



Centennial Coal



Environment Protection Licence 3607

December 2016

Environmental Monitoring Data

Springvale Colliery



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Abbreviations

| Abbreviation | Description |
|---------------|--------------------------------|
| DG | Dust Gauge |
| EC | Electrical Conductivity |
| EPL | Environment Protection Licence |
| kL | kilolitre |
| L | litre |
| LDP | Licensed Discharge Point |
| Mg | milligrams |
| ML | Megalitre |
| TSS | Total Suspended Solids |
| uS or μ S | microsiemens |

1 Introduction

This report summarises the environmental monitoring results for Springvale Colliery for December 2016. The locations of the Licensed Discharge Points (LDPs) are shown in Appendix 1. Monitoring results for LDP006 and LDP007 are reported separately from this report.

A variation was made to EPL 3607 in December 2014. The variation aligned the mining scale with MOD 4 of the Development Consent which allows production of coal up to 4.5 million tonnes. The EPL was further varied on the 26th of February 2016 to align with SSD5594 commitments.

The EPL for Springvale is available on the NSW Environment Protection Authority web site www.environment.nsw.gov.au. The direct link is shown below.

<http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=32604&SYSUID=1&LICID=3607>

Additional information about Springvale Colliery is available on the Centennial Coal Website www.centennialcoal.com.au.

2 Weather

A summary of rainfall data recorded at the Springvale meteorological monitoring station is shown in Table 1 below.

Table 1. Weather Summary

| Month | Total Rainfall (mm) | Minimum Temperature (°C) @ 2m | Maximum Temperature (°C) @ 2m |
|----------------|---------------------|-------------------------------|-------------------------------|
| December 2015 | 52.4 | 4.41 | 32.29 |
| January 2016 | 138.0 | 6.28 | 34.1 |
| February 2016 | 31.2 | 6.86 | 33.89 |
| March 2016 | 56.8 | 4.69 | 31.14 |
| April 2016 | 6.0 | 5.56 | 15.28 |
| May 2016 | 19.4 | - 8.23 | 14.00 |
| June 2016 | 155.8 | - 6.4 | 15.02 |
| July 2016 | 79.6 | - 2.03 | 15.74 |
| August 2016 | 59.0 | - 1.38 | 10.24 |
| September 2016 | 101.6 | 1.42 | 12.88 |
| October 2016 | 57.0 | 1.49 | 16.08 |
| November 2016 | 61 | 0.47 | 29.05 |
| December 2016 | 72.2 | 3.65 | 32.2 |

3 Air Quality Monitoring

The air quality monitoring results for the monthly reporting period are summarised in Table 2 and a 12 month comparison of dust results is displayed in Figure 1.

3.1 Depositional Dust

Table 2. Depositional Dust

| | | | | | | |
|------------------------|--|------------------|--------------------|------------------------------|------------------|----------------------------|
| Data Published: | 13/01/2017 | | Licensee: | Springvale Coal Pty Limited | | |
| Data Sampled: | Exposure period 11/11/2016 to 9/12/2016 | | Address: | Castlereagh Hwy, Lidsdale | | |
| Data Obtained: | 9/01/2017 | | EPL No. | 3607 | | |
| Sampling Point | Monitoring frequency | Pollutant | Measurement | Limit | Units | Exceedence (yes/no) |
| SV_D1 | Monthly | Insoluble Solids | 3.9 | NA | g/m ² | no |
| SV_D2 | Monthly | Insoluble Solids | 0.5 | NA | g/m ² | no |

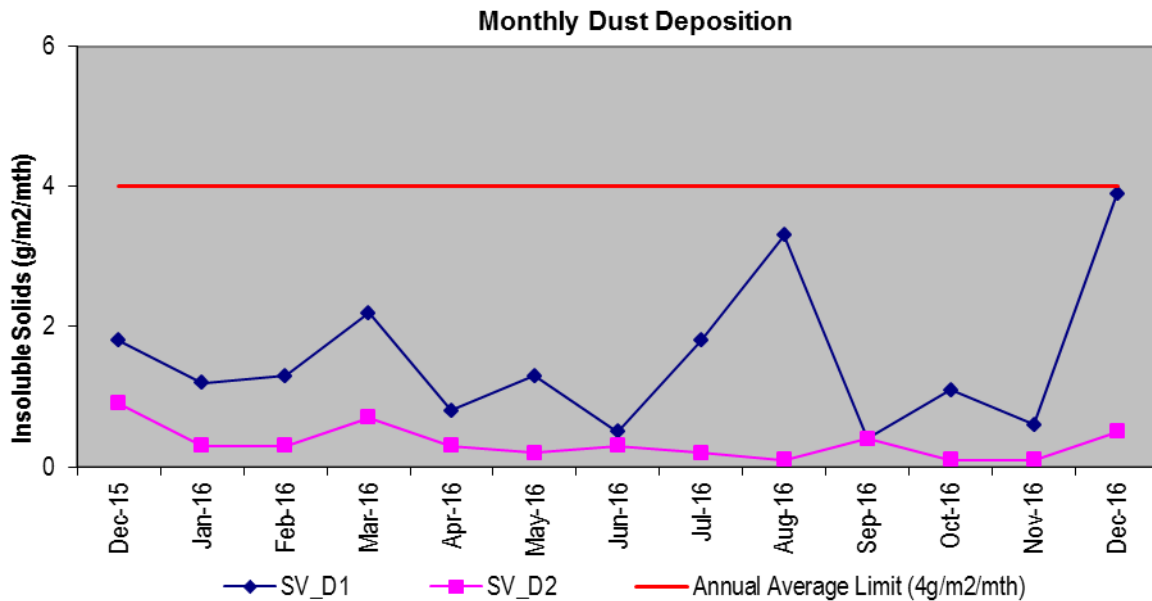


Figure 1: 12 Month Summary of Dust Results

4 Surface Water Quality

A summary of monitoring data for LDP001 and LDP009 is provided in Table 3 below.

There were no discharges from LDP004, LDP005, and LDP10 for the month.

Table 3. Surface Water Quality December 2016

| | | | | | | | |
|-------------------------------|--------------------|-----------------------------|-------------------------------|-----------|------------|------------|------------|
| Date Published: | 13/01/2017 | Licensee: | Springvale Coal Pty Ltd | | | | |
| Data Sampled: | December 2016 | Address: | Castlereagh Highway, Lidsdale | | | | |
| Date Obtained: | 9/01/2017 | EPL No: | 3607 | | | | |
| LDP001 | | | | | | | |
| | Frequency required | 100th Percentile Limit | Unit of Measure | 6/12/2016 | 13/12/2016 | 20/12/2016 | 28/12/2016 |
| Oil and Grease | monthly | 10 | mg/L | <5 | | | |
| pH | weekly | 6.5-9.0 | pH | 8.75 | 8.29 | 8.38 | 8.3 |
| Total Suspended Solids | monthly | 30 | mg/L | 7 | | | |
| EC | weekly | Monitoring requirement only | uS/cm | 881 | 1017 | 1030 | 966 |
| Manganese Filterable | monthly | Monitoring requirement only | mg/L | 0.003 | | | |
| Iron Filterable | monthly | Monitoring requirement only | mg/L | <0.05 | | | |
| LDP009 | | | | | | | |
| | Frequency required | 100th Percentile Limit | Unit of Measure | 6/12/2016 | 13/12/2016 | 20/12/2016 | 28/12/2016 |
| pH | weekly | 6.5-9.0 | pH | 7.73 | 7.76 | 7.89 | 7.74 |
| EC | weekly | 1200 | uS/cm | 1192 | 1178 | 1161 | 1176 |
| Turbidity | weekly | 50 | NTU | 2 | 2 | 6 | 4 |
| TSS | weekly | 50 | mg/L | <5 | <5 | <5 | 5 |
| Aluminium (filt) | weekly | 0.45 | mg/L | <0.01 | <0.01 | 0.01 | 0.01 |
| Arsenic (filt) | weekly | 0.024 | mg/L | 0.013 | 0.015 | 0.066 | 0.017 |
| Copper (filt) | weekly | 0.007 | mg/L | <0.001 | <0.001 | <0.001 | 0.003 |
| Manganese (filt) | weekly | 1.7 | mg/L | 0.028 | 0.023 | 0.022 | 0.018 |
| Nickel (filt) | weekly | 0.047 | mg/L | 0.003 | 0.002 | 0.003 | 0.003 |
| Zinc (filt) | weekly | 0.05 | mg/L | <0.005 | <0.005 | <0.005 | 0.007 |
| Boron (filt) | weekly | 0.37 | mg/L | 0.06 | 0.07 | 0.07 | 0.07 |
| Iron (filt) | weekly | 0.40 | mg/L | <0.05 | <0.05 | <0.05 | <0.05 |
| Fluoride | weekly | 1.80 | mg/L | 1.3 | 1.2 | 1.2 | 1.2 |
| Oil and Grease | weekly | 10.00 | mg/L | <5 | <5 | <5 | <5 |

Results are presented graphically to show a comparison with historic data trends in the following pages.

During the reporting period an Arsenic exceedance was recorded at LDP009. The recorded result was 0.066mg/L against the EPL limit of 0.024mg/L. Weekly sampling conducted prior to and following the exceedance yielded results within EPL criteria limits, 0.015mg/L and 0.017mg/L respectively. An investigation is underway into the cause of the elevated Arsenic result. Inspections of the chemical dosing system (that treats water being discharged through LDP009) conducted on the day of the exceedance indicated no malfunctions. The exceedance may be a result of the mobilisation of natural occurring minerals in the geological sequence.

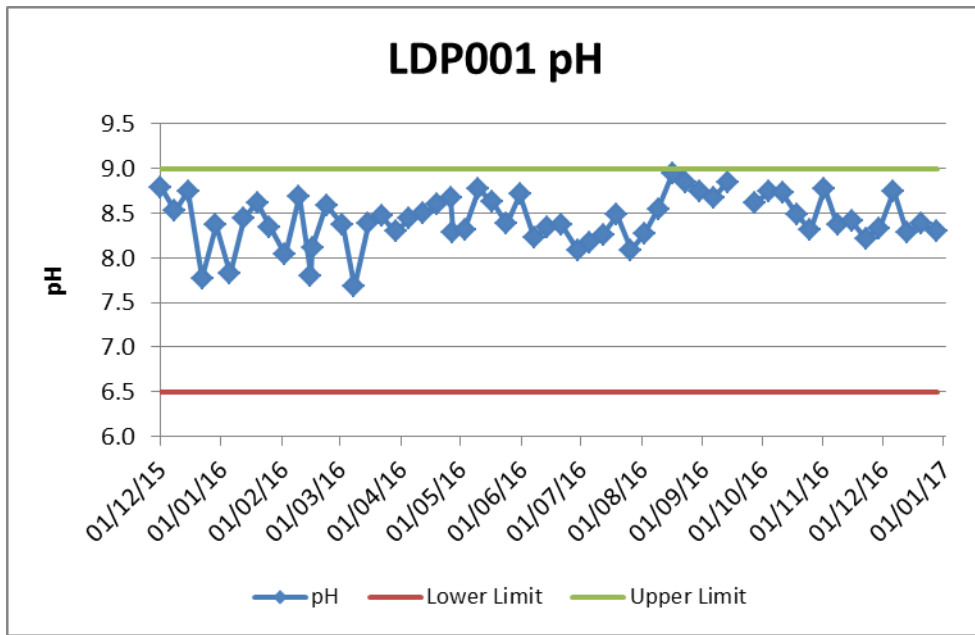


Figure 2: LDP001 pH 12 month summary

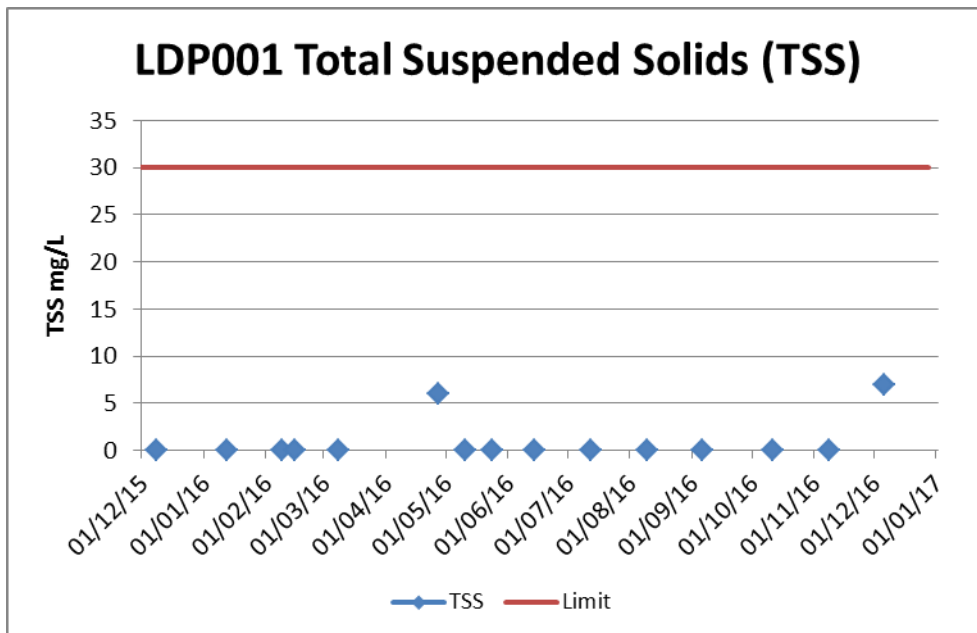


Figure 3: LDP001 TSS 12 month summary

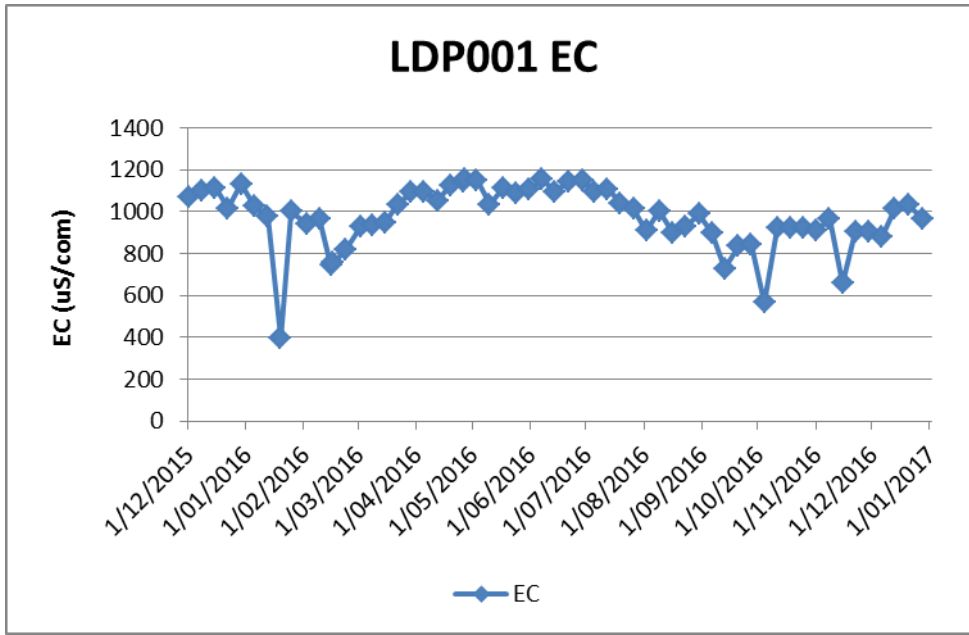


Figure 4: LDP001 EC 12 month summary

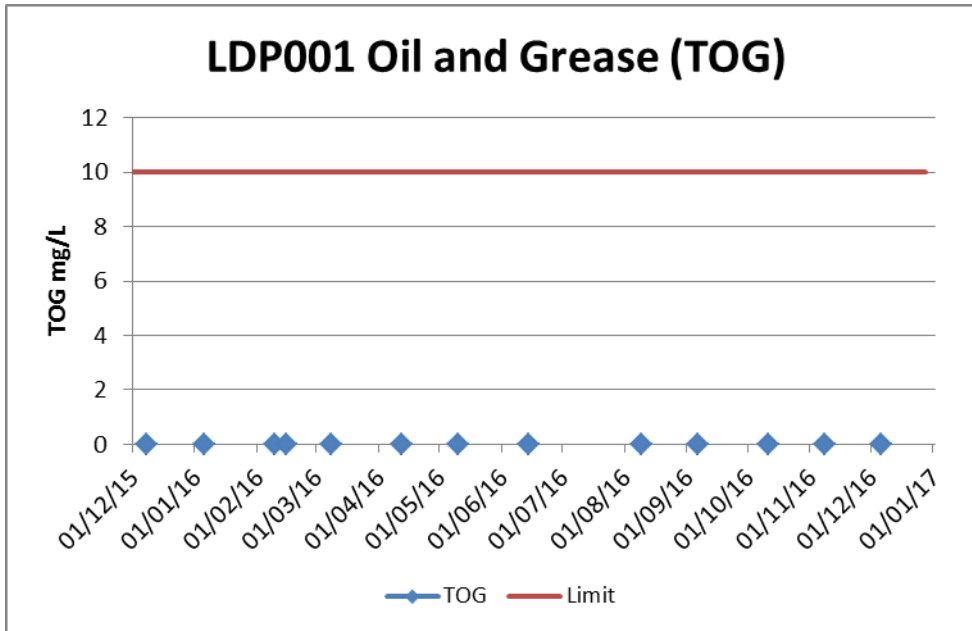


Figure 5: LDP001 TOG 12 month summary

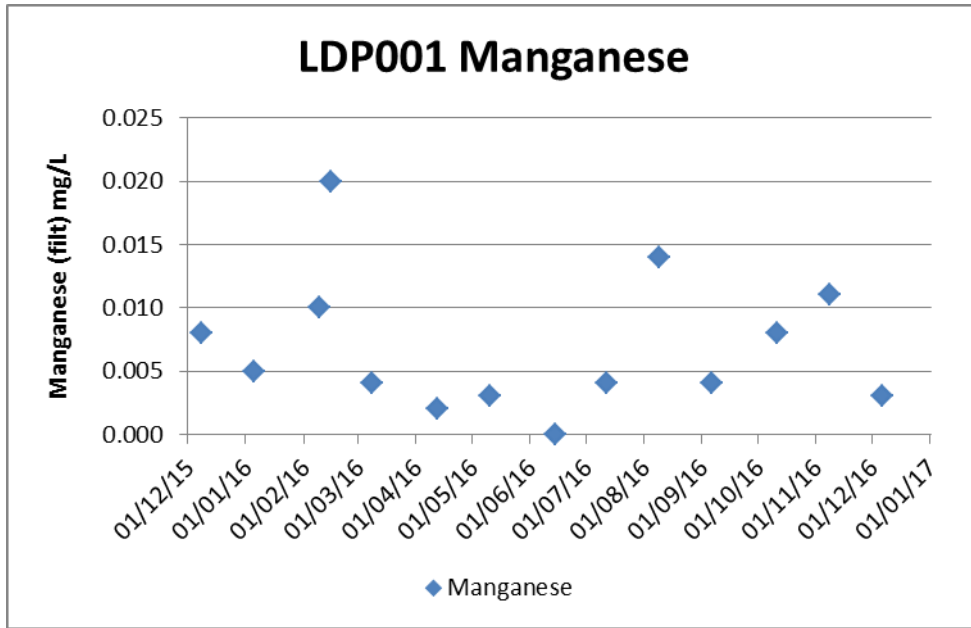


Figure 6: LDP001 Manganese 12 month summary

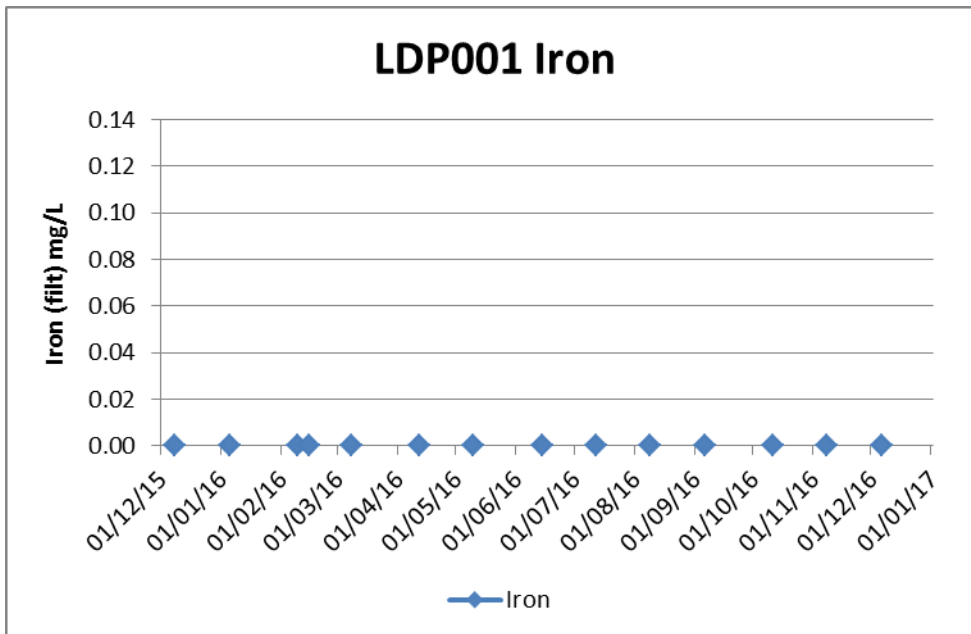


Figure 7: LDP001 Iron 12 month summary

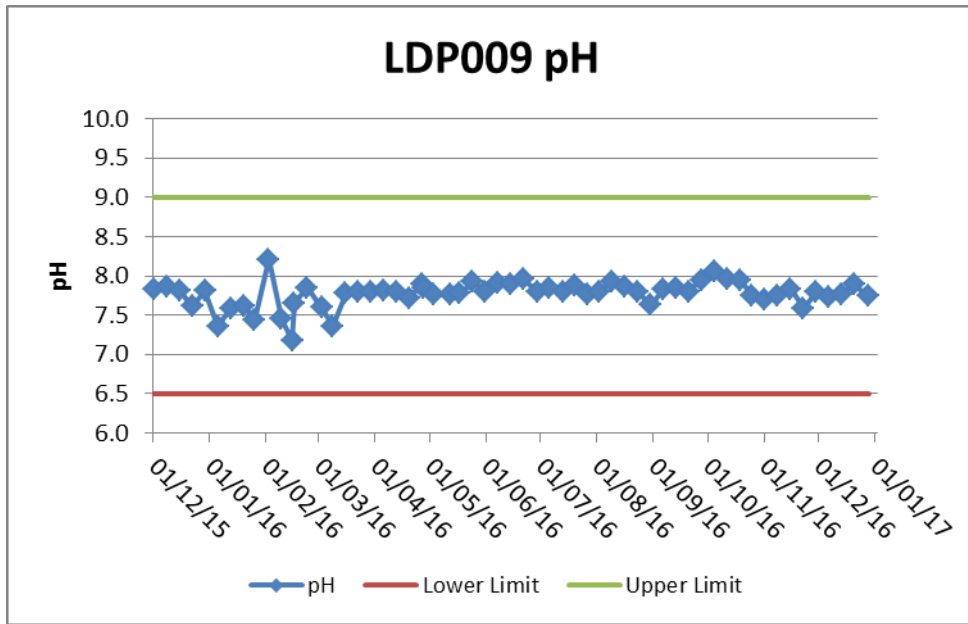


Figure 8: LDP009 pH 12 month summary

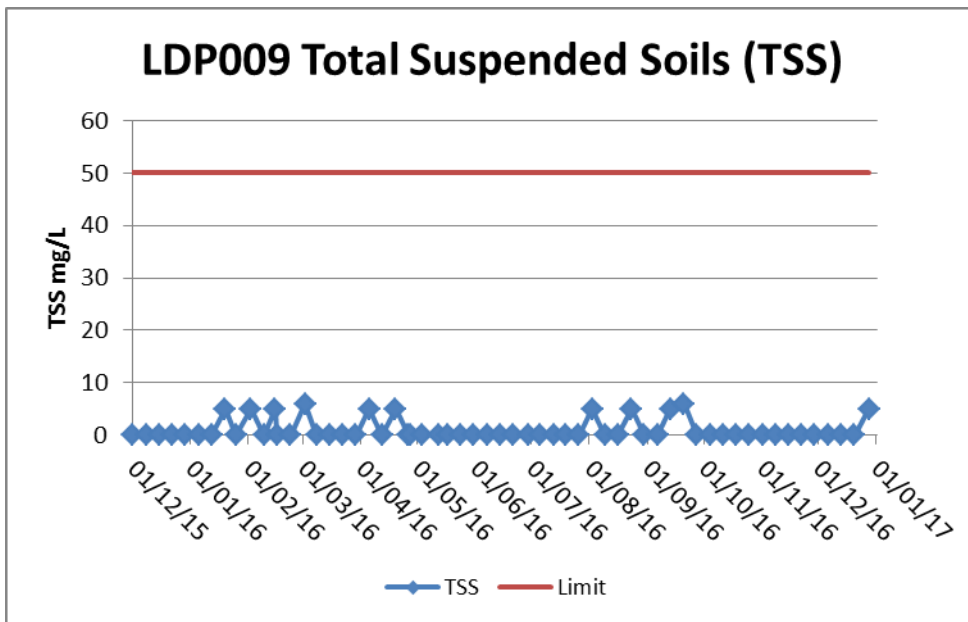


Figure 9: LDP009 TSS 12 month summary

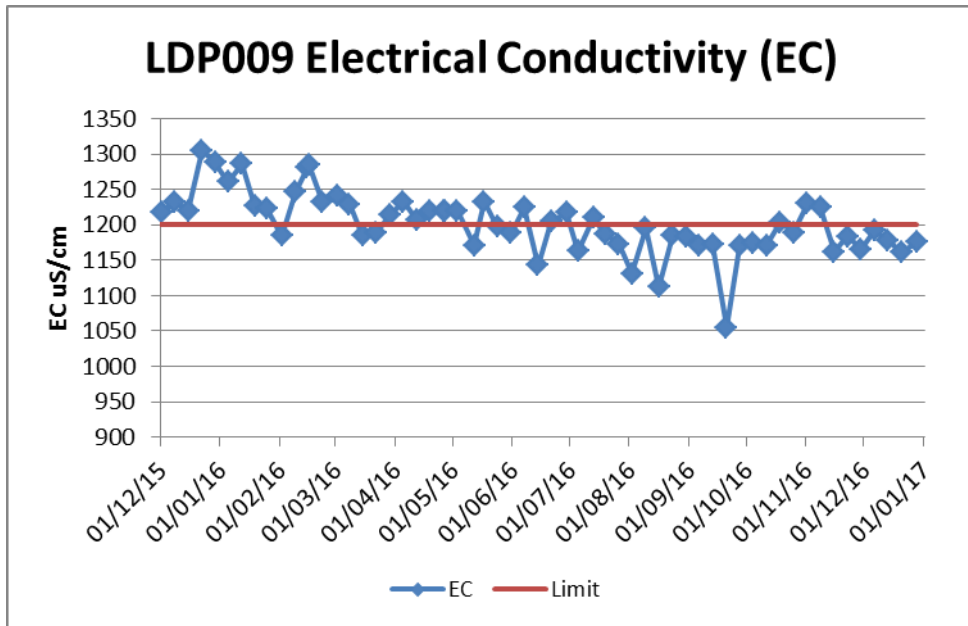


Figure 10: LDP009 EC 12 month summary

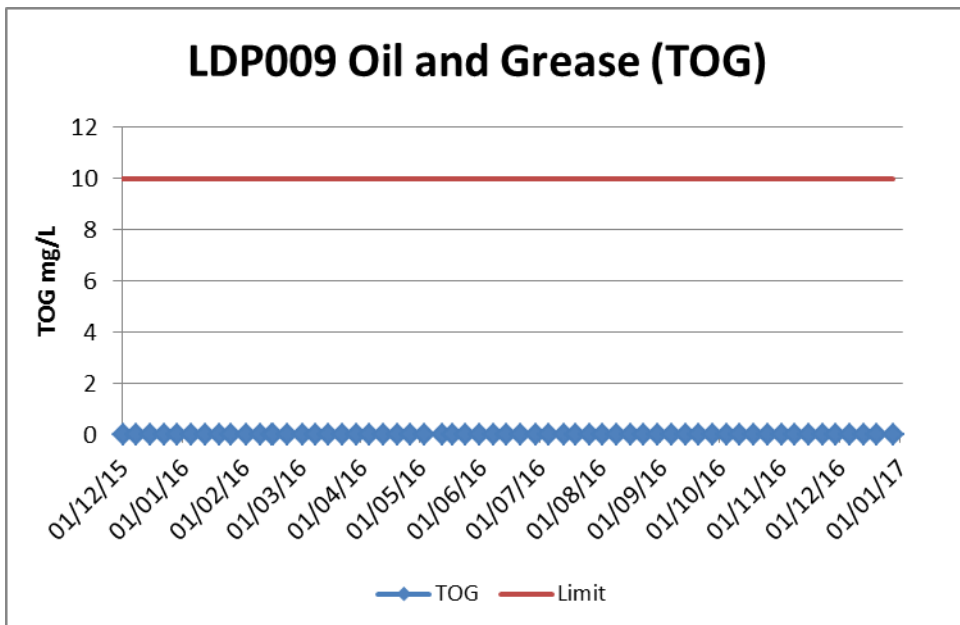


Figure 11: LDP009 TOG 12 month summary

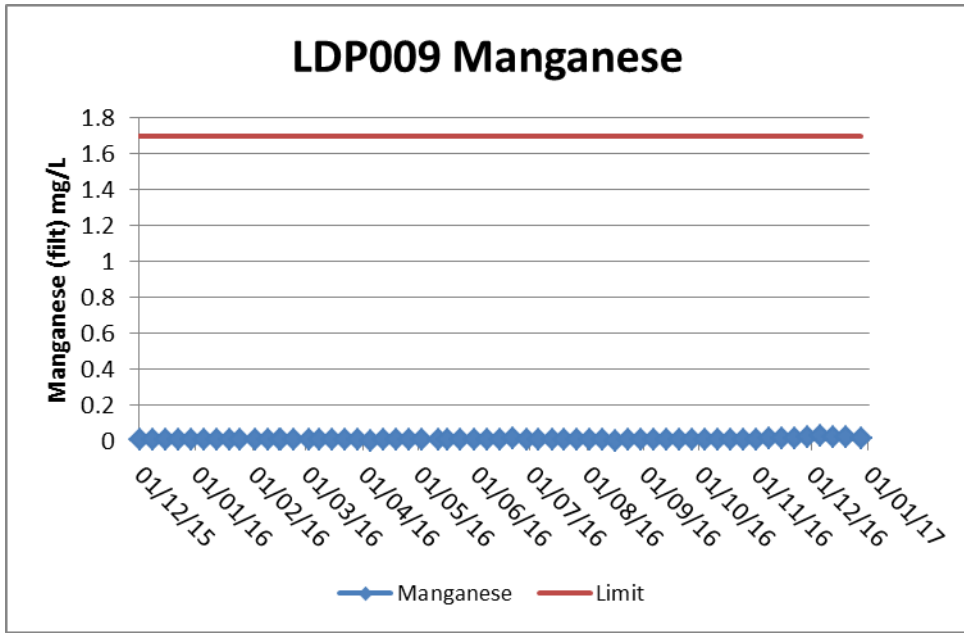


Figure 12: LDP009 Manganese 12 month summary

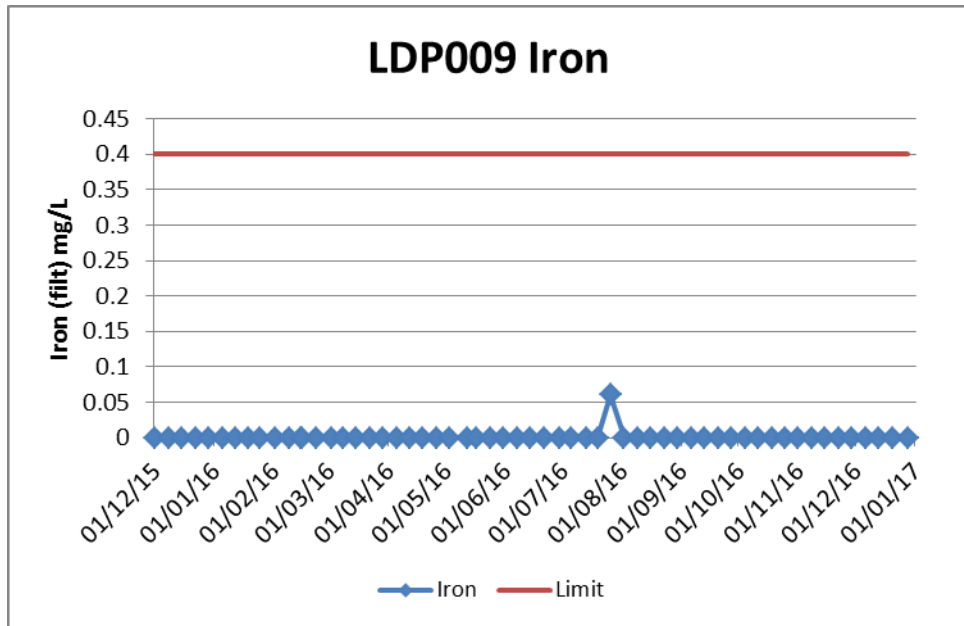


Figure 13: LDP009 Iron 12 month summary

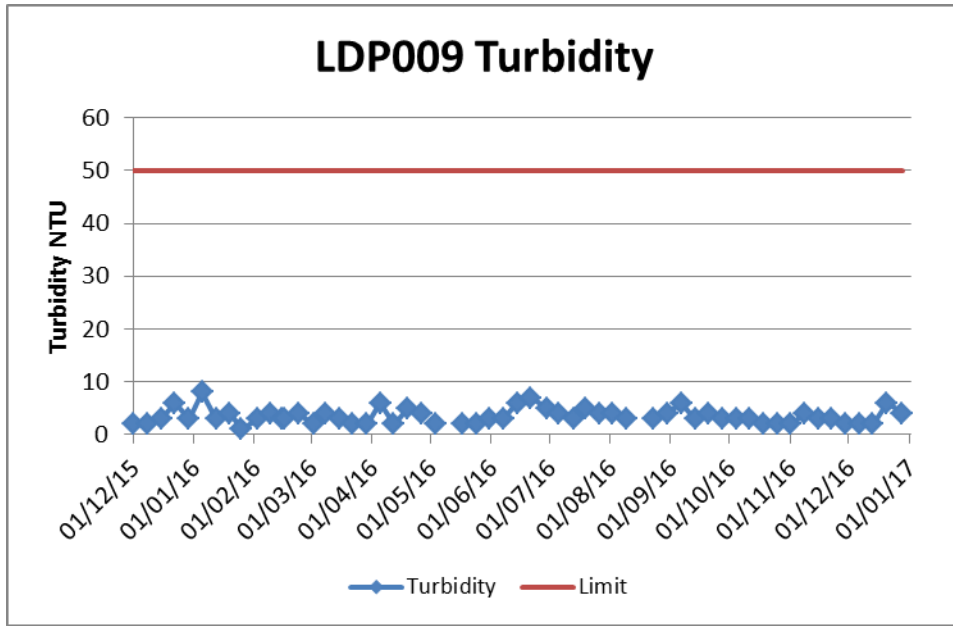


Figure 14: LDP009 Turbidity 12 month summary

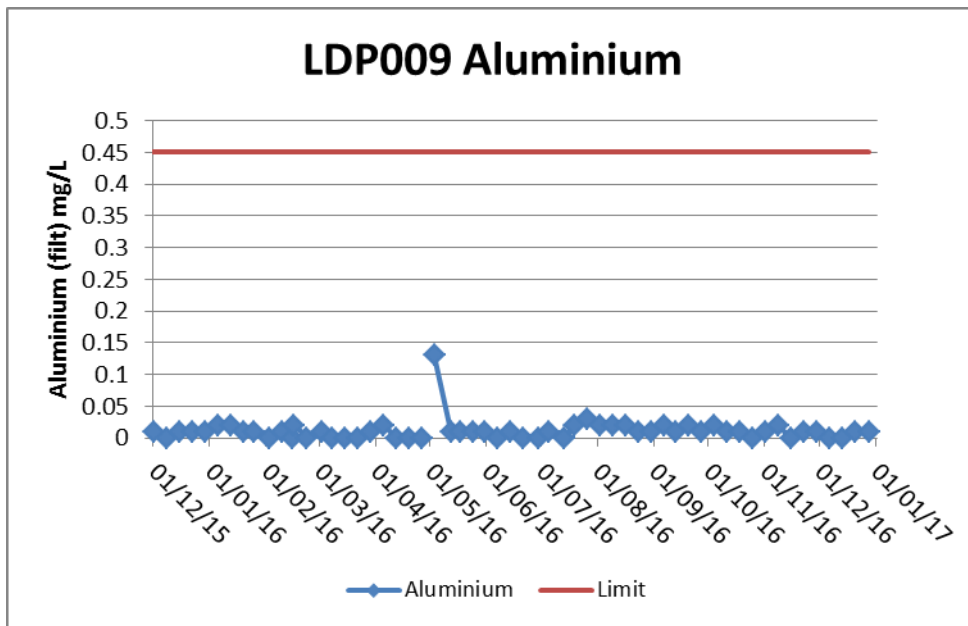


Figure 15: LDP009 Aluminium 12 month summary

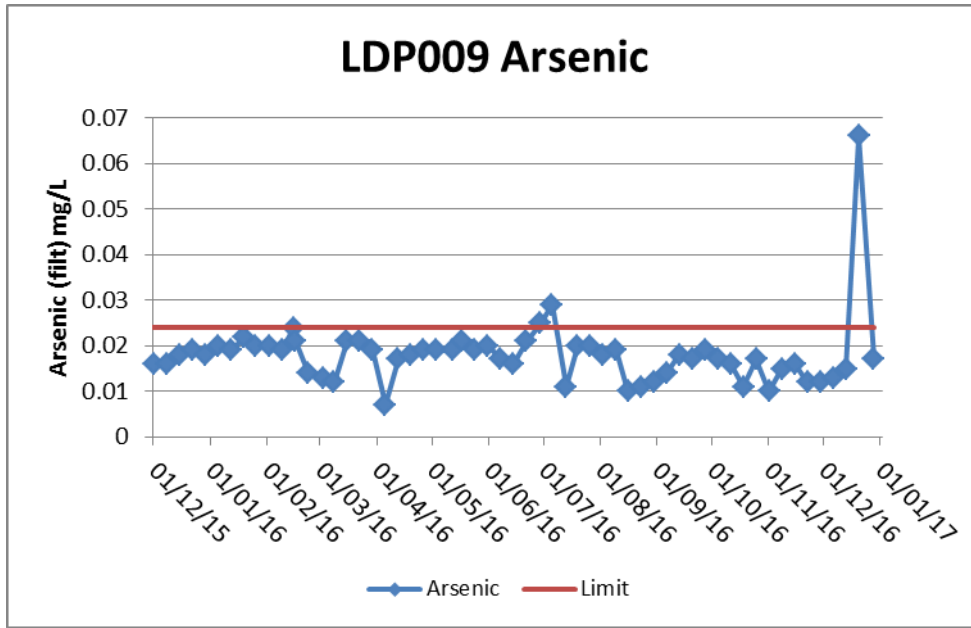


Figure 16: LDP009 Arsenic 12 month summary

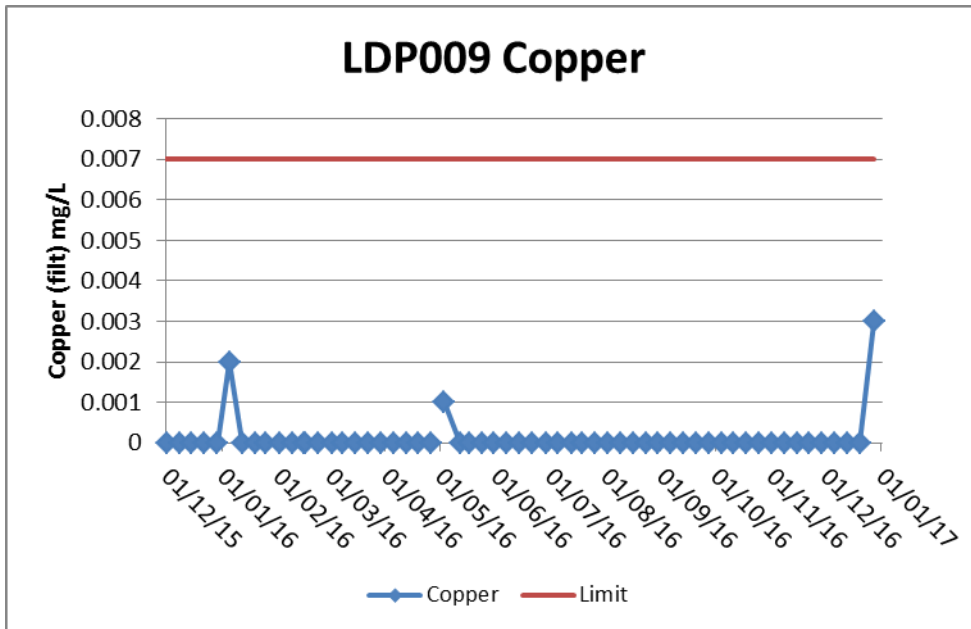


Figure 17: LDP009 Copper 12 month summary

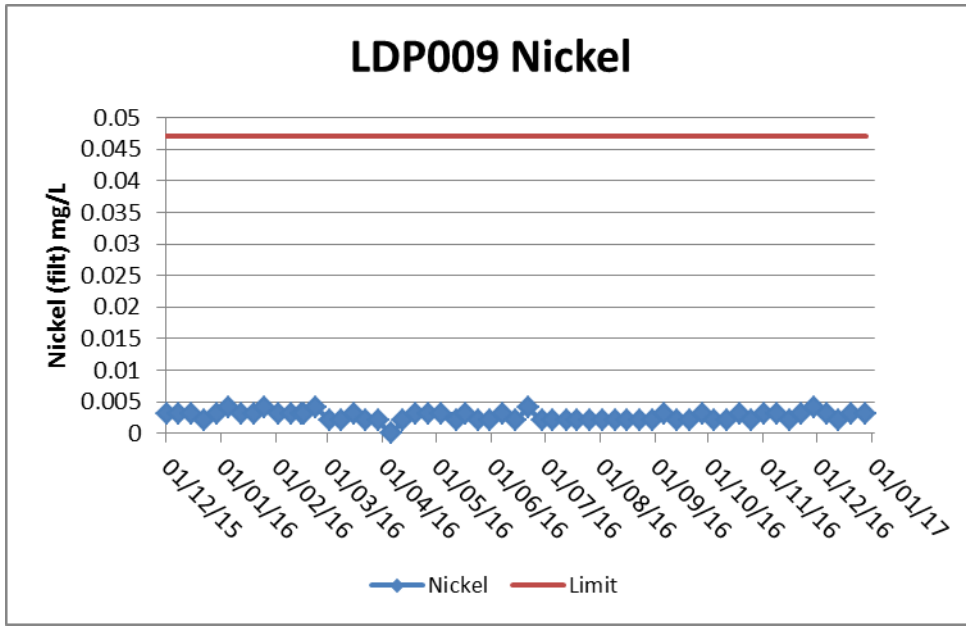


Figure 18: LDP009 Nickel 12 month summary

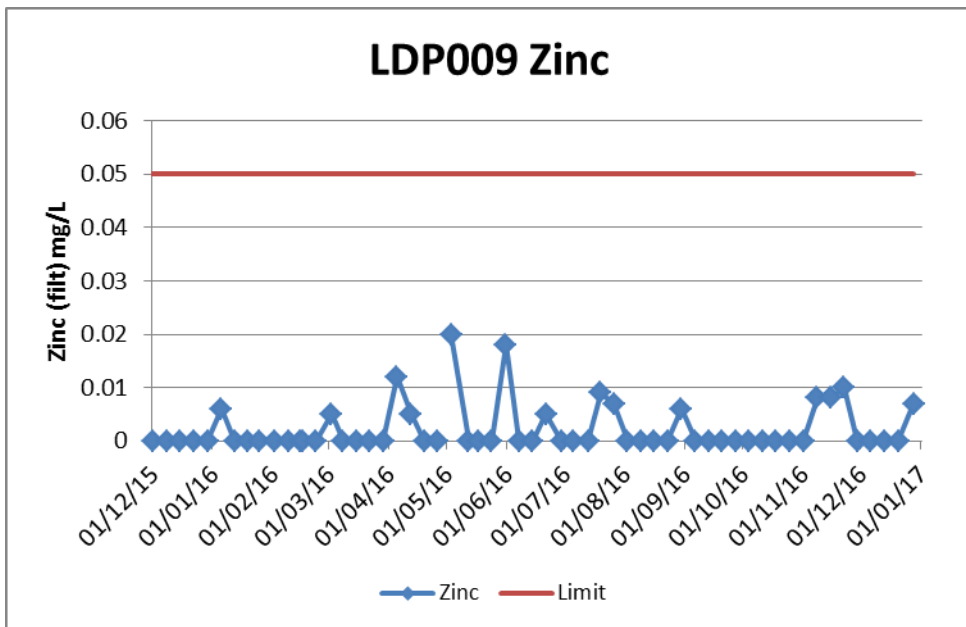


Figure 19: LDP009 Zinc 12 month summary

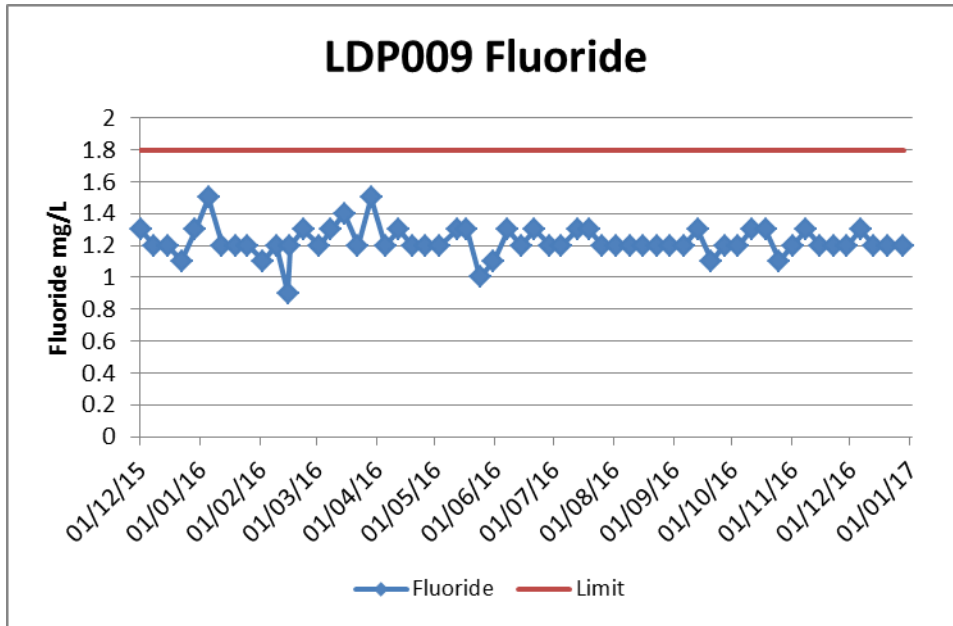


Figure 20: LDP009 Fluoride 12 month summary

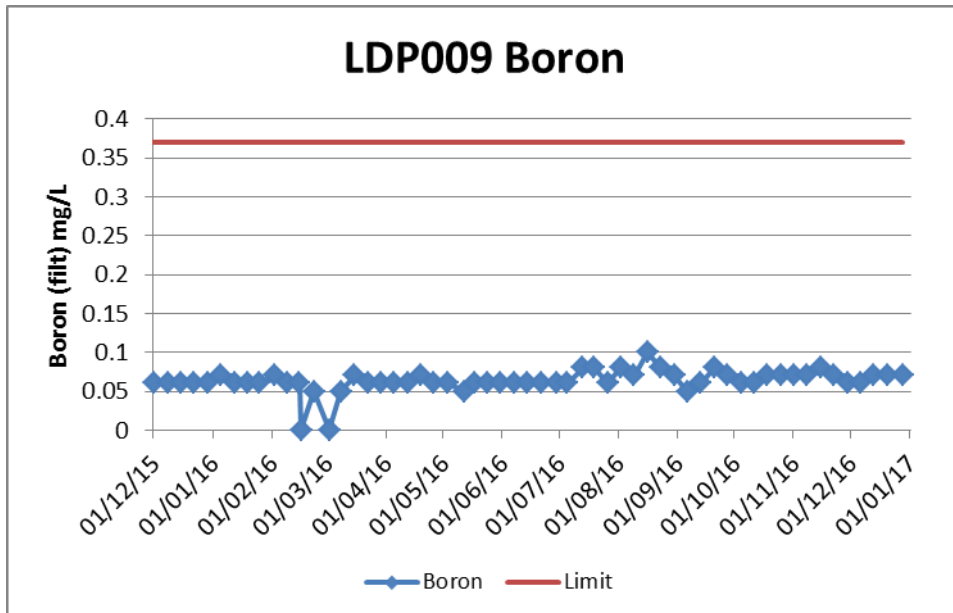


Figure 21: LDP009 Boron 12 month summary

5 Water Volume

Table 4. Licensed Discharge Points - Water Volume

| Data Published: | | 13/01/2017 | | Licensee: | | Springvale Coal Pty Limited | |
|------------------------|-------------|-------------------------------------|---------------------------|------------------------|------------------------|-----------------------------|----------------------------|
| Data Sampled: | | Dec-16 | | Address: | | Castlereagh Hwy, Lidsdale | |
| Data Obtained: | | 13/01/2017 | | EPL No. | | 3607 | |
| Discharge Point | Unit | Licence Monitoring Frequency | Frequency Measured | Min. Value (kL) | Max. Value (kL) | Volume Limit (kL) | Exceedence (yes/no) |
| LDP001 | kL | Daily | Daily | 533 | 1679 | 10000 | no |
| LDP002 | kL | Daily | Daily | 0 | 0.73 | # | n/a |
| LDP004 | kL | Daily during discharge | Daily | No discharge | No discharge | 15000 | no |
| LDP005 | kL | Daily during discharge | Daily | No discharge | No discharge | 15000 | no |
| LDP009 | kL | Daily during discharge | Daily | 19088 | 23943 | 30000 | no |
| LDP010 | kL | Daily during discharge | Daily | No discharge | No discharge | # | n/a |

No volume discharge limits apply.

6 Noise Monitoring

Quarterly noise monitoring was undertaken in December 2016. Results will be presented in the January 2017 Environmental Monitoring Report.

7 Complaints

No complaints were received during the reporting period in relation to Springvale Colliery. A 12 month summary is presented in Figure 22.

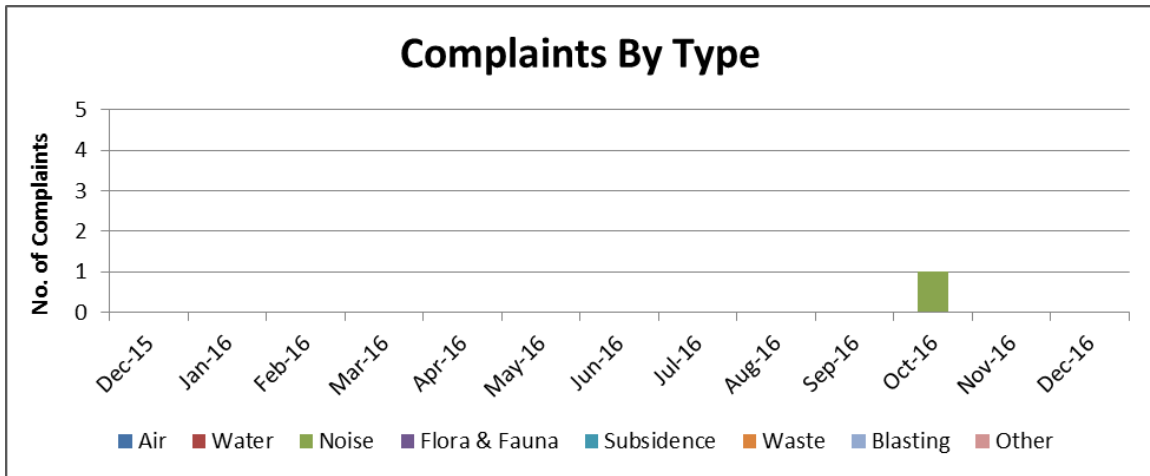


Figure 22: 12 month Complaints Summary

8 Correction Log

No corrections have been made to previous monthly reports.

Appendix A EPL Environmental Monitoring Location



licensed Discharge Point
 dust Deposition Gauge

NOTES:

| | |
|-------------|---------------------|
| DATE | 10-05-2013 |
| DRAWN BY | Jim Macpherson |
| CHECKED BY | S:\Starving\Z_Plans |
| APPROVED BY | Tony Nolan |
| SCALE | 1:10000 |

| | |
|---|--|
| SPRINGVALE MINE | |
| Springvale Licensed Discharge Points | |



Centennial Coal

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