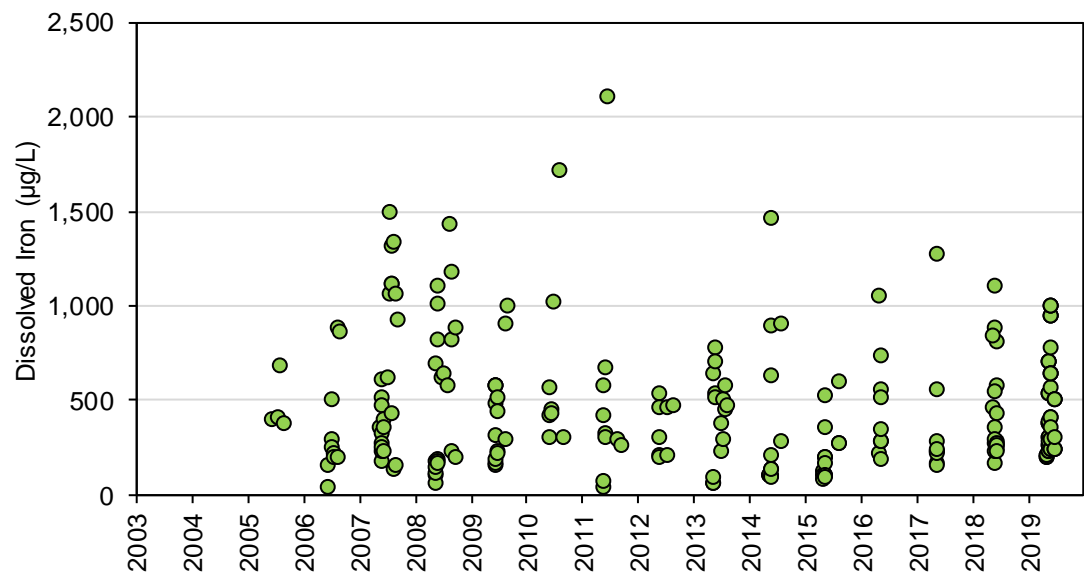


Figure 4B-54: Dissolved Lead Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

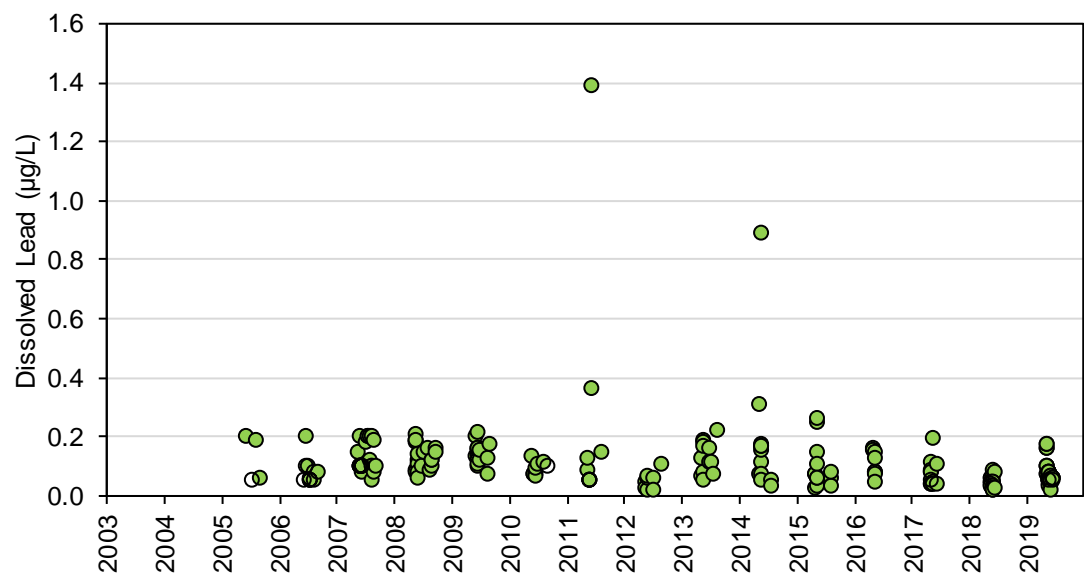


Figure 4B-55: Dissolved Lithium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

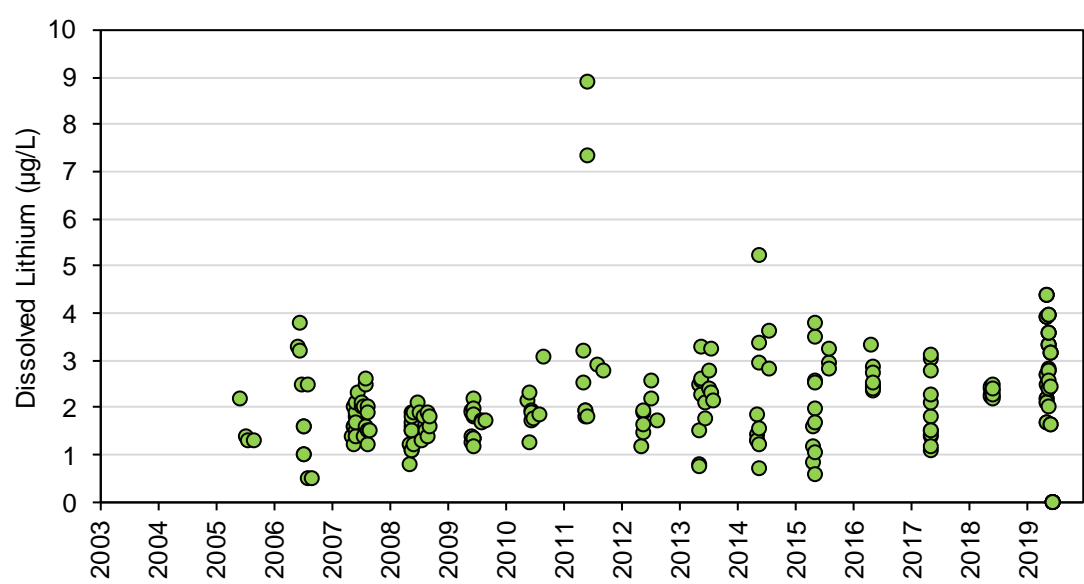


Figure 4B-56: Dissolved Manganese Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

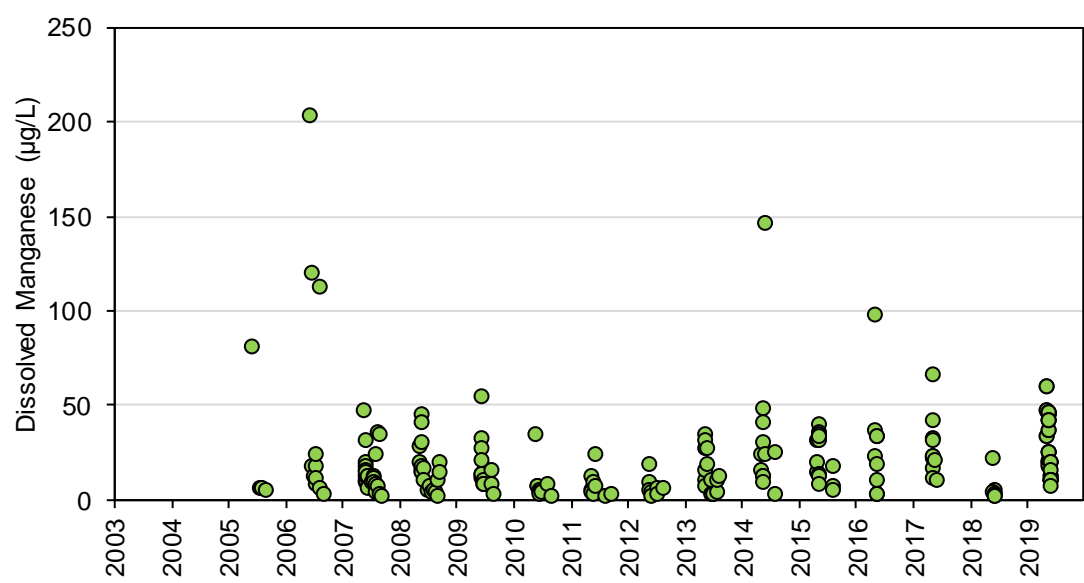


Figure 4B-57: Dissolved Mercury Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

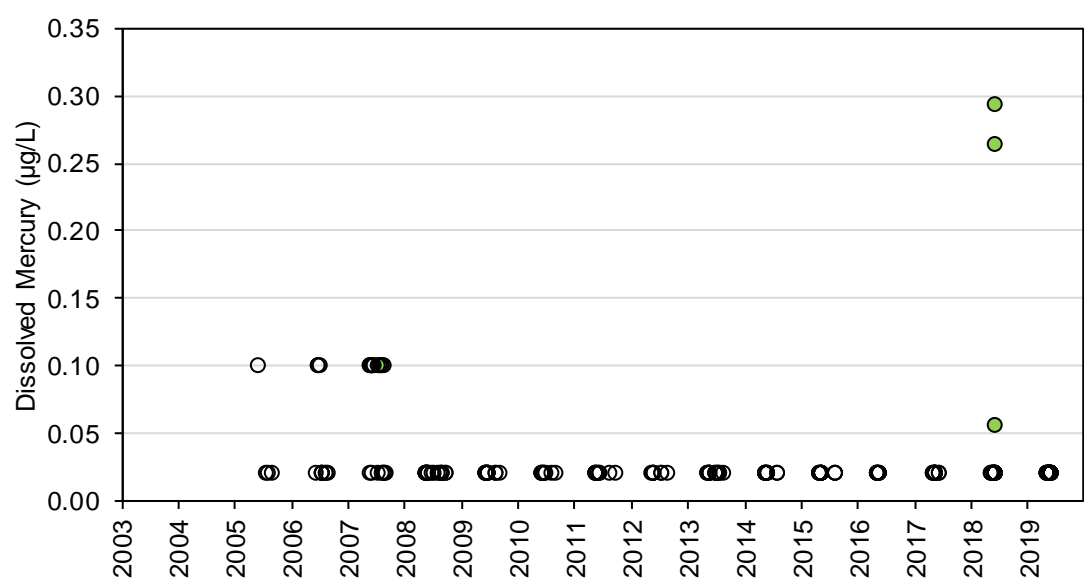


Figure 4B-58: Dissolved Molybdenum Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

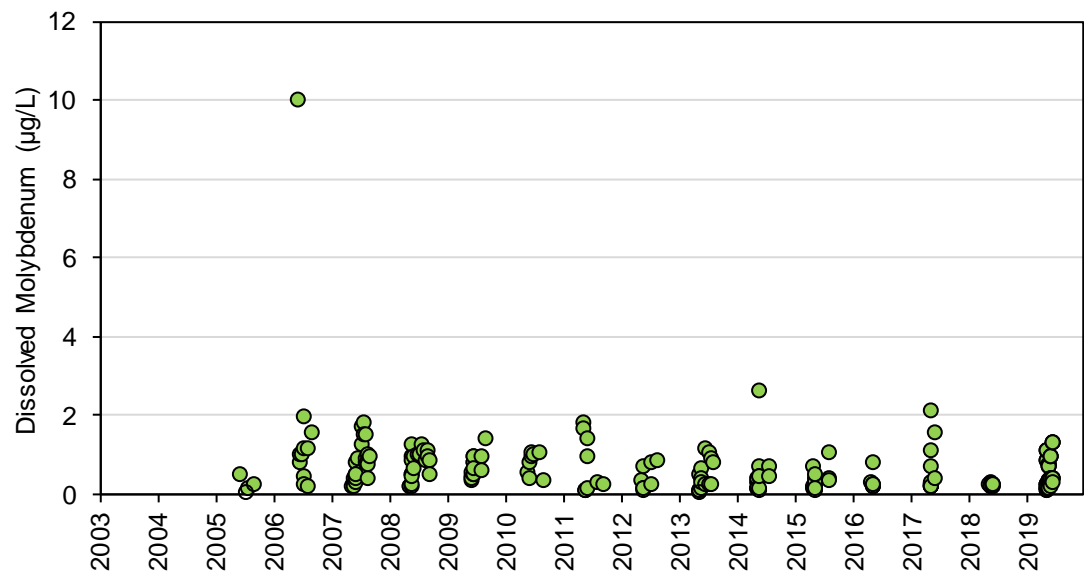


Figure 4B-59: Dissolved Nickel Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

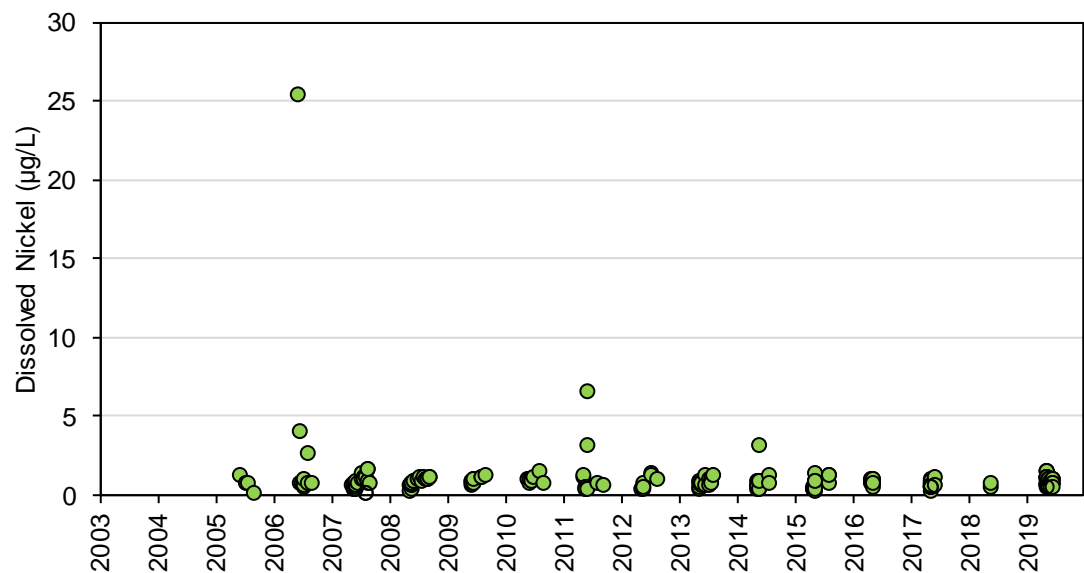


Figure 4B-60: Dissolved Rubidium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

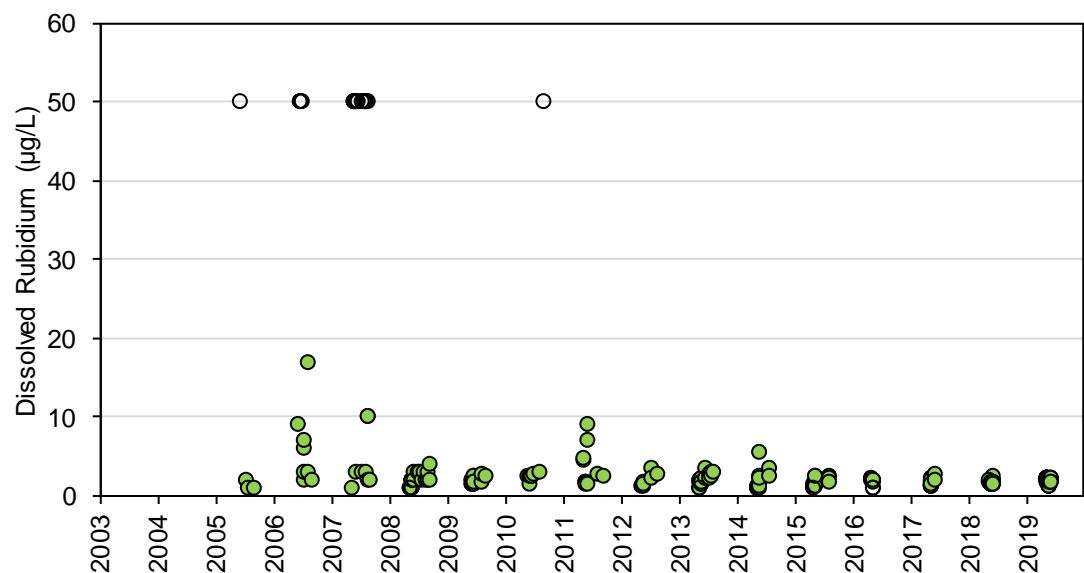


Figure 4B-61: Dissolved Selenium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

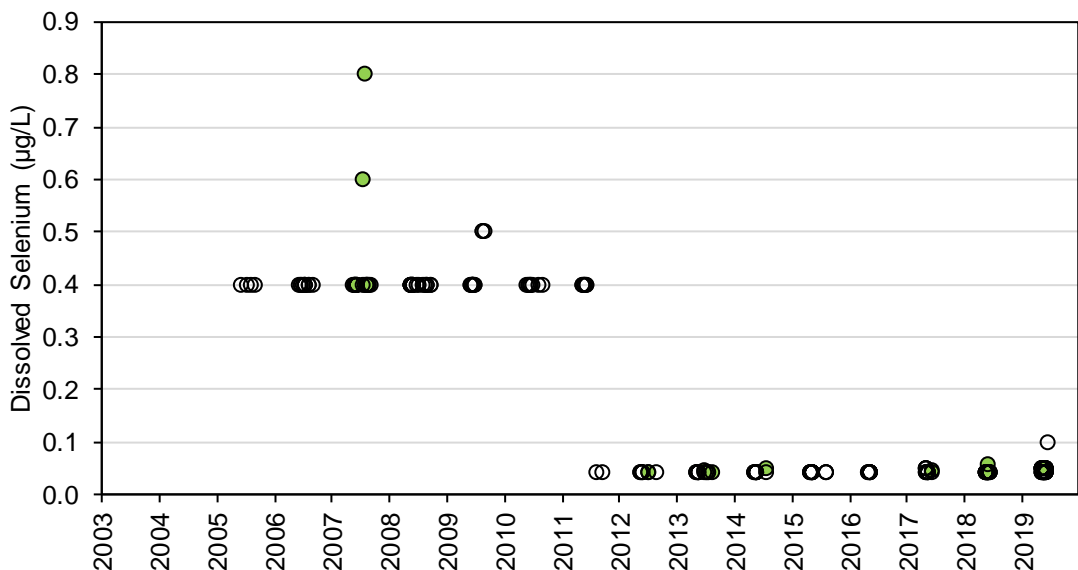


Figure 4B-62: Dissolved Silver Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

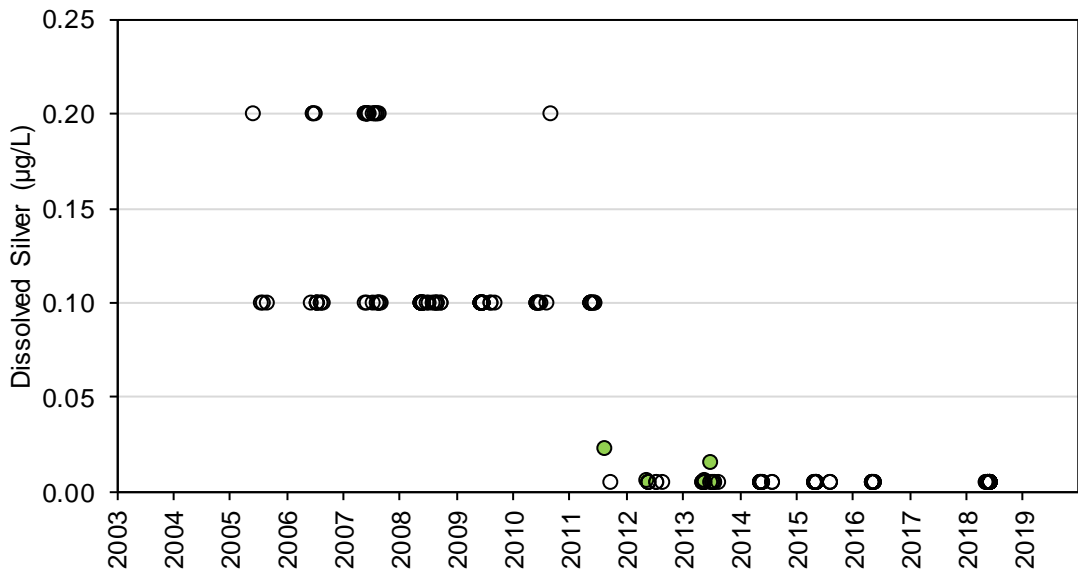


Figure 4B-63: Dissolved Strontium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

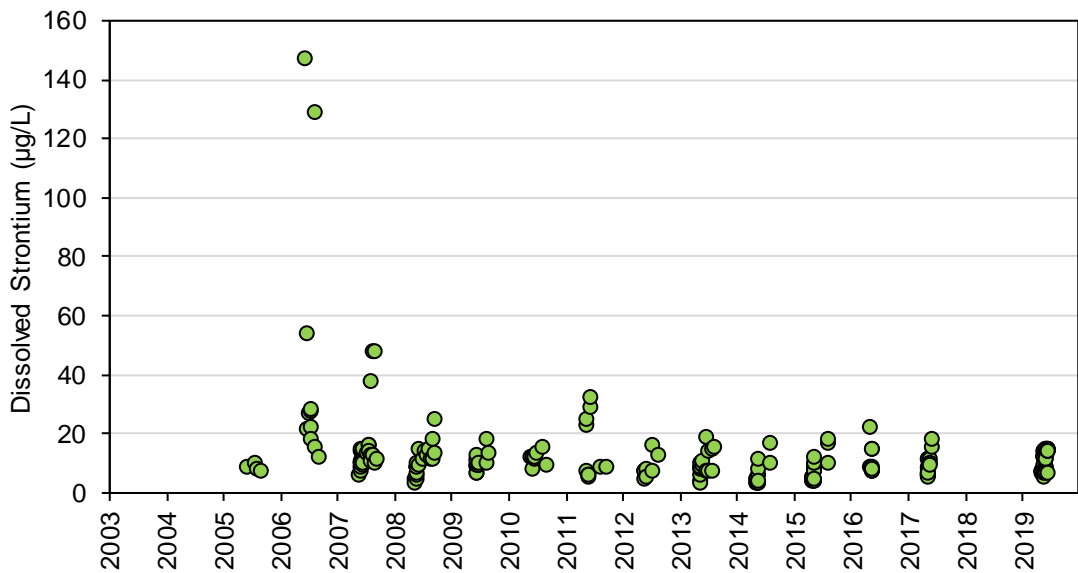


Figure 4B-64: Dissolved Thallium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

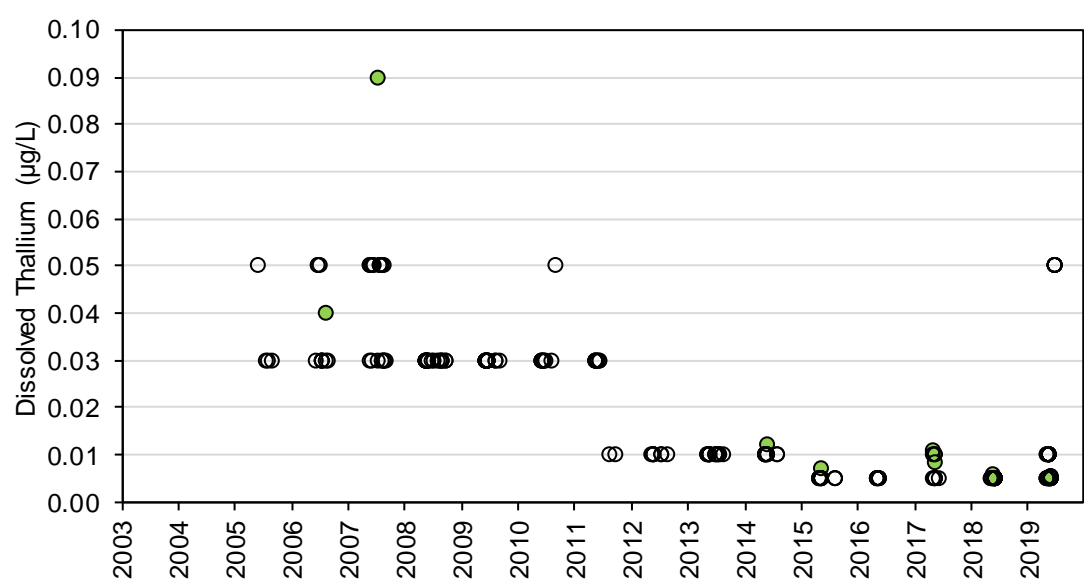


Figure 4B-65: Dissolved Titanium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

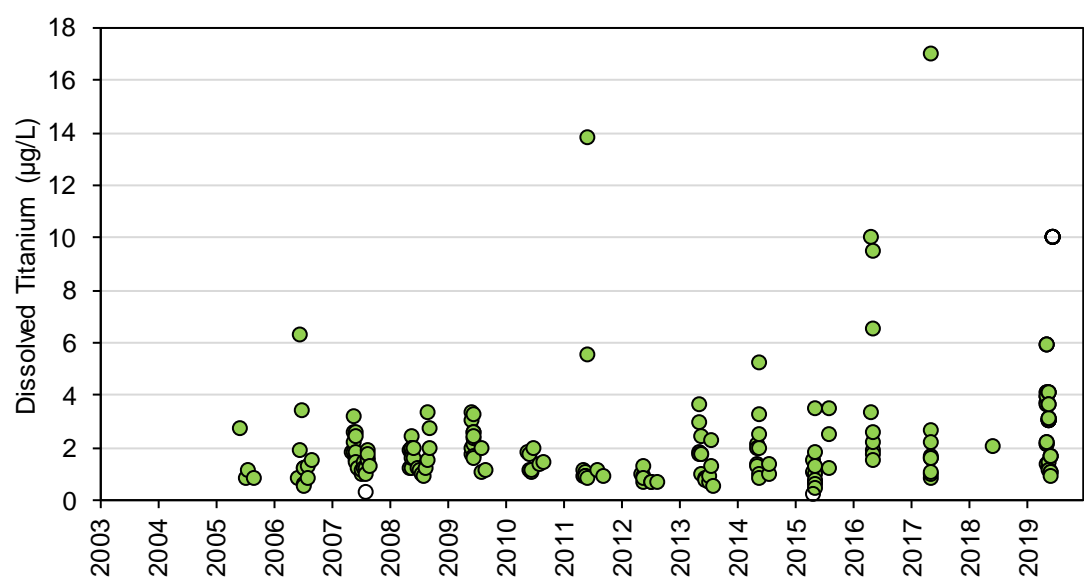


Figure 4B-66: Dissolved Uranium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

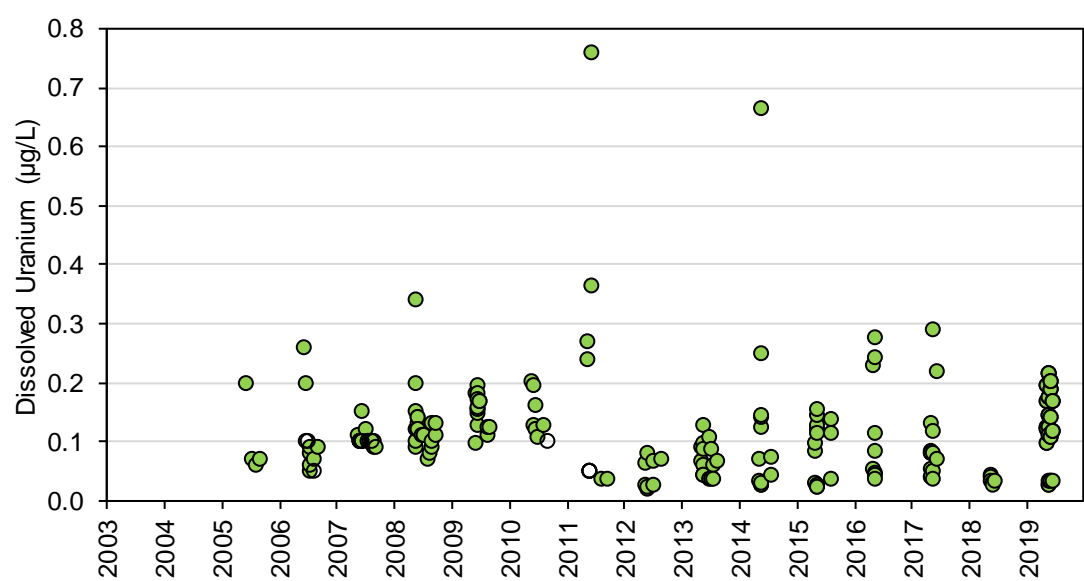


Figure 4B-67: Dissolved Vanadium Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance

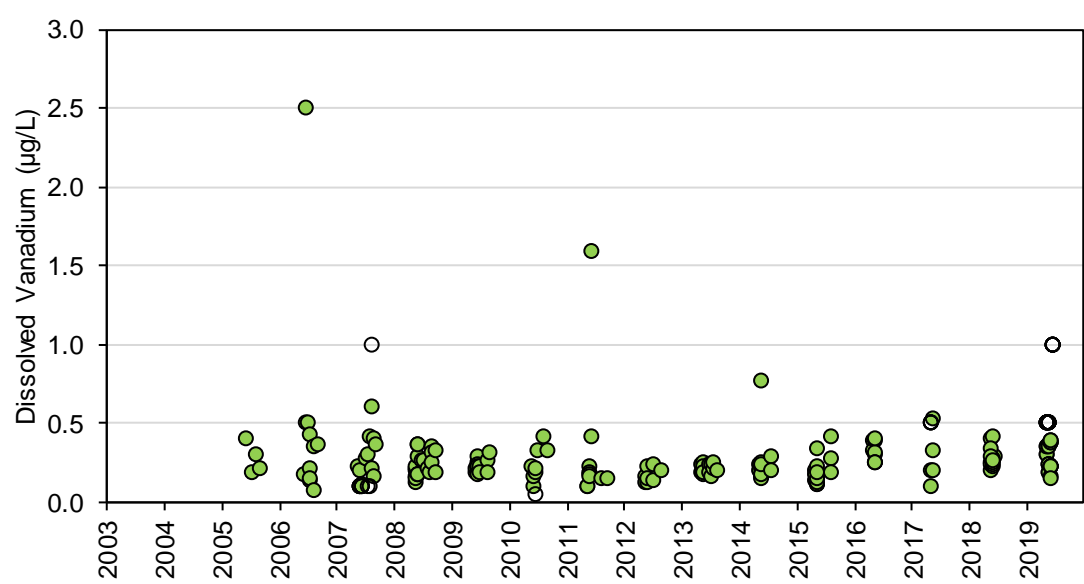
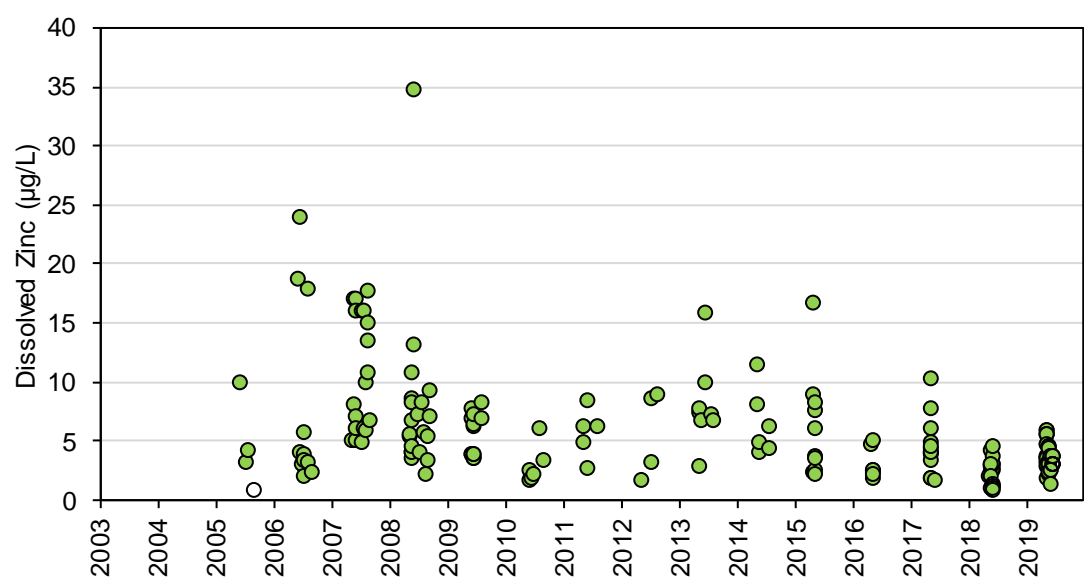


Figure 4B-68: Dissolved Zinc Concentrations at Station SNP 02-04, 02-04.1, 02-04.2 and 02-04.3 during Construction, Operations, and Extended Care and Maintenance



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ATTACHMENT 4C. FIGURES OF WATER QUALITY FOR SNP 02-05

Figure 4C-1: Total Dissolved Solids, calculated (lab) Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

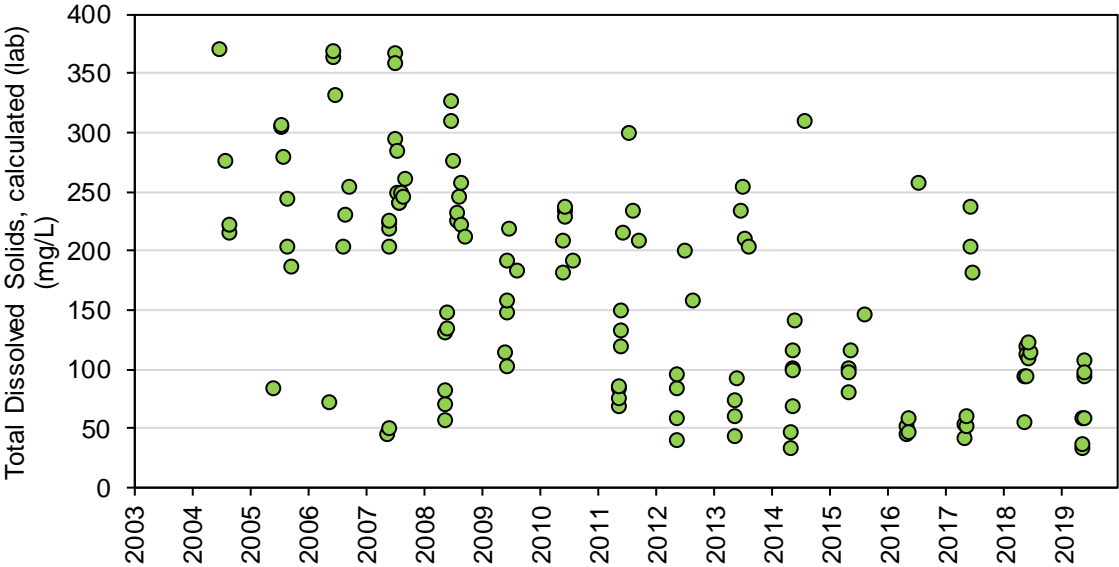


Figure 4C-2: Calcium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

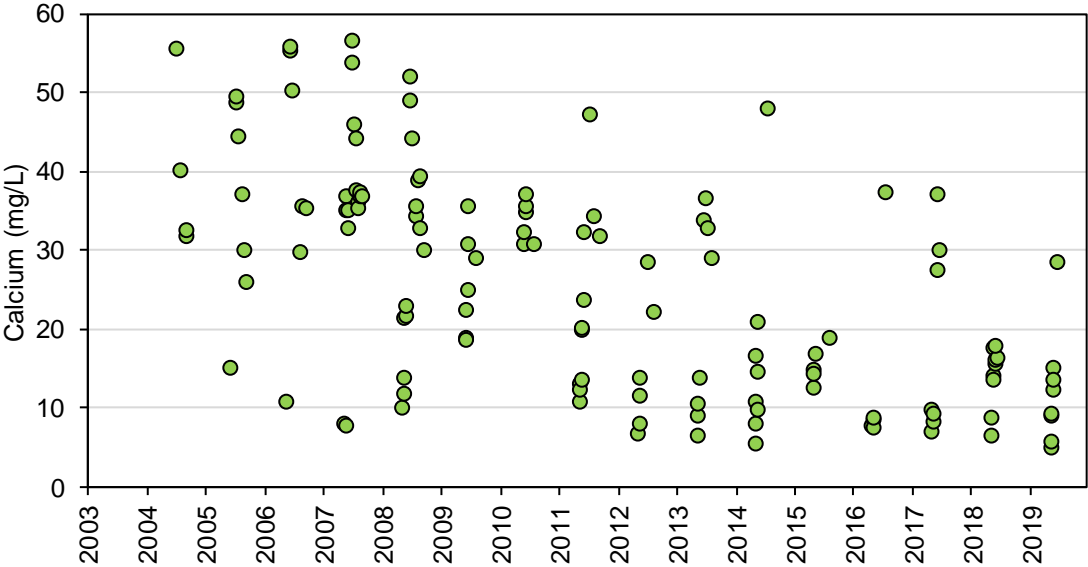


Figure 4C-3: Chloride Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

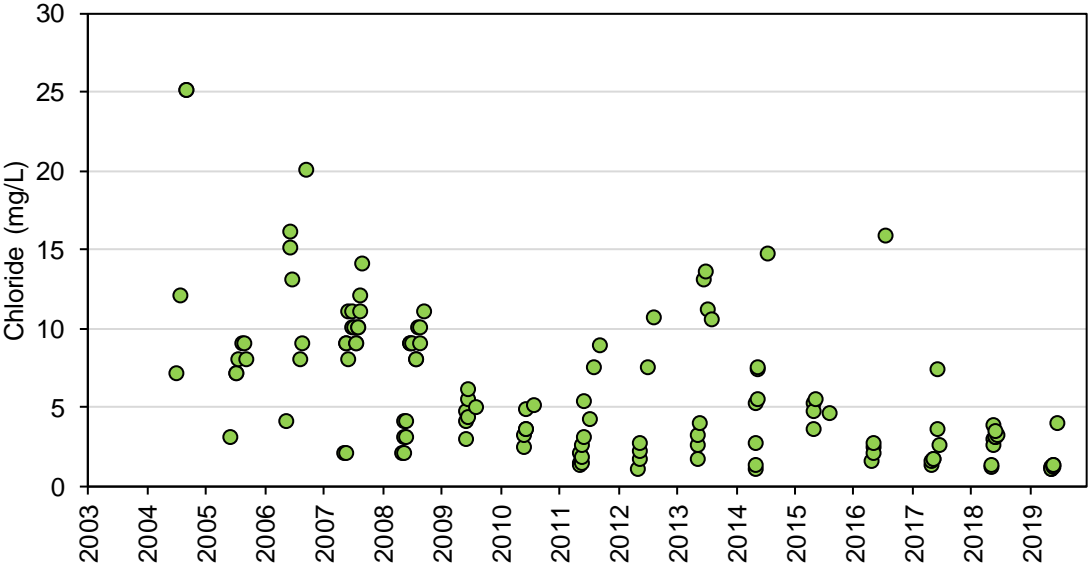


Figure 4C-4: Fluoride Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

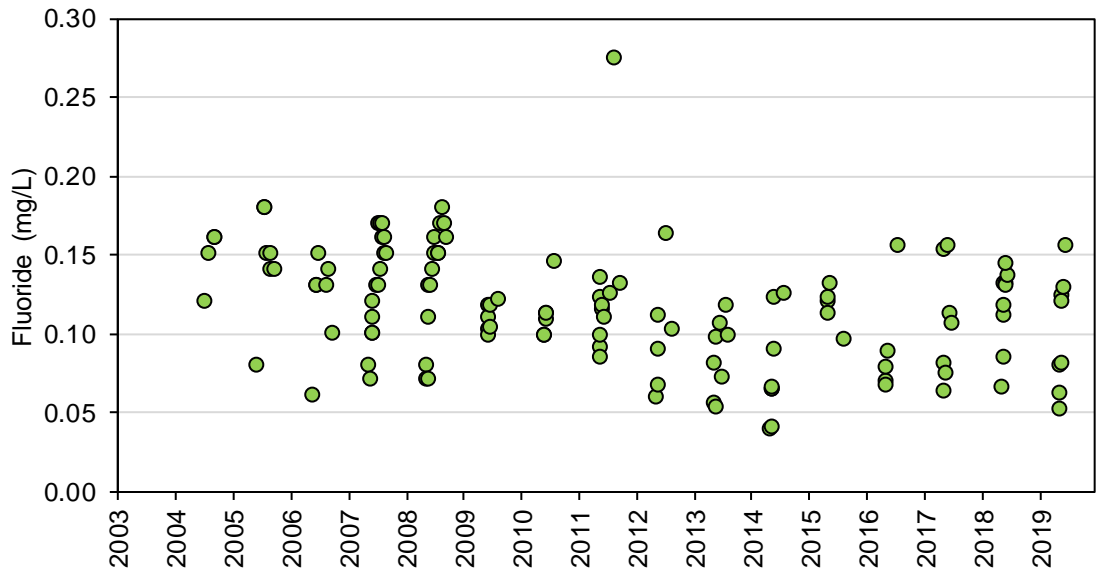


Figure 4C-5: Magnesium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

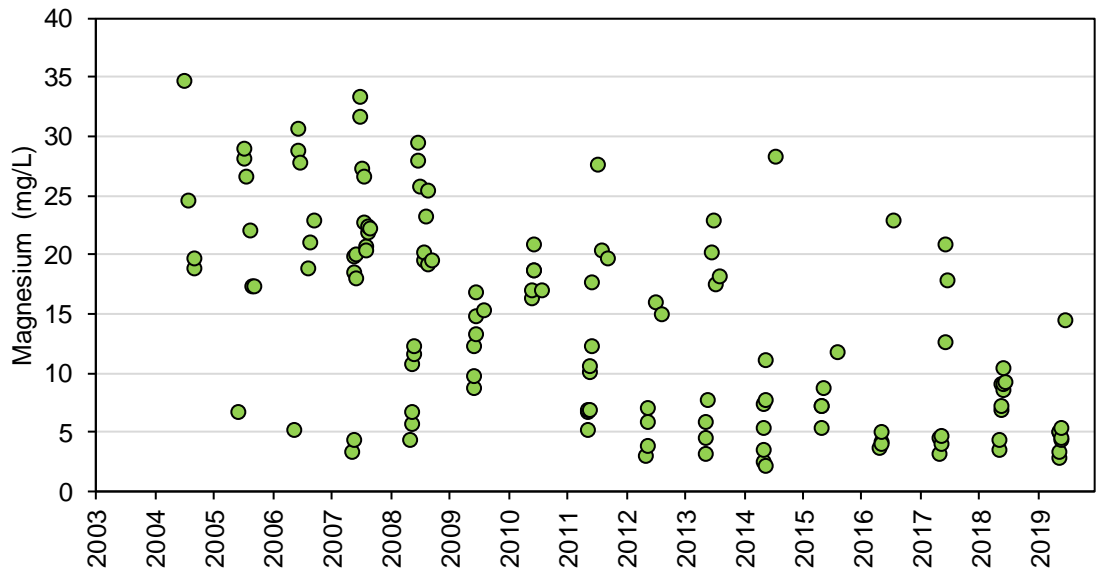


Figure 4C-6: Potassium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

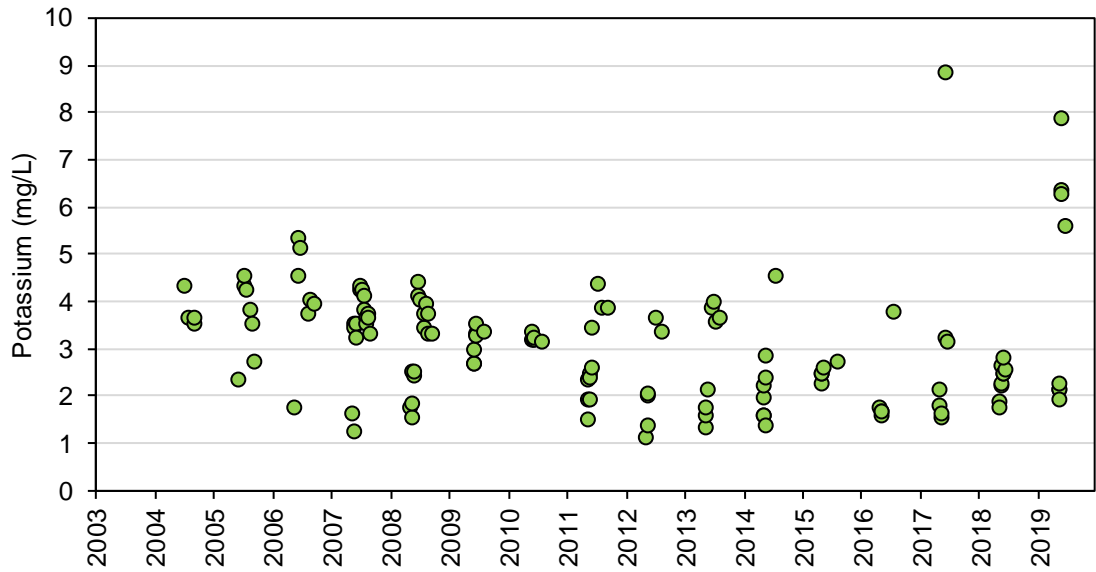


Figure 4C-7: Sodium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

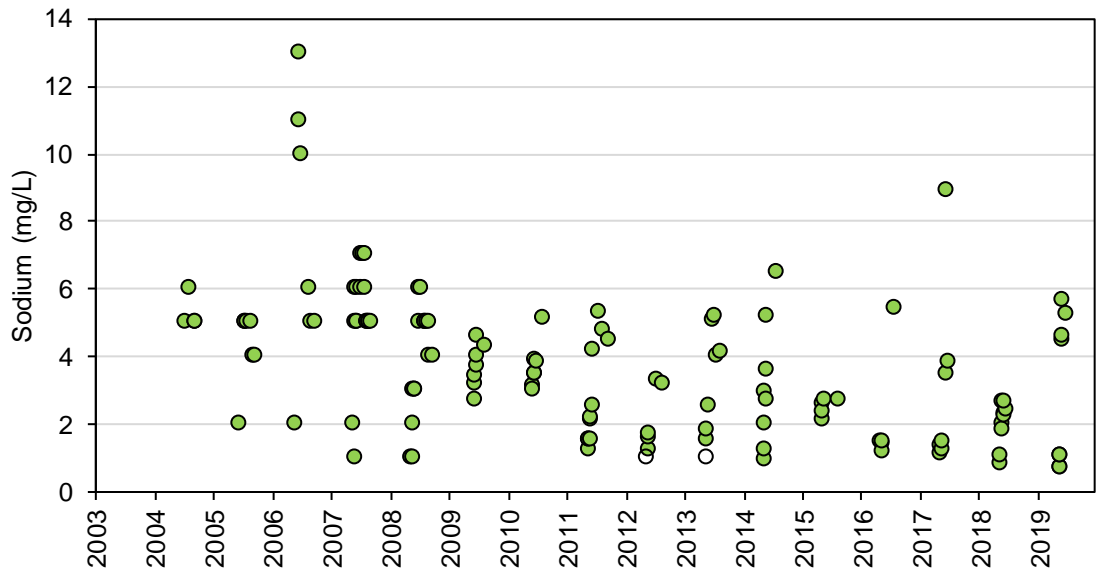


Figure 4C-8: Sulphate Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

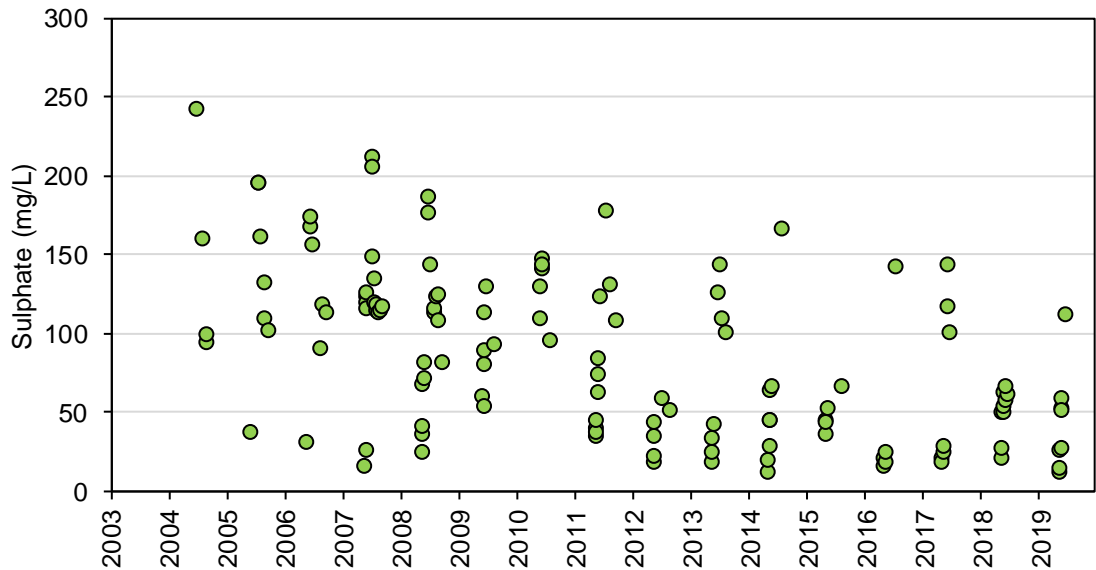


Figure 4C-9: Nitrate Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

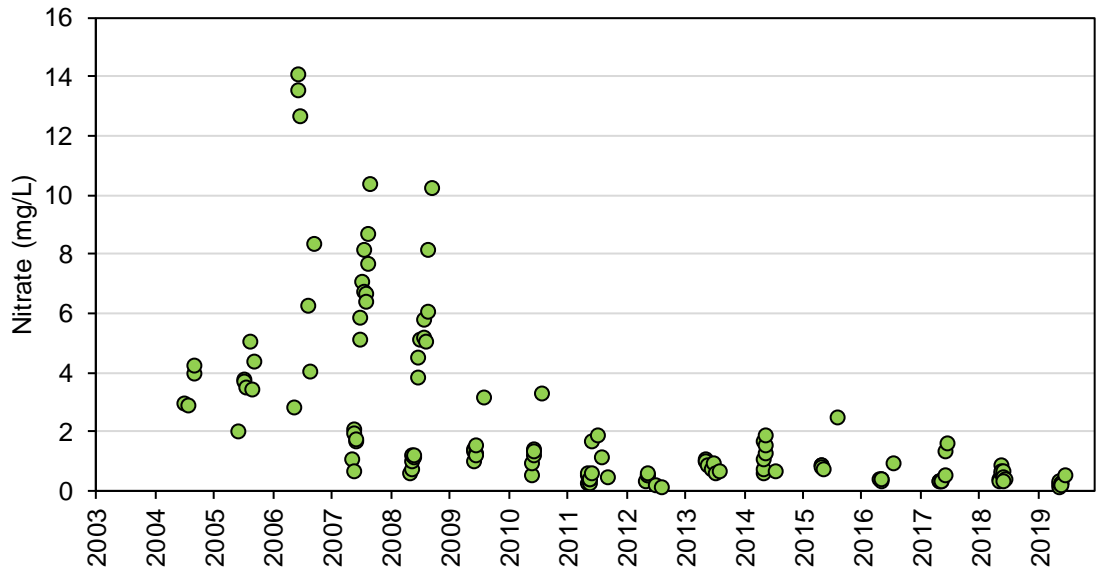


Figure 4C-10: Nitrite Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

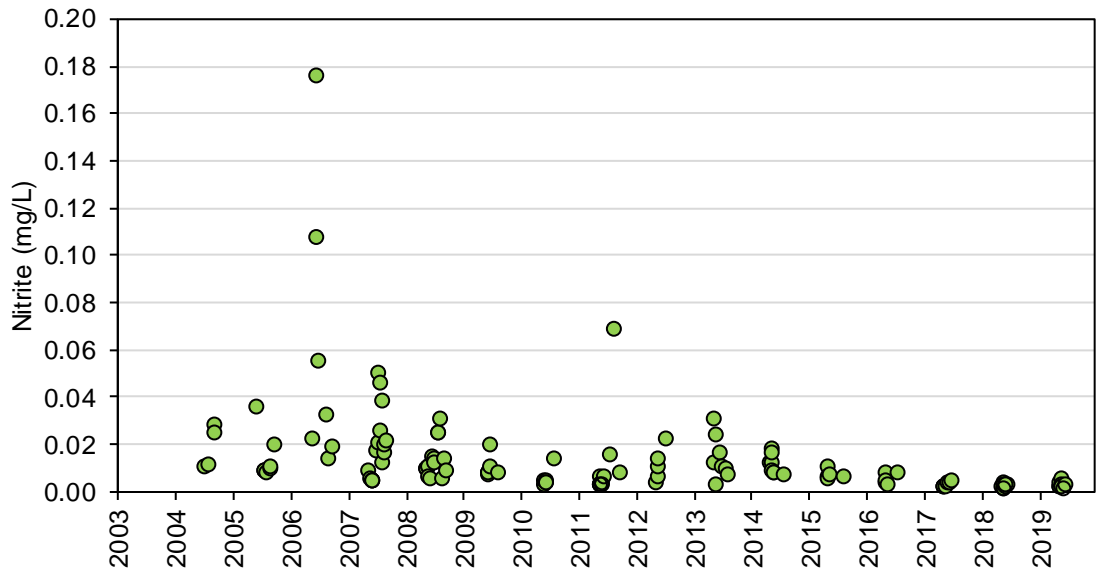


Figure 4C-11: Total Ammonia Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

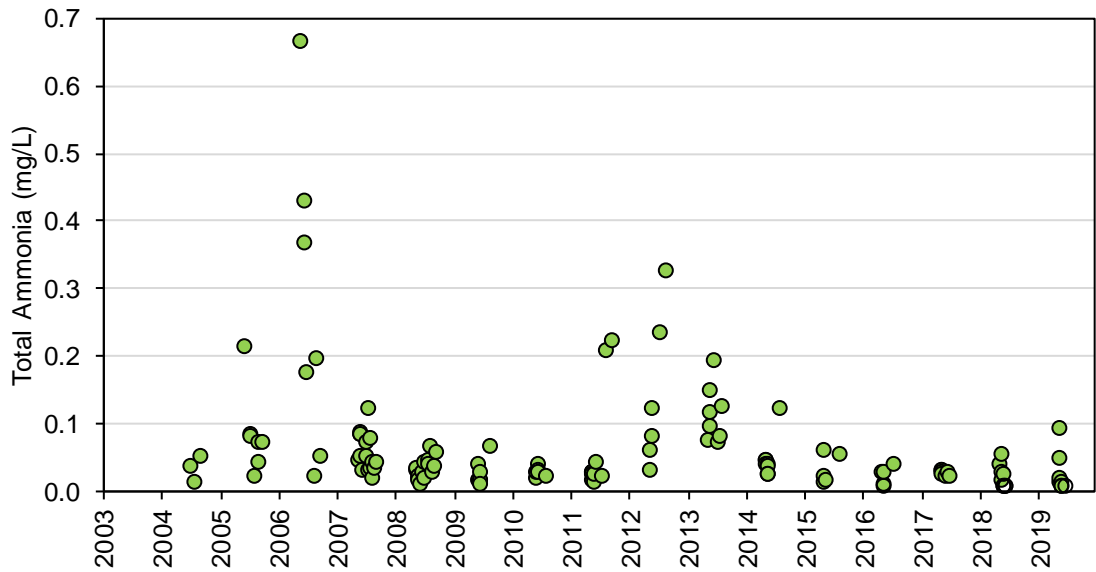


Figure 4C-12: Total Phosphorus Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

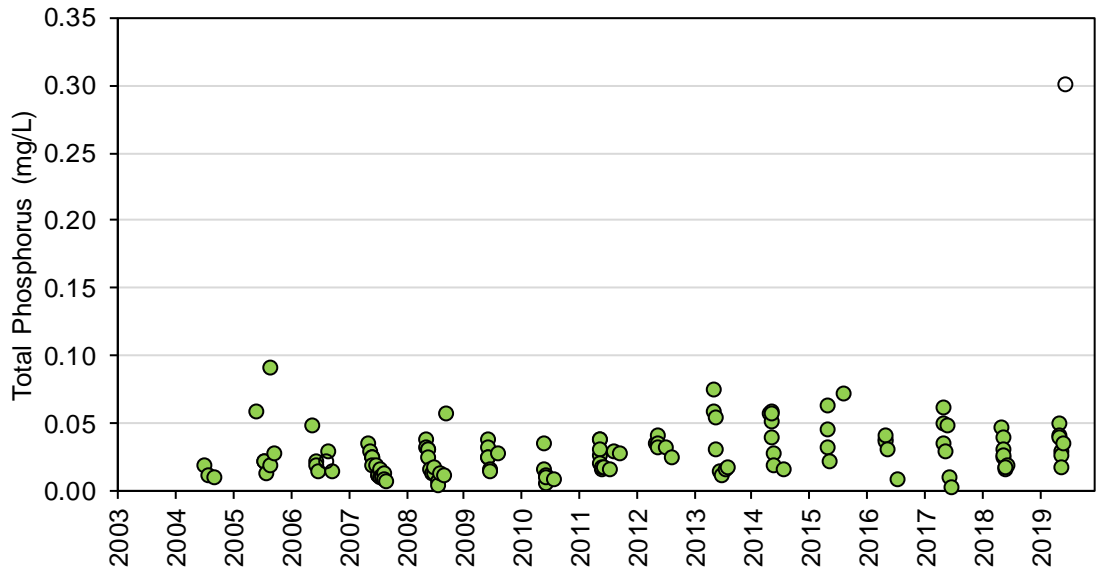


Figure 4C-13: Total Aluminum Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

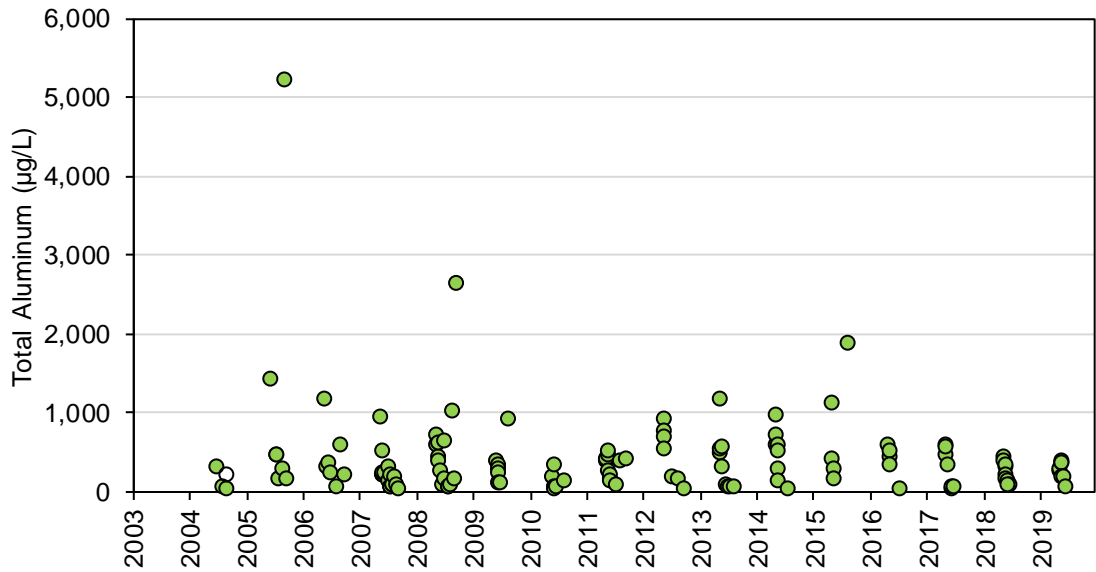


Figure 4C-14: Total Antimony Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

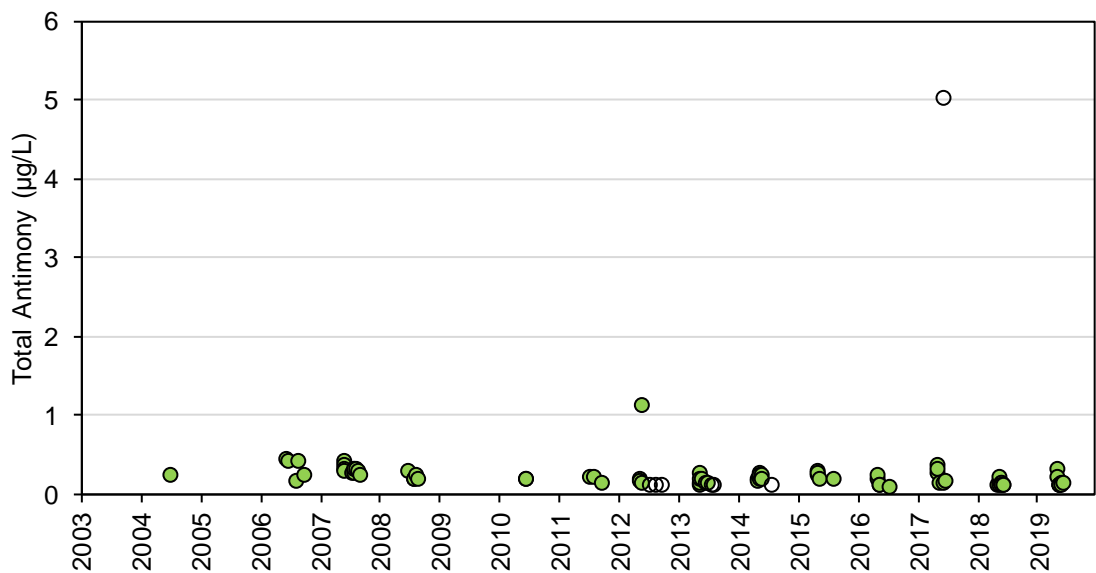


Figure 4C-15: Total Arsenic Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

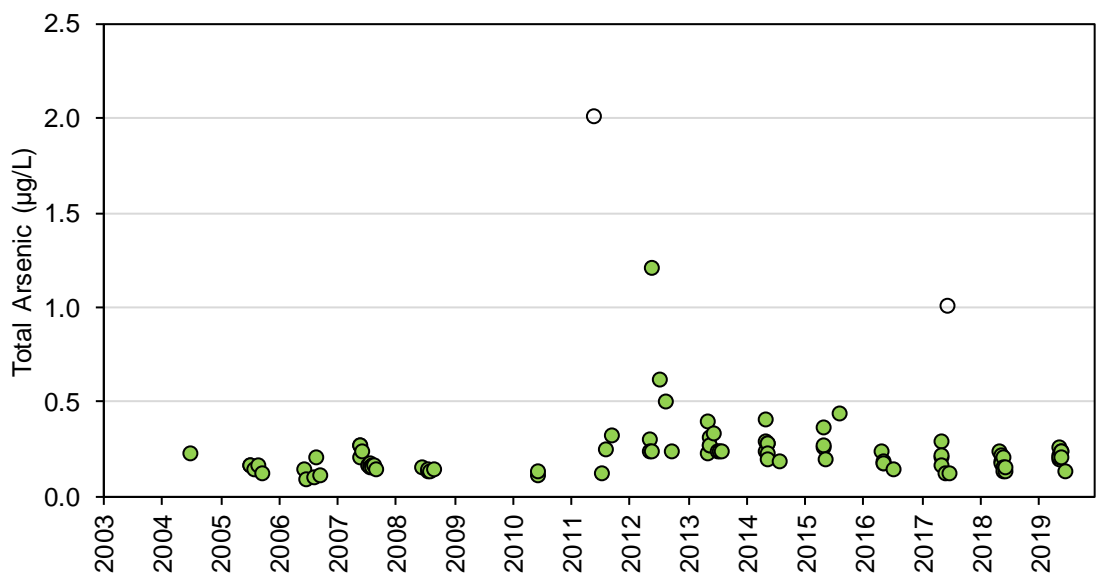


Figure 4C-16: Total Barium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

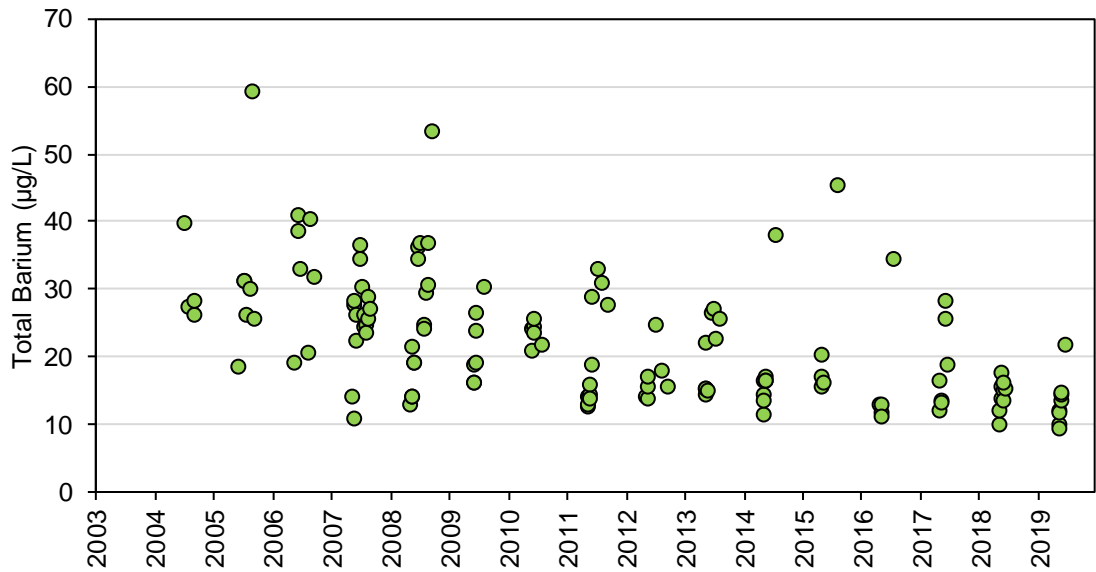


Figure 4C-17: Total Beryllium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

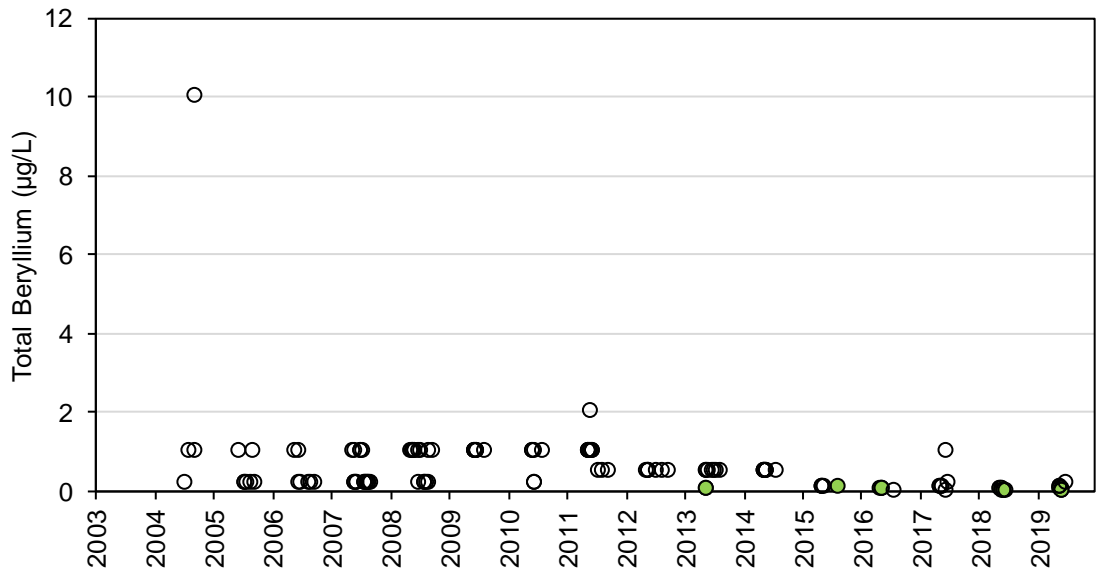


Figure 4C-18: Total Bismuth Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

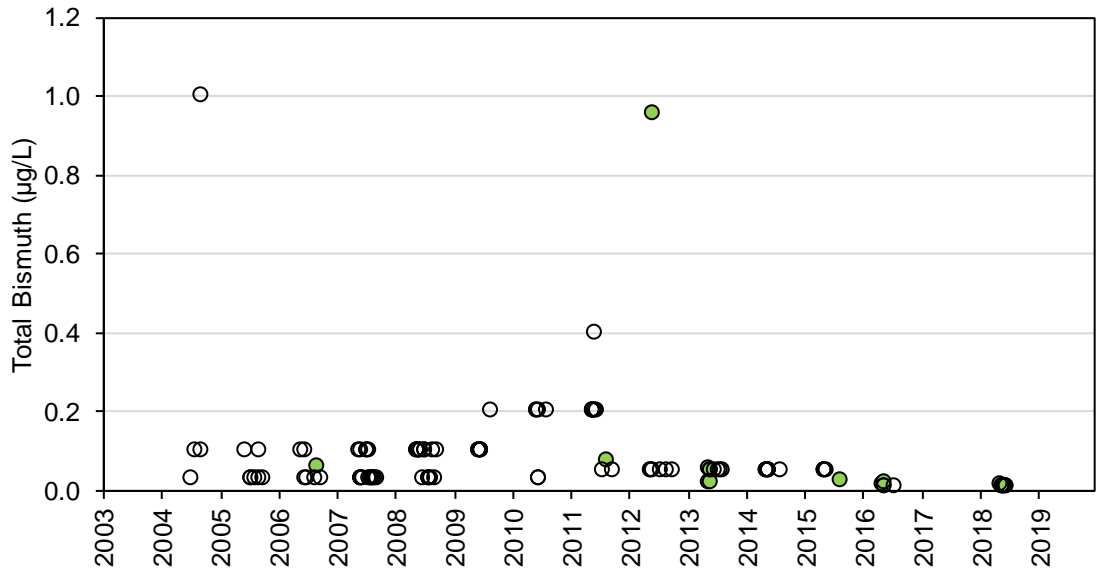


Figure 4C-19: Total Boron Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

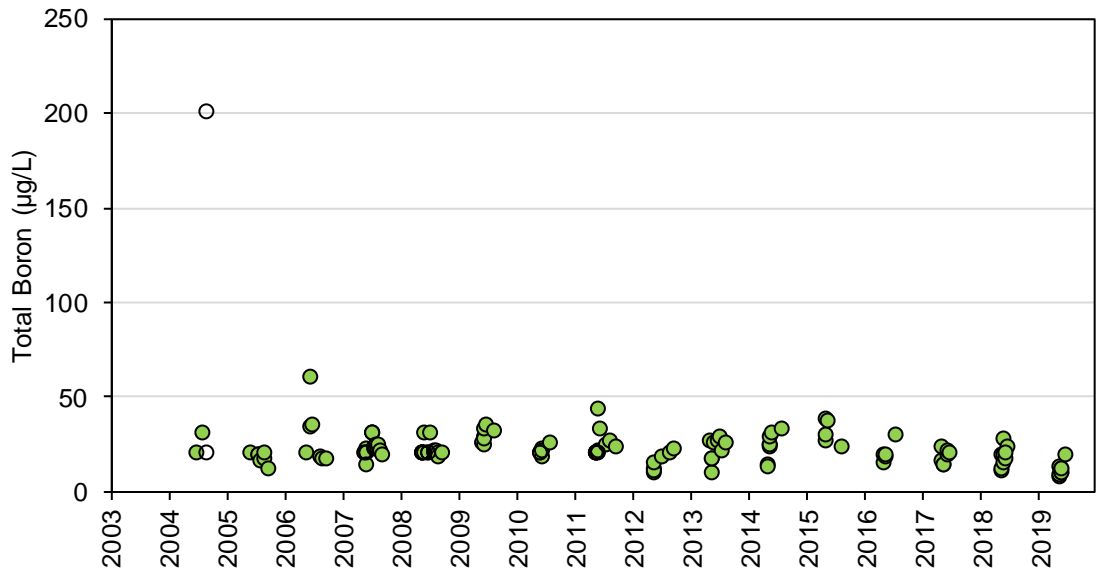


Figure 4C-20: Total Cadmium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

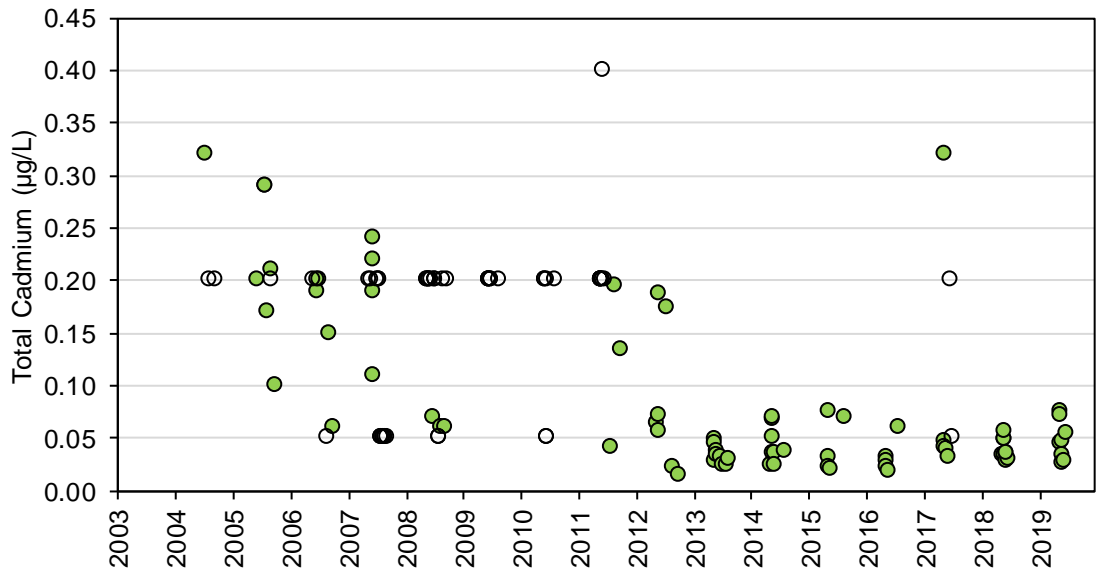


Figure 4C-21: Total Cesium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

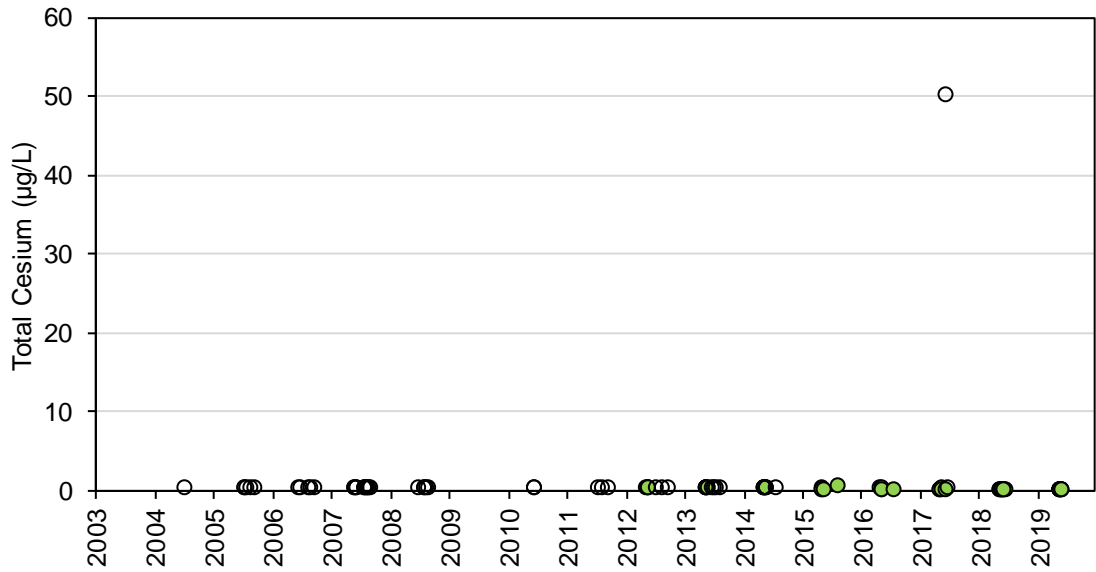


Figure 4C-22: Total Chromium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

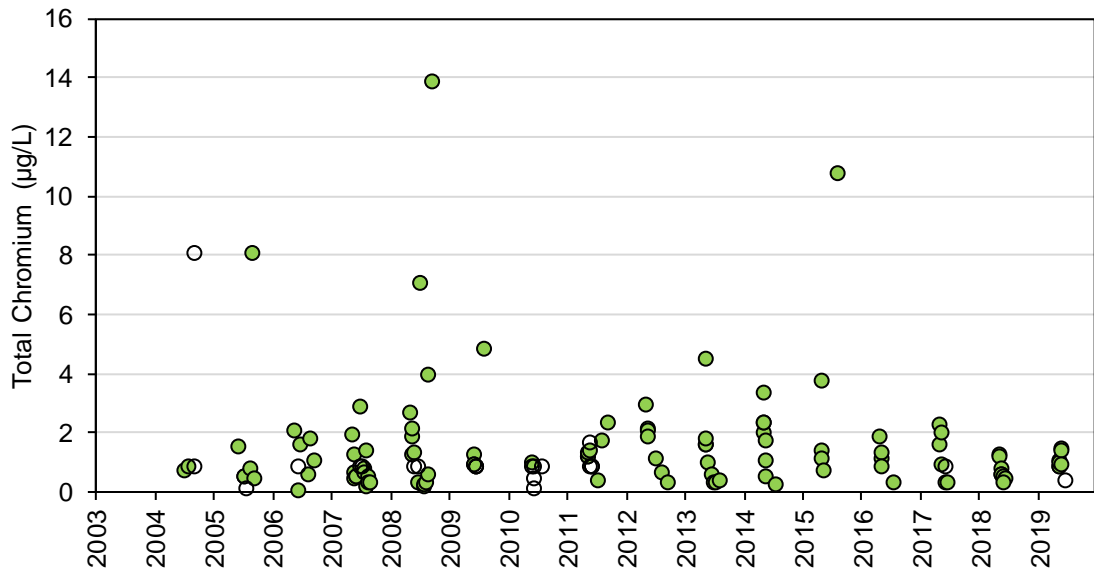


Figure 4C-23: Total Cobalt Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

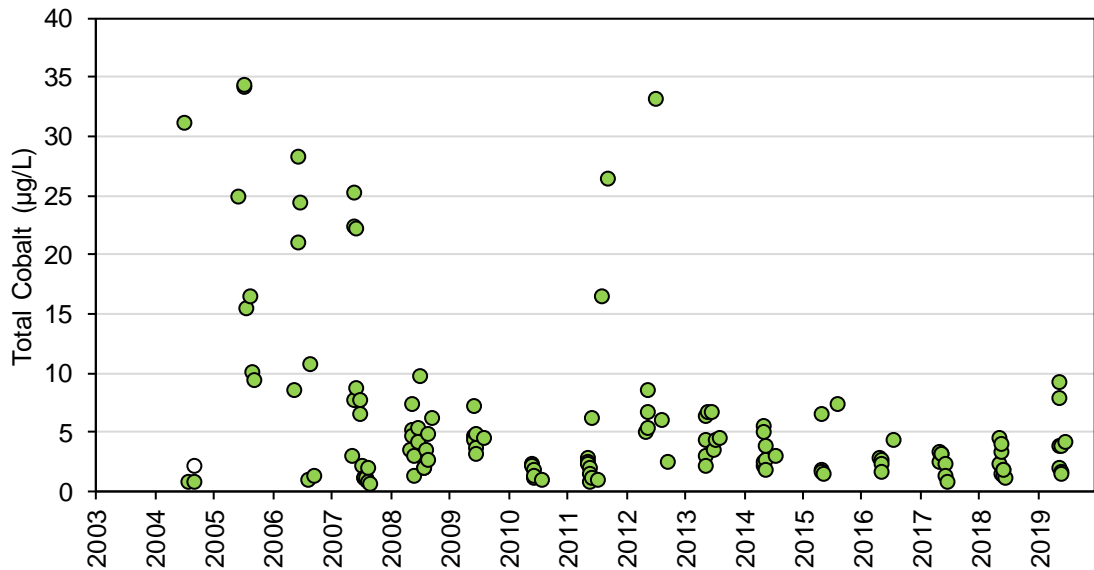


Figure 4C-24: Total Copper Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

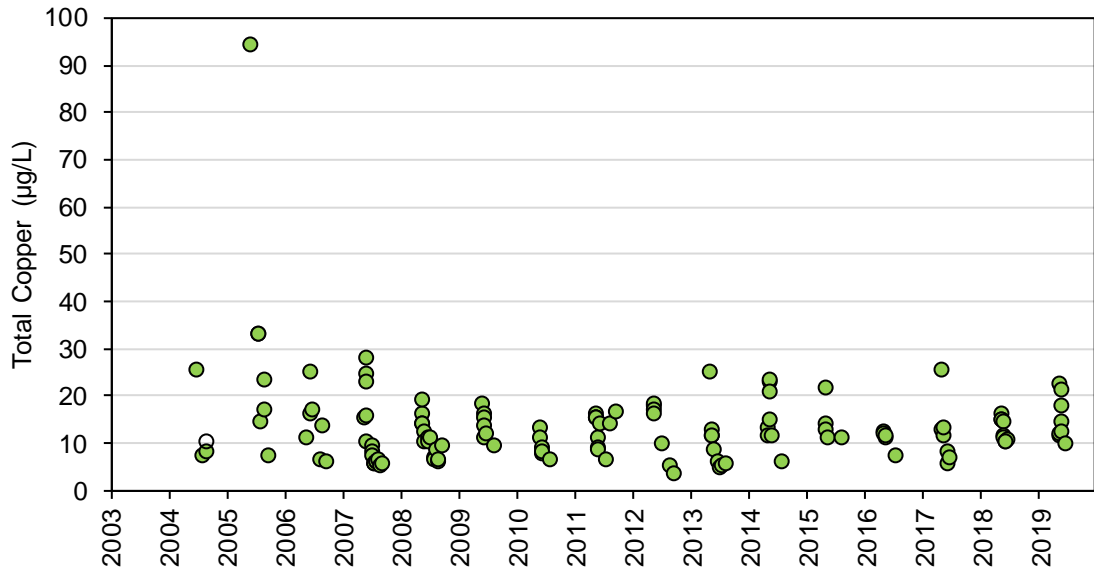


Figure 4C-25: Total Iron Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

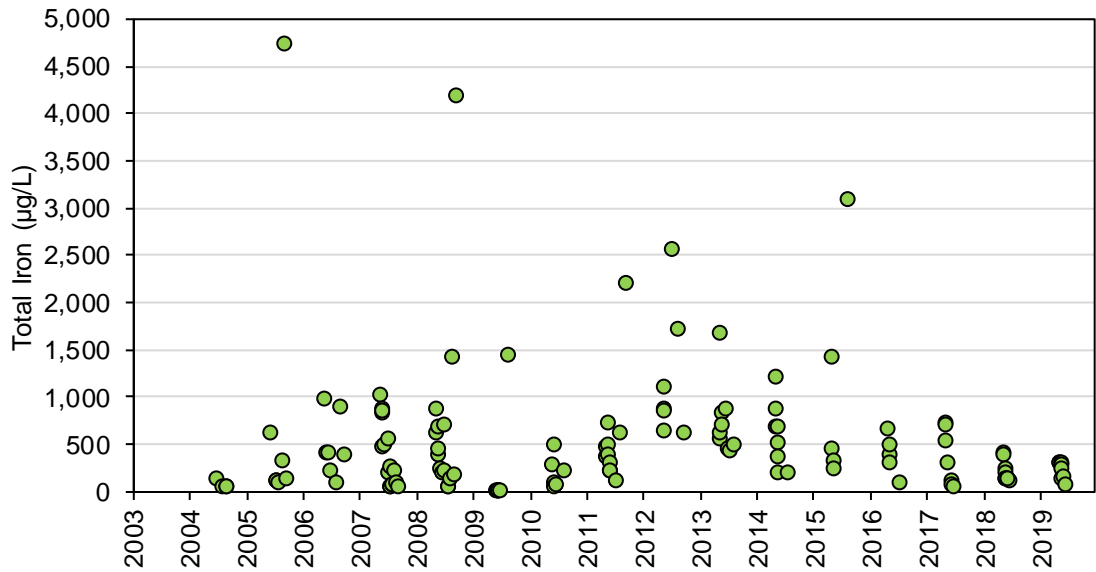


Figure 4C-26: Total Lead Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

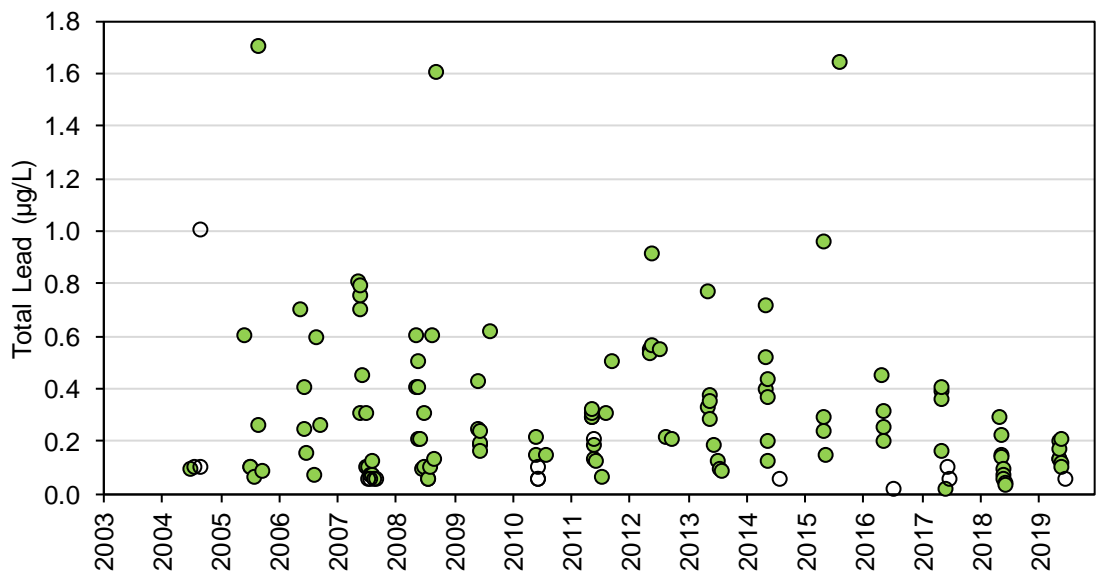


Figure 4C-27: Total Lithium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

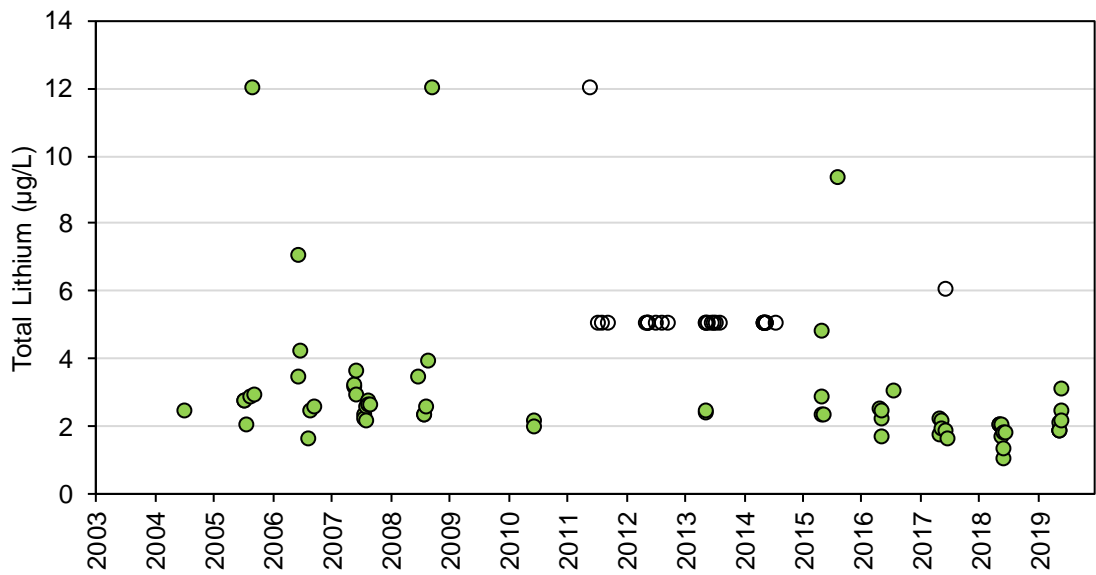


Figure 4C-28: Total Manganese Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

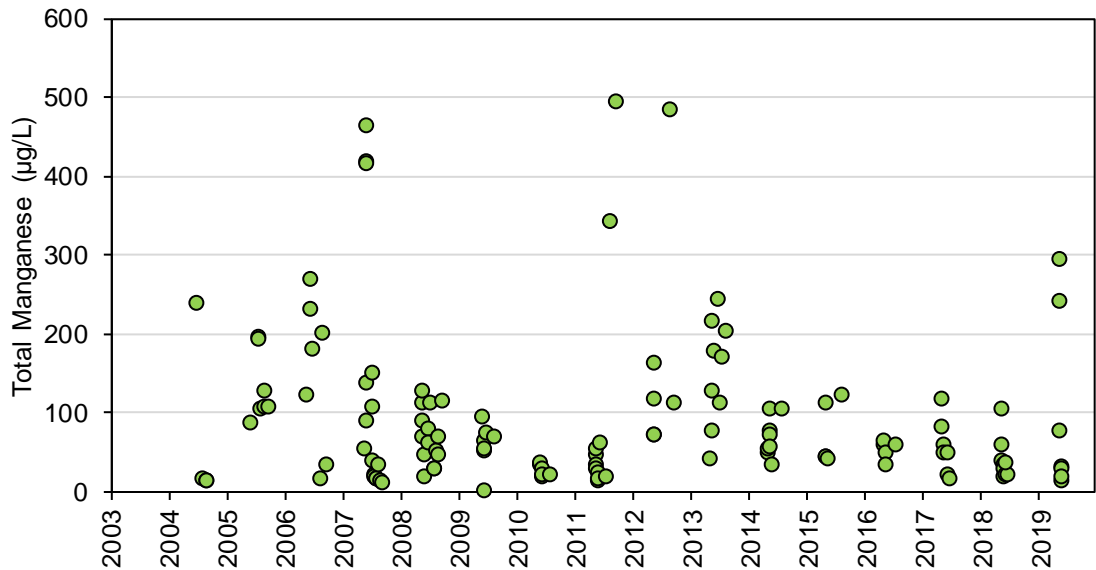


Figure 4C-29: Total Mercury Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

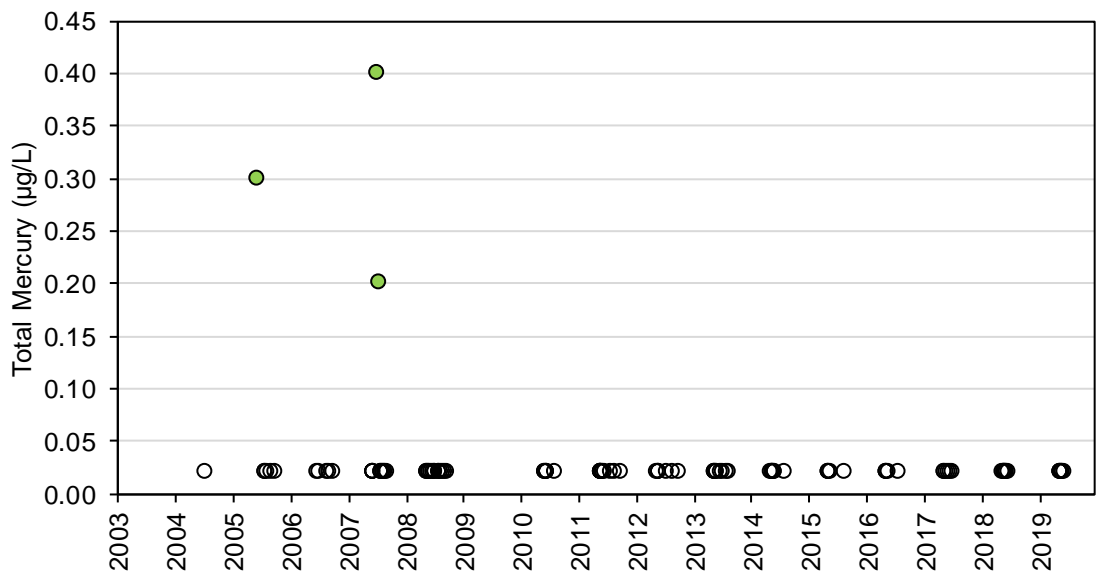


Figure 4C-30: Total Molybdenum Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

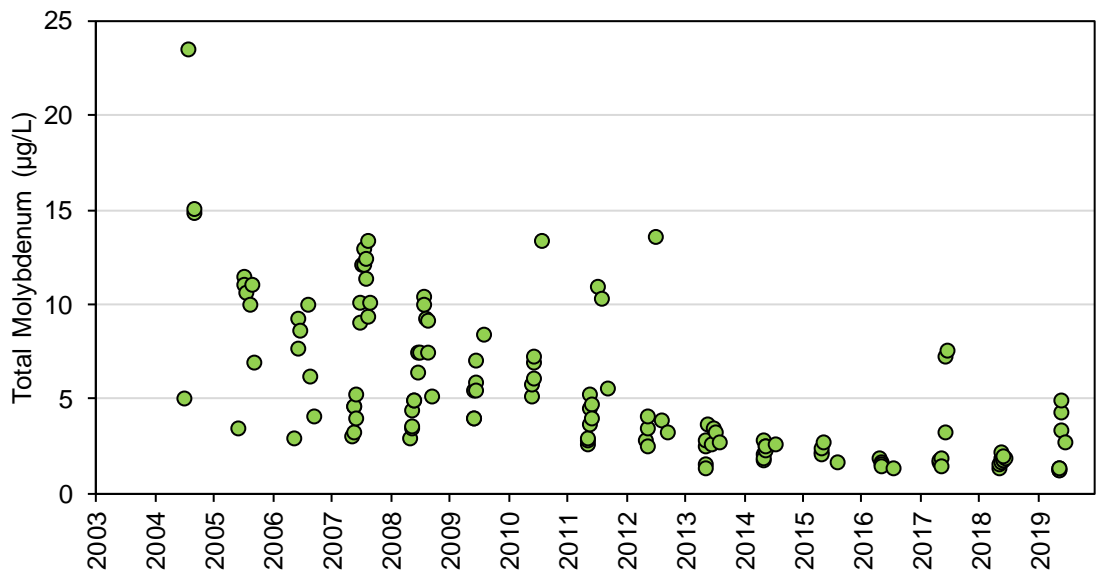


Figure 4C-31: Total Nickel Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

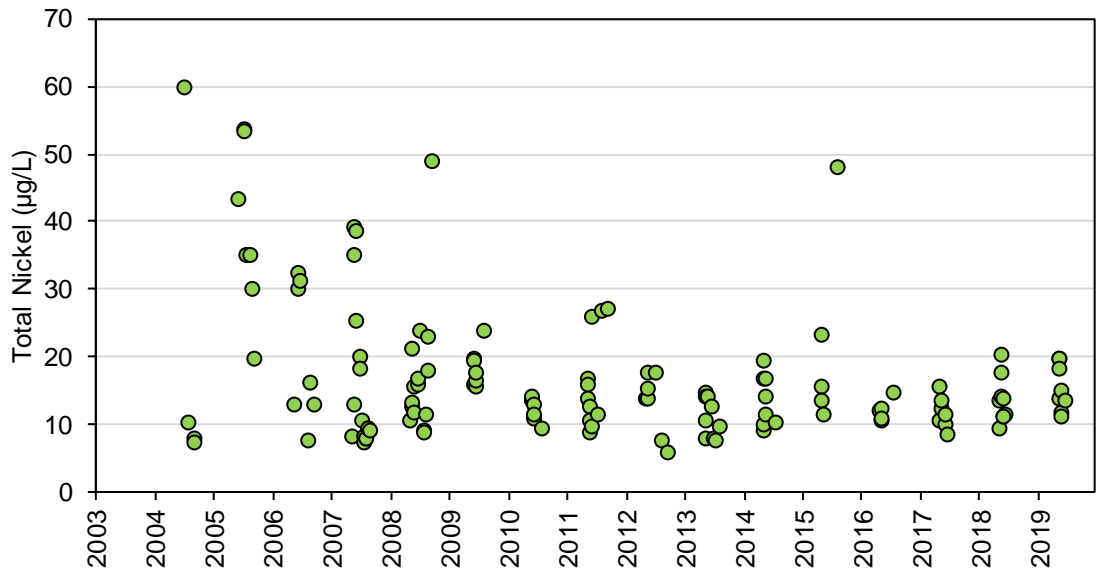


Figure 4C-32: Total Rubidium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

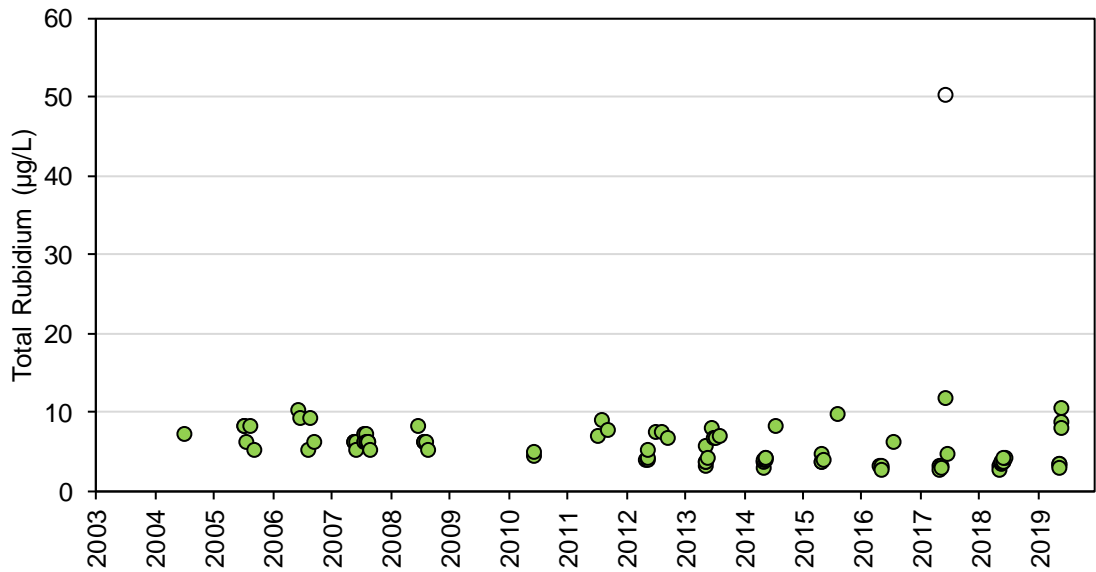


Figure 4C-33: Total Selenium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

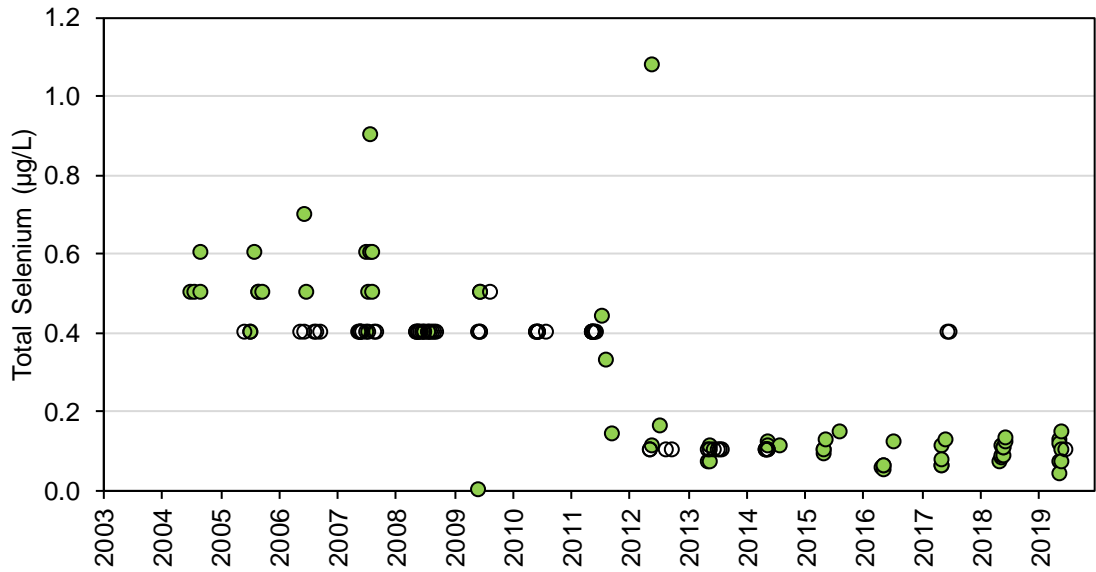


Figure 4C-34: Total Silver Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

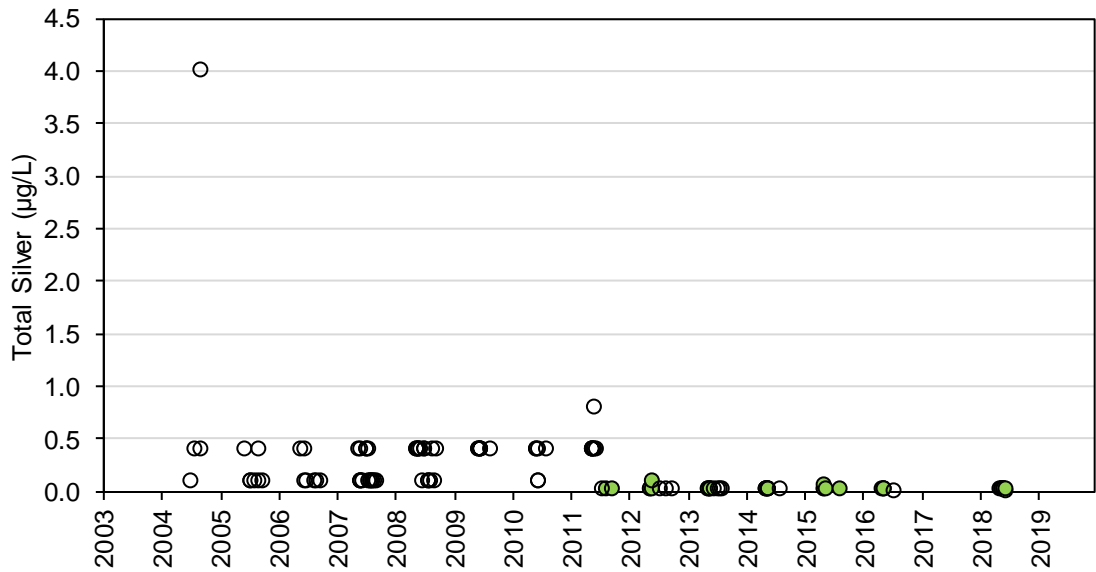


Figure 4C-35: Total Strontium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

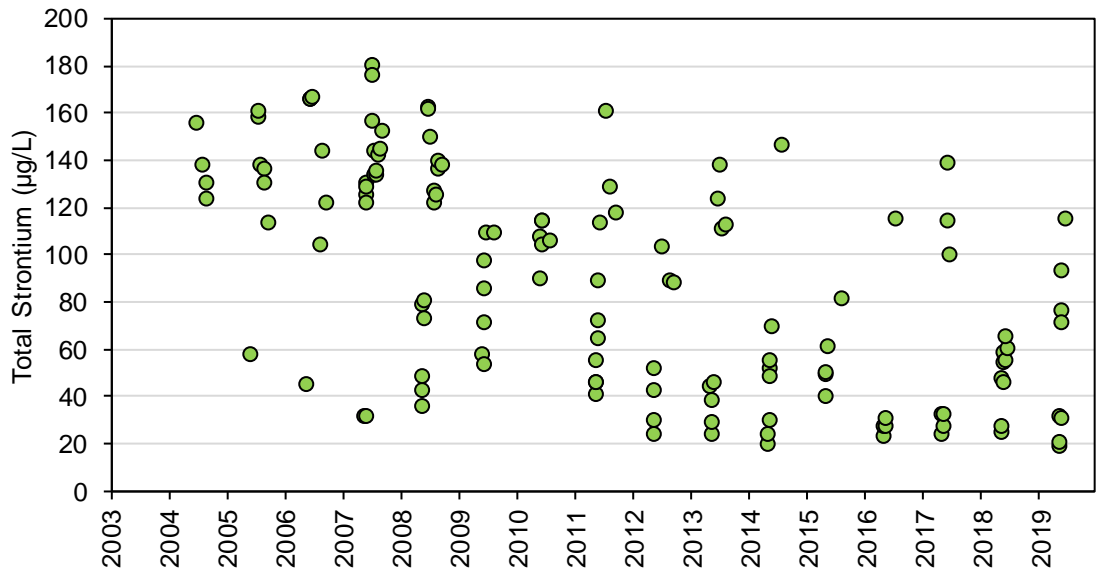


Figure 4C-36: Total Thallium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

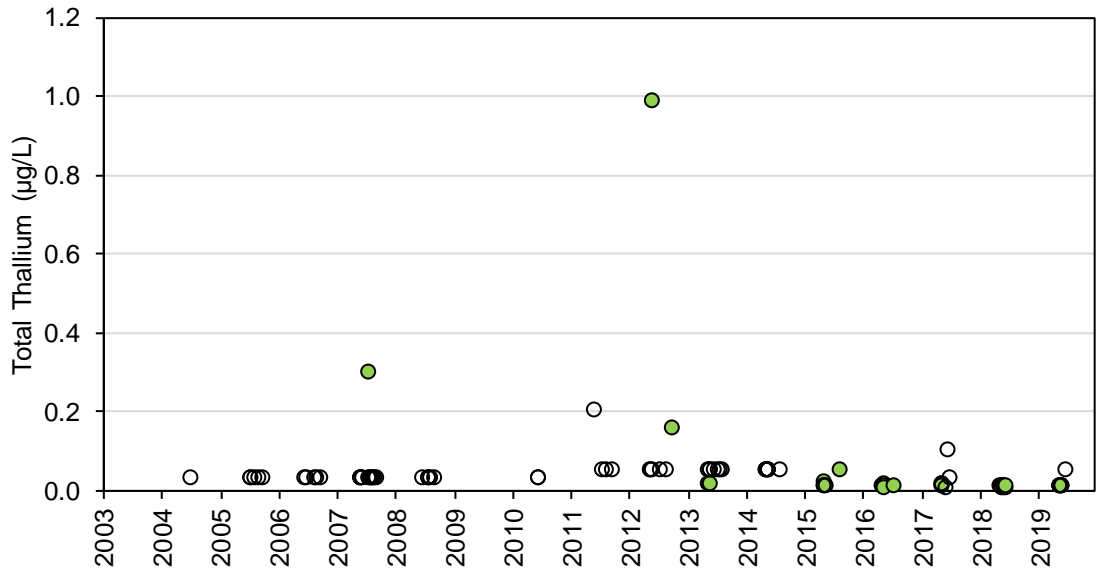


Figure 4C-37: Total Titanium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

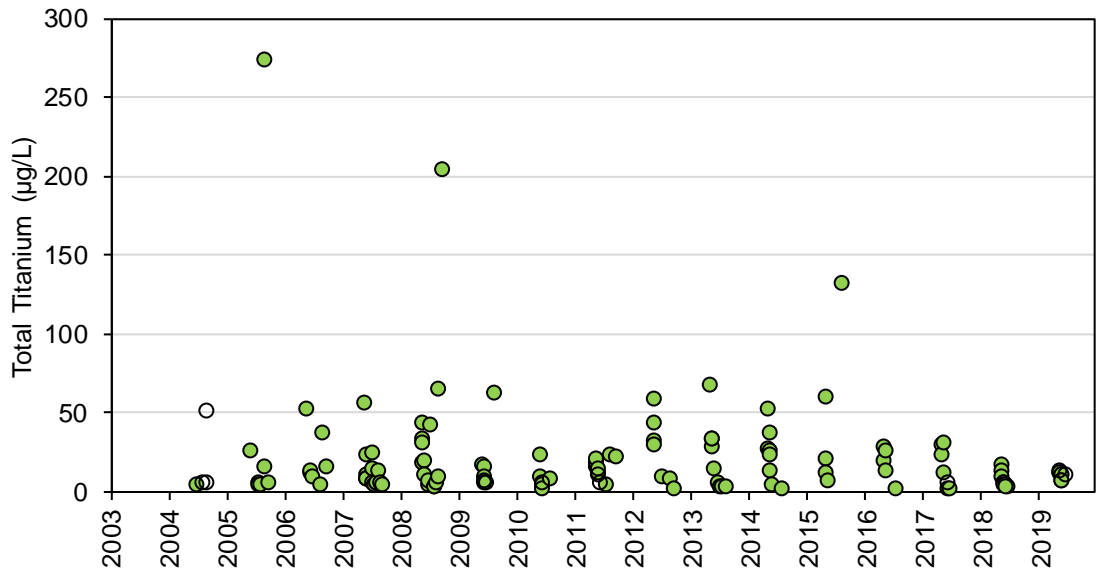


Figure 4C-38: Total Uranium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

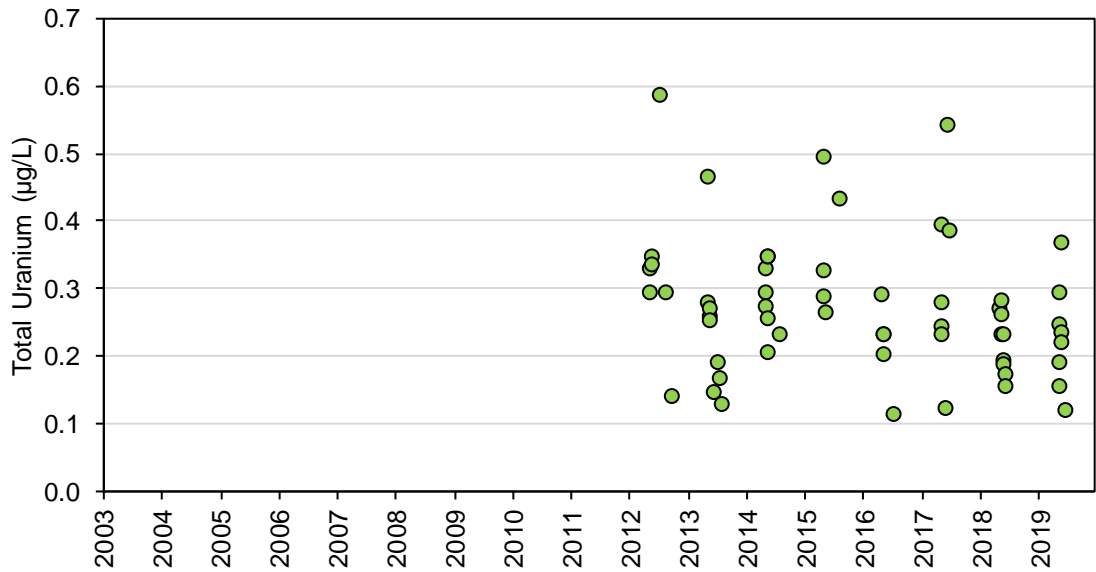


Figure 4C-39: Total Vanadium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

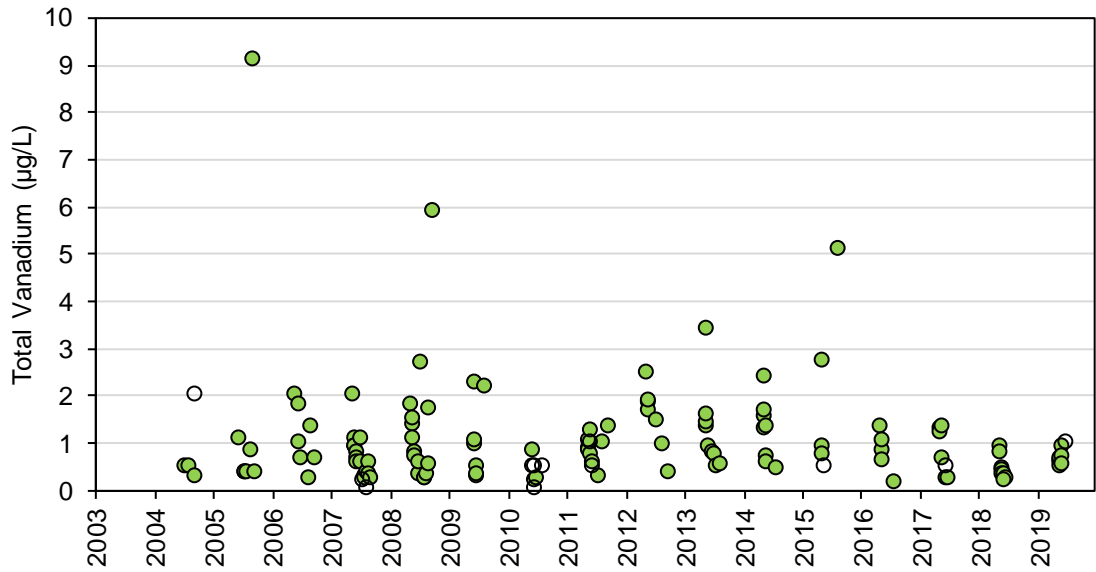


Figure 4C-40: Total Zinc Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

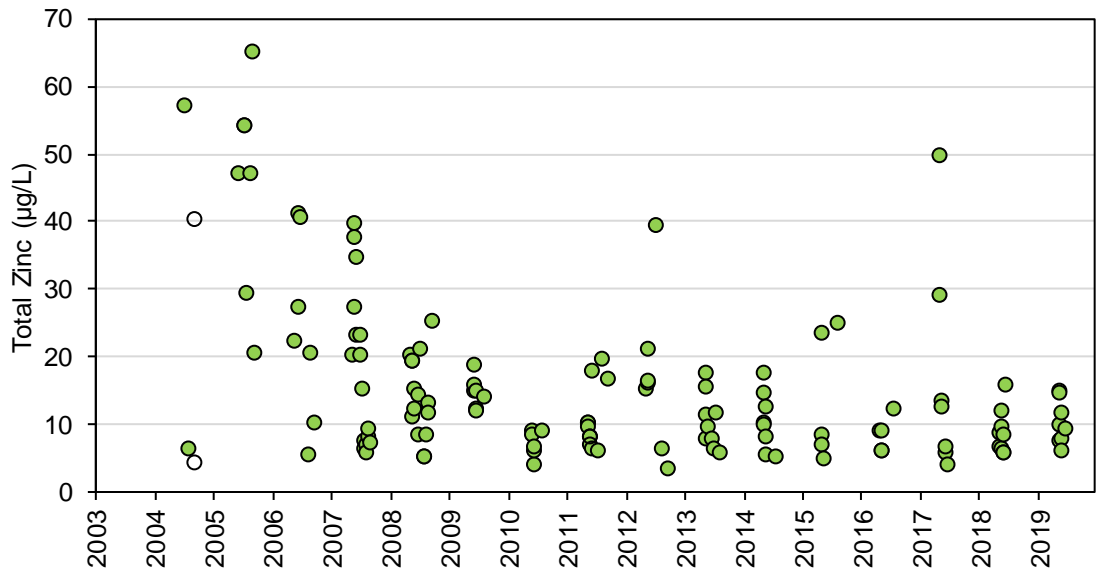


Figure 4C-41: Dissolved Aluminum Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

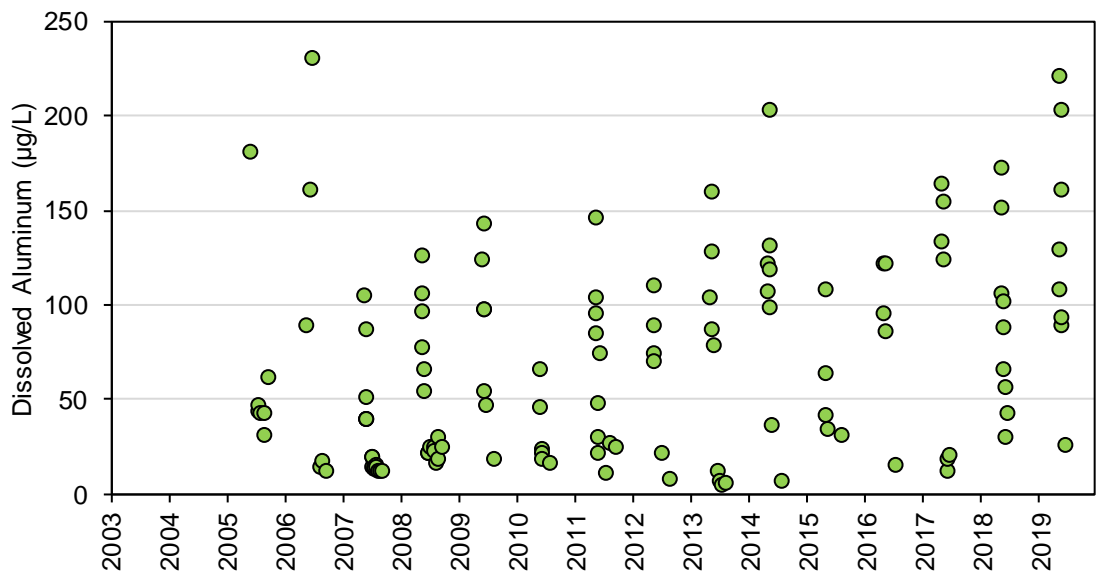


Figure 4C-42: Dissolved Antimony Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

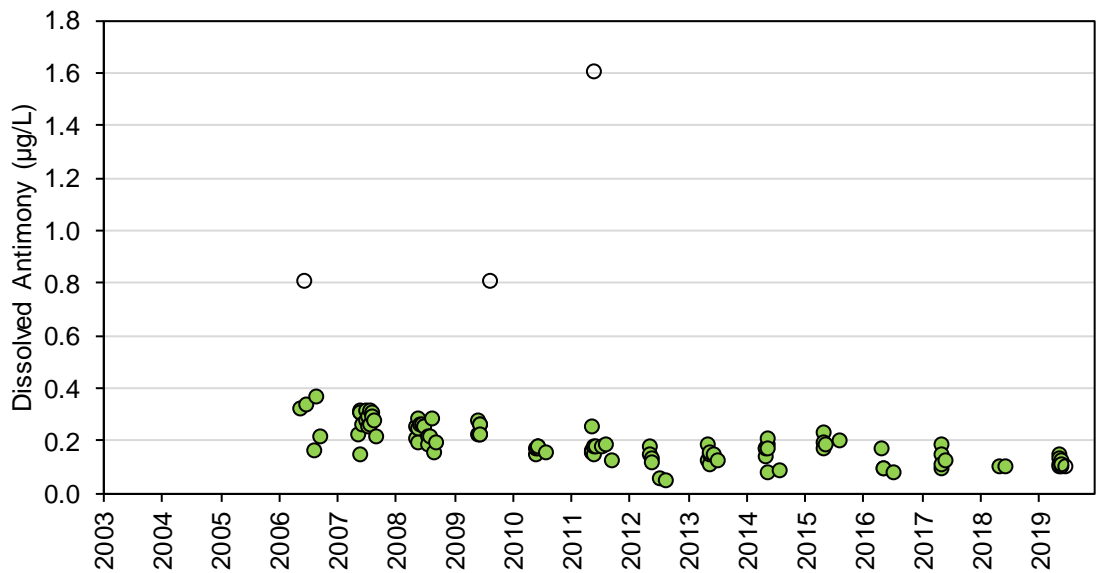


Figure 4C-43: Dissolved Arsenic Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

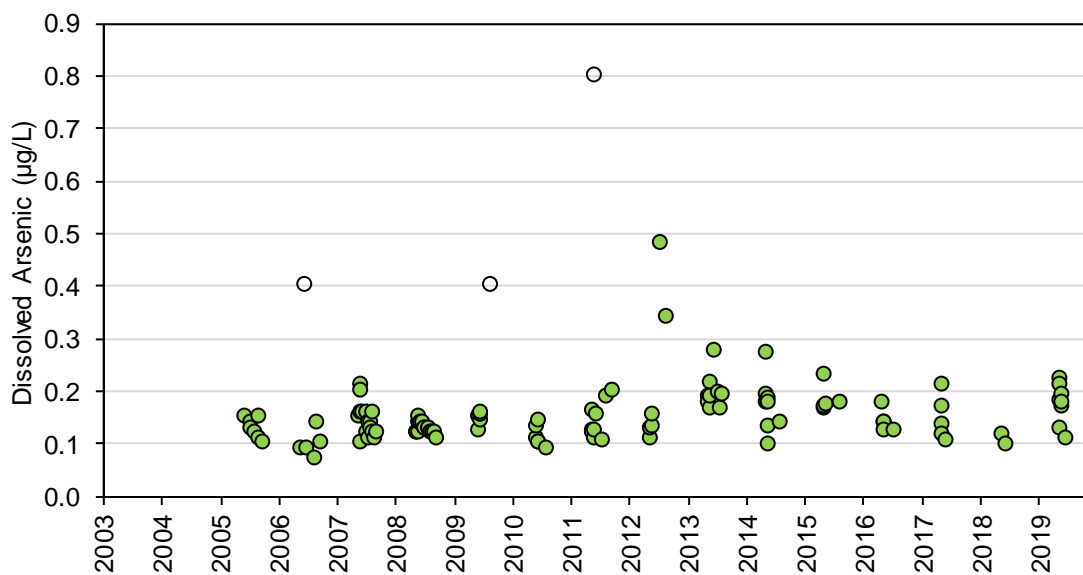


Figure 4C-44: Dissolved Barium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

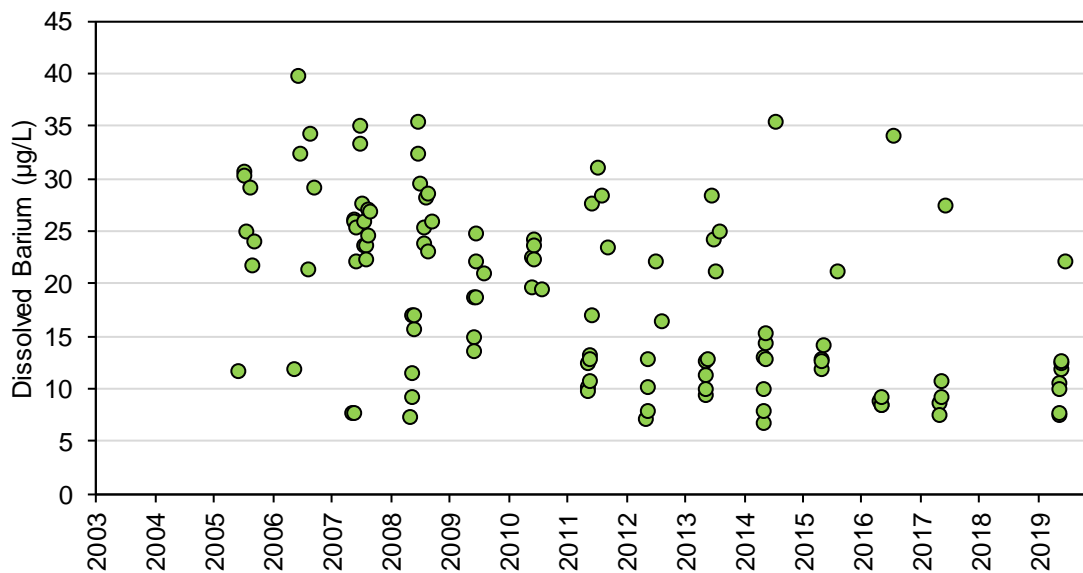


Figure 4C-45: Dissolved Beryllium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

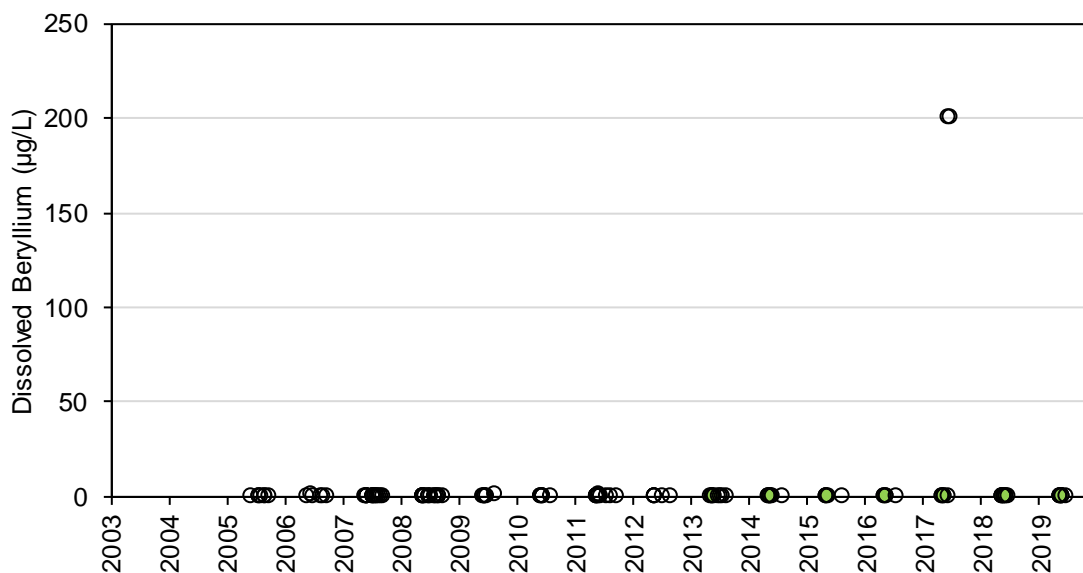


Figure 4C-46: Dissolved Bismuth Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

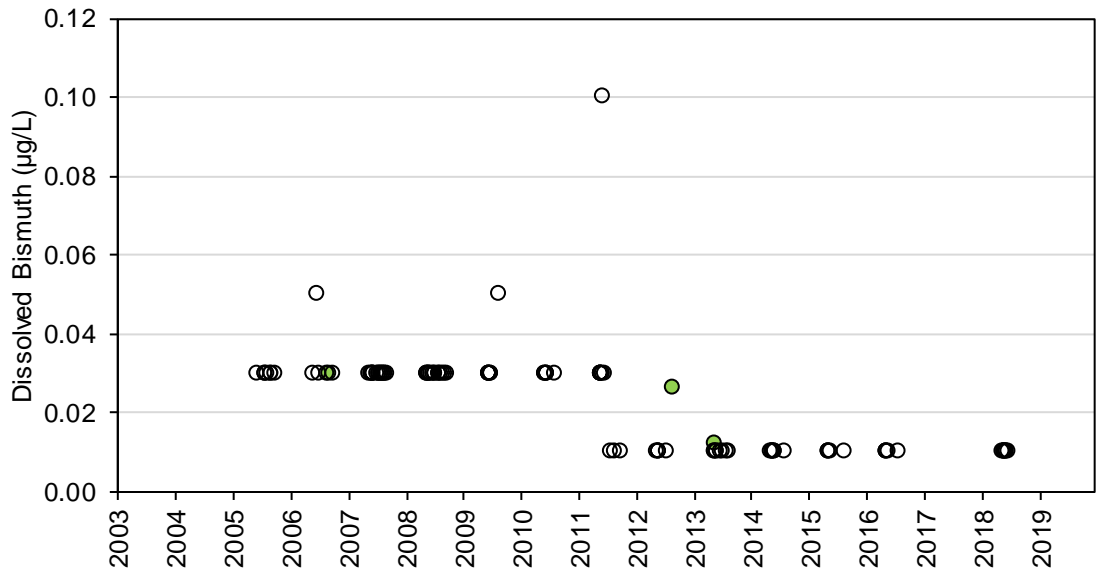


Figure 4C-47: Dissolved Boron Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

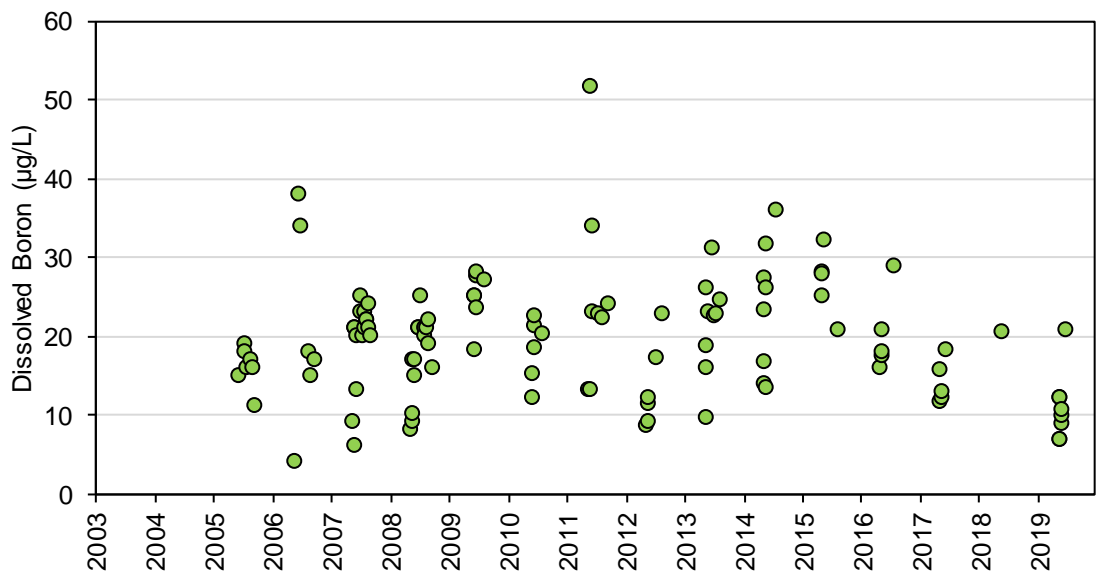


Figure 4C-48: Dissolved Cadmium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

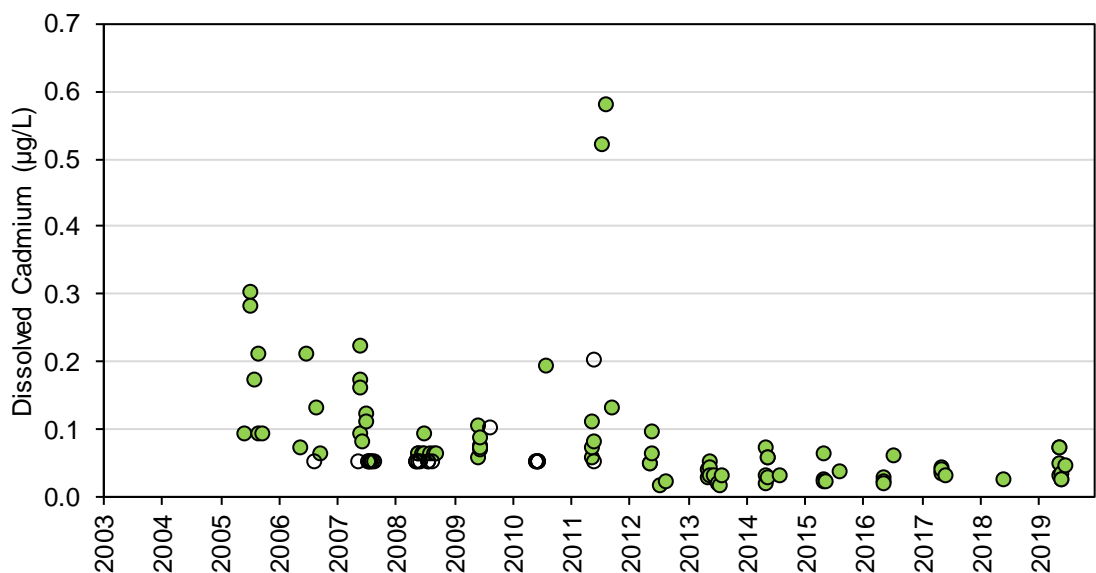


Figure 4C-49: Dissolved Cesium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

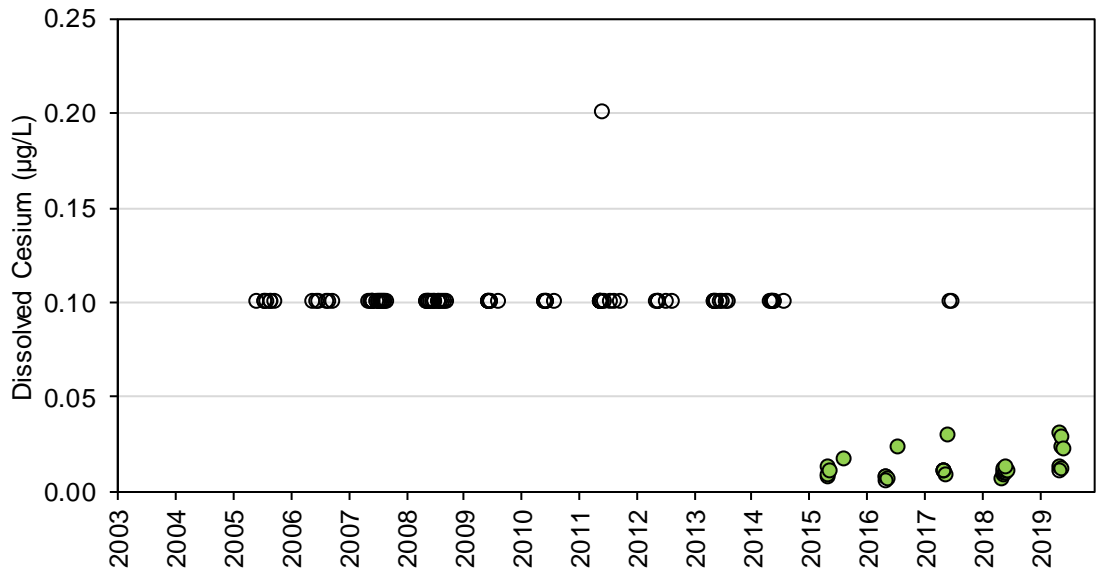


Figure 4C-50: Dissolved Chromium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

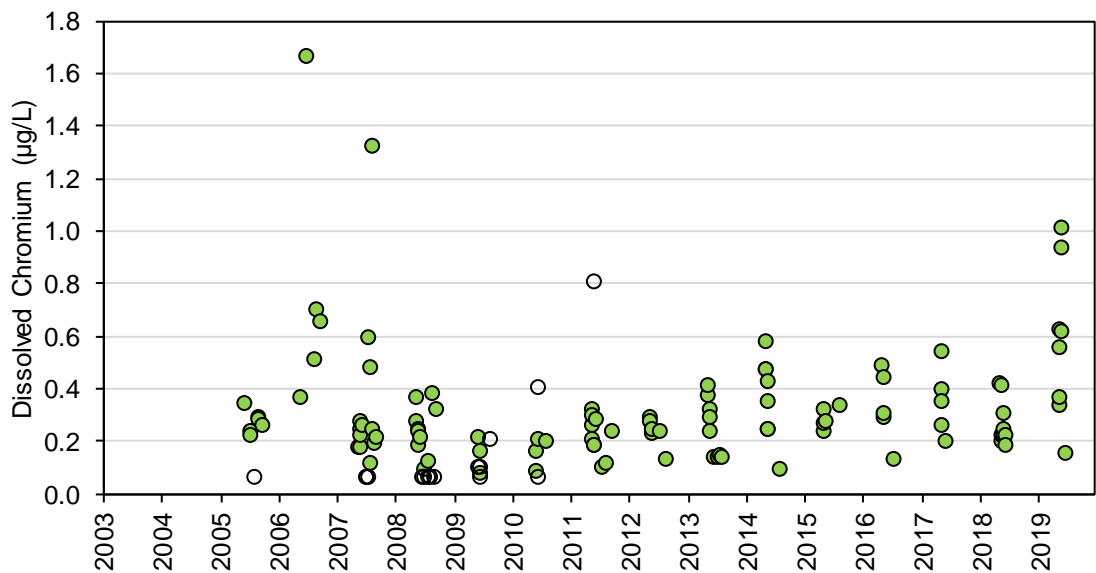


Figure 4C-51: Dissolved Cobalt Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

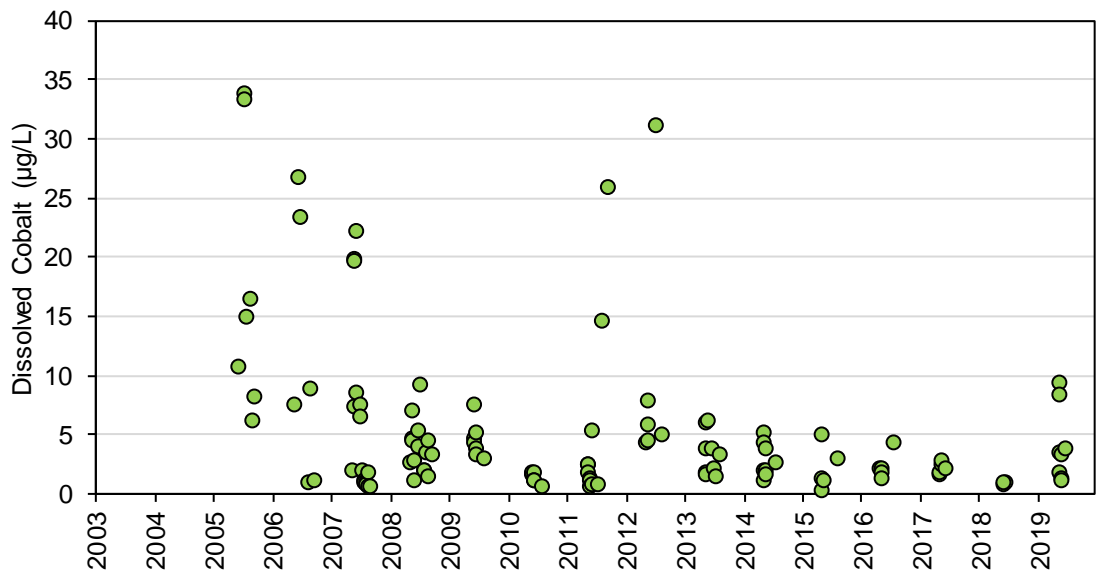


Figure 4C-52: Dissolved Copper Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

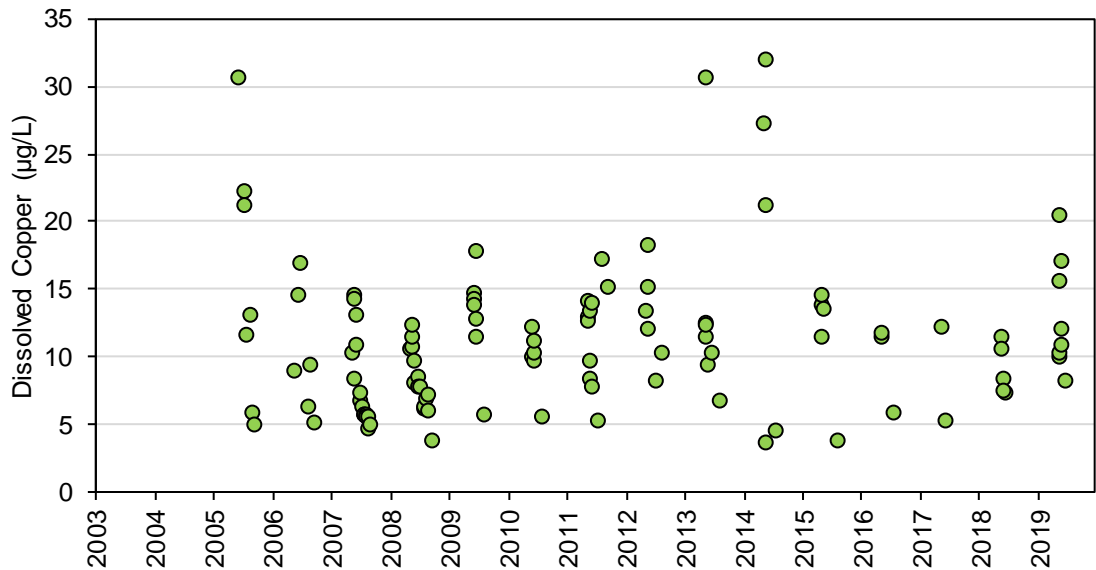


Figure 4C-53: Dissolved Iron Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

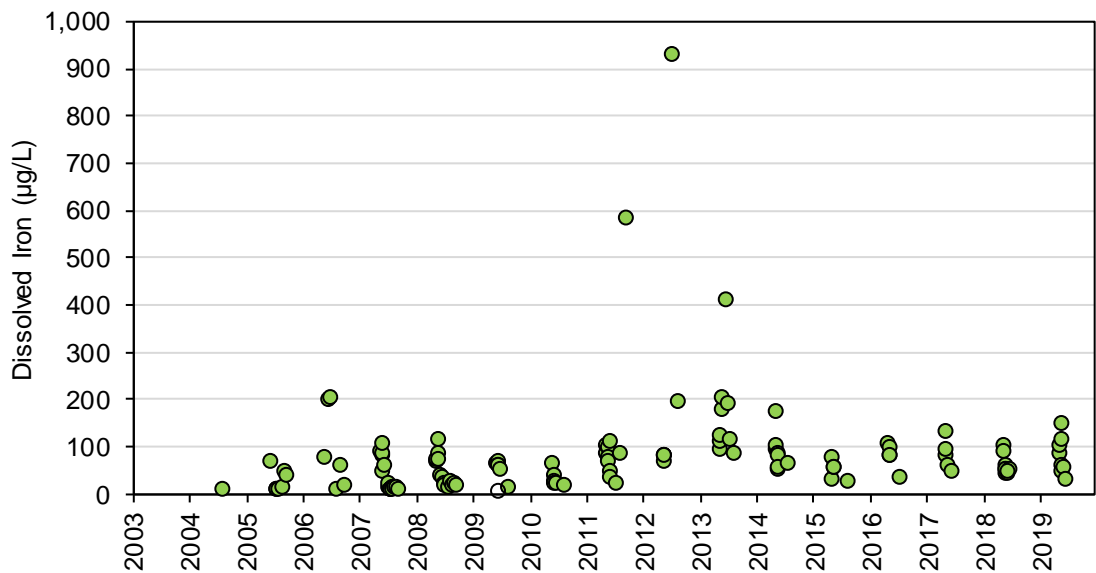


Figure 4C-54: Dissolved Lead Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

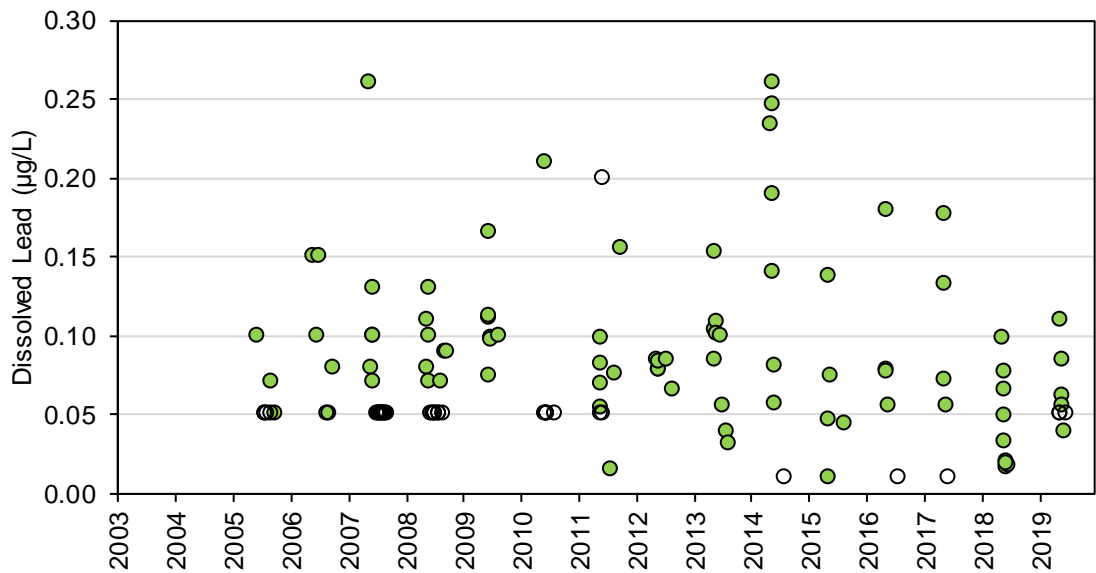


Figure 4C-55: Dissolved Lithium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

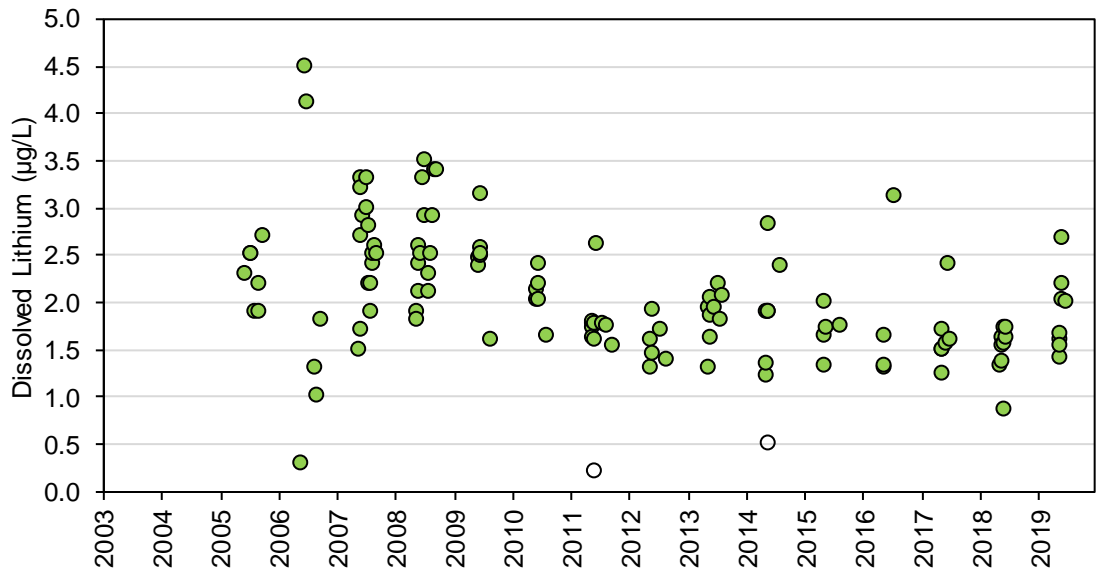


Figure 4C-56: Dissolved Manganese Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

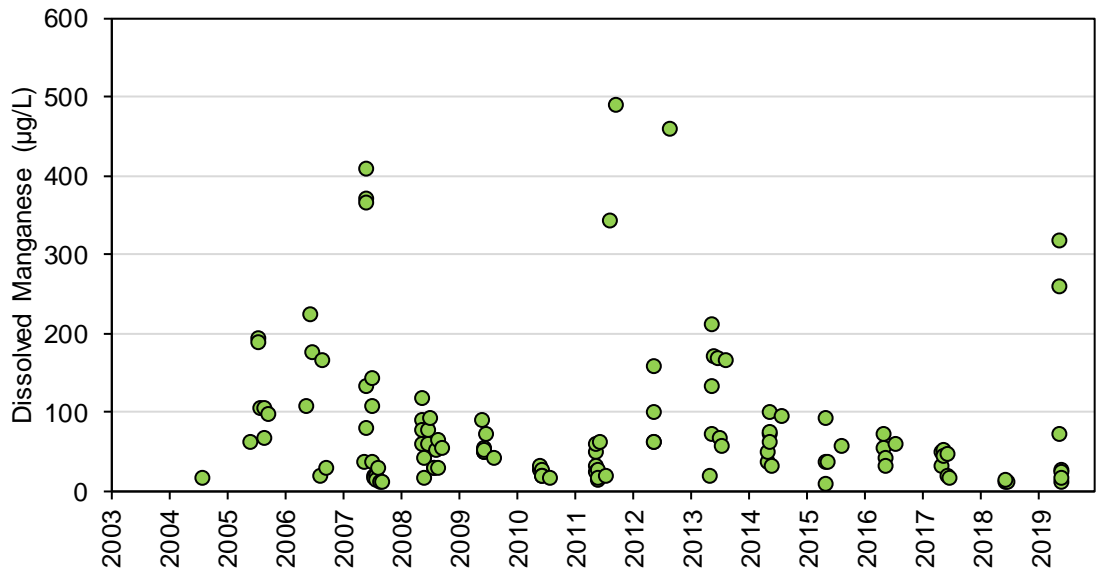


Figure 4C-57: Dissolved Mercury Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

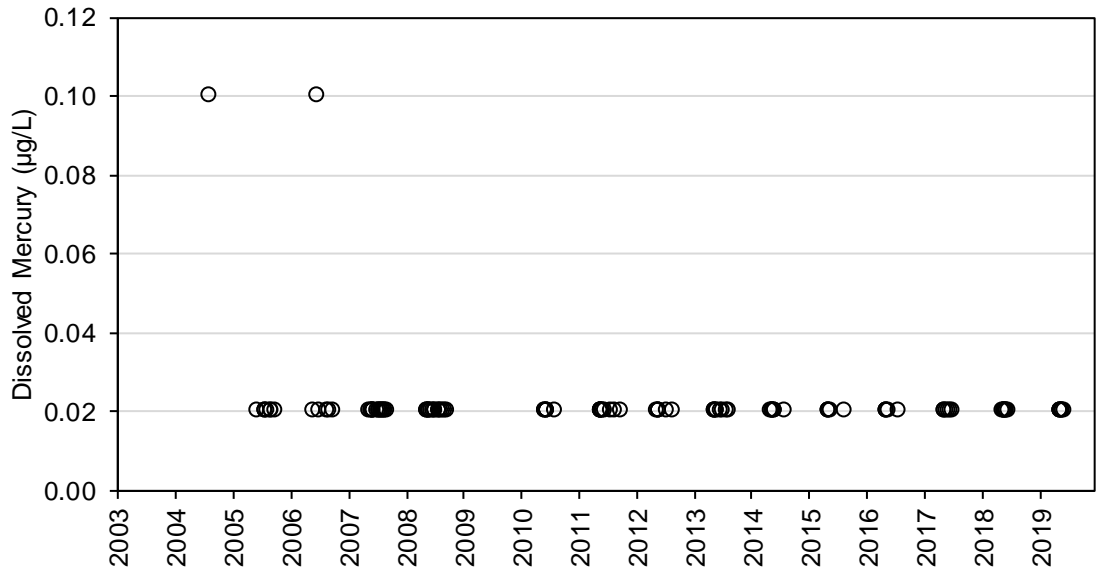


Figure 4C-58: Dissolved Molybdenum Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

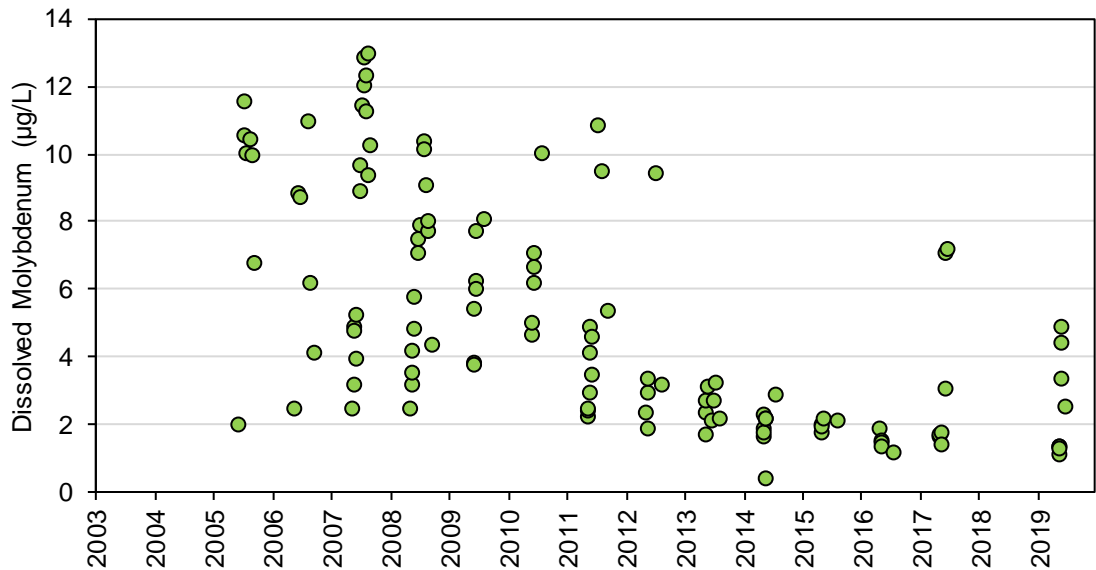


Figure 4C-59: Dissolved Nickel Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

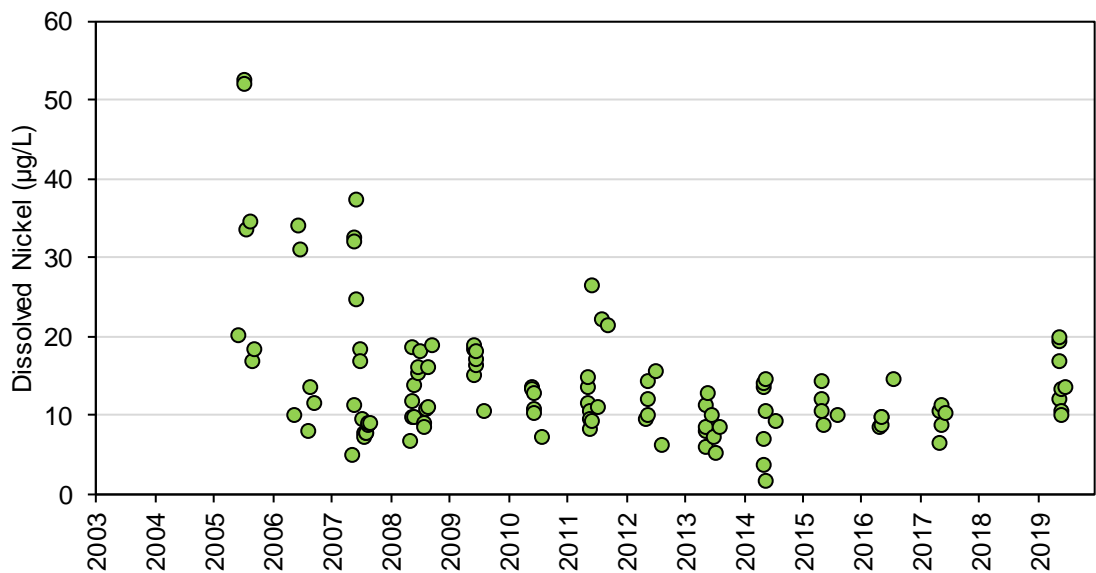


Figure 4C-60: Dissolved Rubidium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

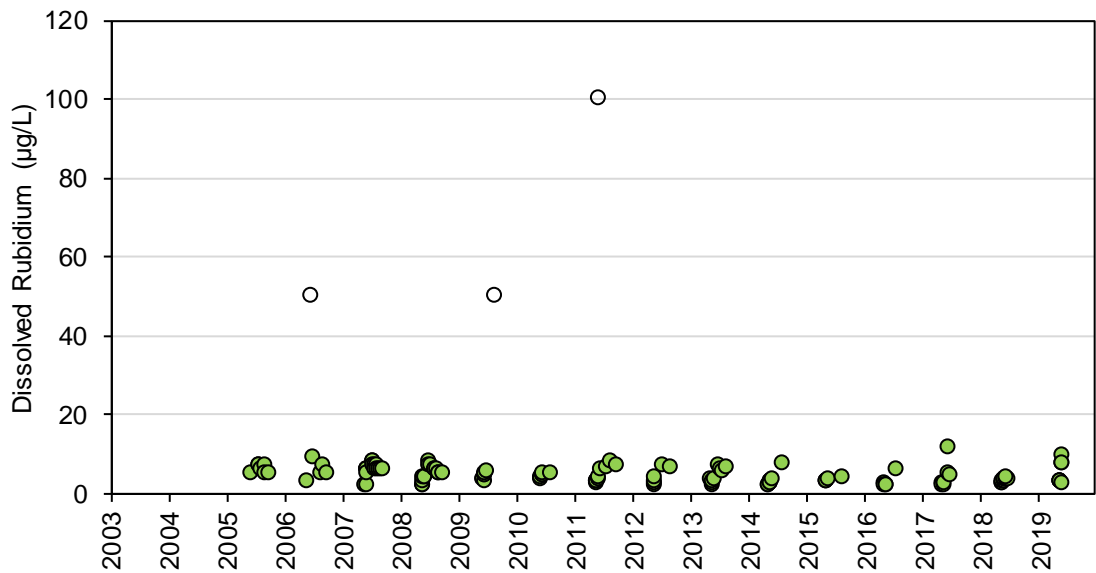


Figure 4C-61: Dissolved Selenium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

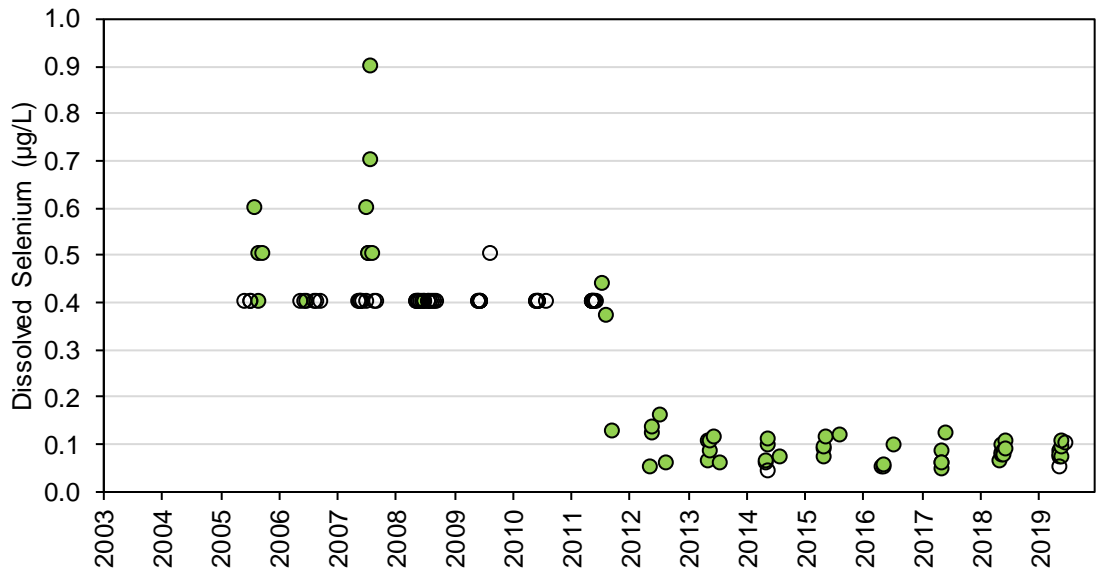


Figure 4C-62: Dissolved Silver Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

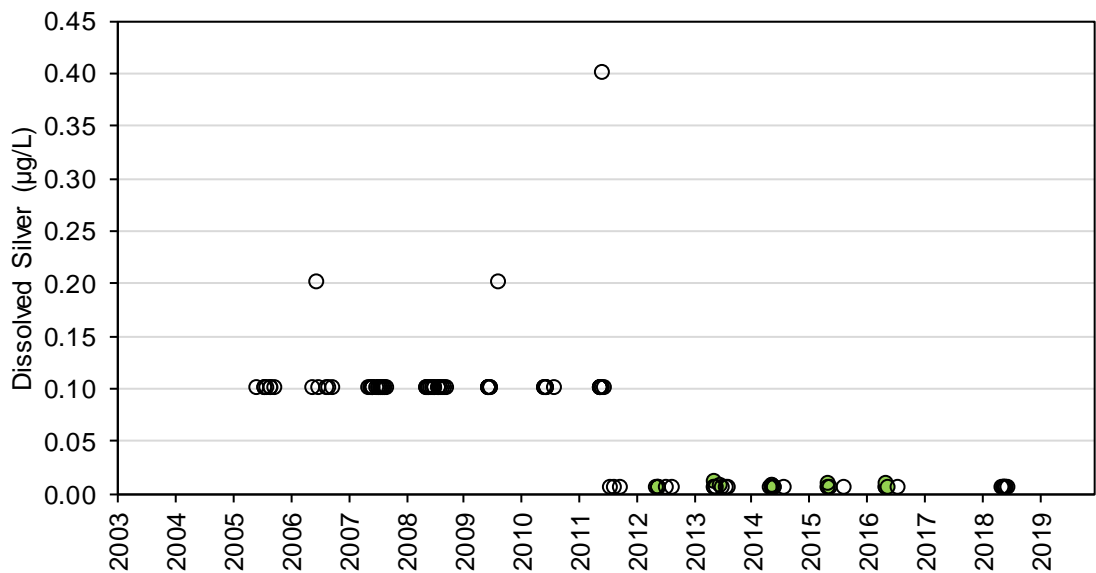


Figure 4C-63: Dissolved Strontium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

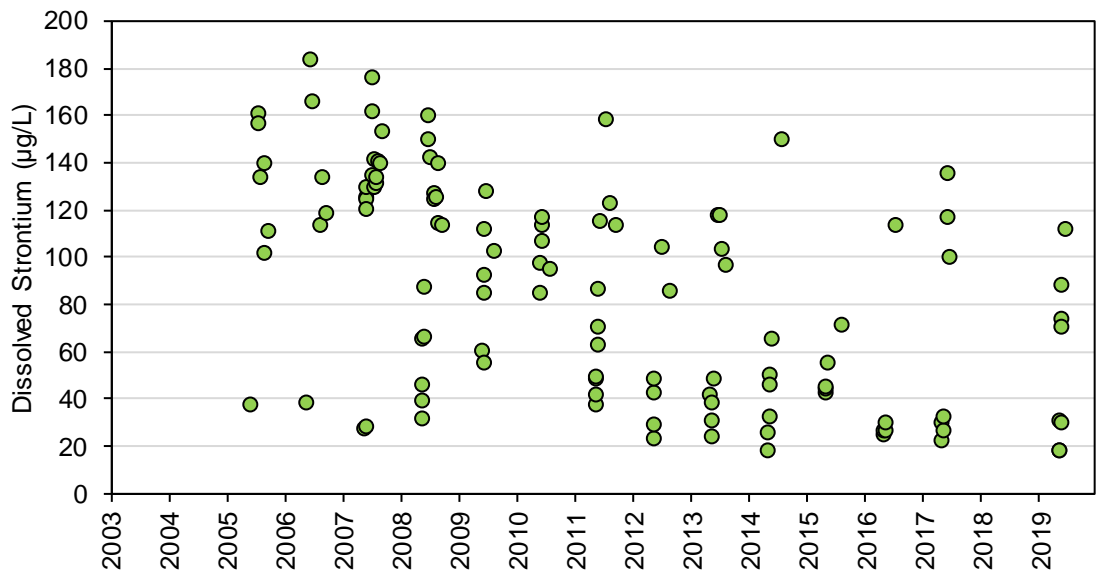


Figure 4C-64: Dissolved Thallium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

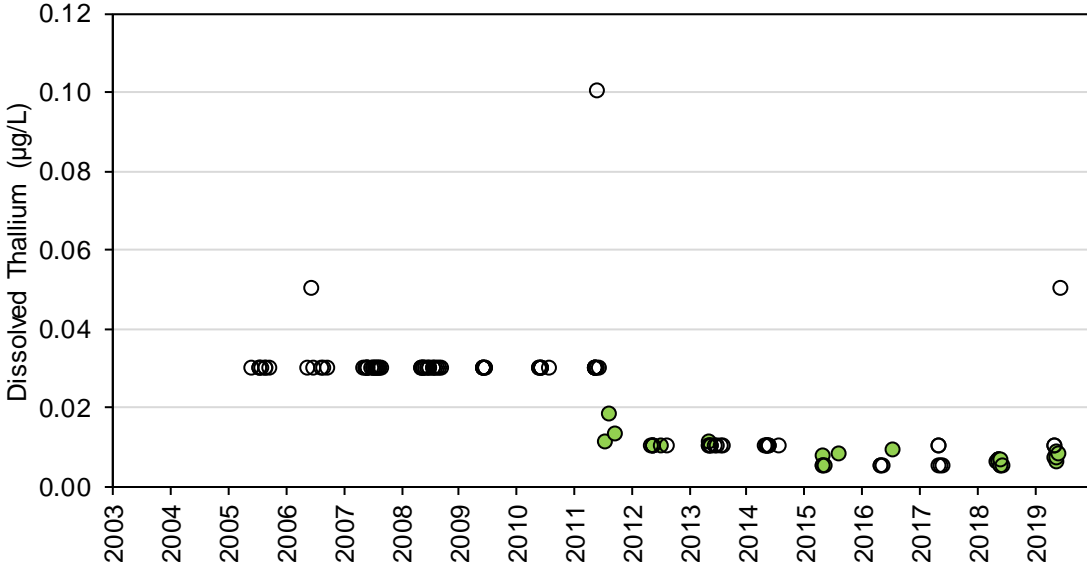


Figure 4C-65: Dissolved Titanium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

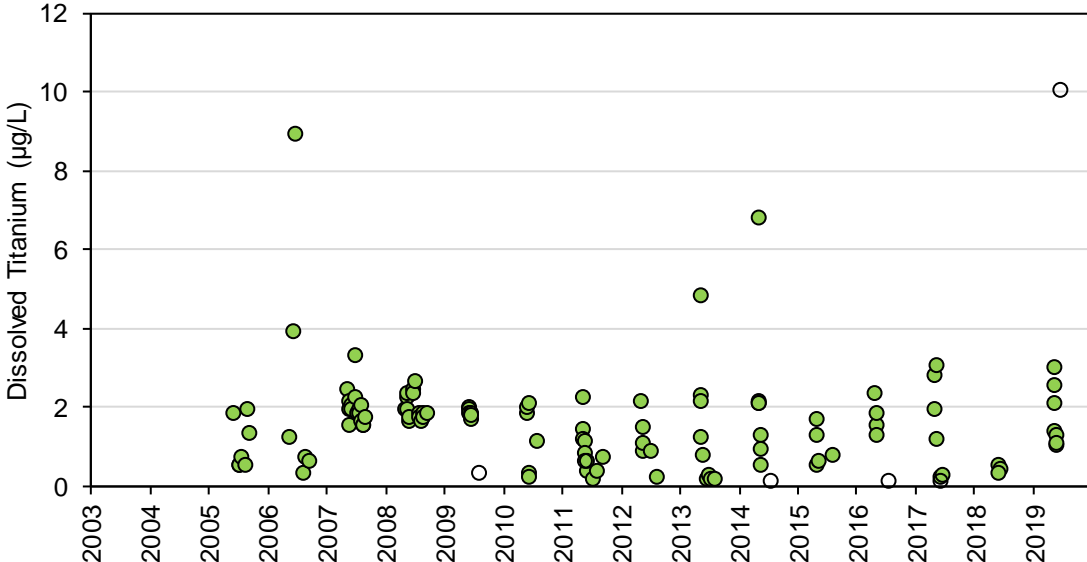


Figure 4C-66: Dissolved Uranium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

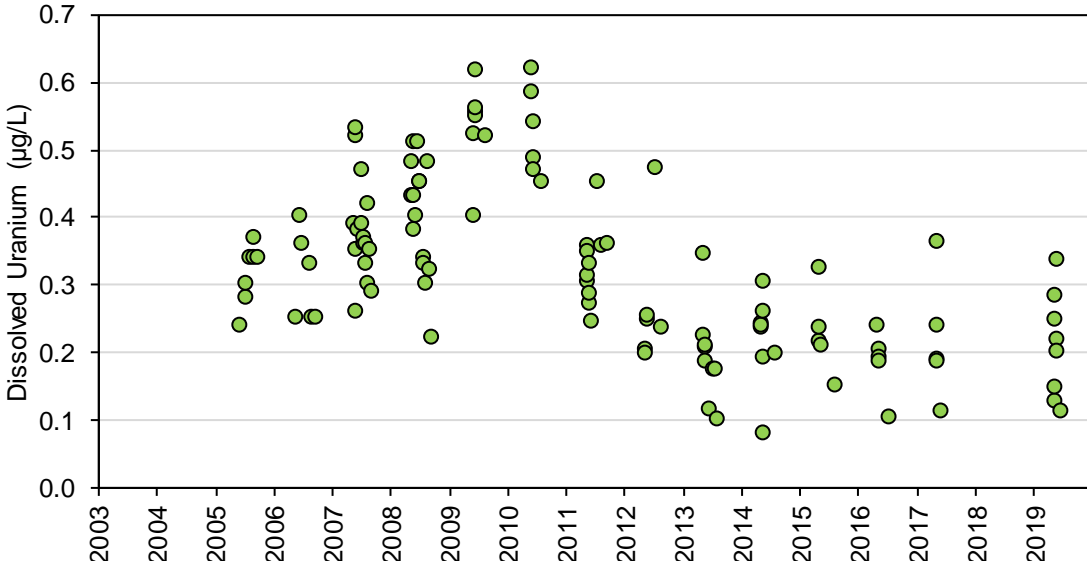


Figure 4C-67: Dissolved Vanadium Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance

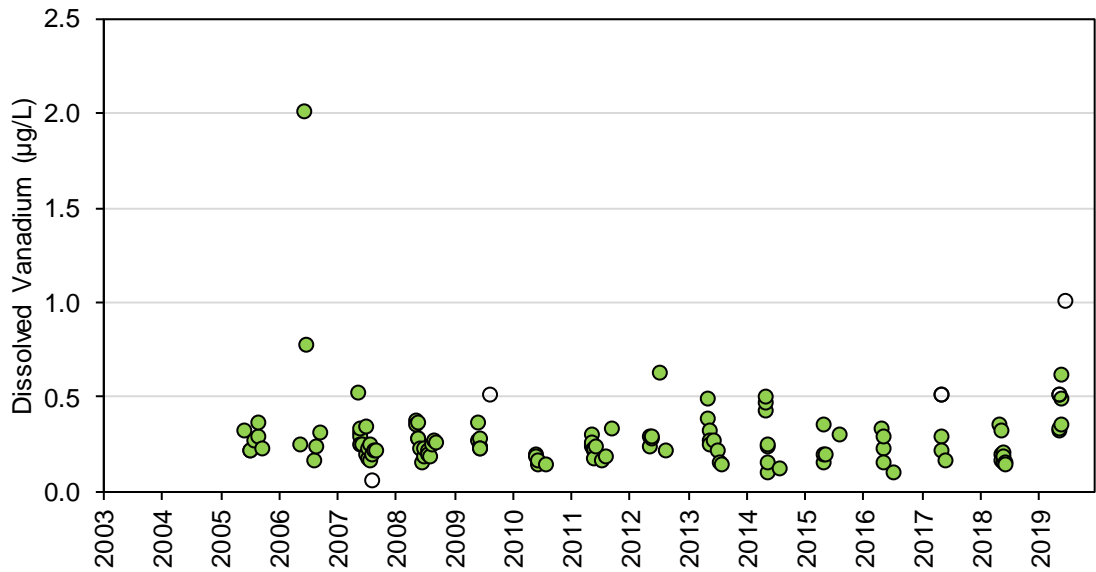
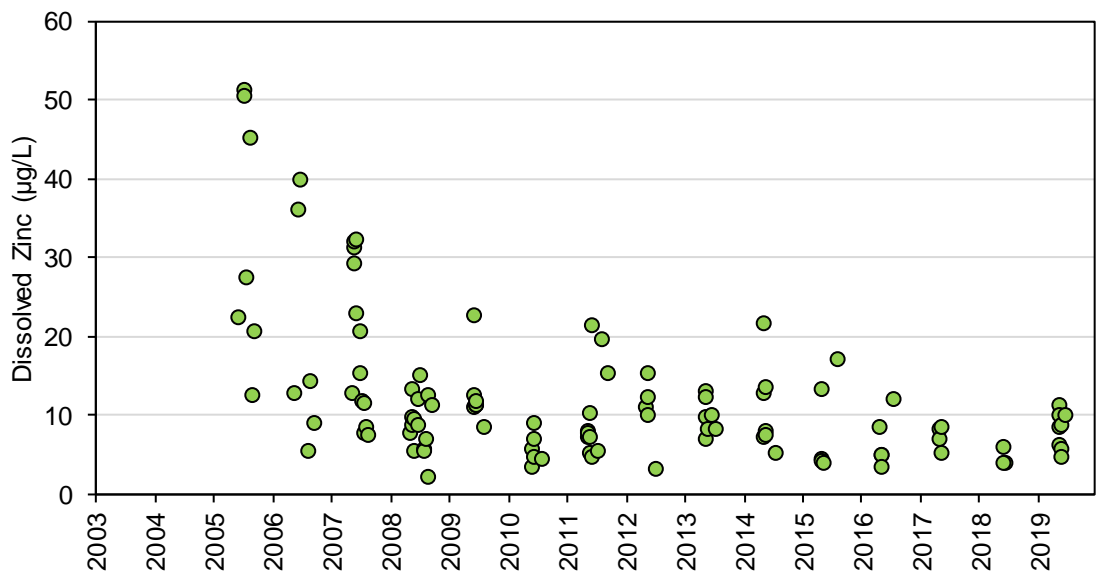


Figure 4C-68: Dissolved Zinc Concentrations at Station SNP 02-05 during Construction, Operations, and Extended Care and Maintenance



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ATTACHMENT 4D. FIGURES OF WATER QUALITY FOR SNP 02-06

Figure 4D-1: Total Dissolved Solids, calculated (lab) Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

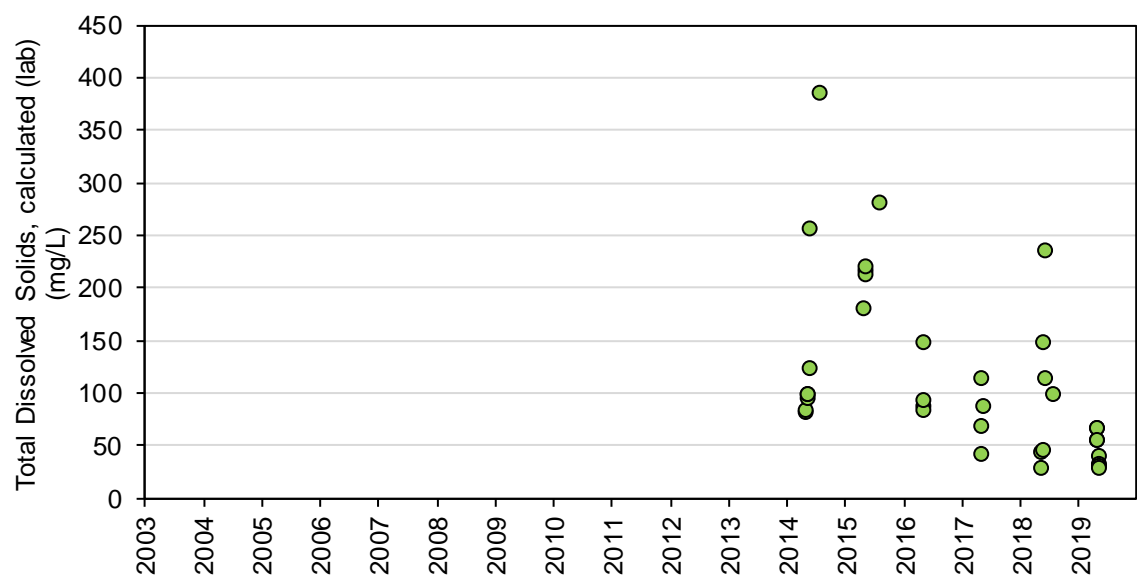


Figure 4D-2: Calcium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

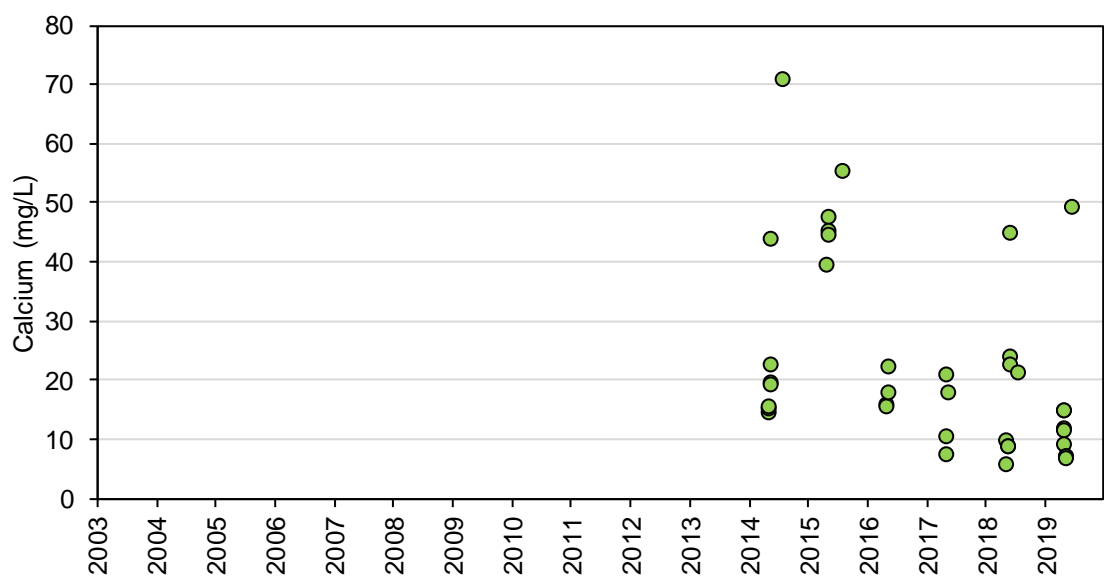


Figure 4D-3: Chloride Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

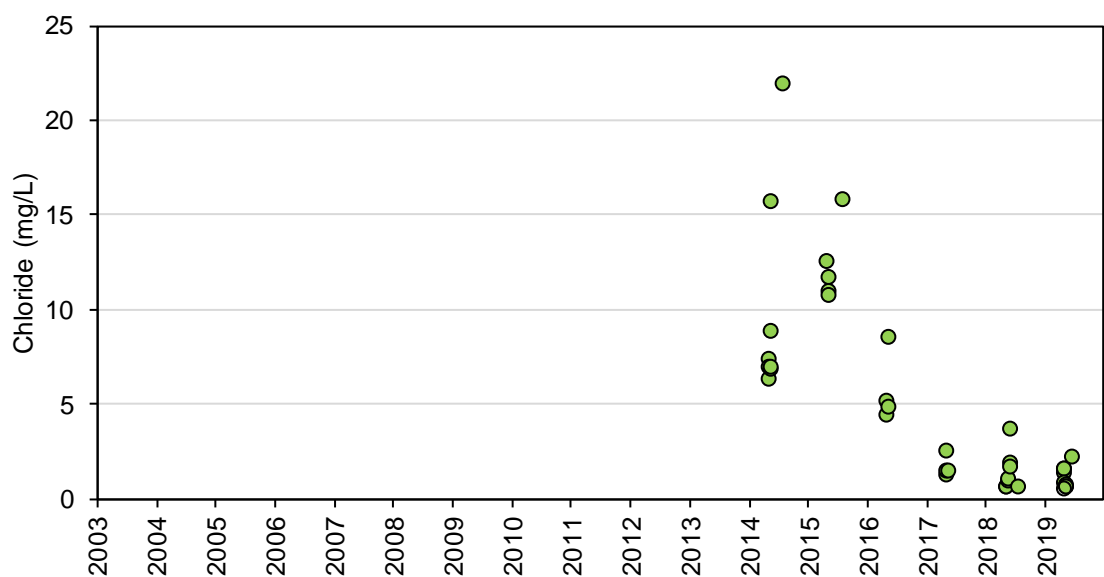


Figure 4D-4: Fluoride Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

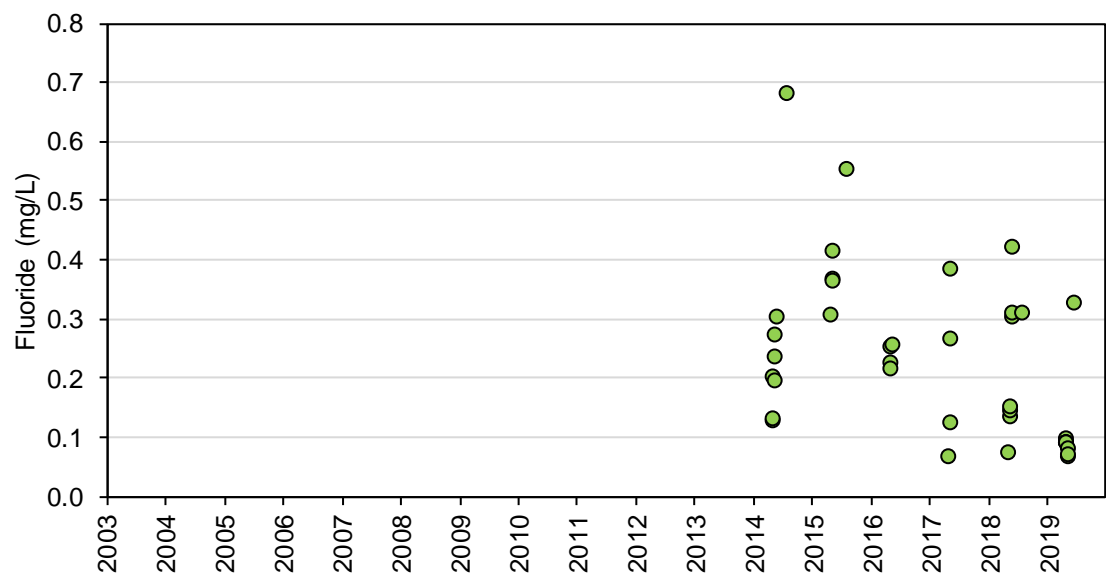


Figure 4D-5: Magnesium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

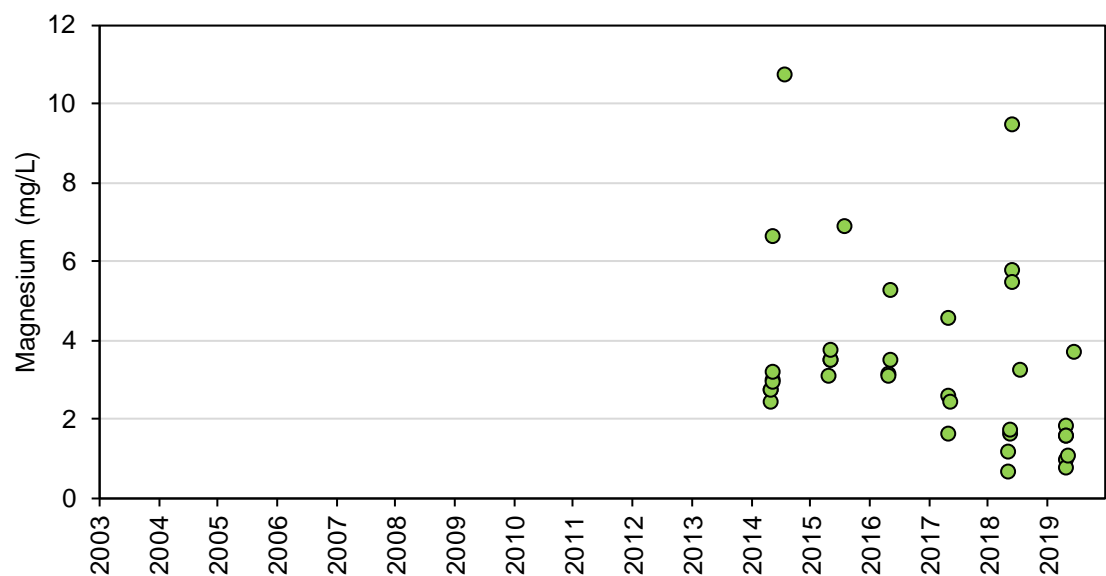


Figure 4D-6: Potassium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

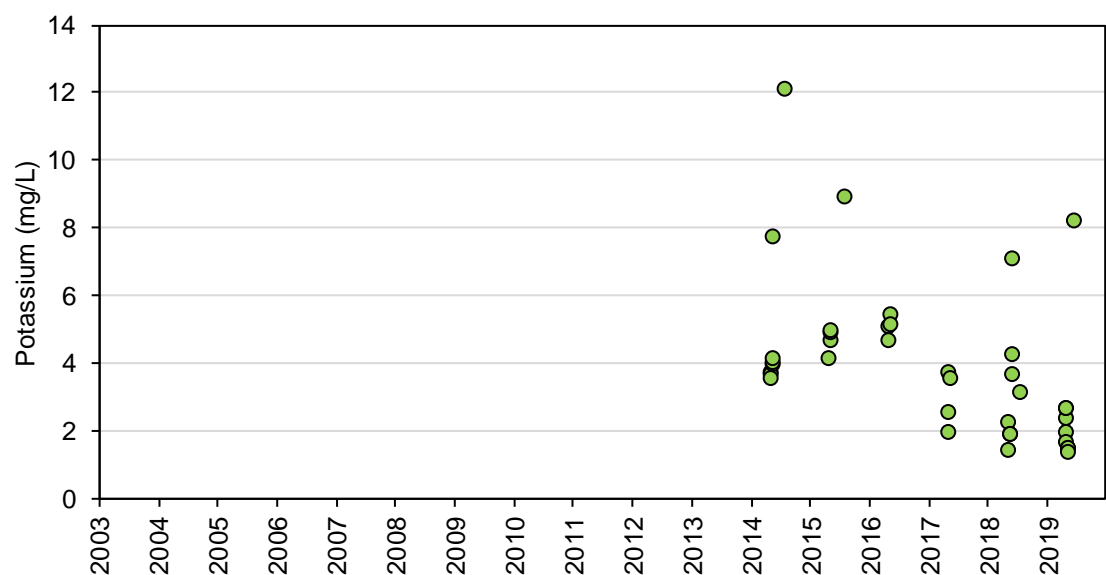


Figure 4D-7: Sodium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

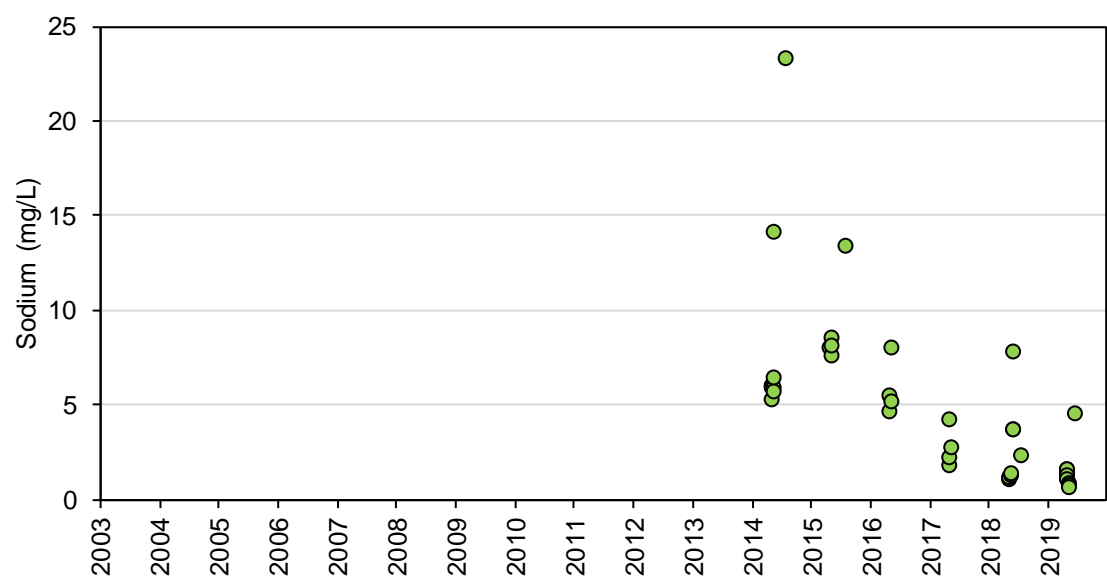


Figure 4D-8: Sulphate Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

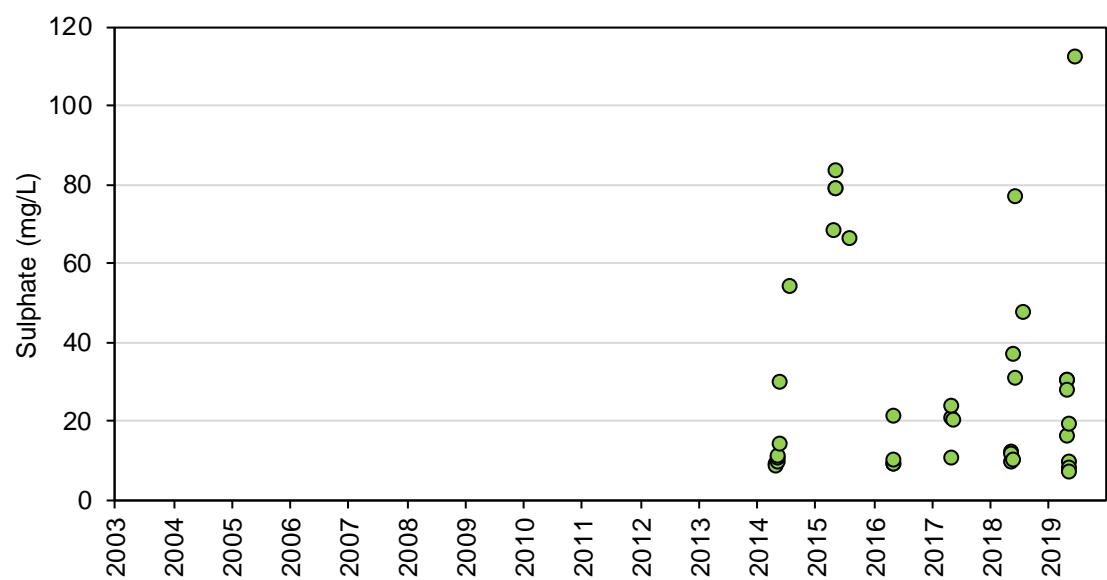


Figure 4D-9: Nitrate Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

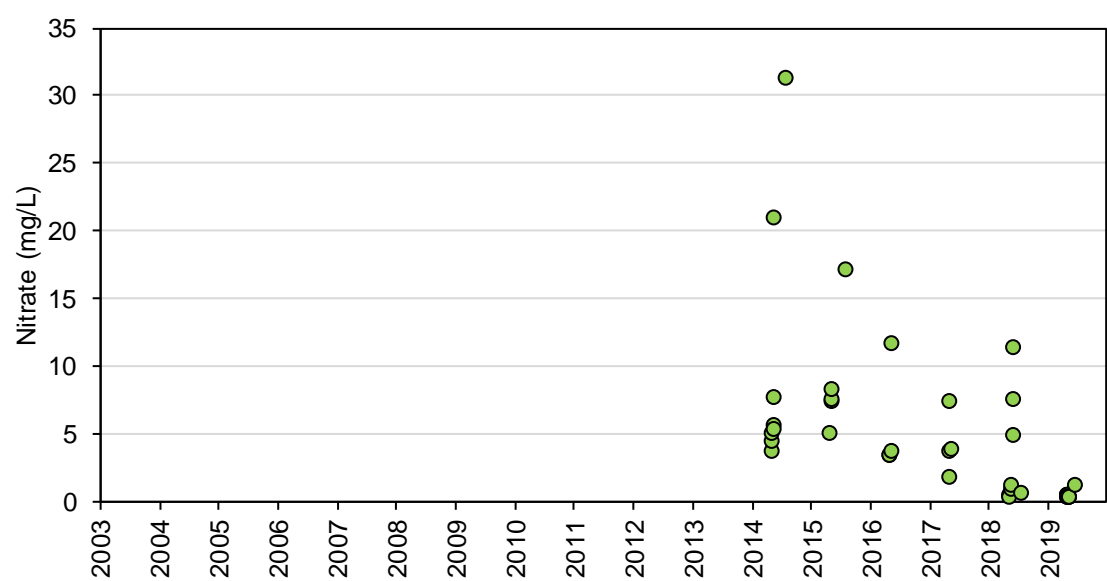


Figure 4D-10: Nitrite Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

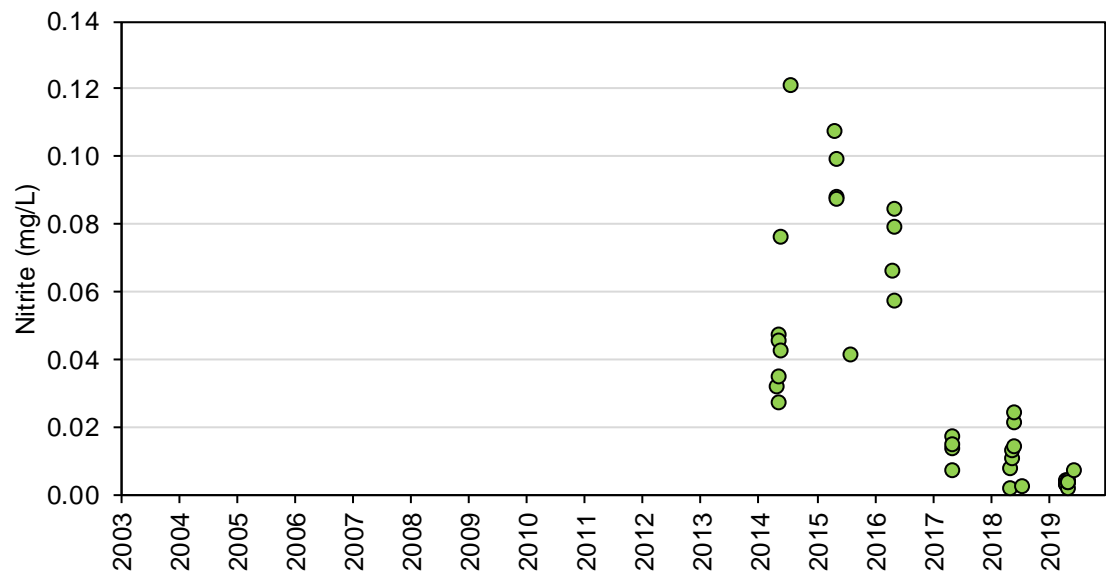


Figure 4D-11: Total Ammonia Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

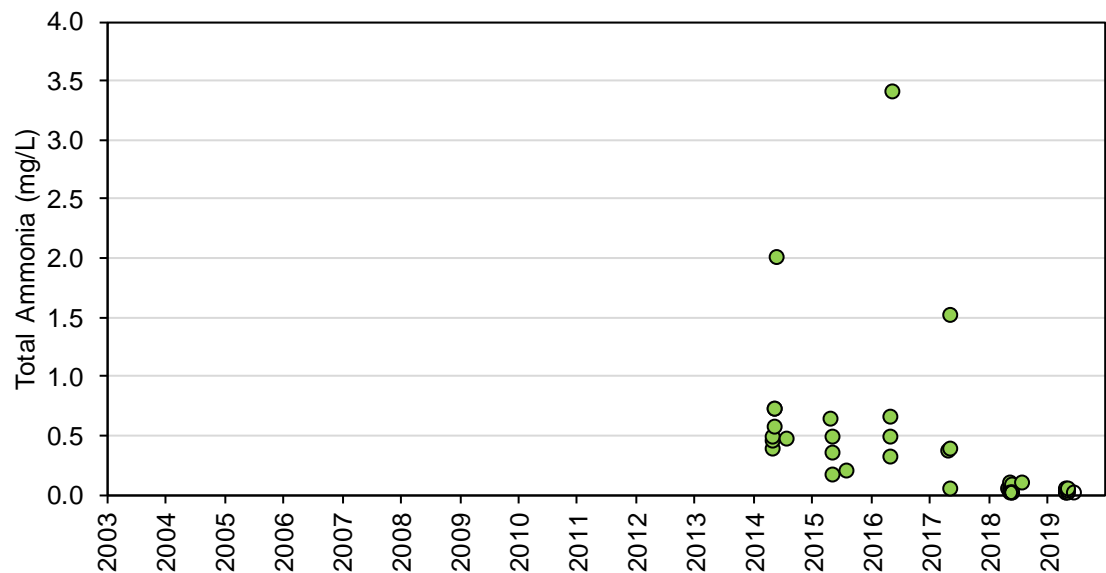


Figure 4D-12: Total Phosphorus Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

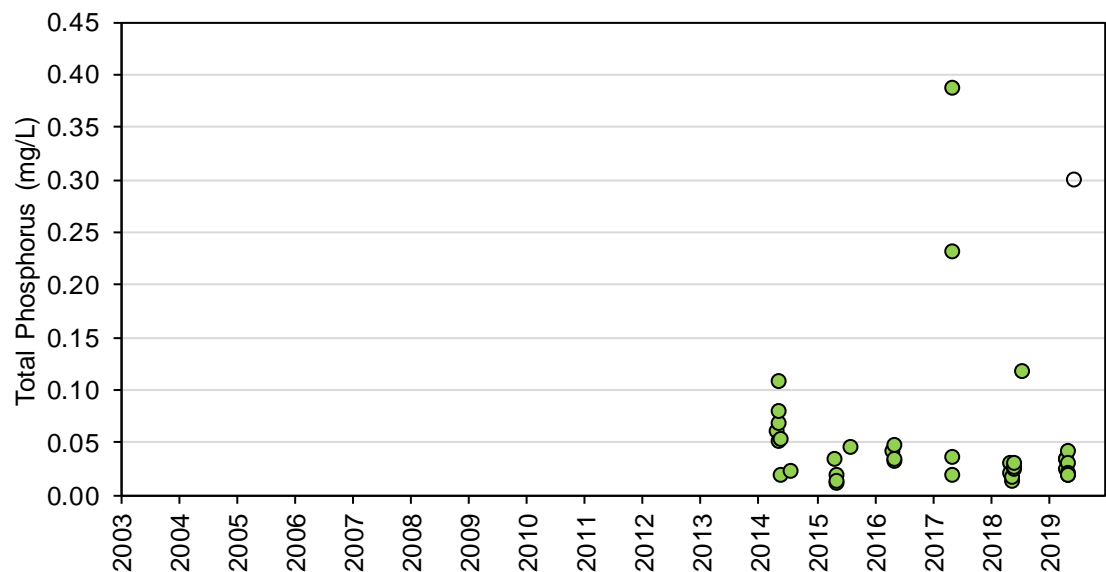


Figure 4D-13: Total Aluminum Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

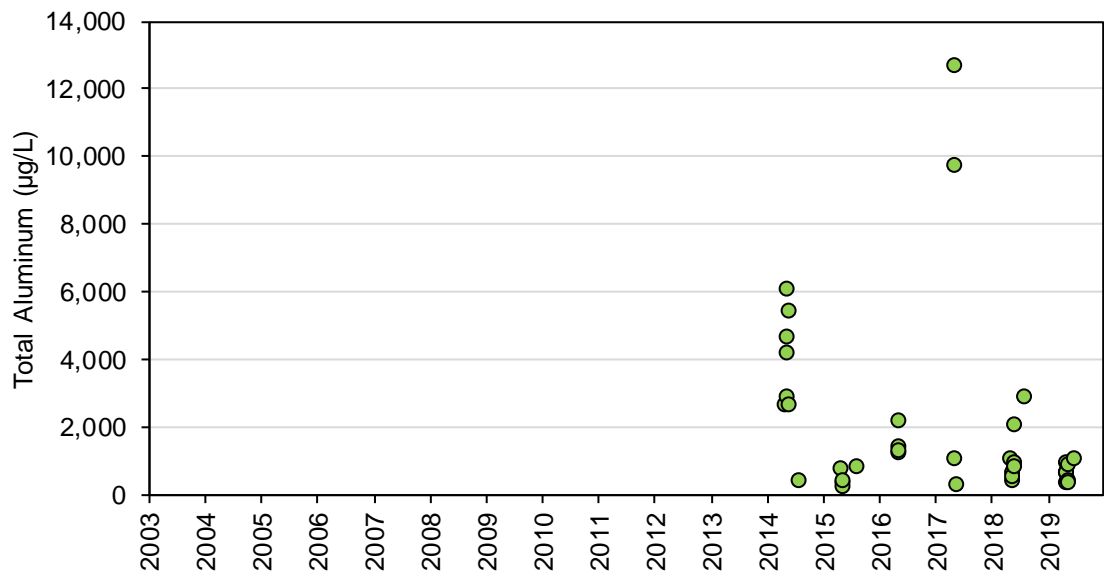


Figure 4D-14: Total Antimony Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

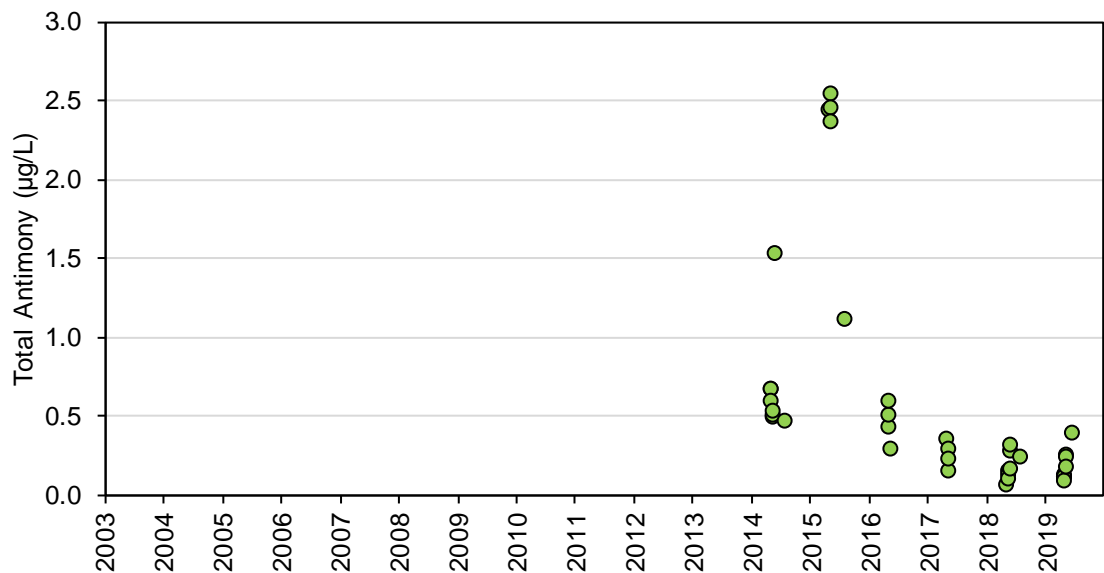


Figure 4D-15: Total Arsenic Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

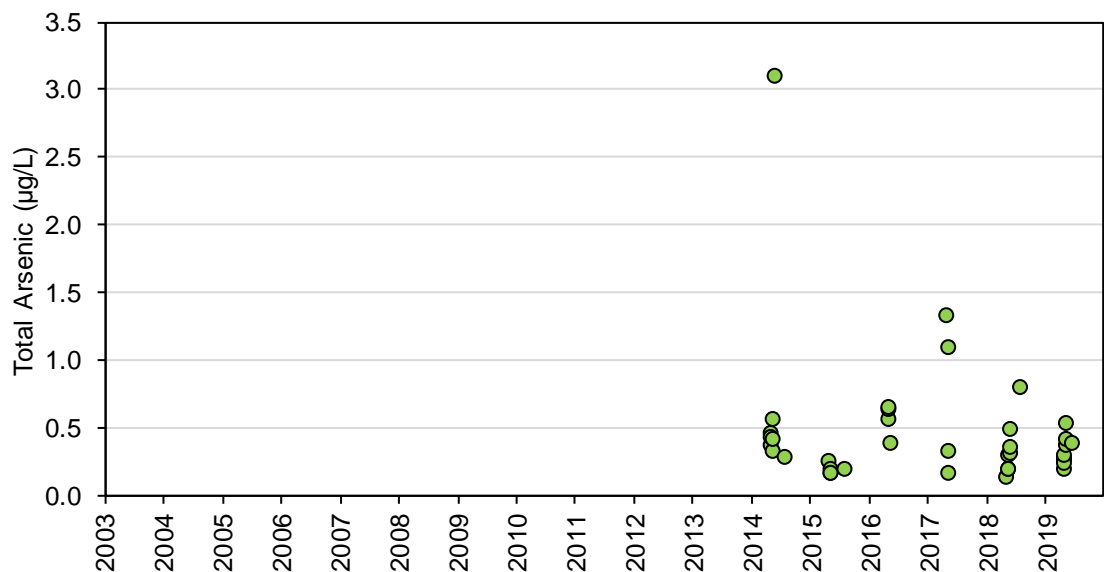


Figure 4D-16: Total Barium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

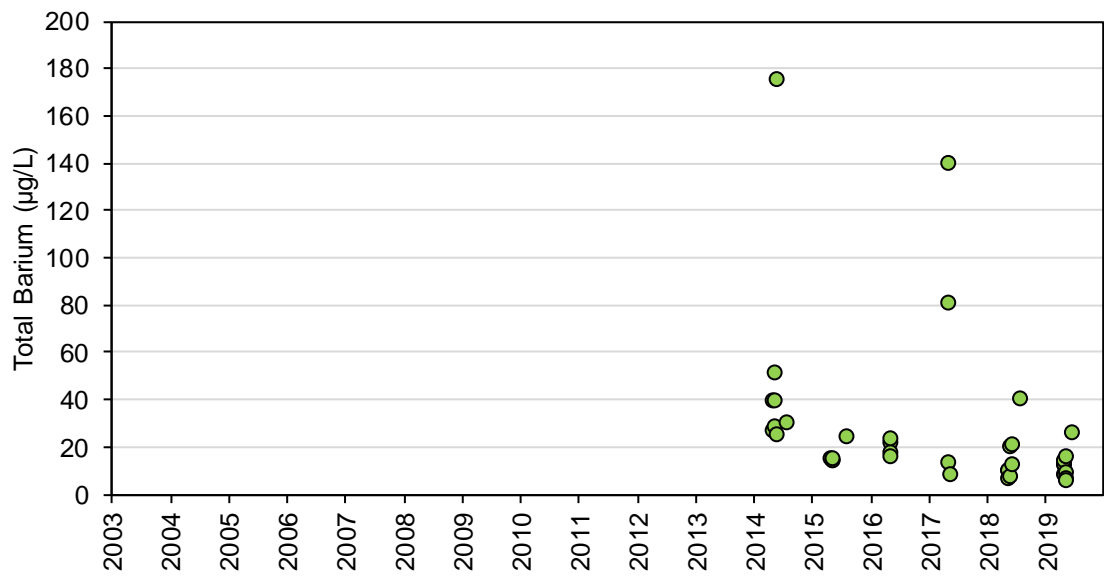


Figure 4D-17: Total Beryllium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

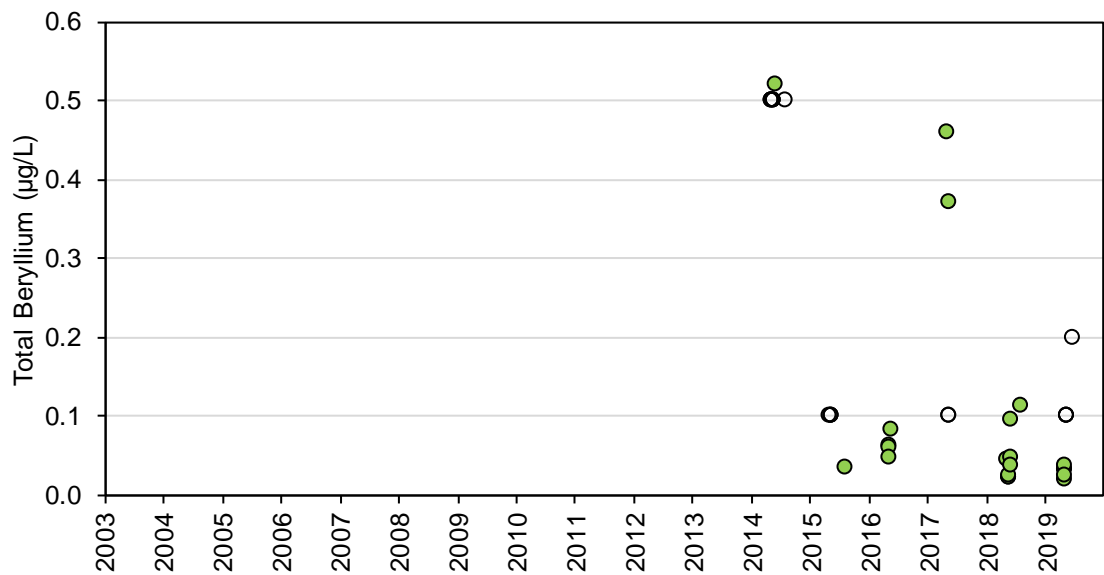


Figure 4D-18: Total Boron Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

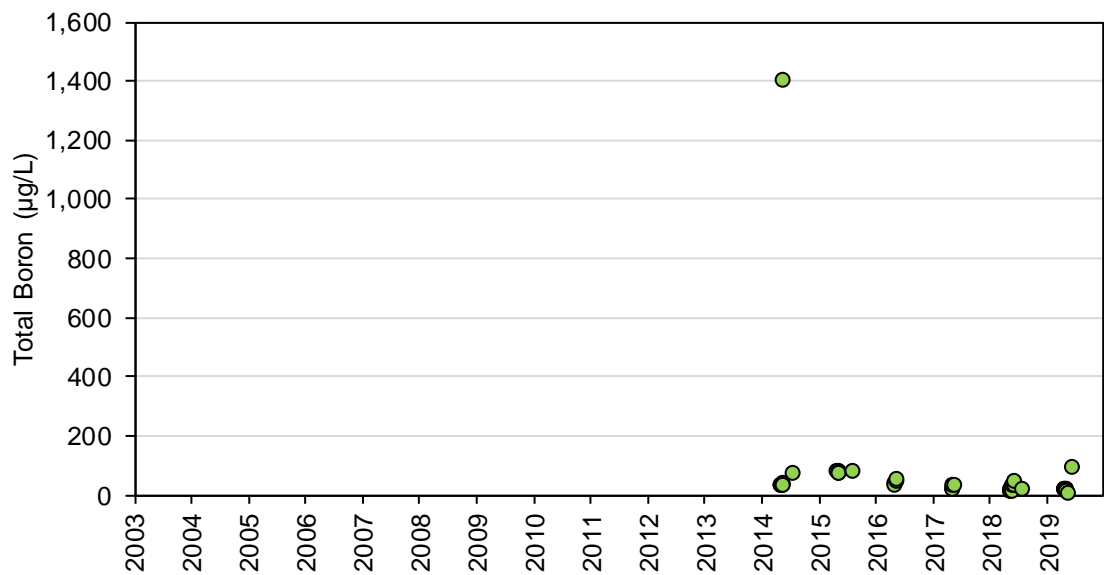


Figure 4D-19: Total Cadmium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

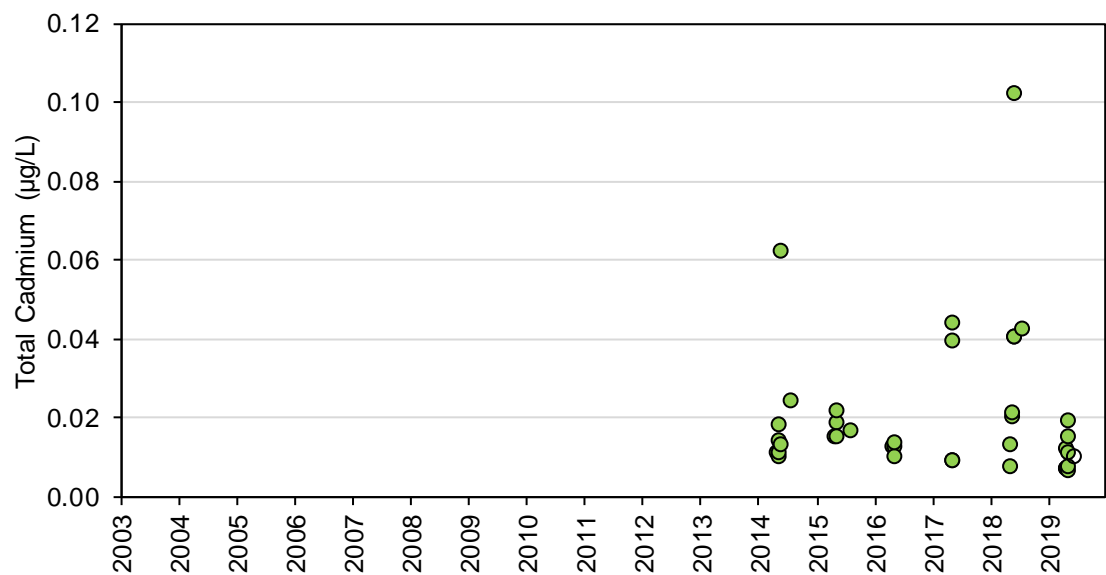


Figure 4D-20: Total Cesium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

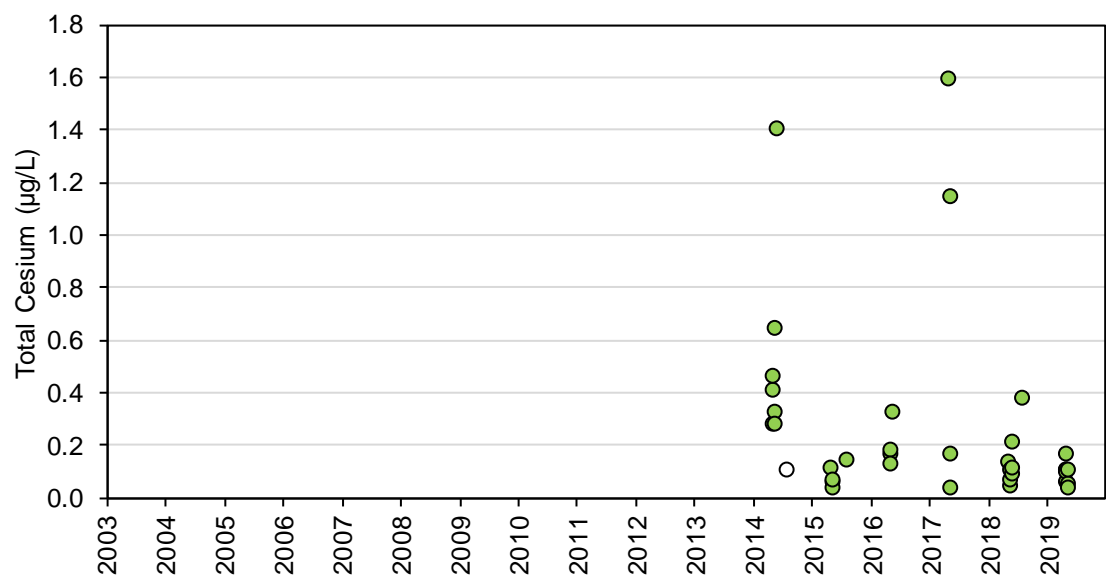


Figure 4D-21: Total Chromium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

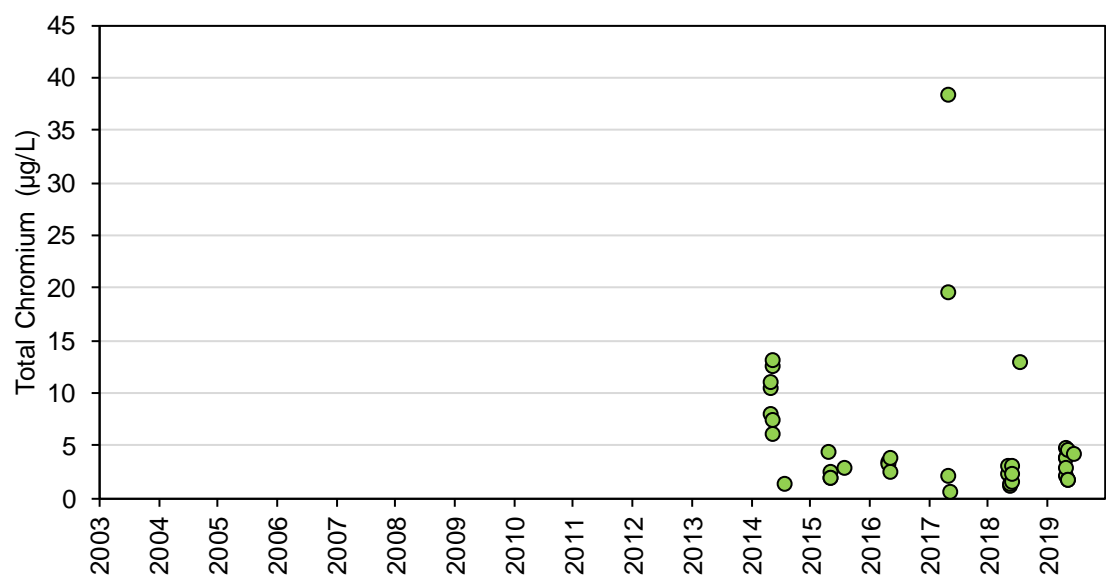


Figure 4D-22: Total Cobalt Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

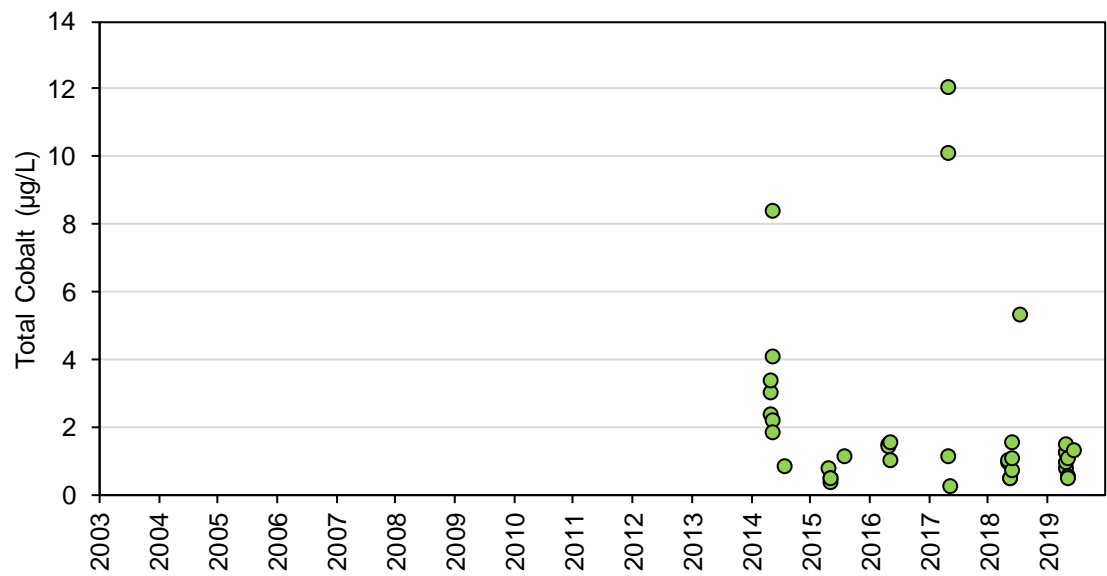


Figure 4D-23: Total Copper Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

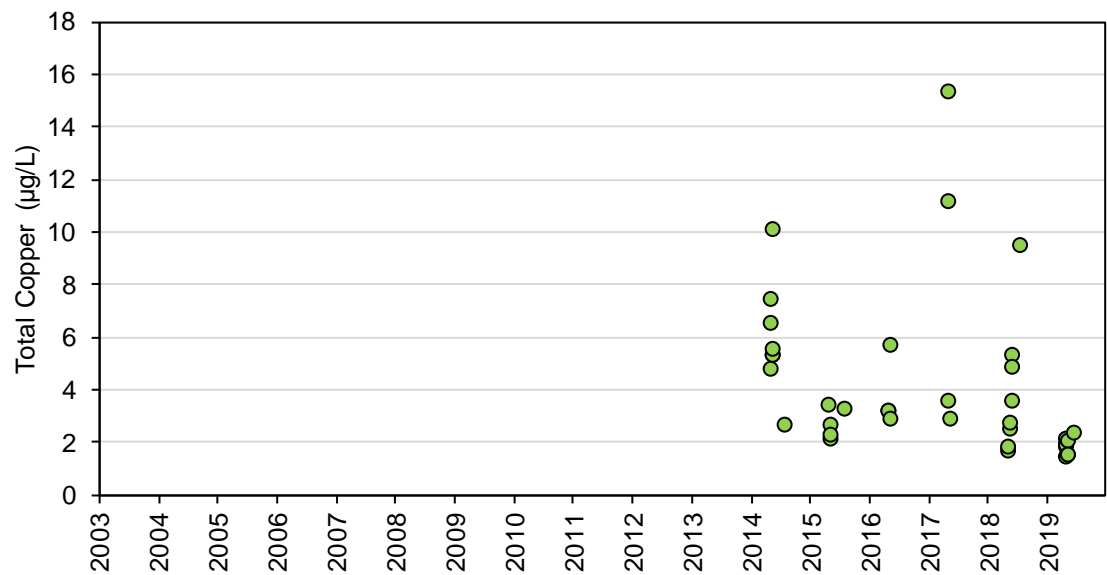


Figure 4D-24: Total Iron Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

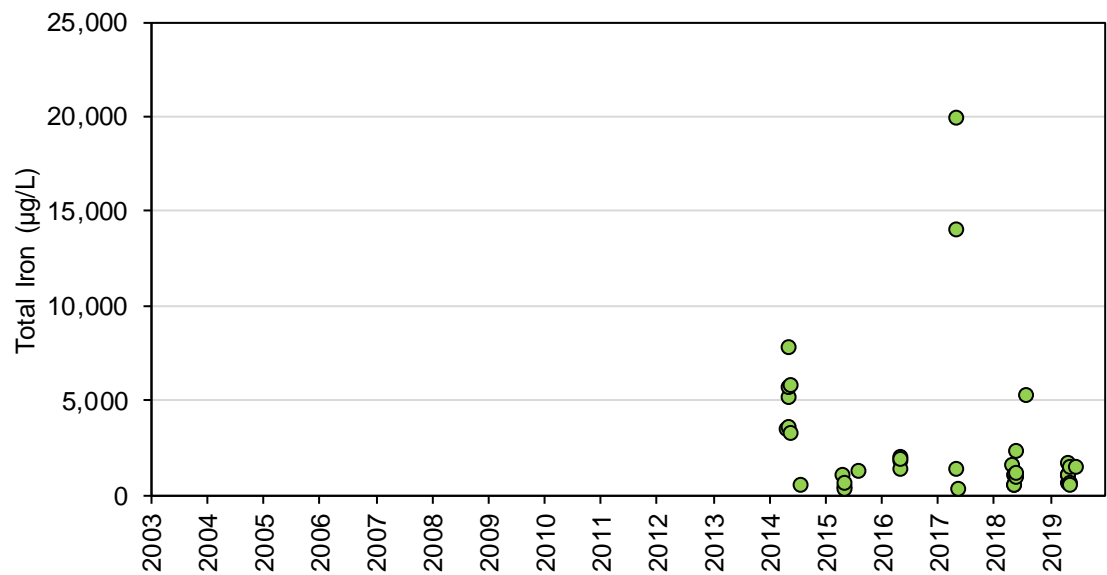


Figure 4D-25: Total Lead Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

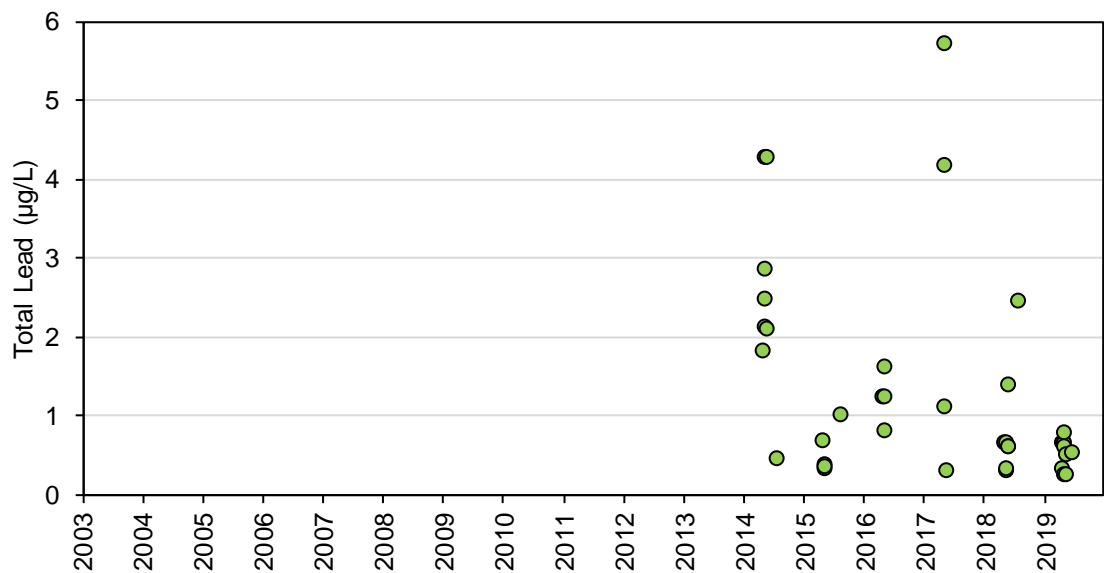


Figure 4D-26: Total Lithium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

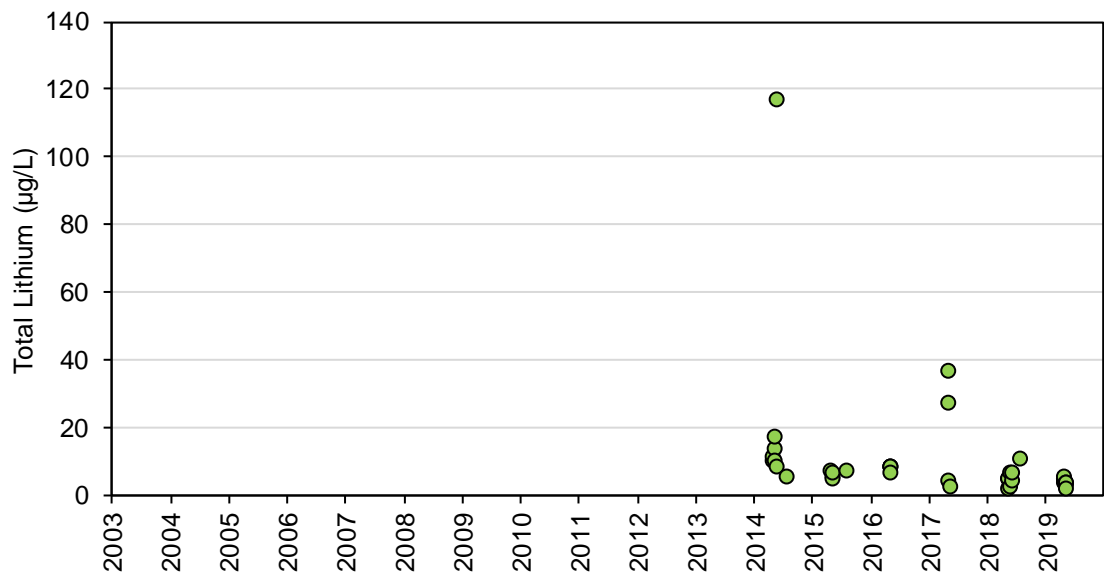


Figure 4D-27: Total Manganese Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

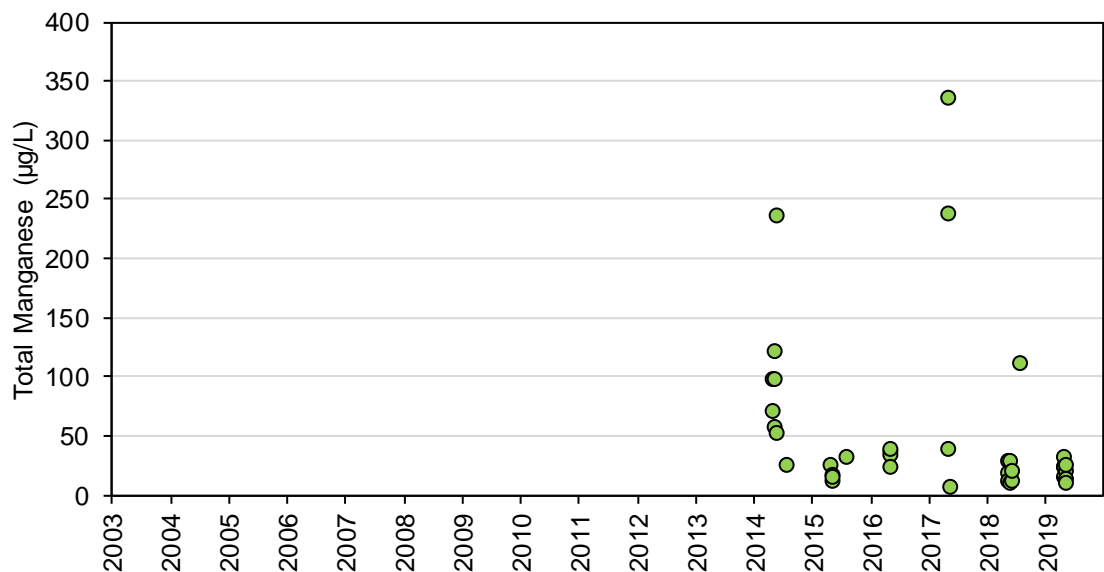


Figure 4D-28: Total Mercury Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

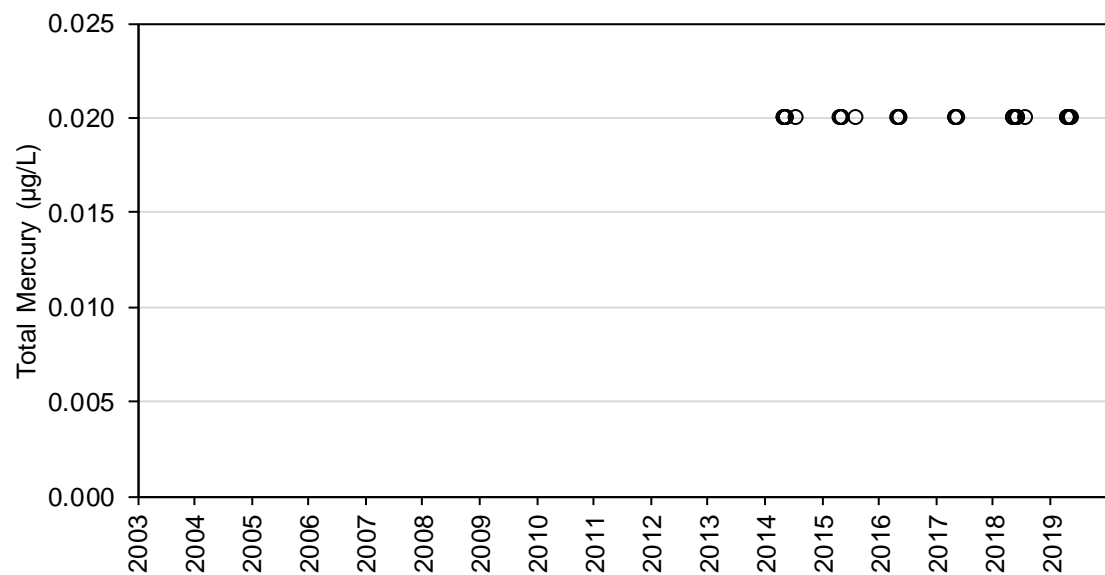


Figure 4D-29: Total Molybdenum Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

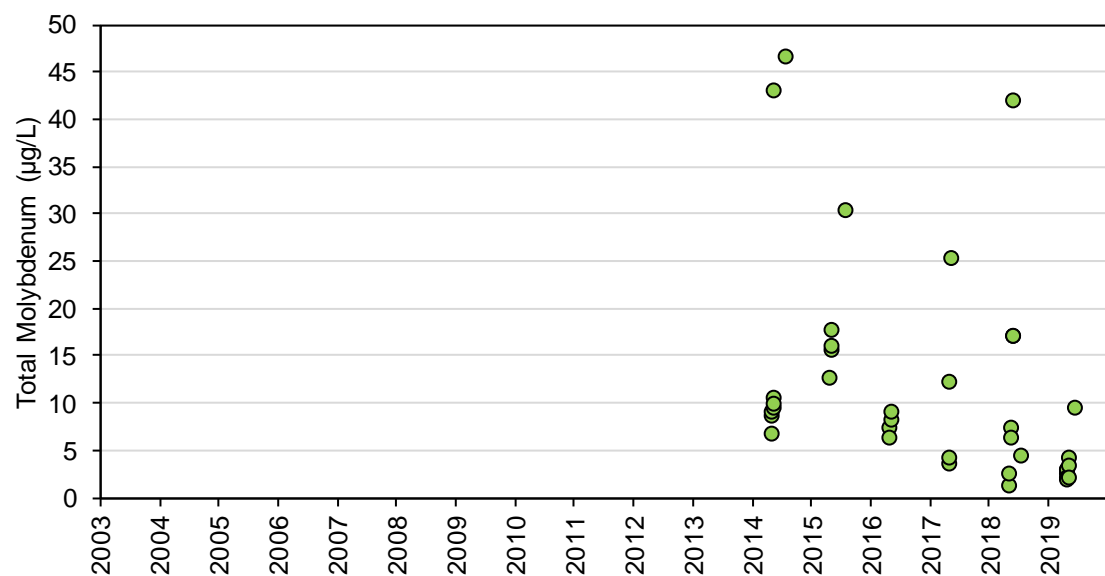


Figure 4D-30: Total Nickel Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

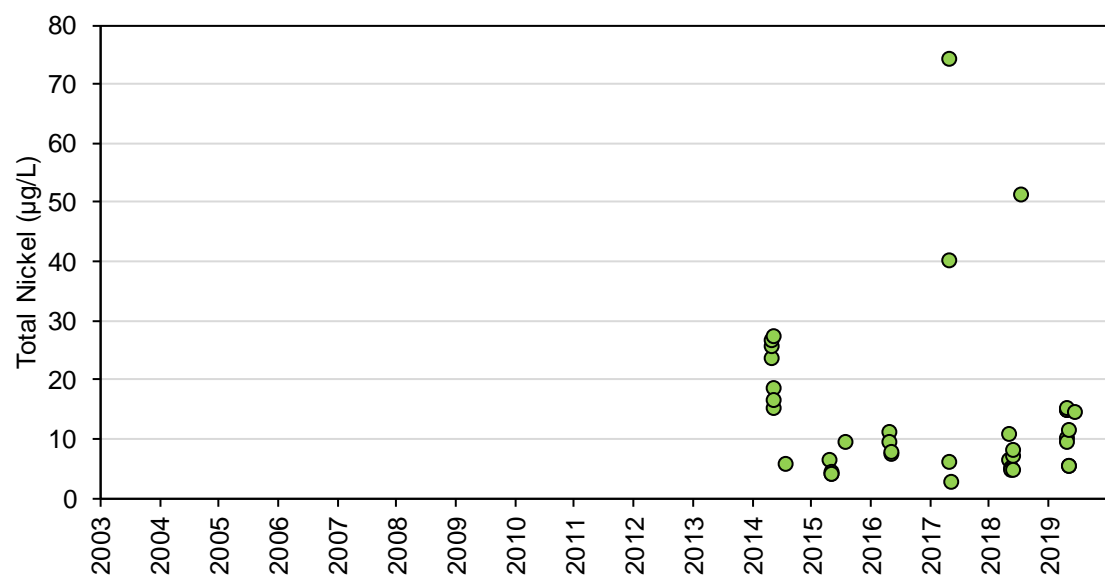


Figure 4D-31: Total Rubidium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

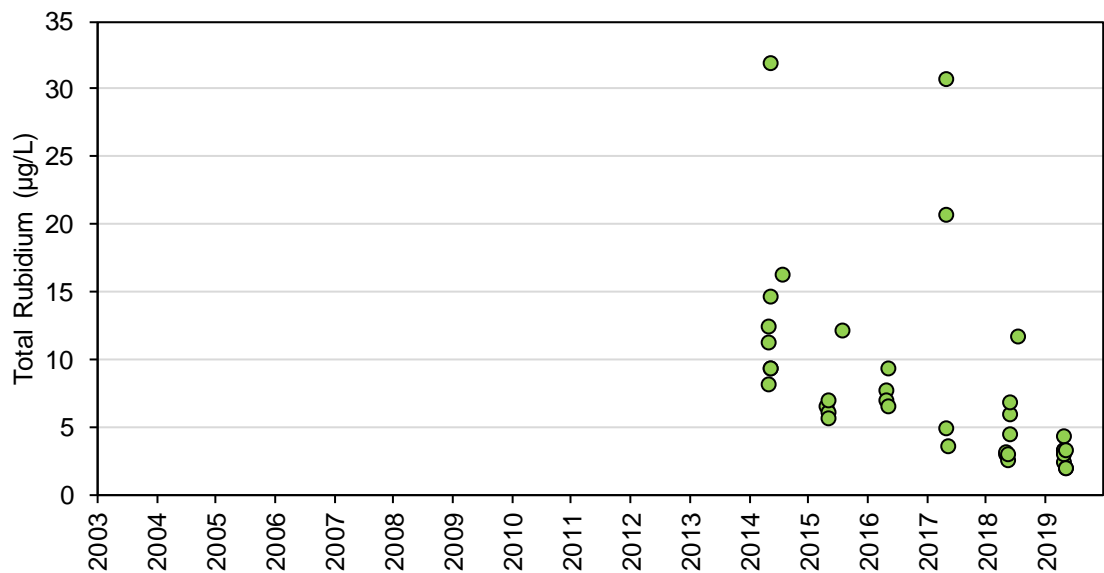


Figure 4D-32: Total Selenium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

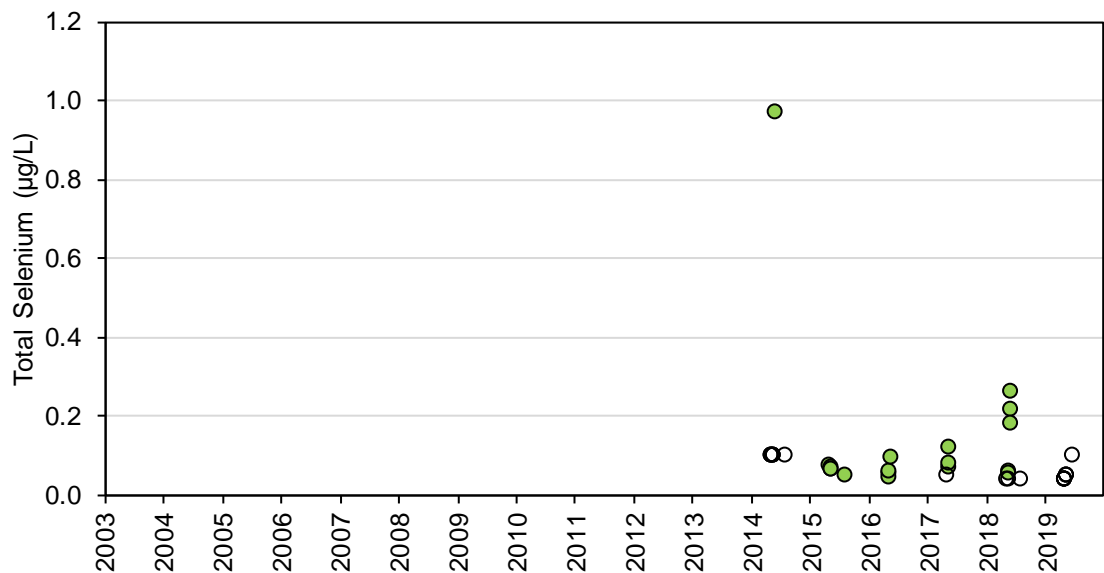


Figure 4D-33: Total Strontium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

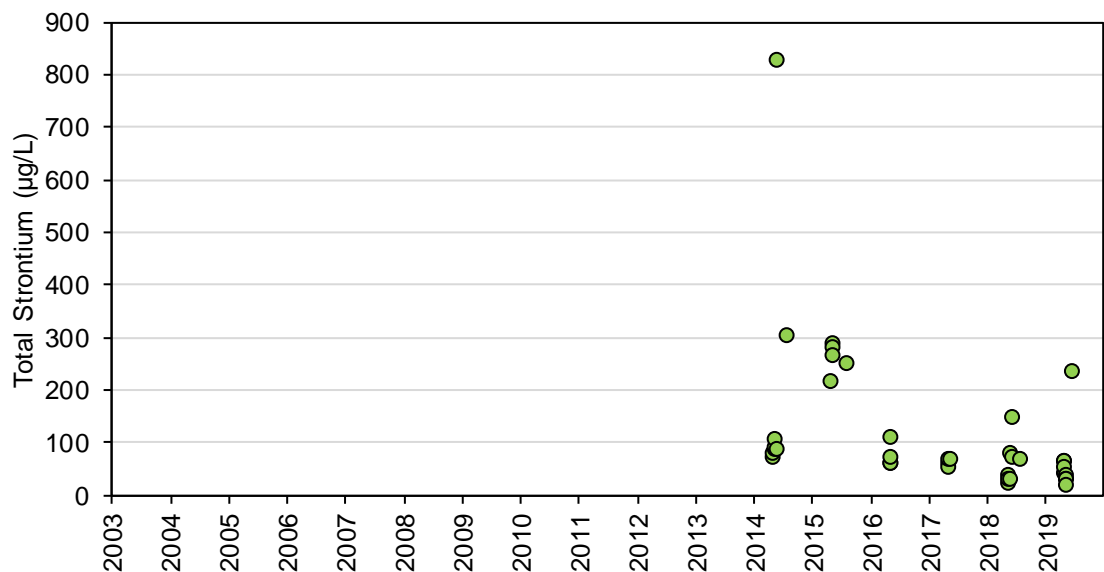


Figure 4D-34: Total Thallium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

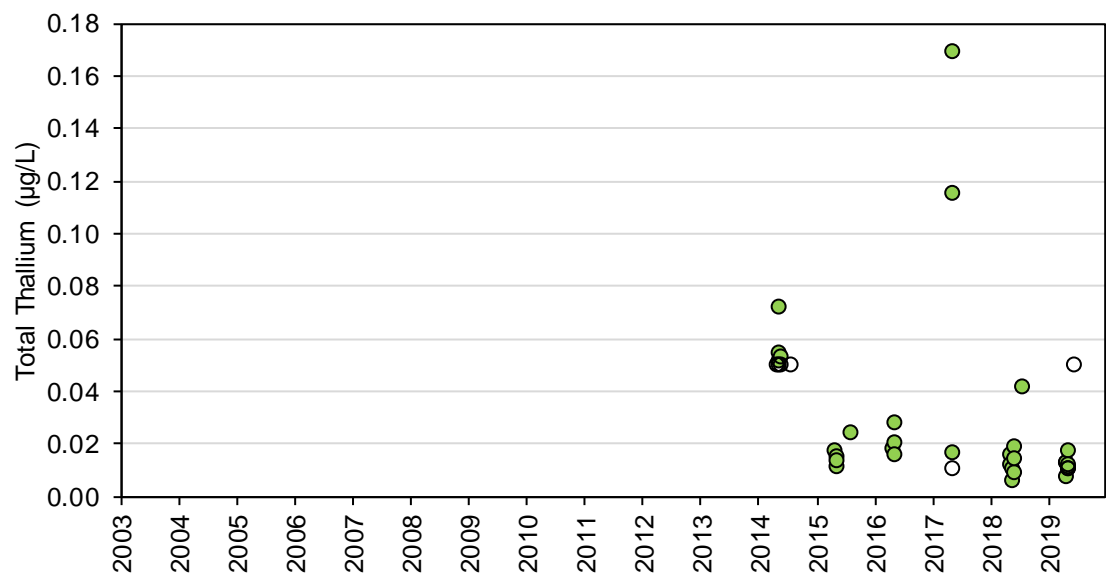


Figure 4D-35: Total Titanium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

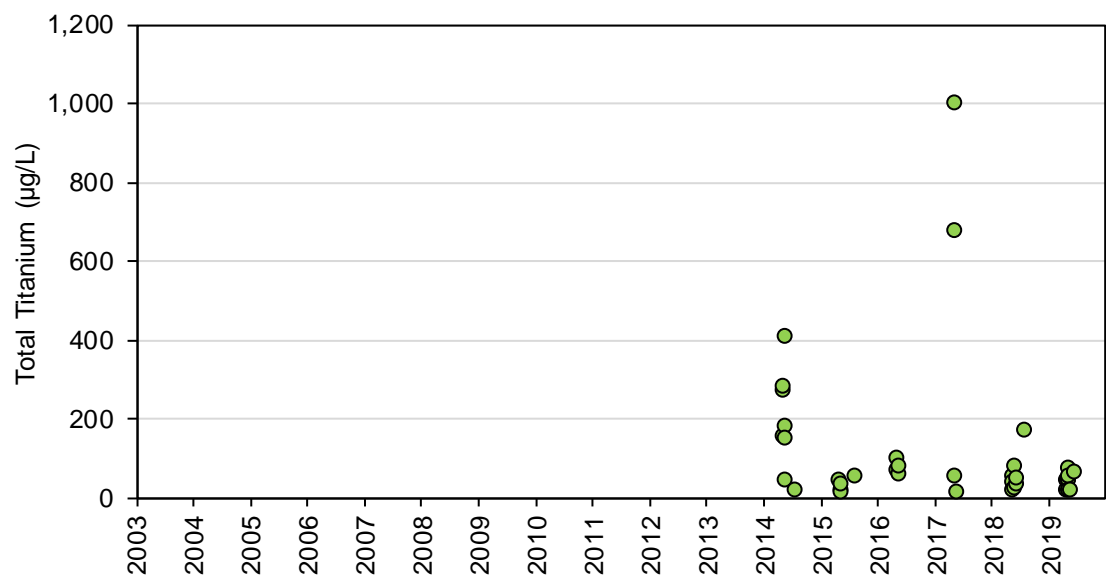


Figure 4D-36: Total Uranium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

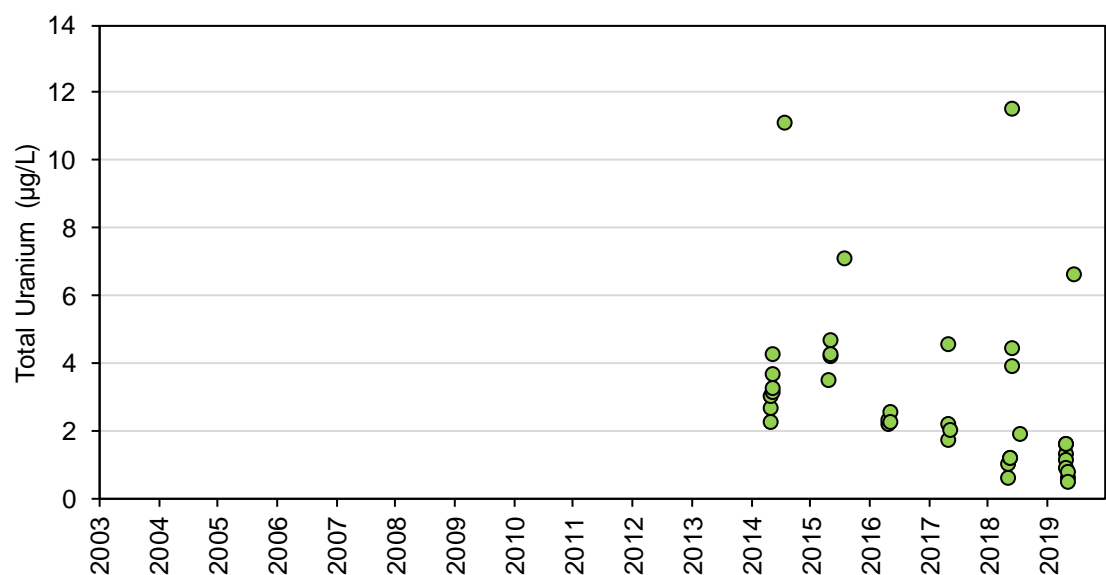


Figure 4D-37: Total Vanadium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

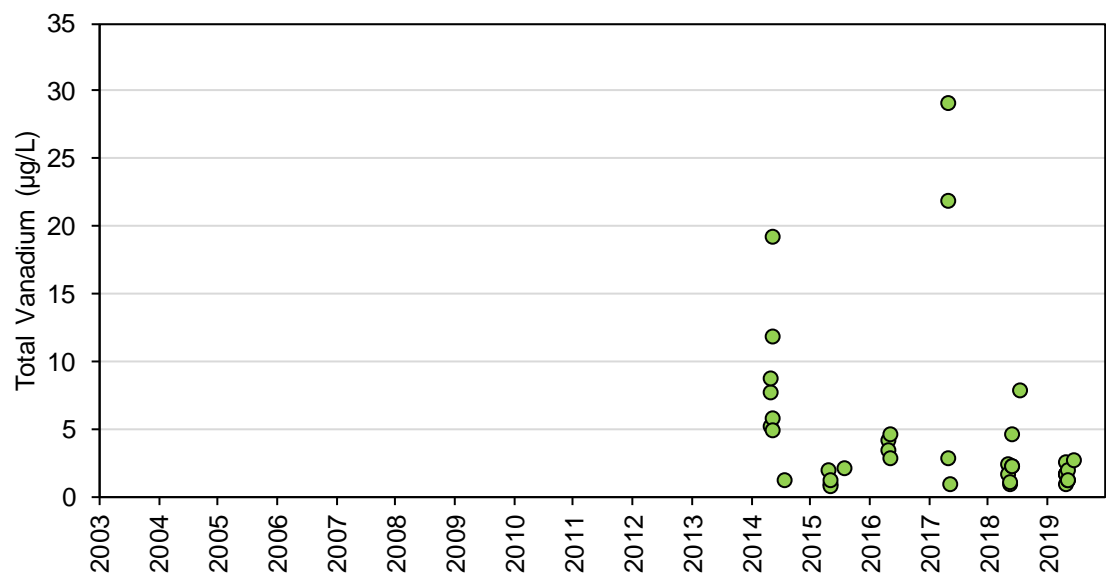


Figure 4D-38: Total Zinc Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

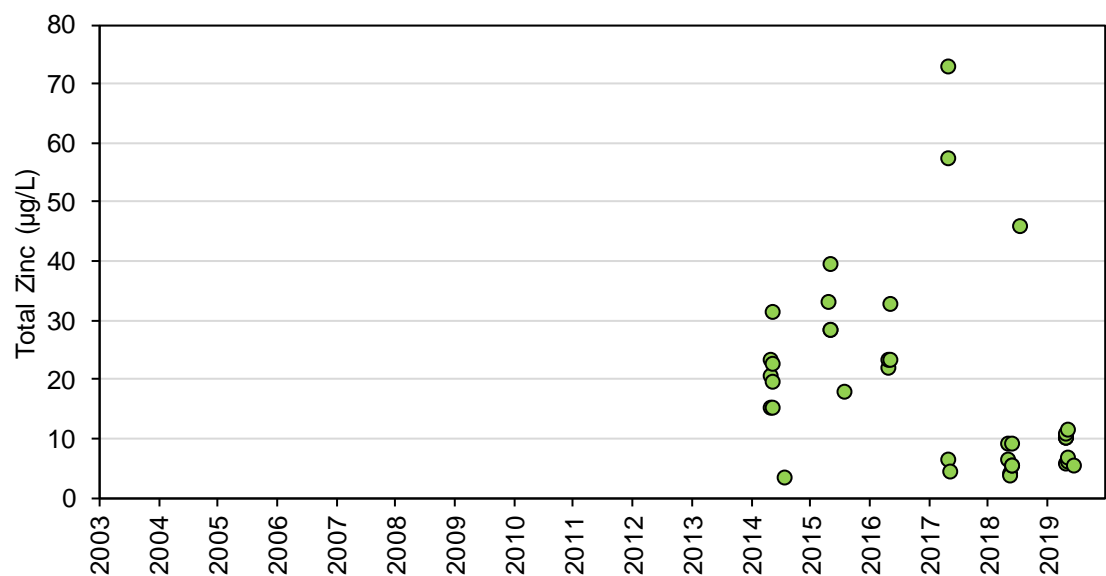


Figure 4D-39: Dissolved Aluminum Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

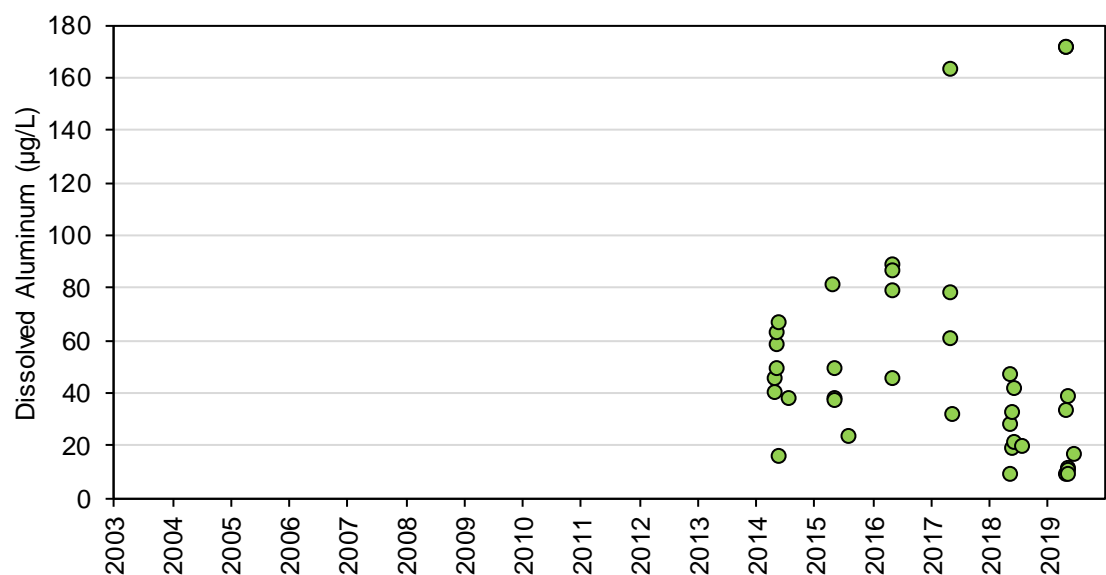


Figure 4D-40: Dissolved Antimony Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

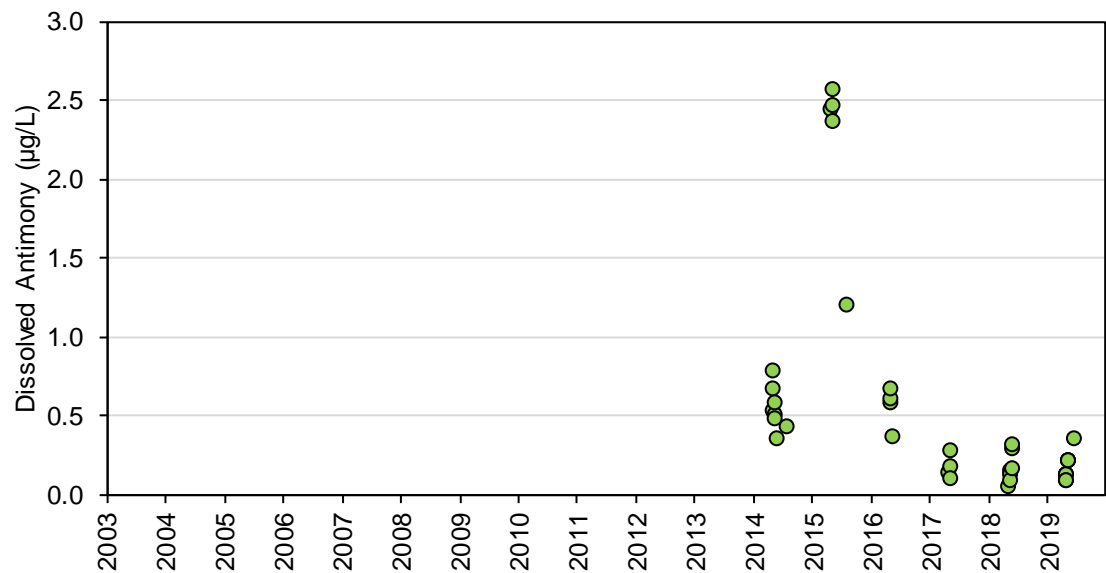


Figure 4D-41: Dissolved Arsenic Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

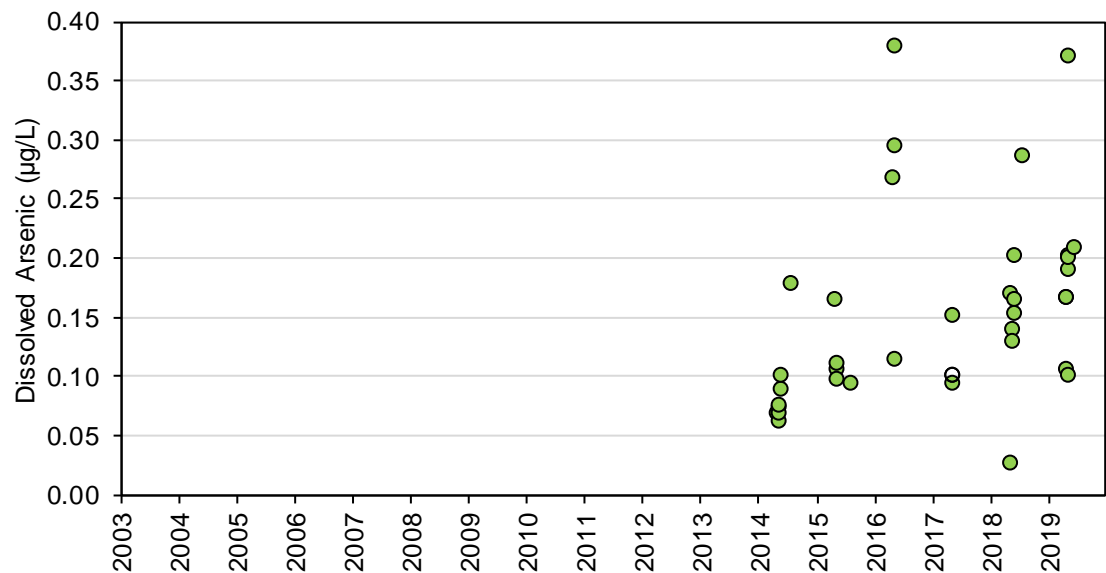


Figure 4D-42: Dissolved Barium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

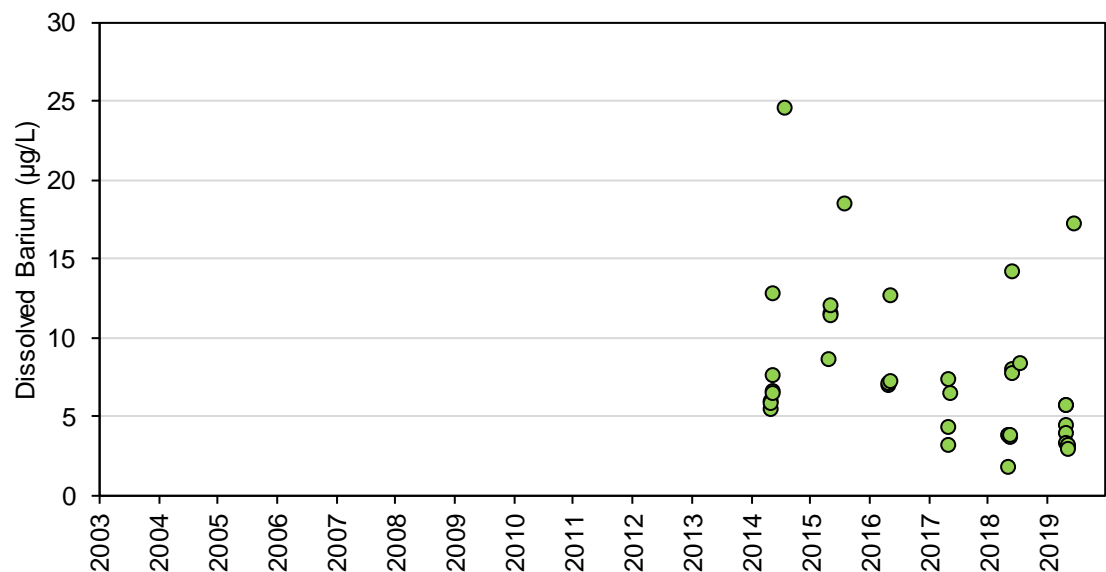


Figure 4D-43: Dissolved Beryllium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

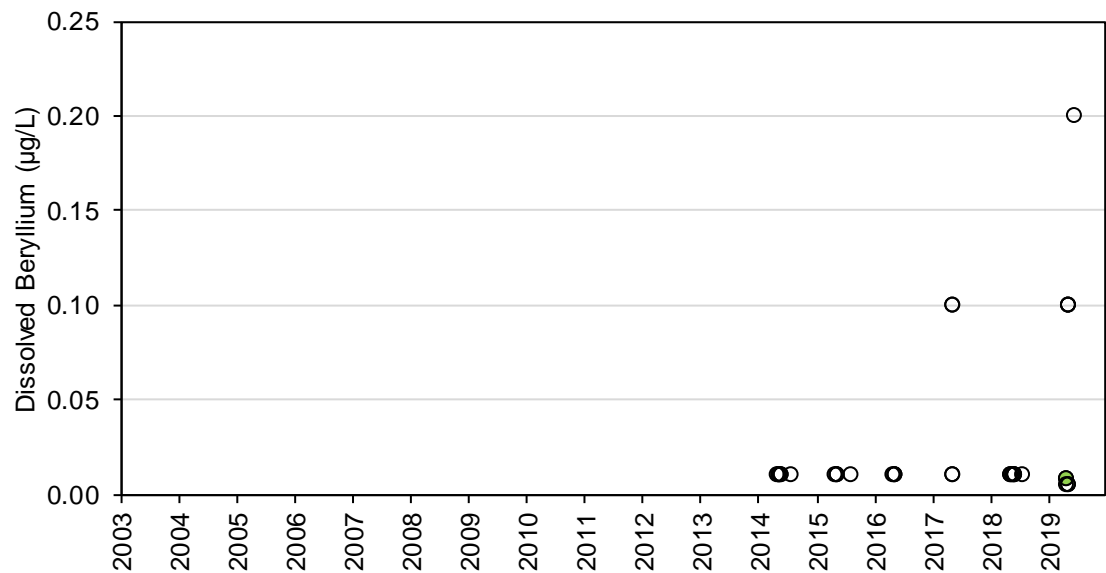


Figure 4D-44: Dissolved Boron Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

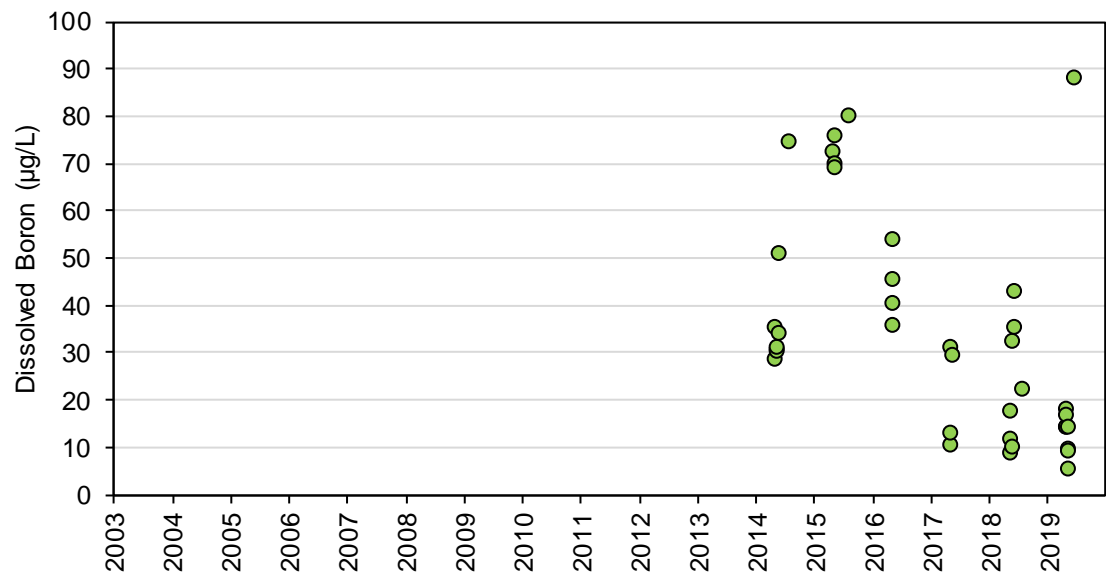


Figure 4D-45: Dissolved Cadmium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

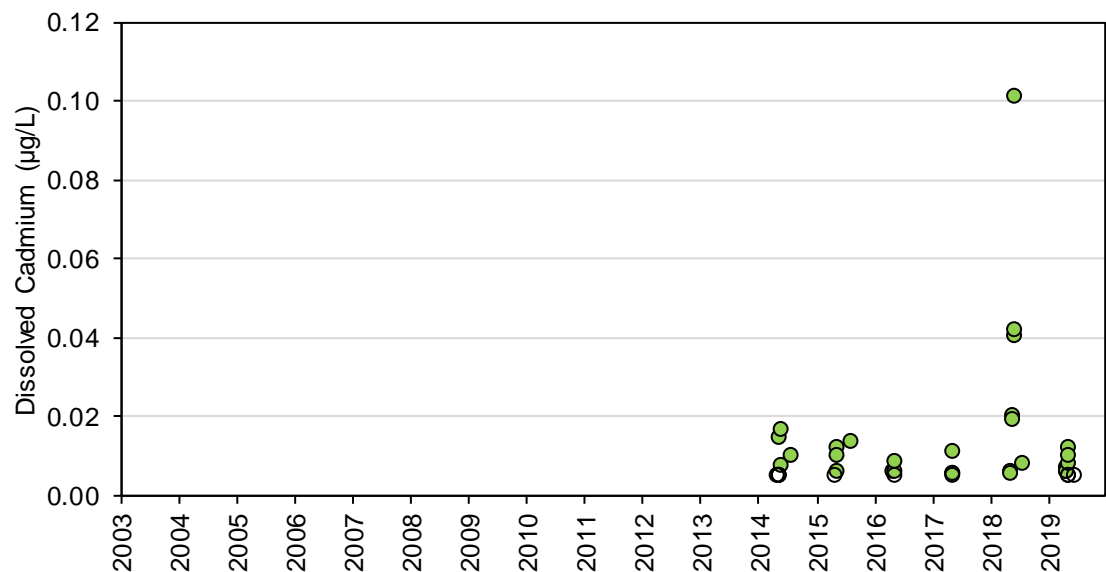


Figure 4D-46: Dissolved Cesium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

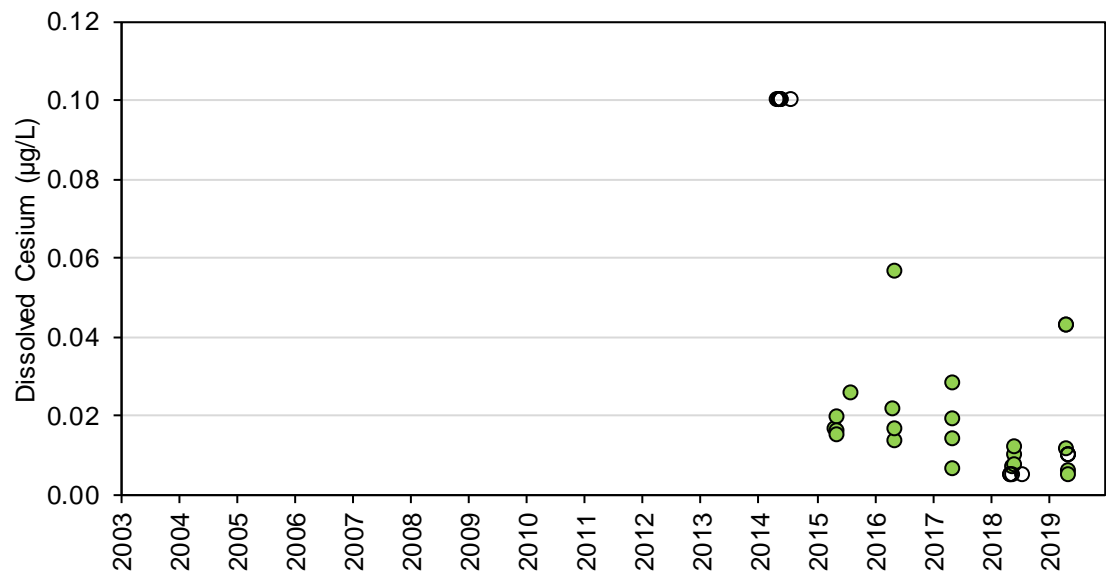


Figure 4D-47: Dissolved Chromium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

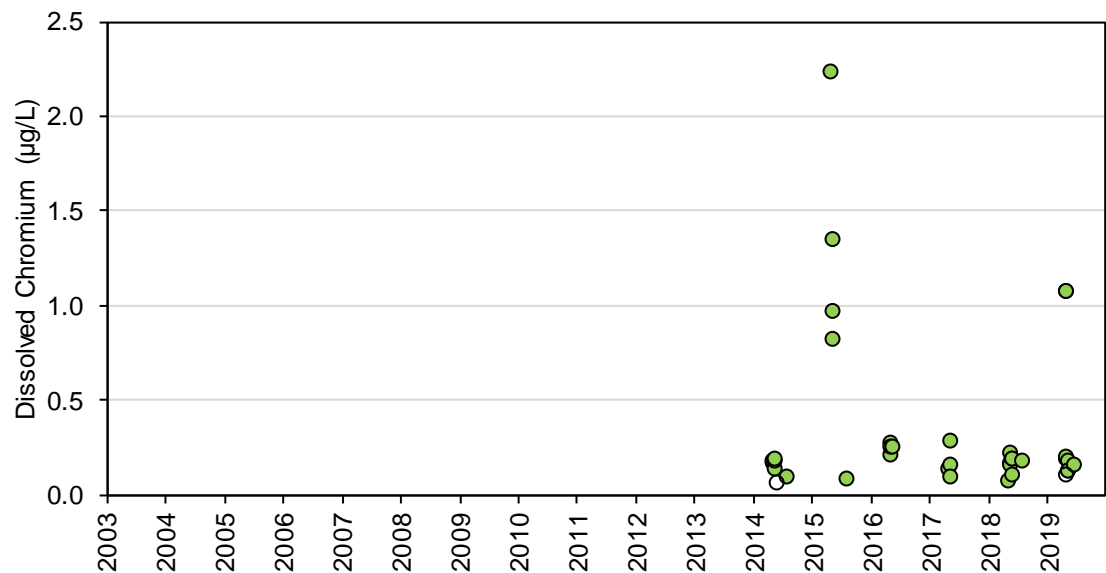


Figure 4D-48: Dissolved Cobalt Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

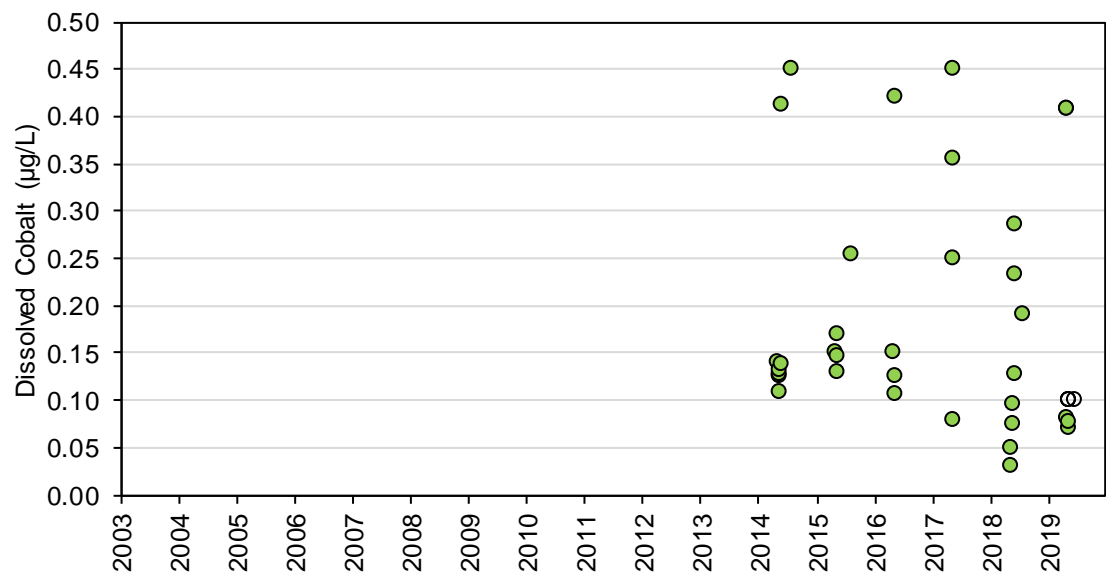


Figure 4D-49: Dissolved Copper Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

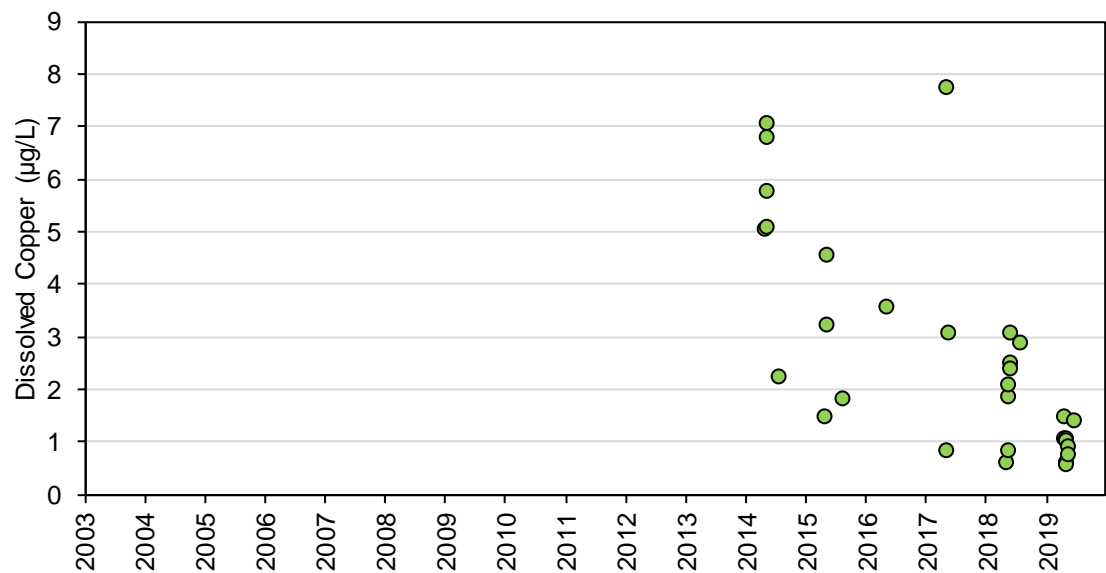


Figure 4D-50: Dissolved Iron Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

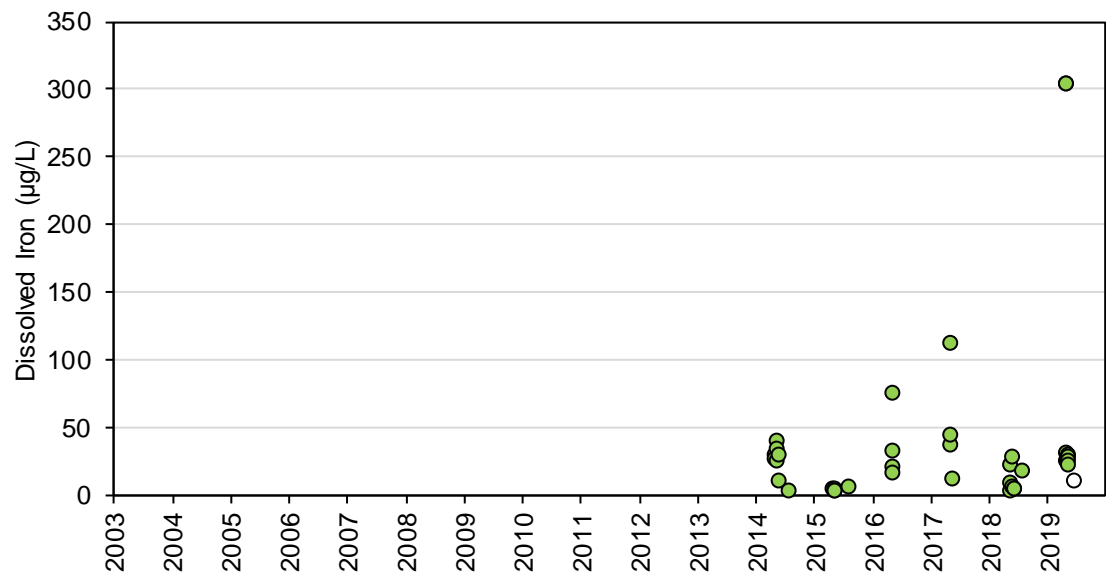


Figure 4D-51: Dissolved Lead Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

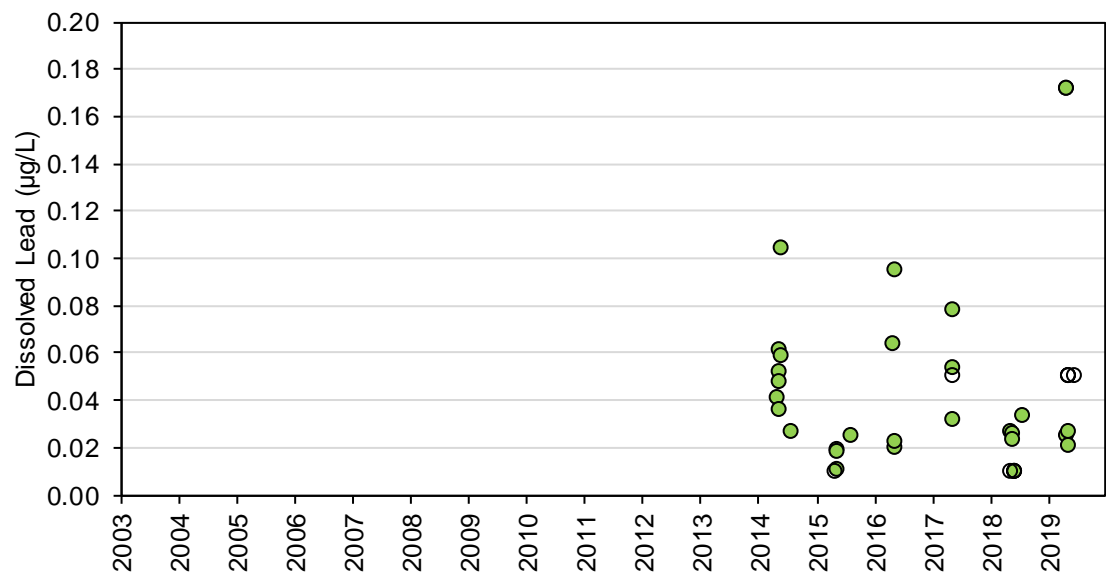


Figure 4D-52: Dissolved Lithium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

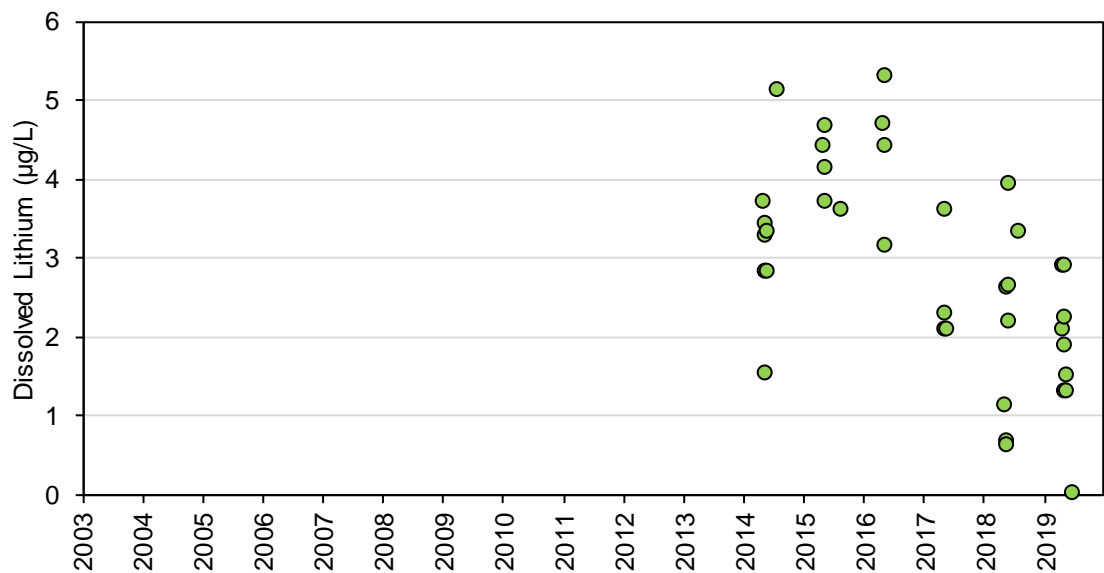


Figure 4D-53: Dissolved Manganese Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

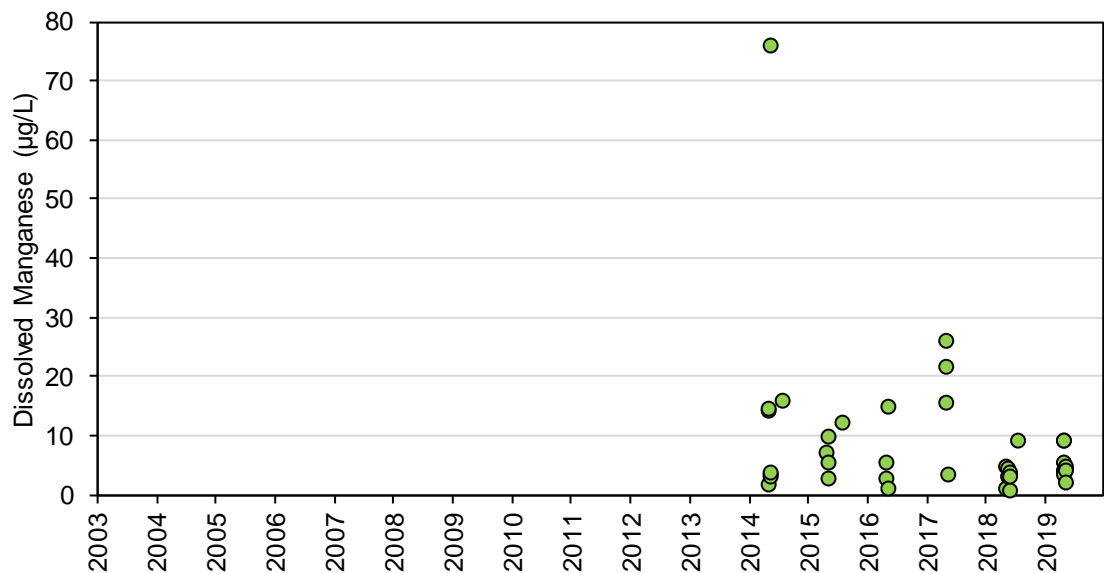


Figure 4D-54: Dissolved Mercury Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

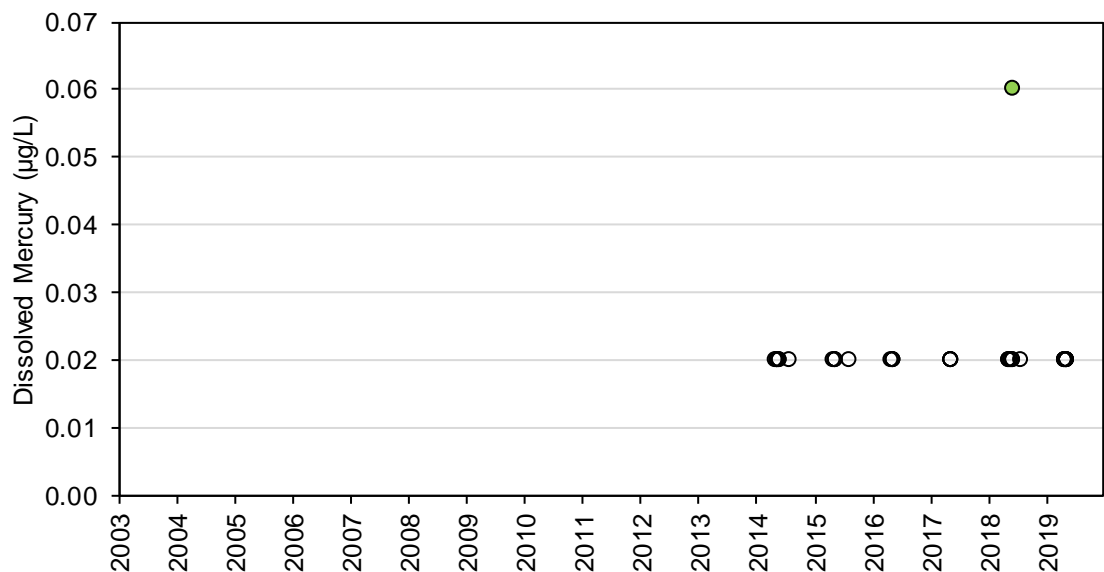


Figure 4D-55: Dissolved Molybdenum Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

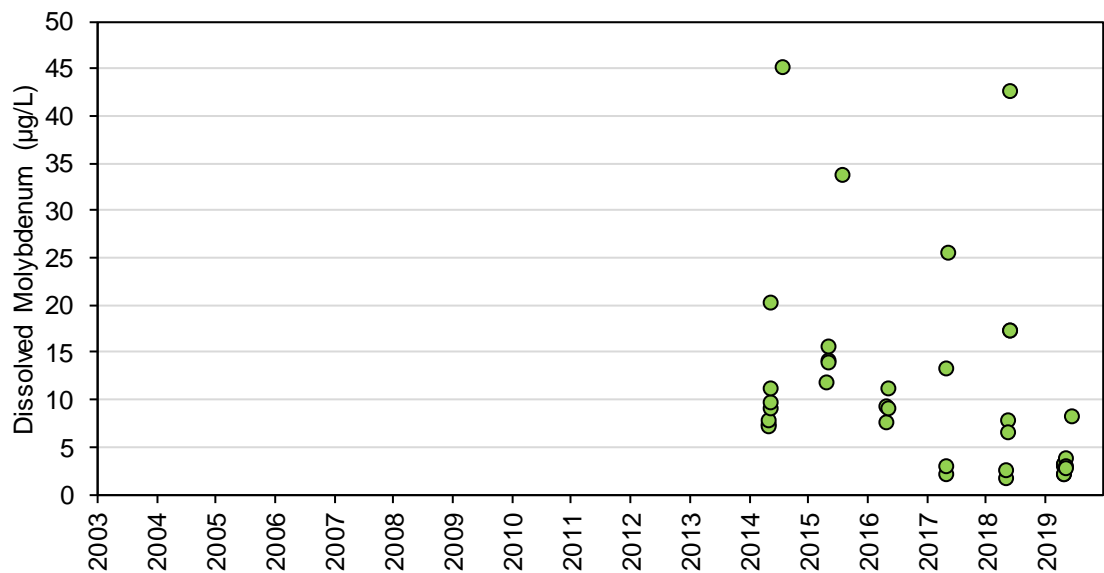


Figure 4D-56: Dissolved Nickel Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

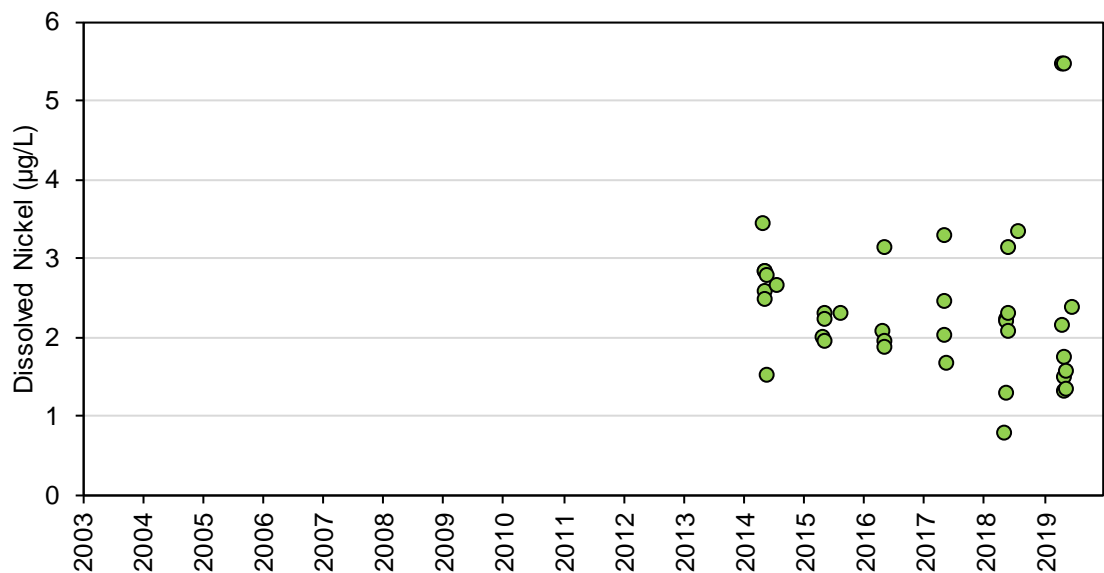


Figure 4D-57: Dissolved Rubidium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

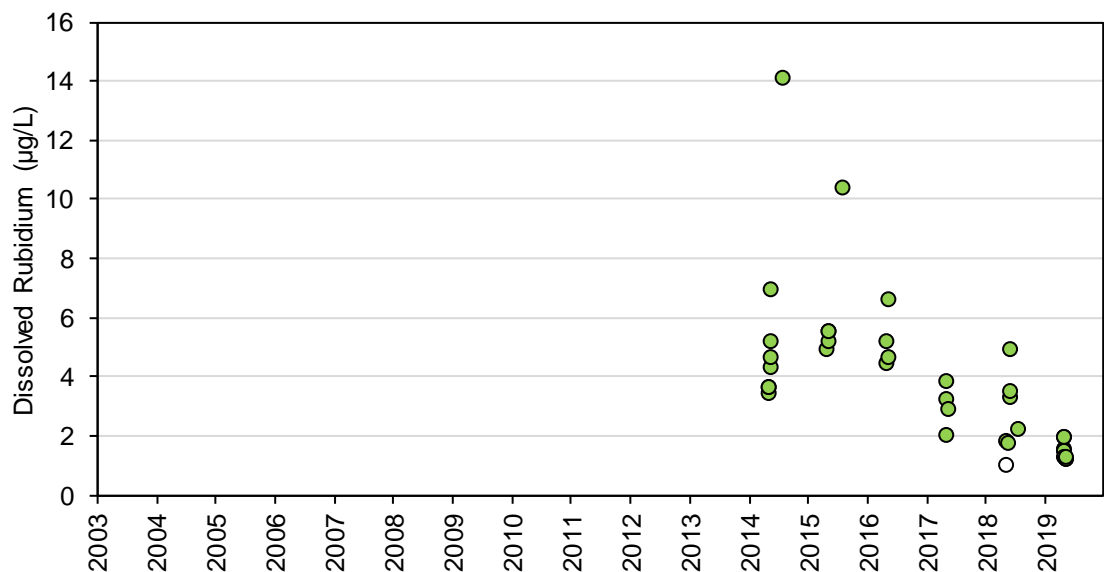


Figure 4D-58: Dissolved Selenium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

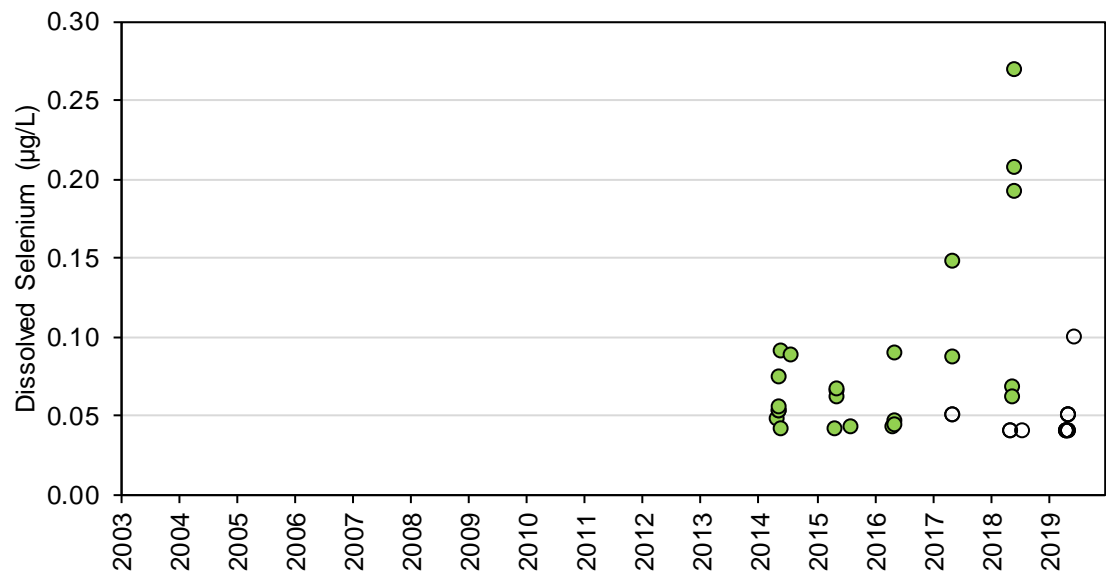


Figure 4D-59: Dissolved Strontium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

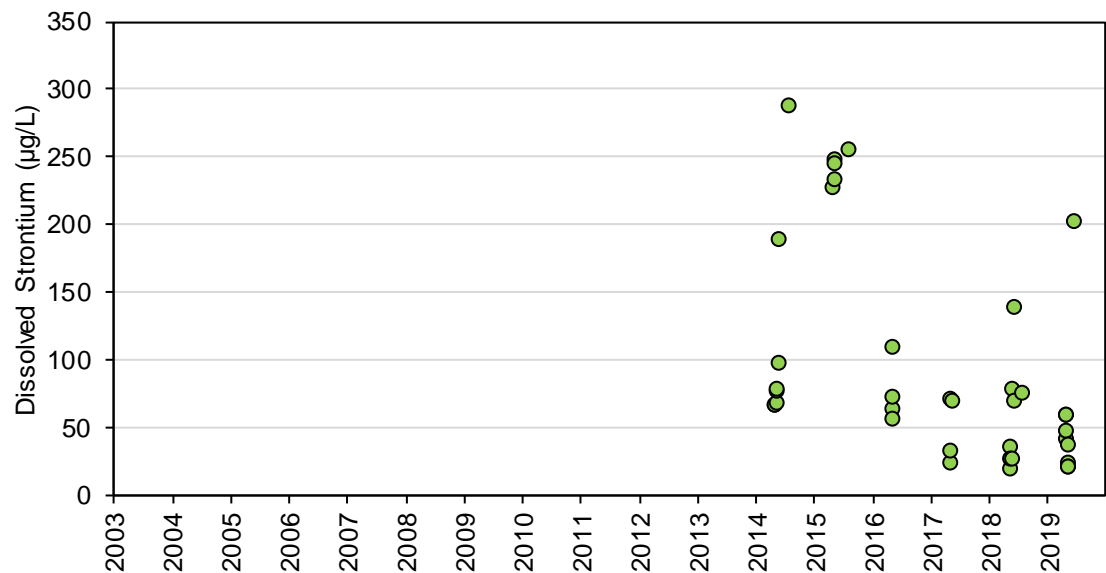


Figure 4D-60: Dissolved Thallium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

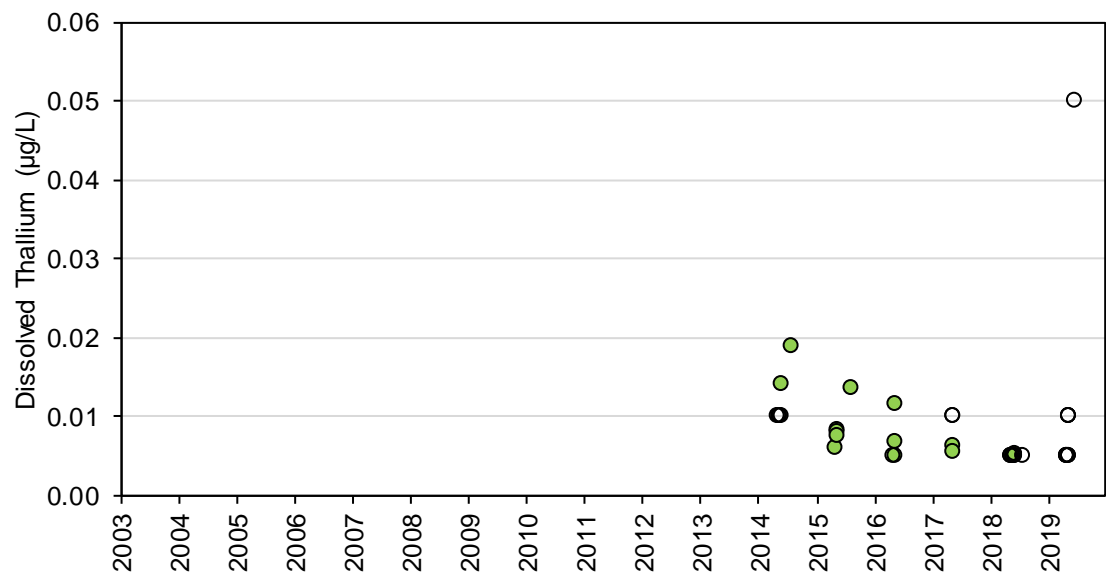


Figure 4D-61: Dissolved Titanium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

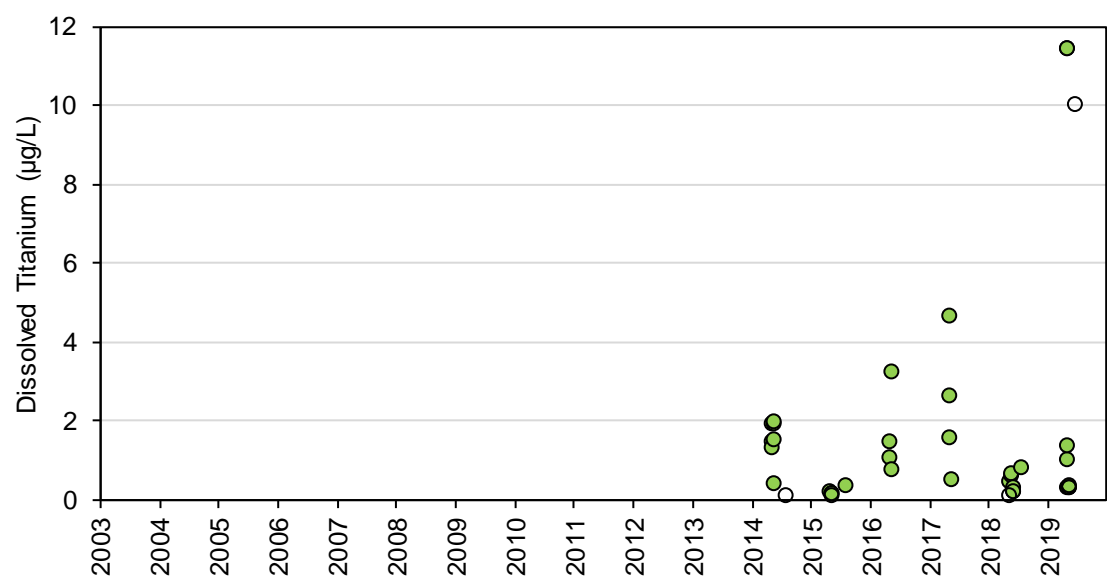


Figure 4D-62: Dissolved Uranium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

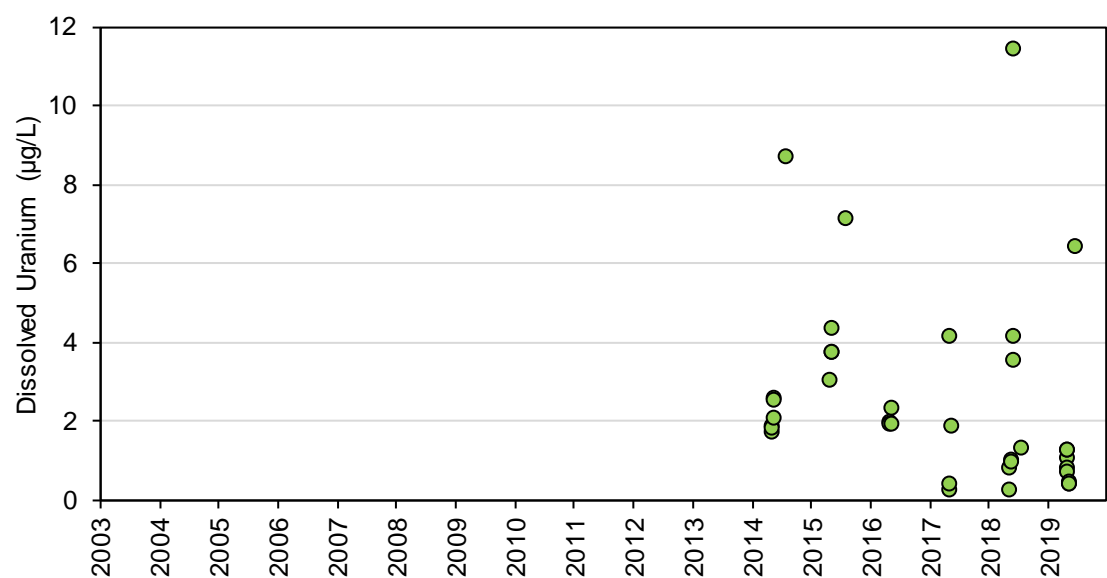


Figure 4D-63: Dissolved Vanadium Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance

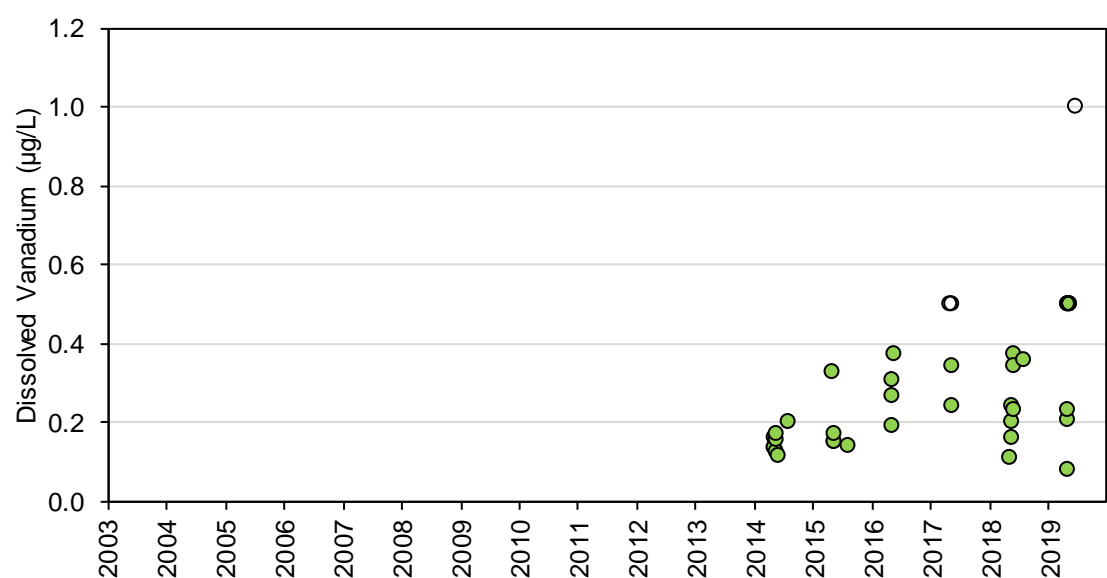
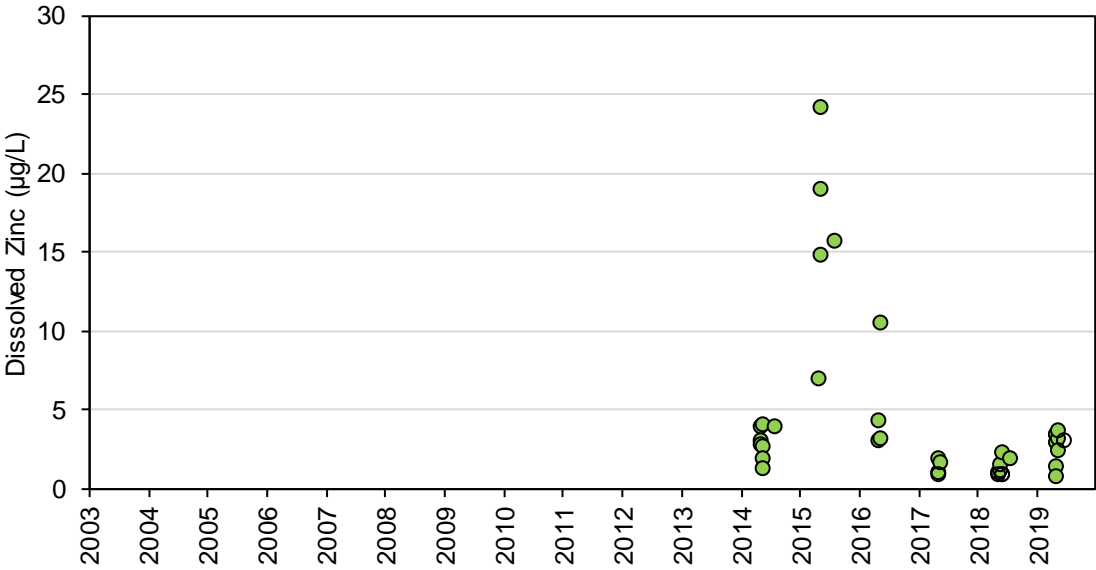


Figure 4D-64: Dissolved Zinc Concentrations at Station SNP 02-06 during Construction, Operations, and Extended Care and Maintenance



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ATTACHMENT 4E. FIGURES OF WATER QUALITY FOR SNP 02-07

Figure 4E-1: Total Dissolved Solids, calculated (lab) Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

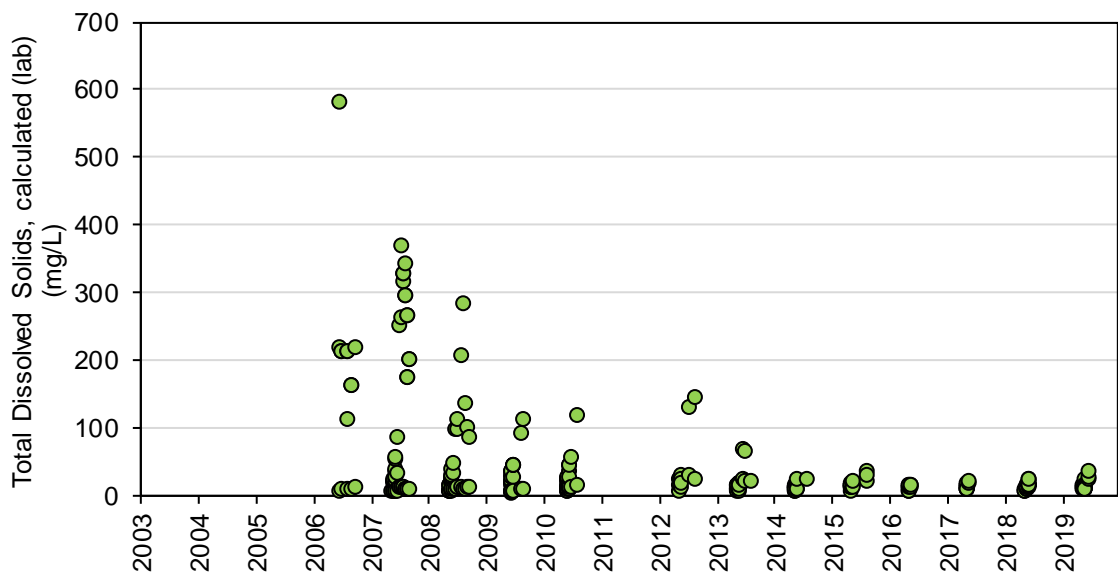


Figure 4E-2: Calcium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

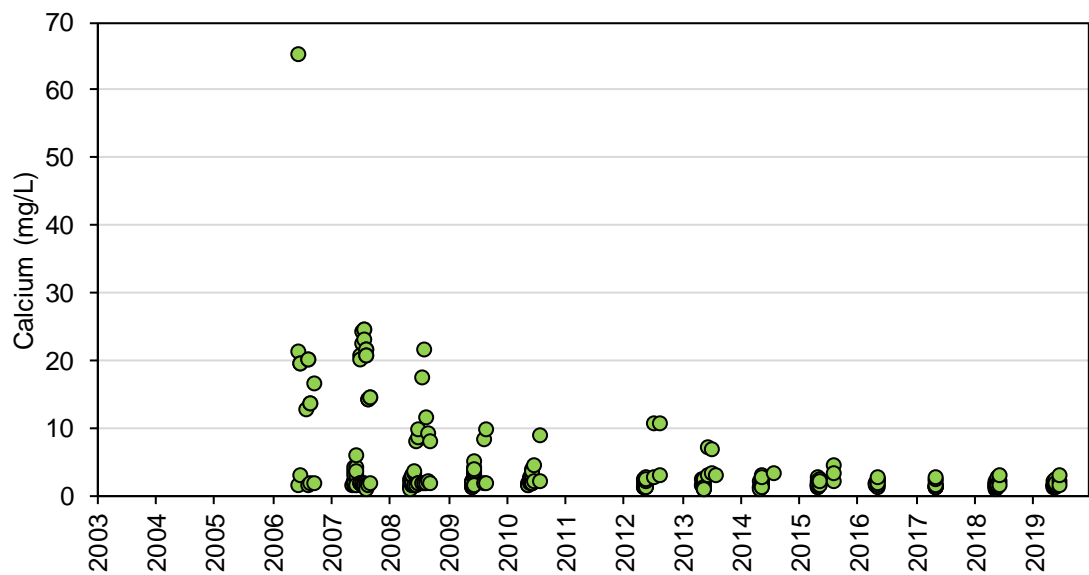


Figure 4E-3: Chloride Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

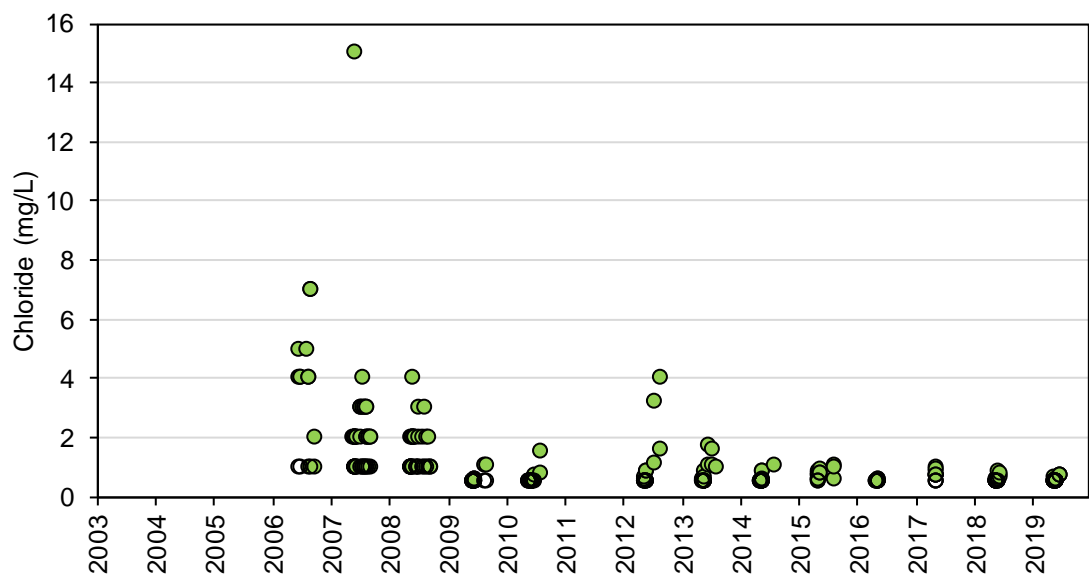


Figure 4E-4: Fluoride Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

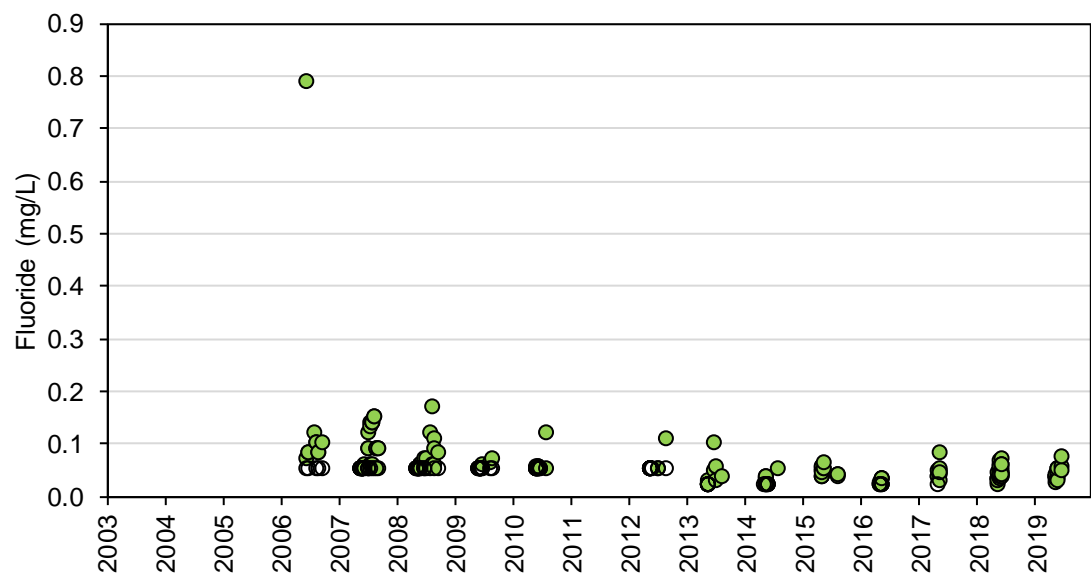


Figure 4E-5: Magnesium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

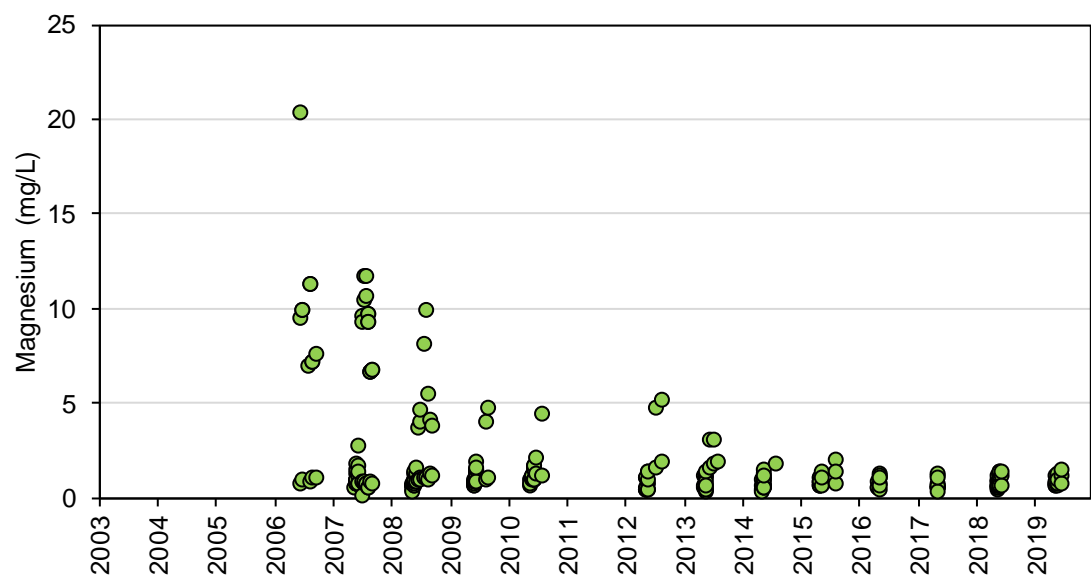


Figure 4E-6: Potassium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

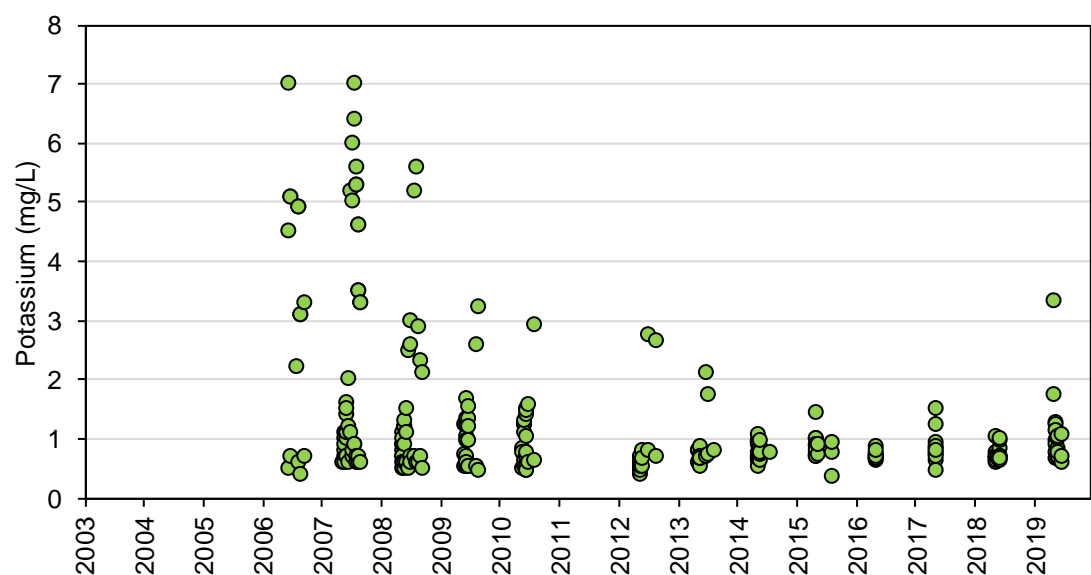


Figure 4E-7: Sodium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

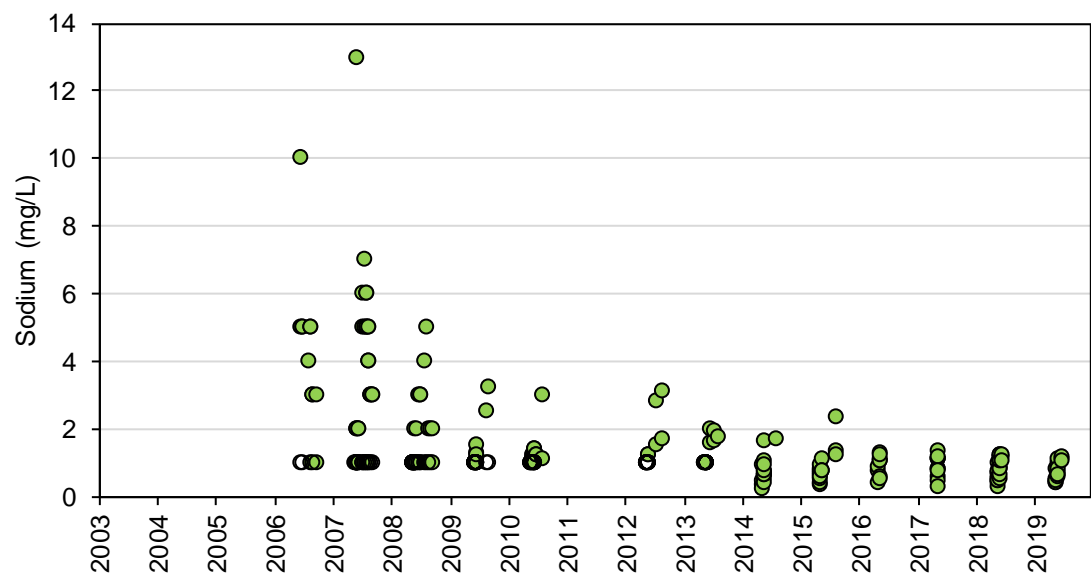


Figure 4E-8: Sulphate Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

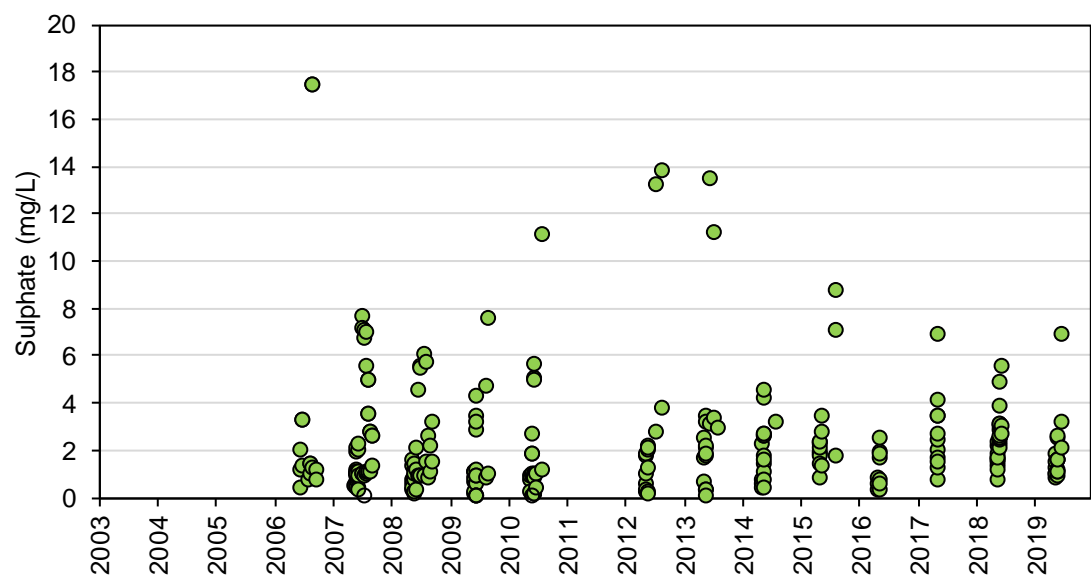


Figure 4E-9: Nitrate Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

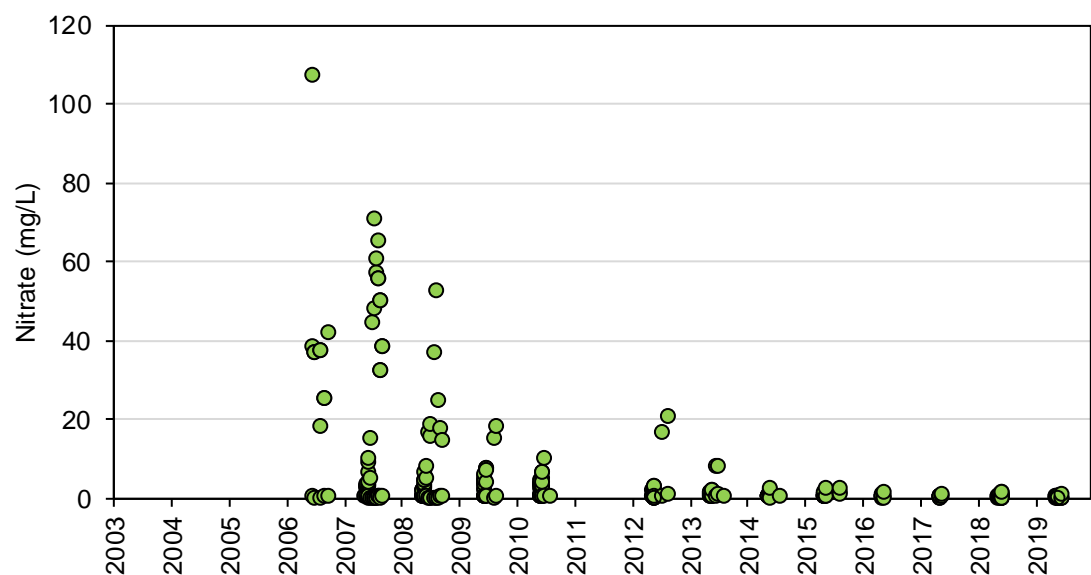


Figure 4E-10: Nitrite Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

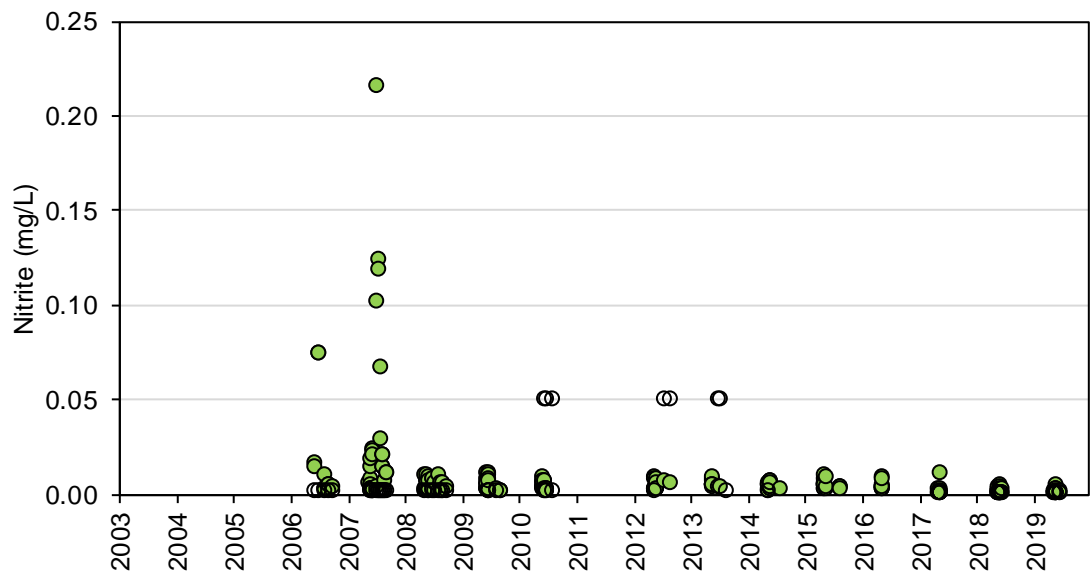


Figure 4E-11: Total Ammonia Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

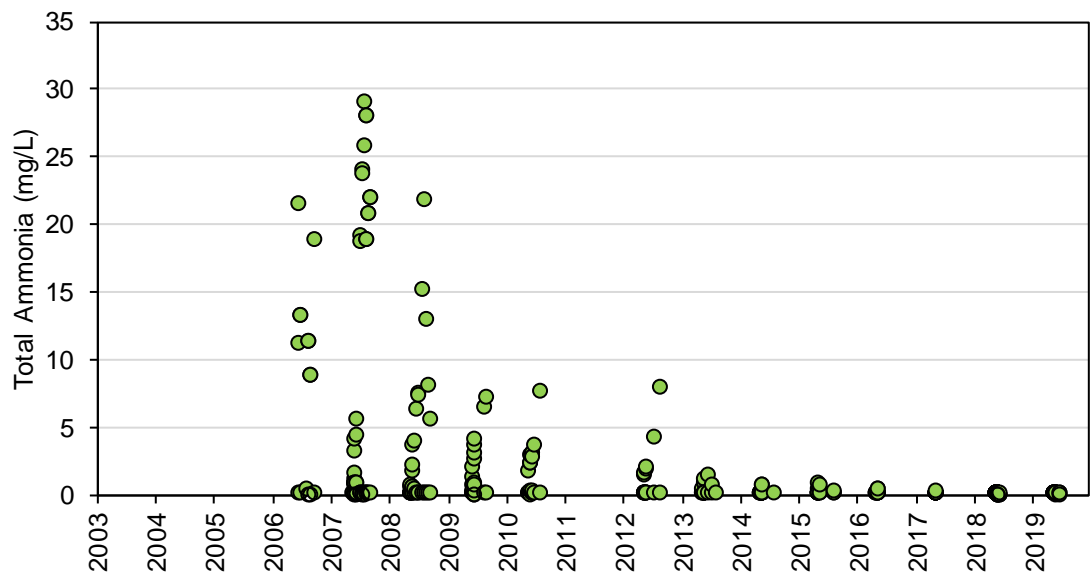


Figure 4E-12: Total Phosphorus Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

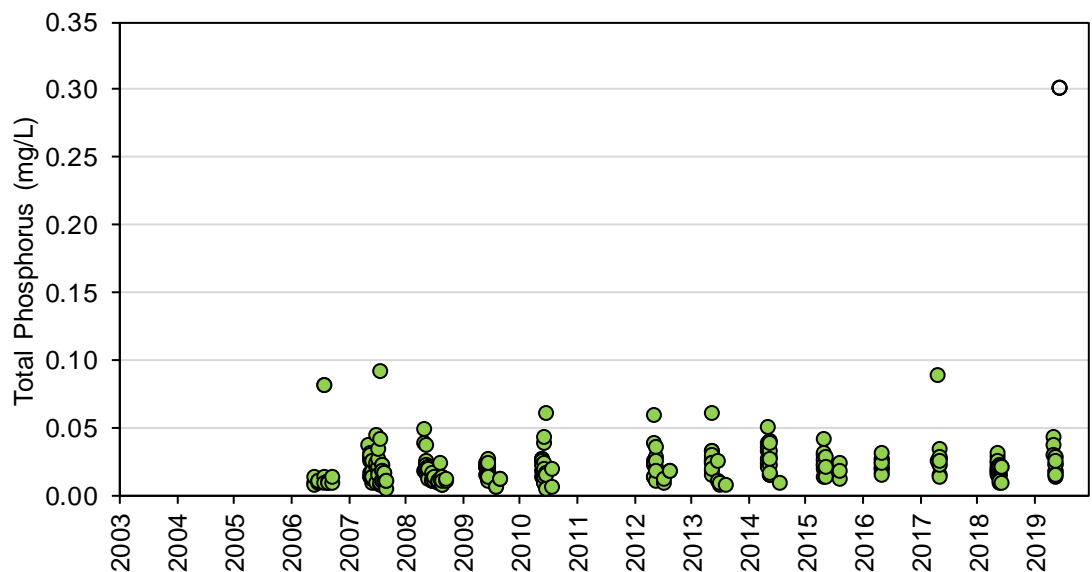


Figure 4E-13: Total Aluminum Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

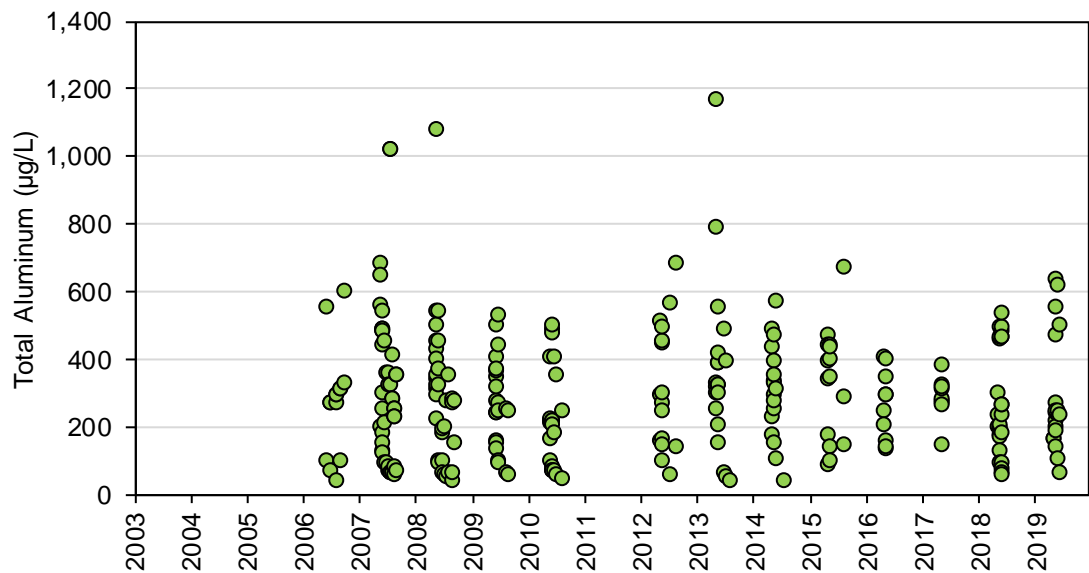


Figure 4E-14: Total Antimony Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

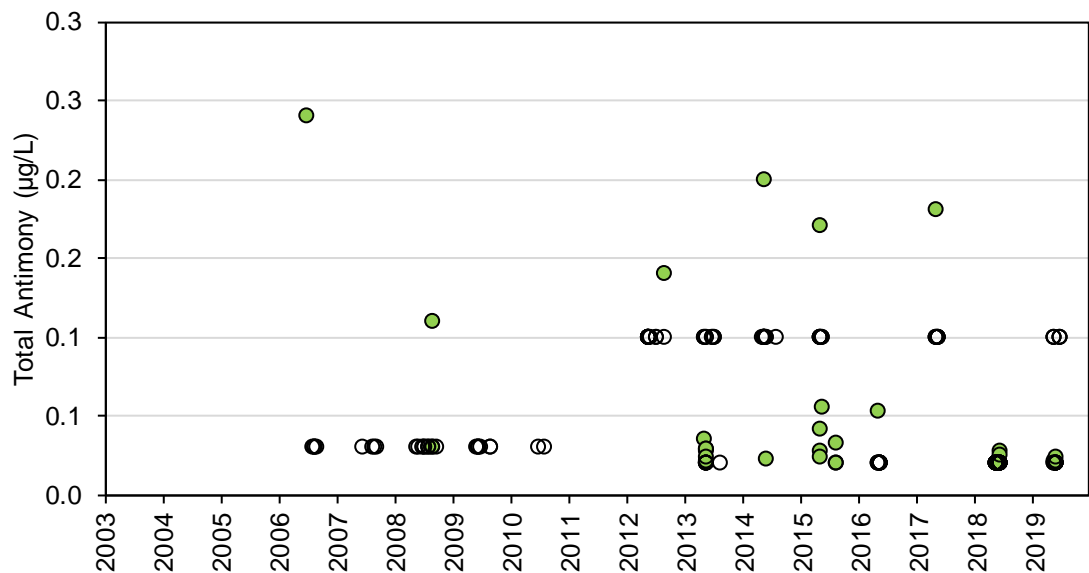


Figure 4E-15: Total Arsenic Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

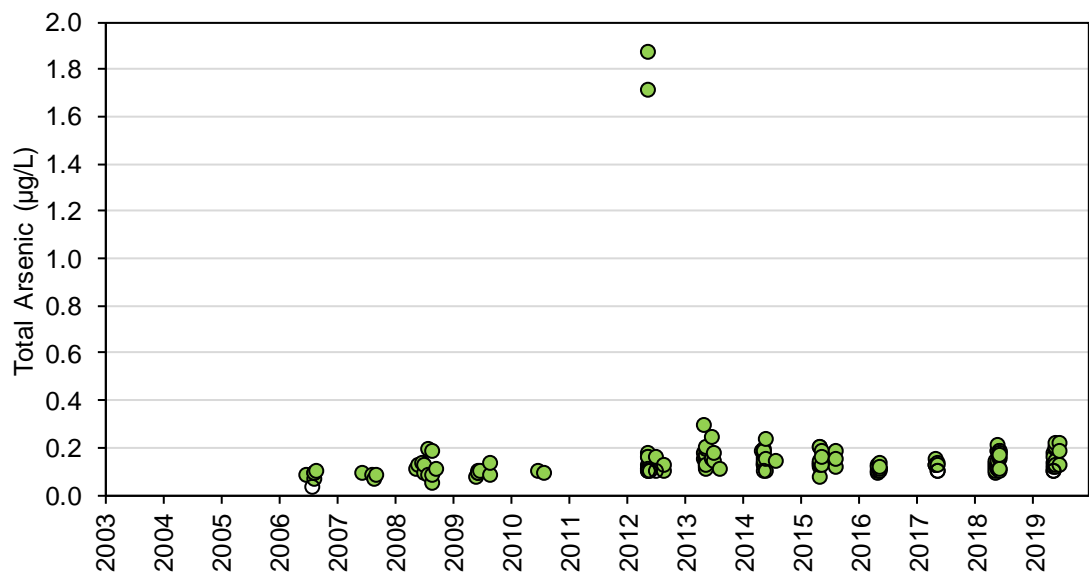


Figure 4E-16: Total Barium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

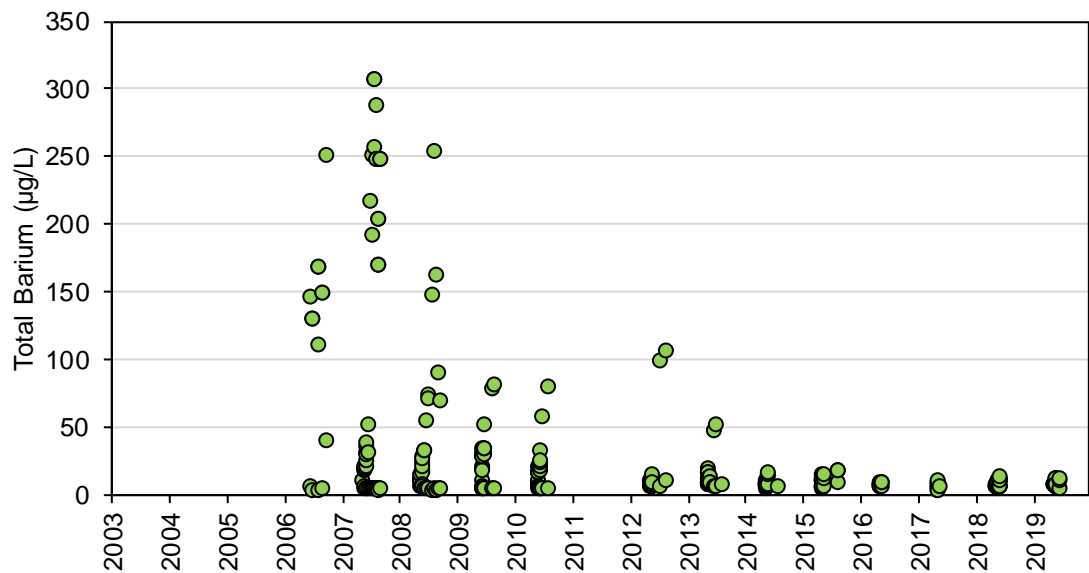


Figure 4E-17: Total Beryllium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

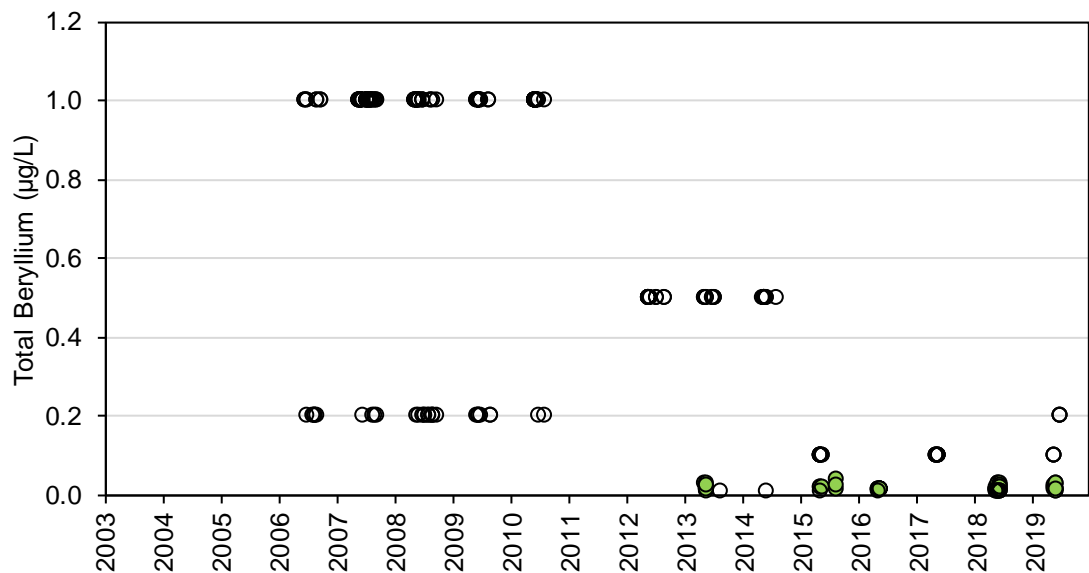


Figure 4E-18: Total Bismuth Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

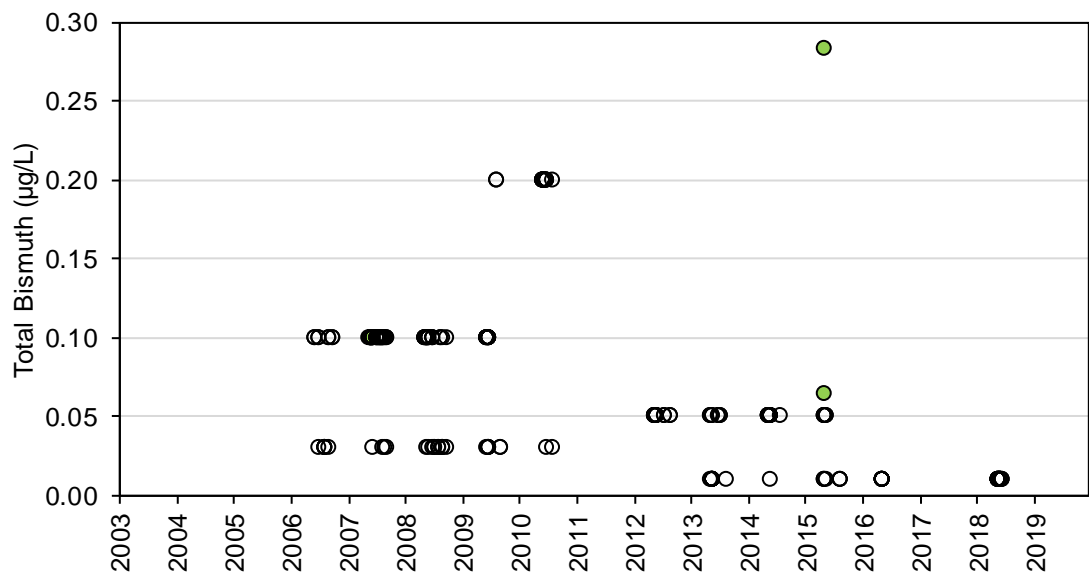


Figure 4E-19: Total Boron Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

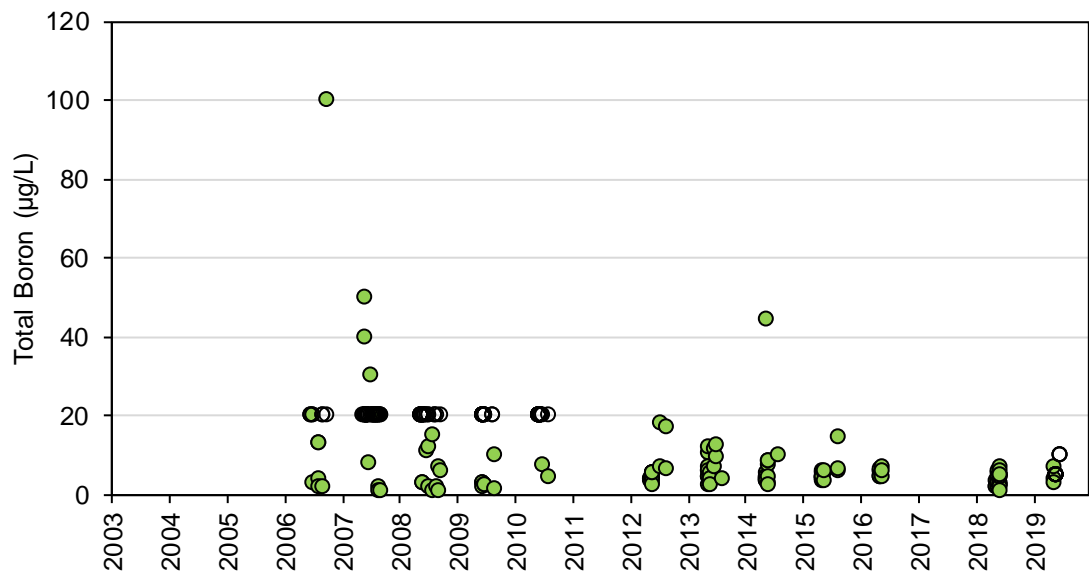


Figure 4E-20: Total Cadmium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

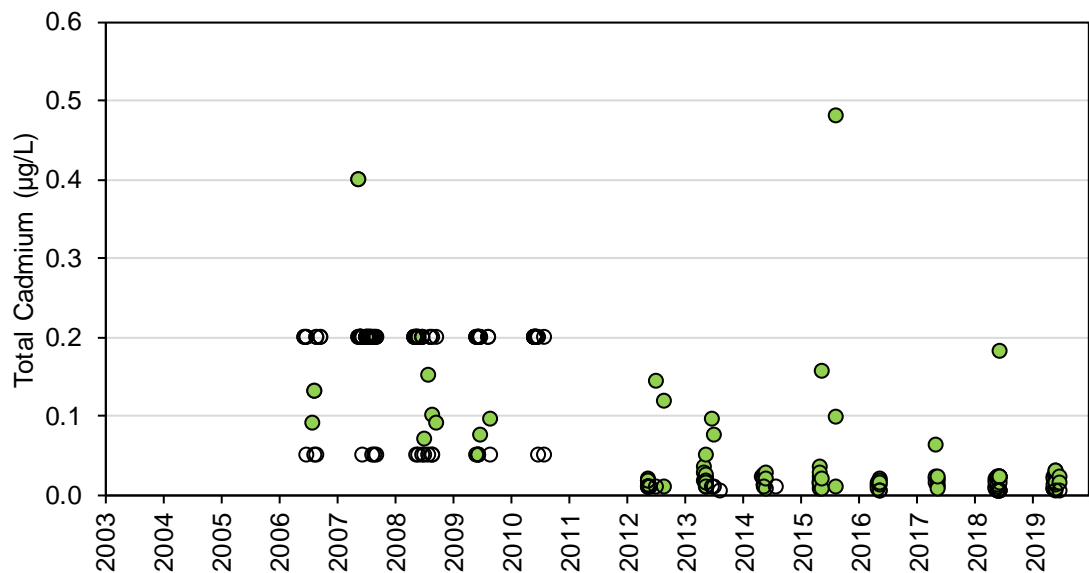


Figure 4E-21: Total Cesium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

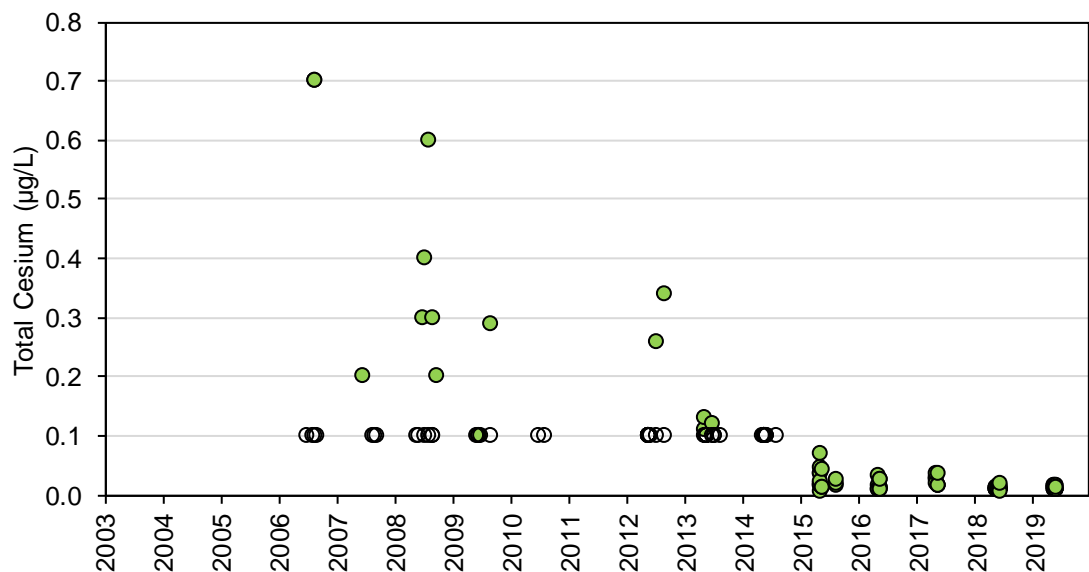


Figure 4E-22: Total Chromium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

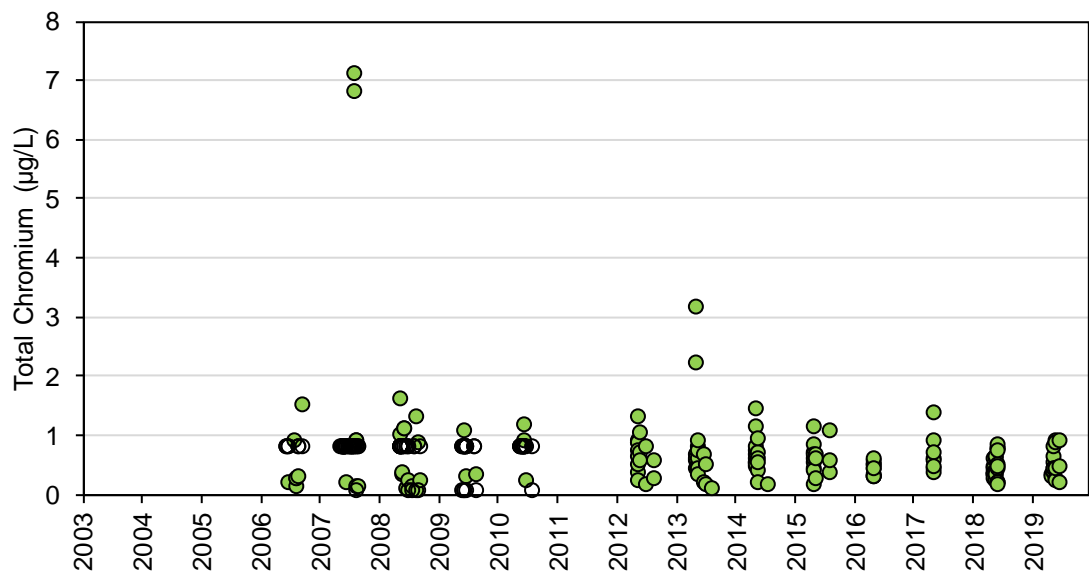


Figure 4E-23: Total Cobalt Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

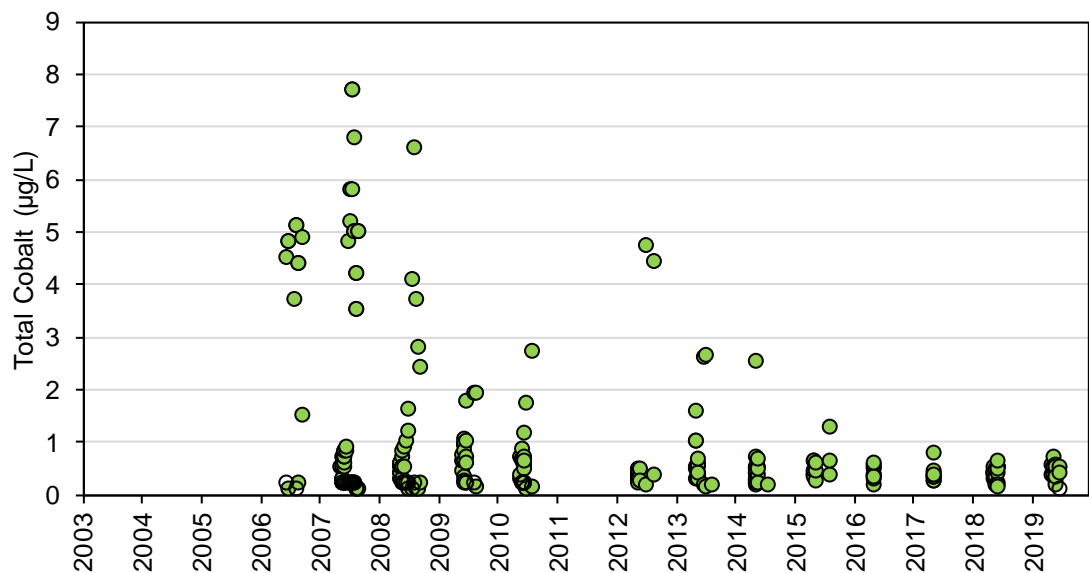


Figure 4E-24: Total Copper Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

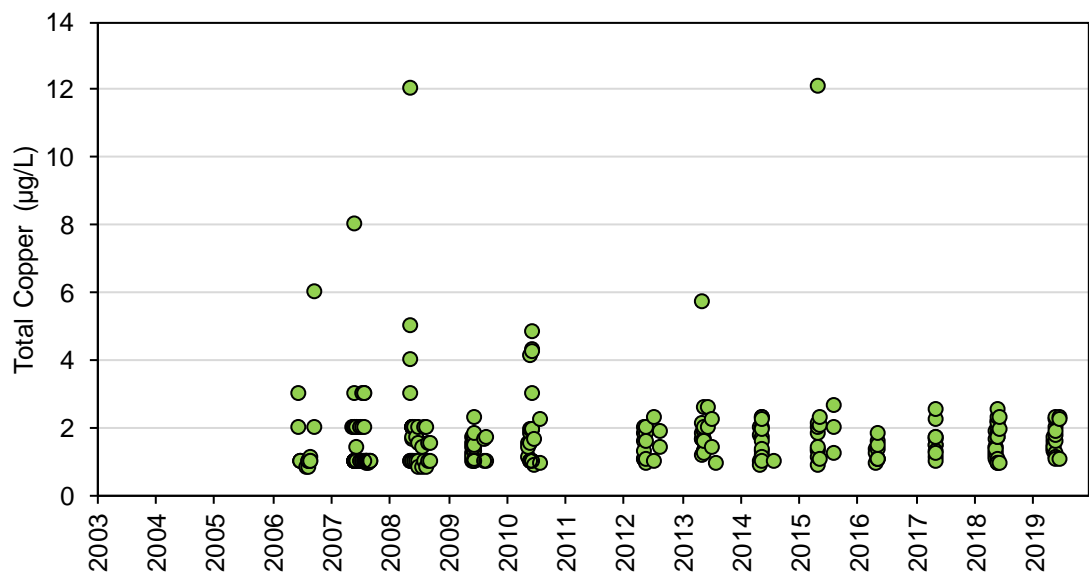


Figure 4E-25: Total Iron Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

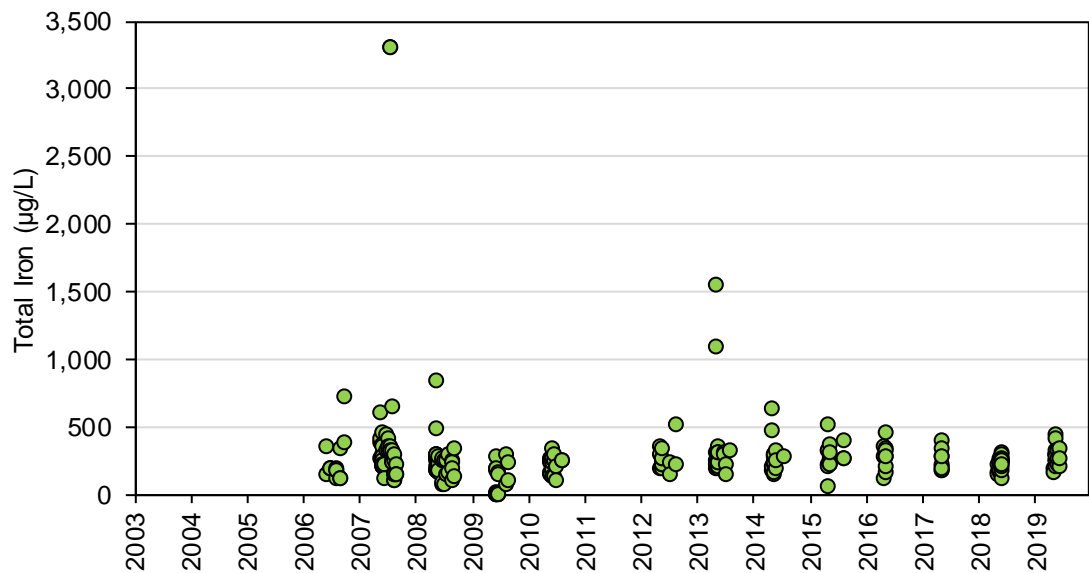


Figure 4E-26: Total Lead Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

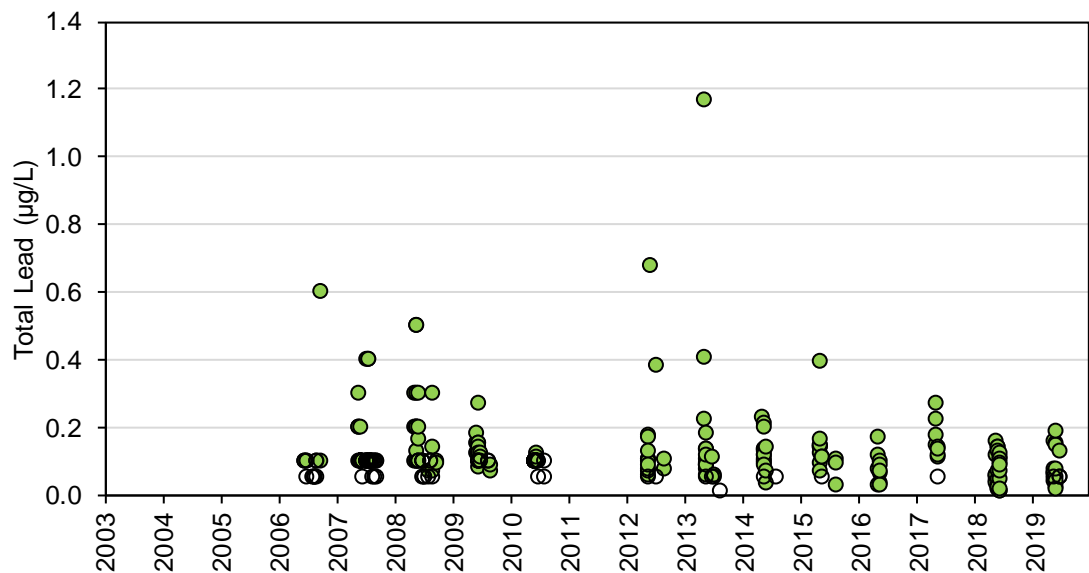


Figure 4E-27: Total Lithium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

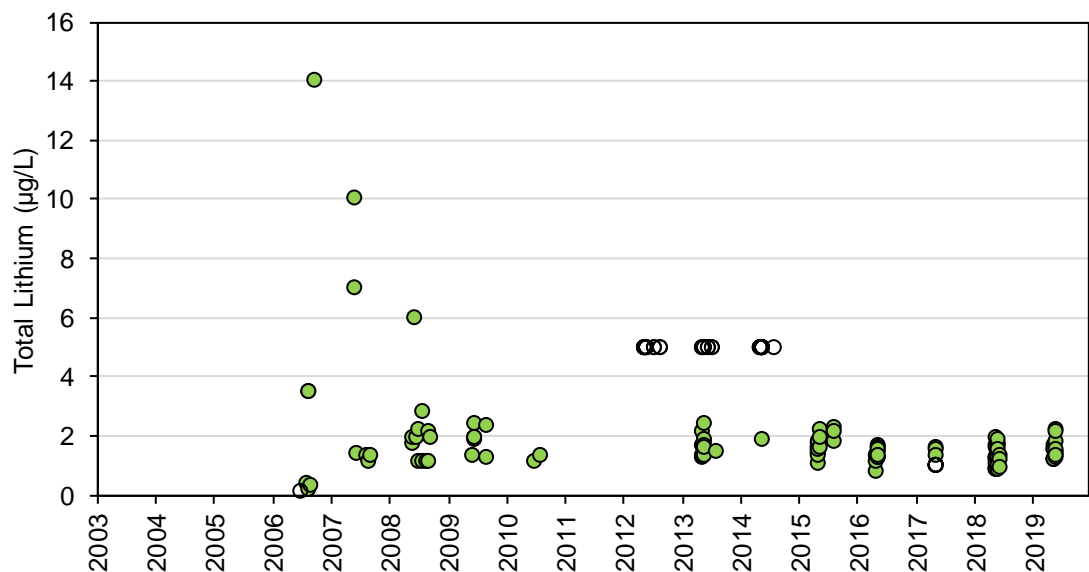


Figure 4E-28: Total Manganese Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

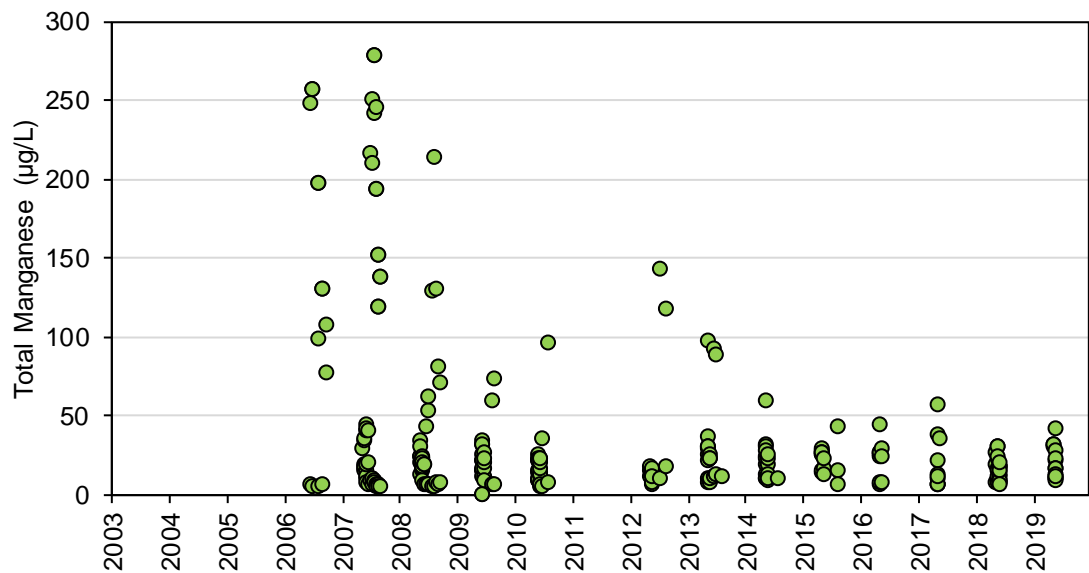


Figure 4E-29: Total Mercury Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

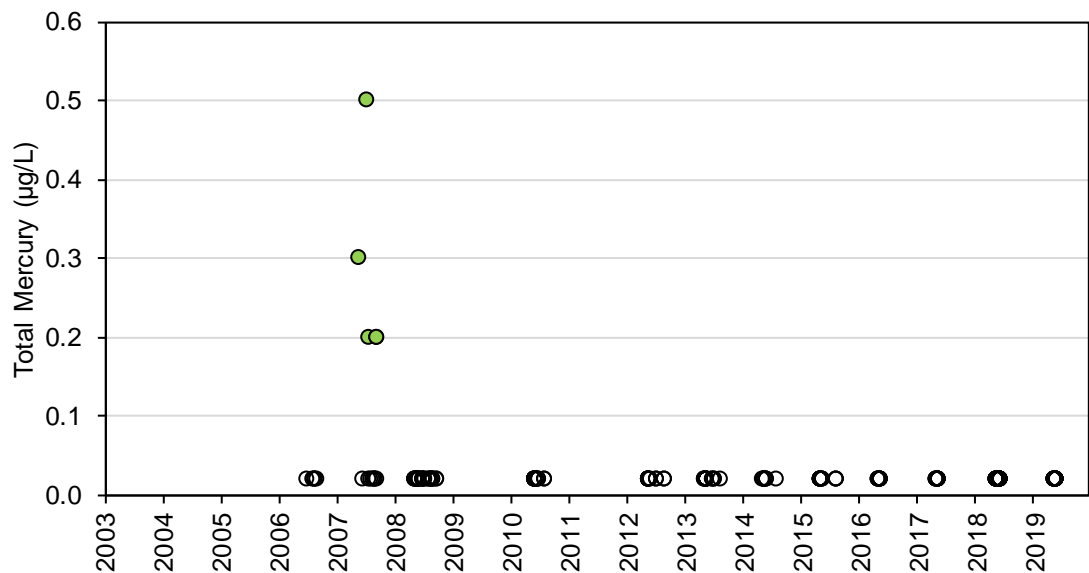


Figure 4E-30: Total Molybdenum Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

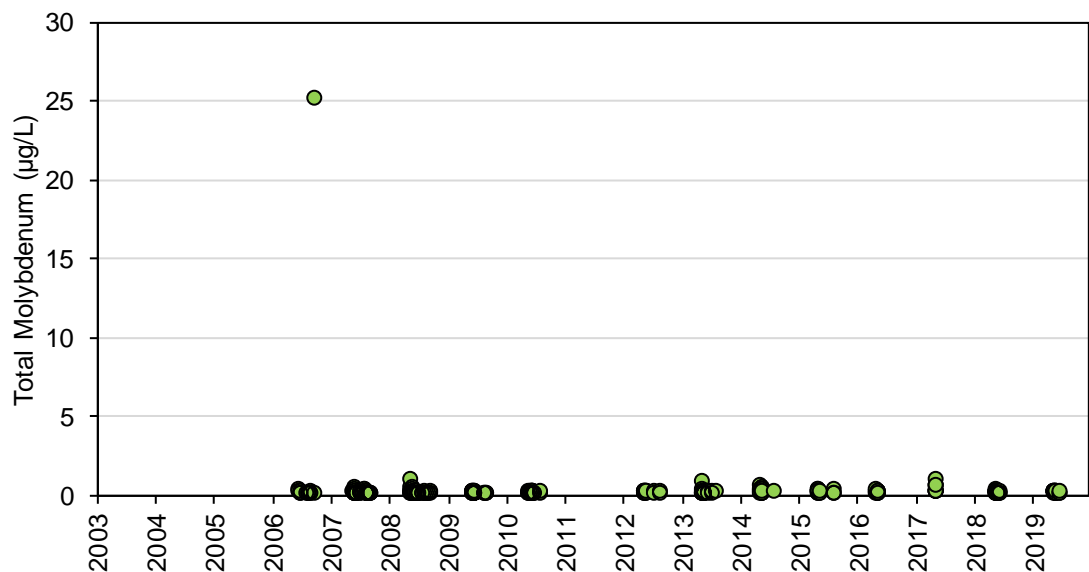


Figure 4E-31: Total Nickel Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

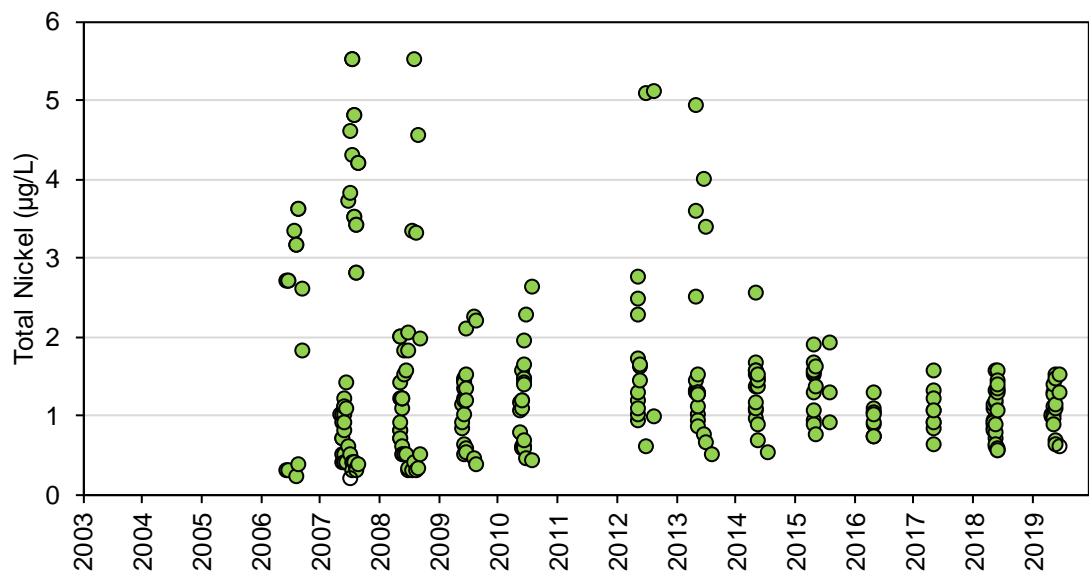


Figure 4E-32: Total Rubidium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

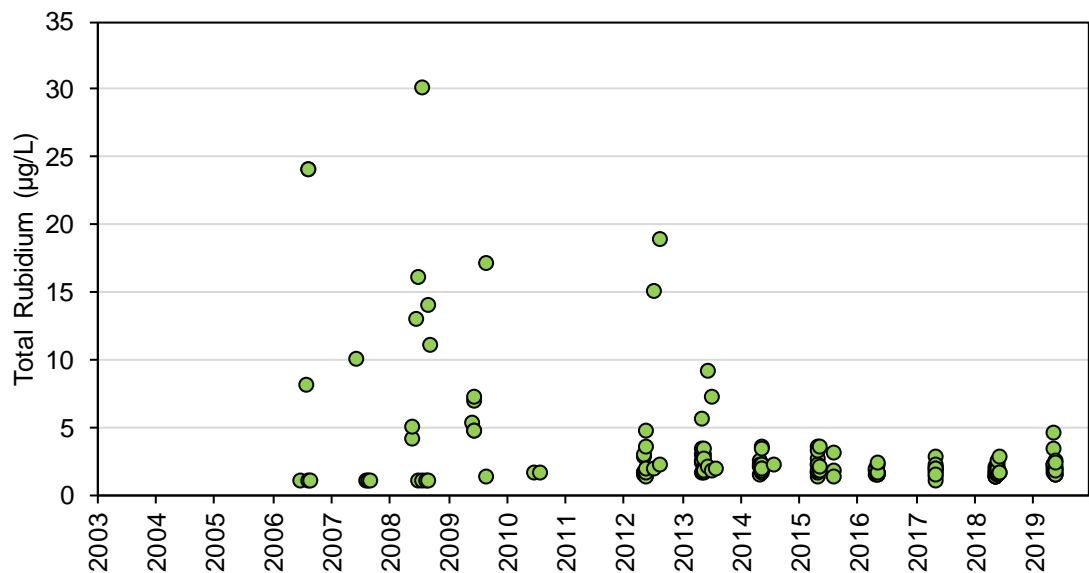


Figure 4E-33: Total Selenium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

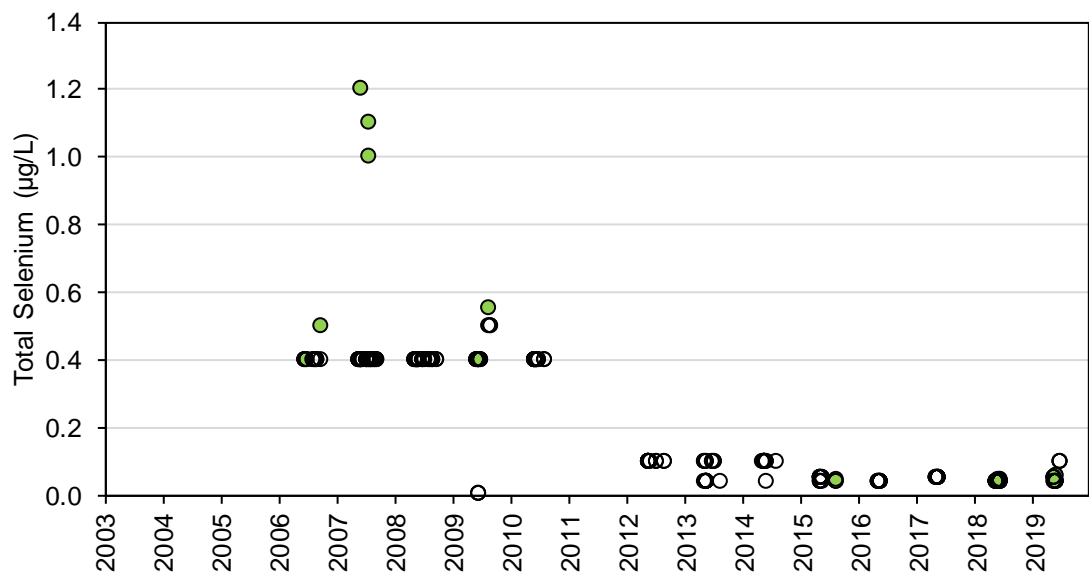


Figure 4E-34: Total Silver Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

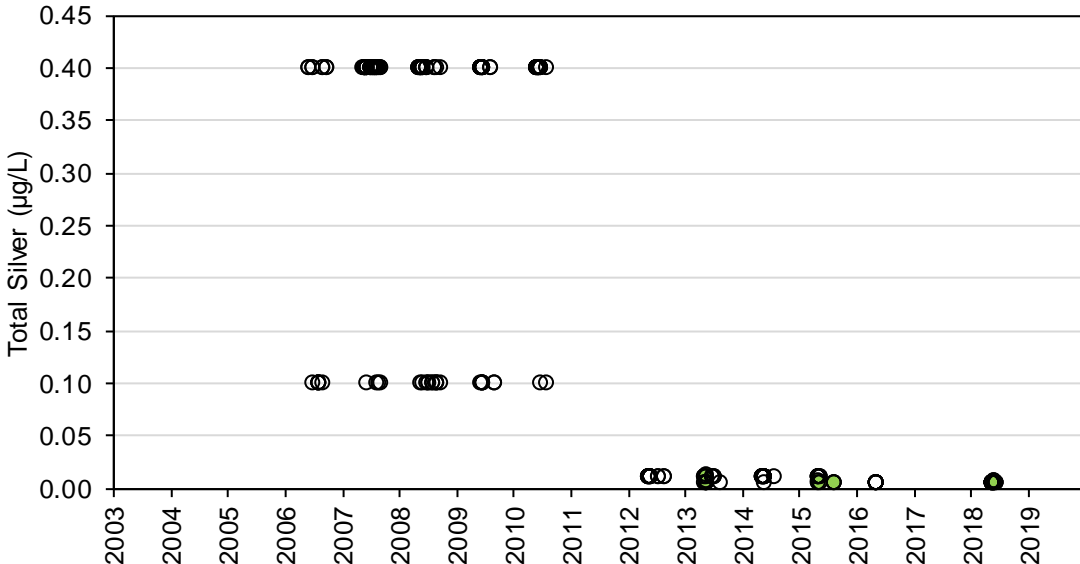


Figure 4E-35: Total Strontium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

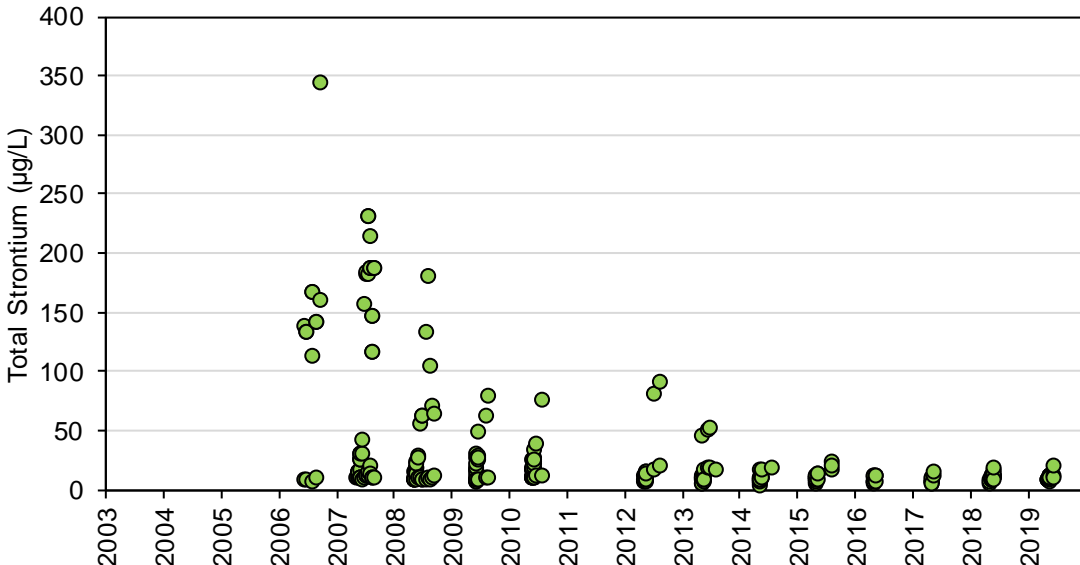


Figure 4E-36: Total Thallium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

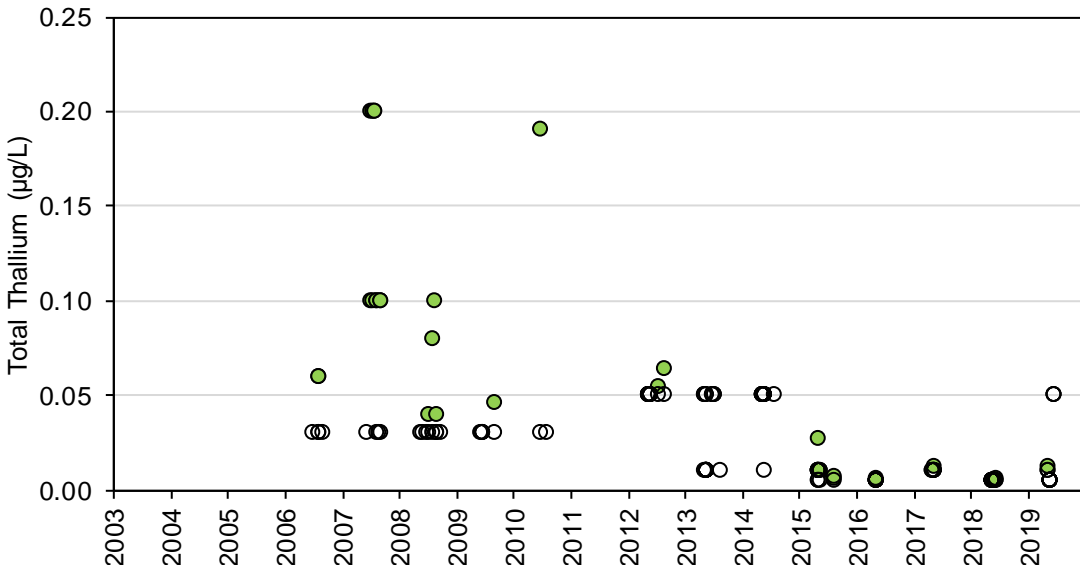


Figure 4E-37: Total Titanium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

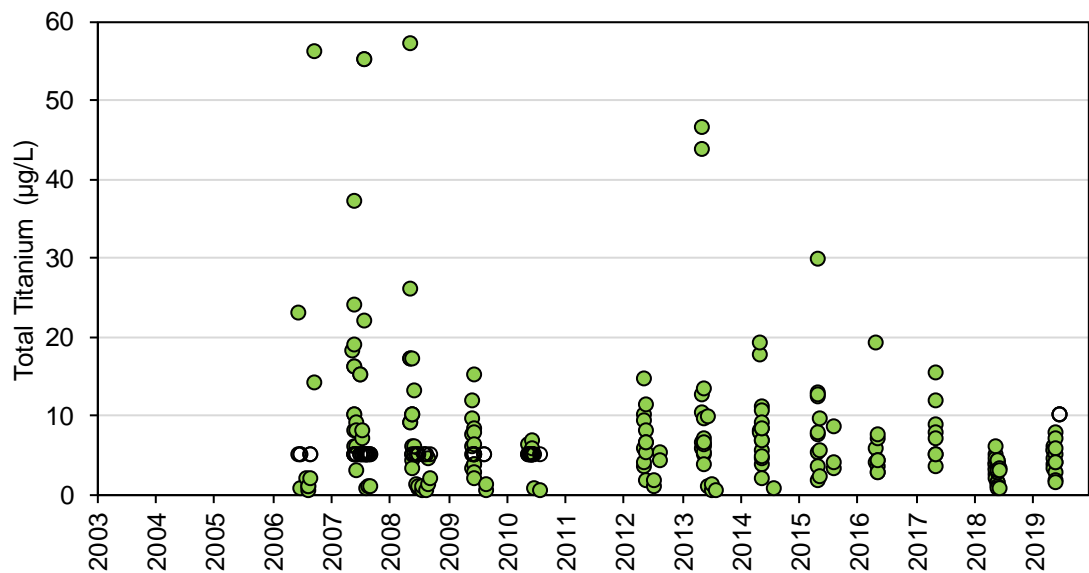


Figure 4E-38: Total Uranium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

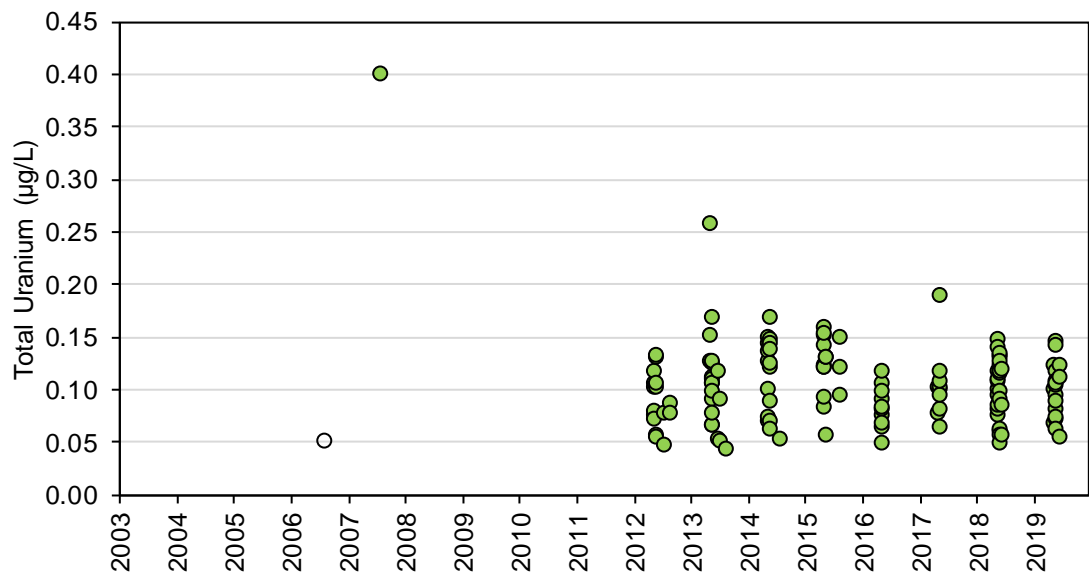


Figure 4E-39: Total Vanadium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

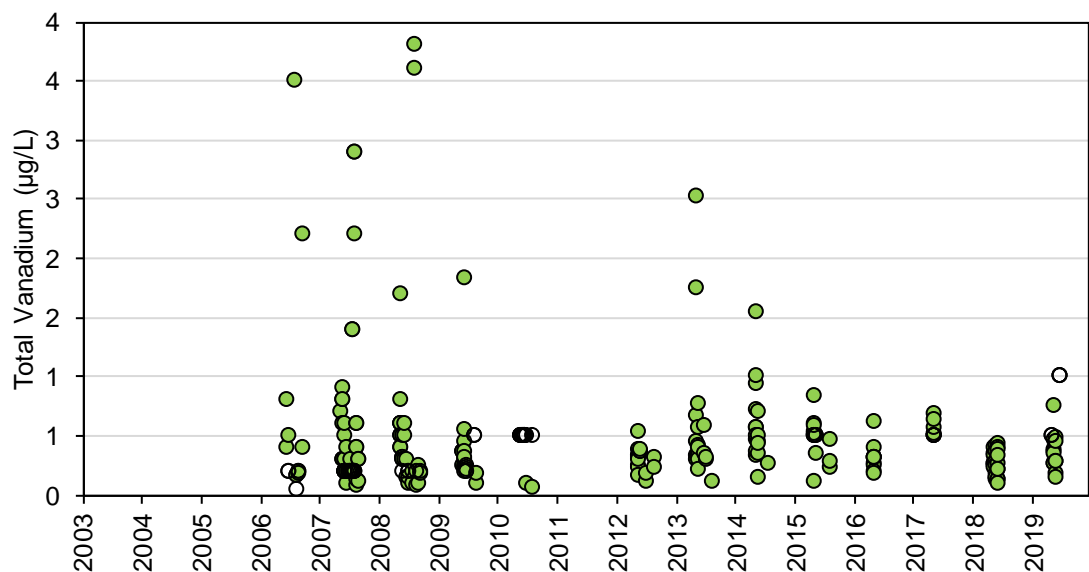


Figure 4E-40: Total Zinc Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

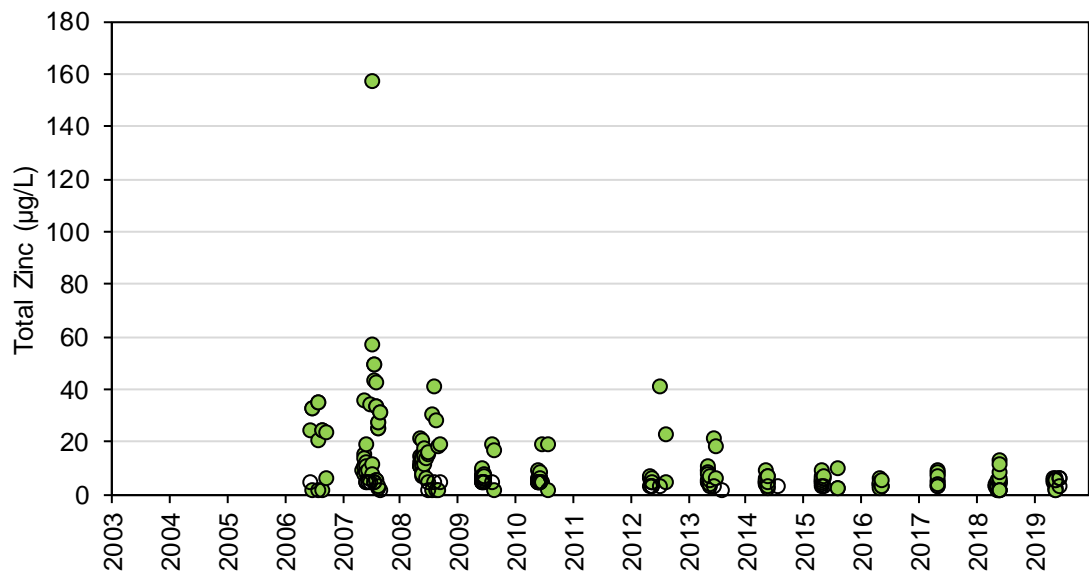


Figure 4E-41: Dissolved Aluminum Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

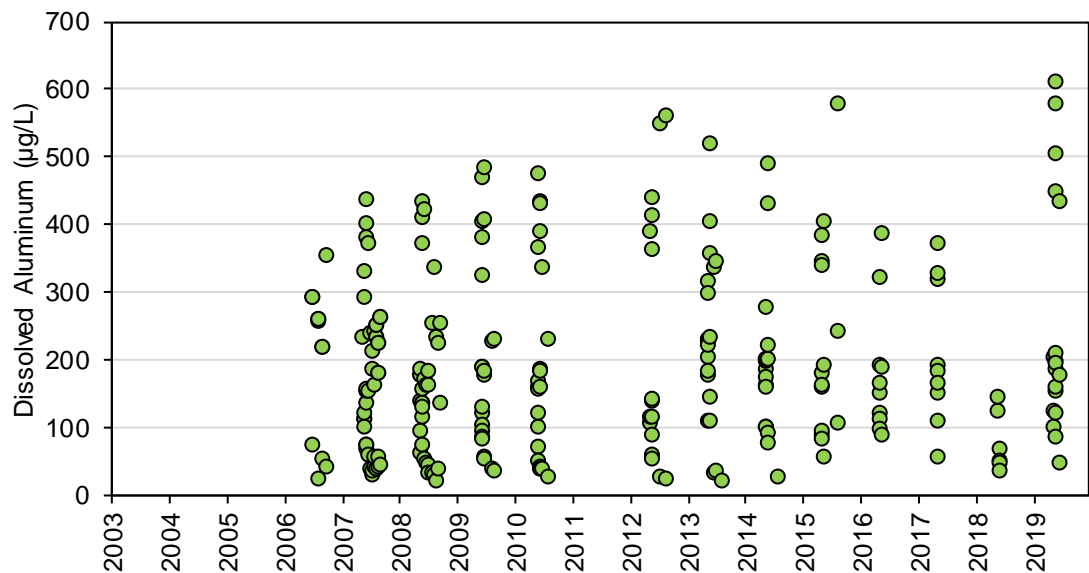


Figure 4E-42: Dissolved Antimony Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

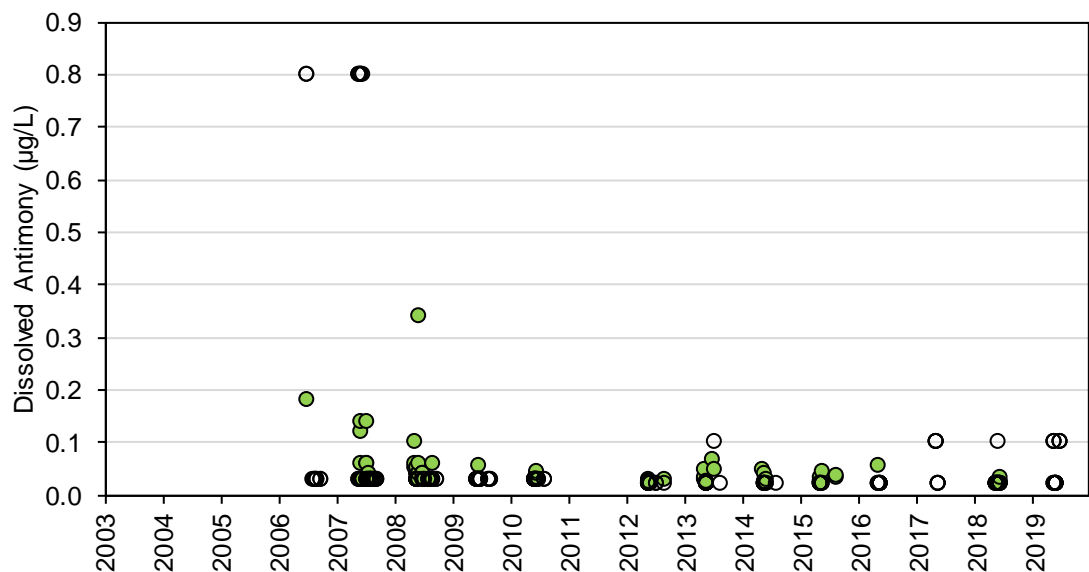


Figure 4E-43: Dissolved Arsenic Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

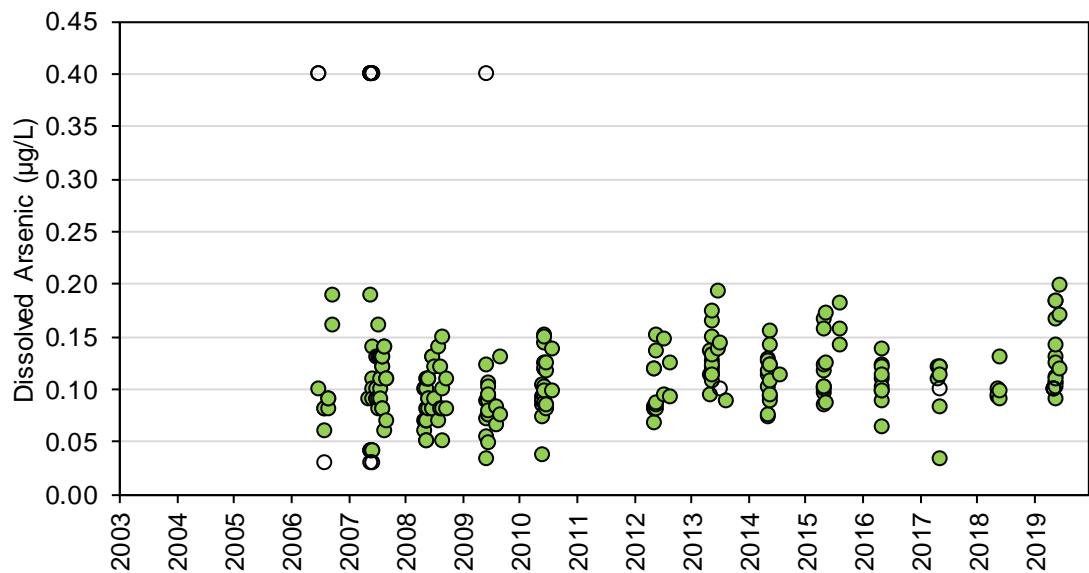


Figure 4E-44: Dissolved Barium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

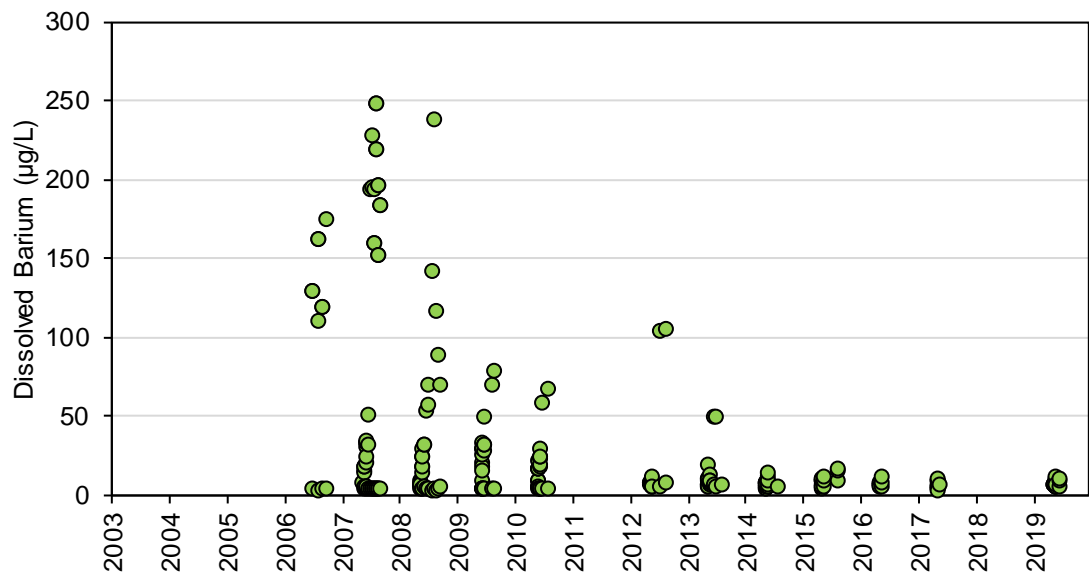


Figure 4E-45: Dissolved Beryllium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

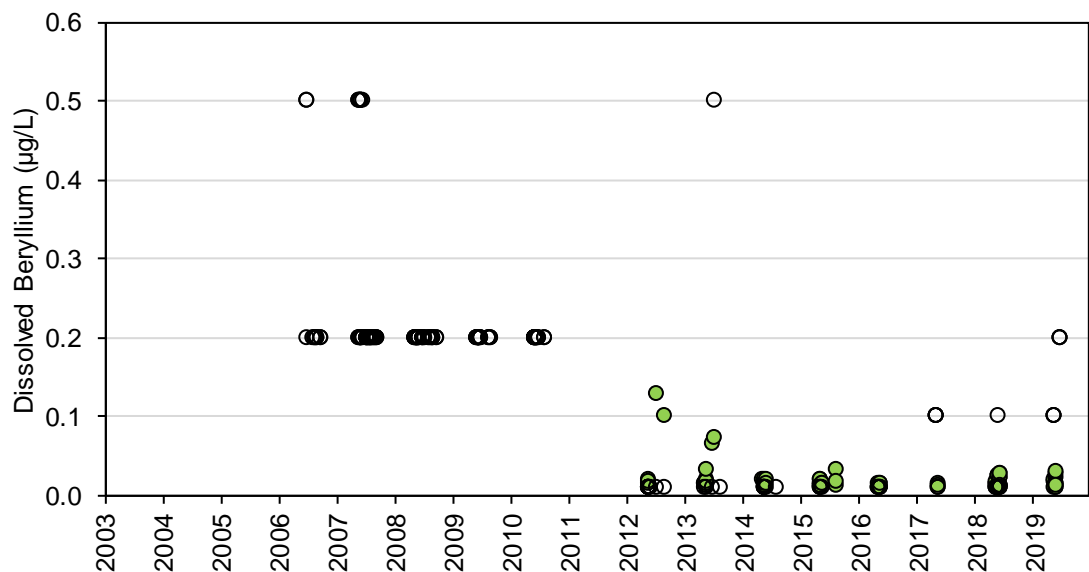


Figure 4E-46: Dissolved Bismuth Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

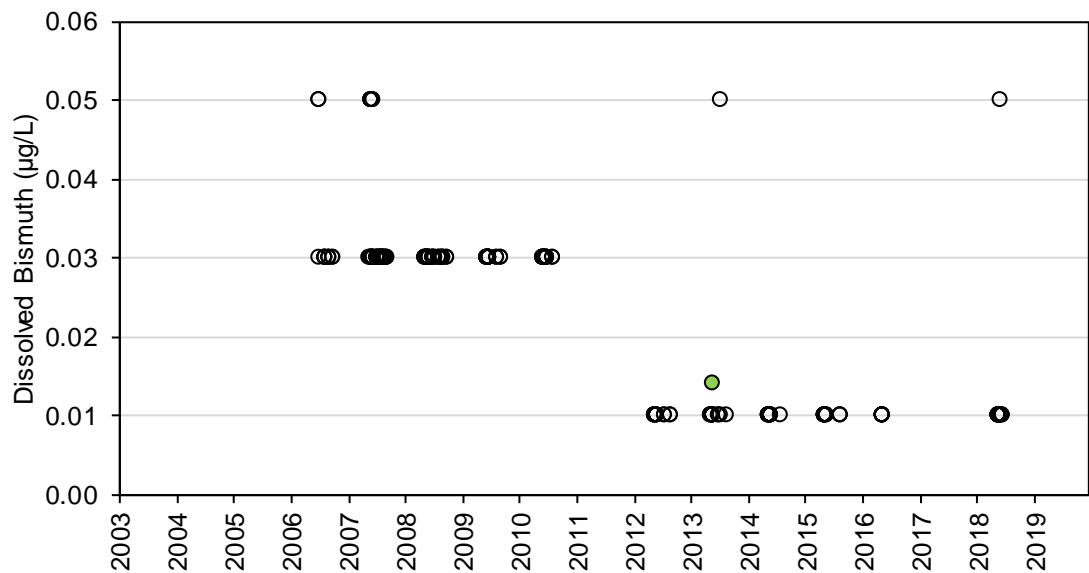


Figure 4E-47: Dissolved Boron Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

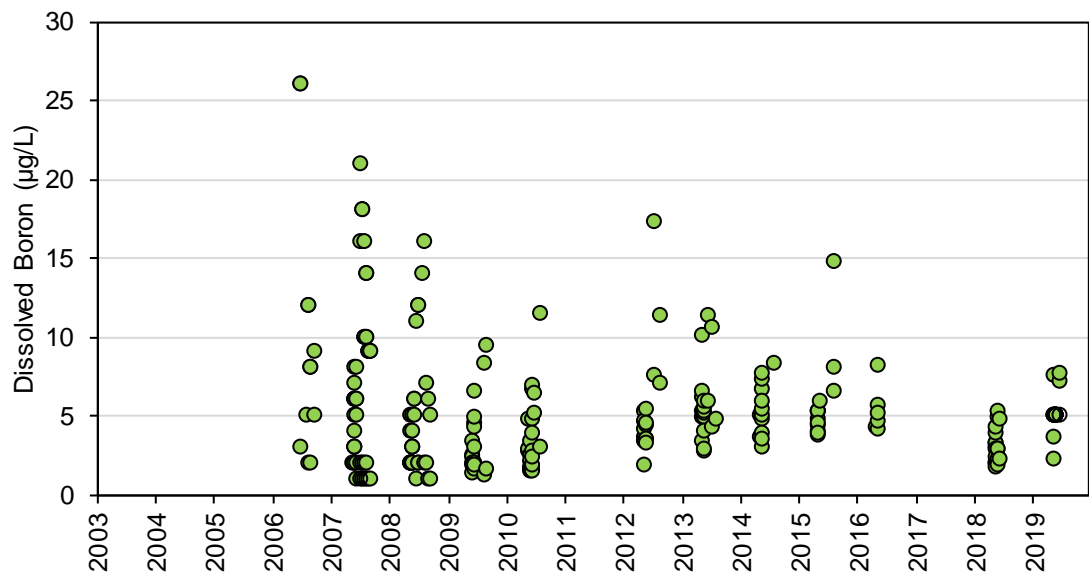


Figure 4E-48: Dissolved Cadmium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

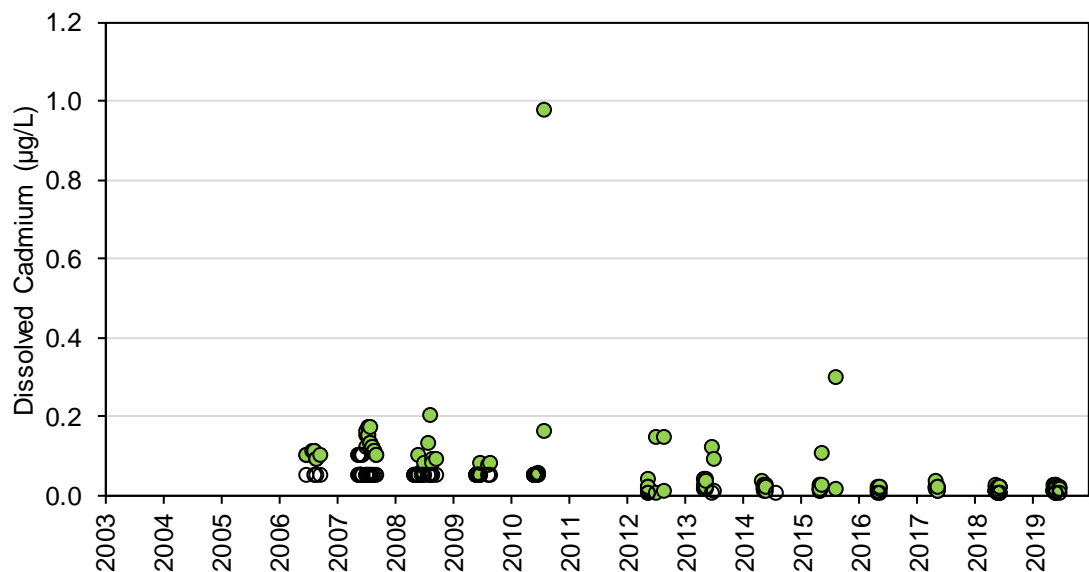


Figure 4E-49: Dissolved Cesium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

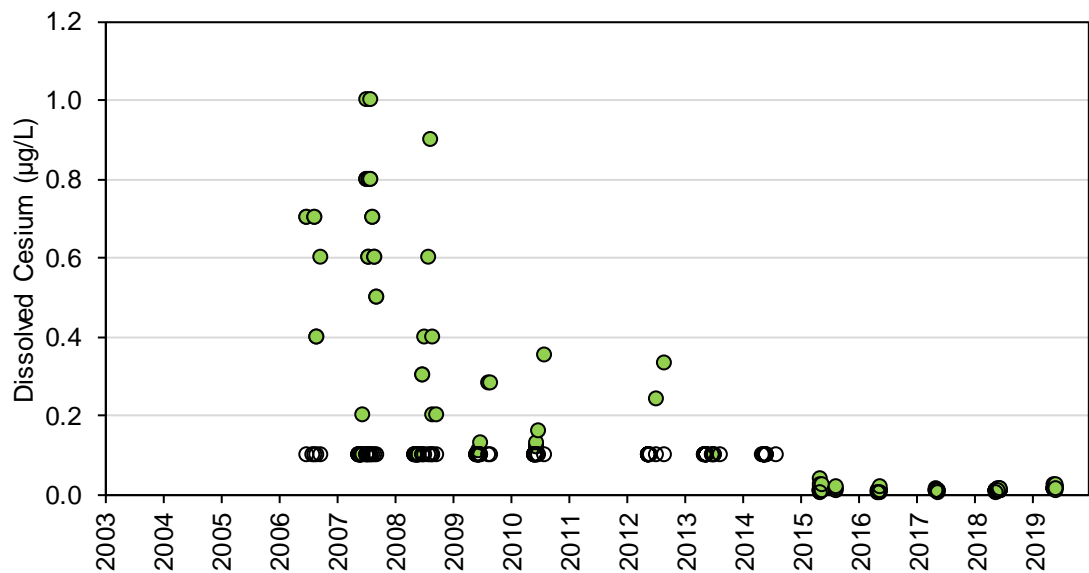


Figure 4E-50: Dissolved Chromium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

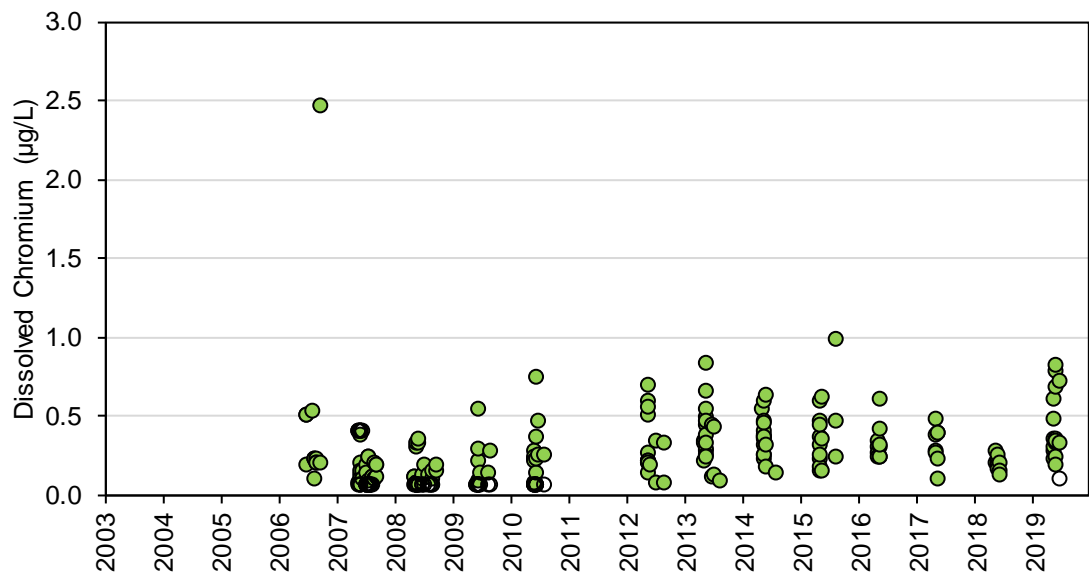


Figure 4E-51: Dissolved Cobalt Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

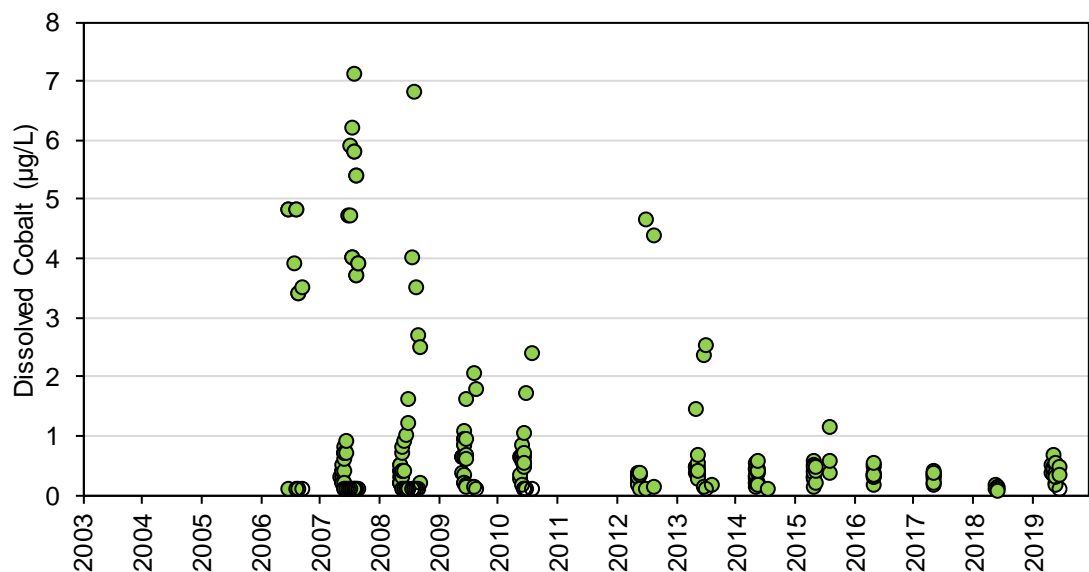


Figure 4E-52: Dissolved Copper Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

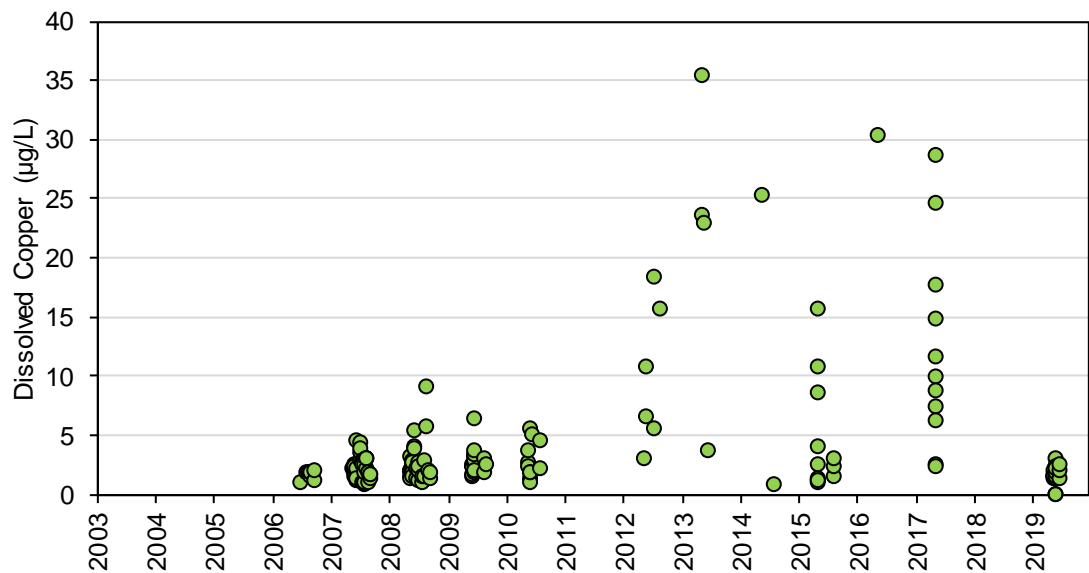


Figure 4E-53: Dissolved Iron Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

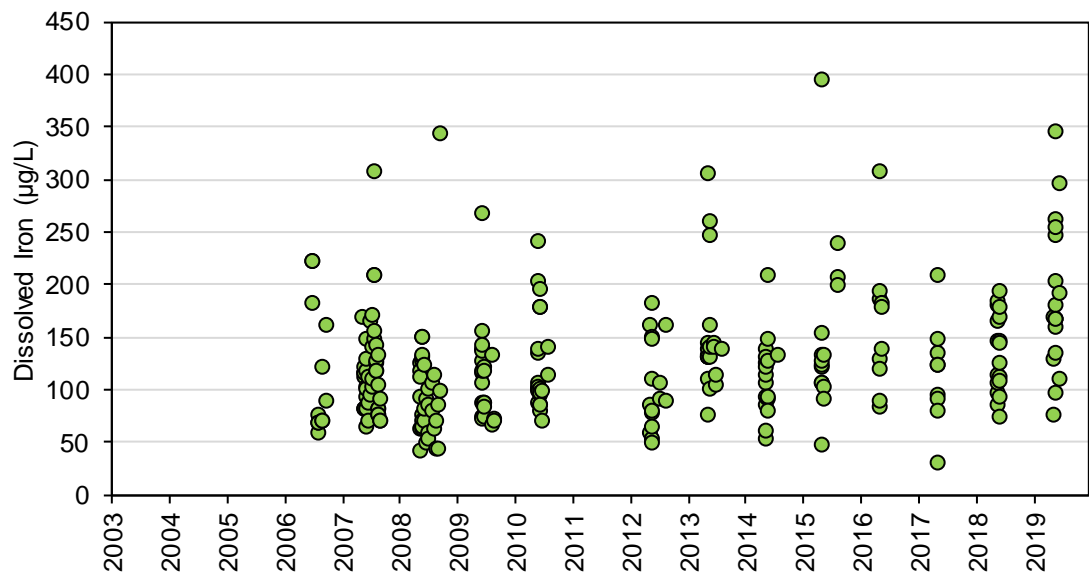


Figure 4E-54: Dissolved Lead Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

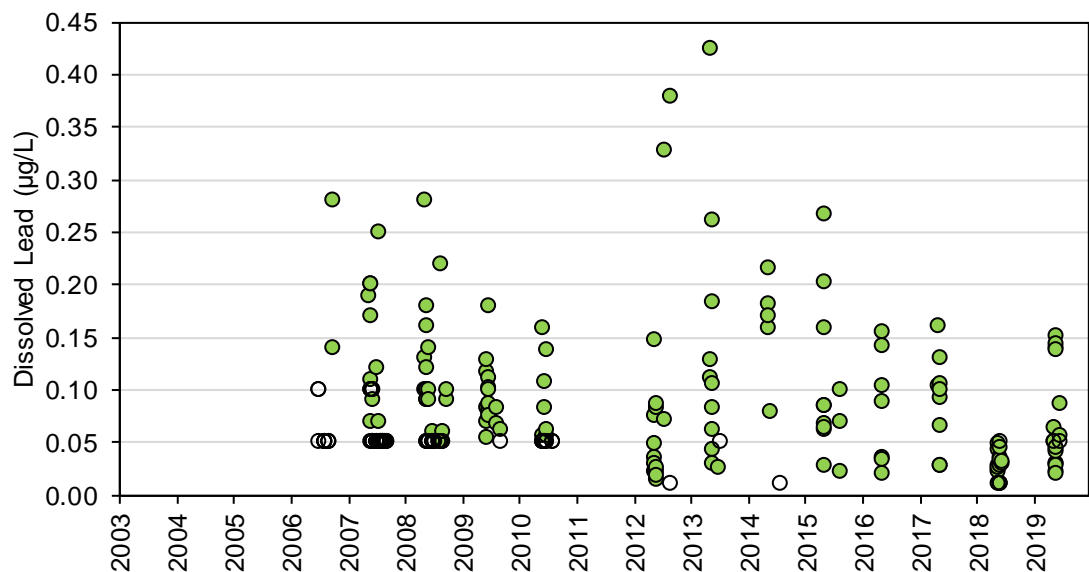


Figure 4E-55: Dissolved Lithium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

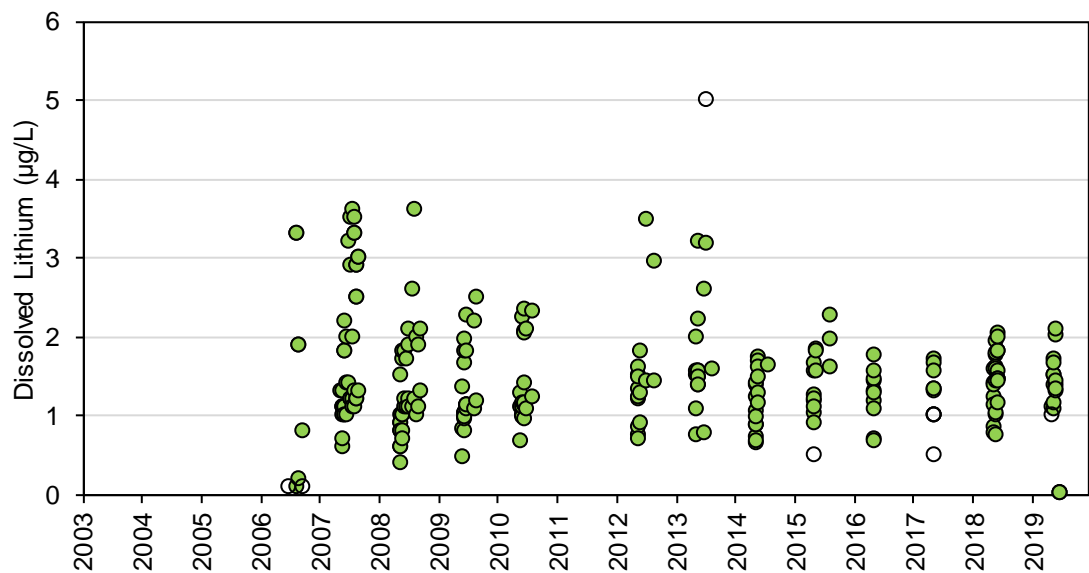


Figure 4E-56: Dissolved Manganese Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

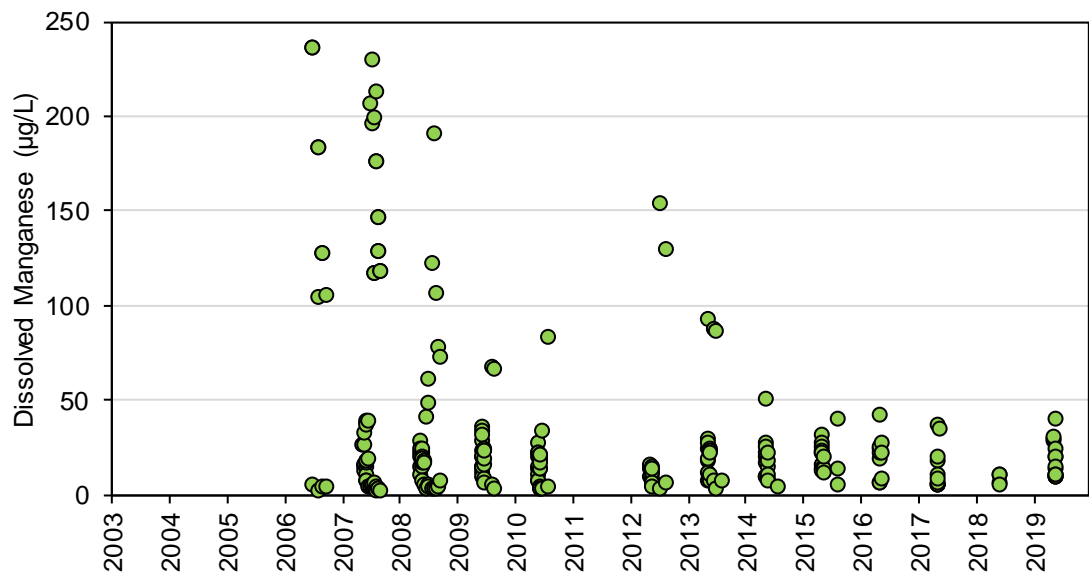


Figure 4E-57: Dissolved Mercury Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

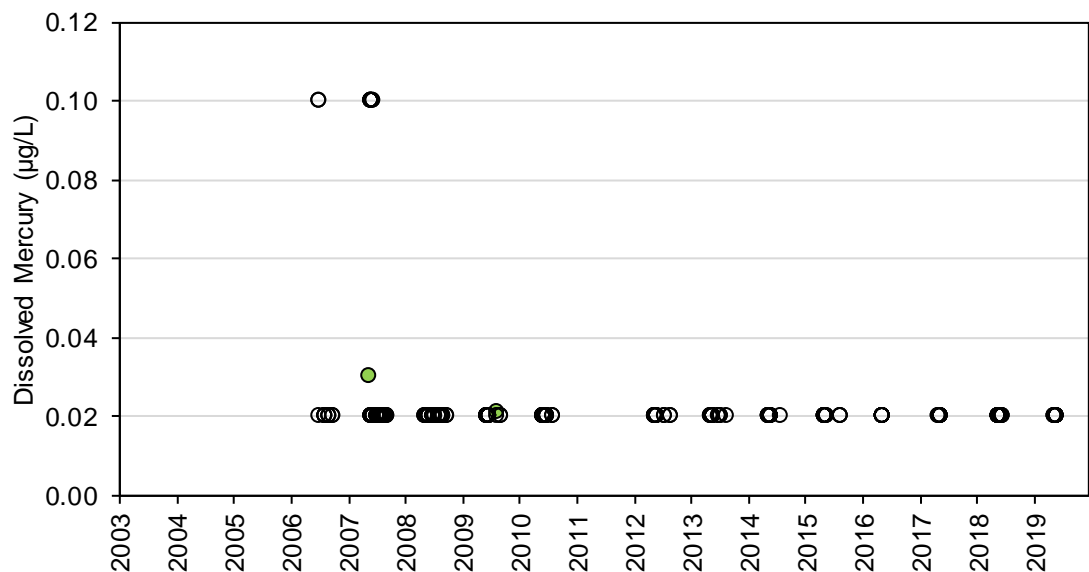


Figure 4E-58: Dissolved Molybdenum Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

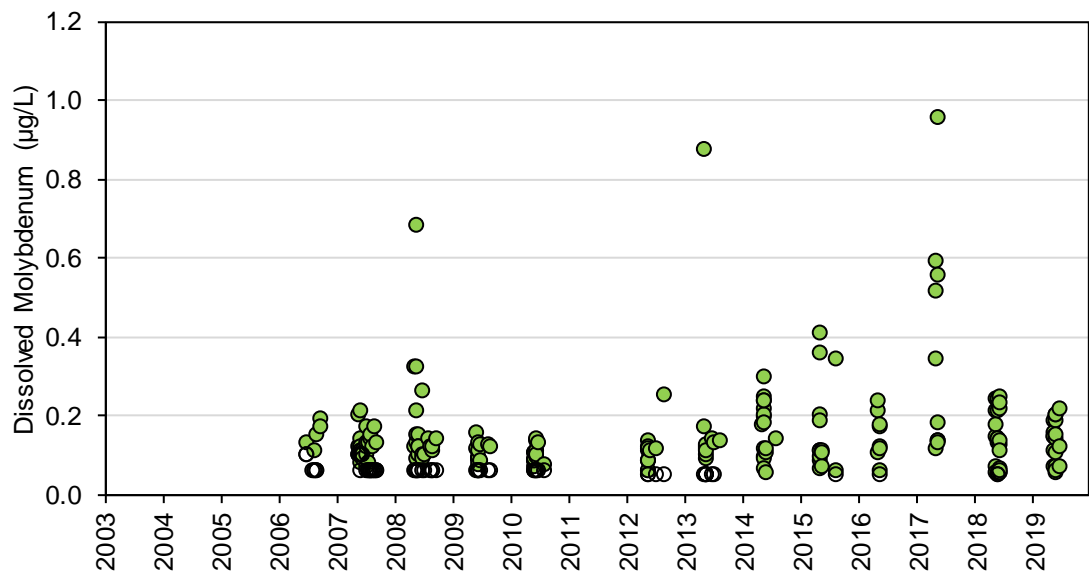


Figure 4E-59: Dissolved Nickel Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

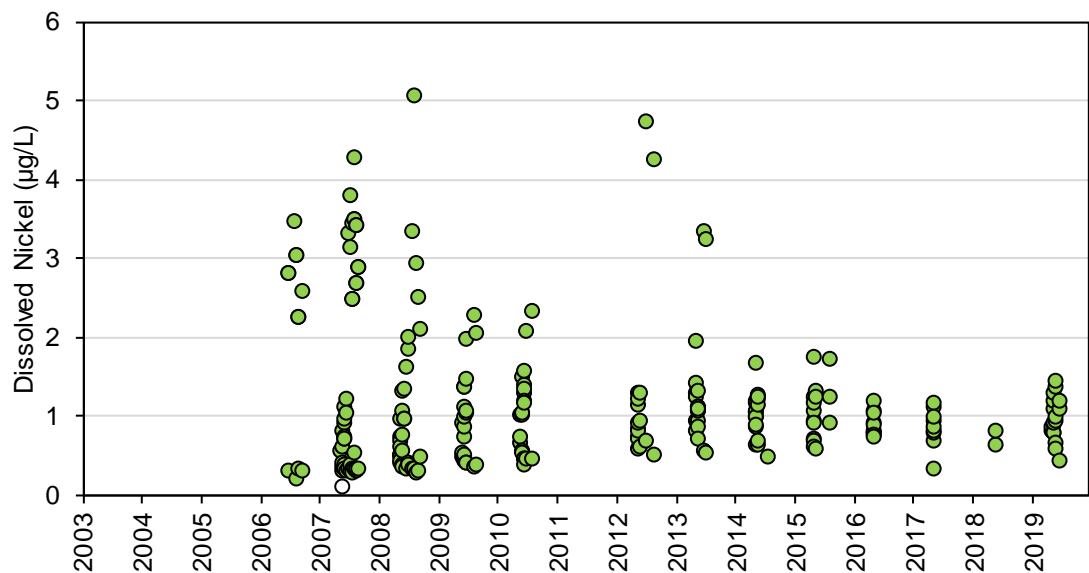


Figure 4E-60: Dissolved Rubidium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

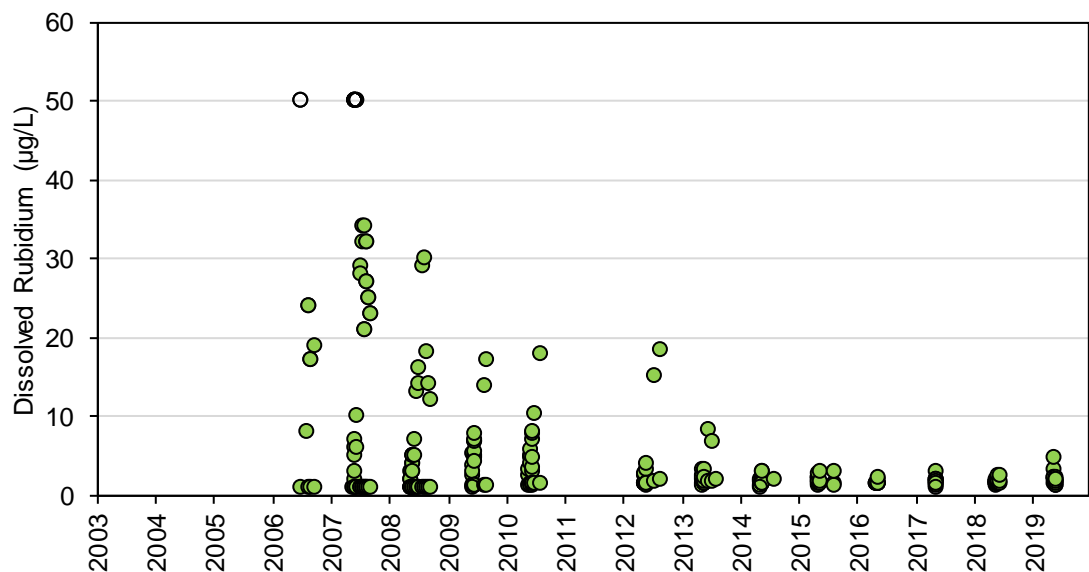


Figure 4E-61: Dissolved Selenium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

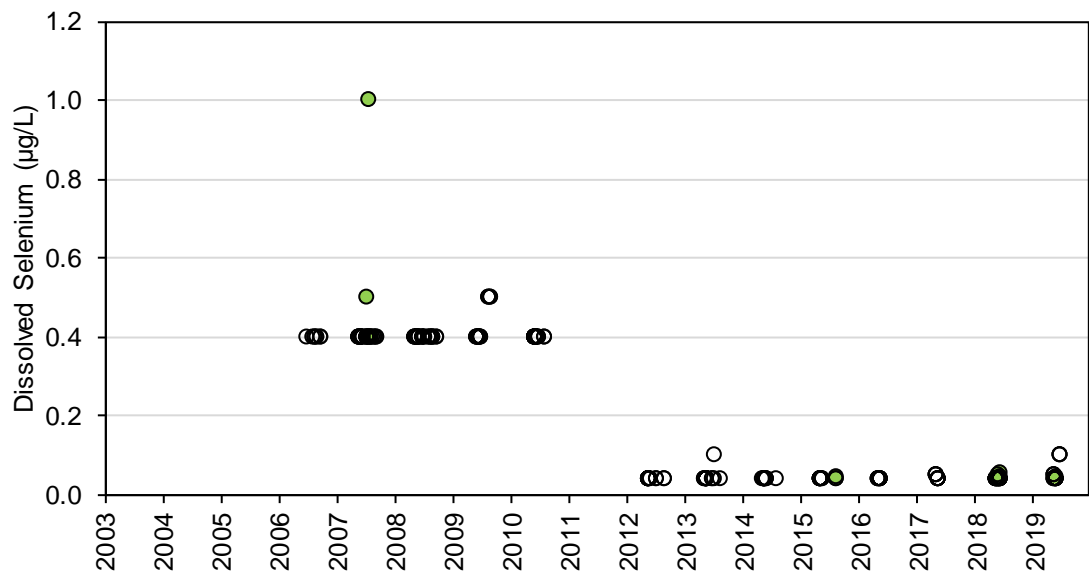


Figure 4E-62: Dissolved Silver Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

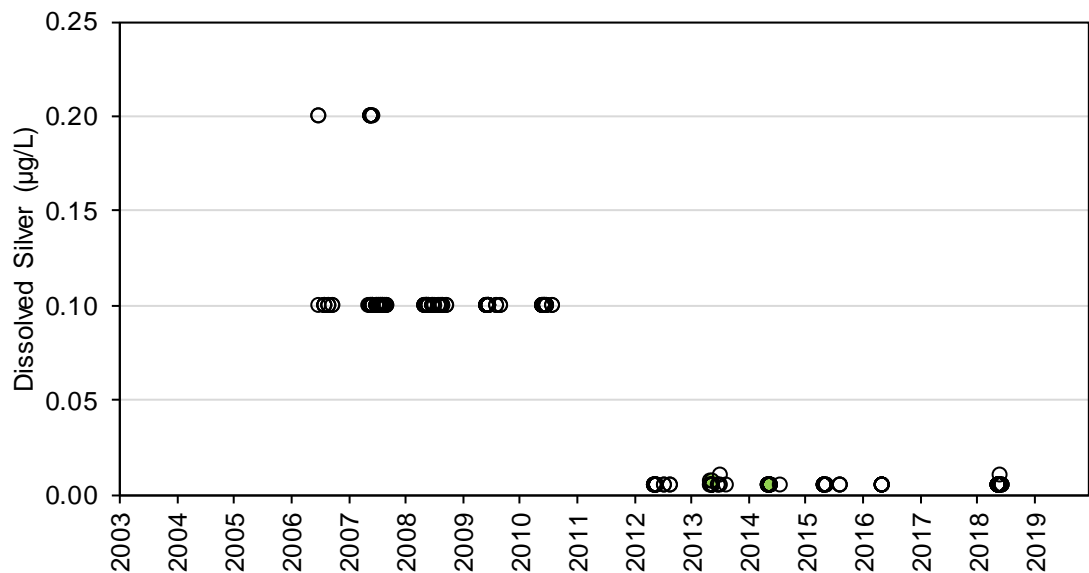


Figure 4E-63: Dissolved Strontium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

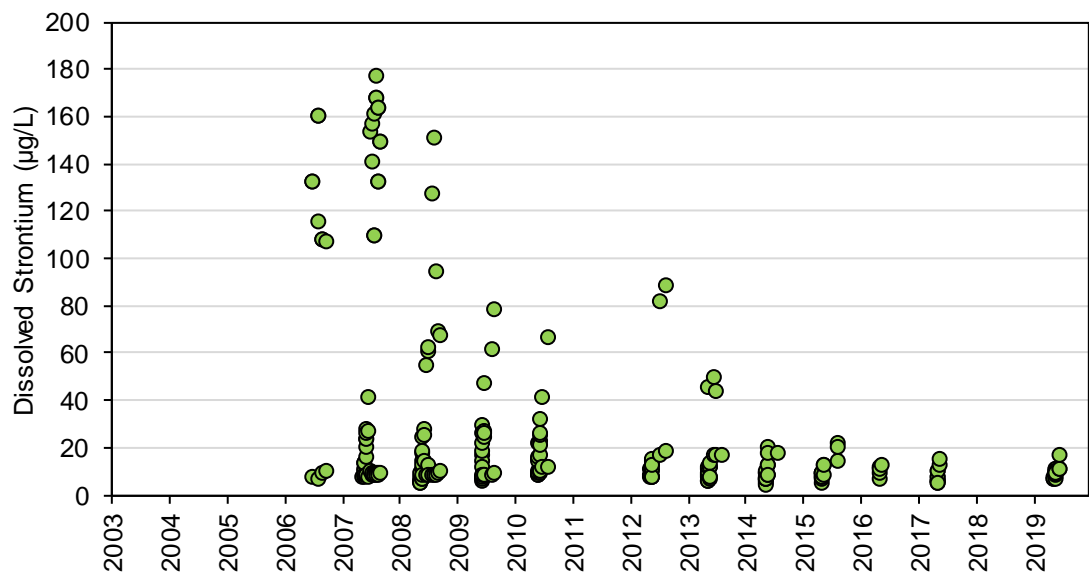


Figure 4E-64: Dissolved Thallium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

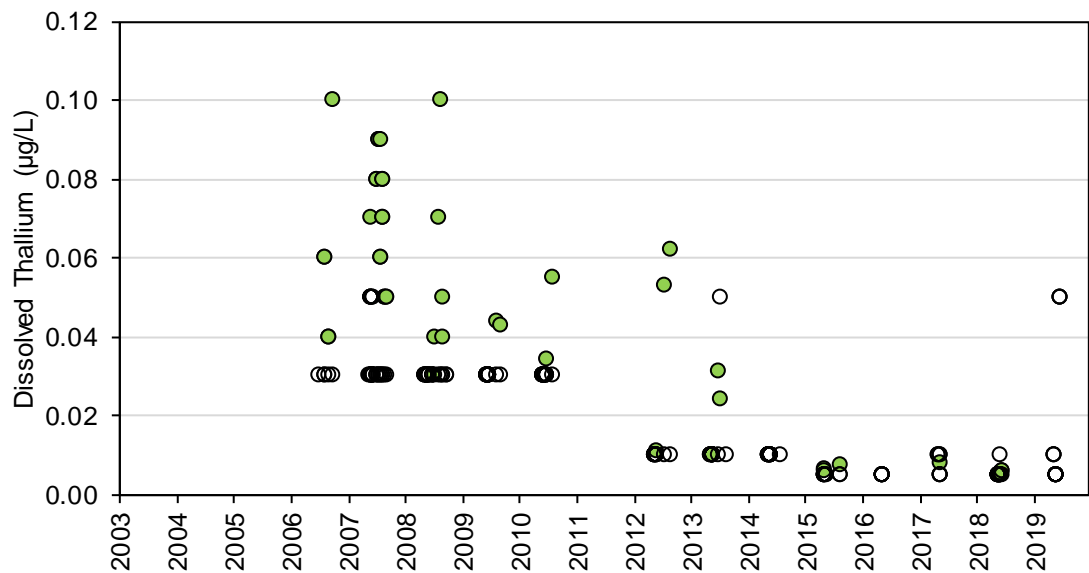


Figure 4E-65: Dissolved Titanium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

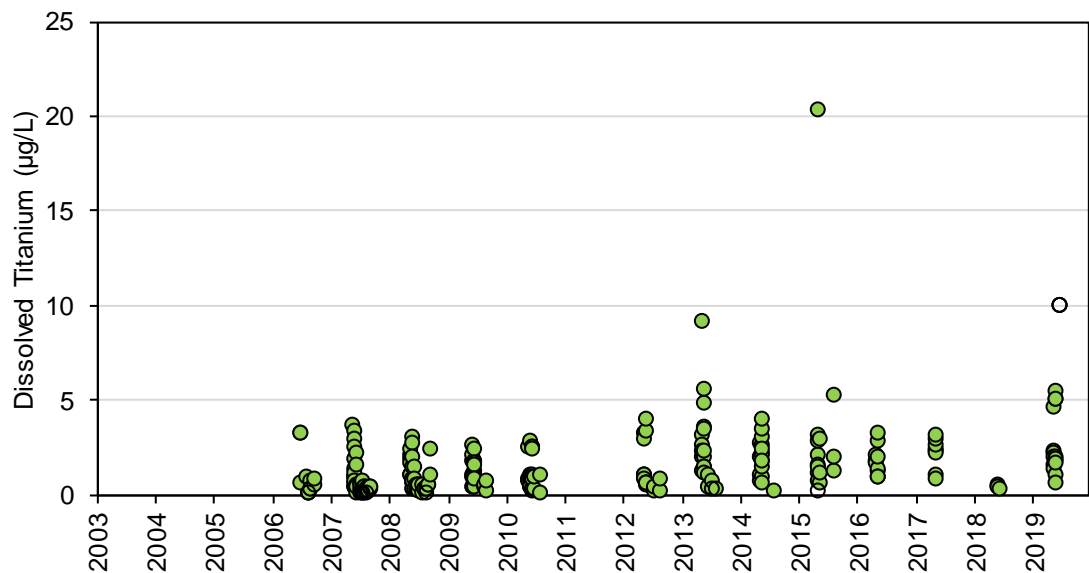


Figure 4E-66: Dissolved Uranium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

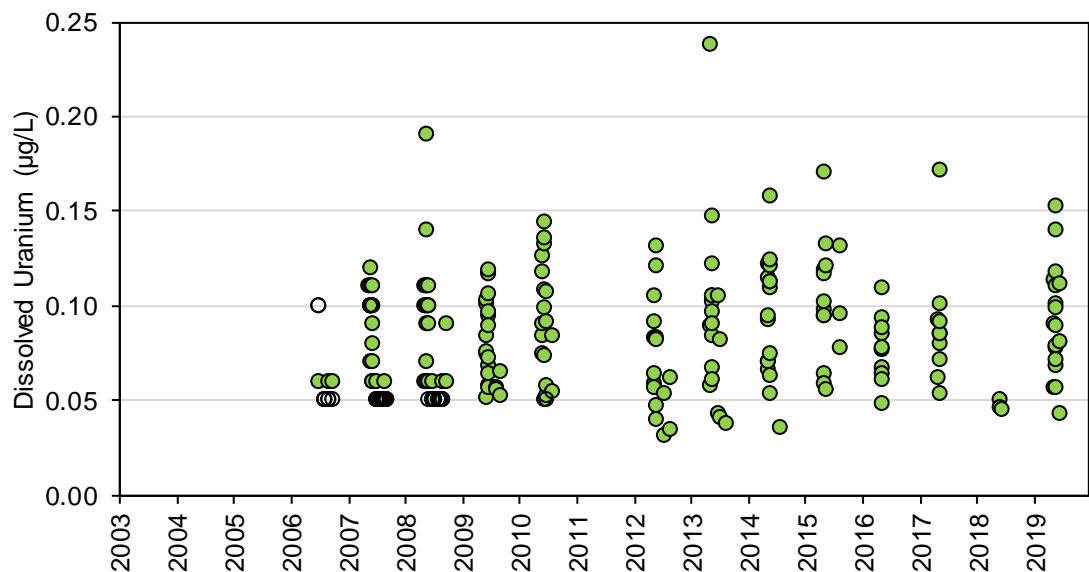


Figure 4E-67: Dissolved Vanadium Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance

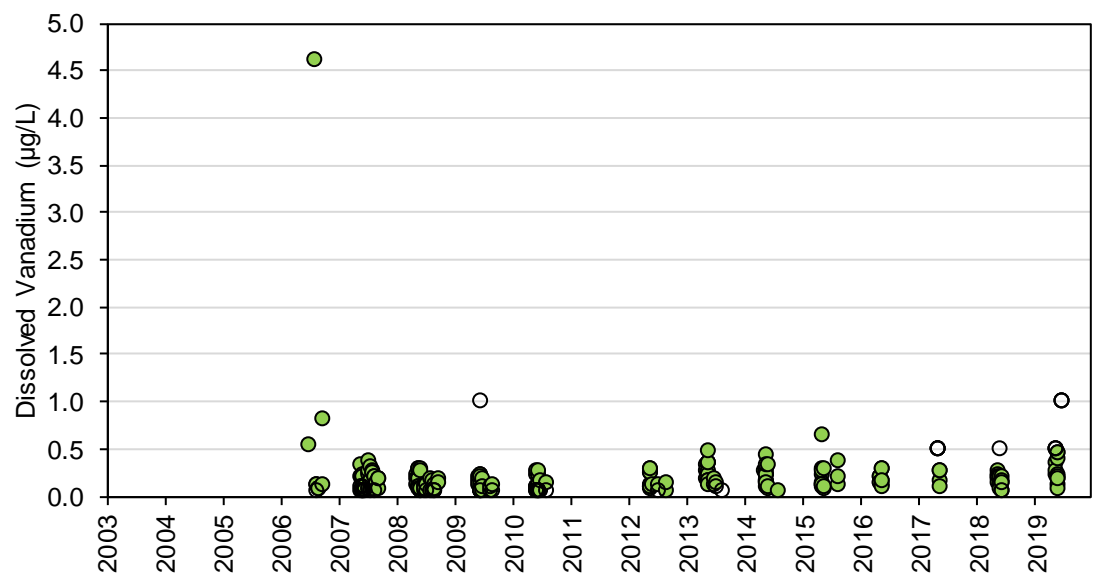
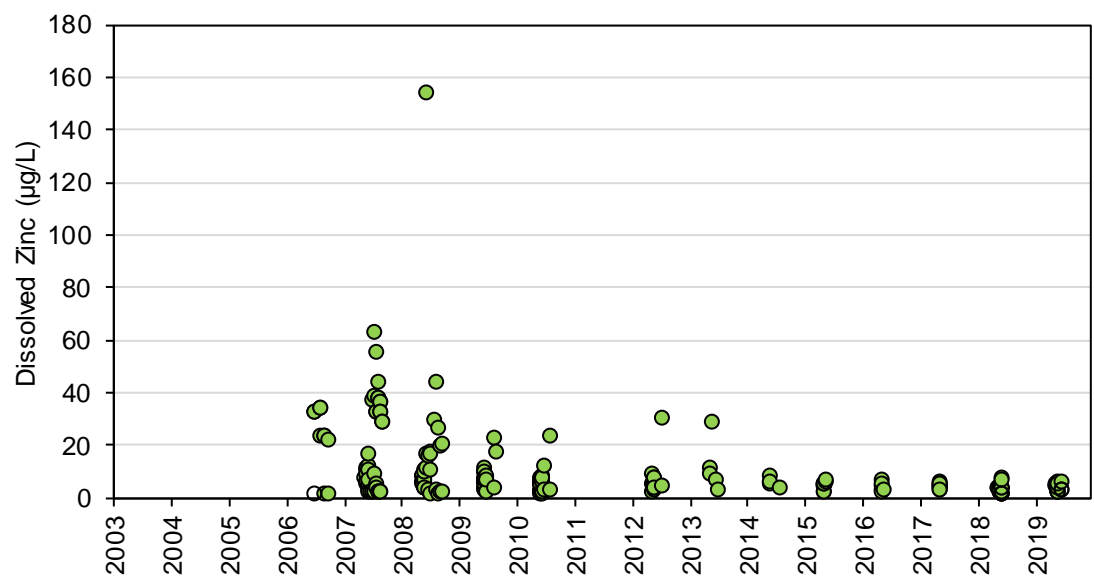


Figure 4E-68: Dissolved Zinc Concentrations at Stations SNP 02-07.1 to 07.3 during Construction, Operations, and Extended Care and Maintenance



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ATTACHMENT 4F. FIGURES OF WATER QUALITY FOR SNP 02-08

Figure 4F-1: Total Dissolved Solids, calculated (lab) Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

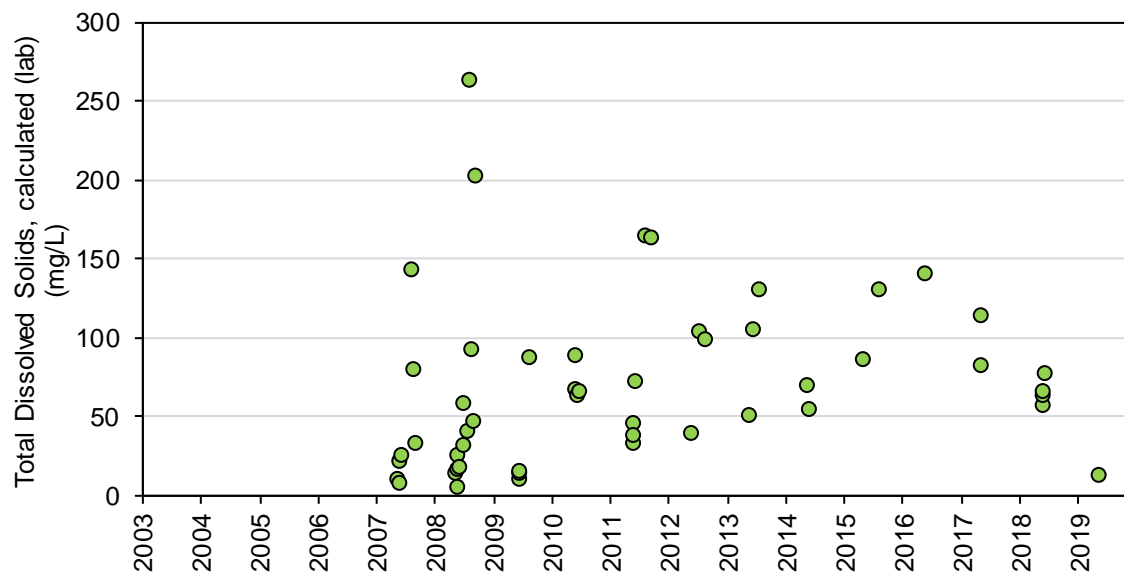


Figure 4F-2: Calcium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

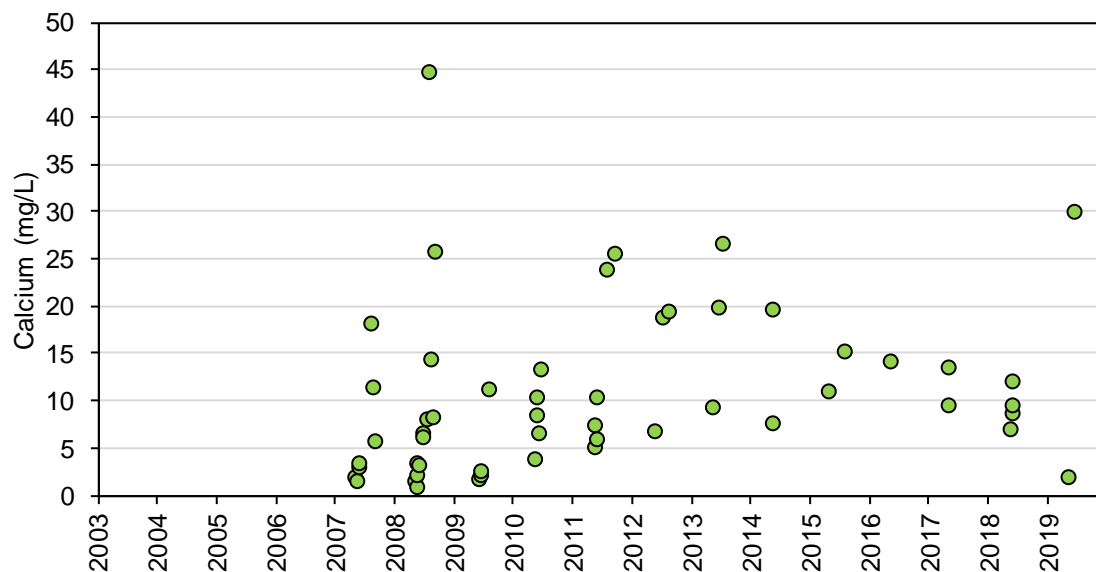


Figure 4F-3: Chloride Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

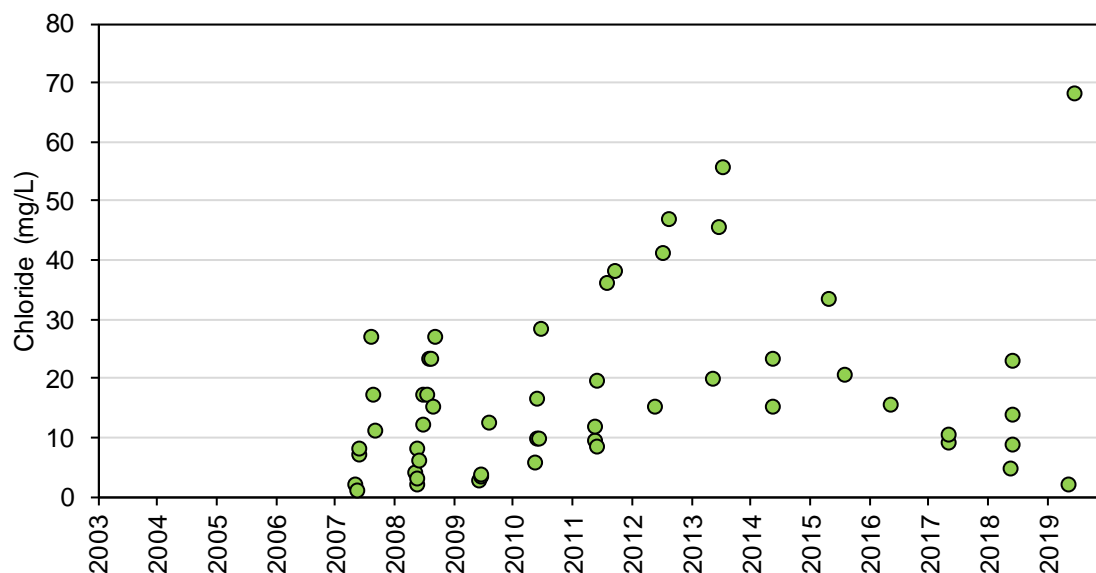


Figure 4F-4: Fluoride Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

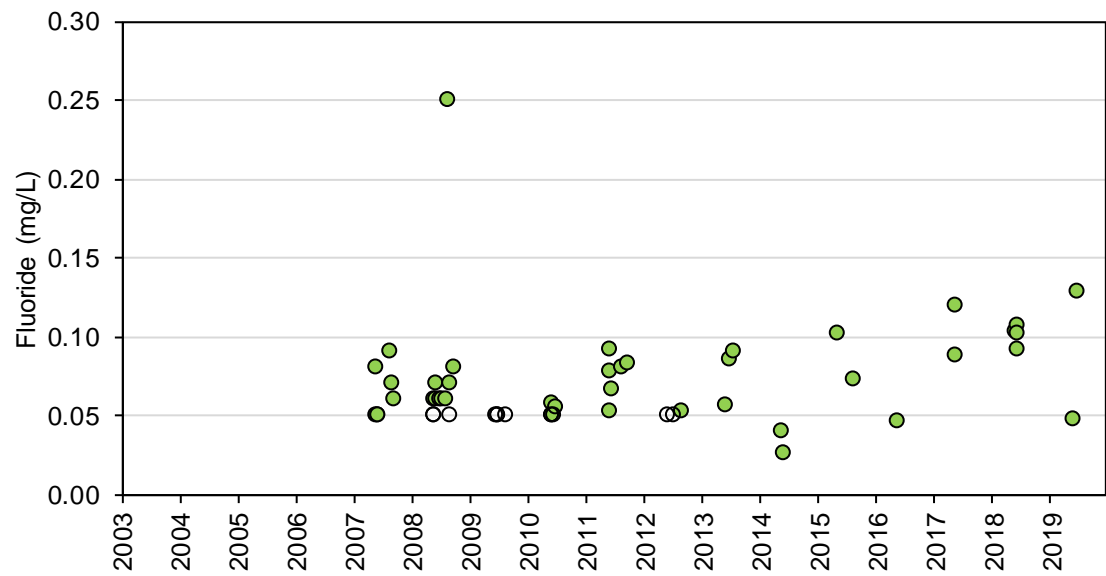


Figure 4F-5: Magnesium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

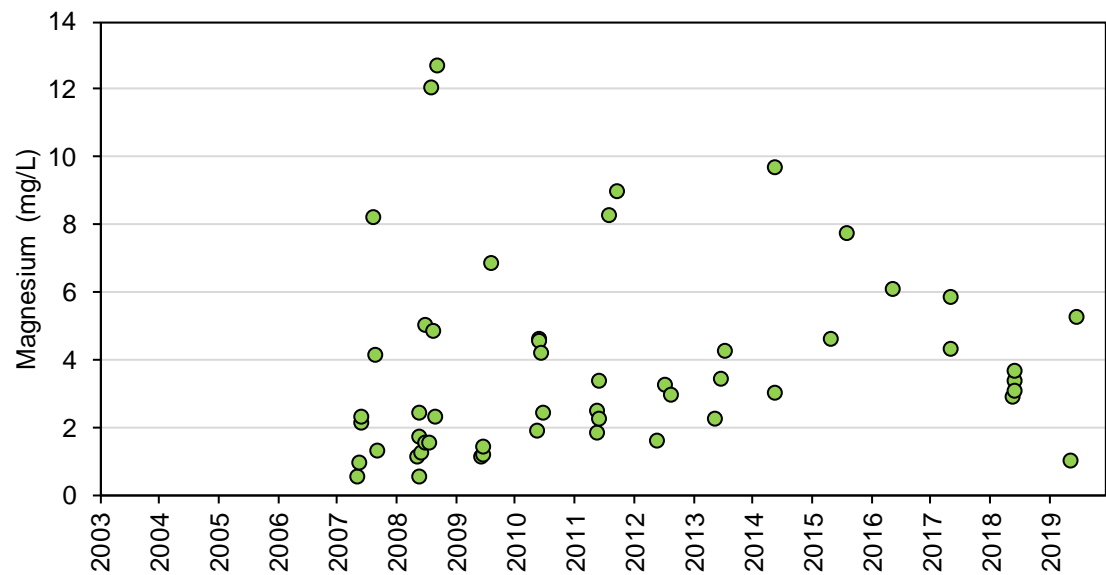


Figure 4F-6: Potassium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

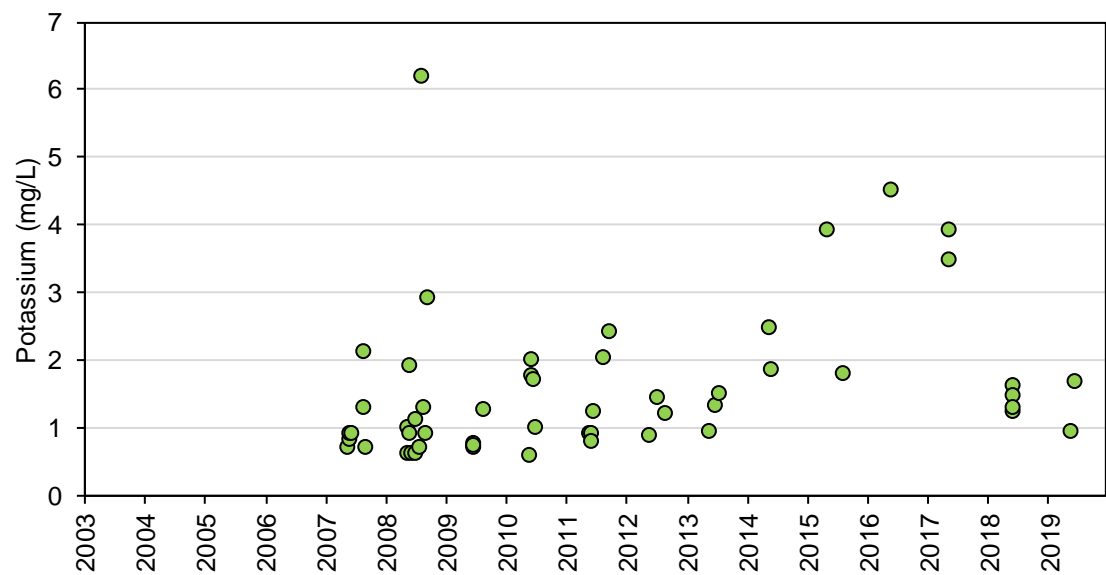


Figure 4F-7: Sodium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

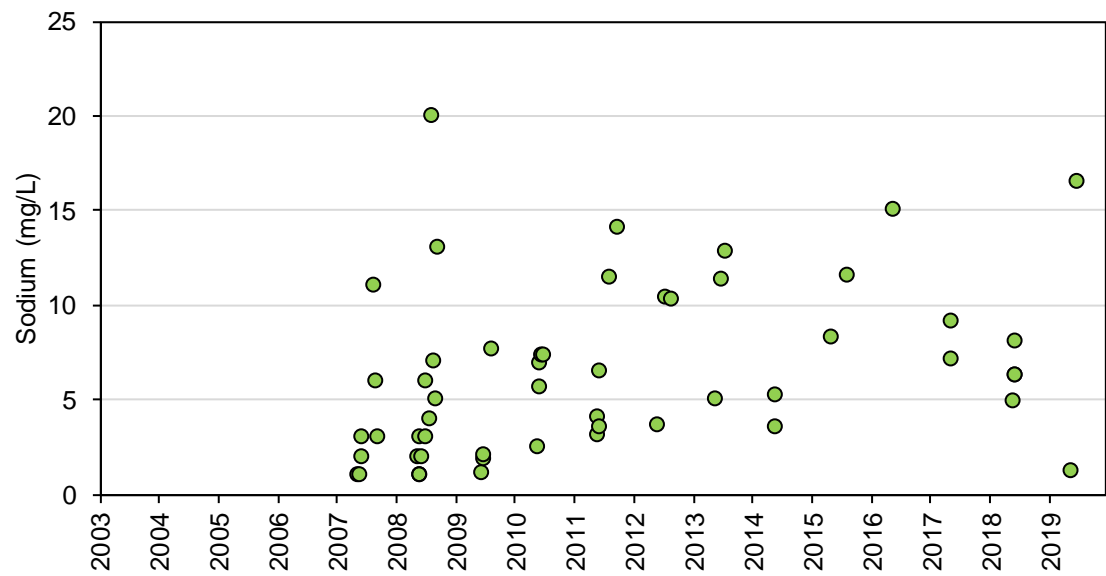


Figure 4F-8: Sulphate Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

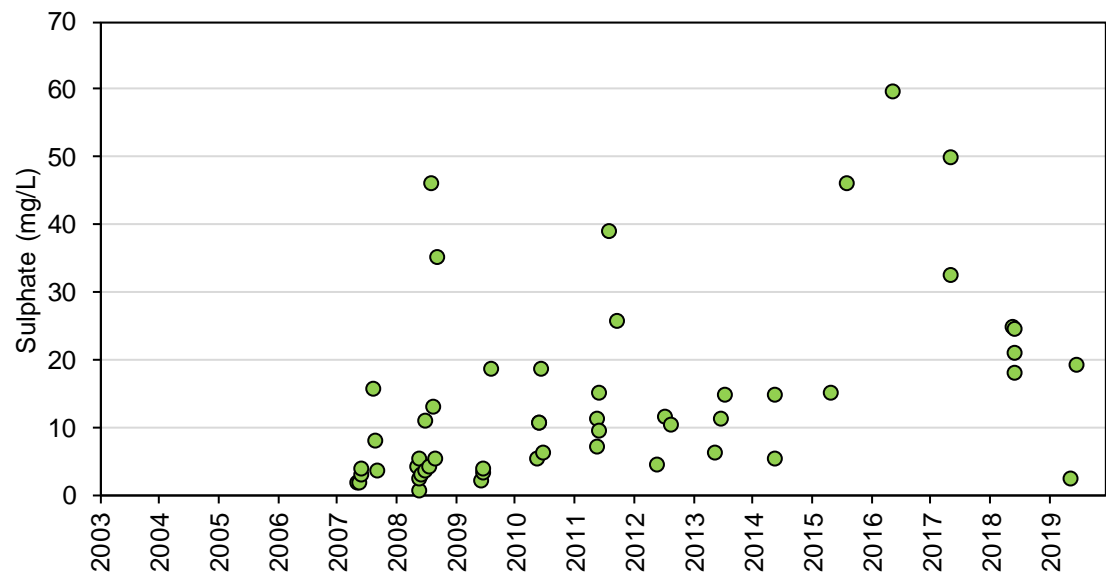


Figure 4F-9: Nitrate Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

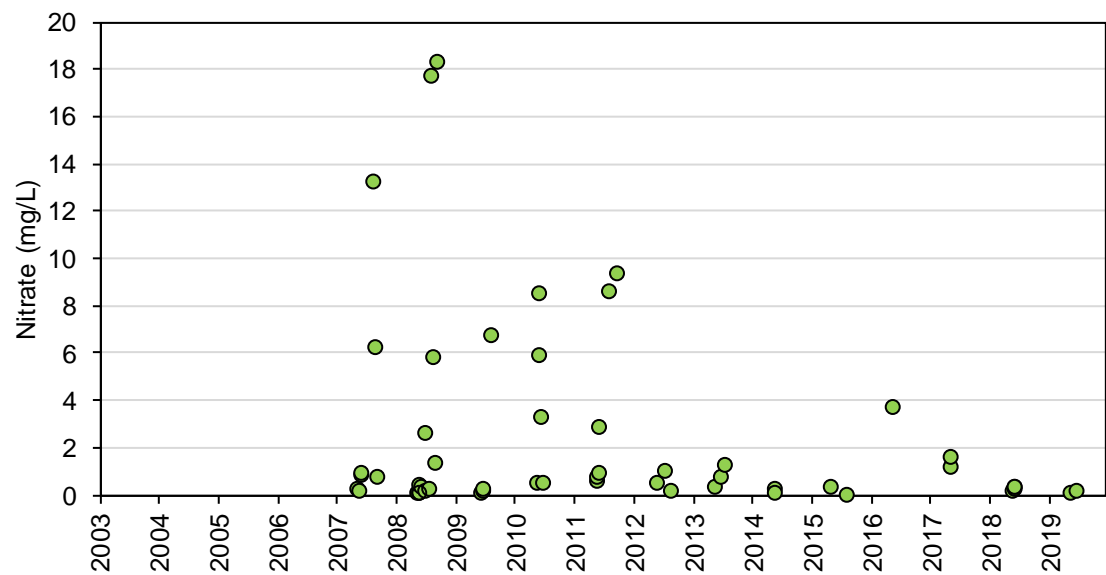


Figure 4F-10: Nitrite Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

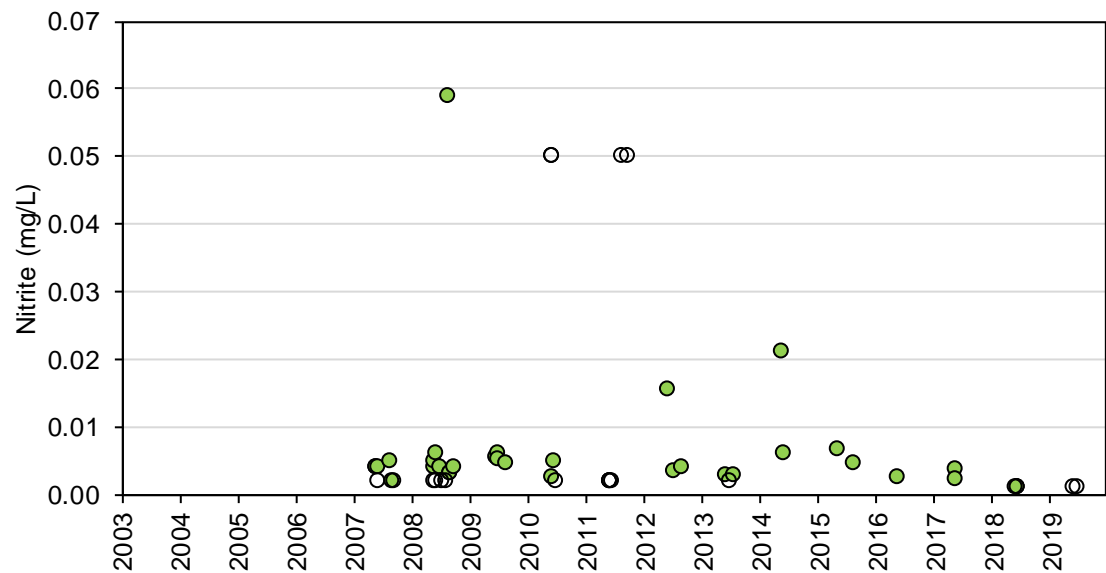


Figure 4F-11: Total Ammonia Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

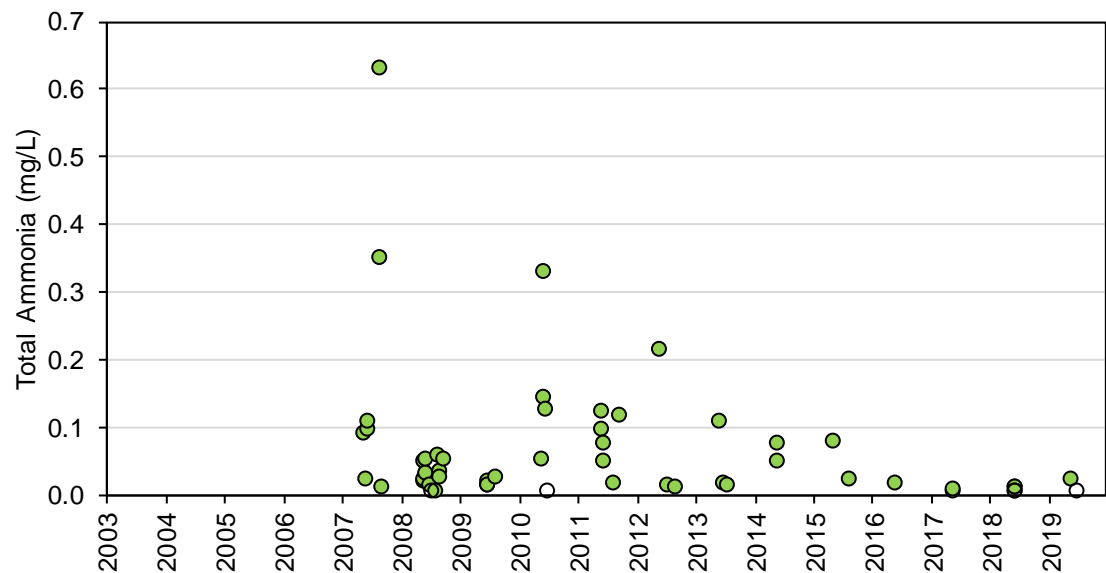


Figure 4F-12: Total Phosphorus Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

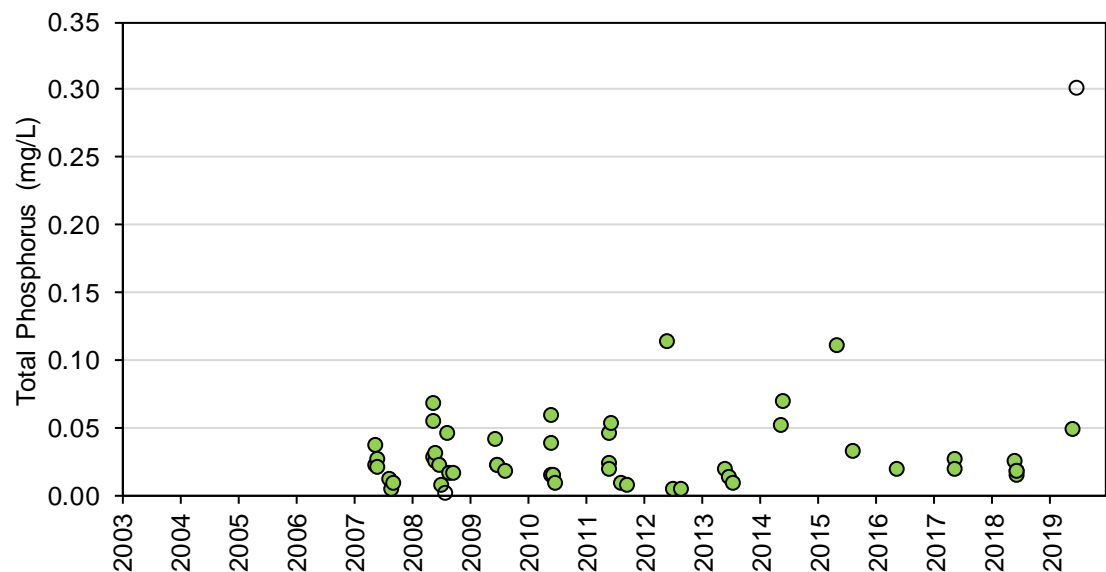


Figure 4F-13: Total Aluminum Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

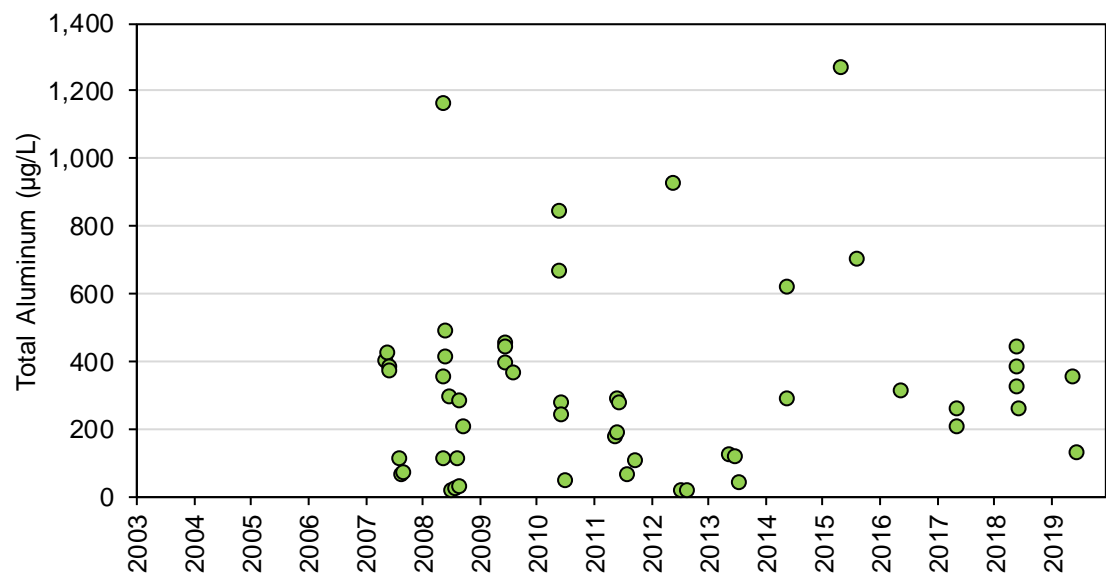


Figure 4F-14: Total Antimony Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

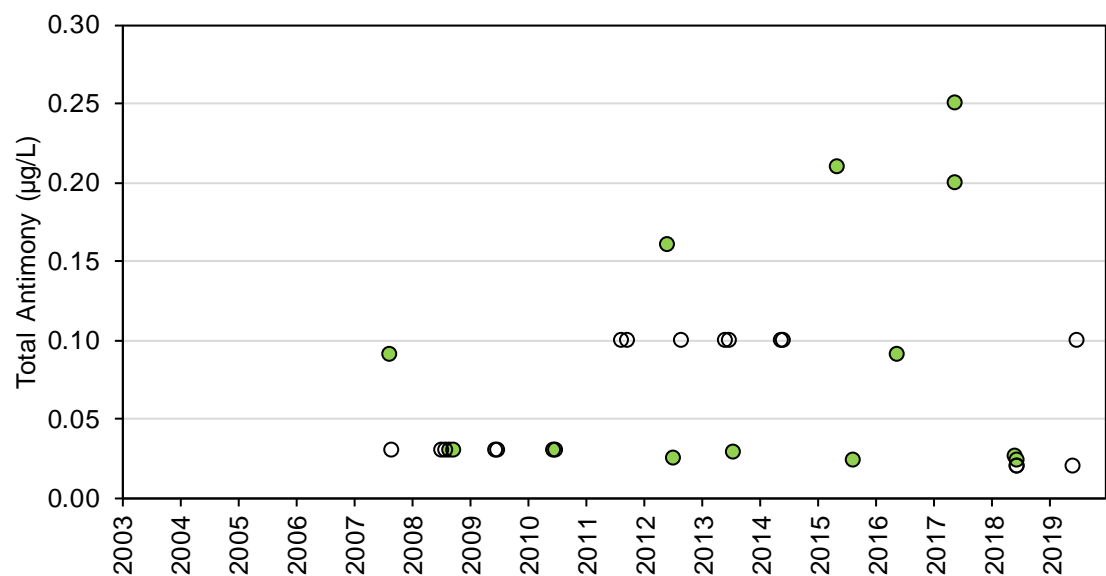


Figure 4F-15: Total Arsenic Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

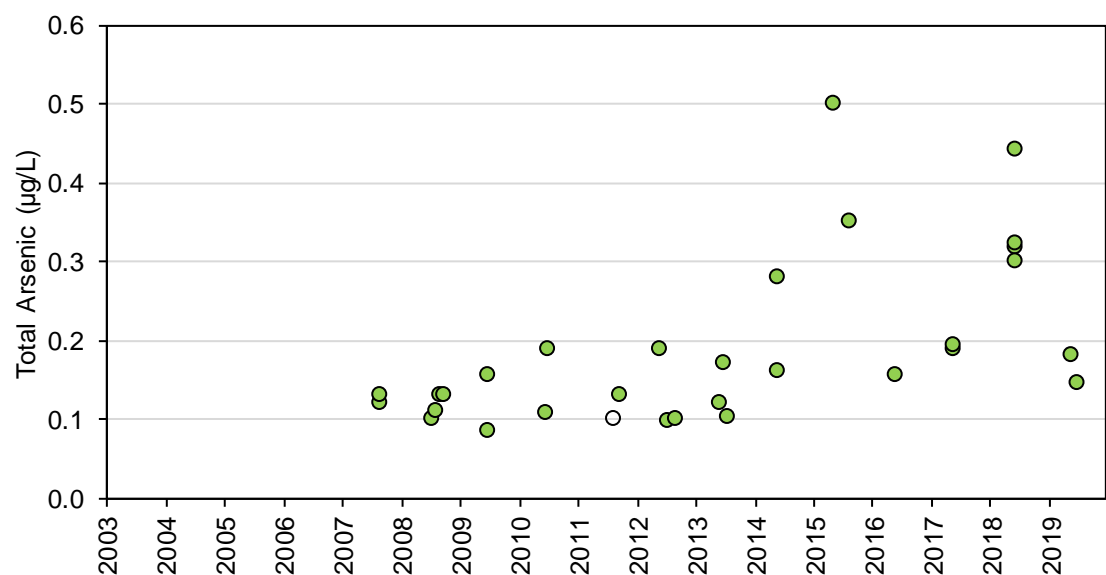


Figure 4F-16: Total Barium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

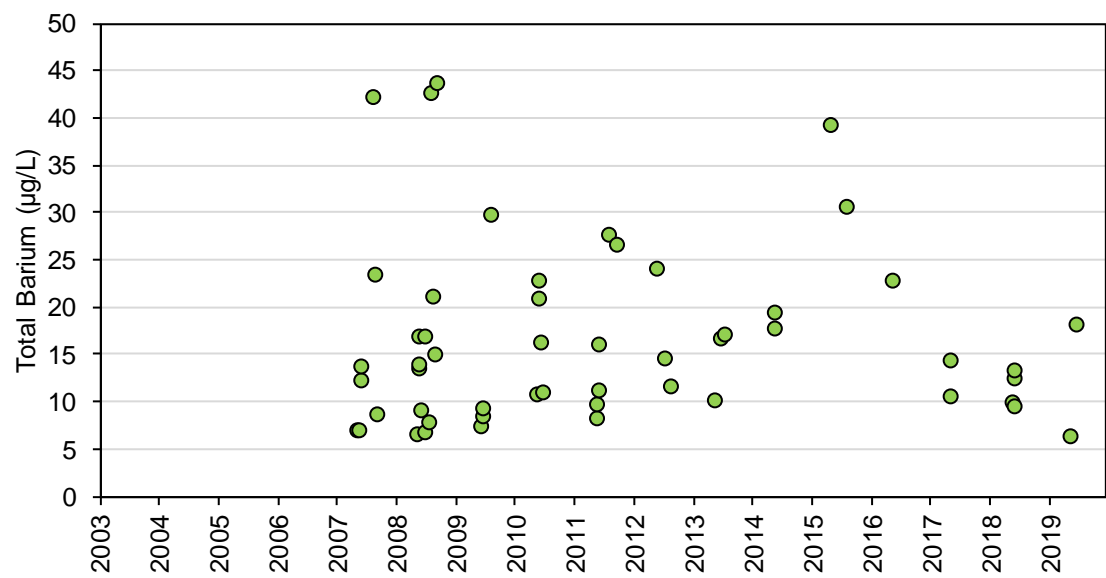


Figure 4F-17: Total Beryllium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

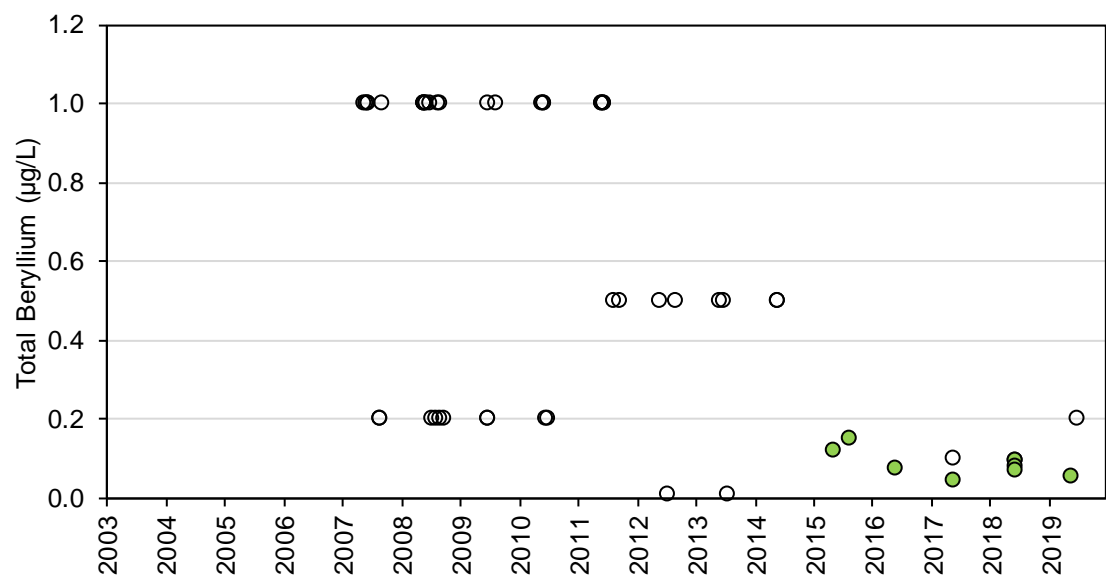


Figure 4F-18: Total Bismuth Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

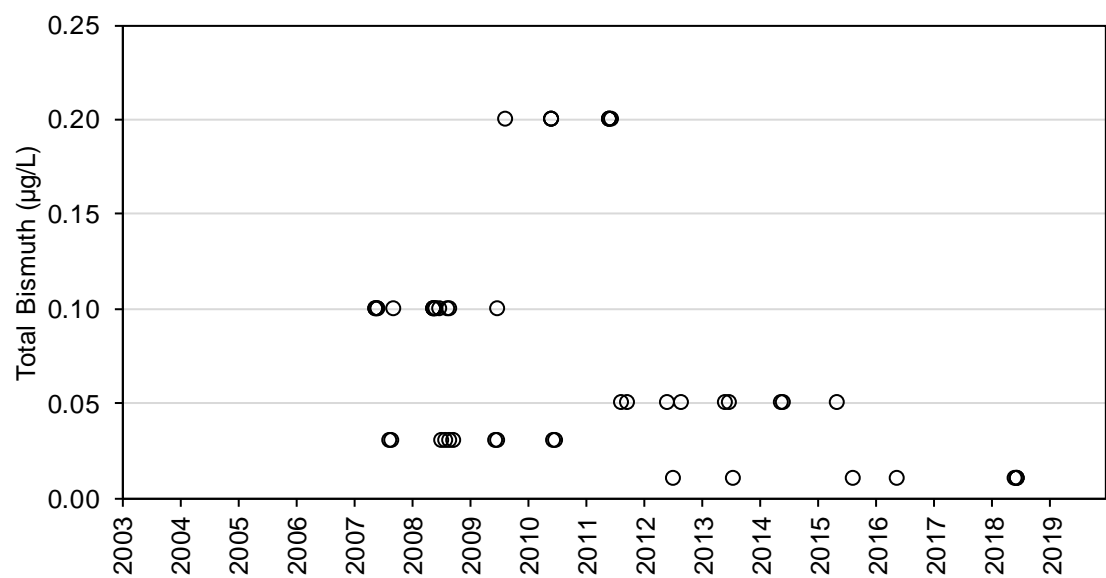


Figure 4F-19: Total Boron Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

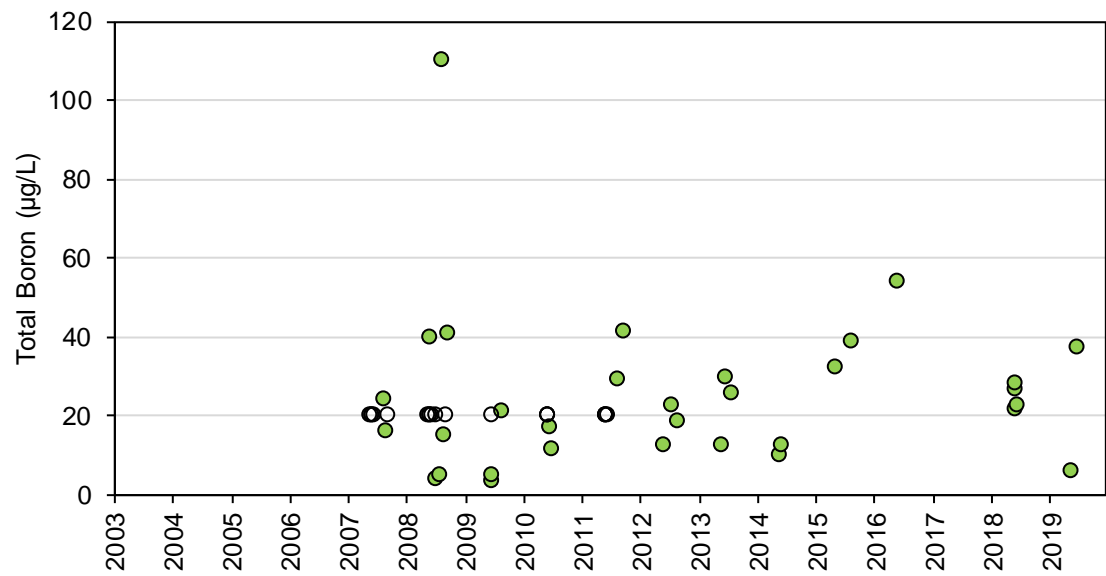


Figure 4F-20: Total Cadmium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

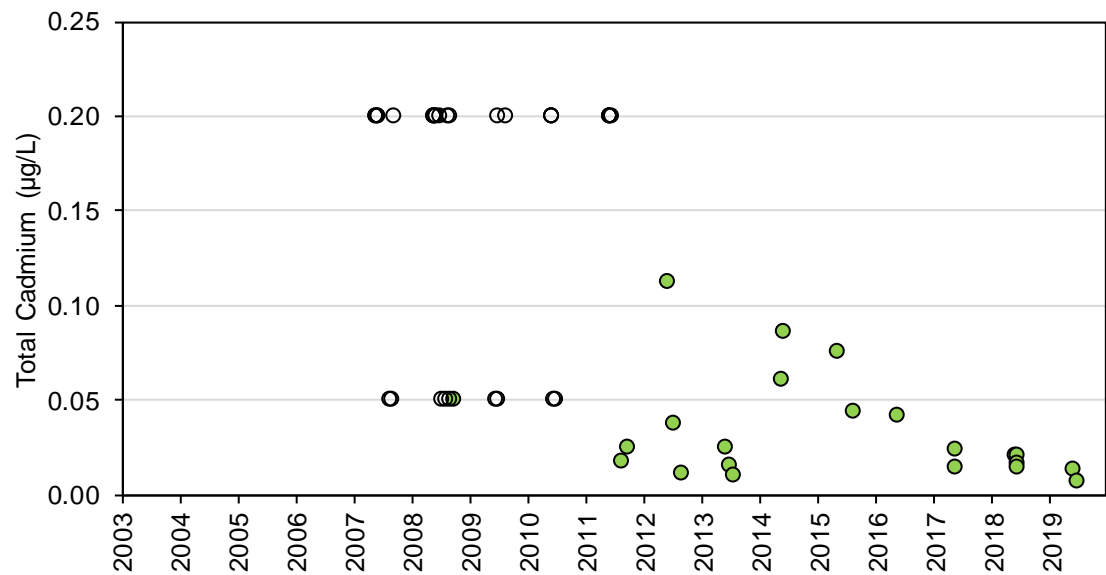


Figure 4F-21: Total Cesium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

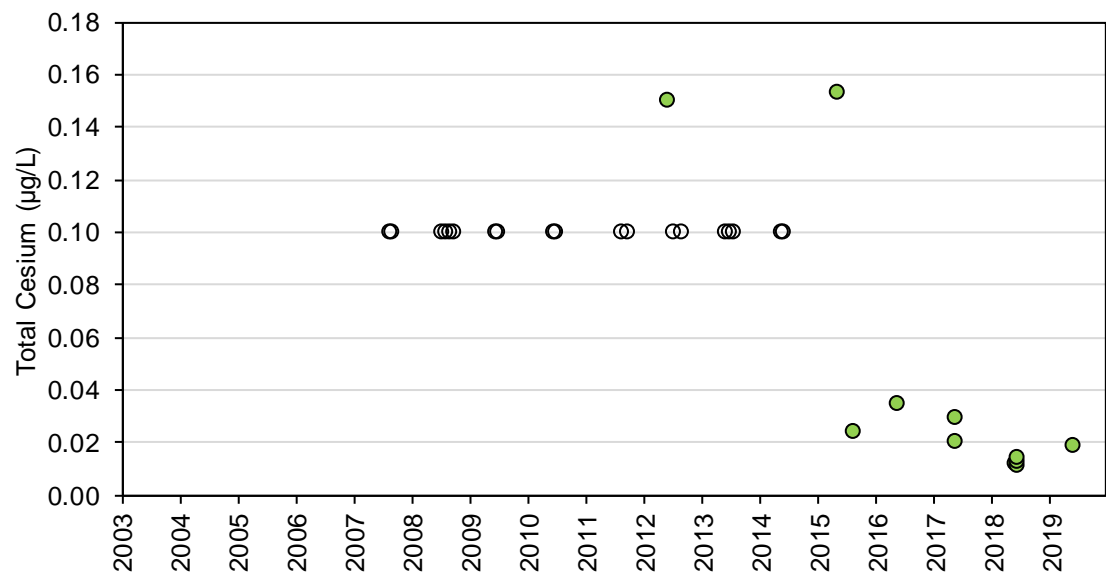


Figure 4F-22: Total Chromium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

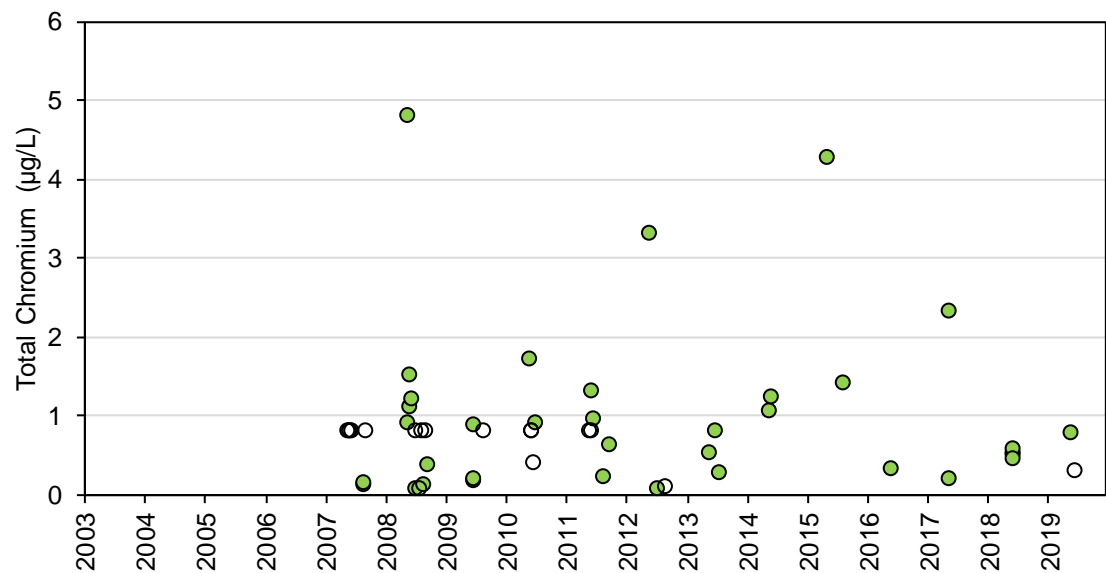


Figure 4F-23: Total Cobalt Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

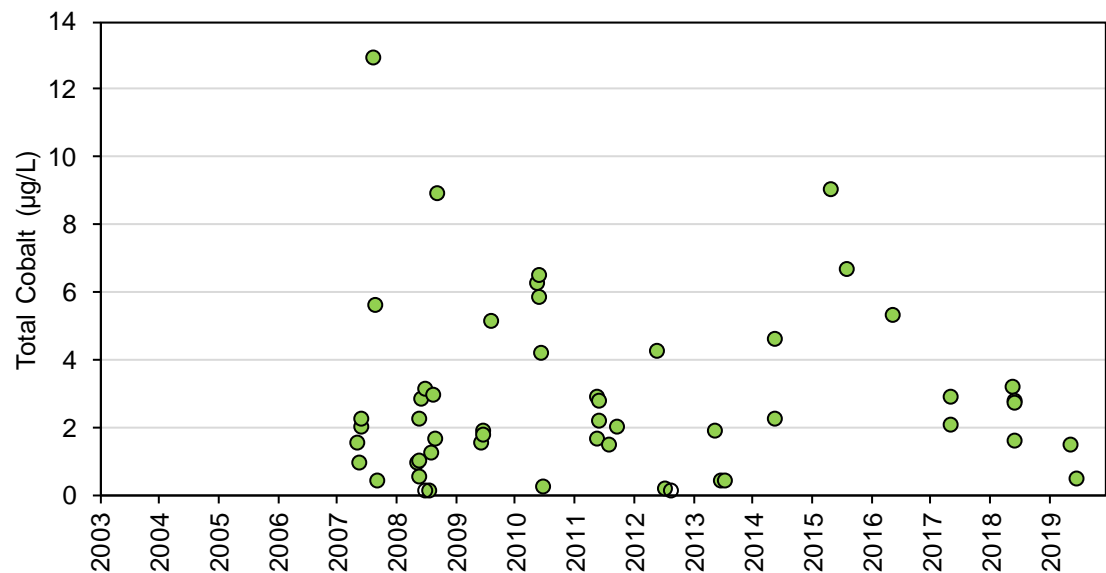


Figure 4F-24: Total Copper Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

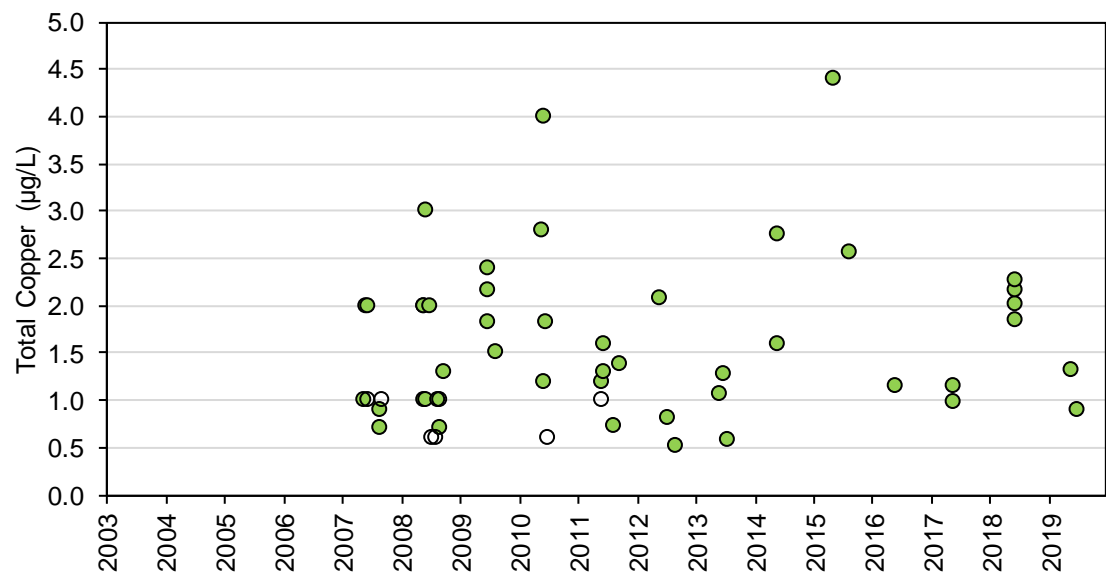


Figure 4F-25: Total Iron Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

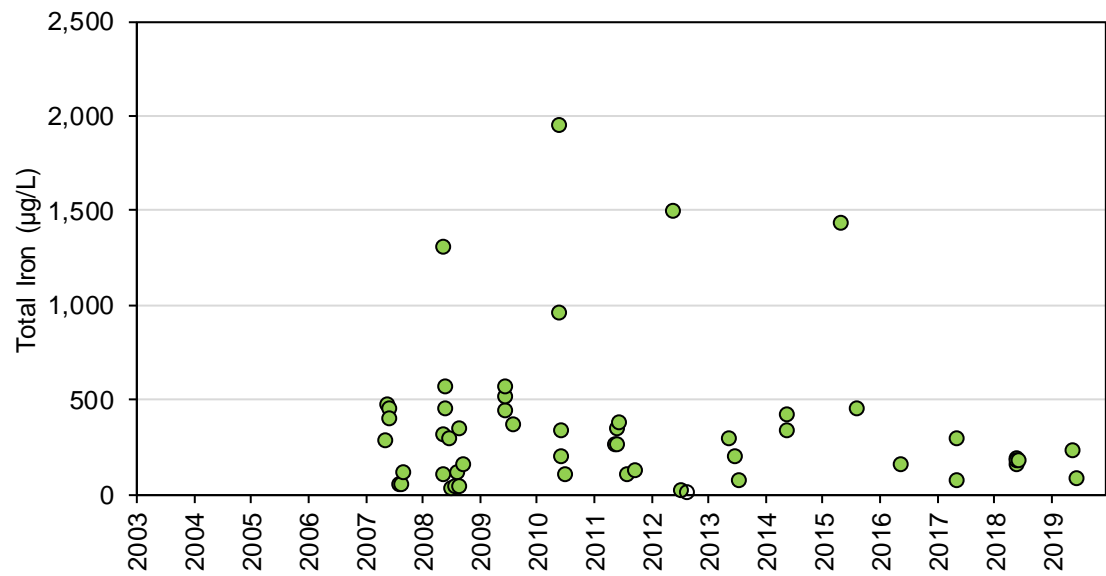


Figure 4F-26: Total Lead Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

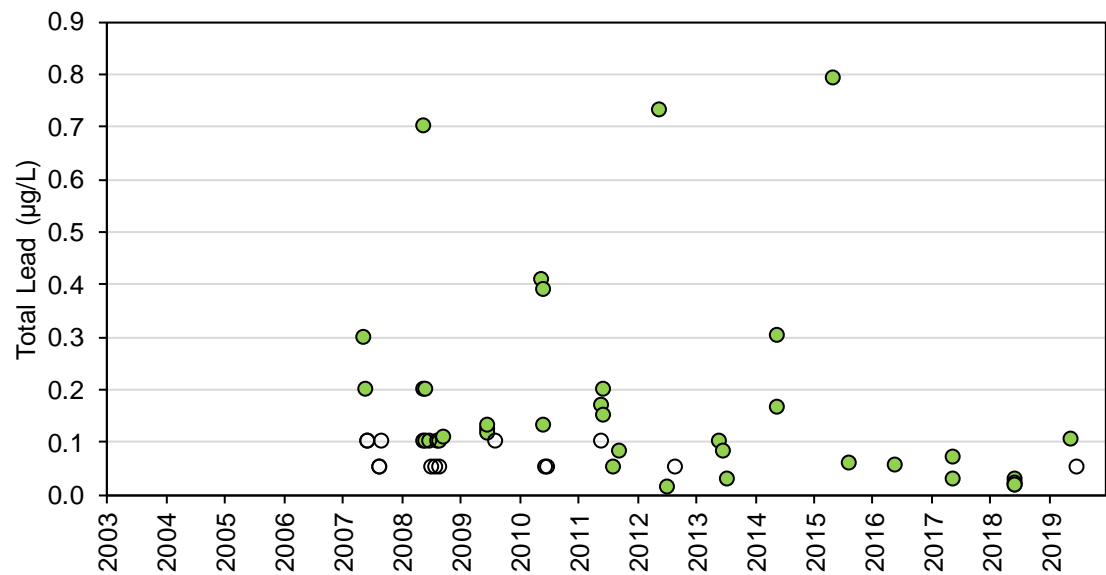


Figure 4F-27: Total Lithium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

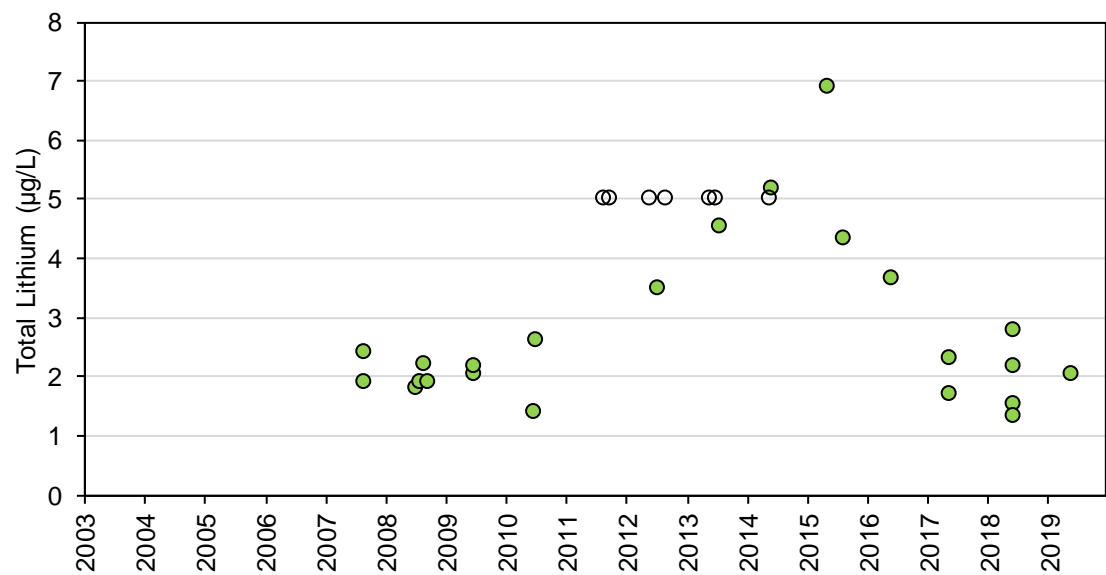


Figure 4F-28: Total Manganese Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

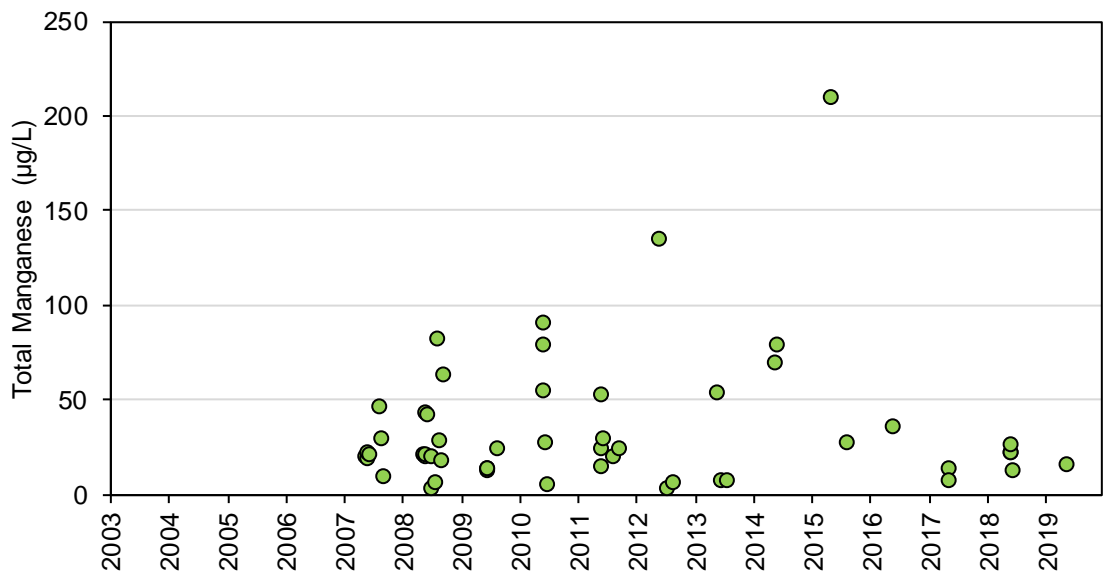


Figure 4F-29: Total Mercury Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

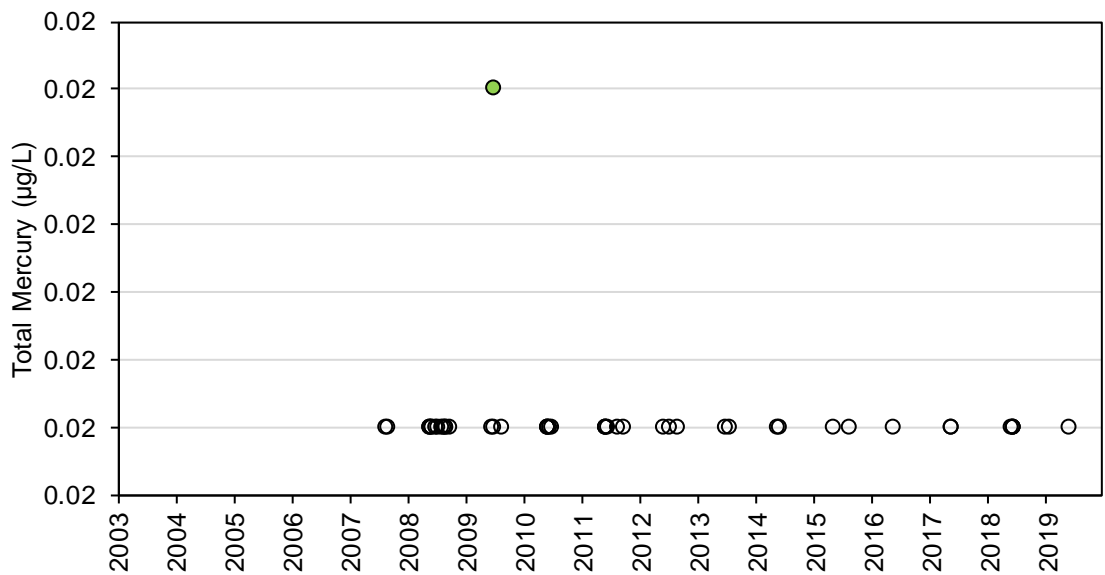


Figure 4F-30: Total Molybdenum Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

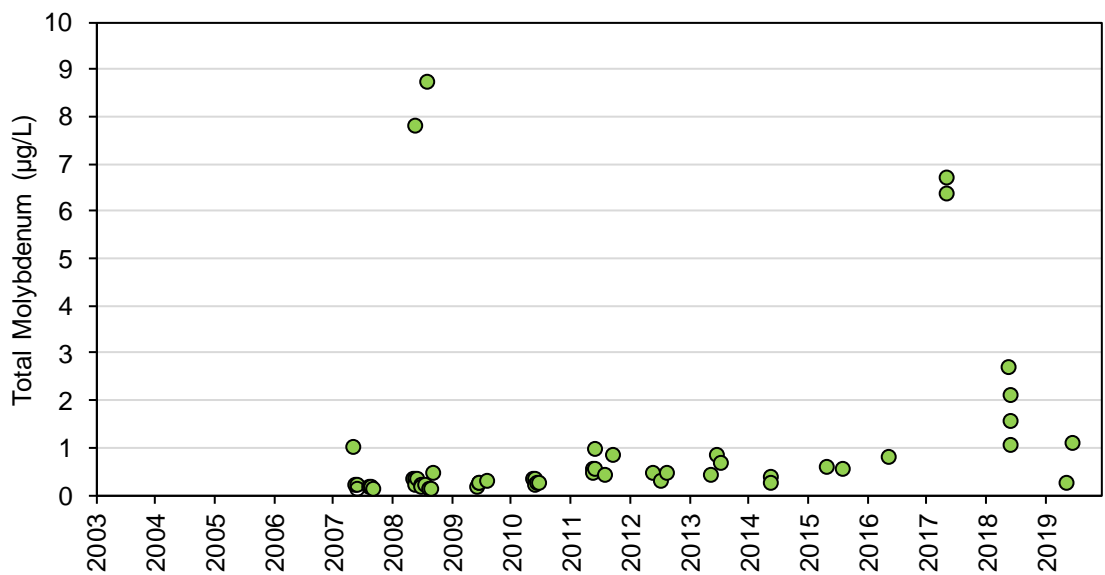


Figure 4F-31: Total Nickel Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

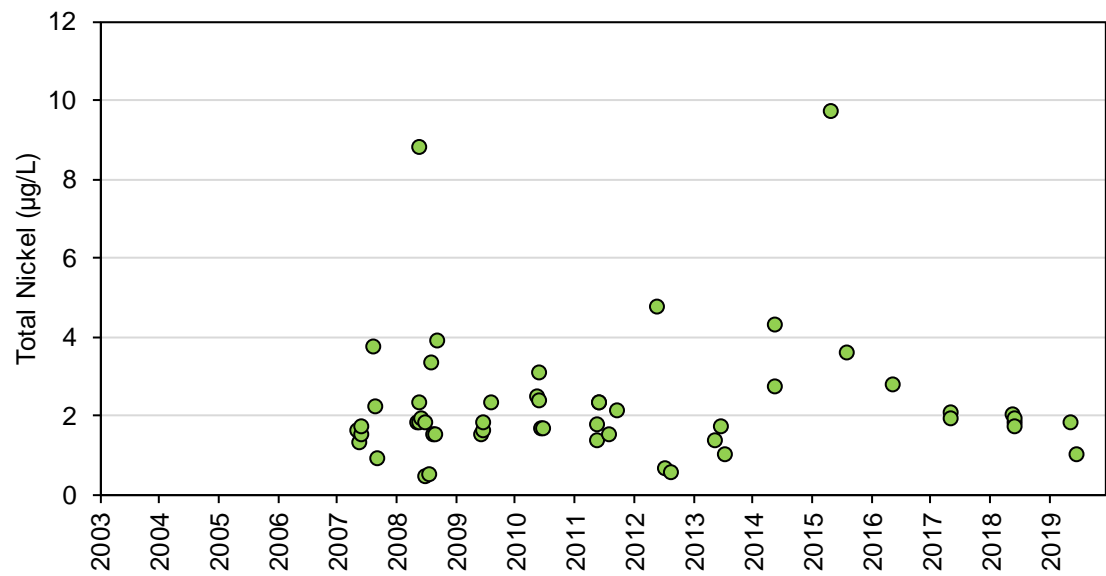


Figure 4F-32: Total Rubidium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

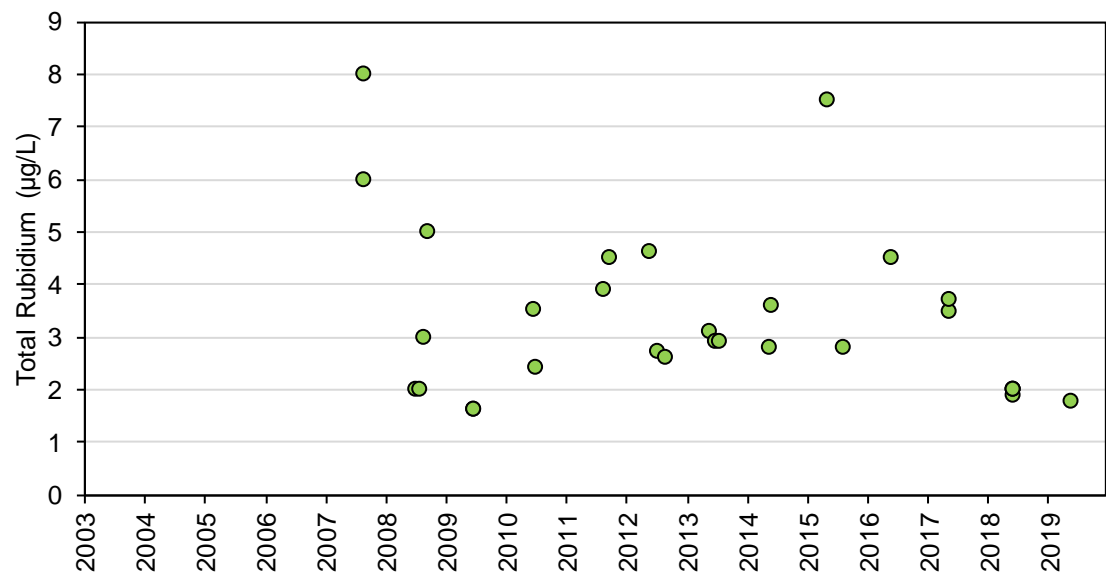


Figure 4F-33: Total Selenium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

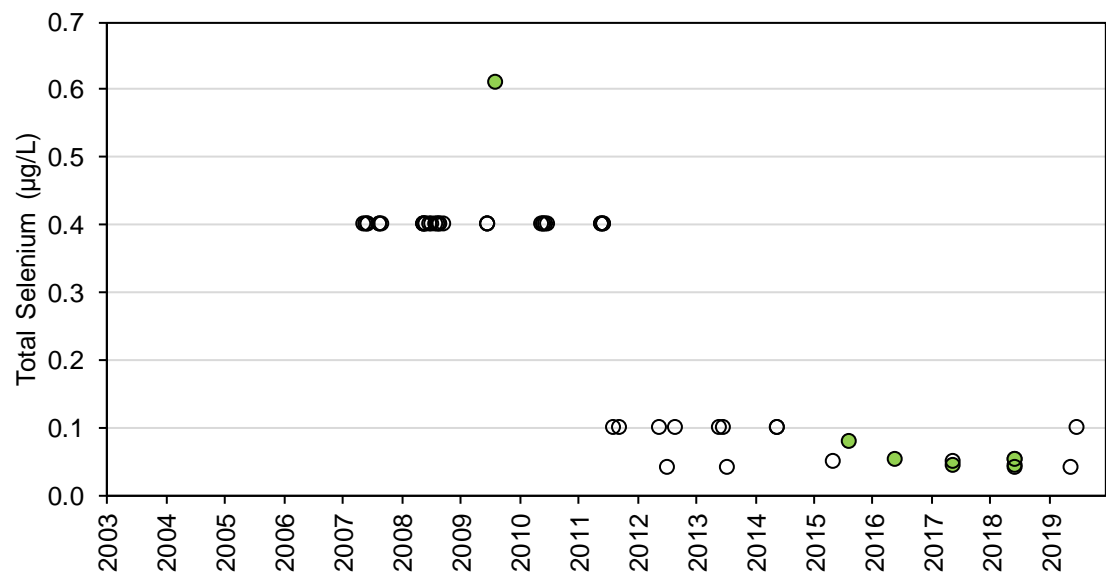


Figure 4F-34: Total Silver Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

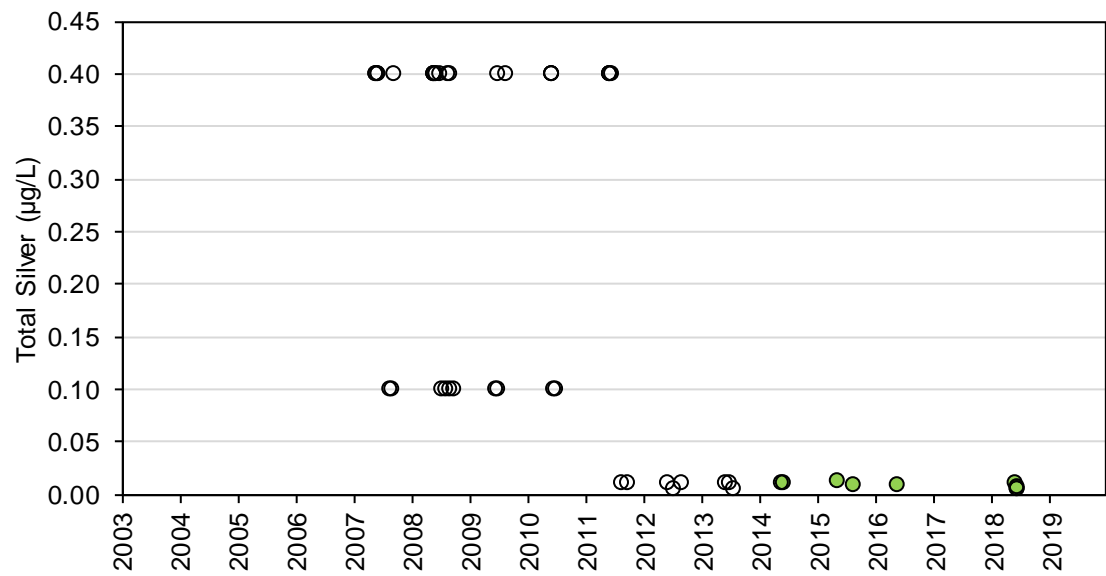


Figure 4F-35: Total Strontium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

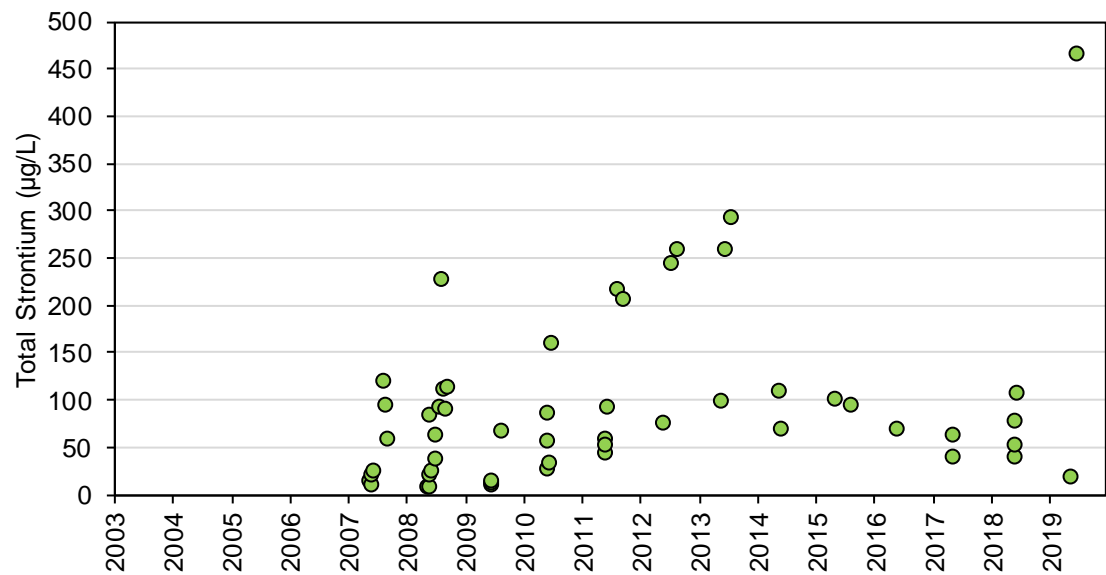


Figure 4F-36: Total Thallium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

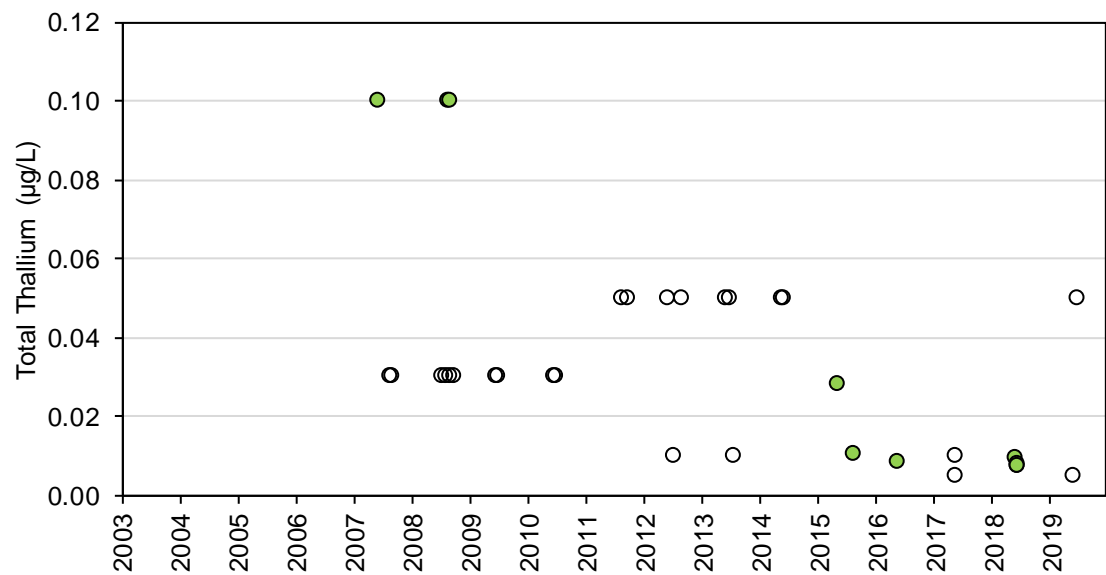


Figure 4F-37: Total Titanium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

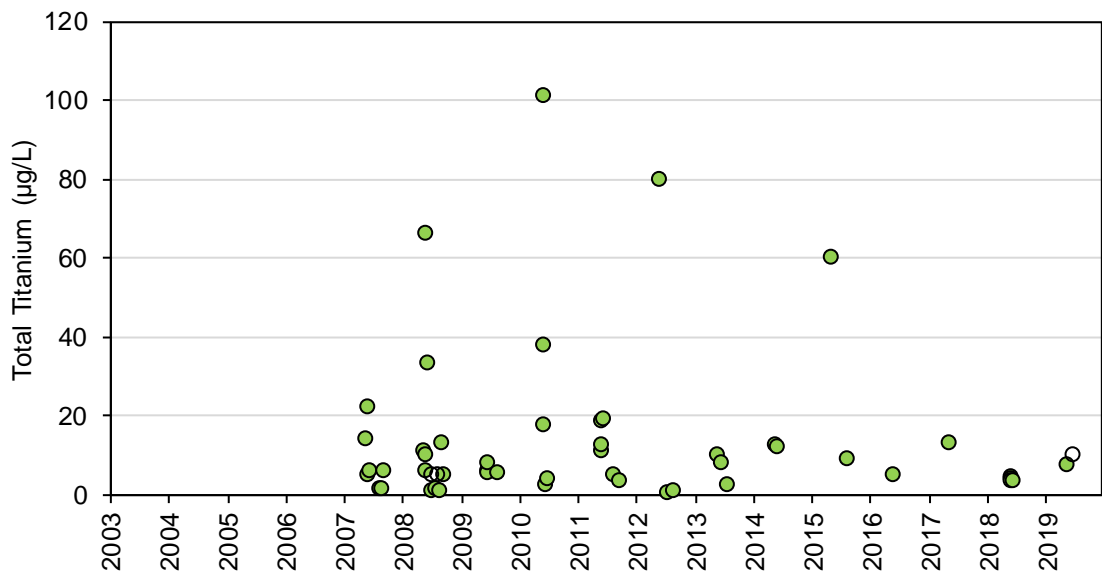


Figure 4F-38: Total Uranium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

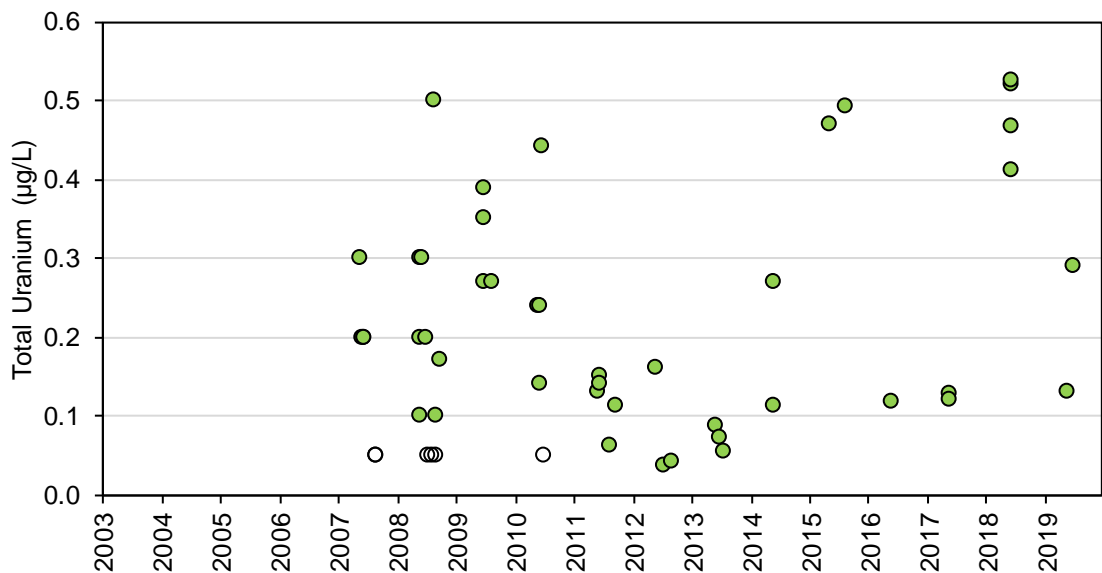


Figure 4F-39: Total Vanadium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

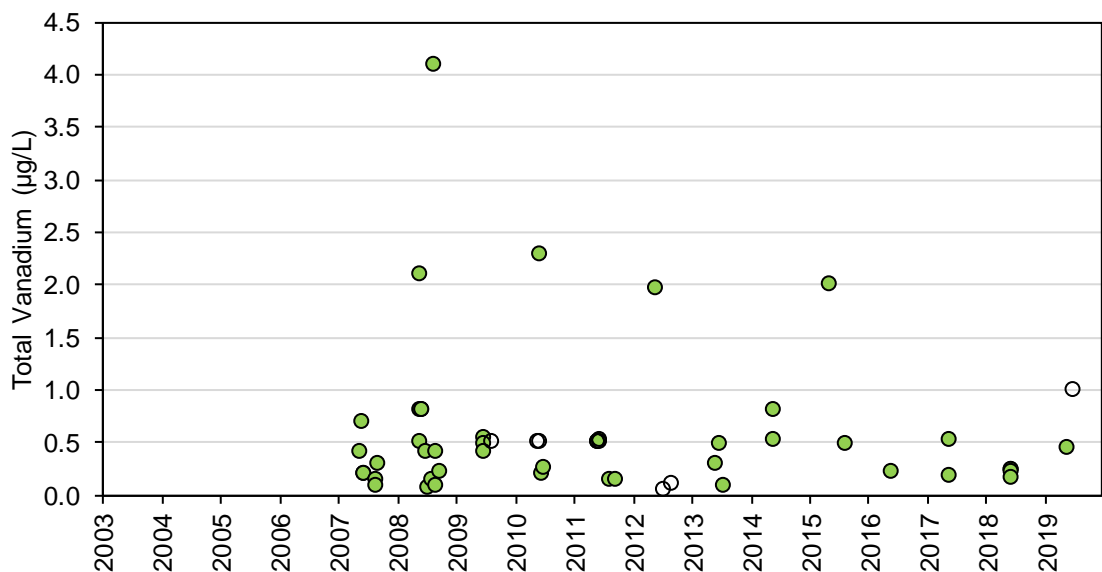


Figure 4F-40: Total Zinc Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

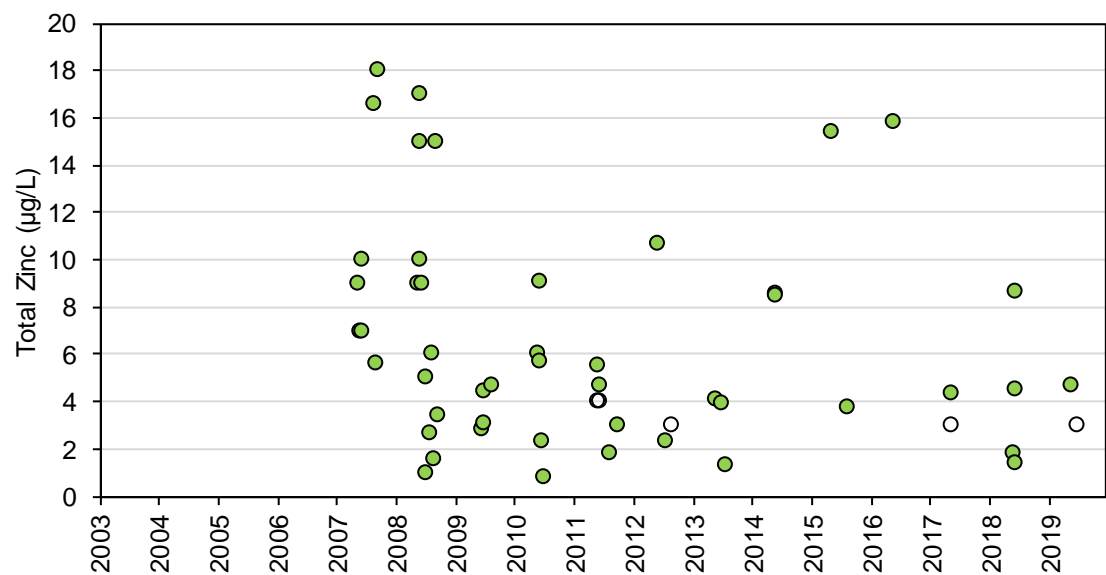


Figure 4F-41: Dissolved Aluminum Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

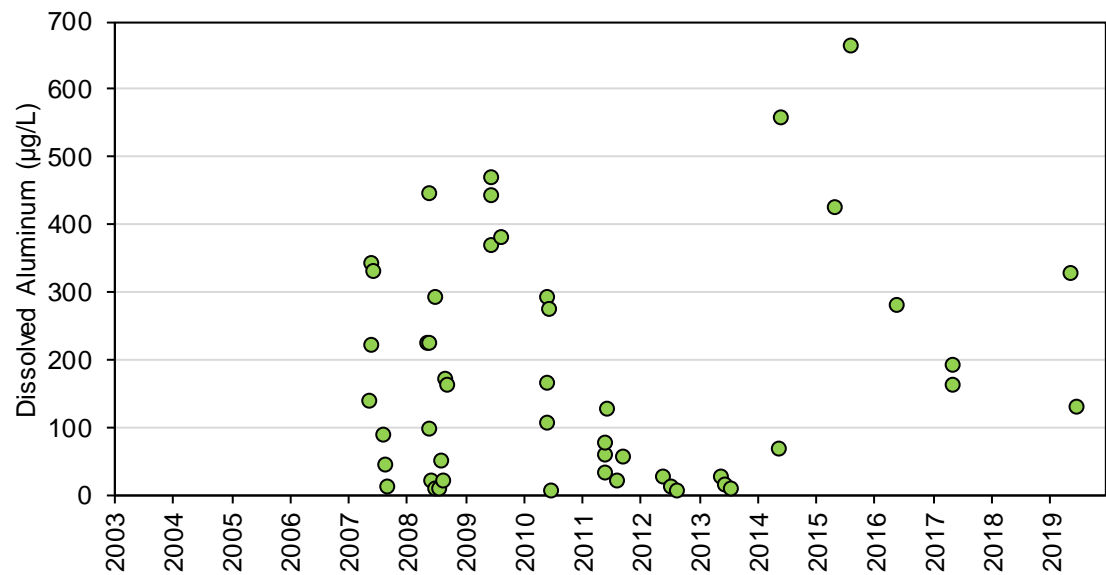


Figure 4F-42: Dissolved Antimony Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

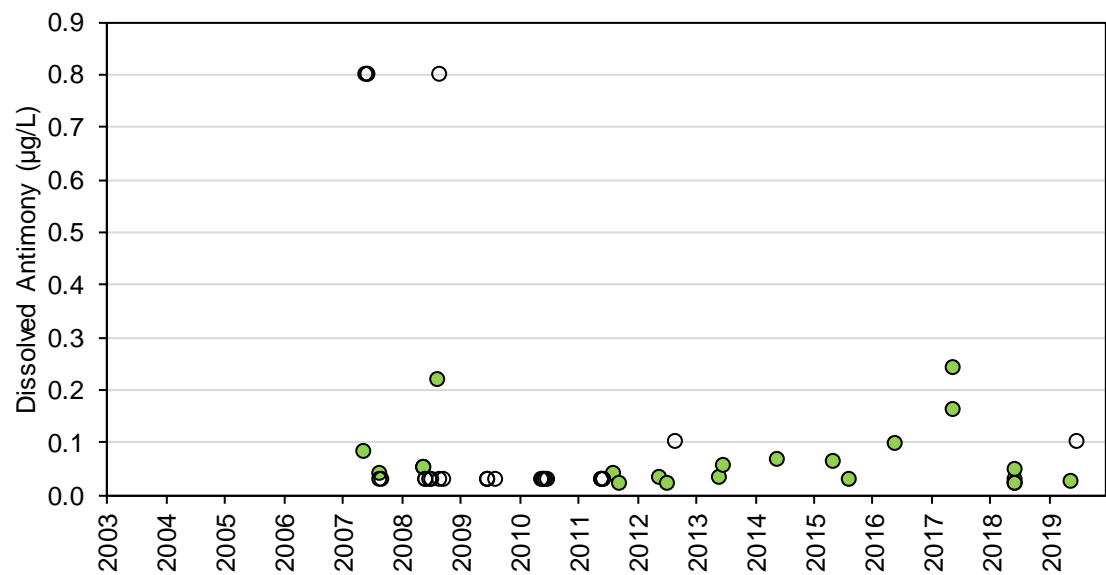


Figure 4F-43: Dissolved Arsenic Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

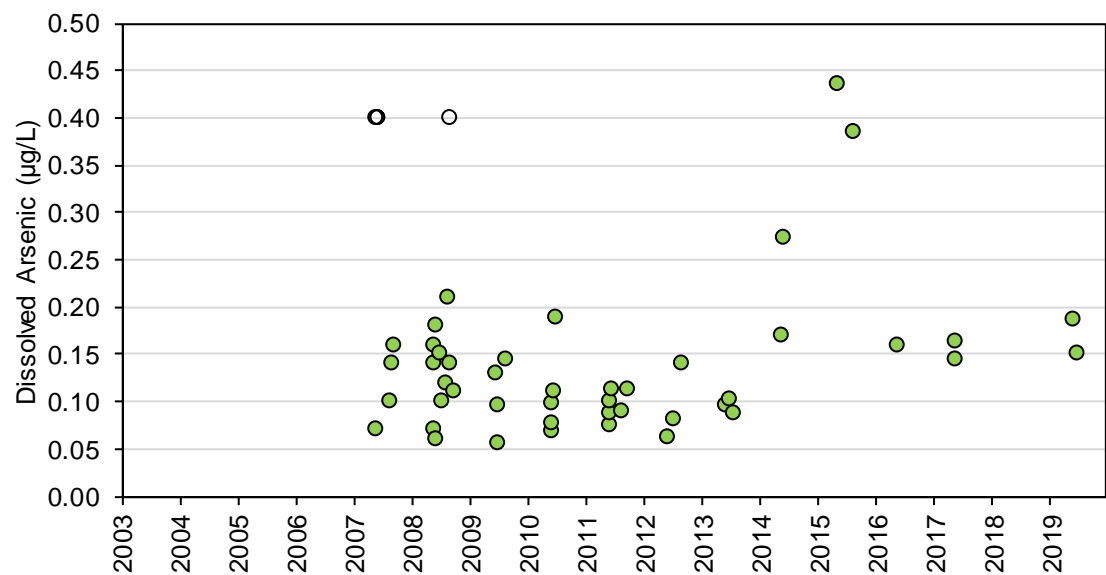


Figure 4F-44: Dissolved Barium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

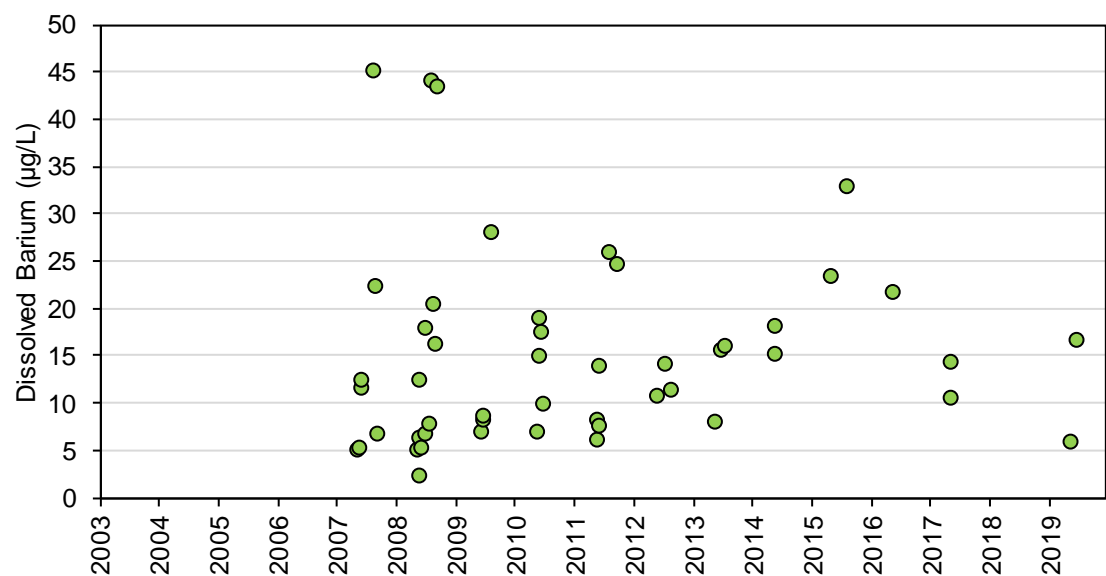


Figure 4F-45: Dissolved Beryllium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

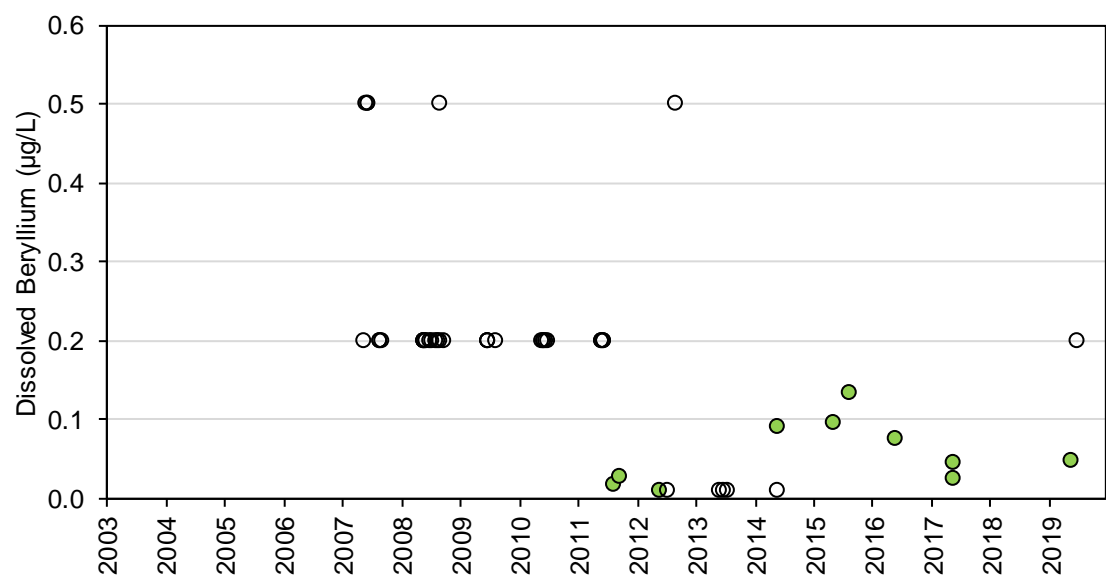


Figure 4F-46: Dissolved Bismuth Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

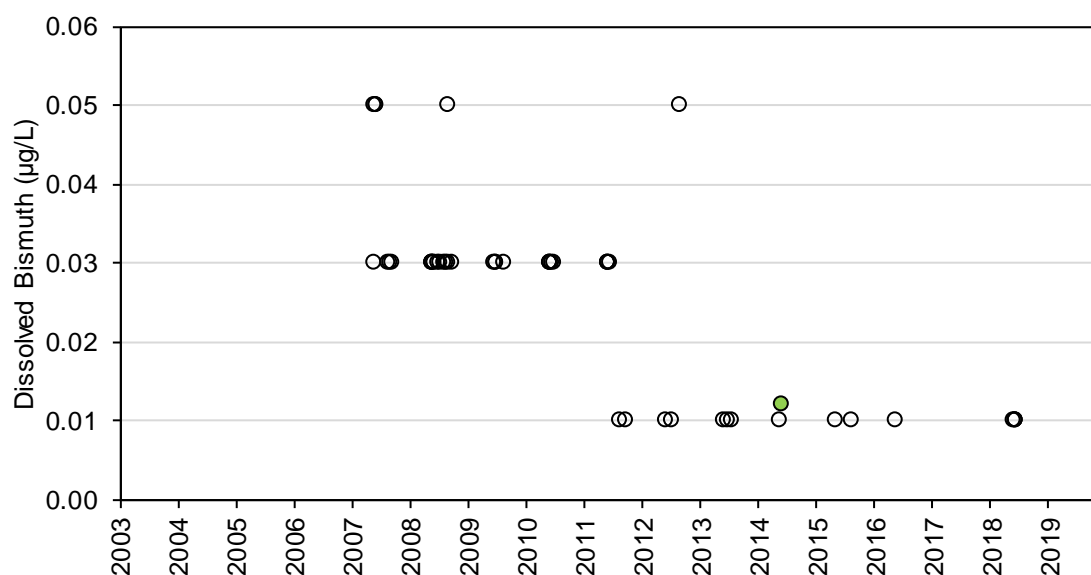


Figure 4F-47: Dissolved Boron Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

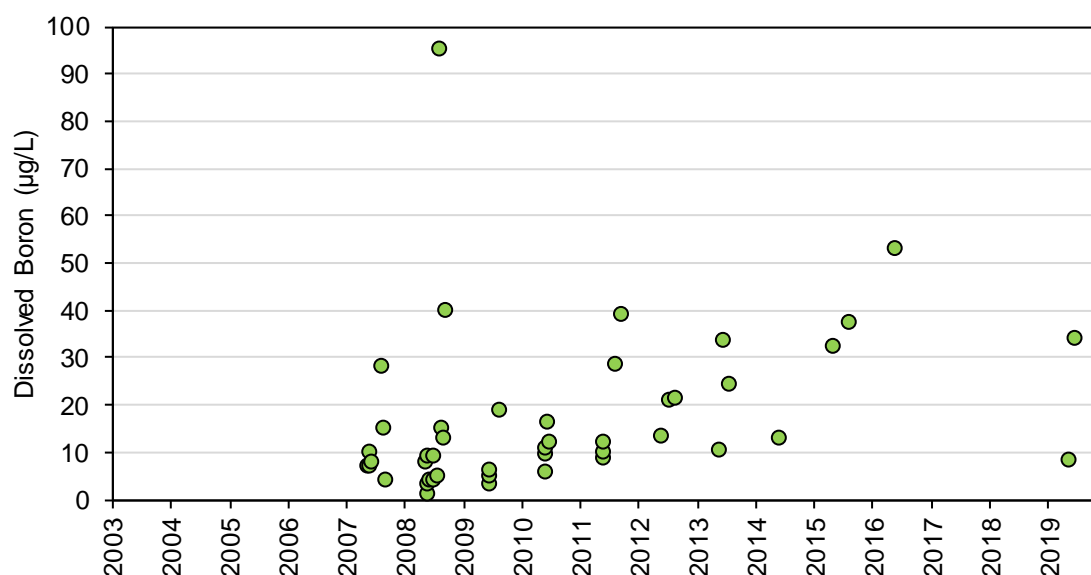


Figure 4F-48: Dissolved Cadmium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

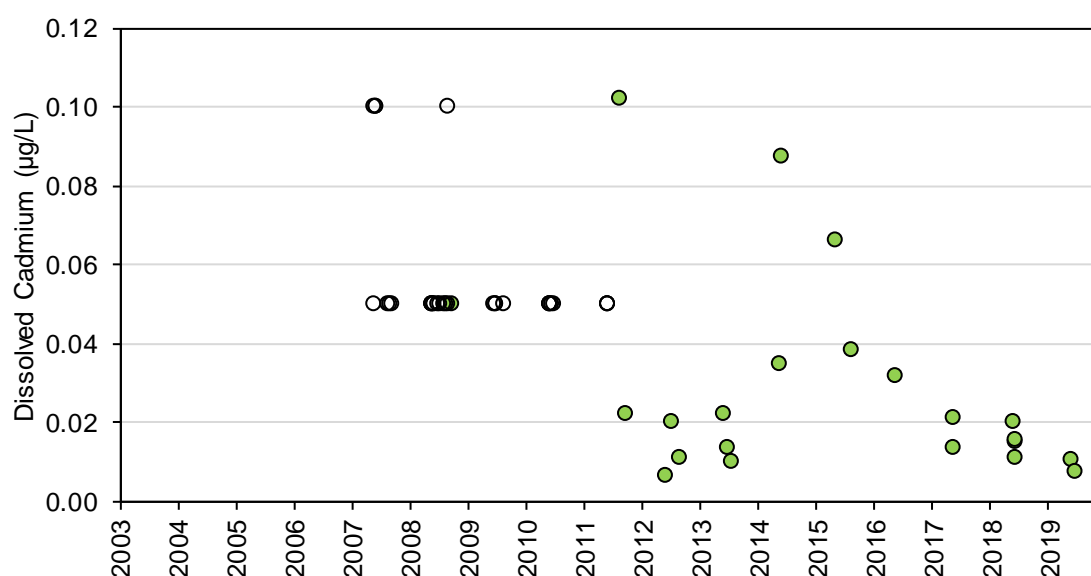


Figure 4F-49: Dissolved Cesium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

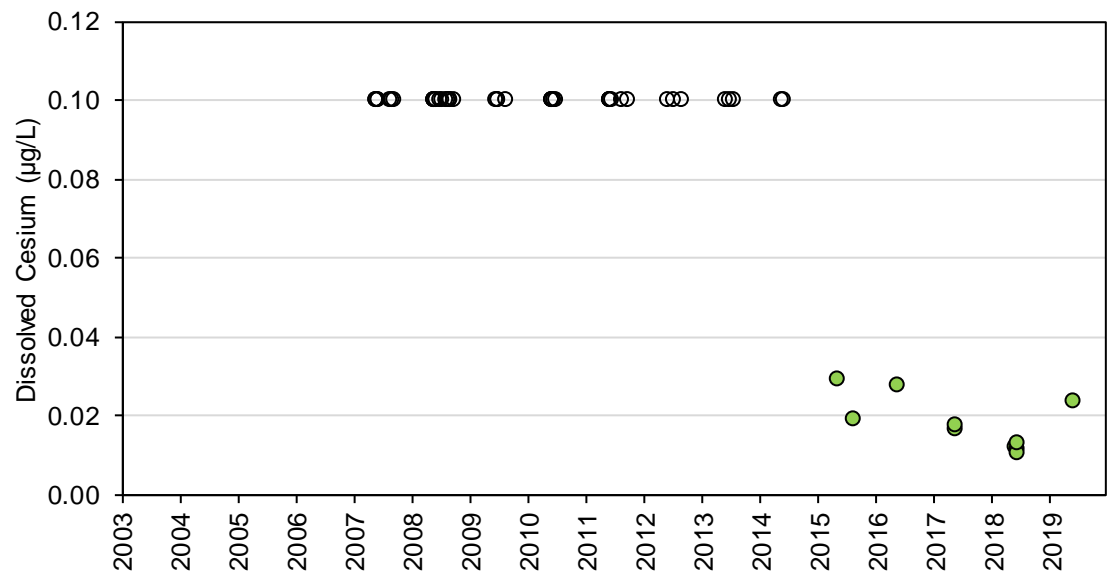


Figure 4F-50: Dissolved Chromium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

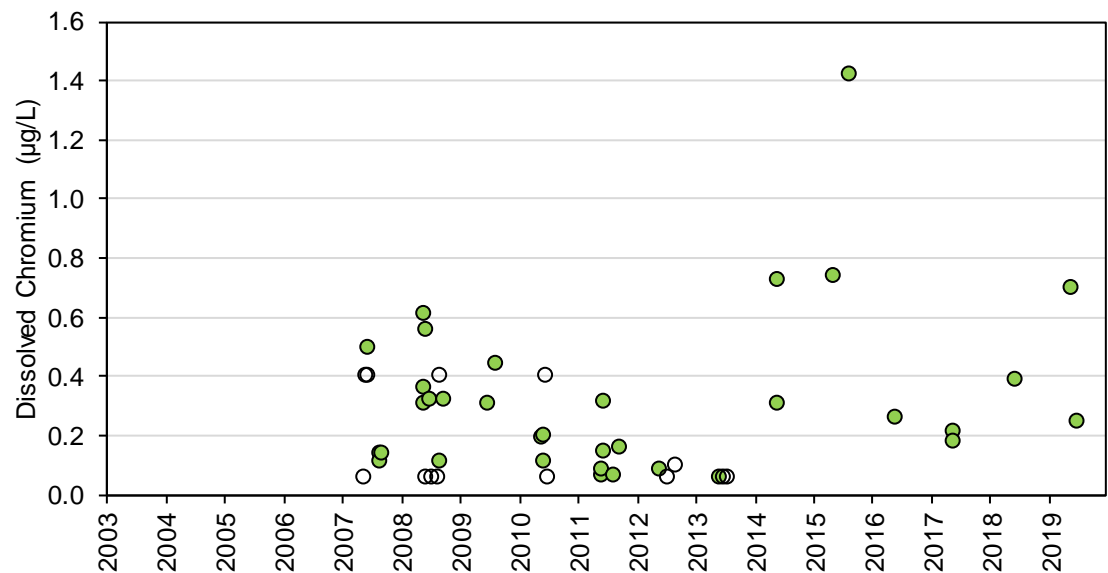


Figure 4F-51: Dissolved Cobalt Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

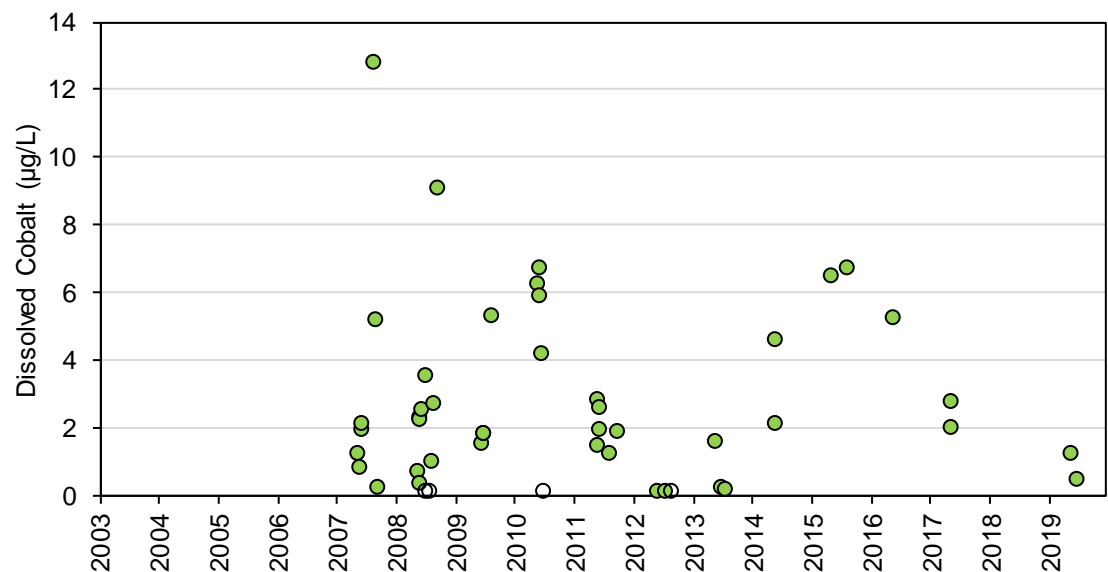


Figure 4F-52: Dissolved Copper Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

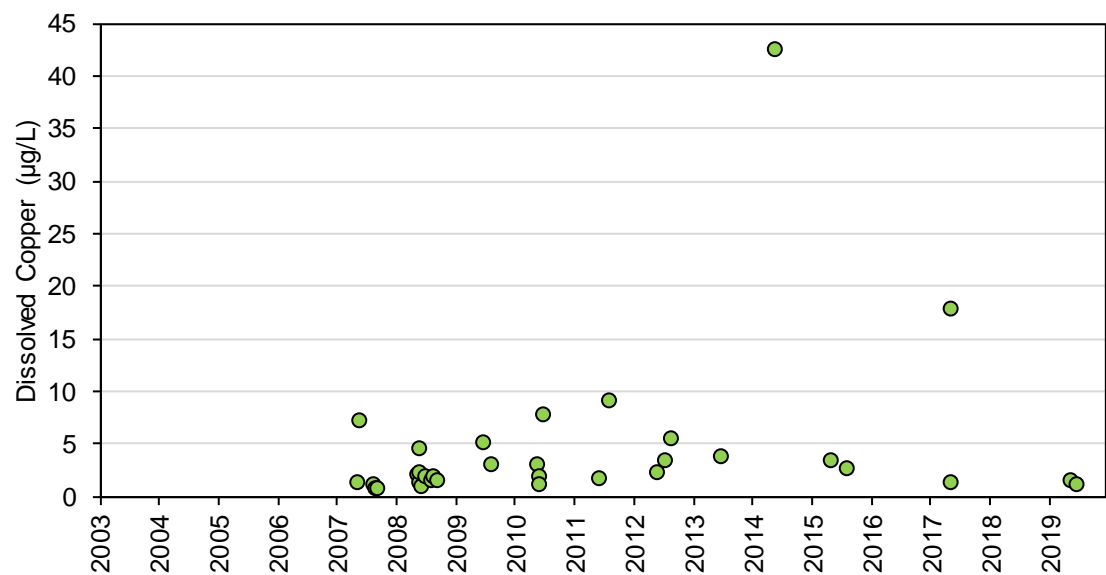


Figure 4F-53: Dissolved Iron Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

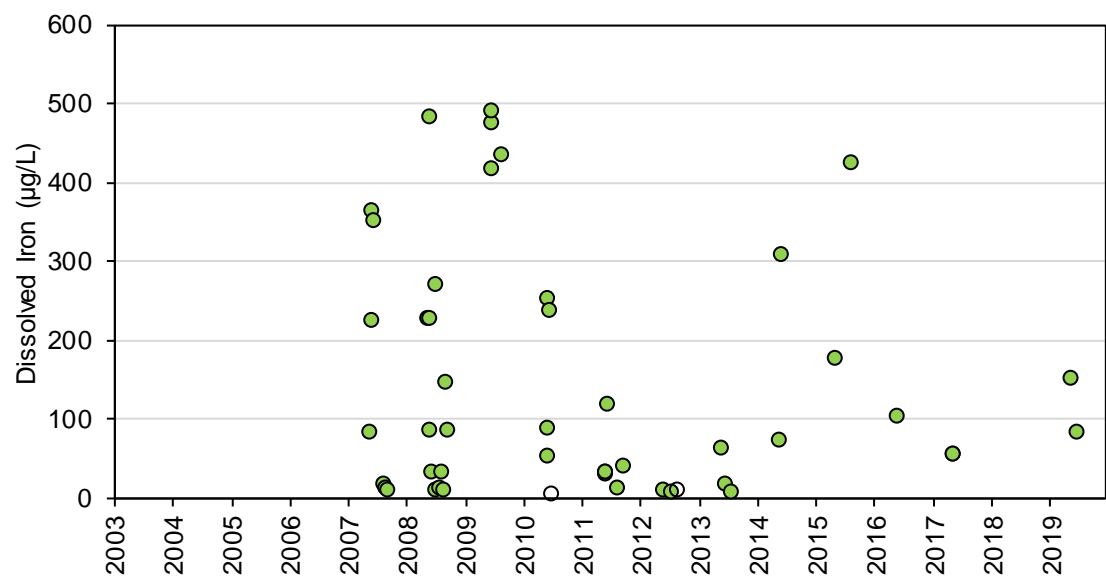


Figure 4F-54: Dissolved Lead Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

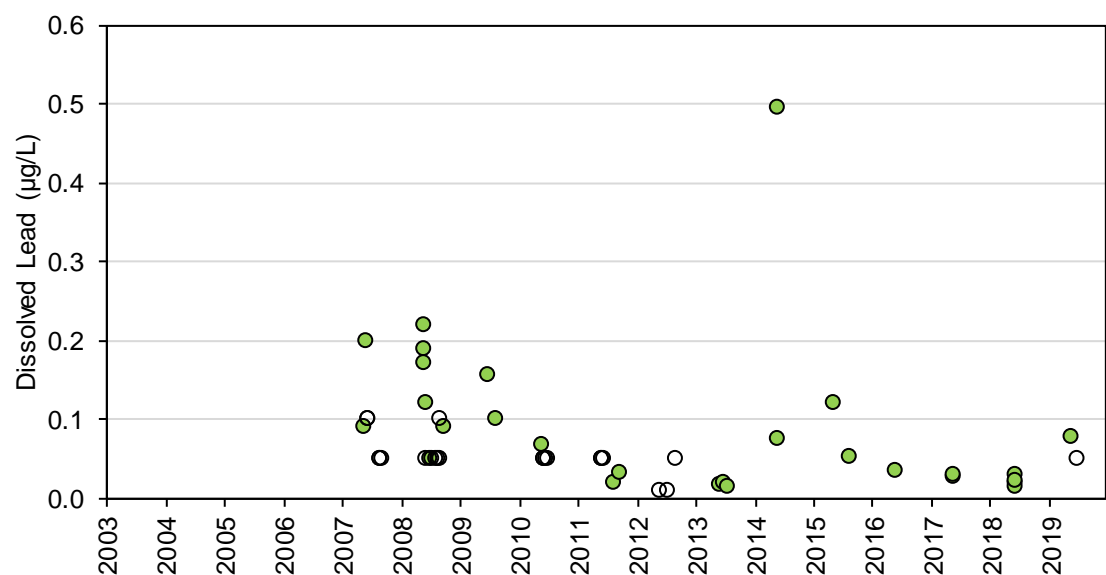


Figure 4F-55: Dissolved Lithium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

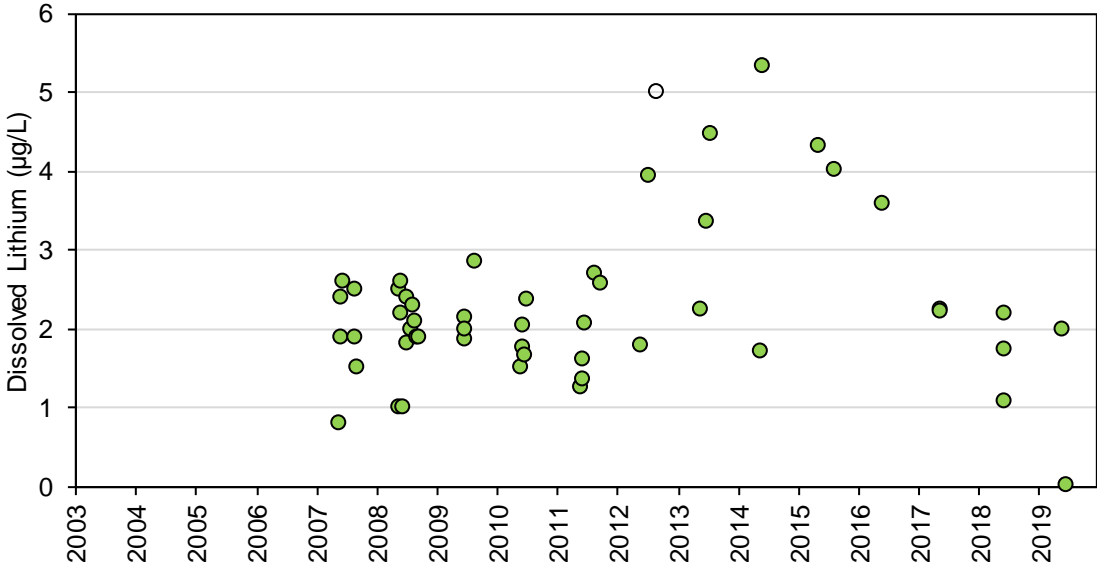


Figure 4F-56: Dissolved Manganese Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

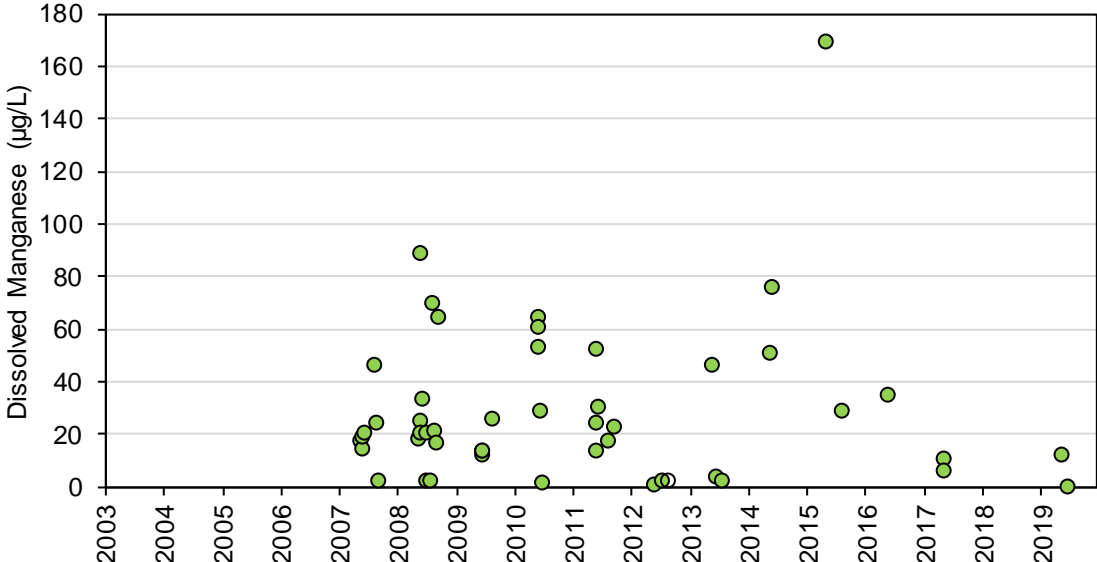


Figure 4F-57: Dissolved Mercury Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

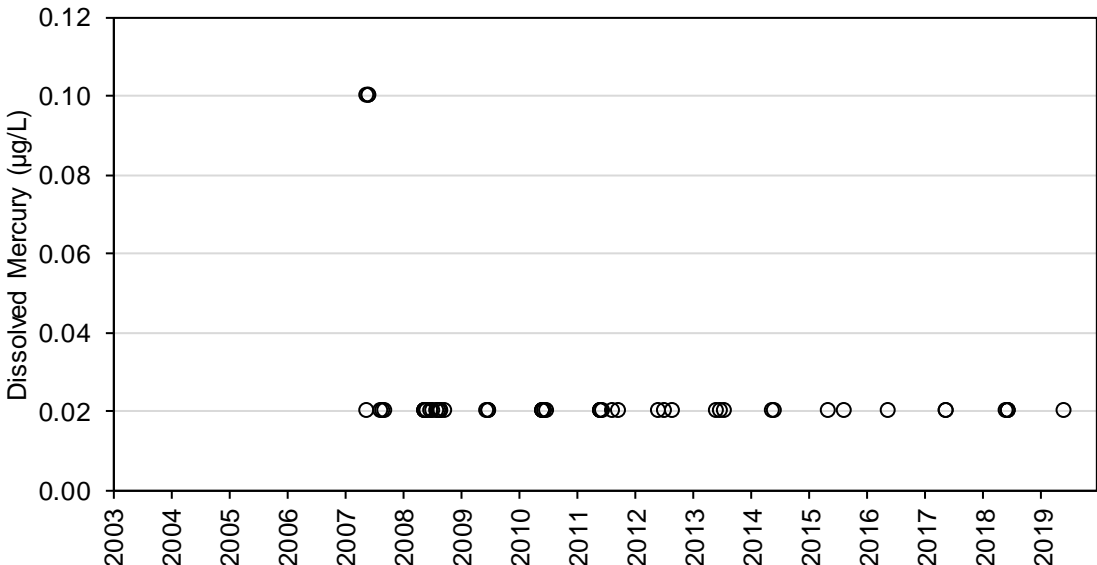


Figure 4F-58: Dissolved Molybdenum Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

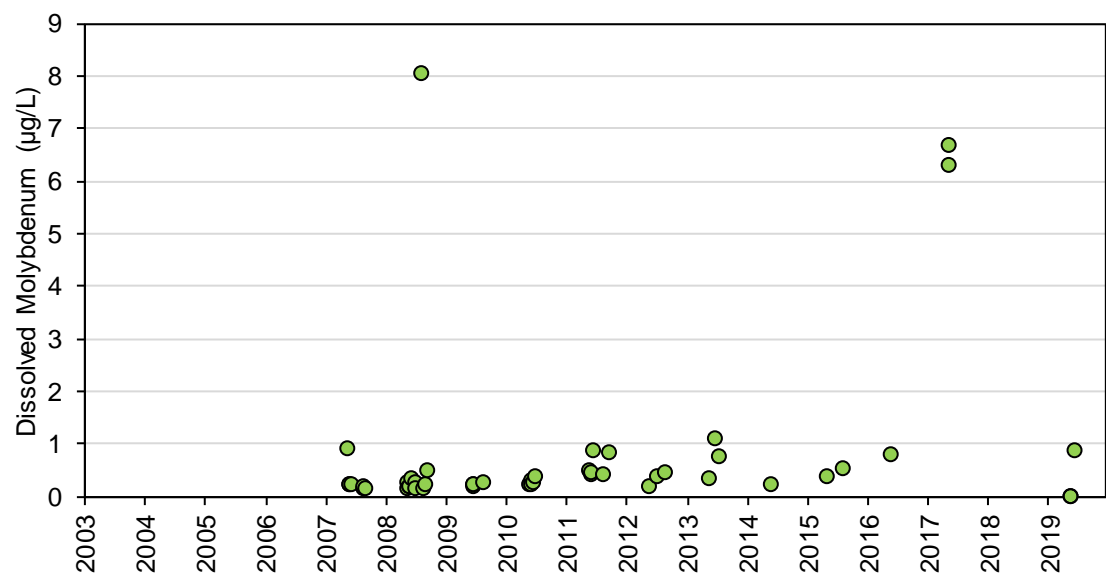


Figure 4F-59: Dissolved Nickel Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

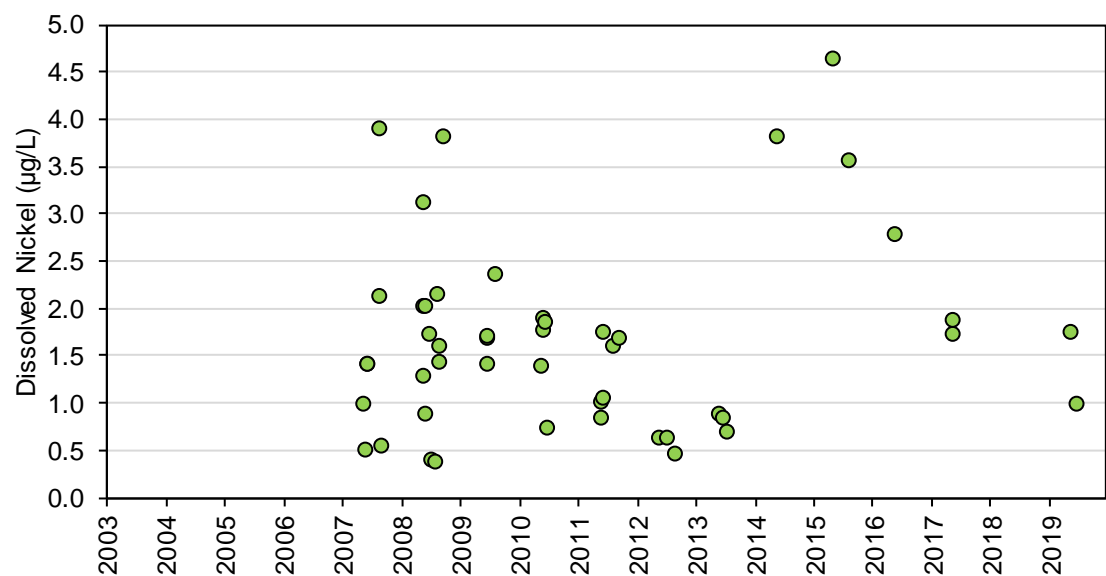


Figure 4F-60: Dissolved Rubidium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

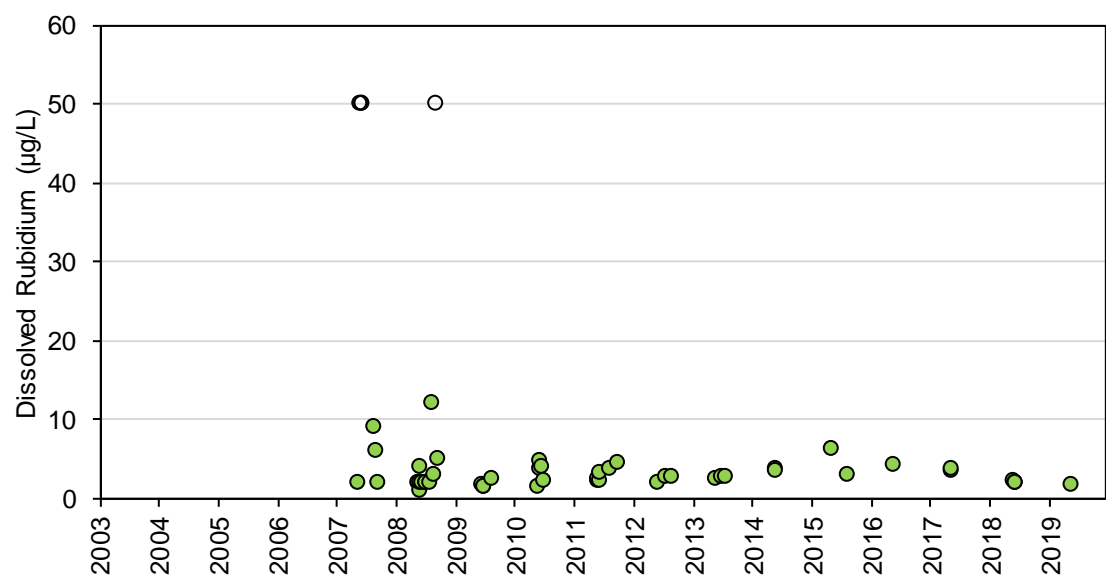


Figure 4F-61: Dissolved Selenium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

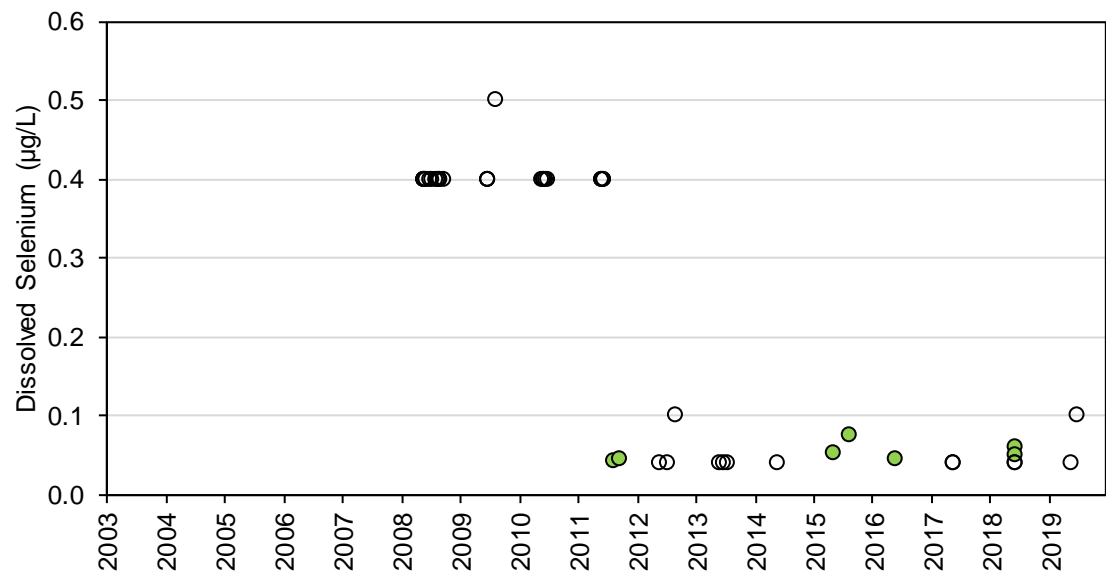


Figure 4F-62: Dissolved Silver Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

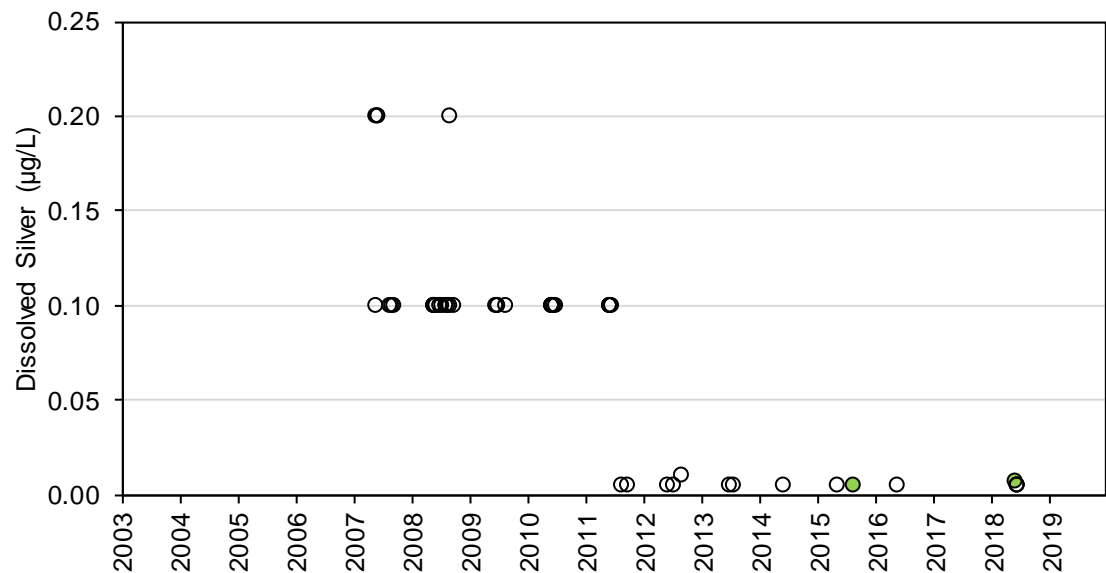


Figure 4F-63: Dissolved Strontium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

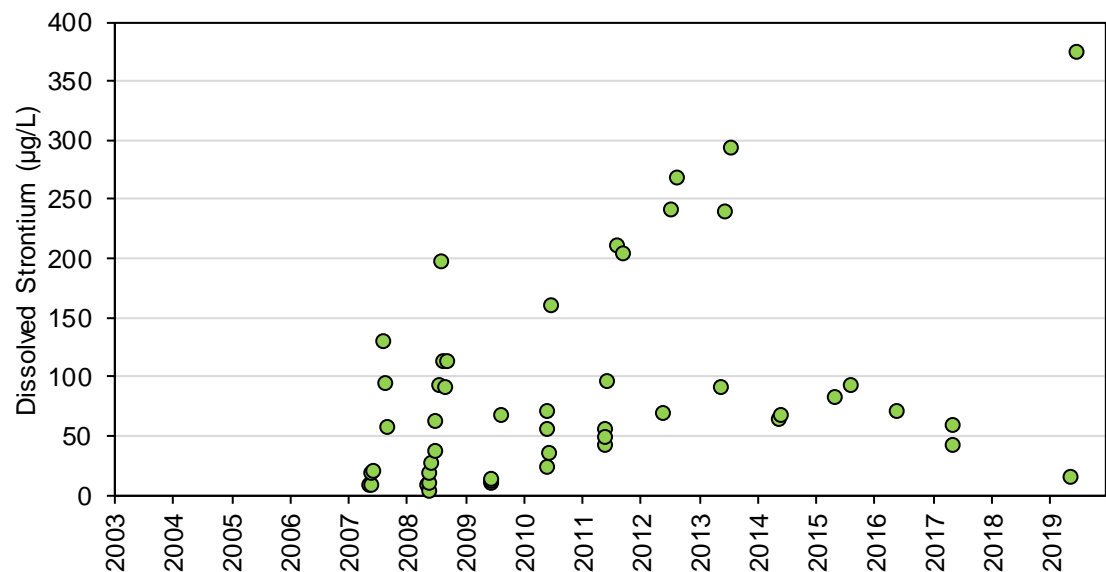


Figure 4F-64: Dissolved Thallium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

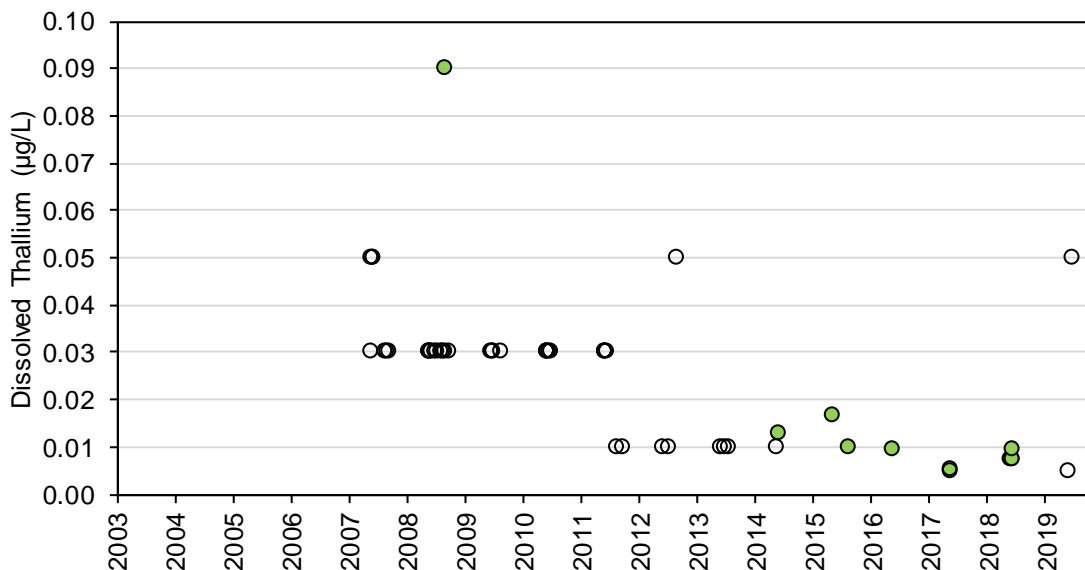


Figure 4F-65: Dissolved Titanium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

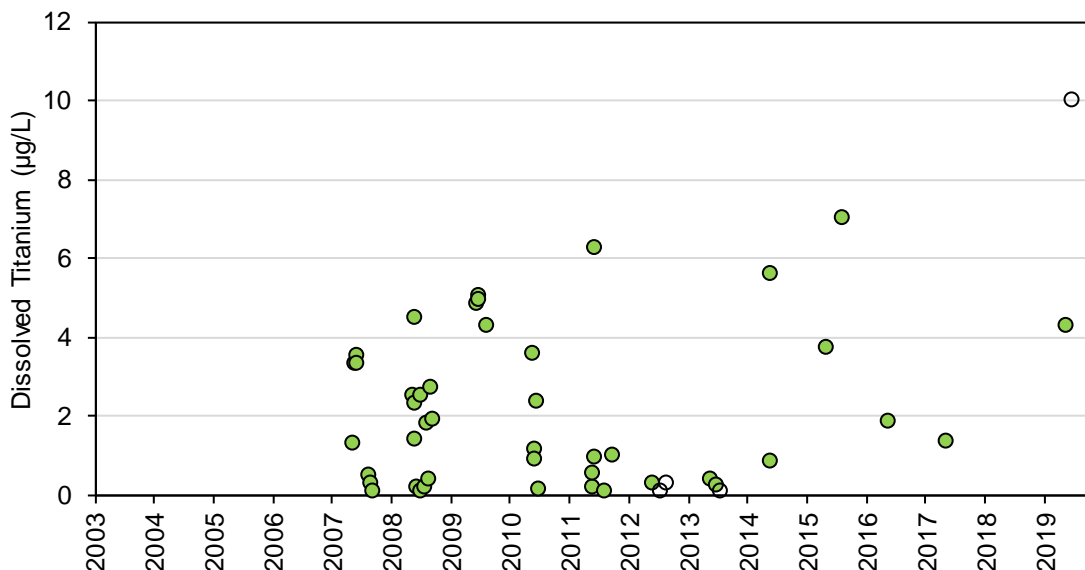


Figure 4F-66: Dissolved Uranium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

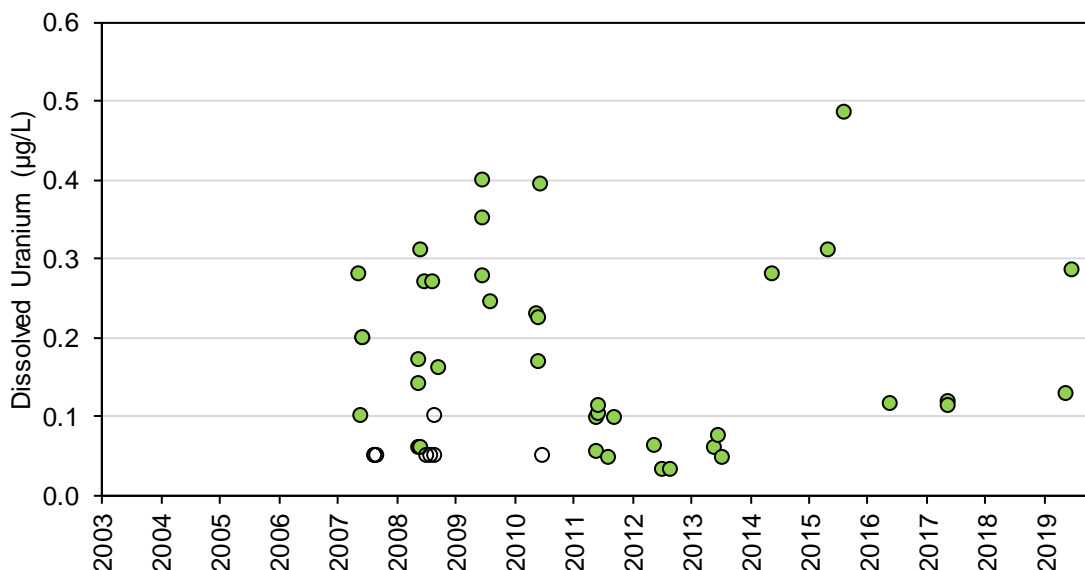


Figure 4F-67: Dissolved Vanadium Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance

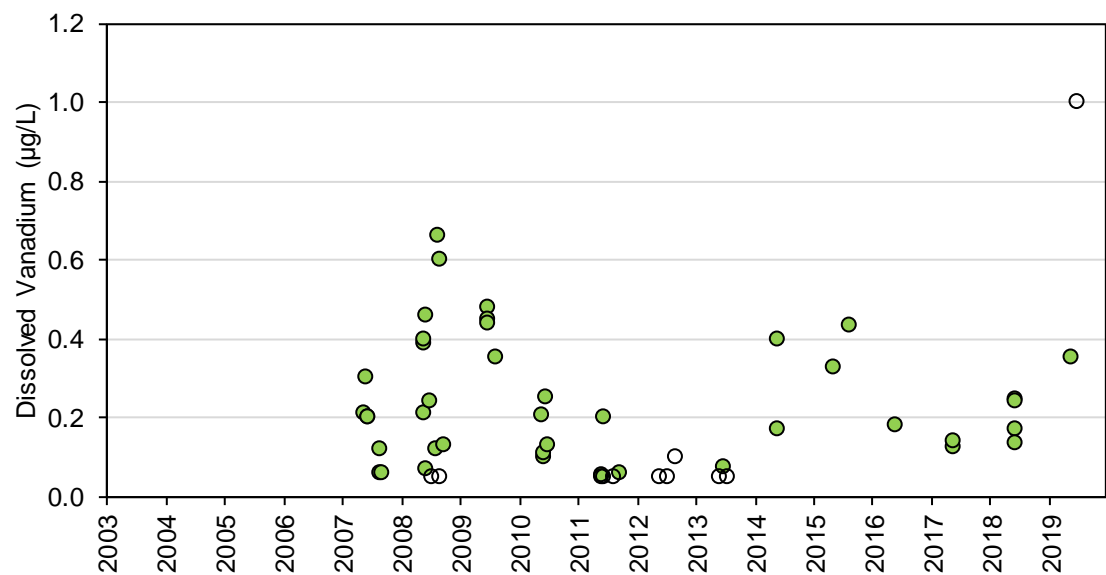
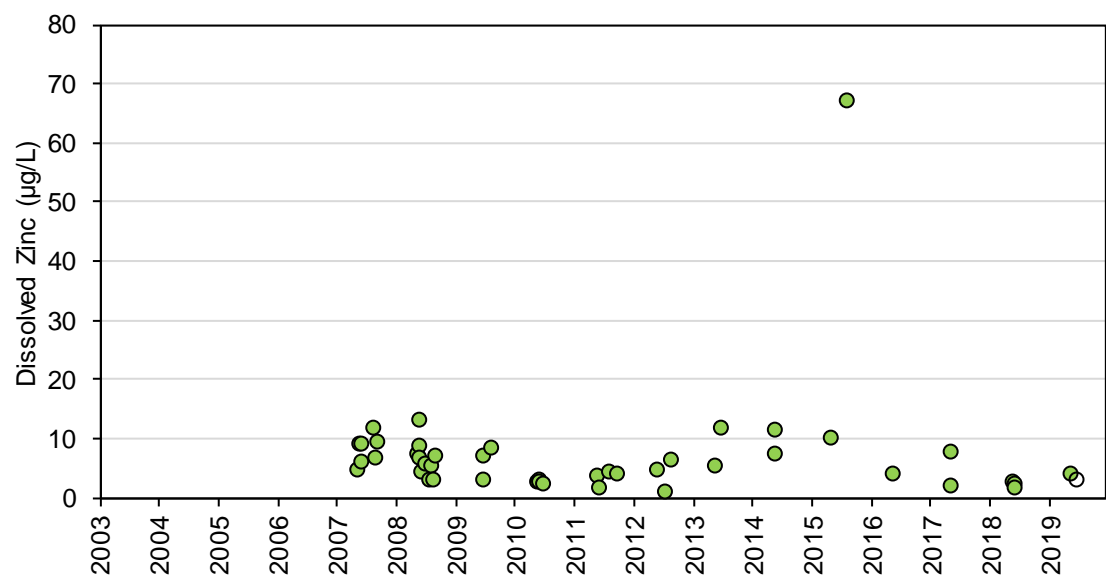


Figure 4F-68: Dissolved Zinc Concentrations at Station SNP 02-08 during Construction, Operations, and Extended Care and Maintenance



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ATTACHMENT 4G. FIGURES OF WATER QUALITY FOR SNP 02-09

Figure 4G-1: Total Dissolved Solids, calculated (lab) Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

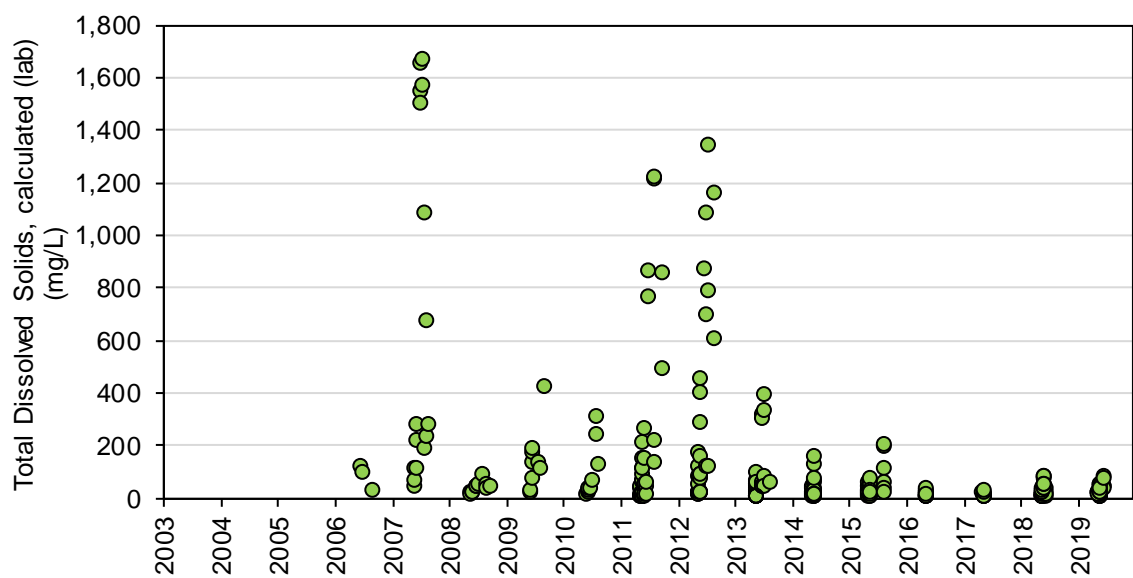


Figure 4G-2: Calcium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

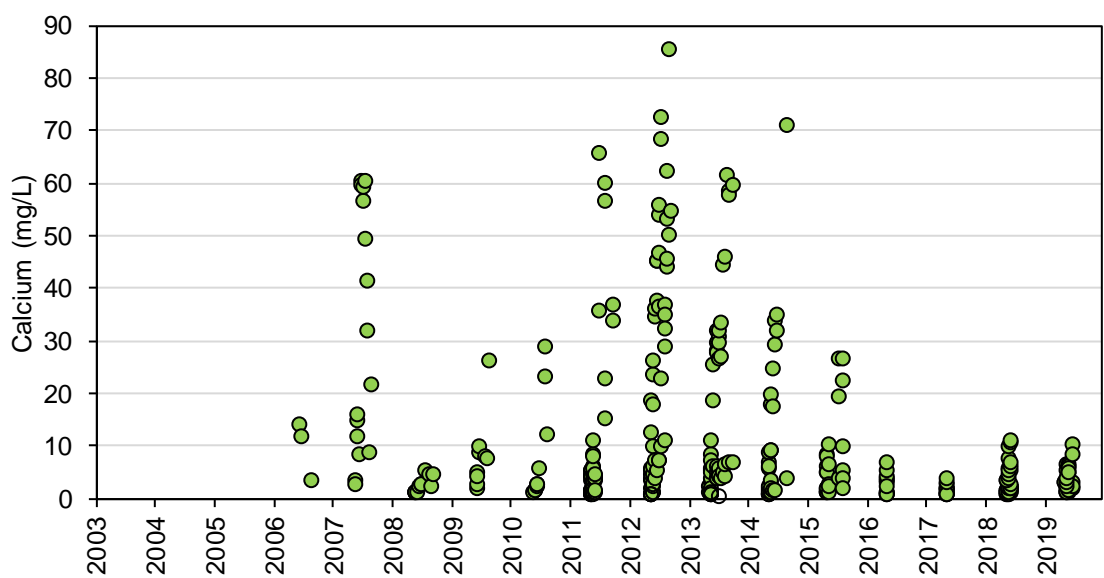


Figure 4G-3: Chloride Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

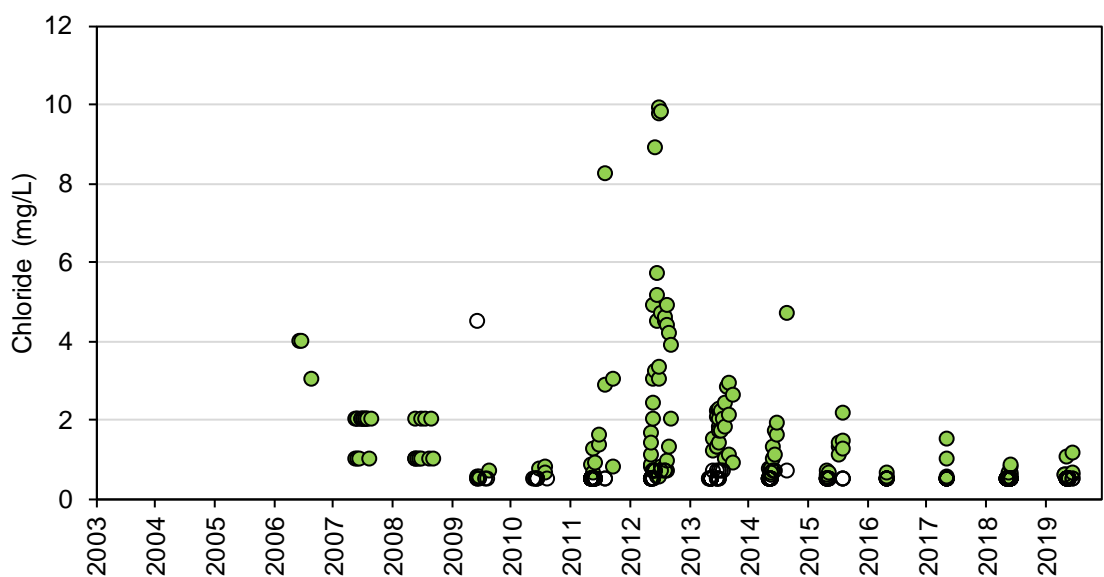


Figure 4G-4: Fluoride Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

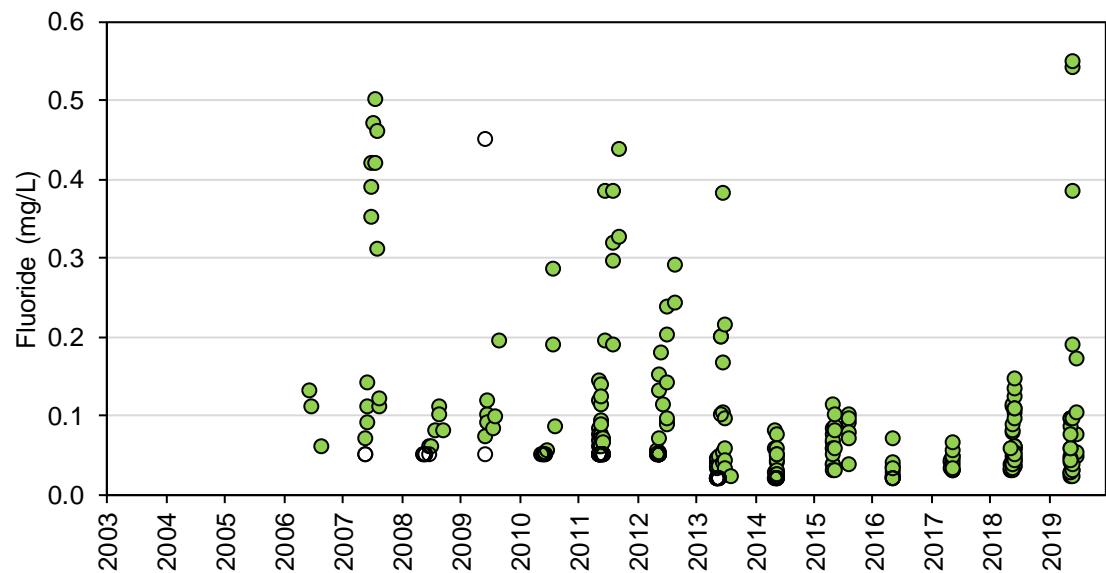


Figure 4G-5: Magnesium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

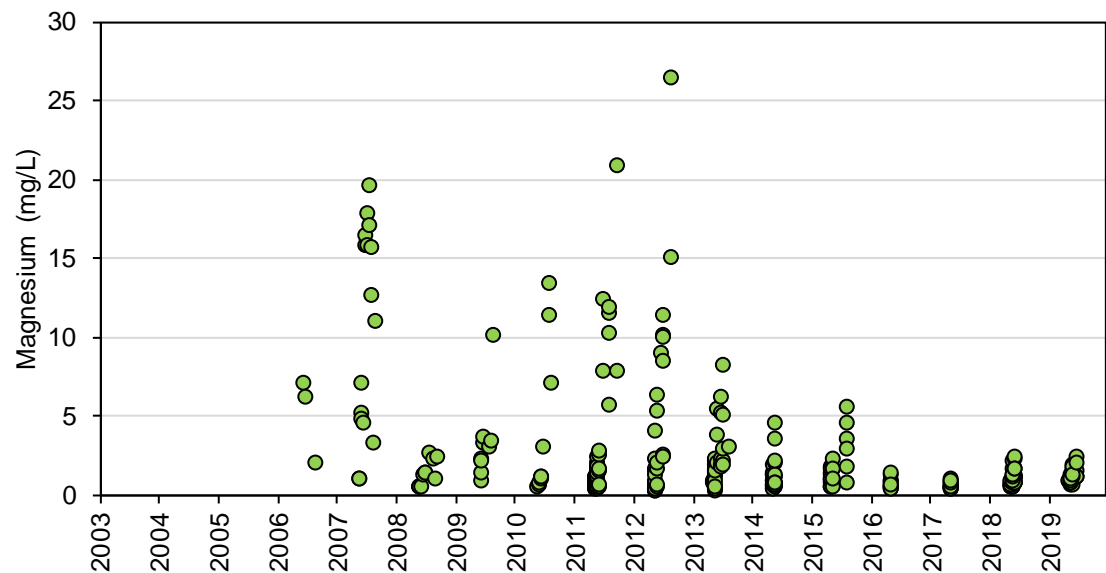


Figure 4G-6: Potassium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

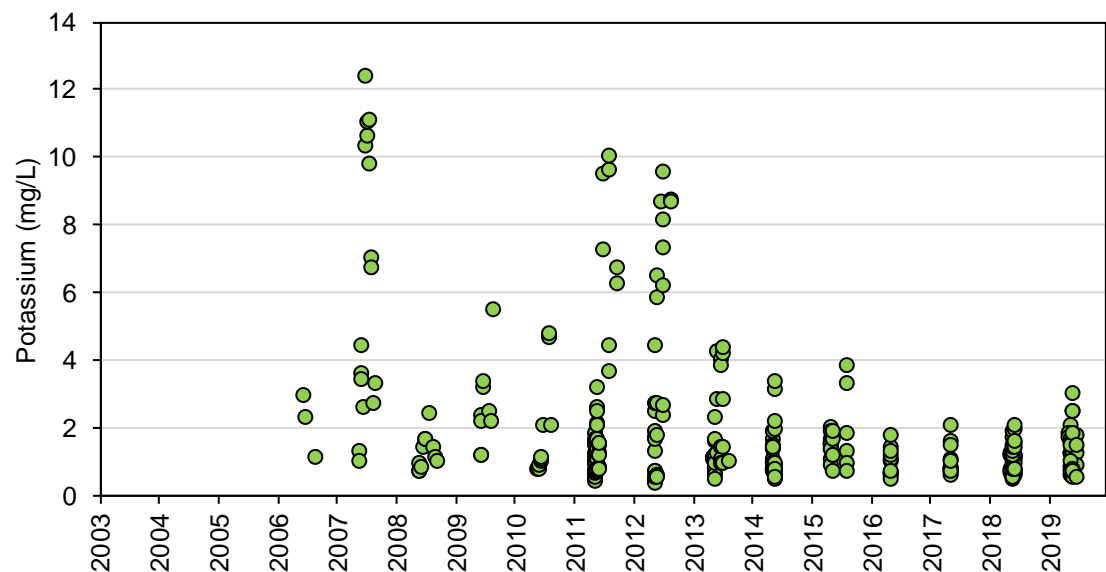


Figure 4G-7: Sodium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

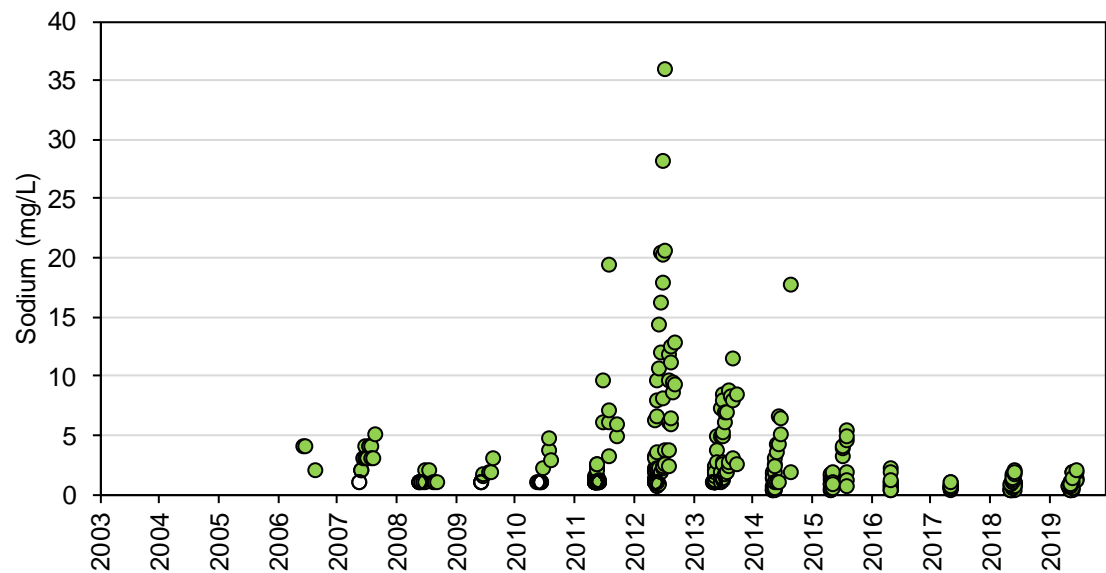


Figure 4G-8: Sulphate Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

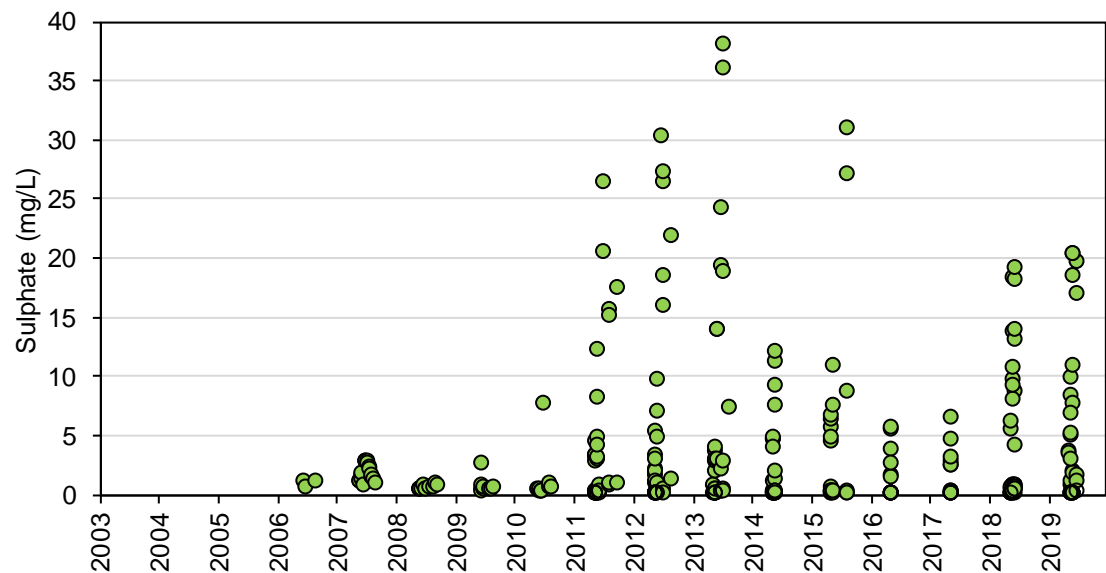


Figure 4G-9: Nitrate Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

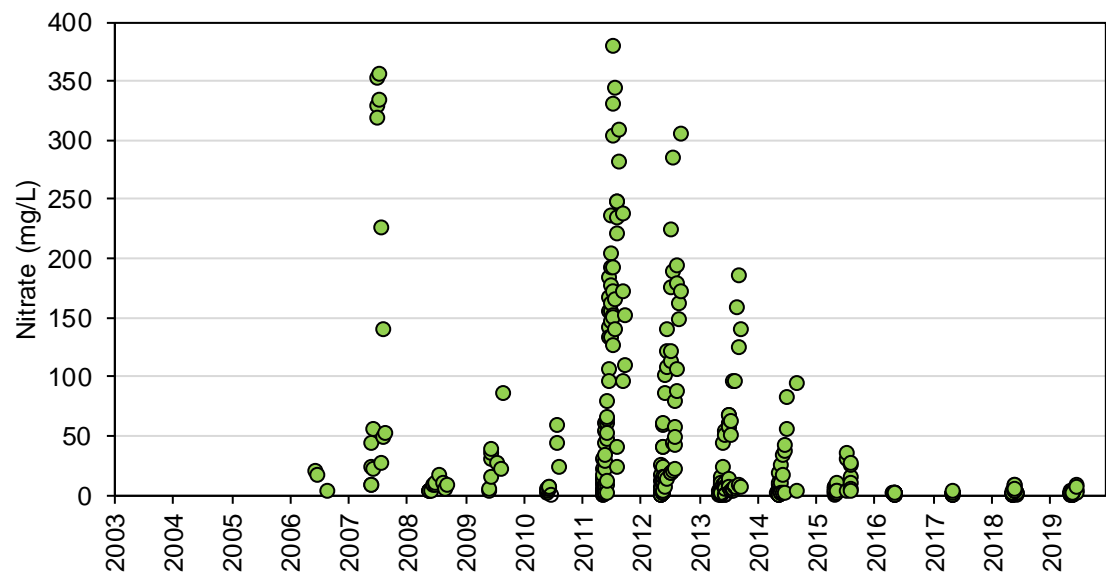


Figure 4G-10: Nitrite Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

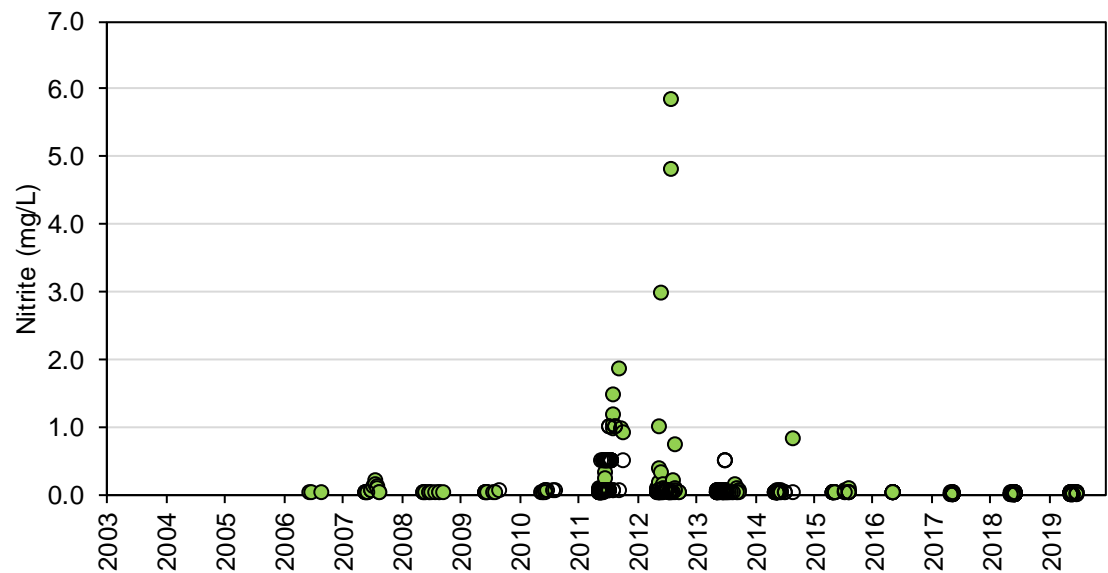


Figure 4G-11: Total Ammonia Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

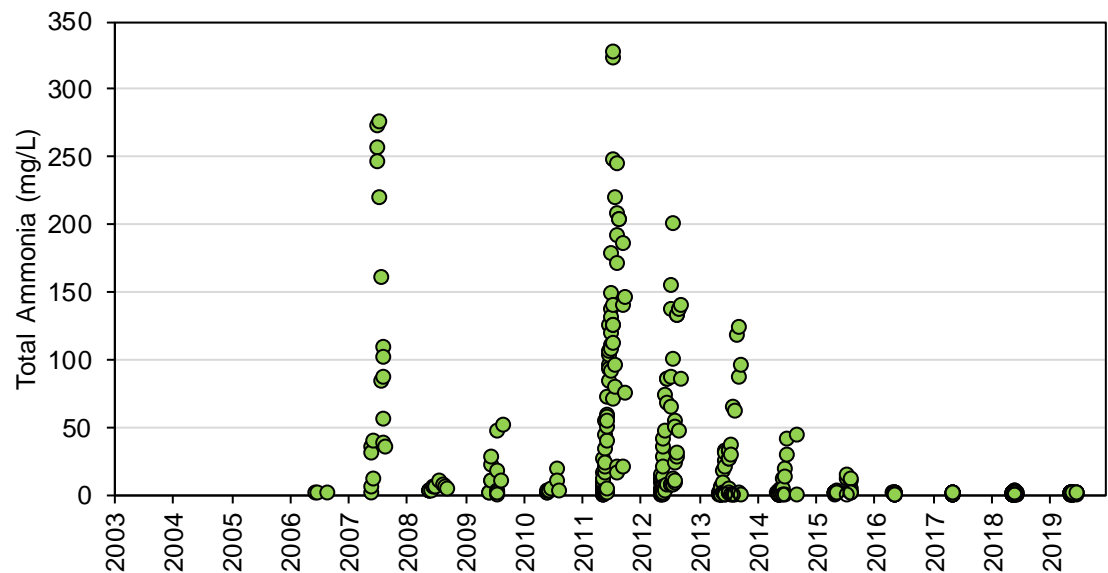


Figure 4G-12: Total Phosphorus Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

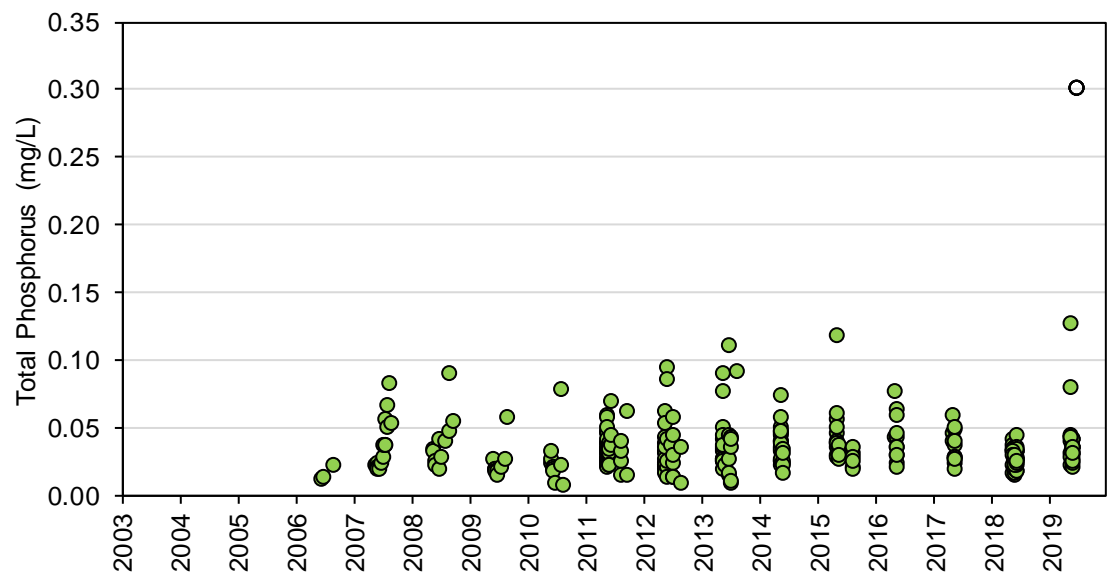


Figure 4G-13: Total Aluminum Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

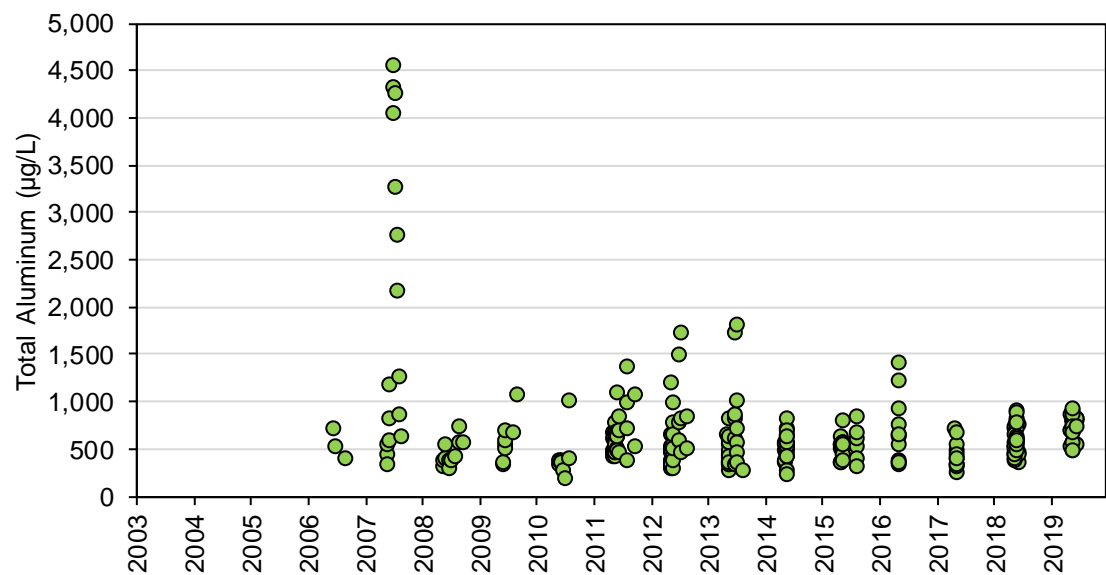


Figure 4G-14: Total Antimony Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

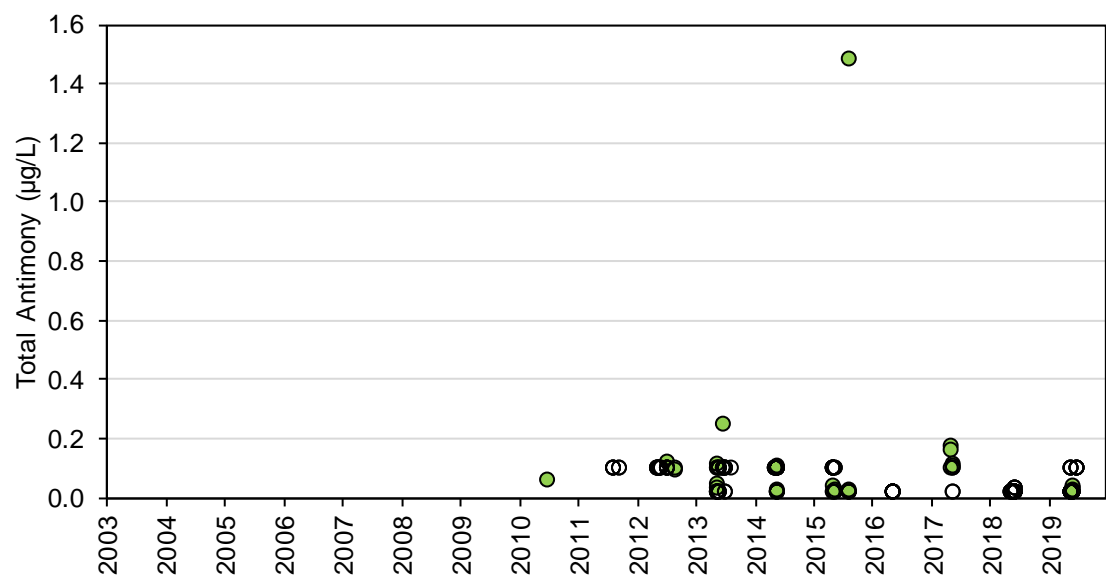


Figure 4G-15: Total Arsenic Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

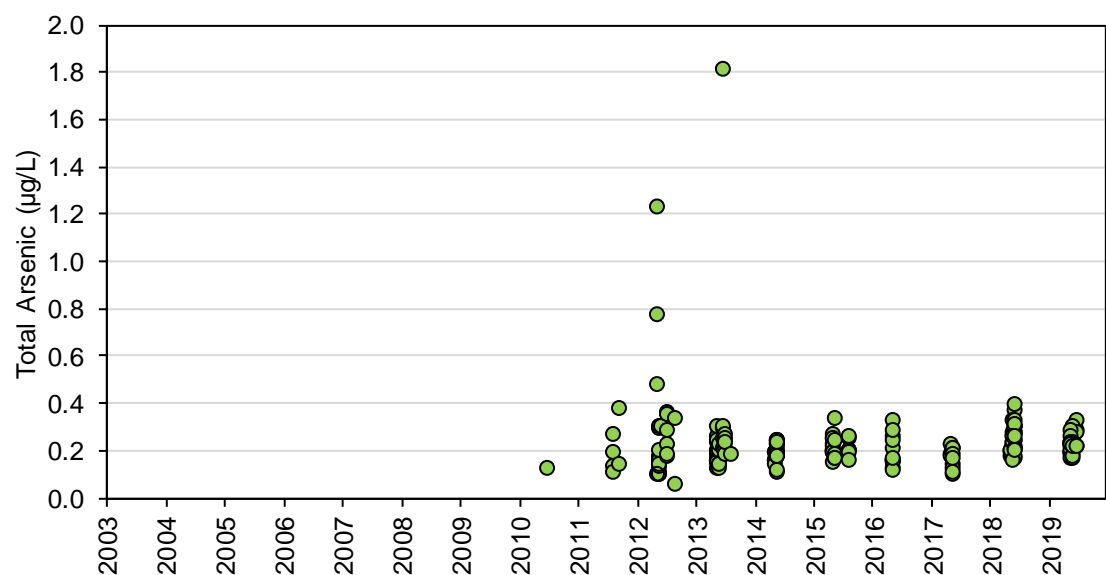


Figure 4G-16: Total Barium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

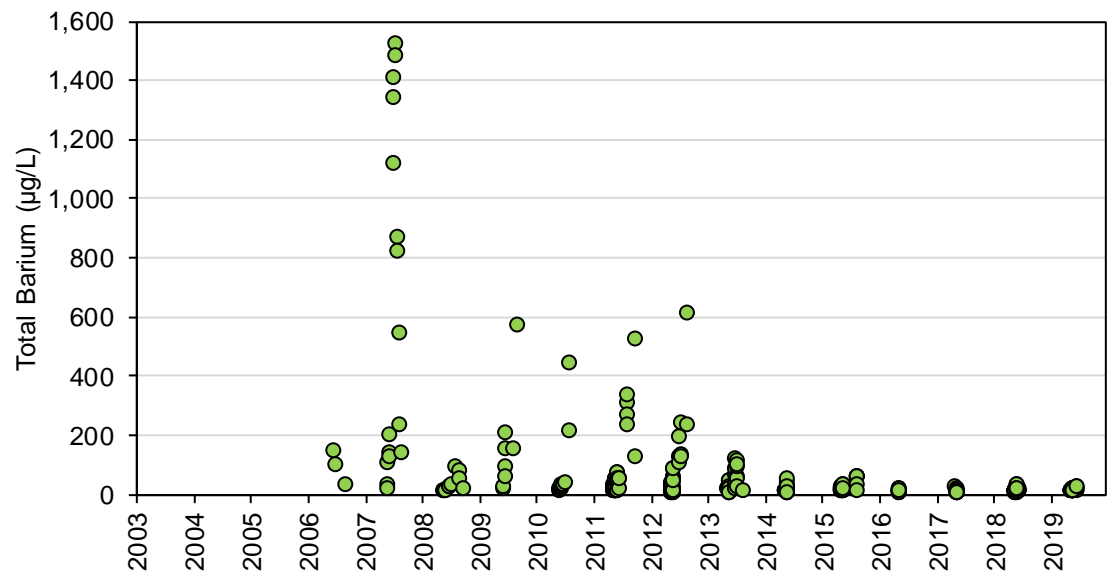


Figure 4G-17: Total Beryllium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

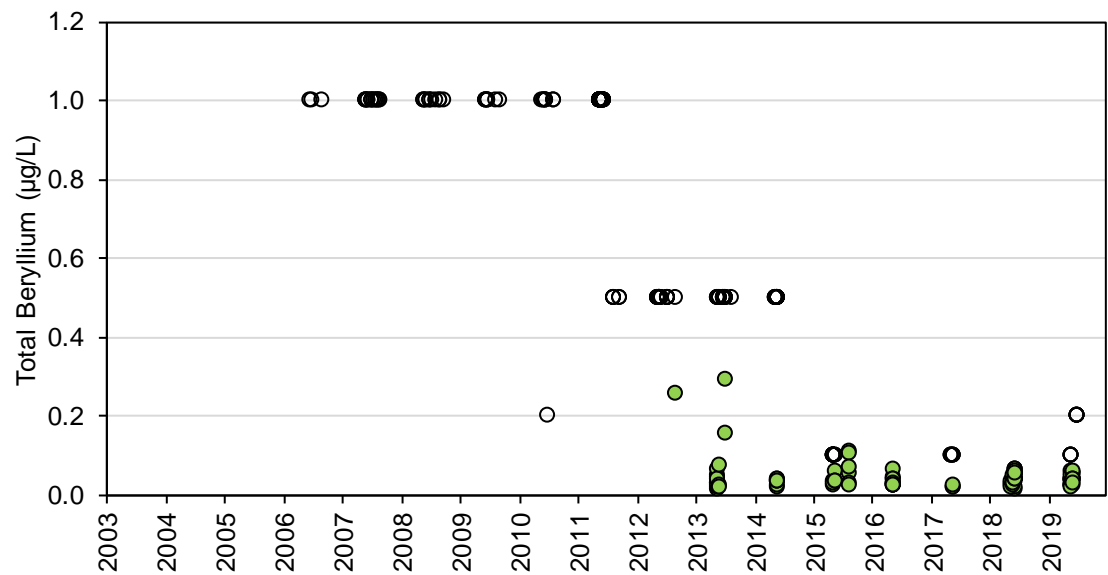


Figure 4G-18: Total Bismuth Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

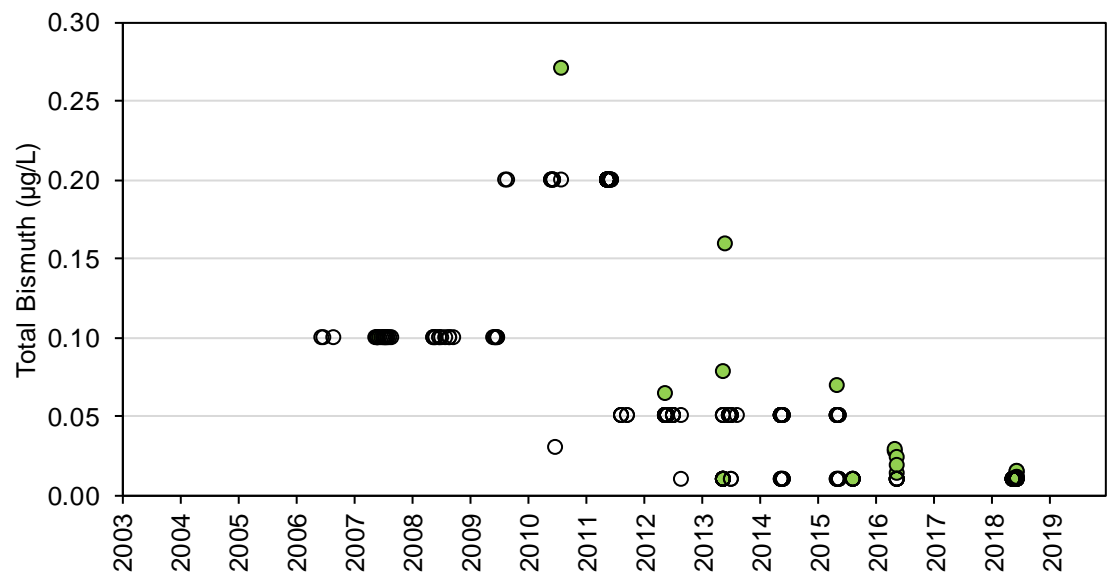


Figure 4G-19: Total Boron Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

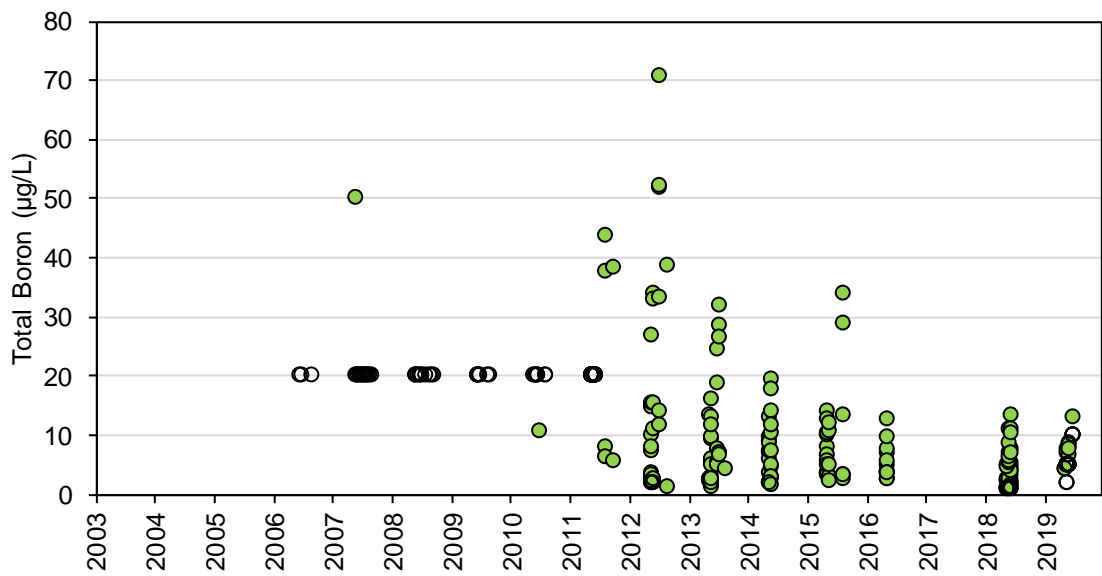


Figure 4G-20: Total Cadmium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

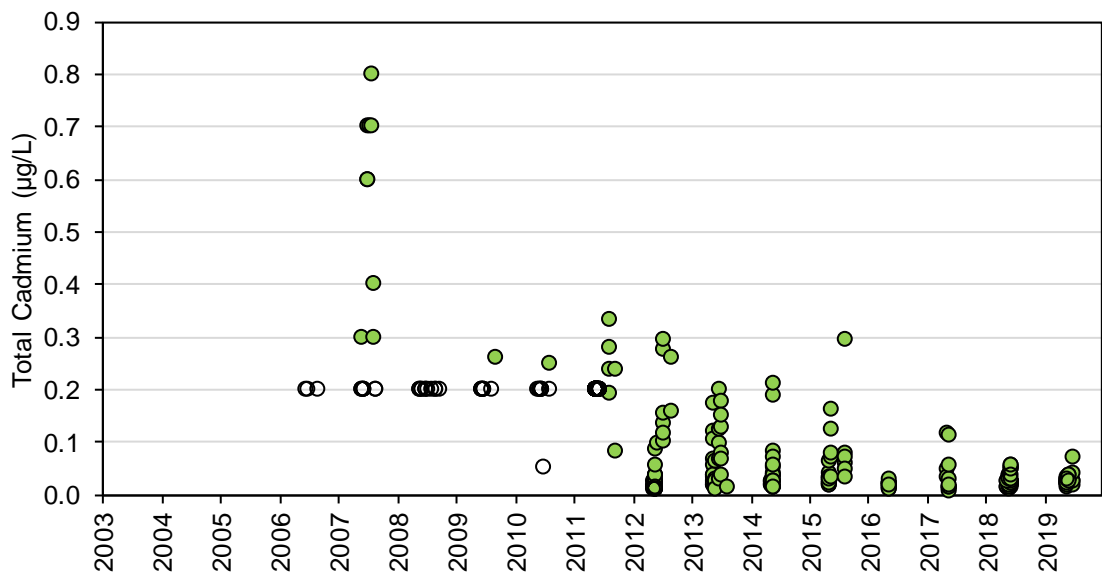


Figure 4G-21: Total Cesium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

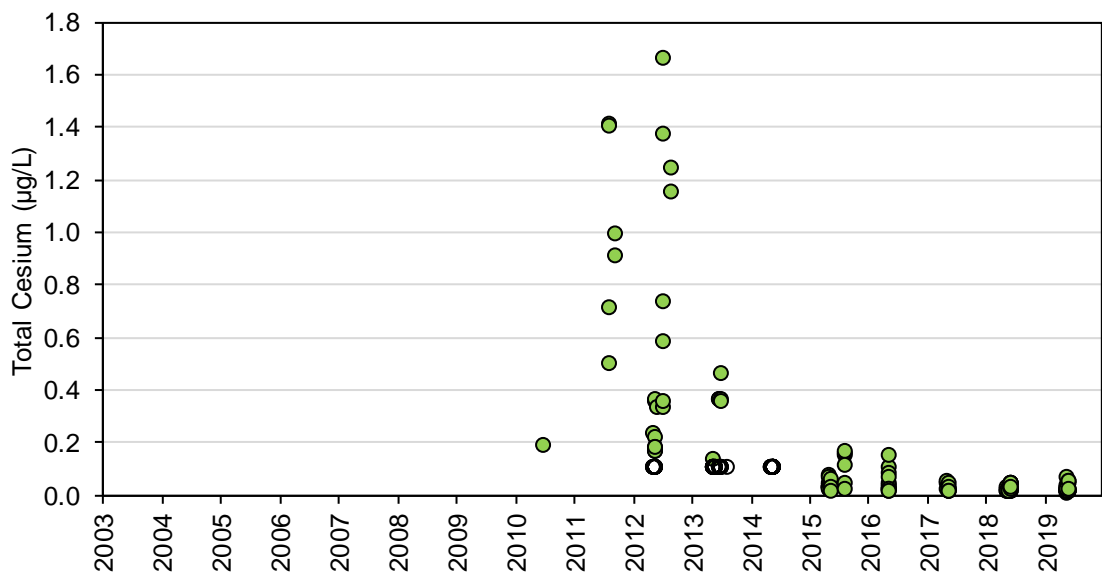


Figure 4G-22: Total Chromium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

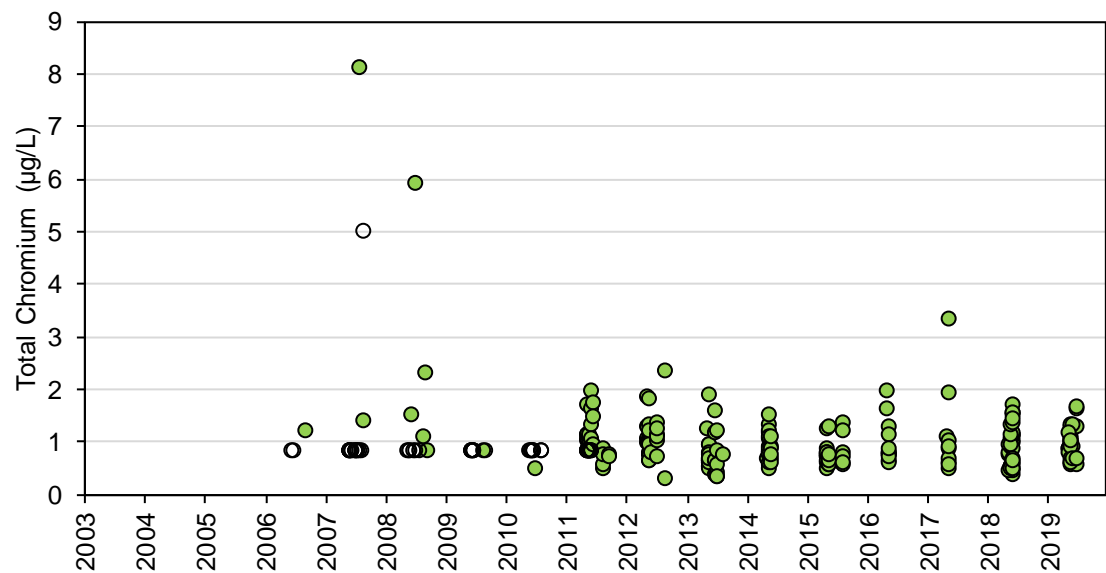


Figure 4G-23: Total Cobalt Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

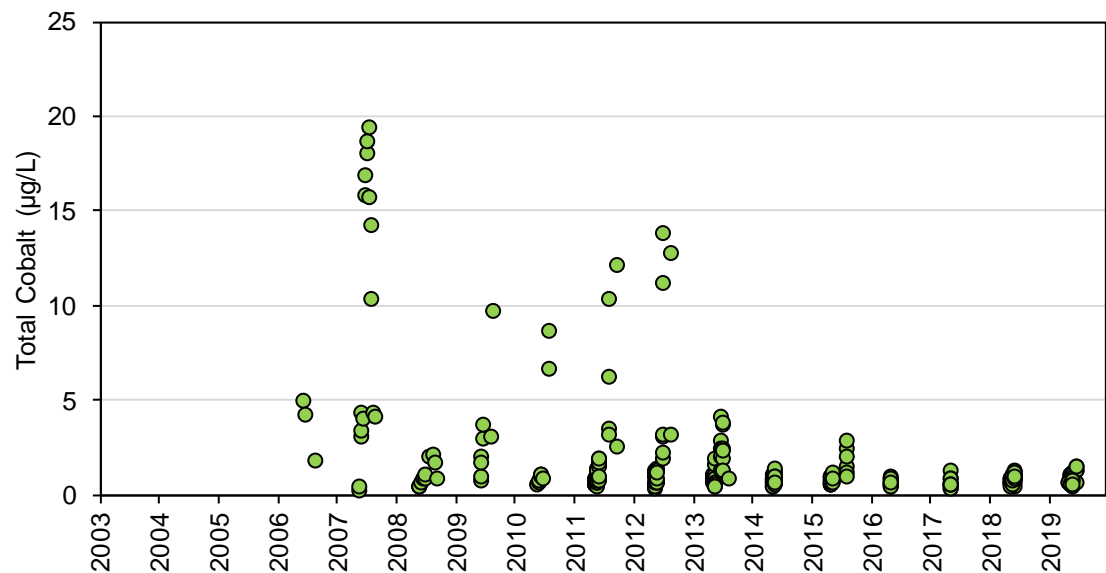


Figure 4G-24: Total Copper Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

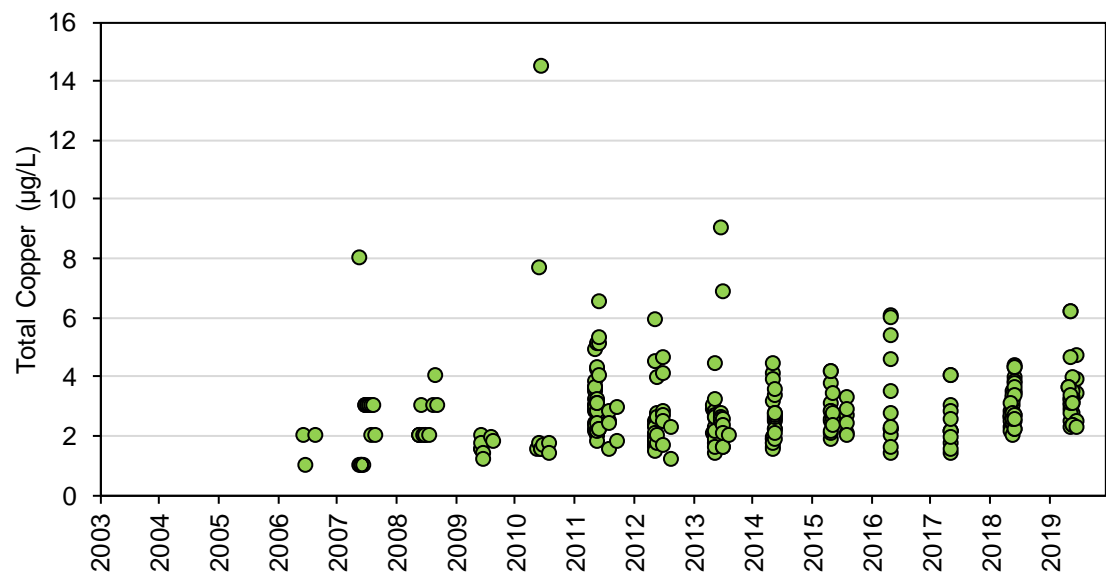


Figure 4G-25: Total Iron Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

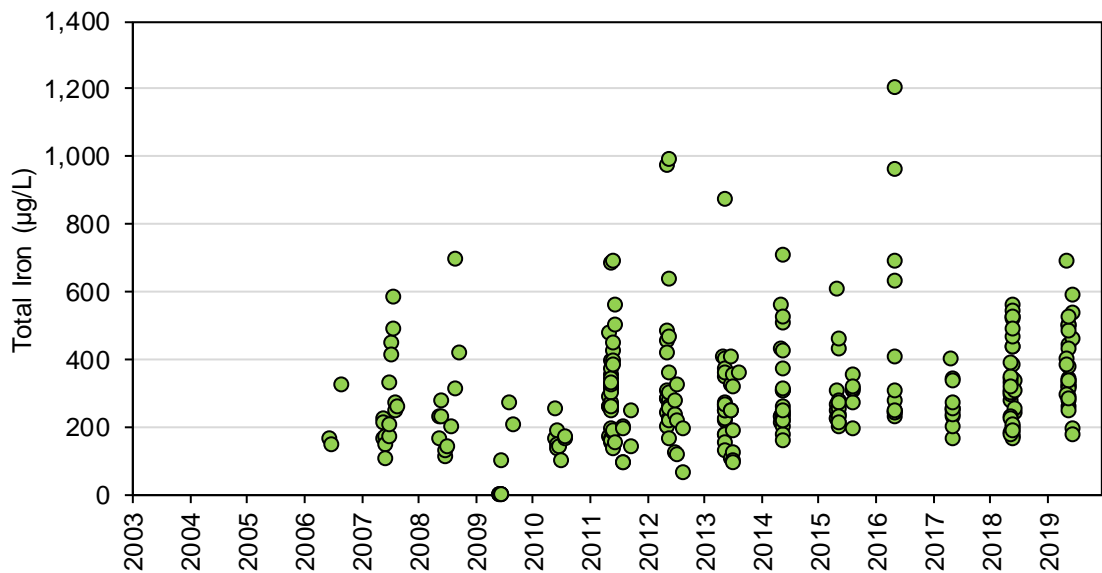


Figure 4G-26: Total Lead Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

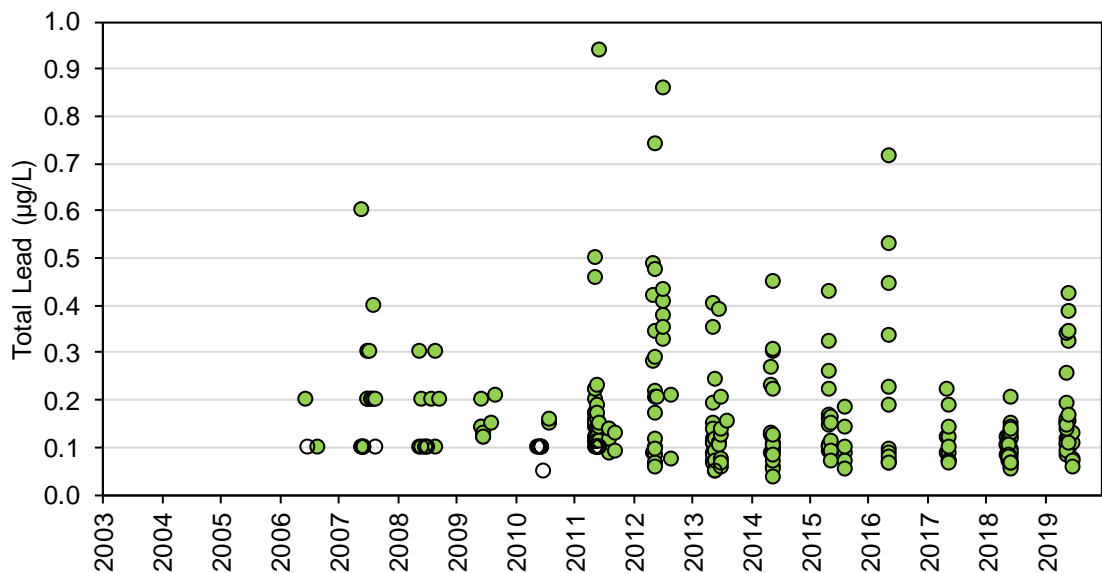


Figure 4G-27: Total Lithium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

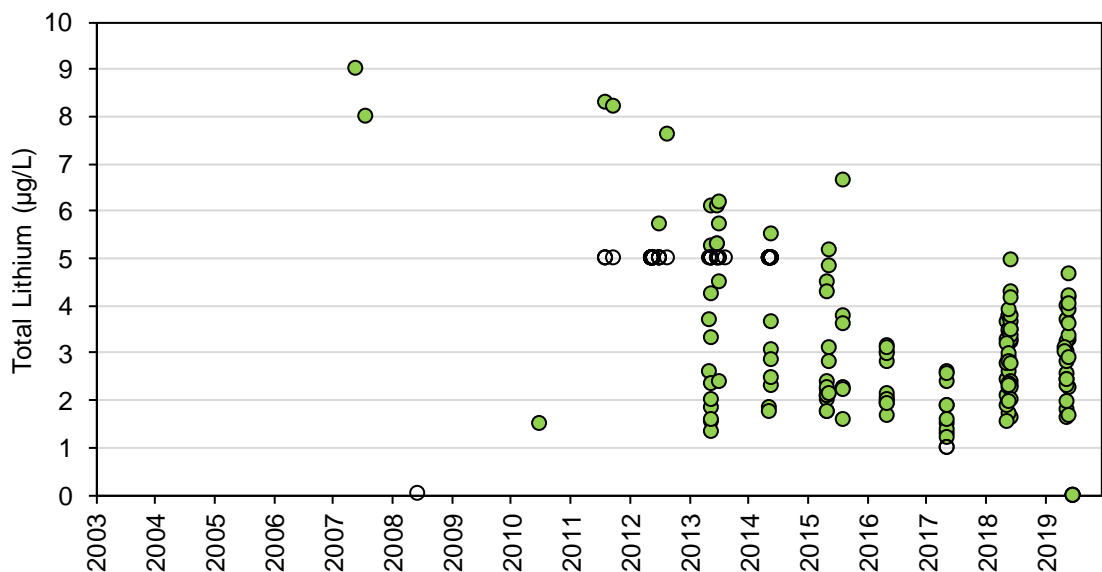


Figure 4G-28: Total Manganese Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

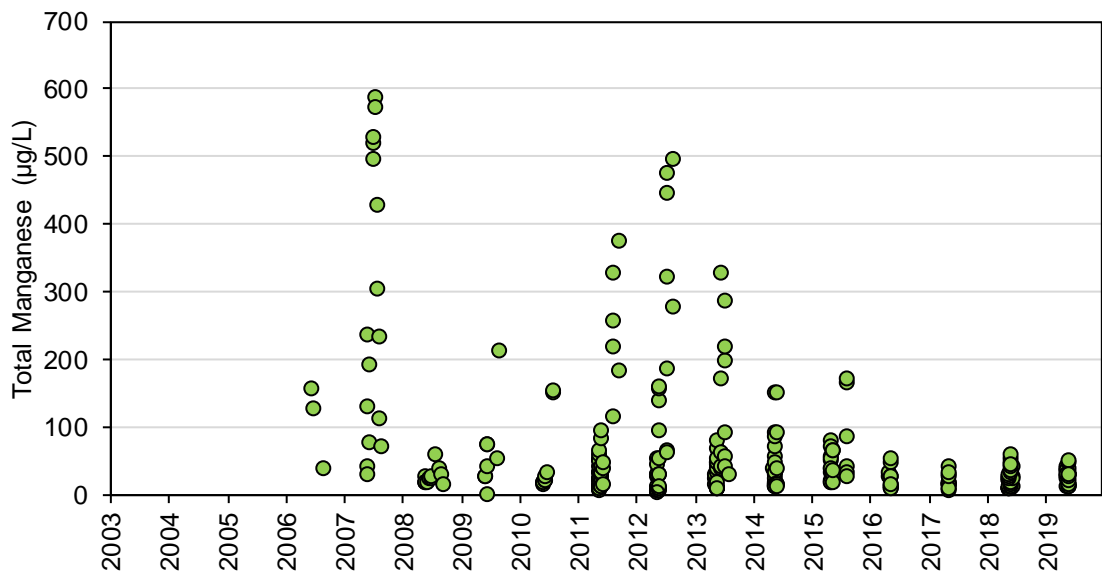


Figure 4G-29: Total Mercury Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

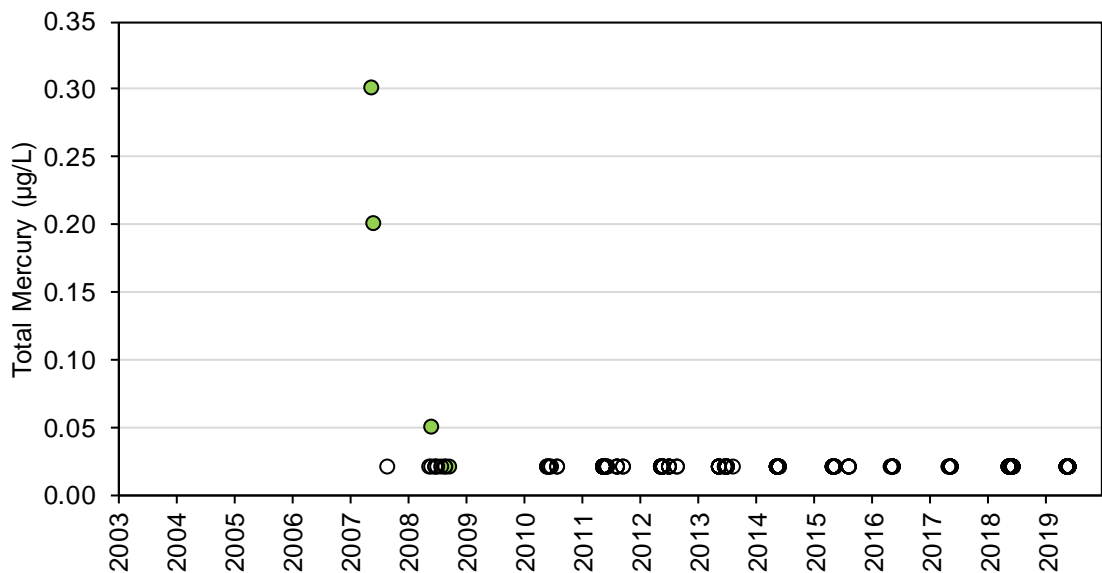


Figure 4G-30: Total Molybdenum Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

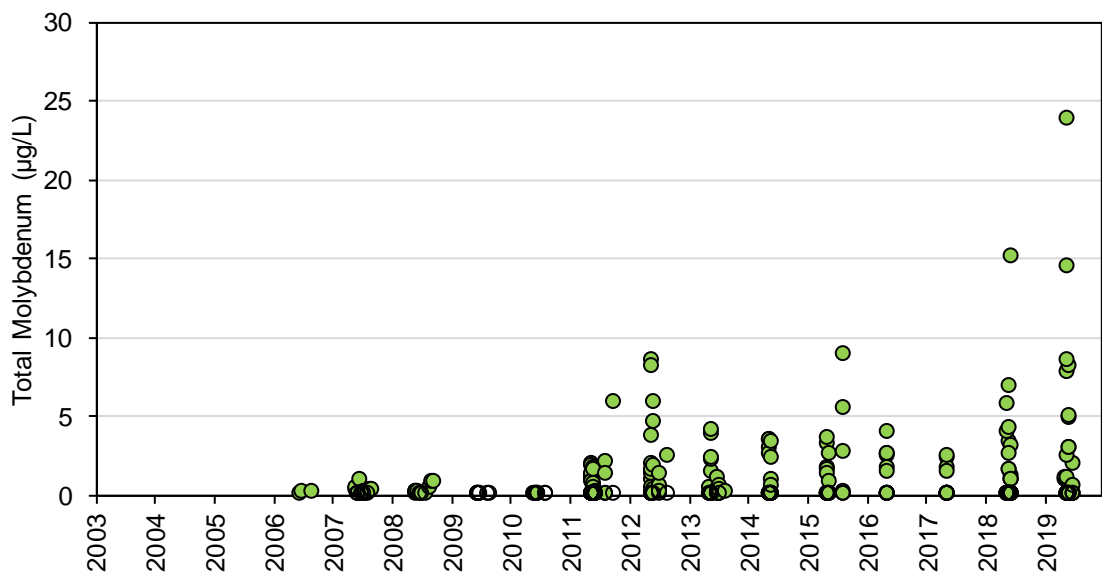


Figure 4G-31: Total Nickel Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

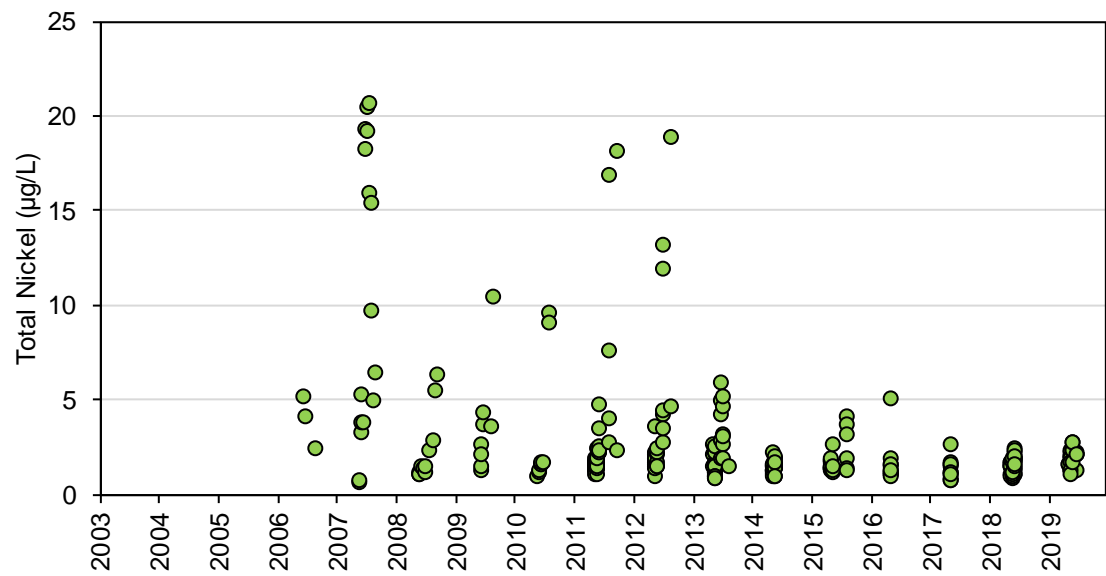


Figure 4G-32: Total Rubidium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

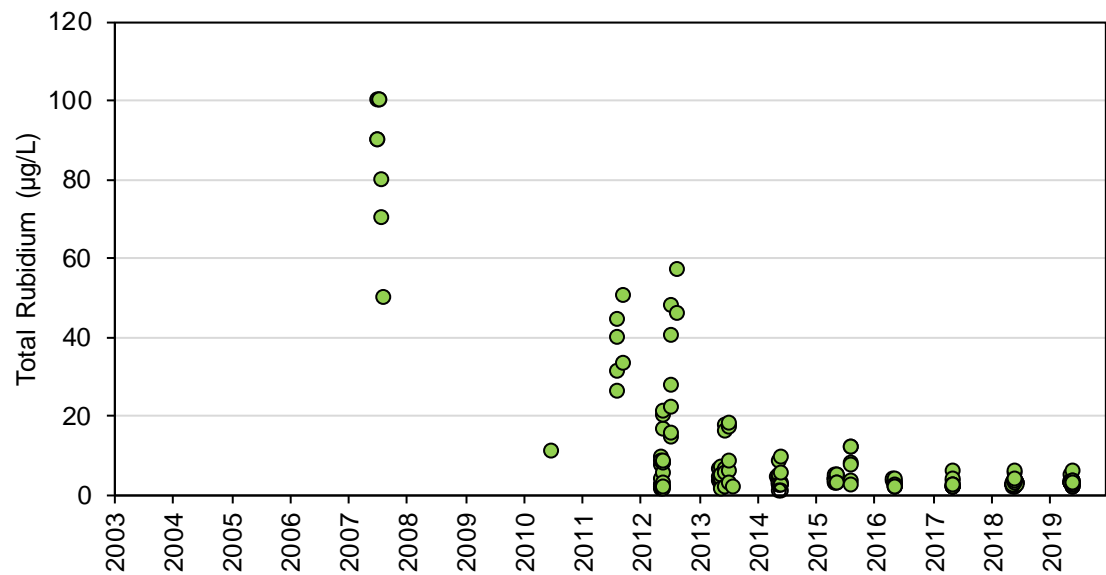


Figure 4G-33: Total Selenium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

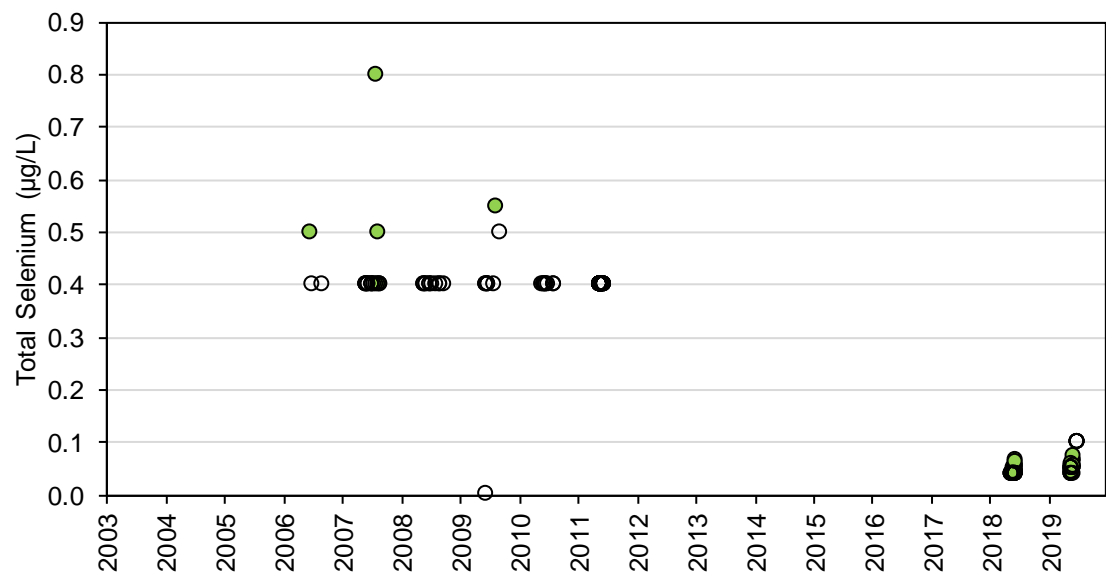


Figure 4G-34: Total Silver Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

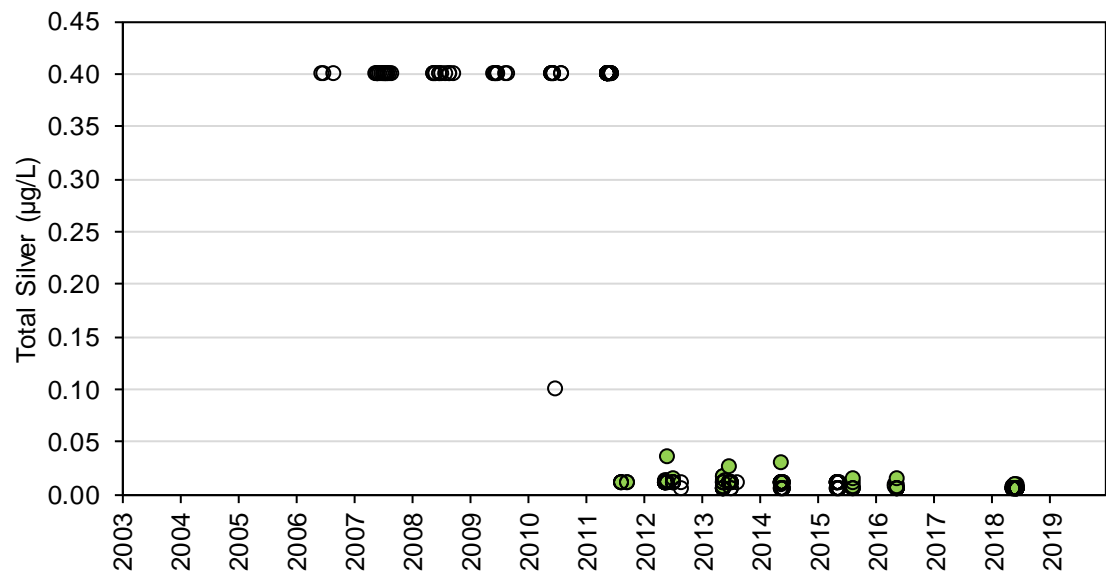


Figure 4G-35: Total Strontium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

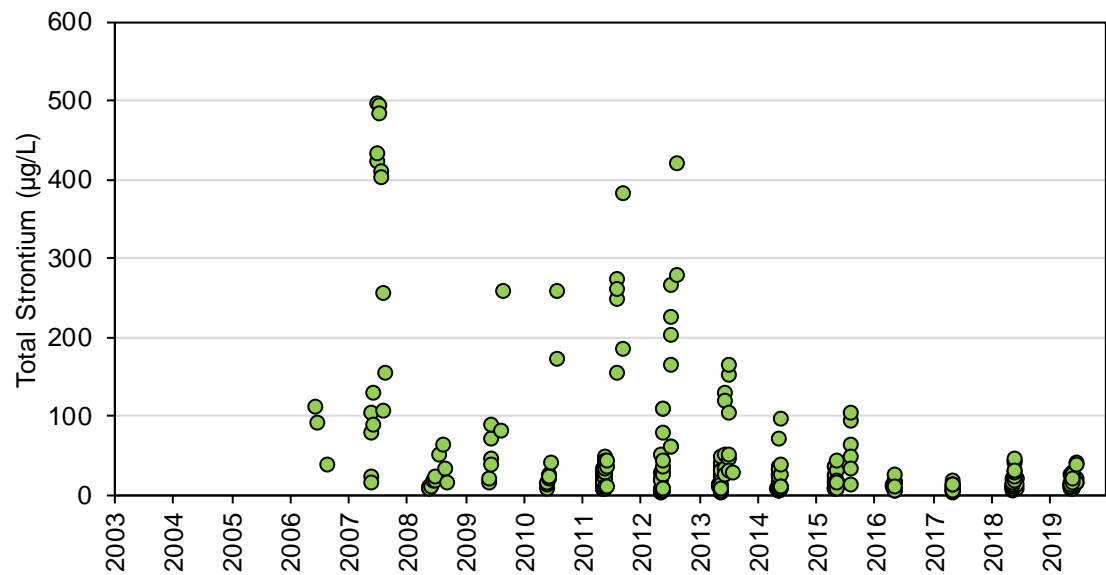


Figure 4G-36: Total Thallium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

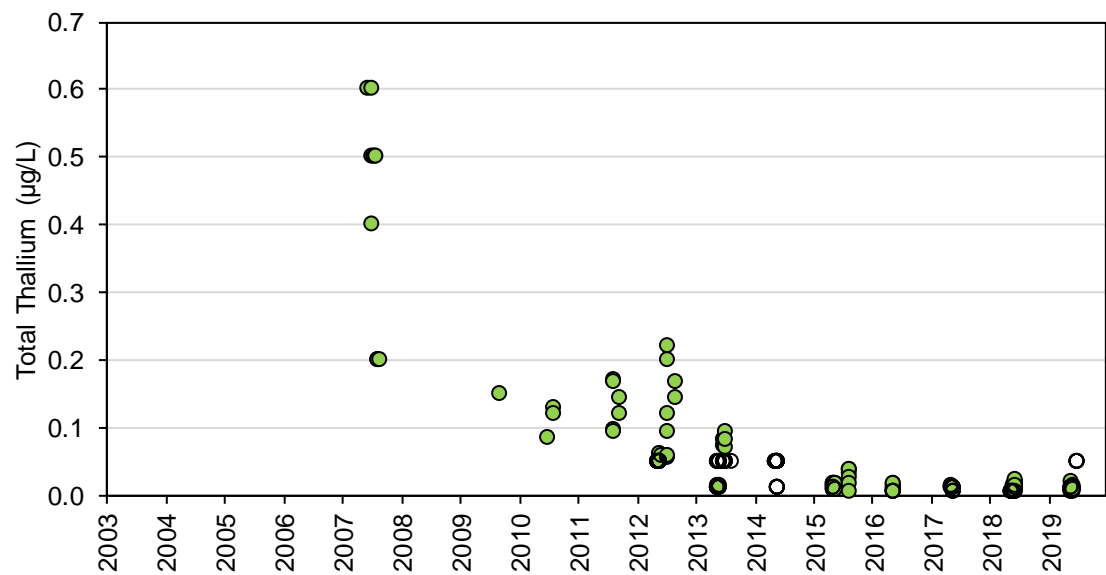


Figure 4G-37: Total Titanium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

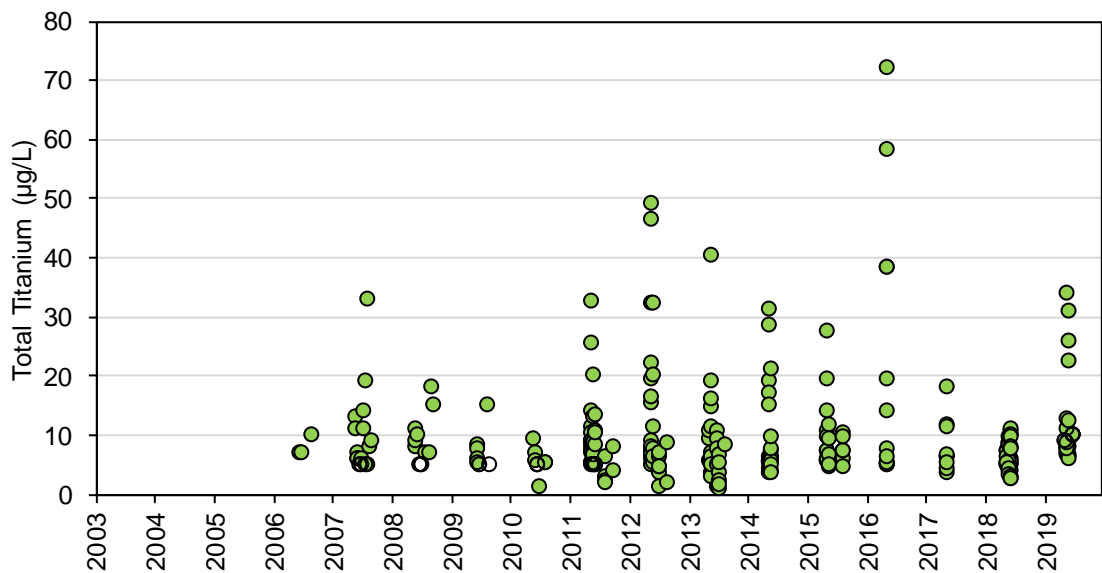


Figure 4G-38: Total Uranium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

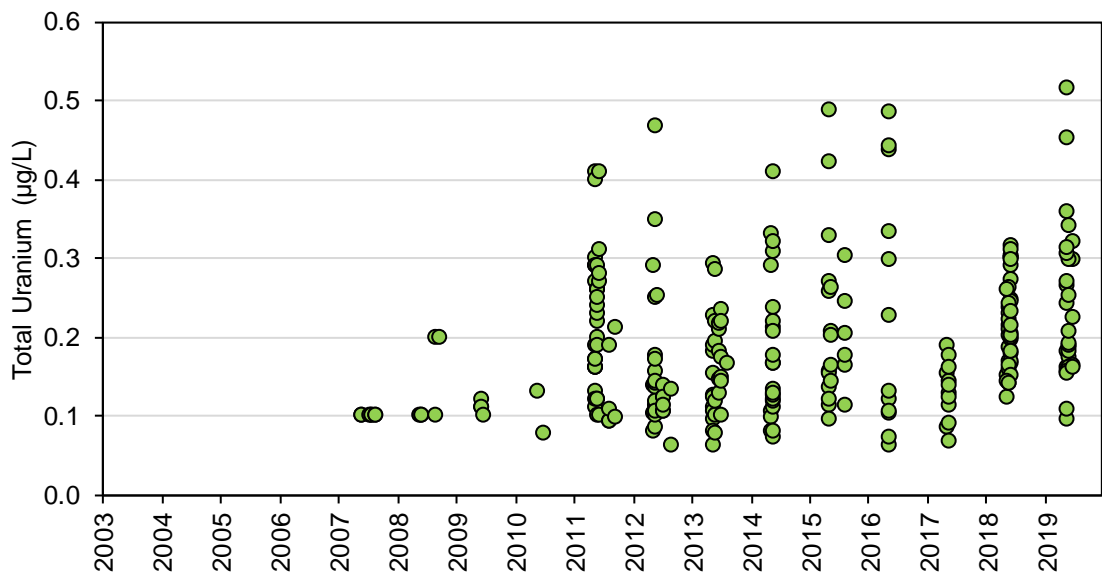


Figure 4G-39: Total Vanadium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

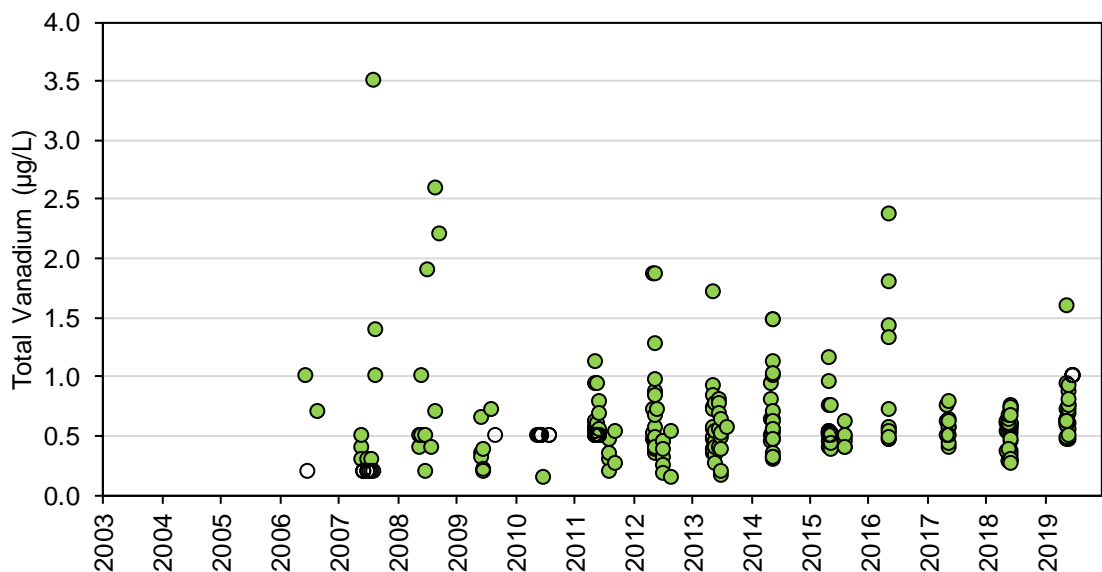


Figure 4G-40: Total Zinc Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

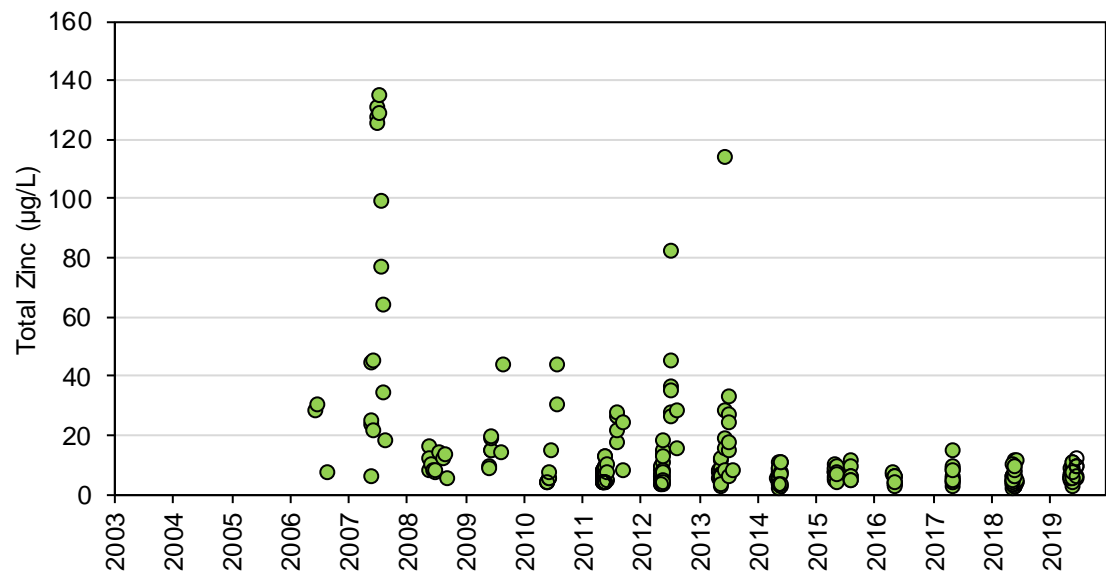


Figure 4G-41: Dissolved Aluminum Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

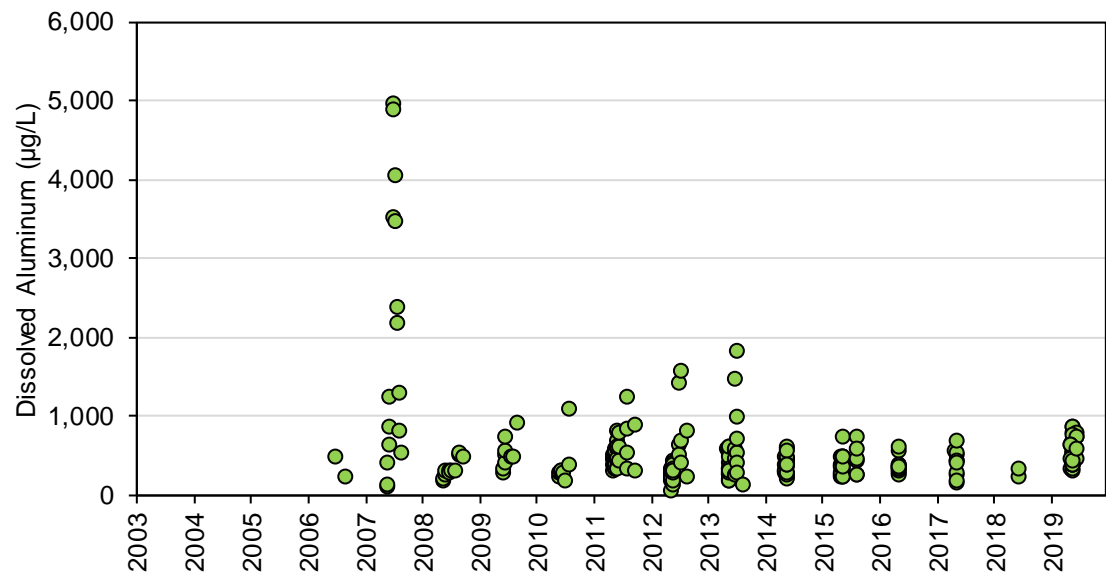


Figure 4G-42: Dissolved Antimony Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

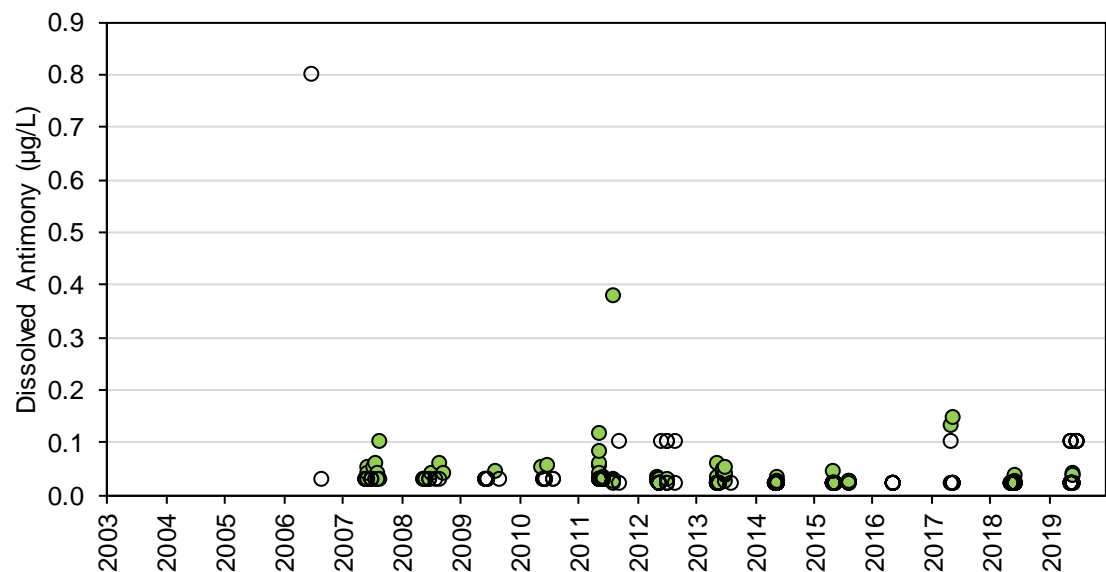


Figure 4G-43: Dissolved Arsenic Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

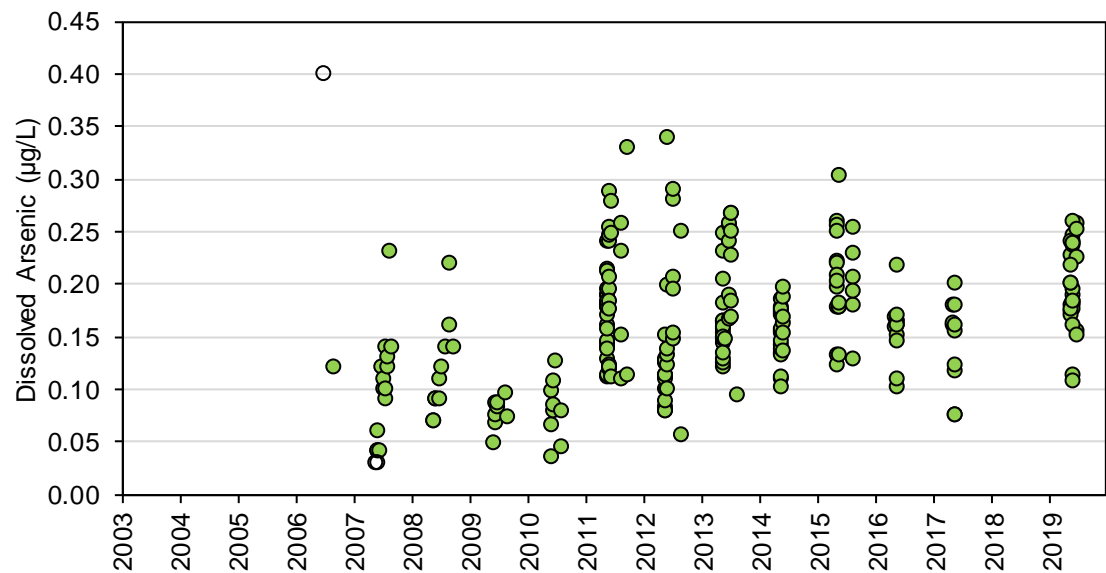


Figure 4G-44: Dissolved Barium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

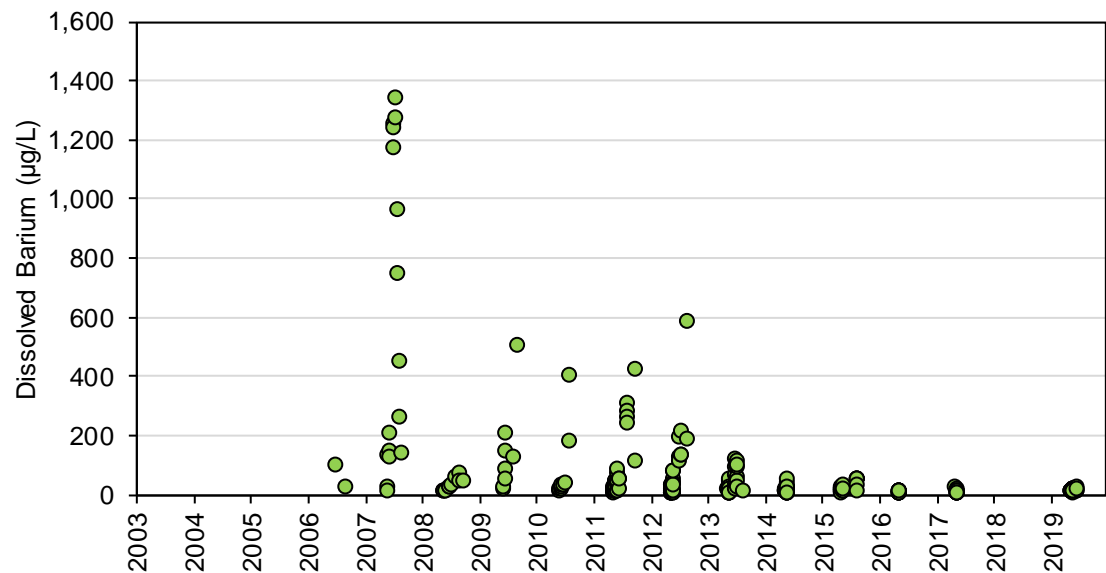


Figure 4G-45: Dissolved Beryllium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

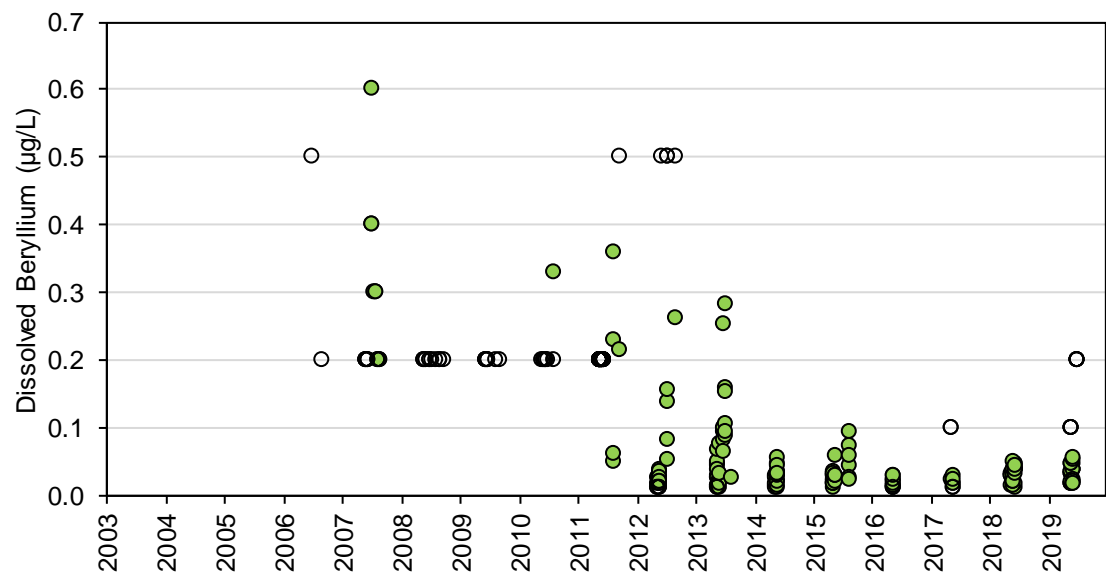


Figure 4G-46: Dissolved Bismuth Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

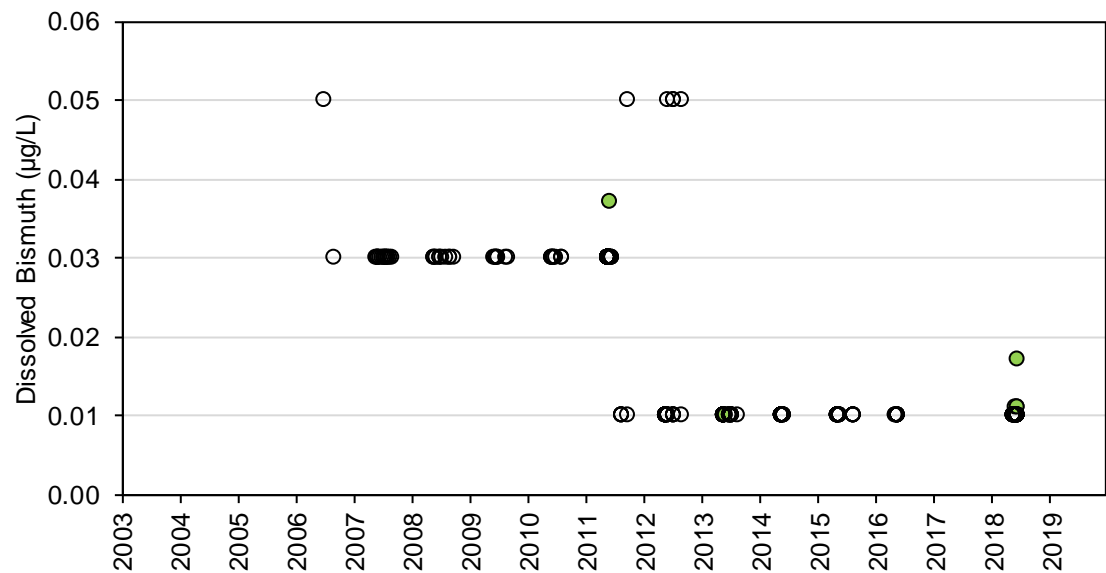


Figure 4G-47: Dissolved Boron Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

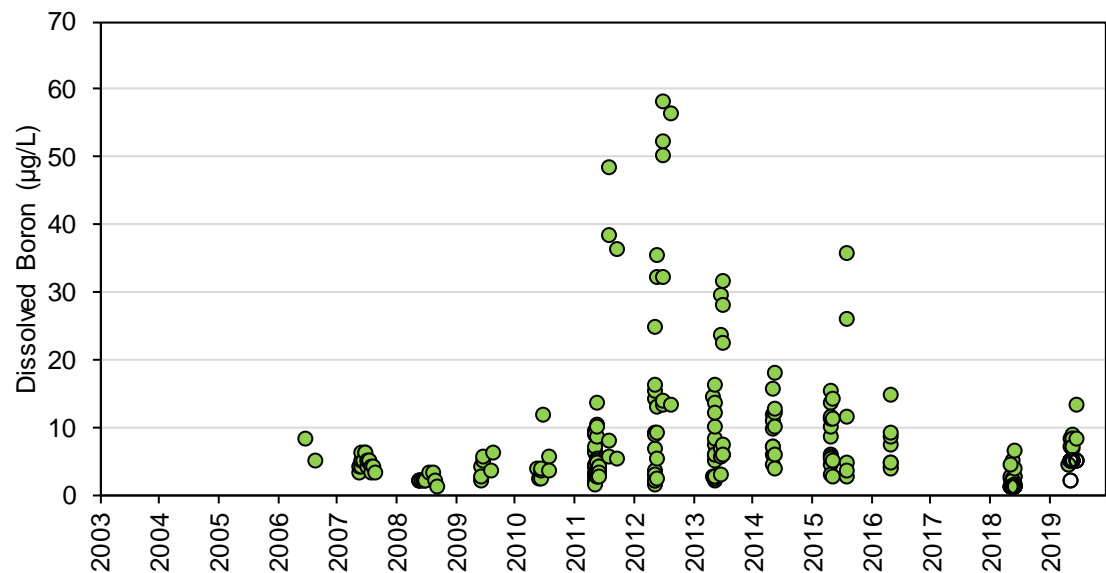


Figure 4G-48: Dissolved Cadmium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

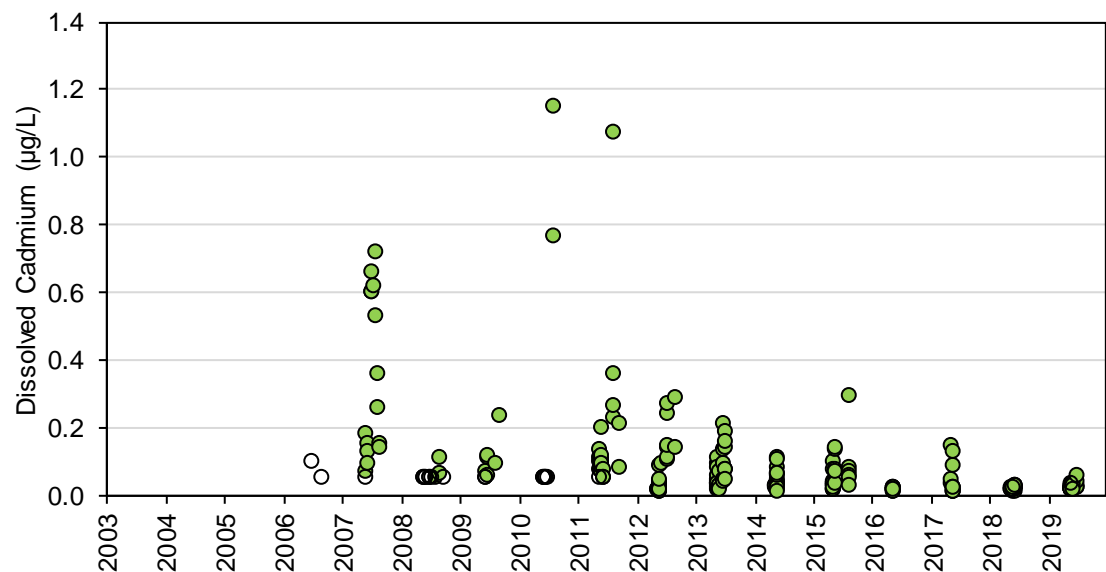


Figure 4G-49: Dissolved Cesium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

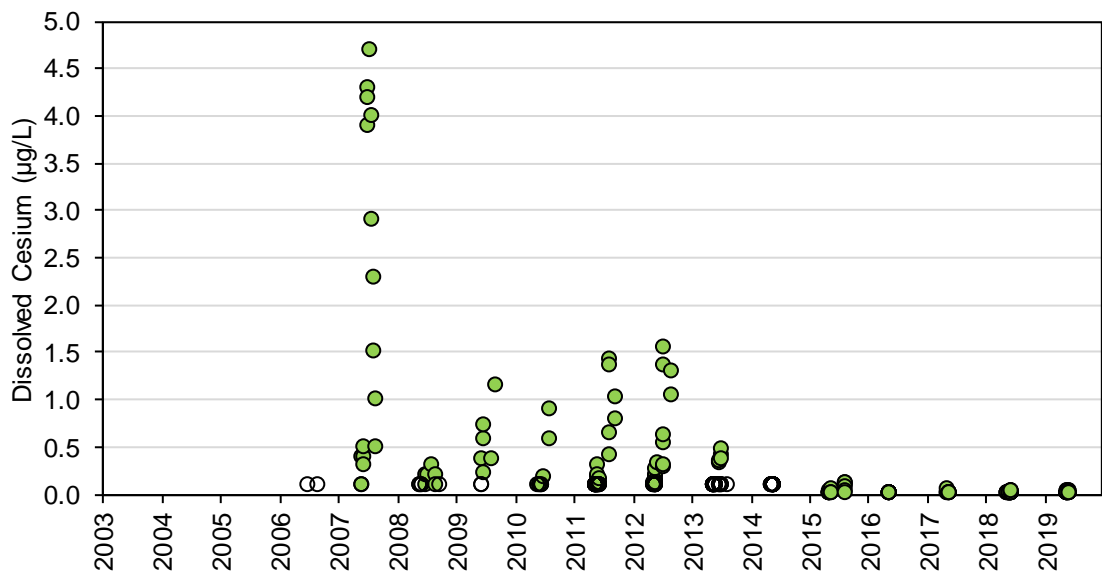


Figure 4G-50: Dissolved Chromium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

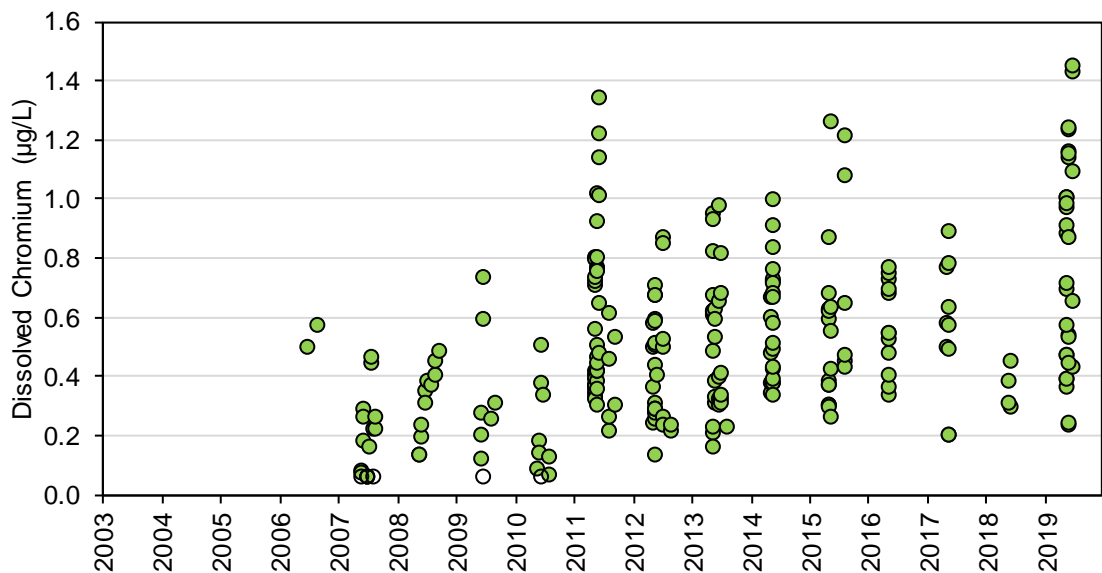


Figure 4G-51: Dissolved Cobalt Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

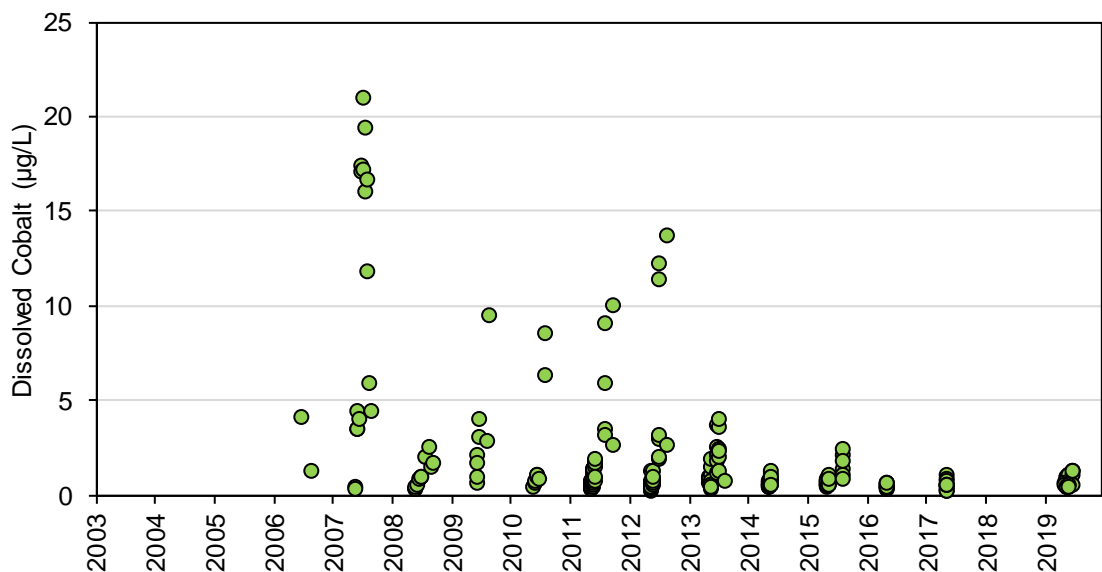


Figure 4G-52: Dissolved Copper Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

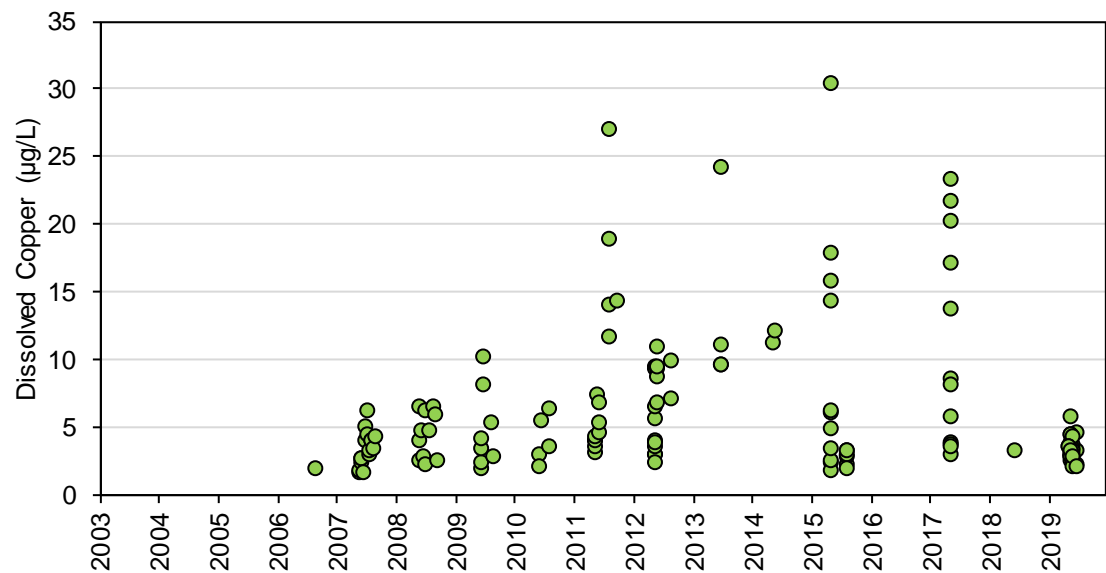


Figure 4G-53: Dissolved Iron Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

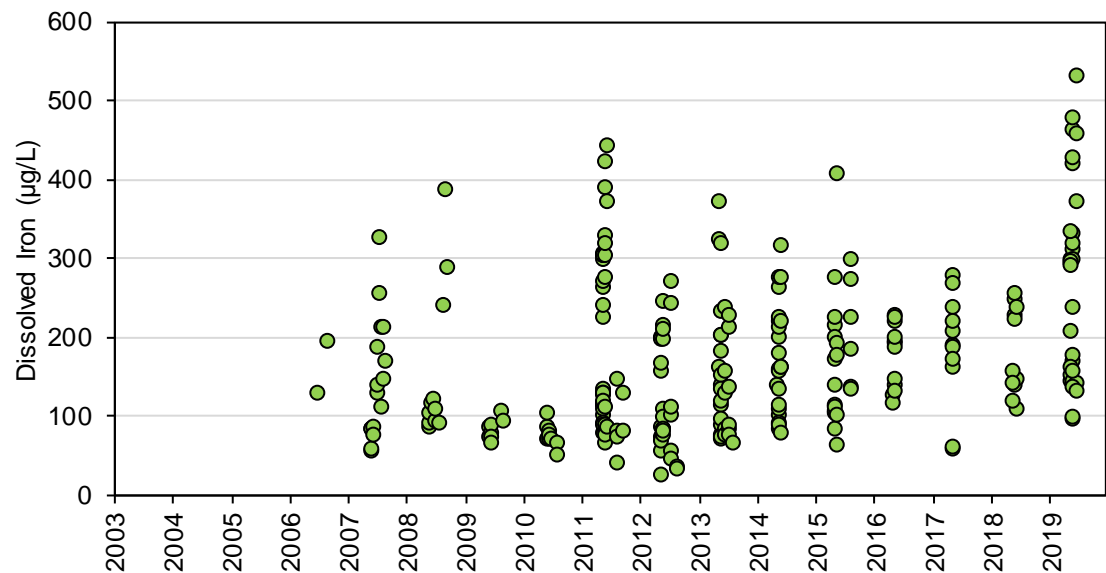


Figure 4G-54: Dissolved Lead Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

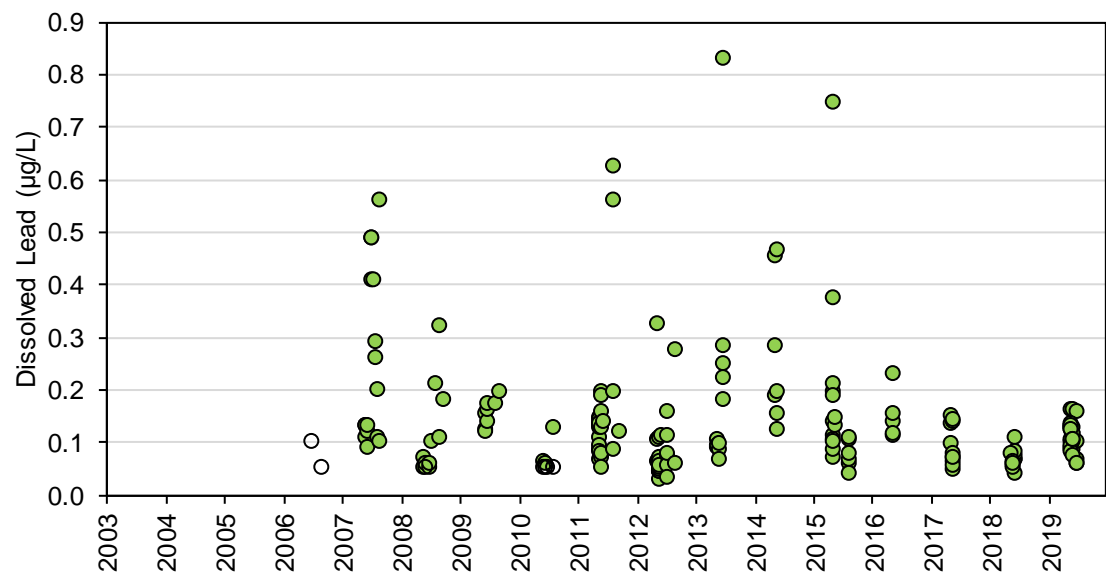


Figure 4G-55: Dissolved Lithium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

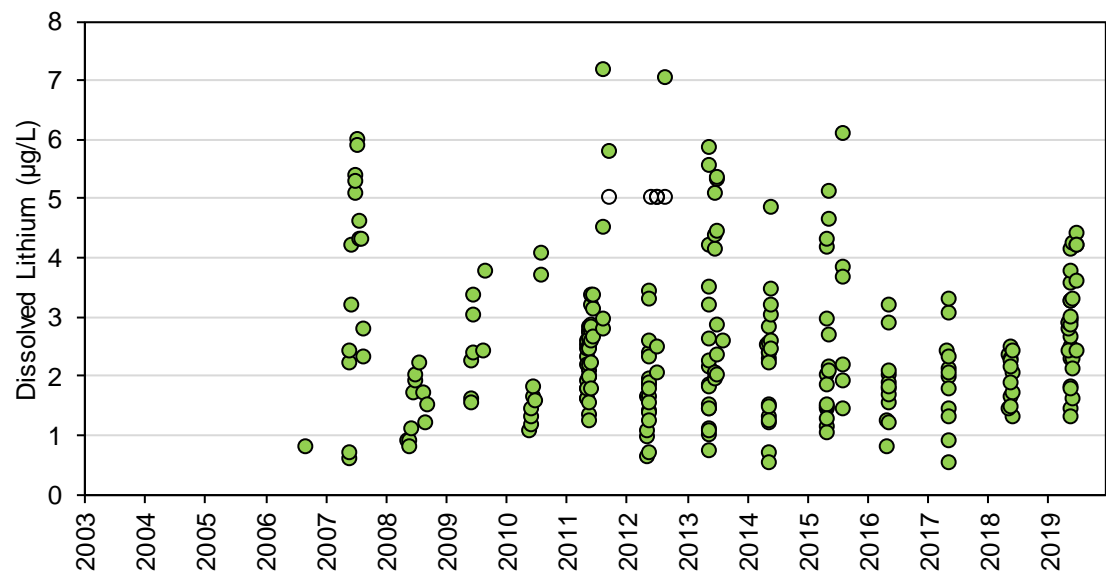


Figure 4G-56: Dissolved Manganese Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

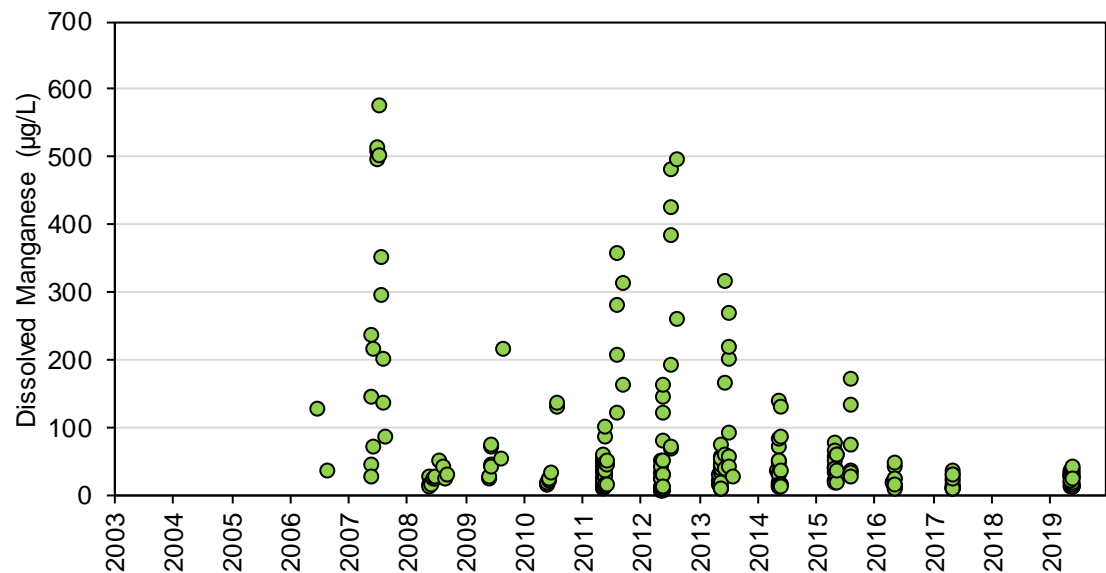


Figure 4G-57: Dissolved Mercury Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

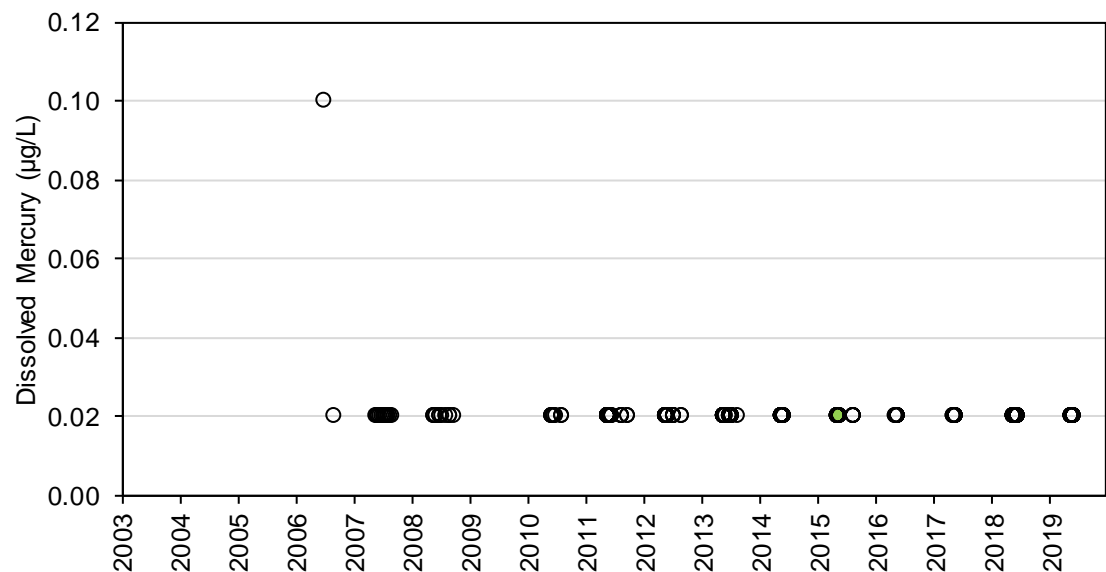


Figure 4G-58: Dissolved Molybdenum Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

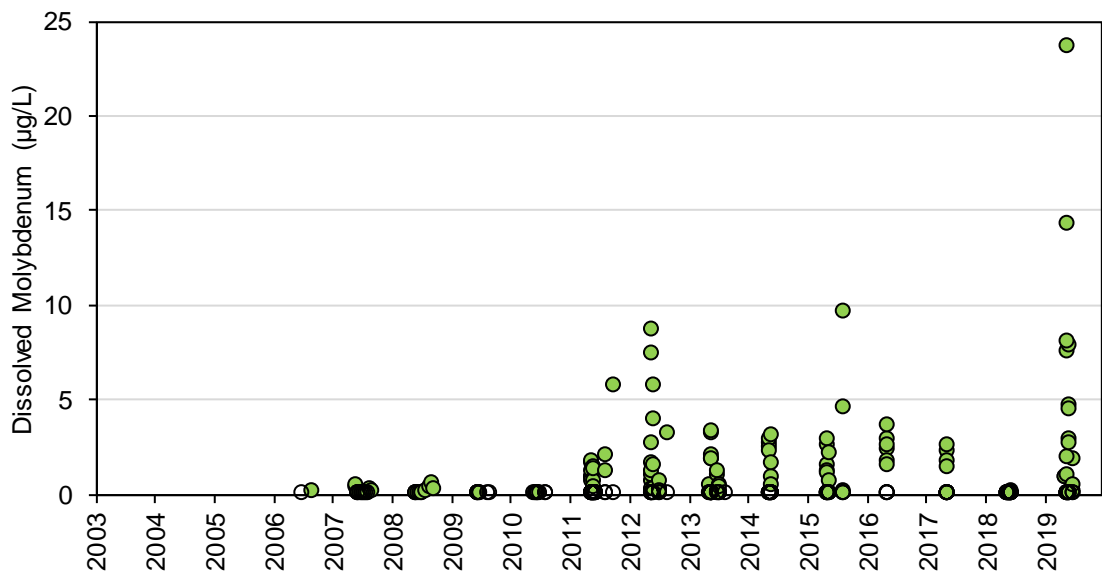


Figure 4G-59: Dissolved Nickel Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

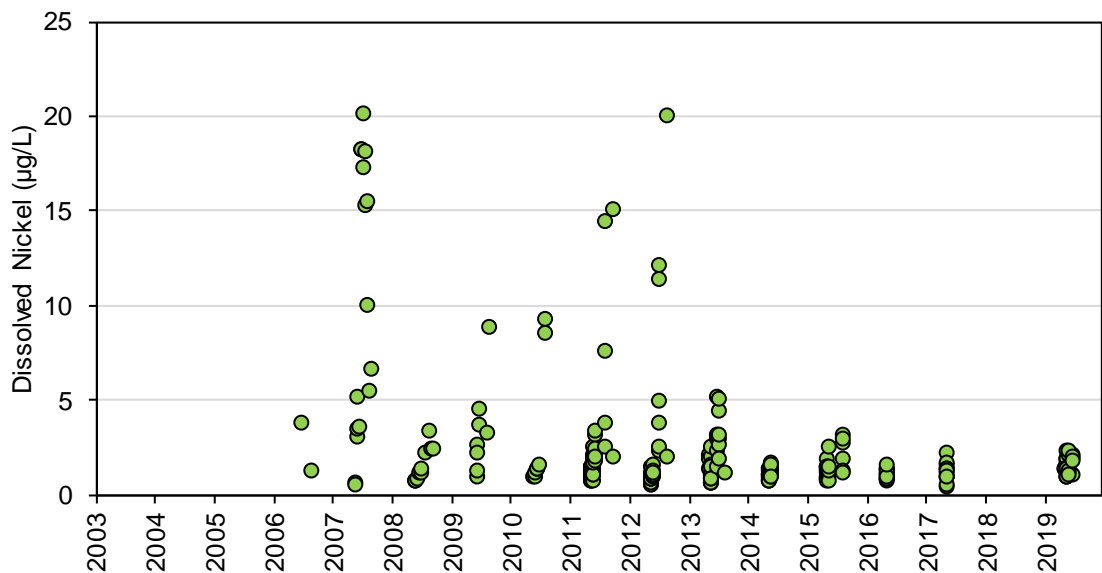


Figure 4G-60: Dissolved Rubidium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

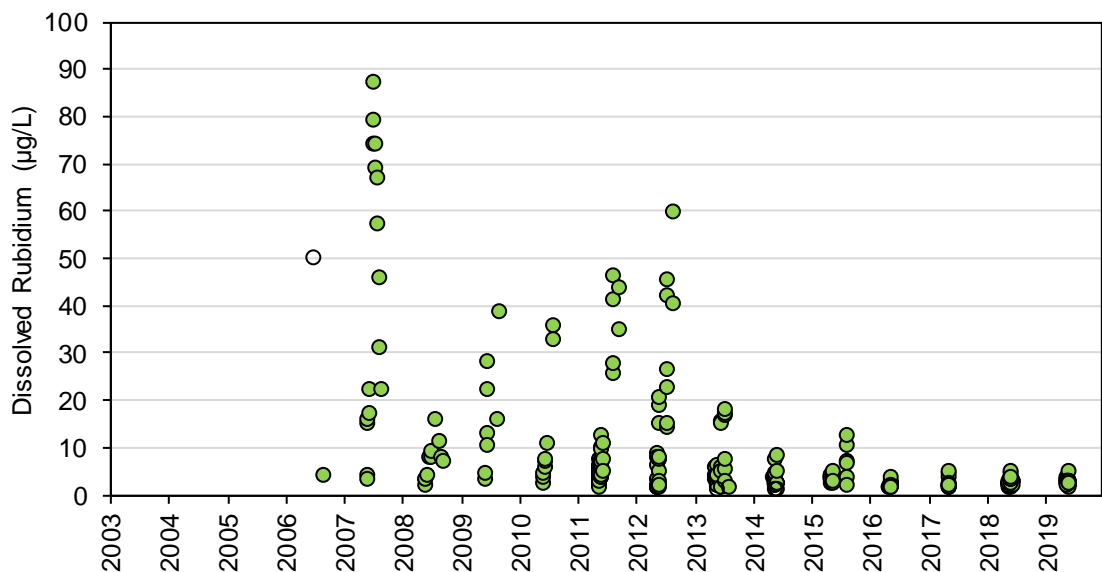


Figure 4G-61: Dissolved Selenium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

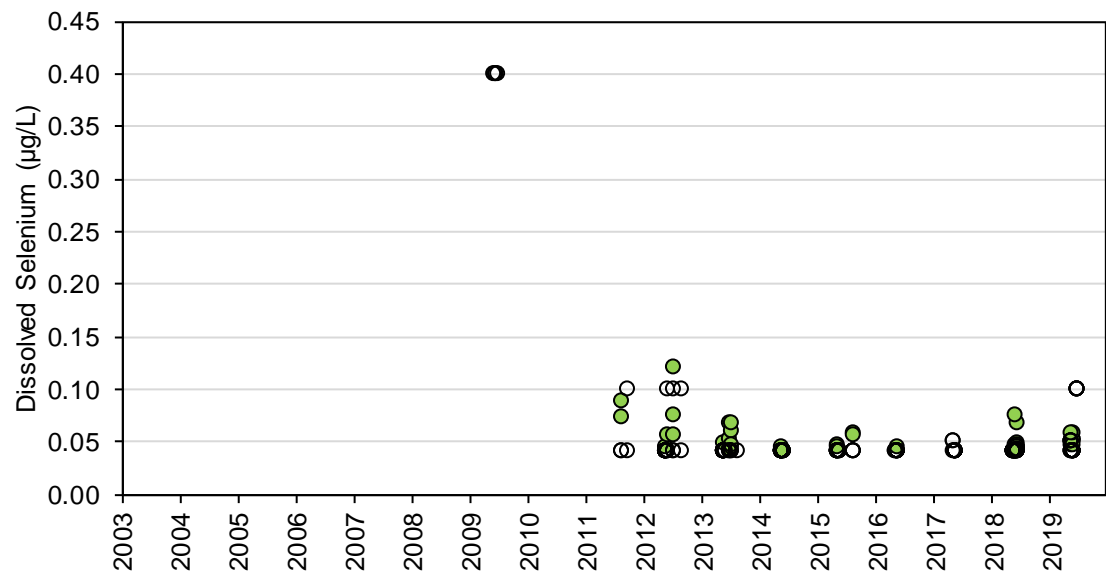


Figure 4G-62: Dissolved Silver Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

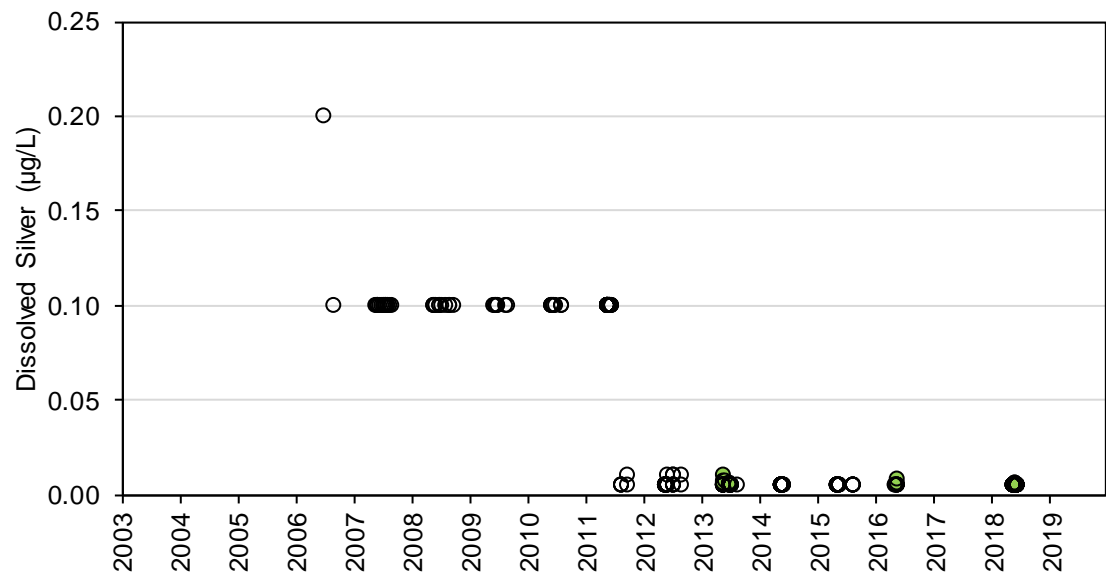


Figure 4G-63: Dissolved Strontium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

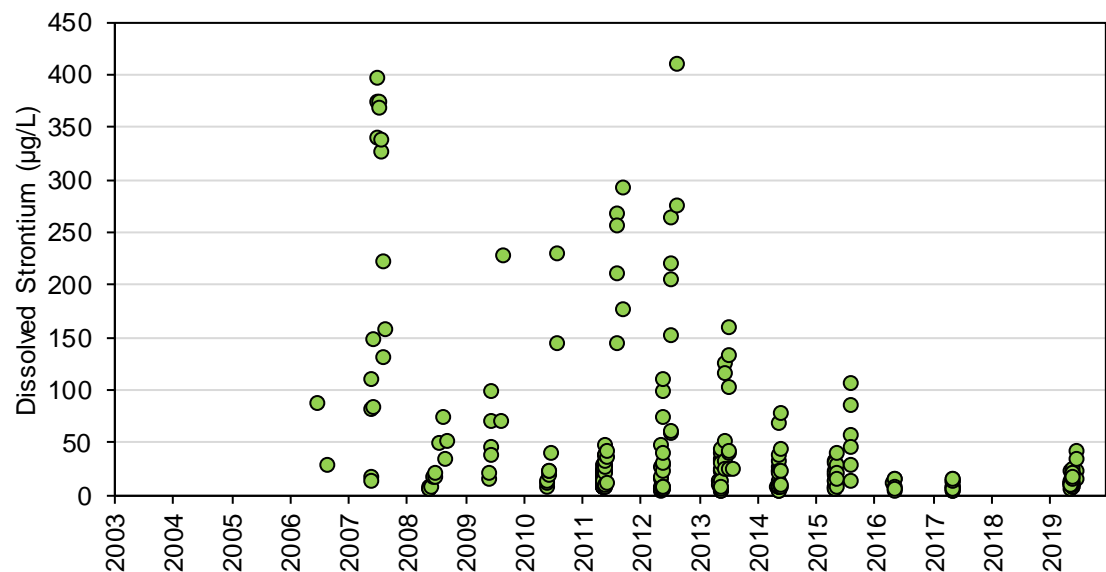


Figure 4G-64: Dissolved Thallium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

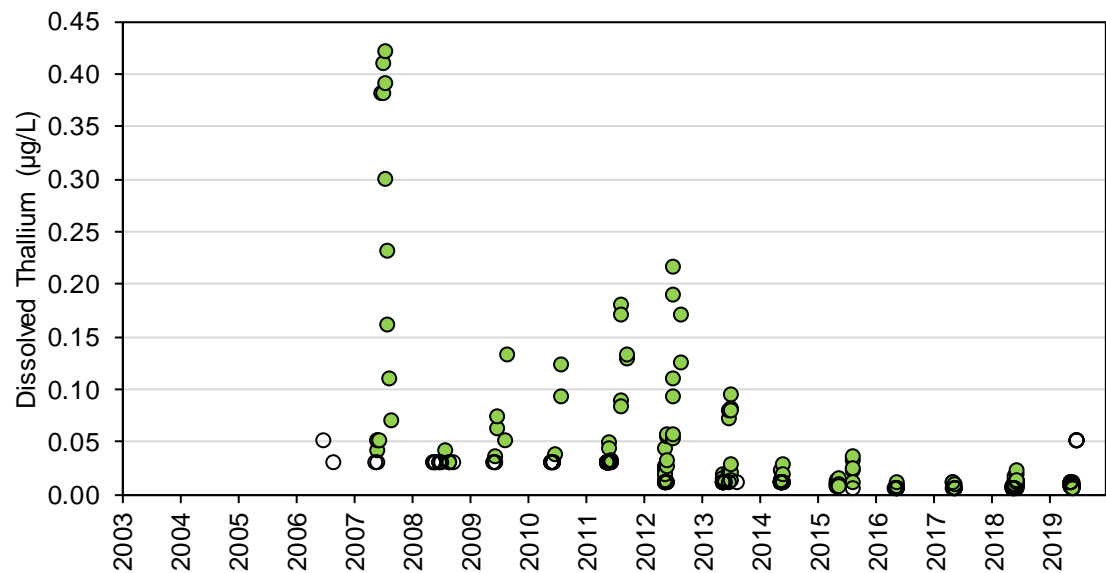


Figure 4G-65: Dissolved Titanium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

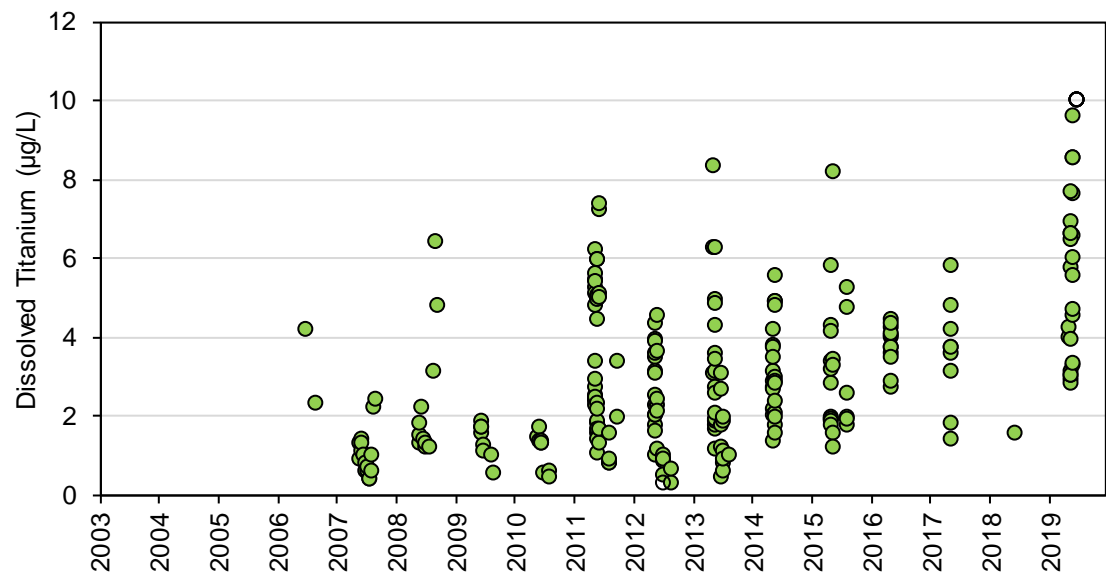


Figure 4G-66: Dissolved Uranium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

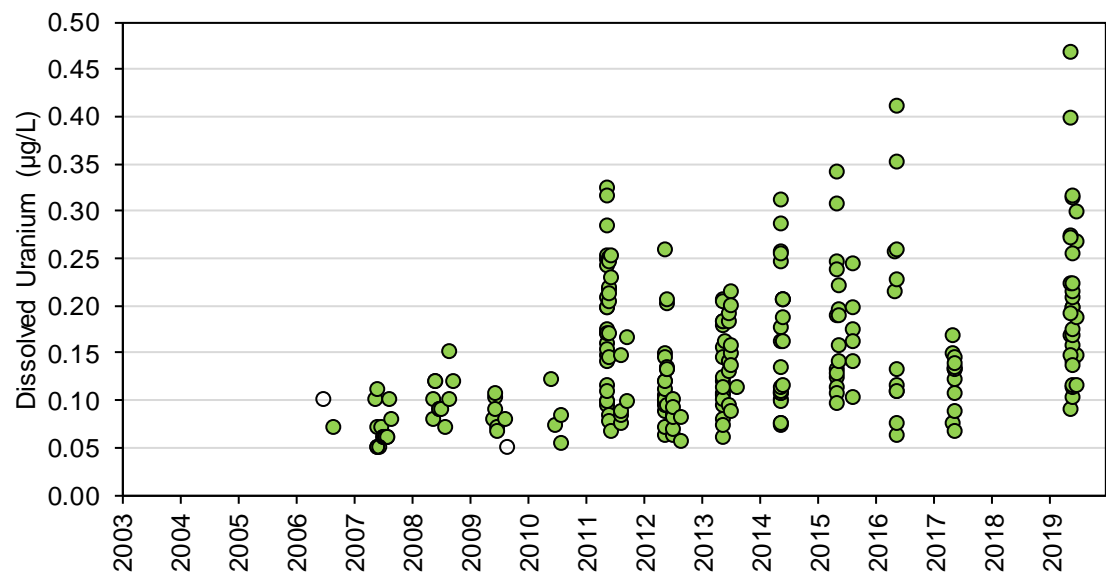


Figure 4G-67: Dissolved Vanadium Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance

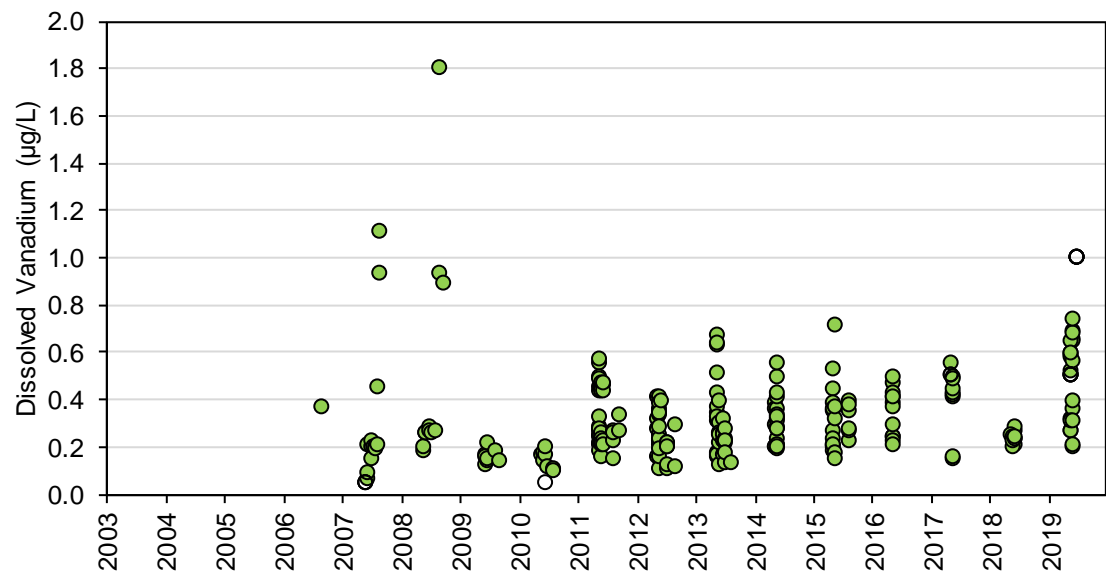
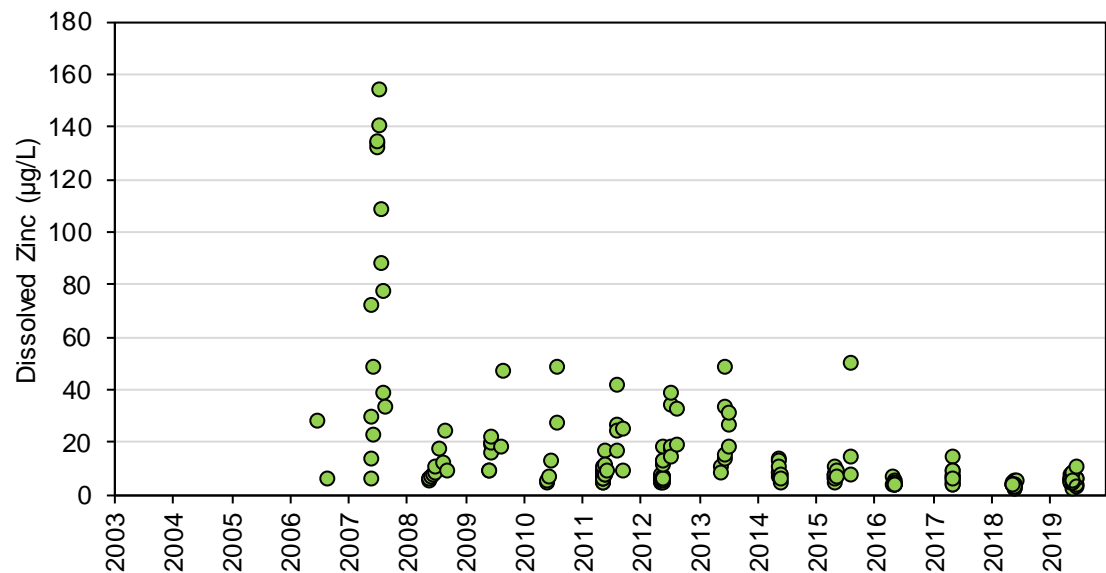


Figure 4G-68: Dissolved Zinc Concentrations at Station SNP 02-09 during Construction, Operations, and Extended Care and Maintenance



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ATTACHMENT 4H. FIGURES OF WATER QUALITY FOR SNP 02-10

Figure 4H-1: Total Dissolved Solids, calculated (lab) Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

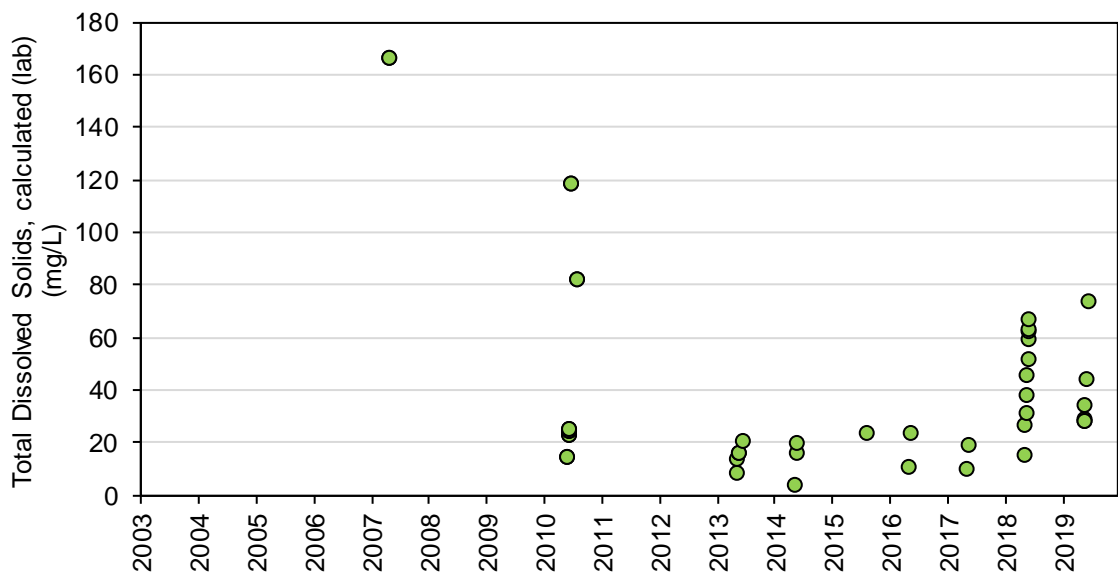


Figure 4H-2: Calcium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

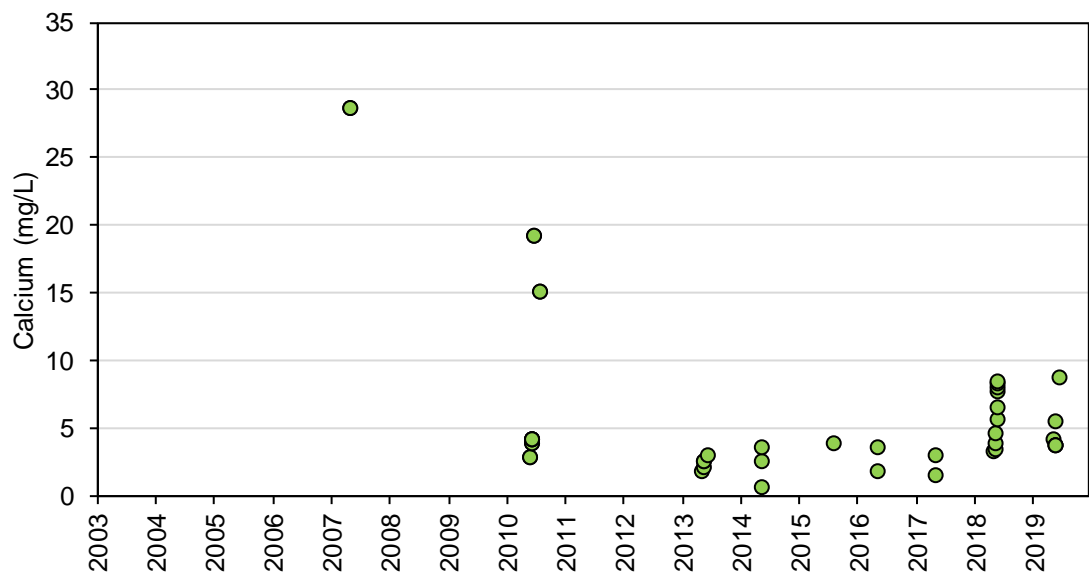


Figure 4H-3: Chloride Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

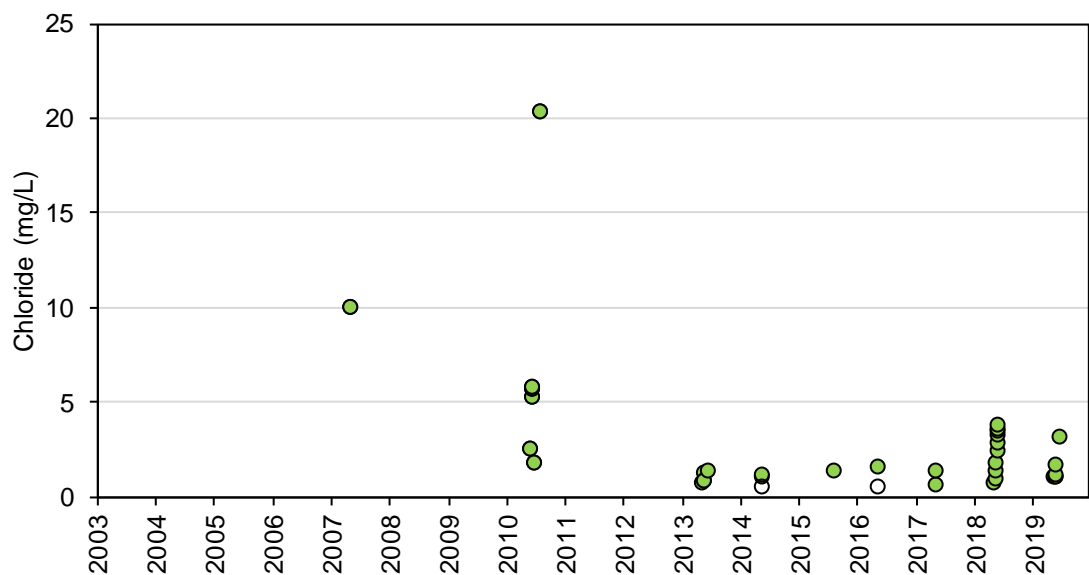


Figure 4H-4: Fluoride Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

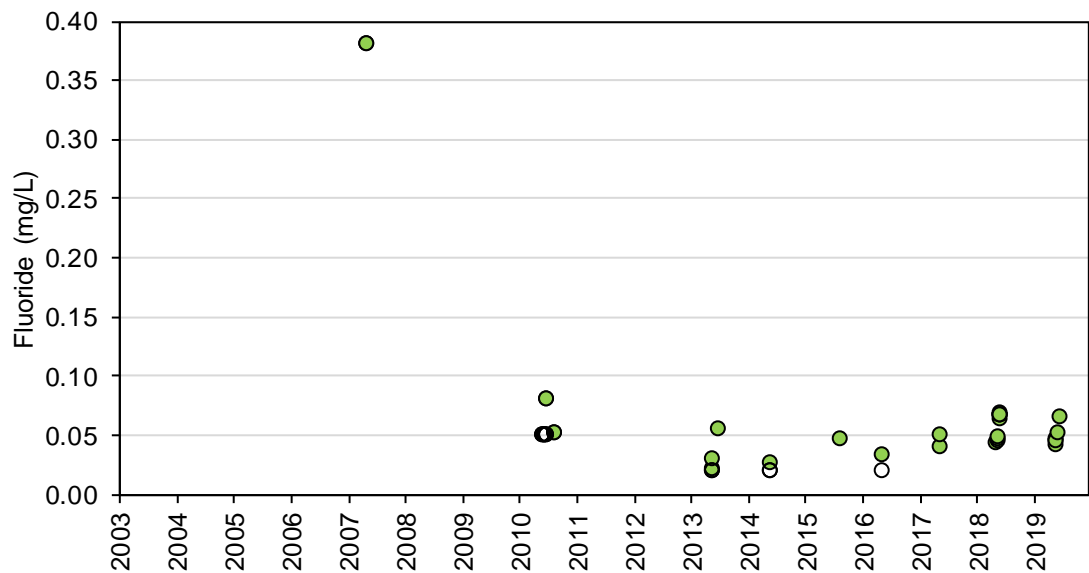


Figure 4H-5: Magnesium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

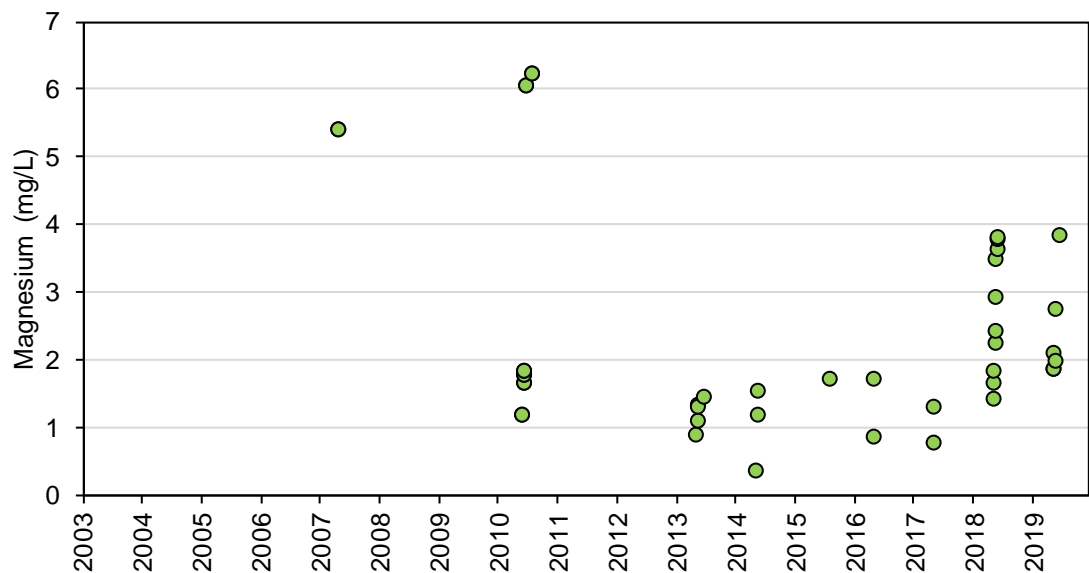


Figure 4H-6: Potassium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

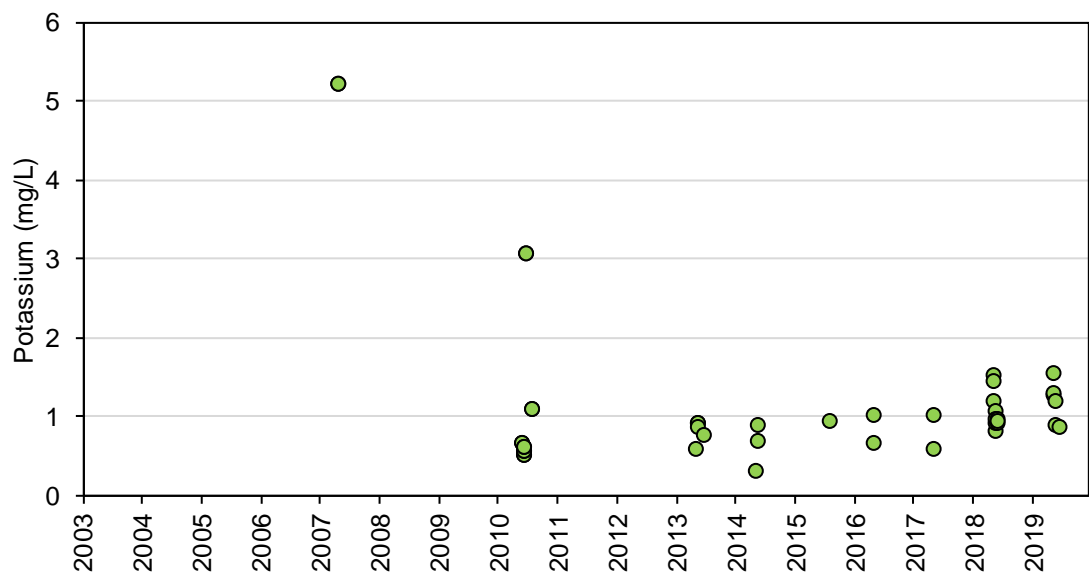


Figure 4H-7: Sodium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

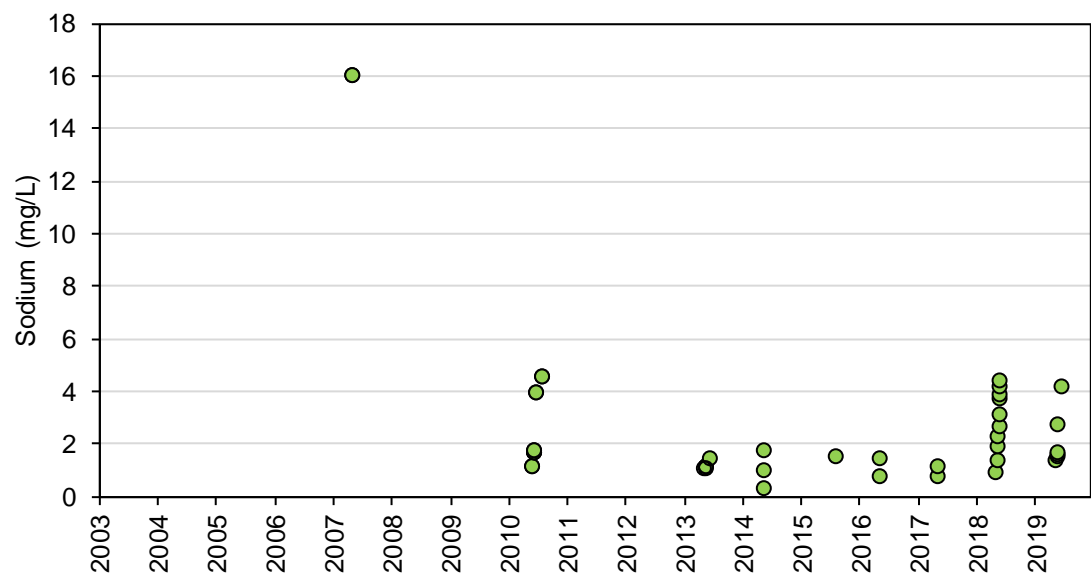


Figure 4H-8: Sulphate Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

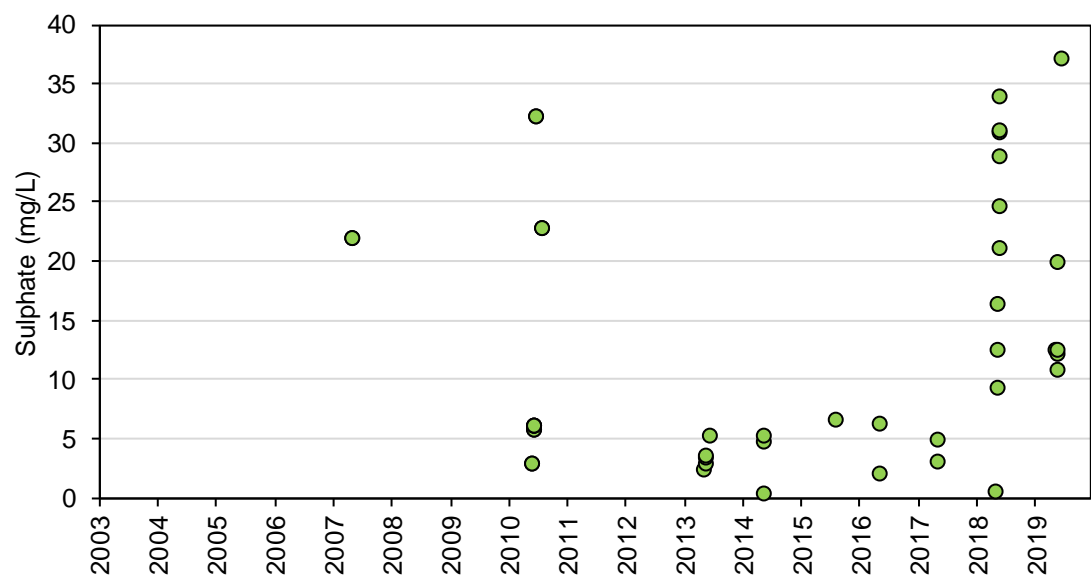


Figure 4H-9: Nitrate Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

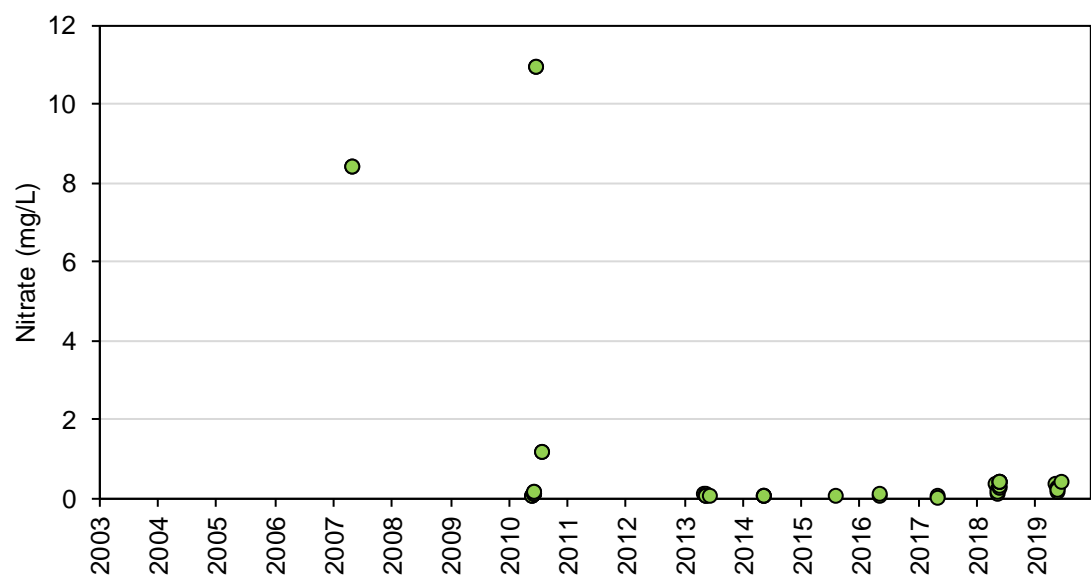


Figure 4H-10: Nitrite Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

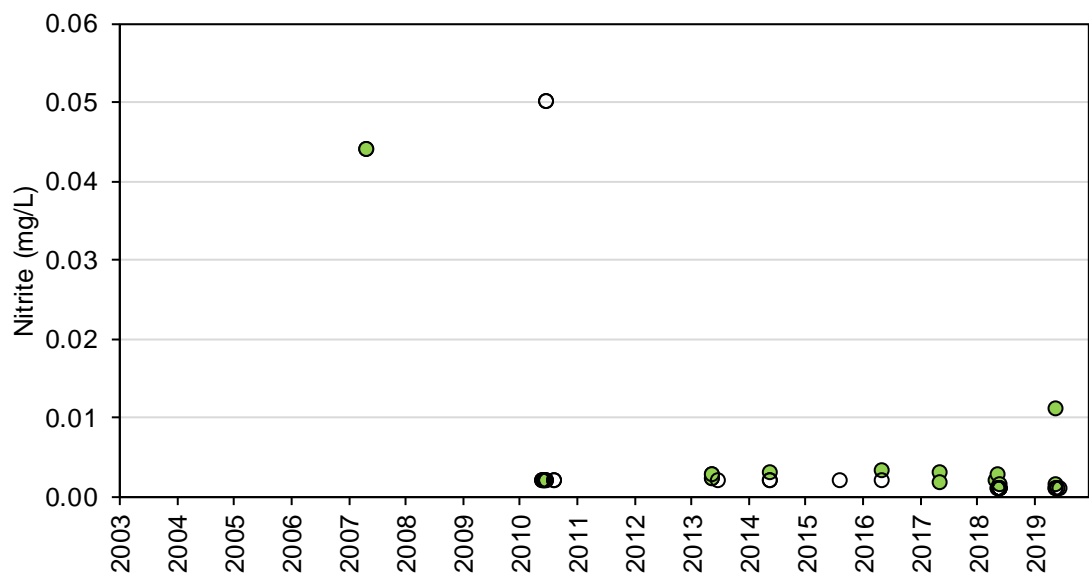


Figure 4H-11: Total Ammonia Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

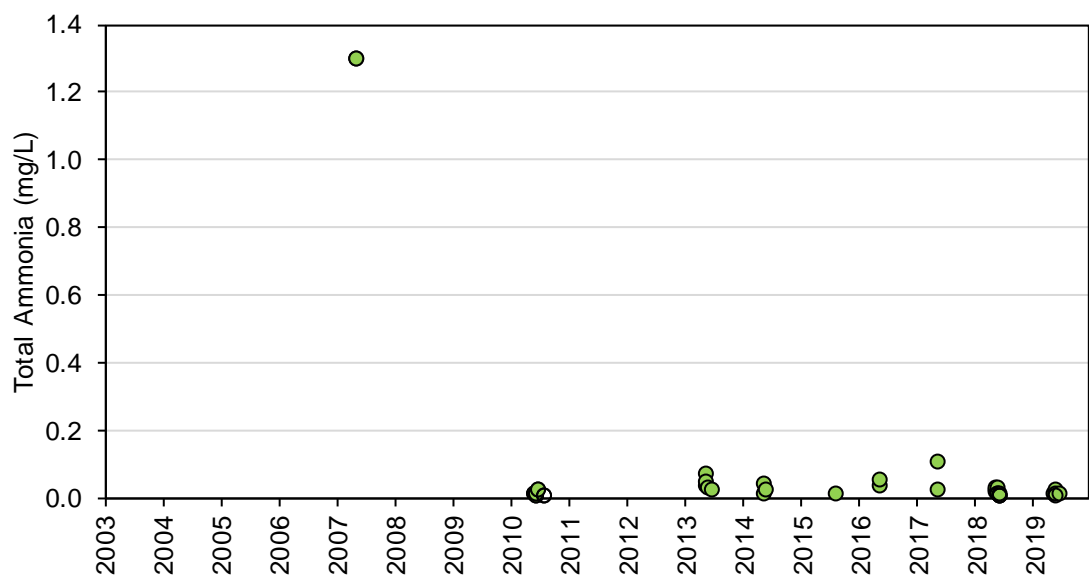


Figure 4H-12: Total Phosphorus Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

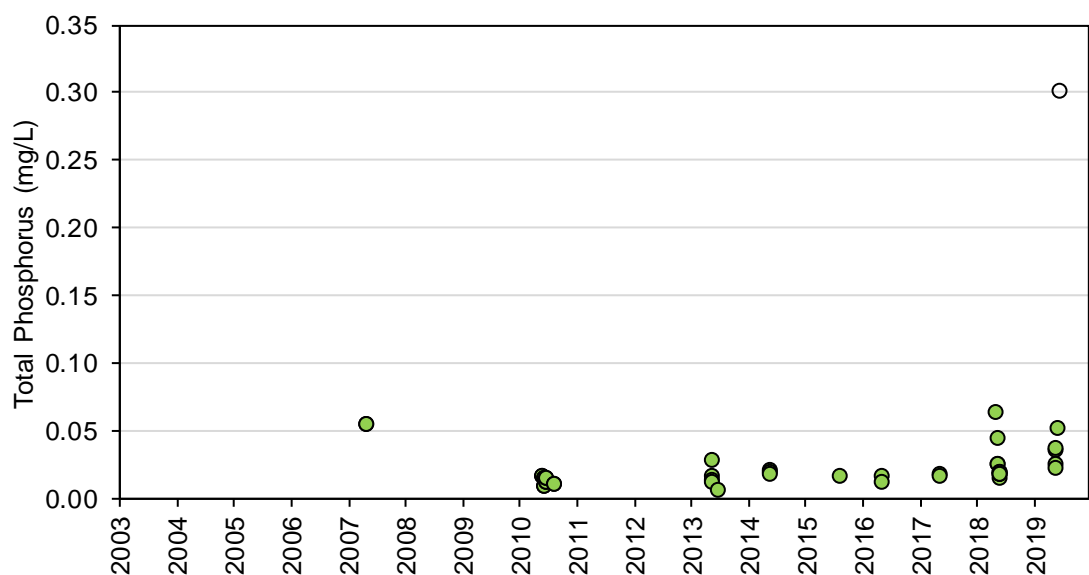


Figure 4H-13: Total Aluminum Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

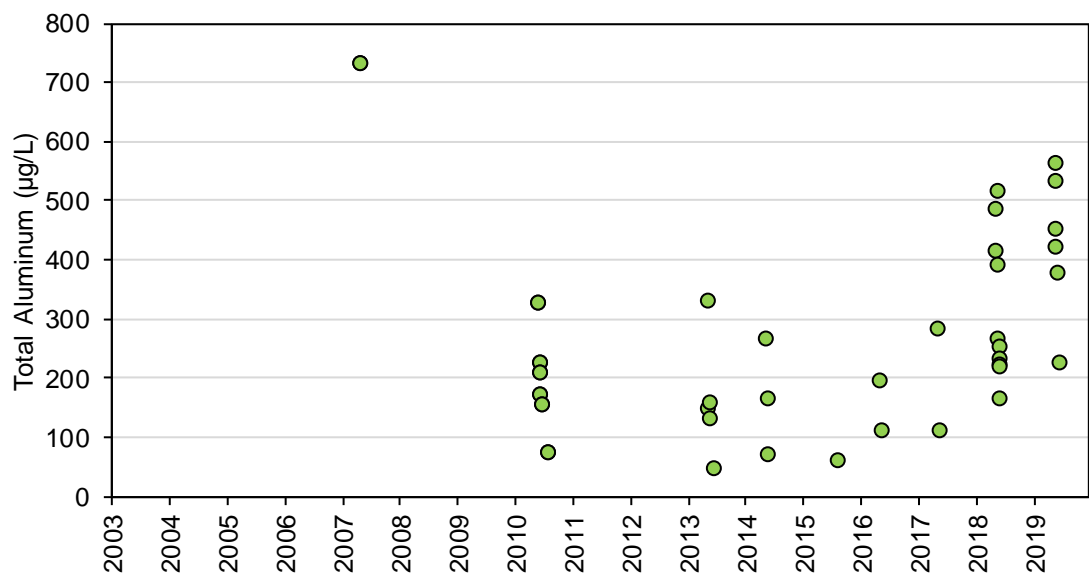


Figure 4H-14: Total Antimony Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

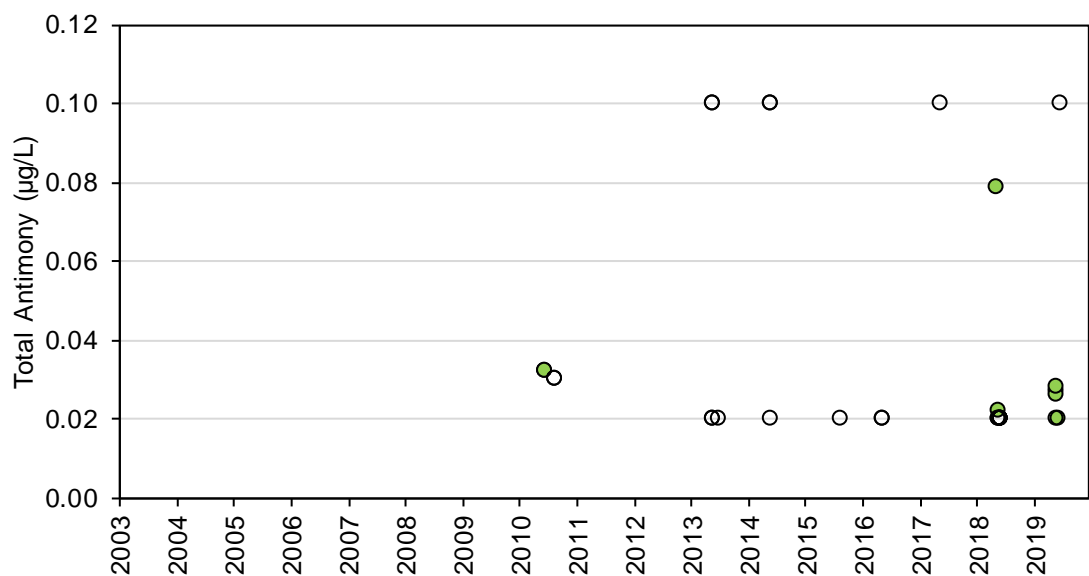


Figure 4H-15: Total Arsenic Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

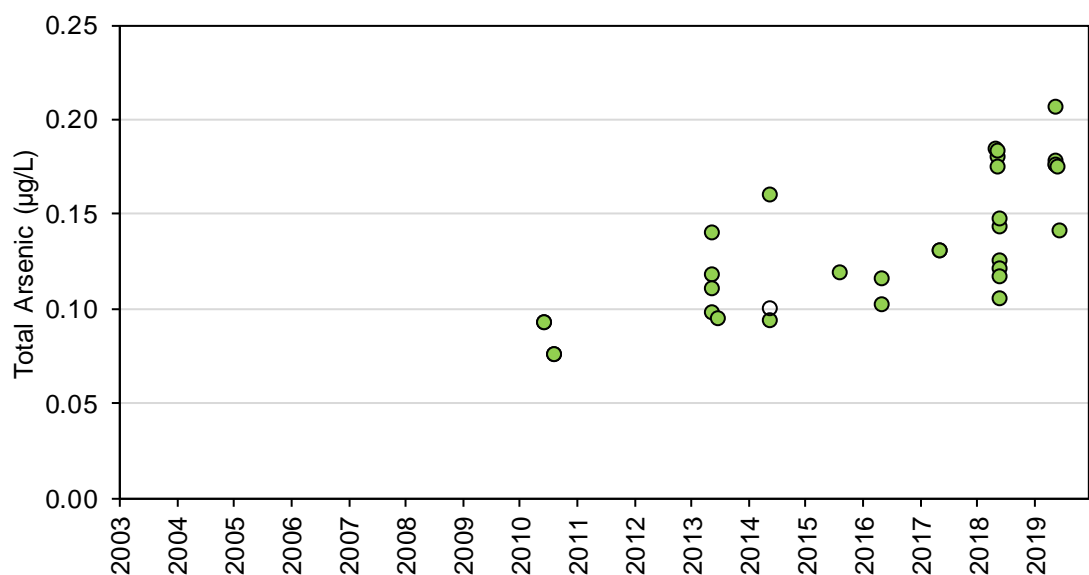


Figure 4H-16: Total Barium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

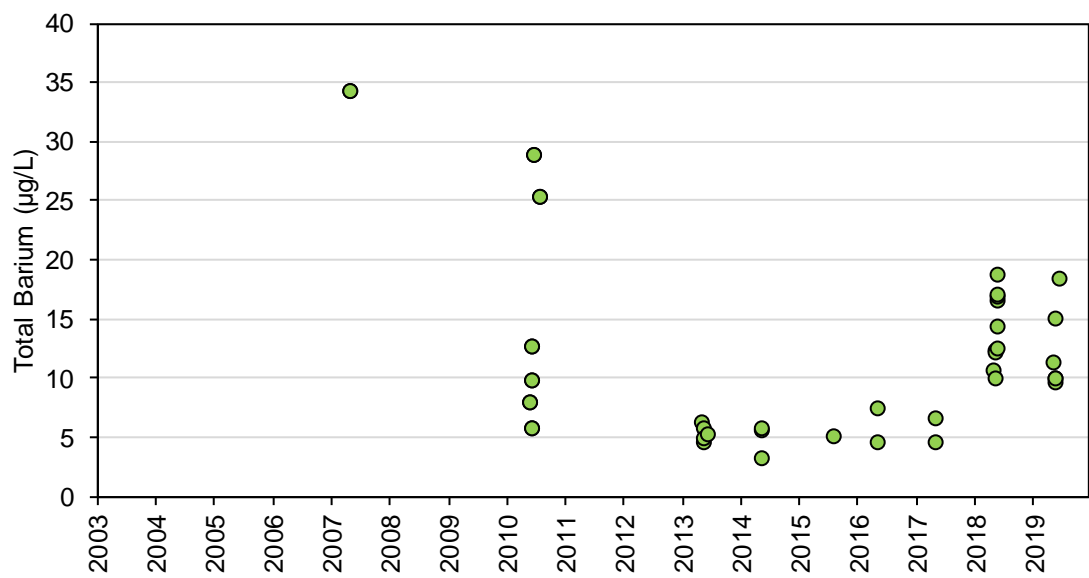


Figure 4H-17: Total Beryllium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

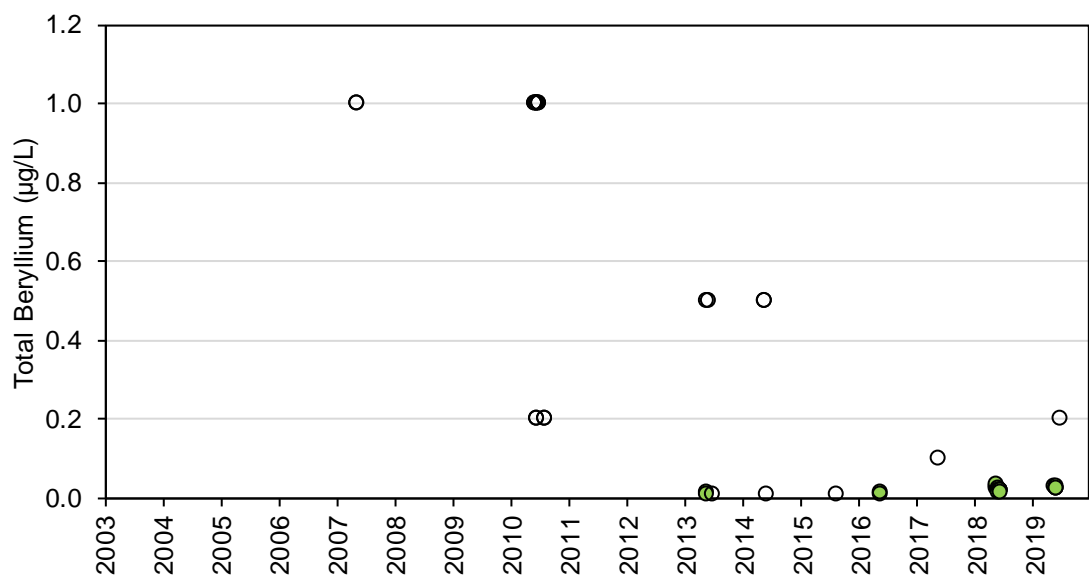


Figure 4H-18: Total Bismuth Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

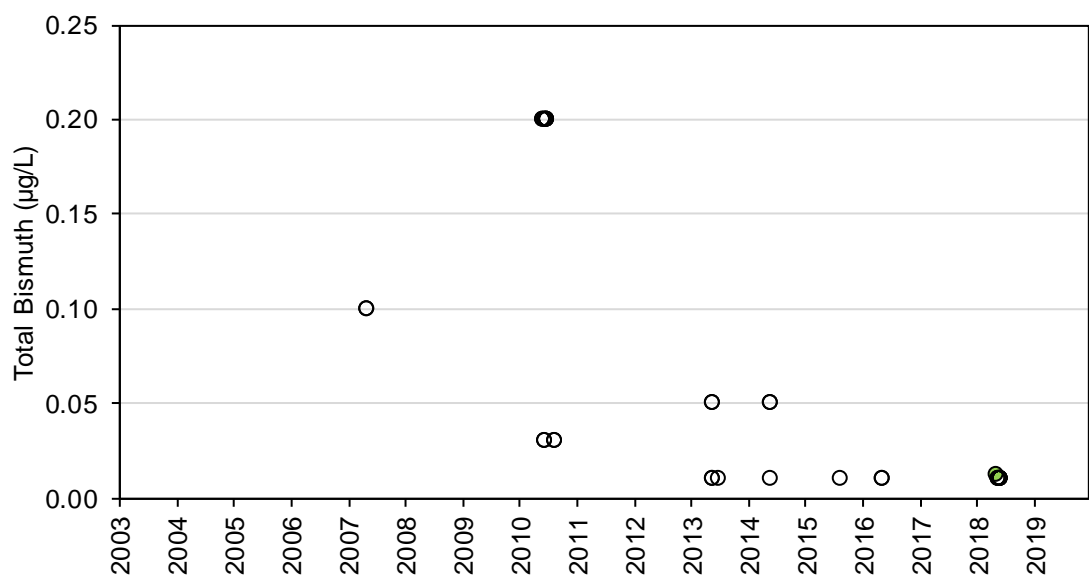


Figure 4H-19: Total Boron Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

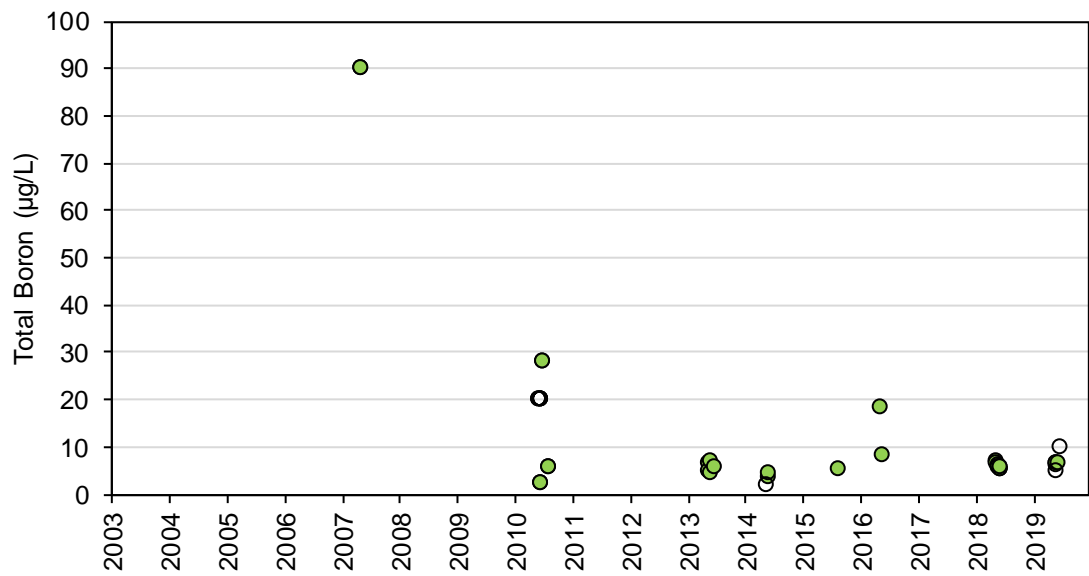


Figure 4H-20: Total Cadmium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

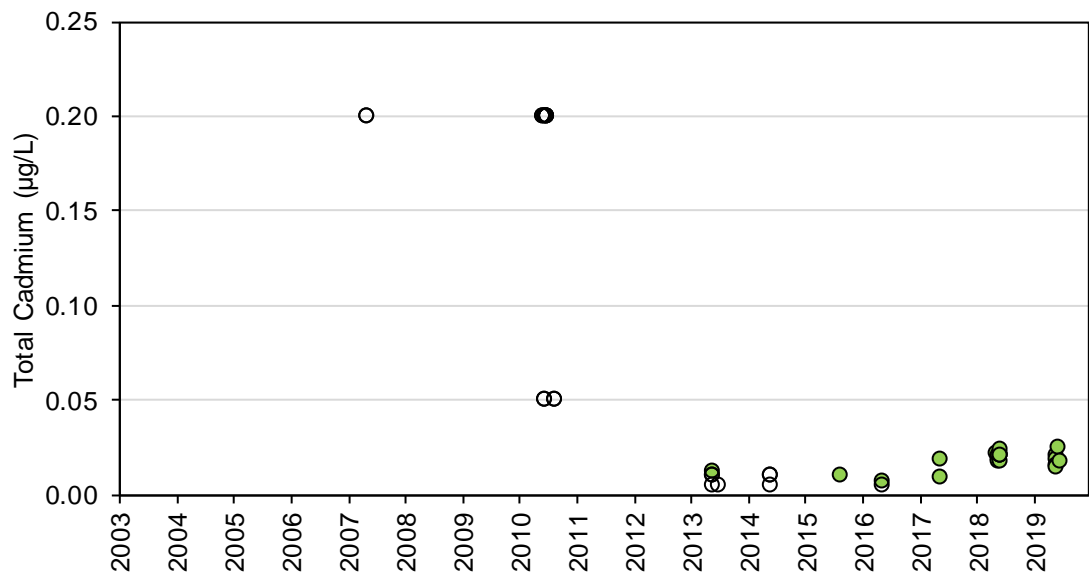


Figure 4H-21: Total Cesium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

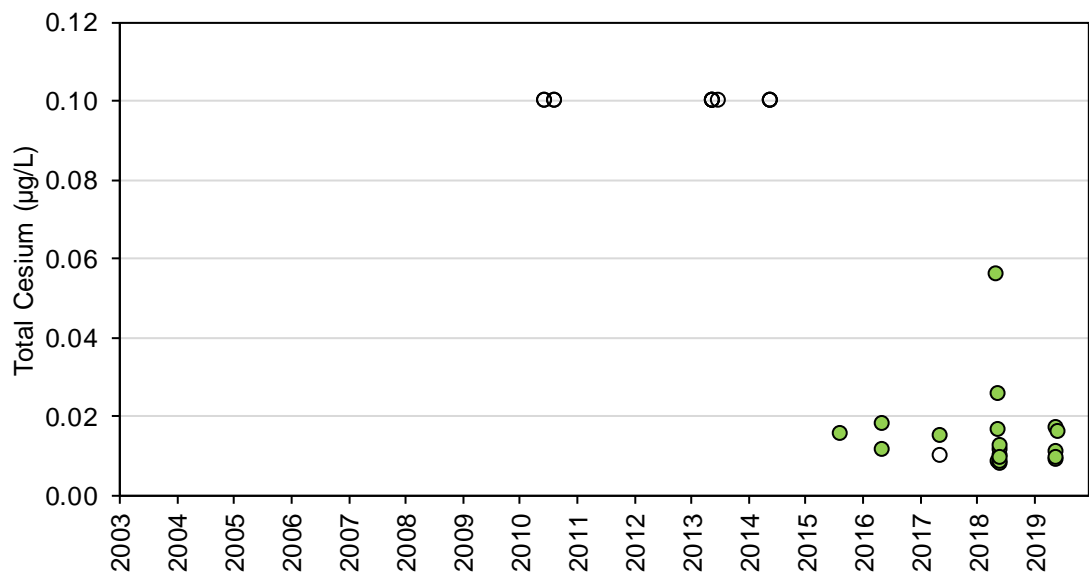


Figure 4H-22: Total Chromium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

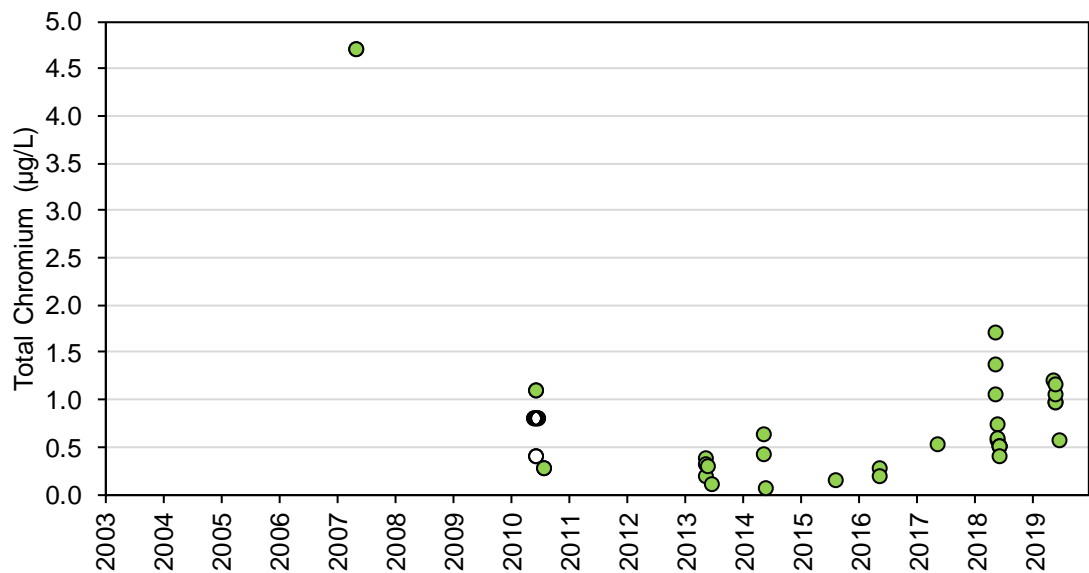


Figure 4H-23: Total Cobalt Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

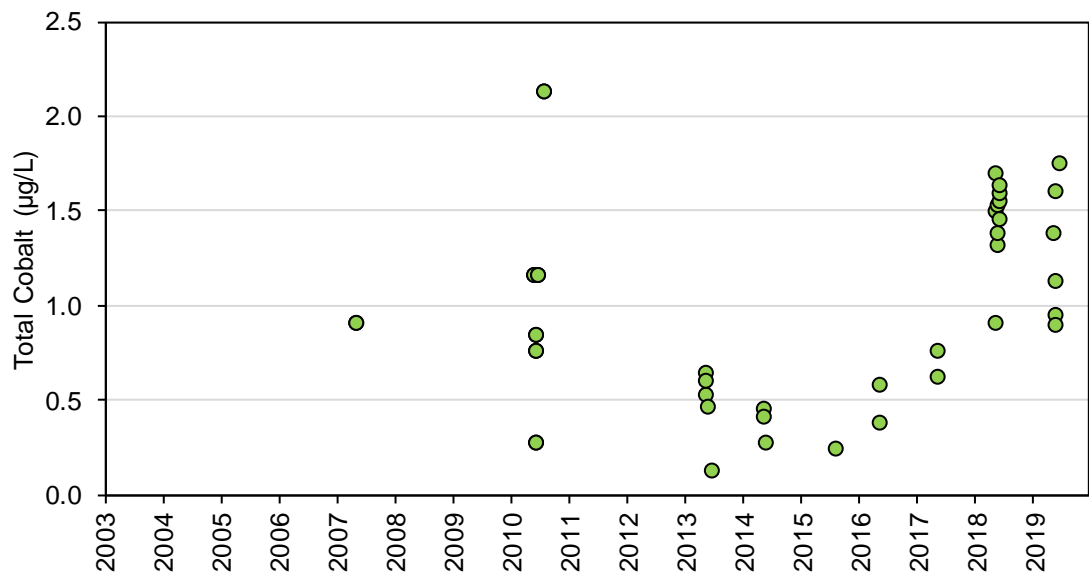


Figure 4H-24: Total Copper Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

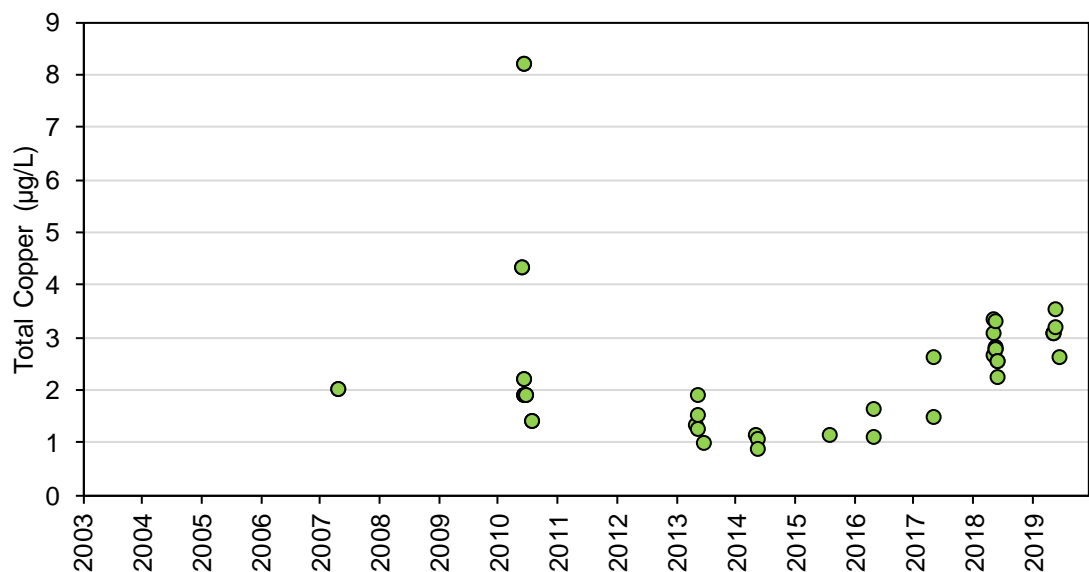


Figure 4H-25: Total Iron Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

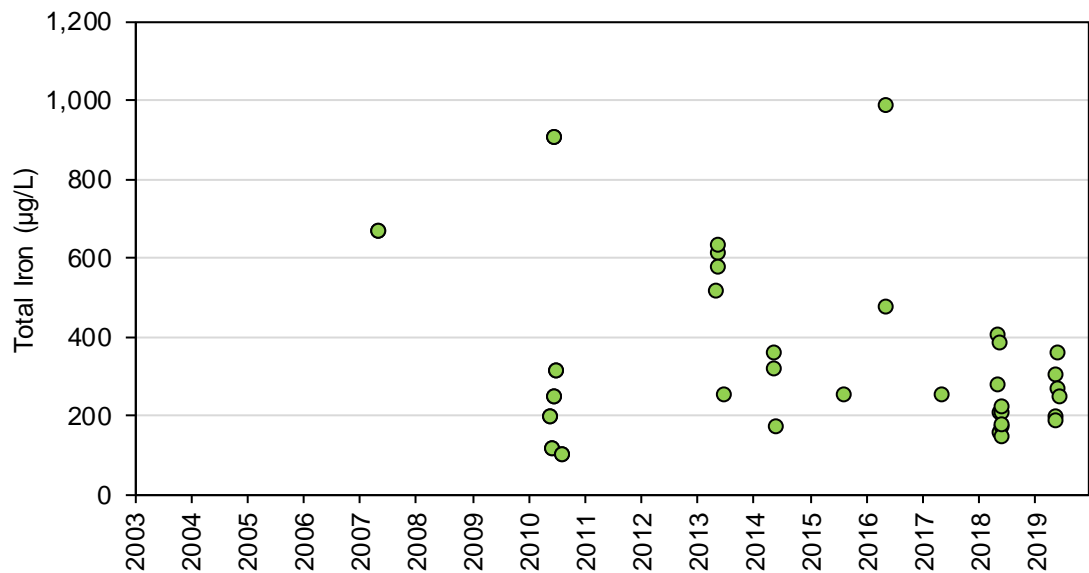


Figure 4H-26: Total Lead Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

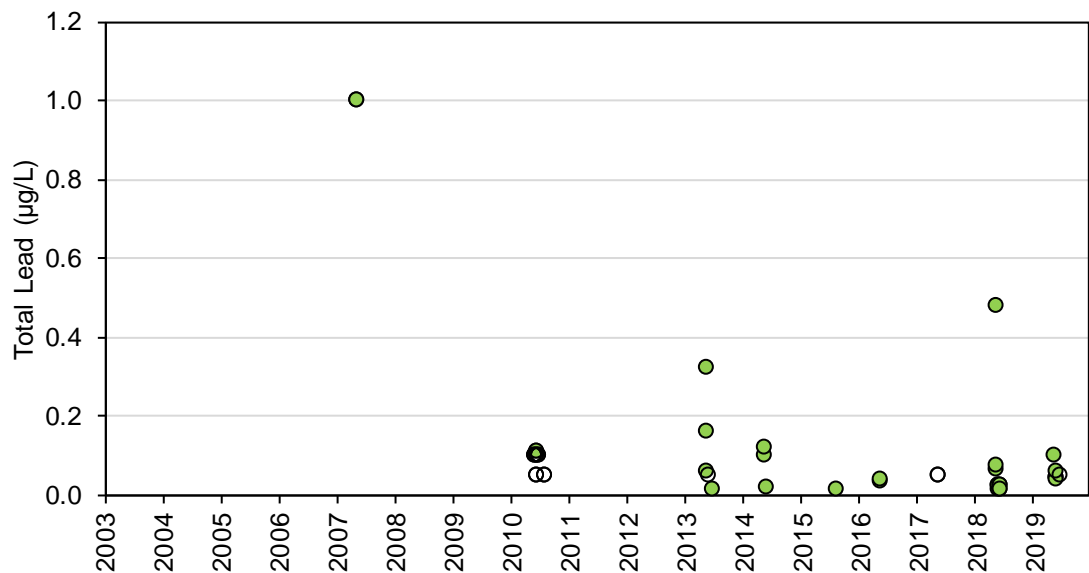


Figure 4H-27: Total Lithium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

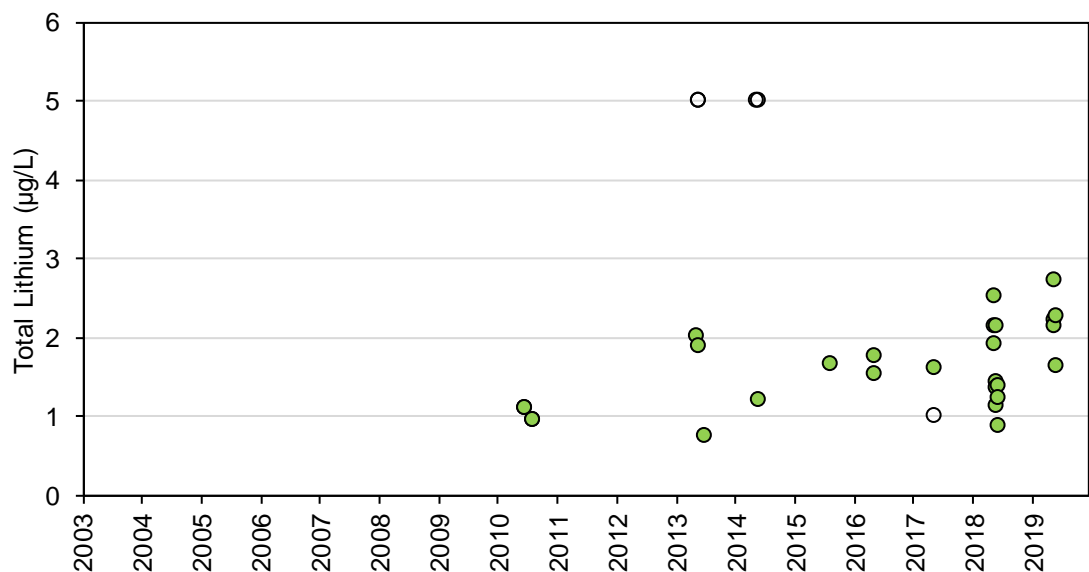


Figure 4H-28: Total Manganese Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

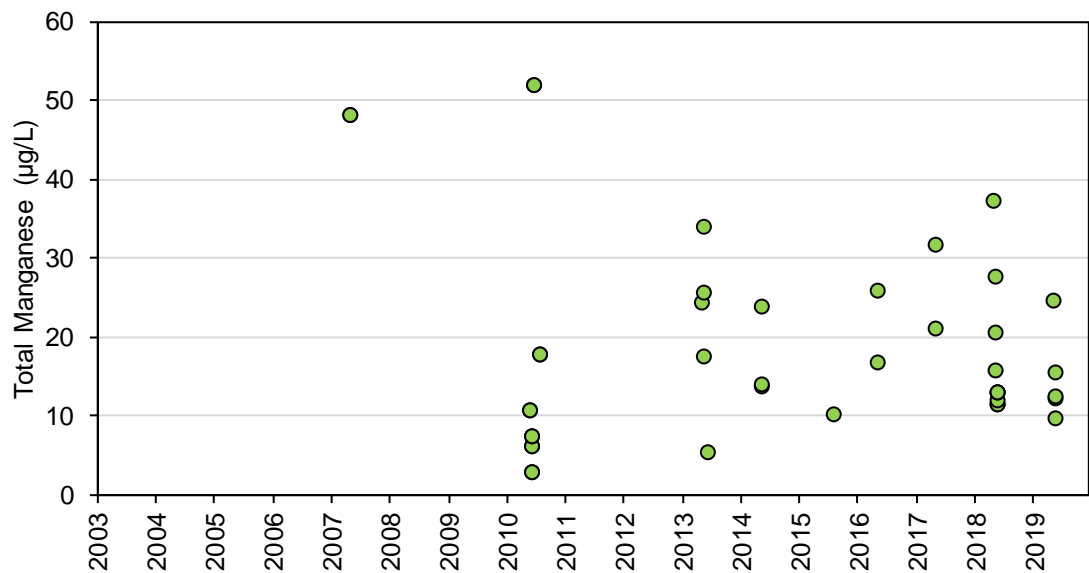


Figure 4H-29: Total Mercury Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

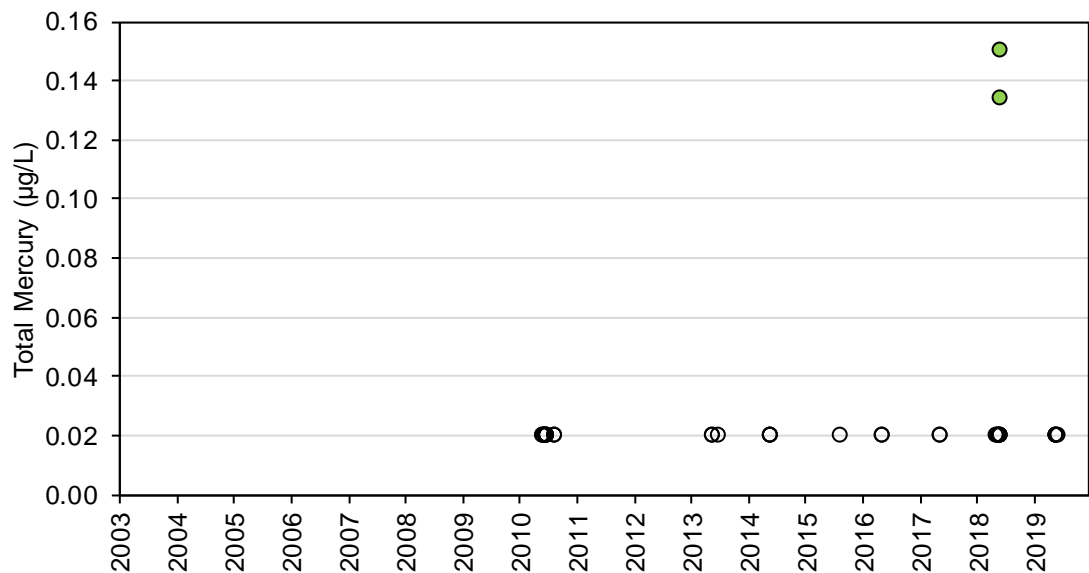


Figure 4H-30: Total Molybdenum Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

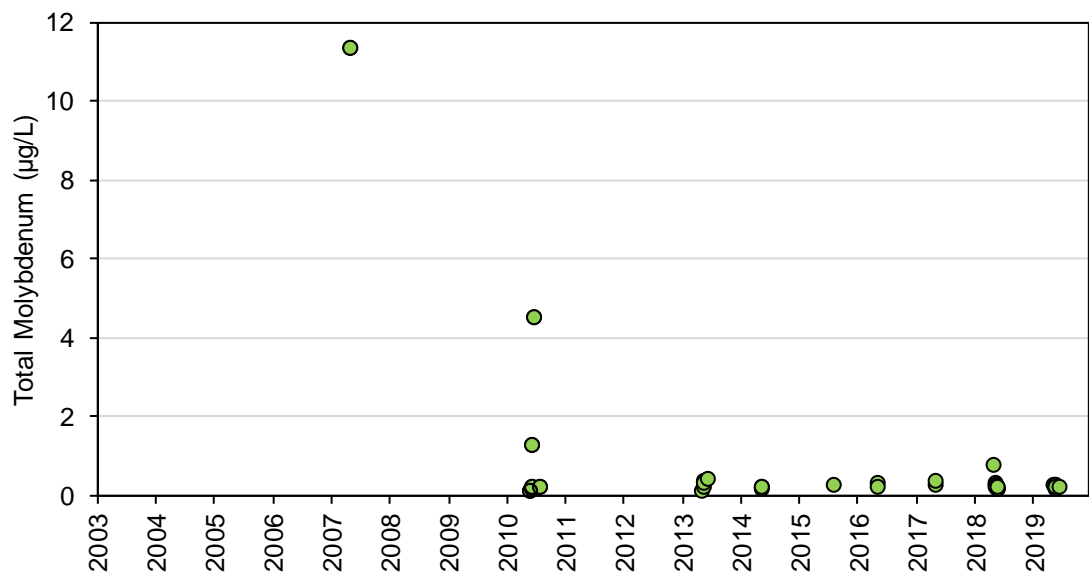


Figure 4H-31: Total Nickel Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

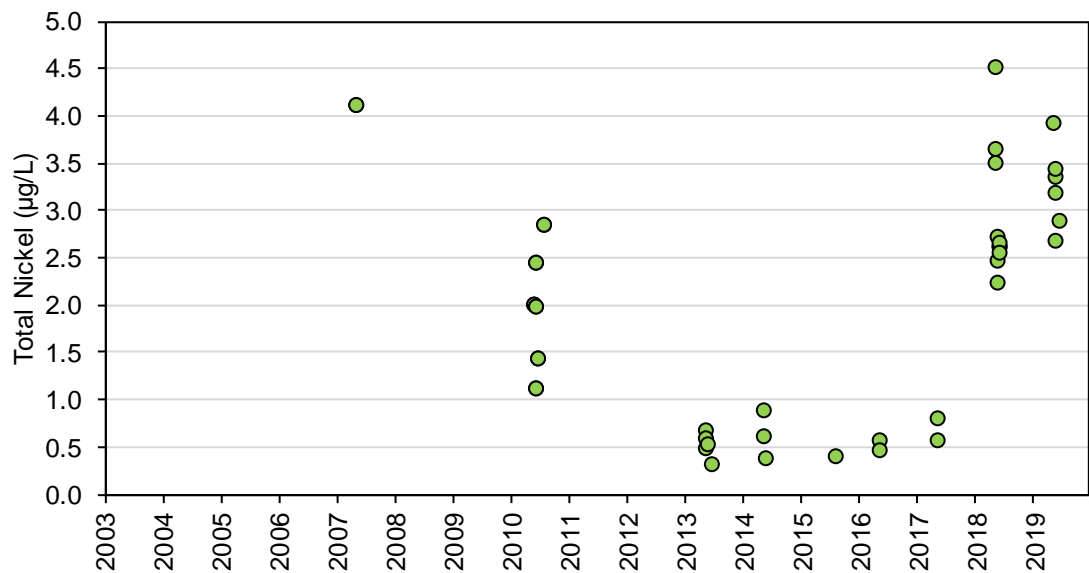


Figure 4H-32: Total Rubidium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

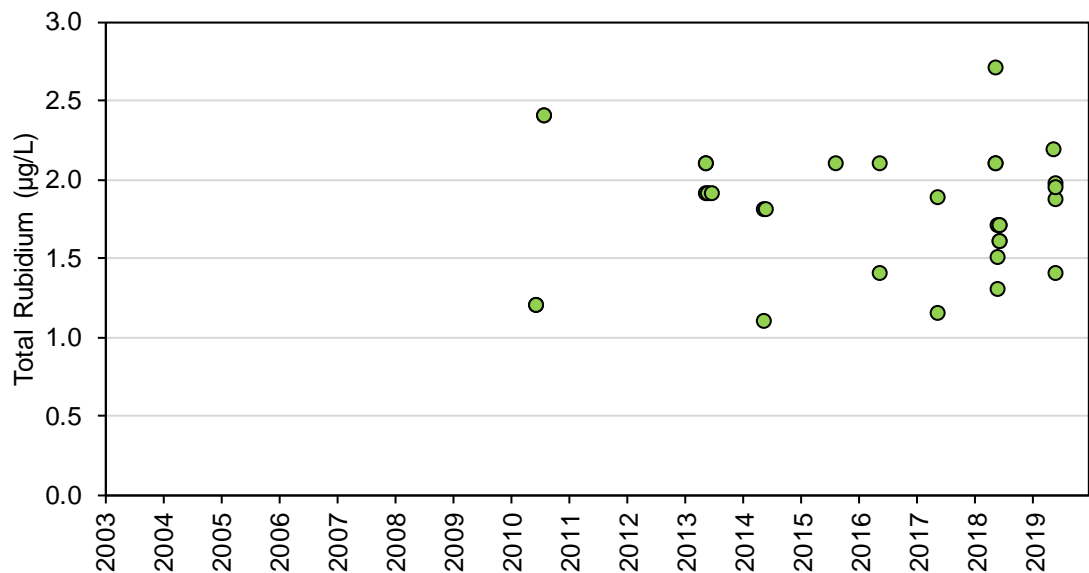


Figure 4H-33: Total Selenium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

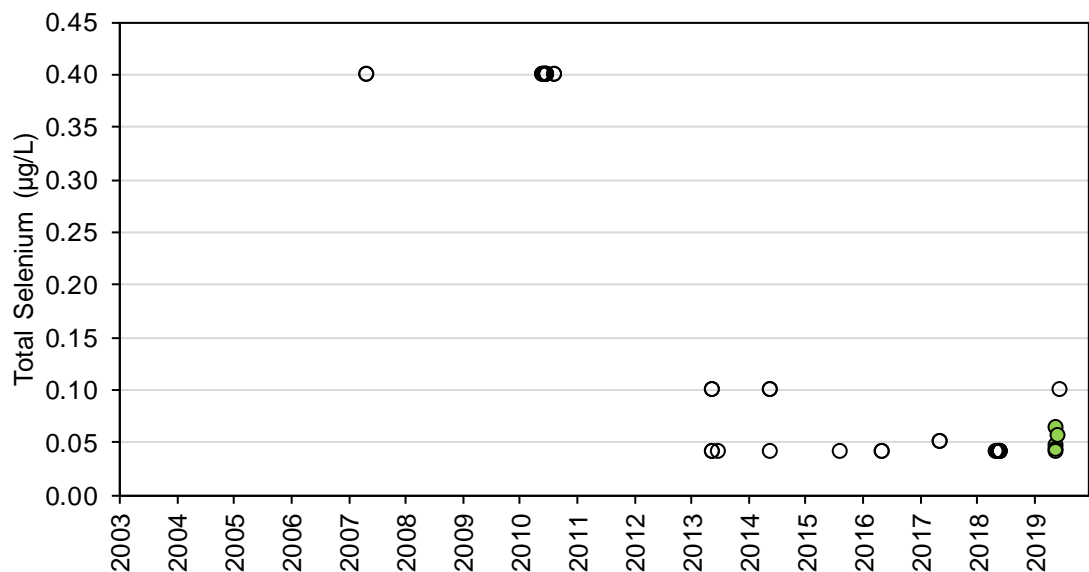


Figure 4H-34: Total Silver Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

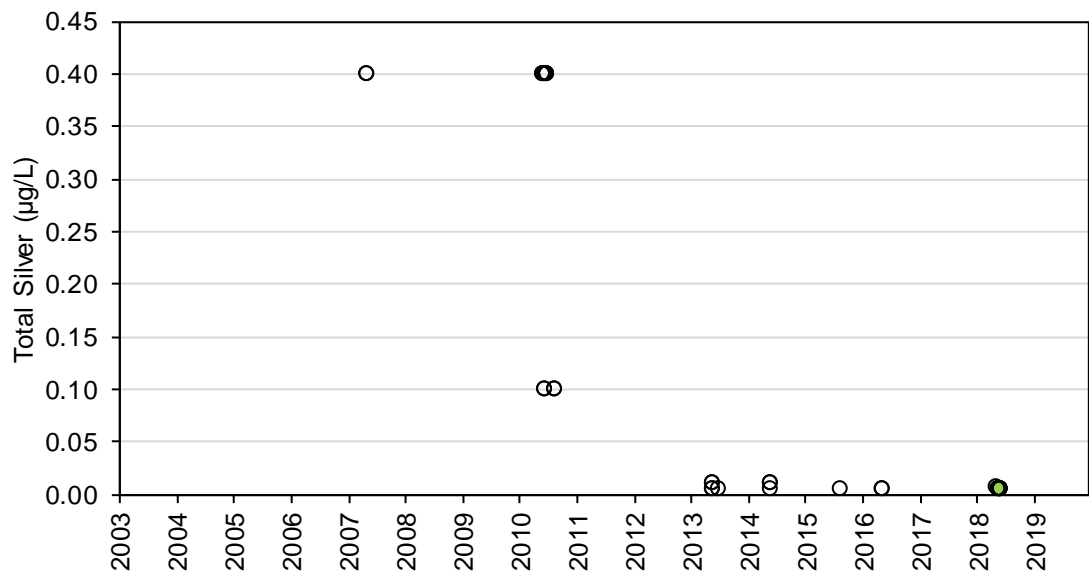


Figure 4H-35: Total Strontium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

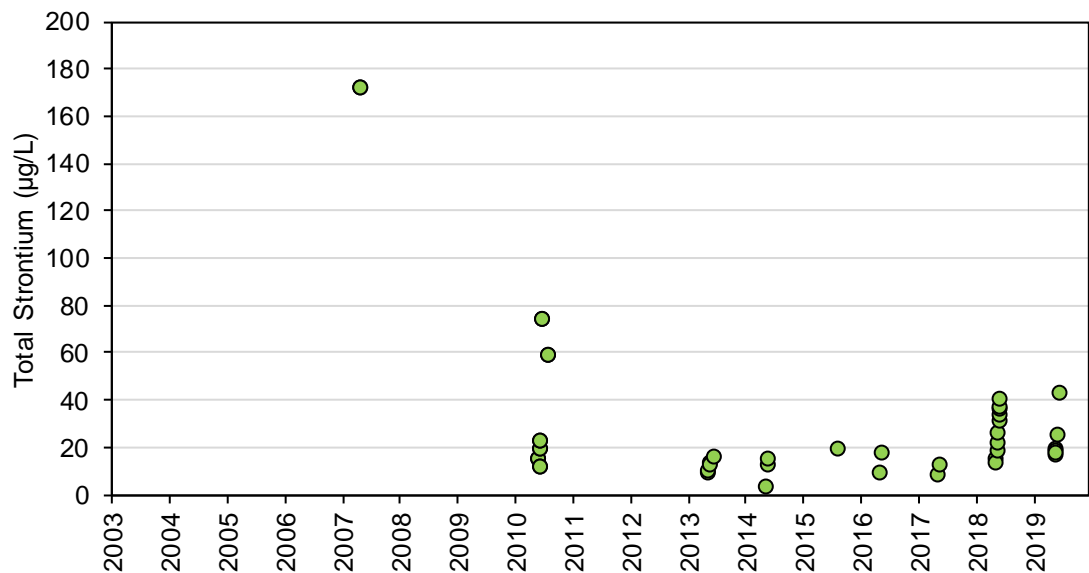


Figure 4H-36: Total Thallium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

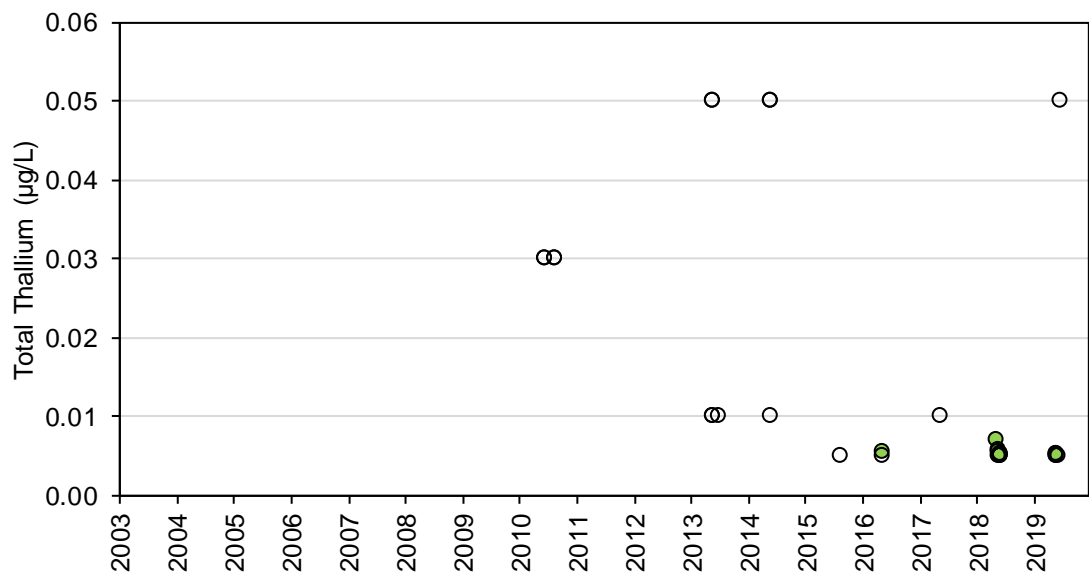


Figure 4H-37: Total Titanium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

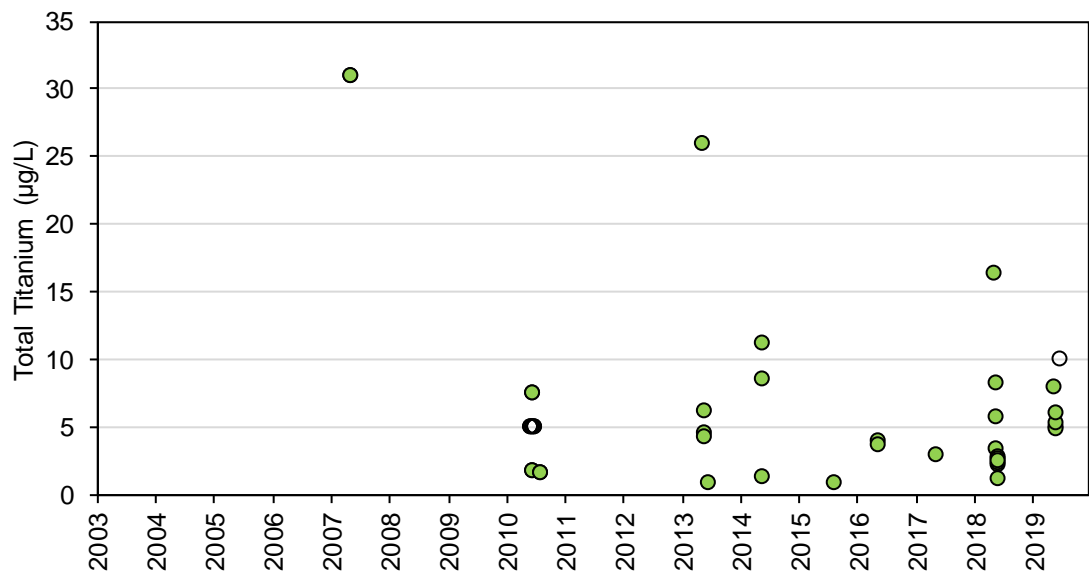


Figure 4H-38: Total Uranium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

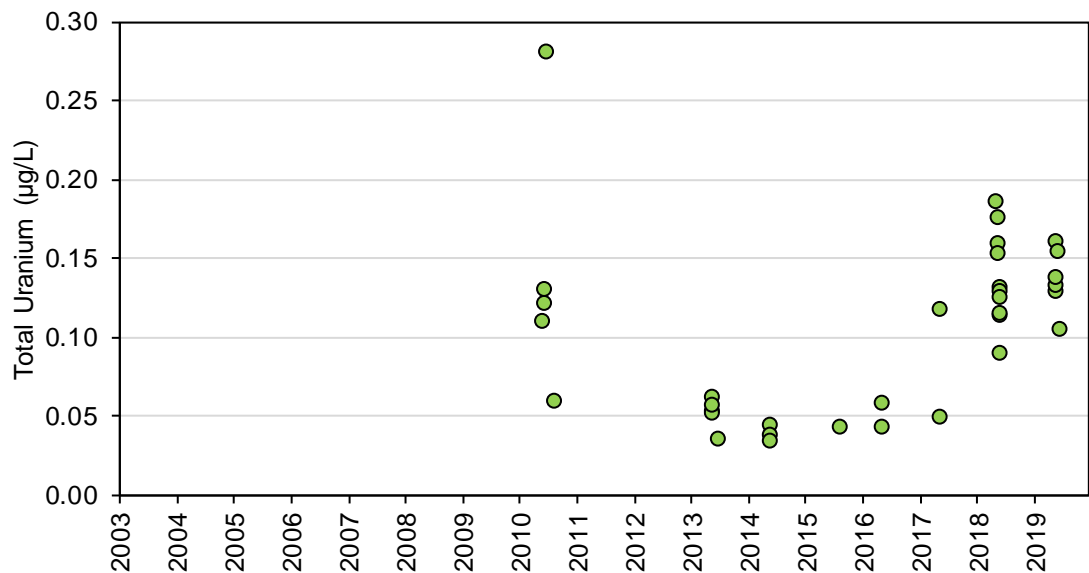


Figure 4H-39: Total Vanadium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

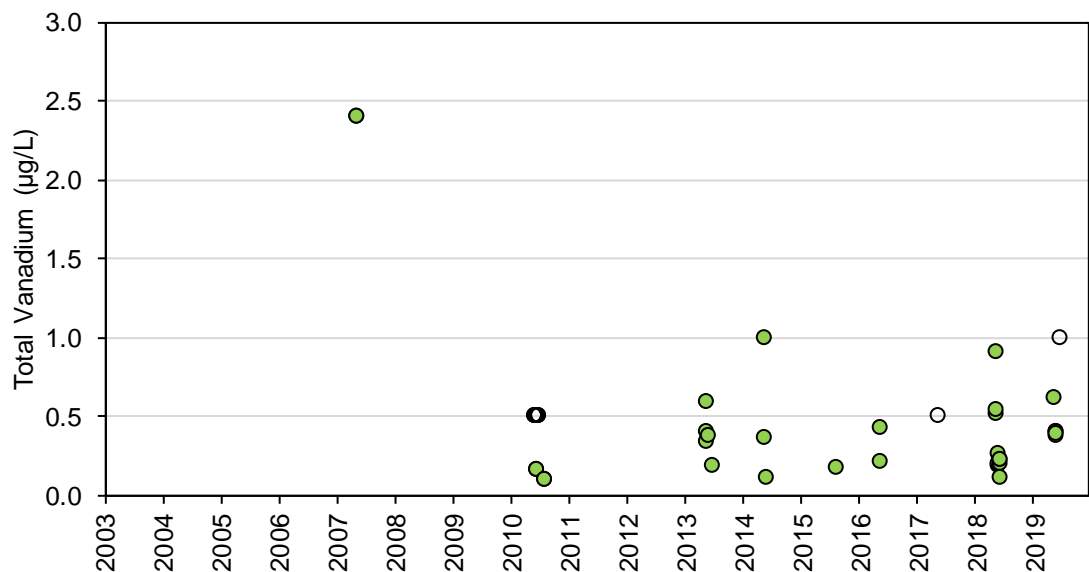


Figure 4H-40: Total Zinc Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

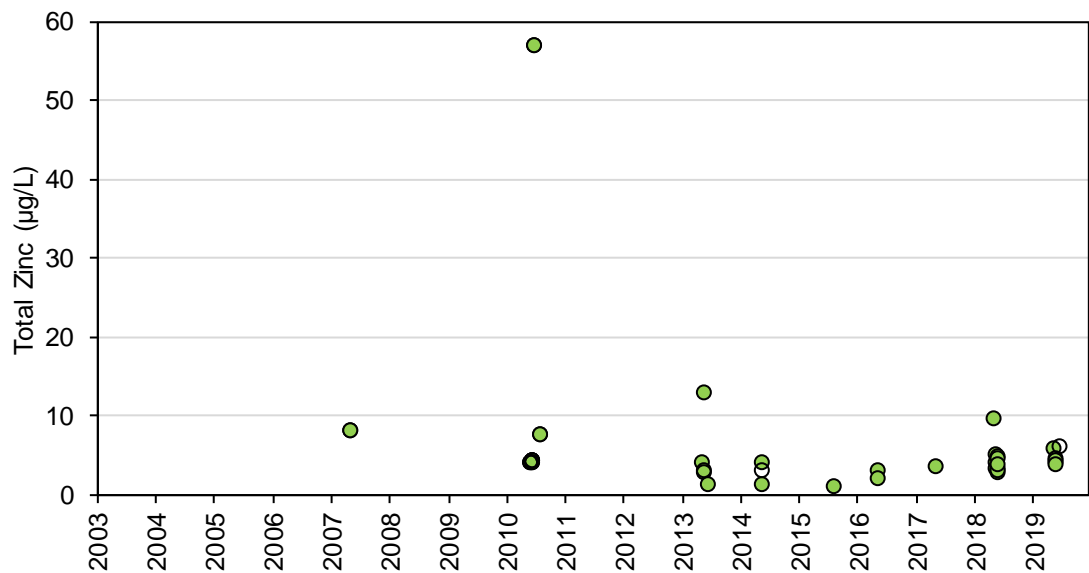


Figure 4H-41: Dissolved Aluminum Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

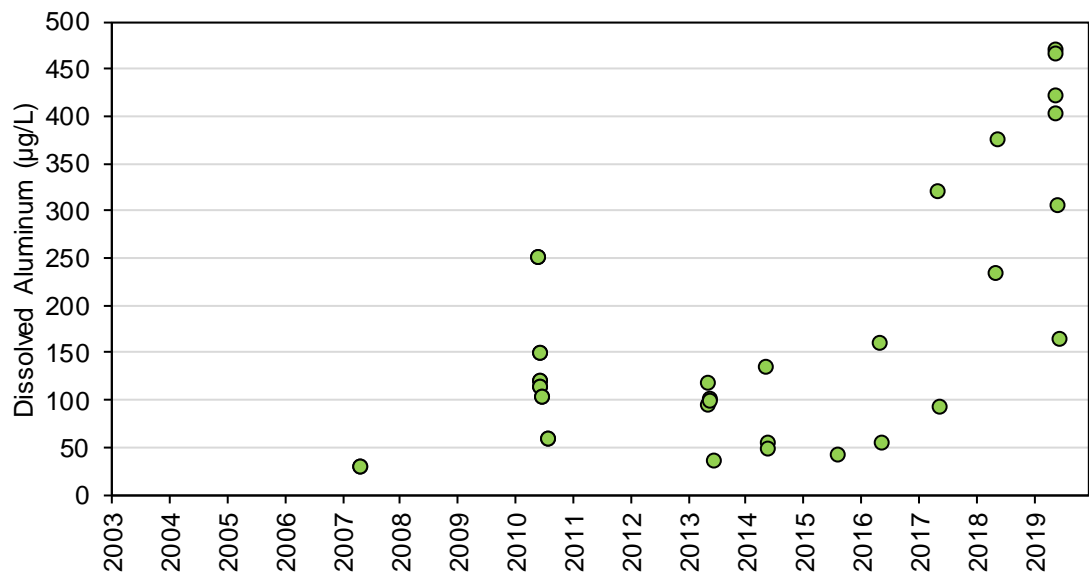


Figure 4H-42: Dissolved Antimony Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

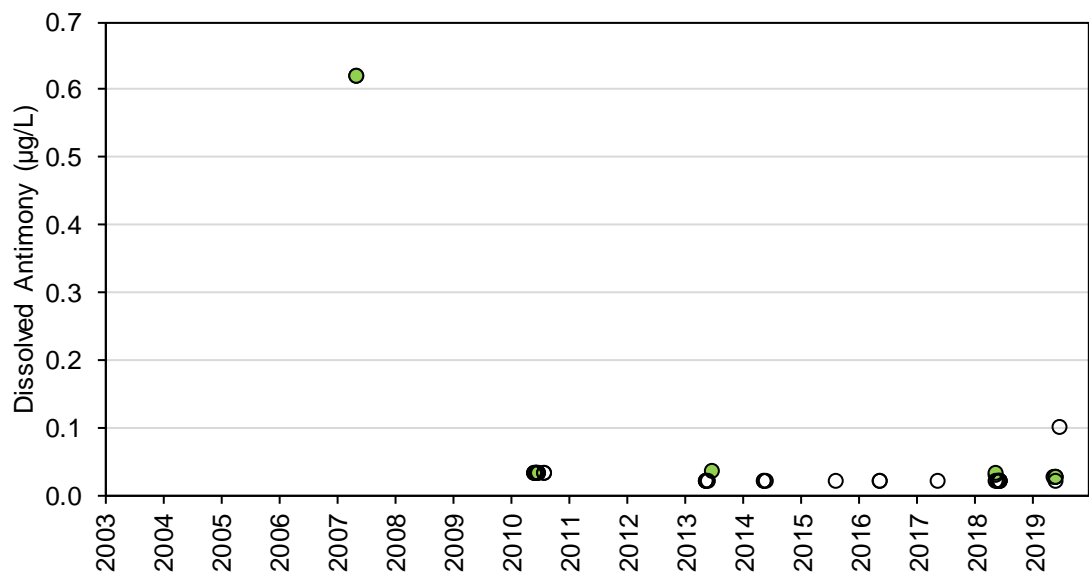


Figure 4H-43: Dissolved Arsenic Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

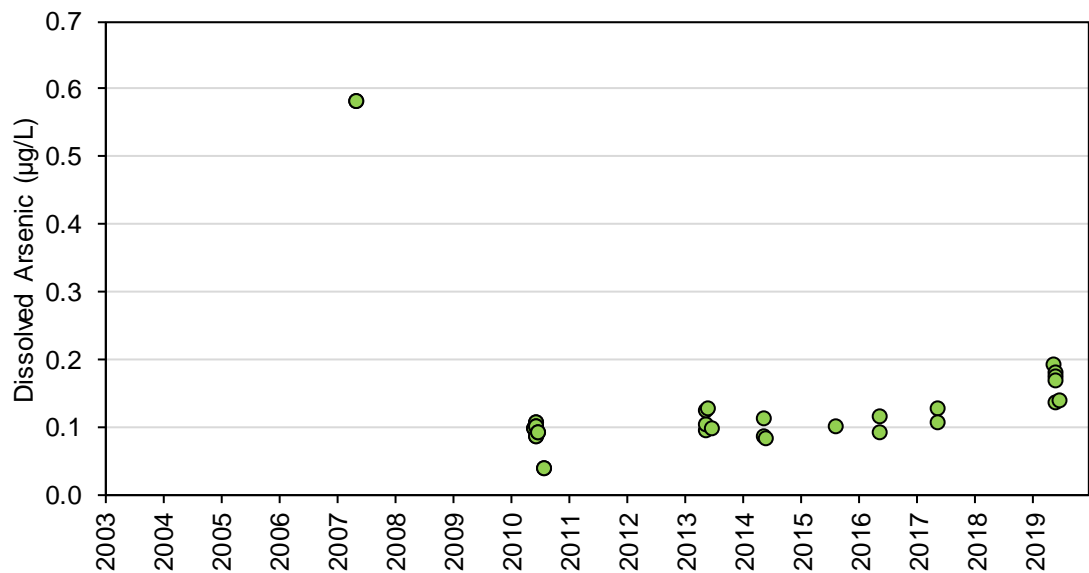


Figure 4H-44: Dissolved Barium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

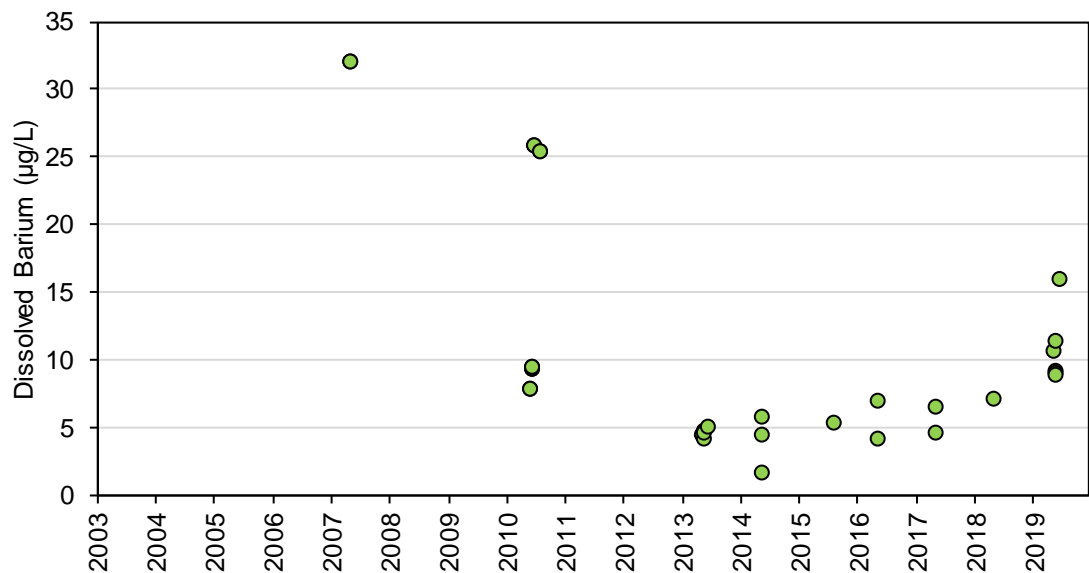


Figure 4H-45: Dissolved Beryllium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

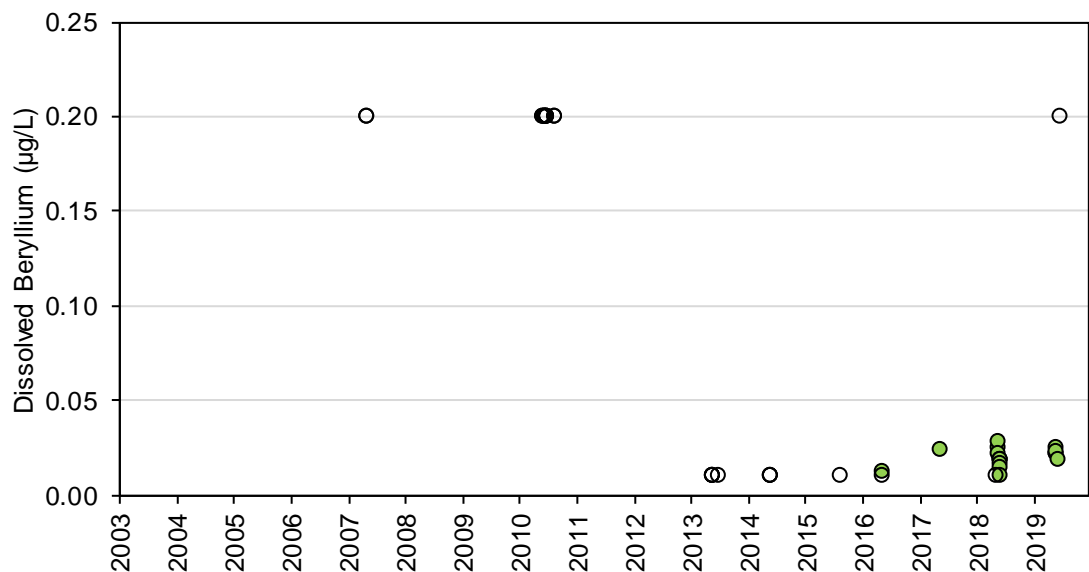


Figure 4H-46: Dissolved Bismuth Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

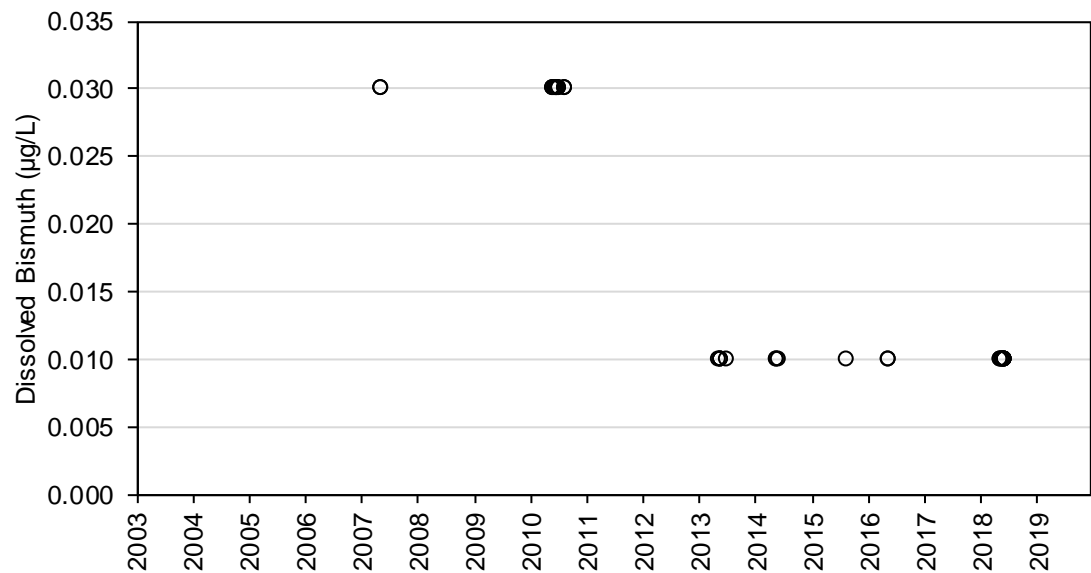


Figure 4H-47: Dissolved Boron Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

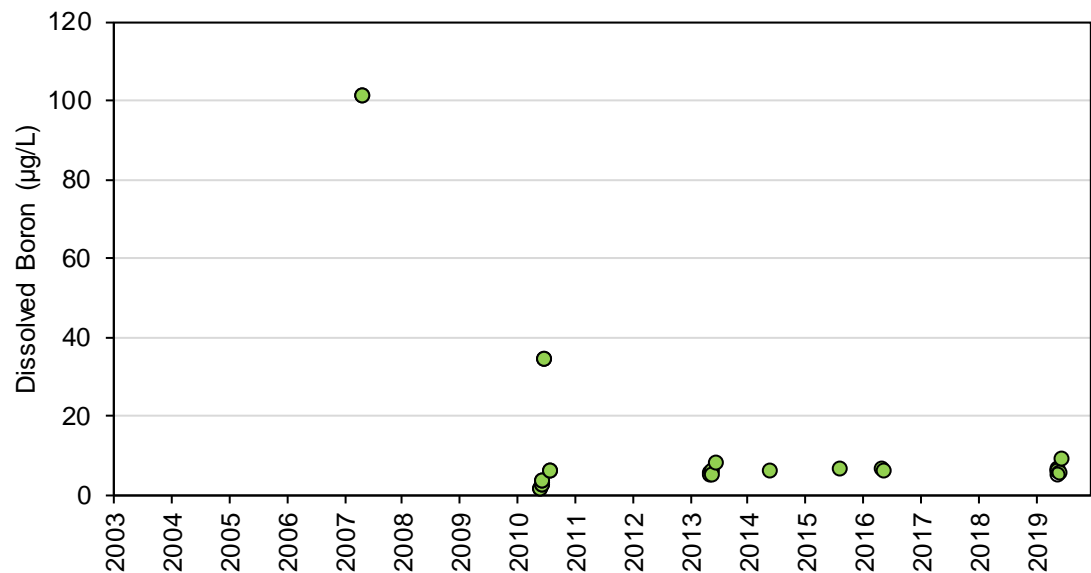


Figure 4H-48: Dissolved Cadmium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

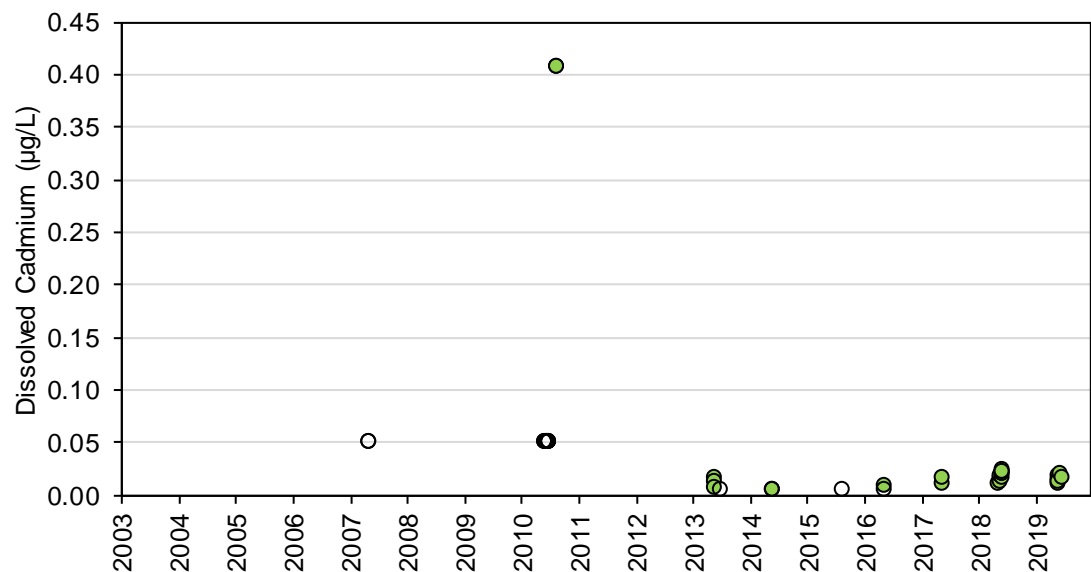


Figure 4H-49: Dissolved Cesium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

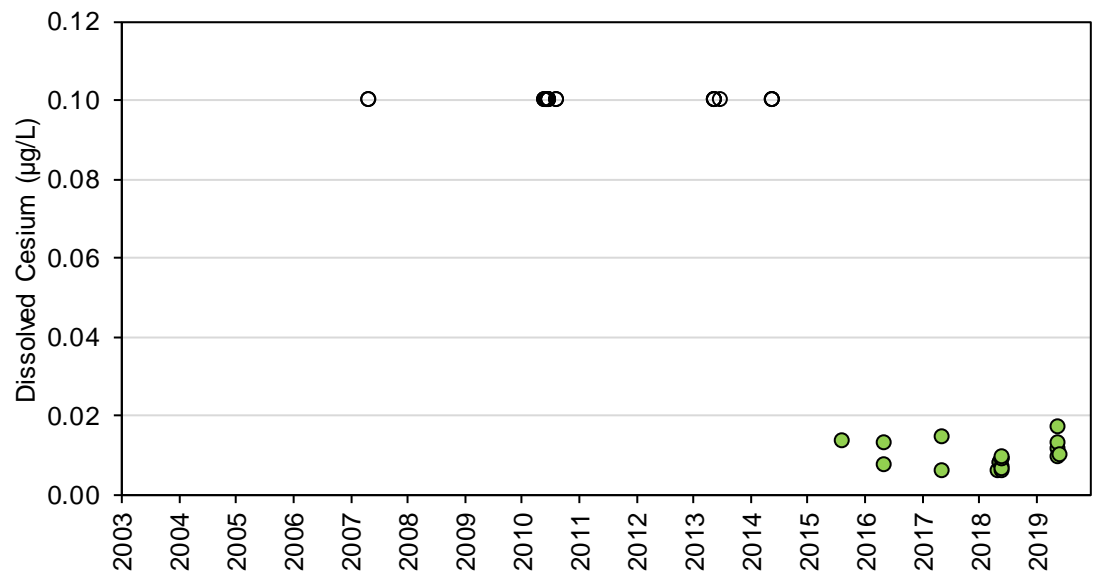


Figure 4H-50: Dissolved Chromium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

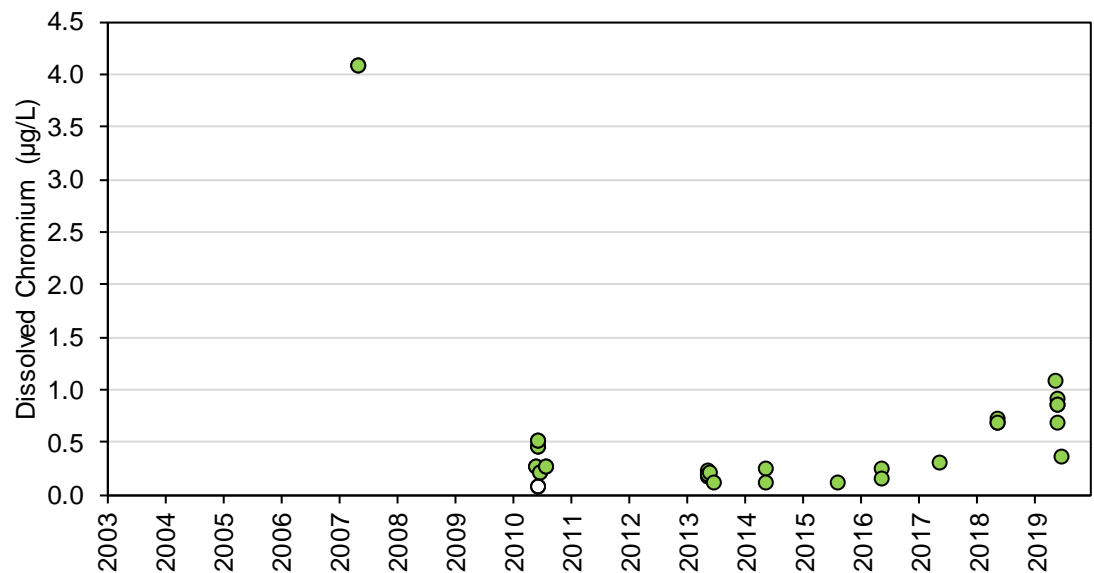


Figure 4H-51: Dissolved Cobalt Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

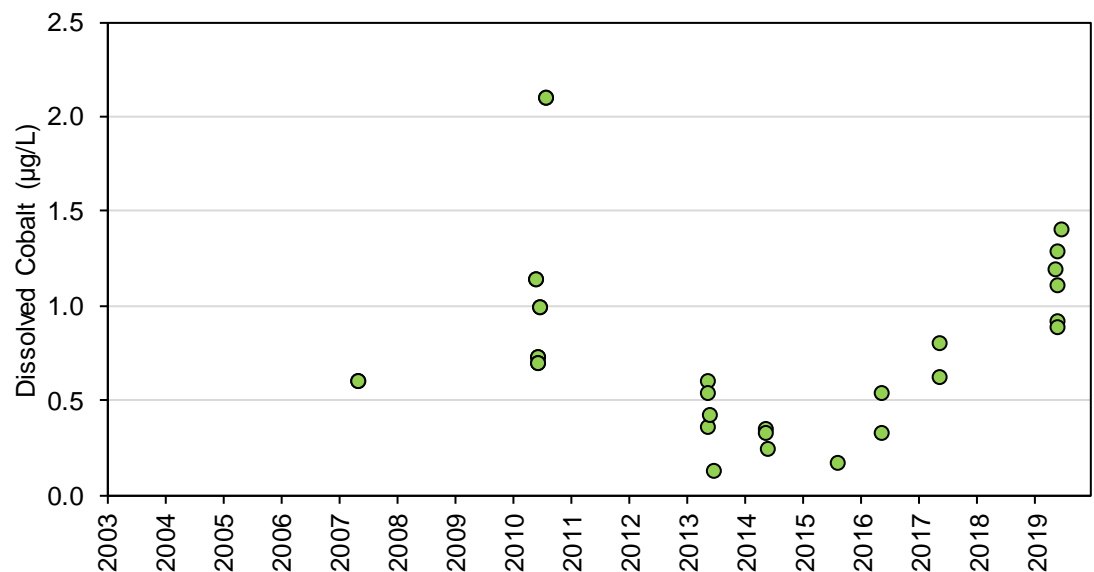


Figure 4H-52: Dissolved Copper Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

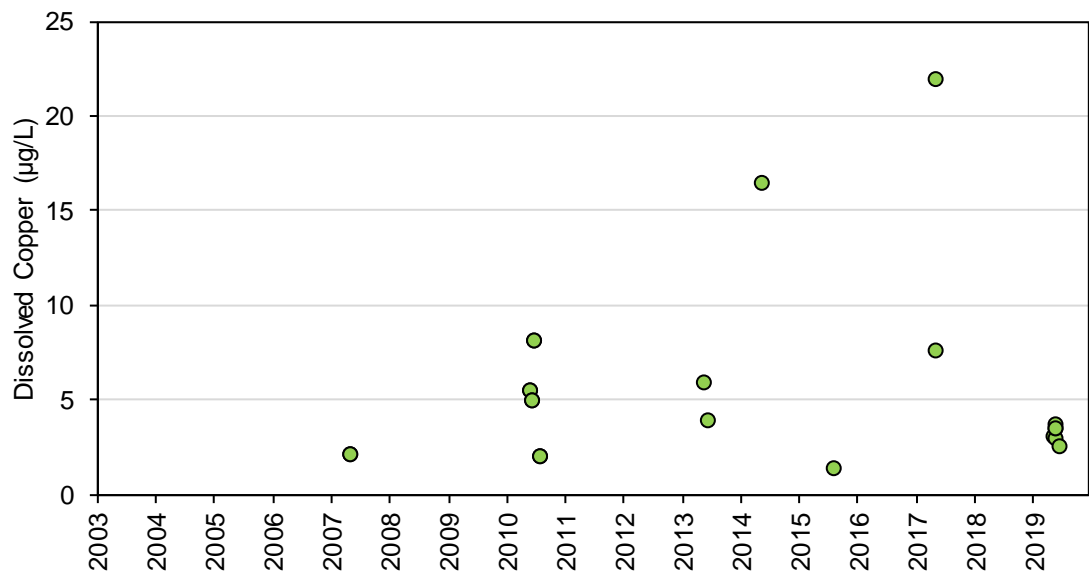


Figure 4H-53: Dissolved Iron Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

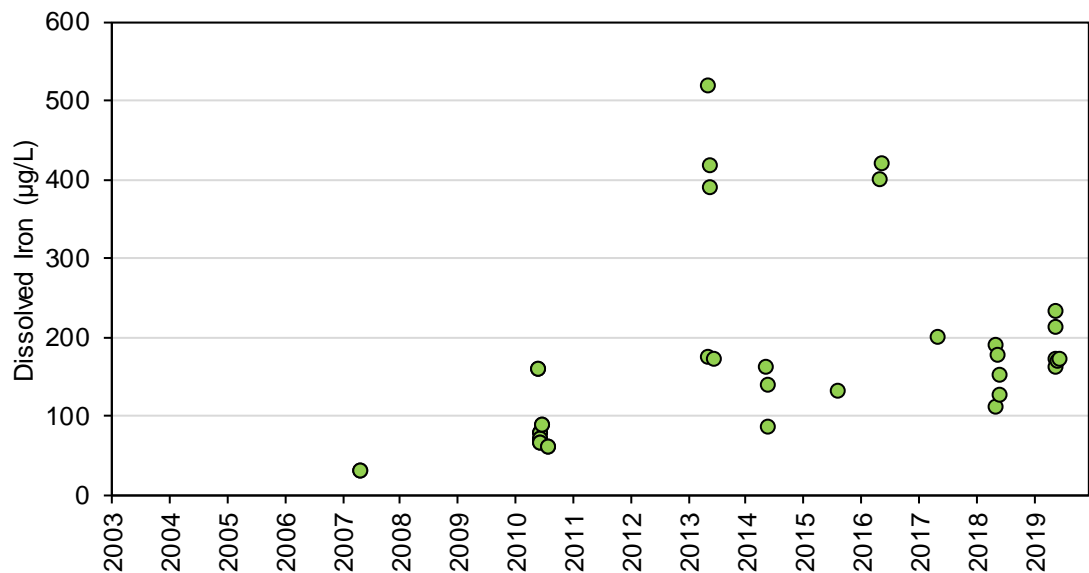


Figure 4H-54: Dissolved Lead Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

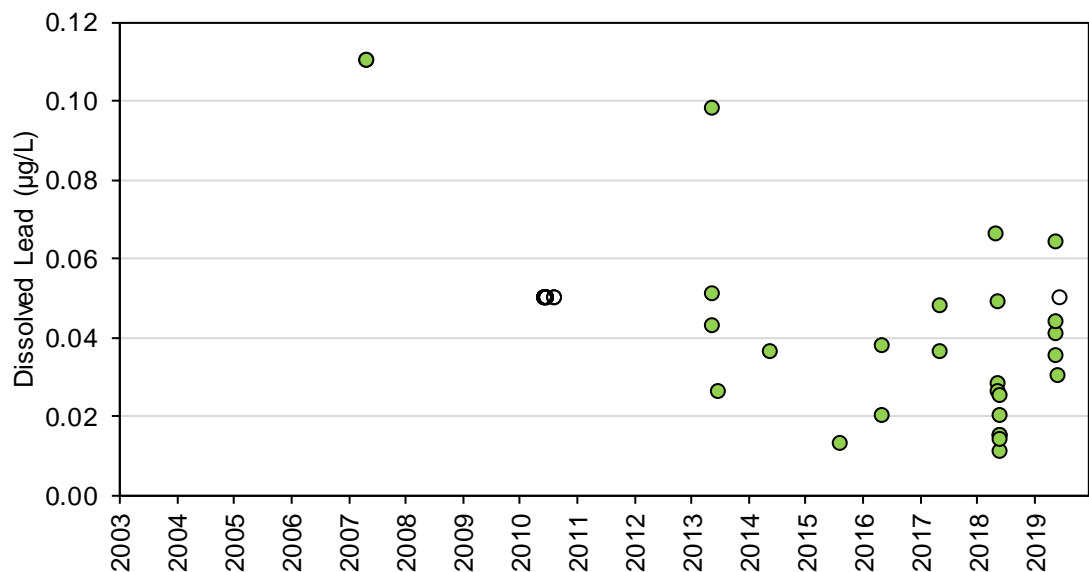


Figure 4H-55: Dissolved Lithium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

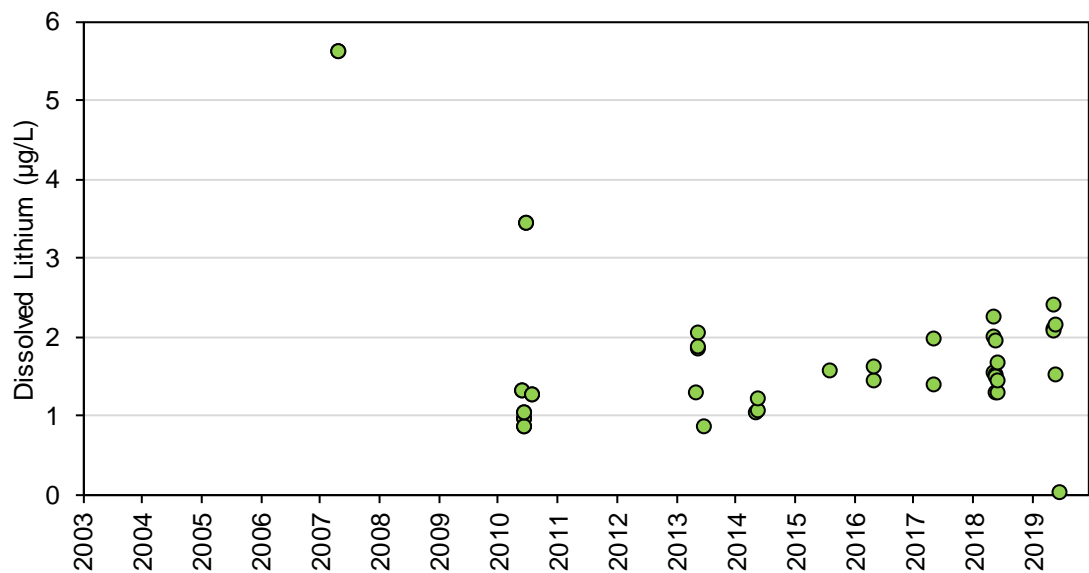


Figure 4H-56: Dissolved Manganese Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

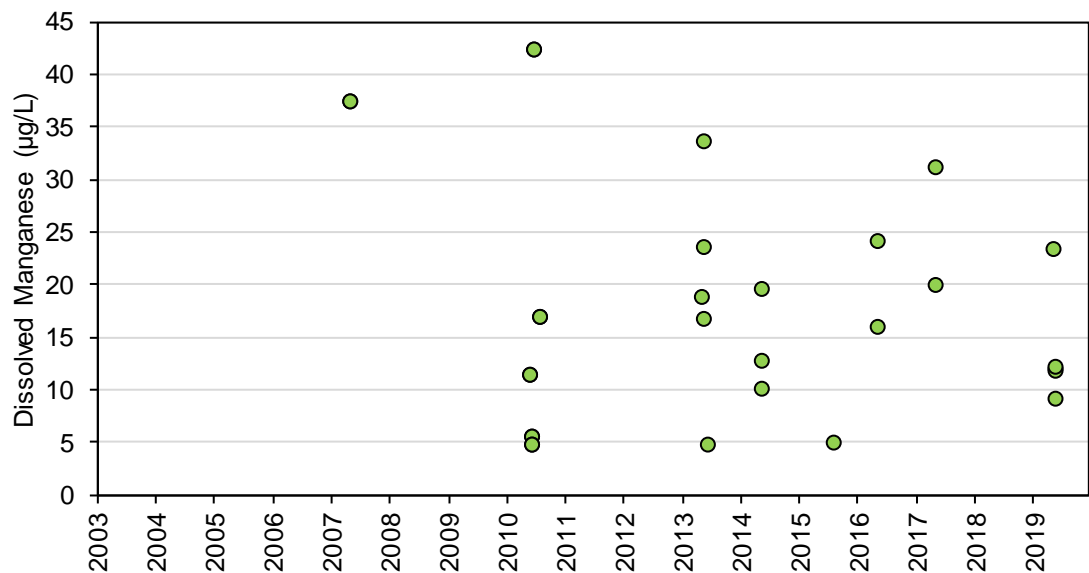


Figure 4H-57: Dissolved Mercury Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

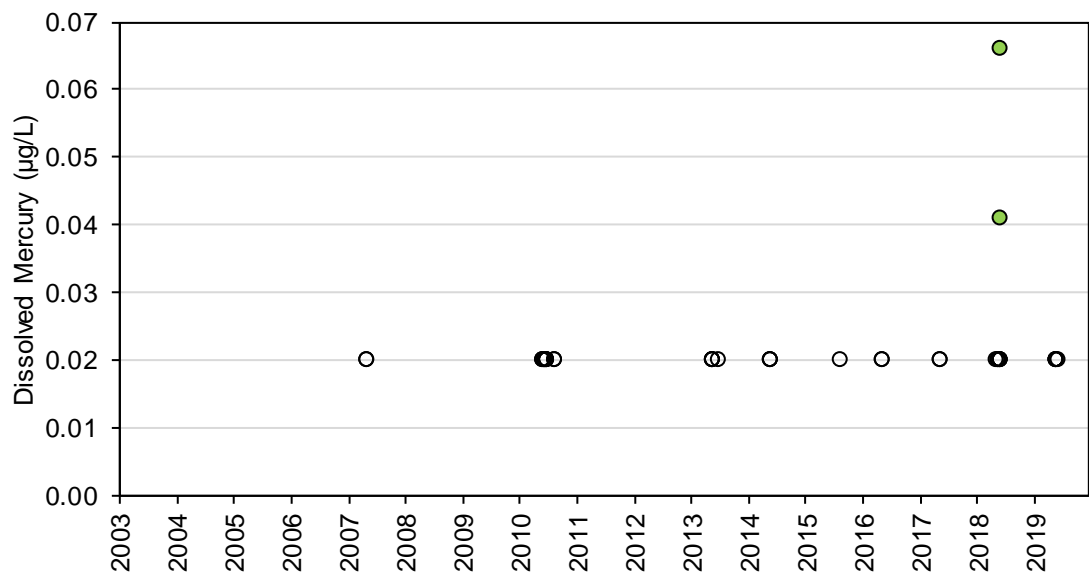


Figure 4H-58: Dissolved Molybdenum Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

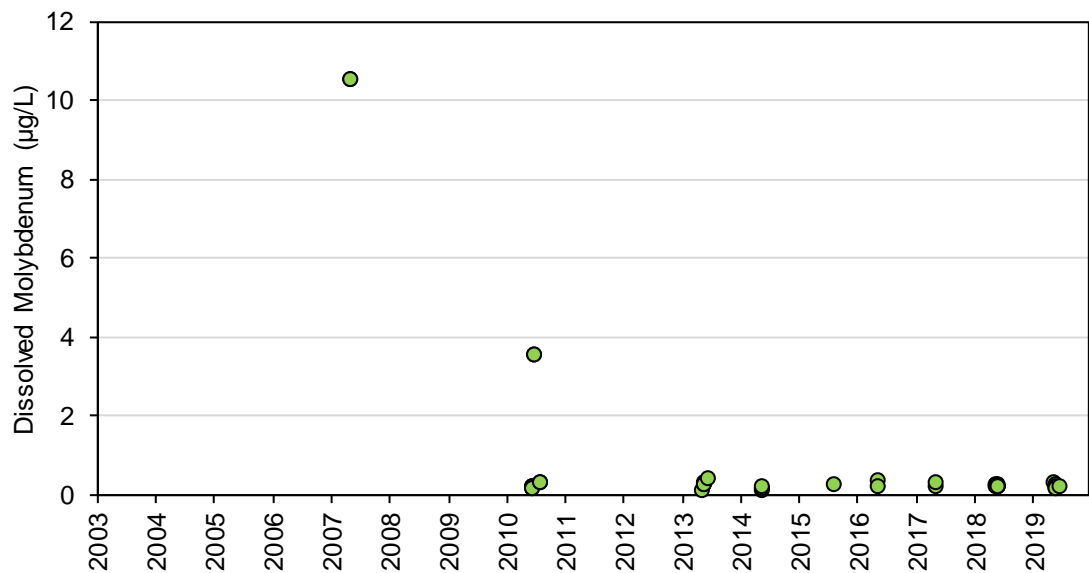


Figure 4H-59: Dissolved Nickel Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

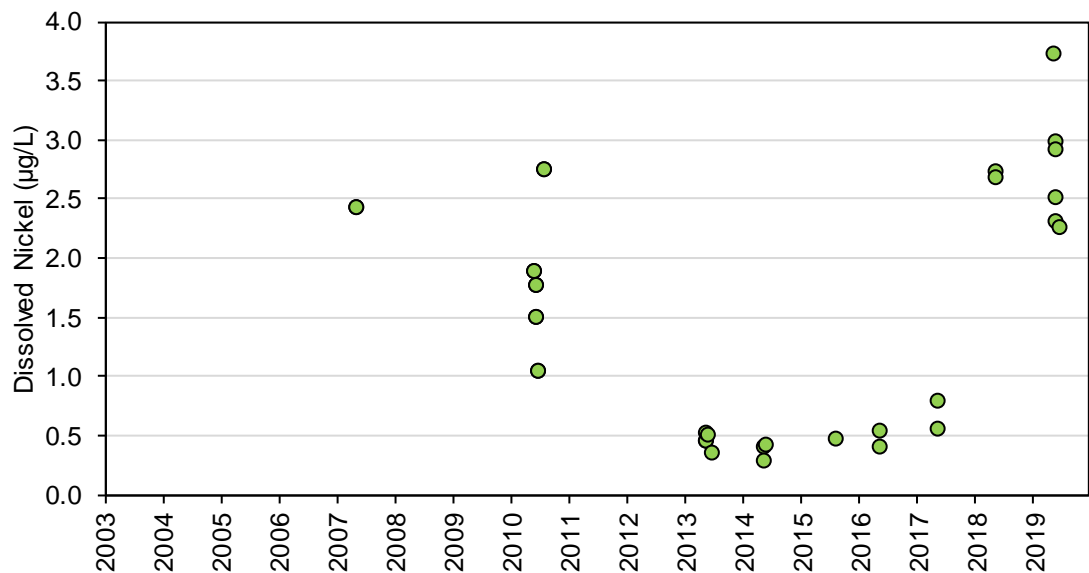


Figure 4H-60: Dissolved Rubidium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

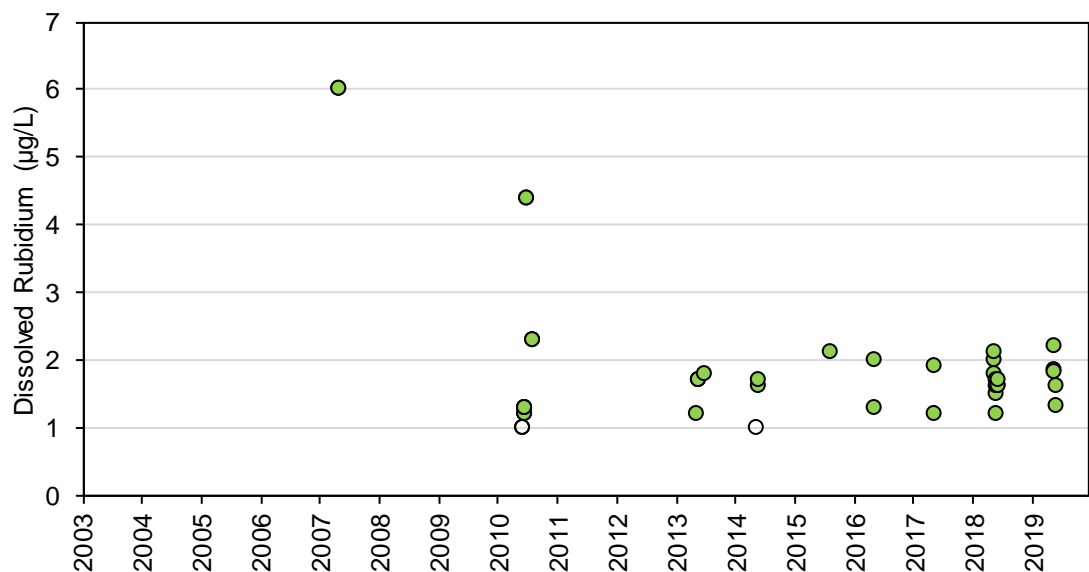


Figure 4H-61: Dissolved Selenium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

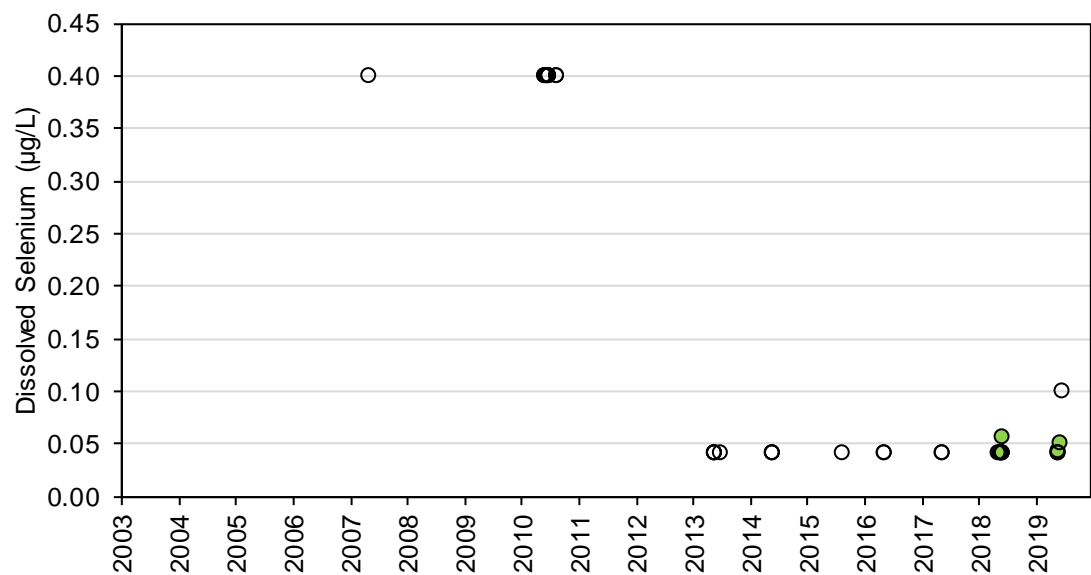


Figure 4H-62: Dissolved Silver Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

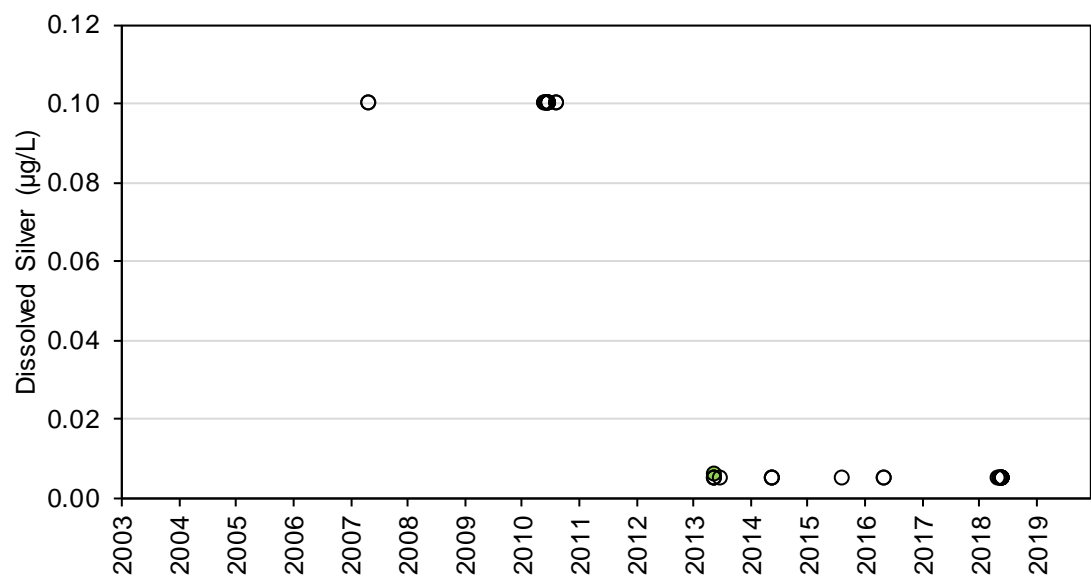


Figure 4H-63: Dissolved Strontium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

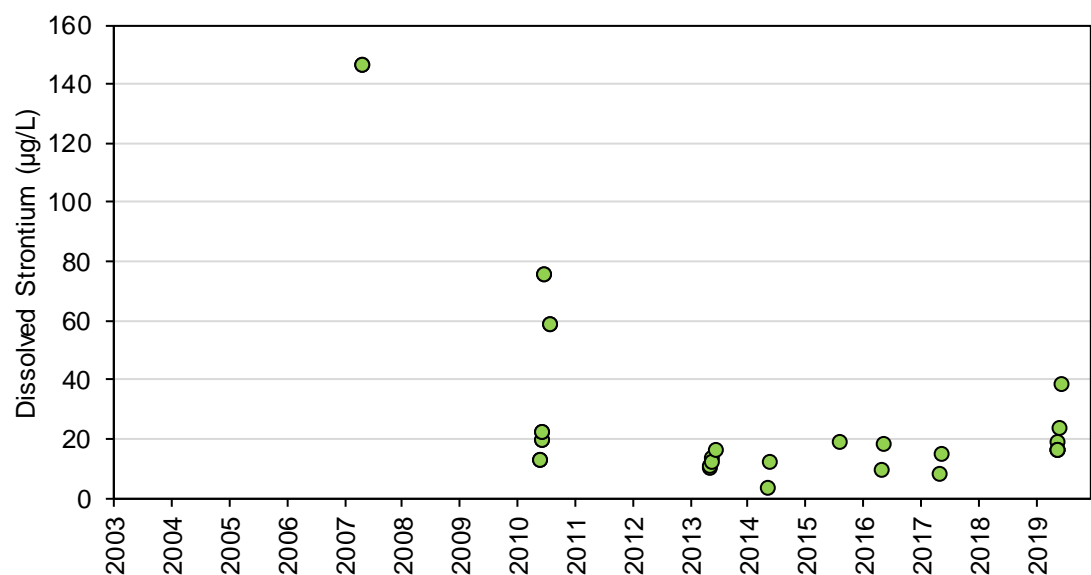


Figure 4H-64: Dissolved Thallium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

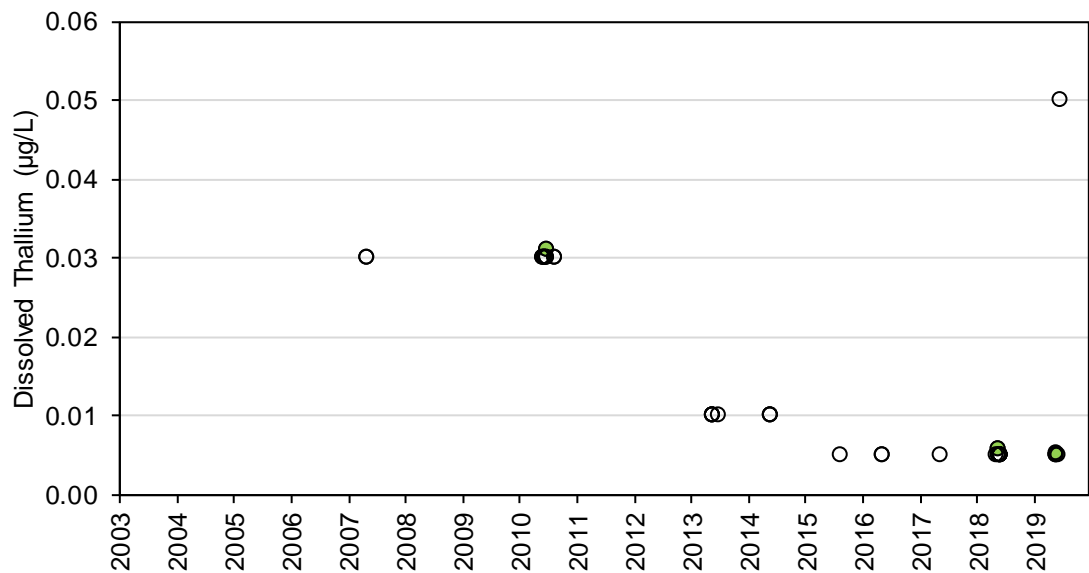


Figure 4H-65: Dissolved Titanium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

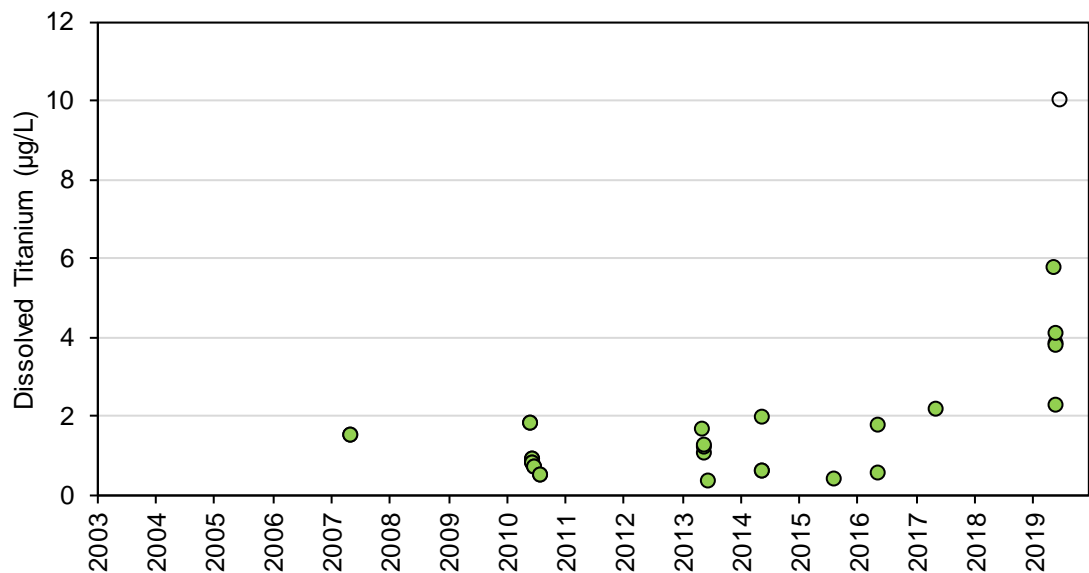


Figure 4H-66: Dissolved Uranium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

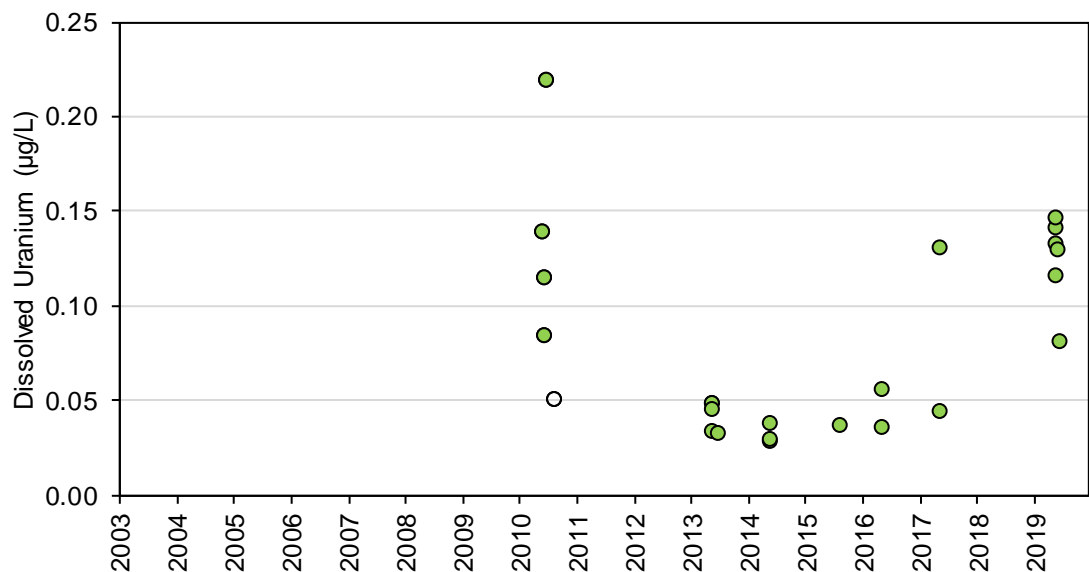


Figure 4H-67: Dissolved Vanadium Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance

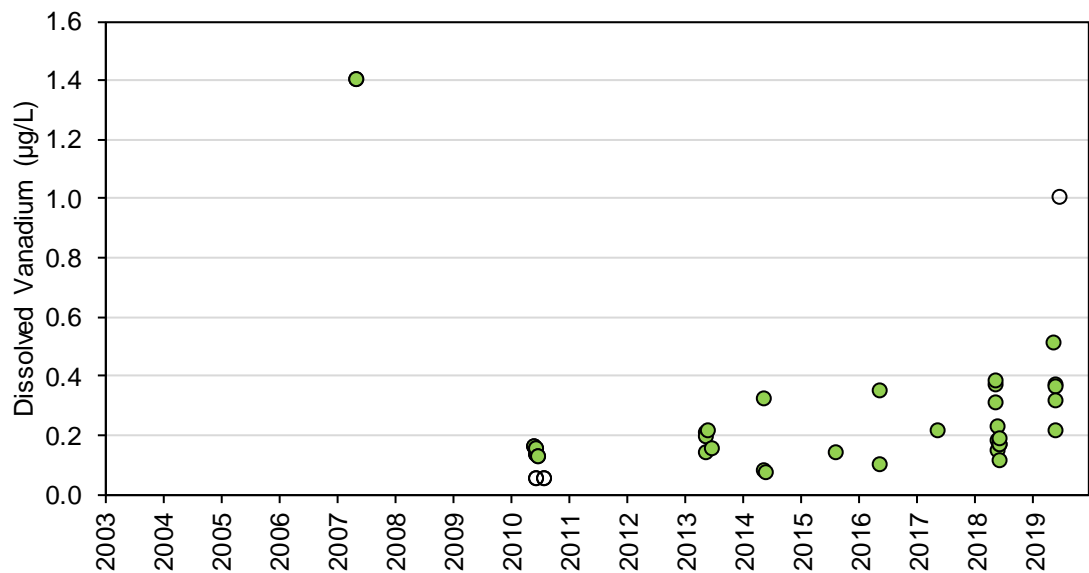
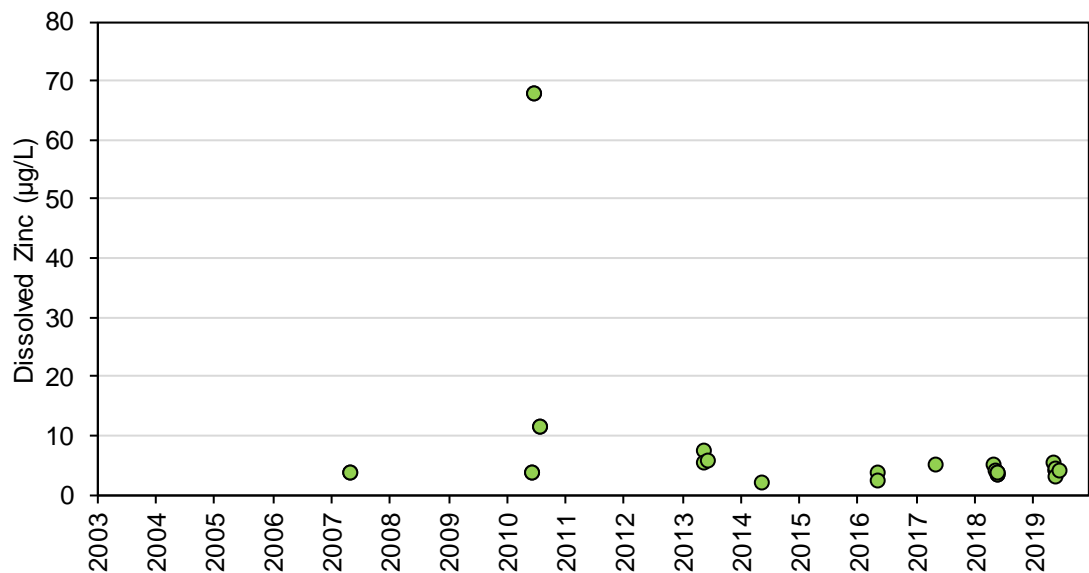


Figure 4H-68: Dissolved Zinc Concentrations at Station SNP 02-10 during Construction, Operations, and Extended Care and Maintenance



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ATTACHMENT 4I. FIGURES OF WATER QUALITY FOR SNP 02-11 AND 02-12

Figure 4I-1: Total Dissolved Solids, calculated (lab) Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

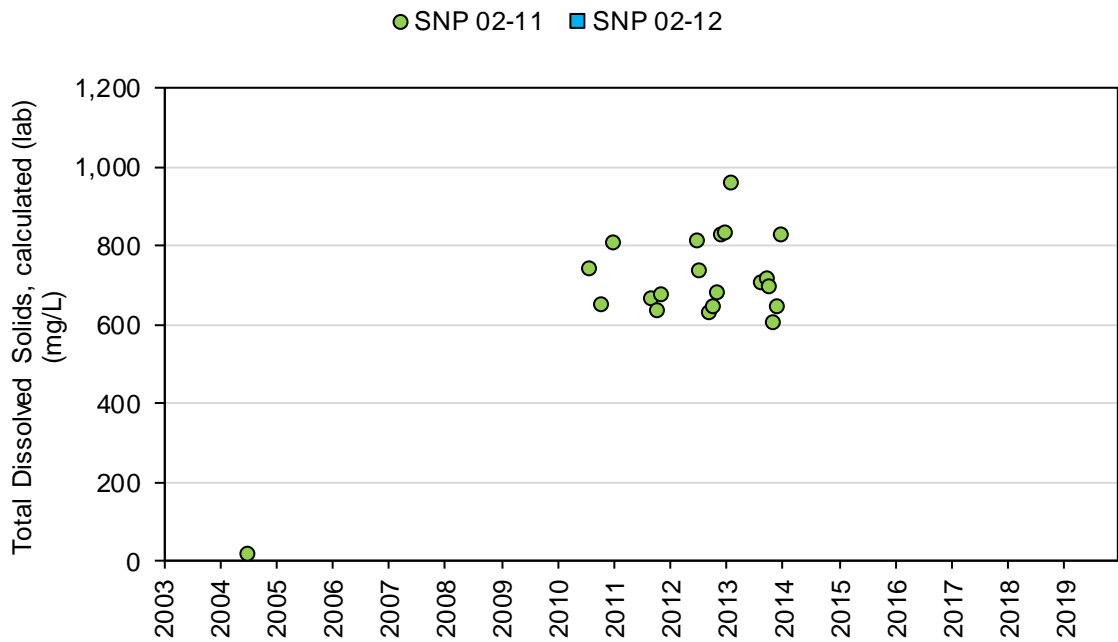


Figure 4I-2: Calcium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

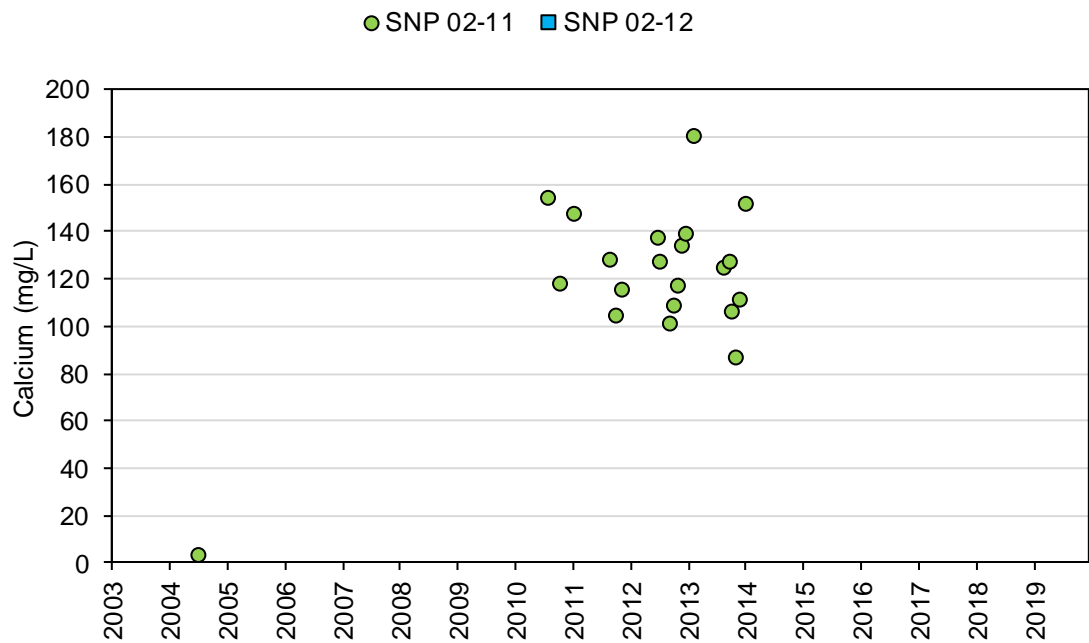


Figure 4I-3: Chloride Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

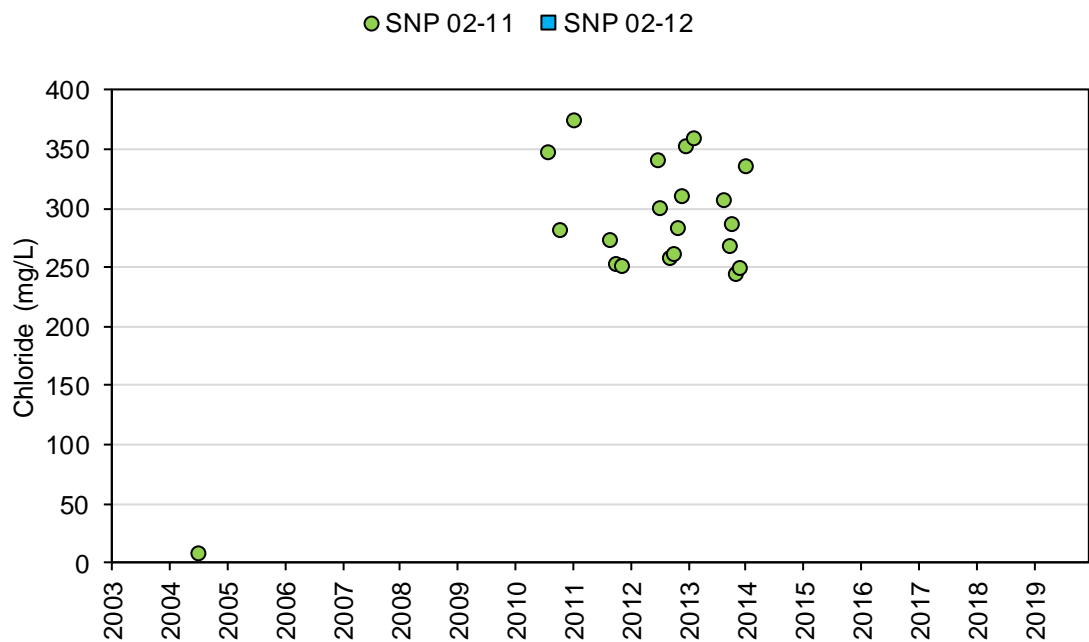


Figure 4I-4: Fluoride Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

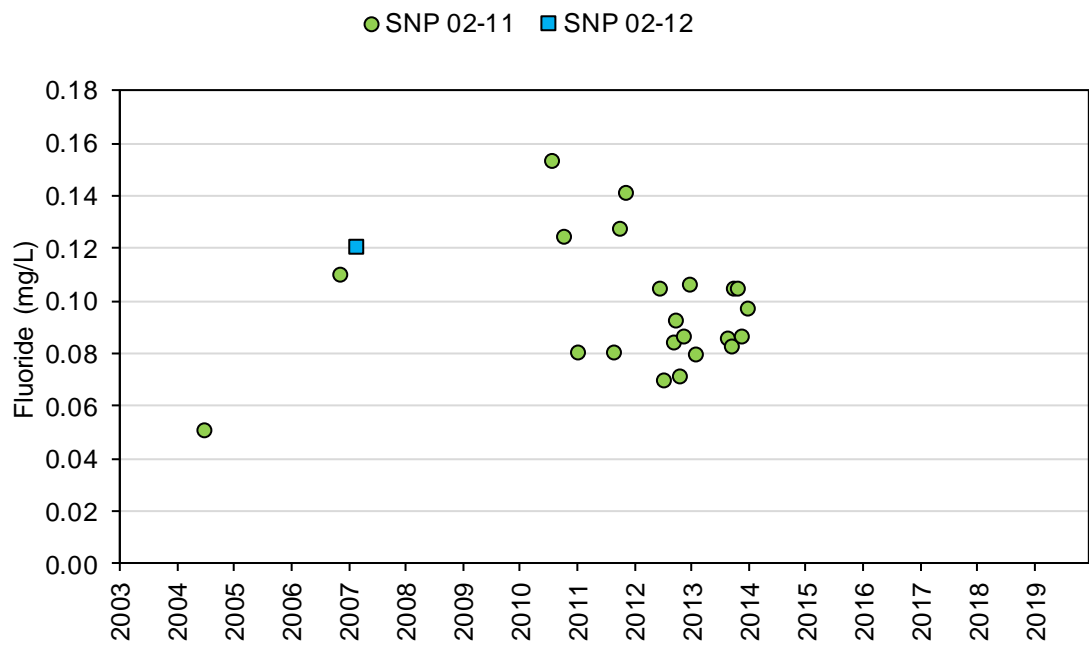


Figure 4I-5: Magnesium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

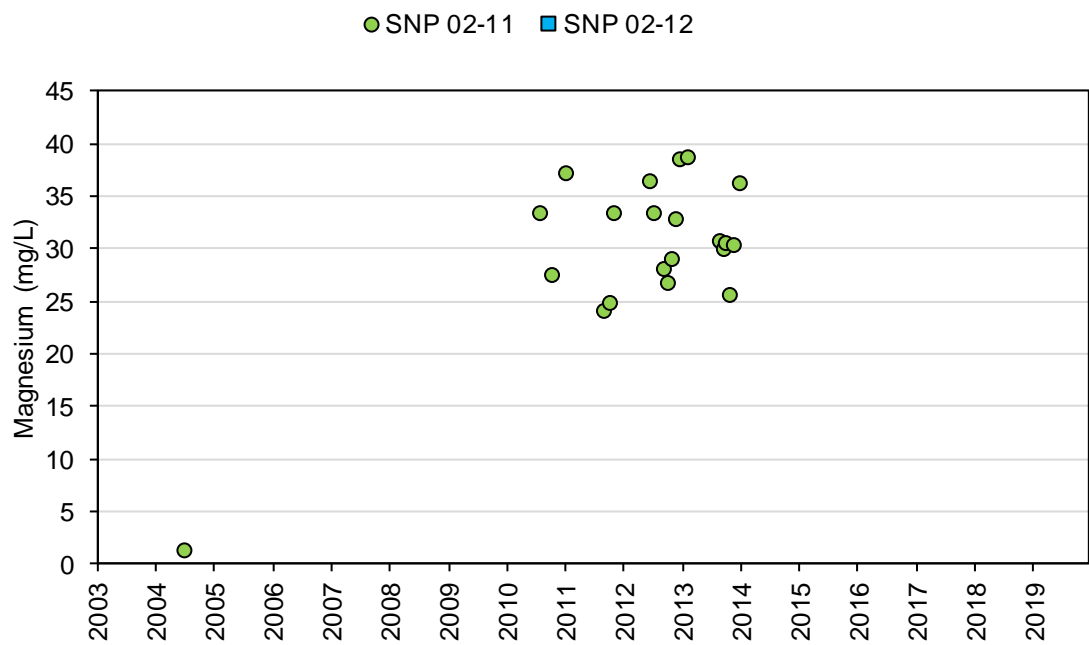


Figure 4I-6: Potassium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

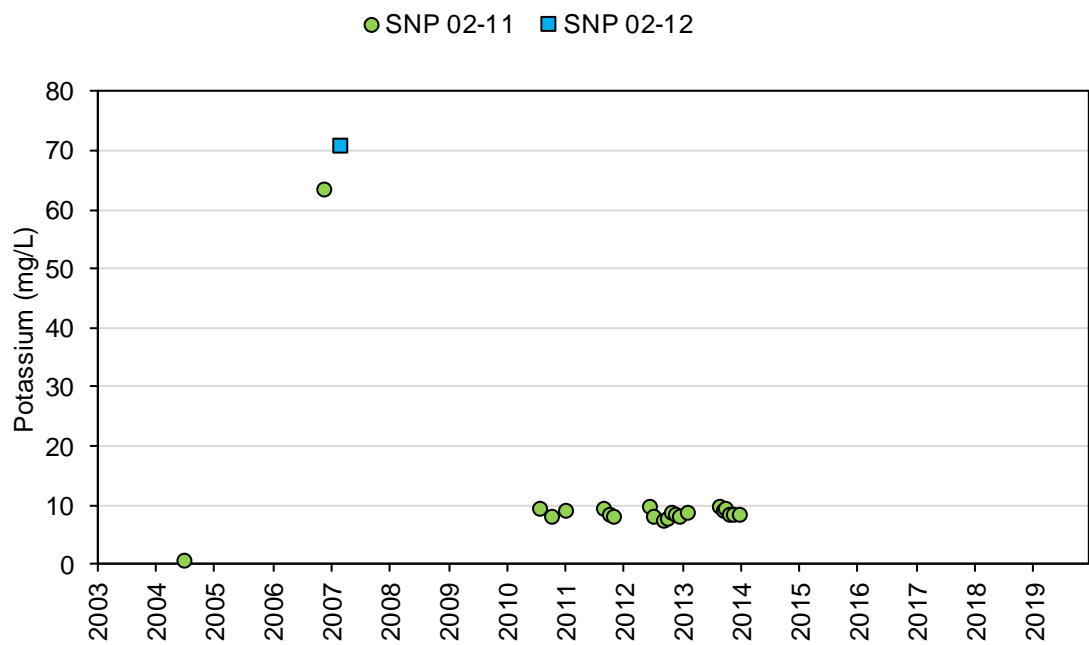


Figure 4I-7: Sodium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

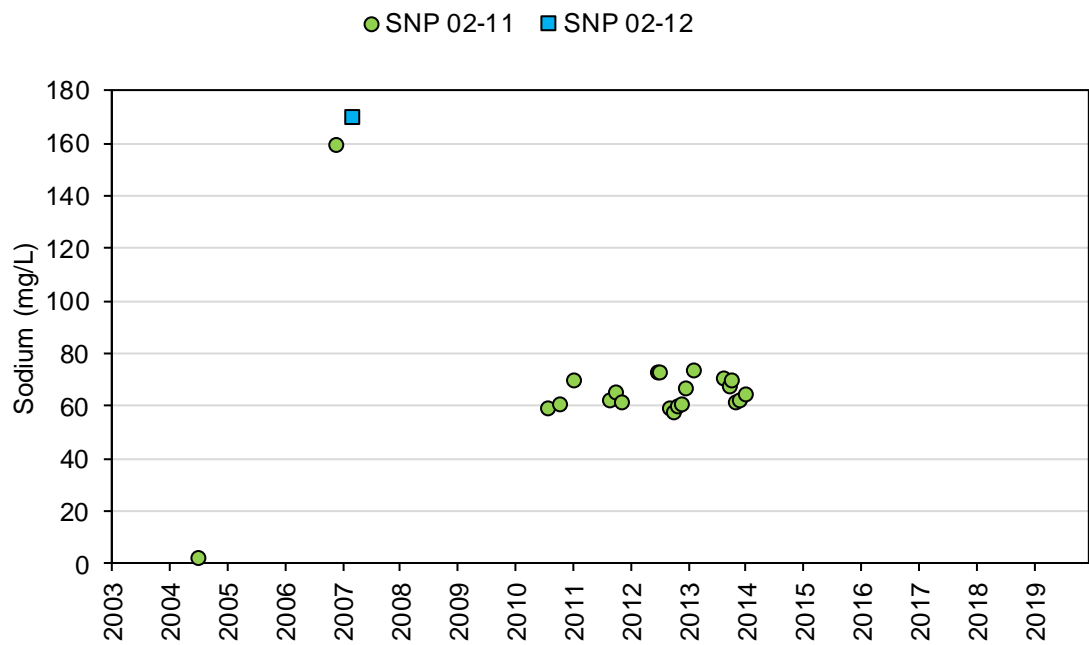


Figure 4I-8: Sulphate Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

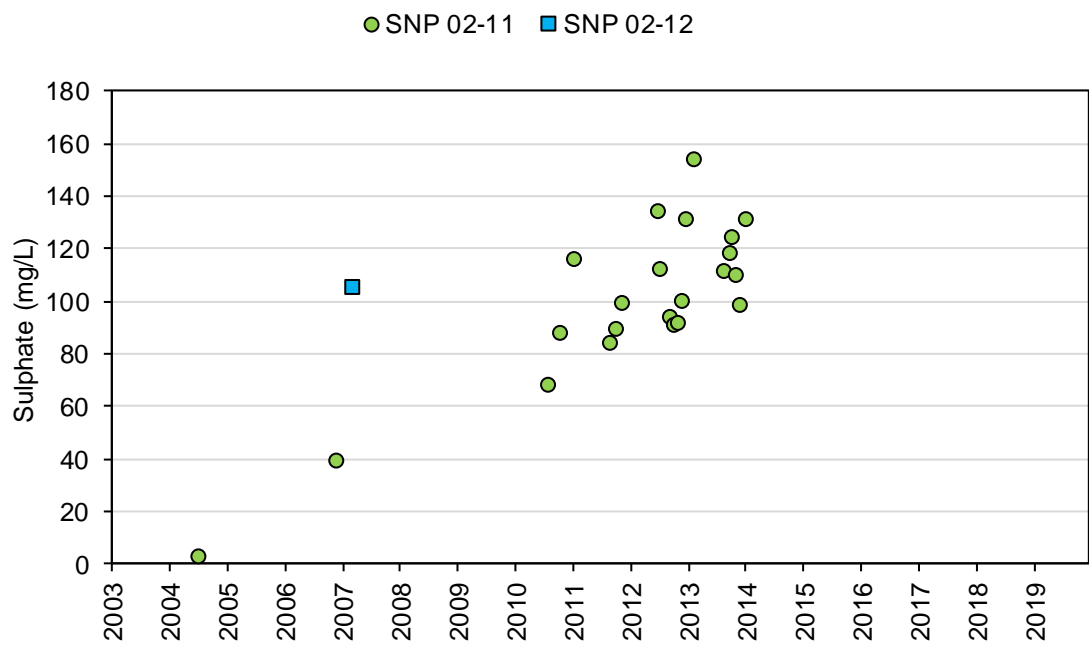


Figure 4I-9: Nitrate Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

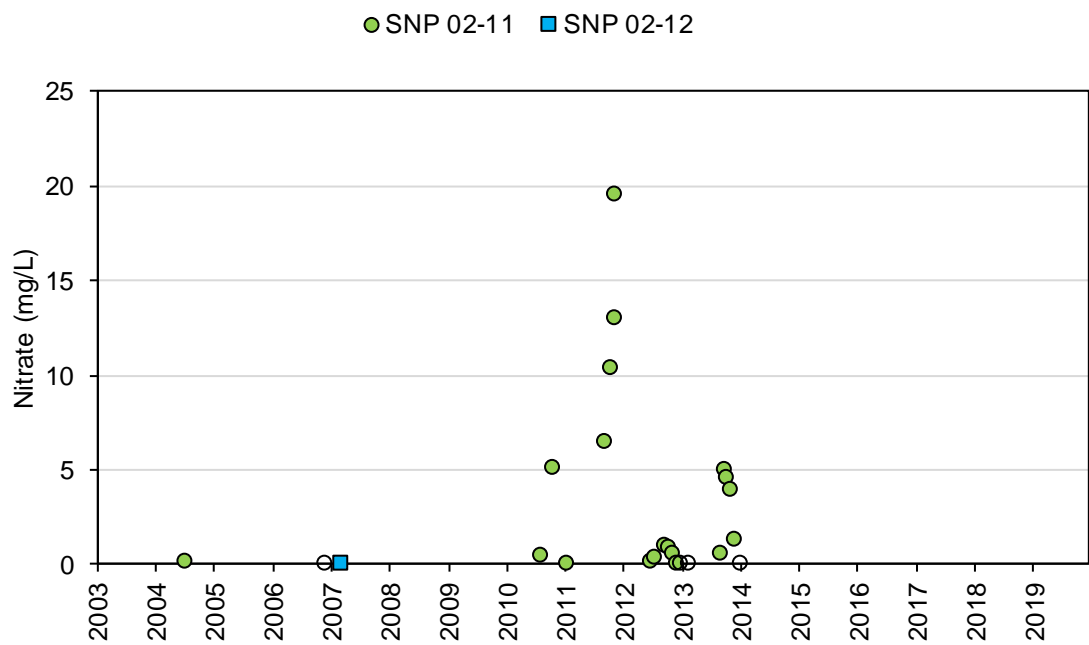


Figure 4I-10: Nitrite Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

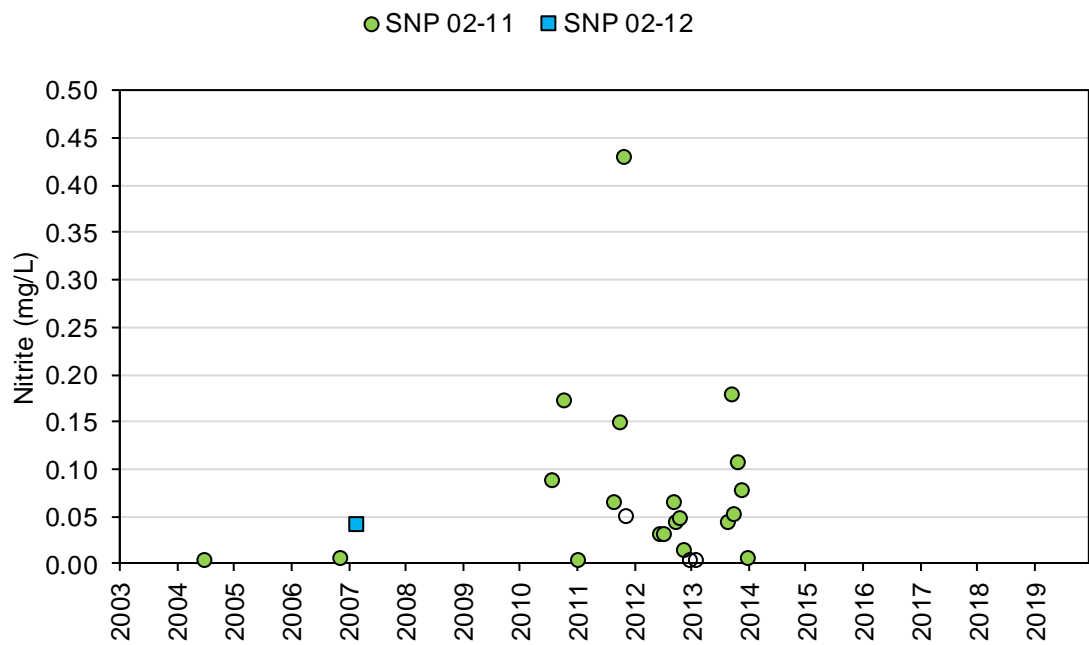


Figure 4I-11: Total Ammonia Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

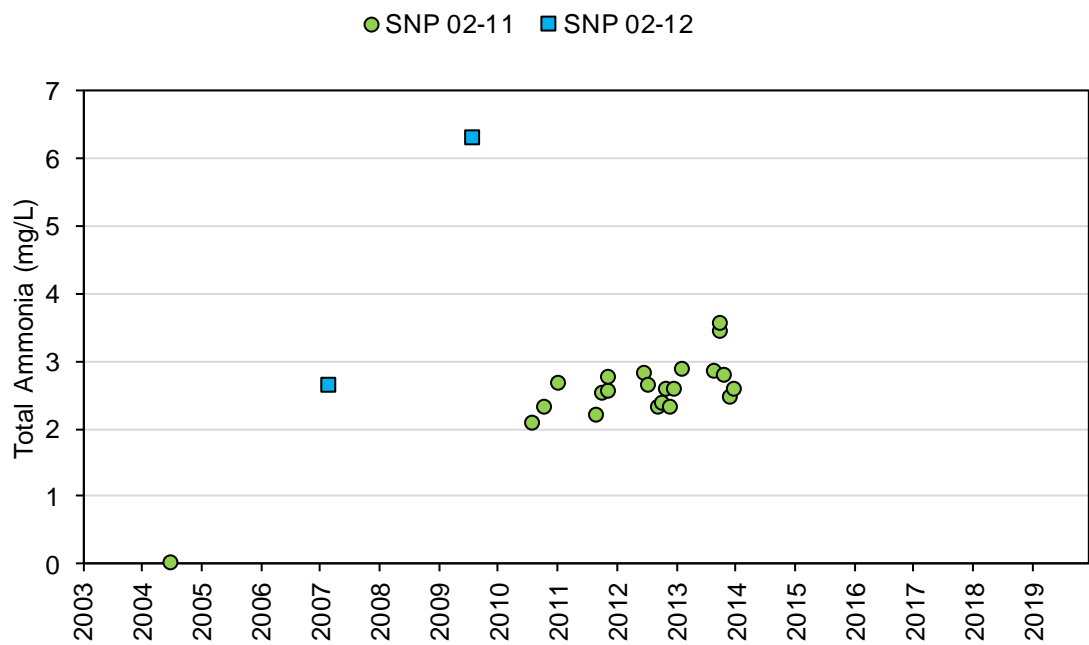


Figure 4I-12: Total Phosphorus Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

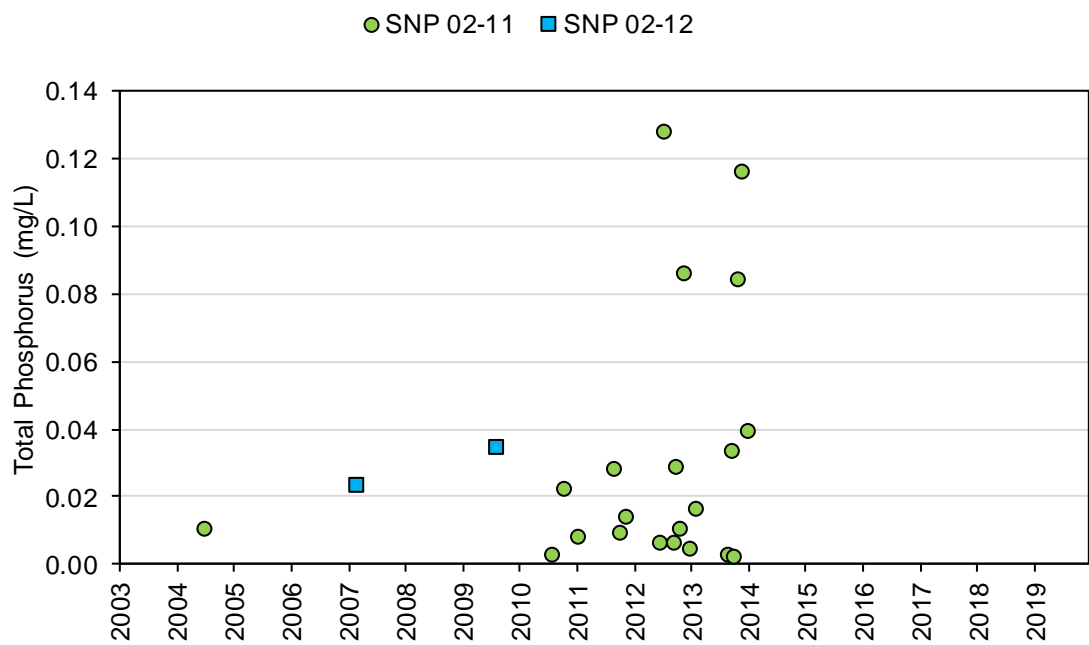


Figure 4I-13: Total Aluminum Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

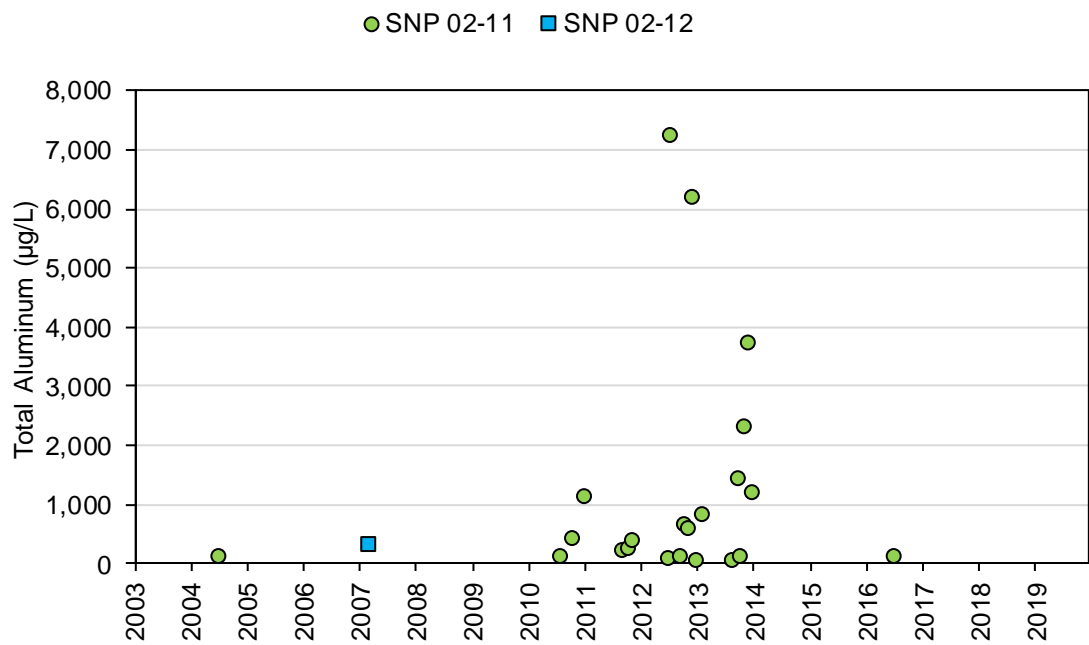


Figure 4I-14: Total Antimony Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

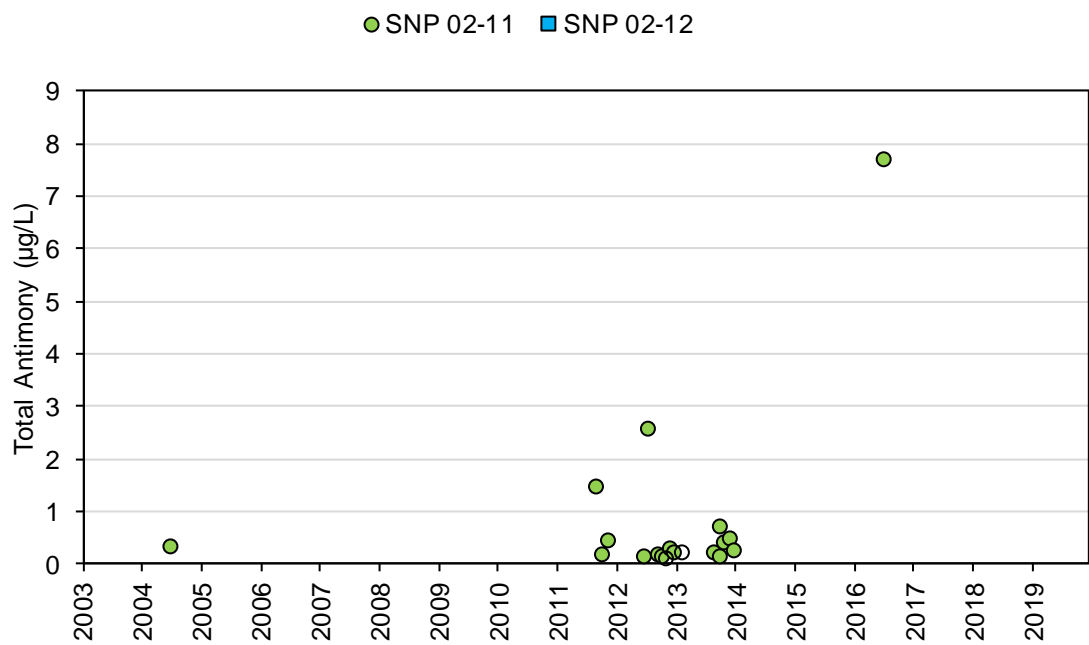


Figure 4I-15: Total Arsenic Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

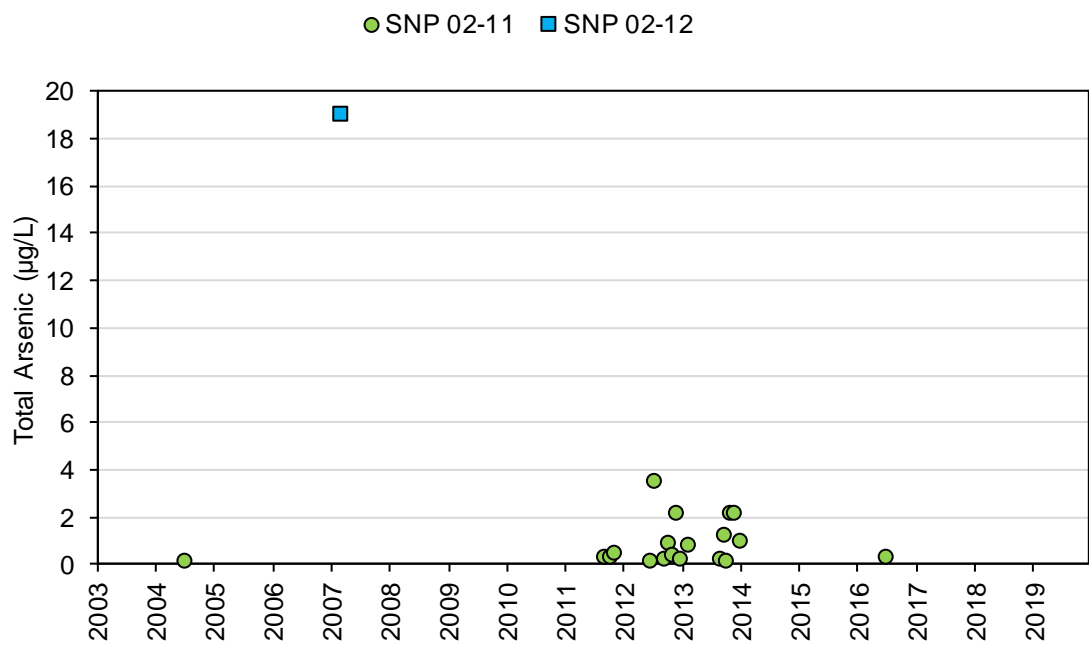


Figure 4I-16: Total Barium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

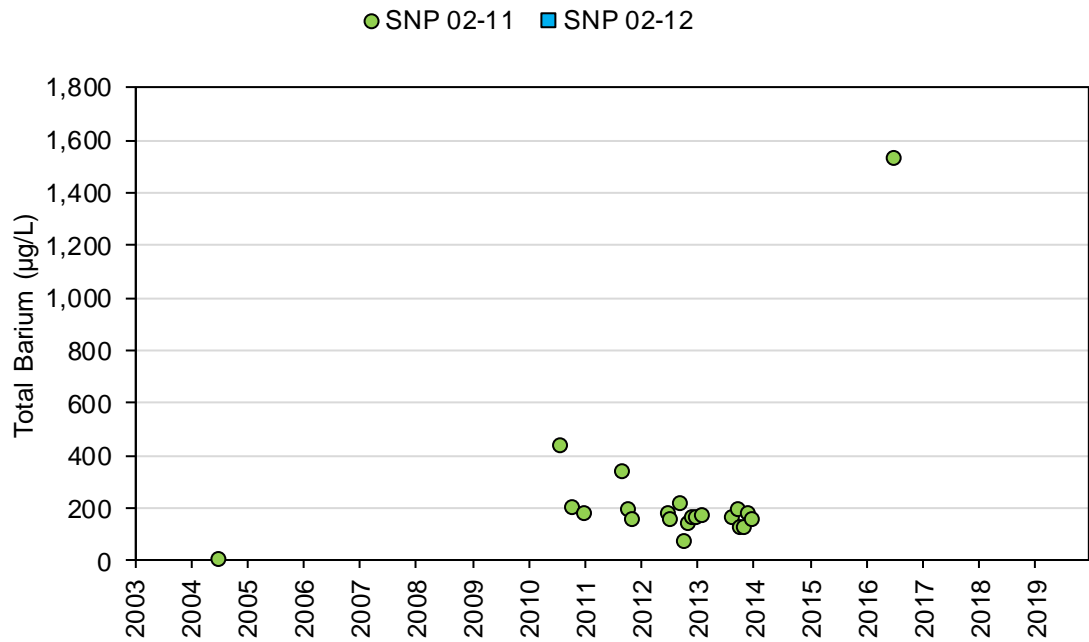


Figure 4I-17: Total Beryllium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

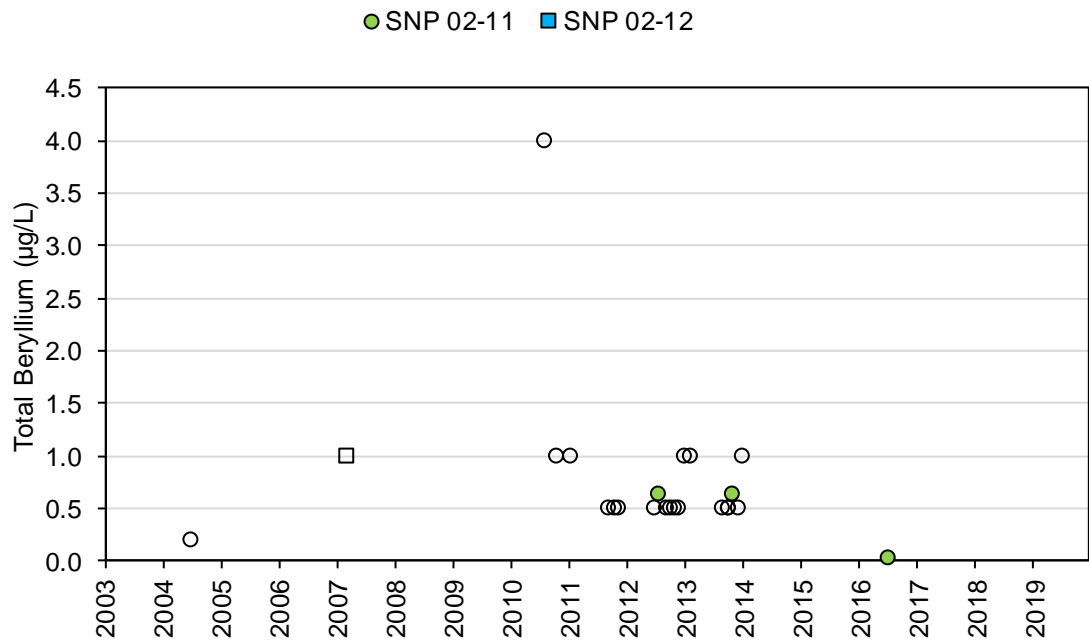


Figure 4I-18: Total Bismuth Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

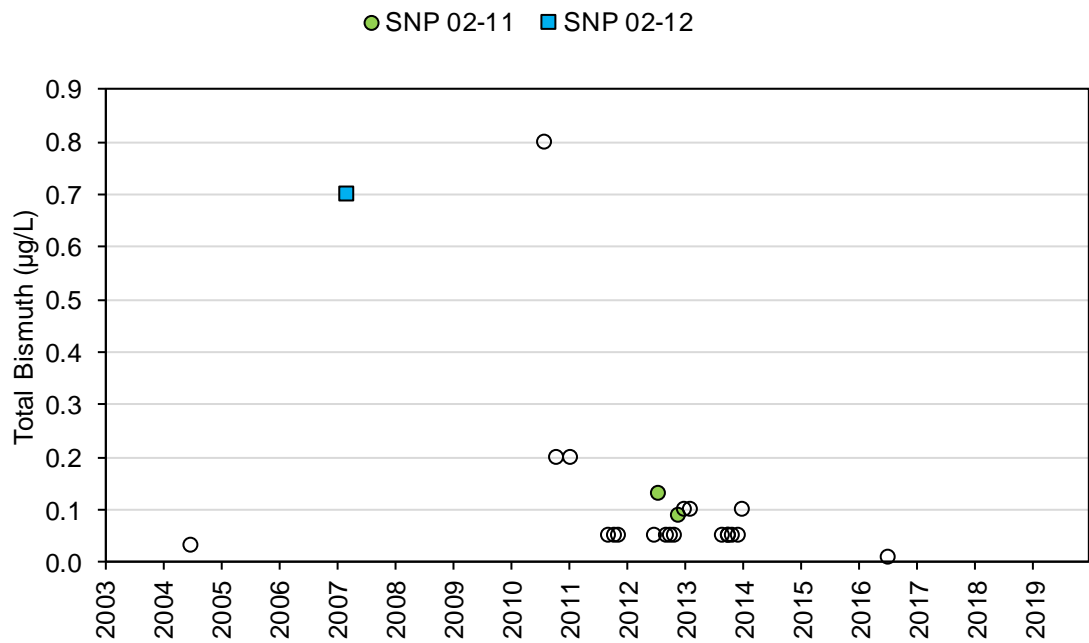


Figure 4I-19: Total Boron Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

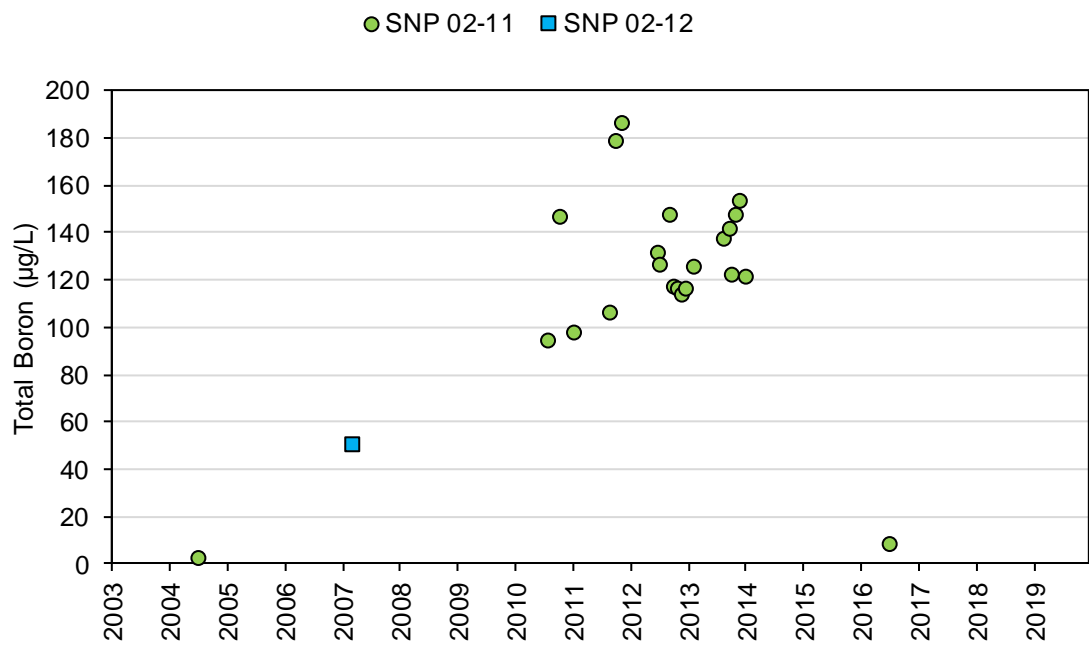


Figure 4I-20: Total Cadmium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

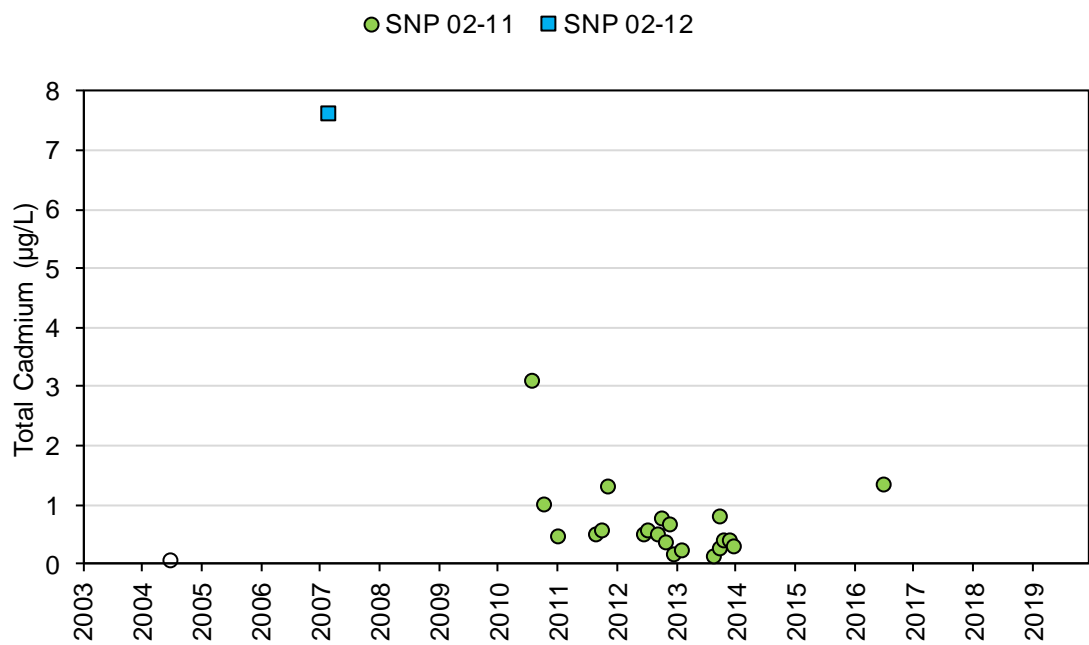


Figure 4I-21: Total Cesium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

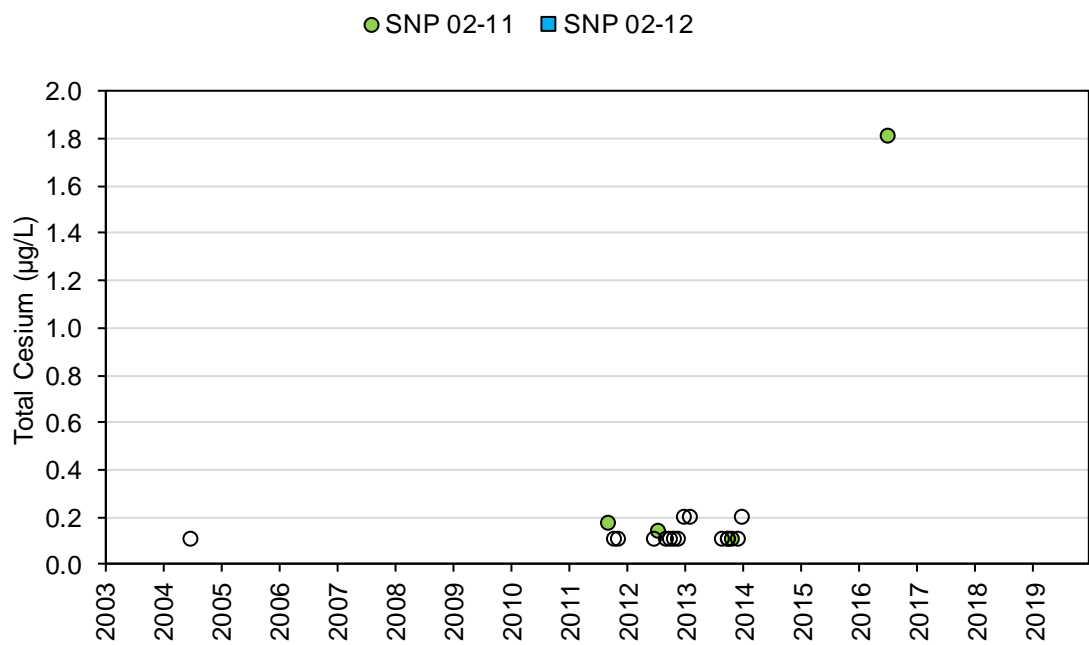


Figure 4I-22: Total Chromium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

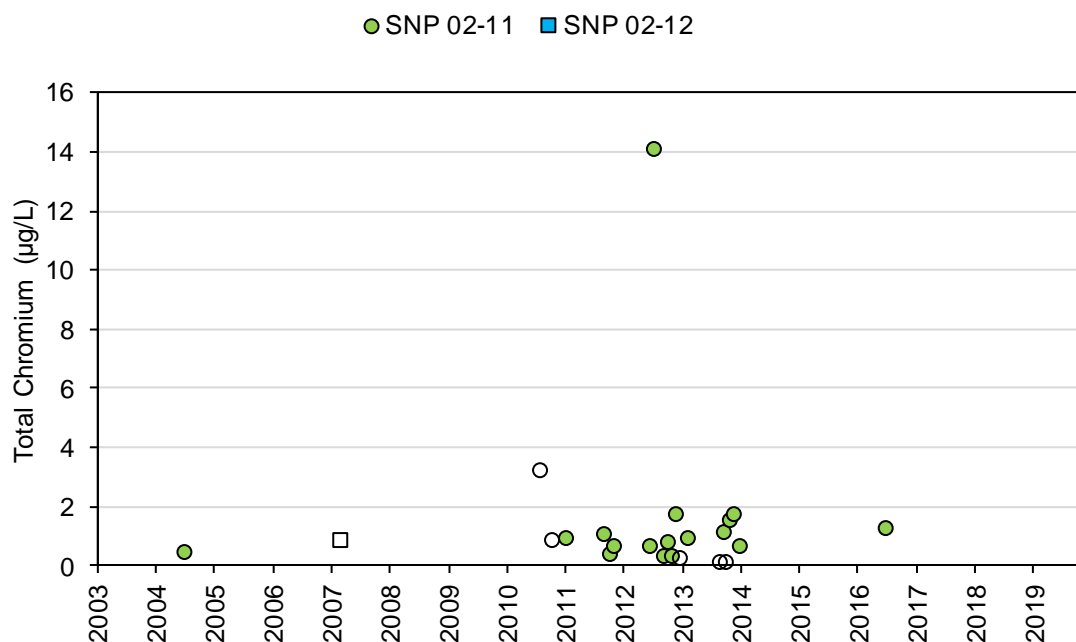


Figure 4I-23: Total Cobalt Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

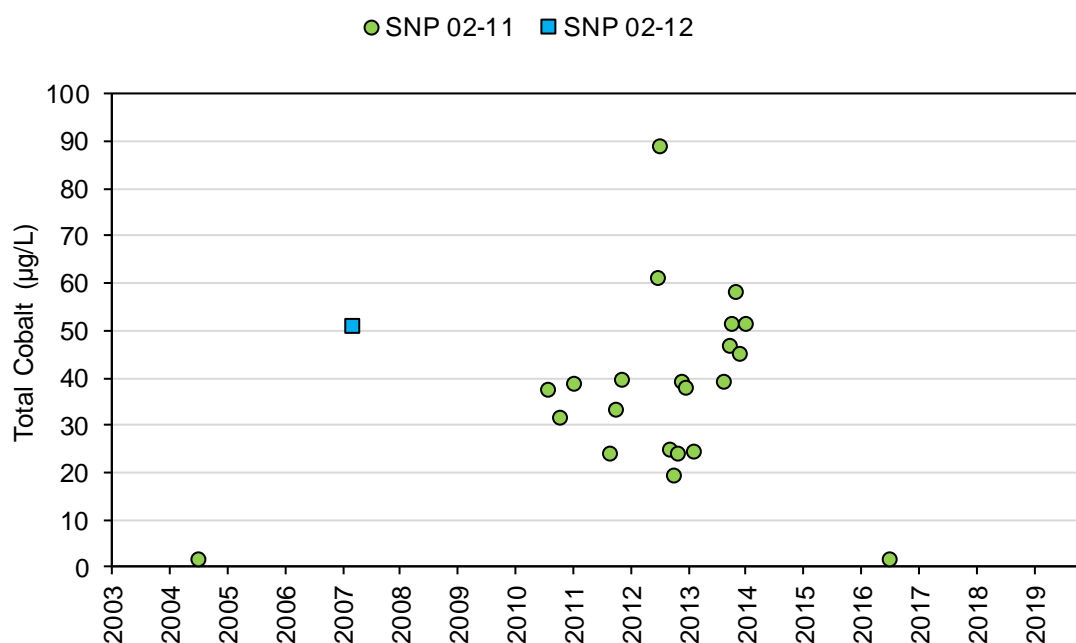


Figure 4I-24: Total Copper Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

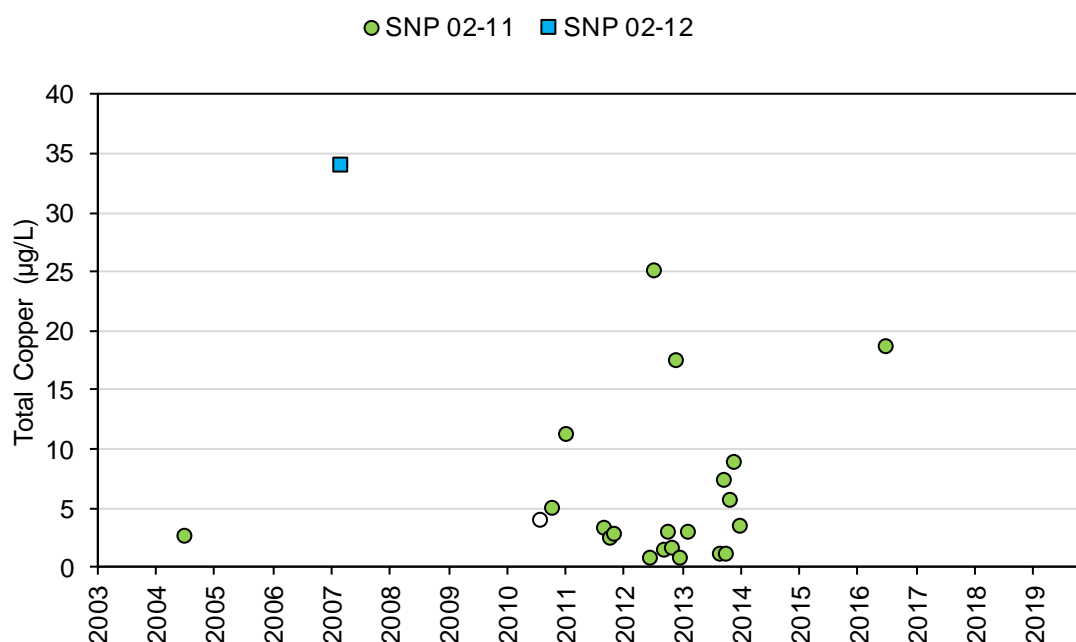


Figure 4I-25: Total Iron Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

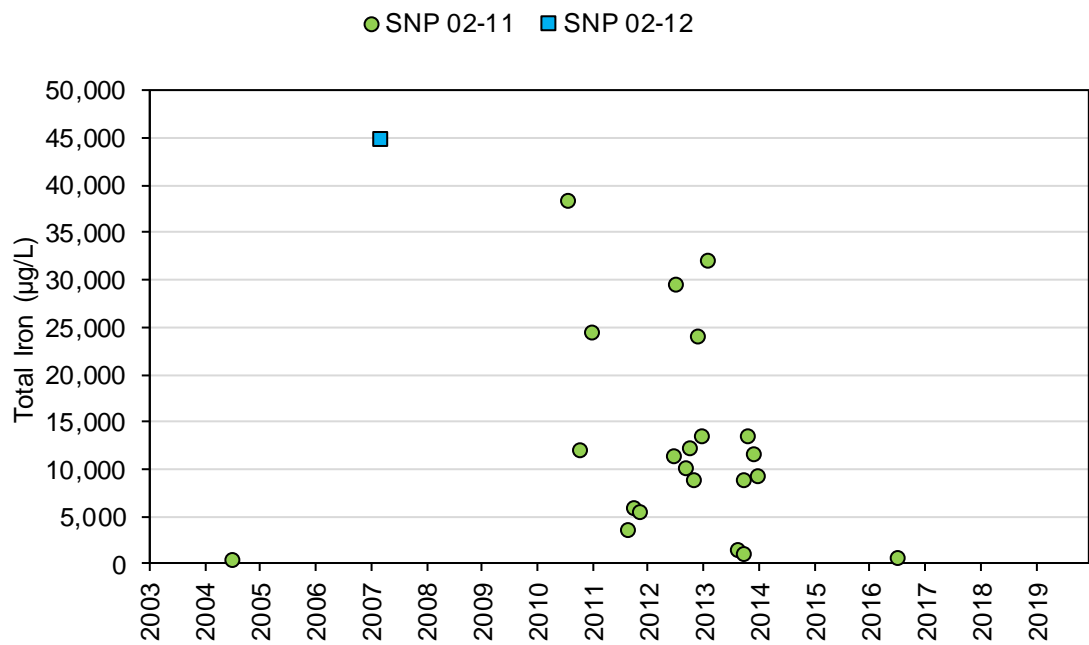


Figure 4I-26: Total Lead Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

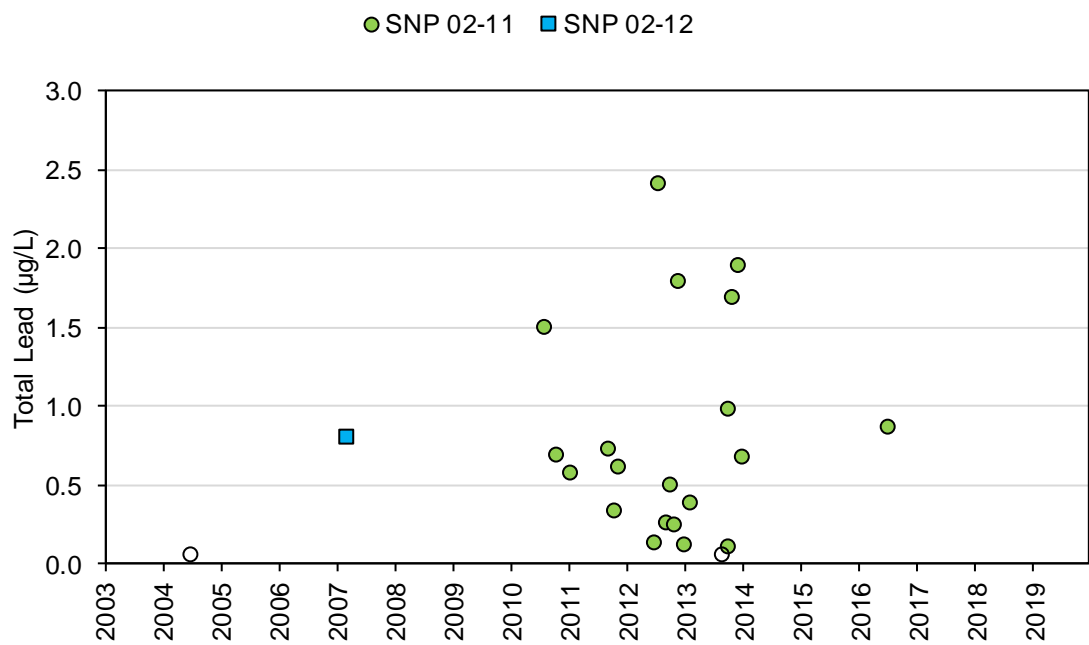


Figure 4I-27: Total Lithium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

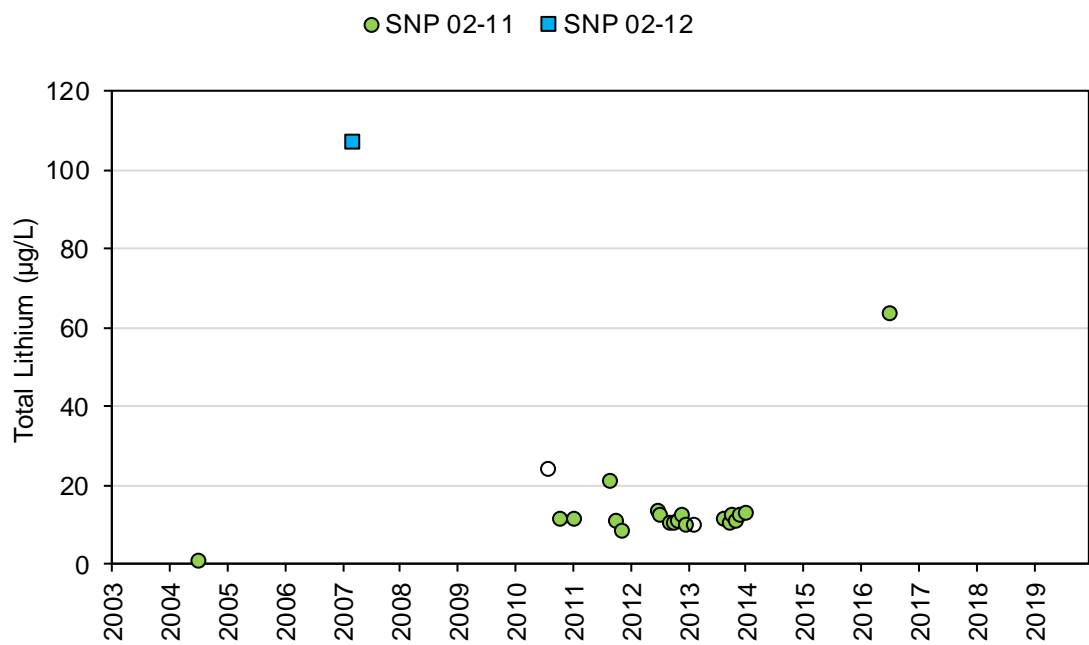


Figure 4I-28: Total Manganese Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

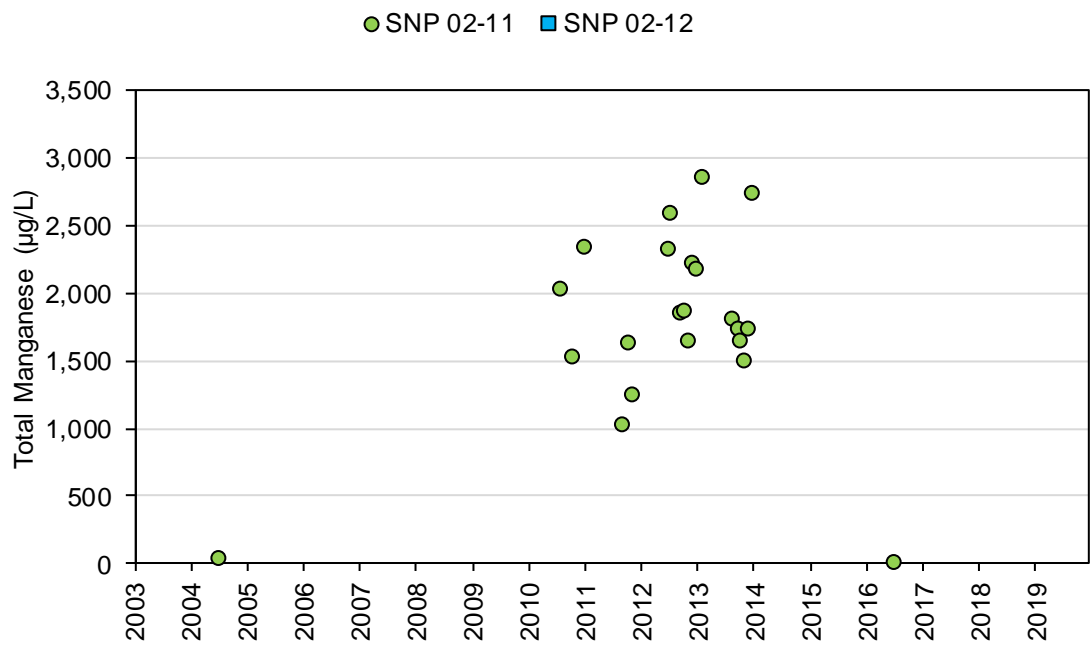


Figure 4I-29: Total Mercury Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

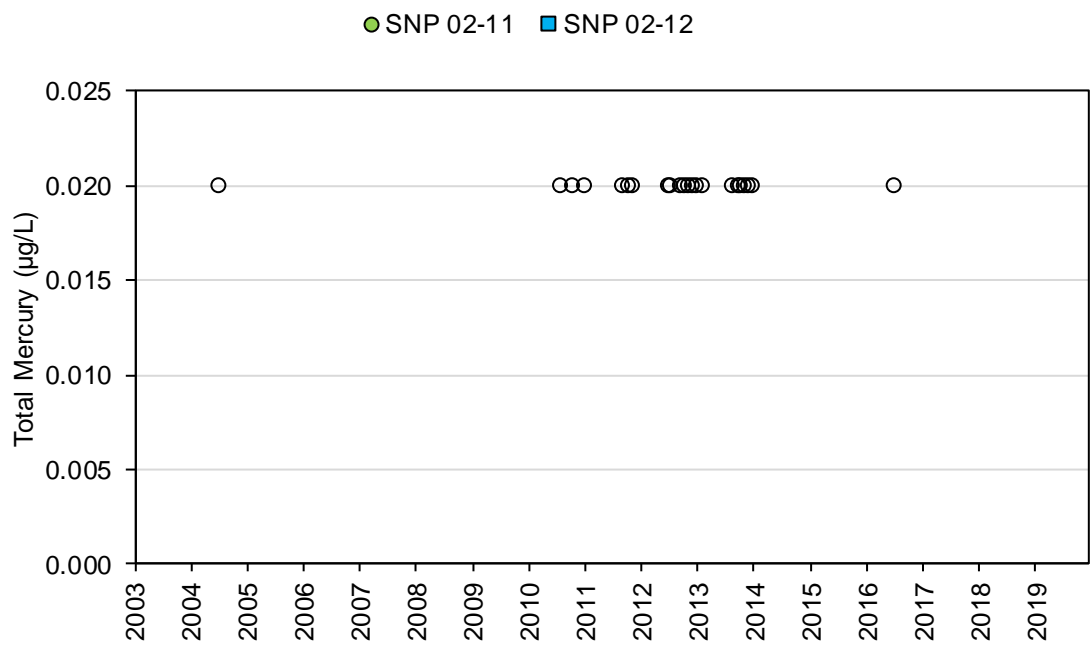


Figure 4I-30: Total Molybdenum Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

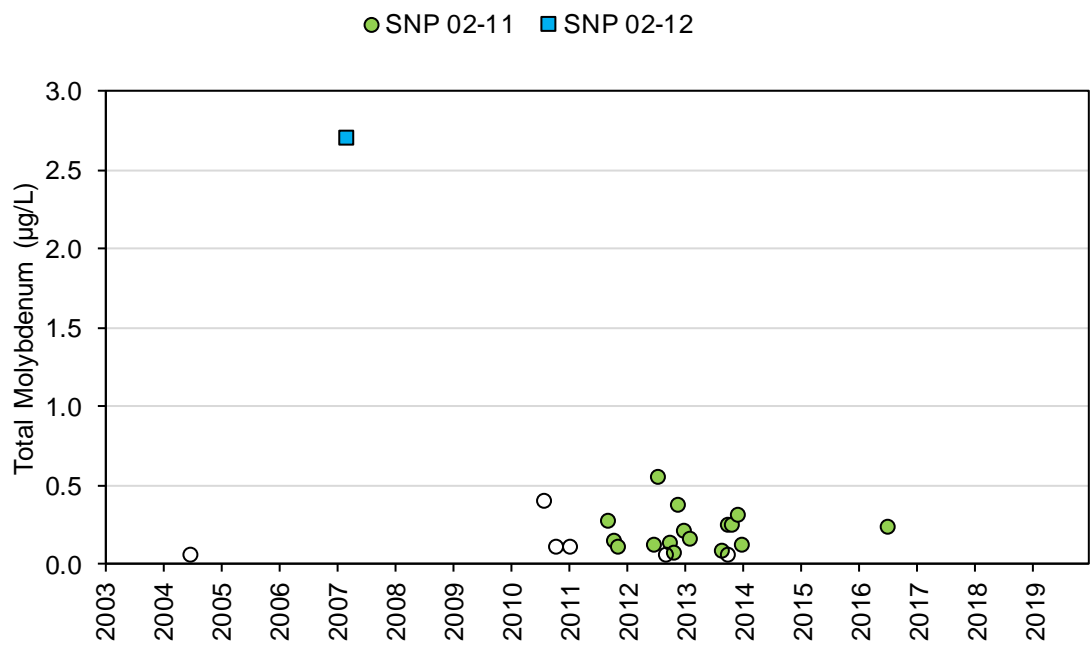


Figure 4I-31: Total Nickel Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

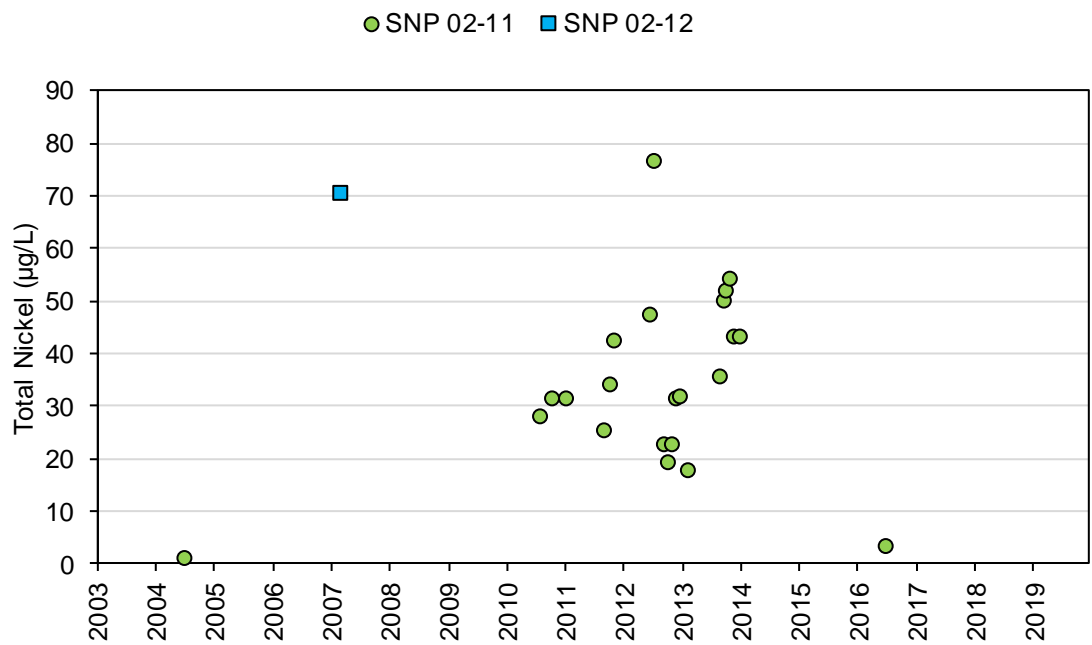


Figure 4I-32: Total Rubidium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

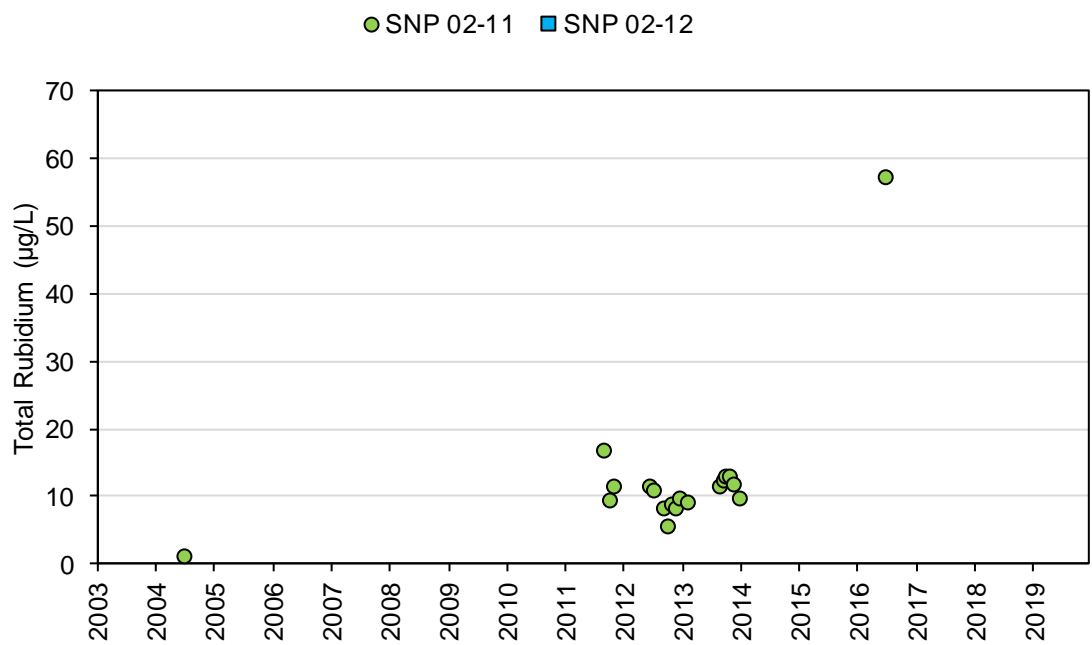


Figure 4I-33: Total Selenium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

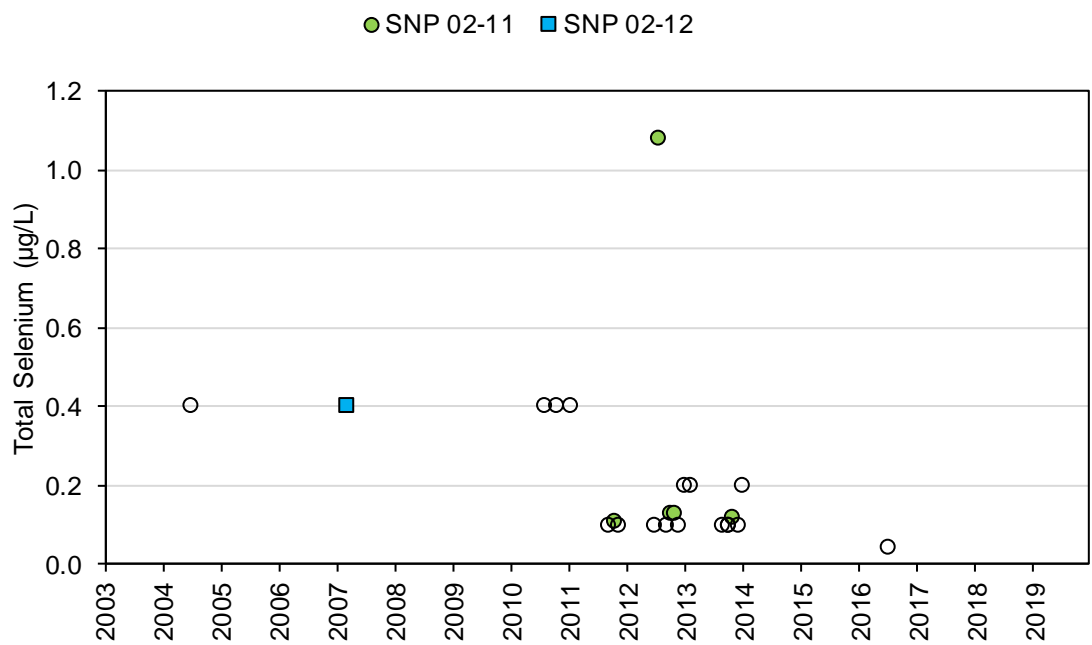


Figure 4I-34: Total Silver Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

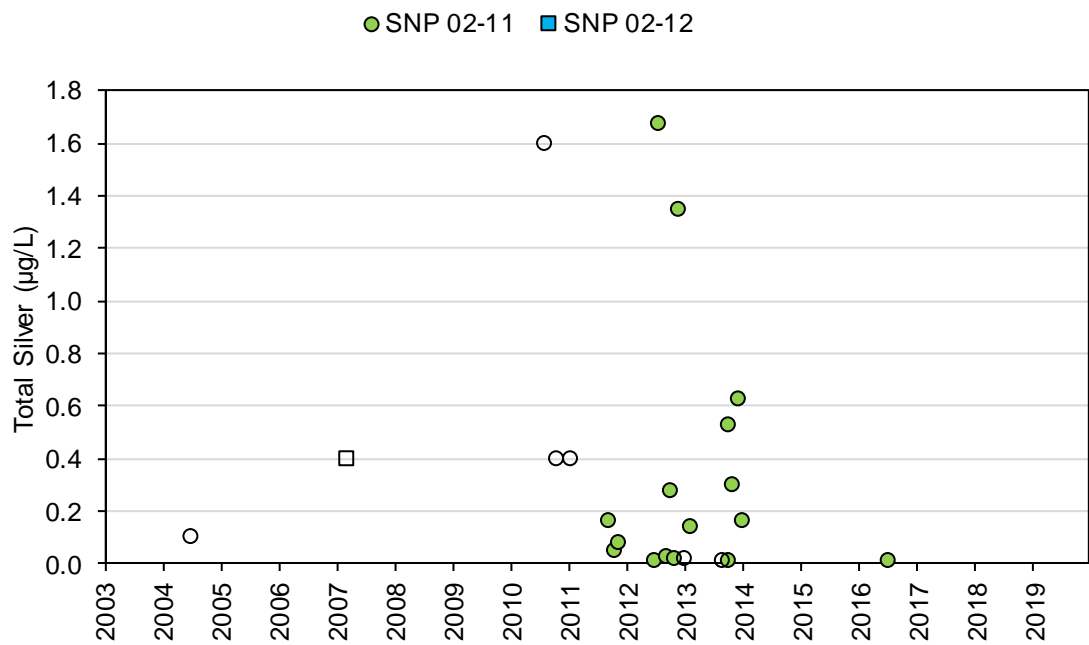


Figure 4I-37: Total Titanium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

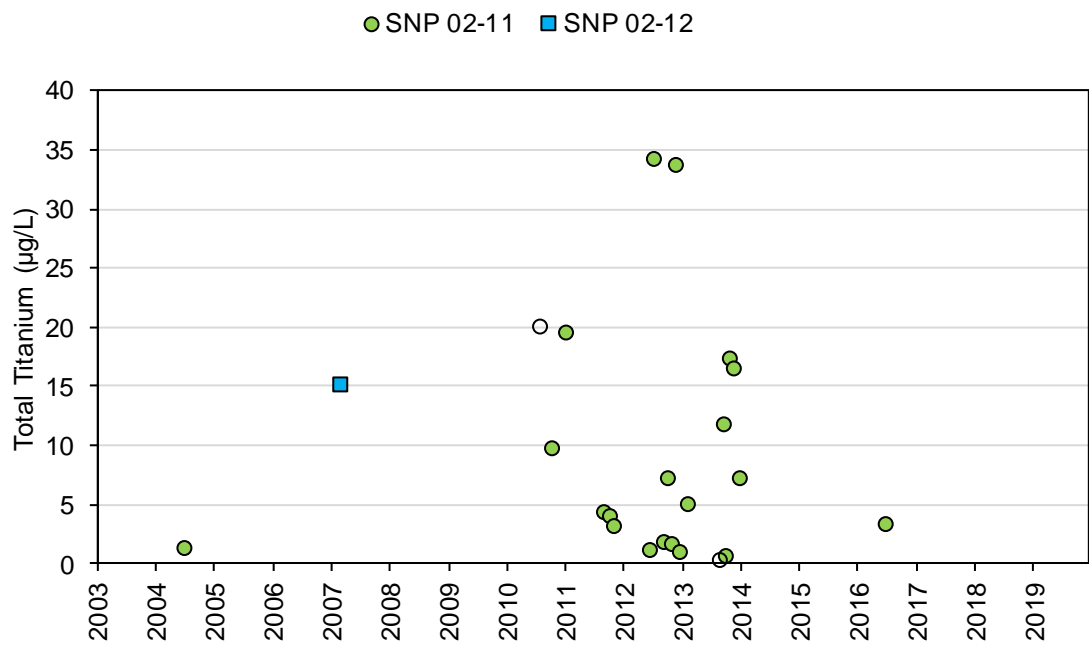


Figure 4I-38: Total Uranium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

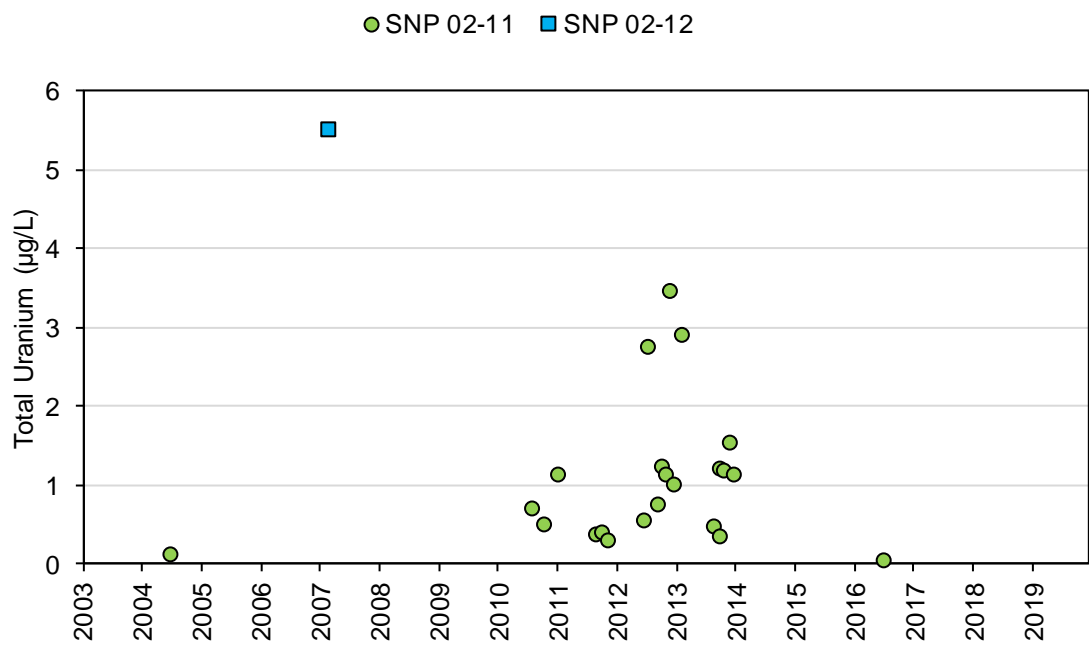


Figure 4I-39: Total Vanadium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

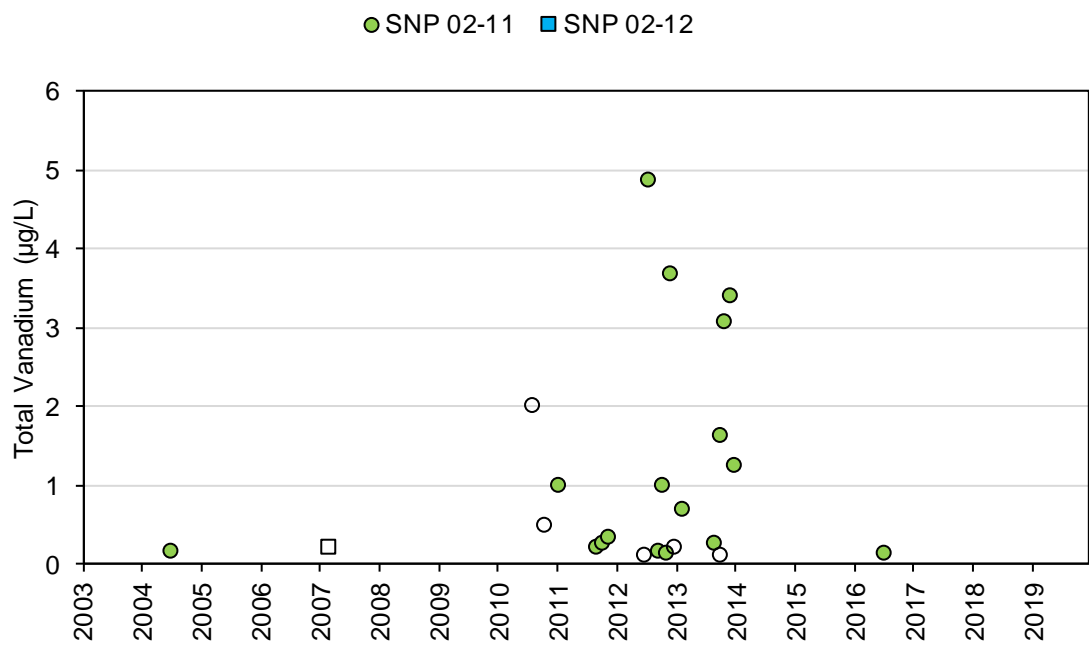


Figure 4I-40: Total Zinc Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

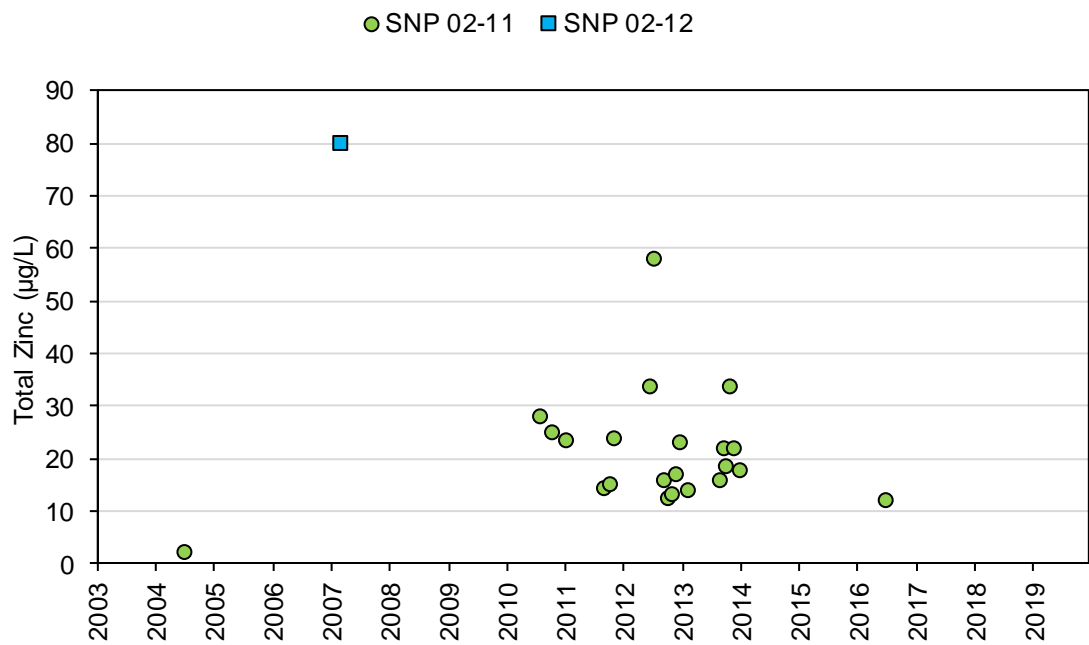


Figure 4I-41: Dissolved Aluminum Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

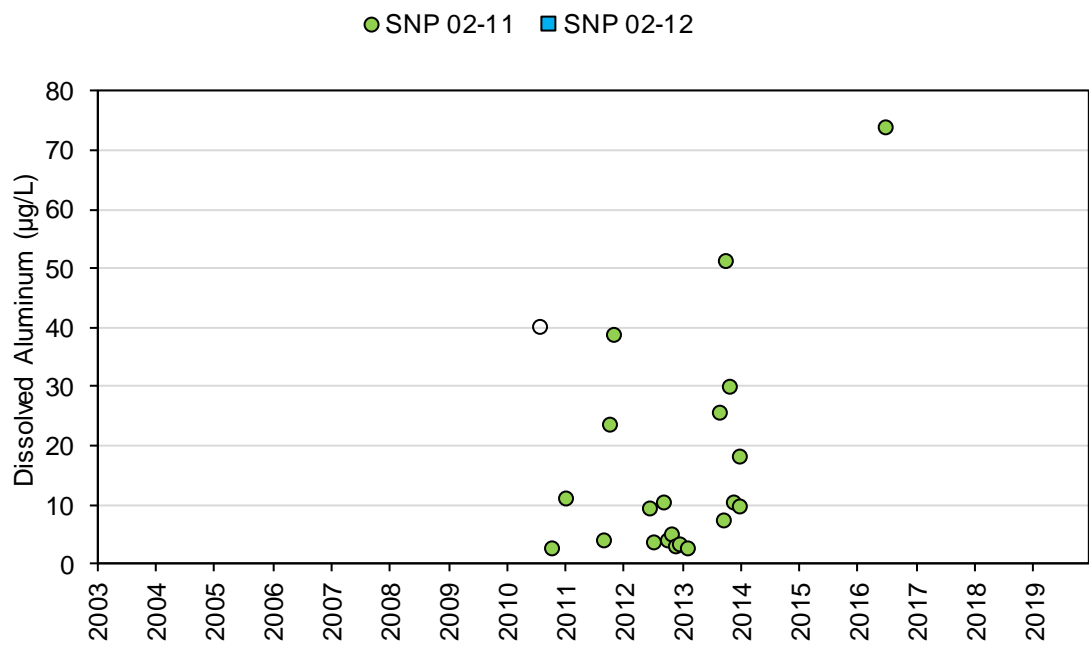


Figure 4I-42: Dissolved Antimony Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

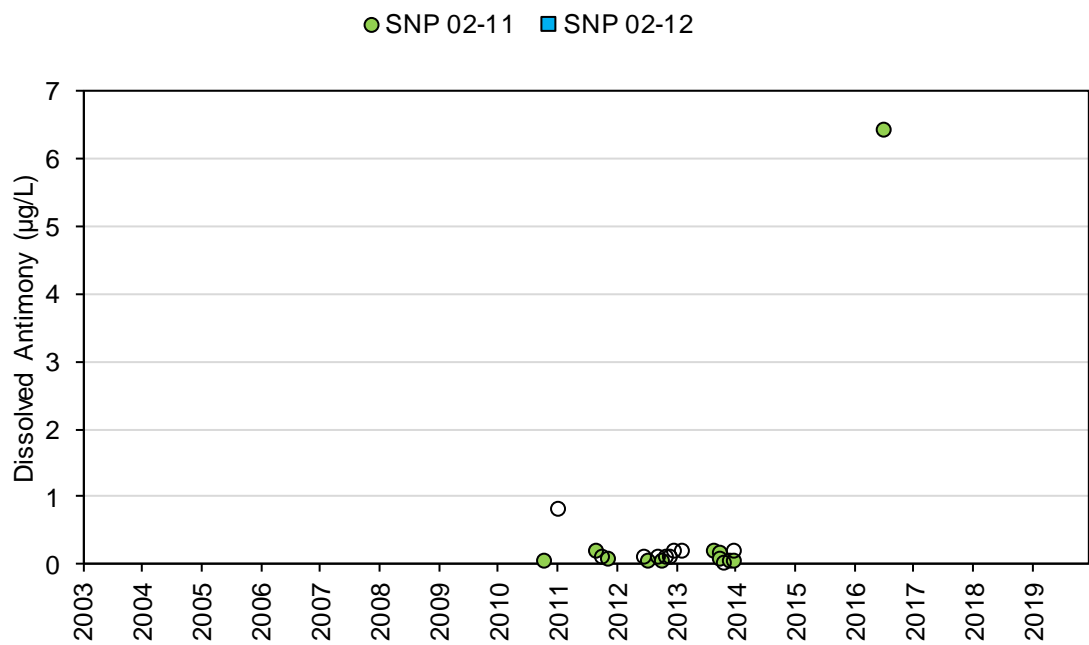


Figure 4I-43: Dissolved Arsenic Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

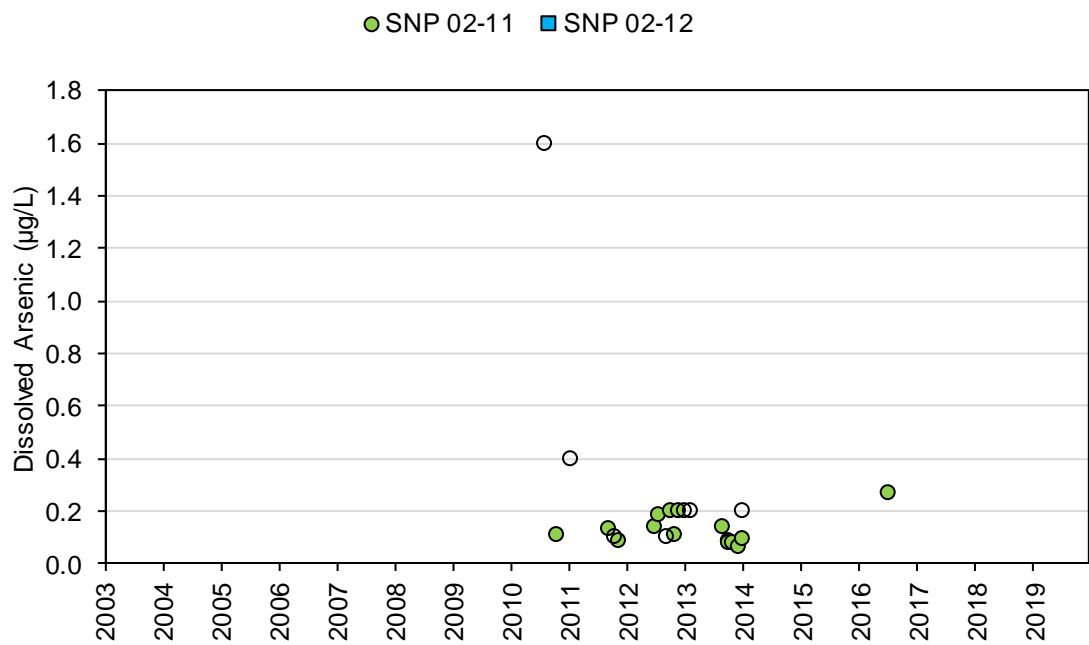


Figure 4I-44: Dissolved Barium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

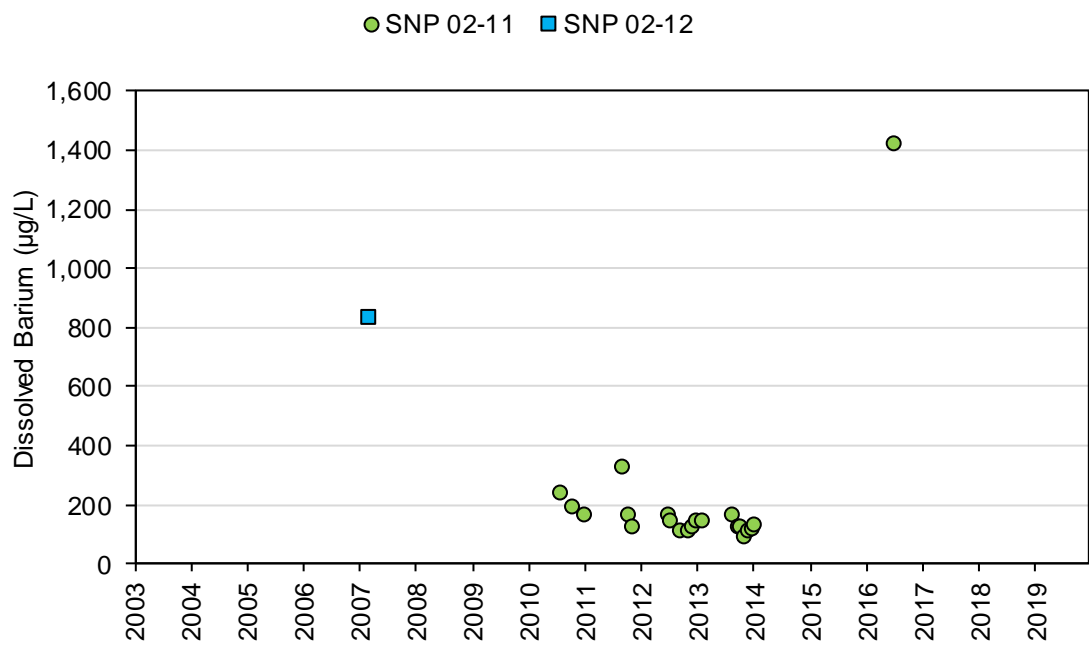


Figure 4I-45: Dissolved Beryllium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

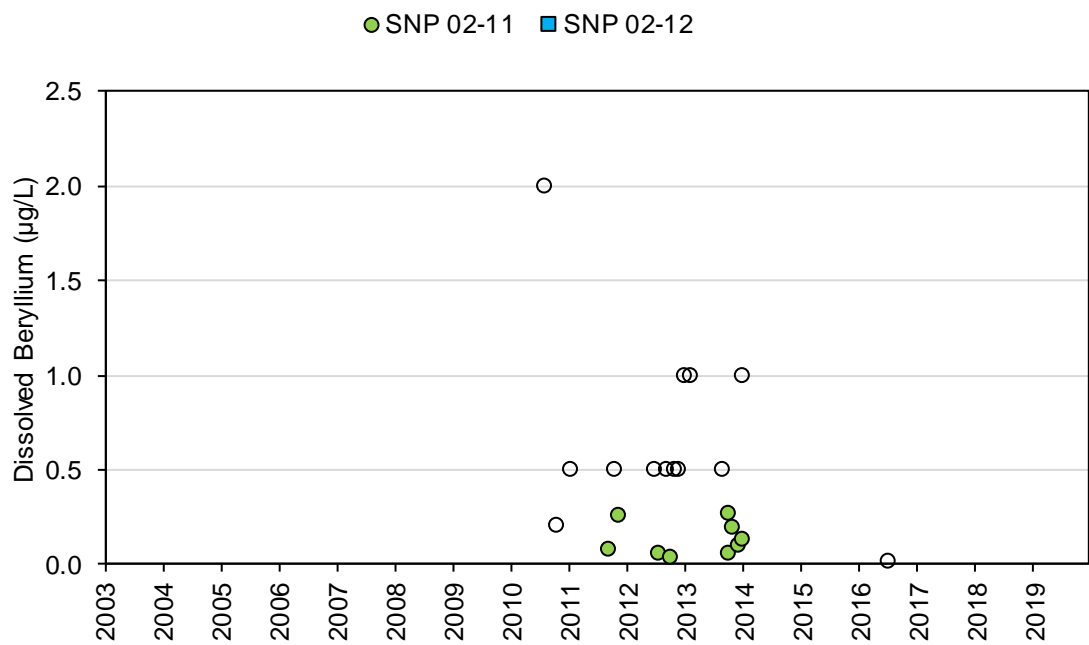


Figure 4I-46: Dissolved Bismuth Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance



Figure 4I-47: Dissolved Boron Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

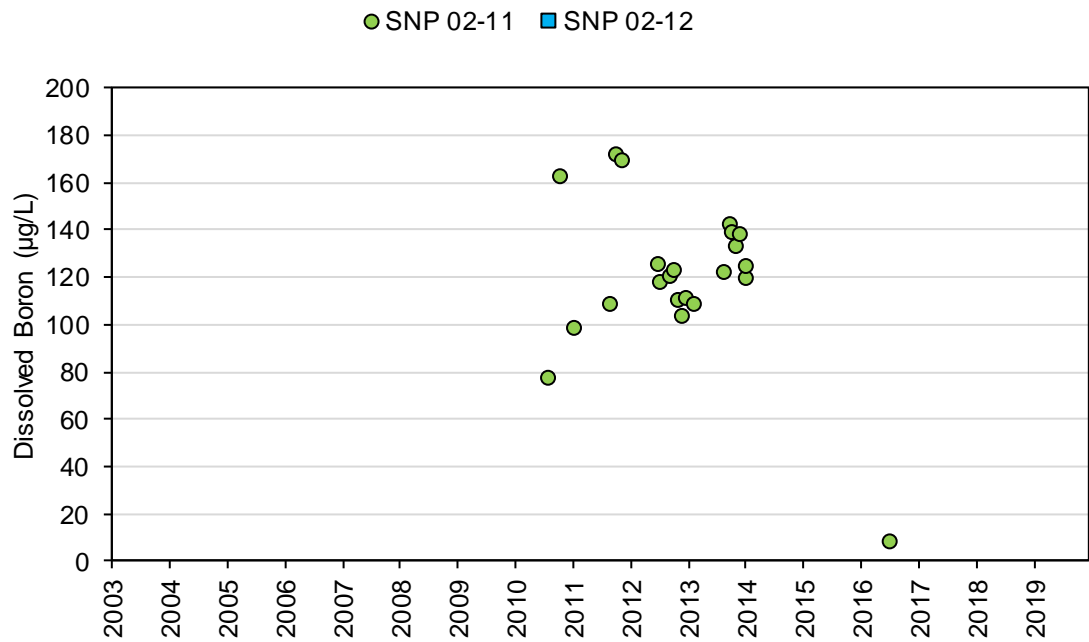


Figure 4I-48: Dissolved Cadmium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

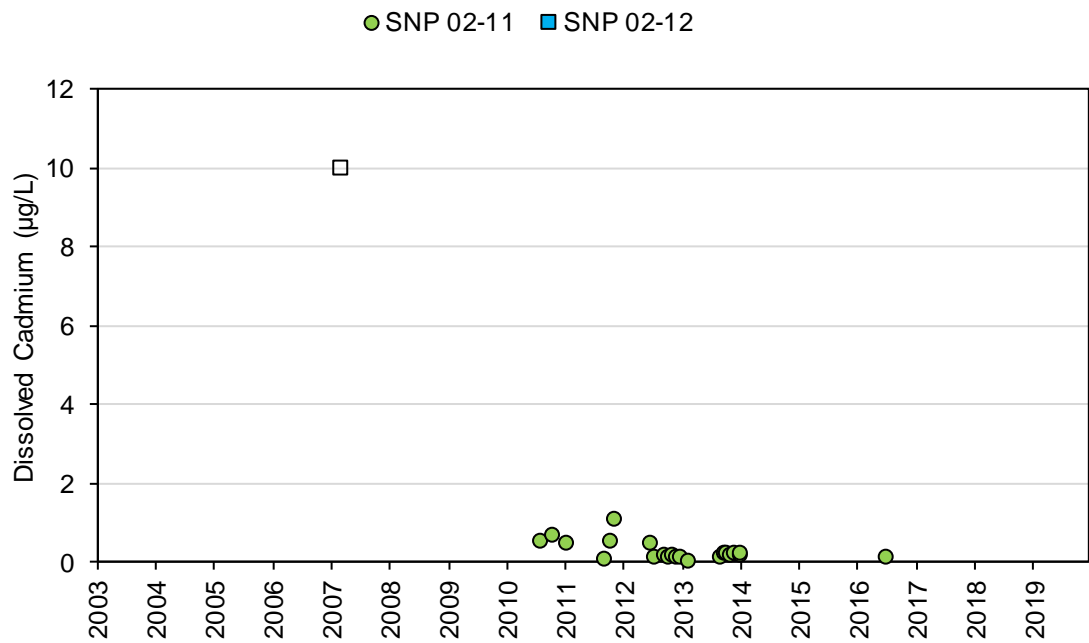


Figure 4I-49: Dissolved Cesium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

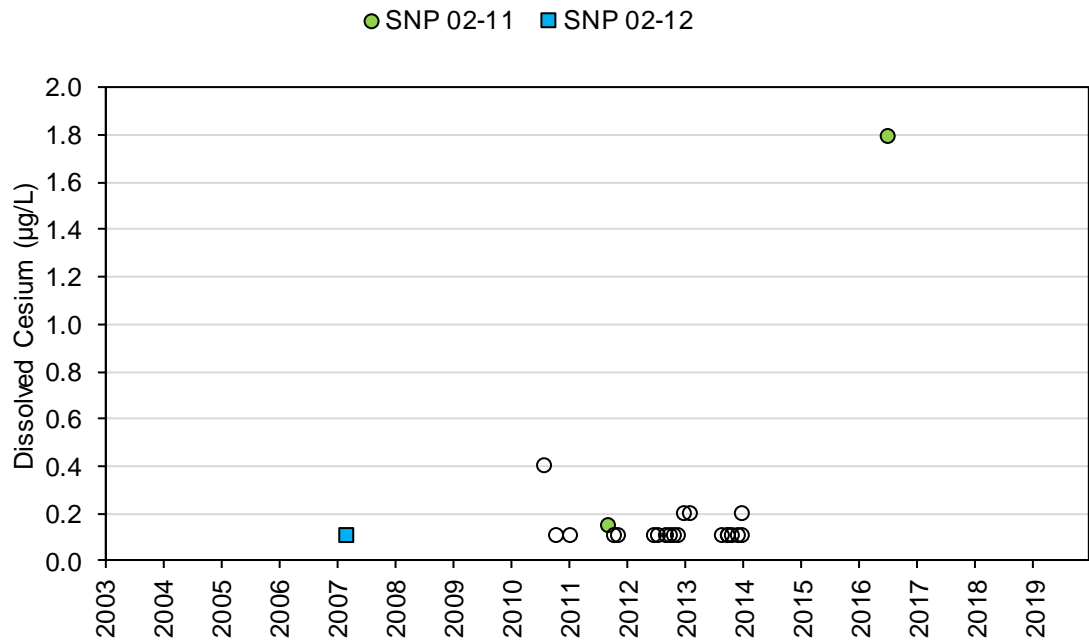


Figure 4I-50: Dissolved Chromium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

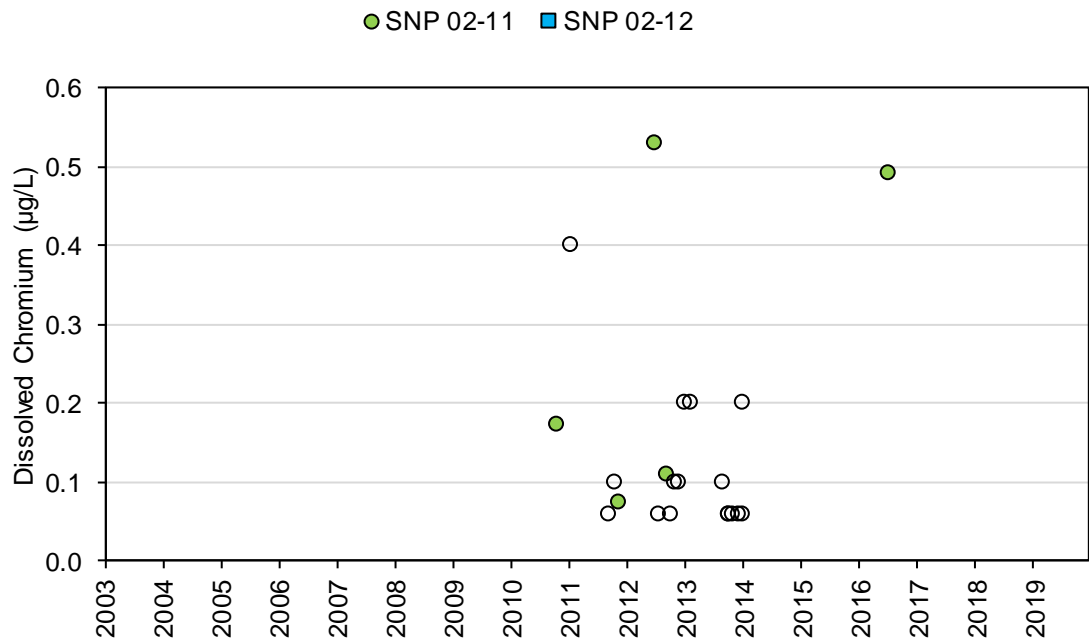


Figure 4I-51: Dissolved Cobalt Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

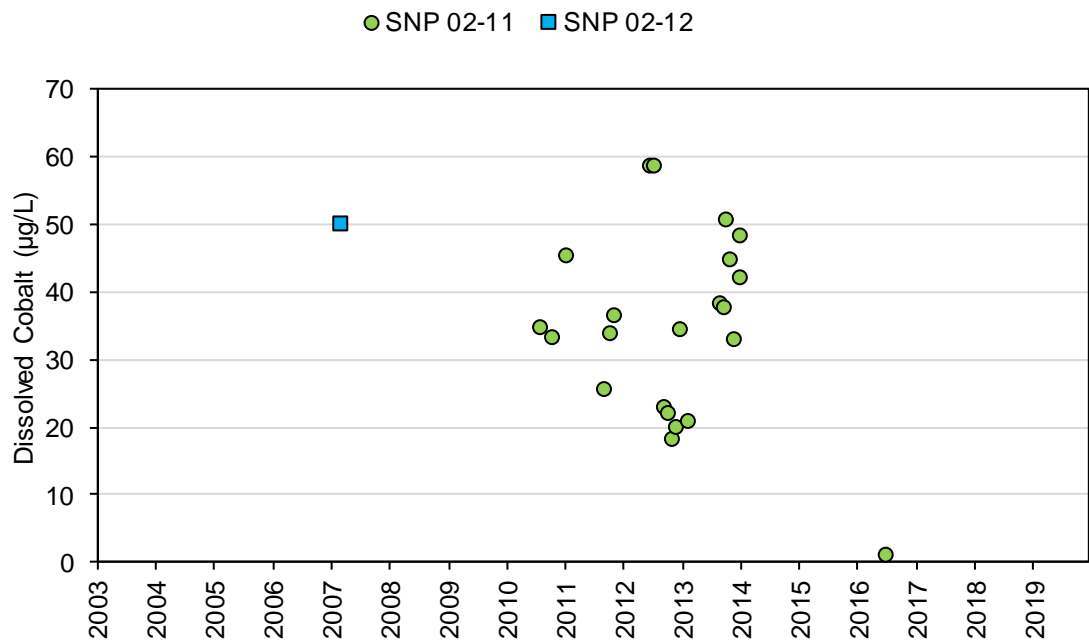


Figure 4I-52: Dissolved Copper Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

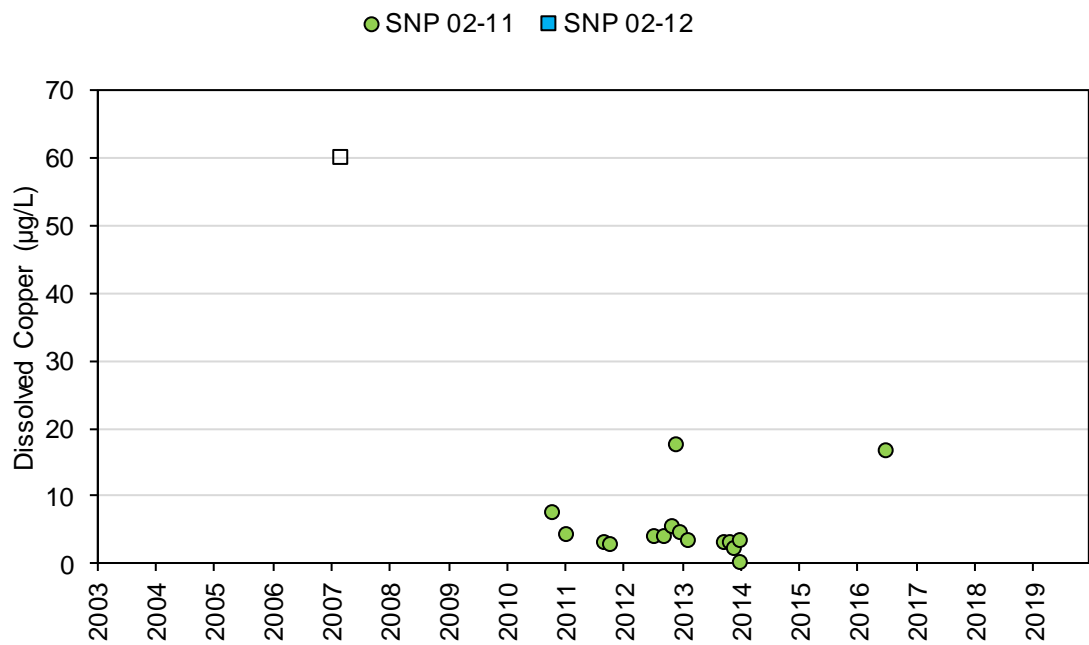


Figure 4I-53: Dissolved Iron Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

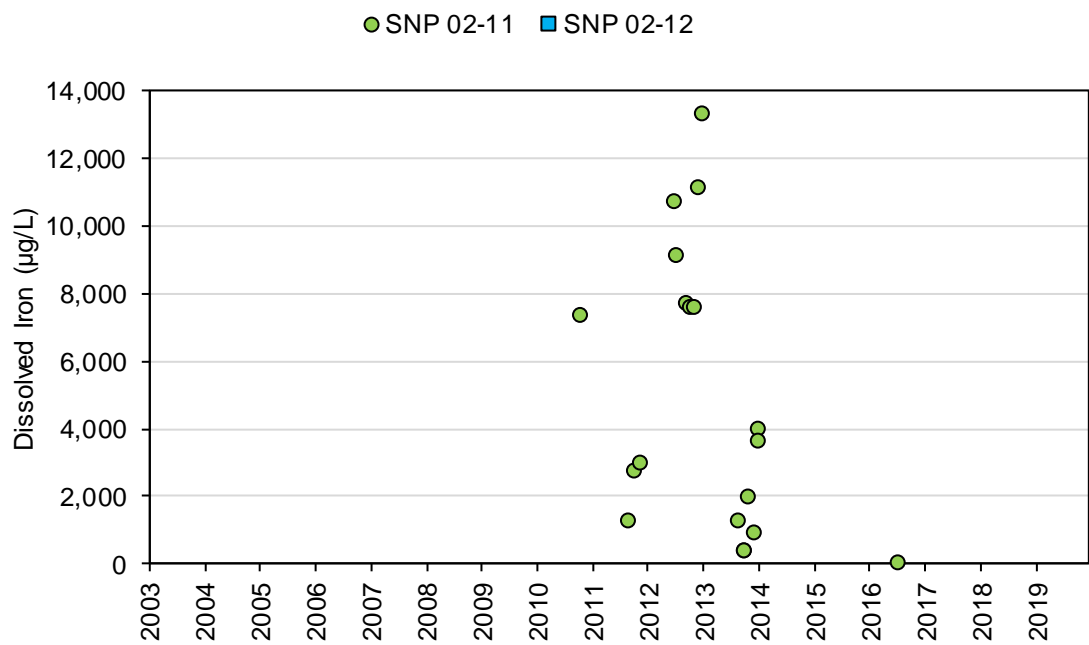


Figure 4I-54: Dissolved Lead Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

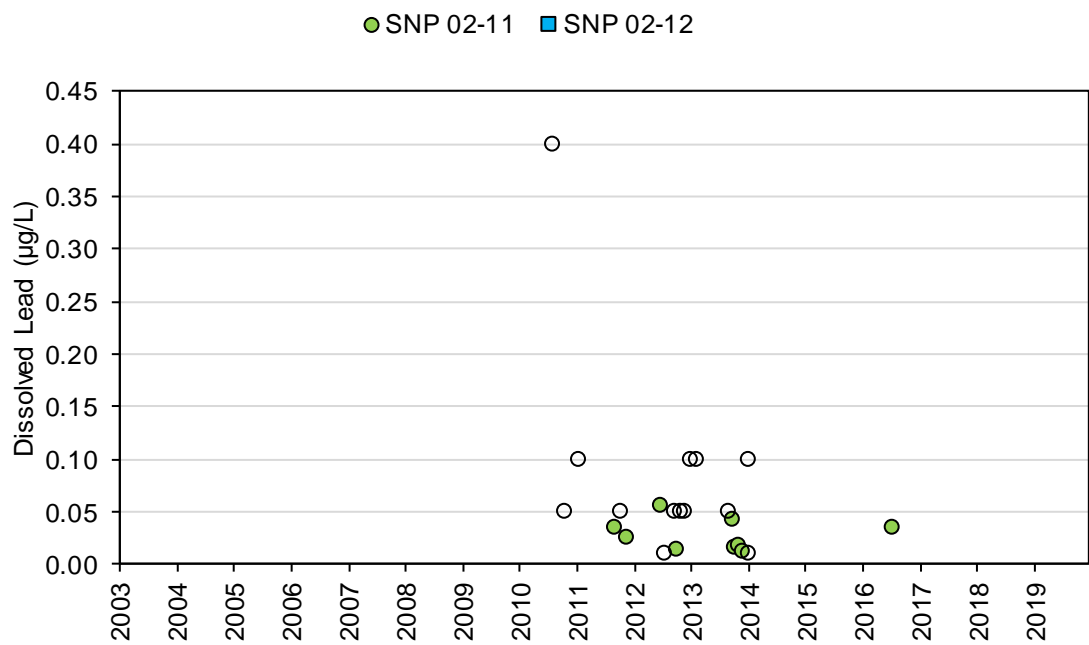


Figure 4I-55: Dissolved Lithium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

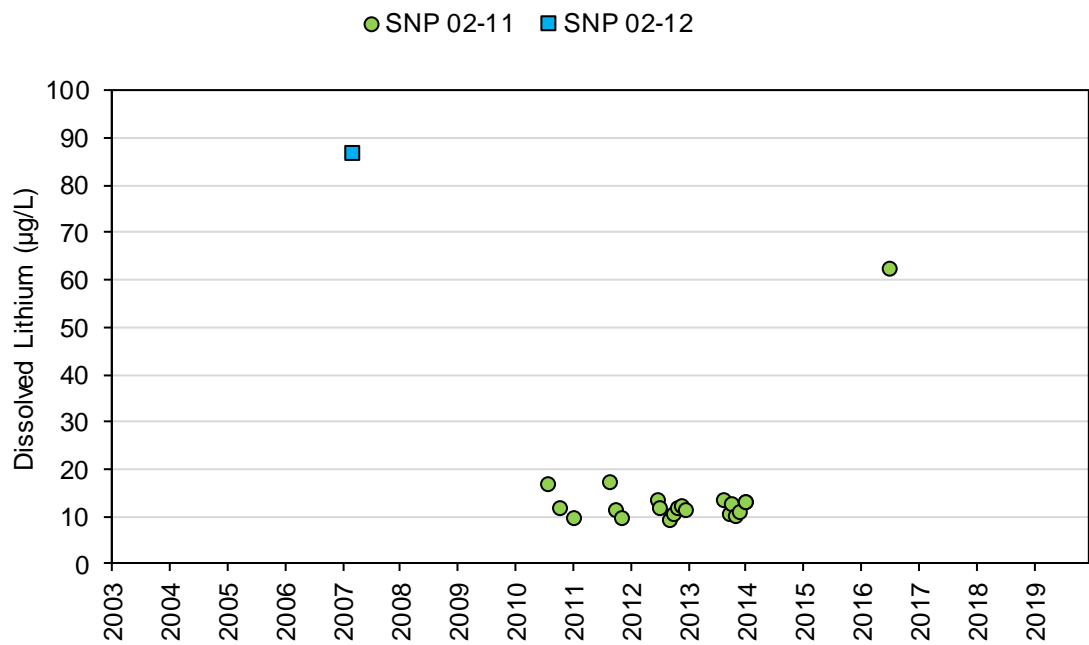


Figure 4I-56: Dissolved Manganese Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

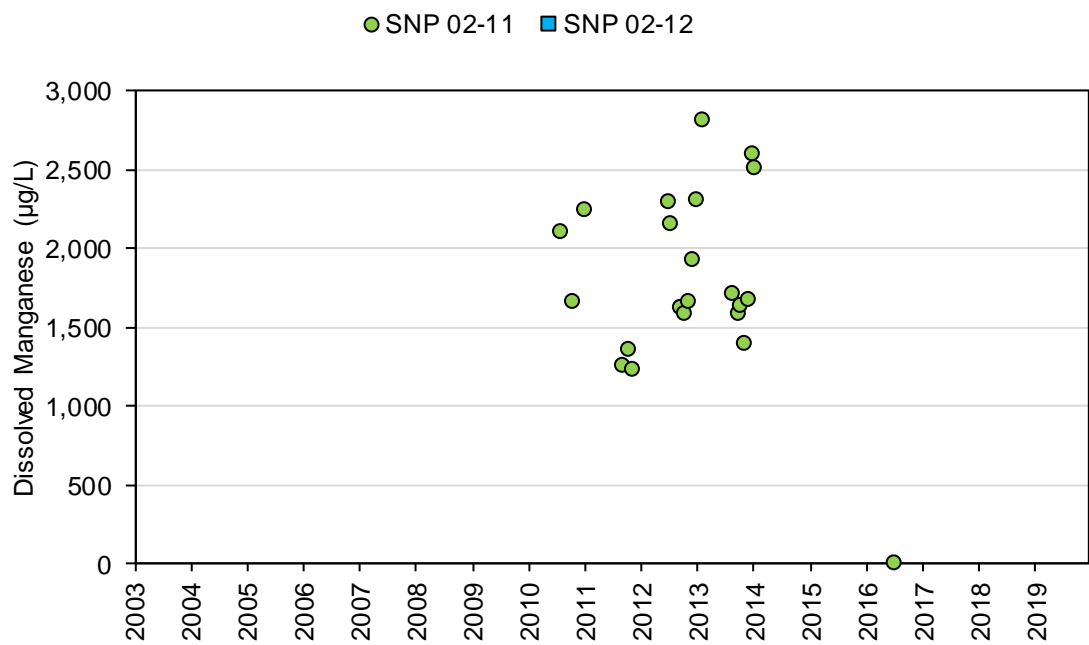


Figure 4I-57: Dissolved Mercury Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

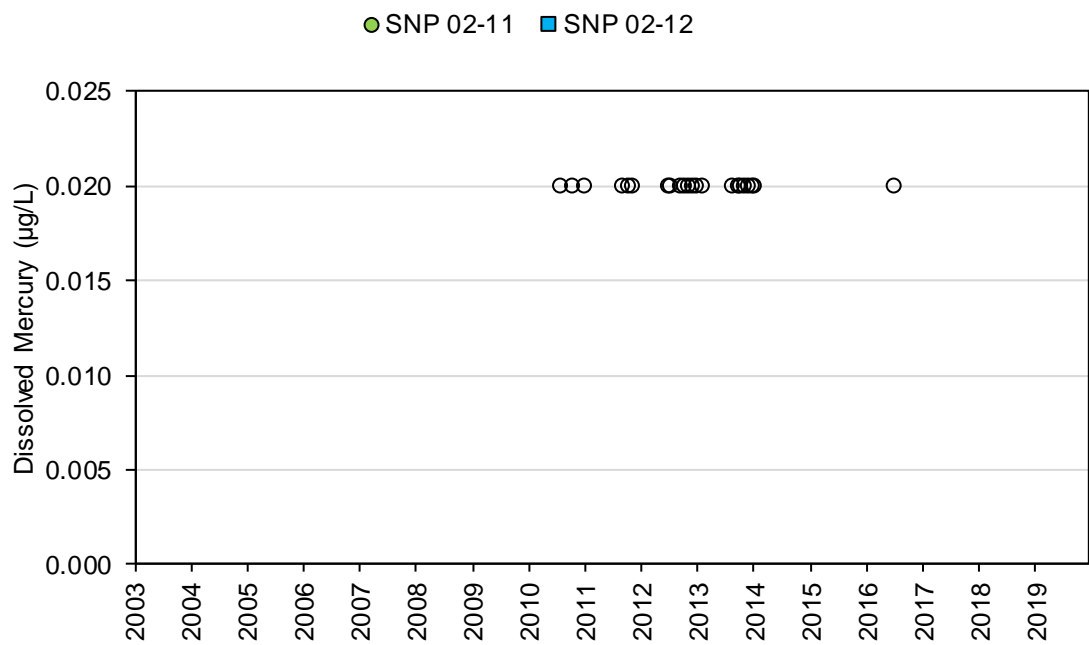


Figure 4I-58: Dissolved Molybdenum Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

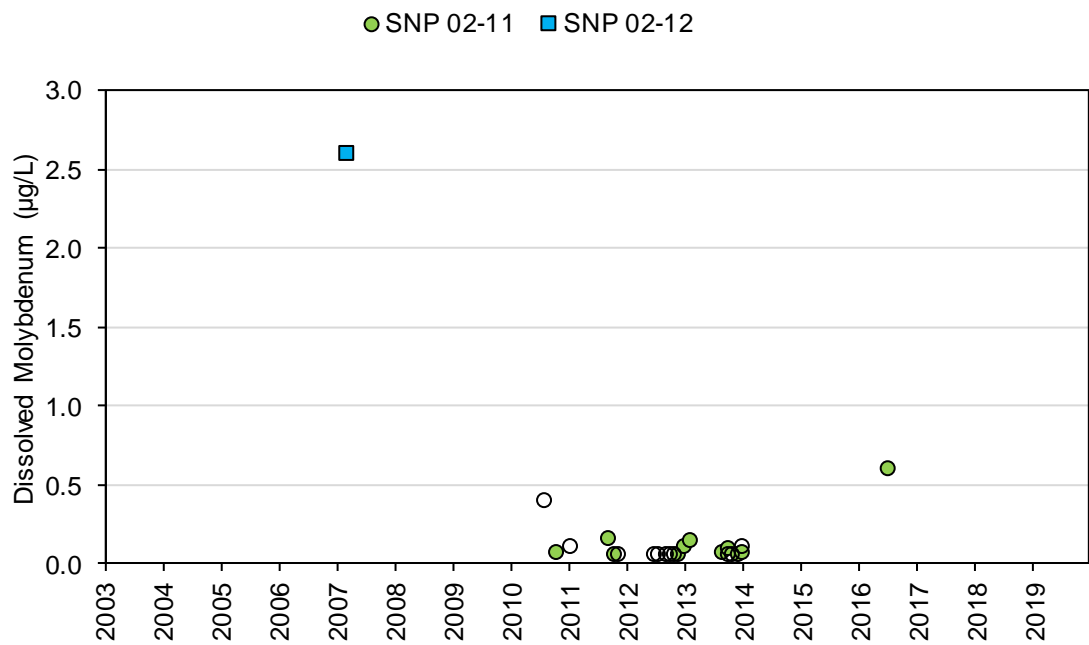


Figure 4I-59: Dissolved Nickel Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

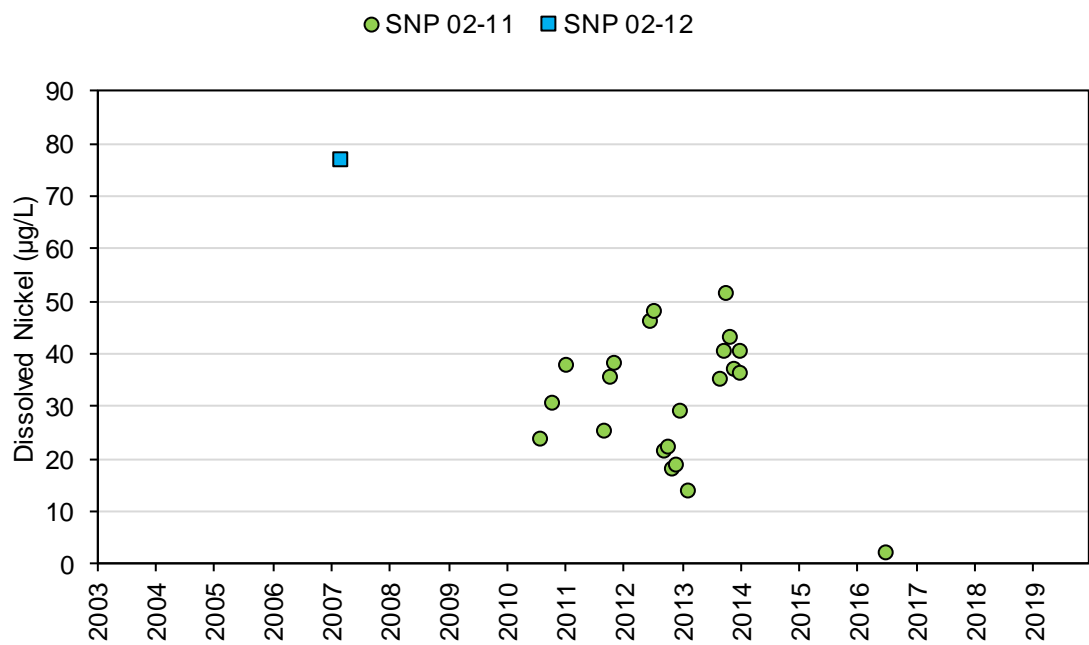


Figure 4I-60: Dissolved Rubidium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

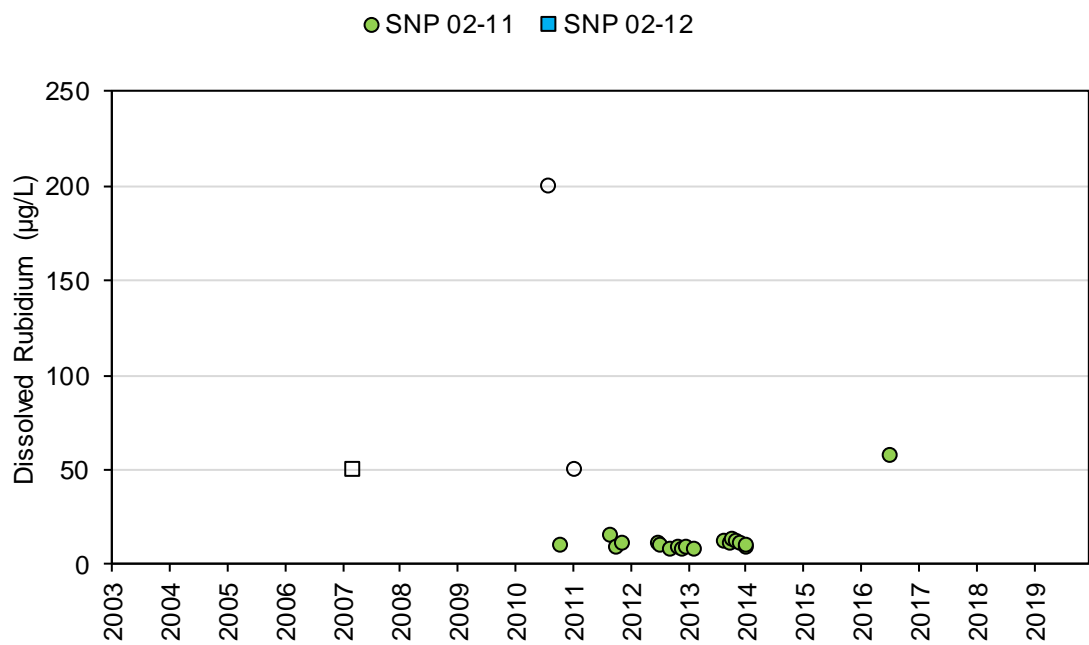


Figure 4I-61: Dissolved Selenium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance



Figure 4I-62: Dissolved Silver Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

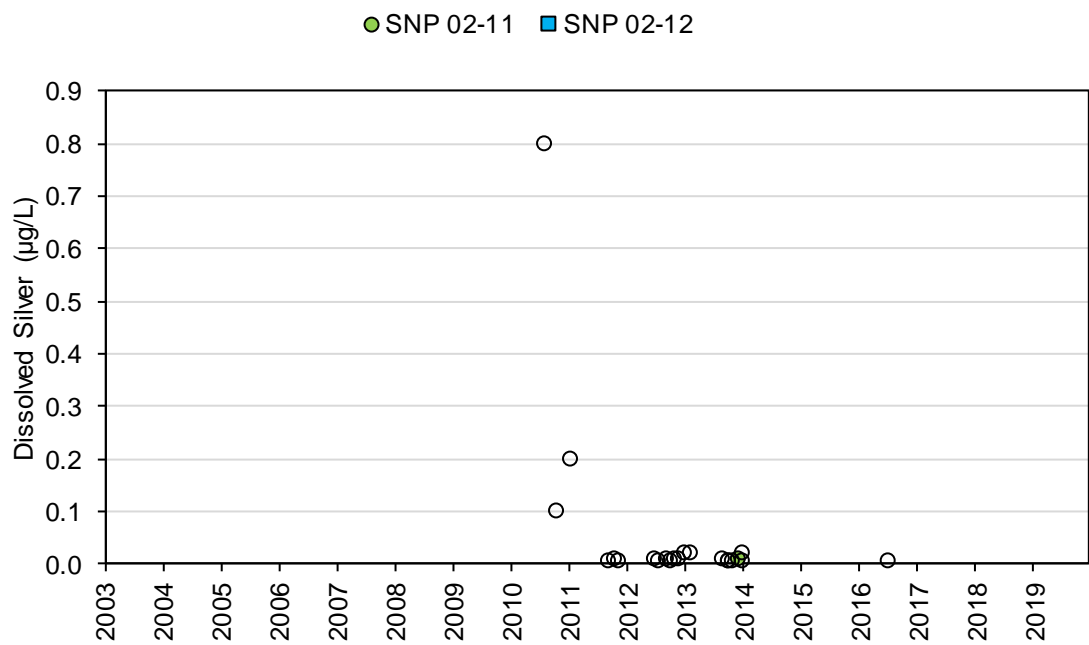


Figure 4I-63: Dissolved Strontium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

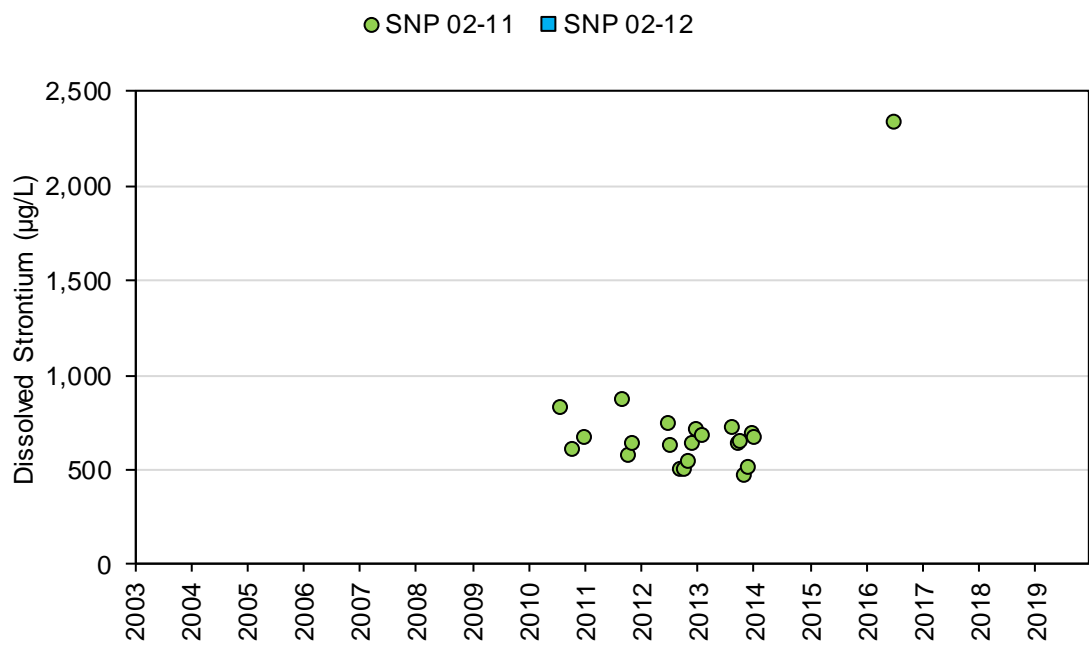


Figure 4I-64: Dissolved Thallium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

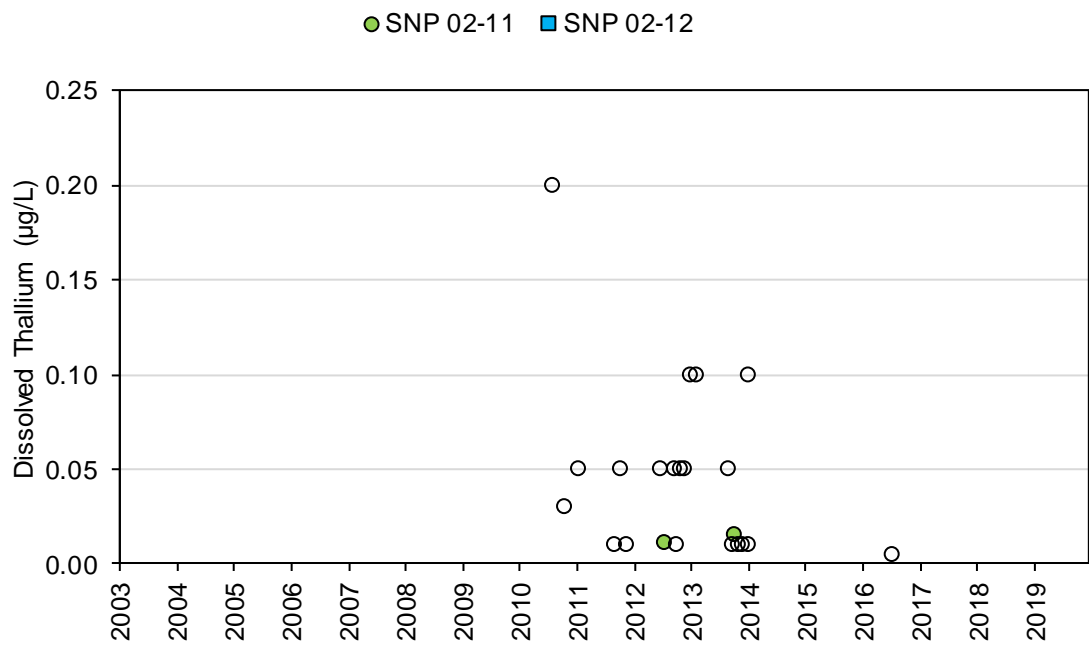


Figure 4I-65: Dissolved Titanium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

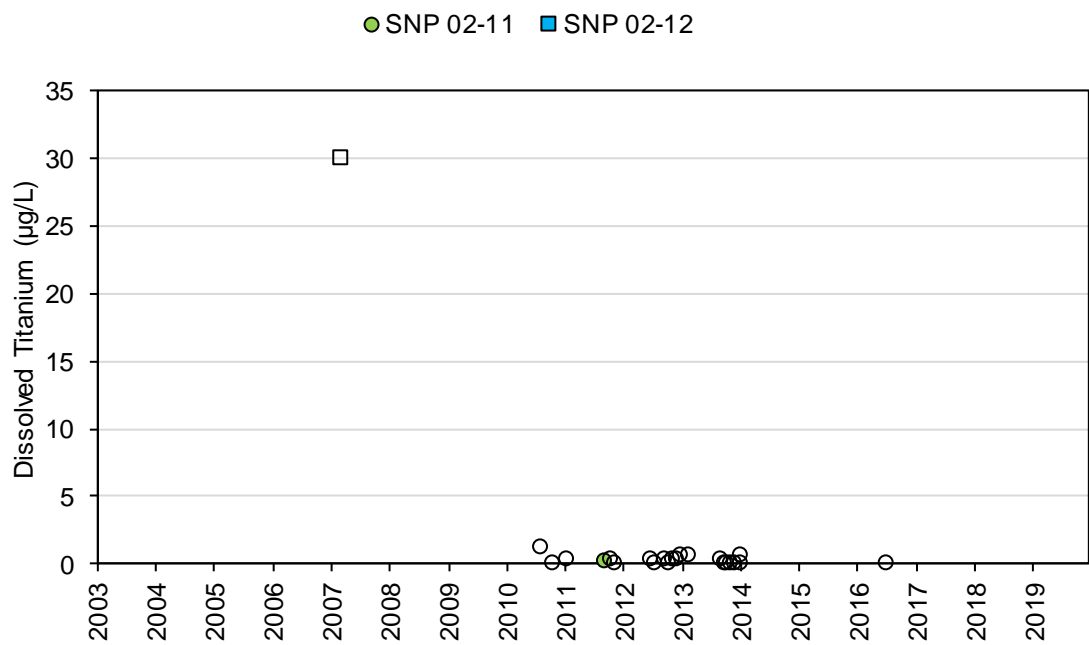


Figure 4I-66: Dissolved Uranium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

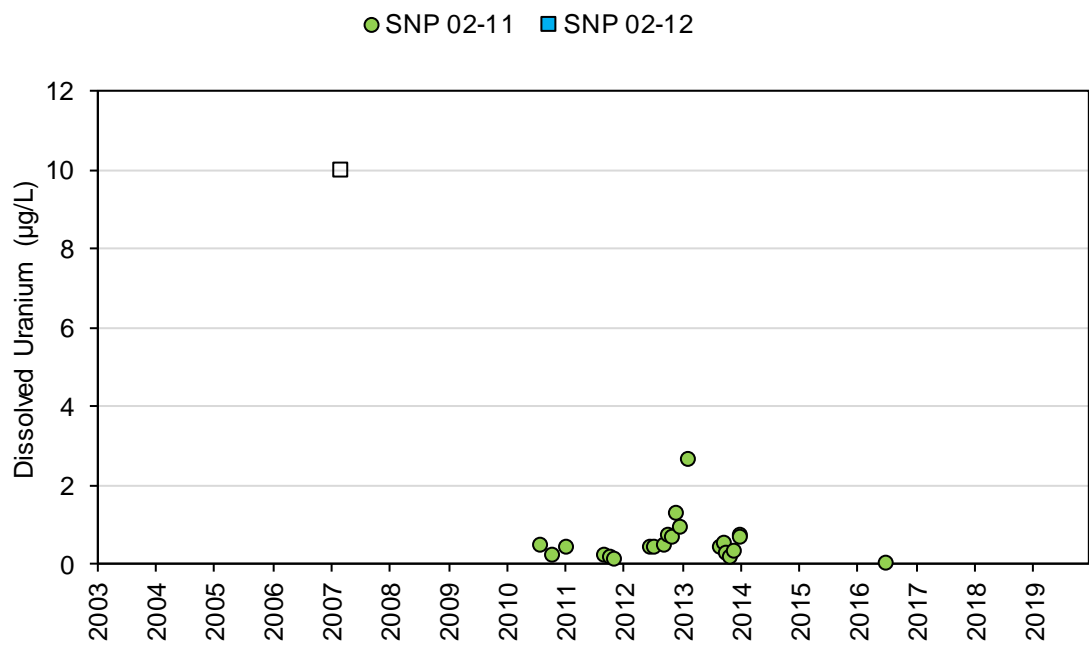


Figure 4I-67: Dissolved Vanadium Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

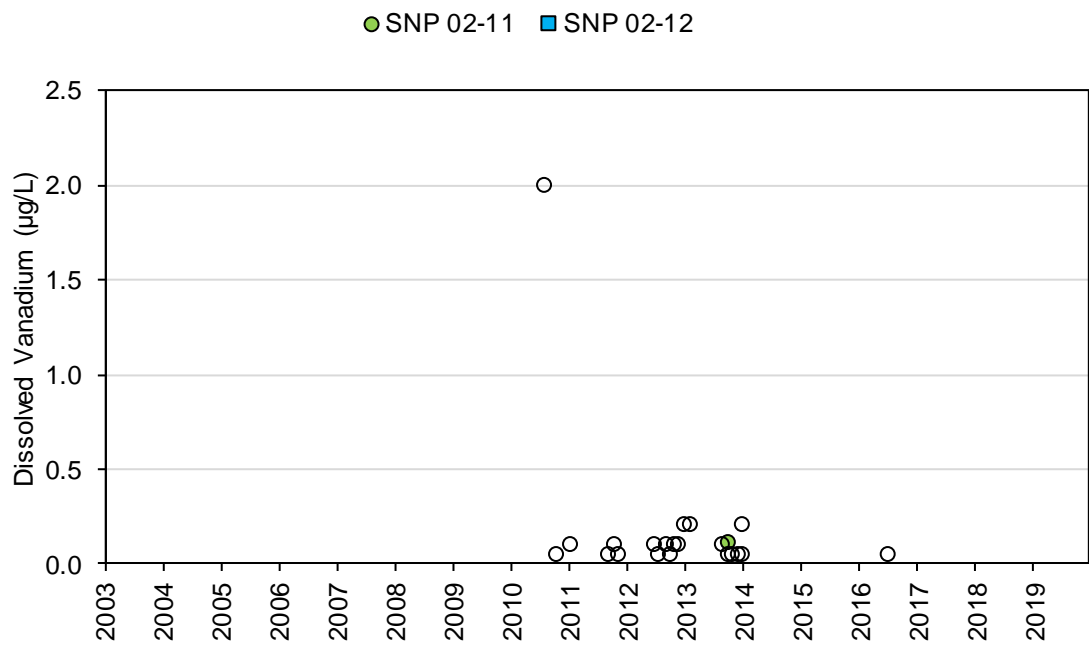


Figure 4I-68: Dissolved Zinc Concentrations at Stations SNP 02-11 and SNP 02-12 during Construction, Operations, and Extended Care and Maintenance

