



Application Support Document

Hill Barton

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Application Support Document

Hill Barton



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CONTENTS

1.	INTRODUCTION	7
2.	PERMITTING HISTORY	13
3.	DESCRIPTION OF PROPOSED CHANGES	13
3.1	Description of the Proposed Changes.....	13
3.2	Details of the Installation	17
3.2.1	Installation Boundary	17
3.2.2	Site Infrastructure and Design	17
3.3	Raw Materials.....	18
3.4	Description of the Process.....	28
3.5	Bioremediation.....	28
3.6	Soil Washing Process.....	29
3.7	Asbestos Picking Process	32
3.7.1	Asbestos Handpicking Station Acceptance Procedures	32
3.7.2	Asbestos Picking Station.....	33
3.7.3	Post Treatment Verification and Storage.....	33
3.8	Asbestos Mitigation Measures	36
3.9	BAT Justification	38
3.10	Management System	48
3.11	Energy Efficiency	48
3.12	Operator Competence.....	49
3.13	Accident and Emergencies.....	49
3.14	Management Plans	50
4.	EMISSIONS AND THEIR ABATEMENT	51
4.1	Emissions to Air	51
4.2	Odour	51
4.3	Noise	51
4.4	Emissions to Controlled Water	52
4.5	Emissions to Sewer.....	52
4.6	Emissions to Land.....	52
4.7	Waste Production / Management.....	52
5.	ENVIRONMENTAL MONITORING.....	54
5.1	Emissions to Air	54
5.2	Odour	54
5.3	Emissions to Controlled Water.....	54
5.4	Emissions to Sewer.....	55
5.5	Emissions to Land.....	55
5.6	Monitoring Frequency	55
6.	IMPACT TO THE ENVIRONMENT	56
6.1	Impacts to Air	56
6.2	Impacts to Controlled Water.....	56
6.3	Impacts to Sewer.....	56
6.4	Impacts to Land	56

List of Tables

Table 2.1	Permitting History.....	13
Table 3.1	Listed Activities	14
Table 3.2	Existing and Proposed Feedstock EWC Codes and Types for Bioremediation	19
Table 3.3	Existing and Proposed Feedstock EWC Codes and Types for Soil Washing.....	22
Table 3.4	Existing and Proposed Feedstock EWC Codes and Types for Asbestos Handpicking	27

Table 3.5 BAT Justification – BREF Waste Treatment38
Table 4.1 Wastes Produced on site53
Table 5.1 Emission Points and Monitoring Frequency55

List of Figures

Figure 1.1 Site Location9
Figure 1.2 Current Installation Boundary10
Figure 1.3 Proposed Installation Boundary11
Figure 1.4 Proposed Site Layout12
Figure 3.1 Sludge Treatment Process Schematic.....31
Figure 3.2 Asbestos Picking Station Process Schematic.....35

NON-TECHNICAL SUMMARY

This document has been prepared on behalf of UK Remediation Limited ('UK Remediation' or 'Operator' hereafter) by Sol Environment Ltd and provides supporting evidence as required by Environmental Permit Application Forms Part C2 and C3 issued by the Environment Agency (EA).

UK Remediation is making this application to carry out a 'Normal' Variation of their existing EPR permit under The Environmental Permitting (England and Wales) Regulations 2018 (as amended) in order to extend their existing permit boundary and to increase the scope of the treatment techniques on site to include a waste sludge treatment process, topsoil/aggregate recovery and asbestos hand-picking station. Therefore, this variation will also include additional waste codes and increase the facility's capacity to process 150,000 tonnes per annum.

The site is located at Unit 11b, Hill Barton Business Park, Clyst St Mary, Exeter, EX5 1DR.

The site is currently regulated in accordance with the conditions established by the Environmental Permit EPR/LP3939TS/V002 to process 75,000 tonnes per annum of hazardous and non-hazardous waste soils, spoils and sludges per year using two distinct treatment techniques, Bioremediation and Soil Washing.

The Bioremediation activities are currently permitted under the following Schedule References:

- Section 5.3 Part A(1)(a) 'The disposal of hazardous waste (other than incineration or landfill) in a facility with a capacity of more than 10 tonnes per day'; and
- Section 5.3 Part A(1)(c)(i) 'The disposal of non-hazardous waste in a facility with a capacity of more than 50 tonnes per day by biological treatment'.

The Soil Washing activities are currently permitted under the following Schedule References:

- Section 5.3 Part A(1)(a) 'The disposal of hazardous waste (other than incineration or landfill) in a facility with a capacity of more than 10 tonnes per day'; and
- Section 5.3 Part A(1)(c)(ii) 'The disposal of non-hazardous waste in a facility with a capacity of more than 50 tonnes per day by physico-chemical treatment'.

The site is also permitted to carry out a number of Directly Associated Activities as well as a separate 'Waste Operation' for the Biological and Physico-chemical Treatment of non-hazardous waste for re-use.

Since the Environment Agency (EA) issued the most recent version of the permit in 2012, the Environmental Permitting Regulation have been updated (The Environmental Permitting (England and Wales) Regulations 2018 (as amended)) and the existing activities now meet the following Schedule References:

Bioremediation:

- Section 5.3 'Disposal or recovery of hazardous waste' Part A(1)(a)(i) 'Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving biological treatment; and
- Section 5.4 'Disposal, recovery or a mix of disposal and recovery of non-hazardous waste' Part A(1)(b)(i) 'Recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving biological treatment.'

Soil Washing:

- Section 5.3 'Disposal or recovery of hazardous waste' Part A(1)(a)(ii) 'Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment; and
- Section 5.4 'Disposal, recovery or a mix of disposal and recovery of non-hazardous waste' Part A(1)(a)(ii) 'Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving physico-chemical treatment.

The inclusion of the asbestos handpicking station as part of this permit variation will introduce two additional listed Activities as detailed below:

- Section 5.3 'Disposal or recovery of hazardous waste' Part A(1)(a)(vi) 'Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving recycling or reclamation of inorganic materials other than metals or metal compounds; and
- Section 5.6 'Temporary storage of hazardous waste with a total capacity exceeding 50 tonnes'.

The proposed sludge treatment and topsoil/aggregate recovery is included as part of the current operations on site and therefore do not require additional listed Activities.

UK Remediation would also like the site address updated on the permit to accurately reflect the site. The site address is UK Remediation, Unit 11b, Hill Barton Business Park, Clyst St Mary, Exeter, EX5 1DR.

Emissions to Air

The existing site currently has no point source emissions to air.

As a result of this permit variation, there will be one point source emission to air (A1) from the stack associated with the enclosed asbestos handpicking process. As confirmed and detailed within the validation response submitted to the EA on 30th January 2026, the application does not include a H1 Assessment to air as there are no pollutant concentrations within the emissions from the asbestos handpicking station.

The asbestos handpicking process will be undertaken within an enclosed picking station to prevent the migration of potential asbestos fibres off-site during the hand picking process. The air within the picking station will be extracted through a stack, which will be fitted with a HEPA filter in accordance with BAT requirements. At the end of each asbestos picking operation, the unit will be professionally cleaned and air tested to ensure there won't be an accumulation of residual fibres between each picking operation.

Odour

It is recognised that there is potential for odour generation due to the nature of the wastes accepted on site. However, the proposed site is located in a long-established industrial area, and located approximately 770m from the nearest residential area, therefore, it is not located in a sensitive location.

The main source of potential odour is the acceptance of odorous wastes onto the site. As such, the primary prevention and control measure employed on site is the use of stringent waste acceptance procedures. Please refer to Annex E – Environmental Management System Summary for a copy of the waste acceptance procedures.

Additionally, an odour suppression system will be deployed to minimise airborne aerosols, bio-aerosols and fine particulates during unloading. The odour control system currently comprises of a perimeter misting

odour suppression system running above head height around the site boundary. An odour suppressant solution is sprayed across site via the spray bar system to neutralise odours. This system will be extended to cover the area of the planned extension.

The site will be operated in accordance with the Odour Management Plan provided within Annex F – Odour Management Plan.

Noise

An updated Noise Impact Assessment (NIA) has been completed as part of this permit variation. The NIA can be found in Annex I – Noise Impact Assessment. The NIA concludes that the rating levels are calculated to fall below the adopted background sound levels at all receptors identified within the NIA. Additionally, the existing area is industrial with varying uses and activities and it is unlikely that the proposed site operations would affect the existing character of the acoustic environment.

Emissions to Controlled Water

There will be no changes to emissions to controlled waters arising from this permit variation. The additional area added to the installation boundary has impermeable hardstanding with surface water draining to the existing water collection or newly installed collection attenuation tank on site as shown in Annex A - Figures.

The entire perimeter of the site, including the proposed additional area has a low-level bund to capture and contain surface water from leaving the site's perimeter.

The entire site has impermeable hardstanding with a fully contained and sealed drainage system.

Emissions to Sewer

UK Remediation have made an application to increase the throughput and discharge to sewer as a result of this permit variation, although run off water will be reused whenever possible.

A H1 Assessment has been completed and included in *Annex L – H1 Assessment to Sewer*. All substances pass the assessment and are successfully screened out except for Polyaromatic hydrocarbons (PAHs). However, PAHs are based on the worst-case scenario as the Waste Treatment BREF only references the Hydrocarbon Oil Index (HOI). It is considered highly unlikely that PAHs would make up the total HOI content in the discharge, and it is also highly unlikely that this volume of HOI substance is present. For example, when benzene is used in the model instead of PAHs (another high risk HOI component) it is screened out after test 2.

All surface water runoff from ground level surfaces is prevented from leaving the site by a low-level bund around the perimeter. The site is graded so that all rainfall landing within the bunded area flows to a one of two treatment/attenuation tanks prior to being pumped to the public foul sewer at a rate of 2 liters per second.

All leachate/runoff will also be directed by gradient to the sites interceptor where it will be processed through the water treatment system before temporary storage in the attenuation tank, prior to discharge via public foul sewer. Water will be tested on a monthly basis. The water treatment system will consist of a sand filter to remove sediment (physical separation), and GAC filters to treat organic contaminants (adsorption) in accordance with EA BAT requirements.

Emissions to Land

There are no emissions to land arising from this permit variation.

Waste / Product Management

Following treatment on site, all waste/product on site will be recycled or disposed of off-site with a full audit trail kept. Table 4.1 in section 4.7 identifies the wastes produced on site and their classification.

1. INTRODUCTION

This document has been prepared on behalf of UK Remediation Limited ('UK Remediation' or 'Operator' hereafter) by Sol Environment Ltd and provides supporting evidence as required by Environmental Permit Application Forms Part C2 and C3 issued by the Environment Agency (EA).

UK Remediation is making this application to carry out a 'Normal' Variation of their existing EPR permit under The Environmental Permitting (England and Wales) Regulations 2018 (as amended) in order to extend their existing permit boundary and to increase the scope of the treatment techniques on site to include a waste sludge treatment process and asbestos hand-picking station. Therefore, this variation will also include additional waste codes and increase the facilities capacity to process 150,000 tonnes per annum.

The site is located at Unit 11b, Hill Barton Business Park, Clyst St Mary, Exeter, EX5 1DR.

The site is currently regulated in accordance with the conditions established by the Environmental Permit EPR/LP3939TS to process 75,000 tonnes per annum of hazardous and non-hazardous waste soils, spoils and sludges per year using two distinct treatment techniques, Bioremediation and Soil Washing.

The Bioremediation activities are currently permitted under the following Schedule References:

- Section 5.3 Part A(1)(a) 'The disposal of hazardous waste (other than incineration or landfill) in a facility with a capacity of more than 10 tonnes per day'; and
- Section 5.3 Part A(1)(c)(i) 'The disposal of non-hazardous waste in a facility with a capacity of more than 50 tonnes per day by biological treatment'.

The Soil Washing activities are currently permitted under the following Schedule References:

- Section 5.3 Part A(1)(a) 'The disposal of hazardous waste (other than incineration or landfill) in a facility with a capacity of more than 10 tonnes per day'; and
- Section 5.3 Part A(1)(c)(ii) 'The disposal of non-hazardous waste in a facility with a capacity of more than 50 tonnes per day by physico-chemical treatment'.

The site is also permitted to carry out a number of Directly Associated Activities as well as a separate 'Waste Operation' for the Biological and Physico-chemical Treatment of non-hazardous waste for re-use.

Since the Environment Agency (EA) issued the most recent version of the permit in 2012, the Environmental Permitting Regulation have been updated (The Environmental Permitting (England and Wales) Regulations 2018 (as amended)) and the existing activities now meet the following Schedule References:

Bioremediation:

- Section 5.3 'Disposal or recovery of hazardous waste' Part A(1)(a)(i) 'Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving biological treatment; and
- Section 5.4 'Disposal, recovery or a mix of disposal and recovery of non-hazardous waste' Part A(1)(b)(i) 'Recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving biological treatment.'

Soil Washing:

- Section 5.3 'Disposal or recovery of hazardous waste' Part A(1)(a)(ii) 'Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment; and
- Section 5.4 'Disposal, recovery or a mix of disposal and recovery of non-hazardous waste' Part A(1)(a)(ii) 'Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving physico-chemical treatment.

The inclusion of the asbestos handpicking station as part of this permit variation will introduce two additional listed Activities as detailed below:

- Section 5.3 'Disposal or recovery of hazardous waste' Part A(1)(a)(vi) 'Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving recycling or reclamation of inorganic materials other than metals or metal compounds; and
- Section 5.6 'Temporary storage of hazardous waste with a total capacity exceeding 50 tonnes'.

The proposed sludge treatment and topsoil/aggregate recovery is included as part of the current operations on site and therefore do not require additional listed Activities.

The site is located at Hill Barton Business Park, Clyster St Mary, Exeter, EX5 1DR.

The remainder of this application support document is structured accordingly:

- Section 2: Provides a detailed planning history of the site and associated activities;
- Section 3: Provides specific nature of the proposed changes associated with the variation application;
- Section 4: Provides specific nature and detailed description of the emissions to air and water associated with the Installation;
- Section 5: Provides details of all monitoring associated with the Installation; and
- Section 6: Provides an Environmental Impact and Assessment of the varied Installation.

The site location is provided below in Figure 1.1.

The current Installation Boundary is shown in Figure 1.2 below. The proposed new Installation Boundary and proposed site layout is provided below in Figure 1.3 and 1.4 below.



Figure 1.1 Site Location



Figure 1.2 Current Installation Boundary



Figure 1.3 Proposed Installation Boundary

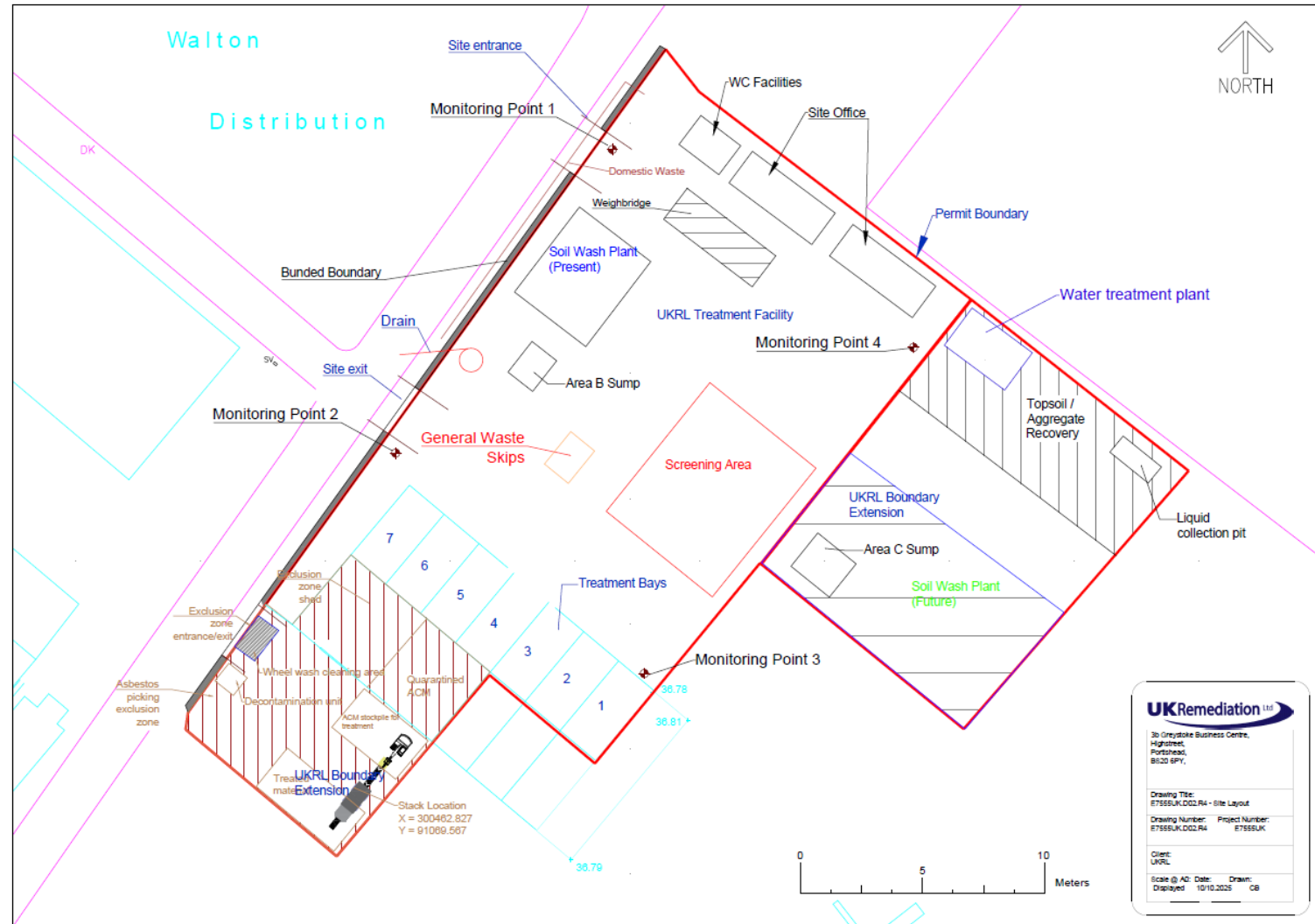


Figure 1.4 Proposed Site Layout

2. PERMITTING HISTORY

The current permit has been included within Annex J – Existing Permit and the details pertaining to all known permits are provided in Table 2.1 below.

Table 2.1 Permitting History

Reference	Description	Status	Date Granted
EPR/LP3939TS/V003	(This Variation)	T.B.C	T.B.C
EPR/LP3939TS/V002	Variation to add a list of waste codes.	Granted	18/10/2012
EPR/LP3939TS	Application for a the storage and treatment of up to 75,000 tonnes of hazardous and non hazardous waste soils, spoils and sludges per year, using two distinct treatment techniques - bio-remediation and soil washing.	Granted	31/12/2010

3. DESCRIPTION OF PROPOSED CHANGES

3.1 Description of the Proposed Changes

The site is regulated in accordance with the conditions established by the Environmental Permit EPR/LP3939TS to process 75,000 tonnes per annum of hazardous and non-hazardous waste soils, spoils and sludges per year using two distinct treatment techniques, Bioremediation and Soil Washing.

UK Remediation is making this application to carry out a 'Normal' Variation of their existing EPR permit under The Environmental Permitting (England and Wales) Regulations 2018 (as amended) in order to extend their existing permit boundary and to increase the scope of the treatment techniques on site to include a waste sludge treatment process, topsoil/aggregate recovery and asbestos hand-picking station. Therefore, this variation will also include additional waste codes and increase the facilities capacity to process 150,000 tonnes per annum.

UK Remediation would also like the site address updated on the permit to accurately reflect the site. The site address is UK Remediation, Unit 11b, Hill Barton Business Park, Clyst St Mary, Exeter, EX5 1DR.

Since the Environment Agency (EA) issued the most recent version of the permit in 2012 (EPR/LP3939TS/V002), the Environmental Permitting Regulation have been updated (The Environmental Permitting (England and Wales) Regulations 2018 (as amended)) and therefore the Schedule References for the existing Activities have changed. Table 3.1 below identifies any changes to the existing Activities and the addition of new Activities are shown in **RED**.

Table 3.1 Listed Activities

Activity	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity and waste types
Bio-remediation	Section 5.3 Part A(1)(a)(i) Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving biological treatment.	D8 – Biological treatment of waste for disposal. D15 – Storage of waste pending disposal.	Receipt, storage and treatment of waste prior and post treatment. Waste types, quantities and limitations as specified in Tables S2.2, S2.3 and S2.4. Storage of waste residues and raw materials.
	Section 5.4 Part A(1)(b)(i) Recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving biological treatment.	D8 – Biological treatment of waste for disposal. D15 – Storage of waste pending disposal.	Storage to be carried out within area with impermeable surface and sealed drainage. Hazardous waste to be kept and treated separately from non-hazardous waste. Treatment to consist of bioremediation and soil washing/scrubbing with associated plant, resulting in changes to the chemical composition or components of the waste.
Soil washing	Section 5.3 Part A(1)(a)(ii) Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment.	D9 – Physico-chemical treatment of waste soils for disposal (including solidification and stabilisation).	Treatment to include screening and sorting of waste materials and recycling of contaminated water used in process.
	Section 5.4 Part A(1)(a)(ii) Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving physico-treatment.	D15 – Storage of waste pending disposal.	Bioremediation/biopiling treatment to be undertaken within a building unless otherwise agreed with the Agency.

<p>Asbestos Hand Picking</p>	<p>Section 5.3 Part A(1)(a)(vi) Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving recycling or reclamation of inorganic materials other than metals or metal compounds.</p>	<p>Asbestos removal from waste (R5)</p>	<p>From receipt of waste through to storage of treated waste.</p> <p>The manual removal of visible fragments of asbestos in a soil matrix within an enclosed asbestos handpicking station.</p> <p>Treatment in a dedicated enclosed and abated picking station. The extraction system must be operational during picking operations.</p> <p>Wastes containing asbestos shall not be subject to mechanical screening and sorting.</p> <p>All treatment and storage shall take place on an impermeable surface with a sealed drainage system with a dust suppression system in place.</p> <p>Asbestos removed from the waste shall be double-bagged and stored in a sealed locked skip.</p>
<p>Temporary storage of Hazardous Waste</p>	<p>Section 5.6 Part A(1)(a) Temporary storage of hazardous waste with a total capacity exceeding 50 tonnes.</p>	<p>Storage of hazardous waste prior to on-site treatment for the purpose of disposal (D15) Storage of hazardous waste prior to on-site treatment for the purpose of recovery (R13)</p>	<p>From receipt of waste through to submission for treatment.</p> <p>All storage must take place on an impermeable surface with a sealed drainage system and in a way that minimises asbestos fibre emissions.</p>

Directly Associated Activities			
	Handling and storage of waste	Handling and storage of waste	From receipt to dispatch of waste
	Handling and storage of raw material	Handling and storage of raw materials used in the treatment process	From receipt to use of raw materials
	Surface water management	Collection and recycling of surface water	Drainage of hardstanding areas
	Contaminated water management	Collection, storage, reuse and disposal of contaminated water	Collection, storage, reuse and disposal of contaminated water
	Abatement Systems	Operation of HEPA filters	The enclosed asbestos handpicking station will be enclosed and vent to air via a series of HEPA filters through a single stack.

Description of Activities for Waste Operations		Limits of Activities
Biological and Physico-chemical treatment of non hazardous waste for re-use.	<p>R13:Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced).</p> <p>R3:Recycling/reclamation of organic substances which are not used as solvents.</p> <p>R4:Recycling/reclamation of metals and metal compounds.</p> <p>R5:Recycling/reclamation of other inorganic compounds.</p>	<p>Operations shall be limited to:</p> <p>Bioremediation treatment with associated plant resulting in changes to the chemical composition or components of the waste.</p> <p>Physical chemical treatment consisting of soil washing/scrubbing with associated plant resulting in changes to the chemical composition or components of waste.</p> <p>Treatment to include screening, sorting waste material and recycling of contaminated water.</p>

		<p>Bioremediation treatment to take place within a building unless otherwise agreed with the Agency.</p> <p>Receipt of waste and use of raw materials.</p> <p>Storage and treatment to be carried out in area of impermeable surface and sealed drainage.</p> <p>Non hazardous waste types and quantities specified in Table S2.2, and limitations as specified in Tables S2.3 and S2.4, excluding highly odourous wastes.</p> <p>Waste designated for reuse to be kept separate from waste designated for disposal.</p>
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3.2 Details of the Installation

3.2.1 Installation Boundary

UK Remediation is extending the permit boundary to incorporate an adjacent section of land. A visual representation of the current and proposed Installation Boundary is provided in Section 1, Figure 1.2 and 1.3.

An updated Site Condition Report (SCR) is provided in Annex D – Site Condition Report. This incorporates the proposed additional sections of land and outlines the baseline conditions associated with it, as well as defining the historical uses as a whole.

The SCR does not identify any additional risk to the environment under normal operations of the facility as a result of this permit variation.

3.2.2 Site Infrastructure and Design

All current and proposed operational areas of the site will be constructed on concrete hardstanding with a sealed drainage system.

All surface water runoff from ground level surfaces is prevented from leaving the site by a low-level bund around the entire perimeter. The site is graded so that all rainfall landing within the banded area flows to one of two of the treatment/attenuation tanks prior to being pumped to the public foul sewer at a rate of 2 litres per second.

There will be minimal process water arising from the operation of the proposed plant, however, there will be dust suppression units to dampen down the soils to mitigate any potential fugitive dust emissions. All

surface water collected on site will be utilised and reused where practicable for dust suppression and for the soil wash feed.

All site infrastructure (roads, drainage systems, concrete hardstanding and buildings) are inspected on a weekly basis by a competent person. Any faults and repairs will be carried out as soon as practicable and recorded within the site diary.

The sludge treatment process proposed on site will be undertaken as part of the soil washing plant within the proposed new area on site. The asbestos picking facility will be located in the proposed area within the south of the site on concrete hardstanding.

The additional infrastructure and equipment in relation to the sludge treatment will include the following:

- Feed conveyors;
- Ultra scrub unit;
- Attrition system;
- Lites-out system;
- Ultrasand plant;
- Overflow transfer system;
- Water treatment;
- Thickener tank; and
- Filter press.

The additional infrastructure and equipment in relation to the asbestos picking station will include the following:

- Dump trucks;
- Excavators;
- Mobile enclosed picking station;
- Decontamination unit;
- Lockable asbestos waste skips;
- Asbestos waste bags; and
- Dust monitoring equipment.

3.3 Raw Materials

The site is currently permitted under permit EPR/LP3939TS/V002 to process 75,000 tonnes per annum of hazardous and non-hazardous waste soils, spoils and sludges per year. This capacity is proposed to increase to 150,000 tonnes per annum.

All wastes will be accepted on site in accordance with the sites waste acceptance procedures which are provided within Annex E – Environmental Management System Summary.

A detailed list of European Waste Catalogue (EWC) codes of wastes that will be accepted by site is provided in Table 3.2 below. The EWC codes shown in **RED** are additional EWC codes proposed to be included as part of this variation.

Table 3.2 Existing and Proposed Feedstock EWC Codes and Types for Bioremediation

EWC Code	EWC Description
01	MINING/QUARRYING/MINERAL TREATMENT
01 04	physical and chemical processing of non-metalliferous minerals
01 04 09	waste sand and clays
01 04 12	tailings and other wastes from washing and cleaning of minerals other than those mentioned in 01 04 07 and 01 04 11
01 05	drilling muds and other drilling wastes
01 05 04	freshwater drilling muds and wastes
01 05 05*	oil-containing drilling muds and waste
01 05 06*	drilling muds and other drilling wastes containing hazardous substances
05	PETROLEUM/GAS PRODUCTION
05 01	petroleum refining
05 01 03*	tank bottom sludges
05 01 09*	sludges from on- site effluent treatment containing hazardous substances
05 01 10	sludges from on- site effluent treatment other than those mentioned in 05 01 09
06	INORGANIC CHEMICAL PROCESSING
06 05	sludges from on-site effluent treatment
06 05 02	sludges from on- site effluent treatment containing hazardous substances
10	THERMAL PROCESSES
10 01	power stations and other combustion plants (except 19)
10 01 20*	sludges from on- site effluent treatment containing hazardous substances
10 01 21	sludges from on- site effluent treatment other than those mentioned in 10 01 20
10 11	manufacture of glass and glass products

10 11 19*	solid wastes from on-site effluent treatment containing hazardous substances
10 11 20	solid wastes from on-site effluent treatment other than those mentioned in 10 11 19
10 12	manufacture of ceramic goods – bricks, tiles and construction products
10 12 13	sludge from on-site effluent treatment
12	SHAPING/PHYSICAL TREATMENT OF METALS/PLASTICS
12 01	wastes from shaping and physical and mechanical surface treatment of metals and plastics
12 01 14*	machining sludges containing hazardous substances
12 01 15	machining sludges other than those mentioned in 12 01 14
13	OIL AND LIQUID FUEL WASTES
13 05	oil/water separator contents
13 05 01*	solids from grit chambers and oil/water separators
13 05 02*	sludges from oil/water separators
13 05 03	interceptor sludges
13 05 08	mixtures of waste from grit chambers and oil/water separators
16	OTHER WASTES FROM INDUSTRIAL PROCESSES
16 07	transport tank, storage tank and barrel cleaning (Except 05 and 13)
16 07 08	wastes containing oil
17	CONSTRUCTION AND DEMOLITION WASTE
17 01	concrete, bricks, tiles and ceramics
17 01 06*	mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing hazardous substances
17 01 07	mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06
17 05	soil (including excavated soil from contaminated sites), stones and dredging spoil
17 05 03*	soil and stones
17 05 04	soil and stones other than those described in 17 05 03
17 05 05*	dredging spoil containing dangerous substances

17 05 06	dredging spoil other than those mentioned in 17 05 05
17 05 07*	track ballast containing hazardous substances
17 05 08	track ballast other than those mentioned in 17 05 07
19	MATERIALS FROM WASTE AND WATER TREATMENT
19 02	physico/chemical treatments of waste (including dechromation, decyanidation and neutralisation
19 02 03	pre mixed wastes composed only of non-hazardous wastes
19 02 04*	pre mixed wastes composed of at least one hazardous waste – wastes suitable for biological treatment only
19 02 05*	sludges from physio/chemical treatment containing dangerous substances
19 02 06	sludges from physico/chemical treatment other than those mentioned in 19 02 05
19 02 11*	other wastes containing hazardous substances – wastes suitable for biological treatment only
19 05	wastes from aerobic treatment of solid wastes
19 05 03	off specification compost
19 08	wastes from waste water treatment plants not otherwise specified
19 08 01	screenings
19 08 02	waste from desanding
19 08 13*	sludges containing hazardous substances from other treatment of industrial waste water
19 08 14	sludges from other treatment of industrial waste water other than those mentioned in 19 08 13*
19 11	oil regeneration
19 11 05*	sludges from on- site effluent treatment containing hazardous substances
19 11 06	sludges from on- site effluent treatment other than those mentioned in 19 11 05
19 12	mechanical treatment of wastes (sorting, crushing, compacting, pelletising
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
19 13	soil and groundwater remediation
19 13 01*	solid wastes from soil remediation
19 13 02	solid wastes from soil remediation
19 13 03*	sludges from soil remediation
19 13 04	sludges from soil remediation
19 13 05*	sludges from groundwater remediation
19 13 06	sludges from groundwater
20	MUNICIPAL WASTE AND SIMILAR MATERIALS FROM COMMERCE AND INDUSTRY
20 02	garden and park wastes (including cemetery waste)
20 02 02	soil and stone
20 03	other municipal wastes
20 03 03	street cleaning residue

Table 3.3 Existing and Proposed Feedstock EWC Codes and Types for Soil Washing

EWC Code	EWC Description
01	MINING/QUARRYING/MINERAL TREATMENT
01 01	mineral excavation
01 01 01	wastes from mineral metalliferous excavation
01 01 02	wastes from mineral non-metalliferous excavation
01 03	physical and chemical processing of metalliferous minerals
01 03 05*	other tailings containing hazardous substances
01 03 06	tailings other than those mentioned in 01 03 04 and 01 03 05
01 03 07*	other waste containing hazardous substances from physical and chemical processing of metalliferous minerals
01 04	physical and chemical processing of non-metalliferous minerals

01 04 09	waste sand and clays
01 04 12	tailings and other wastes from washing and cleaning of minerals other than those mentioned in 01 04 07 and 01 04 11
01 04 07*	wastes containing hazardous substances from physical and chemical processing of non metalliferous mineral
01 05	drilling muds and other drilling wastes
01 05 04	freshwater drilling muds and wastes
01 05 05*	oil-containing drilling muds and waste
01 05 06*	drilling muds and other drilling wastes containing hazardous substances
05	PETROLEUM/GAS PRODUCTION
05 01	petroleum refining
05 01 03*	tank bottom sludges
05 01 09*	sludges from on- site effluent treatment containing hazardous substances
05 01 10	sludges from on- site effluent treatment other than those mentioned in 05 01 09
06	INORGANIC CHEMICAL PROCESSING
06 05	sludges from on-site effluent treatment
06 05 02	sludges from on- site effluent treatment containing hazardous substances
10	THERMAL PROCESSES
10 01	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 04*	oil fly ash and boiler dust
10 01 14*	bottom ash, slag and boiler dust from co-incineration containing hazardous substances
10 01 15	bottom ash, slag and boiler dust from co-incineration other than those mentioned in 10 01 14
10 01 16*	fly ash from co- incineration containing hazardous substances
10 01 17	fly ash from co- incineration other than those mentioned in 10 01 16
10 01 20*	sludges from on- site effluent treatment containing hazardous substances
10 01 21	sludges from on- site effluent treatment other than those mentioned in 10 01 20
10 02	iron and steel industry
10 02 07*	solid waste from gas treatment containing hazardous substances
10 02 13	sludges and filter cakes from gas treatment containing hazardous substances
10 11	manufacture of glass and glass products

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 11 17*	sludges and filter cakes from flue-gas treatment containing hazardous substances
10 11 18	sludges and filter cakes from flue-gas treatment other than those mentioned in 10 11 17
10 11 19*	solid wastes from on-site effluent treatment containing hazardous substances
10 11 20	solid wastes from on-site effluent treatment other than those mentioned in 10 11 19
10 12	manufacture of ceramic goods – bricks, tiles and construction products
10 12 05	sludges and filter cakes from gas treatment
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 12 13	sludge from on-site effluent treatment
10 13	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
12	SHAPING/PHYSICAL TREATMENT OF METALS/PLASTICS
12 01	wastes from shaping and physical and mechanical surface treatment of metals and plastics
12 01 14*	machining sludges containing hazardous substances
12 01 15	machining sludges other than those mentioned in 12 01 14
12 01 16*	waste blasting material containing hazardous substances
12 01 17	waste blasting material other than those mentioned in 12 01 16
13	OIL AND LIQUID FUEL WASTES
13 05	oil/water separator contents
13 05 01*	solids from grit chambers and oil/water separators
13 05 02*	sludges from oil/water separators

13 05 03	interceptor sludges
13 05 08	mixtures of waste from grit chambers and oil/water separators
16	OTHER WASTES FROM INDUSTRIAL PROCESSES
16 07	transport tank, storage tank and barrel cleaning (Except 05 and 13)
16 07 08	wastes containing oil
17	CONSTRUCTION AND DEMOLITION WASTE
17 01	concrete, bricks, tiles and ceramics
17 01 02	bricks
17 01 06*	mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing hazardous substances
17 01 07	mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06
17 03	bituminous mixtures, coal, tar and tarred products
17 03 01*	bituminous mixtures containing coal tar
17 03 02	bituminous mixtures other than those mentioned in 17 03 01
17 05	soil (including excavated soil from contaminated sites), stones and dredging spoil
17 05 03*	soil and stones
17 05 04	soil and stones other than those described in 17 05 03
17 05 05*	dredging spoil containing dangerous substances
17 05 06	dredging spoil other than those mentioned in 17 05 05
17 05 07*	track ballast containing hazardous substances
17 05 08	track ballast other than those mentioned in 17 05 07
17 06	insulation materials and asbestos containing construction materials
17 06 05	construction waste containing asbestos
17 09	other construction and demolition wastes
17 09 03*	other construction and demolition wastes (including mixed wastes) containing dangerous substances
17 09 04	mixed construction demolition waste other than those mentioned in 17 09 03*
19	MATERIALS FROM WASTE AND WATER TREATMENT
19 01	incineration or pyrolysis of waste
19 01 11*	bottom ash and slag containing hazardous substances

19 01 12	bottom ash and slag other than those mentioned in 19 01 11
19 01 13*	fly ash containing hazardous substances
19 01 14	fly ash other than those mentioned in 19 01 13
19 01 15*	boiler dust containing hazardous substances
19 01 16	boiler dust other than those mentioned in 19 01 15
19 02	physico/chemical treatments of waste (including dechromation, decyanidation and neutralisation
19 02 03	pre mixed wastes composed only of non-hazardous wastes
19 02 05*	sludges from physio/chemical treatment containing dangerous substances
19 02 06	sludges from physico/chemical treatment other than those mentioned in 19 02 05
19 04	vitrified waste and wastes from vitrification
19 04 02*	fly ash and other flue-gas treatment wastes
19 05	wastes from aerobic treatment of solid wastes
19 05 03	off specification compost
19 08	wastes from waste water treatment plants not otherwise specified
19 08 01	screenings
19 08 02	waste from desanding
19 08 13*	sludges containing hazardous substances from other treatment of industrial waste water
19 08 14	sludges from other treatment of industrial waste water other than those mentioned in 19 08 13*
19 11	oil regeneration
19 11 05*	sludges from on- site effluent treatment containing hazardous substances
19 11 06	sludges from on- site effluent treatment other than those mentioned in 19 11 05
19 12	mechanical treatment of wastes (sorting, crushing, compacting, pelletising
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

19 13	soil and groundwater remediation
19 13 01*	solid wastes from soil remediation
19 13 02	solid wastes from soil remediation
19 13 03*	sludges from soil remediation
19 13 04	sludges from soil remediation
19 13 05*	sludges from groundwater remediation
19 13 06	sludges from groundwater
20	MUNICIPAL WASTE AND SIMILAR MATERIALS FROM COMMERCE AND INDUSTRY
20 02	garden and park wastes (including cemetery waste)
20 02 02	soil and stone
20 03	other municipal wastes
20 03 03	street cleaning residue

Table 3.4 Existing and Proposed Feedstock EWC Codes and Types for Asbestos Handpicking

EWC Code	EWC Description
17	CONSTRUCTION AND DEMOLITION WASTE
17 01	concrete, bricks, tiles and ceramics
17 01 06*	mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing hazardous substances
17 05	soil (including excavated soil from contaminated sites), stones and dredging spoil
17 05 03*	soil and stones
17 05 05*	dredging spoil containing dangerous substances
17 05 07*	track ballast containing hazardous substances
17 06	insulation materials and asbestos containing construction materials
17 06 05*	construction waste containing asbestos
17 09	other construction and demolition wastes
17 09 03*	other construction and demolition wastes (including mixed wastes) containing dangerous substances
19	MATERIALS FROM WASTE AND WATER TREATMENT

19 12	mechanical treatment of wastes (sorting, crushing, compacting, pelletising
19 12 11*	other wastes (including mixtures of materials) from mechanical treatment of waste containing hazardous substances
19 13	soil and groundwater remediation
19 13 01*	solid wastes from soil remediation

3.4 Description of the Process

3.5 Bioremediation

There are no proposed changes to the process for bioremediation / biopiling treatment undertaken on site. However, the permit currently states 'Bioremediation/biopiling treatment to be undertaken within a building unless otherwise agreed with the Agency.' UK Remediation would like to request as part of this permit variation that bioremediation is undertaken externally within enclosed bays, on hardstanding with a fully contained and sealed drainage system and under a shed roof.

As part of the bioremediation process, UK Remediation are proposing to include a topsoil recovery process. The topsoil/aggregate recovery process description and process schematic is provided in Annex B – Technical Information, with further information provided below. The aggregate recovery process is part of the currently permitted soil washing process.

Topsoil Recovery

Road sweepings and gully wastes are collected and upon arrival to site the material is inspected, weighed and quarantined in separate storage bays to avoid cross-contamination. The materials will then undergo a series of treatment steps to remove contaminants. The treatment process will consist of the following steps:

- Screening – coarse and medium screening will be undertaken to remove stones, plastic, timber and any other identified debris;
- Extraction – the material will be subject to air and vacuum extraction to pull out the remaining light materials such as leaves, wood and plastic fragments;
- Soil washing – only gully waste will undergo soil washing to separate the materials into different size and density fragments; and
- Biological treatment – if there are contaminants present within the materials such as hydrocarbons the material will undergo biological treatment. The biological treatment will be undertaken through bioaugmentation / nutrient amendments.

Once the material has been processed, the remaining material will be fine to medium soil and is reclassified as a remediated soil and stored in controlled batches. The material is tested for physical and chemical properties including nutrient levels, organic matter content and if there are any remaining contaminants. The remediated soil is tested and only available as product once it complies with BS3882:2015.

3.6 Soil Washing Process

The soil treatment facility will be relocated within the proposed new area of the site and will include a sludge treatment process. The soil treatment process however will not change as a result of this permit variation. The soil treatment procedure and process schematic is provided in Annex B – Technical Information.

UK Remediation have acquired a new wash plant with enhanced soil washing capabilities. Therefore, UK Remediation propose that the maximum thresholds detailed within Table S2.4 of the permit are removed. The soil wash plant specification is included in Annex B – Technical Information.

UK Remediation proposed to include organotin compounds included within REACH Annex XVII such as tributyltin (TBT), dibutyltin (DBT) and triphenyltin (TPhT) and other organotin/organostannic compounds which are not covered by REACH that may co-occur at contaminated sites and share similar environmental behaviours. Soil washing has emerged as a viable remediation option for organotin contaminated soils and therefore UK Remediation proposed to treat organotin compounds with the enhanced soil washing capabilities of the new plant. Soil washing can effectively separate and remove organotin compounds by targeting the fine, contaminant-rich soil fractions through physical separation and/or chemical extraction. Further information is provided within document E7555UK.SWP.04 Organotin Compounds in Annex B – Technical Information.

Due to the enhanced soil washing capabilities, UK Remediation propose to expand the treatment of long and short chain PFAS on site. The effective method for the remediation of PFAS is detailed within document E7555UK.SWP.02 within Annex B – Technical Information. These will include the compounds identified by the EA list of compounds for targeted analysis and the ECHA REACH proposed restriction list which are detailed within document E7555UK.SWP.03 PFAS Types and Limits within Annex B – Technical information.

Sludge Treatment Process

The proposed sludge treatment process will be undertaken as part of the soil wash plant located within the proposed extension area of the site. The sludge treatment procedure is provided in Annex B – Technical Information and is a direct result from sludge being accepted on site and processed through the soil wash plant. The sludge treatment process will consist of the following:

- Thickener Tank – tailing containing unwanted fines are pumped to the thickener from the tailing sump. A flocculate agent is added and flocculated solids gradually drop towards the centre via a rake mechanism and are then pumped out. The thickener underflow typically has a consistency of thick mud with a solid content ranging from 25 – 40%. Process water is reused and recirculated back into the system.
- Filter Press – The filter press will dewater and separate liquid and solids in a slurry. The slurry is pumped under high pressure into a series of hydraulically closed recessed plates lined with filter cloths. Solids are captured between the plates while the clean filtrate water passes through the filter cloth. Once the desired moisture is achieved the filter cake is released. The filter cake is analysed and either reprocessed or prepared for off site disposal.
- Stabilisation – If required, the filter cake will be sent for stabilisation depending on the physical and chemical composition of the filter cake. Stabilisation will consist of adding binding agents to enhance the properties of the filter cake. If stabilisation is not viable, the filter cake will be processed for reuse or disposal.

The sludge treatment process schematic is shown overleaf in Figure 3.1.

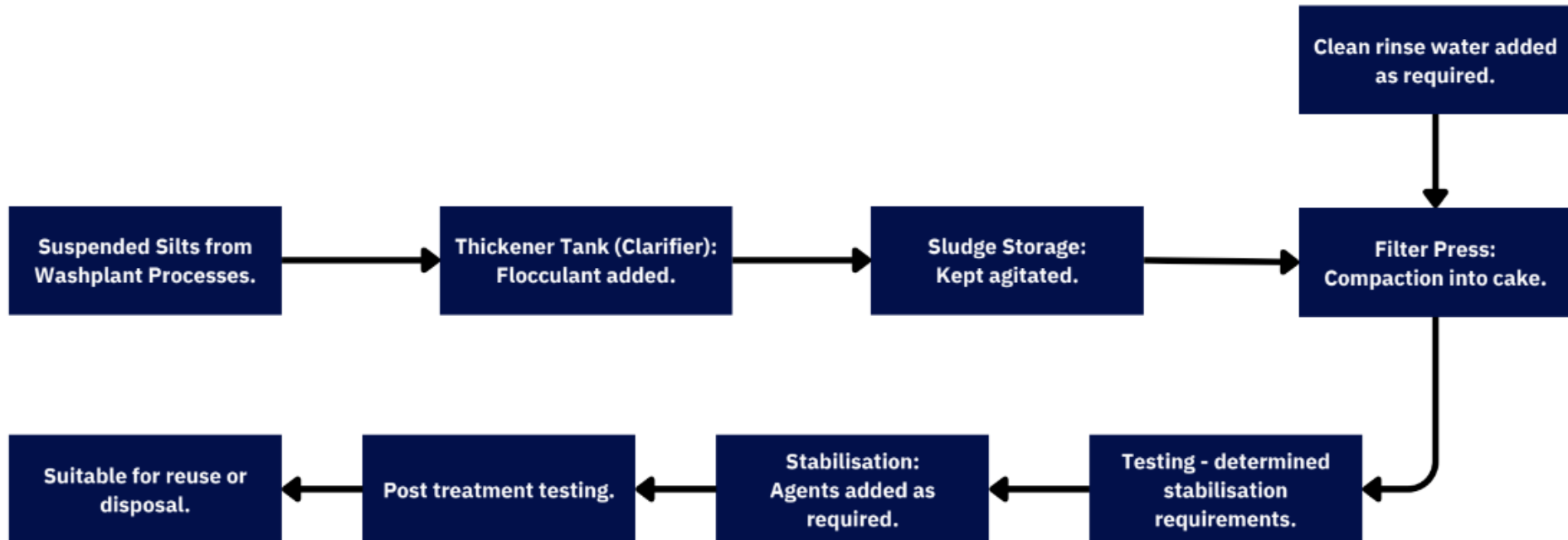


Figure 3.1 Sludge Treatment Process Schematic

3.7 Asbestos Picking Process

3.7.1 Asbestos Handpicking Station Acceptance Procedures

In addition to the general acceptance procedures, for soils containing asbestos fragments, all lorries will be sheeted to avoid spillages and prevent any potential asbestos fibre emissions. All material will be unloaded/loaded within controlled conditions (covered, within a building and dampened down where necessary).

Asbestos stockpiling will also be managed under controlled conditions and will be within the quarantine area shown in Annex A – Figures.

Pre-Acceptance Procedure

Where removable asbestos is identified for potential treatment at pre-acceptance, all available information will be reviewed by competent personnel. This will include laboratory analysis of the fragments of asbestos, soil analysis including identification and where indicated quantification of microscopic soil asbestos, as well as the physical properties of the material. If deemed necessary, a site visit will be undertaken by a UK Remediation engineer to visually assess the material for the suitability of manual segregation and to confirm the type of asbestos present.

The above factors, most notably the asbestos type, will determine the wastes suitability for asbestos handpicking. In addition, if the asbestos content is assessed during pre-acceptance as licensed asbestos (in accordance with the Control of Asbestos Regulations 2012) then the material will not be acceptable for import into site. The geotechnical properties of the soil will also have an effect on the suitability for handpicking. If the material is a granular material this is more favourable for removing fragments as opposed to cohesive material. An assessment of material suitability will be made at pre-acceptance stage and will not be accepted if deemed unsuitable for treatment by the methods described here.

If the soils contain other contaminants other than asbestos, a combination of treatment methods may be considered, e.g. asbestos handpicking then bioremediation. As in all cases for asbestos treatment, soil emerging from the enclosed picking station will be placed in thin layers and undergo verification visual assessment by an asbestos work Category B trained and experienced manager to confirm that all asbestos has been removed.

Once its suitability for import into site and treatment via asbestos handpicking has been confirmed, appropriate documentation will be completed consisting of a waste information form and a treatment quotation prior to import into site. The site manager will confirm that sufficient capacity is available within the quarantined areas and the treatment areas prior to import into site.

Acceptance Procedure

A segregated area within the site quarantine area will be constructed in advance of consignment to accommodate the entire incoming material. On arrival the drivers will be directed to the holding bay in the quarantine area and will slowly tip the material in the designated area as directed by the banksman. The Site Manager or a designated operative will maintain a close watching brief to ensure that the received load matches the description from the pre-acceptance stage. Samples of any unexpected inclusions may be taken at this stage to test for asbestos and other contaminants. Samples of asbestos-containing material and surrounding soil matrix will be taken to confirm the asbestos categorisation applied at pre-acceptance. A

wider suite of analysis will also be included for waste classification purposes. Sampling records will be incorporated into the material tracking system.

In the event of non-conformance, such as an assessment that separation would constitute licensable work or that laboratory results indicate fibres in soil quantifiable above trace levels, the material will be rejected from site.

Once accepted, the material will be tipped in a designated quarantined area under the supervisions of a qualified banksman. The quarantined area will be situated on the impermeable concrete slab which has been specifically designed to control surface water / leachate from stored material. The stockpiles will be sheeted using LDPE sheeting and / or dust suppression used to dampen down the material during tipping and stockpiling in order to minimise dust spoiling and potential asbestos fibre release.

Concrete blocks will be utilised to form separate quarantined areas for the appropriate segregation of imported material according to its chemical constituents, source and proposed treatment method. This will ensure no cross contamination will occur. The concrete blocks can be easily moved using machinery which allows the volumes of the bays to be adjusted accordingly depending on current import volumes.

A stockpile sign will also be erected detailing the asbestos content and type, type of the soil and the tracking number.

3.7.2 Asbestos Picking Station

The Asbestos Handpicking Station procedure is provided in Annex B – Technical Information. Once the material has passed the pre-acceptance and acceptance procedures on site the material will be moved from the stockpiled quarantined area to the treatment zone using a loading shovel. All material will be suitably dampened down with the appropriate dust suppression systems operating.

A stockpile of material will be made within the enclosed picking station and the material loaded into the feed hopper. The feed hopper will transport materials onto a moving conveyor which will pass the material through the picking station. Trained operatives will visually examine the material and remove any visible asbestos.

Any identified asbestos from the picking line will be removed and placed in a UN asbestos waste bag (double bagged) which is sealed once full. These bags will then be placed in the lockable asbestos waste skips located on site.

3.7.3 Post Treatment Verification and Storage

Once the material has passed through the picking stations moving conveyor system it will drop at the end of the conveyor into a stockpile. An excavator will spread the stockpile into thin layers, completing another check for any potentially missed asbestos before being re-stockpiled.

The verified stockpile will then be cleared using a loading shovel and moved to a bay for storage. Each bay will be constructed with interlocking concrete blocks and have a capacity of 250m³. Each bay will be sampled across a selection of six locations within the bay, this will ensure a representative sample is taken of the verified stockpile.

Each storage bay will be dampened down and sheeted until sample results are received and the material can be disposed of either off site to a suitable licensed facility as non-hazardous inert waste or reprocessed through the soil wash plant.

The asbestos handpicking station process schematic is shown overleaf in Figure 3.2.

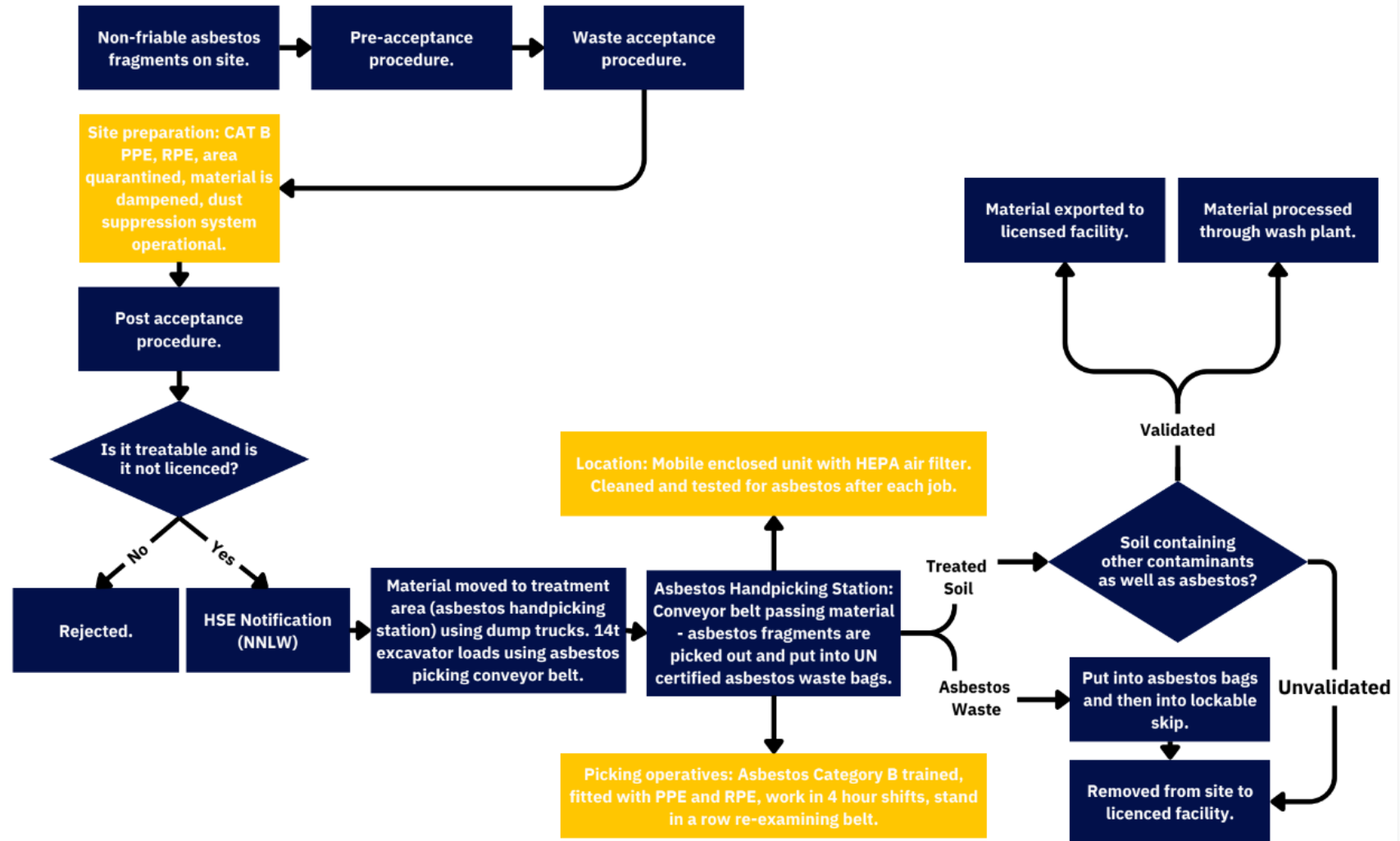


Figure 3.2 Asbestos Picking Station Process Schematic

3.8 Asbestos Mitigation Measures

Waste Acceptance Procedures

UK Remediation implement strict control and mitigation measures to reduce the risks of airborne, or water borne asbestos fibres, in accordance with the Control of Asbestos Regulations 2012. This will start at the pre-acceptance stage with characterisation of the materials and rejection of any non-conforming high risk soils containing loose fibres or licensable asbestos.

Enclosed Picking Station

The asbestos handpicking station is an enclosed station preventing the migration of potential asbestos fibres off-site during the handpicking process. The station will have a negative pressure system that will be connected to a filtration system. The filtration system will consist of HVAC and HEPA filters to prevent the release of any potential dust particles, asbestos fibres and volatile organic compounds. The filtration system will emit via a single release point (Emission Point A1).

Operational controls within the picking station will also reduce the potential for airborne asbestos fibres. This includes:

- Minimised drop heights of material;
- Reduced conveyor speeds; and
- The loading shovel will be part loaded to reduce the potential of spillage.

Dust Suppression

Two mobile dust suppression units will be in constant operation during the processing of materials. The units will consist of a central tank, a diesel pump and a 'mast' with a spray bar at the top. The mast can be extended to a maximum height of 3m and the units will be moved in conjunction with the material movements on site. The dust suppression unit will be used to dampen down the asbestos stockpile prior to entering the picking station to reduce the risk of airborne fibre releases.

Stockpile Sheeting

The stockpiles will be covered with polythene sheeting when they stored waiting for disposal to reduce the risk of airborne fibre releases.

Personal Protective Equipment

Specialist protective equipment will be worn by all operatives involved in the processing of asbestos contaminated material including the asbestos operatives within the picking station and the dump truck operators.

Decontamination Procedure

Upon completion of each shift operating the asbestos picking station, the site operatives will follow the decontamination procedures and ensure all PPE is appropriately disposed of and any potential asbestos fibres do not leave the enclosed area. The decontamination unit will be regularly cleaned and air tested to ensure no residual asbestos fibres accumulate. All PPE will be bagged and disposed of as hazardous asbestos waste.

Dust Deposition Monitoring

On-point monitoring is carried out, during active operations, with 5-minute averaged readings reported. Hand-held dust monitoring of airborne particulates at sensitive offsite receptors (nearest residential properties are to the south and east of the site) will be carried out during active operations. Initially, during the trial period, this will be undertaken at least weekly with the frequency increased to daily if dust emissions are deemed to be increasing. Weekly (or daily) dust monitoring totals will be regularly averaged and reviewed for potential exceedances of the annualised average figure.

Readings at the site boundary will be calculated with the wind speed and direction taken into account from the on-site weather station. Weather conditions, including windspeed and precipitation will also be recorded at the site on a continuous logging basis, using a digital logging weather station.

Particulate monitoring is undertaken using an automated dust monitoring kit which is moved every 1.5 hours (approximately) between five locations around site (four at boundary points, one in the working area), calibrated and serviced in accordance with the manufacturer's guidance. The automated monitor is set to report total suspended particulates (TSP), PM₁₀, PM_{2.5}, and PM₁, providing 10-minute average readings. The monitoring is undertaken continuously around site.

Additional offsite dust monitoring is undertaken periodically when necessary which involves monitoring upwind and downwind of the source using a handheld dust monitor.

Asbestos Air Monitoring

During asbestos handpicking works asbestos air monitoring will be undertaken by a specialist subcontractor to directly monitor levels of airborne fibres. This will be undertaken using actively pumped samples being collected through a pumped deposition monitor, with on-site inspection and fibre counts under a vehicle mounted phase contrast microscope, to provide near real time monitoring.

Samples will be collected at four locations around the perimeter of the working area to establish if there are any fibres emissions migrating outside to the wider site. Furthermore, two samples will be obtained from within the working area and personal monitors will be placed on operatives within the picking station. These will be sampled at the end of every shift and sent to the lab for analysis, for additional confidence that the safe control limit of 0.1 fibres per cubic centimeter has not been exceeded (Control of Asbestos Regulations 2012). If this control limit is approached, works will stop, and additional mitigation measures will be implemented and working methodologies reviewed.

3.9 BAT Justification

All new aspects of the process will be operated in accordance with the Best Available Techniques (BAT). Operations on site have been reviewed against The Waste Treatment BREF BAT Conclusions document.

Table 3.5 below highlights the relevant BAT requirements solely for proposed activities and demonstrates how they are met.

Table 3.5 BAT Justification – BREF Waste Treatment

BAT Reference	BAT Conclusion	Justification
GENERAL BAT CONCLUSIONS		
Overall Environmental Performance		
BAT 1	In order to improve the overall environmental performance, BAT is to implement and adhere to an environmental management system (EMS) that incorporates the features provided within the BREF document.	UK Remediation have an Environmental Management System in place, that incorporates the relevant features outlined within the BREF document.
BAT 2	In order to improve the overall environmental performance of the plant, BAT is to use all of the techniques provided within the BREF document.	UK Remediation implements the following on site: <ul style="list-style-type: none"> • Waste Pre-Acceptance, Acceptance and Rejection Procedures; • A waste tracking system and inventory; • A quality management system ensuring the right classification of waste is accepted, particularly for the asbestos waste; • Waste segregation according to the waste characteristics; • Ensures waste compatibility during waste inspections; and • The sorting of incoming waste by visual inspection.
BAT 3	In order to facilitate the reduction of emissions to water and air, BAT is to establish and to maintain an inventory of waste water and waste gas streams, as part of the environmental management system (see	There are no waste water streams from the process. There is potential for minimal wastewater from the sludge treatment if the plant is water positive. This water will be reused where practicable, otherwise it will

	BAT 1), that incorporates all of the features provided within the BREF document.	<p>drain into the sites surface water drainage system which is described in section 4.4 and 4.5 of this application.</p> <p>The site will maintain an inventory of emissions to air. The only emission to air point relates to the filtration system from the asbestos handpicking station (Emission Point A1).</p>
BAT 4	In order to reduce the environmental risk associated with the storage of waste, BAT is to use all of the techniques provided within the BREF document.	<p>The following is carried out on site to reduce the environmental risk associated with the storage of waste:</p> <ul style="list-style-type: none"> • Optimised storage locations; • Adequate storage capacity; and • Safe storage operation.
BAT 5	In order to reduce the environmental risk associated with the handling and transfer of waste, BAT is to set up and implement handling and transfer procedures.	<p>All handling and transfer of waste is carried out by competent staff and documented via the sites acceptance procedures and environmental management system.</p> <p>Any spillages on site will be detected via the sites site walkover procedure and managed via the sites spill response procedure.</p>
Monitoring		
BAT 6	For relevant emissions to water as identified by the inventory of waste water streams (see BAT 3), BAT is to monitor key process parameters (e.g. waste water flow, pH, temperature, conductivity, BOD) at key locations (e.g. at the inlet and/or outlet of the pretreatment, at the inlet to the final treatment, at the point where the emission leaves the installation).	<p>N/A – there are no waste water streams from the process.</p> <p>The only permitted water emission from site is clean surface water discharge via public foul sewer which is pumped at a rate of 2 litres per second which is monitored via the sites discharge consent.</p>
BAT 7	BAT is to monitor emissions to water with at least the frequency given in the guidance, and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international	<p>There are no process emissions to controlled waters. Clean surface water is discharged via sewer. The emissions to sewer from the site are monitored in accordance with the sites Discharge Consent.</p>

	standards that ensure the provision of data of an equivalent scientific quality.	
BAT 8	BAT is to monitor channelled emissions to air with at least the frequency given in the guidance, and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.	Dust will be monitored on a daily basis in line with the sites Dust Management Plan and as detailed within Section 5.1. This is considered BAT for the process.
BAT 9	BAT is to monitor diffuse emissions of organic compounds to air from the regeneration of spent solvents, the decontamination of equipment containing POPs with solvents, and the physico-chemical treatment of solvents for the recovery of their calorific value, at least once per year using one or a combination of the techniques given in the BREF guidance note.	N/A – no solvents are treated on site.
BAT 10	BAT is to periodically monitor odour emissions.	Odour will be periodically monitored in accordance with the sites Odour Management Plan.
BAT 11	BAT is to monitor the annual consumption of water, energy and raw materials as well as the annual generation of residues and waste water, with a frequency of at least once per year.	The facility will implement an annual review of the energy consumption of the plant and will report annually to the Environment Agency.
Emissions to Air		
BAT 12	In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to set up, implement and regularly review an odour management plan, as part of the environmental management system (see BAT 1).	Odour will be managed in accordance with the sites Odour Management Plan.

<p>BAT 13</p>	<p>In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to use one or a combination of the techniques given below:</p> <ul style="list-style-type: none"> • minimising residence times; • using chemical treatment; • optimising aerobic treatment. 	<p>Odour emissions are reduced on site by minimising the residence time of waste on site.</p> <p>All waste will be managed in accordance with the sites Odour Management Plan.</p>
<p>BAT 14</p>	<p>In order to prevent or, where that is not practicable, to reduce diffuse emissions to air, in particular of dust, organic compounds and odour, BAT is to use an appropriate combination of the techniques given below:</p> <ul style="list-style-type: none"> • Minimising the number of potential diffuse emission sources; • Selection and use of high integrity equipment; • Corrosion prevention; • Containment, collection and treatment of diffuse emissions; • Dampening; • Maintenance; • Cleaning of waste treatment and storage area; • Leak detection and repair programme. 	<p>Dust and odour reduction is achieved on site using the following measures:</p> <ul style="list-style-type: none"> • Minimising the number of potential diffuse emission sources by limiting the drop height of material and limiting the traffic speed on site; • Use of high integrity equipment; • Containment of potential diffuse emissions by enclosing all loose waste storage; • Collection and treatment of diffuse emissions from the asbestos picking station via the abatement system; • Regular planned preventative maintenance of all equipment and infrastructure; and • Regular cleaning of waste storage and treatment areas.
<p>BAT 15</p>	<p>BAT is to use flaring only for safety reasons or for non-routine operating conditions (e.g. start-ups, shutdowns) by using both of the techniques given in the BREF Guidance.</p>	<p>N/A – there is no flaring on site.</p>
<p>BAT 16</p>	<p>In order to reduce emissions to air from flares when flaring is unavoidable, BAT is to use both of the techniques given in the BREF Guidance.</p>	<p>N/A – there is no flaring on site.</p>

Noise and Vibration

BAT 17	In order to prevent or, where that is not practicable, to reduce noise and vibration emissions, BAT is to set up, implement and regularly review a noise and vibration management plan, as part of the environmental management system (see BAT 1).	The site is not anticipated to cause a nuisance at nearby receptors regarding noise or vibration. An updated Noise Impact Assessment has been completed and included in Annex I – Noise Impact Assessment. In the unlikely event of any noise complaints they will be managed in accordance with the sites complaints procedure. This is considered BAT for site.
BAT 18	In order to prevent or, where that is not practicable, to reduce noise and vibration emissions, BAT is to use one or a combination of the techniques given in the BREF Guidance.	UK Remediation has undertaken a noise assessment which is provided in Annex I – Noise Impact Assessment. UK Remediation implement the following measures to mitigate any potential noise emissions: <ul style="list-style-type: none"> • Appropriate location of equipment and buildings; • Planned preventative maintenance; • Equipment is operated by trained and experienced staff; • Site operational times are adhered to; and • White noise reversing alarms are utilised where necessary.
Emissions to Water		
BAT 19	In order to optimise water consumption, to reduce the volume of waste water generated and to prevent or, where that is not practicable, to reduce emissions to soil and water, BAT is to use an appropriate combination of the techniques given in the BREF Guidance.	There are no waste water streams from the process. The following measures are in place to reduce emissions to soil and water: <ul style="list-style-type: none"> • Impermeable Surfaces – all storage and treatment areas are constructed on impermeable concrete hardstanding; and • The entire site is bunded to ensure all surface water is captured. There are no tanks containing hazardous substances on site.
BAT 20	In order to reduce emissions to water, BAT is to treat waste water using an appropriate combination of the techniques given in the BREF Guidance.	N/A – there are no waste water streams from the process.
Emissions from Accidents and Incidents		

BAT 21	In order to prevent or limit the environmental consequences of accidents and incidents, BAT is to use all of the techniques given in the guidance, as part of the accident management plan (see BAT 1).	<p>The site operates in accordance with an Accident Management Plan (Annex H – Accident Management Plan) and Fire Prevention Plan.</p> <p>UK Remediation uses the following techniques to prevent or limit environmental consequences of accidents and incidents:</p> <ul style="list-style-type: none"> • Protection measures; • Management of accidental emissions i.e spillage procedures and containment of fire water; and • Incident / accident system – all incidents will be recorded on the company’s incident management system.
Material Efficiency		
BAT 22	In order to use materials efficiently, BAT is to substitute materials with waste.	Raw materials on site are limited to diesel and chemicals which is used within mobile plant and for the soil washing process. At present, it is not economically viable to substitute these materials with waste alternatives, however UK Remediation will undertake annual reviews of the process and endeavour to utilise wastes where feasible.
Energy Efficiency		
BAT 23	<p>In order to use energy efficiently, BAT is to use both of the techniques given below:</p> <ul style="list-style-type: none"> • Energy efficiency plan; and • Energy balance record.. 	UK Remediation will maintain both an energy efficiency plan and energy balance record.
Reuse of Packaging		
BAT 24	In order to reduce the quantity of waste sent for disposal, BAT is to maximise the reuse of packaging, as part of the residues management plan (see BAT 1).	N/A – packaged waste is not accepted onto site.

BAT 25 – 31	BAT conclusions for the mechanical treatment of waste	N/A – the proposed operations are not considered mechanical treatment
BAT 32	BAT conclusions for the treatment of WEEE containing mercury	N/A – no treatment of WEEE on site
Biological Treatment		
BAT 33	In order to reduce odour emissions and to improve the overall environmental performance, BAT is to select the waste input.	<p>UK Remediation implements the following on site:</p> <ul style="list-style-type: none"> • Waste Pre-Acceptance, Acceptance and Rejection Procedures; • A waste tracking system and inventory; • A quality management system ensuring the right classification of waste is accepted, particularly for the asbestos waste; • Waste segregation according to the waste characteristics; • Ensures waste compatibility during waste inspections; and • The sorting of incoming waste by visual inspection.
BAT 34	In order to reduce channelled emissions to air of dust, organic compounds and odourous compounds, including H ₂ S and NH ₃ , BAT is to use one or a combination of the techniques provided within the BAT document.	<p>Uk Remediation will utilise a GAC pod to reduce emissions to air including dust and odour for the topsoil/ aggregate recovery operations on site. Dust and odour reduction is achieved on site using the following measures:</p> <ul style="list-style-type: none"> • Minimising the number of potential diffuse emission sources by limiting the drop height of material and limiting the traffic speed on site; • Use of high integrity equipment; • Containment of potential diffuse emissions by enclosing all loose waste storage; • Collection and treatment of diffuse emissions from the asbestos picking station via the abatement system; • Regular planned preventative maintenance of all equipment and infrastructure; and

		<ul style="list-style-type: none"> Regular cleaning of waste storage and treatment areas.
BAT 35	In order to reduce the generation of waste water and to reduce water usage, BAT is to use all of the techniques provided within the BAT document.	<p>All surface water runoff from ground level surfaces is prevented from leaving the site by a low-level bund around the perimeter. The site is graded so that all rainfall landing within the bunded area flows to a one of two treatment/attenuation tanks prior to being pumped to the public foul sewer at a rate of 2 liters per second.</p> <p>All leachate/runoff will also be directed by gradient to the sites interceptor where it will be processed through the water treatment system before temporary storage in the attenuation tank, prior to discharge via public foul sewer. Water will be tested on a monthly basis. The water treatment system will consist of a sand filter to remove sediment (physical separation), and GAC filters to treat organic contaminants (adsorption) in accordance with EA BAT requirements.</p>
BAT 36 - 37	BAT conclusions for the aerobic treatment of waste	N/A – the proposed operations are not considered aerobic treatment
BAT 38-39	BAT conclusions for the anaerobic treatment of waste	N/A – the proposed operations are not considered anaerobic treatment
Physico-chemical treatment of waste		
BAT 40	In order to improve the overall environmental performance, BAT is to monitor the waste input as part of the waste pre-acceptance and acceptance procedures (See BAT 2).	UK Remediation operate in accordance with waste pre-acceptance, acceptance and rejection procedures.
BAT 41	In order to reduce emissions of dust, organic compounds and NH3 to air, BAT is to apply BAT 14d and to use one or a combination of the techniques provided within the BAT document.	UK Remediation will utilise a GAC pod to reduce emissions to air including dust and odour. Dust and odour reduction is achieved on site using the following measures:

		<ul style="list-style-type: none"> • Minimising the number of potential diffuse emission sources by limiting the drop height of material and limiting the traffic speed on site; • Use of high integrity equipment; • Containment of potential diffuse emissions by enclosing all loose waste storage; • Collection and treatment of diffuse emissions from the asbestos picking station via the abatement system; • Regular planned preventative maintenance of all equipment and infrastructure; and • Regular cleaning of waste storage and treatment areas.
BAT 42 – 44	BAT conclusions for the re-refining of waste oil	N/A – no re-refining of waste oil on site
BAT 45	BAT conclusions for the physico-chemical treatment of waste with calorific value	N/A – no physio-chemical treatment of waste with a calorific value on site
BAT 46 – 47	BAT conclusions for the regeneration of spent solvents	N/A – no regeneration of spent solvents on site
BAT 48 – 49	BAT conclusions for the thermal treatment of spent activated carbon, waste catalysts and excavated contaminated soil	N/A – no thermal treatment on site
The water washing of excavated contaminated soil		
BAT 50	In order to reduce emissions of dust and organic compounds to air from the storage, handling and washing steps, BAT is to apply BAT 14D and to use one or a combination of techniques provided within the BAT document.	<p>UK Remediation will utilise a GAC pod to reduce emissions to air including dust and odour for the topsoil/aggregate recovery operations on site. Dust and odour reduction is achieved on site using the following measures:</p> <ul style="list-style-type: none"> • Minimising the number of potential diffuse emission sources by limiting the drop height of material and limiting the traffic speed on site; • Use of high integrity equipment;

		<ul style="list-style-type: none"> • Containment of potential diffuse emissions by enclosing all loose waste storage; • Collection and treatment of diffuse emissions from the asbestos picking station via the abatement system; • Regular planned preventative maintenance of all equipment and infrastructure; and • Regular cleaning of waste storage and treatment areas.
BAT 51	BAT conclusions for the decontamination of equipment containing PCBs	N/A – the proposed operations do not include equipment containing PCBs
BAT 52 - 53	BAT conclusions for the treatment of water-based liquid waste	N/A – the proposed operations are not considered treatment of water-based liquid waste

3.10 Management System

The site is operated in accordance with corporate standards and procedures as part of an Environmental Management System (EMS). The system has been designed to meet the requirements of ISO 14001:2015.

All assets owned and operated by UK Remediation are operated in accordance with a suite of procedures, policies and controls. All aspects of the site operations will be managed in accordance with the management system through a lifecycle approach, e.g. pre-acceptance, acceptance, rejection procedures.

The EMS is structured to meet the requirements of the Environmental Permitting Regulations and associated pollution prevention guidance. The EMS will be designed to ensure:

- The identification of all foreseeable environmental impacts and risks that the operators activities pose to the environment;
- Prevention or minimisation of any identified risks to practical minimum;
- Legal compliance assurance;
- Identification of risks of pollution including those arising from operations, maintenance, accidents, incidents, non-conformances and complaints, and how these will be minimised;
- Activities at the site will be managed in accordance with the management system, which will be subject to continuous review, audit and improvement. Specific detailed management system reviews will take place if there is a significant change to the activities, following an accident or if a non-compliance is found; and
- Furthermore, the whole management system will be subject to an annual external audit by a competent third party.

The keys aspects of the EMS for the site will include:

- Preventative maintenance;
- Operator requirements;
- Training and competence;
- Emergency response and incident management; and
- Monitoring, measurement and reporting.

The EMS and procedures have been written to ensure that the environmental risk and impact of the normal running of the site activities are documented and minimised. The EMS will be fully developed, implemented and in operation when the permit is issued and a copy of the EMS will be kept at a convenient location on site.

3.11 Energy Efficiency

Energy required by the site is imported in the form of electricity from the National Grid.

UK Remediation monitor their energy use, diesel use and costs and maintain an energy record balance each month which is summarised in the annual reporting to the EA as part of the required annual pollution inventory reporting.

All plant and equipment is chosen both on the ability to perform and on its energy efficiency. UK Remediation have a maintenance programmes in place to undertake routine inspections and checks. UK Remediation will regularly undertake research for energy efficient mobile plant developments to see if more energy efficient options become available.

Plant will be monitored to ensure that no plant is operating ineffectively leading to the loss of energy. Regular maintenance will take place on site and any inefficient plant will be replaced.

3.12 Operator Competence

All staff working for and on behalf of the site will be suitably trained and competent (e.g. professional maintenance engineers, electricians, equipment operators etc). All personnel working on site will be trained in the necessary sections of the EMS and associated procedures.

Additional activities will include general site housekeeping and administration activities. Additional staff attending the site will be visiting engineers from the equipment manufacturers who are adequately trained to perform their duties at site. The operator will maintain written operation instructions for all plant and monitoring equipment present on site.

A site manager / technically competent person who holds the necessary WAMITAB CoTC Level 4 qualifications as required by the WAMITAB / EA Operator Competency Scheme will be on site to manage site operations.

3.13 Accident and Emergencies

UK Remediation has developed an Accident Management Plan based around the specific risks associated with the site operations.

The key aspects of the Sites Accident Management Plan are:

- Reviewed by the Site Management annually and as soon as practicable after an accident.
- Considers hazards presented by:
 - Actions in case of fire/explosion;
 - Actions in case of fire/emergencies;
 - Incompatible Feedstock/Unwanted Reactions;
 - Failure of mains services
 - Failure of any equipment/operator error;
 - Spillages and uncontrolled release;
 - Plant or equipment failure;
 - Vandalism; and
 - Flooding.
- Identifies events or failures that could damage the environment.
- Assesses the likelihood and the potential environmental consequences from accidents at the site; and
- Proposes action to minimise the potential causes and consequences of accidents.

In the event of an accident, the EA will be immediately informed and necessary measures to limit the environmental impact of the accident will be carried out, as well as measures to prevent further possible accidents.

The sites Accident Management Plan has been included in Annex H – Accident Management Plan.

3.14 Management Plans

Due to the proposed activities, in terms of fire risk, the site is considered to be low risk. However, UK Remediation have prepared a Fire Prevention Plan (FPP) covering the potential fire risk identified on site. The FPP is provided in Annex J – Fire Prevention Plan.

As part of this permit variation, UK Remediation have also reviewed and updated the following management plans to reflect the proposed changes on site:

- Odour Management Plan – Please refer to Annex F – Odour Management Plan;
- Dust Management Plan – Please refer to Annex G – Dust Management Plan; and
- Accident Management Plan – Please refer to Annex H – Accident Management Plan.

4. EMISSIONS AND THEIR ABATEMENT

4.1 Emissions to Air

This permit variation introduces one emission point to air (Emission Point A1) originating from a release point related to the abatement system of the asbestos hand picking station.

The asbestos handpicking process will be undertaken within an enclosed picking station to prevent the migration of potential asbestos fibres off-site during the hand picking process. The air within the picking station will be extracted through a stack, which will be fitted with a HEPA filter in accordance with the BAT requirements. At the end of each asbestos picking operation, the unit will be professionally cleaned and air tested to ensure there won't be an accumulation of residual fibres between each picking operation.

The HEPA filters utilised on site are designed to filtrate up to 99.995% of small particles.

Monitoring has been undertaken for the same operations at UK Remediation's other site in Cornwall (Permit reference: EPR/XP3734QY). The monitoring results showed <0.01 fibres/ml for all stationary air monitoring and <0.04 fibres/ml for all personal monitoring.

The personal monitoring identified higher concentrations due to the lower volume of air pumped and detection limits provided by the laboratory carrying out the monitoring.

Due to the proposed mitigation measures, the proposed monitoring regime and the extremely low results from the monitoring carried out at the Cornwall site, it is considered that emissions to air from the abatement system can be screened out as insignificant and no further assessment is required.

4.2 Odour

It is recognised that there is potential for odour generation due to the nature of the wastes accepted on site. However, the proposed site is situated in a long-established industrial area, approximately 770m from the nearest residential area, therefore, it is not located in a sensitive location.

The main source of potential odour is the acceptance of odorous wastes onto the site. As such, the primary prevention and control measure employed on site is the use of stringent waste acceptance procedures. Please refer to Annex E – Environmental Management System Summary for a copy of the waste acceptance procedures.

Additionally, an odour suppression system is deployed to minimise airborne aerosols, bio-aerosols and fine particulates during unloading, including bio aerosols. The odour control system currently comprises of a perimeter misting odour suppression system running above head height around the site boundary. An odour suppressant solution is sprayed across site via the spray bar system to neutralise odours. This system will be extended to cover the additional area of site proposed as part of this permit variation.

The site will be operated in accordance with the Odour Management Plan provided within Annex F – Odour Management Plan.

4.3 Noise

An updated Noise Impact Assessment (NIA) has been completed as part of this permit variation. The NIA can be found in Annex I – Noise Impact Assessment. The NIA concludes that the rating levels are calculated to fall below the adopted background sound levels at all receptors identified within the NIA. Additionally, the

existing area is industrial with varying uses and activities and it is unlikely that the proposed site operations would affect the existing character of the acoustic environment.

UK Remediation implement the following measures to mitigate any potential noise emissions:

- Appropriate location of equipment and buildings;
- Planned preventative maintenance;
- All plant and equipment will continue to be assessed to ensure that it gives rise to the lowest practicable noise levels during operations;
- Equipment is operated by trained and experienced staff;
- Site operational times are adhered to; and
- Whie noise reversing alarms are utilised where necessary.

4.4 Emissions to Controlled Water

There are no emissions to controlled water arising as a result of this permit variation.

All operational areas of the site are constructed on sealed concrete hardstanding with a sealed drainage system.

All surface water runoff from ground level surfaces is prevented from leaving the site by a low-level bund around the perimeter. The site is graded so that all rainfall landing within the bunded area flows to one of two treatment/attenuation tanks prior to discharge off site.

4.5 Emissions to Sewer

All operational areas of the site will be constructed on sealed concrete hardstanding with a sealed drainage system.

All surface water runoff from ground level surfaces is prevented from leaving the site by a low-level bund around the perimeter. The site is graded so that all rainfall landing within the bunded area flows to a one of two treatment/attenuation tanks prior to being pumped to the public foul sewer at a rate of 2 liters per second.

All leachate/runoff will also be directed by gradient to the site's interceptor where it will be processed through the water treatment system before temporary storage in the attenuation tank, once tested and safe for disposal it will be discharged via public foul sewer. The water treatment system will consist of a sand filter to remove sediment (physical separation), and GAC filters to treat organic contaminants (adsorption) in accordance with EA BAT requirements.

4.6 Emissions to Land

There are no emissions to land arising as a result of this permit variation.

4.7 Waste Production / Management

Following treatment on site, all waste/product on site will be recycled or disposed of off-site with a full audit trail kept. Table 4.1 below identifies the wastes produced on site and their classification.

Table 4.1 Wastes Produced on site

EWC Code	EWC Description
17 01 02	bricks
17 03 01*	bituminous mixtures containing coal tar
17 03 02	bituminous mixtures other than those mentioned in 17 03 01
17 03 03*	coal tar and tarred products
17 05 03*	soil and stones containing hazardous substances
17 05 04	soil and Stones other that those described in 17 05 03
17 05 05*	dredging spoil containing hazardous substances
17 05 08	track ballast other than those mentioned in 17 05 07
17 06 05	construction waste containing asbestos
17 09 03*	other construction and demolition wastes (including mixed wastes) containing hazardous substances
17 09 04	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03
19 02 05*	sludges from physio/chemical treatment containing hazardous substances
19 02 06	sludges from physio/chemical treatment other than those mentioned in 19 12 05
19 03 04	wastes marked as hazardous, partly stabilised other than 19 03 08
19 03 05	stabilised wastes other than those mentioned in 19 03 04
19 03 06	wastes marked as hazardous, solidified
19 03 07	solidified wastes other than those mentioned in 19 03 06
19 13 01*	solid wastes from soil remediation containing hazardous substances
19 13 02	solid wastes from soil remediation other than those mentioned in 19 13 01
19 13 03*	sludges from soil remediation containing hazardous substances
19 13 04	sludges from soil remediation other than those mentioned in 19 13 03
20 03 03	street-cleaning residues

5. ENVIRONMENTAL MONITORING

5.1 Emissions to Air

The addition of the asbestos handpicking activity will require monitoring carried out on site as described below.

During the operation of the asbestos handpicking activity, asbestos air monitoring will be undertaken by a specialist subcontractor to directly monitor levels of airborne fibres. This will be undertaken using actively pumped samples being collected through a pumped deposition monitor, with on-site inspection and fibre counts under a vehicle mounted phase contrast microscope, to provide near real time monitoring. Samples will be collected at four locations around the perimeter of the working area to establish if there are any fibres emissions migrating outside to the wider site. Furthermore, two samples will be obtained from within the working area and personal monitors will be placed on operatives within the picking station. These will be sampled at the end of every shift and sent to the lab for analysis, for additional confidence that the safe control limit of 0.1 fibres per cubic centimetre has not been exceeded (Control of Asbestos Regulations 2012). If this control limit is approached, works will stop, and additional mitigation measures will be implemented along with a review of site working methodologies. .

A pumped-through 'DustMate' monitor will be utilised to provide real-time dust readings of airborne dust particulates as total inhalable particulates (PM₁₀, PM_{2.5} and PM_{1.0}). Monitoring using this method will be undertaken on a daily basis during asbestos handpicking works by a site engineer. If the concentration exceeds the limit of 250µg/m³ (Workplace Exposure Limits) then works will cease until additional dust suppression measures are implemented. Dust monitoring will also be indicative of potential asbestos fibre release. Monitoring using this method will be undertaken upwind and downwind of the work activity. The data will be electronically logged by the instrument and the data downloaded after each monitoring event.

5.2 Odour

In the unlikely event that there is any discernible odour detected at the site boundary and the odour is judged to be 'moderate' (i.e. Odour Intensity Rank 3), then the Site Manager will be notified immediately and the olfactory survey will continue as detailed within the Odour Management Plan, to determine the source and extent of the odour plume.

The main aim of monitoring will be to test if any odours emitted from the site will be causing the nearest receptors nuisance. In scenarios where nuisance is being caused then operations will be suspended until the conditions improve.

Additionally, the site drainage system is checked on a weekly basis and cleaned as necessary to prevent odour generation.

All odour monitoring will be carried out in accordance with the sites Odour Management Plan. A copy of the Odour Management Plan is provided within Annex F – Odour Management Plan.

5.3 Emissions to Controlled Water

There are no emissions to controlled water as a result of this permit variation. Therefore, no monitoring is required.

5.4 Emissions to Sewer

UK Remediation have made an application to increase the throughput and discharge to sewer as a result of this permit variation.

The emissions to sewer from site will continue to be monitored in accordance with the sites existing Discharge Consent until a new discharge consent has been granted.

5.5 Emissions to Land

There are no emissions to land as a result of this permit variation Therefore, no monitoring is required.

5.6 Monitoring Frequency

The main monitoring on site relates to dust and asbestos fibres emissions from the asbestos hand picking station and associated stack (A1).

Records will be kept of all monitoring carried out at site. The reporting results will be submitted to the Environment Agency as soon as practicable and will be retained for at least 6 years from the date the records were made.

Please refer to Table 5.1 below for emissions monitoring details.

Table 5.1 Emission Points and Monitoring Frequency

Emission Point	Source	Parameter	Monitoring Frequency	Methodology
A1 – to air	Stack - Asbestos Handpicking Station	Asbestos fibres, dust and particulate matter.	Dust monitoring – continuous on site Monitoring asbestos fibres – during the operation of the asbestos station.	Control of Asbestos Regulations 2012. Limit of 0.1 fibres per cubic centimetre.
S1 – to sewer	Effluent from site	N/A	Determined discharge consent.	N/A

6. IMPACT TO THE ENVIRONMENT

6.1 Impacts to Air

This permit variation introduces one emission point to air (Emission Point A1) originating from a release point related to the abatement system of the asbestos hand picking station.

Monitoring has been undertaken for the same operations at UK Remediations other site in Cornwall (Permit reference: EPR/XP3734QY). The monitoring results showed <0.01 fibres/ml for all stationary air monitoring and <0.04 fibres/ml for all personal monitoring.

The personal monitoring identified higher concentrations due to the lower volume of air pumped and detection limits provided by the laboratory carrying out the monitoring.

Due to the proposed mitigation measures, the proposed monitoring regime and the extremely low results from the monitoring carried out at the Cornwall site, it is considered that emissions to air from the abatement system can be screened out as insignificant and no further assessment is required.

6.2 Impacts to Controlled Water

There are no impacts to controlled water as a result of this permit variation.

6.3 Impacts to Sewer

UK Remediation have made an application to increase the throughput and discharge to sewer as a result of this permit variation.

The H1 Assessment to sewer is provided in *Annex 1 – H1 Assessment to Sewer*. All substances pass the assessment and are successfully screened out except for Polyaromatic hydrocarbons (PAHs). However, PAHs are based on the worst-case scenario as the Waste Treatment BREF only references the Hydrocarbon Oil Index (HOI). It is considered highly unlikely that PAHs would make up the total HOI content in the discharge, and it is also highly unlikely that this volume of HOI substance is present. For example, when benzene is used in the model instead of PAHs (another high risk HOI component) it is screened out after test 2.

6.4 Impacts to Land

There are no impacts to land as a result of this permit variation.