Project details	Environmental Permit Application EPR/BP3702MC/A001 Larkshall Mill Aggregate Manufacturing Facility
Applicant details	O.C.O Technology Limited Montague Place Quayside Chatham Maritime Chatham Kent ME4 4QU
Report details	**Installation EP Application** **Application Supporting Statement** **Document reference: OCO_2020.04/03_v1**
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Submitted to	Permitting and Support Centre Environmental Permitting Team Environment Agency Quadrant 2 99 Parkway Avenue Parkway Business Park Sheffield S9 4WF Email: PSC@environment-agency.gov.uk
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1 Introduction

1.1 General

O.C.O Technology Ltd (the 'applicant') has requested that Reva Environmental Ltd (the 'agent') prepares an Environmental Permit (EP) application, for a new installation at Larkshall Mill, East Wretham, Thetford, Norfolk, IP24 1QY.

There is a permitted facility currently in operation at this location; the EP holder is the applicant, to whom the EP was transferred in June 2021 from Viridor Waste Management Limited (ref. EPR/KB3305ME/T001). The EP allows the acceptance and storage of waste and subsequent treatment consisting of physical sorting or separation into different components for disposal, recycling or reclamation. The operations are limited to a storage capacity of 2000 tonnes of waste at any one time (plus up to 1000 end-of-life vehicles) and treatment is limited to <50 tonnes per day.

The total quantity of waste that can be accepted at the site is currently limited to 74,999 tonnes.

1.2 Current Site Status

The MRF building has been decommissioned from use following damage incurred during a fire. Viridor remains on site under a lease agreement with the applicant/EP holder and is using the site as a transfer facility, importing, storing and transferring (already) baled recyclable materials.

The applicant intends to obtain a new EP for the site, after which an application will be made to surrender the existing EP in full, and Viridor will leave the site in accordance with this and the expiry of the lease agreement.

1.3 Site Location and Description

The proposed EP boundary is shown on **Figure SS1** below, in green (the full site ownership boundary is indicated in red). The EP only includes the activities that need to be regulated by it; the aggregate product storage bays and curing bays do not fall within the boundary as it has ceased to be a waste at that point. This is consistent with the EPs for the other O.C.O sites that operate the same activities.

The access route to the facility is from Thetford Road to the west. A traffic management (and routing) system is in place to control vehicle movements and the flow of materials through the site.

1.4 Application Objective

The applicant wishes to apply for a new bespoke installation EP for the site. In accordance with EA advice received by email in November 2020 (ref. Jake Walker, 25/11/2021) this application is being made to allow flexibility in timing as the new EP can be issued while the existing EP remains active.

This application seeks to set out details of the new use of the site, and suggests that a pre-operational condition be used to make sure that the new activity does not commence until cessation of the existing activity and surrender of the existing EP.

The objective of this application is to ultimately install three lines that will treat air pollution control (APC) residues to create an aggregate that can be used in block manufacture. APC residues are delivered in powder tankers and transferred into silos, then into a reactor where they are treated with carbon dioxide to lower the pH and reduce the leachability of some heavy metals. The material is then mixed with cement, sand, and water to turn it into pellets. The pellets are stored in covered bays and delivered to end users to make blocks. Processing is all carried out in a building. This process is already permitted at 3 other applicant sites in the UK:

- Leeds Aggregate Manufacturing Facility, EPR/TP3737YG/V005, permitted for 3 production lines;
- Avonmouth Aggregate Manufacturing Facility, EPR/HP3638WW/V004, permitted for 2 production lines (an application for a 3rd line is planned for 2022); and
- Brandon Aggregate Manufacturing Facility, EPR/JP3332FK, permitted for 2 production lines.

The facility will be built in two phases, with just two of the three lines being built initially. This application is for all three lines in order to futureproof the permit and all assessments completed are based on the full development.

The application seeks to allow the following activities:

- 5.3 A(1)(a)(vi) – Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving the recycling or reclamation of inorganic materials other than metals or metal compounds (R5). This listed activity will apply three times (AR1, AR2 and AR3) to reflect the three production lines and will allow a combined annual waste throughput of 100,000 tonnes) for the purposes of producing pellets; and
- 5.6 A(1)(a) – Temporary storage (AR4) of hazardous waste with a total capacity exceeding 50 tonnes (R13). The maximum storage capacity is proposed to be 2,850 tonnes at any one time, across 12 silos, and a maximum storage time of 6 months will be enforced, from the date of receipt of the waste.

Three directly associated activities (DAAs) are also proposed as follows:

- Handling and storage of wastes, prior to treatment and recovery activities for hazardous wastes (AR5);
- Storage of raw materials (AR6) for use within production lines AR1 to AR3 (est. up to 150,000 tonnes usage per year combined); and
- Management of surface water for disposal (AR7) via discharge to soakaway (lagoon). Uncontaminated surface (roof) water collection and reuse system to be implemented for the full development (three line facility).

Each line will be an exact duplicate of the other, will process the same wastes and use the same raw materials to produce the aggregate. They will run in parallel so can be operated independently to provide flexibility of operations. The proposed daily throughput capacity for each line is 140 tonnes, which is 420 tonnes combined across all 3 lines.

2 Application Form

An application for a new bespoke installation EP requires the completion of the EA application form parts A, B2, B3 and F1. Details have primarily been provided on the form but this section provides additional supporting information and signposts to supplementary documents provided in support of the application where required.

The application form is provided at the front of this EP application document.

2.1 Form Part A

Contact details for the agent and the applicant are provided in this part of the application form. In addition to the relevant persons required by Question 5c of the form, details are provided for the Directors as follows:

- John Stephen Greig (Managing Director) – Date of Birth: Redacted
- Stephen Brian Roscoe (Director) – Date of Birth: Redacted
- Richard MacAndrew Skehens (Director) – Date of Birth: Redacted
- Clayton Sinclair Sullivan-Webb (Director) – Date of Birth: Redacted

These details also fulfil the requirements of Question 4 of Appendix 1 of this part of the form, which is required for new installation permits.

2.2 Form Part B2

2.2.1 Question 3a: Relevant Offences

The applicant can confirm that none of the relevant persons listed above have been convicted of any relevant offence, defined in the guidance as being one relating to the environment or environmental regulation.

2.2.2 Question 3b: Technical Competence

The applicant can confirm that it can provide sufficient technical ability for the proposed activity, and the applicant has identified two technically competent managers, certified under WAMITAB. A WAMITAB certificate is included for each in **Appendix B**, along with their most recent continuing competency certificate (where applicable). Also included is the credit certificate and list of units gained, which seeks to demonstrate the appropriateness of these persons to provide COTC for the site.

The competent managers do provide technical competence for other O.C.O sites and these are detailed in Table SS1.

Table SS1: COTC

EP Number	Site Address	Postcode
Paul Barber:		
EPR/JP3332FK	Brandon Aggregate Manufacturing Plant Lignacite Block Works High Street Brandon	OP27 0AX

	Suffolk	
EPR/TP3737YG	Leeds Aggregate Manufacturing Facility Hub 45 Knowsthorpe Gate Leeds West Yorkshire	LS9 0NX
EPR/HP3638WW	Avonmouth Aggregate Manufacturing Facility Unit 1 Severn View Industrial Estate Central Avenue Avonmouth	BS10 7SD
Peter Swann:		
EPR/TP3737YG	Leeds Aggregate Manufacturing Facility Hub 45 Knowsthorpe Gate Leeds West Yorkshire	LS9 0NX

2.2.3 Question 3c: Finances

The applicant can confirm that none of the relevant persons listed above have/had current/past bankruptcy or insolvency proceeding against them, either in their role for the applicant or as a relevant person for another company.

2.2.4 Question 3d: Management Systems

The applicant operates its existing permitted facilities in accordance with an integrated management system comprising a set of policies and procedures which apply to all O.C.O Technology facilities. The applicant ensures that the system is kept up to date. An EMS summary is provided in **Appendix C** of this application, alongside a copy of the current ISO 14001 certificate for the Avonmouth Aggregate Manufacturing Facility as an example.

2.2.5 Question 4: Consultation

Question 4 requires confirmation of the sewerage undertaker where a discharge is part of the activity being applied for. Whilst there is a sewage treatment plant for the sewage from the offices at the site, this is separately permitted and does not fall within the EP boundary to which this application applies.

With respect to the proposed production activity, there will be no discharge to sewer so no discharge consent is required as a result of this application.

2.2.6 Question 5: Supporting Information

Question 5a requires site plans to be provided in support of the application. These are provided in **Appendix D** of this application and are as follows:

- Drawing OCO-LKSM-EP01: Site Location Plan
- Drawing OCO-LKSM-EP02: Site Layout Plan
- Drawing OCO-LKSM-EP03: Site Setting
- Drawing OCO-LKSM-EP04: Site Drainage Plan

Question 5b requires the provision of a site condition report (SCR). A copy of the H5 template has been completed (Sections 1 – 3) and a supporting SCR, based on a Landmark Envirocheck report, is provided in **Appendix E** of this 2021 application (ref. OCO_2020.04/04).

Question 5c requires the provision of a non-technical summary. This has been produced and is provided in **Appendix F** of this 2021 application (ref. OCO_2020.04/05).

Question 5d requires the provision of a fire prevention plan (FPP) where the activities include the storage of combustible waste. This is not applicable to this application; the waste accepted at the site is a product of a thermal treatment so is not itself combustible.

2.2.7 Question 6: Environmental Risk Assessment

Question 6 requires the provision of an environmental risk assessment (ERA). A qualitative risk assessment has been generated for the facility, following the EA's source-pathway-receptor approach. A copy of this is provided in **Appendix G** of this 2022 application (ref. OCO_2020.04/06). The EA pre-application advice identifies two sites that are designated as a SAC; one of which (Breckland Forest) is also designated as SPA. This is also a SSSI. All identified habitats have been explicitly considered in the ERA.

Question 6b is a new requirement for waste and installation permits; it includes the completion of climate change risk screening. Based on the 3 questions on the form, the total screening score is 5. As a result of the score being 5 or more, a climate change risk assessment is required.

The site falls within the Cam and Ely Ouse Management Catchment, subgroup (operational catchment) Little Ouse and Thet (as identified via the mapping on gov.uk); a copy of the appropriate assessment for the Anglian Region has therefore been completed and is provided in **Appendix G** alongside the ERA (ref. OCO_2020.04/07). It has been completed in accordance with the risk scoring matrix in the climate change risk assessment user guide (version dated 7 October 2021), as shown in **Figure SS2**.

	Severe impact (score = 4)	Medium impact (score = 3)	Mild impact (score = 2)	Minor impact (score = 1)
Highly likely (score = 4)	16	12	8	4
Likely (score = 3)	12	9	6	3
Low likelihood (score = 2)	8	6	4	2
Unlikely (score = 1)	4	3	2	1

Key

Risk categories:

- 12 to 16: high
- 8 to 9: moderate to high
- 4 to 6: moderate to low
- 1 to 3: low

The CCRA will be integrated into the Environmental Management System for the site.

2.3 Form Part B3

2.3.1 Question 1: Description of Activities

The proposed activities are set out in Section 1.4 above. For clarity it is proposed that these are listed in the EP as follows:

- Activity Reference **(AR)1:** 5.3 A(1)(a)(vi) Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving the recycling or reclamation of inorganic materials other than metals or metal compounds (R5) – in Line 1;
- **AR2:** 5.3 A(1)(a)(vi) Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving the recycling or reclamation of inorganic materials other than metals or metal compounds (R5) – in Line 2;
- **AR3:** 5.3 A(1)(a)(vi) Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving the recycling or reclamation of inorganic materials other than metals or metal compounds (R5) – in Line 3;
- **AR4:** 5.6 A(1)(a) – Temporary storage (AR4) of hazardous waste with a total capacity exceeding 50 tonnes (R13);
- **AR5:** Handling and storage of wastes, prior to treatment and recovery activities for hazardous wastes;
- **AR6:** Storage of raw materials for use within production lines AR1 to AR3; and
- **AR7:** Management of surface water for disposal (AR7) via discharge to soakaway (lagoon). Longer term (three line facility) plan is to capture clean roof water and reuse it in the facility.

Table SS2 below lists the proposed wastes to be permitted for acceptance at the facility.

Table SS2: Permitted Wastes for AR1, AR2, AR3 and AR4

Waste Code	Waste Description	Treatment Stage	Detail
01	**WASTES RESULTING FROM EXPLORATION, MINING, QUARRYING, AND PHYSICAL AND CHEMICAL TREATMENT OF MINERALS**		
01 04	Wastes from physical and chemical processing of non-metalliferous minerals		
01 04 09	Waste sand and clays		
10	**WASTES FROM THERMAL PROCESSES**		
10 01	Wastes from power stations and other combustion plants (except 19)		
10 01 02	Coal fly ash		
10 01 14*	Bottom ash, slag and boiler dust from co-incineration containing dangerous substances		
10 01 16*	Fly ash from co-incineration containing dangerous substances		
10 01 18*	Wastes from gas cleaning containing dangerous substances		
10 13	Wastes from manufacture of cement, lime and plaster and articles and products made from them		
10 13 04	Wastes from calcination and hydration of lime		
10 13 06	Particulates and dust (except 10 13 12 and 10 13 13)		
17	**CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)**		
17 05	Soil (including excavated soil from contaminated sites), stones and dredging spoil		
17 05 04	Soil and stones other than those mentioned in 17 05 03		
17 05 06	Dredging spoil other than those mentioned in 17 05 05		
19	**WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE**		
19 01	Wastes from incineration or pyrolysis of waste		
19 01 07*	Solid waste from gas treatment		
19 01 11*	bottom ash and slag containing hazardous substances		
19 01 13*	Fly ash containing dangerous substances		

19 01 14	Fly ash other than those mentioned in 19 01 13 (if mixed with APC residues)
19 01 15*	boiler dust containing hazardous substances
19 01 17*	Pyrolysis wates containing hazardous substances
19 04	Vitrified waste and wastes from vitrification
19 04 02*	fly ash and other flue-gas treatment wastes
19 11	Wastes from oil regeneration
19 11 07*	wastes from flue-gas cleaning

The inherent purpose of the facility is to support the implementation of the waste hierarchy and it will do this by diverting waste materials from disposal activities to a recovery activity, resulting in an output that has end-of-waste status. Additional opportunities for recovery of waste are investigated by way of carrying out trials on potential new waste streams. It is requested therefore that the EP allows the applicant to carry out process trials on new waste streams to determine if they can be effectively recovered in the facility in order to take them out of the disposal route. It is proposed that the EP makes allowance for this by:

- Including an additional DAA (AR8) which will allow for the carrying out of process trials and the acceptance of specific wastes following agreement from the EA;
- Including a second permitted waste list (see Table SS3) that lists the potentially acceptable waste, pending successful trial and approval from the EA; and
- Including a pre-operational condition which requires the submission of a written proposal to the EA for trials on new waste streams.

In order to present a consistent approach across all operational O.C.O sites, Tables SS2 and SS3 reflect the permitted waste tables in the EPs for those other sites.

Table SS3: Proposed Permitted Wastes - Pending Successful Trial

Waste Code	Waste Description	Treatment Stage	Detail
01	**WASTES RESULTING FROM EXPLORATION, MINING, QUARRYING, AND PHYSICAL AND CHEMICAL TREATMENT OF MINERALS**		
01 01	Wastes from mineral metalliferous excavation		
01 01 01	wastes from mineral metalliferous excavation		
01 01 02	wastes from mineral non-metalliferous excavation		
01 03	Wastes from physical and chemical processing of metalliferous minerals		
01 03 06	tailings other than those mentioned in 01 03 04 and 01 03 05		
01 03 08	dusty and powdery wastes other than those mentioned in 01 03 07		
01 04	Wastes from physical and chemical processing of non-metalliferous minerals		
01 04 08	waste gravel and crushed rocks other than those mentioned in 01 04 07		
01 04 10	dusty and powdery wastes other than those mentioned in 01 04 07		
01 04 13	wastes from stone cutting and sawing other than those mentioned in 01 04 07		
10	**WASTES FROM THERMAL PROCESSES**		
10 01	Wastes from power stations and other combustion plants (except 19)		
10 01 01	bottom ash, slag and boiler dust (excluding boiler dust mentioned in 10 01 04)		
10 01 02	Coal fly ash		
10 01 03	fly ash from peat and untreated wood		
10 01 05	calcium-based reaction wastes from flue-gas desulphurisation in solid form		
10 01 15	bottom ash, slag and boiler dust from co-incineration other than those mentioned in 10 01 14		
10 01 17	fly ash from co-incineration other than those mentioned in 10 01 16		

10 01 19	wastes from gas cleaning other than those mentioned in 10 01 05, 10 01 07 and 10 01 18
10 01 24	Sand from fluidised beds
10 02	Wastes from the iron and steel industry
10 02 01	wastes from the processing of slag
10 02 07*	Solid wastes from gas treatment containing hazardous substances
10 02 08	solid wastes from gas treatment other than those mentioned in 10 02 07
10 03	Wastes from aluminium thermal metallurgy
10 03 29*	wastes from treatment of salt slags and black drosses containing dangerous substances
10 03 30	wastes from treatment of salt slags and black drosses other than those mentioned in 10 03 29
10 11	Wastes from manufacture of glass and glass products
10 11 05	particulates and dust
10 11 12	waste glass other than those mentioned in 10 11 11
10 11 15*	Solid wastes from flue-gas treatment containing hazardous substances
10 11 16	solid wastes from flue-gas treatment other than those mentioned in 10 11 15
10 12	Wastes from manufacture of ceramic goods, bricks, tiles and construction products
10 12 03	particulates and dust
10 12 08	waste ceramics, bricks, tiles and construction products (after thermal processing)
10 12 09*	Solid wastes from gas treatment containing hazardous substances
10 12 10	solid wastes from gas treatment other than those mentioned in 10 12 09
10 13	Wastes from manufacture of cement, lime and plaster and articles and products made from them
10 13 11	wastes from cement-based composite materials other than those mentioned in 10 13 09 and 10 13 10
10 13 12*	Solid wastes from gas treatment containing hazardous substances
10 13 13	solid wastes from gas treatment other than those mentioned in 10 13 12
10 13 14	waste concrete and concrete sludge
15	**WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED**
15 02	Absorbents, filter materials, wiping cloths and protective clothing
15 02 02*	absorbents, filter materials, wiping cloths and protective clothing contaminated by hazardous substances
15 02 03	absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02
16	**WASTES NOT OTHERWISE SPECIFIED IN THE LIST**
16 08	Spent catalysts
16 08 03	spent catalysts containing transition metals or transition metal compounds not otherwise specified
16 08 04	spent fluid catalytic cracking catalysts (except 16 08 07)
16 08 07*	Spent catalysts contaminated with hazardous substances
19	**WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE**
19 01	Wastes from incineration or pyrolysis of waste
19 01 12	bottom ash and slag other than those mentioned in 19 01 11
19 01 16	boiler dust other than those mentioned in 19 01 15
19 01 18	pyrolysis wastes other than those mentioned in 19 01 17
19 01 19	sands from fluidised beds
19 04	Vitrified waste and wastes from vitrification
19 04 01	vitrified waste

19 12	Wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified
19 12 05	glass
19 12 09	minerals (for example sand, stones)
19 12 11*	Other wastes (including mixtures of materials) from mechanical treatment of waste containing hazardous substances
19 12 12	Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11

2.3.2 Question 2: Point Source Emissions to Air, Water and Land

The application seeks to allow the installation of 12 waste storage silos, 2 binder (e.g. cement) silos, a filler (e.g. sand) storage bay, 2 CO_2 tank(s) and a three production lines (all within the same process building). The emission points to air are as follows:

- A1 to A12 – vents from the waste storage silos;
- A13 & A14 – vents from the binder silos; and
- A15 & A16 – high level fans on the first stage mixer housing.

These emission points are shown on the Site Layout Plan provided in **Appendix D** of this application.

There is no discharge to sewer from the process. Currently all surface water from the site is collected in drains and directed to the surface water (reed bed) lagoon which acts as a soakaway. When all three lines have been constructed, clean (roof) water will be captured separately and reused in the process. Two underground tanks are located in the northern part of the site; these can provide buffer water storage if it is required. The tanks, drains and lagoon are all defined on the Site Drainage Plan.

2.3.3 Question 3: Operating Techniques

Question 3a relates to operating techniques. A BAT assessment has been produced, to reflect fully the proposed operations and to provide consistency with the other facilities that operate the same processes. The BAT Assessment is provided in **Appendix H** of this 2021 application (ref. OCO_2020.04/08).

Question 3c relates to raw materials. The process requires the addition of binder (cement or equivalent waste material) and filler (sand/limestone dust or other equivalent waste material), and CO_2 at specified rates in order to produce an end-of-waste aggregate product. These will be stored as follows:

- Binder material will be stored in two silos each with a capacity of 125 m^3 (200 tonnes) so a total of 400 tonnes;
- Filler will be stored in a storage bay with a capacity of 600 tonnes; and
- CO_2 will be stored in two tanks allowing for a storage capacity of 100 tonnes combined.

2.3.4 Question 5: EIA

The planning application that is being made for the site is a full Environmental Impact Assessment. The application was submitted on 20 December 2021 and has been registered but not yet validated at the time of this EP application. The reference is FUL/2021/0072.

2.3.5 Question 6: Resource Efficiency and Climate Change

Question 6 requires information to be provided as to the basic measures implemented to improve energy efficiency. The BAT Assessment sets out the measures that will be in place.

2.4 Form Part F1

The application fee has been identified using the April 2019 EA Charging Scheme. It is based on the activity references for the proposed listed activities as follows:

- Charge activity ref. 1.16.1 for Production Line 1 (Section 5.3 hazardous waste installation) - £16,001 for a new application;
- Charge activity ref. 1.16.1 for Production Line 2 - £1,600.10 as 90% reduction can be applied to subsequent activities falling under the same activity;
- Charge activity ref. 1.16.1 for Production Line 3 - £1,600.10 as 90% reduction can be applied to subsequent activities falling under the same activity; and
- Charge activity ref. 1.16.4 for the temporary storage of hazardous waste (Section 5.6) - £13,519 for a new application.

Payment of the total application fee of £32,722.20 has been made by BACS, reference PSCAPPOCOTE212.