

CCR Annual Groundwater Monitoring Report - 2018

TS Power Plant

Eureka County, Nevada



Newmont Nevada Energy Investment, LLC
TS Power Plant
450 TS Power Plant Road
Battle Mountain, NV 89445

January, 2019

1. Groundwater Monitoring System

The groundwater monitoring system has been designed to reflect local groundwater hydrology and ensure that monitoring wells are properly located to accomplish the requirement to detect and assess any potential impacts to groundwater resulting from operation and closure of the CCR landfill. Initial geotechnical evaluations of the area were conducted as part of TSPP permitting and are incorporated in the Class III Landfill Permit Application¹ submitted to NDEP – Bureau of Waste (NDEP-BWM).

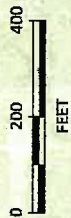
This initial evaluation consisted of reviewing prior geophysical data and installing several test borings with temporary piezometers in the footprint of the proposed landfill. Based on a prior gravimetric survey, it was determined that the thickness of saturated alluvium in the area is at least 1,000 feet. Depth to groundwater in proximity to the landfill site was 17 to 36 feet below ground surface. Data indicated a very shallow gradient of 0.00086 ft/ft to the southwest. Lithologic units encountered in the area consisted of silt to gravel. Hydraulic conductivity of these materials may be quite variable and could range from 1×10^{-2} cm/sec to 1×10^{-5} cm/sec. Based on available data, the average rate of groundwater flow was conservatively estimated at 81 ft/yr.

Based on the geotechnical investigation and the landfill footprint, a groundwater monitoring system consisting of three (3) monitor wells; one up gradient and two downgradient, was proposed in the landfill application. NDEP-BWM accepted the monitoring system design, which was incorporated in the Class III Landfill Permit issued in 2005. Consistent with conditions of the permit, a groundwater monitoring system consisting of the following monitoring wells was constructed (refer to Figure 1):

- TSMW-1 is located approximately 2,000 feet northeast of Cell 1. It is an upgradient well constructed to establish background groundwater chemistry. TSMW-1 has been monitored since 4th Quarter, 2005.
- TSMW-3 is a downgradient well located immediately west of Cell 1. TSMW-3 has been monitored since 1st Quarter, 2008.
- TSMW-4 is a downgradient well located south of Cell 1, adjacent to the Cell 1 collection pond. TSMW-4 has been monitored since 1st Quarter, 2008.

¹ 2005, Revised Class III Landfill Application, TS Power Plant, Eureka County, Nevada, March 2005, submitted by AMEC Earth and Environmental, Inc.

The CCR Rule requires that a groundwater monitoring system for an existing CCR landfill consist of a minimum of one upgradient and three downgradient wells (§257.91(c)(1)). To comply with this requirement, an additional downgradient monitor well (TSMW-8) was installed in 2015. The well is located immediately west of Cell 2. TSMW-8 has been monitored since 4th Quarter, 2015. The location of the monitor wells is indicated on Figure 1. A summary of monitor well locations, depth and depth to water is included as Table 1. Based on calculations for groundwater gradient and flow rate, the location of the monitor wells relative to the landfill are such that any impacts to groundwater would be detected in a timely manner.



CCR
LANDFILL

FUTURE
CELL
3

FUTURE
CELL
6

CELL
2

FUTURE
CELL
5

CELL
1

FUTURE
CELL
4

TSMW-8

TSMW-3

ACCESS RAMP

TSMW-4

CELL 1-3
POND

FUTURE CELL
4-6
POND

TSMW-1

EVAPORATION
PONDS

NOTE:
PHOTO DATE: AUGUST 2013. SOURCE: NAIIP

KEY:

 MONITORING WELL

NewFields

PROJECT NUMBER | LOCATION | CLIENT
4/5.0221 | EUREKA COUNTY, NEVADA | NEWMONT
DOCUMENT FILENAME | TSPP-221-1DK-0001_0.DWG

| | | | |
|--------------|------------------------------|--------|---------|
| AREA | TS POWER PLANT | CLIENT | NEWMONT |
| PROJECT | CCR LANDFILL | | |
| FIGURE TITLE | GROUNDWATER MONITORING WELLS | | |

NEWMONT

FIGURE NUMBER **1** REVISION **0**

Table 1 - TS Power Plant CCR Landfill Groundwater Monitor Wells

| Well No. | Coordinates ¹ | Elevation (amsl) | Depth (ft) | Depth to Water (ft) ² | Water Elevation | Completion | Type |
|----------|----------------------------|------------------|------------|----------------------------------|-----------------|------------|-------------------------|
| TSMW-1 | 462,246.4 N 493,250.4 E | 4644.34 | 55 | 28.1 | 4616.25 | 2005 | Upgradient - Background |
| TSMW-3 | 461,097.1 N 491,724.9 E | 4651.5 | 50 | 37.7 | 4613.83 | 2007 | Downgradient |
| TSMW-4 | 460,662 N 492,251.5 E | 4642.12 | 60 | 32.3 | 4614.41 | 2007 | Downgradient |
| TSMW-8 | 461,426.2 N 491,731.9 E | 4651.89 | 58 | 37.5 | 4614.39 | 2015 | Downgradient |

Notes: 1 - local coordinate system
2 -02 Oct, 2018 measurement

The groundwater monitoring system includes the minimum number of wells required by the CCR rule. Considering the design and footprint (12 acres) of the existing CCR landfill and the local groundwater hydrology, the monitoring system is sufficient to demonstrate compliance with the CCR performance standard.

2. Groundwater Monitoring

Groundwater monitoring is conducted in accordance with the requirements of Class III Permit SW270REV01 and the CCR Rule. The combination of requirements involves groundwater monitoring for three suites of analytes (Table 2):

Permit SW270REV01 - Groundwater samples are tested for the following constituents: total dissolved solids, pH, conductivity, arsenic, barium, beryllium, cadmium, lead, nickel, selenium, silver and total organic carbon. Quarterly monitoring under conditions of the landfill permit has been conducted since: 2005 for TSMW-1; 2008 for TSMW-3 and 4; and 2015 for

TSMW-8. Monitoring data is reported to NDEP-BWM as part of a semi-annual landfill report. Historical data is archived in the landfill operating record.

CCR Detection Monitoring (§257.94) - The CCR rule prescribes requirements for a Detection Monitoring Program that must be conducted through the active life of a CCR landfill and the post-closure period. Analytes associated with the Detection Monitoring program are specified in §257, Appendix III and listed in Table 2. The CCR Rule requires semi-annual detection monitoring; however, for consistency with the existing monitoring program, detection monitoring is conducted on a quarterly basis. Detection monitoring of all monitor wells began in 4th Quarter, 2015. At least twelve (12) independent samples has been collected from each detection monitoring well..

CCR Assessment Monitoring (§257.95) - The CCR rule prescribes requirements for an Assessment Monitoring Program that must be established if detection monitoring demonstrates a statistically significant increase over background levels for one or more constituents. Analytes associated with the Assessment Monitoring program are specified in §257, Appendix IV and listed in Table 2. In order to establish background levels, there is also a requirement that eight (8) independent samples from each monitoring well be collected and analyzed for the assessment monitoring constituents. As indicated in Table 2, due to an overlap of requirements, a number of assessment monitoring constituents are monitored as part of the landfill permit monitoring program and have been monitored since 2008. Assessment monitoring for the remaining constituents has been conducted during the period 4th Quarter, 2015 to 4th Quarter, 2017.

Table 2 - TS Power Plant Ash Landfill - Groundwater Monitoring Constituents and History

| Constituent | Landfill Permit Requirement ¹ | CCR Detection Monitoring ² | CCR Assessment Monitoring ³ | Quarterly Monitoring Start |
|---|--|---------------------------------------|--|----------------------------|
| Depth to Water | X | | | 2008 |
| Arsenic | X | | X | 2008 |
| Barium | X | | X | 2008 |
| Beryllium | X | | X | 2008 |
| Cadmium | X | | X | 2008 |
| Chromium | X | | X | 2008 |
| Lead | X | | X | 2008 |
| Nickel | X | | | 2008 |
| Selenium | X | | X | 2008 |
| Silver | X | | | 2008 |
| Total Organic Carbon | X | | | 2008 |
| pH | X | X | | 2008 |
| TDS | X | X | | 2008 |
| Spec. Conductivity | X | | | 2008 |
| Mercury | X | | X | 2008 |
| Boron | | X | | 2015 |
| Calcium | | X | | 2015 |
| Chloride | | X | | 2015 |
| Fluoride | | X | X | 2015 |
| Sulfate | | X | | 2015 |
| Antimony | | | X | 2015 |
| Cobalt | | | X | 2015 |
| Lithium | | | X | 2015 |
| Molybdenum | | | X | 2015 |
| Thallium | | | X | 2015 |
| Radium 226/228 | | | X | 2015 |
| 1 - Class III Permit SW270REV01 2 - 40 CFR Part 257, Appendix III 3 - 40 CFR Part 257, Appendix IV | | | | |

2.1. Sampling Procedures

Monitor well sampling is conducted on a quarterly basis by experienced technicians from Newmont Mining Corporation's hydrology department. Procedures associated with sampling are described in TSPP's *Water Sampling and Monitoring Procedures* (March 2010). This procedure manual contains detailed documentation regarding the collection and recording of

field data, calibration of instrumentation, collection and preservation of groundwater samples, quality control and chain of custody procedures. Analysis are conducted at a Nevada-certified laboratory using approved EPA methods.

2.2. Statistical Evaluation of Groundwater Data

The CCR Groundwater Monitoring Plan (2016) includes a description of methodology used to statistically evaluate groundwater data. As part of the ongoing groundwater monitoring program, existing groundwater data was evaluated to determine the upper background limit values (UBL). The UBL are calculated as the 95th upper tolerance limit with 95% coverage. In other words, this value represents an upper limit below which 95% of future measured concentrations will be occur with a 95% statistical confidence. In calculating the UBL, statistical methods specific to the identified underlying population distribution of the data being analyzed are used. In order to calculate UBL values, a minimum of eight (8) data points are required in the dataset. The USEPA has developed the ProUCL software package that was used for the statistical analysis.

TSMW-8 is the most recent monitoring well and data indicated that groundwater chemistry had not fully stabilized when the statistical evaluation was conducted in 2016. The UBL for this well was reevaluated in 2018 when two years of additional data was available.

Table 3 summarizes the UBL for individual constituents that were determined from the existing groundwater data set.

Any measured groundwater concentrations above the UBL indicates a potential change in groundwater quality; possibly resulting from current activities. Evaluation of future measured concentrations against background will be based on the following approach:

- An initial observed exceedance in groundwater concentration above the UBL potentially represents a statistically significant increase in concentrations above background. However, this initial exceedance will not result in any action beyond continued monitoring of the sample location.
- If a downgradient sample location continues to exceed the UBL for three consecutive sampling periods then an assessment monitoring program (§257.95) will be instituted and

if necessary a corrective action plan will be designed and implemented. Notification that an assessment monitoring program has been established will be made in accordance with §257.106.

Table 3 - Upper Background Limit of Constituents in Landfill Monitor Wells *

| Well ID | TDS | Arsenic | Barium | Boron | Calcium | Chloride | Fluoride |
|---------|-------|---------|--------|-------|---------|----------|----------|
| TSMW-1 | 872 | 0.013 | 0.039 | 0.382 | 106.2 | 135.7 | 1.178 |
| TSMW-3 | 865 | 0.0134 | 0.2 | 0.33 | 112.5 | 156.2 | 1.069 |
| TSMW-4 | 867.3 | 0.0149 | 0.054 | 0.623 | 84.14 | 124.8 | 0.89 |
| TSMW-8 | 825.1 | 0.016 | 0.068 | 0.242 | 82.3 | 166.3 | 1.0 |

| Well ID | Lithium | Ra 226 | Ra 228 | Ra226 + Ra 228 | Selenium | Sulfate | TOC |
|---------|---------|--------|--------|----------------|----------|---------|-------|
| TSMW-1 | 0.0978 | 0.37 | 1.8 | 1.9 | 0.0074 | 277.8 | 39.1 |
| TSMW-3 | 0.0994 | 0.3 | 1.7 | 1.9 | 0.0084 | 296.7 | 12.78 |
| TSMW-4 | 0.0903 | 0.25 | 1.5 | 1.5 | 0.0087 | 238.4 | 45.5 |
| TSMW-8 | 0.0888 | 0.33 | 1.7 | 1.7 | 0.008 | 214.9 | |

* 95% Upper Tolerance Limit with 95% coverage

3.0 Groundwater Analytical Data

Groundwater monitoring data for the CCR monitor wells is compiled in Appendix A. The compilation includes the following:

- A hydrograph chart indicating groundwater elevations in the monitor wells for the period of sampling.
- Spreadsheets indicating groundwater constituent data for quarterly sampling during the most recent four (4) year period (2015-2018).
- A visual representation of constituent concentrations in individual monitor wells over the three year sampling period. These data are presented in a control chart format and includes the calculated UBL for the monitored constituent.
- A tabulation of monitored constituents that are consistently below the analytical detection limit.

3.1 Detection Monitoring Results

The CCR rule prescribes requirements for a Detection Monitoring Program that must be conducted through the active life of a CCR landfill and the post-closure period. Analytes associated with the Detection Monitoring program are specified in §257, Appendix III and include: Total Dissolved Solids, pH, Boron, Calcium, Chloride, Fluoride and Sulfate.

Monitoring results during the period 2015-2018 indicate all detection monitoring constituents occurred at concentrations below the calculated UBL. Based on the results, assessment monitoring has not been triggered and will not be conducted going forward, unless warranted by future detection monitoring results.

3.2 Assessment Monitoring Results

In order to obtain baseline data for the assessment monitoring constituents, the CCR Rule requires initial monitoring (eight sampling events) for assessment monitoring constituents. These constituents are listed in Table 2. Assessment monitoring was conducted during the period 2015 through 2017. The baseline data is included in the Appendix A data package.

The following assessment constituents were at or below the analytical detection limit in all samples collected: beryllium, cadmium, lead, molybdenum, mercury, antimony, cobalt, thallium.

All assessment monitoring constituents were below upper background limit with 2 exceptions:

- MW-1 (up gradient), 3 May, 2017, slightly exceeded the barium UBL in one sampling event.
- MW-4, 19 May, 2015, slightly exceeded the arsenic UBL in one sampling event.

Based on these data, additional testing for assessment monitoring constituents will not be conducted going forward, unless triggered by detection monitoring results.

3.3 Landfill Permit Monitoring Results

The CCR rule prescribes requirements for a Detection Monitoring Program that must be conducted through the active life of a CCR landfill and the post-closure period. Analytes

associated with the Detection Monitoring program are specified in §257, Appendix III and include: Total Dissolved Solids, pH, Boron, Calcium, Chloride, Fluoride and Sulfate.

Monitoring results during the period 2015-2018 indicate all detection monitoring constituents in wells down gradient of the landfill occurred at concentrations below the calculated UBL. Based on the results, assessment monitoring has not been triggered and will not be conducted going forward, unless warranted by future detection monitoring results.

TSMW-1, a monitor well located approximately 1,000 feet northeast of the ash landfill, was located to provide background information on water quality. Recent data indicates exceedances of the UBL for several constituents, including TDS, barium, chloride, boron and calcium. Since this is an up gradient well, constituent concentrations would be unrelated to operation of the landfill.

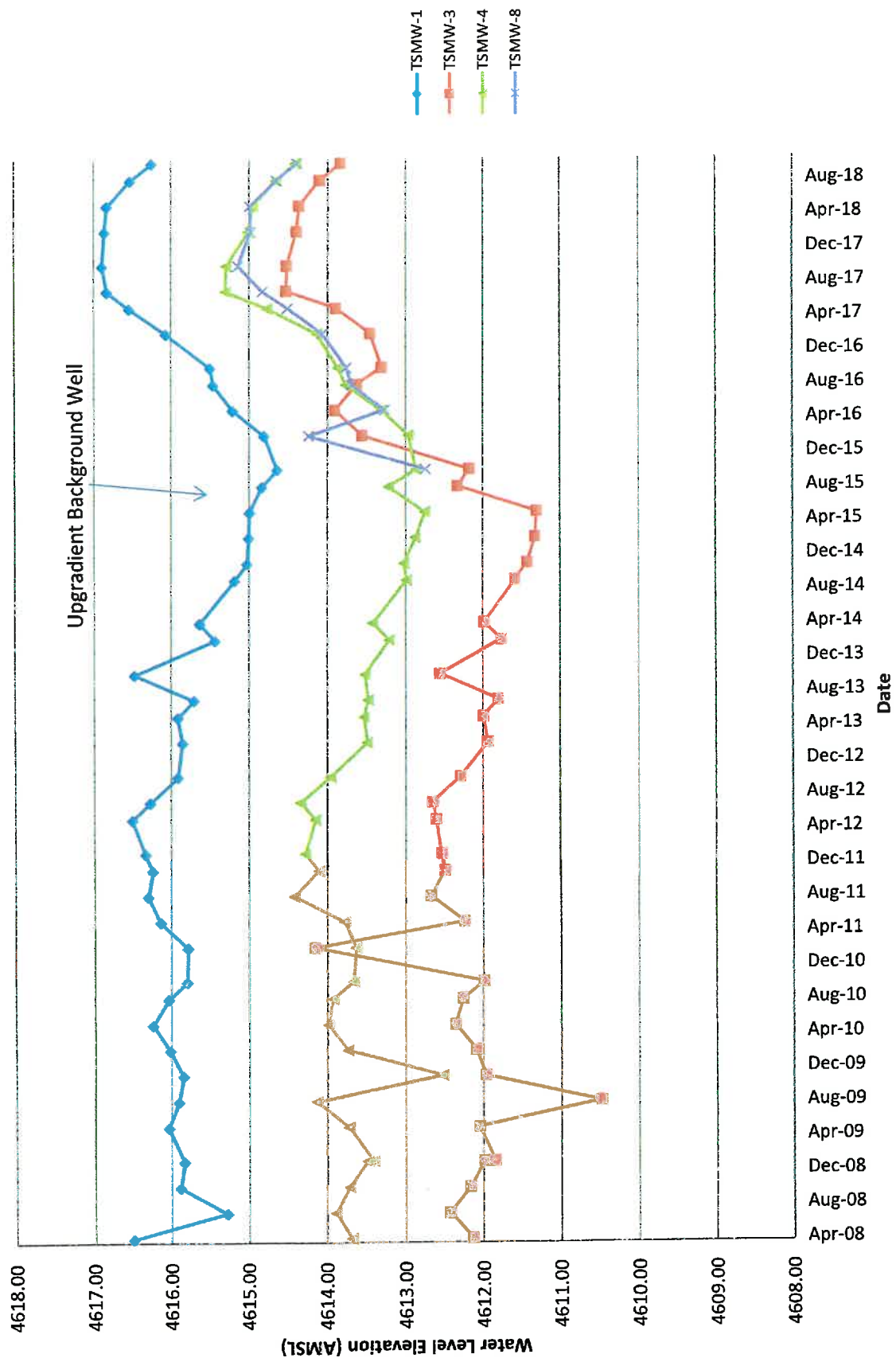
4.0 Corrective Measures

Based on the groundwater monitoring results presented herein no corrective measures are required for the facility.

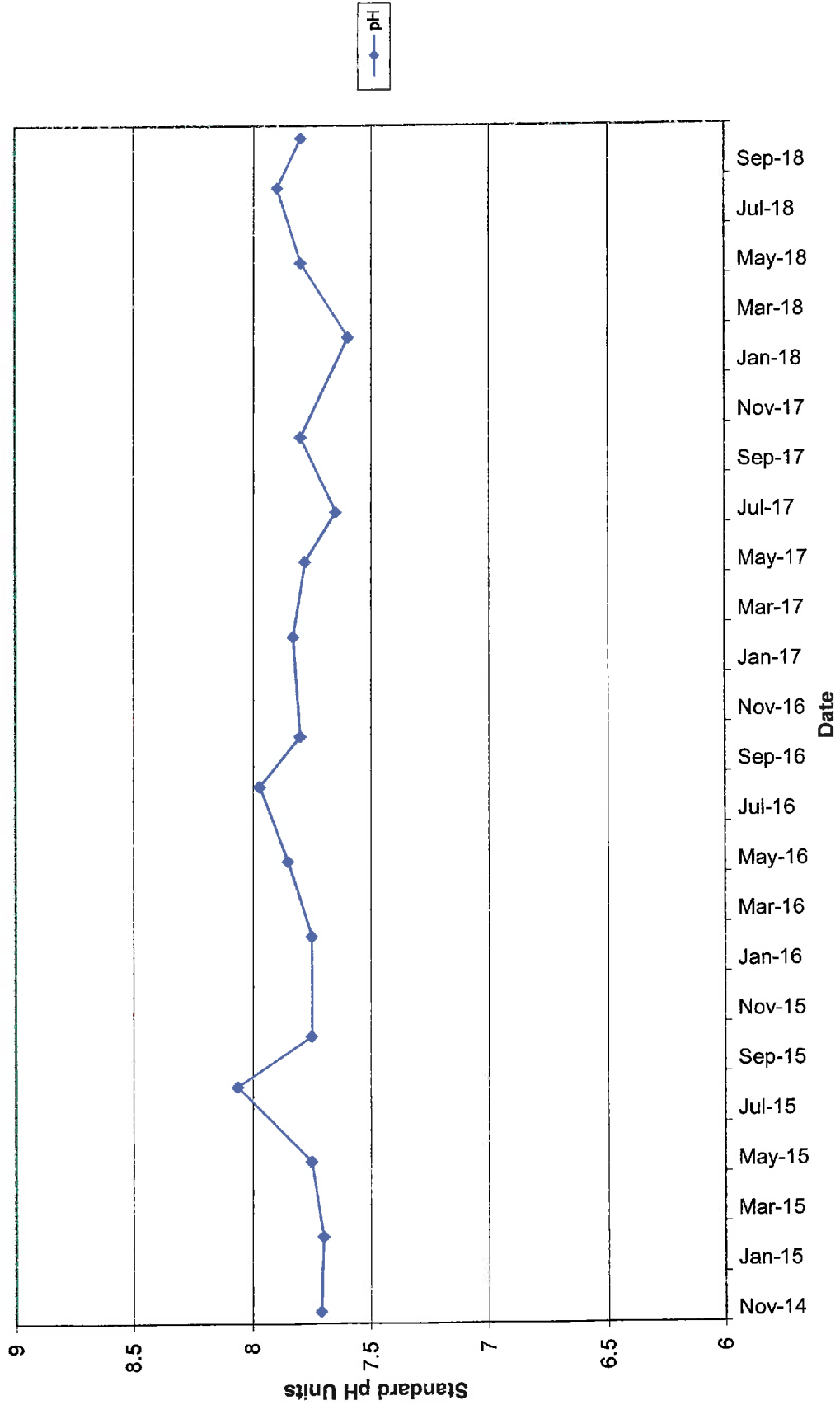
Appendix A

CCR Groundwater Monitoring Results (2015-2018)

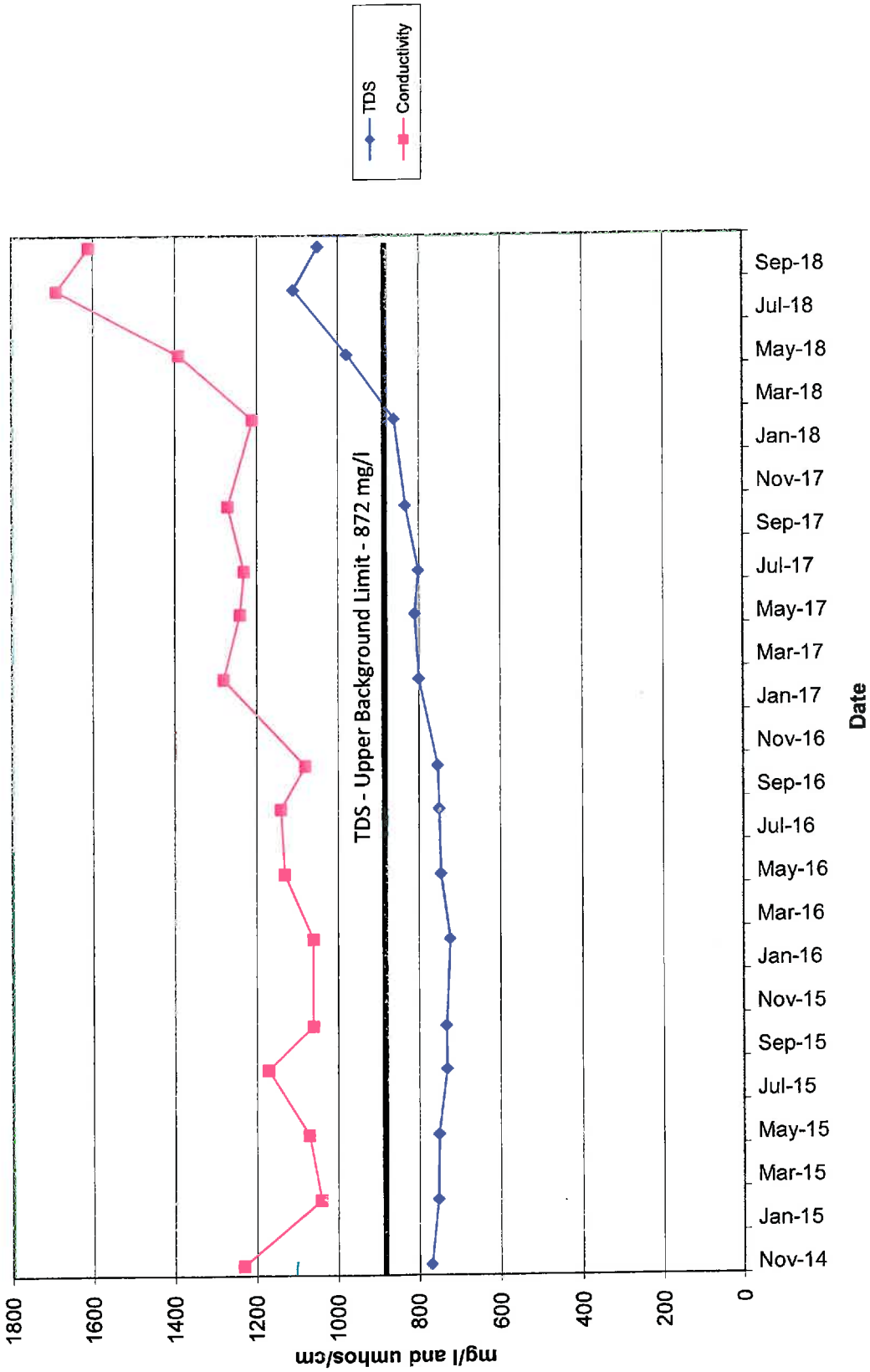
TSPP Ash Landfill - Monitor Well Hydrographs



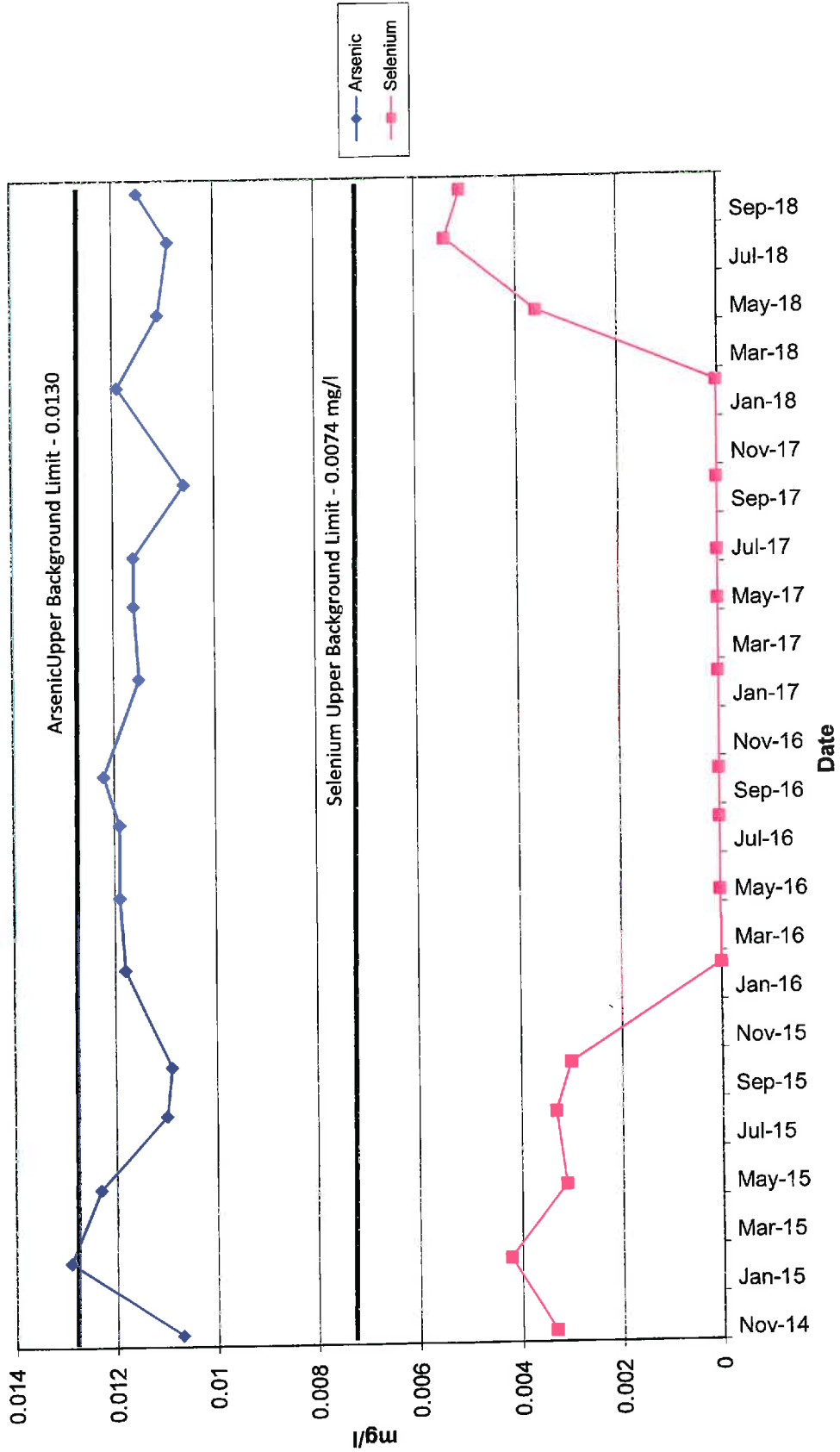
Landfill Monitor Well MW1 - pH



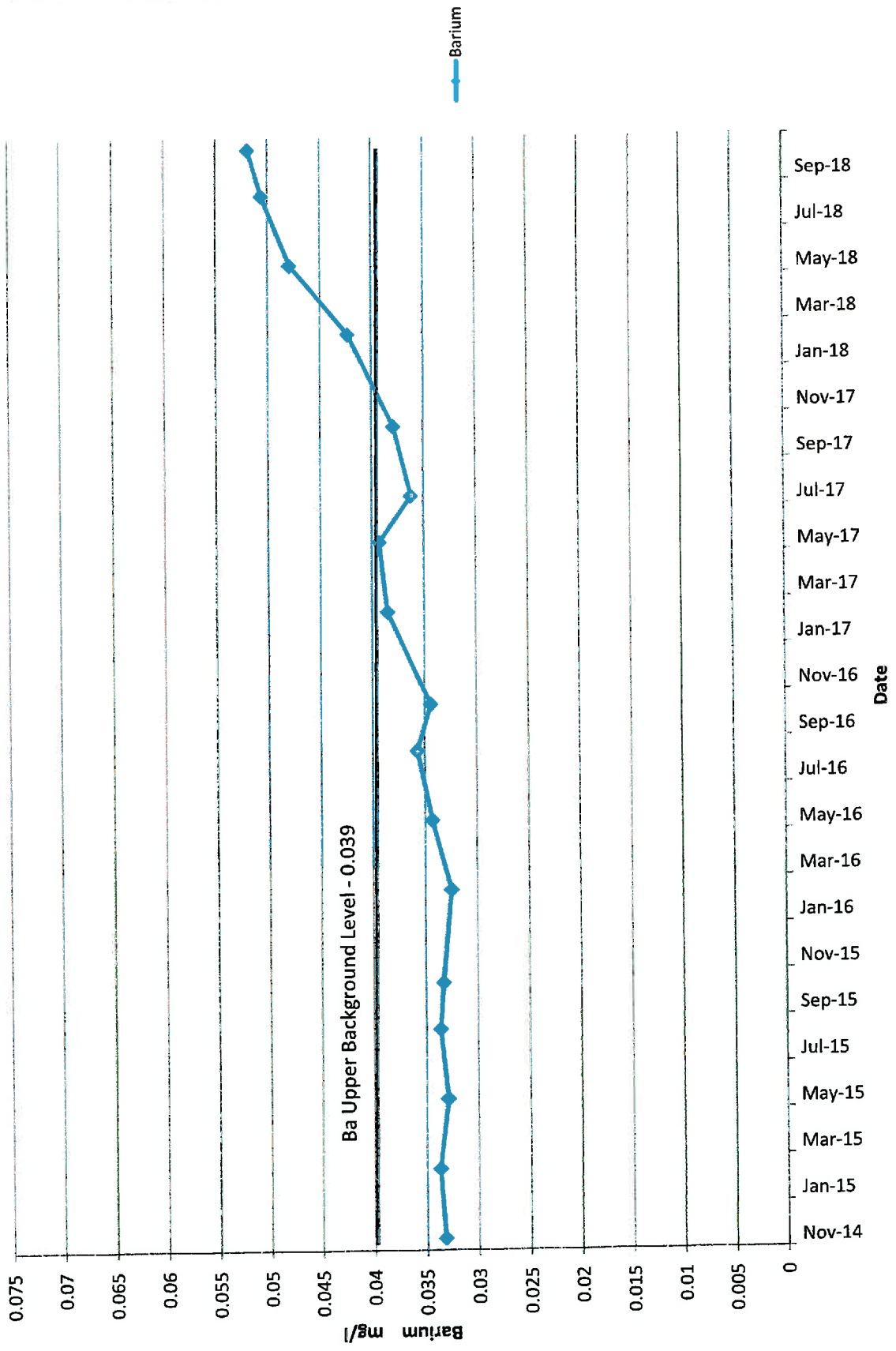
Landfill Monitor Well MW1 - TDS and Conductivity



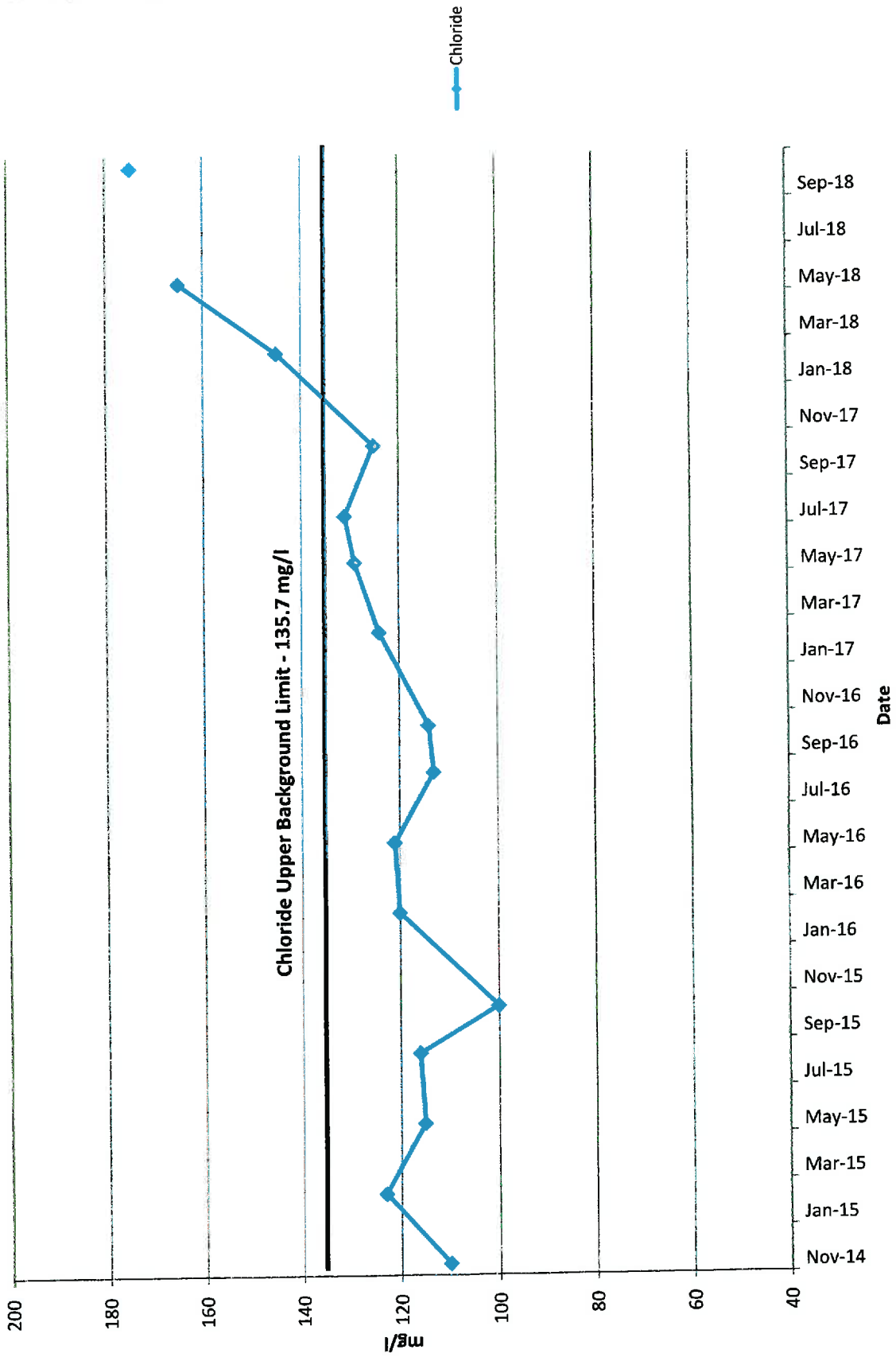
Landfill Monitor Well MW1 - Arsenic and Selenium



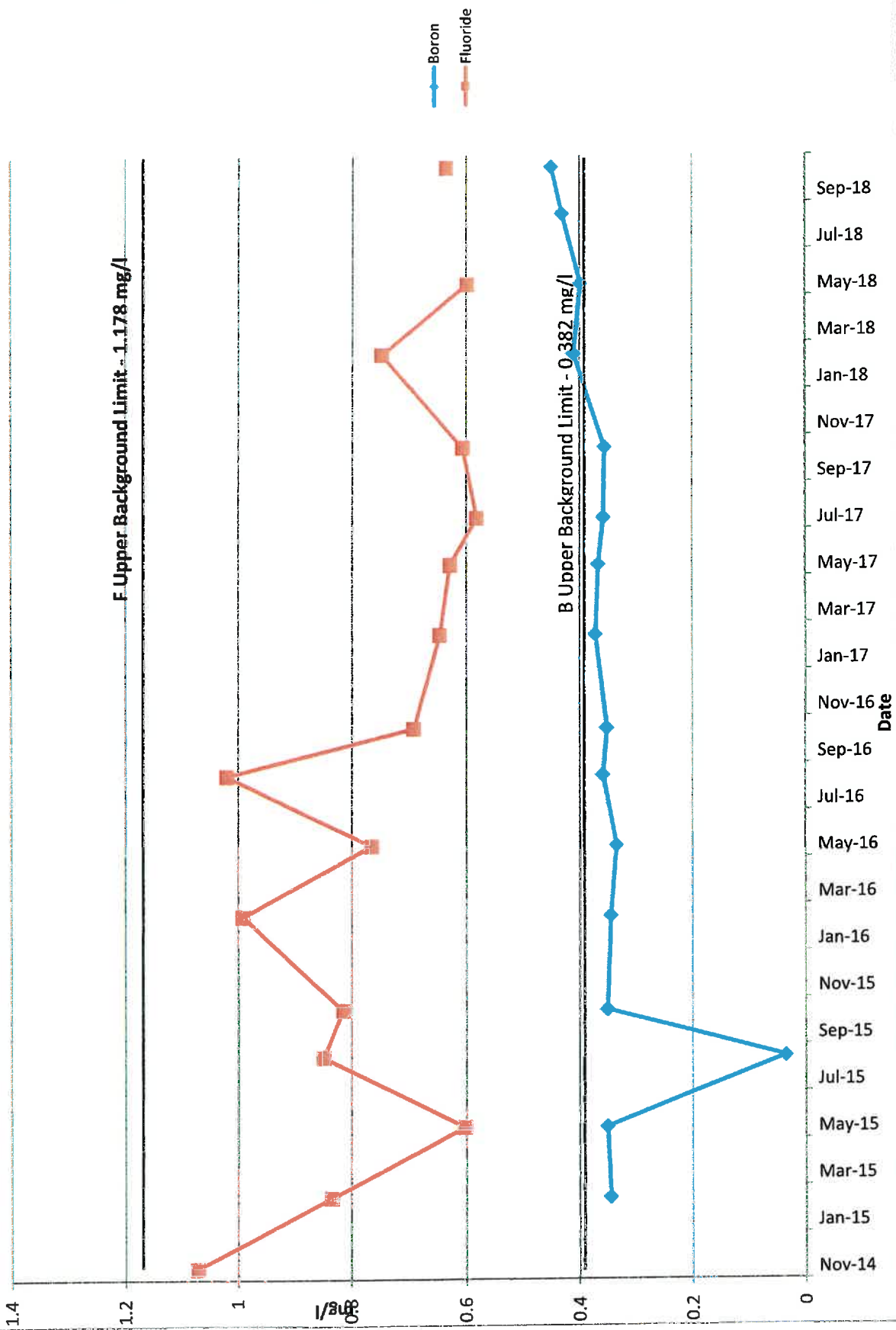
Landfill Monitor Well MW1 - Barium



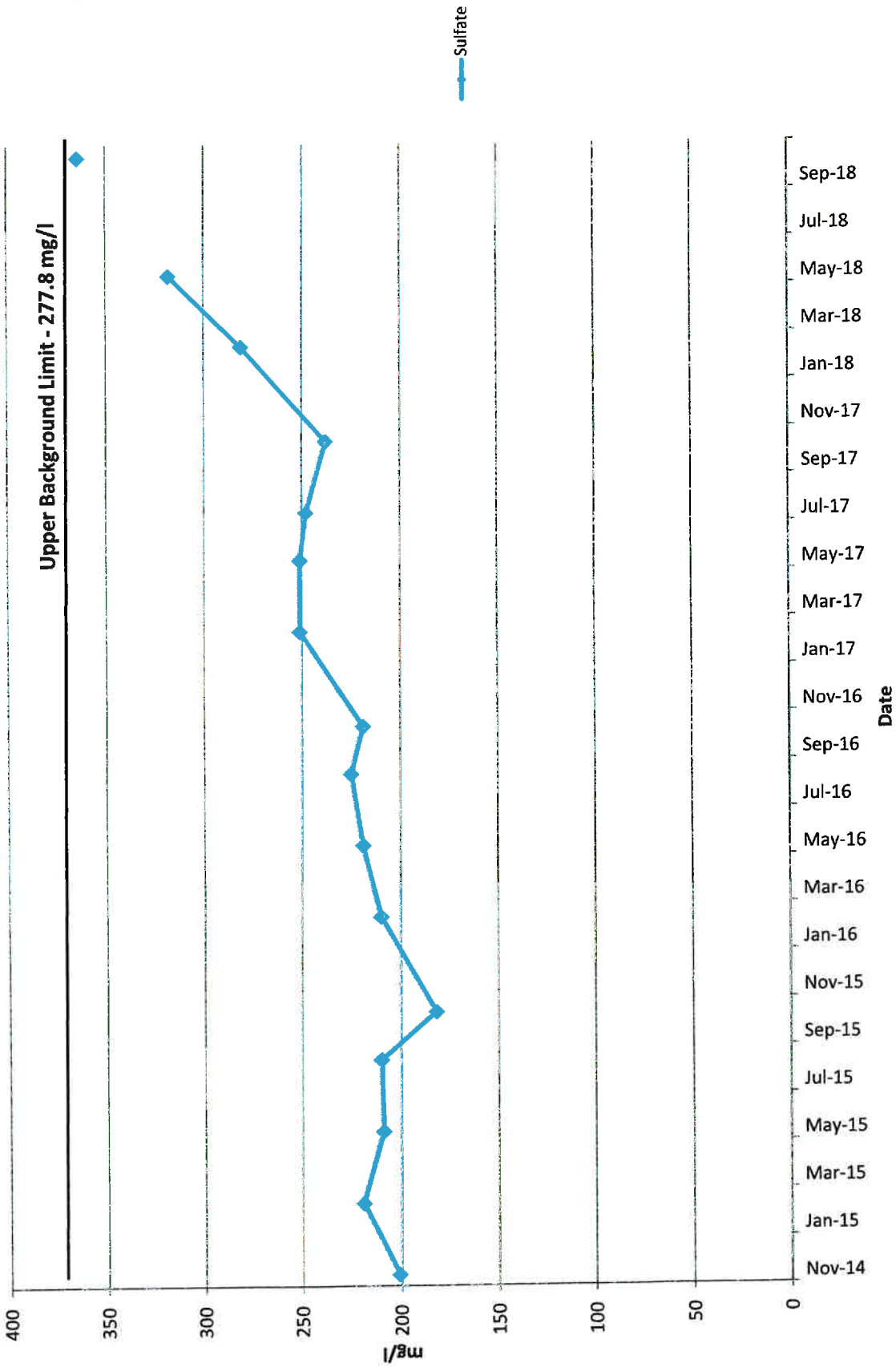
Landfill Monitor Well MW1 - Chloride



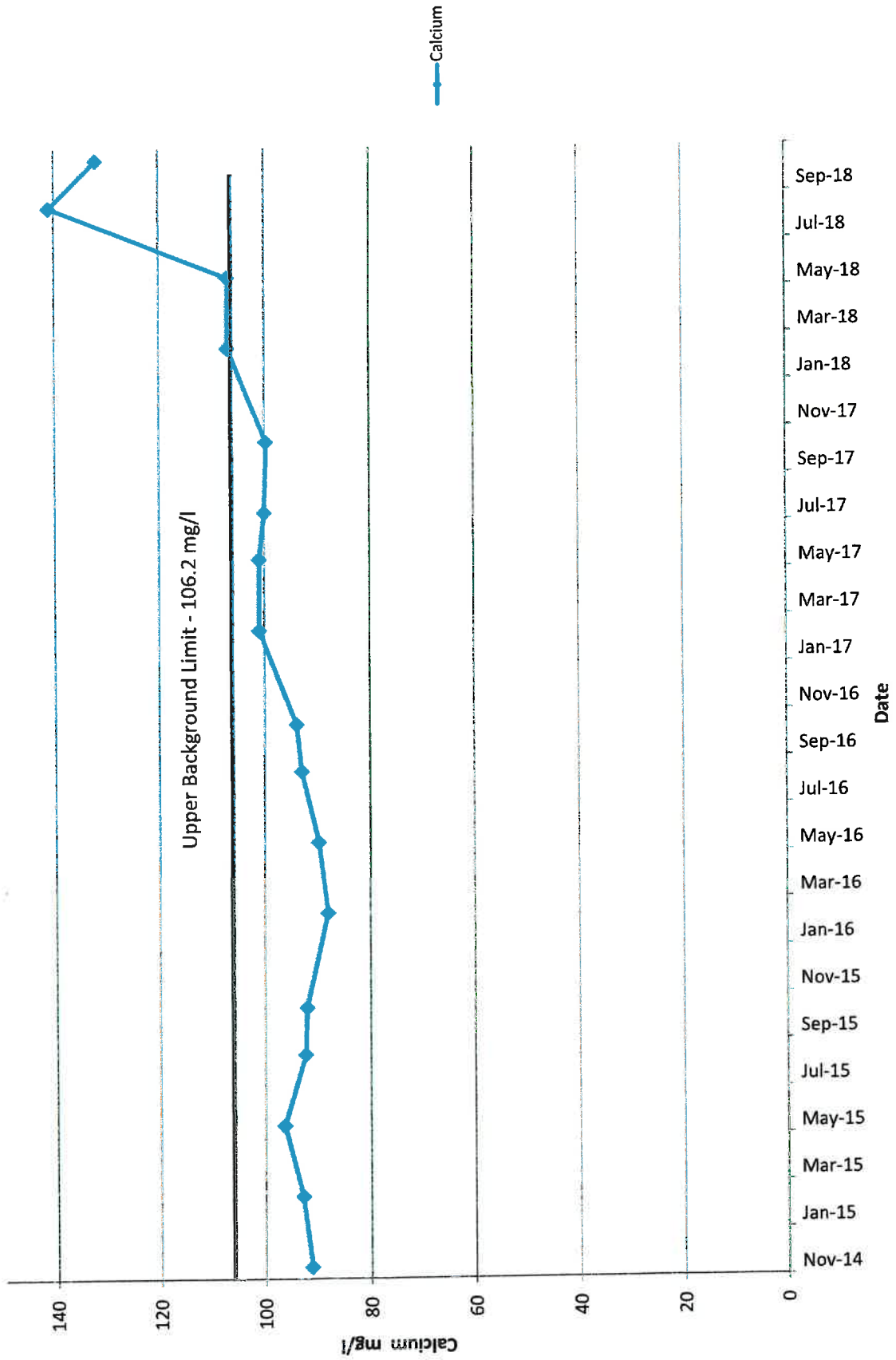
Landfill Monitor Well MW1 - Boron and Fluoride



Landfill Monitor Well MW1 - Sulfate

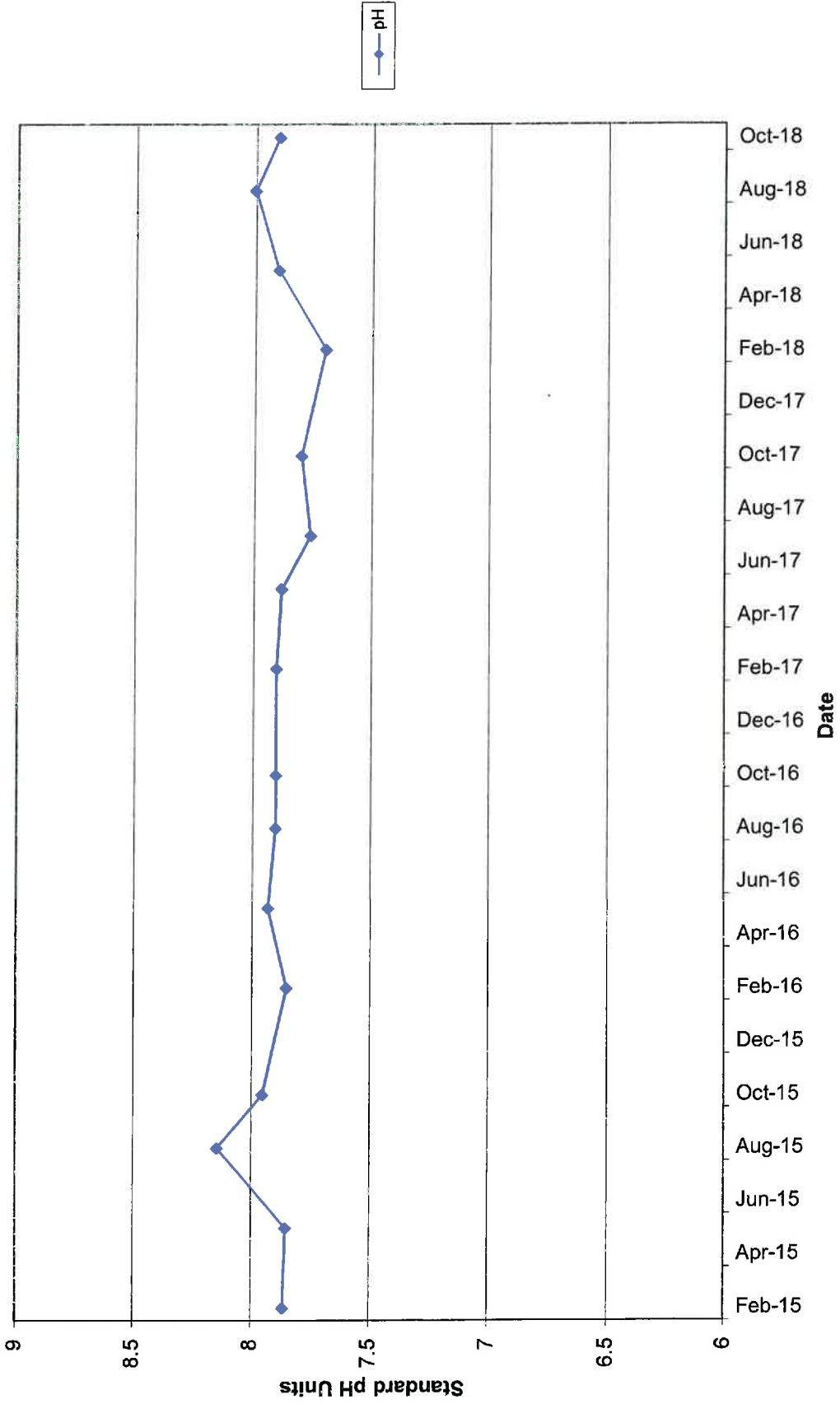


Landfill Monitor Well MW1 - Calcium

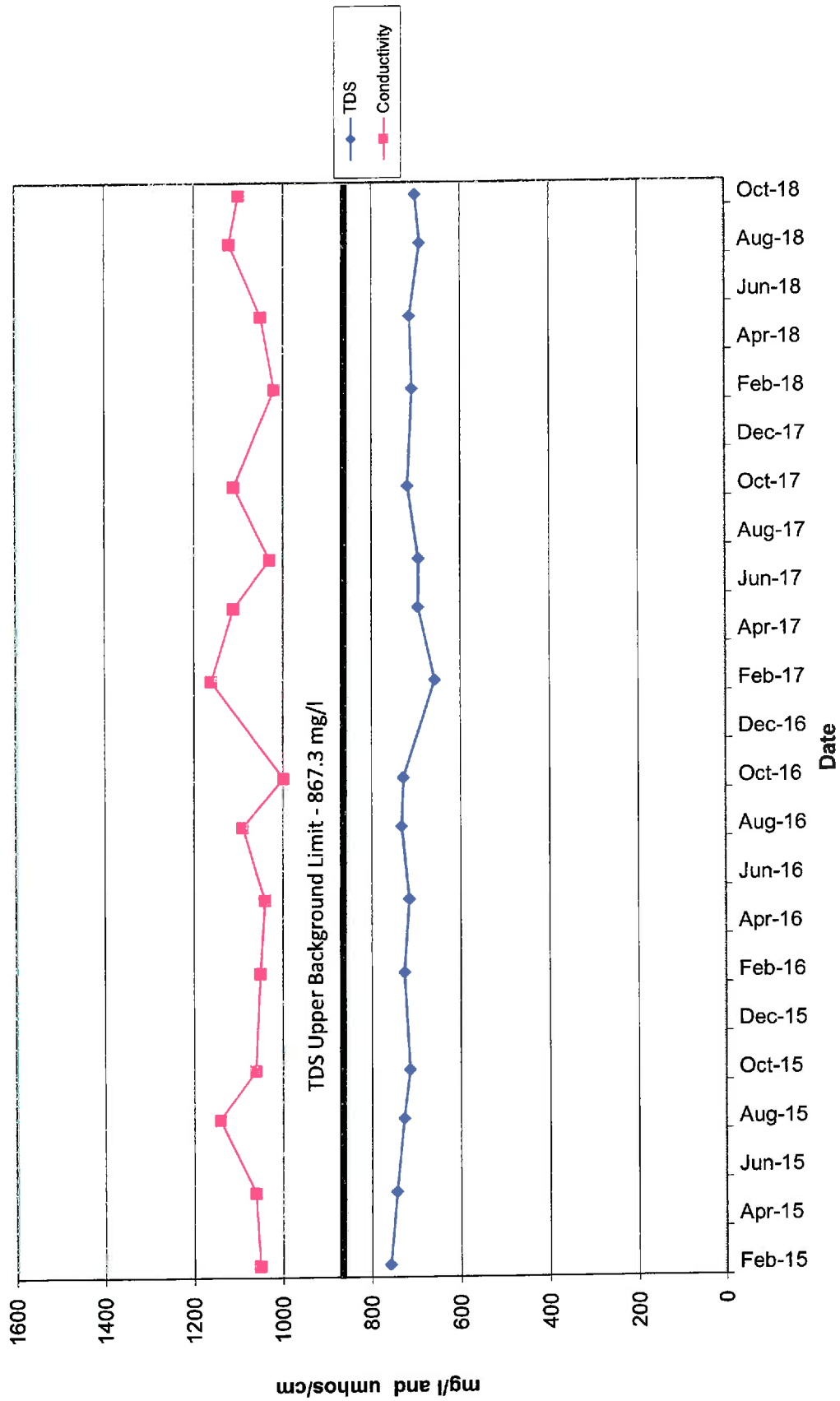


| Lantrifil Monitor Well MW4 | | (all values mg/l, unless otherwise noted) | | | | | | | | | | | | | pcell | | | | | | | | | | |
|----------------------------|---------|---|--------|--------|-----------|---------|----------|--------|--------|---------|--------|----------|--------|------|-------|---------|----------|---------|----------|------------|---------|----------|--------|--------|------|
| Date | Well ID | Conductivity | Ammony | Barium | Beryllium | Cadmium | Chromium | Cobalt | Lead | Mercury | Nickel | Selenium | Silver | TOC | Baron | Calcium | Chloride | Lithium | Fluoride | Molybdenum | Sulfate | Thallium | Re 228 | Re 228 | |
| 11-Feb-15 | 757 | 1050 | 0.0130 | 0.0334 | <0.002 | <0.002 | <0.006 | <0.001 | <0.003 | <0.0002 | <0.01 | 0.0083 | <0.005 | 1.36 | 0.581 | 77.9 | | | | | | | | | |
| 10-Mar-15 | 743 | 785 | 0.0133 | 0.0331 | <0.002 | <0.002 | <0.006 | <0.003 | <0.003 | <0.0002 | <0.01 | 0.0051 | <0.005 | 2 | 0.578 | 82.1 | | | | | | | | | |
| 25-Mar-15 | 727 | 814 | 0.0128 | 0.0332 | <0.002 | <0.002 | <0.006 | <0.006 | <0.003 | <0.0002 | <0.01 | 0.0047 | <0.005 | 1.78 | 0.571 | 78 | | | | | | | | | |
| 22-Oct-15 | 714 | 785 | 0.0132 | 0.0333 | <0.002 | <0.002 | <0.006 | <0.006 | <0.003 | <0.0002 | <0.01 | 0.0048 | <0.005 | 1.45 | 0.574 | 74.3 | 58.8 | 0.985 | 0.621 | 0.008 | 183 | <0.001 | <0.14 | <1.2 | <1.5 |
| 19-Feb-16 | 726 | 785 | 0.0137 | 0.0322 | <0.002 | <0.002 | <0.006 | <0.006 | <0.003 | <0.0002 | <0.01 | 0.0048 | <0.005 | 1.45 | 0.589 | 75.1 | 103 | 0.977 | 0.748 | 0.008 | 205 | <0.001 | <0.13 | <0.98 | <1.0 |
| 4-May-16 | 715 | 783 | 0.0141 | 0.0334 | <0.002 | <0.002 | <0.006 | <0.006 | <0.003 | <0.0002 | <0.01 | 0.0048 | <0.005 | 1.79 | 0.537 | 71.1 | 107 | 0.976 | 0.703 | 0.008 | 208 | <0.001 | <0.11 | <0.19 | <0.3 |
| 17-Aug-16 | 732 | 770 | 0.0135 | 0.0334 | <0.002 | <0.002 | <0.006 | <0.006 | <0.003 | <0.0002 | <0.01 | 0.0048 | <0.005 | 1.89 | 0.542 | 73.4 | 101 | 0.98 | 0.503 | 0.008 | 204 | <0.001 | <0.09 | <1.0 | <1.3 |
| 25-Oct-16 | 728 | 770 | 0.0135 | 0.0334 | <0.002 | <0.002 | <0.006 | <0.006 | <0.003 | <0.0002 | <0.01 | 0.0048 | <0.005 | 1.77 | 0.573 | 73.8 | 108 | 0.972 | 0.48 | 0.008 | 205 | <0.001 | <0.09 | <1.4 | <1.5 |
| 8-Mar-17 | 662 | 788 | 0.0135 | 0.0316 | <0.002 | <0.002 | <0.006 | <0.006 | <0.003 | <0.0002 | <0.01 | 0.0048 | <0.005 | 1.98 | 0.540 | 73.1 | 108 | 0.976 | 0.527 | 0.008 | 205 | <0.001 | <0.1 | <0.2 | <0.4 |
| 13-Jul-17 | 694 | 776 | 0.0134 | 0.0309 | <0.002 | <0.002 | <0.006 | <0.006 | <0.003 | <0.0002 | <0.01 | 0.0044 | <0.005 | 1.36 | 0.539 | 74.1 | 103 | 0.976 | 0.496 | 0.008 | 184 | <0.001 | <0.1 | <0.6 | <0.7 |
| 17-Oct-17 | 719 | 778 | 0.0129 | 0.0316 | <0.002 | <0.002 | <0.006 | <0.006 | <0.003 | <0.0002 | <0.01 | 0.0044 | <0.005 | 1.74 | 0.536 | 74.1 | 103 | 0.976 | 0.442 | 0.008 | 184 | <0.001 | <0.1 | <0.6 | <0.7 |
| 14-Feb-18 | 708 | 777 | 0.0141 | 0.0332 | <0.002 | <0.002 | <0.006 | <0.006 | <0.003 | <0.0002 | <0.01 | 0.0048 | <0.005 | 1.21 | 0.518 | 80.5 | 102 | 0.901 | 0.491 | 0.008 | 184 | <0.001 | <0.1 | <0.6 | <0.7 |
| 2-May-18 | 715 | 778 | 0.0129 | 0.0339 | <0.002 | <0.002 | <0.006 | <0.006 | <0.003 | <0.0002 | <0.01 | 0.0048 | <0.005 | 1.93 | 0.589 | 71.5 | 98.6 | 0.975 | 0.475 | 0.008 | 184 | <0.001 | <0.1 | <0.6 | <0.7 |
| 7-Aug-18 | 691 | 8 | 0.0148 | 0.0315 | <0.002 | <0.002 | <0.006 | <0.006 | <0.003 | <0.0002 | <0.01 | 0.0044 | <0.005 | 1.93 | 0.585 | 72.2 | 108 | 0.975 | 0.475 | 0.008 | 184 | <0.001 | <0.1 | <0.6 | <0.7 |
| 22-Dec-18 | 701 | 7.8 | 0.0138 | 0.0331 | <0.002 | <0.002 | <0.006 | <0.006 | <0.003 | <0.0002 | <0.01 | 0.0048 | <0.005 | 0.5 | 0.585 | 72.2 | 108 | 0.975 | 0.475 | 0.008 | 184 | <0.001 | <0.1 | <0.6 | <0.7 |

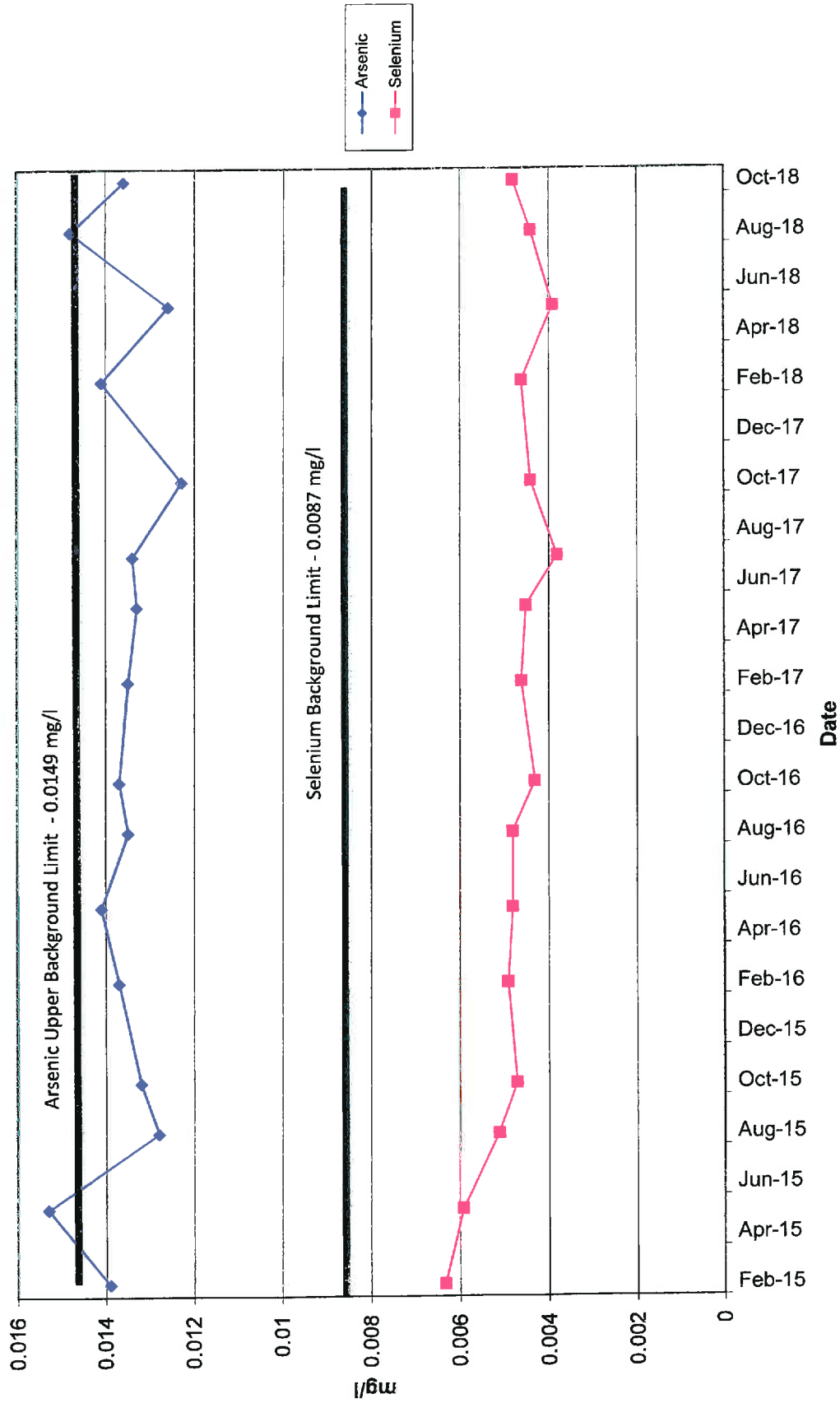
Landfill Monitor Well MW4 - pH



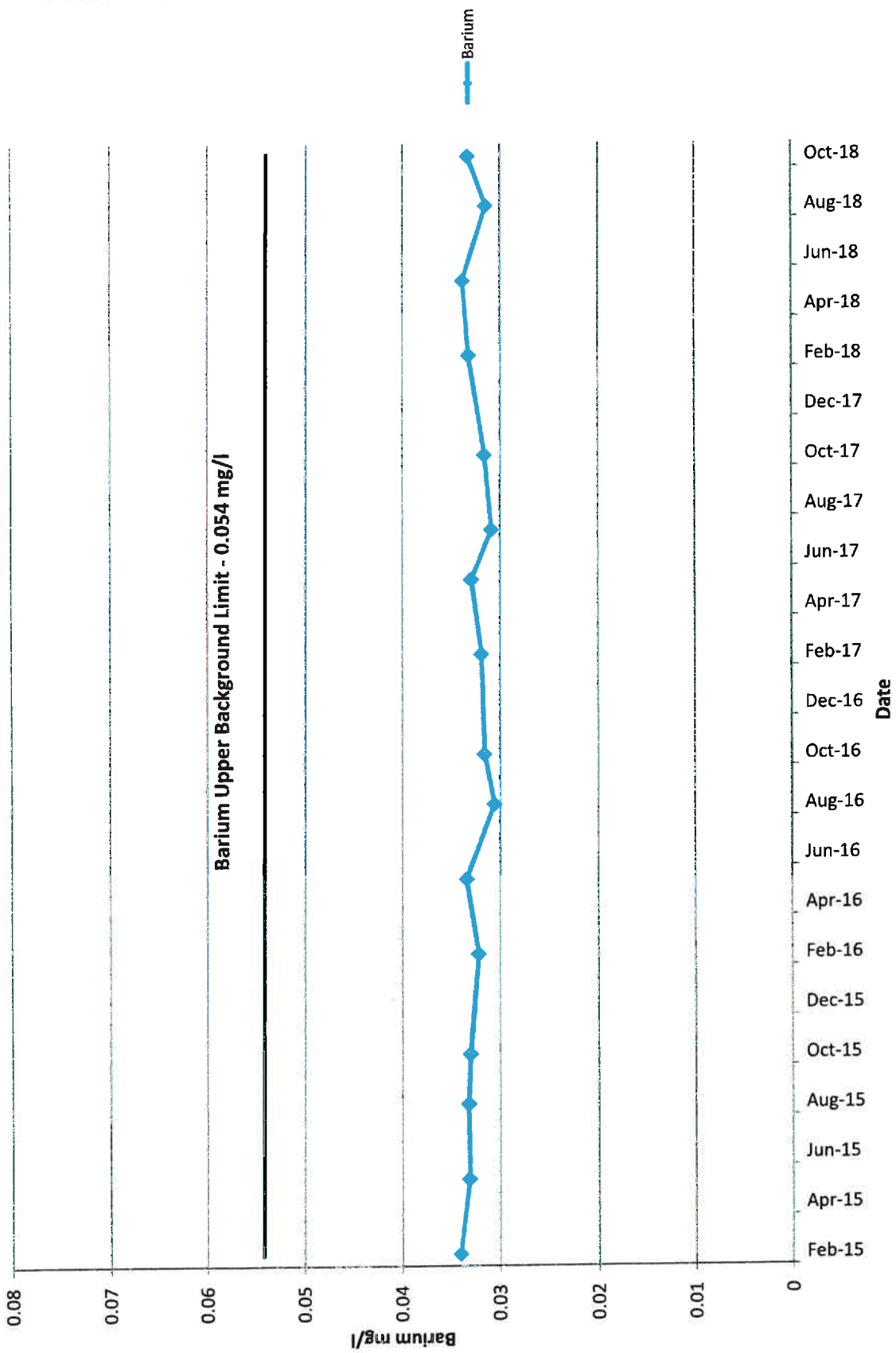
Landfill Monitor Well MW4 - TDS and Conductivity



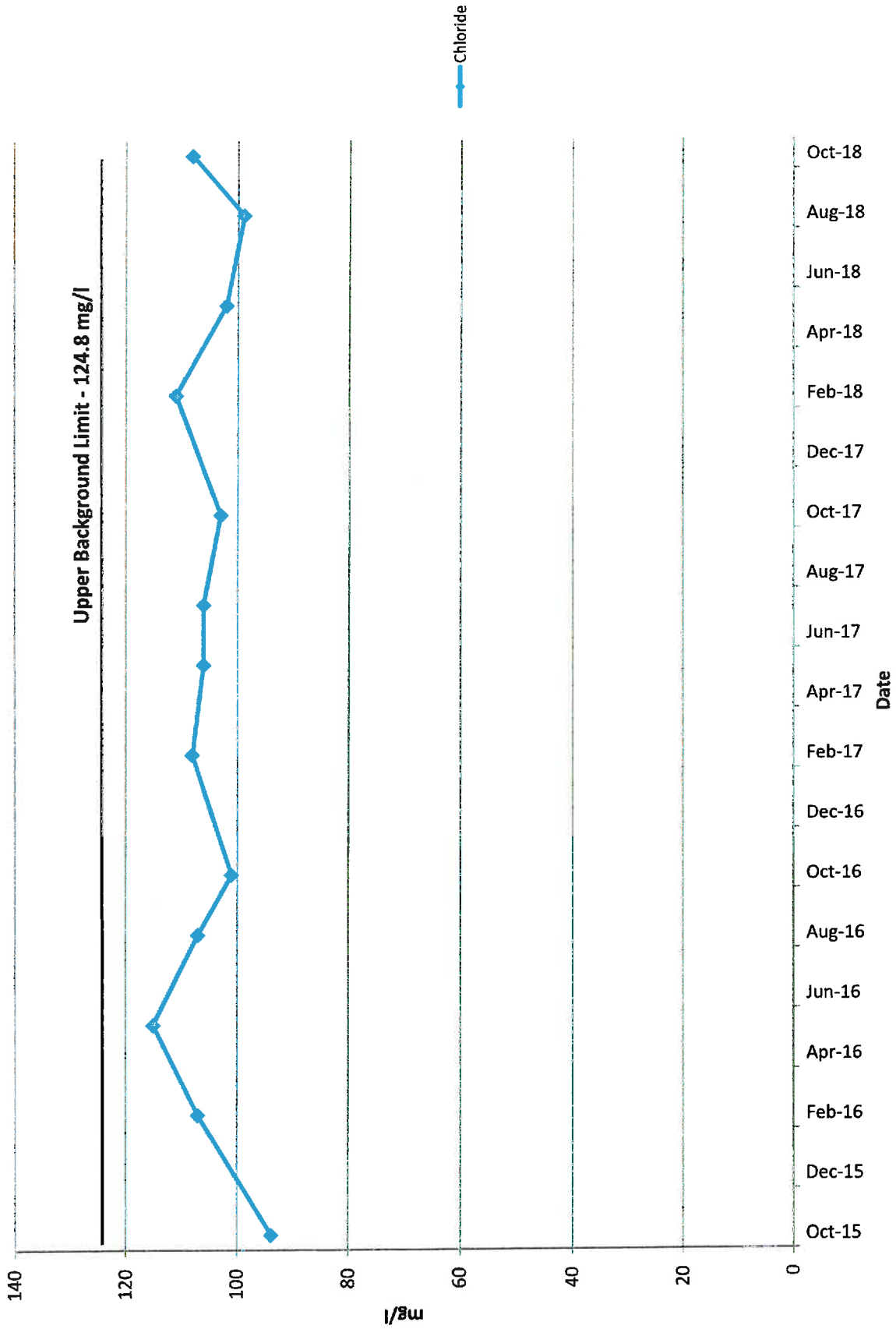
Landfill Monitor Well MW4 - Arsenic and Selenium



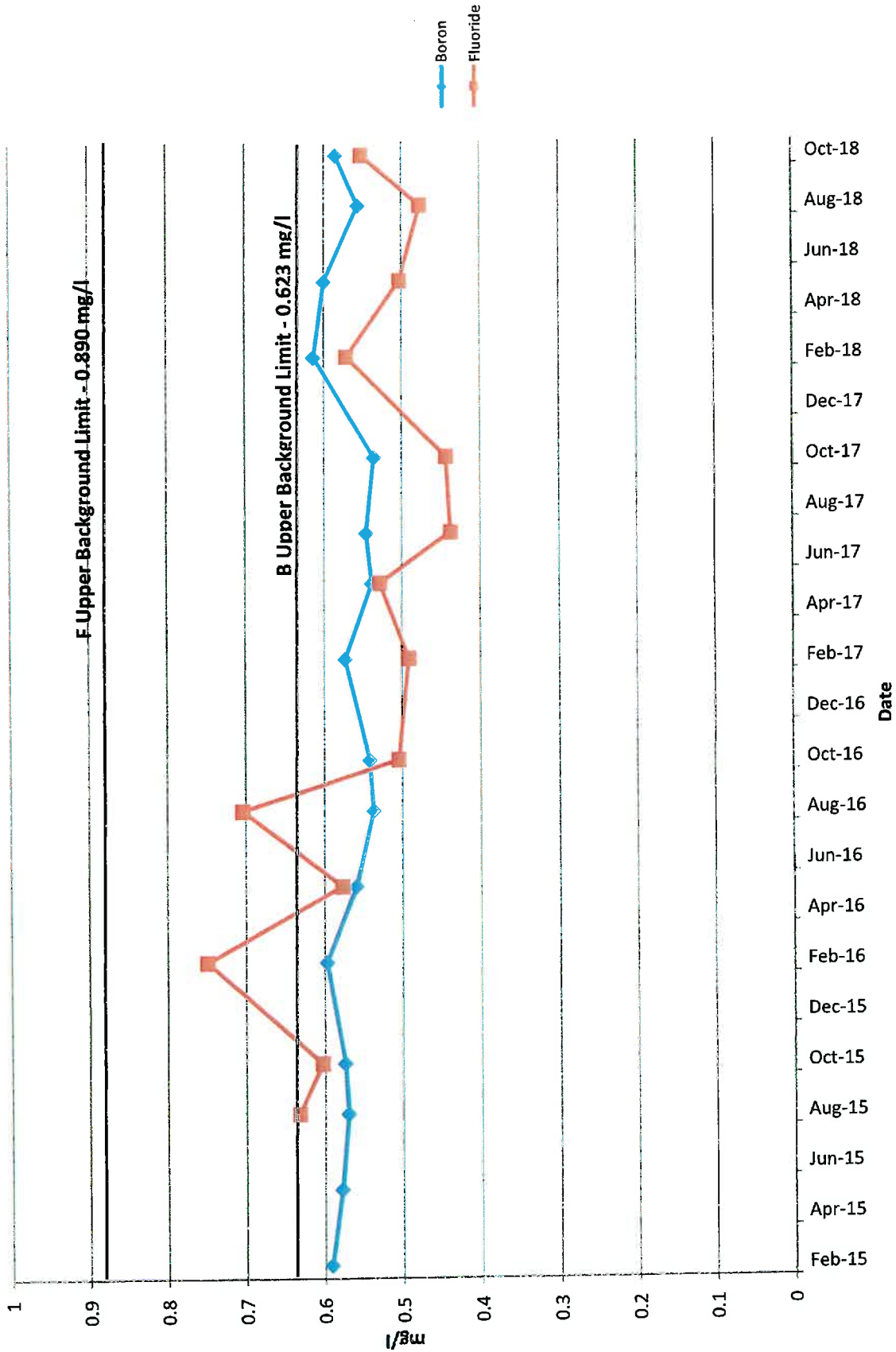
Landfill Monitor Well MW4 - Barium



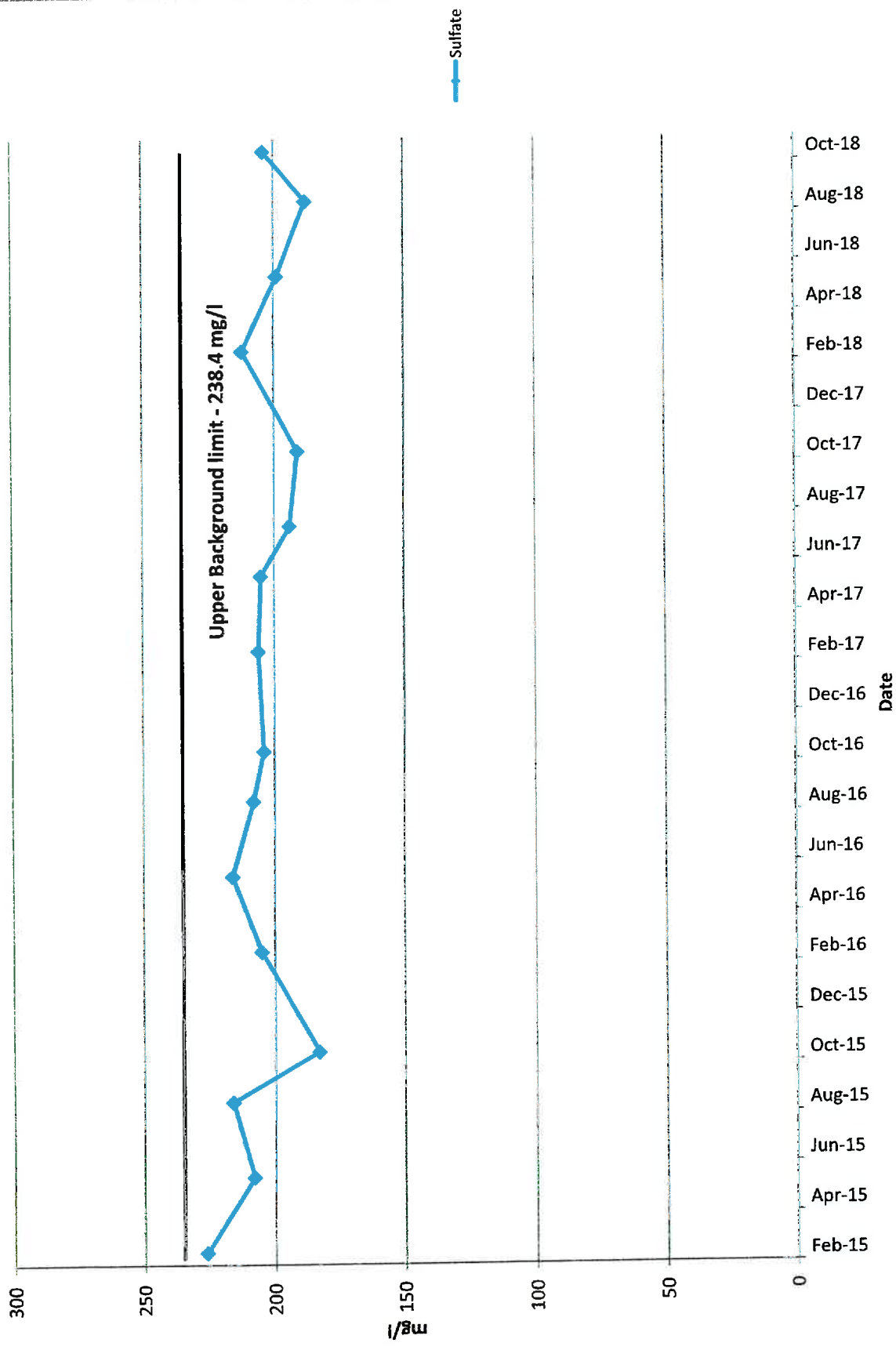
Landfill Monitor Well MW4 - Chloride



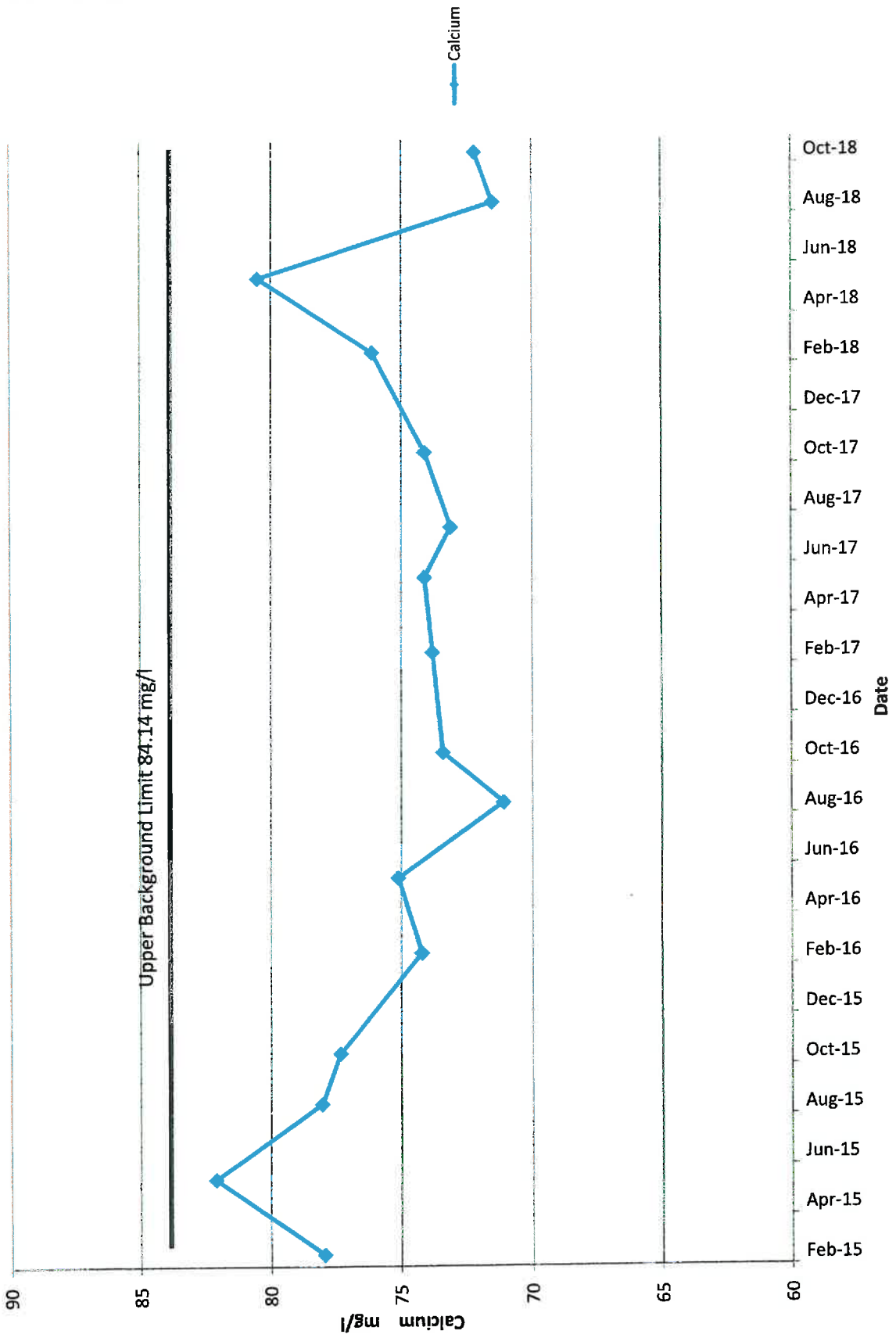
Landfill Monitor Well MW4 - Boron and Fluoride



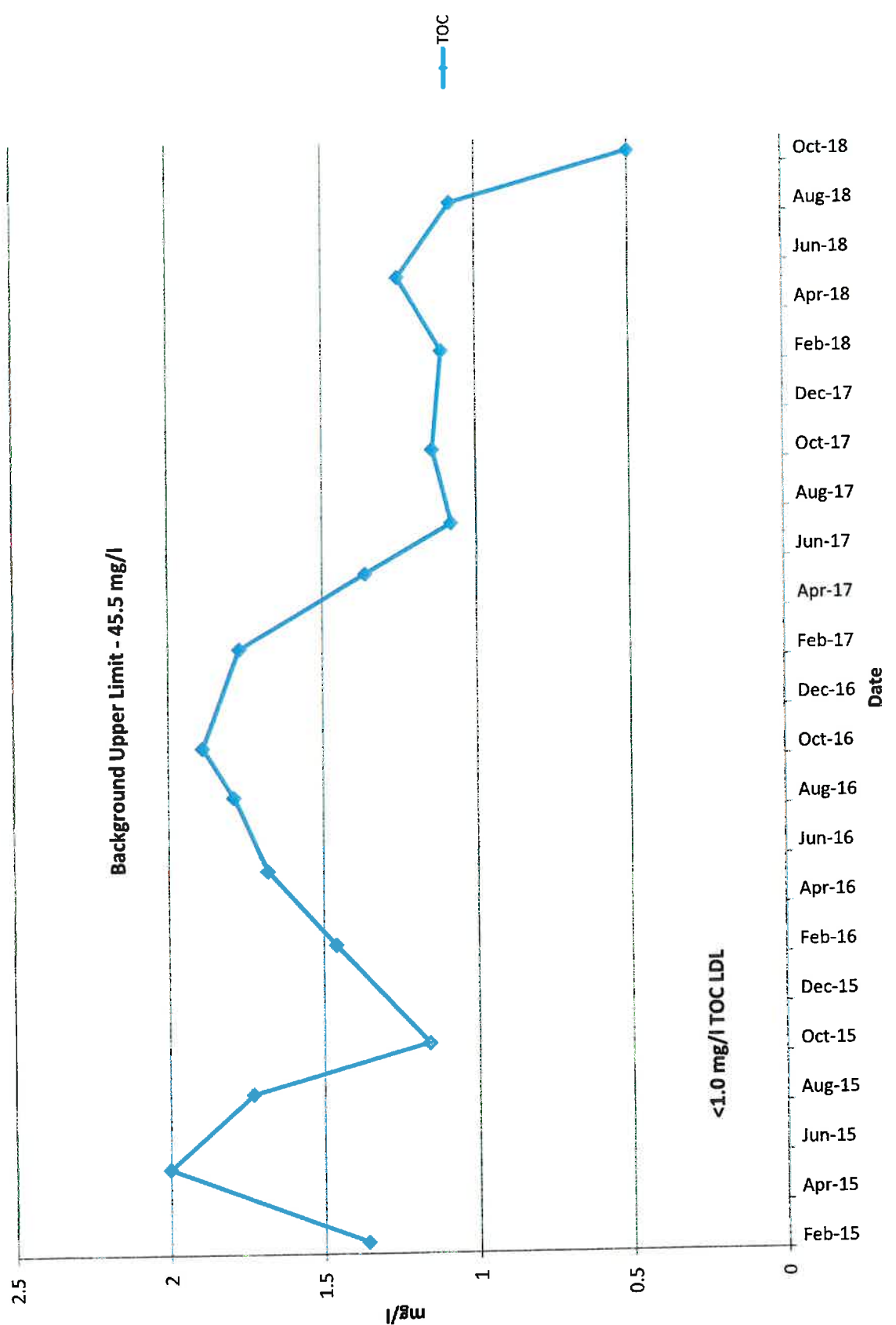
Landfill Monitor Well MW4 - Sulfate



Landfill Monitor Well MW4 - Calcium

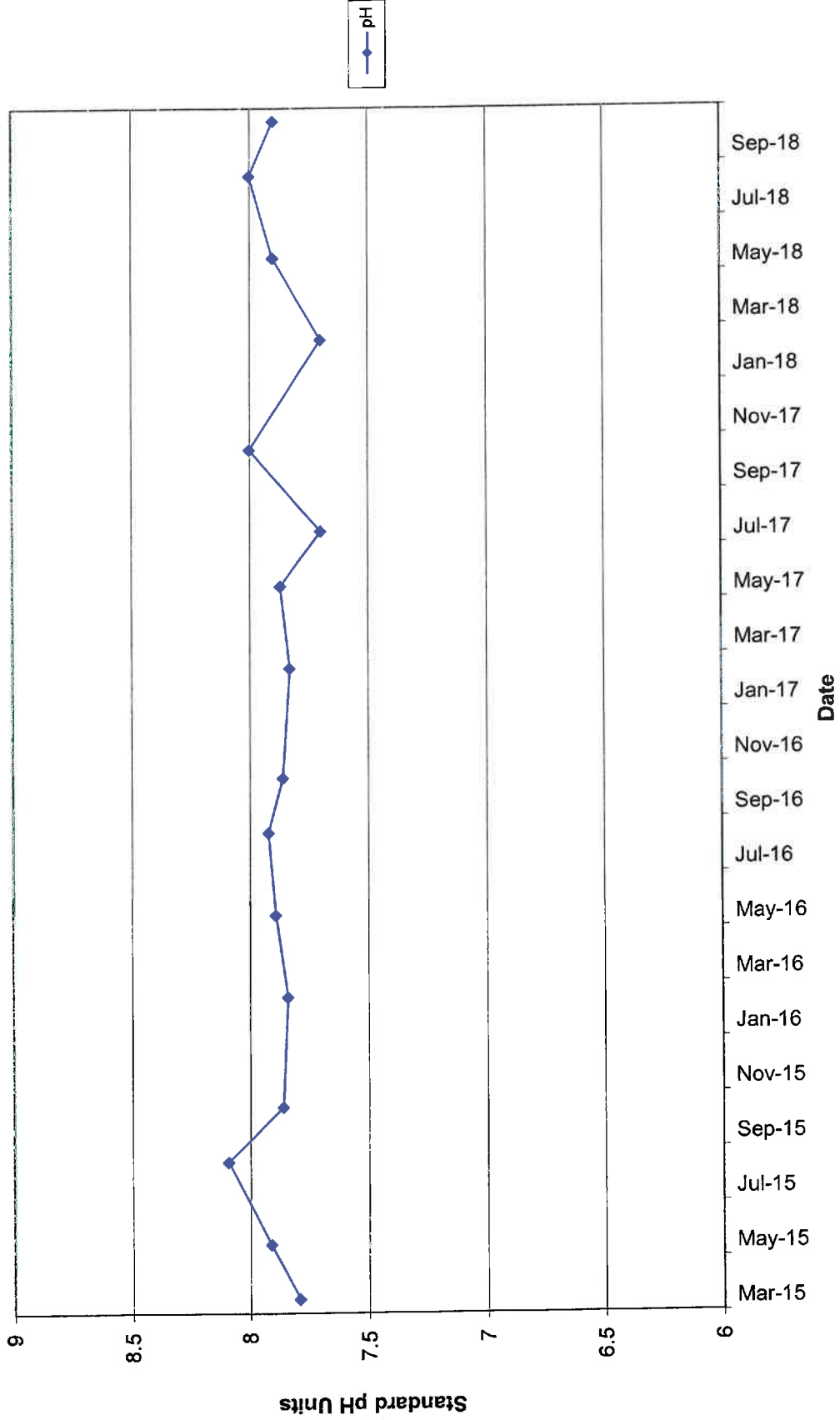


Landfill Monitor Well MW4 - Total Organic Carbon

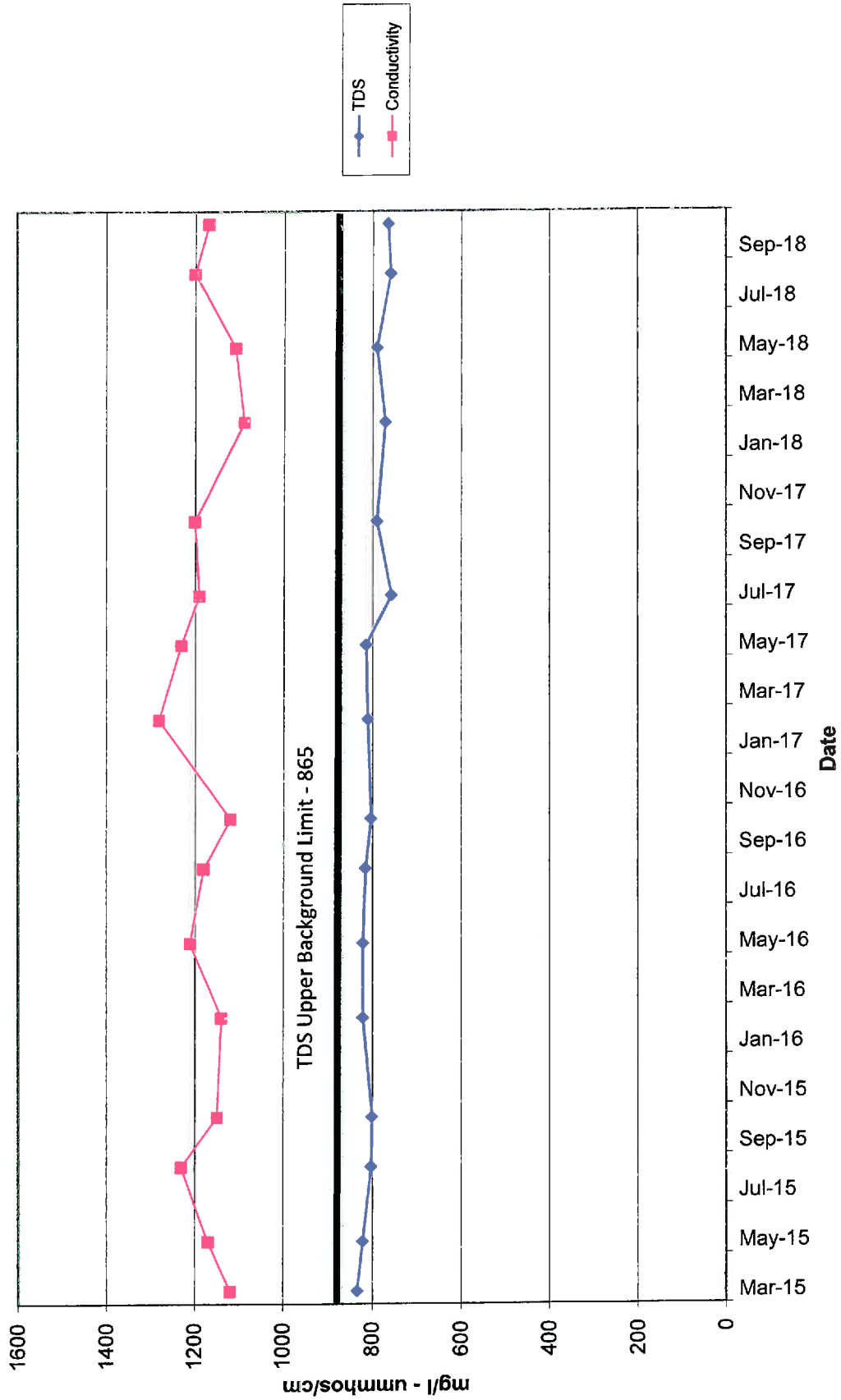


| Landfill Monitor Well MW3 | PCIL | Re 228 | Thallium | Fluoride | Lithium | Chloride | Boron | TOC | Sulfate | Silver | Selenium | Nickel | Mercury | Lead | Cobalt | Chromium | Calcium | Cadmium | Cerium | Beryllium | Barium | Arsenic | Antimony | Conductivity | pH | Temp |
|---------------------------|------|--------|----------|----------|---------|----------|-------|----------|----------|--------|----------|--------|---------|--------|-------------|-------------|---------|---------|--------|-----------|--------|---------|----------|--------------|------|------|
| 2-Feb-15 | 833 | 7.70 | | | | | 0.283 | 265 <1.0 | 271 <1.0 | <0.005 | 0.0071 | <0.01 | <0.003 | <0.003 | 105 <0.006 | 107 <0.006 | <0.002 | <0.002 | <0.002 | 0.0348 | 0.0124 | 0.0118 | 0.0338 | 1170 | 7.81 | 1120 |
| 16-Mar-15 | 821 | 7.81 | | 0.629 | | 0.28 | 0.28 | 246 <1.0 | 246 <1.0 | <0.005 | 0.0053 | <0.01 | <0.003 | <0.003 | 106 <0.006 | 106 <0.006 | <0.002 | <0.002 | <0.002 | 0.0351 | 0.0103 | 0.0075 | 0.0338 | 1230 | 8.09 | 1230 |
| 25-Aug-15 | 802 | 8.09 | | 0.702 | | 0.28 | 0.28 | 252 <1.0 | 252 <1.0 | <0.005 | 0.0046 | <0.01 | <0.003 | <0.003 | 93.3 <0.006 | 105 <0.006 | <0.002 | <0.002 | <0.002 | 0.0343 | 0.0075 | 0.0351 | 0.0351 | 1150 | 7.86 | 1150 |
| 18-Feb-16 | 821 | 7.84 | | 0.875 | | 0.303 | 0.303 | 257 <1.0 | 257 <1.0 | <0.005 | 0.0045 | <0.01 | <0.003 | <0.003 | 101 <0.006 | 101 <0.006 | <0.002 | <0.002 | <0.002 | 0.0351 | 0.0121 | 0.0117 | 0.0351 | 1210 | 7.84 | 1210 |
| 4-May-16 | 821 | 7.89 | | 0.875 | | 0.268 | 0.268 | 224 <1.0 | 224 <1.0 | <0.005 | 0.0052 | <0.01 | <0.003 | <0.003 | 98.1 <0.006 | 101 <0.006 | <0.002 | <0.002 | <0.002 | 0.0351 | 0.0117 | 0.0093 | 0.0351 | 1190 | 7.95 | 1190 |
| 17-Aug-16 | 815 | 7.95 | | 0.81 | | 0.295 | 0.295 | 252 <1.0 | 252 <1.0 | <0.005 | 0.0044 | <0.01 | <0.003 | <0.003 | 98.4 <0.006 | 101 <0.006 | <0.002 | <0.002 | <0.002 | 0.0351 | 0.0118 | 0.0118 | 0.0351 | 1200 | 7.86 | 1200 |
| 25-Oct-16 | 803 | 7.86 | | 0.597 | | 0.31 | 0.31 | 270 <1.0 | 270 <1.0 | <0.005 | 0.0044 | <0.01 | <0.003 | <0.003 | 95.9 <0.006 | 95.9 <0.006 | <0.002 | <0.002 | <0.002 | 0.0351 | 0.0118 | 0.0118 | 0.0351 | 1230 | 7.87 | 1230 |
| 28-Feb-17 | 810 | 7.87 | | 0.595 | | 0.32 | 0.32 | 284 <1.0 | 284 <1.0 | <0.005 | 0.0038 | <0.01 | <0.003 | <0.003 | 104 <0.006 | 104 <0.006 | <0.002 | <0.002 | <0.002 | 0.0351 | 0.0118 | 0.0118 | 0.0351 | 1200 | 7.9 | 1200 |
| 13-May-17 | 757 | 7.7 | | 0.544 | | 0.32 | 0.32 | 281 <1.0 | 281 <1.0 | <0.005 | 0.0046 | <0.01 | <0.003 | <0.003 | 99 <0.006 | 99 <0.006 | <0.002 | <0.002 | <0.002 | 0.0351 | 0.0128 | 0.0128 | 0.0351 | 1170 | 7.8 | 1170 |
| 17-Oct-17 | 760 | 7.7 | | 0.544 | | 0.31 | 0.31 | 281 <1.0 | 281 <1.0 | <0.005 | 0.0046 | <0.01 | <0.003 | <0.003 | 98 <0.006 | 98 <0.006 | <0.002 | <0.002 | <0.002 | 0.0351 | 0.0128 | 0.0128 | 0.0351 | 1170 | 7.8 | 1170 |
| 14-Feb-18 | 771 | 7.7 | | 0.872 | | 0.343 | 0.343 | 281 <1.0 | 281 <1.0 | <0.005 | 0.0038 | <0.01 | <0.003 | <0.003 | 104 <0.006 | 104 <0.006 | <0.002 | <0.002 | <0.002 | 0.0351 | 0.0128 | 0.0128 | 0.0351 | 1110 | 7.9 | 1110 |
| 2-May-18 | 750 | 7.9 | | 0.655 | | 0.346 | 0.346 | 282 <1.0 | 282 <1.0 | <0.005 | 0.0043 | <0.01 | <0.003 | <0.003 | 99 <0.006 | 99 <0.006 | <0.002 | <0.002 | <0.002 | 0.0351 | 0.0128 | 0.0128 | 0.0351 | 1200 | 8.0 | 1200 |
| 7-Aug-18 | 759 | 8.0 | | 0.654 | | 0.343 | 0.343 | 240 <1.0 | 240 <1.0 | <0.005 | 0.0045 | <0.01 | <0.003 | <0.003 | 98 <0.006 | 98 <0.006 | <0.002 | <0.002 | <0.002 | 0.0351 | 0.0128 | 0.0128 | 0.0351 | 1170 | 7.8 | 1170 |

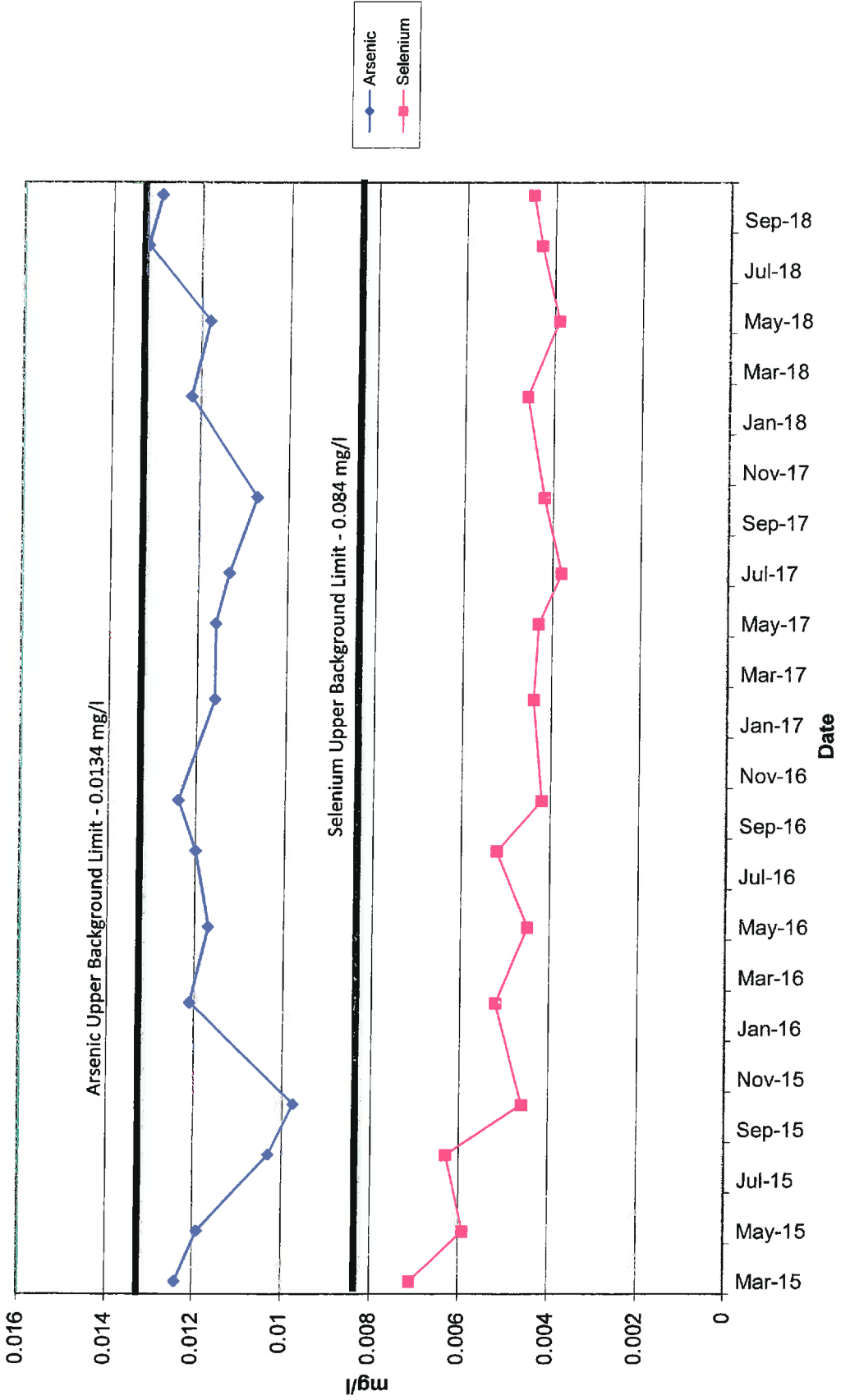
Landfill Monitor Well MW3 - pH



Landfill Monitor Well MW3 - TDS and Conductivity

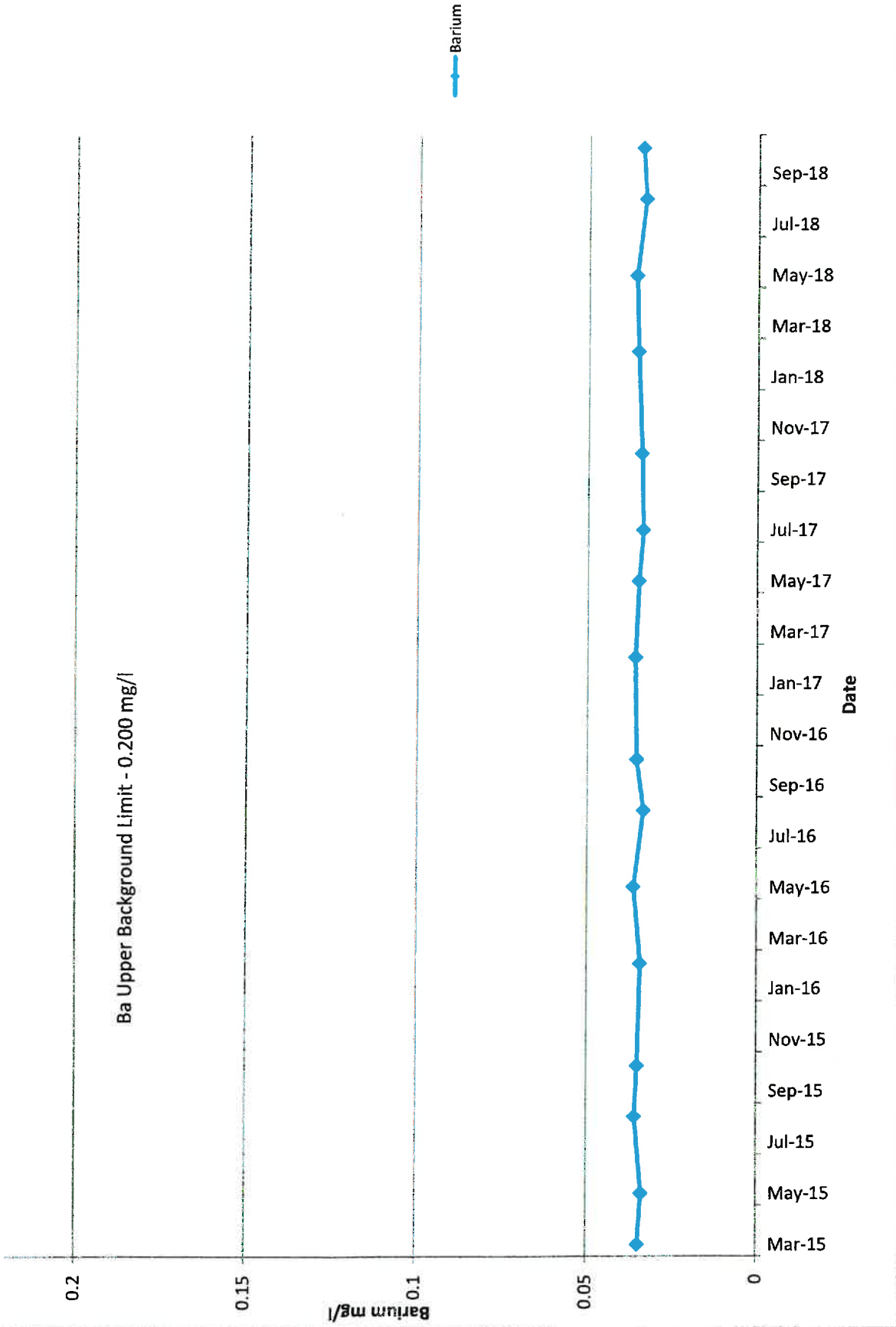


Landfill Monitor Well MW3 - Arsenic and Selenium

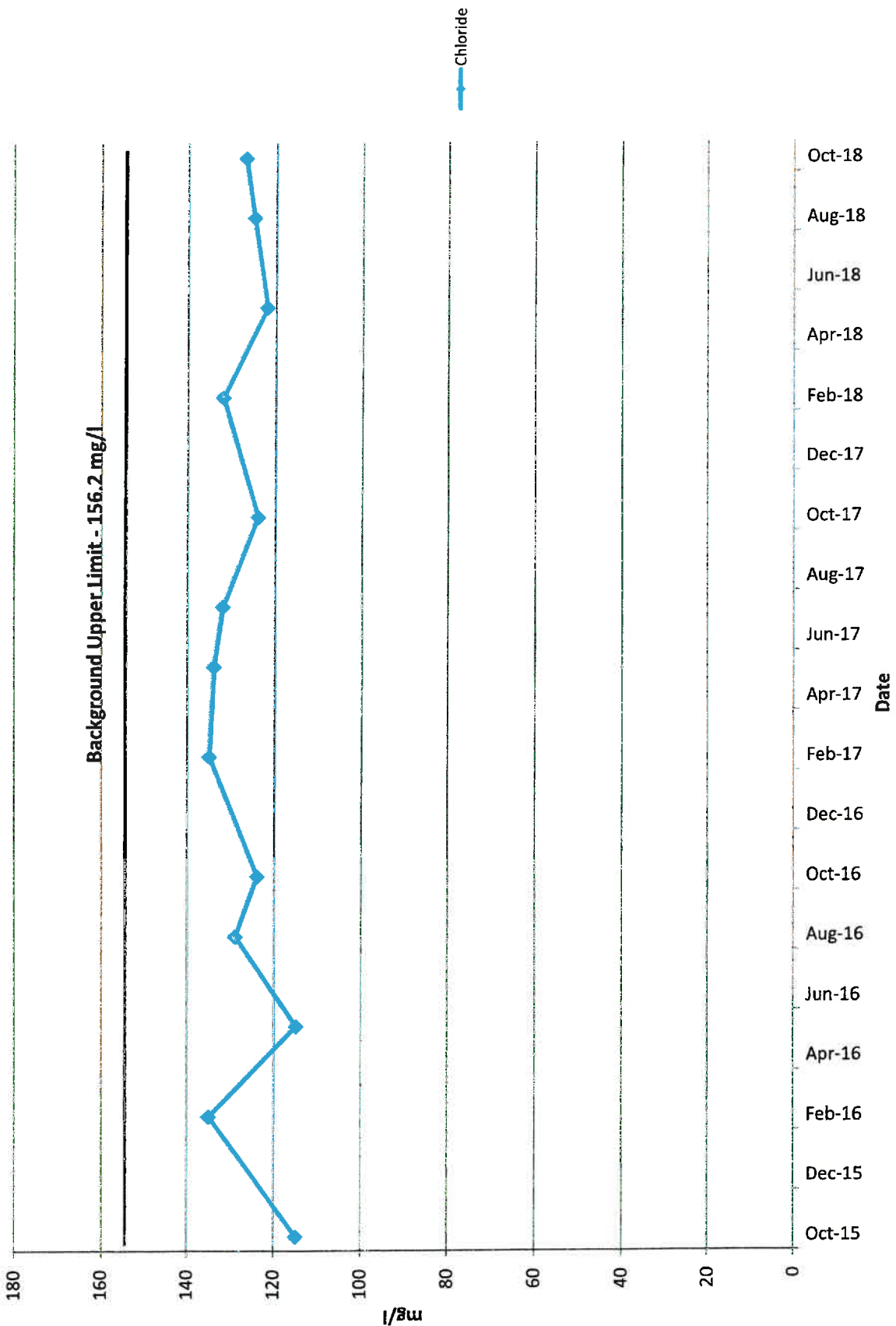


Landfill Monitor Well MW3 - Barium

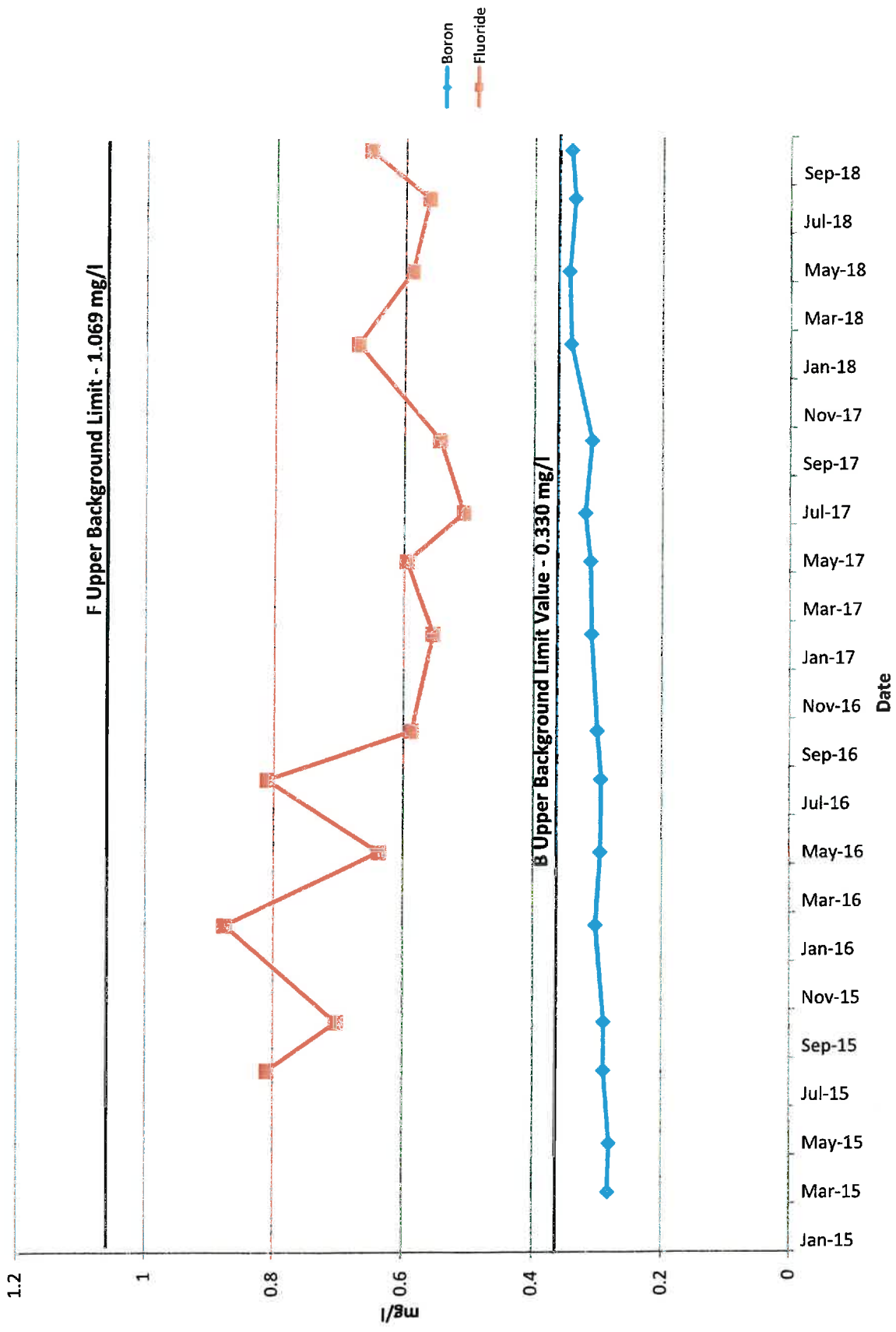
Ba Upper Background Limit - 0.200 mg/l



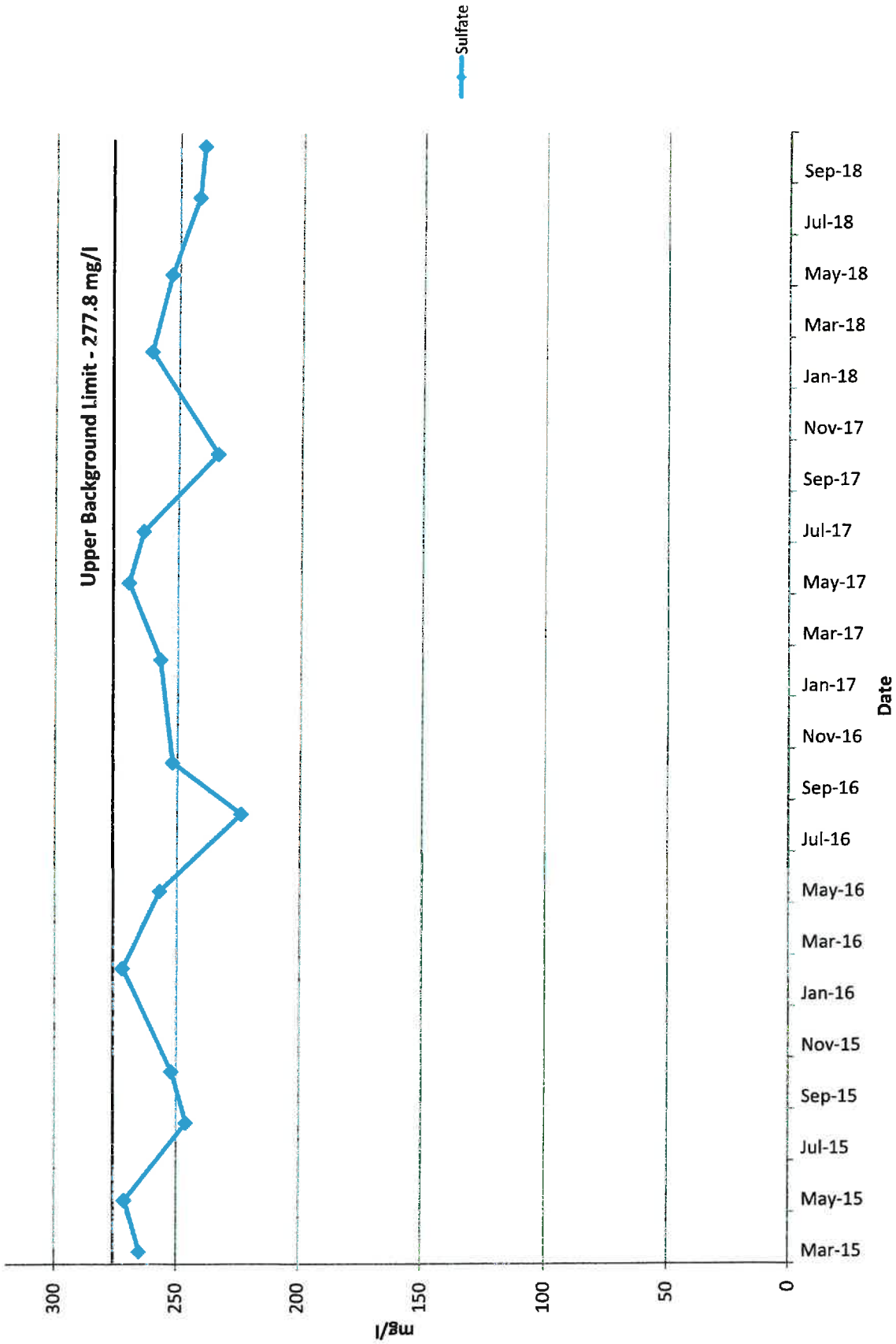
Landfill Monitor Well MW3 - Chloride



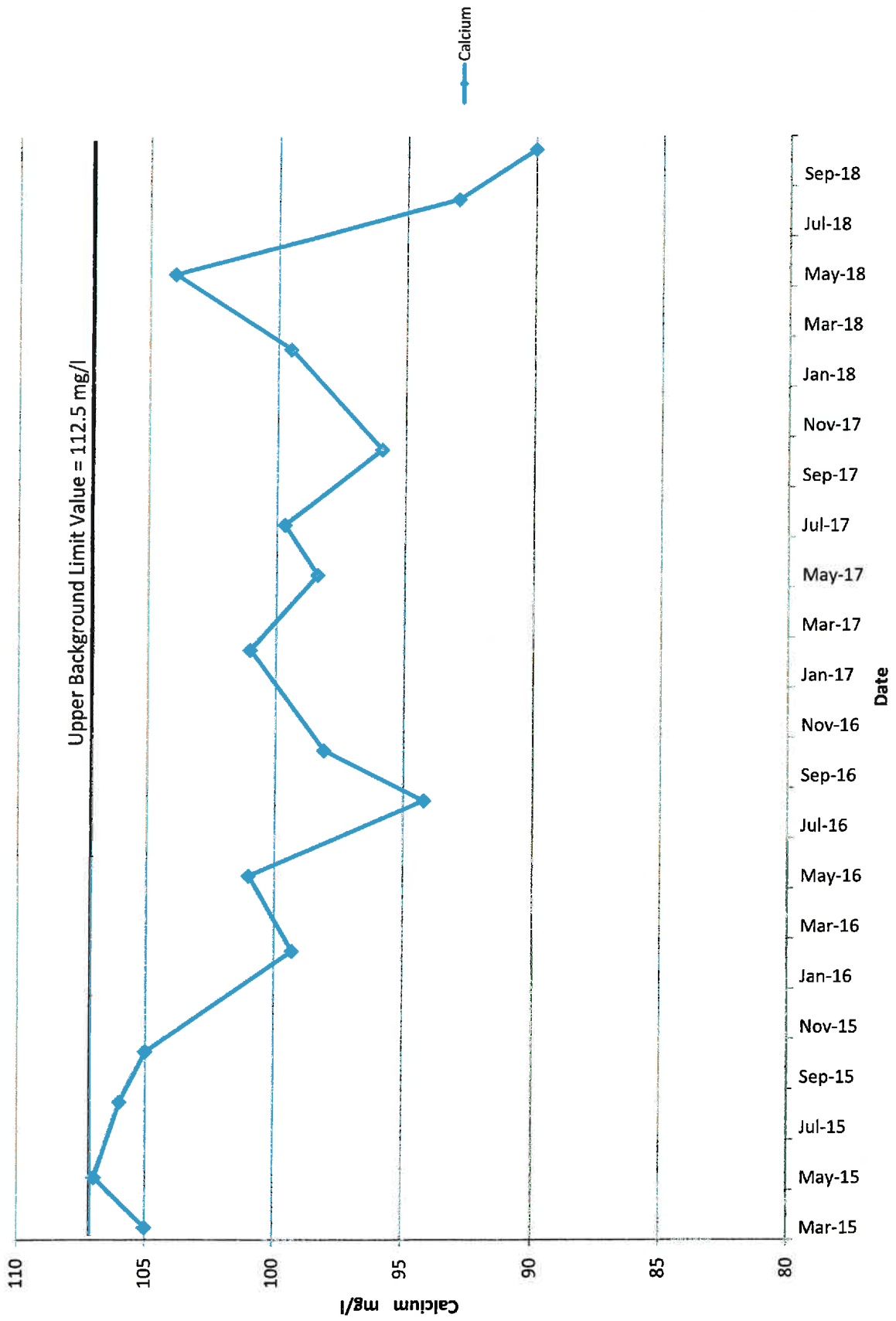
Landfill Monitor Well MW3 - Boron and Fluoride



Landfill Monitor Well MW3 - Sulfate

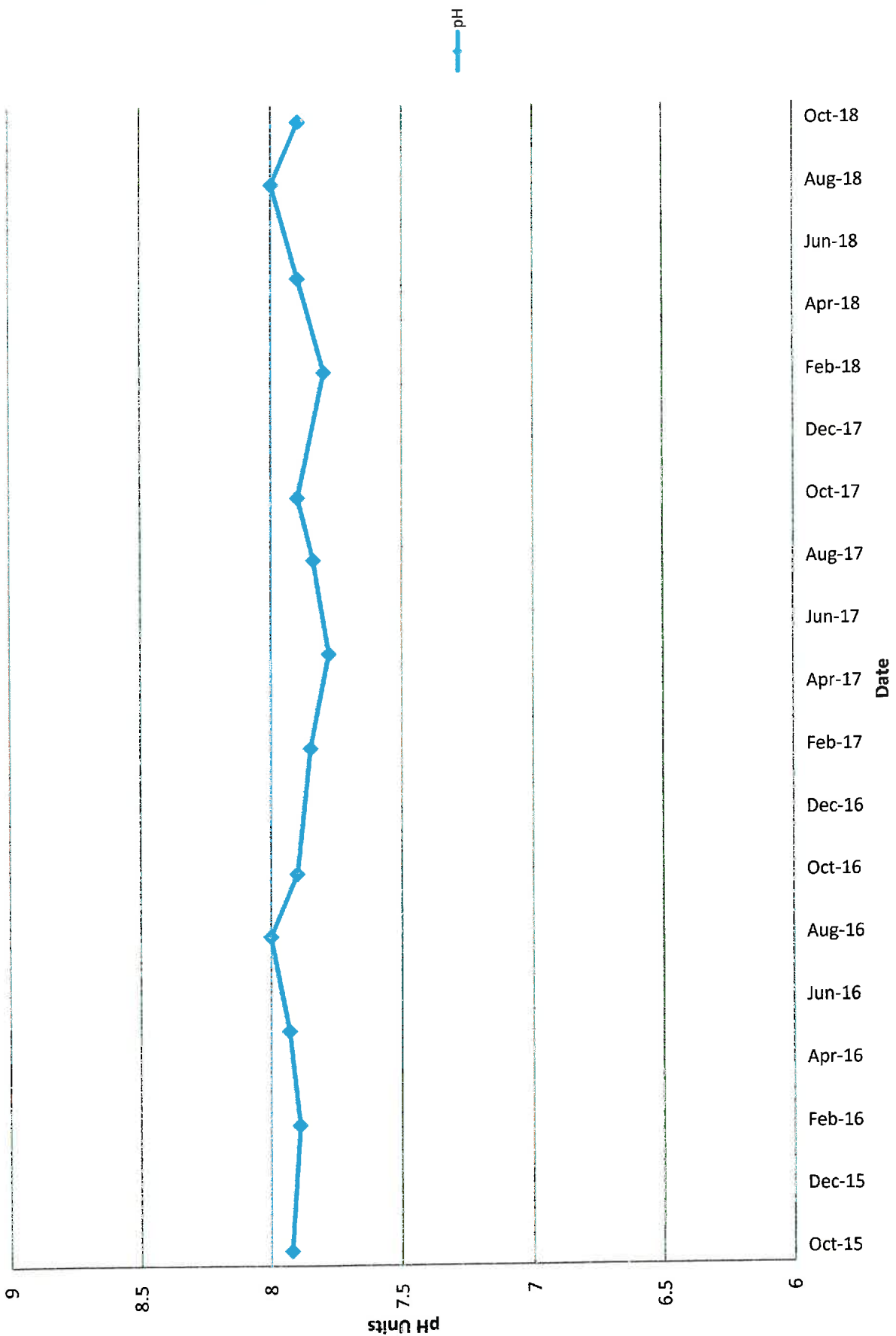


Landfill Monitor Well MW3 - Calcium

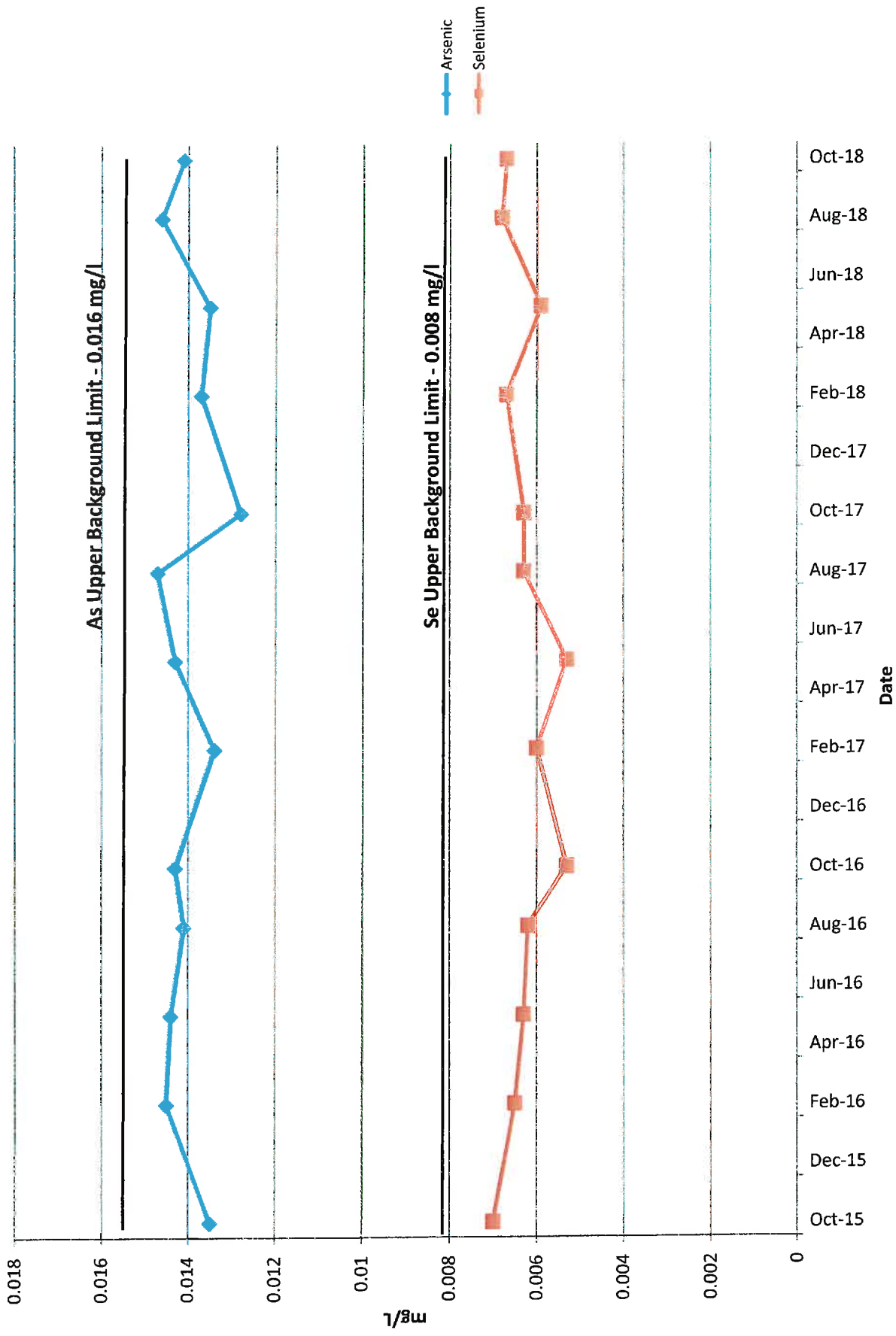


| Landfill Monitor Well MW# | pH | Conductivity | (all values mg/L, unless otherwise noted) | | | | | | | | | | TOC | Boron | Chloride | Lithium | Fluoride | Molybdenum | Thallium | Ra-226 | PCU | | |
|---------------------------|-----|--------------|---|-----------|---------|---------|----------|--------|--------|---------|--------|----------|--------|---------|----------|---------|----------|------------|----------|------------|----------|--------|------|
| Date | TDS | Antimony | Arsenic | Beryllium | Benzene | Cadmium | Chromium | Cobalt | Lead | Mercury | Nickel | Selenium | Silver | Sulfate | TOC | Boron | Chloride | Lithium | Fluoride | Molybdenum | Thallium | Ra-226 | PCU |
| 22-Oct-15 | 620 | 869 | <0.003 | 0.0135 | 0.068 | <0.002 | 63.4 | <0.006 | <0.003 | <0.0002 | <0.01 | 0.007 | <0.005 | 153 | <1.0 | 0.205 | 104 | 0.032 | 0.874 | <0.008 | <0.001 | <0.14 | 1.7 |
| 16-Feb-16 | 645 | 788 | 956 | <0.003 | 0.0145 | 0.0442 | <0.002 | 69.4 | <0.006 | <0.003 | <0.01 | 0.0065 | <0.005 | 167 | <1.0 | 0.224 | 118 | 0.083 | 0.966 | <0.008 | <0.001 | <0.14 | 0.94 |
| 4-May-16 | 648 | 783 | 1030 | <0.003 | 0.0144 | 0.0458 | <0.002 | 69 | <0.006 | <0.003 | <0.01 | 0.0063 | <0.005 | 181 | <1.0 | 0.212 | 128 | 0.083 | 0.783 | <0.008 | <0.001 | 0.33 | <1.0 |
| 17-Aug-16 | 682 | 8 | 1030 | <0.003 | 0.0141 | 0.0421 | <0.002 | 88.6 | <0.006 | <0.003 | <0.01 | 0.0062 | <0.005 | 180 | <1.0 | 0.235 | 125 | 0.084 | 0.906 | <0.008 | <0.001 | 0.21 | <1.3 |
| 29-Oct-16 | 640 | 78 | 845 | <0.003 | 0.0143 | 0.043 | <0.002 | 88.4 | <0.006 | <0.003 | <0.01 | 0.0063 | <0.005 | 175 | <1.0 | 0.216 | 122 | 0.087 | 0.796 | <0.008 | <0.001 | <0.18 | <0.4 |
| 29-Oct-16 | 640 | 78 | 845 | <0.003 | 0.0134 | 0.0439 | <0.002 | 70.5 | <0.006 | <0.003 | <0.01 | 0.0063 | <0.005 | 187 | <1.0 | 0.218 | 134 | 0.084 | 0.871 | <0.008 | <0.001 | <0.14 | <0.5 |
| 5-Mar-17 | 657 | 78 | 1030 | <0.003 | 0.0147 | 0.0439 | <0.002 | 68 | <0.006 | <0.003 | <0.01 | 0.0063 | <0.005 | 192 | <1.0 | 0.22 | 138 | 0.085 | 0.888 | <0.008 | <0.001 | 0.2 | <0.3 |
| 17-Aug-17 | 757 | 784 | 1040 | <0.003 | 0.0127 | 0.0375 | <0.002 | 70.8 | <0.006 | <0.003 | <0.01 | 0.0063 | <0.005 | 192 | <1.0 | 0.22 | 138 | 0.085 | 0.888 | <0.008 | <0.001 | <0.2 | <0.3 |
| 17-Oct-17 | 698 | 7.9 | 1100 | | 0.0128 | 0.0348 | <0.002 | 74.1 | <0.006 | <0.003 | <0.01 | 0.0067 | <0.005 | 202 | <1.0 | 0.225 | 148 | 0.085 | 0.888 | <0.008 | <0.001 | <0.2 | <0.3 |
| 14-Feb-18 | 688 | 7.8 | 1020 | | 0.0137 | 0.0348 | <0.002 | 74.9 | <0.006 | <0.003 | <0.01 | 0.0067 | <0.005 | 189 | <1.0 | 0.222 | 148 | 0.085 | 0.888 | <0.008 | <0.001 | <0.2 | <0.3 |
| 2-May-18 | 741 | 7.9 | 1050 | | 0.0135 | 0.0347 | <0.002 | 77.9 | <0.006 | <0.003 | <0.01 | 0.0069 | <0.005 | 188 | <1.0 | 0.231 | 142 | 0.085 | 0.888 | <0.008 | <0.001 | <0.2 | <0.3 |
| 7-Aug-18 | 707 | 8 | 1120 | | 0.0146 | 0.0387 | <0.002 | 77.4 | <0.006 | <0.003 | <0.01 | 0.0068 | <0.005 | 188 | <1.0 | 0.231 | 142 | 0.085 | 0.888 | <0.008 | <0.001 | <0.2 | <0.3 |
| 2-Oct-18 | 727 | 7.9 | 1110 | | 0.0141 | 0.0348 | <0.002 | 72.4 | <0.006 | <0.003 | <0.01 | 0.0067 | <0.005 | 196 | <1.0 | 0.225 | 150 | 0.085 | 0.888 | <0.008 | <0.001 | <0.2 | <0.3 |

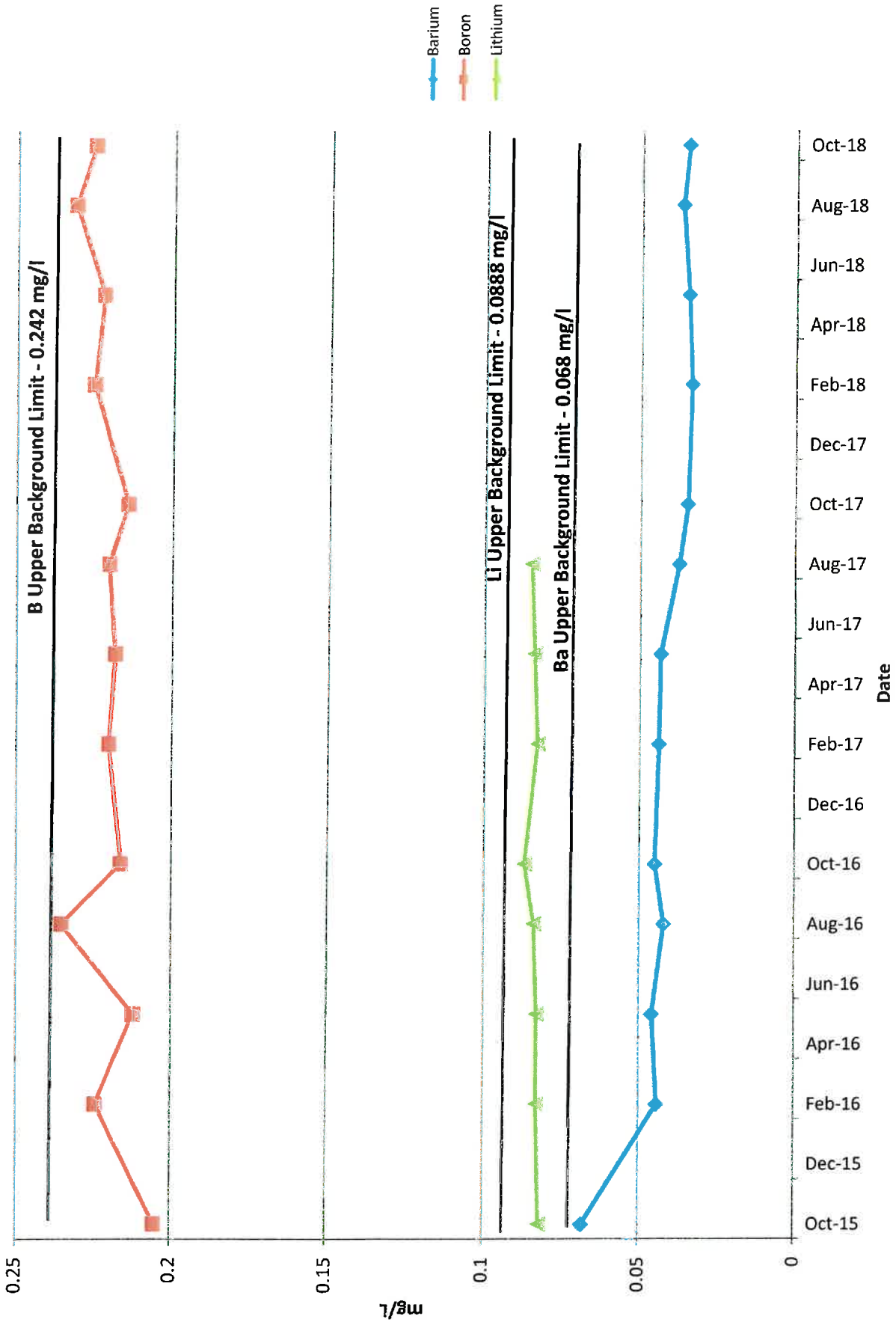
Landfill Monitor Well MW 8 - pH



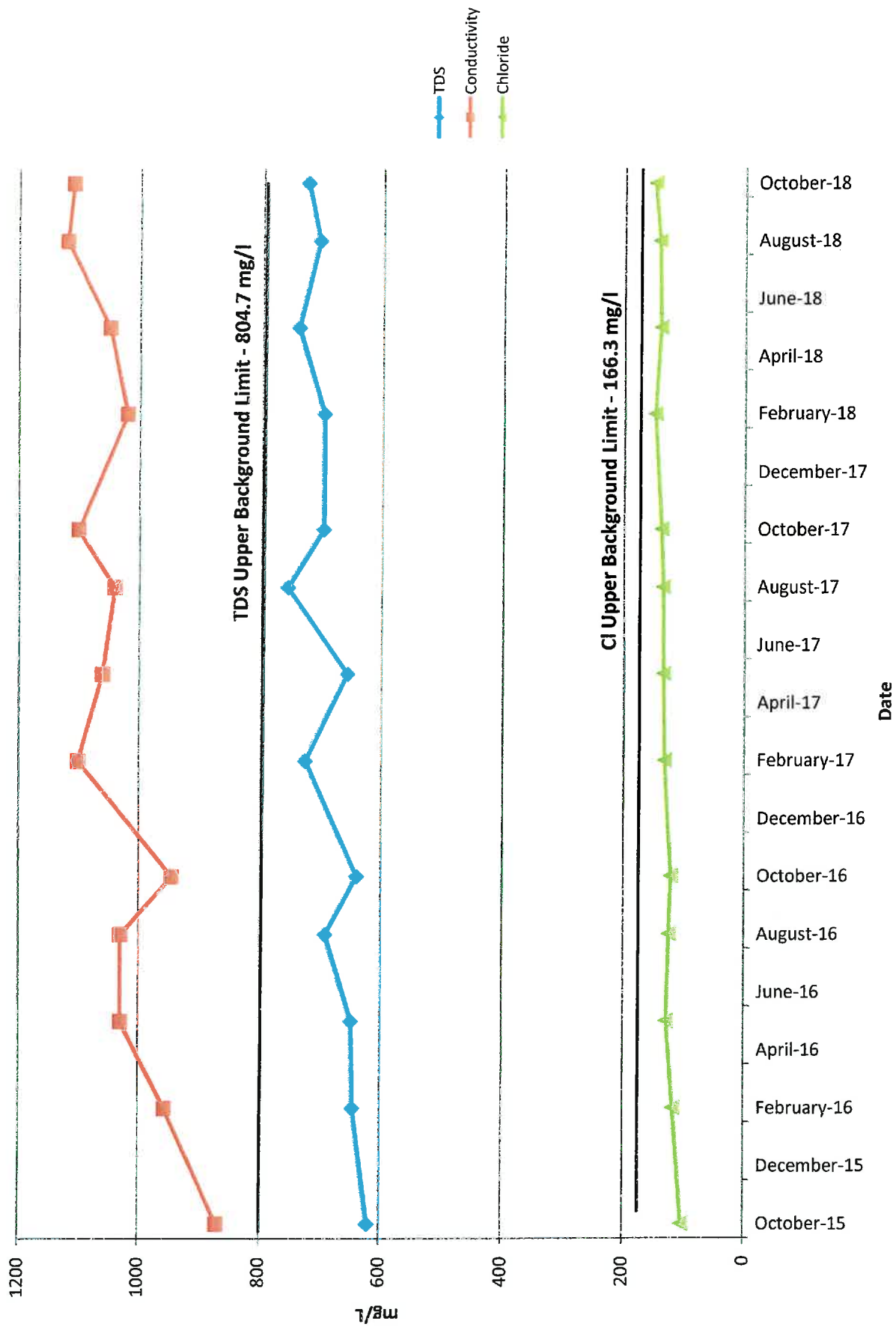
Landfill Monitor Well MW 8 - Arsenic and Selenium



Landfill Monitor Well MW 8 - Barium, Boron and Lithium

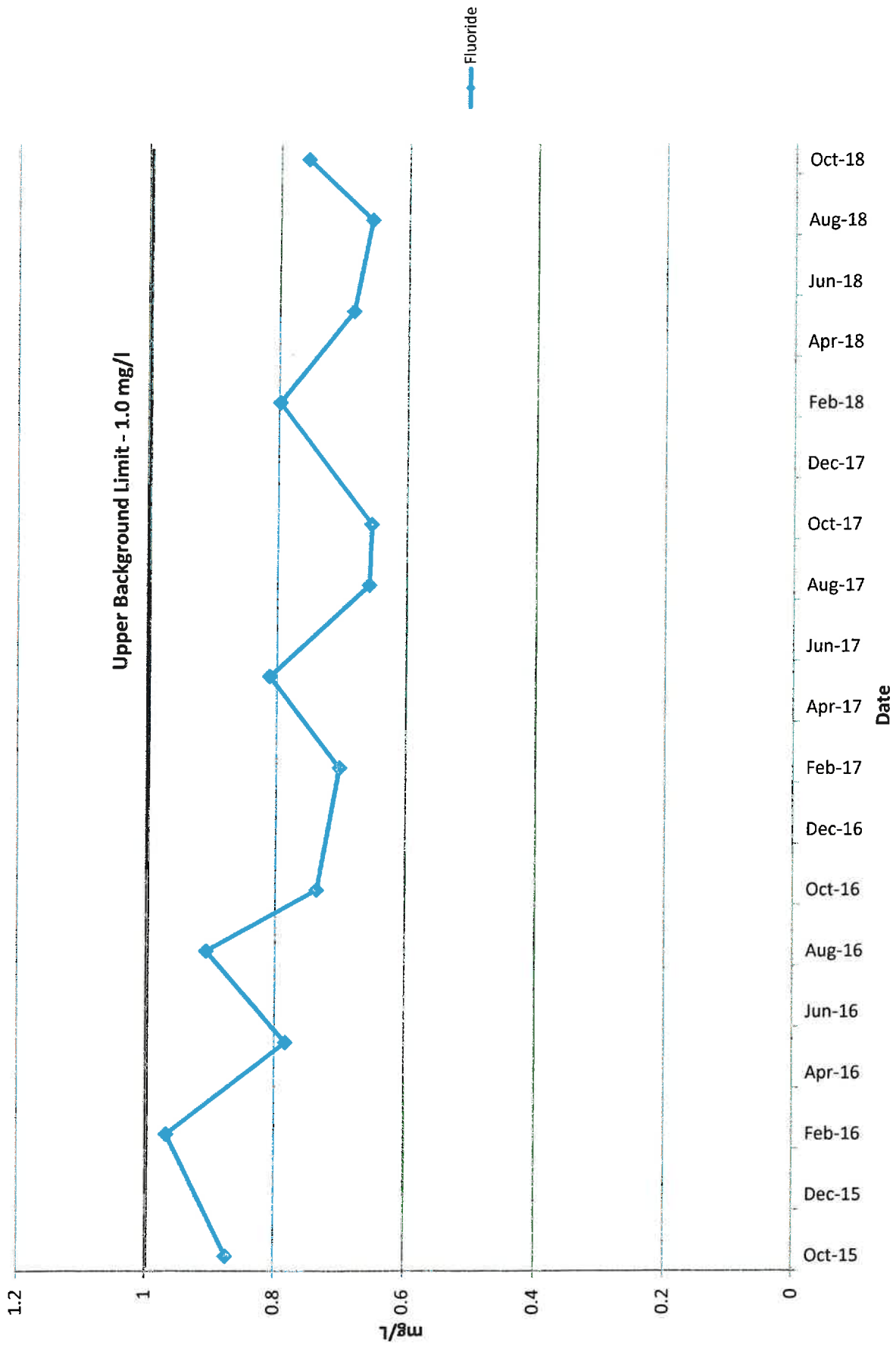


Landfill Monitor Well MW 8 - TDS, Conductivity and Chloride

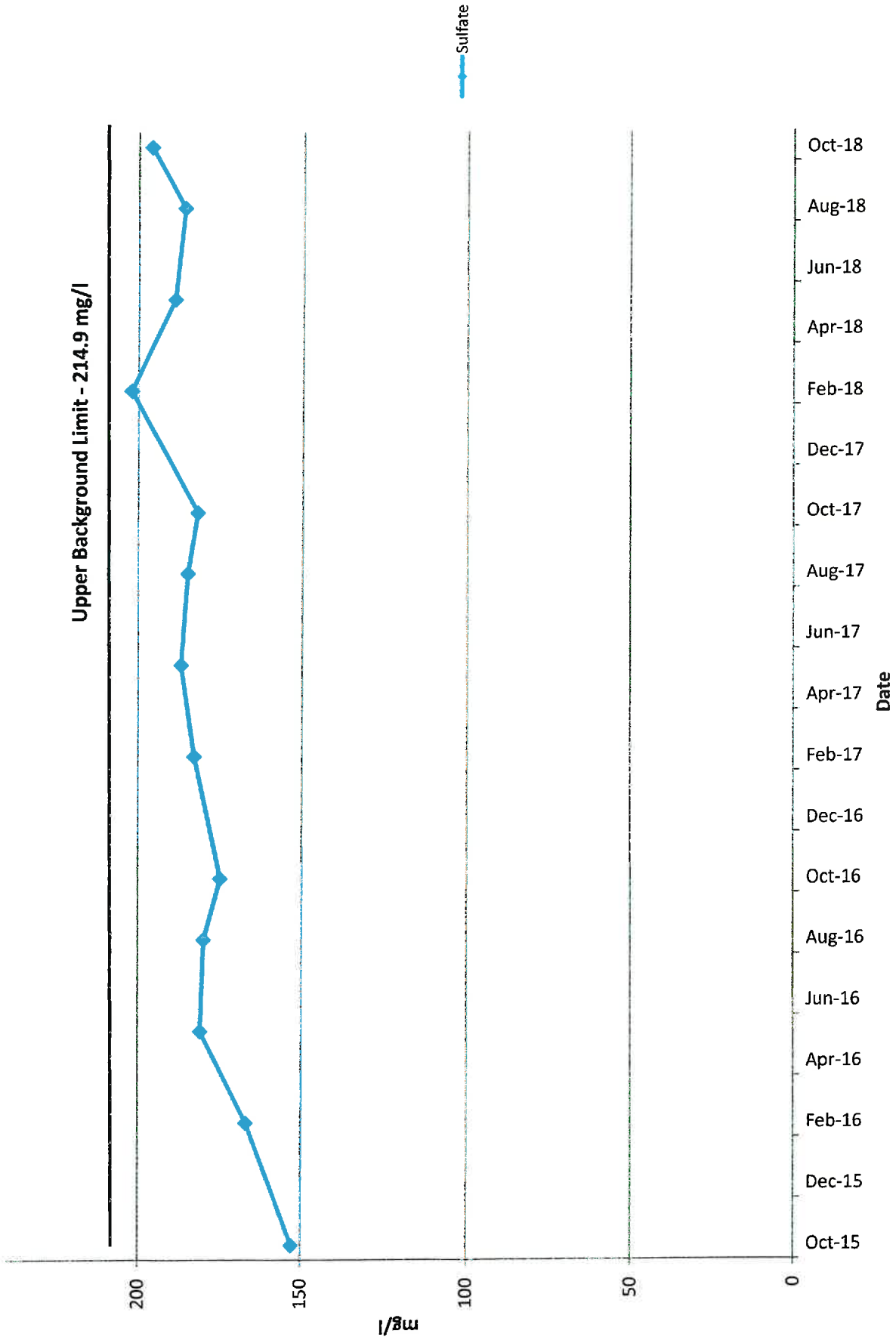


Landfill Monitor Well MW 8 - Fluoride

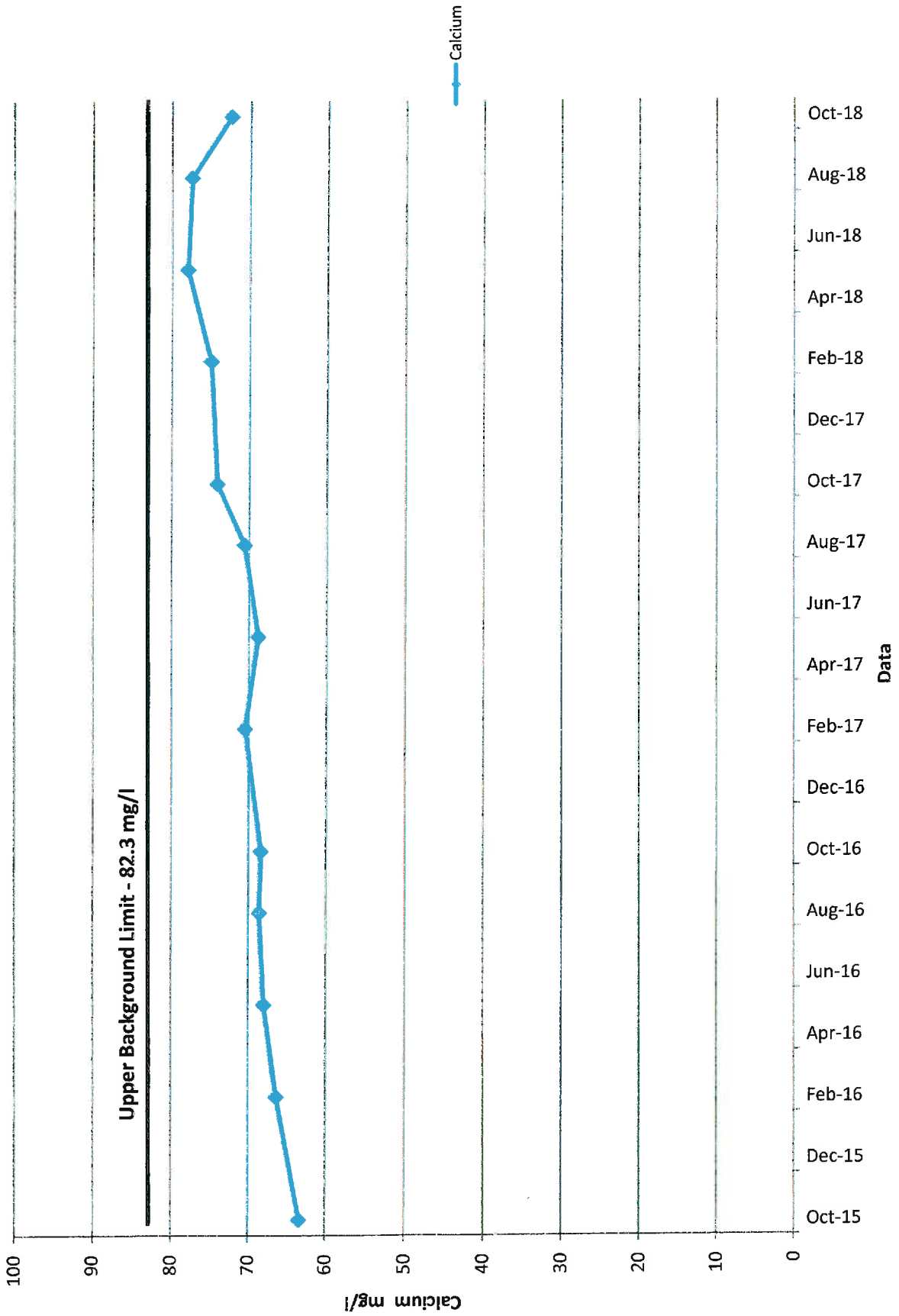
Upper Background Limit - 1.0 mg/l



Landfill Monitor Well MW8 - Sulfate



Landfill Monitor Well MW8 - Calcium



Constituents Measured as Non Detects in Wells

| Well ID | Antimony | Beryllium | Cadmium | Cobalt | Chromium | Molybdenum |
|---------|----------|-----------|---------|--------|----------|------------|
| TSMW-1 | X | X | X | X | X | X |
| TSMW-3 | X | X | X | X | X | X |
| TSMW-4 | X | X | X | X | X | D |
| TSMW-8 | X | X | X | X | D | X |

| Well ID | Lead | Mercury | Silver | Thallium |
|---------|------|---------|--------|----------|
| TSMW-1 | X | X | X | X |
| TSMW-3 | X | X | X | X |
| TSMW-4 | X | X | X | X |
| TSMW-8 | X | X | X | X |

Notes:

X- Non Detect

D-Detected at or enar detection limit (2 samples)