

Future Industrial Services Kirkby

Site Condition Report

Date: January 2025



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1 INTRODUCTION

1.1 AUTHORISATION

On the instruction of Future Industrial Services Limited (hereafter referred to as FIS), a Site Condition Report (SCR) has been compiled in support of an environmental permit variation application for the extension to their hazardous waste processing facility at their existing site in Kirkby.

1.2 BACKGROUND INFORMATION

This application is for an Environmental Permit variation application for an air pollution control residue (APCR) mixing and pelletisation process to produce a material to be used as a construction aggregate.

Under the provisions of the Environmental Permitting Regulations (EPR), the company is required to submit an application to the Environment Agency (EA) to vary their Environmental Permit to include the new mixing and pelletisation process. The baseline and previous condition of the site has been described in the preceding SCR developed for the last variation application in 2014 and this report is an addendum to that document updating any changes to risk or impacts to land and groundwater..

1.3 OBJECTIVES OF THE SITE CONDITION REPORT

The SCR comprises of desk-based research of private and public domain information, along with a site audit and review of proposed site operations. The objectives of this SCR are to:

- Provide information on the proposed new activity and any change to site condition;
- Detail any changes to the environmental setting and land pollution history for the site and establish the environmental setting and land pollution history for the site;
- Consider whether the new activity that will be conducted at the installation may cause pollution of the land and / or groundwater;
- Identify and assess the preventative measures that are in place and will be put in place to protect the land and groundwater;
- Assess whether there is a risk to the land or groundwater beneath the site, as a result of the new activity; and
- Be sufficient to form the basis of any required further work to establish reference conditions.

1.4 SCOPE OF WORK

The SCR considered the following elements:

- Communication with FIS personnel;
- A desk-top study including a review of the existing reports, site history, local geology, hydrogeology and hydrology, examination of archive sources and historical Ordnance Survey maps;
- Review of available soil and groundwater test reports (if available);
- Factual and interpretative reporting; and
- A desk-top study including a review of the existing reports, site history, local geology, hydrogeology and hydrology, examination of archive sources and historical Ordnance Survey maps; and Factual and interpretative reporting.

1.5 **RELEVANT GUIDANCE AND DOCUMENTATION**

This SCR has been prepared with reference to the following key guidance:

- H5 Site condition report – guidance and templates Environment Agency v3 13th May 2013

2 SITE DETAILS

2.1 SITE LOCATION

Installation Address:	Future Industrial Services Limited Image Business Park Acornfield Road Knowsley Industrial Park North Kirkby L33 7UF
National Grid Reference:	SJ 43830 98590
Size:	2.3 Ha (approximately)
Description of Site:	The site is used as a waste management centre. The current main process on the site is the treatment of (aqueous) waste streams through the site's pH adjustment plant to produce a filter cake which is transferred on to landfill; and a non-hazardous aqueous effluent which is discharged to foul sewer in accordance with the site's discharge consent and environmental permit. The site also incorporates a packaged waste transfer station and blending / storage facilities for waste solvents, waste oils and aqueous effluent. FIS occupies three Zones within the wider Image Business Park, parts or all of Zones 3, 4 and 6.

2.2 SITE SURROUNDING

The area immediately surrounding the Installation is comprised of the following key land uses:

- **North:** Commercial / Industrial premises which form part of the Knowsley Industrial Estate.
- **South:** A wooded parkland area with Matalan warehouse beyond.
- **East:** Bounded by Perimeter Road, beyond which is open farmland.
- **West:** Commercial / industrial premises which form part of the Knowsley Industrial Estate.

2.3 GEOGRAPHY AND TOPOGRAPHY

The site generally is flat although the waste transfer station has a slight slope from the transfer station towards the main office buildings.

The pit area is removed from the main waste transfer station area and is in a below ground concrete lined pit which is the subject of this variation.

2.4 INSTALLATION LAYOUT

An updated installation boundary drawing is shown below in Figure 2.1 which extends the installation boundary to cover the full extent of the pit area.

Figure 2.1 Installation Boundary



CONDITION OF THE LAND AT PERMIT ISSUE

3.1 INTRODUCTION

Information was obtained from both private and public sources and, in particular, was obtained from Future Industrial Services Limited. The data obtained is referenced in Table 3.1 below.

Table 3.1 Public Domain Information

Document / Resource Title	Information Obtained
HISTORICAL ORDNANCE SURVEY PLANS	Information relating to: <ul style="list-style-type: none"> Historical land use of site Historical land use of surrounding area
LANDMARK ENVIROCHECK REPORT NOVEMBER 2014	<ul style="list-style-type: none"> Operational and non-operational landfills Abstraction Licences (groundwater and surface water) Chemical releases Discharge consents IPC, IPPC & EPR Authorisations Pollution Incidents River Quality Surveys Operational and non-operational scrap yards and waste transfer / treatment sites Current industrial land uses Water Waste Statutory records and authorisations Borehole and trade directory entries
COAL MINING REPORT	<ul style="list-style-type: none"> Not applicable, the site is not within the zone of likely physical influence on the surface from past or present underground workings.
BRITISH GEOLOGICAL SURVEY WEBSITE	<ul style="list-style-type: none"> Mineral Extraction Data
ENVIRONMENT AGENCY WEBSITE	<ul style="list-style-type: none"> Flood risk
VARIOUS GRAPHICAL RESOURCES	Information including: <ul style="list-style-type: none"> BGS 1:50,000 Geological Map 1:100,000 Groundwater Vulnerability Map 1:25,000 Explorer Ordnance Survey Plan Sheet

3.2 ENVIRONMENTAL SETTING

3.2.1 GEOGRAPHY AND TOPOGRAPHY

The site grades gently to the southwest and is at an elevation of between approximately 41m and 46m above Ordnance Datum (aOD).

3.2.2 REGIONAL AND SITE GEOLOGY

Published geological mapping indicates the study area to be underlain by Shirdley Hill Sand, and then subsequently by Glacial Till and Sherwood Sandstone. Site investigations have generally confirmed this sequence and also encountered peat locally. Made Ground is present across the whole site, generally between 1 and 2m thick.

3.2.3 HYDROGEOLOGY

Two distinct groundwater bodies are present beneath the site; a perched groundwater within the Made Ground / Shirdley Hill Sand, resting on the Glacial Till and the main groundwater body within the underlying Sherwood Sandstone.

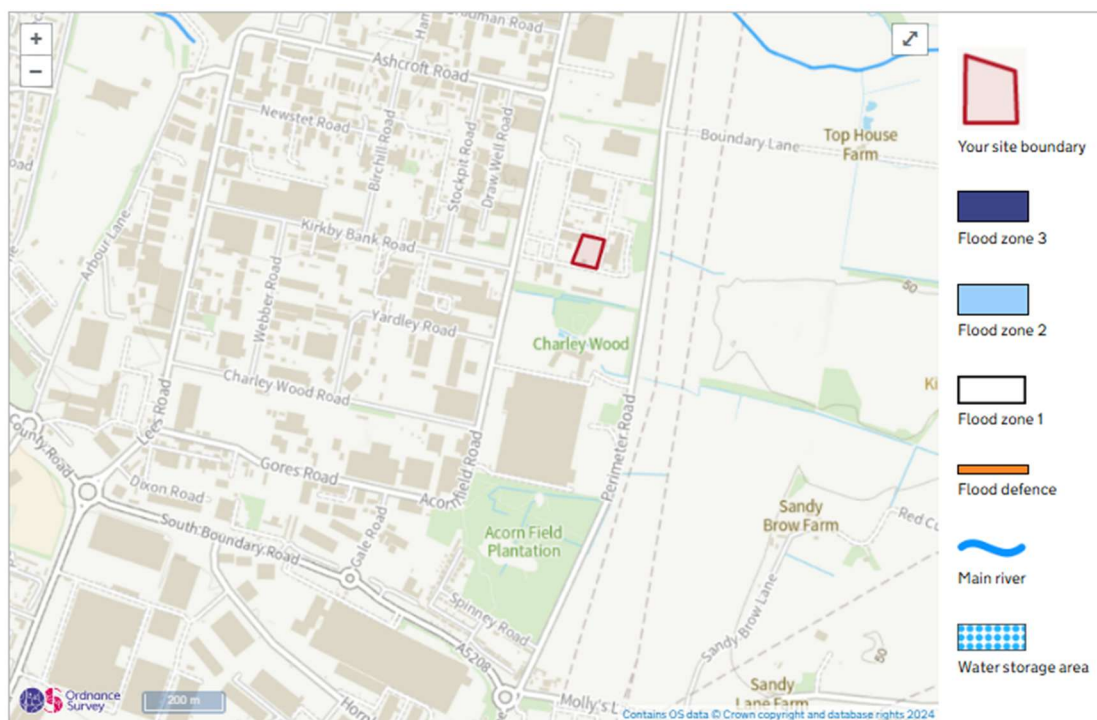
3.2.4 SURFACE WATER (HYDROLOGY)

The nearest surface watercourse is a small drainage ditch situated on the edge of woodland (Charley Wood) 30m to the south of the Site. No other significant surface water features have been identified within a 500m radius of the study area.

3.2.5 FLOOD RISK

Figure 3.1 below shows that the site is located in flood zone 1 which is classed as having a low probability of flooding from rivers and the sea.

Figure 3.1 Flood Zone Map



3.2.6 ENVIRONMENTAL CONSENTS, LICENSES, AUTHORISATIONS, PERMITS AND DESIGNATIONS FOR THE SITE AND SURROUNDING AREA

The following section contains regulatory information associated with the site and its surrounding area, within a 1km radius. This information has been obtained from the public register where available. Distances are from the central point of the postcode.

EPR Authorisations

In addition to the site itself, there are ten companies with an effective EPR authorisation within 1km of the subject site according to the Environment Agency Public Register <https://environment.data.gov.uk/public-register/view/index>.

Table 3.2: EPR Authorisations

Operator	Details	Direction	Distance (km)
Tradebe Minerals Recycling Limited	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.	East	0.1
Ames Goldsmith UK Limited	Inorganic chemicals, halogens etc. or halogen / oxygen compounds etc.	South west	0
Avanti Environmental Group Limited	Other waste disposal: non-hazardous waste >50t/day by physico-chemical treatment.	West	0.2
Mulberry Waste Limited	Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment. Temporary storage of hazardous waste not under S5.2 pending activities listed in S5.1, 5.2, 5.3 and paragraph (B) of this section with a total capacity >50 tonnes excl temporary storage where generated.	North west	0.3
Surface Transforms PLC	Directly Associated Activity (Included) Organic Chemicals; Phosphorus Containing Compounds Eg Substituted Phosphines - 4.1 A(1) a) (v) The Activity Of Making Charcoal - 1.2 Part A (1) F) 2017 Carbon; Producing Carbon Etc By Incineration/Graphitisation - 6.2 A(1) a)	-	0.3
Qualitech Environmental Services Limited	Organic chemicals: oxygen, nitrogen, sulphur and phosphorus containing compounds; organometallic compounds, polymerising etc unsaturated hydrocarbons greater than 50t/12 months/ Other waste disposal, non-hazardous waste >50t/d by biological treatment.	West	0.3
SRCL Limited	Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day including physico-chemical treatment. Temporary storage of hazardous waste not under S5.2 pending activities listed in S5.1, 5.2, 5.3 and paragraph (B) of this section with a total capacity >50 tonnes excl temporary storage where generated.	North	0.5
Rentokil Initial UK Limited	Organic chemicals: nitrogen containing compounds e.g. amines	West	0.5

Avanti Environmental Group Limited	<p>Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving biological treatment.</p> <p>Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving repackaging prior to submission to any of the other activities listed in this Section or in Section 5.1.</p> <p>Disposal of >50t/d non-hazardous (>100t/d if only AD) involving physico-chemical treatment.</p> <p>Temporary storage of hazardous waste not under S5.2 pending activities listed in S5.1, 5.2, 5.3 and paragraph (B) of this section with a total capacity >50 tonnes excl temporary storage where generated.</p>	South west	0.7
Faci UK Limited	Organic chemicals: organometallic compounds	North west	0.8

LAPPC Authorisations

There are eleven companies with an effective LAPPC authorisation within 1km of the subject site.

Table 3.3: LAPPC Authorisations

Operator	Details	Direction	Distance (km)
Cubis	PG4/2 processes for the manufacture of fibre reinforced plastics.	South west	0.3
North West Fencing Products	PG3/1 blending, packing, loading and use of bilt cement.	North west	0.5
Boundary Plant Limited	PG6/34 respraying of road vehicles.	North west	0.5
Dams International Limited	PG1/12 combustion of fuel manufactured from / or comprised of, solid waste in appliances between 0.4-3MW thermal input.	South west	0.5
Rockfield Engineering	PG1/1 waste oil burners, less than 0.4MW net rated thermal input.	South west	0.7
Littlewoods Garage	PG6/34 respraying of road vehicles.	South west	0.8
Eldapoint Limited	PG6/23 coating of metal and plastic.	South west	0.8
Stackright Building Systems	PG6/23 coating of metal and plastic.	South west	0.8
Texaco (Robert Herbert Garage)	PG1/14 petrol filling station.	South west	0.8
Dams International Limited	PG6/2 manufacture of timber and wood-based products.	South west	0.8
Sonae (UK) Limited	6/4 Manufacture of particleboard and fibreboard.	North west	1.0

Radioactive Substances Authorisation

There are no companies with radioactive substance authorisations within 1km of the site.

Groundwater Abstractions

There are fourteen licensed groundwater abstraction points within 1km of the site.

Table 3.4: Groundwater Abstractions

Licensee	Details	Direction	Distance (km)
Ames Goldsmith UK Limited	Other industrial /commercial/public services: general use (medium loss)	North	0.1
Ames Goldsmith UK Limited	Chemicals: general cooling(low loss)	North	0.1
Kodak Limited (likely to have been transferred to IPPE)	Other industrial /commercial/public services: general use (medium loss)	North	0.1
Kodak Limited (likely to have been transferred to IPPE)	Chemicals: general cooling(low loss)	North	0.1
Pilkington Brothers Limited	Other industrial /commercial/public services: general cooling (low loss)	North	0.2
Pilkington Brothers Limited	Other industrial /commercial/public services: process water	North	0.2
Baker Hughes Limited	Petrochemicals: process water	West	0.3
Baker Hughes Limited	Petrochemicals: boiler feed	West	0.3
Baker Hughes Limited	Petrochemicals: drinking, cooking, sanitary, washing (small garden)	West	0.3
Petrolite Limited	Petrochemicals: process water	West	0.3
Petrolite Limited	Petrochemicals: boiler feed	West	0.3
Sonae (UK) Limited	Other industrial /commercial/public services: dust suppression	North west	1.0
Sonae (UK) Limited	Other industrial /commercial/public services: process water	North west	1.0
Sonae (UK) Limited	Other industrial /commercial/public services: non-evaporative cooling	North west	1.0

Surface Water Abstractions

There are two licensed surface water abstraction points within 1km of the site seen in Table 3.5 below.

Table 3.5: Surface Water Abstractions

Licensee	Details	Direction	Distance (km)
Berry Brothers Farms Limited	Agricultural spray irrigation (summer) from an unnamed tributary of Simonswood Brook at Kirkby	North east	0.4
Berry Brothers Farms Limited	General agriculture: spray irrigation direct	North	0.6

Discharge Consents

There is one recorded discharge consent to water or groundwater within 1km of the site.

Table 3.6: Discharge Consents

Licensee	Details	Direction	Distance (km)
White Moss Peat Co Limited	Sewage Discharges - Final/Treated Effluent - Not Water Company to Simonswood Brook.	East	0.3

In addition, there are two water quality exemptions within 1km of the site which are presented in Table 3.7 below.

Table 3.7: Water Quality Exemptions

Licensee	Details	Direction	Distance (km)
Bunker 9	Discharge of sewage effluent to surface water of five cubic metres per day or less. First made before 6 April 2010.	Unknown	0.2
North Mersey Business Park	Discharge of sewage effluent to surface water of five cubic metres per day or less. First made before 6 April 2010.	Unknown	1.0

Operational and Non Operational Landfill

There are three historical landfill sites within 1km of the site, three operational registered landfill sites and one landfill site which it is not known if it is operational.

Table 3.8: Operational and Non-Operational Landfill

Licensee	Details	Direction	Distance (km)
Not supplied – Kirkby Moss	Historical Landfill Deposited Waste included Inert, Industrial, Commercial and Household Waste, and Liquid Sludge	East	0

White Moss Peat Company Limited	Historical Landfill Deposited Waste included Inert and Industrial Waste, and Liquid Sludge	South east	0.5
Knowsley Metropolitan Borough Council	Historical Landfill Household, Road Sweepings, Sludges (Inert - Processed/Oily)	East	0
Knowsley Metropolitan Borough Council	Landfills Taking Non-biodegradable Wastes (Not Construction)	North west	0.9
Fourway Management Ltd	Co-disposal Landfill Sites	West	0.2
Knowsley Metropolitan Borough Council	Landfills Taking Non-biodegradable Wastes (Not Construction)	North west	0.8
Merseyside Waste Disposal Authority	Status unknown	East	0.5

Registered Waste Operations

There are thirteen registered waste operation within 1km of the site and these are presented in Table 3.9 below.

Table 3.9: Registered Waste Operation

Licensee	Site Type	Permit Number
Tradebe Minerals Recycling Limited	A17: Physico-Chemical Treatment	CP3690LE
Avanti Environmental Group Limited	A9: Special Waste Transfer Station	XP3038HX
Mulberry Waste Limited	A16: Physical treatment Facility	ZP3439RM
Kirkby Skips Limited	A11: Household, Commercial & Industrial Waste Transfer Station	EB3608TM
Kirkby Skips Limited	S0811 No 11: Inert & excavation waste TS + treatment	CB3409XM
LH Waste Removal and Grab Hire Limited	S1504 N04: 75 kte HCl Waste TS	WE8737AB
Rentokil Initial 1927 PLC	A9: Special Waste Transfer Station	TP3597CF
Triton North West Limited	SR 2011 No.3: Vehicle Depollution facility <5,000 tpa	BB3906SS
Kirkby Skips Limited	A11: Household, Commercial & Industrial Waste Transfer Station	KB3206SY
SRCL Limited	A12: Clinical Waste Transfer Station	KP3436NL
Patrick Holdings Limited	S2205 Materials Waste Recycling	WE4822AC
Veolia ES Merseyside & Halton Limited	S0813 N13: 75 kte Non-hazardous & hazardous HWA site	DB3833AU
Knowsley Metropolitan Borough Council	A5: Landfill taking Non-Biodegradable Wastes	KP3197CA

SSSIs and Sensitive Habitats

The site itself is not subject to any statutory or non-statutory nature conservation designations.

There are no Sites of Special Scientific Interest (SSSI), Special Protection Areas (SPA) or Special Areas of Conservation (SAC) within 2km of the Installation.

There is one Local Nature Reserve within 2km of the installation (See Figure 3.2):

- Acornfield Plantation;

Figure 3.2 Ecological Sites close to Kirkby Installation (ref: MAGIC website, Defra)



Nitrate Vulnerable Zones (NVZ)

The Envirocheck Report indicates that the site is located in a nitrate vulnerable zone for surface water.

3.3 POLLUTION HISTORY SINCE 2014 VARIATION

There have been no incidents that have impacted the land or groundwater since the last variation was submitted in 2014.

3.3.1 Historical Land Use and Associated Contaminants

Pre FIS Occupation

Until World War 2 the study area was situated within a rural, agricultural setting. In late 1939 construction of the Kirkby Munitions Factory commenced, with completion in early 1941 (although manufacturing started in 1940). The site was used as a filling factory, whereby explosives were loaded into various types of ammunition cases. The Munitions Factory covered 743 acres, with the majority located off-site, to the west of Acornfield Road and only covered a small part of the FIS operational area. Within the subject site there was a small building surrounded by an earth bund close to the south-eastern corner of Zone 4 (see below). The use of this building is unknown but likely to have included storage of explosives / munitions, hence the presence of the bund. A rectangular feature was constructed close to the eastern boundary within Zone 3, anecdotal information suggesting this was a fresh water reservoir.

The munitions factory was closed in 1946 and Kodak purchased a long-term lease on the property in 1949. Within the FIS areas, Zone 4 was utilised for bulk chemical storage, initially in drums on soil, but replaced by the existing above and below ground storage tanks from the 1960s onwards. Zone 3

was reportedly utilised for the storage of highly volatile chemicals, away from other developed areas of the site until the 1980s. Zone 6 was used as an informal area of waste storage / disposal until the late 1980s when the current drum storage compound was constructed. Anecdotal information suggests that contaminated soils were removed from beneath the drum compound area prior to construction.

FIS Occupation

Kodak operations ceased at the end of 2006, since when the new owner, International Process Plant & Equipment (IPPE) undertook a programme of decommissioning, limited demolition and refurbishment. FIS entered into a lease to occupy parts of Zones 3, 4 and 6 from 2008.

3.3.2 Visual / Olfactory Evidence of Existing Contamination

A site walkover was undertaken in 2014 of the Pad (Area 3) and of the area where it was proposed to install the oil recovery unit and oil / water treatment plant.

There were signs of cracking in the concrete on the Pad and there was uncertainty of the condition of the drains in this area. During the walkover areas of the Pad were flooded with water and sludge. This area needs to be refurbished and provided with an impermeable surface resistant to the materials to be handled prior to this area being used.

The proposed area where the oil recovery unit and thermal oxidiser are to be located is currently an area of open landscaped ground and concrete pad with redundant metal work in place. There was no evidence of any discolouration or spillage to the landscaped area.

The pad area has undergone a significant refit with patchwork to damaged areas completed in 2024. In addition, damaged concrete has been dug out, new concrete laid and joints sealed. Area has also been cleaned of sludge by industrial services team.

3.5 Baseline Reference Data

Baseline reference data was provided in the previous iterations of SCR submitted and determined by the EA as detailed below.

- Application Site Condition Report 31/08/2007
- Application Site Condition Report 5/12/2014 WSP

It is stated in the 2014 SCR the condition of Zone 3, the location of the mixing and pelletisation activity that “a series of exploratory holes were completed in 2007. Chemical testing was completed on eight soil samples across the former reservoir area; no elevated concentrations of contaminants were recorded”.

Therefore, it is considered that there is no further need to collect reference data given the previous absence of elevated levels of contamination and the fact that the area, previously used as a reservoir has significant concrete flooring and walls that would not allow any contamination to occur.

3.6 Pollution Prevention Measures

See Section 5 of this SCR.

4 PERMITTED ACTIVITIES

The site holds an Environmental Permit (Ref: VP3936UG/V007) for the acceptance and treatment of specified wastes defined by the European Waste Catalogue (EWC).

The installation contains a number of waste treatment / handling activities namely:

Table 4.1: Activities Listed under Schedule 1 of the EPR

Activity No.	Activity listed in Schedule 1 of the EP regs	Description of specified activity	Limits of specified activities
A1	Section 5.6 A(1)(a)	<p>Temporary storage of hazardous waste with a total capacity exceeding 50 tonnes.</p> <p>D15: Storage pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where the waste is produced).</p> <p>R13: Storage of waste pending any of the operations numbered R1 to R12.</p> <p>Storage of hazardous filter cake and sludges pending disposal D1 to D12 or recovery R1 to R13.</p>	<p>Hazardous Wastes as listed in Table S3.2, column 1, marked 'X'.</p> <p>Containerised wastes stored in the Waste Transfer Station as shown on drawing" Plan View v1.9 in appendix I". Maximum storage capacity: 2,458 tonnes.</p> <p>Bulk Hazardous Wastes stored in tanks as shown on drawing" Generic Tank Contents". Maximum storage capacities as detailed in Table "Tank Farm generic Contents" Maximum storage capacity 5549 tonnes</p> <p>Stored in Area 1, shown on Site Plan. Hazardous wastes as listed in Table S3.2 column 9, marked 'X' Maximum storage capacity 1000 tonnes</p>
A2	Section 5.3 A(1)(a)(iv)	<p>Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving repackaging.</p> <p>R1, R3, R4 and R5 D14: Repackaging prior to submission to any of the operations numbered D1 to D13.</p>	<p>Repackaging of hazardous wastes undertaken in the Waste Transfer Station as shown on drawing Figure 1_Var.</p> <p>Hazardous Wastes as listed in Table S3.2 column 1, marked 'X'</p>
A3	Section 5.3 A(1)(a)(iii)	<p>Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving blending or mixing.</p> <p>R1, R3, R4 and R5. D13: Blending or mixing prior to submission to any of the operations numbered D1 to D12.</p>	<p>Blending or Mixing of solvents undertaken in the Solvent Bulking Plant (tanks T10, T11, T12 and T14 as shown on drawing Figure 1_Var), including the associated emission abatement and control equipment.</p> <p>Hazardous Wastes as listed in Table S3.2 column 6, marked 'X'.</p> <p>Maximum treatment capacity: 100 tonnes/day.</p>
A4	Section 5.3 A(1)(a)(iii)	<p>Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving blending or mixing.</p> <p>R3, R4 and R5.</p>	<p>Blending or Mixing of wastes undertaken in the Aqueous Bulk Storage Facility (tanks T2, T3, T20 to T27 as shown on drawing Figure 1_Var).</p> <p>Hazardous Wastes as listed in Table S3.2 column 2, marked 'X'.</p>

		D13: Blending or mixing prior to submission to any of the operations numbered D1 to D12.	Maximum treatment capacity: 500 tonnes/day.
A5	Section 5.3 A(1)(a)(ii)	<p>Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment.</p> <p>D9: Physico-chemical treatment not specified elsewhere which results in final compounds or mixtures which are disposed of by any of the operations numbered D1 to D12.</p>	<p>Treatment of hazardous wastes consisting of removal of contamination using GAC column.</p> <p>Treatment undertaken in the Aqueous Bulk Storage Facility as shown on drawing Figure 1_Var.</p> <p>Hazardous Wastes listed in Table S3.2 column 3, marked 'X'.</p> <p>Maximum treatment capacity: 60,000 tonnes/year.</p>
A6	Section 5.4 A(1)(a)(ii)	<p>Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day involving physico-chemical treatment.</p> <p>D9: Physico-chemical treatment not specified elsewhere which results in final compounds or mixtures which are disposed of by any of the operations numbered D1 to D12.</p>	<p>Treatment of non-hazardous wastes consisting of removal of contamination using GAC column.</p> <p>Treatment undertaken in the Aqueous Bulk Storage Facility as shown on drawing Figure 1_Var.</p> <p>Non-hazardous Wastes listed in Table S3.2 column 3, marked 'X'.</p> <p>Maximum treatment capacity: 50,000 tonnes/year.</p>
A7	Section 5.3 A(1)(a)(ii)	<p>Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment.</p> <p>D9: Physico-chemical treatment not specified elsewhere which results in final compounds or mixtures which are disposed of by any of the operations numbered D1 to D12.</p>	<p>Treatment of hazardous wastes consisting of pH adjustment.</p> <p>Treatment undertaken in the pH Adjustment Plant (tanks T4, T5, and T6 as shown on drawing Figure 1_Var), including the associated emission abatement and control equipment.</p> <p>Hazardous Wastes listed in Table S3.2 column 2, marked 'X'.</p> <p>Maximum treatment capacity: 1,200 tonnes/day.</p>
A8	Section 5.4 A(1)(a)(ii)	<p>Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment.</p> <p>D9: Physico-chemical treatment not specified elsewhere which results in final compounds or mixtures which are disposed of by any of the operations numbered D1 to D12.</p>	<p>Treatment of non-hazardous wastes consisting of pH adjustment.</p> <p>Treatment undertaken in the pH Adjustment Plant (tanks T4, T5, and T6 as shown on drawing Figure 1_Var), including the associated emission abatement and control equipment.</p> <p>Non-hazardous Wastes listed in Table S3.2 column 2, marked 'X'.</p> <p>Maximum treatment capacity: 1,200 tonnes/day.</p>
A9	Section 5.3 A(1)(a)(ii)	<p>Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment.</p> <p>D9: Physico-chemical treatment not specified elsewhere which results in final compounds or mixtures which are disposed of by any of the operations numbered D1 to D12.</p>	<p>Phase separation of waste oils.</p> <p>Oil Water Plant (tanks O1, O2, O3 and O4) as shown on drawing Figure 1_Var), including the associated emission abatement and control equipment.</p> <p>Wastes listed in Table S3.2 column 5, marked 'X'.</p> <p>Maximum treatment capacity: 200 tonnes/day.</p>

		R3: Recycling/ reclamation of organic substances which are not used as solvents. To add R9, R1 for oil going to Oil recovery unit.	
A10	Section 5.3 A(1)(a)(iii)	<p>Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving blending and mixing.</p> <p>D13: Blending or mixing prior to submission to any of the operations numbered D1 to D12</p> <p>R1: Use principally as a fuel or other means to generate energy</p> <p>R3: Recycling/ reclamation of organic substances which are not used as solvents.</p> <p>R9: Oil re-refining or other reuses of oil</p>	<p>Blending of waste oils.</p> <p>Oil Water Plant (tanks O1, O2, O3 and O4) as shown on drawing Figure 1_Var), including the associated emission abatement and control equipment.</p> <p>Wastes listed in Table S3.2 column 5, marked 'X'.</p> <p>Maximum treatment capacity: 200 tonnes/day.</p>
A11	Section 5.3 A(1)(a)(vi)	<p>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>R5: Recycling/ reclamation of other inorganic materials.</p>	<p>Recycling/reclamation of inorganic materials consisting of washing, dewatering, neutralisation and filtration of wastes to produce synthetic gypsum.</p> <p>Alkaline Powder Recycling Plant as shown on drawing Figure 1_Var including the associated emission abatement and control equipment.</p> <p>Including storage of wastes prior to treatment in Silos S1, S2, and storage of recovered gypsum as a directly associated activity.</p> <p>Wastes listed in Table S3.2 column 4, marked 'X'.</p> <p>Maximum treatment capacity: 150 tonnes/day.</p>
A12	Section 5.3 A(1)(a)(x)	<p>Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving oil re-refining or other reuses of oil.</p> <p>R 1 Use principally as a fuel or other means to generate energy</p> <p>R 2 Solvent reclamation/ regeneration</p> <p>R3: Recycling/ reclamation of organic substances which are not used as solvents.</p> <p>R 9 Oil re-refining or other reuses of oil</p>	<p>Recovery of waste oil in the Oil Recovery Unit (ORU). Including storage of waste prior to treatment in the West tank farm and East tank farm.</p> <p>Maximum treatment capacity 45,000 tonnes per annum.</p> <p>Includes a Small Waste Incinerator Plant burning recovered light distillate to generate heat for the ORU, including the associated emission abatement and control equipment.</p>
A13	Section 5.3A(1)(a)(ii)	<p>Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment.</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>Washing of waste containers containing hazardous residues undertaken in the Container Plant as shown on drawing Figure 1_Var, including the associated emission abatement and control equipment.</p> <p>Shredding of washed plastic, waste containers.</p>

			Crushing of washed metal, waste containers. Hazardous Wastes listed in Table S3.2 column 7, marked 'X'
A14	Section 5.3A(1)(a)(ii)	Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment. R3: Recycling/ reclamation of organic substances which are not used as solvents. R4: Recycling/ reclamation of metals and metal compounds R 1 Use principally as a fuel or other means to generate energy	Sludge bulking and treatment including treatment with lime, undertaken in the Waste Transfer Station shown in Plan view v1.9 in appendix 3. Hazardous Wastes listed in Table S3.2 column 9, marked 'X'. Capacity 7,500 tonnes per annum.

4.1 Permitted Activities

4.1.1 Alkaline Powder Recycling

The alkaline powdered waste undergoes a treatment process which converts the waste to synthetic gypsum for use in the cement manufacturing industry. The waste is mixed with water to remove the sodium and potassium salts and then passed through a centrifuge. The centrifuge creates a slurry which is then pH adjusted with sulphuric acid, creating the calcium sulphate (gypsum). After being pH adjusted it passes through a filter press and the filter cake removed to a covered storage area.

This is the pre-existing activity which will then be taken further to add the mixing and pelletising process to create an aggregate material.

4.1.2. Hazardous Waste Transfer Station

Mixed containerised hazardous waste is segregated upon arrival at the installation and stored in the appropriate bay. It is then analysed on site by a suitably qualified chemist and then routed for treatment either onsite or for a third party treatment / disposal.

4.1.3 Oil / Water Separation

Oil / water is stored in a designated storage area and undergoes recovery, the oil is then sold for re-use and some will be used as a fuel for the thermal oxidiser. The water is discharged as effluent.

4.1.4 Solvent Bulking

Waste solvents are blended and mixed in a designated storage area; these are connected to a mobile Granular Activated Carbon unit (GAC).

4.1.5 Tanker Dig Out Facility

Solid residues from road tanker barrels are manually dug out to a dedicated storage tank. This residue is pumped to a series of settlement troughs. The settled sludge is passed through a filter press prior to being transferred offsite for disposal. The filtrate discharges to a process drain for treatment in the pH adjustment plant.

4.1.6 Aqueous Bulk Plant

A series of bulk storage tanks for the storage of liquid hazardous wastes, prior to treatment as described above.

4.1.7 pH Adjustment Plant

Aqueous waste streams are stored in the designated storage area, where pH adjustment is undertaken followed by settlement of solids in a clarifier. The sludge is removed from the clarifier and passed through a filter press, which is then transferred offsite for disposal. Wastewater are discharged to the public foul sewer for further treatment at the Fazakerly Sewage Treatment Works where necessary, aqueous wastes are treated via the GAC unit to remove organic contaminants. This is in compliance with the Trade Effluent Consent issued by United Utilities plc.

4.1.8 Oil recovery Unit

This comprises an oil distillation process to recover light distillate, longer chain hydrocarbon and asphalt fractions from waste oil. This is done via the following processes:

- a. Flash evaporation - to remove lower boiling components by using a flash evaporator at ~200°C.
- b. Vacuum Distillation - This is carried out by the use of 2 wiped film evaporators in distillation vessels one at a wall temperature of 250-300°C to remove lower boiling molecules and the other at 300-325°C to remove heavier lube based oils.
- c. There are then two quality enhancement steps with the addition of n-methyl pyrrolidone (NMP) to remove aromatic and colour species before going to a polish in zeolite columns which passes the treated oils across an alumina silicate bed to further remove colour species.

Whilst permitted this has not been introduced at site.

4.1.9 Thermal Oxidiser (Waste Oil Fired Thermal Heater)

As part of the integrated process a thermal oxidiser will be installed to generate the heat required for the oil distillation process and to abate emissions from the distillation plant and zeolite finish exhaust gases. The fuel for the thermal oxidiser is a light distillate oil fraction from the oil recovery unit which does not meet the end of waste criteria. The exhaust gases from the oil recovery unit and zeolite columns are added above the burner zone to be thermally treated. The combined input to this thermal oxidiser is below 10 tonnes per day of hazardous waste and it is therefore classed as a small waste incineration plant (SWIP) for the purposes of this application.

Whilst permitted this has not been introduced at site.

4.2 Non-Permitted Activities

Non-permitted activities are taken to mean directly associated activities which are carried out within the installation boundary. These include the storage and handling of wastes produced on site.

Table 4.2: Directly Associated Activities

Activity No.	Activity listed in Schedule 1 of the EP regs	Description of specified activity	Limits of specified activities
A15	Washing and shredding or crushing of waste containers.	R3: Recycling/ reclamation of organic substances which are not used as solvents. R4: Recycling/ reclamation of metals and metal compounds.	Washing of waste containers containing non-hazardous residues undertaken in the Container Plant as shown on drawing Figure 1_Var, including the associated emission abatement and control equipment. Shredding of washed plastic, waste containers. Crushing of washed metal, waste containers. Non-Hazardous Wastes listed in Table S3.2 column 7, marked 'X'.
A16	Storage of wastes.	D15: Storage pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where the waste is produced). R 13 Storage of wastes pending any of the operations numbered R 1 to R 12 (excluding temporary storage, pending collection, on the site where it is produced)	Storage of non-hazardous wastes residues prior to on-site treatment for disposal. Non Hazardous Wastes as listed in Table S3.2 column 1, marked 'X'. Containerised wastes stored in the Waste Transfer Station as shown on drawing Figure 1_Var. Maximum capacity: 540 tonnes. Bulk Non-hazardous Wastes stored in tanks as shown on drawing Figure 1_Var. Maximum storage capacities as detailed in Table B2.1.12(A) of the application.
A17	Storage of APC residues that have been converted to Synthetic Gypsum.	Storage of recovered Gypsum and or filter cake.	Product gypsum stored in a covered storage area in the Soil Treatment Area as shown on drawing Figure 1_Var. Maximum capacity: 600 tonnes.
A18	Tanker Washing.	D9: Physico-chemical treatment not specified elsewhere which results in final compounds or mixtures which are disposed of by any of the operations numbered D1 to D12.	Washing of residues from tankers after delivery of wastes.
A19	Steam supply	Gas oil fired boiler plant rated at ~1.3MW thermal input.	From receipt of gas oil at the installation to steam supply to waste oil tanks and emissions to air from boiler exhaust stack.
A20	Storage of filter cake and sludges	Storage of non-hazardous filter cake and sludges pending disposal D1 to D12 or recovery R1 to R13.	Maximum storage capacity 1000 tonnes. Storage undertaken in Area 1, shown on Site Plan.
A21	Flare	Combustion of off gases from ORU in an emergency flare.	Combustion of off gases from enclosed emergency relief vents on the hydro treatment process and fractionation column during abnormal operation only.
A22	Nitrogen Generation Plant	Production of nitrogen to use as an inert gas blanketing during ORU plant start-up and in vessels during normal operation.	Operation of air compressor, flow of compressed air through a pressure swing absorption (PSA) array, separation of oxygen from nitrogen, venting of oxygen rich air, and flow of nitrogen to hydrotreater plant for purification.

A23	Hydrogen gas and amine solution storage	Delivery and storage of hydrogen gas in onsite storage trailer and storage of amine solution in IBC.	<p>Storage of hydrogen gas and amine solution for use in the hydrotreatment system.</p> <p>Maximum storage capacity (static & trailer storage) for hydrogen gas shall not exceed 0.72 tonnes at any one time.</p> <p>No more than 1 tonne of amine solution shall be stored on site at any one time.</p>
A24	Amine hydrogen recovery unit	Regeneration of amine solution in the amine regenerator column.	<p>From receipt of the recycle gas from the cold high-pressure separator, absorption of hydrogen sulphide from the sour gas in a column with amine solution to return of hydrogen sulphide free gas to the suction of the recycle compressor.</p>

5 RISKS TO LAND AND GROUNDWATER

This section of the SCR identifies potential risks to the land and groundwater posed by the activities which are undertaken on site and associated materials. This assessment has been updated to take into consideration the proposed changes on site.

5.1 STORAGE TANKS AND ASSOCIATED PIPEWORK

The following table details the active storage tanks on site, and the proposed storage tanks to be included, along with the contents and capacity:

Table 5.1 Above Ground Tanks

Name	Capacity m ³	Material / Orientation	Use
O1	125	Mild Steel, Cone Based, Vertical	Aqueous Wastes or Final Effluent
O2	125	Mild Steel, Cone Based, Vertical	Aqueous Wastes or Final Effluent
O3	125	Mild Steel, Cone Based, Vertical	Aqueous Wastes or Final Effluent
O4	125	Mild Steel, Cone Based, Vertical	Aqueous Wastes or Final Effluent
T2	100	Stainless Steel, Flat Bottomed	Incoming Aqueous Wastes
T3	100	Stainless Steel, Flat Bottomed	Incoming Aqueous Wastes
T19	185	Mild Steel, Resin Lined, Dish Based, Vertical	High COD Aqueous Wastes
T20	185	Mild Steel, Resin Lined, Dish Based, Vertical	Aqueous Wastes or Final Effluent
T21	185	Mild Steel, Resin Lined, Dish Based, Vertical	Final Effluent
T1	60	Stainless Steel, Horizontal	
T4	25	Stainless Steel, Dish Based, Vertical	Reactor
T24	27	316L Stainless Steel, Horizontal	Aqueous Wastes or Final Effluent
T25	27	316L Stainless Steel, Horizontal	Aqueous Wastes or Final Effluent
T26	27	316L Stainless Steel, Horizontal	Aqueous Wastes or Final Effluent
T27	27	316L Stainless Steel, Horizontal	Aqueous Wastes or Final Effluent
T10	54	316 Stainless Steel, Horizontal	Aqueous Wastes or Final Effluent
T11	54	316 Stainless Steel, Horizontal	Aqueous Wastes or Final Effluent
R1	35	316 Stainless Steel, Vertical	Reactor
R2	35	316 Stainless Steel, Vertical	Reactor
W1	35	316 Stainless Steel, Vertical	Sludge store
S1	100	Mild Steel, Cone Based, Vertical	Ash / APCr Silo
S2	100	Mild Steel, Cone Based, Vertical	Ash / APCr Silo
SS1	4	Mild Steel, Cone Based, Vertical	Ash Weigh Tank
SS2	4	Mild Steel, Cone Based, Vertical	Ash Weigh Tank
AST1	55	HDPE, Vertical, Flat Bottomed	Acid Storage Tank

All of the tanks detailed above are located within suitable bunds or bunded areas.

5.2 CONCRETE HARDSTANDING AND BUNDS

The majority of the site is covered in concrete hardstanding with tarmac roadways. The pad area, where the mixing and pelletisation activity is to take place, has undergone a significant refit with patchwork to damaged areas completed in 2024. In addition, damaged concrete has been dug out, new concrete laid and joints sealed. Area has also been cleaned of sludge by industrial services team.

5.3 VEGETATION

The majority of the site is surfaced with either concrete hardstanding or tarmac. A grassed area is located along the western boundary of the site and hardcore chippings are present in and around the

central area of the site. However, no processing operations or material storage takes place within these areas. These areas are also protected with containment kerbing.

5.4 NATURE OF THE STORAGE AND HANDLING OF MATERIALS

The site has waste pre-acceptance procedures in place to assess waste before it arrives on site. Once the waste arrives at the installation either in tankers or in containers (IBCs / drums) acceptance procedures are followed. The waste is tested to ensure it is consistent with the pre-acceptance information and proposed treatment or disposal method and complies with the site's permit. Containers will then be transferred to a designated storage area and bulk waste will be transferred to designated storage tanks. Materials being stored in tanks are detailed in Section 4.1 above.

Further details of the waste acceptance and storage procedures are provided in Section 4 of the main variation application document.

5.5 SURFACE WATER AND FOUL DRAINAGE

The nearest surface water feature is a drain that flows parallel to the southern boundary.

5.6 SURFACE WATER AND FOUL DRAINAGE

A CCTV drainage survey was undertaken by Lanes for Drains in November 2014. The survey identified a number of areas where the drains required repair. These identified defects were subsequently repaired.

5.7 POLLUTING SUBSTANCES AND RELEVANT ACTIVITIES

A complete list of the permitted polluting substances which are allowed to be accepted / processed onsite as per the Environment Agency EPR Permit (No. VP3936UG/V007) are listed in Table S3.1 in Schedule 3 of the Permit. The following table summarises this information:

Table 5.2 Polluting Substances

Polluting Substance	Associated On Site Process
Wastes from mineral extraction	Storage/Alkaline Powder Plant
Wastes from physical and chemical processing of metalliferous minerals	Storage/Aqueous pH Adjustment
Wastes from physical and chemical processes of non-metalliferous minerals	Storage/Alkaline Powder Plant
Drilling muds and other wastes	Storage/Oil Separation/pH Adjustment
Wastes from agriculture, horticulture, aquaculture, forestry, hunting, fishing, food preparation and processing	Storage/pH Adjustment
Wastes from wood processing and the production of panels and furniture, pulp, paper and cardboard	Storage/Solvent Bulking
Wastes from the textile industry	Storage/pH Adjustment/Solvent Bulking

Wastes from petroleum refining, natural gas purification and pyrolytic treatment of coal	Storage/Oil Separation
Wastes from inorganic chemical processes	Storage/pH Adjustment/Alkaline Powder Plant
Wastes from organic chemical processes	Storage/pH Adjustment/ GAC Treatment/Solvent Bulking
Wastes from the manufacture, formulation, supply and use of coatings, sealants, adhesives and printing inks	Storage/pH Adjustment/ Solvent Bulking
Wastes from the photographic industry	Storage/pH Adjustment/ Solvent Bulking
Wastes from thermal processes	Storage/pH Adjustment/Alkaline Powder Plant
Wastes from shaping and physical and mechanical surface treatment of metals and plastics	Storage/Oil Separation/Solvent Bulking
Oil wastes and wastes of liquid fuels	Storage/Oil Separation/Solvent Bulking
Used engine oil / lubricating oils	Storage / treatment / Recovery
Recovered oil / solvent fractions	Storage / use in thermal oxidiser
Sodium hydroxide	Storage / scrubber / oil distillation process
Therminol	Thermal fluid for the heat transfer from oxidiser to oil distillation process
Amine Solution	Storage/use in hydrotreatment system

5.8 PREVENTATIVE MEASURES

Due to the nature of the mixing and pelletisation activity to be carried out on site by FIS, specifically relating to the handling, storage, processing and treatment of a hazardous APCR waste, it is important that there is consideration for minimising contributory pollution of underlying land and/or groundwater.

The following inspection and recording programme has been proposed to demonstrate the effectiveness of pollution prevention measures. These records will be collected throughout the life of the permit.

Table 5.3 Mixing and Pelletisation Activity

Task	Frequency	Monitoring / Reporting	Records Kept
Site inspections	Daily	Completion of site environmental compliance log form.	Site Diary File in main laboratory office
Site Inspections	Weekly	Completion of site environmental compliance log form.	Site Diary File in main laboratory office
Site Tour (management)	Monthly	Completion of site environmental compliance log form.	Site Diary File in main laboratory office
Maintenance Items	Monthly	Completion of site environmental compliance log form.	Site Diary File in main laboratory office

6 OPERATIONAL CHANGES TO THE SCR

This Section details the changes proposed as part of this permit variation whilst the previous Sections detail historical activities and information which has previously been determined.

In accordance with the template detailed in the Environment Agency publication: EPR H5 Site Condition Report:

Guidance and Templates, the Operational Phase SCR requires the maintenance of four key areas:

- 4.0 Changes to the activity;
- 5.0 Measures taken to protect land;
- 6.0 Pollution incidents that may have had an impact on land, and their remediation; and
- 7.0 Soil, gas and water quality monitoring (where undertaken).

Each of these key areas are listed in this Section and are intended to be updated and altered as required.

4.0 Changes to the activity	
Have there been any changes to the activity boundary?	<p>Yes- increase to boundary see Figure 2.1.</p> <p>The boundary is to be extended to include the whole of the pad area rather than just a proportion of it.</p>
Have there been any changes to the permitted activities?	<p>The proposed changes by FIS to which this application is subject are detailed in turn below:</p> <ul style="list-style-type: none"> ■ Addition of an APCR mixing and pelletisation activity to produce an aggregate substitute product; and ■ Extension of the permit boundary to cover the whole pad area rather than just a proportion of it as it currently stands within the environmental permit. <p>The pad area is to be used for the APCR mixing and pelletisation process. There is a discharge point in one corner of the pad which had been previously bunded to prevent any waters being able to discharge to it and sealed. There is a tank installed on the pad area where the pad water is pumped to for treatment elsewhere rather than using this discharge point.</p> <p>The proposed additional waste treatment activities is an are activities under:</p> <ul style="list-style-type: none"> ■ Section 5.3 Disposal or recovery of hazardous waste Part A(1)(a) Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving one or more of the following activities- (vi) recycling or reclamation of inorganic materials other than metals or metal compounds; and ■ Section 5.4 Disposal, recovery or a mix of disposal and recovery of non-hazardous waste Part A(1)(a) Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day (or 100 tonnes per day if the only waste treatment is anaerobic digestion) involving one or more of the following activities and excluding activities covered by Council directive 91/271/EEC concerning urban waste water treatment. <p>The APCR mixing and pelletisation activity is described in detail below. This section of process occurs with existing permitted equipment:</p> <ul style="list-style-type: none"> ■ Air Pollution Control residues (APCR) accepted into sealed silo with weigh scales. ■ APCR metered into stirred reaction vessel and water added approximately 1 part ash to 5 parts water, subject to the nature of the APCR. For example, APCR

with higher soluble contamination (higher TDS/Chloride) requires a higher water ratio to ensure solubilisation. There is also a requirement to ensure a mobile slurry, which typically gives a lower bound of 3:1 water to ash. This water may be recycled process water.

- Slurry stirred for approximately 20 minutes then pumped to plate press for dewatering.
- Effluent from plate press collected in dedicated effluent tank.
- Cake within filter press may be washed with fresh water if recycled process water utilised for slurring.
- Filter cake that exhibits reduced leaching properties for chloride and heavy metals as well as reduced heavy metal content is dropped from filter press into skip. This washed APCR may be hazardous or non-hazardous (19 02 05* / 19 02 06), depending on the initial levels of heavy metals in the incoming APCR stream.
- Effluent is tested and process modelled in on-site laboratory to determine treatability for on-site discharge under existing consent.
- Process modelling is undertaken in the laboratory which consists of bench scale modelling of treatment in the effluent plant and testing of the output effluent against discharge requirements. If final effluent is suitable, chemists sign off on batch for treatment. If treatable, effluent is fed to a reaction tank and acid added to adjust pH and precipitate heavy metals (lead/zinc) using lime addition or sodium sulphite but no coagulants.
- Treated effluent is then fed to the filter press for dewatering. The effluent from the first press goes around the same process again. So pressed out of the ash, goes to a tank where it is sampled and process modelled. Then sent back to reaction tanks, dosed with lime. Then the whole mixture is sent back to same filter press (when empty, so not cross-contaminating washed ash), dewatered and effluent from this ('treated effluent') sent to a separate tank for discharge. There is the potential for the untreated/first pass effluent from the ash washing to instead be re-used as process water for slurring of the next ash washing batch.
- Effluent collected in the effluent tank and retested prior to discharge.
- Waste water treatment cake sent to hazardous landfill.
- If effluent is unsuitable for on-site discharge then it is, sent to a third party treatment facility.
- Process development – in-line dosing of effluent with acid, lamella separator, centrifuge/press for dewatering to allow continual processing of effluent

Process occurring outside of existing plant:

- Washed APCR in the skip is then transferred to the pit area and stored within a covered bay.
- Sand (raw material) is stored in an adjacent bay and cement (raw material) stored in a silo with silo emission control.
- Washed APCR, sand and cement are fed in set ratios to a single shaft concrete mixer. Sand and filter cake by shovel and cement by screw feed. Ratios may vary during process development, but laboratory scale trials indicate a ratio of 1/0.5/0.2 APCR/Sand/Cement produces appropriate strength aggregate. Clean water is added as required to ensure appropriate consistency.
- The output from the concrete mixer is dropped into a pan mixer to be mixed further to produce rough rounded pellets.
- The output from the pan mixer is transferred via belt conveyor to a rotary pelletiser to produce a smoother, rounded aggregate.

These pellets are then screened (whilst damp) to remove oversize and left to cure under cover for up to 28 days. Oversize pellets are stored in a separate pile as lower grade product as it will still have some value as larger aggregate.

Have any 'dangerous substances' not identified in the Application Site Condition Report been used or produced as a result of the permitted activities?

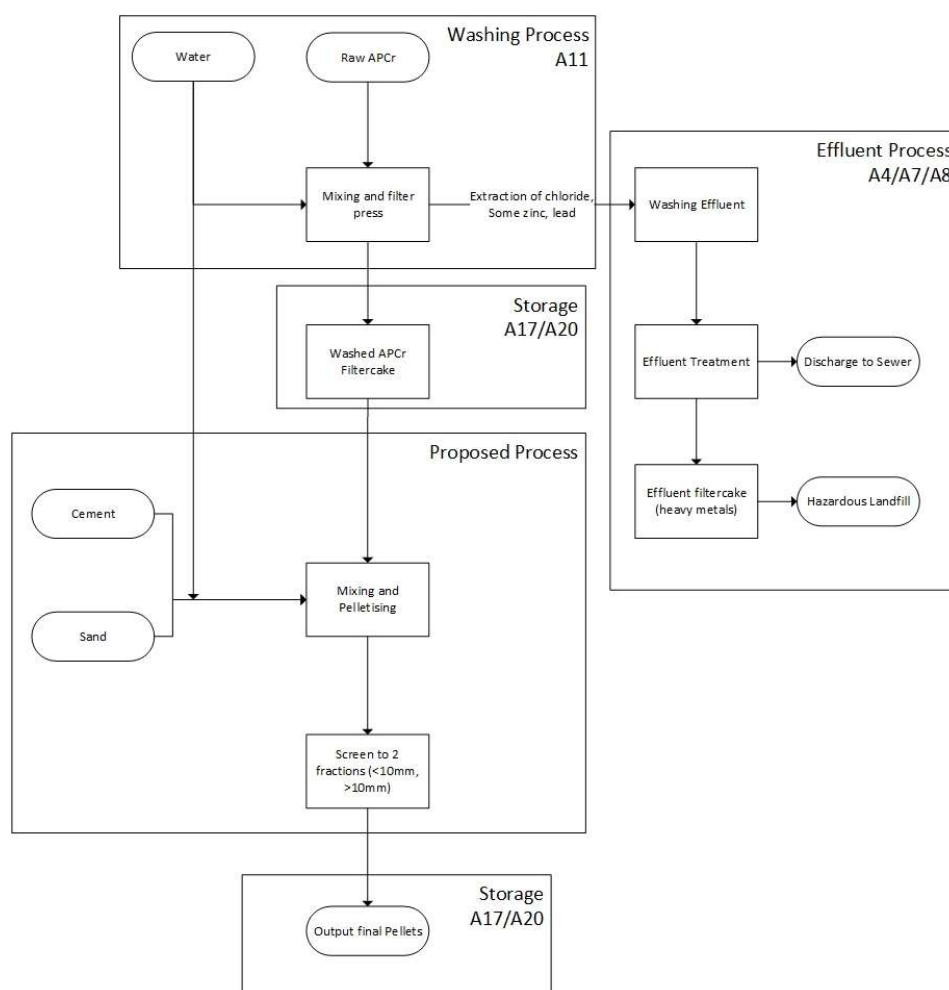
The existing activities and proposed activity inter-relationship can be seen in Figure 6.1.

The only substances to be included as part of this permit variation is:

- Cement and sand

APCR for treatment and sulphuric acid for effluent neutralisation are for an already permitted activity.

Figure 6.1 Process Flow Diagram



5.0 Measures taken to protect land

Checklist of supporting information

The containment measures for the tanks and vessels associated with the APCR pelletisation activity can be seen in Table 6.1 below.

The pad area is a below ground self-bunded area with thick concrete base and walls with sealed joints.

Checklist of supporting information	All water is collected to a water tank for reuse or disposal after testing.
	Main permit application document

Table 6.1 Equipment and Containment Measures for the Mixing and Pelletisation Activity

Equipment Details	Contents	Volume (litres)	Ancillary Pipe work (incl. fill and draw lines/points)	Primary Containment	Secondary / Tertiary Containment Feature	Observation (e.g. loss of integrity, spillage staining etc)
CONCRETE MIXER	Mix of washed ash cake, cement, sand	500	Screw feed conveyor from cement silo	Concrete mixer	Situated on 68x68 metre bunded pad	To be new equipment so no observations as to integrity.
PAN MIXER	Mix of washed ash cake, cement, sand	800	N/A	Open topped pan mixer	Situated on 68x68 metre bunded pad	To be new equipment so no observations as to integrity.
CEMENT SILO	Cement product (purchased)	32,000	Fill point for tanker blow-in.	Steel silo	Situated on 68x68 metre bunded pad	To be new equipment so no observations as to integrity.
ON PAD WATER TANK	Rain and surface water	360,000	1x fill point with pump to collect surface water, 1x tanker connection to remove water	Galvanised steel with an EPDM rubber liner tank	Situated on 68x68 metre bunded pad	To be new equipment so no observations as to integrity.

6.0 Pollution incidents that may have had an impact on land, and their remediation

See Section 3. These are historical and have been previously considered as part of earlier permit determinations.

Checklist of supporting information

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7.0 Soil gas and water quality monitoring (where undertaken)

Groundwater monitoring is undertaken quarterly with a detailed annual report. These are managed through the site's compliance via the local site officer and are not presented here as they have already been assessed as compliant with permit conditions.

Checklist of supporting information

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