

Rehab Glassco Ltd.

**ATTACHMENTS DOCUMENT - Waste Licence
Review Application for Glass and Can
Recycling Facility at Osberstown, Naas, Co.
Kildare (EPA Licence W0279-01)**

February 2015

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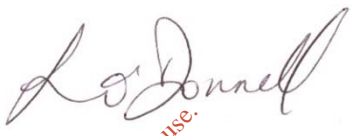


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| Client Name: | Rehab Glassco Ltd. |
| Client Address: | Unit 4, Osberstown Industrial Park, Caragh Road, Naas, Co. Kildare |
| Report Title: | ATTACHMENTS DOCUMENT - Waste Licence Review Application for Glass and Can Recycling Facility at Osberstown, Naas, Co. Kildare (EPA Licence W0279-01) |
| Project Code: | RG0204 |

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**Attachment A:
Non-technical Summary**

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Attachment A: Non-technical Summary (NTS)

A.a NTS: Contents

- A.a.1 This non-technical summary (NTS) comprises the following:
- A.a: Contents
 - A.b to A.l: Non-technical summary of each glass section of the Waste Licence Review Application
 - A.m: Selected Waste Licence Review Application drawings to accompany the non-technical summary, to identify and describe the activity.

A.b NTS: Section B - General

- A.b.1 This Waste Licence Review Application is being made by Rehab Glassco Ltd. (also referred to as 'Rehab Glassco' hereinafter) for a glass and can recycling facility at Unit 4, Osberstown Industrial Park, Caragh Road, Naas, Co. Kildare, Ireland. The facility operates under Waste Licence register number W0279-01, issued by Environmental Protection Agency (also referred to as 'The Agency' hereinafter) on the 10th December 2014¹.
- A.b.2 The Agency directed (correspondence dated 10th December 2014) Rehab Glassco to apply for a Waste Licence Review for the facility, to address a new air emission point located at a new extension to the Main Process building. The Agency has advised that Waste Licence W0279-01 does not authorise the operation of this new emission point, and that a review of the waste licence is therefore required to regularise this new emission point.
- A.b.3 The new air emission point is associated with the operation of a new fines processing line, installed to sort rejected glass from the existing main glass processing plant. The new fines processing line consists of a direct fired rotary dryer (capacity to process 10 tonnes/hr), feed conveyors, screens and an extraction system. The extraction system consists of associated exhaust pipework, a dust cyclone, followed by a reverse jet bag filter. Air movement is controlled by a centrifugal fan with discharge to atmosphere through the new air emission point.
- A.b.4 The extension to the glass recycling plant (Main Process building) was granted planning permission by Kildare County Council on 10th November 2014 (Planning Register No. 14/579).
- A.b.5 The Waste Licence Review application has been prepared by Patel Tonra Ltd., Environmental Solutions on behalf of Rehab Glassco.
- A.b.6 A copy of the newspaper page containing the Waste Licence Review Application advertisement is attached with this application. A site notice is affixed adjacent to the facility entrance.

¹ Previously operated under Waste Facility Permit, ref. WFP-KE-08-0357-01

Type of Waste Activity

- A.b.7 In accordance with the Third and Fourth Schedules to the Waste Management Act 1996, as amended, the principal waste activity is Fourth Schedule, Recovery Operations, Class **R 5**: *Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials*. This activity at Rehab Glassco relates to the separation and recycling of glass.
- A.b.8 Metals are also recovered at the facility (e.g. drinks cans, food tins); therefore Fourth Schedule, Recovery Operations, Class **R 4**: *Recycling/reclamation of metals and metal compounds*, is relevant.
- A.b.9 In relation to the operation of the Drying Plant at Rehab Glassco, the following class of activity is relevant: **R 12**: *Exchange of waste for submission to any of the operations numbered R 1 to R 11 (if there is no other R code appropriate, this can include preliminary operations prior to recovery including pre-processing such as, amongst others, dismantling, sorting, crushing, compacting, pelletising, drying, shredding, conditioning, repackaging, separating, blending or mixing prior to submission to any of the operations numbered R1 to R11)*.
- A.b.10 Small amounts of residual material will be temporarily stored on-site pending off-site recovery or disposal at an appropriately licensed/permitted waste facility; therefore the following classes are relevant:
- Third Schedule, Disposal Operations, Class **D 15**: *Storage pending any of the operations numbered D 1 to D 14 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced)*.
 - Fourth Schedule, Recovery Operations, Class **R 13**: *Storage of waste pending any of the operations numbered R 1 to R 12 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced)*.
- A.b.11 The licensed activities are as per Part 1 of EPA Licence W0279-01; no changes are proposed as part of this Waste Licence Review application.
- A.b.12 The Control of Major Accident Hazards involving Dangerous Substances Regulations do not apply to this activity.

A.c NTS: Section C - Management of the Facility

- A.c.1 Rehab Glassco offers unparalleled experience in glass collection and recycling services in Ireland. The site has been an operational glass recycling facility since 2008, initially regulated under a Waste Facility Permit from Kildare County Council and, from December 2014, under EPA Waste Licence No. W0279-01. Prior to the formation of Rehab Glassco in December 2009, Glassco Recycling Ltd. operated in the glass recycling sector for 11 years, and Rehab Recycle operated in the glass recycling sector for 15 years.
- A.c.2 An organisational chart for the facility is included in Attachment C.
- A.c.3 Rehab Glassco Ltd. achieved certification of its Environmental Management System to the International Standard I.S. EN ISO 14001:2004 in January 2015. A copy of the certificate is included in Attachment C.

Hours of Operation

- A.c.4 The hours of operation are as per the existing Waste Licence W0279-01 (condition 3.12); no changes are proposed as part of this Waste Licence Review application.
- A.c.5 The general hours of operation are: 24-hours, Monday to Friday inclusive and 07:00 to 23:00 Saturday. The hours of operation of the Drying Plant are 07:00 to 19:00 Monday to Saturday inclusive.
- A.c.6 The hours of waste acceptance/dispatch are: 07:00 to 19:00 Monday to Saturday inclusive.
- A.c.7 It is not anticipated that the facility would operate outside of these hours, however, during exceptional busy periods for glass recycling in line with public/customer demand (e.g. festive periods) or for any other operational emergencies, Rehab Glassco may seek permission from the Agency to extended these hours on a temporary period.
- A.c.8 No construction/development works are proposed as part of this application.
- A.c.9 No other relevant hours of operation are anticipated.

A.d NTS: Section D - Infrastructure & Operation

- A.d.1 The facility has a range of infrastructural works consistent with the requirements of the Waste Licence issued by the Agency (W0279-01). Site infrastructure is shown on Drawing **WLR-04**.

Site security arrangements including gates and fencing

- A.d.2 Site security gates and fencing are in place at the site. The site currently operates a CCTV security system. The site is manned overnight for operational purposes and site personnel are available to deal with any emergencies and or security breaches. All site buildings are lockable.

Designs for site roads

- A.d.3 The site is located within the existing Osberstown Industrial Park, Naas, Co. Kildare, which has a well-developed road network. Traffic movement is controlled by a designated one-way system on site.

Design of hardstanding areas

- A.d.4 The site is overlaid by concrete hardstanding, with the exception of a designated wayleave 20m in width along the northern site boundary, which is dedicated for the Newbridge rising main.

Plant

- A.d.5 The primary items of plant relate to: (i) the Main Process Building, including the new fines processing line (located in a new extension to the Main Process building), and (ii) Drying Plant. No additional plant is proposed for the purposes of this Waste Licence Review Application. The Main Process Building includes the following plant and equipment:

- Screens
- Crushers
- Magnetic separation units
- Eddy current separators

- Air classifiers
- Optical sorting equipment
- Conveyor systems
- Rotary dryer
- Extraction system (cyclone, bag filter-house, centrifugal fan, exhaust pipework)
- Process control system
- Fire detection and alarm system

A.d.6 The new fines processing line (located in a new extension to the Main Process building), which deals with reject glass fractions between 3-8mm in the Main Process, consists of a direct-fired rotary dryer (capacity to process 10 tonnes/hour), feed conveyors, screens and an extraction system. The extraction system consists of associated exhaust pipework, a dust cyclone, followed by a reverse jet bag filter. Air movement is controlled by a centrifugal fan with discharge to atmosphere.

A.d.7 The Drying Plant building houses a rotating drying unit, with associated conveyor, bagging and ancillary equipment.

A.d.8 There is currently a single weighbridge on site, which will be maintained for ongoing use. The weighbridge software is of bespoke design, commissioned by Rehab Glassco to meet their specific business requirements.

Wheelwash

A.d.9 A wheel-cleaning system and a truck wash facility is currently in place on site. Vehicle washing and wheelwash facilities are provided using a power-washing system on site, if required; however, the majority of vehicles which enter/exit the site arrive on the public road network onto a fully concreted site and the risk of carrying mud/dirt off-site is insignificant.

Laboratory facilities

A.d.10 No on-site laboratory for environmental analysis is proposed. Any samples collected as part of the environmental monitoring programme will be analysed by an independent accredited laboratory. There is currently a quality control laboratory on site for the control of the processed glass cullet product.

Design and location of fuel storage areas

A.d.11 There are currently two fuel storage tanks on site (see Drawing **WLR-04**): Tank#1 is a 10,000-litre capacity diesel storage tank, located at the Vehicle Maintenance building; Tank#2 is a 2,500-litre capacity diesel storage tank, located adjacent to the Drying Plant. Tank#1 is used for truck refuelling and Tank#2 to fuel site machinery.

A.d.12 Both tanks are bunded/double skinned.

A.d.13 There is a gas storage tank in the north of the site. The dimensions of the tank are approximately 7.4m long x 3.8, diameter.

A.d.14 The garage building is equipped with spill control equipment, drip trays and bunded pallets. This equipment will be maintained on site and replaced as necessary.

Waste Quarantine and Inspection Areas

A.d.15 There is an established waste inspection and quarantine procedure in place at the facility.

Traffic Control

A.d.16 There is a one-way traffic management system in place on site, as indicated by directional signage. All incoming and outgoing vehicles must report to the weighbridge. All drivers are required to drive with due consideration for site safety. There are designated parking areas on site.

Sewage and Surface Water Drainage Infrastructure

A.d.17 A purpose-designed surface water management system has been installed at the facility, to include an engineered surface water drainage network, a silt trap and 2 No. interceptors. A silt trap is installed at the vehicle washing area on the southern site boundary.

All other services

A.d.18 Electricity is supplied to the facility by a sub-station on site supplying 1,000 KVA. The site is fully equipped with a modern telecommunications system, including broadband, internet access, email, telephone and fax.

Plant sheds, garages and equipment compound

A.d.19 In addition to the Main Process Building and the Drying Plant, there is an on-site garage building used for the purpose of standard vehicle maintenance for Rehab Glassco vehicles.

Site Accommodation

A.d.20 Site offices, including the weighbridge office, are contained within the Main Process Building.

Fire Control System, including water supply

A.d.21 A fire detection and alarm system is installed at the premises.

Facility Operation

A.d.22 There are two unit operations on site: (i) main glass/can processing, including the new fines processing line, and (ii) drying plant operation, which are further described in Attachment **D.2**.

A.e NTS: Section E - Emissions

Emissions to Atmosphere

A.e.1 There are two air emission point sources: the source of emission point 'A1' relates to the drying unit in the Drying Plant building; the source of emission point 'A2' is associated with the operation of a new fines processing line installed to sort rejected glass from the existing main glass processing plant. There are potential fugitive emissions to air from dust and vehicle emissions; however management and control procedures are implemented to mitigate against such impacts.

Emissions to Surface Waters

A.e.2 There are 2 No. points of discharge to surface water: emission point SW1 relates to emissions from Interceptor#1 in the eastern portion of the site; emission point SW2 relates to emissions from Interceptor#2 in the western portion of the site. Both SW1 and SW2 discharge to the storm culvert, which runs adjacent to the north-eastern site boundary.

Emissions to Sewers

A.e.3 Toilet and washing facilities from the Office/Administration building are the only emissions to sewer.

Emissions to Groundwater

A.e.4 There will be no direct discharges to groundwater or any groundwater abstractions as part of the development.

Noise Emissions

A.e.5 Potential noise emissions are associated with plant and equipment, vehicle movements and loading/unloading operations.

Environmental Nuisances

Bird Control

A.e.6 To prevent birds from removing glass and tin foil from the facility and depositing material off-site, a bird management programme has been designed and implemented at the site by a commercial operator/expert.

Dust Control

A.e.7 Dust mitigation measures are detailed in **Attachment I.1**.

Fire Control

A.e.8 Emergency response procedures will be prepared and submitted to the EPA as part of the Environmental Management Programme.

Litter Control

A.e.9 Windblown litter impacts are not generally anticipated due to the nature of the materials accepted, i.e. glass, cans, etc.; however good housekeeping practices have been implemented, as well as routine site inspections to mitigate against this occurring. Litter-picks are conducted around the facility, as required.

Traffic

A.e.10 Access to the site will be controlled; the general public does not have access to the facility. There are designated staff, visitor and truck parking areas. On-site traffic flow patterns/routes, based on a one-way system, are specified. No traffic queuing is permitted outside the facility.

Vermin Control

A.e.11 Rehab Glassco retains the services of a pest control contractor and bait boxes are in place at a number of locations on site.

Road-cleaning

A.e.12 Internal site roads are cleaned and swept when necessary using a brushing/sweeping attachment when required. External estate roads are cleaned using a road sweeper, once per month, or more frequently, if required.

A.f NTS: Section F - Control & Monitoring

Treatment, Abatement and Control Systems

A.f.1 There are a number of air emissions abatement/control systems in operation at the Drying Plant, which are described in the following sections:

- Emissions abatement system from the glass drying operation

- Dust extraction system related to the processing of glass in the Drying Plant building
- Misting system at entrance to Drying Plant building
- Vacuum system in Drying Plant building
- Containment of product/material

A.f.2 A new air emission point, A2, is associated with the operation of a new fines processing line installed to sort rejected glass from the existing main glass processing plant. A baghouse filtration system combined with a cyclone is in place at the end of the fines processing line. The air emissions abatement/ extraction system consists of associated exhaust pipework, a dust cyclone, followed by a reverse jet bag filter. Air movement is controlled by a centrifugal fan with discharge to atmosphere through the new air emission point.

A.f.3 2 No. swivel-head arc 'rain guns' have been installed at the Main Process building. The rain guns are capable of reaching a distance of 30m and are positioned at the front of building.

A.f.4 A fire detection and alarm system is installed at the premises.

A.f.5 A purpose-designed surface water management system has been installed at the facility.

Air Monitoring and Sampling Points

A.f.6 Point-source air emissions monitoring is proposed at 2 No. emission points.

A.f.7 Dust monitoring is proposed at 3 No. locations.

Surface Water Monitoring and Sampling Points

A.f.8 2 No. surface water emission monitoring points are proposed.

Noise Monitoring and Sampling Points

A.f.9 Annual noise monitoring is proposed at the nearest residential noise sensitive receptor.

A.g NTS: Section G - Resources Use & Energy Efficiency

A.g.1 The input material to the facility is glass and cans. Input glass may be colour-segregated or mixed-colour. Material is subject to a range of sorting/processing techniques. There is no washing of material. No chemicals/additives are applied. The process aims to maximise the recovery of glass and cans.

A.g.2 All office space heating is powered by electricity (storage heaters). Diesel is stored in 2 No. on-site tanks; there is 1 No. gas tank. Oils, lubricants, etc. associated with vehicle maintenance and garaging activities are stored in the Garage Building. Water is used for drinking water and sanitary purposes.

A.g.3 Rehab Glassco has invested in state-of-the-art sorting equipment for its plant at Osberstown. The equipment was procured with due regard for energy efficiency specifications. The main switch room is fitted with power factor correction which regulates power supply to the facility to maximise efficiency and minimise any losses.

- A.g.4 Energy use is monitored and measured and opportunities for improved energy performance are examined on an ongoing basis. Records of resource and energy use will be maintained on site and reported to the EPA as required.

A.h NTS: Section H - Materials Handling

Waste Types and Quantities

- A.h.1 Rehab Glassco offers a nationwide collection and recycling service for glass and cans. Materials are collected from pubs, hotels, restaurants, sports clubs, financial institutions, office blocks, apartments and housing developments, council bring sites, civic amenity centres, industrial units and waste companies.
- A.h.2 Glass products, bottles and jars and aluminium and steel cans are accepted for recycling at the Rehab Glassco facility.
- A.h.3 The facility has the capability of sorting mixed glass into colour-separated glass cullet.
- A.h.4 The Waste Licence Review Application seeks an input tonnage of up to 150,000 tonnes per annum – this is as per the existing licence W0279-01; no change is proposed.

Waste Acceptance Procedures

- A.h.5 Incoming loads are weighed in and full details recorded on the weighbridge software. The weighbridge operator directs the incoming vehicle to the appropriate storage bay for unloading. Waste sources and inputs to the Rehab Glassco facility are controlled. All waste loads arriving at the facility are tipped and visually inspected prior to processing. Any contaminated/unsuitable loads may be recorded as a 'rejected load' and returned to source or removed to an appropriately licensed/permitted site, with the Agency's consent.
- A.h.6 Any loads which may require to be further inspected or quarantined will be appropriately cordoned off in a storage bay pending further investigation and the material will be dealt with in the appropriate manner. Any smaller non-conforming items within an incoming loaded may be removed to the residual waste storage area or mobile hopper bins, pending removal off-site to an appropriately licensed/permitted facility.

Waste Handling

Main Process

- A.h.7 The Rehab Glassco glass processing and cleaning plant is a state-of-the-art facility, relying on proven technology which includes sophisticated optical technology, screening systems and air classification to separate various mixes and colours of glass-based material into furnace-ready clean cullet for remanufacture into glass products. The process also uses manual pre-sort and quality control techniques to separate out certain contaminants at the early stages of the process.
- A.h.8 A new fines processing line has been installed (in a new extension to the Main Process building) to sort rejected glass from the main process. Fine-fraction glass material (3-8mm) is scalped out from the main sorting and processing operation and introduced to the fines processing line.

Drying Plant

- A.h.9 The on-site Drying Plant is used to treat certain residual glass materials from the Main Process on site. The Drying Plant operation includes magnetic extraction, manual pre-sort, drying, screening, crushing and separation of the clean glass into various size fractions. Material is fed via a hopper and passes under an over-band magnet to a manual picking line. Acceptable material passes from the picking line to the rotating drying unit.
- A.h.10 The glass output from the drying unit is screened into the following fractions: >8mm fraction, which is transferred onwards to the main processing plant for re-processing; the 3mm-8mm fraction leaves the drying plant as finished cullet. The <3mm fraction is crushed to various grades of glass fines.

Material Storage

- A.h.11 There are a number of external storage areas at the facility, which are dedicated for the storage of specific input and output materials. Rehab Glassco employs a range of control/mitigation measures in relation to the storage of these materials, as detailed in Attachment **H.3**.

Waste Arisings

- A.h.12 Small amounts of residual waste arise from the Main Process and the Drying Plant operations. Residue consigned to landfill is minimised through the operation of the Drying Plant. Overall waste residue is estimated at approximately <1% of input, by weight.
- A.h.13 Non-process wastes generated at the facility include: general municipal-type waste, office paper waste and waste from garaging activities. Records of all wastes removed from site are retained by Rehab Glassco. Only appropriately licensed/permitted waste contractors and facilities are used.

Waste Recycling and Recovery

- A.h.14 The facility produces glass cullet, which is a market-ready raw material used to manufacture new glass products; this is known as 'closed-loop' recycling. The environmental benefits of closed-loop glass recycling are well documented, including substantial energy savings, with positive climate change implications, and avoiding the need for quarrying and related emissions associated with using virgin raw materials for glass manufacturing.
- A.h.15 The Rehab Glassco facility plays a critical role in the recycling and recovery of glass in the context of the Irish waste management sector. The operation of this facility makes a substantive contribution towards meeting Ireland's recycling and recovery targets for glass: it accounts for approximately 85% of the country's glass recycling.

A.i NTS: Section I - Existing Environment & Impact of the Facility

- A.i.1 A Remedial Environmental Impact Statement (REIS) prepared for the development (March 2013), and subsequent additional information submitted to the Planning Authority and the EPA (under the W0279-01 application), considered potential impacts on the air environment. Summary information is provided herein. Information has been updated to reflect the new air emission point at the extension to the Main Process building.

Assessment of atmospheric emissions

Road Traffic Air Impacts

- A.i.2 The subject facility does not result in significant additional traffic-derived emissions, and thus has not negatively impacted on the local air quality. No remedial or mitigation measures in relation to traffic emissions are proposed.

Dust

- A.i.3 It is anticipated that the facility will have an ongoing need for dust suppression and optimising management measures, as a result of the nature of the activity and on-site processes. Implementation of remedial/mitigation measures (detailed in Attachment **I.1**), combined with an ongoing monitoring regime, is considered important to manage the issue and demonstrate compliance.

Air Emissions

- A.i.4 There are 2 No. Point source emissions to air, from dust abatement systems located (i) at the Drying Plant and (ii) at the Main Process building extension (fines processing line).
- A.i.5 The abatement system at the Drying Plant will require ongoing management and optimisation. Ongoing monitoring is required, as detailed in Attachment **F**.
- A.i.6 Monitoring results indicate that, for the parameters tested, emissions at the Main Process building extension are in compliance with emission limits set under Waste Licence W0279-01. Ongoing monitoring is required, as detailed in Attachment **F**.

Odour

- A.i.7 Due to the inert nature of the material accepted at the Rehab Glassco facility, i.e. glass and cans, odour is not noted as a significant issue on site. No remedial or mitigation measures in relation to odour are required.

Assessment of impacts of surface water discharges on the receiving waters

- A.i.8 Surface water management infrastructure has been installed at the facility.
- A.i.9 Surface water emissions will be controlled at 2 No. discharge points only, via the site drainage system, 2 No. interceptors and silt trap at the vehicle washing/power-wash area. Drains, silt traps and interceptors are subject to ongoing inspection, cleaning and maintenance.
- A.i.10 Emissions to surface water at the discharge points will be sampled in accordance with regulatory requirements.
- A.i.11 It is proposed that a storm-water attenuation pond is constructed in the north-east of the site.
- A.i.12 There are 2 No. fuel storage tanks on site (see Attachment **D.1.g**). Both tanks are bunded/double skinned. A documented emergency response system is in place.

Assessment of impact on receiving sewer

- A.i.13 No significant wastewater impacts are anticipated.

Assessment of impact to groundwater and soils

- A.i.14 No significant impacts on soils or groundwater are anticipated.

Ground and/or groundwater contamination

A.i.15 There is no known ground and/or groundwater contamination, historical or current, on or under the site. Mitigation measures in relation to containment of fuel storage areas and the construction of a new storm-water attenuation pond are outlined in Attachment I.4. No significant residual impacts on soils, geology or groundwater, post-mitigation, are anticipated.

Noise Impact

A.i.16 No material is accepted into or removed from the facility between the hours of 19:00 and 07:00; therefore there is no related HGV noise at this time.

A.i.17 Continued restriction of operation of the Drying Plant to daytime hours only, i.e. 07:00 to 19:00 (the facility (except the Drying Plant) continues to operate on a 24-hour basis). There is no requirement to restrict operating hours of the new fines processing line (extension to the Main Process building) as the unit is contained within the Main Process building.

A.i.18 A noise barrier/screen was installed at the western site boundary (in proximity to the nearest residential neighbour) in January 2013.

A.i.19 Continued implementation of a plant and equipment maintenance procedure to minimise noise levels is recommended. Any new equipment acquired will conform to EU noise standards.

A.i.20 Continued monthly inspection of on-site plant and equipment. The maintenance inspections are documented and records retained on site. Any required corrective actions are identified, reported to the management team and actioned accordingly.

A.i.21 Any noise complaints will be recorded and investigated, with corrective actions identified, as appropriate.

A.i.22 Ongoing noise monitoring to be conducted in line with waste regulatory requirements (see Attachment F).

A.i.23 Residual noise impacts are anticipated to be within acceptable levels, post implementation of mitigation measures.

Assessment of Ecological Impacts & Mitigation Measures

A.i.24 The development is substantially complete so there will be no further direct impacts on ecology. In the past the impacts have been to obliterate a former field and to clean out its adjacent drain. Uncontained storage of glass-based material also occurred outside of areas of concrete hardstanding, so that the remaining soil near the drainage ditch contains a fraction of broken glass.

A.i.25 Mitigation of surface drainage water has been built into the site in the form of oil separators and the attenuation tank and if the former are cleaned regularly they will prevent any oil pollution reaching the drain. It is understood that a storm water attenuation pond is to be constructed in the north-east of the site; no impacts on flora and fauna are anticipated.

A.i.26 The project has had all its negative impacts during the construction phase, and its impact on ecology, which was basically a removal of local habitat, will decline to some extent as the vegetation is restored on part of the site.

A.j NTS: Section J - Accident Prevention & Emergency Response

- A.j.1 Rehab Glassco has documented and implemented Emergency Response Procedure Guidelines. All staff receive Health & Safety induction training and are fully equipped with PPE. A fire detection and alarm system is installed at the premises.
- A.j.2 Diesel is stored in double-skinned tanks. Potentially contaminating material stored in the garage building is retained on spill pallets. The surface water drainage system includes two interceptors.
- A.j.3 Incidents will be reported to the Agency in line with the requirements of EPA Licence W0279-01 (condition 9.3).
- A.j.4 An Environmental Liabilities Risk Assessment (ELRA) was completed for the facility in September 2013. In accordance with condition 12.2 of EPA Licence W0279-01, the licensee will arrange for a review of the ELRA, in line with EPA 2014 guidance.

A.k NTS: Section K - Remediation, Decommissioning, Restoration and Aftercare

- A.k.1 If the decommissioning of part or all of the Rehab Glassco facility should be required, a phased decommissioning process will be carried out. After all material has been removed a programme of environmental monitoring and a site audit will be carried out to ensure that the local environment has not been adversely affected by the closure of the facility and that no residual material remains on the site.
- A.k.2 It is not envisaged that the activities at the Rehab Glassco facility will have an adverse impact on the site, which will result in detailed aftercare management of the site being required.
- A.k.3 *A Report on ELRA, CRAMP and Financial Provision for Glass Recycling Facility (EPA Waste Licence Application W0279-01) was prepared on behalf of Rehab Glassco Ltd. in September 2013. In accordance with condition 12.2 of EPA Licence W0279-01, the licensee will arrange for a review of the ELRA, in line with EPA 2014 guidance.*

A.l NTS: Section L - Statutory Requirements

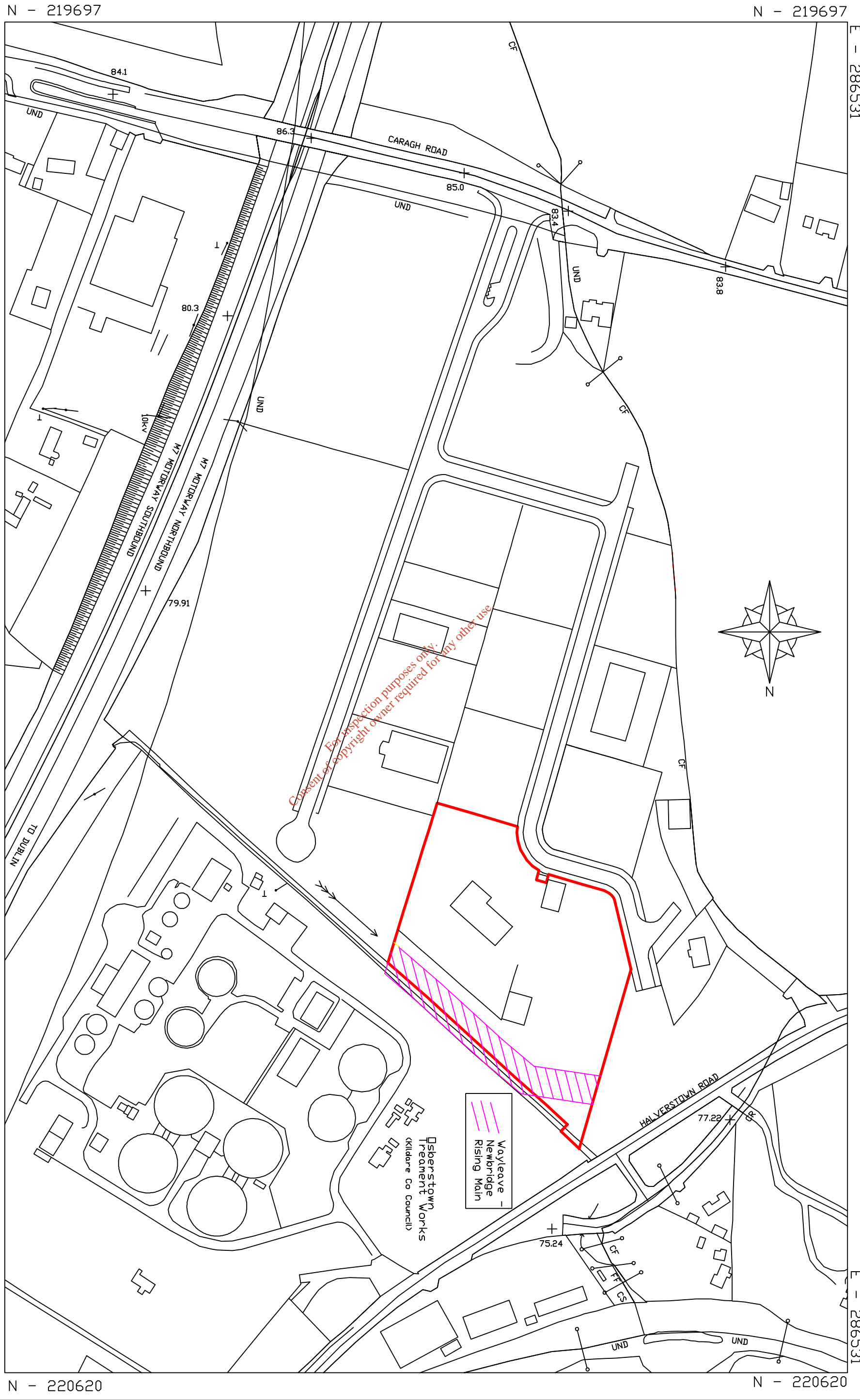
- A.l.1 Section 40(4) of the Waste Management Act 1996, as amended, requires that the Agency shall not grant a waste licence unless it is satisfied that its requirements are met. Attachment L of the Waste Licence Review Application provides information to show that these criteria have been met.
- A.l.2 The facility will be managed and operated to minimise environmental impact. Environmental monitoring is proposed for air/dust, noise and surface water to ensure that relevant emission limit values are not exceeded. The facility is a state-of-the-art processing facility for the management of glass/cans. The facility has been designed to prevent/limit emissions from the activity.
- A.l.3 The Rehab Glassco activity is deemed to be consistent with the objectives of Kildare Waste Management Plan.
- A.l.4 Rehab Glassco (and previously Glassco Recycling) has been the holder of a Waste Facility Permit for the facility since 2008.
- A.l.5 The Applicant has not been convicted of any offences pertaining to the Waste Management, EPA, Air or Water Pollution Acts.

- A.I.6 The Applicant holds the requisite technical knowledge and qualifications to carry on the proposed activity in an appropriate manner.
- A.I.7 The Applicant is in a position to meet financial commitments/liabilities which may be associated with the activity.
- A.I.8 The Rehab Glassco facility focuses on the recycling of glass and cans, i.e. a *recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes*, in line with the priority order waste hierarchy.
- A.I.9 The Rehab Glassco facility plays a critical role in the recycling and recovery of glass and cans in the context of the Irish waste management sector. The facility is strategically located with reference to key waste generation points in the country, with excellent motorway access to all parts of Ireland. The facility is designed and operated to ensure a high level of protection for the environment and public health.
- A.I.10 Screening for Appropriate Assessment has been undertaken, which concluded that there will be no significant effect on any of the Natura 2000 sites or on their conservation objectives. Screening concludes that an Appropriate Assessment is not required.

A.m Selected Waste Licence Review Application Drawings to Accompany the Non-technical Summary

- A.m.1 Please find attached:
- Drawing WLR-01: Site Location Map
 - Drawing WLR-04: Site Plan
 - Drawing WLR-07: Unit Operations
 - Drawing WLR-16: Monitoring Locations

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N - 219697

N - 219697

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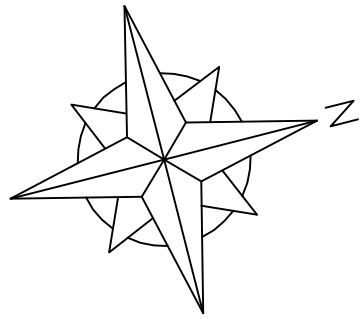
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N - 220620

EPA WASTE LICENCE APPLICATION, ODSBERSTOWN BUSINESS PK, NAAS.
 SITE LOCATION PLAN SCALE: 1:2500

DRG No. WLR-01

BRIAN PYPER AND ASSOCIATES
 25 TOWERVIEW AVENUE
 BANGOR, CO. DUBLIN, B119 6BB
 TEL: 00 44 7825 213 111
 Email: bpyper@gmail.com



| REV. | DATE. | AMENDMENT. | INITIALS. |
|------|-------|------------|-----------|
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| | | | |

CLIENT: REHAB GLASSCO

PROJECT: EPA WASTE LICENCE APPLICATION OSBERSTOWN BUSINESS PARK, NAAS.

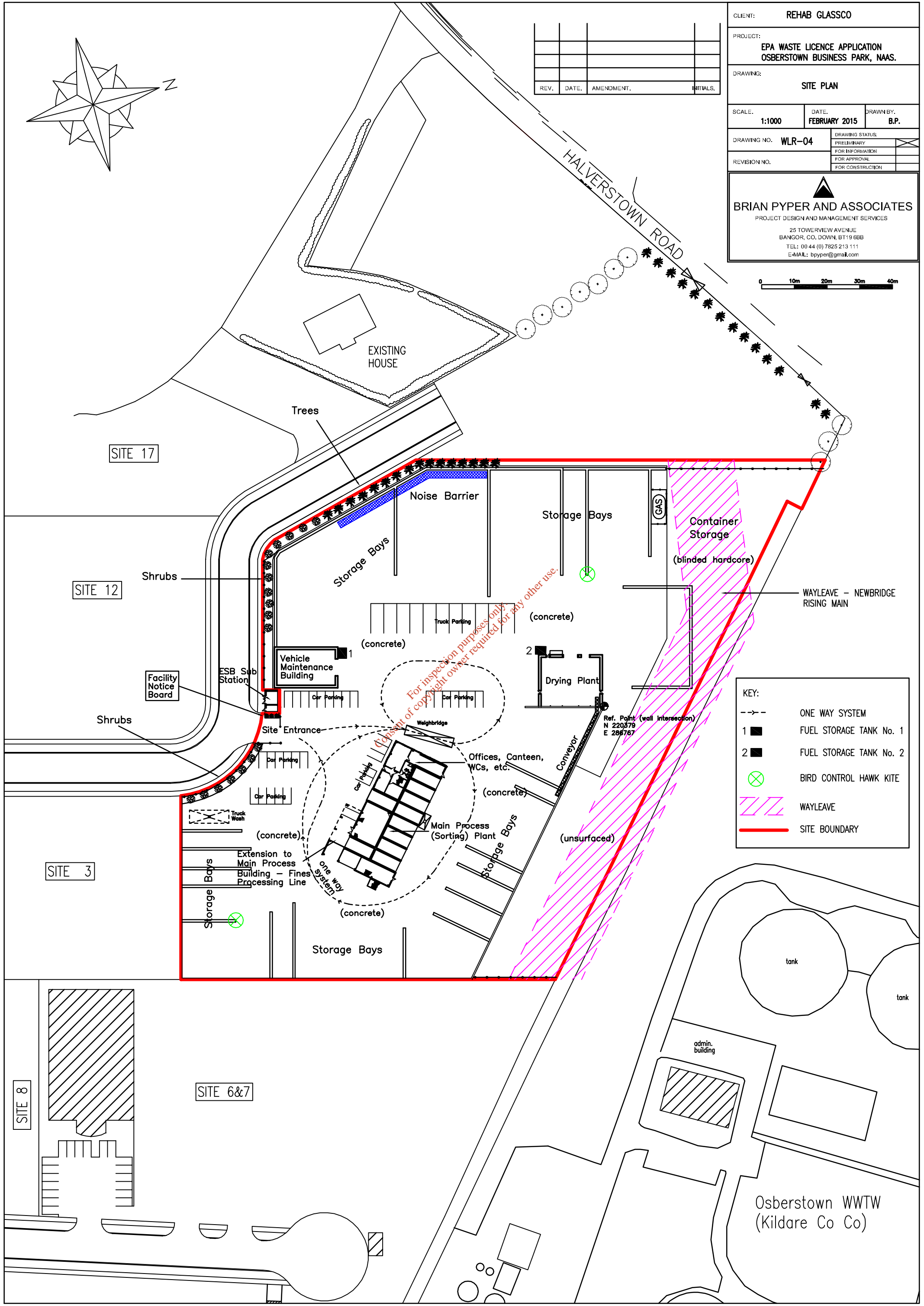
DRAWING: SITE PLAN

SCALE: 1:1000 DATE: FEBRUARY 2015 DRAWN BY: B.P.

DRAWING NO. WLR-04 DRAWING STATUS: PRELIMINARY

REVISION NO. FOR INFORMATION: FOR APPROVAL: FOR CONSTRUCTION:

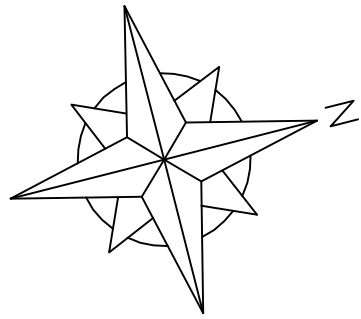
BRIAN PYPER AND ASSOCIATES
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 BANGOR, CO. DOWN. BT19 6BB
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 E-MAIL: bpyper@gmail.com



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KEY:

| | |
|---|-------------------------|
| | ONE WAY SYSTEM |
| 1 | FUEL STORAGE TANK No. 1 |
| 2 | FUEL STORAGE TANK No. 2 |
| | BIRD CONTROL HAWK KITE |
| | WAYLEAVE |
| | SITE BOUNDARY |



| REV. | DATE. | AMENDMENT. | INITIALS. |
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CLIENT: REHAB GLASSCO

PROJECT: EPA WASTE LICENCE APPLICATION OSBERSTOWN BUSINESS PARK, NAAS.

DRAWING: UNIT OPERATIONS

SCALE: 1:1000 DATE: FEBRUARY 2015 DRAWN BY: B.P.

DRAWING NO. WLR-07 DRAWING STATUS: PRELIMINARY FOR INFORMATION FOR APPROVAL FOR CONSTRUCTION

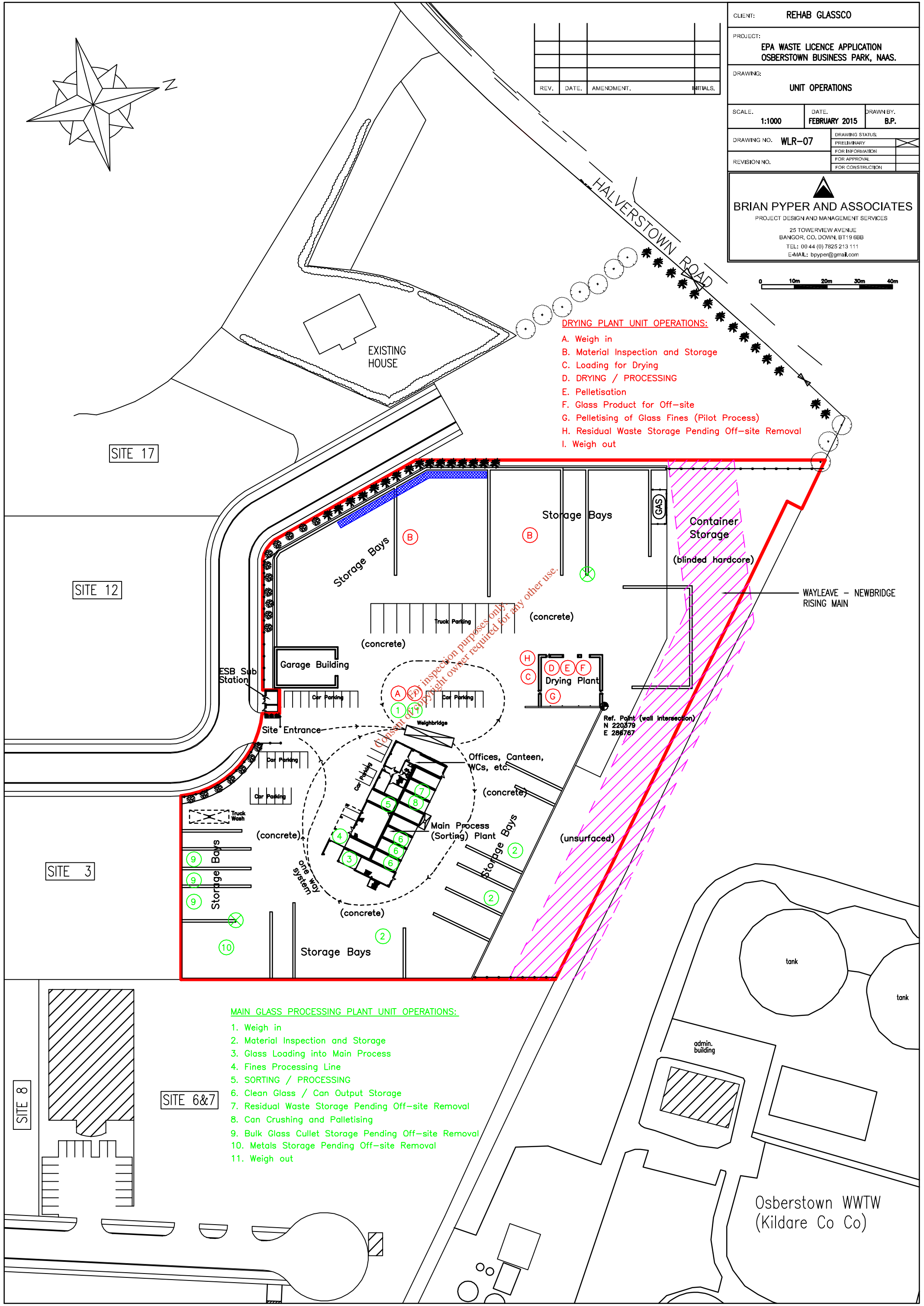
REVISION NO.

BRIAN PYPER AND ASSOCIATES
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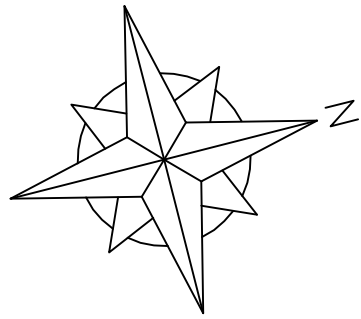
DRYING PLANT UNIT OPERATIONS:

- A. Weigh in
- B. Material Inspection and Storage
- C. Loading for Drying
- D. DRYING / PROCESSING
- E. Pelletisation
- F. Glass Product for Off-site
- G. Pelletising of Glass Fines (Pilot Process)
- H. Residual Waste Storage Pending Off-site Removal
- I. Weigh out



MAIN GLASS PROCESSING PLANT UNIT OPERATIONS:

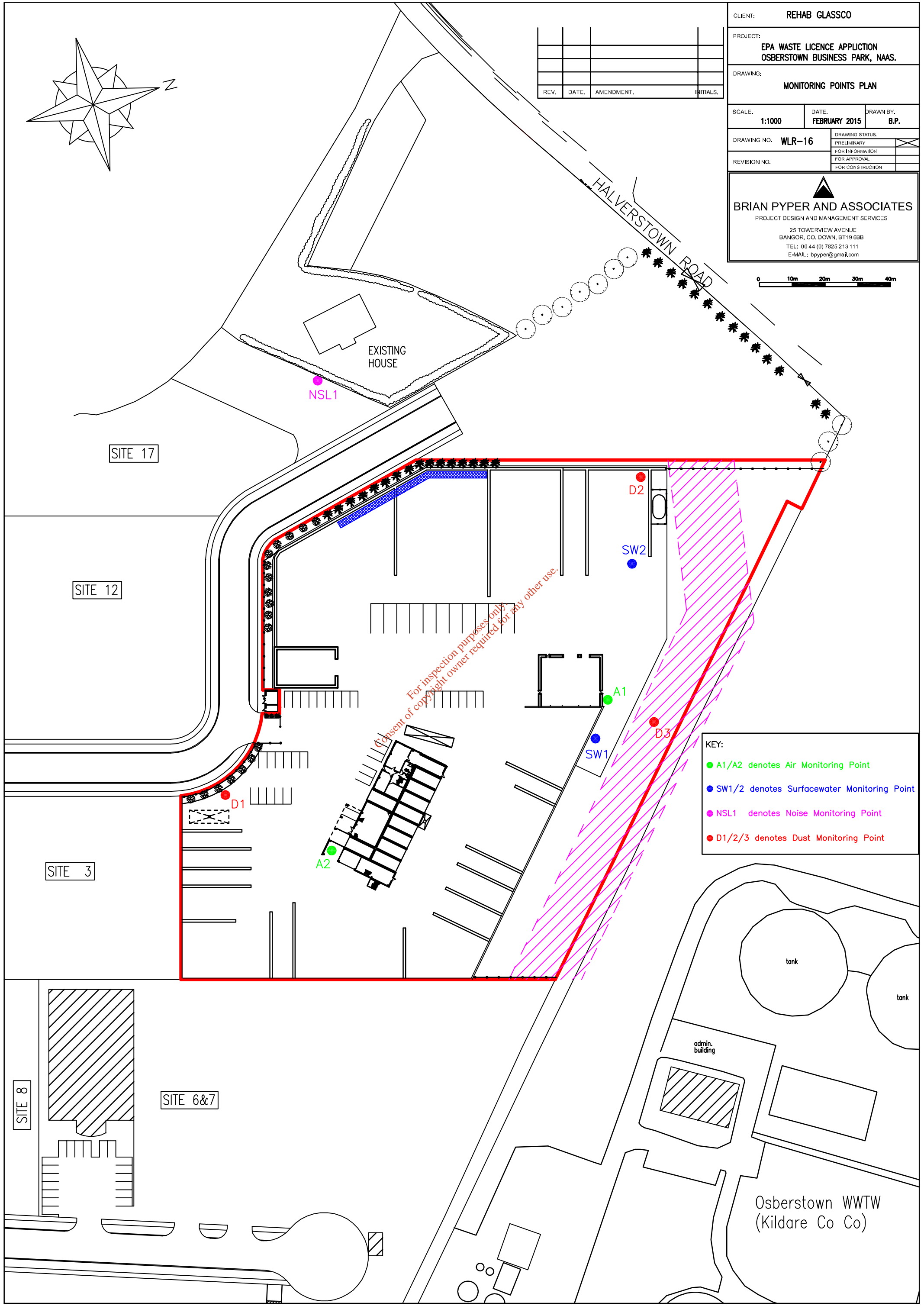
- 1. Weigh in
- 2. Material Inspection and Storage
- 3. Glass Loading into Main Process
- 4. Fines Processing Line
- 5. SORTING / PROCESSING
- 6. Clean Glass / Can Output Storage
- 7. Residual Waste Storage Pending Off-site Removal
- 8. Can Crushing and Palletising
- 9. Bulk Glass Cullet Storage Pending Off-site Removal
- 10. Metals Storage Pending Off-site Removal
- 11. Weigh out



| REV. | DATE | AMENDMENT | INITIALS |
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|---------------|---|-----------------|------------------|
| CLIENT: | REHAB GLASSCO | | |
| PROJECT: | EPA WASTE LICENCE APPLICATION OSBERTOWN BUSINESS PARK, NAAS. | | |
| DRAWING: | MONITORING POINTS PLAN | | |
| SCALE: | 1:1000 | DATE: | FEBRUARY 2015 |
| | | DRAWN BY: | B.P. |
| DRAWING NO.: | WLR-16 | DRAWING STATUS: | PRELIMINARY |
| REVISION NO.: | | | FOR INFORMATION |
| | | | FOR APPROVAL |
| | | | FOR CONSTRUCTION |


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| | |
|---|---------------------------------------|
| KEY: | |
| ● A1/A2 | denotes Air Monitoring Point |
| ● SW1/2 | denotes Surfacewater Monitoring Point |
| ● NSL1 | denotes Noise Monitoring Point |
| ● D1/2/3 | denotes Dust Monitoring Point |

Attachment B:

General

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Attachment B: General

B.0 Background and Context

- B.0.1 This Waste Licence Review application is being made by Rehab Glassco Ltd. (also referred to as 'Rehab Glassco' hereinafter) in relation to its glass and can recycling facility at Unit 4, Osberstown Industrial Park, Caragh Road, Naas, Co. Kildare, Ireland. The facility operates under Waste Licence register number W0279-01, issued by Environmental Protection Agency (also referred to as 'The Agency' hereinafter) on the 10th December 2014².
- B.0.2 The Agency directed (correspondence dated 10th December 2014) Rehab Glassco to apply for a Waste Licence Review for the facility, to address a new air emission point located at a new extension to the Main Process building. The Agency has advised that Waste Licence W0279-01 does not authorise the operation of this new emission point, and that a review of the waste licence is therefore required to regularise this new emission point.
- B.0.3 The new air emission point is associated with the operation of a new fines processing line, installed to sort rejected glass from the existing main glass processing plant. The new fines processing line consists of a direct fired rotary dryer (capacity to process 10 tonnes/hr), feed conveyors, screens and an extraction system. The extraction system consists of associated exhaust pipework, a dust cyclone, followed by a reverse jet bag filter. Air movement is controlled by a centrifugal fan with discharge to atmosphere through the new air emission point.
- B.0.4 The extension to the glass recycling plant (Main Process building) was granted planning permission by Kildare County Council on 10th November 2014 (Planning Register No. 14/579).
- B.0.5 The Waste Licence Review application has been prepared by Patel Tonra Ltd., Environmental Solutions on behalf of Rehab Glassco.

B.1 Applicant Details

- B.1.1 This Waste Licence Review application is being made by Rehab Glassco Ltd. (also referred to as 'Rehab Glassco' hereinafter) for a glass and can recycling facility at Unit 4, Osberstown Industrial Park, Caragh Road, Naas, Co. Kildare, Ireland.
- B.1.2 The site location is shown in:
Drawing WLR-01 (Attachment B.1): Site Location Map
- B.1.3 A Certificate of Incorporation (change of name) (December 2009) for Rehab Glassco Ltd. is attached. The facility was previously operated by Glassco Recycling Ltd; this Certificate of Incorporation (December 2002) is also attached.
Appendix B.1.1: Certificate of Incorporation
- B.1.4 The Company Number is 365472, as shown on the Certificate of Incorporation. The company directors are Zeki Mustafa (Managing Director), Keith Poole (Director), Damien Cooper (Director) and Paudie Murphy (Director).

² Previously operated under Waste Facility Permit, ref. WFP-KE-08-0357-01

B.1.5 An ownership drawing for the site is attached. The boundary showing Rehab Glassco's ownership is shown in blue ink.

Drawing WLR-02 (Attachment B.1): Ownership Plan

B.1.6 The site area and proposed EPA-licensed area (the 'red line' area) is 21,300m². The site is owned by Rehab Glassco (the 'blue line' area). The 'red line' and 'blue line' areas are identical, i.e. the site/proposed licensed facility is in the full ownership of Rehab Glassco.

B.2 Location of Activity

B.2.1 The site is located at Unit 4, Osberstown Industrial Park, Caragh Road, Naas, Co. Kildare, Ireland (National Grid Reference E 286767 N 220379), approximately 3.5km west of the town of Naas (see Figures B.2.1 – B.2.4, source: www.osi.ie, Google Earth). The site is in close proximity to the M7 motorway; access to the Industrial Park is via the R409.

Figure B.2.1: Site Location – Regional Context

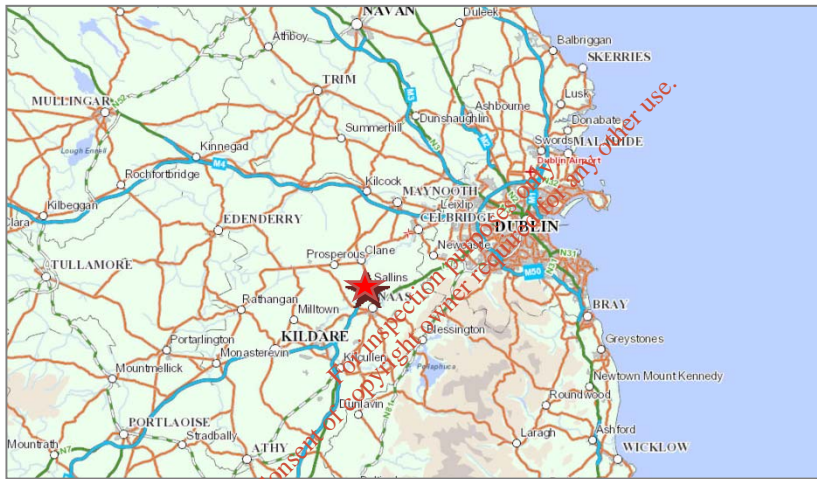


Figure B.2.2: Site Location – Proximity to Naas

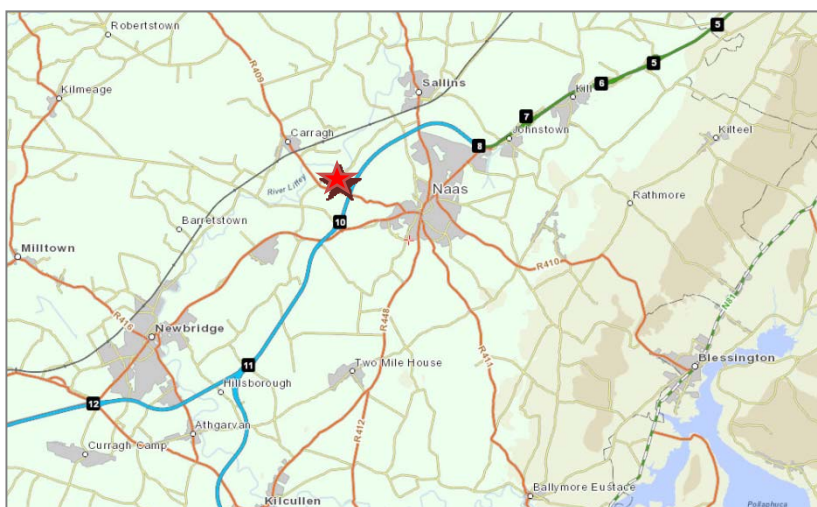


Figure B.2.3: Site Location – Local Setting

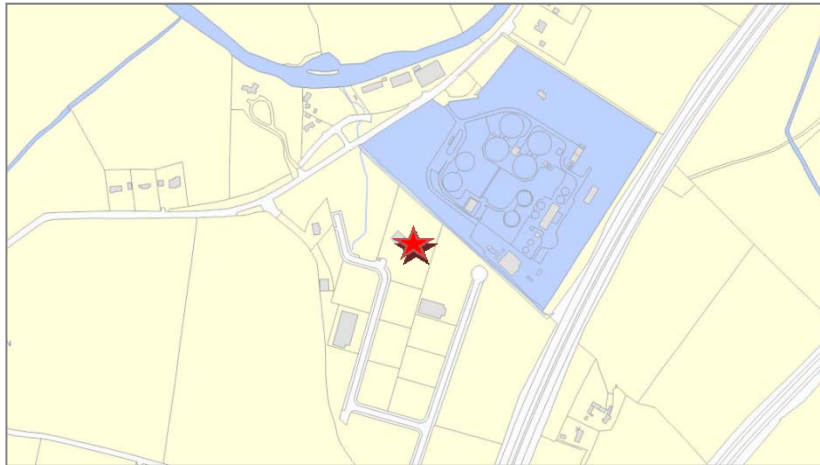


Figure B.2.4: Site Location – Local Setting (Aerial) (Source: Google Earth)



B.2.2 The location map attached includes buildings, roads and streams within 500m of the boundary:

Drawing WLR-03 (Attachment B.2): Site Location Map (with 500m offset)

B.2.3 A site plan of the facility is attached. The site layout for the purposes of this Waste Licence Review Application is the same as the existing site layout.

Drawing WLR-04 (Attachment B.2): Site Plan

B.2.4 The Services Plan attached includes services within 250m of the facility boundary:

Drawing WLR-05 (Attachment B.2): Services Plan

B.3 Planning Authority

B.3.1 The Planning Authority is Kildare County Council³.

³ An Bord Pleanála ruled on a Substitute Consent application (as **Table B.3.1**)

Planning Permission already granted

B.3.2 The planning history is provided in Table B.3.1 and further detailed in:

Appendix B.3.1: Planning History Details

Table B.3.1: Planning history (Kildare County Council) for Site 4, Osberstown Industrial Park, Caragh Road, Naas⁴

| App. Num | Authority | Applicant Name | Development Description | Application Date | Grant Date |
|----------------------------|------------------------|-----------------------|---|------------------|-----------------------------|
| 14579 ⁵ | Kildare County Council | Rehab Glassco Ltd | An extension to existing glass recycling plant | 14/07/2014 | 10/11/2014 |
| 09.SU.0015 ^{6, 7} | An Bord Pleanála | Rehab Glassco Ltd. | Glass recycling facility | 06/03/2013 | 12/06/2014 |
| 11508 | Kildare County Council | Rehab Glassco Ltd | For retention of free standing maintenance building with steel framed, fabric covered structure for company vehicle maintenance | 18/05/2011 | 26/05/2012 |
| 101195 | Kildare County Council | Rehab Glassco Ltd | For retention of free-standing plant with steel framed, fabric covered structure for glass recycling | 25/11/2010 | 15/04/2011 |
| 10984 | Kildare County Council | Rehab Glassco Ltd | For a new free standing plant with steel framed, fabric covered structure for glass recycling | 24/09/2010 | APPLICATION DID NOT PROCEED |
| 10652 | Kildare County Council | Rehab Glassco Ltd | For retention of change of use to office space from industrial space and retention of relocated and amended external staircase | 28/06/2010 | 24/09/2010 |
| 0948 | Kildare County Council | Glassco Recycling Ltd | To extend the site of an existing glass recycling plant to provide additional vehicle parking and external storage areas on land adjoining sites 4 and 5. | 22/01/2009 | 18/08/2009 |
| 061710 | Kildare County Council | Glassco Recycling Ltd | Construction of glass recycling plant | 11/08/2006 | 29/03/2007 |

B.3.3 The planning grants for planning ref. 14/579 and 09.SU.0015 are provided in the appendix; these are the planning grants related to the operation of the facility (other planning applications/grants related to specific buildings on site, as detailed in Table B.3.1). Planning ref. 14/579 specifically relates to the extension to the

⁴ Source: Kildare County Council planning website, January 2015

⁵ The planning grant is included as an appendix to this application.

⁶ The planning grant is included as an appendix to this application.

⁷ Substitute Consent. Ref. www.pleanala.ie

Main Process building, which is the subject of this Waste Licence Review application.

Appendix B.3.2: Planning Grant ref. 14/579

Appendix B.3.3: Substitute Consent Permission ref. 09.SU.0015

B.3.4 The Planning Authority (Kildare County Council) has confirmed in writing that, on the basis of the screening exercise conducted by the Planning Authority, the extension sought under register reference 14/579 would not give rise to the requirement to be accompanied by an EIS (Environmental Impact Statement) under the provisions of the Planning and Development Acts 2000 -2014.

Appendix B.3.4: Correspondence from Kildare County Council re. EIS

B.3.5 The Planning Authority (Kildare County Council) has received written notification from the applicant of the application to the EPA for a Waste Licence Review.

Appendix B.3.5: Notification to Kildare County Council re. Waste Licence Review Application

Licences and Permits

B.3.6 The site is currently regulated under an EPA Waste Licence (W0279-01). A copy of the EPA Waste Licence (W0279-01) is attached.

Appendix B.3.6: EPA Waste Licence W0279-01

B.3.7 Previously the site operated under a Waste Facility Permit (ref. WFP-KE-08-0357-01) issued by Kildare County Council.

B.3.8 A table of references to all licences and permits past and presently in force is provided below.

Table B.3.2: Waste regulation history for Site 4, Osberstown Industrial Park, Caragh Road, Naas

| Reference. no | Applicant Name | Granted by | Date granted |
|--------------------------|------------------------|---|--------------|
| W0279-01 | Rehab Glassco Ltd. | Environmental Protection Agency - Waste Licence | 10/12/2014 |
| WFP-KE-08-0357-01 | Glassco Recycling Ltd. | Kildare County Council – Waste Facility Permit | 09/03/2010 |

Appropriate Assessment

B.3.9 Appropriate Assessment (AA) Screening was completed for the purposes of a Remedial Environmental Impact Statement (REIS), which was submitted to An Bord Pleanála in March 2013⁸.

B.3.10 The March 2013 AA Screening report concluded that: “given the distance between the site and the Natura 2000 sites (40-50km by river) and the mitigation measures included in the design, there is no likelihood of significant ecological effects on the qualifying interests of the Natura sites downstream. This being the

⁸ Relating to the application to An Bord Pleanála for Substitute Consent (Ref: 09.SU.0015)

case there will be no 'in combination' effects with other developments. The further, more detailed, stages of Appropriate Assessment are not required."

B.3.11 The AA Screening report has been examined and reviewed by the author in the context of changes outlined in this Waste Licence Review Application. The author states that the main plant modifications relating to the new fines processing line, housed in the new extension will produce no additional impact on the environment that would alter the previous conclusion of the AA Screening Report, i.e. that there will be no significant effect on any of the Natura 2000 sites or on their conservation objectives.

B.3.12 The original AA Screening report (February 2013; included in REIS, 2013) and AA Screening review (February 2015) for the purpose of this Waste Licence Review application are included as follows:

Appendix B.3.7: Appropriate Assessment Screening Reports (February 2013 and February 2015)

B.3.13 The Agency, as part of the original Waste Licence application (W0279-01), made a determination on the 30th September 2014 that an Appropriate Assessment is not required as the project, individually or in combination with other plans or projects, is not likely to have a significant effect on a European site(s).

B.3.14 The Planning Authority (Kildare County Council) as part of its submission to An Bord Pleanála during the application for Substitute Consent for the Rehab Glassco facility, made the following comment as summarised by the Inspectors report (section 5.2) dated the 13th September 2013: "A screening assessment report was undertaken by the Planning Authority that concludes that the nearest site is Ballynafagh Bog SAC c.8.5km to the north west and that there will be no significant impacts on any designated site."

B.4 Sanitary Authority

B.4.1 The Sanitary Authority is Irish Water (Kildare County Council is acting as an agent for Irish Water).

B.4.2 A drainage drawing is attached:

Drawing WLR-06 (Attachment B.4): Site Drainage Drawing

B.4.3 Drawing **WLR-06** Site Drainage Drawing shows the foul sewer running from the site offices to the industrial park's sewer system. This sewer system discharges to the Osberstown Wastewater Treatment Works, Naas, Co. Kildare. The Osberstown Wastewater Treatment Works is located immediately to the east of the Rehab Glassco facility.

B.5 Other Authorities

B.5.1 The activity is located in the HSE Dublin Mid–Leinster Region, based in Tullamore, Co. Offaly.

B.6 Notices and Advertisements

B.6.1 A copy of the text of the site notice is attached.

Appendix B.6.1: Site Notice

- B.6.2 The location of the site notice is shown on Drawing **WLR-03**.
- B.6.3 A copy of the newspaper page containing the Waste Licence Review Application advertisement is attached as Appendix **B.6.2**. The original application includes the complete newspaper in which the advertisement was placed.

Appendix B.6.2: Newspaper Advertisement

- B.6.4 The Planning Authority (Kildare County Council) has received written notification regarding the application to the EPA for a Waste Licence Review; see Appendix **B.3.5**.

B.7 Type of Waste Activity

- B.7.1 In accordance with the Third and Fourth Schedules to the Waste Management Act 1996, as amended, the principal waste activity is Fourth Schedule, Recovery Operations, Class **R 5: Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials**. This activity at Rehab Glassco relates to the separation and recycling of glass.
- B.7.2 Metals are also recovered at the facility (e.g. drinks cans, food tins); therefore Fourth Schedule, Recovery Operations, Class **R 4: Recycling/reclamation of metals and metal compounds**, is relevant.
- B.7.3 In relation to the operation of the Drying Plant at Rehab Glassco, the following class of activity is relevant: **R 12: Exchange of waste for submission to any of the operations numbered R 1 to R 11 (if there is no other R code appropriate, this can include preliminary operations prior to recovery including pre-processing such as, amongst others, dismantling, sorting, crushing, compacting, pelletising, drying, shredding, conditioning, repackaging, separating, blending or mixing prior to submission to any of the operations numbered R1 to R11)**.
- B.7.4 Small amounts of residual material will be temporarily stored on-site pending off-site recovery or disposal at an appropriately licensed/permitted waste facility; therefore the following classes are relevant:
- Third Schedule, Disposal Operations, Class **D 15: Storage pending any of the operations numbered D 1 to D 14 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced)**.
 - Fourth Schedule, Recovery Operations, Class **R 13: Storage of waste pending any of the operations numbered R 1 to R 12 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced)**.
- B.7.5 The licensed activities are as per Part 1 of EPA Licence W0279-01; no changes are proposed as part of this Waste Licence Review application.

B.8 Seveso II Directive

- B.8.1 The Control of Major Accident Hazards involving Dangerous Substances Regulations do not apply to this activity.

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**Attachment C:
Management of the Facility**

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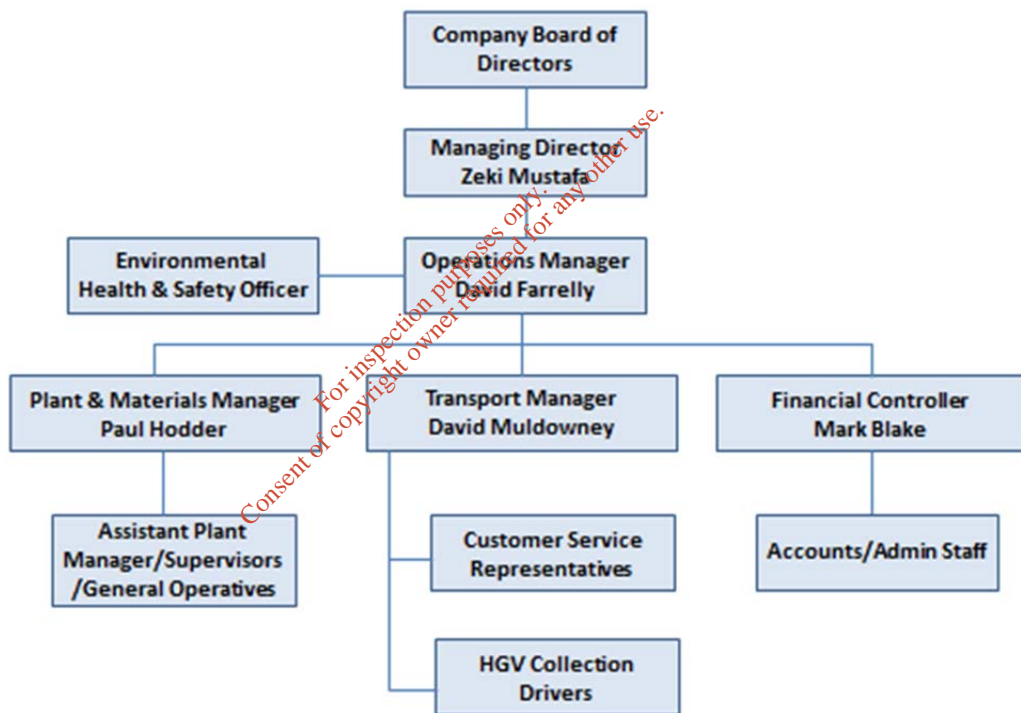
Attachment C: Management of the Facility

C.1 Technical Competence and Site Management

C.1.1 Rehab Glassco offers unparalleled experience in glass collection and recycling services in Ireland. The site has been an operational glass recycling facility since 2008, initially regulated under a Waste Facility Permit from Kildare County Council and, from December 2014, under EPA Waste Licence No. W0279-01. Prior to the formation of Rehab Glassco in December 2009, Glassco Recycling Ltd. operated in the glass recycling sector for 11 years, and Rehab Recycle operated in the glass recycling sector for 15 years.

C.1.2 The Rehab Glassco organisational chart is provided in Figure C.1.1 below.

Figure C.1.1: Organisation chart



C.1.3 Duties, responsibilities and experience/qualifications of key staff are provided in Table C.1.1.

Table C.1.1: Management and competence

| Name | Position | Duties and Responsibilities | Experience/Qualifications |
|-----------------|---------------------------|--|--|
| Zeki Mustafa | Managing Director | <ul style="list-style-type: none"> ▪ Managing Director ▪ Company Development ▪ Strategic Planning & Operations ▪ Conformance with licence and regulatory requirements ▪ HR ▪ Key contact person for EPA communications | <ul style="list-style-type: none"> ▪ BA Finance (Hons) ▪ Founder and managing director of Glassco Recycling Ltd. and subsequently Rehab Glassco ▪ 14 years' experience within Irish recycling sector ▪ Member of the Ferver Steering Group (Federation of European Glass Processors) |
| David Farrelly | Operations Manager | <ul style="list-style-type: none"> ▪ Sales & Marketing ▪ Business development ▪ Development of Environmental Management System ▪ Licence compliance and reporting to EPA | <ul style="list-style-type: none"> ▪ BBS (Services Marketing) ▪ 15 years' experience within Irish recycling sector ▪ FÁS/FETAC National Waste Management Training Programme ▪ Institution of Occupational Safety & Health training |
| Mark Blake | Financial Controller | <ul style="list-style-type: none"> ▪ Financial & Resourcing Provision ▪ Budgeting ▪ HR | <ul style="list-style-type: none"> ▪ Management Accountant (CIMA) ▪ 20 years' financial management experience (IATA & CIMA) |
| David Muldowney | Transport Manager | <ul style="list-style-type: none"> ▪ Scheduling and Logistics ▪ Waste Collection Permits | <ul style="list-style-type: none"> ▪ BA Mechanical Engineering & Mathematics ▪ 8 years' experience within the Irish recycling sector ▪ Institution of Occupational Safety & Health (Managing Safely) |
| Paul Hodder | Plant & Materials Manager | <ul style="list-style-type: none"> ▪ Facility operations ▪ Control of plant, material and equipment ▪ Implementation of licence conditions and controls | <ul style="list-style-type: none"> ▪ Qualified electrician ▪ 7 years' experience within Irish recycling sector ▪ CIWM accredited Waste Management Training Programme |

- C.1.4 The company is committed to training and development of staff, and encourages all employees to acquire the knowledge and skills required to maximise their performance in their current positions or in preparation for new job opportunities.
- C.1.5 Rehab Glassco is part of Rehab Enterprises, Ireland's largest single non-Government employer of people with disabilities. Over 547 people are employed by Rehab Enterprises, more than half of whom have a disability, where the emphasis is on ensuring that people with disabilities play a full role in society. Rehab Enterprises is a division of the Rehab Group which has a proud tradition of providing high-quality services across Ireland, England, Scotland, the Netherlands and Poland. Rehab Enterprises offers dynamic business solutions to companies and commercial organisations in areas spanning logistics, information destruction, recycling, packaging, retail and accessibility.
- C.1.6 Rehab Glassco was named 'Recovery Operator of the Year 2010' at the Repak Recycling Awards (large company category). The awards acknowledge best practice in packaging recycling and waste minimisation from around the country.

C.2 Environmental Management System (EMS)

- C.2.1 Rehab Glassco Ltd. achieved certification of its Environmental Management System to the International Standard I.S. EN ISO 14001:2004 on the 27th January 2015. A copy of the NSAI Certificate of Registration is included as follows.

Appendix C.2.1: Rehab Glassco EMS 14001:2004 Certificate

- C.2.2 The company has developed a number of environmental and operational control procedures. A copy of the company's Environmental Policy Statement is included as:

Appendix C.2.2: Rehab Glassco Environmental Policy Statement

C.3 Hours of Operation

- C.3.1 The hours of operation are as per the existing Waste Licence W0279-01 (condition 3.12); no changes are proposed as part of this Waste Licence Review application.
- C.3.2 The general hours of operation are: 24-hours, Monday to Friday inclusive and 07:00 to 23.00 Saturday. The hours of operation of the Drying Plant are 07:00 to 19:00 Monday to Saturday inclusive.
- C.3.3 The hours of waste acceptance/dispatch are: 07:00 to 19:00 Monday to Saturday inclusive.
- C.3.4 It is not anticipated that the facility would operate outside of these hours, however, during exceptional busy periods for glass recycling in line with public/customer demand (e.g. festive periods) or for any other operational emergencies, Rehab Glassco may seek permission from the Agency to extended these hours on a temporary period.
- C.3.5 No construction/development works are proposed as part of this application.
- C.3.6 No other relevant hours of operation are anticipated.

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**Attachment D:
Infrastructure & Operation**

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Attachment D: Infrastructure & Operation

D.1 Infrastructure

D.1.1 The facility has a range of infrastructural works consistent with the requirements of the Waste Licence issued by the Agency (W0279-01). Site infrastructure is shown on Drawing **WLR-04**, and in more detail on the following drawings:

Drawing WLR-07 (Attachment D.1): Unit Operations

Drawing WLR-08 (Attachment D.1): Main Process (Sorting) Plant General Layouts (Sheet 1)

Drawing WLR-09 (Attachment D.1): Main Process (Sorting) Plant General Layouts (Sheet 2)

Drawing WLR-10 (Attachment D.1): Main Process (Sorting) Plant General Layouts (Sheet 3)

Drawing WLR-11 (Attachment D.1): Main Process (Sorting) Plant – Elevations and Section

Drawing WLR-12 (Attachment D.1): Garage Building – Plans, Elevations and Section

Drawing WLR-13 (Attachment D.1): Drying Plant Building – Plans, Elevations and Section

Drawing WLR-14 (Attachment D.1): Main Process (New Fines Processing) Plant

D.1.a Site security arrangements including gates and fencing

D.1.2 Site security gates and fencing are in place at the site. The front part of the site (southern side, adjacent to entrance) is bounded by approximately 2.4 m-high paladin-type fencing; elsewhere, the boundary treatment consists of an approximately 2.5- to 3m-high block wall. Additional tree/shrub planting and the installation of a noise barrier have been completed at the western boundary. The facility entrance is secured by sliding gates (also approximately 2.4m in height), which are locked overnight and/or when the facility is unsupervised. Gates, fencing and other boundary treatments are appropriately maintained; any defects will be duly remedied.

Photograph D.1.1: Site entrance security gate

D.1.3 The site currently operates a CCTV security system, which uses 10 specific camera points (some with motion sensors) mounted on the Main Process building, the Drying Plant and the garage building; the approximate locations of CCTV cameras are shown on Drawing **WLR-04**. The CCTV security system covers the entire site including the site entrance, weighbridge area, one-way traffic system, garage/maintenance facility, input and output bays and general site operational activities.

Photograph D.1.2: CCTV camera positions on Main Process Building

D.1.4 The site is manned overnight for operational purposes and site personnel are available to deal with any emergencies and or security breaches. All site buildings are lockable.

D.1.b Designs for site roads

D.1.5 The site is located within the existing Osberstown Industrial Park, Naas, Co. Kildare, which has a well-developed road network.

D.1.6 Within the facility boundary, the site is fully laid in concrete hardstanding (with the exception of the wayleave, described in **D.1.c**). Traffic movement is controlled by a designated one-way system, as shown on Drawing **WLR-04**.

Photograph D.1.3: Site roads and Windssock

D.1.c Design of hardstanding areas

D.1.7 The site is overlaid by concrete hardstanding, with the exception of a designated wayleave 20m in width along the northern site boundary, which is dedicated for the Newbridge rising main. The wayleave area which falls within the Rehab Glassco site is covered by a removable hard plastic matting system, which allows for vehicle movements and temporary storage of materials and recycling receptacles in this area.

D.1.8 Site drainage and surface water management infrastructure is described in Attachment **D.1.i**.

D.1.d Plant

D.1.9 Site operations and recycling/recovery activities are described in Attachment **D.2**. The primary items of plant relate to: (i) the Main Process building, including the new fines processing line (located in a new extension to the Main Process building) and (ii) Drying Plant. No additional plant is proposed for the purposes of this Waste Licence Review application.

D.1.10 The Main Process Building includes the following plant and equipment:

- Screens
- Crushers
- Magnetic separation units
- Eddy current separators
- Air classifiers
- Optical sorting equipment
- Conveyor systems
- Rotary dryer
- Extraction system (cyclone, bag filter-house, centrifugal fan, exhaust pipework)
- Process control system
- Fire detection and alarm system

Photograph D.1.4: Interior of Main Process Building

- D.1.11 The new fines processing line (located in a new extension to the Main Process building), which deals with reject glass fractions between 3-8mm in the Main Process, consists of a direct-fired rotary dryer (capacity to process 10 tonnes/hour), feed conveyors, screens and an extraction system. The extraction system consists of associated exhaust pipework, a dust cyclone, followed by a reverse jet bag filter. Air movement is controlled by a centrifugal fan with discharge to atmosphere.

Photograph D.1.5: Extension to Main Process Building – exterior (Fines Processing Plant)

Photograph D.1.6: New fines processing line - interior (Main Process building extension)

- D.1.12 The Drying Plant building houses a rotating drying unit, with associated conveyors, bagging and ancillary equipment.

Photograph D.1.7: Rotating Drying Unit (Drying Plant building)

- D.1.13 There is currently a single weighbridge on site, which will be maintained for ongoing use. The weighbridge is a Globeweigh UK Ltd. model; dimensions 15m x 3m, with a capacity of 50 tonnes.

Photograph D.1.8: Weighbridge position and operator's window

- D.1.14 The weighbridge software is of bespoke design, commissioned by Rehab Glassco to meet their specific business requirements. The software is PC-based with all data stored in a local database, will full data back-up. The system addresses requirements for the recording of information on loads in and out and also provides an advanced level of reporting for both internal and external purposes. The software makes provision for the attachment of photographs assigned to specific input data, loads, vehicles or customers.

Photograph D.1.9: Screenshot of weighbridge software - sample load weigh-in

- D.1.15 The Rehab Glassco facility operates/retains the following additional plant and equipment:

- Garaging/vehicle maintenance plant and equipment
- 3 x front-end loaders (Volvo and JCB)
- 2 x forklift trucks
- Various spare parts and incidentals for the main processing plant, drying plant and garage workshop
- 2 x interceptors and surface water management infrastructure (further detailed in Attachment **D.1.I**)
- 2 x water guns for dust suppression (further detailed in Attachment **F.1**)
- 1 x water misting system on the two doors at the Drying Plant (further detailed in Attachment **F.1**)

Photograph D.1.10: Garage/vehicle workshop plant and equipment

D.1.e Wheelwash

D.1.16 A wheel-cleaning system and a truck wash facility is currently in place on site. Vehicle washing and wheelwash facilities are provided using a power-washing system on site, if required; however, the majority of vehicles which enter/exit the site arrive on the public road network onto a fully concreted site and the risk of carrying mud/dirt off-site is insignificant. The power wash system is also provided to ensure that the Rehab Glassco collection vehicles are kept clean and well-presented. The power-wash area is serviced by a silt trap prior to entering the surface water management system.

Photograph D.1.11: Vehicle wash bay

D.1.f Laboratory facilities

D.1.17 No on-site laboratory for environmental analysis is proposed. Any samples collected as part of the environmental monitoring programme will be analysed by an independent accredited laboratory.

D.1.18 There is currently a quality control laboratory on site for the control of the processed glass cullet product (further detailed in Attachment **H.3**).

D.1.g Design and location of fuel storage areas

D.1.19 There are currently two fuel storage tanks on site (see Drawing **WLR-04**): Tank#1 is a 10,000-litre capacity diesel storage tank, located at the Vehicle Maintenance building; Tank#2 is a 2,500-litre capacity diesel storage tank, located adjacent to the Drying Plant. Tank#1 is used for truck refuelling and Tank#2 to fuel site machinery.

D.1.20 Both tanks are bunded/double skinned.

D.1.21 There is a gas storage tank in the north of the site. The dimensions of the tank are approximately 7.4m long x 3.8, diameter.

D.1.22 The garage building is equipped with spill control equipment, drip trays and bunded pallets. This equipment will be maintained on site and replaced as necessary.

D.1.h Waste Quarantine Areas

D.1.23 There is an established waste inspection and quarantine procedure in place at the facility, as detailed in Attachment **H.2**. If a load(s) is required to be quarantined, it will be directed to an empty storage bay (as shown on Drawing **WLR-04**) and appropriately labelled/cordoned off. Smaller non-conforming items may be retained in the residual waste bay (as shown on Drawing **WLR-04**), pending removal off-site.

Photograph D.1.12: Storage bay

D.1.i Waste Inspection Areas

D.1.24 There is an established waste inspection and quarantine procedure in place at the facility, as detailed in Attachment **H.2**. All loads are inspected upon tipping in the active storage bay, as directed by the weighbridge operator. Should a load require more detailed inspection, it may be directed to an empty storage bay and appropriately labelled/cordoned off for further inspection and/or quarantine.

D.1.j Traffic Control

D.1.25 There is a one-way traffic management system in place on site, as indicated by directional signage (see Photograph **D.1.2**). All incoming and outgoing vehicles must report to the weighbridge. All drivers are required to drive with due consideration for site safety. There are designated parking areas on site.

Photograph D.1.13: Designated parking area

D.1.k All other services

D.1.26 Electricity is supplied to the facility by a sub-station on site supplying 1,000 KVA. The main switch room is fitted with power factor correction which regulates power supply to the facility to maximise efficiency and minimise any losses.

D.1.27 The site is fully equipped with a modern telecommunications system, including broadband, internet access, email, telephone and fax.

D.1.l Sewage and Surface Water Drainage Infrastructure

D.1.28 A purpose-designed surface water management system has been installed at the facility (see Drawing **WLR-06**), to include an engineered surface water drainage network, a silt trap and 2 No. interceptors.

D.1.29 A silt trap is installed at the vehicle washing area on the southern site boundary.

D.1.30 The on-site surface water drainage system works in two parts (see Drawing **WLR-06**): the eastern portion of the site falls to the interceptor ('Interceptor#1') to the rear (east) of the Drying Plant⁹; the western portion of the site drains to the interceptor ('Interceptor#2') and an attenuation tank located in the north-west of the site¹⁰.

D.1.31 The installed interceptors are detailed as follows:

- Interceptor#1: Klargestor Class 1 ref NSBP018 or similar, which covers the eastern part of the site
- Interceptor#2: BPDA10000 Class 1 ref NSB18, which covers the western portion of the site

D.1.32 The discharge from Interceptor#1 connects to the culvert downstream of this interceptor (it runs from the manhole downstream of the interceptor called up as SMH CL81.00 IL 79.20, to the culvert; see Drawing **WLR-06**). This is labelled as emission point SW1 on Drawing **WLR-15**.

D.1.33 The discharge from Interceptor#2 is directed to storm drainage attenuation (underground hydro chambers). The output flow rate from the attenuation tank is controlled by a hydro-valve. The discharge from this system connects to the culvert at the manhole called up as CHH CL80.30 IL 77.90 (see Drawing **WLR-06**). This is labelled as emission point SW2 on Drawing **WLR-15**.

D.1.34 Discharges from both interceptor systems are to the storm culvert, which runs adjacent to the north-eastern site boundary. This storm culvert also conveys storm-water from other sites and roadways within the industrial park.

⁹ This represents the original site area, prior to the extension of the site in 2009.

¹⁰ This represents the extended site area (2009).

- D.1.35 The interceptors are maintained and cleaned on a regular basis (servicing records confirm interceptor cleaning by a contractor on a regular basis; both interceptors are vacuumed out and washed down using a jet vac; the waste product is removed by tanker for appropriate off-site disposal).
- D.1.36 The site has a sewer connection to the industrial estate's foul sewer network, which subsequently discharges into the adjacent local authority waste water treatment facility in Osberstown. There are no process emissions to sewer; the only emissions to sewer relate to on-site the toilet /sanitary facilities, located at the Main Process Building. The site's connection to the mains sewer is located outside the facility entrance, as shown on Drawing **WLR-06**.
- D.1.37 Additional storm-water attenuation capacity has been included in engineering designs for the site; however one of the two attenuation units has not been constructed to date. Current attenuation capacity for the site is inadequate and the installation of additional attenuation capacity is in line with regional drainage policies. It is proposed that a storm-water attenuation pond is constructed in the north-east of the site, as shown in Drawing **WLR-17**. The attenuation pond will be approximately 75m (length) x 5m (width) x 1.2m (depth).

D.1.m Plant sheds, garages and equipment compound

- D.1.38 In addition to the Main Process building and the Drying Plant detailed in **D.1.d**, there is an on-site garage building used for the purpose of standard vehicle maintenance for Rehab Glassco vehicles (no third party vehicles). The facility is equipped with spill pallets for containing oils, lubricants and other standard fluids used for this type of activity.

Photograph D.1.14: Spill pallet in garage building

D.1.n Site Accommodation

- D.1.39 Site offices, including the weighbridge office, are contained within the Main Process building. Offices are located along the western side of the building, and are separated from the plant operations. A staff canteen and toilets are also located in this area.

Photograph D.1.15: Site offices located at western side of Main Process Building

D.1.o Fire Control System, including water supply

- D.1.40 A fire detection and alarm system is installed at the premises (L2/L3 standard). The system has been independently inspected, tested and commissioned, in accordance with I.S. 3218:2009, as detailed in Attachment **J.1**

D.1.p Civic Amenity facilities

- D.1.41 No civic amenity facilities exist on site; no civic amenity facilities are proposed.

D.1.q Composting infrastructure

- D.1.42 There is no composting infrastructure on site; no composting infrastructure is proposed.

D.1.r Incineration infrastructure

D.1.43 There is no incineration infrastructure on site; no incineration infrastructure is proposed.

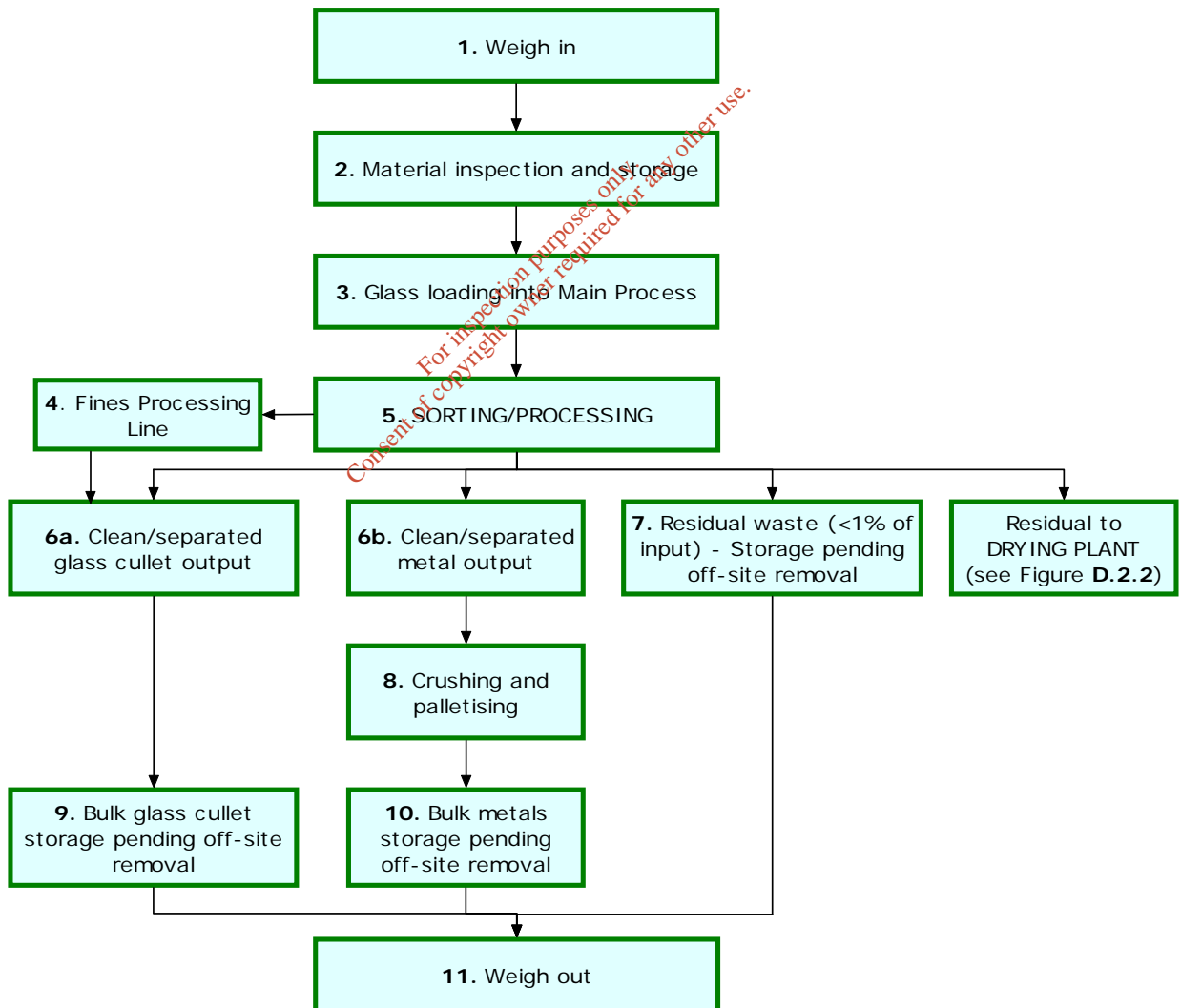
D.1.s Any other infrastructure

D.1.44 No other infrastructure is proposed.

D.2 Facility Operation

D.2.1 Unit operations are shown on Drawing **WLR-07** and shown in the flowcharts below, Figure **D.2.1** and Figure **D.2.2**. There are two unit operations on site: (i) main glass/can processing, including the new fines processing line, and (ii) drying plant operation, as described further in **D.2**. Full details of the processing techniques are contained in Attachment **H.3**.

Figure D.2.1: Flowchart of facility operation: (i) Main Process



Main Process

D.2.2 Figure D.2.1 outlines the stages in the Main Process operation as follows:

1. **Weigh in** – all incoming vehicles are directed to the weighbridge (see Photograph D.1.8) where they are weighed in and full details recorded on the weighbridge software. The weighbridge operator directs the incoming vehicle to the appropriate storage bay for unloading.
2. **Material inspection and storage** – all loads are inspected upon tipping and stored in the storage bays pending processing.

Photograph D.2.1: Input material inspection and storage bay

3. **Glass loading into Main Process** – material is loaded into a hopper located at the east of the Main Process Building by a front-end loader.

Photograph D.2.2: Glass loading into Main Process

4. **Fines Processing Line** – a new fines processing line has been installed (in a new extension to the Main Process building) to sort rejected glass from the main process. Fine-fraction glass material (3-8mm) is scalped out from the main sorting and processing operation and introduced to the fines processing line. The fines processing line consists of a direct-fired rotary dryer (capacity to process 10 tonnes/hr), feed conveyors, screens, extraction system and air emission point.

5. **SORTING/PROCESSING** – a range of state-of-the-art sorting and processing techniques are applied in the main plant to sort the input material into separated glass cullet product and cans/metals for use off-site. Full details of sorting/processing methodologies are provided in Attachment H.3.

6. **a. Clean/separated glass cullet output** – this is the major output of operations. Glass cullet is colour-separated and sized to meet stringent customer specifications. This material is market-ready for use in glass/bottle manufacturing. The intermediate storage area for this material is in ground-level bays, which are located beneath the processing operations.

Photograph D.2.3: Clean/separated glass cullet output

6. **b. Clean/separated metal output** – ferrous and non-ferrous metals are sorted and separated from the input feedstock.

7. **Residual waste – storage pending off-site removal** – a small fraction of the input feedstock, generally less than 1% by weight, is residual waste extracted during sorting/processing. This residual material is stored in a dedicated ground-level bay, which is located beneath the processing operations.

Photograph D.2.4: Residual waste storage

Residual to DRYING PLANT – some outputs from the Main Process are diverted to the Drying Plant, as detailed below.

8. Crushing and palletising – cans are crushed, baled and stacked onto pallets for onward transportation and off-site recovery.

Photograph D.2.5: Can crushing and baling

9. Bulk glass cullet storage pending off-site removal – bulk storage of the processed glass cullet is within the storage bays in south of the site.

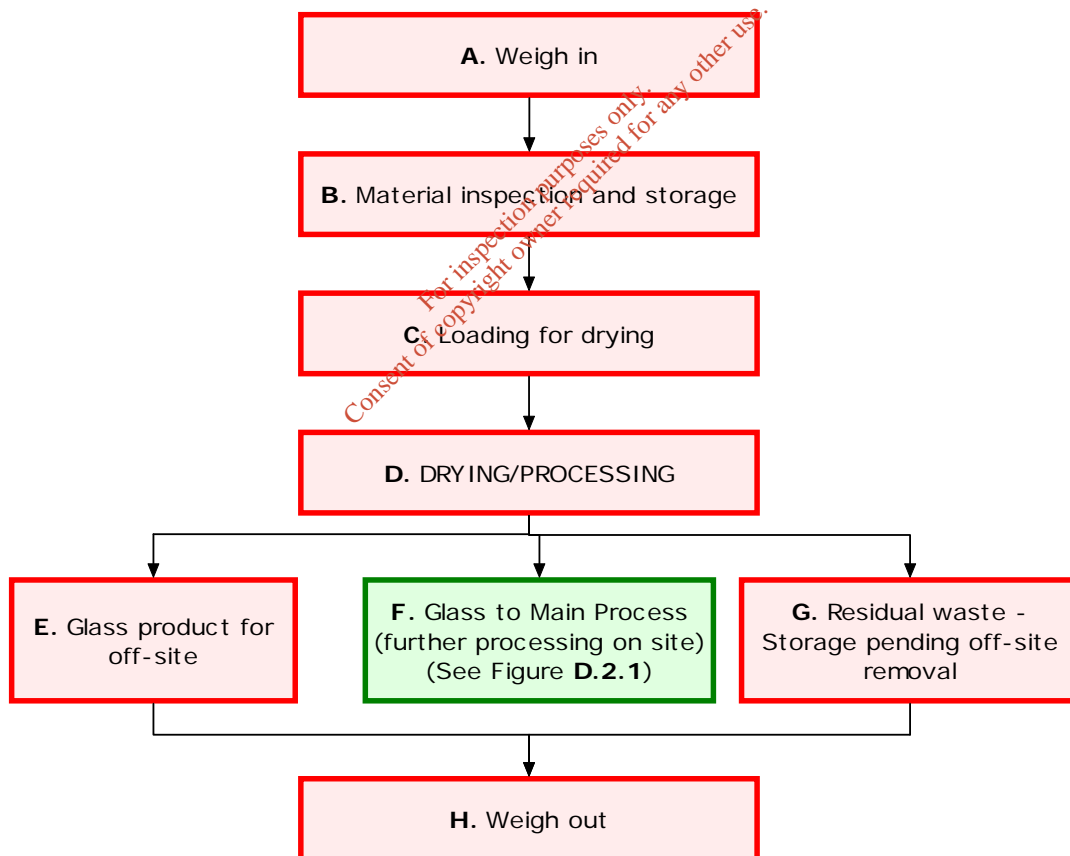
Photograph D.2.6: Bulk glass cullet storage

10. Bulk metals storage pending off-site removal – bulk storage of the processed/baled metals is within the storage bays in south of the site.

Photograph D.2.7: Baled cans/metal storage

11. Weigh out – all outgoing loads are weighed out at the weighbridge prior to exiting the facility.

Figure D.2.2: Flowchart of facility operation: (ii) Drying Plant



Drying Plant

D.2.3 Figure D.2.2 outlines the stages in the drying plant operation as follows:

- A. Weigh in** – inputs are weighed on the facility weighbridge (see Photograph **D.1.8**) or belt-weigher.
- B. Material inspection and storage** – all loads are inspected upon tipping and stored in the storage bays pending processing.
- C. Loading for Drying** – material is loaded into a hopper located at the southern side of the Drying Plant building by a front-end loader. Material initially passes through a manual picking line, where contaminants are removed.

Photograph D.2.8: Hopper and picking station at Drying Plant

- D. DRYING/PROCESSING** – material passes to the drying unit (further detailed in Attachment **H.3**).
- E. Glass product for off-site** – a granular glass product is bagged for use as a marketable product, or conveyed to an outdoor storage bay for bulk-loading and removal off-site (a conveyor exits the Drying Plant building and runs along the retaining wall to the allocated storage bay, located to the east of the Drying Plant building).

Photograph D.2.9: Crushed and graded product from the Drying Plant

- F. Glass to Main Process** – a considerable proportion (approximately 70-80% by weight) of the output from the Drying Plant is diverted back to the Main Process for glass sorting, separation and materials recovery.

Photograph D.2.10: Output from the Drying Plant for diversion to Main Process

- G. Residual waste – storage pending off-site removal** – a small fraction of the input feedstock to the Drying Plant, generally less than 1% by weight, remains as a residual waste output from the Drying Plant operations. This residual material is stored in a container positioned beneath the sorting cabin.

Photograph D.2.11: Residual waste from the Drying Plant

- H. Weigh out** – all outgoing loads are weighed out at the weighbridge prior to exiting the facility.

Alternatives Considered

D.2.4 The principle alternatives considered by Rehab Glassco for installing the new fines processing line to process reject glass fractions between 3-8mm were:

- To keep sending material to landfill from the end of the main processing operation for disposal;
- To keep processing and crushing residual/fines material for one-off shot-blasting use, which is an open-loop system and less beneficial than a closed-loop system;
- To reprocess material again on a separate and additional process run, introducing various inefficiencies, including energy, waste handling,

storage/stockpiling and increasing the chance of potential environmental nuisances on site;

- Two types of drying technologies were considered: 1. a drum dryer and 2. a fluidised bed dryer. The drum dryer technology was essential chosen because Rehab Glassco has previous experience of this technology and it was considered highly effective and efficient for the removal of organics and paper residue material from the fine material input. The drum dryer also met the processing capacity and the bulk density requirements for the processing of fines material.

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Attachment E:

Emissions

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Rehab Glassco

**Patel Tonra Ltd. for Rehab Glassco Ltd.
EPA Waste Licence Review Application,
February 2015**

Attachment E: Emissions

E.1 Emissions to Atmosphere

- E.1.1 There are two air emission point sources – labelled 'A1' and 'A2' on Drawing **WLR-15**. The source of emission point 'A1' relates to the drying unit in the Drying Plant building. The source of emission point 'A2' is associated with the operation of a new fines processing line installed to sort rejected glass from the existing main glass processing plant (see Drawing **WLR-14**).

Drawing WLR-15 (Attachment E): Emissions Points

- E.1.2 There are potential fugitive emissions to air from dust and vehicle emissions, as discussed in Attachment **I**; however management and control procedures are implemented to mitigate against such impacts.
- E.1.3 Air emissions and dust monitoring arrangements are detailed in Attachment **F.2**.

E.2 Emissions to Surface Waters

- E.2.1 Surface water management infrastructure, including 2 No. interceptors, is detailed in Attachment **D.1.I**.
- E.2.2 There are 2 No. points of discharge to surface water (see Drawing **WLR-15**), as described in Attachment **D.1.I**. Emission point SW1 relates to emissions from Interceptor#1 in the eastern portion of the site; Emission point SW2 relates to emissions from Interceptor#2 in the western portion of the site.
- E.2.3 Both SW1 and SW2 discharge to the storm culvert, which runs adjacent to the north-eastern site boundary.
- E.2.4 Surface water monitoring arrangements are detailed in Attachment **F.3**.

E.3 Emissions to Sewers

- E.3.1 Toilet and washing facilities from the Office/Administration building are the only emissions to sewer. Drawing **WLR-06** Site Drainage Drawing shows the foul sewer running from the site offices to the industrial park's sewer system at emission point ref. SE1 (see Drawing **WLR-15**).

On-site or off-site treatment envisaged

- E.3.2 Off-site treatment is proposed (as per current arrangements).

Name of the sewerage / WWTP undertaker and a copy of any agreement or permission by the undertaker to accept effluent

- E.3.3 Sewage will be emitted to the adjacent Osberstown Wastewater Treatment Plant (via the Industrial Park's sewage infrastructure), operated by Kildare County Council (Kildare County Council is acting as an agent for Irish Water).

- Any further treatment of effluent by the undertaker, existing or proposed*
- E.3.4 No treatment is proposed.
- Any problems of sewage treatment associated with the proposed emission*
- E.3.5 There are no issues arising.
- Likely effects of the emission on sewer or sewage treatment maintenance operations*
- E.3.6 There are no anticipated effects on the sewer or maintenance operations.
- Capacity, quality and integrity of the sewer*
- E.3.7 There are no known issues surrounding the capacity, quality and integrity of the sewer.
- Likely effects of the emission on sewer integrity*
- E.3.8 There are no anticipated effects on sewer integrity.
- Possible reactions of the emission with other effluent likely to be in the sewerage system*
- E.3.9 There are no anticipated impacts in this regard.
- Nature of final emission to the receiving water and the estimated volumetric contribution of the site emissions to the total wastewater treatment plant Dry Weather Flow expressed as a percentage (% DWF)*
- E.3.10 The emissions to sewer from the facility are associated with on-site toilets and washing facilities, and would be considered insignificant in terms of nature and volume.

E.4 Emissions to Groundwater

- E.4.1 There will be no direct discharges to groundwater, nor groundwater abstractions.

E.5 Noise Emissions

- E.5.1 Potential noise emissions are associated with plant and equipment, vehicle movements and loading/unloading operations. The latest noise survey was carried out in February 2014; See Attachment **I.6** for further information.
- E.5.2 Noise monitoring will be conducted, as detailed in Attachment **F.6**.

E.6 Environmental Nuisances

Bird Control

- E.6.1 To prevent birds from removing glass and tin foil from the facility and depositing material off-site, a bird management programme has been designed and implemented at the site by a commercial operator/expert. The fortnightly programme includes the use of flying live hawks to harass and disperse the local

scavenging bird population. Other methods at the facility include the use of visual and acoustic measures such as the use of a Scarecrow Patrol Two-Bird Dispersal System in addition to Bird Control Hawk Kites; further details are provided as follows:

Appendix E.6.1: Bird Control Report

Dust Control

E.6.2 Dust mitigation measures are detailed in **Attachment I.1**.

Fire Control

E.6.3 Emergency response procedures will be prepared and submitted to the EPA as part of the Environmental Management Programme; further details are provided in **Attachment J.1**.

Litter Control

E.6.4 Windblown litter impacts are not generally anticipated due to the nature of the materials accepted, i.e. glass, cans, etc.; however good housekeeping practices have been implemented, as well as routine site inspections to mitigate against this occurring. Litter-picks are conducted around the facility, as required.

Traffic

E.6.5 Access to the site will be controlled; the general public does not have access to the facility. There are designated staff, visitor and truck parking areas. On-site traffic flow patterns/routes, based on a one-way system, are shown on Drawing **WLR-04**. All incoming waste vehicles will be required to 'weigh in' at the weighbridge, marked on Drawing **WLR-04**. No traffic queuing is permitted outside the facility.

Vermin Control

E.6.6 Rehab Glassco retains the services of a pest control contractor and bait boxes are in place at a number of locations on site; see **Attachment G.1**.

Road-cleaning

E.6.7 Internal site roads are cleaned and swept when necessary using a brushing/sweeping attachment when required. External estate roads are cleaned using a road sweeper, once per month, or more frequently, if required.

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**Attachment F:
Control & Monitoring**

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Rehab Glassco

**Patel Tonra Ltd. for Rehab Glassco Ltd.
EPA Waste Licence Review Application,
February 2015**

Attachment F: Control & Monitoring

F.1 Treatment, Abatement and Control Systems

Dust Suppression – Yard Area

- F.1.1 2 No. swivel-head arc 'rain guns' have been installed at the Main Process building. The rain guns are capable of reaching a distance of 30m and are positioned at the front of and back of the main building. Roadsweeping is conducted as required (see Attachment E.6).

Photograph F.1.1: Water gun #1 positioned at Main Process building - extension

Photograph F.1.2: Water gun #2 positioned at Main Process building

Drying Plant

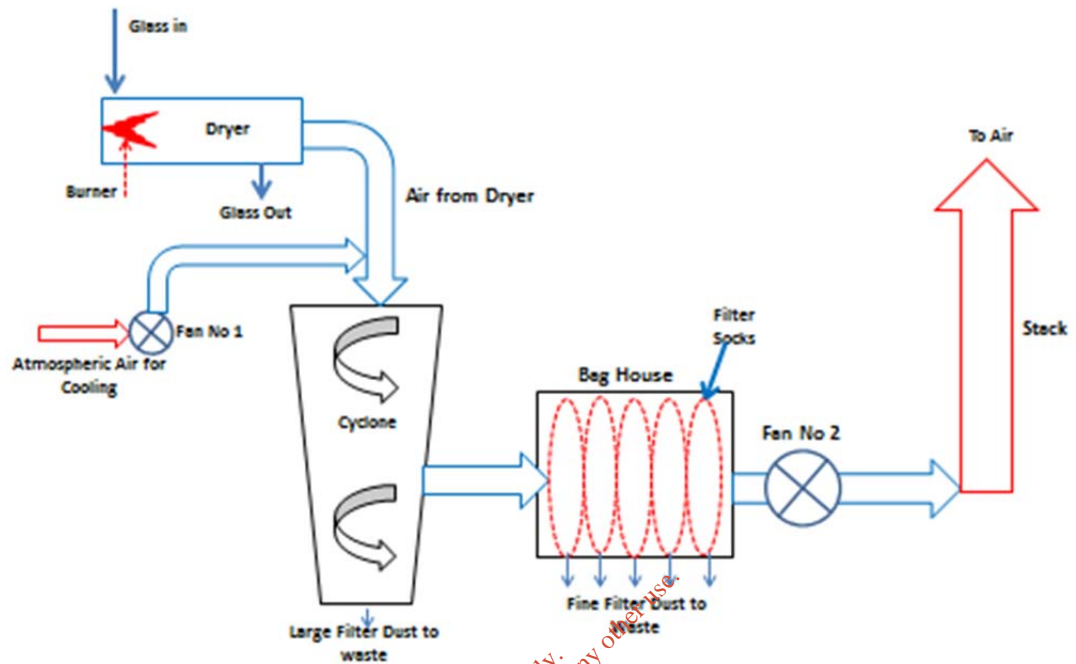
- F.1.2 There are a number of air emissions abatement/control systems in operation at the Drying Plant, which are described in the following sections:

- Emissions abatement system from the glass drying operation
- Dust extraction system related to the processing of glass in the Drying Plant building
- Misting system at entrance to Drying Plant building
- Vacuum system in Drying Plant building
- Containment of product material

Emissions Abatement System - Glass Drying Operation (Drying Plant building)

- F.1.3 The emissions abatement system was designed to filter exhaust air from the dryer before its emission to atmosphere at point **A1**, shown on Drawing **WLR-15**. The system is shown graphically as follows.

Figure F.1.1: Schematic of Emissions Abatement System, Glass Drying Operation



F.1.4 The emissions abatement system consists of the following:

- Pipework with extraction point at the end of the dryer
- Small fan (No. 1) taking in air to cool air before bag house
- Cyclone to remove large dust fragments (large dust goes to waste)
- Enclosed bag house filter, with filter socks to remove fine dust (fine dust goes to waste)
- High velocity exhaust fan (No. 2)
- Mild steel ductwork
- Stack emitting to air

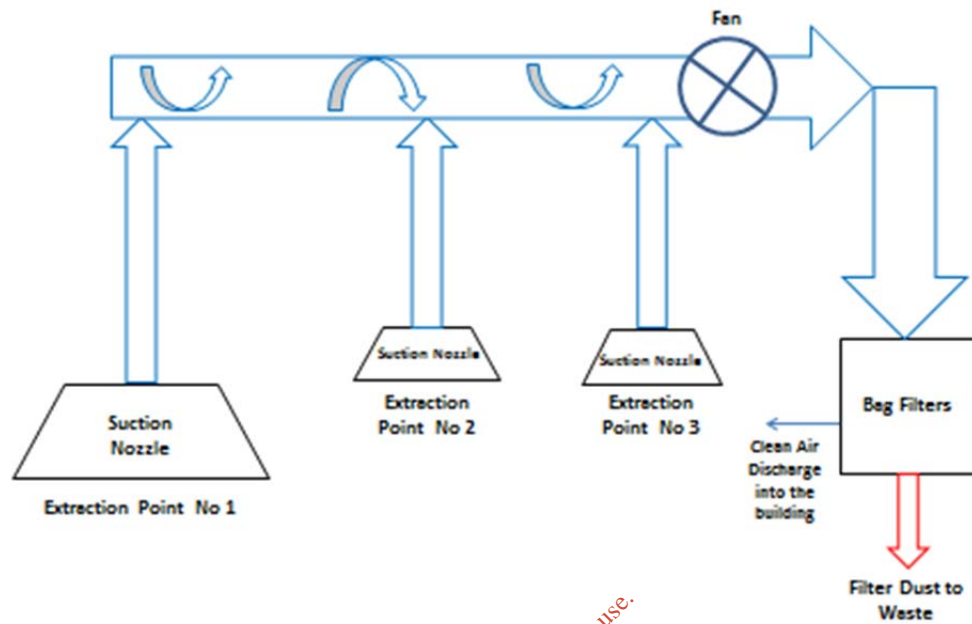
F.1.5 The technical specifications of the emissions abatement system, including the bag-house filter is provided in the following appendix:

Appendix F.1.1: Technical Specifications of the Emissions Abatement System (Glass Drying Operation)

Dust Extraction System (Drying Plant building)

F.1.6 The dust extraction system (which is independent of the emissions abatement system described above) has been designed to collect and remove dust via dust extractor nozzles from specific points inside the plant. The system is shown graphically as follows.

Figure F.1.2: Schematic of Dust Extraction System – Drying Plant Building



F.1.7 The dust extraction system consists of the following:

- Suction nozzles to remove dust from 3 extraction points
- Air ductwork from fans to bag filters
- Fan for conveying dust to bag filters
- Bag filters
- Clean air discharge to ambient air in the plant
- Filtered material deposited into plastic bags as a waste product

F.1.8 The technical specifications of key components of the dust extraction system, including the extraction fans and the bag filters are detailed in the following appendix.

Appendix F.1.2: Technical Specifications of Dust Extraction System Components (Drying Plant Building)

Misting system at entrance to Drying Plant building

F.1.9 A water misting system has been installed on the two doors of the Drying Plant (at the front of building).

Photograph F.1.3: Misting system at Drying Plant (1)

Photograph F.1.4: Misting system at Drying Plant (2)

Photograph F.1.5: Misting system at Drying Plant (3)

Photograph F.1.6: Misting system at Drying Plant (4) - spray nozzles

Vacuum system in Drying Plant building

- F.1.10 An industrial vacuum system (Bag Vac) has been installed and used on a daily basis in the Drying Plant for spot cleaning and improved housekeeping.

Photograph F.1.7: Industrial Vacuum system in the Drying Plant (1)

Photograph F.1.8: Industrial Vacuum system spot cleaning hose in the Drying Plant (2)

Containment of product/material

- F.1.11 Chutes/silos to product storage bags have been sealed and contained for improved housekeeping; product bags are individually bagged and sealed to control dust in storage areas.

Photograph F.1.9: Sealed/contained chutes/silos to storage bags in Drying Plant

Photograph F.1.10: Product from Drying Plant - bagged and sealed

Fines Processing Line, Main Process Building - Extraction System

- F.1.12 A new air emission point, A2, (shown in Drawing **WLR-15**), is associated with the operation of a new fines processing line installed to sort rejected glass from the existing main glass processing plant. Fine glass material fractions of between 3-8mm is scalped out from the main sorting and processing operation and introduced to the fines processing line. The new fines processing line (detailed in Attachment **D.2**) consists of a direct-fired rotary dryer, feed conveyors, screens and an extraction system.

- F.1.13 A baghouse filtration system combined with a cyclone is in place at the end of the fines processing line, shown on Drawing **WLR-14**. The air emissions abatement/extraction system consists of associated exhaust pipework, a dust cyclone, followed by a reverse jet bag filter. Air movement is controlled by a centrifugal fan with discharge to atmosphere through the new air emission point. The technical specifications of key components of the abatement/extraction system, including the dust collection system, are detailed in the following appendices:

Appendix F.1.3: Rotary Dryer Specification (Fines Processing Line, extension to Main Process Building)

Appendix F.1.4: Specification for Dalumatic Cased Dust Collectors (Fines Processing Line, extension to Main Process Building)

Appendix F.1.5: Filter Media Datasheet (Fines Processing Line, extension to Main Process Building)

Fire Control

- F.1.14 A fire detection and alarm system is installed at the premises. The system has been independently inspected, tested and commissioned in accordance with I.S. 3218:2009, as detailed in Attachment **J.1**.

Surface Water Infrastructure

- F.1.15 A purpose-designed surface water management system has been installed at the facility (see Drawing **WLR-06**), to include an engineered surface water drainage network, a silt trap and 2 No. interceptors – see Attachment **D.1.I** for further details.

F.1.16 Additional storm-water attenuation capacity has been included in engineering designs for the site; it is proposed that a storm-water attenuation pond is constructed in the north-east of the site, as shown in **Drawing WLR-17**; see Attachment **D.1.I** for further details.

F.2 Air Monitoring and Sampling Points

F.2.1 Point-source air emissions monitoring is proposed at 2 No. emission points, as follows (see Drawing **WLR-16**).

Drawing WLR-16 (Attachment F): Monitoring Locations

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Table F.7.1: Proposed air emissions monitoring

| Monitoring Location Ref. | Type | Source | Grid Reference | | Proposed Monitoring Frequency |
|--------------------------|--------------|--|----------------|----------|-------------------------------|
| | | | Easting | Northing | |
| A1 | Point source | Stack emission from Drying Plant | 286764 | 220379 | Biannually ¹¹ |
| A2¹² | Point source | Stack emission from Fines Processing Line (extension to Main Process building) | 286811 | 220296 | Biannually |

F.2.2 Dust monitoring locations are shown on Drawing **WLR-16**. The methodology for dust monitoring is the 'Bergerhoff' Method (German Standard Method VDI2119). Monitoring is proposed as follows.

Table F.7.2: Proposed dust monitoring¹³

| Monitoring Location Ref. | Type | Location | Grid Reference | | Proposed Monitoring Frequency ¹⁴ |
|--------------------------|---------|--|----------------|----------|---|
| | | | Easting | Northing | |
| D1 | Ambient | On southern site boundary, close to site entrance | 286761 | 220258 | Quarterly |
| D2 | Ambient | In north of site, in proximity to nearest residential property | 286701 | 220410 | Quarterly |
| D3 | Ambient | Eastern boundary of site | 286772 | 220394 | Quarterly |

F.3 Surface Water Monitoring and Sampling Points

F.3.1 2 No. surface water emission monitoring points are included, as detailed below and shown on Drawing **WLR-16**.

¹¹ As per existing Waste Licence, W0279-01; no changes proposed for the purpose of the Waste Licence Review application

¹² This is a new monitoring location (since W0279-01), included for the purpose of the Waste Licence Review application

¹³ As per existing Waste Licence, W0279-01; no changes proposed for the purpose of the Waste Licence Review application

¹⁴ Twice during the period May to September

Table F.7.3: Proposed surface (storm) water monitoring¹⁵

| Monitoring Location Ref. | Type | Location | Grid Reference | | Proposed Monitoring Frequency ¹⁶ |
|--------------------------|-------|---|----------------|----------|---|
| | | | Easting | Northing | |
| SW1 | Water | Discharge from Interceptor#1 | 286775 | 220372 | Weekly |
| SW2 | Water | Discharge from Interceptor#2 (via the attenuation tank/hydro-valve to the north western part of the site) | 286727 | 220398 | Weekly |

F.4 Sewer Monitoring and Sampling Points

F.4.1 No monitoring of discharge to sewer is proposed.

F.5 Groundwater Monitoring and Sampling Points

F.5.1 No groundwater monitoring is proposed.

F.6 Noise Monitoring and Sampling Points

F.6.1 Proposed noise monitoring is detailed below (see Drawing **WLR-16**).

Table F.7.4: Proposed noise monitoring

| Monitoring Location Ref. | Location | Grid Reference | | Proposed Monitoring Frequency |
|--------------------------|--|----------------|----------|-------------------------------|
| | | Easting | Northing | |
| NSL1 | West of the site, approx. 30m from the site boundary at the nearest noise sensitive location | 286648 | 220322 | Annual |

F.7 Meteorological Data Monitoring and Sampling Points

F.7.1 No meteorological monitoring is proposed.

¹⁵ As per existing Waste Licence, W0279-01; no changes proposed for the purpose of the Waste Licence Review application

¹⁶ Visual inspection daily

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**Attachment G:
Resources Use & Energy Efficiency**

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Attachment G: Resources Use & Energy Efficiency

G.1 Raw Materials and Product

G.1.1 The following input raw materials are utilised at the facility:

- Glass products/materials
- Cans

G.1.2 The following ancillary materials/substances/preparations are utilised at the facility:

- Oils, lubricants, etc. (associated with plant & machinery, vehicle maintenance and garaging activities)
- Sodium silicate (used as a binding agent in the (pilot) pelletising process within the Drying Plant building)

G.1.3 The following fuels/energy/resources are utilised at the facility:

- Electricity
- Gas
- Diesel
- Water

G.1.4 The following products are produced at the facility:

- Glass cullet
- Cans
- Glass fines
- Processed ceramics

G.1.5 The following wastes are produced at the facility:

- Residual process waste (residual from Main Process and the Drying Plant operations)
- Non-process wastes – office (general municipal-type waste; office paper waste)
- Non-process wastes – garage (waste from garaging activities, e.g. waste oil, oily rags, used filters)

- Other bulky/ misc. waste (e.g. waste pallets, scrap metal, concrete blocks, plastic piping, litter on site or deposited in the yard)
- G.1.6 The input material to the facility is glass and cans. Input glass may be colour-segregated or mixed-colour. Material is subject to a range of sorting/processing techniques, as described in Attachment **H.3**. There is no washing of material. No chemicals/additives are applied.
- G.1.7 The process aims to maximise the recovery of glass and cans.
- G.1.8 Processing operations in the Main Process (described in Attachment **H.3**) are powered by electricity.
- G.1.9 A gas storage tank is installed in the north of the site and is used as a fuel source for the Drying Plant operation and for the new fines processing line at the extension to the Main Processing building.
- G.1.10 All office space heating is powered by electricity (storage heaters).
- G.1.11 Diesel is stored in 2 No. on-site tanks, as described in Attachment **D.1.g**. Diesel is used for truck refuelling and to fuel site machinery.
- G.1.12 Oils, lubricants, etc. associated with vehicle maintenance and garaging activities are stored in the Garage Building (described in Attachment **D.1.m**).
- G.1.13 Water is used for drinking water, sanitary purposes and for the on-site dust suppression system. Rehab Glassco will further examine options for rainwater harvesting in the medium-term as an option for water supply to the dust suppression system.
- G.1.14 No construction works are proposed; therefore no Construction and Demolition waste will be generated.
- G.1.15 No insecticides/herbicides are used or retained on site.
- G.1.16 Safety datasheets for vermin control material are included as follows:
Appendix G.1.1: Safety datasheets (vermin control)
- G.1.17 Records of material inputs/outputs, resource use and waste generation will be maintained on site and reported to the EPA, as required.

G.2 Energy Efficiency

- G.2.1 Rehab Glassco has invested in state-of-the-art sorting equipment for its plant at Osberstown. The equipment was procured with due regard for energy efficiency specifications.
- G.2.2 Electricity is supplied to the facility by a sub-station on site supplying 1,000 KVA. The main switch room is fitted with power factor correction which regulates power supply to the facility to maximise efficiency and minimise any losses.

- G.2.3 Energy use is monitored and measured and opportunities for improved energy performance are examined on an ongoing basis. The Plant Manager is a qualified electrician and ensures that energy is used efficiently. The Main Process operation is controlled by PC, which ensures optimal efficiency of all motors and equipment.
- G.2.4 All yard and outdoor lighting at the site operates on photocells, ensuring that lights are activated only when light levels decrease.
- G.2.5 Records of energy use will be maintained on site and reported to the EPA, as required.
- G.2.6 An energy efficiency audit will be completed in line with licence requirements (W0279-01).

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**Attachment H:
Materials Handling**

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Attachment H: Materials Handling

H.1 Waste Types and Quantities - Existing and Proposed

Waste Types

- H.1.1 Rehab Glassco offers a nationwide collection and recycling service for glass and cans. Materials are collected from pubs, hotels, restaurants, sports clubs, financial institutions, office blocks, apartments and housing developments, council bring sites, civic amenity centres, industrial units and waste companies.
- H.1.2 Glass products, bottles and jars and aluminium and steel cans are accepted for recycling at the Rehab Glassco facility.
- H.1.3 The facility has the capability of sorting mixed glass into colour-separated glass cullet.
- H.1.4 Acceptable wastes, categorised by European Waste Catalogue (EWC) code are listed in Appendix H.1.1. In addition, the Applicant seeks permission to accept other compatible waste streams, as may arise. The EWC codes are as per EPA Licence W0279-01; no changes are proposed as a result of the Waste Licence Review application.

Appendix H.1.1: Acceptable Wastes (EWC codes)

Waste Quantities

- H.1.5 Rehab Glassco (and previously Glassco Recycling Ltd) has operated a glass/can recycling facility at Osberstown Industrial Park, under Waste Facility Permit (WFP-KE-08-0357-01), since 2008. Due to increased tonnage associated with the closure of a 'sister' plant in Ballymount, South Dublin in February 2011, an application was made to the EPA for a Waste Licence in July 2011. EPA Waste Licence W0279-01 was issued in December 2014.
- H.1.6 The input tonnages for 2008 to 2014 are provided in **Table H.1.1**.

Table H.1.1: Input tonnages to the glass/can recycling facility at Osberstown, 2008-2014

| Year | Input tonnage |
|--------------------|---------------|
| 2008 | 34,028 |
| 2009 | 58,230 |
| 2010 | 55,367 |
| 2011 ¹⁷ | 95,585 |
| 2012 | 96,494 |
| 2013 | 111,767 |

¹⁷ Merging of glass plants at Ballymount and Naas

| Year | Input tonnage |
|------|---------------|
| 2014 | 122,641 |

H.1.7 The Applicant predicts future business growth and increased waste input. The Waste Licence application (July 2011) therefore sought an input tonnage of up to 150,000 tpa. EPA Licence W0279-01 licensed a maximum tonnes per annum of 150,000 tonnes. No change is proposed as part of this Waste Licence Review application.

H.2 Waste Acceptance Procedures

- H.2.1 Incoming loads are weighed in and full details recorded on the weighbridge software. The weighbridge operator directs the incoming vehicle to the appropriate storage bay for unloading.
- H.2.2 A specific waste inspection and quarantine system is in place on site.
- H.2.3 Waste sources and inputs to the Rehab Glassco facility are controlled. All waste loads arriving at the facility are tipped and visually inspected prior to processing.
- H.2.4 If, upon tipping, the operative notes any suspected contaminated/non-conforming wastes, the plant manager, assistant plant manager or shift supervisor is informed immediately. The manager will decide whether the load should be rejected or quarantined. Any contaminated/unsuitable loads may be recorded as a 'rejected load' and returned to source or removed to an appropriately licensed/permitted site, with the Agency's consent.
- H.2.5 Any loads which may require to be further inspected or quarantined will be appropriately cordoned off in a storage bay pending further investigation and the material will be dealt with in the appropriate manner. The waste inspection and quarantine area is not a fixed location; rather an empty storage bay is assigned on an 'as required' basis.
- H.2.6 Any smaller non-conforming items within an incoming loaded may be removed to the residual waste storage area or mobile hopper bins, pending removal off-site to an appropriately licensed/permitted facility. Such material (e.g. cardboard, black refuse sacks, bricks, concrete, ceramics, stones, porcelain, timber) can be handpicked out or mechanically removed.
- H.2.7 If the material is deemed to be satisfactory, it is 'pushed back' for storage in the appropriate bay in the normal manner pending processing. If any material or batch is found to be unsuitable or contaminated after tipping, it will be immediately examined further and the bay will be cordoned off.
- H.2.8 Acceptable material is removed from the storage bay for processing as described in Attachment H.3 below.
- H.2.9 In accordance with EPA Licence W0279-01, condition 8.11, detailed written waste acceptance and characterisation procedures will be established and maintained by the licensee.

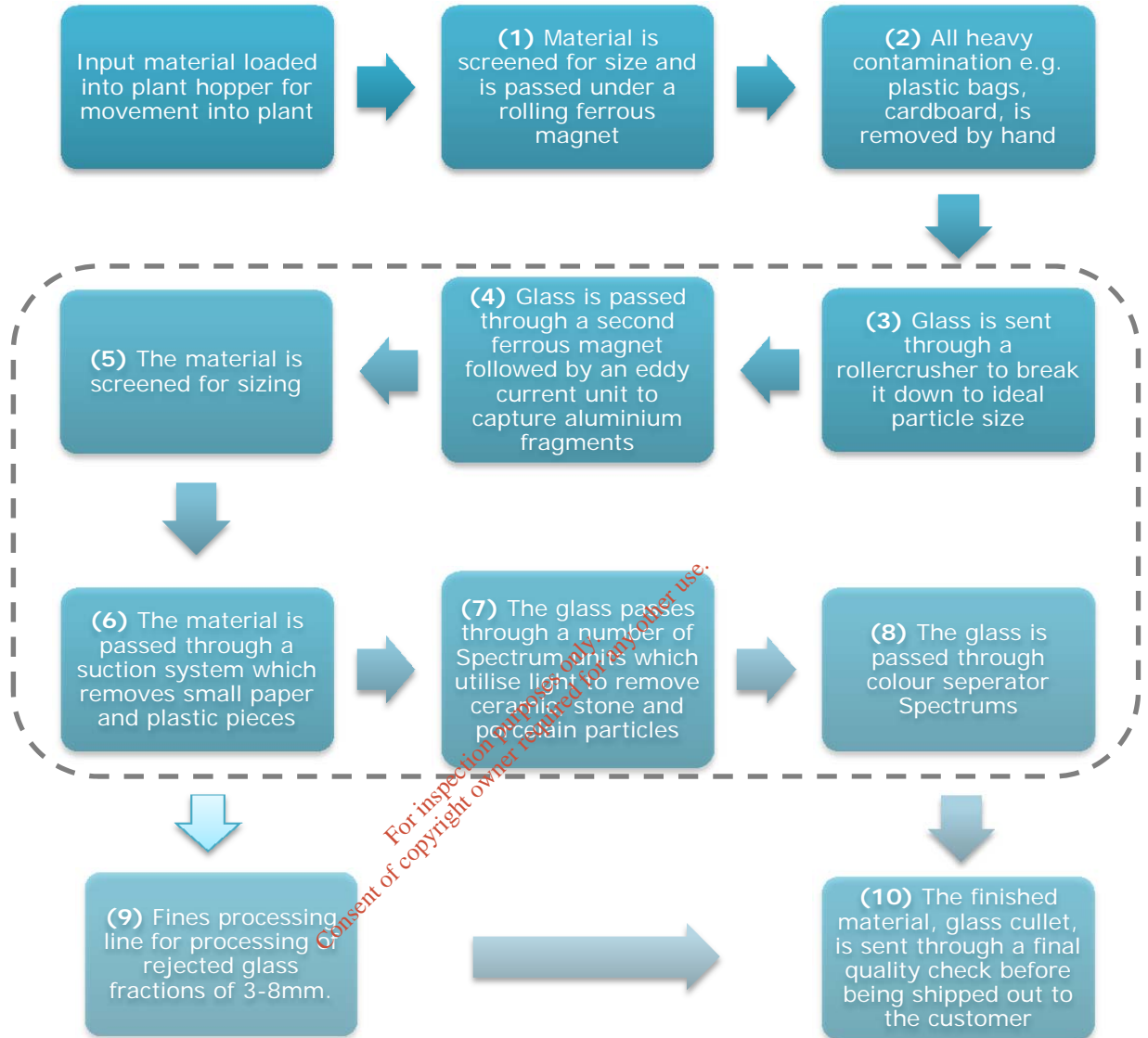
H.3 Waste Handling

MAIN PROCESS

- H.3.1 A flowchart showing the stages associated with Main Process is provided in Attachment **D.2**; what follows below is a description of the 'sorting/processing' stage, once input material has been fed into the Main Process; please see **Figure H.3.1**.
- H.3.2 The Rehab Glassco glass processing and cleaning plant is a state-of-the-art facility, relying on proven technology which includes sophisticated optical technology, screening systems, drying and air classification to separate various mixes and colours of glass-based material into furnace-ready clean cullet for remanufacture into glass products. The process also uses manual pre-sort and quality control techniques to separate out certain contaminants at the early stages of the process.

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Figure H.3.1: Flowchart of sorting/processing stage of Main Process



(1) Initial Screening and Ferrous Extraction

H.3.3 The first stage after the glass enters the plant is initial screening and sizing to remove bottle tops, neck rings, corks and labels using a dedicated screen and rolling ferrous magnetic system.

(2-3) Manual Sorting and Crushing

H.3.4 After the initial screening, the material is conveyed to the main manual pre-sort, which is located in an enclosed sorting platform at the early stages of this process and is a critical step where the glass can be visually inspected and gross contaminants (e.g. plastics bags, cardboard, any remaining liquids or ‘short fills’ in plastic bottles) are manually removed by dedicated pickers. Immediately after this step the glass is broken down and crushed into an ideal size using a roller-crusher; this presents the glass in a particle size range which is suitable for the onward process.

(4) Extraction of Ferrous and Non-Ferrous Metals

- H.3.5 The next stage after the crushing and manual sorting involves the second ferrous extraction system using the over-band magnet to remove ferrous metals, mainly steel cans and other small/medium pieces of metals, e.g. various kitchen utensils and cutlery, ring pull-tops, etc. The material is then conveyed to the eddy current separator to remove non-ferrous items mainly aluminium cans, ring pull-tops and other small fragments.

Photograph H.3.1: Eddy Current Separator Unit

(5) Further Screening and sizing

- H.3.6 The glass is further screened and sized to remove residual matter and fine particulate matter.

(6) Air Classification

- H.3.7 Once the glass has been separated from other contaminants including ferrous /non-ferrous metals, it is further processed by using air classification systems (cyclone/vortex suction/air blower methods) to further classify the heavy from the light material (e.g. small plastic components, labels, caps, foil, tops and dust). The air classification systems can handle large volumes of material flow containing glass, paper, foil, etc. and can be highly effective in cleaning the glass and removing further light contaminants.

(7-8) Optical Sorting

- H.3.8 The glass is conveyed and presented for onward optical separation using the dedicated sorting systems known as Spectrum units. These optical sorting systems use high-tech sensors (cameras) with high velocity optical detectors which identify the opacity and true colour of the glass. Off-colour contamination and non-transparent contaminants such as ceramics, stones and porcelain (CSP) are rejected and the offending material is 'blown out' by high velocity compressed air jet nozzles at pinpoint accuracy, to minimise loss of good cullet (processed furnace-ready glass).
- H.3.9 The plant also uses another combination series of state-of-the art optical machines known as Speckmags in the material flow to process glass by true colour and clean the glass free from non-glass contaminants (CSP), including ferrous and non-ferrous items. The removal efficiency of both such systems are quoted by the manufacturers to be in the region of >95% purity levels. This whole processing operation is currently achieving in the region of approximately <1% residual fraction as an output of the total input, which is consigned to landfill.
- H.3.10 The Rehab Glassco plant and the optical systems has been designed to provide features for touch-screen interface control for setting up and day-to-day programme management, and built-in modems for remote diagnostics from the manufacturer. The plant makes use of the modern power management systems, and the optical systems, screening and air classification system have been designed for easy access to allow for maintenance and cleaning.

Photograph H.3.2: Spectrum Unit showing glass input conveyor

(9) Fines Processing Line

- H.3.11 A new fines processing line has been installed (in an new extension to the Main Process building) to sort rejected glass from the main process. Fine-fraction glass material (3-8mm) is scalped out from the main sorting and processing operation and introduced to the fines processing line.

(10) Final QC

- H.3.12 The finished material, glass cullet, is sent through a final quality check before being transported to the customer.
- H.3.13 There is currently a glass cullet quality control (QC) laboratory on site. The function of the laboratory is to physically sample the processed glass for contaminants, mainly in the form of ceramic, stone and porcelain (CSP) material, prior to removal off-site. The weight of the contaminants, date, colour of main glass sampled are recorded on the sampling sheet, including photographic evidence of the CSP, which is placed into bag and retained for record-keeping purposes. The glass sampling procedure is repeated at a frequency of approximately every 30 minutes. Rehab Glassco operates an internal Standard Operating Procedure for the QC laboratory.

Photograph H.3.3: Glass cullet quality control (QC) laboratory (1)

Photograph H.3.4: Glass cullet quality control (QC) laboratory (2)

DRYING PLANT

- H.3.14 A flowchart showing the stages associated with Drying Plant is provided in Attachment **D.2**.
- H.3.15 The on-site Drying Plant is used to treat certain residual glass materials from the Main Process on site, i.e. glass rejected from the Main Process on 'first pass'.
- H.3.16 Feedstock to the Drying Plant was previously consigned to landfill; the Drying Plant process now facilitates a significantly increased level of materials recovery.
- H.3.17 The Drying Plant operation includes magnetic extraction, manual pre-sort, drying, screening, crushing and separation of the clean glass into various size fractions. Material is fed via a hopper and passes under an over-band magnet to a manual picking line, where gross contaminants are picked out. Acceptable material passes from the picking line to the rotating drying unit, which operates at approximately 200 to 250°C. A baghouse filtration system is in place in the Drying Plant.
- H.3.18 The glass output from the drying unit is screened into the following fractions: >8mm fraction, which is transferred onwards to the main processing plant for re-processing (this fraction forms approximately 70%-80% of the output by weight from the drying plant) (see Photograph **D.2.10**); the 3mm-8mm fraction leaves the drying plant as finished cullet (see Photograph **D.2.9**). The <3mm fraction is crushed to various grades of glass fines.

- H.3.19 The very fine-grained glass residue (<1mm), which is light and dusty in nature, is pelletised to form a marketable product. The process involves the addition of small volumes of water¹⁸ and sodium silicate (binding agent) to the glass dust fraction, within an enclosed mixing unit. The output from the process is pellets or granules of the fine-grained glass dust fraction. The product is a furnace-ready raw material for the glass manufacturing industry. This is a bespoke pilot process, researched and developed by Rehab Glassco to change a waste residue into a valuable product; the process may be regarded as an innovative waste prevention approach.
- H.3.20 The residual fraction from the Drying Plant is approximately <0.5% by weight of the total input. This contaminant material (see Photograph **D.2.11**) is currently consigned to landfill; however future potential recovery options will be considered, as appropriate.

MATERIAL STORAGE

- H.3.21 There are a number of external storage areas at the facility, which are dedicated for the storage of specific input and output materials (see Photographs **D.2.1**, **D.2.3**, **D.2.6** and **D.2.7**). Rehab Glassco employs a range of control/mitigation measures in relation to the storage of these materials, as detailed below.
- H.3.22 All incoming material is inspected upon tipping and stored in the external storage bays. The material is non-hazardous and non-putrescible in nature and originates from household and commercial sources. The material category includes separately-collected municipal packaging wastes including: glass packaging, metallic packaging, composite packaging and other forms of metals and glass.
- H.3.23 Waste storage bays are clearly delineated and only one glass type/colour or other material is stored in each bay at any one time prior to processing.
- H.3.24 Precast concrete 'lego block' walls and concrete floors are used in the construction of the storage bays (See Photograph **D.1.12**). This provides each bay with a hard, abrasive-resistant surface area to prevent the tipped glass from wearing and tearing the containment structure down from general handling operations. High-quality structures also prevent the potential of additional dust from arising, particularly from the scraping of the front-end loader bucket.
- H.3.25 Any spilled product outside of the bays is immediately cleaned up and the material is pushed back into its bay, as and where necessary. In addition, the yard area is regularly swept by roadsweeper.
- H.3.26 Post-processing, the glass cullet is stored in an intermediate storage area, in ground-level bays, which are located beneath the processing operations. Bulk storage of glass cullet is within the storage bays in south of the site pending off-site removal.
- H.3.27 Residual waste from the main plant input feedstock is stored pending off-site removal in a dedicated ground-level bay, which is located beneath the processing operations. Small amounts of the residual material will be temporarily stored on-site pending off-site recovery or disposal at an appropriately licensed/permitted off-site waste facility.

¹⁸ Estimated by Rehab Glassco at 14% relative to material input. There is no resulting water/wastewater output.

- H.3.28 Cans are crushed, baled and stacked onto pallets for onward transportation and off-site recovery. Bulk storage of the processed/baled metals is within the storage bays in south of the site, pending off site removal.
- H.3.29 A purpose-designed surface water management system has been installed at the facility to include an engineered surface water drainage network, a silt trap and 2 No. interceptors (detailed in Attachment **D.1.I**).
- H.3.30 Condition 8.10.4 of Waste Licence W0279-01 restricts the height of outdoor stockpiles to a maximum of 3m. No change is proposed as a result of the Waste Licence Review application.

H.4 Waste Arisings

- H.4.1 Small amounts of residual waste arise from the Main Process and the Drying Plant operations, as described in Attachment **H.3**. Residue consigned to landfill is minimised through the operation of the Drying Plant. Overall waste residue is estimated at approximately <1% of input, by weight.
- H.4.2 Non-process wastes generated at the facility include:
- General municipal-type waste
 - Office paper waste
 - Waste from garaging activities, e.g. waste oil, oily rags, used filters
- H.4.3 Records of all wastes removed from site are retained by Rehab Glassco. Only appropriately licensed/permitted waste contractors and facilities are used.
- H.4.4 It is noted that glass cullet is subject to 'End-of-Waste' criteria in accordance with Article 6 of the 2008 Waste Framework Directive (2008/98/EC) and Commission Regulation (EU) No 1179/2012. Article 28 of the Waste Framework Directive sets out the grounds by which a material which is recovered or recycled from waste can be deemed to be no longer a waste.

H.5 Waste Recycling and Recovery

- H.5.1 European Communities (Waste Directive) Regulations 2011 (31(1)) makes provision for the separate collection of paper, metal, plastic and glass. This approach is very much in keeping with Rehab Glassco collection and processing procedures. The waste input to the Rehab Glassco facility in Osberstown comprises of materials collected at the bring bank network throughout the country, as well as collections of segregated glass/metals from commercial and other sources.
- H.5.2 The Rehab Glassco facility has the sorting capabilities to successfully sort and segregate mixed-colour glass (as described in Attachment **H.3**).
- H.5.3 The facility produces glass cullet, which is a market-ready raw material used to manufacture new glass products; this is known as 'closed-loop' recycling.

- H.5.4 The environmental benefits of closed-loop glass recycling are well documented, including substantial energy savings¹⁹, with positive climate change implications, and avoiding the need for quarrying and related emissions associated with using virgin raw materials for glass manufacturing.
- H.5.5 The Rehab Glassco facility plays a critical role in the recycling and recovery of glass in the context of the Irish waste management sector. The operation of this facility makes a substantive contribution towards meeting Ireland's recycling and recovery targets for glass: it accounts for approximately 85% of the country's glass recycling.
- H.5.6 Operation of the Drying Plant offers an added opportunity for materials recovery by recovering materials previously consigned to residual waste disposal.
- H.5.7 The residual output from the facility, which is currently non-recoverable, is extremely low at approximately <1% (by weight) of total input, demonstrating the recovery efficiencies of the plant, as well as the level of control applied by the Waste Acceptance Procedures/at the source-segregation stage.
- H.5.8 The acceptable waste types would not be considered hazardous waste, i.e. the waste does not display any property listed in the Second Schedule to the Waste Management Act 1996 (as amended).
- H.5.9 Article 28 of the European Communities (Waste Directive) Regulations, 2011, transposes article 6 of the 2008 Waste Framework Directive (2008/98/EC). Article 28 sets out the grounds by which a material which is recovered or recycled from waste can be deemed to be no longer a waste. In accordance with article 6 of the Directive, the European Commission has developed two regulations governing end-of-waste criteria for:
- Iron, steel and aluminium scrap (Council Regulation (EU) No 333/2011)
 - Glass cullet (Commission Regulation (EU) No 1179/2012)
- H.5.10 End-of-waste criteria for glass cullet apply in line with legislative and EPA provisions (see Attachment **H.4**).

¹⁹ WRAP (UK) estimates that for every tonne of glass recycled, 314 kg of CO₂ emissions are avoided (closed-loop recycling). Every tonne of glass recycled prevents the quarrying of 1.2 tonnes of raw materials. The energy saving from recycling one bottle will:

- Power a 100 watt light bulb for almost an hour.
- Power a computer for 20 minutes.
- Power a colour TV for 15 minutes.
- Power a washing machine for 10 minutes.

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**Attachment I:
Existing Environment & Impact of the Facility**

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Attachment I: Existing Environment & Impact of the Facility

I.1 Assessment of atmospheric emissions

Description of the Activity

- I.1.1 The facility is an operational glass recycling facility and includes built infrastructure to include: (i) Main Process building (including the Fines Processing Line extension) (ii) Drying Plant building and (iii) Vehicle maintenance building.
- I.1.2 In considering emissions to air, due regard was given to point source air emissions from the Drying Plant building and the Main Process building extension; there is 1 No. point emission source from each of these areas.
- I.1.3 Outdoor storage areas and concrete hardstanding areas were considered in terms of potential fugitive dust emissions and dust management requirements.

Possible Effects of an Activity of this Type

- I.1.4 A Remedial Environmental Impact Statement (REIS) prepared for the development (March 2013), and subsequent additional information submitted to the Planning Authority and the EPA (under the W0279-01 application), considered potential impacts on the air environment. Summary information is provided herein. Information has been updated to reflect the new air emission point at the extension to the Main Process building.
- I.1.5 Possible effects of a proposal of this kind are considered as follows:
- The lowering of air quality due to road traffic impacts associated with the development.
 - Air pollution/environmental nuisance associated with elevated dust emissions from the operation of the facility.
 - Air pollution associated with uncontrolled releases to atmosphere from point sources on-site.
 - Air pollution/environmental nuisance associated with odorous emissions from the facility operation.

Road Traffic Air Impacts

- I.1.6 Emissions of pollutants from road traffic can be controlled by either controlling the number of road users or by controlling the flow of traffic. For the majority of vehicle-generated pollutants, emissions arise as speed drops, although the opposite is true for oxides of nitrogen. Emissions are also higher under stop-start conditions when compared with steady speed driving.
- I.1.7 With this development operational, however, even if the average traffic speed at junctions drops to 60 km/hr for the R409 (which is unlikely) with 10 km/hr modelled for turning motions, compliance with all the legislative criteria is likely to be achieved at the nearest sensitive residential receptors.

I.1.8 The predictions for road traffic pollution generation indicate that there are no significant increases in the levels of various traffic-related pollutants as a result of the development in the vicinity of the receptors modelled. These receptors represent the likely worst-case impacts on air quality from traffic. However, with reference to current European Union and Irish legislative criteria, the subject site operations do not have any negative effect on air quality, even under worst-case average traffic conditions.

I.1.9 In summary, the modelling studies undertaken as part of the REIS have shown that the pollutant concentrations present at the subject site are not significant. The traffic-emission concentrations predicted at the receptors are mainly due to the vicinity of the receptors to the existing traffic-flows (even with the contribution of the subject site removed). The subject facility does not result in significant additional traffic-derived emissions, and thus has not negatively impacted on the local air quality. No remedial or mitigation measures in relation to traffic emissions are proposed.

Dust

I.1.10 Results for the most recent round of environmental dust monitoring have been considered. Dust deposition was monitored at three locations (see table following) at the Rehab Glassco site, between the 20th December 2013 and 20th January 2014.

Table I.1.1: Dust monitoring locations

| Monitoring Location | Description |
|---------------------|--|
| D1 | Located on the South western boundary of the site adjacent site entrance |
| D2 | Located to the north boundary of the site |
| D3 | Located on the eastern boundary of the site |

I.1.11 2013-2014 dust monitoring results and are contained in the following table:

Table I.1.2: Dust monitoring results

| Dust Monitoring Location | (mg/m ² /day) | |
|--------------------------|--------------------------|-------------------|
| | Emission Limit Value | 2013-2014 Results |
| D1 | 350 | 45 |
| D2 | 350 | 51 |
| D3 | 350 | 326 |

I.1.12 The dust monitoring report is contained in the following appendix:

Appendix I.1.1: Dust Monitoring Report (ORS, January 2014)

I.1.13 It is anticipated that the facility will have an ongoing need for dust suppression and optimising management measures, as a result of the nature of the activity and on-site processes. Implementation of remedial and mitigation measures, combined with an ongoing monitoring regime, is considered important to manage the issue and demonstrate compliance.

Dust Mitigation Measures

Dust mitigation measures – Drying Plant

- I.1.14 Remedial and mitigation measures for dust were included in the REIS (March 2013). These remedial and mitigation measures have been reviewed by Patel Tonra Ltd., Environmental Solutions.
- I.1.15 A new industrial vacuum system was installed in the Drying Plant in December 2013; see Photographs **F.1.7** and **F.1.8**. The vacuum system allows for spot cleaning of loose dust and debris. Continued use of the vacuum system in the Drying Plant and daily cleaning after plant shut-down is required, to ensure clean-up of spilled product/dust from the floor area, plant, equipment, conveyors and ledges.
- I.1.16 A new water misting system was installed on the two doors at the Drying Plant in January 2014, to prevent the egress of dust emissions from the Drying Plant building; see Photographs **F.1.3**, **F.1.4**, **F.1.5** and **F.1.6**. Deployment of the misting system at the Drying Plant is identified as a mitigation measure, which is required to be implemented on an ongoing basis.
- I.1.17 The primary dust suppression system (e.g. at conveyors, material drop points/chutes/hoppers) in the Drying Plant building was modified at the end of December 2012, to include the installation of a new fan which provided additional extraction capacity, and new dust hoods at critical points. In addition, improvements have been made to seal/contain transfer chutes and openings in the Drying Plant to prevent dust emissions (see Photograph **F.1.9**).
- I.1.18 All emissions from the Drying Plant are managed through the plant's primary and secondary (whole-building) air suppression and filtration system, which includes a combination of cyclone filters and bag-house filtration systems. Continued implementation of a filter checking, maintenance and replacement programme, with filters replaced regularly (and annually, as a minimum). Records of the maintenance/replacement programme will be retained on site.

Dust mitigation measures – Main Process building

- I.1.19 The new extension to the Main Process building houses a fines processing line. A dust abatement system has been installed (see Attachment **F.1**) and the system includes 1 No. point source emission to air. Ongoing maintenance of the abatement system is required. Air emissions monitoring is recommended, as detailed in Attachment **F**.

Dust mitigation measures – Yard Area

- I.1.20 Continued storage of fine product (i.e. output from the Drying Plant <0.2mm), which is light and has the potential to become wind-blown, in sealed bags and covered/wrapped is recommended.
- I.1.21 2 No. water guns were installed at the facility in November 2013 (affixed externally on the Main Process building, on the south-western and north-eastern sides). The water guns operate at a steady rotation speed and provide the required distance and water volume intensity for water distribution in the main yard areas. See Photographs **F.1.1** and **F.1.2**. Continued deployment of the water guns positioned at the Main Process building is required to be implemented on an ongoing basis (depending on weather/site conditions).

- I.1.22 The continued regular sweeping of the yard/hardstanding areas using a mechanical sweeper is required. Continued implementation of regular and routine housekeeping measures on site, i.e. dust cleaning/wiping and sweeping is required
- I.1.23 A water bowser was purchased by the operator to minimise dust in concrete hard-standing areas. Its use on site commenced in February 2013; it is used on an ongoing basis, under dry weather conditions. The continued use of the water bowser during spells of dry weather, or as otherwise may be required, as a dust control measure is required.
- I.1.24 Continued monthly inspection of on-site plant and equipment is required. The maintenance inspections are documented and records retained on site. Any required corrective actions are identified, reported to the management team and actioned accordingly.
- I.1.25 Routine dust monitoring, in line with regulatory requirements, is identified as a mitigation measure, which is required to be implemented on an ongoing basis. Results will be reported to the regulator. Any exceedance of prescribed limit values will be recorded as an incident, with an appropriate level of response identified.
- I.1.26 Continued monitoring of point source emissions from the Drying Plant, in line with regulatory requirements, is required. Any exceedance of prescribed limit values will be recorded as an incident, with an appropriate level of response identified.

Air Emissions

- I.1.27 There are 2 No. Point source emissions to air, from dust abatement systems located (i) at the Drying Plant and (ii) at the Main Process building extension (fines processing line).

Air emissions point at the Drying Plant

- I.1.28 Results for the most recent round of air emissions monitoring from the emission point at the Drying Plant²⁰ have been considered. Monitoring was conducted on the 12th March 2014. The monitoring report is included in the following appendix:

Appendix I.1.2: Air Emissions Compliance Monitoring Emissions Report 0 Drying Plant (Air Scientific, April 2014)

- I.1.29 The monitoring report indicates that TPM, NO₂, SO₂ and volume to be emitted are in compliance with emission limits set under Waste Licence W0279-01; but that there was a non-compliance for CO (see table following). The abatement system at the Drying Plant will require ongoing management and optimisation. Ongoing monitoring is required, as detailed in Attachment F.

²⁰ Note: the monitoring point is denoted 'A2-01' in the monitoring report; elsewhere in the Waste Licence Review application documentation this emission point is denoted 'A1'.

Table I.1.3: Air emissions monitoring results - Drying Plant

| A2-01 ²¹ | Concentration STP Wet and Unadjusted for O ₂ | | | | |
|--|---|--------|--------|-------|-----------|
| Parameter | Units | Result | MU +/- | Limit | Compliant |
| Total Particulate Matter (TPM) | mg.m ⁻³ | 4.71 | 0.41 | 50 | Yes |
| Carbon Monoxide (CO) | mg.m ⁻³ | 826.7 | 176.3 | 300 | No |
| Oxides of Nitrogen (NO _x) as NO ₂ | mg.m ⁻³ | 15.1 | 13.4 | 50 | Yes |
| Sulphur Dioxide (SO ₂) | mg.m ⁻³ | 17.0 | 16.2 | 50 | Yes |
| Volumetric Flow Rate (Ref.) | m ³ .hr ⁻¹ | 4,096 | - | 9,500 | Yes |

I.1.30 *Air emissions point at the Main Process building extension (fines processing line)*
Results for the most recent round of air emissions monitoring from the emission point at the Main Process building extension (fines processing line) have been considered. Monitored was conducted on the 17th December 2014. The monitoring report is included in the following appendix:

Appendix I.1.3: Air Emissions Compliance Monitoring Emissions Report – Main Process Building Extension (Air Scientific, January 2015)

I.1.31 The monitoring report indicates that, for the parameters tested, results for emissions monitoring at the Main Process building extension are in compliance with emission limits set under Waste Licence W0279-01. Ongoing monitoring is required, as detailed in Attachment F.

Table I.1.4: Air emissions monitoring results – Main Process Building Extension

| A2 | Concentration | | | | |
|--|----------------------------------|--------|--------|-------|-----------|
| Parameter | Units | Result | MU +/- | Limit | Compliant |
| Carbon Monoxide (CO) | mg.m ⁻³ | 20.3 | 8.0 | 300 | Yes |
| Oxides of Nitrogen (NO _x) as NO ₂ | mg.m ⁻³ | 14.7 | 6.9 | 50 | Yes |
| Sulphur Dioxide (SO ₂) | mg.m ⁻³ | 7.8 | 7.3 | 50 | Yes |
| Volumetric Flow Rate (Ref.) | m ³ .hr ⁻¹ | 6,005 | - | 9,500 | Yes |

Odour

I.1.32 Due to the inert nature of the material accepted at the Rehab Glassco facility, i.e. glass and cans, odour is not noted as a significant issue on site. No remedial or mitigation measures in relation to odour are required.

I.1.33 Emissions of pollutants (as defined in the Waste Management Act 1996, as amended and the Air Pollution Act 1992, as amended, respectively) to the atmosphere are not likely to impair the environment.

²¹ Note: the monitoring point is denoted 'A2-01' in the monitoring report; elsewhere in the Waste Licence Review application documentation this emission point is denoted 'A1'.

I.2 Assessment of impacts of surface water discharges

Description of the Activity

- I.2.1 The facility is an operational glass recycling facility and includes built infrastructure to include: (i) Main Process building, (including extension) (ii) Drying Plant building and (iii) Vehicle maintenance building.
- I.2.2 Concrete hardstanding, drainage and surface water management infrastructure have been installed at that facility, as detailed in Attachment **D.1.I**; see **Drawing WLR-06**.
- I.2.3 There is a ditch running the length of the north-eastern boundary of the facility. Site visits indicate that the ditch is dry at times, with low to medium water level at other times. The variation in water levels is thought to be related to weather and seasonal factors. There is minimal to no flow in the stream. Stream-water appears to be fed by surface water drains from the neighbouring property. There are no piped surface water emissions from the subject site to the ditch.
- I.2.4 A wayleave associated with the Newbridge Rising Main runs along the north-eastern boundary of the site, as shown in **Drawing WLR-04**. The wayleave is approximately 22m in width, of which approximately 14m (width) falls within the Rehab Glassco site. The wayleave re-oriens in the northern corner of the Rehab Glassco site and lies wholly within the Rehab Glassco site. The wayleave area which falls within the Rehab Glassco site is covered by a removable hard plastic matting system, which allows for vehicle movements and temporary storage of materials and recycling receptacles in this area.
- I.2.5 The Rehab Glassco site shares a boundary (north-eastern) with the Irish Water Osberstown Waste Water Treatment Plant (WWTP). Osberstown WWTP is licensed by the EPA under Waste Water Discharge Licence D0002-01.
- I.2.6 The River Liffey flows in a west-east direction and is located approximately 120m to the north of the subject site (at the closest point).
- I.2.7 The subject site lies within the Eastern River Basin District; sub-basin IE_EA_09_1870_3; Liffey Water Management Unit; Hydrometric Area No. 9, Liffey and Dublin Bay; River Liffey Catchment. The subject site is approximately 0.24km distant (at the closest point) from a proposed National Heritage Area, 'the Liffey at Osberstown'.

Possible Effects of an Activity of this Type

- I.2.8 A Remedial Environmental Impact Statement (REIS) prepared for the development (March 2013), and subsequent additional information submitted to the Planning Authority and the EPA (under the W0279-01 application), considered potential impacts on the surface water environment. Summary information is provided herein. Information has been updated to reflect the new air emission point at the extension to the Main Process building (as appropriate).
- I.2.9 *Possible* effects arising during the construction phase are considered as follows:
- Potential surface water pollution impacts in the event of an incident involving hazardous materials stored on site, e.g. accidental spillage of fuel or leak from a tank.
 - The release of silt-laden material to a water body.
 - Potential impact on a designated/sensitive water body in the vicinity.

I.2.10 Possible effects arising during the operational phase are considered as follows:

- Reduced water infiltration and increased runoff associated with fixed, impermeable surfaces (concrete hardstanding).
- Potential flooding impacts.
- Run-off and potential surface water pollution from input materials/product stored outdoors.
- Possible contamination of surface water from process emissions.
- Potential surface water pollution impacts in the event of an incident involving hazardous materials stored on site, e.g. accidental spillage of fuel or leak from a tank.
- Potential impact on a designated/sensitive water body in the vicinity.

Construction Phase

I.2.11 The construction phase of the subject site was completed in line with previous planning decisions. The site was a greenfield development. Construction and development works were subject to design in line with relevant building/infrastructure standards. The development was subject to planning applications to the planning authority (Kildare County Council) and a series of planning decisions were issued.

I.2.12 There are no records to indicate an environmental incident on site during the construction phase. Furthermore, there were no visible signs of contamination (e.g. staining/discolouration which would be associated with a fuel spillage) during site visits, which may indicate a fuel or hazardous liquid spillage in the past.

I.2.13 There is no evidence of previous or historic pollution sources during site development works, which may have impacted on surface water quality.

I.2.14 The construction-stage impacts on local surface waters designated as protected/sensitive areas are deemed to be insignificant.

Operational Phase

I.2.15 The site area is 21,300m², of which approximately 1,289m² is built infrastructure (footprint) and 15,650m² is concrete hardstanding; this results in infiltration of rainwater being impeded and surface water must be collected and managed. A surface water management system is in place, as detailed in Attachment D.1.

I.2.16 There are no historic records of flooding on the site. The site itself is not in an area identified as a fluvial flood risk area in CFRAM studies or OPW National Flood Hazard Mapping. The site is identified as an area possibly prone to pluvial flooding. Additional storm-water attenuation capacity is proposed as a mitigation measure, as the current attenuation capacities are inadequate, in line with drainage best practice guidelines.

I.2.17 Input and processed materials stored outdoors are inert in nature; however run-off from certain materials can be silty or 'dusty', and there is the potential for small volumes of litter/material to migrate to the stream/ditch along the eastern site boundary; mitigation measures for the storage of input and processed materials are therefore outlined below.

I.2.18 Results for monitoring of surface water at SW-1 (runoff from the western portion of the site) and SW-2 (runoff from the eastern portion of the site) were provided

by consultants to Rehab Glassco as follows. The latest monitoring report is appended as follows:

Appendix I.2.1: Interceptor Monitoring Report (Boylan Engineering, January 2015)

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Table I.2.1: SW-1 surface water monitoring results

| Parameter | Units | BAT ELV ²² | Results | | |
|------------------------|-------|-----------------------|----------------|----------------|----------------|
| | | | Wk 1, Jan 2015 | Wk 4, Dec 2014 | Wk 3, Dec 2014 |
| pH | pH | 6-9 | 6.9 | - | - |
| Conductivity | µS/cm | - | - | - | - |
| BOD | mg/l | 25 | 117 | - | - |
| Mineral Oil | mg/l | - | 0.23 | - | - |
| Total Suspended Solids | mg/l | 35 | 52 | - | - |

Table I.2.2: SW-2 surface water monitoring results

| Parameter | Units | BAT ELV ²³ | Results | | |
|------------------------|-------|-----------------------|----------------|----------------|----------------|
| | | | Wk 1, Jan 2015 | Wk 4, Dec 2014 | Wk 3, Dec 2014 |
| pH | pH | 6-9 | 7.5 | 7.4 | 6.9 |
| Conductivity | µS/cm | - | - | - | 730 |
| BOD | mg/l | 25 | >5 | 5 | 49 |
| Mineral Oil | mg/l | - | 0.06 | 0.11 | 1.17 |
| Total Suspended Solids | mg/l | 35 | 12 | 16 | 27 |

- I.2.19 There are no process emissions from the facility.
- I.2.20 There are 2 No. fuel storage areas on site, which, in the event of an environmental incident, could cause surface water contamination. There is no evidence of environmental pollution incidences having occurred heretofore; mitigation measures are in place, as detailed below, and should be maintained on an ongoing basis.
- I.2.21 The operational-phase impacts on local surfaces waters designated as protected/sensitive areas are deemed to be insignificant.

²² No Emission Limit Value (ELV) prescribed in Waste Licence W0279-01; therefore BAT Notes were referenced (*BAT Guidance Note - Waste Sector (Transfer & Materials Recovery) - Dec 2011*)

²³ No Emission Limit Value (ELV) prescribed in Waste Licence W0279-01; therefore BAT Notes were referenced (*BAT Guidance Note - Waste Sector (Transfer & Materials Recovery) - Dec 2011*)

Mitigation Measures – Emissions to Surface Water

Storm-water attenuation

- I.2.22 Current attenuation capacity for the site is inadequate and the installation of additional attenuation capacity is in line with regional drainage policies²⁴. It is proposed that a storm-water attenuation pond is constructed in the north-east of the site, as shown in **Drawing WLR-17**. The attenuation pond will be approximately 75m (length) x 5m (width) x 1.2m (depth).
- I.2.23 It is recommended that construction works associated with the storm-water attenuation pond works are supervised by a competent engineer. Works to be completed in line with Eastern Regional Fisheries Board guidelines²⁵, to include the following precautionary measures:
- Fuels, oils, greases and hydraulic fluids must be stored in bunded compounds well away from the watercourse. Refuelling of machinery, etc., should be carried out in bunded areas.
 - Runoff from any machine service and concrete mixing areas must not enter the watercourse.
 - Stockpile areas for sands and gravel should be kept to minimum size, well away from the watercourse.
 - Watercourse banks should be left intact if possible. If they have to be disturbed, all practicable measures should be taken to prevent soils from entering the watercourse.
- I.2.24 To avoid soils washing into the stream/ditch along the north-eastern site boundary (during the operational phase), a suitable level of planting is recommended to ensure the stability of the bank.

Interceptor discharge

- I.2.25 Surface water emissions will be controlled at 2 No. discharge points only, via the site drainage system, 2 No. interceptors and silt trap at the vehicle washing/power-wash area. Drains, silt traps and interceptors are subject to ongoing inspection, cleaning and maintenance.
- I.2.26 Emissions to surface water at the discharge points will be sampled in accordance with regulatory requirements.

Storage of input materials and product

- I.2.27 Storage of bulk, uncontained input materials and product will be restricted to hardstanding areas only. Storage outside of the hardstanding areas is only permissible for bagged/contained materials.
- I.2.28 The height of stockpiles will be restricted to 3m maximum to ensure the consistent movement of material through the process, thereby avoiding the on-site storage of material for prolonged periods.
- I.2.29 Non-conforming input wastes and waste residues are contained in appropriate waste receptacles, e.g. bins, skips or specialist containers.

²⁴ The Greater Dublin Strategic Drainage Study (GDSDS)

²⁵ *Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites*

I.2.30 Temporary ground covers only [no permanent fixtures] are used on the wayleave area (Newbridge Rising Main) on the north-eastern boundary, to permit access by the authorities, if required.

Fuel Storage

I.2.31 There are 2 No. fuel storage tanks on site (see Attachment **D.1.g**). Both tanks are bunded/double skinned. Inspections and conformance records will be retained on-site.

I.2.32 Bunded drip trays are in place in the Vehicle Maintenance building and all hazardous liquids will be stored thereon.

I.2.33 A documented emergency response system is in place. Any environmental incidents are logged and reported to the regulator, as required. Emergency spill kits will be positioned at areas of risk. Staff will be trained on environmental emergency response/use of spill kits.

I.2.34 No significant residual impacts on surface water, post-mitigation, are anticipated. Monitoring of surface water discharge is proposed in Attachment **F**.

European Communities Environmental Objectives (Surface Water) Regulations (2009)

I.2.35 The Regulations apply to all surface waters and provide, *inter alia*, for:

- The establishment of legally binding quality objectives for all surface waters and environmental quality standards for pollutants.
- The examination and where appropriate, review of existing discharge authorisations by Public Authorities to ensure that the emission limits laid down in authorisations support compliance with the new water quality objectives/standards.
- The classification of surface water bodies by the EPA for the purposes of the Water Framework Directive.
- The establishment of inventories of priority substances by the EPA.
- The drawing up of pollution reduction plans by coordinating local authorities (in consultation with the EPA) to reduce pollution by priority substances and to cease and/or phase out discharges, emissions or losses of priority hazardous substances.

I.2.36 Chapter 10 of the REIS (March 2013) details the status and environmental objectives for receiving surface water at, and in the vicinity of, the Rehab Glassco facility. There are controlled discharges from the Rehab Glassco site to surface water, which (ultimately) enter the River Liffey.

I.2.37 The River Liffey flows in a west-east direction and is located approximately 120m to the north of the subject site (at the closest point). The river status of the Liffey (at the river section closest to the subject site, ref. EA_Liffey168_Liffey1_Lower_3) is 'Moderate'. Its water body score is '1a, At risk of not achieving good status'. The target for the Liffey (at the river section closest to the subject site, ref. Liffey1_Lower) is to achieve 'Good' status by 2021.

I.2.38 Surface water drainage arrangements are detailed in Attachment **D.1**, and include 2 No. interceptors.

- I.2.39 Monitoring of surface water discharge is completed on a regular basis; further recommendations relating to surface water discharge monitoring are included in this attachment, Attachment I.2, Mitigation Measures – Emissions to Surface Water.

I.3 Assessment of impact on receiving sewer

Existing Environment – Wastewater

- I.3.1 There is no process emission to sewer. The only emission to sewer associated with the facility is from toilets on site.
- I.3.2 Drawing **WLR-06** Site Drainage Drawing shows the foul sewer running from the site offices to the industrial park's sewer system. This sewer system discharges to the Osberstown Wastewater Treatment Works, Naas, Co. Kildare. The Osberstown Wastewater Treatment Works is located immediately to the east of the Rehab Glassco facility.

Potential Impacts - Wastewater

- I.3.3 No significant wastewater impacts are anticipated.

Conclusion - Wastewater

- I.3.4 No significant wastewater impacts are anticipated.

I.4 Assessment of impact to groundwater and soils

Description of the Activity

- I.4.1 The facility is an operational glass recycling facility and includes built infrastructure to include: (i) Main Process building, (ii) Drying Plant building and (iii) Vehicle maintenance building.
- I.4.2 The site is largely finished in concrete hardstanding, as described in Attachment D.1.
- I.4.3 The topography of the site and the immediate environs is flat and low-lying (approximately 80m OD). Kildare as a whole is broadly flat land (the result of glacial deposition).
- I.4.4 The rocks of Kildare-Wicklow record a geological history spanning the last 530 million years. The region's geology can be discussed in three broad time periods: the Lower Palaeozoic (and earliest Devonian), the Carboniferous and the Quaternary. The oldest rocks in Kildare-Wicklow are the greywackes, slates and quartzites of the Bray Group. The succeeding Ribband Group consists predominantly of fine-grained sedimentary rocks deposited as muds and silts in deep water. The Duncannon Group in Kildare-Wicklow is the northern end of a belt of volcanic and marine sedimentary rocks that runs down to the south Waterford coast.²⁶

²⁶ McConnell, B. and Philcox, M.E. (Geological Survey of Ireland) (1994) Geology of Kildare-Wicklow

- I.4.5 The predominant rock types in Kildare are sedimentary rocks, limestone of Carboniferous age in particular. These sedimentary rocks have only been mildly affected by folding and retain many of their original sedimentary and depositional structures.²⁷
- I.4.6 The Quaternary Period is the final one of the geological timescale. It marks the period of the Ice Age, which began about 1.6 million years ago, and the postglacial period or Holocene, which extends to the present day. All of the surface deposits in the Kildare area were deposited during the Quaternary Period. Most of the sediments were deposited during the Ice Age itself, either directly from the huge ice sheets that spread across the area or by meltwater flowing from the ice sheets as they finally melted. Glacial and glaciofluvial deposits are generally very thick in this area. Deposits are commonly more than 30m thick and reach thicknesses in excess of 70m in the Curragh and Blessington areas.²⁸
- I.4.7 The quaternary geology of the subject site and its environs is identified by the GSI as 'drift'.
- I.4.8 In close proximity to the site, there is evidence of gravelly alluvium, glaciofluvial sands and gravels, tills and tills with gravel.
- I.4.9 The EPA identifies the soil type at the site as 'Basic Mineral Deep Well Drained soils (BminDW)', comprising grey brown Podzolics/brown earths.
- I.4.10 The GSI National Draft Gravel Aquifer Map identifies a *Regionally Important* gravel aquifer approximately 800m to the south-west of the subject site (no gravel aquifer is identified underlying the site). This is the Curragh Gravels, an aquifer of some 200km² in area.
- I.4.11 Groundwater vulnerability for the area underlying the subject site is classified by the GSI as 'moderate'.
- I.4.12 The subject site is not immediately adjacent to any Source Protection Areas. The closest designated Source Protection Area (as GSI website) is located at Robertstown, Co. Kildare. It is approximately 6.5km from the subject site (in a north-west direction) to the outer Source Protection Area at Robertstown.
- I.4.13 The EPA identifies the groundwater status of the area under the Water Framework Directive as 'good'. The Naas groundwater body is identified as being at risk of not achieving good status (Category 1a).

Possible Effects of an Activity of this Type

- I.4.14 A Remedial Environmental Impact Statement (REIS) prepared for the development (March 2013), and subsequent additional information submitted to the Planning Authority and the EPA (under the W0279-01 application), considered potential impacts on soils and geology. Summary information is provided herein. Information has been updated to reflect the new air emission point at the extension to the Main Process building (as appropriate).

²⁷ Parkes, M. and Sheehan-Clarke, A. (2005) The Geological Heritage of Kildare. An audit of County Geological Sites in Kildare.

²⁸ Parkes, M. and Sheehan-Clarke, A. (2005) The Geological Heritage of Kildare. An audit of County Geological Sites in Kildare.

I.4.15 *Possible effects arising during the construction phase are considered as follows:*

- Siteworks would involve site clearance, with possibly the removal and importation of soils and aggregates for construction and site development works.
- Any excavations below the water table could require dewatering operations, thereby affecting groundwater levels/flow regimes.
- Potential groundwater pollution impacts in the event of an incident involving hazardous materials stored on site, e.g. fuels, chemicals.
- Potential impact on local drinking water wells and/or regionally important aquifers in the vicinity.
- Potential impact on a sensitive/significant geological site.
- Construction nuisance impacts, e.g. dust.
- Soils and geological deposits under the development will no longer be available for use.

I.4.16 *Possible effects arising during the operational phase are considered as follows:*

- Potential pollution impacts in the event of an incident involving hazardous materials stored on site, e.g. accidental fuel spillage or leak from tank.
- Run-off and potential ground/groundwater pollution from input materials/product stored outdoors.
- Possible contamination of groundwater (or via a surface water pathway) from industrial-type process emissions.
- Ground/groundwater pollution associated with foul water emissions.
- The installation of fixed impermeable surfaces (concrete hardstanding), with consequent reduced water infiltration to soil and groundwater.
- Off-site impact on soils/agricultural areas associated with airborne dust emissions from the facility.
- The use of a resource in the event of groundwater being abstracted for industrial use or drinking water supply.

Construction Phase

I.4.17 Prior to construction of the subject facility, the site was a greenfield development. Construction and development works were subject to design in line with relevant building/infrastructure standards and planning permissions. It is not clear, at the time of writing, the degree or extent of spoil removal and importation of soils/aggregates required as part of construction and development works; however no residual impacts are evident. The off-site removal and importation of construction materials are deemed to be standard practice for construction works, with no significant environmental effects on soils, geology or hydrogeology arising.

I.4.18 There is no evidence to suggest that groundwater was encountered during construction works. The two closest GSI-recorded wells (GSI codes 2621NEW058 and 2621NEW081) record an upper water strike at 30m and 23m, respectively. It is not anticipated that site development works impacted on local groundwater levels or flow regimes.

- I.4.19 There are no records to indicate an environmental incident on site during the construction phase. Furthermore, there were no visible signs of contamination (e.g. staining/discolouration which would be associated with a fuel spillage) during site visits, which may indicate a fuel or hazardous liquid spillage in the past.
- I.4.20 There is no evidence of potential pollution sources during site development works, which may have impacted on groundwater/drinking water quality. The construction-stage hydrogeological risks associated with a development of this type are deemed to be insignificant.
- I.4.21 There are no sites of geological importance identified in direct proximity to the subject site.
- I.4.22 The development of the site has resulted in the underlying soils and geology being effectively 'locked away', preventing possible alternative uses, e.g. agriculture or mining. It is considered, however, that the site setting within an industrial park is in keeping with the land use zoning.

Operational Phase

- I.4.23 There are 2 No. fuel storage areas on site, which, in the event of an environmental incident (e.g. accidental spillage or leak from a tank), could cause soil or groundwater contamination. There is no evidence of environmental pollution incidences having occurred heretofore; however mitigation measures relating to spill control and emergency response are recommended, as detailed below.
- I.4.24 Input and processed materials stored outdoors are inert in nature; therefore their potential to effect soils, geology or groundwater are limited. Mitigation measures are proposed in relation to surface water drainage, as detailed in Attachment I.2, which will have consequential benefits in terms of protection of soil underlying waste storage areas.
- I.4.25 There are no process emissions associated with the facility.
- I.4.26 Foul water is diverted to the industrial park's foul water system, which is ultimately treated in the adjacent wastewater treatment plant. This is in line with previous planning applications and decisions for the facility.
- I.4.27 The site area is 21,300m², of which approximately 1,289m² is built infrastructure (footprint) and 15,650m² is concrete hardstanding. This has drainage/surface water implications, as detailed in Attachment I.2; however resulting impacts on rainwater infiltration to ground are deemed to be insignificant.
- I.4.28 There is no groundwater abstraction at the facility. Water is sourced from mains supplies.

Mitigation Measures – Soils and Geology

- I.4.29 There are currently two fuel storage tanks on site (see Attachment D.1.g). Both tanks are bunded/double skinned. The vehicle maintenance building is equipped with spill control equipment, drip trays and bunded pallets. This equipment will be maintained on site and replaced as necessary.
- I.4.30 In relation to proposed remedial measures to construct a surface/storm water attenuation pond (Attachment I.2), mitigation measures outlined in Attachment I.2 should be applied. In addition, and with reference to soils, geology and hydrogeology, any material removed off-site will be diverted to a suitable licensed or permitted facility, with transportation by a Waste Collection Permit holder. Where works involve topsoil stripping, material will be removed and stored in a

manner to protect the soil structure for alternative use on site or off-site. Measures will be taken to ensure soil stability and prevent soil erosion. The completed depth of the pond will be approximately 1.2m, which will not impact on groundwater.

- I.4.31 As a waste management activity, the facility will be subject to ongoing waste permitting/licensing requirements.
- I.4.32 No significant residual impacts on soils, geology or groundwater, post-mitigation, are anticipated.

European Communities Environmental Objectives (Groundwater) Regulations (2010)

- I.4.33 The Regulations establish clear environmental objectives to be achieved in groundwater bodies within specified timeframes and introduce the legal basis for a more flexible, proportionate and risk-based approach to implementing the legal obligation to prevent or limit inputs of pollutants into groundwater, which already exists under Directive 80/68/EEC. Measures for this purpose include the following:
- measures to prevent or limit the input of pollutants into groundwater and to prevent the deterioration of the status of all bodies of groundwater measures to protect, enhance and restore all bodies of groundwater and to
 - ensure a balance between abstraction and recharge of groundwater, with the aim of achieving good groundwater within a particular timeframe
 - measures requiring the reversal of any significant and sustained upward trend in the concentration of any pollutant resulting from the impact of human activity in order to progressively reduce pollution of groundwater
 - measures for determining groundwater quantitative and chemical status
 - measures establishing procedures for the identification of significant and sustained upward trends and the definition of the starting point for trend reversal
 - the laying down of rules for the presentation and reporting of groundwater monitoring results, trend assessments and the classification of quantitative status and chemical status of groundwater bodies
- I.4.34 Chapter 9 of the REIS (March 2013) details the status and environmental objectives for groundwater at the Rehab Glassco facility. The groundwater status of the area under the Water Framework Directive is 'good'. The Naas groundwater body is identified as being at risk of not achieving good status (Category 1a).
- I.4.35 There are no discharges to groundwater associated with the Rehab Glassco facility. Mitigation measures (Attachment I.4, Mitigation Measures – Soils and Geology) for the protection of groundwater relate to bunding/spill containment and measures to protect groundwater during the construction stage of the new storm-water attenuation pond.

I.5 Ground and/or groundwater contamination

- I.5.1 There is no known ground and/or groundwater contamination, historical or current, on or under the site. The site has been in operation as a waste facility (under permit from Kildare County Council/EPA) since 2008. This site is within an industrial park, which was greenfield prior to development.

I.6 Noise Impact

Description of the Activity

- I.6.1 The primary sources of noise in the operational context have been identified as follows:

- tipping of vehicles containing glass
- plant and equipment activity on the site
- on-site vehicular traffic, including incoming/outgoing vehicles and loaders, forklifts, etc. on site
- vehicular traffic on existing public roads

- I.6.2 The site zoning is: 'NE 1: Industry/Warehousing' under the Kildare County Development Plan 2011–2017.

- I.6.3 Residential properties within 250m of the site are as follows (and detailed in Drawing **WLR-3**):

- 1 No. residential property to the west of the Rehab Glassco Ltd. site. The house is approximately 40m from the Rehab Glassco boundary (at the closest point).
- 3 No. residential properties to the north-west of site, north of Halverstown Road, and in proximity to the River Liffey. The houses are approximately 90m, 120m and 200m, respectively, distant from the Rehab Glassco boundary (at the closest point).

Possible Effects of an Activity of this Type

- I.6.4 A Remedial Environmental Impact Statement (REIS) prepared for the development (March 2013), and subsequent additional information submitted to the Planning Authority and the EPA (under the W0279-01 application), considered potential impacts on the noise environment. Summary information is provided herein. Information has been updated to reflect the new air emission point at the extension to the Main Process building (as appropriate).

- I.6.5 Possible effects of a proposal of this kind are considered as follows:

- Environmental noise emissions from the facility in excess of prescribed limits values, with consequent negative impacts on neighbours/receptors.

- I.6.6 Noise monitoring results for NSL1 were provided by consultants to Rehab Glassco as follows. The latest monitoring report is appended as follows:

Appendix I.6.1: Environmental Noise Survey (ORS, January 2014)

Appendix I.6.2: Environmental Noise Survey (ORS, February 2014)

- I.6.7 The February 2014 report concludes that an environmental noise survey was conducted on the 20th and 21st of February 2014 at the Rehab Glassco facility at 1 No. noise sensitive location outside the boundary of the facility. Results from a previous noise monitoring period, carried out in January 2014 were seen to exceed recommended levels with some tonal noise present. It was concluded that some of this exceedance could be attributed to external noise sources that were out of the control of the client.
- I.6.8 In an attempt to conclusively identify these external noise sources an additional period of noise monitoring was conducted when all operations at the Rehab Glassco plant were stopped.
- I.6.9 Noise levels were compared to those recommended limits as set out EPA document *Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4)* which states that ambient/daily noise levels should not exceed 55dB LAeq, with evening noise levels not exceeding 50dB LAeq and night time noise levels not exceeding 45dB LAeq at noise sensitive locations.
- I.6.10 Noise levels at the Noise Sensitive Location are outside acceptable limits as set out in NG4. As the Rehab Glassco Plant was not in operation during this period of monitoring this exceedance can clearly be attributable to external noise sources which are discussed further in this report.

Noise Mitigation Measures

- I.6.11 Remedial and mitigation measures for noise were included in the REIS (March 2013). These remedial and mitigation measures have been reviewed by Patel Tonra Ltd., Environmental Solutions.
- I.6.12 No material is accepted into or removed from the facility between the hours of 19:00 and 07:00; therefore there is no related HGV noise at this time.
- I.6.13 Continued restriction of operation of the Drying Plant to daytime hours only, i.e. 07:00 to 19:00 (the facility (except the Drying Plant) continues to operate on a 24-hour basis). There is no requirement to restrict operating hours of the new fines processing line (extension to the Main Process building) as the unit is contained within the main processing building.
- I.6.14 A noise barrier/screen was installed at the western site boundary (in proximity to the nearest residential neighbour) in January 2013.
- I.6.15 Continued implementation of a plant and equipment maintenance procedure to minimise noise levels is recommended. Any new equipment acquired will conform to EU noise standards.
- I.6.16 Continued monthly inspection of on-site plant and equipment. The maintenance inspections are documented and records retained on site. Any required corrective actions are identified, reported to the management team and actioned accordingly.
- I.6.17 Any noise complaints will be recorded and investigated, with corrective actions identified, as appropriate.
- I.6.18 Ongoing noise monitoring to be conducted in line with waste regulatory requirements (see Attachment F). Any incidents will be reported to the EPA, with corrective actions identified, as appropriate.

- I.6.19 Residual noise impacts are anticipated to be within acceptable levels, post implementation of mitigation measures.

I.7 Assessment of Ecological Impacts & Mitigation Measures

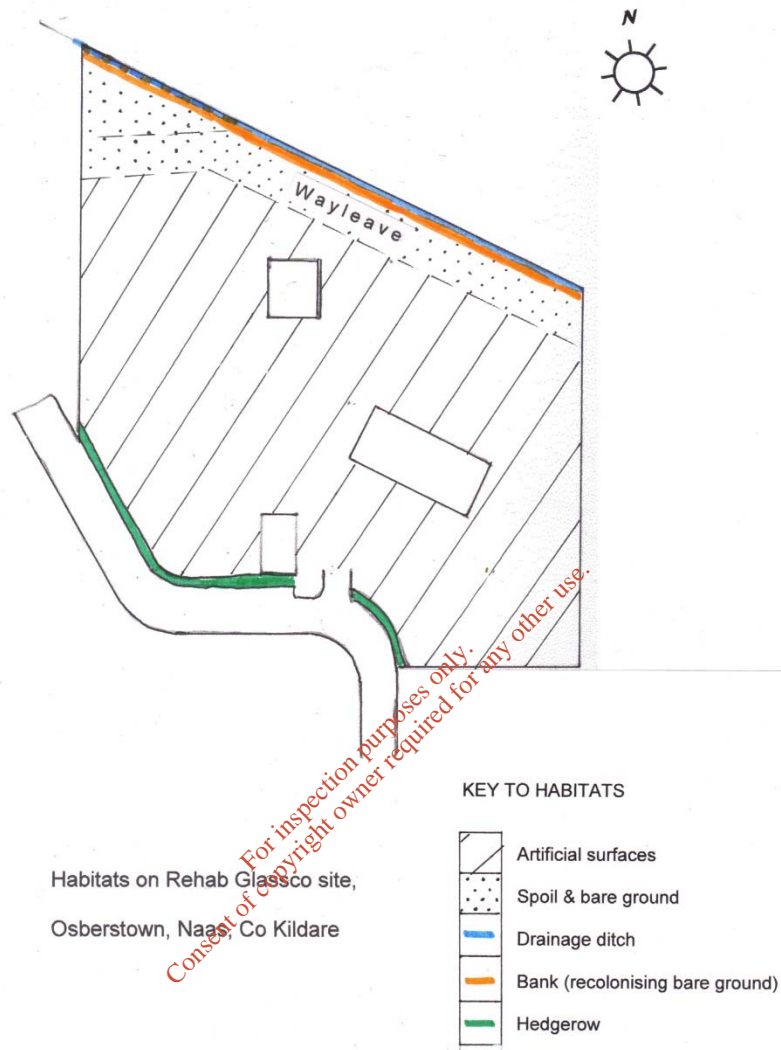
- I.7.1 A Remedial Environmental Impact Statement (REIS) prepared for the development (March 2013), and subsequent additional information submitted to the Planning Authority and the EPA (under the W0279-01 application), considered potential impacts on the ecological environment. Summary information is provided herein. Information has been updated to reflect the new air emission point at the extension to the Main Process building (as appropriate).
- I.7.2 The investigation to describe the existing flora and fauna and to assess any potential impacts on ecology associated with the Rehab Glassco facility follows the methodology of the Heritage Council guidelines (Smith *et al* 2010) though mapping was not digitised in the field. Habitats are classified as in Fossitt 2000.

Habitats and Vegetation

- I.7.3 A habitats sketch-map is provided in **Figure I.7.1**. The predominant habitat is buildings and artificial surfaces (BL3 in Fossitt 2000) since the Main Process Building and other site buildings are surrounded by concrete aprons. The only portion unpaved is the hardcore wayleave along the north-eastern side of the site (spoil and bare ground ED2) which drops down into a drainage ditch (FW4) forming the boundary with the sewage works. The actual bank was exposed soil at the time of the visit but will by now (January 2013) have been colonised by pioneer vegetation and be recolonising bare ground (ED3). Two lengths of hedgerow (WL1) are present, one in the western corner of the site and one around the entrance. An additional tree group is planted at the edge of Halverstown Road close to the northern end.

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Figure I.7.1: Habitats Map



Concrete yards and buildings

I.7.4 There is no vegetation over much of the site; the buildings are too new to be colonised and the surrounding paving frequented by traffic or used for storage of product. In between some of the storage bags, a few annual weeds grow such as groundsel *Senecio vulgaris*, willowherb *Epilobium ciliatum* or Yorkshire fog *Holcus lanatus*, but they are disturbed during site operation so that nothing more permanent can develop.

Wayleave

I.7.5 The wayleave area is also bare of plants but this has been a relatively recent situation as the drainage ditch has been cleaned out and everything left smooth. The substrate here is of soil but it will quickly develop a plant cover in 2013. The remains of tree roots and branches suggest that a band of willows occurred and these will likely re-establish from seeding trees on the far side of the ditch.

Drainage ditch

I.7.6 The lower end of the ditch remains relatively intact and supports a thick cover of plants which are rooted in the base but partly floating. They include

| | |
|-----------------------------|-------------------|
| <i>Apium nodiflorum</i> | fool's watercress |
| <i>Epilobium hirsutum</i> | great willowherb |
| <i>Agrostis stolonifera</i> | creeping bent |
| <i>Angelica sylvestris</i> | wild angelica |
| <i>Filipendula ulmaria</i> | meadowsweet |
| <i>Urtica dioica</i> | nettle |

I.7.7 Where the drain has been cleaned out there are local upwellings of water in the base.

Hedges

I.7.8 Most of the screen planting has been with Leyland cypress but there are some lengths of laurel *Prunus laurocerasus* at the gate.

Adjoining areas

I.7.9 Waste ground to the west of the site plant retains some of the original field species as well as those which colonise disturbed ground. In a cover of creeping bent *Agrostis stolonifera*, Yorkshire fog *Holcus lanatus* and hard rush *Juncus inflexus* there is scattered ragwort *Senecio jacobaea*, tufted vetch *Vicia cracca*, black medick *Medicago lupulina*, hoary willowherb *Epilobium parviflorum* and butterfly bush *Buddleja davidii*.

I.7.10 The 'hedge' flora visible on the far side of the drainage ditch includes

| | |
|--------------------------------|---------------------|
| <i>Crataegus monogyna</i> | hawthorn |
| <i>Hedera helix</i> | ivy |
| <i>Prunus spinosa</i> | blackthorn |
| <i>Fraxinus excelsior</i> | ash |
| <i>Rosa canina</i> | wild rose |
| <i>Euonymus europaeus</i> | spindle tree |
| <i>Brachypodium sylvaticum</i> | false brome |
| <i>Galium aparine</i> | goosegrass |
| <i>Veronica chamaedrys</i> | germander speedwell |
| <i>Equisetum arvense</i> | field horsetail |

Natura 2000/Designated Sites

I.7.11 The following Natura 2000 and other designated sites lie within a 10-kilometre radius of the site (Table I.7.1).

Table I.7.1: Natura 2000/Designated Sites

| Designation Type | Site Name | Site Ref. | Approx. distance from subject site |
|--------------------|-----------------------------|-----------|------------------------------------|
| pNHA ²⁹ | Liffey at Osberstown | 1395 | 0.24km to NE |
| pNHA | Grand Canal | 2104 | 1.5 km to S, farther to N and E |
| pNHA | Mouds Bog | 2331 | 5.8km to W |
| SAC ³⁰ | Mouds Bog | 2331 | 5.8km to W |
| pNHA | Ballynafagh Bog | 0391 | 8.4km to NW |
| SAC | Ballynafagh Bog | 0391 | 8.4km to NW |
| pNHA | Liffey Bank above Athgarvan | 1396 | 9.5km to SW |
| pNHA | Pollardstown Fen | 0396 | 9.9km to W |
| SAC | Pollardstown Fen | 0396 | 9.9km to W |

I.7.12 Appropriate Assessment (AA) Screening is included in Appendix B.3.7. It concludes that there is no likelihood of the project having a negative effect on any of the Natura 2000 sites or their conservation objectives. AA Screening was revisited for the purposes of the Waste Licence review application – no impacts are anticipated.

Fauna

I.7.13 There are no mammals regularly on site though the fox is a probable visitor. Pest control ensures that rodents are very rare while the buildings are unsuitable for bats to roost in. Some feeding by bats is likely over the drainage ditch at the rear however.

I.7.14 Only magpies and jackdaws were seen on the site visit but black-headed gull and starling are also likely at times. There is no food value in the products recycled and the birds are opportunists, ready to land in any site with feeding potential.

I.7.15 As the hedges develop they are likely to be used by a few small birds such as blackbird, robin and dunnock. The first could also nest there. The drain along the NE edge is likely to be visited by moorhen and would supply some food when it becomes re-vegetated.

I.7.16 Currently this drain supports some sewage fungus, partly because there is no growth to remove excess nutrients.

I.7.17 Wasps are present in high numbers in some years, attracted by sugar residues in some beverage containers.

²⁹ pNHA = Proposed Natural Heritage Area

³⁰ SAC = Special Area of Conservation

Evaluation

- I.7.18 The site has no ecological value and the very limited flora and fauna are associated with the peripheral drain and hedges.
- I.7.19 No habitats or species of interest are on, or associated with, the site.
- I.7.20 No invasive alien species were encountered.

Impacts of the Development

- I.7.21 The main features of the development are a processing (sorting) building with associated offices, a drying plant and a garage building for truck maintenance. The buildings are serviced by truck deliveries of glass and aluminium cans and there is some overnight truck parking. Most of the site area is paved and the edges consist of storage bays which are drained through oil interceptors into an attenuation tank just inside the wayleave. It is understood that additional surface-/storm water attenuation capacity is to be constructed in the north-east of the site.
- I.7.22 The development is substantially complete so there will be no further direct impacts on ecology. In the past the impacts have been to obliterate a former field and to clean out its adjacent drain. Uncontained storage of glass-based material also occurred outside of areas of concrete hardstanding, so that the remaining soil near the drainage ditch contains a fraction of broken glass.

Potential Impacts

- I.7.23 During operation the only potential impacts likely are through the drainage water, i.e. oil, or excessive flow.
- I.7.24 The growth of marginal hedging and of vegetation in the drain will tend to benefit flora and fauna by allowing a greater level of biodiversity.

Mitigation

- I.7.25 Mitigation of surface drainage water has been built into the site in the form of oil separators and the attenuation tank and if the former are cleaned regularly they will prevent any oil pollution reaching the drain. It is understood that a storm water attenuation pond is to be constructed in the north-east of the site; no impacts on flora and fauna are anticipated.
- I.7.26 Vegetation in the drain will re-establish itself naturally but the banks will be strengthened by the proposed planting of willows which will have a positive impact on birdlife and insect life. Purple willows *Salix purpurea* are suggested as they are small trees unlikely to fall over and create soil disturbance.
- I.7.27 Tree planting was undertaken at the site in December 2012. Planting consisted of *Leylandii* trees in the western corner of the site (at the closest point to the neighbouring property) and along the south of Halverstown Rd.

Residual impact

- I.7.28 The project has had all its negative impacts during the construction phase, and its impact on ecology, which was basically a removal of local habitat, will decline to some extent as the vegetation is restored on part of the site.

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Attachment J:
Accident Prevention & Emergency Response

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Rehab Glassco

**Patel Tonra Ltd. for Rehab Glassco Ltd.
EPA Waste Licence Review Application,
February 2015**

Attachment J: Accident Prevention & Emergency Response

J.1 Accident Prevention and Emergency Response

J.1.1 A copy of Rehab Glassco's Safety Policy Statement is included as:

Appendix J.1.1: Safety Policy Statement

J.1.2 Rehab Glassco has documented and implemented Emergency Response Procedure Guidelines. The Health & Safety Officer is responsible for ensuring that all relevant personnel are trained on this procedure. The procedure outlines actions to be taken in response to the following potential emergency situations:

- Bodily injury
- Vehicle breakdown
- Vehicle overturn
- Waste spillage
- Fire
- Hazardous waste
- Any operation that may lead to environmental pollution
- Emergency contact phone numbers
- List of emergency response equipment stored on vehicles

J.1.3 All staff receive Health & Safety induction training and are fully equipped with PPE.

J.1.4 A fire detection and alarm system is installed at the premises. The system has been independently inspected, tested and commissioned, in accordance with I.S. 3218:2009. Certificates are included in the following appendix. A register of on-site fire extinguishers is maintained by Rehab Glassco; an inspection certificate for fire extinguishers is included in the following appendix.

Appendix J.1.2: Certificates for Fire Detection/Alarm System and Fire Extinguishers

J.1.5 Rehab Glassco has a documented evacuation procedure in place, indicating steps to be taken in an emergency, including the location of the evacuation assembly point.

J.1.6 Rehab Glassco has implemented site safety procedures which employees, visitors and contractors must adhere to, including the following:

- The speed limit for all traffic on the site is 5km/h
- All delivery and collection vehicles must report to the weighbridge on arrival

- A one way system is in operation on the site. Traffic must drive in a clockwise direction from the weighbridge around the building.
- Personal Protective Equipment (PPE) must be worn
- Mobile phones are prohibited while using any plant or vehicle
- All incidents and accidents of any nature are to be reported to the site office immediately

J.1.7 Diesel is stored in double-skinned tanks, as detailed in Attachment **D.1.g**. Potentially contaminating material stored in the garage building is retained on spill pallets. The surface water drainage system to include 2 No. interceptors is described in Attachment **D.1.i** and shown on Drawing **WLR-06**.

J.1.8 A copy of the facility's current insurance certificate is attached:

Appendix J.1.3: Insurance Certificate

J.1.9 Incidents will be reported to the Agency in line with the requirements of EPA Licence W0279-01 (condition 9.3).

J.1.10 In the event of an unplanned emission to the environment, the causative process/activity will be immediately suspended, and the emission contained insofar as practicable. Necessary clean-up arrangements will be put in place. Corrective and preventive actions will be identified and implemented. Full incident records will be retained and communicated to the Agency.

J.1.11 An Environmental Liabilities Risk Assessment (ELRA) was completed for the facility in September 2013. In accordance with condition 12.2 of EPA Licence W0279-01, the licensee will arrange for a review of the ELRA, in line with EPA 2014 guidance.

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**Attachment K:
Remediation, Decommissioning, Restoration and Aftercare**

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Attachment K: Remediation, Decommissioning, Restoration & Aftercare

K.1 Cessation of Activity

K.1.1 If the decommissioning of part or all of the Rehab Glassco facility should be required, the following programme will be put in place. The decommissioning of the site will be carried out in a phased process. It is envisaged that the phased approach will be carried out as follows:

1. The site will stop accepting materials at the site after a specified date and all remaining materials which have been deposited at the site prior to this date will be processed as per the current operations.
2. Plant and equipment will be disassembled and decommissioned and materials sent for reuse, recovery or disposal, as appropriate.
3. After all material has been removed a programme of environmental monitoring and a site audit will be carried out to ensure that the local environment has not been adversely affected by the closure of the facility and that no residual material remains on the site.
4. After the site audit and monitoring has been completed, the site may be used for other purposes, in line with proper planning and development of the site.

Aftercare Management

K.1.2 It is not envisaged that the activities at the Rehab Glassco facility will have an adverse impact on the site, which will result in detailed aftercare management of the site being required.

K.1.3 Post-closure environmental monitoring at the site will be agreed with the Environmental Protection Agency, if necessary, after appropriate closure procedures have been put in place.

CRAMP (Closure, Restoration and Aftercare Management Plan)

K.1.4 A Report on ELRA, CRAMP and Financial Provision for Glass Recycling Facility (EPA Waste Licence Application W0279-01) was prepared by Patel Tonra Ltd., on behalf of Rehab Glassco Ltd. in September 2013. The report was submitted to the Agency on 5th September 2013 as Article 14 information under Waste Licence Application W0279-01.

K.1.5 The report details the following, *inter alia*:

Table K.1.1: Closure Plan Requirements

| Closure Plan Section | Section Contents |
|---------------------------------|--|
| Introduction | <ul style="list-style-type: none"> ▪ Facility and Licence Details ▪ Facility Closure Scenarios Covered in the Plan |
| Site Evaluation | <ul style="list-style-type: none"> ▪ Facility Description & History ▪ Facility Compliance Status ▪ Facility Processes and Activities ▪ Inventory of Site Buildings, Plant, Raw Materials and Wastes |
| Closure Considerations | <ul style="list-style-type: none"> ▪ Clean or Non Clean Closure Declaration ▪ Plant or Equipment Decontamination Requirements ▪ Plant Disposal or Recovery ▪ Waste Disposal or Recovery ▪ Soil or Spoil Removal |
| Criteria for Successful Closure | <ul style="list-style-type: none"> ▪ Addressing of Site Environmental Liabilities at Closure |
| Closure Plan Costing | <ul style="list-style-type: none"> ▪ Decontamination Costs ▪ Plant & Waste Disposal Costs ▪ On-going monitoring ▪ Facility Security and Staffing ▪ Other Costs |
| Closure Plan Update & Review | <ul style="list-style-type: none"> ▪ Proposed Frequency of Review ▪ Proposed Scope of Review |
| Closure Plan Implementation | <ul style="list-style-type: none"> ▪ EPA Notification ▪ Local or other Statutory Authority notifications ▪ Test Programme (If Applicable) ▪ Full or Partial Closure considerations |
| Closure Plan Validation | <ul style="list-style-type: none"> ▪ Closure Validation Audit ▪ Closure Validation Audit Report ▪ Closure Validation Certificate |

K.1.6 The assessment was based on the methodology in force at the time of writing, i.e. EPA (2006) *Guidance on Environmental Liability Risk Assessment, Residuals Management Plans and Financial Provision*.

K.1.7 In accordance with condition 12.2 of EPA Licence W0279-01, the licensee will arrange for a review of the ELRA, in line with EPA 2014 guidance.

**Attachment L:
Statutory Requirements**

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Attachment L: Statutory Requirements

L.1 Statutory Requirements

Information required under the Waste Management Acts, 1996, as amended

L.1.1 Section 40(4) of the Waste Management Acts 1996, as amended, states that the Agency shall not grant a waste licence unless it is satisfied that the following points have been complied with:

(a) any emissions from the recovery or disposal activity in question ("the activity concerned") will not result in the contravention of any relevant standard, including any standard for an environmental medium, or any relevant emission limit value, prescribed under any other enactment

L.1.2 The facility will be managed and operated to minimise environmental impact. Environmental monitoring is proposed for air/dust, noise and surface water to ensure that relevant emission limit values are not exceeded.

(b) the activity concerned, carried on in accordance with such conditions as may be attached to the licence, will not cause environmental pollution,

L.1.3 The facility will not cause environmental pollution. Waste activities are low environmental risk, i.e. the acceptance and processing of glass and can materials only. Routine monitoring will verify that no pollution is being caused; see Attachment F.

(bb) if the activity concerned involves the landfill of waste, the activity, carried on in accordance with such conditions as may be attached to the licence, will comply with Council Directive 1999/31/EC on the landfill of waste

L.1.4 Not applicable.

(c) the best available techniques will be used to prevent or eliminate or, where that is not practicable, to limit, abate or reduce an emission from the activity concerned,

L.1.5 Best Available Techniques (BAT) was introduced as a key principle in the IPPC Directive 96/61/EC. The Final Draft BAT Guidance Note on Waste Transfer and Material Recovery, published by the EPA, is dated December 2011.

L.1.6 The underlying objective of BAT is to prevent, eliminate, or reduce emissions from processes. Emissions, and hence environmental pollution, can be prevented, eliminated or reduced by:

- proper design of the facility;
- effective management of the facility; and
- the selection of appropriate processes, technologies and facility operations

Draft BAT Guidance Notes – Key Issues for Waste Transfer and MRFS

L.1.7 The key issues identified in this section of the guidance note which applies to the Rehab Glassco site are the following:

- Site Location
- Design Considerations
- Decommissioning
- EMS
- Waste Acceptance procedures
- Waste Dispatch

- L.1.8 The Rehab Glassco facility is located and constructed in an industrial park with major road and motorway access. Ancillary services such as surface water management, foul water services and utilities services have been readily available on site for Rehab Glassco and all industrial park users.
- L.1.9 The Rehab Glassco plant is a state-of-the-art facility which was upgraded in 2011. The plant relies on proven technology which includes sophisticated optical technology, screening systems and air classification to separate various mixes, contamination and colours of glass-based material into furnace-ready clean cullet for remanufacture into glass products. The process also uses manual pre-sort and quality control (QC) techniques to separate out contaminants at key stages of the process.
- L.1.10 The facility conforms to continuous improvement of environmental performance, e.g. improved house-keeping/management techniques, monitoring of plant, equipment and processes. This combined with investment in new tools/techniques, technologies and regular plant maintenance, has created a regime of effective management and operations.
- L.1.11 A fully detailed and costed Closure Plan and Environmental Liabilities Risk Assessment (ELRA) has been prepared on behalf of Rehab Glassco, which takes account of items which cover the decommissioning of the site from a planned and unplanned closure scenario, including risks from unplanned one-off events and the associated liabilities.
- L.1.12 Rehab Glassco is implementing an Environmental Management System for the facility in Osberstown, to include environmental and operational control procedures and policy statements.
- L.1.13 There is an established waste acceptance and quarantine procedure in place at the Rehab Glassco facility. Full details of the waste acceptance procedures are detailed in Attachment H.2.
- L.1.14 Records of all wastes removed (processed, residual and non-processed) and dispatched from the site are retained by Rehab Glassco. Only appropriately licensed/permitted waste contractors and facilities are used for all categories.
- L.1.15 A series of control measures for the facility, which have due regard to the principles of BAT, are outlined in Attachment I.
- L.1.16 The new emission point to air [and related infrastructure], which is the subject of this review application, has been designed with appropriate air emissions control/abatement systems, as detailed in Attachment F.

(cc) the activity concerned is consistent with the objectives of the relevant waste management plan and will not prejudice measures taken or to be taken by the relevant local authority or authorities for the purpose of the implementation of any such plan.

- L.1.17 The Waste Management Plan for County Kildare 2005 - 2010³¹ identifies waste management solutions which shift the emphasis from disposal to prevention, minimisation, recycling, recovery and other forms of waste treatment.
- L.1.18 The recommended strategy to be implemented by the Plan is an integrated scenario with the following components:
- home composting
 - three-bin collection system – the three bins are for dry recyclables (paper/cardboard, metal and plastic), organic/green wastes, and for residual wastes (anything that cannot be placed into the dry recyclables or organic bins)
 - network of bring banks and civic amenity sites
 - transfer station(s)
 - biological treatment facility(s) for the treatment of organic waste (food and garden) to form compost which can be re-used beneficially
 - dry material recovery facility(s) for the recycling/recovery of recyclable material in a dry material recovery facility - sorting and picking lines separate the waste into paper, cardboard, metals and plastic fractions
 - mechanical-biological treatment facility(s) for the treatment of the residual bin, which is a mixture of organic waste and recyclable materials - recyclables can be recovered/recycled from sorting and picking lines, and the remaining waste is then composted
 - residual landfills(s) for material that cannot be recycled, and for material which is rejected from a biological treatment facility, dry material recovery facility or mechanical-biological treatment facility
- L.1.19 The Plan states that glass should not be mixed with dry recyclables [as part of household waste management system], rather it should handled separately for safety reasons.
- L.1.20 The Plan reports that: *glass is collected throughout the County from bottle banks located at shopping centres, filling stations and other bring bank sites. However, under glass management programmes, some commercial outlets such as pubs, restaurants, etc., have their glass collected. The main operator of glass recycling in Kildare is the Rehab Recycling Partnership.*
- L.1.21 The new air emission point, which is the subject of this review application, is associated with the operation of a new fines processing line, installed to sort rejected glass from the existing main glass processing plant. This process facilities increased recovery of materials and reduces the amount of residual waste generated at the plant.
- L.1.22 The Rehab Glassco activity is deemed to be consistent with the objectives of Kildare Waste Management Plan.

³¹ A national review of waste management plans is currently underway. Until this review is completed the current 2005-2010 will remain in place (Kildare.ie, Jan. 2015).

(d) if the applicant is not a local authority, the corporation of a borough that is not a county borough, or the council of an urban district, subject to subsection (8), he or she is a fit and proper person to hold a waste licence,

- L.1.23 Rehab Glassco is the holder of EPA licence W0279-01. Prior to the EPA licence being issued, Rehab Glassco (and previously Glassco Recycling) has been the holder of a Waste Facility Permit for the facility since 2008.
- L.1.24 The Applicant has not been convicted of any offences pertaining to the Waste Management, EPA, Air or Water Pollution Acts.
- L.1.25 The Applicant holds the requisite technical knowledge and qualifications to carry on the proposed activity in an appropriate manner.
- L.1.26 The Applicant is in a position to meet financial commitments/liabilities which may be associated with the activity.

(e) the applicant has complied with any requirements under section 53.

- L.1.27 Financial commitments or liabilities will be addressed by the Applicant, in compliance with Agency requirements.

(f) energy will be used efficiently in the carrying on of the activity concerned

- L.1.28 Rehab Glassco is committed to energy-efficient plant and buildings; energy use will be monitored and reported to the Agency as required.

(g) any noise from the activity concerned will comply with, or will not result in the contravention of, any regulations under section 106 of the Act of 1992

- L.1.29 Noise mitigation measures will be implemented, as detailed in Attachment I.6. Regular noise monitoring will continue to be conducted to ensure that noise emission limits are complied with, as detailed in Attachment F.6.

(h) necessary measures will be taken to prevent accidents in the carrying on of the activity concerned and, where an accident occurs, to limit its consequences for the environment

- L.1.30 Appropriate accident and environmental accident prevention procedures are in place, see Attachment J.

(i) necessary measures will be taken upon the permanent cessation of the activity concerned (including such a cessation resulting from the abandonment of the activity) to avoid any risk of environmental pollution and return the site of the activity to a satisfactory state

- L.1.31 Appropriate closure and aftercare plans are detailed in Attachment K.

(j) the intended method of treatment is acceptable from the point of view of environmental protection, in particular when the method is not in accordance with section 32(1)

- L.1.32 The recycling and recovery of glass/cans at the Rehab Glassco facility is compatible with the principles of environmental protection. Materials will be held, transported, recovered or disposed of (in the case of residual waste) only in a manner that will not cause environmental pollution.

- L.1.33 Waste materials will be transported by Waste Collection Permit holders.

Screening for Appropriate Assessment

- L.1.34 Screening for Appropriate Assessment has been undertaken, as detailed in Attachment **B.3**. The screening exercise concludes that there will be no significant effect on any of the Natura 2000 sites or on their conservation objectives. Screening concludes that an Appropriate Assessment is not required. The screening statement and report is provided in Attachment **B.3**.

L.2 Fit and Proper Person

- L.2.1 Rehab Glassco is the holder of EPA licence W0279-01. Prior to the EPA licence being issued, Rehab Glassco (and previously Glassco Recycling) has been the holder of a Waste Facility Permit for the facility since 2008.
- L.2.2 The company has no offences under the Waste Management Acts 1996 (as amended), the EPA Act 1992 and 2003, the Local Government (Water Pollution) Acts 1997 and 1990 or the Air Pollution Act 1987.
- L.2.3 The Applicant holds the requisite technical knowledge and qualifications to carry on the proposed activity in an appropriate manner (please refer to Attachment **C.1**).
- L.2.4 The Applicant will meet any and all financial commitments or liabilities which may arise.
- L.2.5 A *Report on ELRA, CRAMP and Financial Provision for Glass Recycling Facility (EPA Waste Licence Application W0279-01)* was prepared by Patel Tonra Ltd., on behalf of Rehab Glassco Ltd. in September 2013. In accordance with condition 12.2 of EPA Licence W0279-01, the licensee will arrange for a review of the ELRA, in line with EPA 2014 guidance.
- L.2.6 Rehab Glassco is deemed to be a 'fit and proper' person to hold a waste licence.

L.3 Application of the Waste Hierarchy

- L.3.1 Section 21(A) of the Waste Management Acts 1996, as amended, requires measures to be taken to encourage the options that deliver the best overall environmental outcome, and may require specific waste streams departing from the hierarchy where this is justified by life-cycle thinking on the overall impacts of the generation and management of such waste.
- L.3.2 The priority order waste hierarchy is set down as follows:
- (a) prevention
 - (b) preparing for re-use
 - (c) recycling
 - (d) other recovery (including energy recovery); and
 - (e) disposal
- L.3.3 This Waste Licence Application does not seek to deviate from the priority order waste hierarchy. The Rehab Glassco facility implements the waste hierarchy priority as detailed below.
- L.3.4 Waste prevention is largely beyond the scope of influence of the Applicant; however Rehab Glassco has an excellent understanding of the impact of measures to reduce the quantity of waste, e.g. re-design of glass bottles/drinks cans/food

containers to reduce the overall manufacturing weight and thickness of the containers.

- L.3.5 Glass/cans are not routinely re-used in the food/drinks sector.
- L.3.6 The Rehab Glassco facility focuses on the recycling of glass and cans, i.e. a *recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes.*
- L.3.7 Rehab Glassco operations aim to minimise the amount of residual waste associated with its operations; residual waste is currently approximately <1% (by weight) of the input material.
- L.3.8 The new air emission point, which is the subject of this review application, is associated with the operation of a new fines processing line, installed to sort rejected glass from the existing main glass processing plant. This process facilities increased recovery of materials and reduces the amount of residual waste generated at the plant.

L.4 Principles of Self-sufficiency and Proximity

- L.4.1 Section 37A of the Waste Management Acts 1996, as amended, requires an integrated and adequate network of waste disposal and recovery installations, taking into account best available techniques. The network shall be designed to enable the Community and the State to become self-sufficient in waste disposal/recovery and enable waste to be disposed/recovered in one of the nearest appropriate installations, by means of the most appropriate methods and technologies, in order to ensure a high level of protection for the environment and public health.
- L.4.2 The Rehab Glassco facility plays a critical role in the recycling and recovery of glass and cans in the context of the Irish waste management sector. The operation of this facility makes a substantive contribution towards meeting Ireland's recycling and recovery targets for glass/cans: it accounts for approximately 85% of the country's glass recycling. The processing approaches applied at the facility are state-of-the-art, and attain very high levels of recovery efficiencies. The facility produces a market-ready raw material (cullet) for use in the glass manufacturing industry.
- L.4.3 The facility is strategically located with reference to key waste generation points in the country, with excellent motorway access to all parts of Ireland.
- L.4.4 The facility is designed and operated to ensure a high level of protection for the environment and public health.