# SITE CONDITION REPORT FOR CONNOLLY'S RED MILLS ANIMAL FEED MILL LICENCE APPLICATION.



**Prepared for:**

**CONNOLLY'S RED MILLS,**

**GRANGE LOWER,**

**GORESBRIDGE,**

**CO. KILKENNY**

**3254 - Redmills**

**November 30th, 2017**

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Reviewed by; John Rea, B.Sc., MIEnv.Sc.

**TABLE OF CONTENTS**



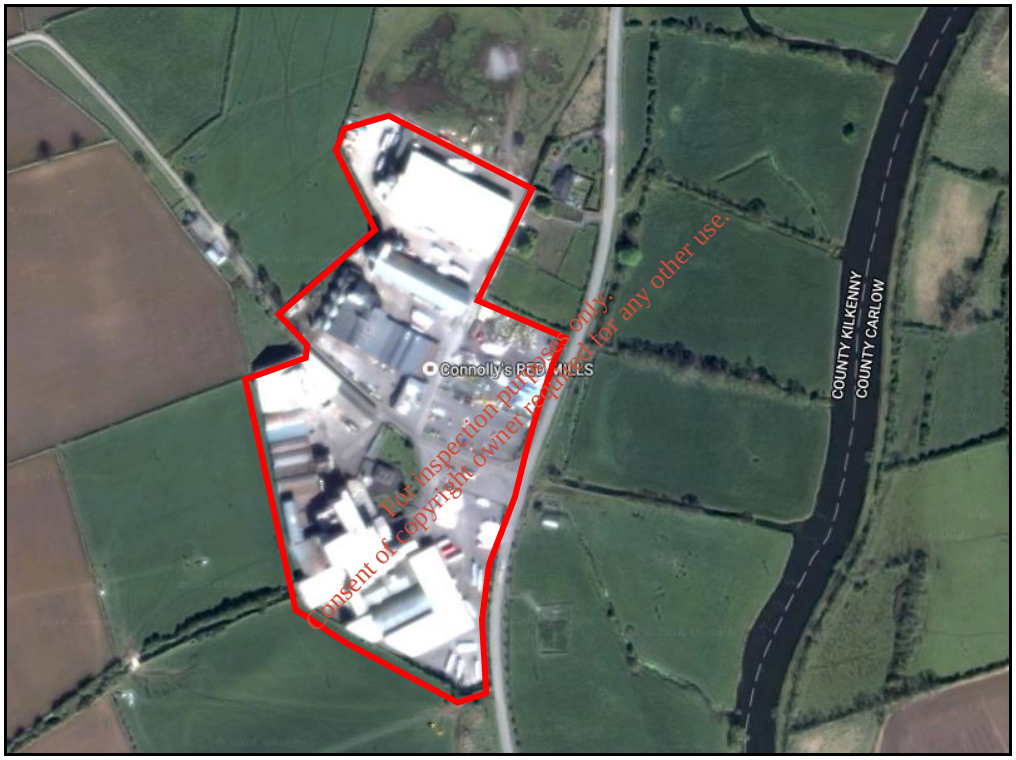
**ATTACHMENTS**

## 1. INTRODUCTION

JRE Ltd. (JRE) was retained by Connolly's Red Mills (Red Mills) to complete a site condition report for their animal feeds mill facility in 29 Barrow Mount Drive, Grange Lower, Goresbridge, Co. Kilkenny.

This Screening Report is being conducted as part of an application for an Industrial Emission Licence at the Redmills Feed Mill site in Goresbridge, Co. Kilkenny. The facility is located approximately 1km to the north of the village of Goresbridge. The site has an area of approximately 67,600 m² as seen in Figure 1.

**Figure 1. Site Area**





The Industrial Emissions licence application is under "Class7.8 (a) The treatment and processing, other than exclusively packaging, of the following raw materials, whether previously processed or unprocessed, intended for the production of food or feed from:

> (ii) only vegetable raw materials with a finished product production capacity greater than 300 tonnes per day or 600 tonnes per day where the installation operates for a period of no more than 90 consecutive days in any year" of the First Schedule of the Environmental Protection Agency Act 1992, as amended.

Under the Redmills brand, the feed mill produces nutrition for a wide range of animals using advanced feed manufacturing technology and nutritional research, together with fully traceable ingredients, Redmills offer high-quality, consistent and nutritious feeds to their customers.

## 2. SITE CONDITION

This section of the report will outline the condition of the RED MILLS site with regards to environmental receptors surrounding the site in Goresbridge, Co. Kilkenny.

### 2.1. Groundwater

The main emissions to groundwater from the Red Mills site is the soak away from the site's domestic effluent treatment system located to the east of the site. Annual groundwater sampling is completed from the on-site water well with the most recent sampling completed in April 2017. The results were compared to the Drinking Water Regulations, 2007 (S.I. 278 of 2007). The results indicated that all parameters were less than the Regulatory limits, see Attachment 1.

### 2.2. Sewer

The foul waste coming from the Feed Mill at Redmills is domestic in character (i.e., no production discharge) and limited in volume. The discharge is directed to the site septic tank treatment system, polishing bed and percolation system. Following settlement and treatment the foul water is then discharged to the septic field. It is not envisioned that sewer waste water will have a significant impact on the River Barrow, but the potential for some bacterial impact exists. However, analysis on downstream river sample for metals (i.e., copper, iron and manganese) are less than or equal to the results from upstream of the site. The Water Framework Directive (WFD) status of the River Barrow improves from poor to moderate immediately downstream of the Redmills site indicating no significant impact from the site.



### 2.3. Stormwater/Surface Water

Surface water runoff from the site roofs and yard and the site car park are directed to the main storm water drain exiting the site at the main gate to the site. All surface water from the site discharges to one of three oil/water interceptors located on site before then entering a surface drainage culvert.

Surface water originating on the north portion of the site is directed to an integrated constructed wetland (ICW) located to the east of the site (on the east side of the L7000 Road). The ICW receives surface water runoff from the site yard surface at the main grain stores and roof water from site buildings in the northern area of the site. A review of the discharge from the ICW from June 2016 indicated that concentrations of contaminants of concern (e.g., ammonia, nitrate, oils fats and greases, BOD and chloride) were all less than the applicable surface water quality limits and were less than the concentrations measured in the Barrow River upstream of the wetlands.

Surface water from the remainder of the site is directed to the river Barrow following treatment in the on-site oil/water separator units. As part of the surface water management on site the receiving water

(i.e., River Barrow) is sampled on a regular basis. The surface water sample collected from the River Barrow downstream from the Redmills site indicated only a marginal increase in BOD and COD but a reduction in nitrate, oils fats and greases. All other parameters in the sample collected downstream of the Redmills facility were similar in concentration to the upstream concentrations indicating no significant impact from the ICW or the site surface water discharge from the Redmills site on the River Barrow SAC. The water quality for the River Barrow between 2004 and 2015 was reviewed using the EPA map viewer resource. The biological quality in the River barrow in Goresbridge (downstream of the site) was classed as Q3-4, moderate status which is consistent with the closest upstream monitoring location at Fenniscourt lock (i.e., Q3-4, moderate status). Laboratory reports for surface water samples collected from receiving waters in the vicinity of the Red Mills site are provided in Attachment 2.

### 2.4. Air Emissions

Flue gas emissions from the boiler stack at the Red Mills Feed Mill site were monitored for nitrous oxides, carbon monoxide, carbon dioxide and sulphur dioxide in January 2017. The monitoring results indicated concentrations that did not significantly impact air quality in the area. The results are outlined in Table 1.

**Table 1: Boiler Emissions Results for Red Mills Site - 2017**

| Parameter | Units | Results |
|---|---|---|
| Carbon Monoxide (CO) | $mg/m^3$ | 2.12 |
| Oxides of Nitrogen (NOx) | $mg/m^3$ | 228.56 |
| Sulphur Dioxide ($SO_2$) | $mg/m^3$ | 17.08 |
| Oxygen (%) | % v/v | 5.00 |



### 2.5. Particulate Matters

Particulate emissions were sampled from the flakers, cubers and extruder stacks at the Red Mills Feed Mill site were sampled in January 2017. The majority of results were less than or marginally greater than the ELV of 50 $mg/m^3$. The results from the isokinetic particulate sampling programme completed in January 2017 at the Red Mills site are presented in Table 2.

**Table 2: Red Mills Process Stack Particulate Sampling Results - 2017**

| Process Location | Parameter | Units | Results |
|---|---|---|---|
| Cubing | Total Particulate | $mg/m^3$ | 12.90 |
| Extruder 4 | Total Particulate | $mg/m^3$ | 54.45 |
| Flaker 2 | Total Particulate | $mg/m^3$ | 40.34 |
| Flaker 1 | Total Particulate | $mg/m^3$ | 67.46 |
| Mixing & Blending | Total Particulate | $mg/m^3$ | 41.86 |
| Extruder 2 | Total Particulate | $mg/m^3$ | 32.11 |

### 2.6. Dust Emissions

There are a number of bulk material intake pits on site; each of the intake pits has a canopy to prevent dust dispersing into the atmosphere. There are also bulk storage bins and stores for raw material, the emissions from these are considered to be 'fugitive' and should not give rise to negative air quality impacts off-site

### 2.7. Noise Emissions

Noise emissions emanating from the Red Mills Feed Mill site are not envisioned to have an impact on sensitive receptors in the vicinity of the facility. Noise emission monitoring was carried out in January 2017 as part of the EPA Industrial Emissions Licence Application. Monitoring was completed at four (4) boundary locations and no tonal or impulse noise component was recorded during the monitoring event. The results indicated no impact to noise sensitive receptors in the immediate vicinity of the Mill site. The results of the noise assessment completed at the Red mills site in January 2016 are presented in Table 3-1 through 3-4.



**Table 3-1: Noise Measurements at N1 at the Southwest Boundary of the Site**

| Monitoring Location | Monitoring Period | Time | $L_{Aeq}$ (dBA) | $L_{A10}$ (dBA) | $L_{A90}$ (dBA) |
|---|---|---|---|---|---|
| N1 | Daytime | 10.45 – 11.15 | 63.3 | 63.1 | 47.8 |
| | | 11.16 – 11.46 | 65.8 | 63.5 | 50.8 |
| | | 11.47 - 12.17 | 63.3 | 64.8 | 51.1 |
| | Evening | 20.45 – 21.00 | 49.1 | 50.2 | 46.9 |
| | Night time | 23.15 – 23. 30 | 45.3 | 46.4 | 44.0 |
| | | 23.32 – 23.47 | 45.5 | 45.7 | 43.7 |

**Table 3-2: Noise Measurements at N2 at the Northern Boundary of the Site**

| Monitoring Location | Monitoring Period | Time | $L_{Aeq}$ (dBA) | $L_{Amax}$(dBA) | $L_{A10}$ (dBA) | $L_{A90}$ (dBA) |
|---|---|---|---|---|---|---|
| N2 | Daytime | 12.35 – 13.05 | 60.1 | 78.7 | 60.9 | 57.8 |
| | | 13.09 – 13.39 | 60.9 | 90.7 | 61.0 | 43.5 |
| | | 13.39 – 14.09 | 53.6 | 77.7 | 53.9 | 43.4 |
| | Evening | 21.11 – 21.26 | 61.9 | 86.2 | 57.5 | 38.3 |
| | Night time | 01.02 - 01.17 | 42.9 | 68.0 | 44.5 | 40.3 |
| | | 01.17 – 01.32 | 42.0 | 67.8 | 42.7 | 39.9 |

**Table 3-3: Noise Measurements at N3 at the Northeast Boundary of the Site**

| Monitoring Location | Monitoring Period | Time | $L_{Aeq}$ (dBA) | $L_{Amax}$(dBA) | $L_{A10}$ (dBA) | $L_{A90}$ (dBA) |
|---|---|---|---|---|---|---|
| N3 | Daytime | 14.26 – 14.56 | 48.8 | 80.9 | 48.1 | 35.7 |
| | | 14.58 – 15.28 | 52.4 | 75.4 | 50.2 | 35.1 |
| | | 15.30 – 16.00 | 45.4 | 78.3 | 49.9 | 34.8 |
| | Evening | 21.30 – 21.45 | 43.1 | 71.4 | 45.8 | 31.8 |
| | Night time | 23.50 – 00.05 | 45.1 | 64.1 | 47.6 | 38.4 |
| | | 00.07 – 00.22 | 45.6 | 61.8 | 47.7 | 38.2 |

**Table 3-4: Noise Measurements at N4 at the Eastern Boundary of the Site**

| Monitoring Location | Monitoring Period | Time | $L_{Aeq}$ (dBA) | $L_{Amax}$(dBA) | $L_{A10}$ (dBA) | $L_{A90}$ (dBA) |
|---|---|---|---|---|---|---|
| N4 | Daytime | 16.05 – 16.35 | 48.9 | 79.4 | 51.0 | 42.4 |
| | | 16.36 – 17.06 | 58.3 | 86.0 | 56.5 | 42.9 |
| | | 17.06 – 17.36 | 48.7 | 68.2 | 51.3 | 42.0 |
| | Evening | 21.49 – 22.04 | 47.6 | 73.0 | 48.3 | 45.4 |
| | Night time | 00.28 – 00.43 | 45.6 | 69.8 | 46.7 | 43.2 |
| | | 00.44 – 00.59 | 46.3 | 68.8 | 47.9 | 43.5 |

# ATTACHMENT 1

## Groundwater Laboratory Report

IAS LABORATORIES

## Independent Analytical Supplies

# Test Report

| | | | |
|---|---|---|---|
| **Lab Report Number:** | **3082J01** | **Analysis Number:** | **W1 MF/2826** |

| | | | |
|---|---|---|---|
| **Customer ID:** | CONN.W1 | **Analysis Type:** | Water - C3 Analysis MF (W1 MF) |
| **Contact Name:** | MARK DOWLING | **Delivery By:** | Customer |
| **Company Name:** | CONNOLLY WILLIAM + SONS | **Sample Card Number:** | 120417O/1 |
| **Address:** | RED MILLS<br>GORESBRIDGE<br>CO. KILKENNY. | **Sample Condition:** | Acceptable |
| **Sample Type:** | Water | **Date Sample Received:** | 12/04/2017 |
| **Sample Reference:** | WATER SAMPLE 12/04/17 | **Date Analysis Commenced:** | 12/04/2017 |
| **Sample Description:** | DRINKING WATER | **Date Certificate Issued:** | 20/04/2017 |

| Parameter | Method | Result | Unit | Drinking Water Regulations (SI278 of 2007) Parametric Values |
|---|---|---|---|---|
| Sulphate | Konelab Aquakem SOP 2062 | 16.56 | mg/l | 250 |
| Ammonium | Konelab Aquakem SOP 2057 | 0.04 | mg/l NH4 | 0.3 |
| Nitrite | Konelab Aquakem SOP 2059 | <0.03 | mg/l NO2 | 0.5 |
| pH | Electrometry SOP 2004 | 7.1 | pH unit | 6.5<pH<9.5 |
| Nitrate | Konelab Aquakem SOP 2060 | 42.59 | mg/l NO3 | 50 |
| Alkalinity | Konelab Aquakem SOP2064 | 354.06 | mg/l | - |
| Conductivity | Electrometry SOP 2076 | 706 | µS/cm 20°C | 2500 |
| Turbidity | Turbidimetric SOP 2022 | 0.34 | NTU | - |
| Calcium | ICP-MS | 145.5 | mg/l Ca | - |
| Magnesium | ICP-MS | 28.6 | mg/l Mg | - |
| Total Coliforms* | Quanti-tray SOP 2090 | <1.0 | MPN/100ml | 0 |
| Sodium | ICP-MS | 10.3 | mg/l Na | 200 |
| Potassium | ICP-MS | 1.59 | mg/l K | - |
| E. Coli* | Quanti-tray SOP 2090 | <1.0 | MPN/100ml | 0 |
| Colour | Konelab Aquakem SOP 2063 | 1.4 | Pt Co | - |
| Iron | ICP-MS | <20 | µg/l Fe | 200 |
| Manganese | ICPMS | <5 | µg/l Mn | 50 |
| Copper | ICP-MS | <10 | µg/l Cu | 2000 |
| Zinc | ICP-MS | 172 | µg/l Zn | - |
| Phosphorus | ICP-MS | <0.01 | mg/l P | - |



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## Independent Analytical Supplies

# Test Report

| | | | |
|---|---|---|---|
| **Lab Report Number:** | **3082J01** | **Analysis Number:** | **W1 MF/2826** |

| | | | |
|---|---|---|---|
| **Customer ID:** | CONN.W1 | **Analysis Type:** | Water - C3 Analysis MF (W1 MF) |
| **Contact Name:** | MARK DOWLING | **Delivery By:** | Customer |
| **Company Name:** | CONNOLLY WILLIAM + SONS | **Sample Card Number:** | 120417O/1 |
| **Address:** | RED MILLS<br>GORESBRIDGE<br>CO. KILKENNY. | **Sample Condition:** | Acceptable |
| **Sample Type:** | Water | **Date Sample Received:** | 12/04/2017 |
| **Sample Reference:** | WATER SAMPLE 12/04/17 | **Date Analysis Commenced:** | 12/04/2017 |
| **Sample Description:** | DRINKING WATER | **Date Certificate Issued:** | 20/04/2017 |

| Parameter | Method | Result | Unit | Drinking Water Regulations (SI278 of 2007) Parametric Values |
|---|---|---|---|---|
| Lead | ICP-MS | <1 | µg/l Pb | 25 |
| Total Hardness | Ca & Mg Hardness | 407.9 | mg/l CaCO3 | - |
| Total Chlorine* | Colourimetry | 0.01 | mg/l Cl2 | - |
| Dissolved Solids* | Filt./Evap. & Drying @ 105°C | 363 | mg/l | - |



Signed: WD McCall Date: 20/04/2017

**Wendy McCall - Laboratory Manager**

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# ATTACHMENT 2

## Surface Water Laboratory Report

IAS LABORATORIES

## Independent Analytical Supplies

# Test Report

| | | | |
|---|---|---|---|
| **Lab Report Number:** | **3083J01** | **Analysis Number:** | **99A/103883** |

| | | | |
|---|---|---|---|
| **Customer ID:** | CONN.W1 | **Analysis Type:** | Misc. Tests (99A) |
| **Contact Name:** | MARK DOWLING | **Delivery By:** | Customer |
| **Company Name:** | CONNOLLY WILLIAM + SONS | **Sample Card Number:** | 120417P/7 |
| **Address:** | RED MILLS<br>GORESBRIDGE<br>CO. KILKENNY. | **Sample Condition:** | Acceptable |
| **Sample Type:** | Effluent | **Date Sample Received:** | 12/04/2017 |
| **Sample Reference:** | EFFLUENT | **Date Analysis Commenced:** | 12/04/2017 |
| **Sample Description:** | UPSTREAM BARROW 12/4/17 | **Date Certificate Issued:** | 20/04/2017 |

| Parameter | Method | Result | Unit |
|---|---|---|---|
| Biochemical Oxygen Demand | Oxygen Meter SOP 2006 | 1 | mg/l |
| Chloride | Konelab Aquakem SOP 2065 | 22.54 | mg/l |
| Chemical Oxygen Demand | Microdigestion and Colourimetry SOP 2005 | 9 | mg/l |
| Conductivity | Electrometry SOP 2076 | 597 | µS/cm 20°C |
| Copper | ICP-MS | <20 | ug/l |
| E. Coli* | Quanti-tray SOP 2090 | 272.3 | MPN/100ml |
| Iron | ICP-MS | 84 | ug/l |
| Manganese | ICPMS | <20 | ug/l |
| Ammonia | Konelab Aquakem SOP 2057 | 0.01 | mg/l NH3 |
| Nitrate | Konelab Aquakem SOP 2060 | 21.25 | mg/l NO3 |
| Oils, Fats and Grease* | Solvent Extraction | 2.3 | mg/l |
| Total Coliforms* | Quanti-tray SOP 2090 | 1046.2 | MPN/100ml |



Signed: WD McCall Date: 20/04/2017

**Wendy McCall - Laboratory Manager**

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# Test Report

| | | | |
|---|---|---|---|
| **Lab Report Number:** | **3083J02** | **Analysis Number:** | **99A/103884** |

| | | | |
|---|---|---|---|
| **Customer ID:** | CONN.W1 | **Analysis Type:** | Misc. Tests (99A) |
| **Contact Name:** | MARK DOWLING | **Delivery By:** | Customer |
| **Company Name:** | CONNOLLY WILLIAM + SONS | **Sample Card Number:** | 120417P/7 |
| **Address:** | RED MILLS<br>GORESBRIDGE<br>CO. KILKENNY. | **Sample Condition:** | Acceptable |
| **Sample Type:** | Effluent | **Date Sample Received:** | 12/04/2017 |
| **Sample Reference:** | EFFLUENT | **Date Analysis Commenced:** | 12/04/2017 |
| **Sample Description:** | STREAM BEHIND MILL 12/4/17 | **Date Certificate Issued:** | 20/04/2017 |

| Parameter | Method | Result | Unit |
|---|---|---|---|
| Biochemical Oxygen Demand | Oxygen Meter SOP 2006 | 2 | mg/l |
| Chloride | Konelab Aquakem SOP 2065 | 22.11 | mg/l |
| Chemical Oxygen Demand | Microdigestion and Colourimetry SOP 2005 | 7 | mg/l |
| Conductivity | Electrometry SOP 2076 | 585 | µS/cm 20°C |
| Copper | ICP-MS | <20 | ug/l |
| E. Coli* | Quanti-tray SOP 2090 | 1119.9 | MPN/100ml |
| Iron | ICP-MS | 43 | ug/l |
| Manganese | ICPMS | <20 | ug/l |
| Ammonia | Konelab Aquakem SOP 2057 | 0.02 | mg/l NH3 |
| Nitrate | Konelab Aquakem SOP 2060 | 22.26 | mg/l NO3 |
| Oils, Fats and Grease* | Solvent Extraction | 1.6 | mg/l |
| Total Coliforms* | Quanti-tray SOP 2090 | 2419.6 | MPN/100ml |



Signed: WD McCall Date: 20/04/2017

**Wendy McCall - Laboratory Manager**

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# Test Report

| | | | |
|---|---|---|---|
| **Lab Report Number:** | **3083J03** | **Analysis Number:** | **99A/103885** |

| | | | |
|---|---|---|---|
| **Customer ID:** | CONN.W1 | **Analysis Type:** | Misc. Tests (99A) |
| **Contact Name:** | MARK DOWLING | **Delivery By:** | Customer |
| **Company Name:** | CONNOLLY WILLIAM + SONS | **Sample Card Number:** | 120417P/7 |
| **Address:** | RED MILLS<br>GORESBRIDGE<br>CO. KILKENNY. | **Sample Condition:** | Acceptable |
| **Sample Type:** | Effluent | **Date Sample Received:** | 12/04/2017 |
| **Sample Reference:** | EFFLUENT | **Date Analysis Commenced:** | 12/04/2017 |
| **Sample Description:** | WETLANDS N 12/4/17 | **Date Certificate Issued:** | 20/04/2017 |

| Parameter | Method | Result | Unit |
|---|---|---|---|
| Biochemical Oxygen Demand | Oxygen Meter SOP 2006 | 9 | mg/l |
| Chloride | Konelab Aquakem SOP 2065 | 24.24 | mg/l |
| Chemical Oxygen Demand | Microdigestion and Colourimetry SOP 2005 | 25 | mg/l |
| Conductivity | Electrometry SOP 2076 | 620 | µS/cm 20°C |
| Copper | ICP-MS | <20 | ug/l |
| E. Coli* | Quanti-tray SOP 2090 | <1.0 | MPN/100ml |
| Iron | ICP-MS | 106 | ug/l |
| Manganese | ICPMS | 193 | ug/l |
| Ammonia | Konelab Aquakem SOP 2057 | 0.04 | mg/l NH3 |
| Nitrate | Konelab Aquakem SOP 2060 | <2.2 | mg/l NO3 |
| Oils, Fats and Grease* | Solvent Extraction | 7.6 | mg/l |
| Total Coliforms* | Quanti-tray SOP 2090 | 8.4 | MPN/100ml |



Signed: WD McCall Date: 20/04/2017

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# Test Report

| | | | |
|---|---|---|---|
| **Lab Report Number:** | **3083J04** | **Analysis Number:** | **99A/103886** |

| | | | |
|---|---|---|---|
| **Customer ID:** | CONN.W1 | **Analysis Type:** | Misc. Tests (99A) |
| **Contact Name:** | MARK DOWLING | **Delivery By:** | Customer |
| **Company Name:** | CONNOLLY WILLIAM + SONS | **Sample Card Number:** | 120417P/7 |
| **Address:** | RED MILLS<br>GORESBRIDGE<br>CO. KILKENNY. | **Sample Condition:** | Acceptable |
| **Sample Type:** | Effluent | **Date Sample Received:** | 12/04/2017 |
| **Sample Reference:** | EFFLUENT | **Date Analysis Commenced:** | 12/04/2017 |
| **Sample Description:** | DOWNSTREAM BARROW 12/4/17 | **Date Certificate Issued:** | 20/04/2017 |

| Parameter | Method | Result | Unit |
|---|---|---|---|
| Biochemical Oxygen Demand | Oxygen Meter SOP 2006 | 1 | mg/l |
| Chloride | Konelab Aquakem SOP 2065 | 23.21 | mg/l |
| Chemical Oxygen Demand | Microdigestion and Colourimetry SOP 2005 | 7 | mg/l |
| Conductivity | Electrometry SOP 2076 | 598 | µS/cm 20°C |
| Copper | ICP-MS | <20 | ug/l |
| E. Coli* | Quanti-tray SOP 2090 | 275.5 | MPN/100ml |
| Iron | ICP-MS | 92 | ug/l |
| Manganese | ICPMS | 24 | ug/l |
| Ammonia | Konelab Aquakem SOP 2057 | 0.01 | mg/l NH3 |
| Nitrate | Konelab Aquakem SOP 2060 | 21.52 | mg/l NO3 |
| Oils, Fats and Grease* | Solvent Extraction | 6.0 | mg/l |
| Total Coliforms* | Quanti-tray SOP 2090 | 1046.2 | MPN/100ml |



Signed: WD McCall Date: 20/04/2017

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# Test Report

| | | | |
|---|---|---|---|
| **Lab Report Number:** | **3083J05** | **Analysis Number:** | **99A/103887** |

| | | | |
|---|---|---|---|
| **Customer ID:** | CONN.W1 | **Analysis Type:** | Misc. Tests (99A) |
| **Contact Name:** | MARK DOWLING | **Delivery By:** | Customer |
| **Company Name:** | CONNOLLY WILLIAM + SONS | **Sample Card Number:** | 120417P/7 |
| **Address:** | RED MILLS<br>GORESBRIDGE<br>CO. KILKENNY. | **Sample Condition:** | Acceptable |
| **Sample Type:** | Effluent | **Date Sample Received:** | 12/04/2017 |
| **Sample Reference:** | EFFLUENT | **Date Analysis Commenced:** | 12/04/2017 |
| **Sample Description:** | WETLANDS S 12/4/17 | **Date Certificate Issued:** | 20/04/2017 |

| Parameter | Method | Result | Unit |
|---|---|---|---|
| Biochemical Oxygen Demand | Oxygen Meter SOP 2006 | 2 | mg/l |
| Chloride | Konelab Aquakem SOP 2065 | 23.71 | mg/l |
| Chemical Oxygen Demand | Microdigestion and Colourimetry SOP 2005 | 7 | mg/l |
| Conductivity | Electrometry SOP 2076 | 708 | µS/cm 20°C |
| Copper | ICP-MS | <20 | ug/l |
| E. Coli* | Quanti-tray SOP 2090 | 22.6 | MPN/100ml |
| Iron | ICP-MS | <20 | ug/l |
| Manganese | ICPMS | <20 | ug/l |
| Ammonia | Konelab Aquakem SOP 2057 | 0.04 | mg/l NH3 |
| Nitrate | Konelab Aquakem SOP 2060 | 34.93 | mg/l NO3 |
| Oils, Fats and Grease* | Solvent Extraction | 2.0 | mg/l |
| Total Coliforms* | Quanti-tray SOP 2090 | 260.3 | MPN/100ml |



Signed: WD McCall Date: 20/04/2017

**Wendy McCall - Laboratory Manager**

*** = not INAB Accredited** **^ = Subcontracted**



ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.2751

**IAS LABORATORIES, Unit 4 Bagenalstown Bus. Park, Bagenalstown, Co. Carlow,**
**Phone: 00353 59 9721022 Fax: 00353 59 9721897 Email: ias@iaslabs.ie Web: www.iaslabs.ie**

IAS LABORATORIES

## Independent Analytical Supplies

# Test Report

| | | | |
|---|---|---|---|
| **Lab Report Number:** | **3083J06** | **Analysis Number:** | **99A/103888** |

| | | | |
|---|---|---|---|
| **Customer ID:** | CONN.W1 | **Analysis Type:** | Misc. Tests (99A) |
| **Contact Name:** | MARK DOWLING | **Delivery By:** | Customer |
| **Company Name:** | CONNOLLY WILLIAM + SONS | **Sample Card Number:** | 120417P/7 |
| **Address:** | RED MILLS<br>GORESBRIDGE<br>CO. KILKENNY. | **Sample Condition:** | Acceptable |
| **Sample Type:** | Effluent | **Date Sample Received:** | 12/04/2017 |
| **Sample Reference:** | EFFLUENT | **Date Analysis Commenced:** | 12/04/2017 |
| **Sample Description:** | STREAM AT FISH TANK 12/4/17 | **Date Certificate Issued:** | 20/04/2017 |

| Parameter | Method | Result | Unit |
|---|---|---|---|
| Biochemical Oxygen Demand | Oxygen Meter SOP 2006 | 1 | mg/l |
| Chloride | Konelab Aquakem SOP 2065 | 20.92 | mg/l |
| Chemical Oxygen Demand | Microdigestion and Colourimetry SOP 2005 | 6 | mg/l |
| Conductivity | Electrometry SOP 2076 | 594 | µS/cm 20°C |
| Copper | ICP-MS | <20 | ug/l |
| E. Coli* | Quanti-tray SOP 2090 | 1413.6 | MPN/100ml |
| Iron | ICP-MS | 80 | ug/l |
| Manganese | ICPMS | 21 | ug/l |
| Ammonia | Konelab Aquakem SOP 2057 | 0.04 | mg/l NH3 |
| Nitrate | Konelab Aquakem SOP 2060 | 31.68 | mg/l NO3 |
| Oils, Fats and Grease* | Solvent Extraction | 1.6 | mg/l |
| Total Coliforms* | Quanti-tray SOP 2090 | >2419.6 | MPN/100ml |



Signed: WD McCall Date: 20/04/2017

**Wendy McCall - Laboratory Manager**

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ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.275T

**IAS LABORATORIES, Unit 4 Bagenalstown Bus. Park, Bagenalstown, Co. Carlow,**

**Phone: 00353 59 9721022 Fax: 00353 59 9721897 Email: ias@iaslabs.ie Web: www.iaslabs.ie**

IAS LABORATORIES

## Independent Analytical Supplies

# Test Report

| | | | |
|---|---|---|---|
| **Lab Report Number:** | **3083J07** | **Analysis Number:** | **99A/103889** |

| | | | |
|---|---|---|---|
| **Customer ID:** | CONN.W1 | **Analysis Type:** | Misc. Tests (99A) |
| **Contact Name:** | MARK DOWLING | **Delivery By:** | Customer |
| **Company Name:** | CONNOLLY WILLIAM + SONS | **Sample Card Number:** | 120417P/7 |
| **Address:** | RED MILLS<br>GORESBRIDGE<br>CO. KILKENNY. | **Sample Condition:** | Acceptable |
| **Sample Type:** | Effluent | **Date Sample Received:** | 12/04/2017 |
| **Sample Reference:** | EFFLUENT | **Date Analysis Commenced:** | 12/04/2017 |
| **Sample Description:** | FISH TANK DISCHARGE PIPE 12/4 | **Date Certificate Issued:** | 20/04/2017 |

| Parameter | Method | Result | Unit |
|---|---|---|---|
| Biochemical Oxygen Demand | Oxygen Meter SOP 2006 | 1 | mg/l |
| Chloride | Konelab Aquakem SOP 2065 | 21.15 | mg/l |
| Chemical Oxygen Demand | Microdigestion and Colourimetry SOP 2005 | 13 | mg/l |
| Conductivity | Electrometry SOP 2076 | 581 | µS/cm 20°C |
| Copper | ICP-MS | <20 | ug/l |
| E. Coli* | Quanti-tray SOP 2090 | 579.4 | MPN/100ml |
| Iron | ICP-MS | 70 | ug/l |
| Manganese | ICPMS | <20 | ug/l |
| Ammonia | Konelab Aquakem SOP 2057 | 0.01 | mg/l NH3 |
| Nitrate | Konelab Aquakem SOP 2060 | 22.57 | mg/l NO3 |
| Oils, Fats and Grease* | Solvent Extraction | 1.3 | mg/l |
| Total Coliforms* | Quanti-tray SOP 2090 | 1553.1 | MPN/100ml |



Signed: WD McCall Date: 20/04/2017

**Wendy McCall - Laboratory Manager**

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ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.2751

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