

EDWIN RICHARDS QUARRY – LOCAL ENFORCEMENT POSITION

1 INTRODUCTION

1.1 Introduction and Background

Edwin Richards Quarry (ERQ) is an integrated waste management facility operated by Waste Recycling Group (Central) Limited, a wholly owned subsidiary of FCC Environment (UK) Limited. The site has two permits as follows:

- Landfill (BU0834IP)
- Soil Treatment Centre (HP3632RP)

This technical note has been prepared in respect of the Soil Treatment Centre (STC) to request a Local Enforcement Position (LEP) from the Environment Agency (EA) to allow the operation of a trial activity to pre-screen incoming hazardous soils, which may contain fragments of bonded asbestos/asbestos contaminated material (ACM), prior to the soils then passing through a hand picking station. The hand picking element of the treatment activity is already taking place inside the building at ERQ and it is the pre-screening activity which is the subject of this LEP request.

The current STC permit includes the following treatment operations as listed activities:

S5.3A(1)(a)(ii) Physico-chemical treatment – This includes sorting, separation and screening of **hazardous wastes** and allows for the removal of asbestos from soils by hand picking.

S5.4A(1)(a)(ii) Physico-chemical treatment - This includes sorting, separation, screening and crushing of **non-hazardous wastes**.

S5.3A(1)(a)(i) Biological treatment – This includes the bioremediation of **hazardous waste** for both disposal and recovery

S5.4A(1)(a)(i) Biological treatment – This includes the bioremediation of **non-hazardous waste** for disposal

S5.4A(1)(b)(i) Biological treatment - This includes the bioremediation of **non-hazardous waste** for recovery.

S5.6A(1)(a) Storage of hazardous waste – Includes the temporary storage of **hazardous waste** pending treatment for disposal or recovery.

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The activity being proposed for the trial is already on the sites permit but is subject to a pre-operational condition 1 (full wording from permit Table S1.3 copied below) relating to the hazardous waste pre-screening activity which requires details to be submitted to the EA for approval prior to the operation of mechanical pre-screening of wastes prior to transfer to the hand picking line. The hand picking line is already in operation and not subject to this pre-operational condition which only relates to the mechanical pre-screening.

The pre-screening element was requested to be included in the permit as it will greatly assist in removing oversize materials from the incoming waste stream before it is then passed through the hand picking line. This has the benefits of preventing large, potentially damaging and dangerous objects causing damage to the picking line and posing H&S risk to the operatives in the picking station. The pre-screening would also improve the throughput of the picking station and based upon an assessment of energy use from other projects where soils have been screened prior to hand picking; this pre-screening will reduce energy use by over 60%.

Table S1.3 below was introduced by the Environment Agency at the ‘draft permit for operator review’ stage of the permit determination. This was not discussed with the operator prior to its inclusion and from discussions with the permitting officer at that time it stated that the permit would not be approved without the inclusion of the pre-commencement condition copied below.

Table 1. Pre-Commencement condition from installation permit

Table S1.3 Pre-operational measures	
Reference	Pre-operational measures
1	<p>Prior to the use of the mechanical screener for the pre-screening of asbestos contaminated soils under activity reference AR2 a report shall be submitted for written permission detailing the following aspects:</p> <ul style="list-style-type: none"> • Evidence to demonstrate that the mechanical screener is fully enclosed and all dust emissions from the screening operation are directed to an active abatement system with a HEPA filter or other suitable design. • Details of the proposed commissioning, operational and maintenance procedures associated with the mechanical screener and active abatement system to be implemented on site. • Details of monitoring checks, audits and emergency procedures to be implemented on site to ensure both the mechanical screener and active abatement system are fully operational and working as designed. <p>No mechanical pre-screening of asbestos contaminated soils under activity reference AR2 shall commence unless the Environment Agency has given prior written permission under this condition.</p>

Since the issue of the permit on 2nd June 2021 we have made two submissions to try to discharge pre-operational condition 1 and both have been rejected on the basis that they were not considered by the EA to achieve ‘full enclosure’ of the pre-screening activity, notwithstanding that the activity will take place inside a building. Following the last submission it was highlighted by the EPR installations officer that it is not possible to introduce an active abatement system, as required by the pre-operational condition, without also needing to vary the

permit to introduce a new point source emission and emission limits i.e. the pre-op condition as worded could not be complied with without a further permit variation.

The difficulties in discharging the pre-operational condition are causing operational impacts as not being able to pre-screen the materials increases the risks to site staff from oversize inclusions, increases fuel use and associated exhaust emissions from earthworks plant and limits the facilities throughput efficiency.

This LEP request is seeking agreement from the EA to undertake a trial of the pre-screening activity to collect further emissions monitoring data. The purpose of the trial would be to investigate through monitoring data if the proposed pre-screening activity does or does not result in emissions of asbestos fibres which exceed the permit limit.

1.2 Previous Submissions for Pre-Operational Condition 1

As mentioned above, two proposals have been submitted to discharge the pre-operational condition and both have been rejected on the basis that the EA are not satisfied they achieved 'full enclosure' as required by the pre-operational condition wording.

The waste pre-screening activity would be carried out inside a building at ERQ, and the two proposals made to satisfy the pre-operational condition are as follows:

- Enclosure of the screening deck with emissions directed to an active abatement system with a HEPA filter; and
- Enclosure of the entire mechanical screen within the building using fast closing doors and localised active extraction of emissions from the screening activity directed to a HEPA filter.

These proposals have been made on the basis that 'full enclosure' of a mechanical screen is technically impossible due to the need for access to the loading hopper with a loading shovel and also the fact that by its nature a mechanical screen will have material outputs from the screener arms which it is not possible to fully enclose unless operated inside a building because space is needed for output/feed stockpiles and heavy plant access.

We have spoken with screen manufacturers about 'fully enclosed' screens and they advise there are none available on the market and the manufacturers of screening equipment have identified that full enclosure would also present other issues with motors overheating due to their 'full enclosure' and lack of ventilation. It is due to these technical difficulties that we made the two proposals identified above as these are practicable, utilise equipment which is available in the market, and we considered, from a practicable perspective, met the requirements of the pre-operational condition to provide full enclosure and active abatement.

1.3 Permit Variation

The feedback from the EA on the previous pre-operational condition submissions was clear in stating that the wording of the pre-operational condition requires the screen to be ‘fully enclosed’ no further explanation or qualification of what that means in practical terms has been offered. Based on the EA responses received to the pre-operational condition submission it is difficult to see what more could have been offered to discharge the pre-operational condition considering that both proposed options would have taken place inside a enclosed building with extraction and a HEPA filter proposed as per the pre-operational condition wording.

The pre-operational condition wording also requires an active abatement system which would require a further variation to the permit to introduce a new point source emission and associated emission limits for the abatement system.

Given the technical and practical difficulties in achieving what is required by the pre-operational condition and the nature of the wording that requires an abatement system and a new point source emission we do not think it is possible to discharge the pre-operational condition as it is currently worded. Consequently, we have been left with no alternative but to submit a permit variation to request that the pre-operational condition is varied/removed.

A permit variation to completely remove the pre-operational condition was submitted in December 2022 and is with the EA for determination. If this trial was allowed it would provide the opportunity to gather actual monitoring data to confirm if there are, or are not emissions which exceed the permit limit from the proposed activity and then determine what level of controls and abatement are necessary and proportionate to the observed risk based on the monitoring data that is collected. The permit can then be varied accordingly based on the data collected in the trial.

2 MONITORING DATA

2.1 Monitoring Locations and Frequency – Current Operations

Monitoring of airborne asbestos is undertaken at the site and locations/methods and emissions thresholds are specified within the permit. This includes for four monitoring locations within the building and three monitoring locations for the external storage area.

Monitoring is undertaken daily within the building where operations are taking place, and also externally where soil is being delivered for external storage. The permit threshold for asbestos in air is <0.01f/ml and monitoring is undertaken in accordance with EA technical guidance note M17 and HSE document reference HSG248.

2.2 Monitoring Results – Current Operations

Hand picking of asbestos commenced in May 2018 inside the building on site. Monitoring was undertaken on a daily basis using phase contrast optical microscopy (PCOM) to achieve an asbestos reporting limit of <0.01f/ml to demonstrate that the works to treat soils with ACM inclusions were compliant with permit limits. There were no results in excess of the 0.01f/ml permit threshold for asbestos in air at any point during the operation of the hand picking operations on site.

In 2021, the detection limit for the airborne monitoring was reduced to <0.0005f/ml to establish if the works were also compliant with WHO air quality guidance for Europe.

The asbestos monitoring results are summarised in Table 1 below.

Table 2. Summary of Asbestos Monitoring

Asbestos Treatment Description	Date Range	Detection Limit (f/ml)	Maximum Concentrations (f/ml)	Permit Threshold (f/ml)
Storage and Hand Picking	08/05/18 – 05/07/21	<0.01	<0.01	<0.01
Storage and Hand Picking	09/07/21 – onwards	<0.0005	0.0007	<0.01

The detection limit varied between <0.0005 – 0.0061f/ml throughout the period of July 2021 and September 2022 due to the occlusion of slides from mobile plant exhaust emissions.

As can be seen from the above data the emissions of asbestos fibres from the current operations are several orders of magnitude below the permit threshold and typically at the lower detection limit i.e. no emission of fibres being recorded. Therefore, if the pre-screening trial was allowed to proceed it would be evident if the pre-screening activity was resulting in emissions above this consistently low baseline and also if it was exceeding the permit limit. The data summarised above has all previously been submitted to the EA but copies can be made available if required as part of this LEP request.

3 PRE-SCREENING TRIAL

3.1 Need for Full Enclosure

We understand the basis for the EA's requirement for 'full enclosure' is due to concerns that mechanical screening of soils, which may contain fragments of bound asbestos, may result in liberation of fibres due to the agitation the materials would experience in a mechanical screen. Pre-screening operations of this nature are permitted to be carried out on construction sites under mobile treatment permits (e.g. Standard rules SR2008 No27 mobile plant for the treatment of soils and contaminated material, substances or products) and monitoring data from these activities shows no emissions of asbestos above the permit limit of <0.01f/ml.

3.2 Pre-acceptance checks

As part of the site's operations, we have rigorous waste acceptance checks, and this is to ensure that there are no materials (e.g. fibrous asbestos) accepted that could give rise to elevated asbestos fibres. This is part of our risk elimination approach to ensure that we are not reliant on abatement measures alone for the prevention of emissions. If there are wastes that could give rise to elevated asbestos fibres in air, we do not accept this on site as per the limits on asbestos concentrations in soil in the sites waste acceptance criteria. Materials which are to be put through the pre-screening activity are only deemed suitable if they meet all the pre-acceptance and also verification checks at a UKAS accredited laboratory.

3.3 Monitoring during the Trial

The monitoring during the trial will following the existing comprehensive requirements within the permit. For example, we monitor between 4-7 sample locations on a daily basis depending on the location of the treatment activity.

Monitoring during the trial will utilise both Phase Contrast Optical Microscopy (PCOM) for immediate daily analysis results against the permit limit of <0.01f/ml and scanning electron microscopy (SEM) as a secondary 'sensitivity' check to a lower detection limit of <0.0005f/ml.

3.4 Operational Procedures in event of an Emission

The trial must meet the requirements of the current permit and its limits at all times. Dust suppression infrastructure is present that will continually be in operation to reduce fugitive dust release within the building. Daily monitoring will be undertaken as previously described.

In the event of a potential breach of the permit threshold for asbestos fibres in air then the trial will cease and the reason for the breach be investigated. There are further details on the procedures for mitigation and investigation of emissions in our overall emissions management plan for the installation and these processes would be followed in the same way as for a permit limit breach for the current operations. The presence of the screener will not materially change the procedures already in place as it is just a supplementary step in the existing treatment process.

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4 REQUEST FOR LOCAL ENFORCEMENT POSITION

This LEP request is being made in the context of two previous submissions to try to discharge pre-operational condition 1 on the permit which requires full enclosure and active abatement of the pre-screening activity. Both of the previous submissions have been refused by the EA due to the EA's view they did not satisfy the need for 'full enclosure' although the EA's expectations appear to be unachievable due to the technical and practical difficulties associated with 'full enclosure' of a mechanical screen. As stated above the activity will take place inside an enclosed building and active extraction was being proposed so it is unclear what would satisfy the EA's interpretation of 'full enclosure'

It is for this reason we wish to investigate, through monitoring, what level of emissions arise from the pre-screening activity. The monitoring data will confirm if there are emissions from the screening activity that need to be abated or not and therefore if the requirement for 'full enclosure' is actually justified or necessary or if alternative control and abatement methods, such as those already in use, could be utilised. To investigate this, we request a LEP is put in place by the EA to allow a trial of the pre-screening activity to take place at the STC at ERQ.

The monitoring data will also assist in determining the pending permit variation which is seeking removal of pre-operational condition 1 on the basis that the current pre-operational condition wording cannot be complied with.

Should the monitoring data confirm there are no emissions from the activity above the permit threshold, then this will confirm that no further mitigation is required, as is being requested by pre-operational condition 1, and the pre-operational condition can be removed via the pending permit variation. Alternatively, if monitoring shows emissions from the pre-screening activity above permit limits then an appropriately worded condition requiring mitigation/abatement measures could be applied to the permit.

We request that the trial is allowed to continue for an indeterminate period as long as no emissions above permit thresholds are detected. This will enable a detailed monitoring data set to be collected for the activity which will provide further confidence to the EA that there are no emissions above the permit limits. Ultimately the trial will either end if there are emissions above permit limits or upon determination of the submitted permit variation requesting the pre-operational condition is removed.