



Irish Tar & Bitumen Suppliers Ltd.

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Irish Tar and Bitumen Suppliers
2018 Annual Environmental Report
IPC Licence Registration No: 86

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I declare that this PDF version of the 2018 AER is a true version of the original AER.

Tony Riordan, Plant Manager



Registered in Ireland No. 9677

Directors: W.P. Alexander, A. Gingell, T. Broderick, J.P. Brennan.

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1. INTRODUCTION

Irish Tar & Bitumen Suppliers are licensed under the Environmental Protection Act 1992 to carry out the chemical manufacture of glues, bonding agents and adhesive. The location of the licensed activity is Alexandra Road, Dublin 1 and the EPA IPC licence register number is 86.

This report is produced as a requirement under condition 2.9.2 of the company's Integrated Pollution Control (IPC) Licence which requires the company to produce an Annual Environmental Report and submit it to the Environmental Protection Agency.

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2. GENERAL OVERVIEW OF THE ACTIVITY:

The existing Irish Tar & Bitumen Suppliers facility is located in the Docklands area of Dublin. The location of the plant is shown in Figure 1 and the plant layout is shown in Figure 2 in Appendix 1. The predominant land-use in the area is port-related commercial/industrial activity and there are no residential areas in close proximity to the facility.

There are essentially two elements to the activity on this site.

- Penetration Grade Bitumens are imported in bulk quantities and these are blended on site and are dispensed to customers in approximately 20 tonne lots by road tanker.
- Polymer Modified Bitumens, Cut-back Bitumens and Bitumens Emulsions are blended and produced at the Alexandra Road site.

A total of 25 people are employed, and the production facility has been in operation since 1942.

Irish Tar & Bitumen Suppliers operate a Quality Management System which complies with the international standard ISO 9001:2008 and an occupational health and safety management system which complies with the international standard ISO 45001:2008.

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3 DATA

3.1 Emissions to Atmosphere

Irish Tar & Bitumen Suppliers are required to measure annually the following emissions to atmosphere from their oil fired boilers (Grid Reference O 19424 34682) under Condition 5 of their Integrated Pollution Control Licence. These emissions were measured on the 5th December 2018.

- Oxides of Sulphur
- Nitrogen Oxides
- Carbon Monoxide
- Flue Gas Volume

A summary of these emissions is presented in Table 3.1.1. All air emissions were below the emission limits set in the licence.

Table 3.1.1

Summary of Emissions from Boiler

| Parameter | Measured | Measured | Limit Value |
|---------------------------------------|--------------------|--------------------|--------------|
| | mg/Nm ³ | mg/Nm ³ | |
| | Thermax 1 | Thermax 2 | - |
| Carbon Monoxide | 6.3 | 19.8 | 150 |
| Nitrogen Oxides (as NO ₂) | 330 | 288 | 600 |
| Oxides of Sulphur | 573 | 577 | 1700 |
| Flue Gas Volume(Nm ³ /h) | 3877 | 7384 | 13000 |

*Note: only one boiler operates the a time with the second as a backup.

Table 3.1.2**Annual Boiler Emissions to Air**

| Parameter | Unit | 2016 | 2017 | 2018 | Licensed Emission |
|------------------|-------------|-------------|-------------|-------------|--------------------------|
| Sulphur Oxides | kg | 10852 | 16439 | 10097 | 45406 |
| Nitrogen Oxides | kg | 7076 | 7827 | 5779 | 16115 |
| Carbon Dioxide | kg | 4096628 | 4425436 | 4663633 | not licensed |
| Carbon Monoxide | kg | 159 | 211 | 276 | 3332 |

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3.2 Surface Water Emissions

The company discharges surface water from the site via an interceptor, which discharges directly to the Dublin Port and Docks retention pond. The company is required under condition 10.1 of its IPCL to carry out the following on the surface water discharge.

- carryout and record a visual examination daily.
- measure pH, temperature, TOC and total ammonia quarterly, as agreed with the Agency

3.2.1 Daily Visual Examination

A visual examination of the surface water was carried out each day. The locations of the sampling points are shown in the figure in Appendix 2. Three classes of observations are used; No Contamination, Contamination and Gross Contamination. For all daily observations, “No Contamination” was recorded on all occasions.

3.2.2 Monthly Analysis of Surface Water Discharge

Samples of surface water were taken quarterly as agreed with the Agency (letter Reference P0086-01/ak16mor dated 29th March 2010). The samples were sent to TelLab laboratory for analysis. The locations of the sampling points are shown in the figure in Appendix 2. A summary of the results are presented in Table 3.2.2.1 below.

Warning and Action levels for TOC were established in 1998 as follows.

| | |
|---------------|----------|
| Warning Level | 50 mg/l |
| Action Level | 100 mg/l |

These levels were not exceeded on any occasion during the year. This will continue to be monitored during the coming year to ensure that levels remain below the warning and action levels.

Table 3.2.2.1

Results of TOC Analysis on Surface Water Discharge

| - | Interceptor 1 | | | Interceptor 2 | | |
|------------------|---------------------|------|------|---------------------|------|------|
| - | Ammoniacal Nitrogen | pH | TOC | Ammoniacal Nitrogen | pH | TOC |
| - | mg/l | - | mg/l | mg/l | - | mg/l |
| Quarter 1 | 0.70 | 7.6 | 4.8 | 0.20 | 6.5 | 30 |
| Quarter 2 | 2.4 | 6.4 | 19 | <0.08 | 6.7 | 5.1 |
| Quarter 3 | <0.08 | 10.2 | 2.4 | <0.08 | 10.4 | 2.4 |
| Quarter 4 | <0.08 | 7.0 | 6.0 | <0.08 | 7.8 | 2.1 |

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3.3 Ground Water Sampling

Irish Tar & Bitumen Suppliers are required by Condition 10.3.1 and Schedule 4 (ii) of the company's IPC licence to carry out ground water sampling every 5 years. This was last carried out in 2016 and reported in the 2016 AER. The next ground water monitoring campaign will be carried out and in 2021 and reported in the 2021 AER.

3.4 Noise

Irish Tar & Bitumen Suppliers were required by Condition 9.1 of the company's IPC licence to carry out a noise survey of the site operations annually. In consultation with the Agency it was decided that a boundary survey was appropriate. Two such surveys were carried out and reported, one in 1998 and the second in 1999. Because the company make a negligible contribution to the overall noise level at the noise sensitive locations and also because they are so far below the limit set in their licence, Irish Tar & Bitumen Suppliers requested the Agency to consider reducing the frequency of monitoring. The Agency agreed to reduce the monitoring frequency to once every five years. The most recent survey was carried out in 2014 and demonstrated that the company readily complies with their licence conditions for noise. The next noise survey will be carried out in 2019 and will be reported in the 2019 AER.

3.5 Inspection of Flanges and Valves

Irish Tar & Bitumen Suppliers are required under condition 10.4.6 of their IPC licence to carry out a weekly inspection of all over-ground flanges and valves which are used to transport materials other than water. Weekly inspections of flanges and valves were carried out and recorded during the period covering this AER. Any leaks detected (mainly steam leaks) were noted on the inspection records and repaired.

3.6 Waste Management

3.6.1 Municipal Waste and Packaging

Irish Tar & Bitumen Suppliers generate no product waste on site. They have a skip to take waste packaging, broken pallets, canteen and office waste. These skips were taken off site by Thorntons Recycling (Waste Licence Number W0044-02). A summary of the skip waste taken off site is presented in the tables below.

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Table 3.6.1.1

Summary of Waste Skips taken off Site

| Month | Type of Waste | Weight Tonnes | No of Skips Rejected | Contractor |
|--------------|------------------------|------------------|-------------------------|------------|
| January | Municipal, SRF and C&D | 5.9 | None | Thorntons |
| February | Municipal, SRF and C&D | 5.3 | None | Thorntons |
| March | Municipal, SRF and C&D | 0 | None | Thorntons |
| April | Municipal, SRF and C&D | 6.2 | None | Thorntons |
| May | Municipal, SRF and C&D | 3.1 | None | Thorntons |
| June | Municipal, SRF and C&D | 2.0 | None | Thorntons |
| July | Municipal, SRF and C&D | 4.3 | None | Thorntons |
| August | Municipal, SRF and C&D | 1.8 | None | Thorntons |
| September | Municipal, SRF and C&D | 1.6 | None | Thorntons |
| October | Municipal, SRF and C&D | 1.3 | None | Thorntons |
| November | Municipal, SRF and C&D | 0 | None | Thorntons |
| December | Municipal, SRF and C&D | 6.4 | None | Thorntons |
| Total | - | | None | - |

3.6.2 Disposal of Recyclable Materials

Recyclable materials are segregated and removed by Thorntons Recycling (Waste Licence Number W0044-02). 9.5 tonnes of recycling material (cardboard, plastics, cans, polymer bags) were taken offsite by Thorntons Recycling during the period covered by this report. Metals are now collected onsite and removed by Thorntons Recycling. This commenced in November 2018. 2.3 tonnes of metal waste was taken offsite during the period covered by this report.

Municipal material collected from the facility is processed through a mechanical and manual sorting process at Thornton's Recycling Centre, Killeen Road, Dublin 10. Here any materials which can be recovered and recycled, to markets available to us, are removed. The recovered fraction is now diverted from landfill by shredding and processing the material into a Solid Recovered Fuel (SRF), used as a fuel in Cement Manufacturing. Only material which we cannot recycle or recover at the facility is consigned to landfill.

Irish Tar and Bitumen Suppliers will continue to monitor and amend the location, number and collection frequency of recycling bins during 2019 and will continue monitoring skips going offsite to improve recycling.

Table 3.6.2.1

Waste Summary

| Waste | 2016 | 2017 | 2018 |
|---|--------------|-------------|-------------|
| Total quantity of waste produced in calendar year (Tonnes) | 156.5 | 111.1 | 123.4 |
| total quantity of waste disposed of on-site | 0 | 0 | 0 |
| total quantity of waste disposed of off-site | 24.5 | 65.7 | 19.7 |
| total quantity of waste recovered on-site | 0 | 0 | 0 |
| total quantity of waste recovered off-site | 132.0 | 45.4 | 103.7 |
| Quantity of non-hazardous waste produced in calendar year | 125.4 | 48.5 | 53.4 |
| quantity of non-hazardous waste disposed of on-site | 0 | 0 | 0 |
| quantity of non-hazardous waste disposed of off-site | 6.5 | 3.9 | 3.8 |
| quantity of non-hazardous waste recovered on-site | 0 | 0 | 0 |
| quantity of non-hazardous waste recovered off-site | 118.9 | 44.6 | 49.6 |
| Quantity of hazardous waste produced in calendar year (Tonnes) | 31.1 | 62.6 | 70.0 |
| quantity of hazardous waste disposed of on-site | 0 | 0 | 0 |
| quantity of hazardous waste disposed of off-site | 18.0 | 61.8 | 15.9 |
| quantity of hazardous waste recovered on-site | 0 | 0 | 0 |
| quantity of hazardous waste recovered off-site | 13.1 | 0.8 | 54.1 |

Table 3.6.2.2 Information on Each Waste Stream

| European Waste Code | Hazardous | Quantity (Tonnes per Year) | Description of Waste | Waste Treatment Operation | Name and Licence/ Permit No | Address |
|---------------------|-----------|----------------------------|---|---------------------------|---|--|
| 20 03 01 | No | 3.8 | mixed municipal waste | D1 | Thorntons Recycling,W0044-02 | Kileen Road,,Ballyfermot,Dublin 10,Ireland |
| 19 12 10 | No | 34.7 | Solid Recovered fuel | R1 | Thorntons Recycling,W0044-02 | Kileen Road,,Ballyfermot,Dublin 10,Ireland |
| 15 01 06 | No | 9.5 | mixed packaging | R3 | Thorntons Recycling,W0044-02 | Kileen Road,,Ballyfermot,Dublin 10,Ireland |
| 17 04 07 | No | 2.3 | Mixed metals | R4 | Thorntons Recycling,W0044-02 | Kileen Road,,Ballyfermot,Dublin 10,Ireland |
| 13 05 03 | Yes | 15.9 | interceptor sludges | D9 | Rialta Environmental Ltd,W0192-3 | Greenogue Business Park,Block 402,Rathcoole,Co. Dublin,Ireland |
| 11 01 13 | Yes | 0.3 | degreasing wastes containing dangerous substances | R13 | Safety Kleen, W0099-01 | Unit 5, Airton Business Park, Airton Rd, Tallaght, Dublin 24 |
| 15 01 02 | No | 3.1 | Plastic Packaging | R12 | Glenn Drums Recycling Ltd. IRE/AG338/19 | 38 Upper Lisdrumchor Road, Glenanne, Armagh, BT602LD |
| 17 03 01 | Yes | 53.8 | Bitumen | R13 | Enva Ireland Ltd. W0184-02 | Clonminam Industrial estate, Portlaoise. |

3.7 Energy and Water Usage

The following quantities of oil, electricity and water were used on site during the twelve months covered by this report.

Table 3.7.1.

Energy Usage

| Description | 2015 | 2016 | 2017 | 2018 |
|----------------------------------|------|------|------|------|
| Electricity (MWh) | 1654 | 1598 | 1601 | 1789 |
| Heavy Fuel Oil (m ³) | 1316 | 1307 | 1412 | 1488 |

Table 3.7.2.

Water Usage – m³

| Water Consumption | 2015 | 2016 | 2017 | 2018 |
|----------------------------|-------|-------|-------|-------|
| On-site groundwater used | 0 | 0 | 0 | 0 |
| On-site surface water used | 0 | 0 | 0 | 0 |
| Municipal water used | 12970 | 13450 | 13124 | 16059 |

3.8 Environmental Complaints

Irish Tar & Bitumen Suppliers have a procedure for recording environmentally related complaints as part of their Environmental Management System. There were no such complaints received in the twelve months covered by this report.

Table 3.8.1.

Environmental Complaints

| | 2015 | 2016 | 2017 | 2018 |
|-----------------------------|------|------|------|------|
| Complaints Received | 0 | 0 | 0 | 0 |
| Complaints Requiring Action | 0 | 0 | 0 | 0 |

Table 3.8.2.

Categories of Complaint

| | 2015 | 2016 | 2017 | 2018 |
|---------------|------|------|------|------|
| Odour | 0 | 0 | 0 | 0 |
| Noise | 0 | 0 | 0 | 0 |
| Water | 0 | 0 | 0 | 0 |
| Air | 0 | 0 | 0 | 0 |
| Procedural | 0 | 0 | 0 | 0 |
| Miscellaneous | 0 | 0 | 0 | 0 |

3.9 Environmental Incidents

Irish Tar & Bitumen Suppliers have a procedure for recording environmentally related incidents as part of their Environmental Management System. There were no such incidents in the twelve months covered by this report.

3.10 Spending on Environmental Protection – 2018

As part of its commitment to improving its environmental performance and achieving its obligations under its IPC Licence the company has committed a substantial amount of its staff and financial resources to this end.

The total spending on these items during 2018 was in excess of €300,000

The following are the main items of expenditure under this heading.

- Remedial work on the surface water pipes
- Upgrading of Storage Tanks and Insulation
- Pipe-work insulation maintenance and up-keep
- Testing of bitumen lines and associated new insulation
- EPA fee
- Engagement of environmental consultants
- Yard cleaning and sweeping
- Waste to landfill and recycling/recovery of waste.
- Painting of storage tanks etc.
- Analysis of surface water
- Ground Water survey and analysis
- Emission tests on boiler
- General housekeeping
- Boiler maintenance
- Tank inspections/maintenance
- SEAI energy audit

3.11 Pollution Emission Register

Irish Tar & Bitumen Suppliers were required by Condition 2.4 of their Integrated Pollution Control Licence to produce a Pollution Emission Register. Because of the nature of their business and production methods all the compounds which are used and which are contained in List I and List II are consumed in the final product. Any product which is found to be outside specification is added back into the process and is fully consumed in subsequent batches of product. Because of this and the fact that there is no significant emission of these materials to air or water a proposal was made to the Environmental Protection Agency for a derogation on this condition. On the basis several assessments of fugitive emissions this proposal was accepted by the Agency and notified to the company in a letter dated 5th June 2001, Ref. M86/AP12MG.

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4 ENVIRONMENTAL MANAGEMENT

4.1 Company Organisation

Mr. Tony Riordan, Plant manager of Irish Tar & Bitumen Suppliers has overall responsibility for environmental matters at the company's premises at Alexandra Road. In his absence Mr. Cathal McCarthy takes over this responsibility.

4.2 Human Resources, Training and Education

Under condition 2.7 of the company's Integrated Pollution Control Licence Irish Tar & Bitumen Suppliers are required to establish and maintain procedures for identifying training needs, and for providing appropriate training, for all personnel whose work can have a significant effect on the environment. They are also required to provide appropriate education, training and/or experience for personnel performing specifically assigned tasks.

As a response to this requirement, external environmental consultants were employed to deliver environmental awareness training during Q1 of 2019. The seminar was received very well by staff and has made a visible improvement of the overall site. Staff reported a greater understanding of the IPC licence requirements and the potential impact of site activities on the environment.

All staff have been instructed and trained in the procedure to be followed in the event of any of the following

- minor leakage of material
- major leakage of material
- fire occurring on the premises

A formal written procedure has been drawn up for all new staff, visitors and contractors in which they receive appropriate instruction/training in matters pertaining to site safety and environmental matters.

4.3 Objectives and Targets

Condition 2.2.1 of the company's IPCL requires that a schedule of Objectives and Targets be draw up. This was submitted and accepted by the Environmental Protection Agency in September 1997. A revised schedule was drawn up for 2019 and set out below.

4.3.1 The licensee shall establish formal procedures to ensure that the requirements of the IPC licence are being complied with in full.

This objective began with the carrying out of an environmental audit during 1998 and 1999. This audit has identified various projects to enable the company to achieve the requirements of its IPC licence. The plant manager and external consultant meet monthly and discuss environmental issues such as; site inspections, EPA visits, IPC Licence requirements, environmental monitoring and other such environmental matters. The plant manager meets regularly with representatives of the other areas within the company (lab/office/yard) and can convey information to/from these meetings as appropriate. An IPC compliance monitoring schedule was drawn up to ensure that the monitoring requirements of the IPC Licence are continuously met and are discussed at these meetings. This will continue during 2019.

4.3.2 An environmental awareness strategy will be developed for the company.

This objective required an evaluation of the level of environmental awareness and training among employees. This was undertaken by way of a questionnaire survey and training seminars in 1998 and 1999. During 2002, staff were issued with an environmental questionnaire. This resulted in the training/instruction of some individuals in specific environmental areas.

An environmental training seminar was again presented in 2008 and in 2012 for all employees. These sessions explained the IPC Licence and demonstrated practical steps that employees can take to comply with the licence and reduce the

possible environmental impact of ITBS. This seminar was received very well by staff and has made a visible improvement of the overall site. This training was revised and most recently delivered to staff during Q1 of 2019.

In addition to this, a formal written procedure has been drawn up for all new staff, visitors and contractors in which they receive appropriate instruction/training in matters pertaining to site safety and environmental matters.

4.3.3 The licensee undertakes to reduce the discharge of polluting material into the aquatic environment.

Irish Tar & Bitumen Suppliers discharges surface water from the site via an interceptor, which discharges directly to the Dublin Port and Docks retention pond. Following a review of the monthly monitoring records over a period of eighteen months, warning and action levels for TOC were agreed in consultation with the Environmental Protection Agency. This monitoring is now being undertaken quarterly, as agreed with Agency (letter Ref P0086-01/ak16mor, dated the 29th March 2010.) Monitoring results for the period covering this report were below the warning levels. The results of the quarterly analysis will continue to be monitored during 2019 and in the case of either the warning or action levels for TOC being exceeded, an investigation will be carried out to determine the source of the contamination and rectify the problem.

As required by condition 10.4.5 of their licence, the company is required to carry out an inspection of the underground pipework every four years. This survey was last carried out in 2017. The issues raised by this inspection were addressed by remedial work was carried out during Q4 2017 and Q1 2018.

The ground water on the site is sampled and analysed in accordance with Condition 10.3 of the company's IPC Licence. This monitoring was last carried out during 2016 and is next schedule for 2021.

4.3.4 Characterisation and reduction of fugitive emissions to air.

Fugitive emissions arise at the plant primarily from the bulk storage and transfer of Bitumen, Coldcote and Polymer Modified Bitumen. Irish Tar and Bitumen Suppliers undertake to characterise and quantify the fugitive emissions and if found to be significant, to take measures to reduce their discharge. An investigation identified the bulk transfer of raw materials as the main source of fugitive emissions to air. These were quantified and found to be not significant.

As a follow up to this, further work was carried out to assess the effect of fugitive emissions from the plant and the other surrounding activities on the ambient air quality at the Irish Tar and Bitumen Suppliers site during 2002 and 2011. This work showed the plant to have little impact on the surrounding environment.

Most recently, an ambient air quality survey was again carried out in February 2016. Ambient air samples were taken at 8 boundary locations during normal road tanker filling and during the bulk transfer of bitumen from a ship into Tank 60 onsite. These samples were analysed for Volatile Organic Compounds (Total Organic Compounds (TOC) and VOC top ten screen) and Benzene. The results were all compliant with Air Quality Standards.

4.3.5 Provision of a catchment system to collect any leaks from flanges and valves.

Condition 10.4.7 of the company's IPC licence requires that the provision of a catchment system to collect any leaks from flanges and valves of all over ground pipes used to transport material other than water be examined. This assessment was carried out during the year 1999. It was concluded that such a catchment system is not required. This report was accepted by the Environmental Protection Agency, with the condition that the situation be reviewed biennially. A weekly inspection of flanges, valves and over ground pipes (potential leaks) is carried out and documented. The weekly inspections will continue to be carried out during 2019 and remedial action carried out where appropriate.

4.3.6 *Minimisation of water usage.*

The company continually monitor water usage and efficiency onsite. Following the 2007 assessment, it was decided to install a 250 tonne tank to replace the smaller 40 tonne tank. This larger storage tank was installed during 2008. It allows water to cool down and be reused and hence reduce the amount of water being used onsite. The company will continue to monitor its water usage during 2019 with the objective of identifying potential savings.

4.3.7 *Minimisation of Waste*

The company continues to examine its waste streams to maximise its contribution to recycling and minimise waste produced. Additional large and small Thorntons recycling bins were strategically placed around the yard, next to the work areas and next to skips to encourage recycling. A metals recycling bin was introduced during 2018 into the yard area. An area in the north/west corner of the site has been developed as a recycling area. This has proved successful as it is easily accessed and dedicated for recycling. Thorntons recycling are also removing skip waste offsite. The skips will continue to be examined to identify any further recycling opportunities.

4.3.8 *Minimise Energy Consumption*

The company are committed to reducing energy consumption and are continually examining methods to do so. An energy audit was carried out in 2007. Details of this audit were presented in the 2007 EMP report. Projects (mainly tank and pipe work insulation) that arose from the audit review were integrated into EMP projects every year since and are reported in the AERs accordingly. All insulation and upgrades that came out of this report have now been completed the re-insulation and maintenance on tanks and pipe work will be carried out as needed. The SEAI have been commissioned to carry out an energy audit of the plant during 2019. The findings of this audit will be reporting in the 2019 AER and projects arising from the audit will also be reported upon in the subsequent AERs.

4.3.9 The licensee undertakes to monitor and reduce the discharge of polluting material into the air.

Irish Tar and Bitumen Suppliers release flue gases from their boiler. As required by their licence, these emissions are monitored annually by an external environmental consultant and compared with licence limits. From 1st January 2014, the EPA require ISO 17025 accreditation for emission monitoring contractors. As part of the EMP for 2013 the company sourced an ISO 17025 accredited contractor to carry out this monitoring (Air Scientific Ltd. INAB accreditation number: INAB319T). This monitoring was carried out during 2018 by ISO accredited emission monitoring contractors and showed emissions to be below the limit levels. The possibility of reducing fuel consumption and hence emissions to air is continually examined.

4.3.10 The licensee shall ensure that appropriate provisions are in place for the protection of the environment in the case of accident or in the event of plant closure.

The Agency requested that the company undertakes a Closure Restoration Aftercare Management Plan (CRAMP) to ensure that appropriate plans and Financial Provisions (FP) are in place for the protection of the environment in the event of plant closure. This project began in 2009 and was facilitated by an external environmental consultancy company. Following the new guidance from the Agency (2014), a full review of the report was carried out. Reviewing and updating the CRAMP and FP will be an ongoing annual project, the findings of which will be presented annually in the AER. The company are currently reviewing their options for allocating the financial provisions from this CRAMP and will inform the Agency in due course.

4.3.11 The licensee shall ensure that appropriate provisions are made for fire water retention.

Condition 10.2 of the Licence requires that company undertakes an assessment to determine if the activity should have a fire-water retention facility. This was undertaken during 1999 and a report was issued outlining the findings of this risk assessment. During 2015 this report was revised and updated by an external consultant to ensure that appropriate provisions are made for fire water retention. The revised report concludes that there are no major changes to the fire water retention requirements onsite.

4.3.12 The licensee shall ensure that an emergency response procedure is in place which shall address any emergency situation which may originate on-site.

Condition 13.1 of the Licence requires that company establishes emergency response procedures for minimising the effect of any emergency on the environment. Emergency procedures have been established for the site. During a 2018 site visit, the EPA requested that this document be updated with current guidance. This will be completed during 2019.

5. Environmental Management Program - Report

An Environmental Management Program proposal for 2018 was submitted as part of the 2017 Annual Environmental Report. The projects to be undertaken as part of this program were as follows.

Environmental Management Program 2018

| | |
|----------------------|--|
| Project No. 1 | Continue the environmental working committee meetings |
| Project No. 2 | Measure emissions to air from the boiler using ISO 17025 accredited contractor as required by the terms of the Integrated Pollution Control Licence |
| Project No. 3 | If the emissions from the boiler exceed the emission limit values then the reason for this will be investigated and a means sought to rectify the situation. |
| Project No. 4 | Assess the company's performance in keeping the TOC levels in the surface water discharges below the warning and action levels. |
| Project No. 5 | If the TOC levels in the surface water discharges have exceeded the warning and action levels the reasons for this will be investigated and means sought to rectify the situation. |
| Project No. 6 | Improve waste segregation and recycling in the office, lab and yard areas. |
| Project No. 7 | Review feedback from the environmental awareness training. |
| Project No. 8 | Review the Closure Restoration and Aftercare Management Plan. |
| Project No. 9 | Carry out integrity survey of all existing concrete bunds and storage areas. |

The following is an update of these projects:

Project No. 1

Continue the environmental working committee and quarterly environmental meetings.

The plant manager and external consultant met quarterly to discuss environmental issues such as; site inspections, EPA visits, IPC Licence requirements, environmental monitoring and to ensure that the IPC licence requirements were being complied with in full. The plant manager met regularly with representatives from the other areas within the company (lab/office/yard) to convey information to/from them at these meetings as appropriate. These meeting will continue during 2019.

Project No. 2

Measure emissions to air from the boiler as required by the terms of the Integrated Pollution Control Licence.

Air Scientific Ltd (INAB accreditation number 3191) were engaged to carry out the air emission monitoring on the Thermax boilers to fulfil the license requirement. The following emissions to air from the boiler were measured during 2018:

- * Oxides of Sulphur
- * Nitrogen Oxides
- * Carbon Monoxide
- * Flue Gas Volume

All of these emissions were well within the Licence Emission Limit Values.

Project No. 3

If the emissions from the boiler exceed the emission limit values then the reason for this will be investigated and a means sought to rectify the situation.

Since the emissions from the boilers were all below their respective emission limit values no further action was required on this project.

Project No. 4**Assess the company's performance in keeping the TOC levels in the surface water discharges below the warning and action levels.**

Samples of surface water were taken and analysed quarterly during 2018, after agreement with the Agency (letter Reference P0086-01/ak16mor dated 29th March 2010). The samples were sent to TelLab laboratories for analysis. The locations of the sampling points are shown in the figure in Appendix 2. A summary of the results are presented in Table 5.1 below.

Warning and Action levels for TOC were established in 1998 as follows.

| | |
|---------------|----------|
| Warning Level | 50 mg/l |
| Action Level | 100 mg/l |

These levels were not exceeded on any occasion during the year. This will continue to be monitored in 2018 to ensure that level remain below the warning and action levels.

Table 5.1**TOC Emissions from Interceptors**

| Quarter | Interceptor No 1 | Interceptor No 2 |
|----------------|------------------|------------------|
| | mg/l | mg/l |
| Quarter 1 | 4.8 | 30 |
| Quarter 2 | 19 | 5.1 |
| Quarter 3 | 2.4 | 2.4 |
| Quarter 4 | 6.0 | 2.1 |
| Average | 8.1 | 9.9 |
| Range | 2.4 - 19 | 2.1 - 30 |

Project No. 5

If the TOC levels in the surface water discharges have exceeded the warning and action levels the reasons for this will be investigated and means sought to rectify the situation.

All of the quarterly TOC results were below both these Warning and Action levels. The TOC levels will continue to be monitored over the coming year and reported in the 2019 AER.

Project No. 6

Improve waste segregation in the office, lab and yard areas.

Recyclable materials are segregated and removed by Thorntons Recycling (Waste Licence Number W0044-02). 9.5 tonnes of recycling material (cardboard, plastics, cans, polymer bags) were taken offsite by Thorntons Recycling during the period covered by this report. Metals are now collected onsite and removed by Thorntons Recycling. This commenced in November 2018. 2.3 tonnes of metal waste was taken offsite during the period covered by this report. Municipal material collected from the facility is processed through a mechanical and manual sorting process at Thornton's Recycling Centre, Killeen Road, Dublin 10. Here any materials which can be recovered and recycled, to markets available to us, are removed. The recovered fraction is now diverted from landfill by shredding and processing the material into a Solid Recovered Fuel (SRF), used as a fuel in Cement Manufacturing. Only material which we cannot recycle or recover at the facility is consigned to landfill. Irish Tar and Bitumen Suppliers will continue to monitor and amend the location, number and collection frequency of recycling bins during 2019 and will continue monitoring skips going offsite to improve recycling.

Project No. 7

Review feedback from the environmental awareness training.

Environmental awareness training was delivered to staff during Q1 of 2019. The seminar was very well received by staff and has made a visible improvement of the overall site. Staff reported a greater understanding of the IPC licence requirements and the potential impact of site activities on the environment.

Project No. 8

Review, revise and allocate resources for the Financial Provisions for the Closure Restoration and Aftercare Management Plan.

The Agency requested that the company undertakes a Closure Restoration Aftercare Management Plan (CRAMP) to ensure that appropriate plans and Financial Provisions (FP) are in place for the protection of the environment in the event of plant closure. The CRAMP document has been completed and will be reviewed annually. The most recent review was carried out during March 2019. The company are currently reviewing their options for allocating the FP from this CRAMP and will inform the Agency in due course.

Reviewing and updating the CRAMP and FP will be an ongoing project, the findings of which will be presented annually in the AER.

Project No. 9

Carry out integrity survey of all existing concrete bunds and storage areas.

Irish Tar & Bitumen Suppliers are required under condition 10.4 of their IPC licence to protect against contamination of ground and surface water. Condition 10.4.1 of the IPC licence requires the company to ensure that all storage tank and drum storage areas shall be rendered impervious to the materials stored therein. A visual examination of the integrity and water tightness of the concrete bunds was carried out during 2018. This examination was undertaken by a certified civil engineer (as agreed with the Agency). The records for these tests and examinations are on file within the 2018 environmental file.

6. Environmental Management Program

Proposal for 2019

Irish Tar & Bitumen Suppliers propose to undertake the following environmental projects during 2019.

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| Project No. 1 | Continue the environmental working committee meetings |
| Project No. 2 | Measure emissions to air from the boiler using ISO 17025 accredited contractor as required by the terms of the Integrated Pollution Control Licence |
| Project No. 3 | If the emissions from the boiler exceed the emission limit values then the reason for this will be investigated and a means sought to rectify the situation. |
| Project No. 4 | Assess the company's performance in keeping the TOC levels in the surface water discharges below the warning and action levels. |
| Project No. 5 | If the TOC levels in the surface water discharges have exceeded the warning and action levels the reasons for this will be investigated and means sought to rectify the situation. |
| Project No. 6 | Improve waste segregation and recycling in the office, lab and yard areas. |
| Project No. 7 | Submit the Closure Restoration and Aftercare Management Plan and Financial Provisions to the Agency |
| Project No. 8 | Complete the SEAI energy audit for the site |
| Project No. 9 | Review and update the Emergency Response Procedures |
| Project No. 10 | Assess if a catchment system is required to collect any leaks from flanges and valves of all over ground pipes used to transport material other than water. |
| Project No. 11 | Carryout an ambient noise survey as agreed with the Agency. |

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| Project No. 1 | Continue the environmental working committee meetings. |
| Relationship to Company's Objective and Targets | This project will help to ensure that the requirements of the IPC licence are being complied with in accordance with Objective 4.3.1. |
| Rationale for undertaking the Project: | Ensure that the IPC licence requirements are adhered to and that any additional EPA requirements/requests or other environmental matters are addressed. |
| Target to be Achieved by Project: | The project will help reduce the environmental impact of Irish Tar and Bitumen Suppliers and ensure that they are in compliance with their IPC licence. |
| Outline of Project: | The plant manager and external consultant will meet monthly and discuss environmental issues such as; site inspections, EPA visits, IPC Licence requirements, environmental monitoring and other such environmental matters. This has been increased from bi-monthly to monthly to ensure compliance with licence conditions and EPA requirements. |
| Designation of Responsibility: | The Plant manager and outside environmental consultants will be responsible for carrying out this project. |
| Project Schedule: | The project will be ongoing and will be reported annually. |

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| <p>Project No. 2</p> | <p>Measure emissions to air from the boiler as required by the terms of the Integrated Pollution Control Licence.</p> |
| <p>Relationship to Company's Objective and Targets</p> | <p>This project will help to ensure that the requirements of the IPC licence are being complied with in accordance with Objective 4.3.1</p> |
| <p>Rationale for undertaking the Project:</p> | <p>Condition 5 of the IPC licence requires the company to ensure that no specified emission to atmosphere shall exceed the emission limit value set in <i>Schedule (i) Emissions to Atmosphere</i> of the licence.</p> |
| <p>Target to be Achieved by Project:</p> | <p>The project will achieve compliance with the requirements of <i>Schedule (ii) Monitoring Emissions to Atmosphere</i> of the IPC licence.</p> |
| <p>Outline of Project:</p> | <p>An ISO 17025 accredited contractor have been employed to carryout this monitoring (Air Scientific Ltd. INAB accreditation number: INAB319T). The monitoring will be carried out during a period when there is continuous demand on the boiler.</p> |
| <p>Designation of Responsibility:</p> | <p>The Plant manager and outside environmental consultant will be responsible for carrying out this project.</p> |
| <p>Project Schedule:</p> | <p>The work will be carried during the year 2019 and reported in the 2019 AER.</p> |

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| <p>Project No. 3</p> | <p>If the emissions from the boiler exceed the emission limit values then the reason for this will be investigated and a means sought to rectify the situation.</p> |
| <p>Relationship to Company's Objective and Targets</p> | <p>This project will help to ensure that the requirements of the IPC licence are being complied with in accordance with Objective 4.3.1</p> |
| <p>Rationale for undertaking the Project:</p> | <p>Condition 5 of the IPC licence requires the company to ensure that no specified emission to atmosphere shall exceed the emission limit value set in <i>Schedule 1 (i) Emissions to Atmosphere</i> of the licence.</p> |
| <p>Target to be Achieved by Project:</p> | <p>The project will achieve compliance with the requirements of <i>Schedule 1 (ii) Monitoring Emissions to Atmosphere</i> of the IPC.</p> |
| <p>Outline of Project:</p> | <p>If the emissions from the boiler exceed the emission limit values then the reason for this will be investigated and a means sought to rectify the situation.</p> |
| <p>Designation of Responsibility:</p> | <p>The Plant manager will be responsible for carrying out this project.</p> |
| <p>Project Schedule:</p> | <p>The work will be carried during the year 2019 and reported in the 2019 AER.</p> |

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| <p>Project No. 4</p> | <p>Assess the company's performance in keeping the TOC levels in the surface water discharges below the warning and action levels.</p> |
| <p>Relationship to Company's Objective and Targets</p> | <p>This project will help to ensure that the requirements of the IPC licence are being complied with in accordance with Objective 4.3.3.</p> |
| <p>Rationale for undertaking the Project:</p> | <p>Condition 10.1.2 of the IPC licence requires the company to determine the normal levels of TOC for uncontaminated surface water and to set warning and action levels for the company's surface water discharge.</p> |
| <p>Target to be Achieved by Project:</p> | <p>The project will achieve compliance with condition 10.1 of the IPC licence and will help to prevent environmental pollution.</p> |
| <p>Outline of Project:</p> | <p>A review of the results of the quarterly analysis for TOC of the surface water will be carried out and they will be compared to the established warning and action levels.</p> |
| <p>Designation of Responsibility:</p> | <p>The Plant manager and outside environmental consultants will be responsible for carrying out this project.</p> |
| <p>Project Schedule:</p> | <p>The work will be carried during the year 2019 and reported in the 2019 AER.</p> |

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| <p>Project No. 5</p> | <p>If the TOC levels in the surface water discharges have exceeded the warning and action levels the reasons for this will be investigated and means sought to rectify the situation.</p> |
| <p>Relationship to Company's Objective and Targets</p> | <p>This project will help to ensure that the requirements of the IPC licence are being complied with in accordance with Objective 4.3.3.</p> |
| <p>Rationale for undertaking the Project:</p> | <p>Condition 10.1.4 of the IPC licence requires the company to carry out an investigation to identify and isolate the source of contamination.</p> |
| <p>Target to be Achieved by Project:</p> | <p>The project will achieve compliance with condition 10.1.4. of the IPC licence and will help to prevent environmental pollution.</p> |
| <p>Outline of Project:</p> | <p>Immediately when/if a result of the TOC content of the surface water is found to exceed the warning level a further sample will be taken and analysed. If a result exceeds the action level the surface water discharge will be closed off until the source of contamination is established and rectified.</p> |
| <p>Designation of Responsibility:</p> | <p>The Plant manager will be responsible for carrying out this project.</p> |
| <p>Project Schedule:</p> | <p>The work will be carried during the year 2019 and reported in the 2019 AER.</p> |

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| Project No. 6 | Improve waste segregation and recycling in the office, lab and yard areas. |
| Relationship to Company's Objective and Targets | Objective 4.3.7 of the company's Objectives and Targets requires an assessment of waste produced on site and identify any which can be recovered, re-used or recycled. |
| Rationale for undertaking the Project: | Condition 8 and Schedule 2 of the IPC licence defines the companies obligations in its handling of waste produced on site. The company is committed to maximising the percentage of waste going for recycling. |
| Target to be Achieved by Project: | Recover, re-use and recycle the maximum amount of mixed waste to reduce the quantity of waste going to landfill. |
| Outline of Project: | The company continues to examine its waste streams to maximise its contribution to recycling and minimise waste produced. Additional large and small Thorntons recycling bins were strategically placed around the yard. A metals recycling bin was introduced during 2018 into the yard area. An area in the north/west corner of the site has been developed as a recycling area. This has proved successful as it is easily accessed and dedicated for recycling. Thorntons recycling are also removing skip waste offsite, a large percentage of which is diverted from landfill by shredding and processing the material into a Solid Recovered Fuel (SRF). The skips will continue to be examined to identify any further recycling opportunities. |
| Designation of Responsibility: | The Plant manager will be responsible for carrying out this project. |
| Project Schedule: | This is an ongoing project. The project will continue during 2019 and the project progress will be reported in the 2019 AER. |

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| <p>Project No. 7</p> | <p>Submit the Closure Restoration and Aftercare Management Plan and Financial Provisions to the Agency</p> |
| <p>Relationship to Company's Objective and Targets</p> | <p>This project will help to ensure that the requirements of the IPC licence are being complied with in accordance with Objective 4.3.10.</p> |
| <p>Rationale for undertaking the Project:</p> | <p>The Agency requested that the company undertakes a Closure Restoration Aftercare Management Plan with appropriate Financial Provisions to ensure that appropriate provisions are in place for the protection of the environment in the event of plant closure. This document should be approved by the Agency.</p> |
| <p>Target to be Achieved by Project:</p> | <p>Submit CRAMP for approval to the Agency.</p> |
| <p>Outline of Project:</p> | <p>The Agency requested that the company undertakes a Closure Restoration Aftercare Management Plan (CRAMP) to ensure that appropriate plans and Financial Provisions (FP) are in place for the protection of the environment in the event of plant closure. The CRAMP document has been completed and will be reviewed annually. The most recent review was carried out during March 2019. The company are currently reviewing their options for allocating the financial provisions from this CRAMP and will inform the Agency in due course.</p> |
| <p>Designation of Responsibility:</p> | <p>The Plant manager will be responsible for carrying out this project.</p> |
| <p>Project Schedule:</p> | <p>The project will be carried out during 2019 and reported in the 2019 AER.</p> |

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| Project No. 8 | Complete the SEAI energy audit for the site. |
| Relationship to Company's Objective and Targets | This project will help to achieve Objective 4.3.8. |
| Rationale for undertaking the Project: | Energy is a vital resource not to be wasted. An energy audit will identify areas/processes where energy may be conserved. |
| Target to be Achieved by Project: | Identify areas/processes where energy is being wasted and implement measures to conserve energy. |
| Outline of Project: | SEAI are been employed to undertake the audit. On completion of the project, a report detailing areas/process where energy can be conserved will be presented to ITBS. A program based on the findings will be drawn up. |
| Designation of Responsibility: | The SEAI and the Plant manager will be responsible for carrying out this project. |
| Project Schedule: | The work will be carried during the year 2019 and finding recorded in the 2019 AER. |

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| <p>Project No. 9</p> | <p>Review and update the Emergency Response Procedures</p> |
| <p>Relationship to Company's Objective and Targets</p> | <p>This project will help to achieve the aims of Objective 4.3.12</p> |
| <p>Rationale for undertaking the Project:</p> | <p>Condition 13.1 of the Licence requires that company establishes emergency response procedures for minimising the effect of any emergency on the environment. Emergency procedures have been established for the site. During a 2018 site visit, the EPA requested that this document be updated with current guidance.</p> |
| <p>Target to be Achieved by Project:</p> | <p>Update the current Emergency Response Procedures in accordance with current guidance.</p> |
| <p>Outline of Project:</p> | <p>The Emergency Response Procedure will be reviewed and updated in accordance with current guidance.</p> |
| <p>Designation of Responsibility:</p> | <p>The Plant manager will be responsible for carrying out this project.</p> |
| <p>Project Schedule:</p> | <p>The project will be completed during 2019.</p> |

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| <p>Project No. 10</p> | <p>Assess if a catchment system is required to collect any leaks from flanges and valves of all over ground pipes used to transport material other than water.</p> |
| <p>Relationship to Company's Objective and Targets</p> | <p>Condition 10.4.7 of the company's IPC licence requires that the provision of a catchment system to collect any leaks from flanges and valves of all over ground pipes used to transport material other than water be examined. This project will help to ensure that the requirements of the IPC licence are being complied with in accordance with Objective 4.3.5.</p> |
| <p>Rationale for undertaking the Project:</p> | <p>The Agency requires the company to reassess the situation on a biennial basis.</p> |
| <p>Target to be Achieved by Project:</p> | <p>Assess if a catchment system is required to collect any leaks from flanges and valves of all over ground pipes used to transport material other than water.</p> |
| <p>Outline of Project:</p> | <p>Examine the inspection records to date and based on this determine if a catchment system is required.</p> |
| <p>Designation of Responsibility:</p> | <p>The Production Co-ordinator will be responsible for carrying out this project.</p> |
| <p>Project Schedule:</p> | <p>This project will be carried out during 2019, the results of which will be presented in the 2019 AER.</p> |

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| Project No. 11 | Carryout an ambient noise survey as agreed with the Agency. |
| Relationship to Company's Objective and Targets | This project will help to ensure that the requirements of the IPC licence are being complied with in accordance with Objective 4.3.1 |
| Rationale for undertaking the Project: | Based on the results from several annual noise surveys it was agreed with the Agency that further noise surveys will be carried out at five yearly intervals. A survey is due during the coming year. |
| Target to be Achieved by Project: | The project will satisfy the requirements of the Agency to carry out an ambient noise survey once every five years and will demonstrate compliance with Condition 3.3 of the company's IPC Licence. |
| Outline of Project: | An environmental noise survey will be carried out in accordance with the company's IPC licence and the EPA Noise Guidance Note. |
| Designation of Responsibility: | The Plant Manager and outside environmental consultants will be responsible for carrying out this project. |
| Project Schedule: | The project will be completed by the end of 2019 and will be reported in the AER for 2019. |

Appendix 1

Location of Plant and Plant Layout

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Figure 2 – Site Plan

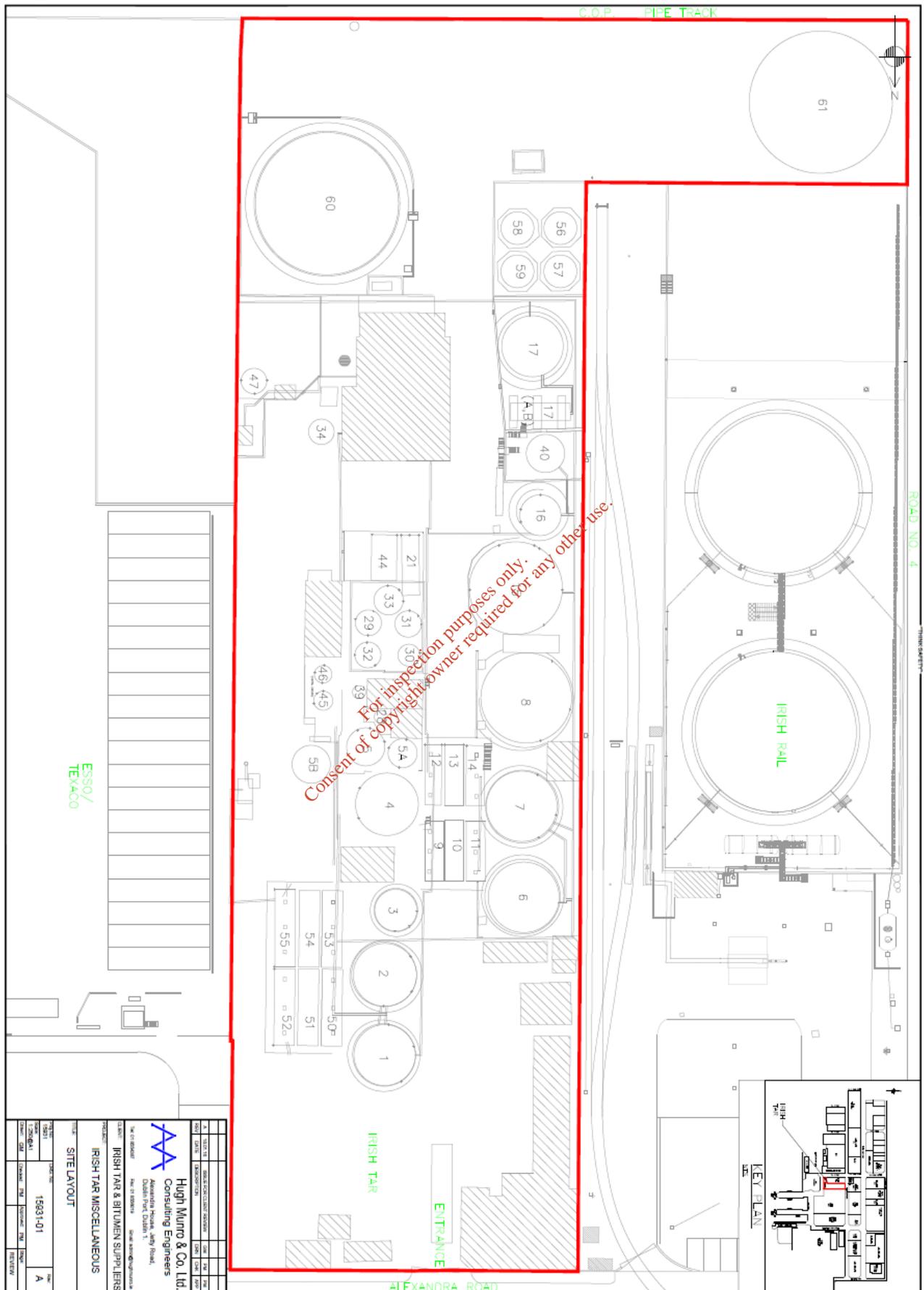


Figure 1 - Location of Irish Tar and Bitumen Suppliers

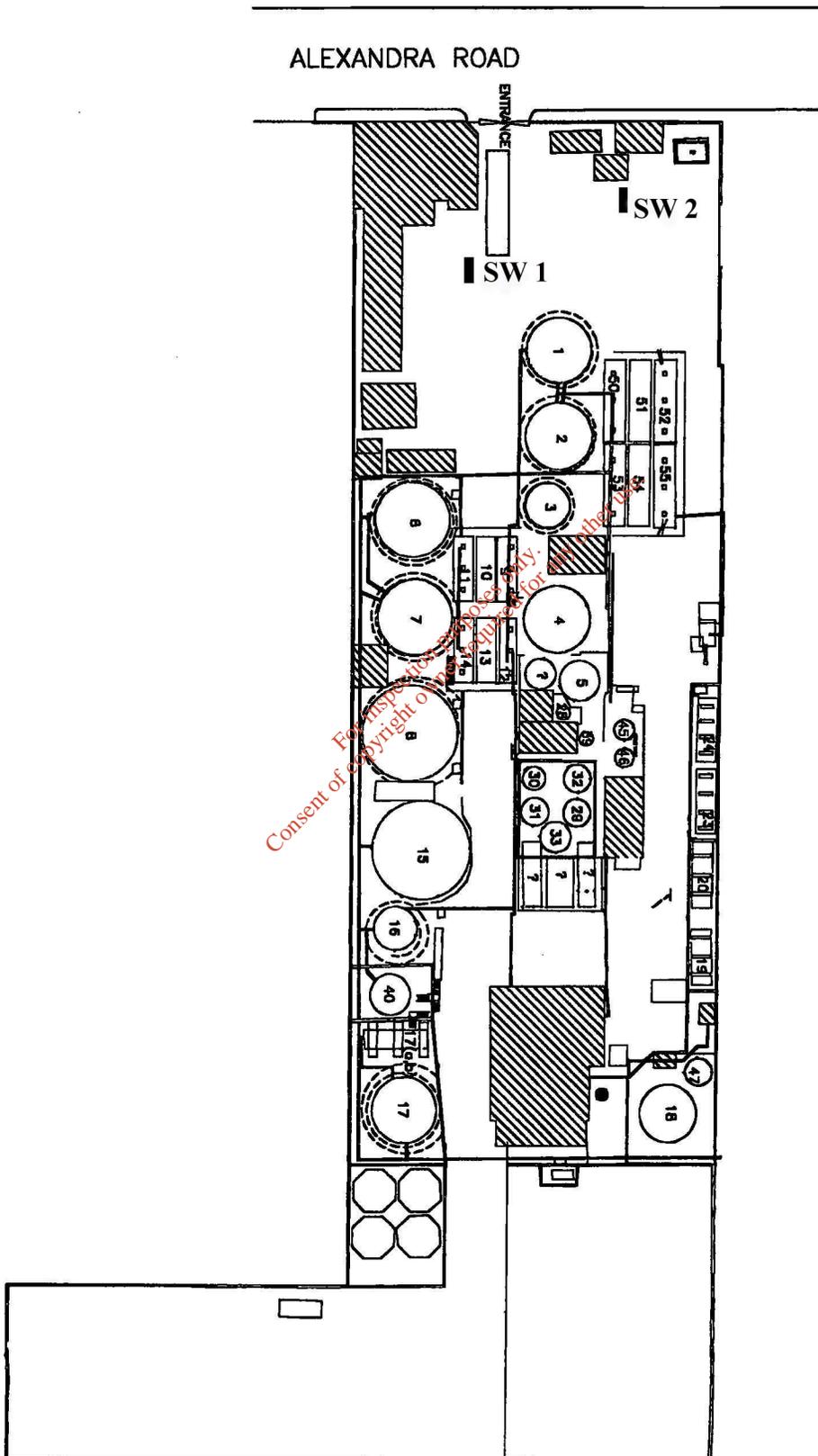


Appendix 2

Surface Water Sampling Locations

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Surface Water Sampling Locations



PLAN OF IRISH TAR AND BITUMEN SUPPLIERS LTD. TANK FARM

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Appendix 3

Ground Water Well Locations

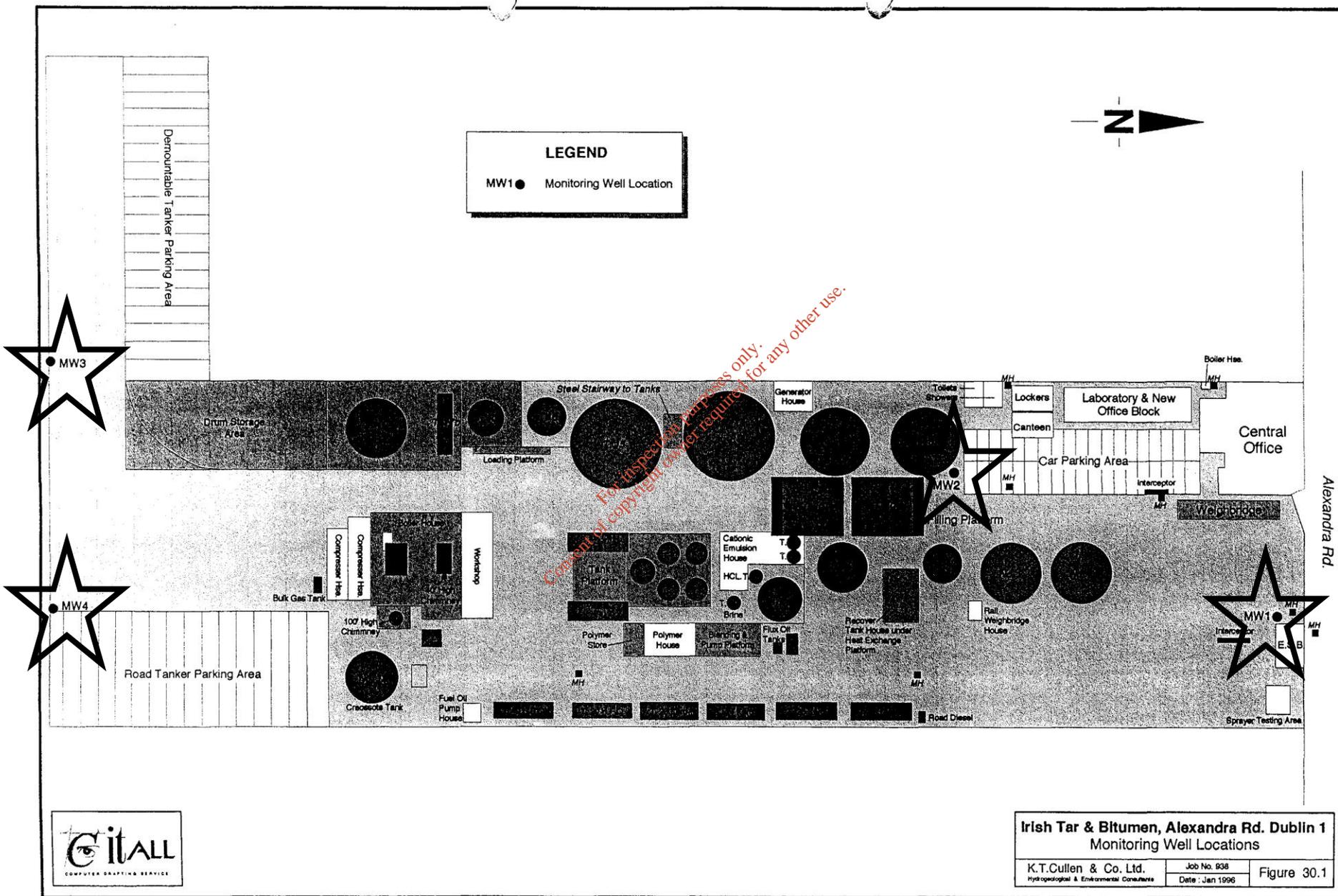
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LEGEND

MW1 ● Monitoring Well Location

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Irish Tar & Bitumen, Alexandra Rd. Dublin 1
Monitoring Well Locations

| | | |
|--|-------------------------------|-------------|
| K.T.Cullen & Co. Ltd. Hydrogeological & Environmental Consultants | Job No. 938 Date: Jan 1996 | Figure 30.1 |
|--|-------------------------------|-------------|

Appendix 4

Bund Locations and Integrity Testing Summary

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Irish Tar and Bitumen Suppliers

| Bund ID Number | Location | Description | Test Date | Test Type | Pass/Fail |
|------------------|--------------------------------------|-----------------------------|---------------|--|-----------|
| Bund-CC-1 | Boundary with container yard | Part of IBC storage cabinet | January 2017 | Hydrostatic Test | Pass 2017 |
| Bund-CC-2 | Beside Tank 60 | Part of IBC storage cabinet | January 2017 | Hydrostatic Test | Pass 2017 |
| Bund-CC-3 | Boundary with container yard | Part of IBC storage cabinet | January 2017 | Hydrostatic Test | Pass 2017 |
| Bund-CC-4 | North/West corner of the yard | Part of IBC storage cabinet | January 2017 | Hydrostatic Test | Pass 2017 |
| Bund-CC-5 | North/West corner of the yard | Part of IBC storage cabinet | January 2017 | Hydrostatic Test | Pass 2017 |
| PB-001 | CAT-Plant | Steel, portable | May 2017 | Hydrostatic Test | Pass 2017 |
| PB-002 | Hopper House | MDPE, portable | May 2018 | Hydrostatic Test | Pass 2018 |
| PB-003 | Polymer Plant | MDPE, portable | May 2017 | Hydrostatic Test | Pass 2017 |
| PB-004 | Back Yard | MDPE, portable | May 2018 | Hydrostatic Test | Pass 2018 |
| Bund-YB-1 | Centre site, beside CAT plant | Concrete Bund | November 2018 | Assessment of integrity and water tightness of bund based on detailed visual inspection/ survey only | Pass 2018 |
| Bund-YB-2 | South/East of site, opposite Tank 60 | Concrete Bund | November 2018 | Assessment of integrity and water tightness of bund based on detailed visual inspection/ survey only | Pass 2018 |
| Bund-YB-3 | Adjacent to Tank 60 | Concrete Bund | November 2018 | Assessment of integrity and water tightness of bund based on detailed visual inspection/ survey only | Pass 2018 |
| Bund-YB-4 | Spray Bar | Concrete Bund | November 2018 | Assessment of integrity and water tightness of bund based on detailed visual inspection/ survey only | Pass 2018 |