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ENVIRONMENTAL RISK ASSESSMENT

for
AGGREGATE RECYCLING FACILITY
OLYMPIC WAY, BLACKPOOL

Report No 102/4

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For

JNCIVILS

DOCUMENT CONTROL

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DRAWINGS

1. INTRODUCTION

1.1 Report Context

1.1.1 Starling Environmental Limited (SEL) has been commissioned by JN Civils Limited (the operator) to prepare an environmental permit variation application for the aggregate recycling facility located at Olympic Way, Blackpool, Lancashire, FY4 4QE.

1.1.2 The site is regulated under environmental permit EPR/KP3025SY which is a standard rules permit SR2010 No12 for the treatment of waste to produce soil, soil substitutes and aggregate. This allows dry processing such as screening of waste soil/stones to produce aggregates.

1.1.3 The operator has recently secured planning permission for construction of a washing plant and also construction of a building for the crushing activity. The proposed permit changes are:

- Add a soil washing activity for production of recycled aggregates
- Increase of the annual throughput
- Revise the waste codes permitted to match the WRAP protocol list

1.1.4 The waste arisings will come from JN Civils core business streams of installation of utilities infrastructure and civil engineering projects. Material will be delivered to site in HGVs.

1.1.5 This report assesses the risks of the proposed changes and has been prepared following guidance available on the gov.uk website, particularly:

- Risk Assessment for your Environmental Permit
- Non-hazardous and inert waste: Appropriate measures for permitted facilities
- Control & Monitor Emissions for your Environmental Permit

1.1.6 Risks identified in Sections 4 and 5 will be controlled through mitigation, as detailed in Section 6. Mitigation will be incorporated into the Environmental Management System.

1.1.7 All drawings referenced are contained in Appendix A.

1.2 Site Location and Surrounding Area

1.2.1 The site is located off Olympic Way, Blackpool, Lancashire, FY4 4QE. The national grid reference for the site is SD 34333 33712. The location of the site is shown on Drawing No 102/02.

1.2.2 The site is a former gas works and was occupied by two large gas holders. These were demolished in 2015 and all associated infrastructure has been removed from the site, with just the concrete slabs remaining. The site is surfaced with a combination of concrete beneath the gas holder footprints, and tarmac and hardstanding elsewhere.

1.2.3 The area of the site is approximately 1.7 hectares.

1.2.4 The site is situated in an industrial area in the south-west of Blackpool, approximately 4 km west of the shore front. It is bordered by the following land uses:

North Cadent depot and beyond the Car Wash, Clifton Road and the residential area of Mereside

East Cadent depot and beyond Blackpool Police Headquarters

South the A5230 Yeadon Way/ M55 motorway

West Olympic Way and beyond the wider industrial area

1.3 Site Layout

1.3.1 The site is securely fenced with palisade fencing approximately 2.5 m high. The site entrance is on Olympic Way via an electronic security gate. Site features are described below and shown on the Site Layout Plan, Drawing No 102/01B.

1.3.2 A waste processing building will be constructed to house the crushing operation and store products. The building will be located at the northern extent of the site with the doorway facing south, into the site. It will be constructed from a steel frame, concrete panel walls up to 4.5 m and steel panels on the upper walls and roof. Two roller shutter doors will allow access.

1.3.3 The wash plant will be constructed on the southern part of the site with further information provided in Section 3.1.

1.3.4 Other equipment to be installed at the site includes a weighbridge, wheel wash, gate house, small electricity substation, office/welfare facilities and weighbridge cabin.

1.3.5 The site office and welfare facilities will be provided by portacabin style units which will be brought to site ready for placement. Four portacabins will be placed adjacent to each other to allow walk through. Three will serve as offices and one as welfare.

1.3.6 The site is surfaced with a combination of concrete, tarmac and loose stone chippings. The concreted areas will remain unchanged, but the tarmac is quite worn and so the tarmac and some hardstanding areas will be resurfaced with tarmac. Surfacing is shown on the Site Layout Plan, Drawing No 102/01B.

1.3.7 The northern and western boundaries will be planted with a hedge on the inside of the fence for screening and for ecological benefit. The stone chippings are around the periphery of the site and are at a higher elevation to the hard surfaced areas. They will not be converted to hard surfacing as they will not be used for waste operations or for vehicle access, but will be enhanced with further planting for ecological purposes and also to minimise the amount of hard surfacing for drainage purposes.

1.3.8 Surface water currently drains into a sub-surface network and then out to sewer via an interceptor. A detailed drainage design has been undertaken and drainage improvements are required as shown on Drawing No 2023-065-03 Proposed Drainage Detail by BEK Enviro. Surface water will be collected within the site via an upgraded drainage network. It is proposed to harvest surface water for use on site using an underground tank. Water will be collected via a silt trap and interceptor to remove suspended solids and any trace oil or fuel so that it is fit for use.

2. CURRENT ACTIVITIES

2.1 A standard rules permit was issued in 2023 however no waste has been imported to date.

2.2 The current permit allows importation of a range of waste types for processing to make aggregate products and soil substitute. The permitted annual throughput is 75,000 tonnes and the maximum permitted quantity of waste for storage is 40,000 tonnes.

2.3 The site is undergoing preparatory works following grant of planning permission for construction of the wash plant and crusher building. Preparatory works include site works to achieve the proposed site layout described in Section 1.3.

2.4 Following completion of the preparatory works, the site will operate in accordance with the current standard rules permit whilst waiting for the variation to be processed.

3. PROPOSED CHANGES

3.1 Soil Washing

3.1.1 It is proposed to add a soil washing activity to allow high quality recycled aggregate products to be produced. Washing will be carried out in a fixed wash plant. The plant will be located on a concrete surface and the location is shown on Drawing No 102/01B. A process flow chart for the operation is shown in Figure 1 and described below.

3.1.2 The majority of waste received will be from utilities trenching and consist of mixtures of soil and sub-base aggregate. Waste will be processed using a fixed wash plant which separates the soil from the stone through washing and then screens the clean stone into different size products for re-use. Proposed waste types that will be subject to soil washing are listed in Table 1 below. This list mirrors the waste types allowed under the end of waste protocol.

Waste Code	Description
01 04 08	Waste gravel and crushed rocks other than those mentioned in 01 04 07 *May include excavation from mineral workings*
01 04 09	Waste sand and clay *Must not include contaminated sand*
10 11 03	Waste glass based fibrous material *Waste without organic binders only*
15 01 07	Glass packaging
17 01 01	Concrete *Must not include concrete slurry*
17 01 02	Bricks
17 01 03	Tiles and ceramics
17 01 07	Mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06
17 02 02	Clean glass Must not include fibreglass or glass fibre
17 03 02	Bituminous mixtures other than those mentioned in 17 03 01 *Only bituminous mixtures from the repair and refurbishment of the asphalt layers of roads and other paved areas (excluding bituminous mixtures containing coal tar and classified as waste code 17 03 01)* *Must not include coal tar or tarred products* *Must not include freshly mixed bituminous mixtures*
17 05 04	Soil and stones other than those mentioned in 17 05 03 *Must not contain any contaminated soil or stone from contaminated sites*
17 05 06	Dredging spoil other than those mentioned in 17 05 05 *Only inert aggregate from dredgings* *Must not contain contaminated dredgings* *Must not contain fines*
17 05 08	Track ballast, soil and stones other than those mentioned in 17 05 07 *Must not contain soil and stones from contaminated sites*
17 09 04	Mixed construction and demolition waste other than those mentioned in 17 09 01, 17 09 02 and 17 09 03 *mixed construction and demolition waste, limited to that generated from utilities trenching, consisting of sub base aggregates, and containing only material that would be described as 17 01 01, 17 03 02 and 17 05 04*

Table 1 (continued over): Proposed Waste Types

Waste Code	Description
19 12 05	Glass *Does not include glass from cathode ray tubes*
19 12 09	Minerals (eg sand, stones) *Must not contain contaminated concrete, bricks, tiles, sand, stone or gypsum from recovered plasterboard*
20 01 02	Glass *Must not include fibreglass*
20 02 02	Garden and park waste (including cemetery waste) – soil and stones *Must not contain contaminated stones from garden and parks waste*

Table 1 continued: Proposed Waste Types

3.1.3 Incoming waste will be deposited in a stockpile next to the washplant and loaded into a hopper which feeds the 'Log Wash', which is the main wash box. From this stone is screened into separate stockpiles to produce various sizes for use as pipe bedding (eg. <40mm, <20mm and <10 mm). Sand is also separated through a cyclone to produce a coarse grit sand and a fine sand for reuse. The components and configuration of the wash plant is shown on Drawing No 102/5 Wash Plant layout and Elevations.

3.1.4 Products will be stored in 4 m high concrete block bays around the wash plant as they are produced and then moved to either the storage building or to the 4 m high concrete block storage bays outside of the building. The incoming waste stockpile will not be in a bay, this will be freestanding. It will be maintained at a maximum height of 4 m and will be situated to the east of the wash plant so that it is sheltered from the prevailing wind. This is presented on Drawing No 102/110 Stockpile Location and Detail.

3.1.5 Wash water will be returned into a thickening tank where it is separated into water/sludge by flocculation. Sludge will be sent for filtration and water is returned to the water feed tank for reuse. The plant will be a closed loop system, there will be no discharge of water. Water is lost as moisture in the filtercake and the system will be topped up with clean water. The water source will initially be harvested surface water and mains water.

3.1.6 The sludge will be filtered through a plate and frame filter press to produce a filtercake with a consistency of dry clay. This is stored below the press in a covered housing.

3.1.7 Any oversized material (eg. whole bricks of large pieces of concrete) will be crushed prior to washing using mobile crushing plant. To contain dust, a new building will be constructed to house the crushing operation and also store lightweight products that may be easily wind blown or generate dust.

3.1.8 Recycled products will be produced to meet Highways Agency specification for aggregates and in accordance with the WRAP quality protocol[1]. This protocol will enable the products to achieve 'end of waste' status so that they can be reused in engineering projects as recycled products.

3.2 Additional Throughput

3.2.1 The wash plant has a maximum treatment capacity of 1000 tonnes per day. The maximum annual throughput will be 250,000 tonnes based on:

1000 tn x 5 days = 5000 tn per week x 50 weeks = 250,000 tn

3.2.2 It is proposed to increase the throughput from the current 75,000 tonnes to 250,000 tonnes to allow the plant to operate at maximum capacity.

3.3 Changes to Waste Codes

3.3.1 It is proposed to reduce the number of permitted waste codes to those listed in Table 1. This list mirrors the waste types allowed under the end of waste protocol, including the additional descriptive text which is specified in the WRAP protocol.

3.3.2 EWC 17 09 04 is not currently on the standard rules permit and it is proposed to add this waste code to the permit, with the description restricting the waste to:

Mixed construction and demolition waste other than those mentioned in 17 09 01, 17 09 02 and 17 09 03 *mixed construction and demolition waste, limited to that generated from utilities trenching, consisting of sub base aggregates, and containing only material that would be described as 17 01 01, 17 03 02 and 17 05 04*

3.3.3 This description is the best waste code for the utilities trenching waste that is generated by JN Civils core business.

[1] Quality Protocol. Aggregates from inert waste; End of waste criteria for the production of aggregates from inert waste. WRAP October 2013

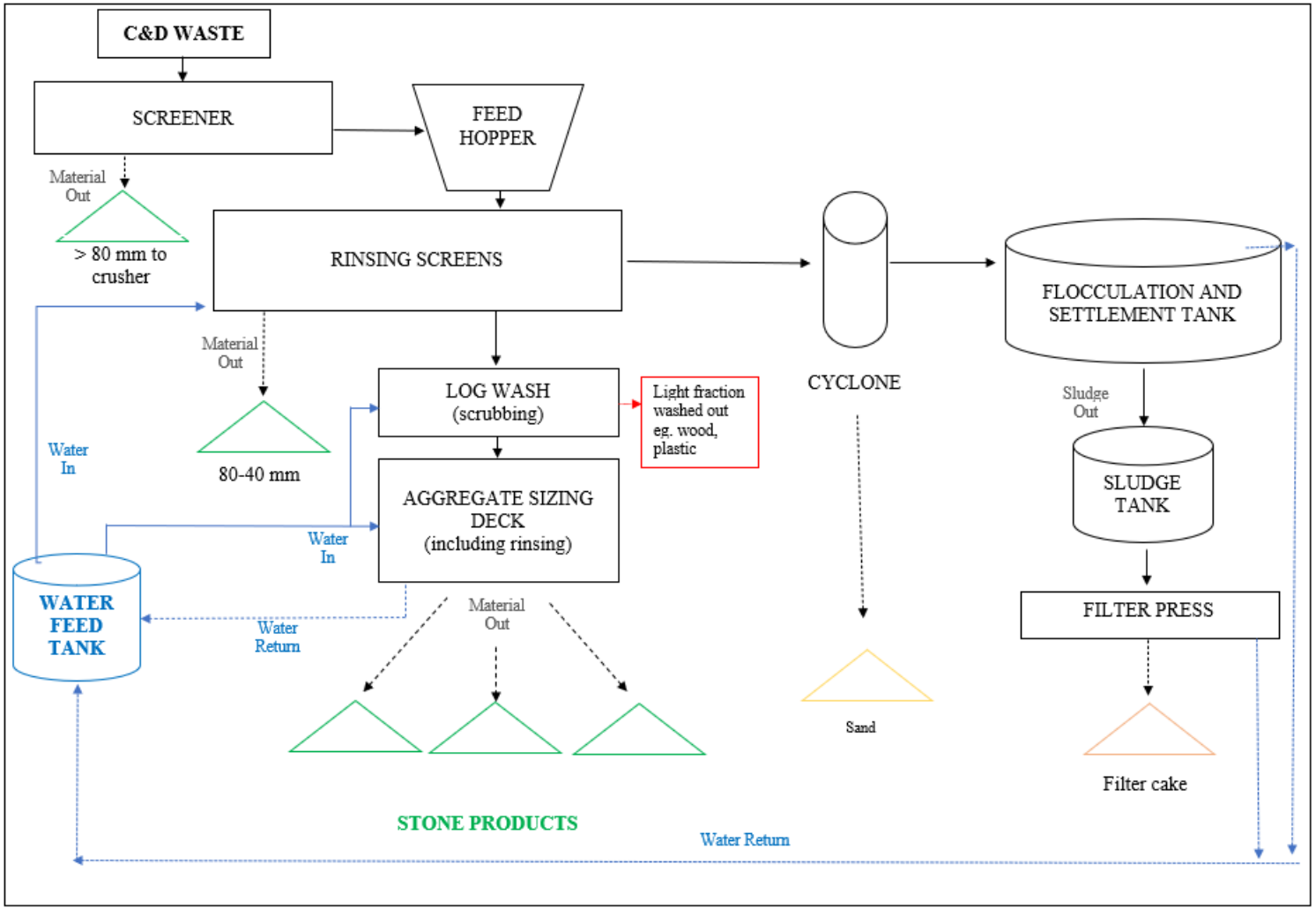


Figure 1: Wash Plant Process Flow

4. IDENTIFICATION OF RISKS

4.1 Receptors

4.1.1 The location of the site in relation to potential receptors is shown on Drawing No 102/13 and listed in Table 2 below.

Ref	Receptor	Direction from Site	Approximate Distance from Site at closest point (m)
Domestic Dwellings			
1	Properties in Mereside	N	210 - 1000
	Whalley Villa Holiday Park	W	825
	Properties in Walker Hill	SW	360 – 1000
	Blackpool South Caravan Park	S	485
Industrial/Commercial Premises			
2	Cadent Depot	N, E	Adjacent
	Tradewinds, Nutrition Group, Trans Continental	W	30
	Car Wash	N	50
	Marshall Mercendes-Benz	SW	60
	Booker Blackpool	SW	115
	Industrial Premises on Spen Business Park	W	180
	Lookers Volkswagen	SW	240
	Blackpool Police Headquarters	E	100
	Tesco Supermarket & Petrol Station	E	185
	Government Offices	SE	170
	Spen Business Park	NW	190
	Industrial Properties off Brunel Way	SW	310
	Suez Recycling Centre	SW	270
	Walkers Hill Business Park	SW	500 - 1000
	Government Buildings	NNE	740
Water Features			
3	Small ponds	S	170 - 1000
	Spen Dyke	S	750
	Drains	N, W, S, E	480 - 1000
Amenity/Recreation			
4	Mereside Park	N	80
	Community Centre	N	230
	Sandham's Green	NE	140
	Playing Fields	NW	720
Highway/Major Road or Transport Link			
5	Yeadon Way (A5230)	S	55
	Progress Way (A5230)	SW	230
	M55 Motorway	SSE	510
	Preston New Road (A583)	E, N, NW	590 - 720
Public Rights of Way			
6	Footpath 5-15-4	E	330
	Footpath 7	SW	325
	Footpath 11	N	750
Ecological Sites			
7	Priority Habitat Woodland (Arnott Wood)	SSE	330
	Priority Habitat Shrubland	SSW	585

Table 2 (continued over): Potential Receptors Within 1 km

Ref	Receptor	Direction from Site	Approximate Distance from Site at closest point (m)
Educational Institutions			
8	Mereside Primary Academy	NW	560
	The Manor Nursery School	NE	715
Hospitals/Care Homes			
9	The Harbour Hospital	NE	710

Table 2 continued: Potential Receptors Within 1 km

4.1.2 The closest domestic dwellings are to the north of the site in the suburb of Mereside, on Clifton Road, Deepdale Road and Branstree Road. The closest of these is 210 m from the site boundary to the edge of the property.

Surface Water

4.1.3 The closest surface water course is an unnamed 'drain' around 480 m south of the site and the closest named watercourse in Spen Dyke approximately 750 m to the south. There are a number of small ponds to the south of the site but these are separated by main highway Yeadon Way.

4.1.4 The EA's Data Catchment Explorer website shows the site to be within the Main Drain (Ribble) Water Body[2], which is reported as having moderate ecological status.

Groundwater

4.1.5 The underlying bedrock is designated as a 'secondary B aquifer', which is described by the EA as consisting of 'mainly lower permeability layers that may store and yield limited amounts of groundwater through characteristics like thin cracks (called fissures) and openings or eroded layers'.

4.1.6 The underlying superficial strata is designated as 'secondary undifferentiated' which have minor value in terms of groundwater.

4.1.7 The underlying groundwater vulnerability is listed as 'medium to low'. The site is not within a groundwater source protection zone.

Ecological Receptors

4.1.8 A pre-application conservation screening request was submitted to the EA. The screening exercise did not identify any habitats or protected species that need to be considered in the application.

[2] https://environment.data.gov.uk/catchment-planning/WaterBody/GB112071065651

4.1.9 Searches using the DEFRA magic map identified one ecological site within 2 km of the site and one European habitats site within 10 km. These are listed in Table 3 below.

Site	Designation	Distance & Direction
Marton Mere	LNR and SSSI	1.3 km N
Alt and Ribble Estuary	NNR, SSSI, SPA and Ramsar	4.2 km SW
Lytham St Annes Dunes	LNR and SSSI	4.1 km SW
Lytham Coastal Changes	SSSI	5.8 km SE

Table 3: Ecological Sites
LNR = local nature reserve
NNR = national nature reserve
SPA = Special Protection Area
SSSI = Site of Special Scientific Interest

4.1.10 The sites listed in Table 3 are outside the zone of influence of site activities. As there are no European sites within 2 km of the site, a habitats assessment is not required.

4.2 Baseline Conditions

Wind Direction

4.2.1 Figure 1 shows a wind rose for data collected at Blackpool Squires Gate which is the closest recording station at approximately 3.5 km to the south-west.

4.2.2 The wind rose shows that the prevailing wind direction is from the west with wind speeds most frequently between 10 – 20 mph, ie moderate to fresh breeze on the Beaufort scale. The strongest winds typically come from the west-southwest Winds from the east are typically lower in strength.

4.2.3 With reference to the data it is considered that wind direction will be variable but with a prevalence towards the north-east, east and south-east.

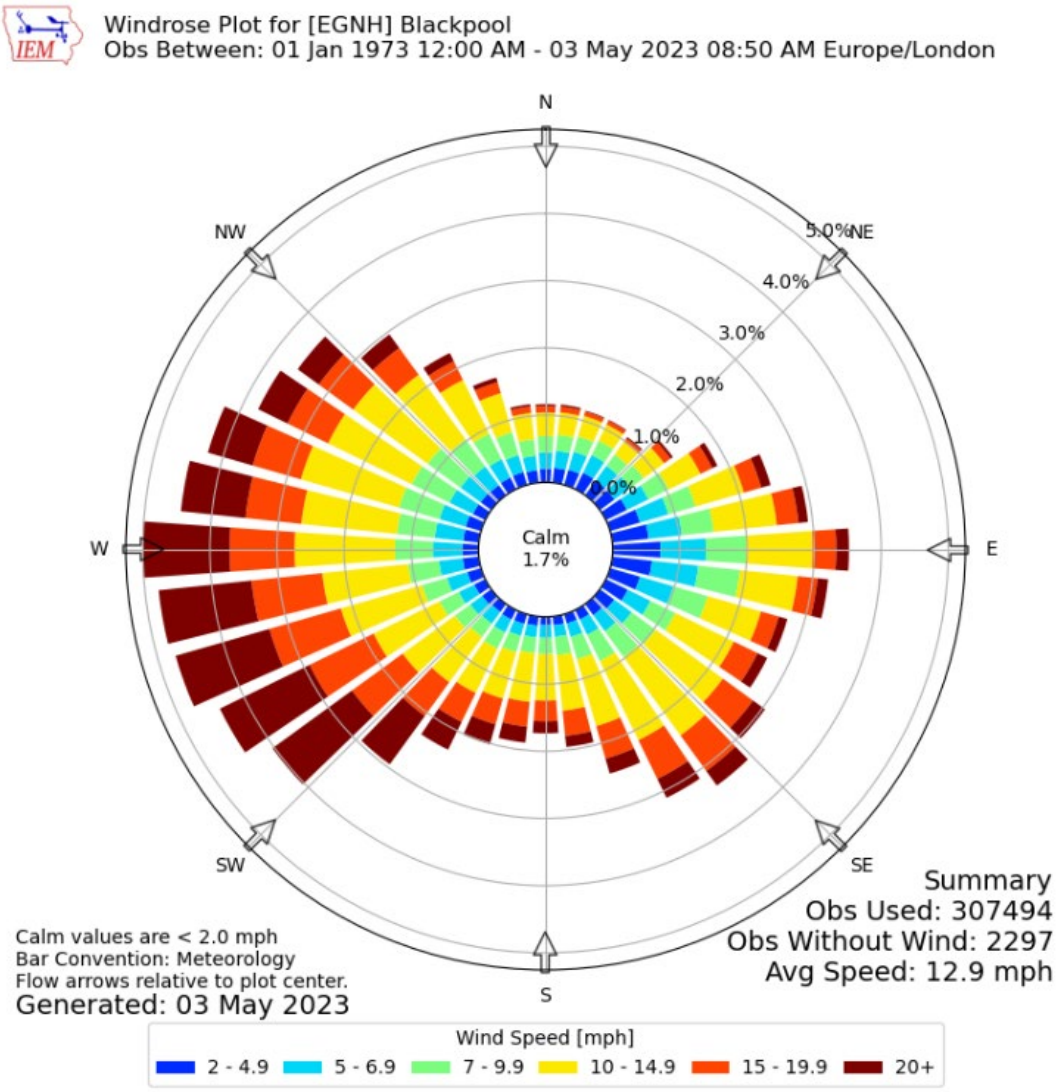


Figure 2: Wind Rose

Rainfall

4.2.4 Reference has been made to rainfall data for Blackpool Squires Gate Climate Station available on the met office website[3]. Total average annual rainfall during the period 1991 to 2020 was 886 mm. The number of days of rainfall greater than or equal to 1 mm was 147 days on average each year, therefore providing natural dampening approximately 40% of the year.

Air Quality

4.2.5 According to the DEFRA interactive map tool[4] the site is not located within an Air Quality Management Area (AQMA).

Potential for Flooding

[3] https://www.metoffice.gov.uk/research/climate/maps-and-data/uk-climate-averages/gctcfvseb
[4] https://uk-air.defra.gov.uk/aqma/maps/

4.2.6 According to the 'Flood map for planning' tool on the gov.uk website, the site is situated in Flood Zone 1, an area with a low probability of flooding.

4.3 Identification of Hazards

4.3.1 Potential hazards from the proposed changes to activities have been identified as:

- Noise and Vibration – from operation of the wash plant and HGVs
- Dust – generated in dry conditions from processing operations, stockpiles and site roads
- Mud on the road – deposited on the public highway by outgoing vehicles
- Uncontained run-off – surface water run-off which may contain suspended solids from stockpiled waste and site roads;
- Accidents (fire, acceptance of contaminated material, spillage of fuel/oil or escape of water from the washing operations)

4.3.2 The nature of wastes accepted at the site will result in negligible generation of odour due to the lack of biodegradable and/or odorous material. Likewise, the wastes will not generate litter or attract birds, vermin or insects.

4.3.3 The operation is not considered to pose a risk to air (excepting fugitive dust) due to the nature of waste materials that are accepted.

4.3.4 A Dust Emissions Management Plan has been prepared to assess the risks from dust and present mitigation and control measures. This is presented as Report No 102/6 and is included with the application.

4.3.5 A Noise Impact Assessment and Management Plan has been prepared to assess the risk from noise and to present control measures. This is presented as Report No J004664-7570-RC-01 and is included with the application.

5. RISK ASSESSMENT

5.1 Methodology

5.1.1 Overall risk is a combination of the severity of an event and the likelihood that it will occur. Probability of occurrence is designated as:

- Probable – expected to occur based on previous occurrences
- Likely – expected to occur due to proposed changes
- Possible – this may occur, it may or may not have happened occasionally in the past
- Unlikely – not expected to occur
- Very Unlikely – has never and is not expected to occur.

5.1.2 The magnitude of risk is determined by the probability of exposure and the severity of the consequences, whereby:

- High – severe and long lasting environmental effects to the wider locality
- Medium – effects to the local environment and community
- Low - minor, short lived effects just beyond the site boundary
- Negligible – no discernible effect beyond the site boundary

5.1.3 An event could have a high probability of occurring but have minor environmental consequences; therefore it will be designated as a low risk. Likewise a risk with severe consequences could be unlikely to occur and will be designated as a low risk. A high risk designation would be assigned to an event that has severe consequences and is expected to occur.

5.2 Assessment

5.2.1 The risks associated with the identified hazards have been assessed and are presented in Tables 4 to 9, including mitigation and control measures.

Hazard	Receptor	Pathway	Consequence	Probability of Exposure	Risk	Risk Management	Mitigated Risk
Noise from incoming and outgoing HGVs for additional throughput	Surrounding commercial operators and residential properties off Clifton Road	Air (noise) Vibration (ground)	Nuisance noise from delivery vehicles	Possible: residential properties are approximately 210 m from the site	Medium	• A noise impact assessment has been carried out to model predicted noise from the operations. This concluded that that impacts will be 'low' • Site access is concrete surfaced and will be maintained to prevent pot-holes and minimise noise generated by vehicles; • Vehicle drivers to adhere to 10 mph speed limit • All machinery & plant maintained as per manufacturer's specifications for efficient running; • Noise only during daytime working hours, no night time operations; • Vehicles delivering waste to the site will be utilised to backfill with product to reduce HGV movements	Low
Noise from aggregate processing (engine noise, reversing warning noise, material handling, crushing, washing & screening)			Nuisance noise detected beyond the site boundary from processing operations during daytime working hours		Medium		Low

Table 4: Assessment of Risks from Noise and Vibration

Hazard	Receptor	Pathway	Consequence	Probability of Exposure	Risk	Risk Management	Mitigated Risk
Mud on the road	Public highway (Olympic Way and Clifton Road)	Material carried on vehicle wheels and axles on leaving the site.	Mud carried onto public highway which could be a skid hazard for motorists.	Possible	Medium	• A wheel wash is to be in place for vehicles exiting the site • Concreted site surface regularly swept with a road sweeper; • Olympic Way also swept with road sweeper • Site access road is checked daily, swept with a road sweeper which provides dampening.	Low

Table 5: Assessment of Risks from Mud on the Road

Hazard	Receptor	Pathway	Consequence	Probability of Exposure	Risk	Risk Management	Overall Risk
Dust from operation of the wash plant	Closest residents, commercial neighbours	Dust generated and carried beyond the site boundary	Annoyance to neighbours, loss of amenity, reduction in air quality and possible health impacts	Unlikely as the washing activity provides inherent dampening	Low	• A Dust Emissions Management Plan has been prepared to assess the risk from dust and propose mitigation and controls • Products are stored in bays to minimise wind whipping • Stockpiles are damped down with a bowser during dry conditions • Site access road is checked daily, swept with a road sweeper which provides dampening. • Site surface is dampened with a bowser • All loads are covered on entering and exiting site • Crushing operations will be carried out within a building • Material that is lightweight and easily windblown will be stored within the building	Low
Dust from vehicle movements carrying additional throughput		Dust carried off site on wheels or from waste loads, or dust generated from dusty roads		Possible	Medium		
Dust from dry processing of additional throughput		Dust generated from crushing of additional waste					

Table 6: Assessment of Risks from Dust

Hazard	Receptor	Pathway	Consequence	Probability of Exposure	Risk	Risk Management	Mitigated Risk
Surface water run-off carrying sediment from stockpiled waste, products and site surface	Surface water listed in Table 2	Flow off site and into watercourse	Increased sediment load reducing water quality	Unlikely:- there is a substantial distance between the site and any surface water	Low	• Run-off drains to underground storage tank via silt trap and interceptor fore reuse on site. Surplus water drains to sewer • Wash plant Spillages will be contained in a sump within the concreted area and returned to the plant • A programme of sampling and testing of recycled water and filtercake will be undertaken to establish if contaminants are becoming concentrated. • Filtercake will be stored on a concreted surface and in a covered bay beneath the filter press housing to shelter from rainfall and prevent generation of runoff from the filtercake	Low
	Groundwater (secondary B aquifer)	Percolation into underlying aquifer	None – sediment will sit on the surface, not percolate through	Very Unlikely	Low		Low
Spillage or leakage of wash plant water; leaching of contaminants from filtercake	Underlying ground and groundwater	Concentrated contaminants in recycled wash water or filtercake soak into underlying ground	Build up of contaminants in groundwater, deteriorating water quality	Possible	Medium		Low

Table 7: Assessment of Risk from Uncontained Run-off

Hazard	Receptor	Pathway	Consequence	Probability of Exposure	Risk	Risk Management	Overall Risk
Non-compliant waste types, eg hazardous dust from importation & processing of contaminated material	Site staff, neighbouring employees and residents	Air	Inhalation of contaminated dust	Unlikely as hazardous material not included on permit but may accidentally be imported	Medium	• Permit conditions preclude acceptance of hazardous materials • Waste acceptance controls & pre-acceptance procedures will prevent acceptance of non-compliant waste types • In the event that non-conforming waste is unloaded the waste will be consigned to a quarantine area to await re-loading & removal off-site	Low
	Surface water	Uncontrolled Run-off	Contamination of controlled waters				
Spillage or leakage of fuel, oils & coolants Minor (< 5 litres) Major (> 5 litres)	Surface water	Oil or fuel seeps off site into surface water	Contamination of ponds and watercourses	Very unlikely due to topography and distance between site and water bodies	Low	• Concreted surface drains to an interceptor which separates oil from the discharge • Fuel stored in bunded tanks in concreted yard area • Vehicles inspected as part of daily checks for leaks • Tank inspection procedure • Oil stored in bunded area • Spillage procedure detailed in the EMS	Low
	Underlying ground and groundwater	Percolates through hardstanding into Secondary B aquifer	Contamination of aquifer	Unlikely as fuel storage in concrete yard area, not on hardstanding which is elevated above the concreted areas	Low		

Table 8 (continued overleaf): Assessment of Risk from Accidents

Hazard	Receptor	Pathway	Consequence	Probability of Exposure	Risk	Risk Management	Overall Risk
Spillage of sludge/ wastewater from wash plant	Surface water	Spillage or misconnection causes wastewater or sludge to flow off site	Increased sediment load in local watercourses reduction in water water quality	Unlikely: no direct pathway as site drains through silt trap interceptor to sewer	Low	• The wash plant will be sited on a concrete base which drains to a central sump to contain any spillages. which will be pumped from the sump back up into the plant • Run-off drains to underground storage tank via silt trap and interceptor fore reuse on site. Surplus water drains to sewer	Low
	Underlying ground and groundwater	Percolates through hardstanding into Secondary B aquifer	Contamination of aquifer	Unlikely as site is hard surfaced and drains to an interceptor; any unpaved areas are at a higher elevation and are not used for waste processing activities	Low		
Fire and firewater	Closest residents and neighbouring businesses	Overland flow of firewater; Increased airborne particulates from smoke	Contaminated firewater flows off site; Smoke causes nuisance and respiratory effects to local residents	Unlikely - the risk of fire is very low as the material processed is mainly non-combustible.	Low	• Permitted activities do not allow flammable materials to be accepted on site and burning of waste not allowed on site. • The site has a no-smoking policy	Low
Flooding		Site floods and waste is washed off-site, adding sediment to the water environment	Waste material may be washed out of the site	Unlikely: The site is in Flood Zone 1 (low probability)	Very Low	• Waste stored on site will be uncontaminated; no direct pathways to watercourses	Very Low

Table 8 continued: Assessment of Risk from Accidents

Hazard	Receptor	Pathway	Consequence	Probability of Exposure	Risk	Risk Management	Mitigated Risk
Litter	Closest residents, commercial neighbours and wider environment	Litter in waste blown beyond site boundary	Litter in the neighbourhood reducing amenity	Unlikely – waste types are construction and demolition waste and would not include easily windblow items of litter such as paper and plastic	Low	• Waste acceptance procedures are in place to ensure only suitable waste types are accepted. • Permitted waste types are restricted to non-putrescible and non-biodegradable waste	Very low
Odour		Dispersion of odours from odorous waste	Odour in the local area and reduction in air quality and amenity	Unlikely – waste types are non-biodegradable so would not generate odours or attract pests	Low		
Pests		Pest attracted to waste or imported inside loads of waste	Pest dispersed in local area, annoying neighbours and disturbing habitats				

Table 9: Assessment of Risks from Litter, Odour and Pests

6. MITIGATION AND CONTROL

6.0.1 Risks assessed as medium or high will require mitigation and control which is detailed below. Proposed measures are outlined below and have been incorporated into the EMS.

6.1 Noise and Vibration

6.1.1 Noise and vibration risks associated with operations have been determined as low following a Noise Impact Assessment, Report No J004664-7570-RC-01 by specialist consultants PDA Limited.

6.1.2 This is mitigated further by carrying out operations only during the working day.

6.1.3 Noise will be minimised by the maintenance of plant and the use of silencers and maintenance of roads.

6.2 Mud on Road

6.2.1 Risks associated with mud on the road have been determined as medium.

6.2.2 This is mitigated to low risk by the use of a wheel wash. The EMS includes procedures for the removal of any accidental deposit by a road sweeper, as well as regular checks and sweeping of the site entrance.

6.3 Dust

6.3.1 Risks from fugitive dust emissions were assessed as medium and a Dust Emissions Management Plan has been produced to demonstrate how dust will be managed to reduce the risk to an acceptable level.

6.3.2 The washing activity is inherently dampening so will not raise dust. Crushing will be carried out inside a building to contain dust. The stockpile of incoming waste and products could become dusty when dry and will be managed by positioning of stockpiles and bays, damping down and use of the building for lightweight products.

6.3.3 Dust monitoring will be carried out daily and contingency actions are in place to prevent dust emissions from occurring.

6.4 Control of Run-off

6.4.1 Surface water run-off from the yard area is directed towards a silt trap interceptor before storage in an underground tank for use on site. Surplus water will be discharge to sewer.

6.4.2 The area footprint beneath the permanent wash plant is concreted and will be laid to a fall with any run-off, drips and spillages drained to a sump. Contents of the sump will be returned to the wash plant.

6.4.3 The storage areas will be compacted hardstanding and used to store incoming waste and processed material.

6.5 Waste Acceptance

6.5.1 Unsuitable waste will be prevented from being accepted into the site by checks carried out as part of the waste acceptance procedures, summarised below and contained in the EMS.

6.5.2 Pre-Acceptance waste enquiries shall include information on the origin of the waste and whether it is from a contaminated site. When an enquiry is received, a member of the management team may carry out a site visit to inspect the waste. Photographs of the site and any stockpiles are taken. If the waste consists only of hardcore it will be accepted on the basis of the visual inspection.

6.5.3 In the case of waste which contains soil, classed as EWC 17 05 04, waste from greenfield sites will be accepted without analysis. Waste from brownfield sites will require chemical analysis to confirm that the soil is not contaminated. This is assessed by a member of the management team. Contaminated waste will not be accepted.

6.5.4 If the waste is accepted as suitable it will be booked into site and undergoes further checks when it arrives.

6.5.5 Waste which is found to be unsuitable after delivery will be rejected.

6.6 Sampling and Testing of Washwater

6.6.1 A programme of testing will be carried out to establish concentration of contaminants in washwater and identify whether these are becoming concentrated by recycling the washwater.

6.6.2 It is proposed to take monthly samples of washwater and filtercake and results will be reviewed after six months.

6.6.3 It is proposed to test for the following parameters:

- Arsenic
- Chromium
- Cadmium
- Copper
- Lead
- Nickel
- Tin

- Zinc
- Total Petroleum Hydrocarbons (TPH)
- PAH 16
- pH

6.6.4 Sampling will be carried out by a trained competent technician and samples will be submitted to an accredited laboratory for analysis. A wash plant monitoring plan has been included in Appendix B.

6.6.5 The aim of the monitoring plan is to:

- Characterise the washwater
- Build up a picture of variation
- Establish if contaminants are becoming concentrated

6.6.6 If contaminants are observed to be building up then an action plan will be proposed to reduce contaminants to an acceptable level.

7. CONCLUSIONS

7.1 The risks to the environment from the proposed activity have been determined and where required mitigation has been proposed to reduce the risks to an acceptably low level.

7.2 Noise will be minimised by the maintenance of plant and the use of silencers, maintenance of roads and working within the permitted operational hours.

7.3 Risks from surface water run-off will be minimised through containment and primary treatment to remove sediment and catch any fuel or oil spillages in a silt trap interceptor.

7.4 Risks from accidents will be reduced through effective management of the site through an Environmental Management System, including waste acceptance procedures to prevent importation of contaminated waste.

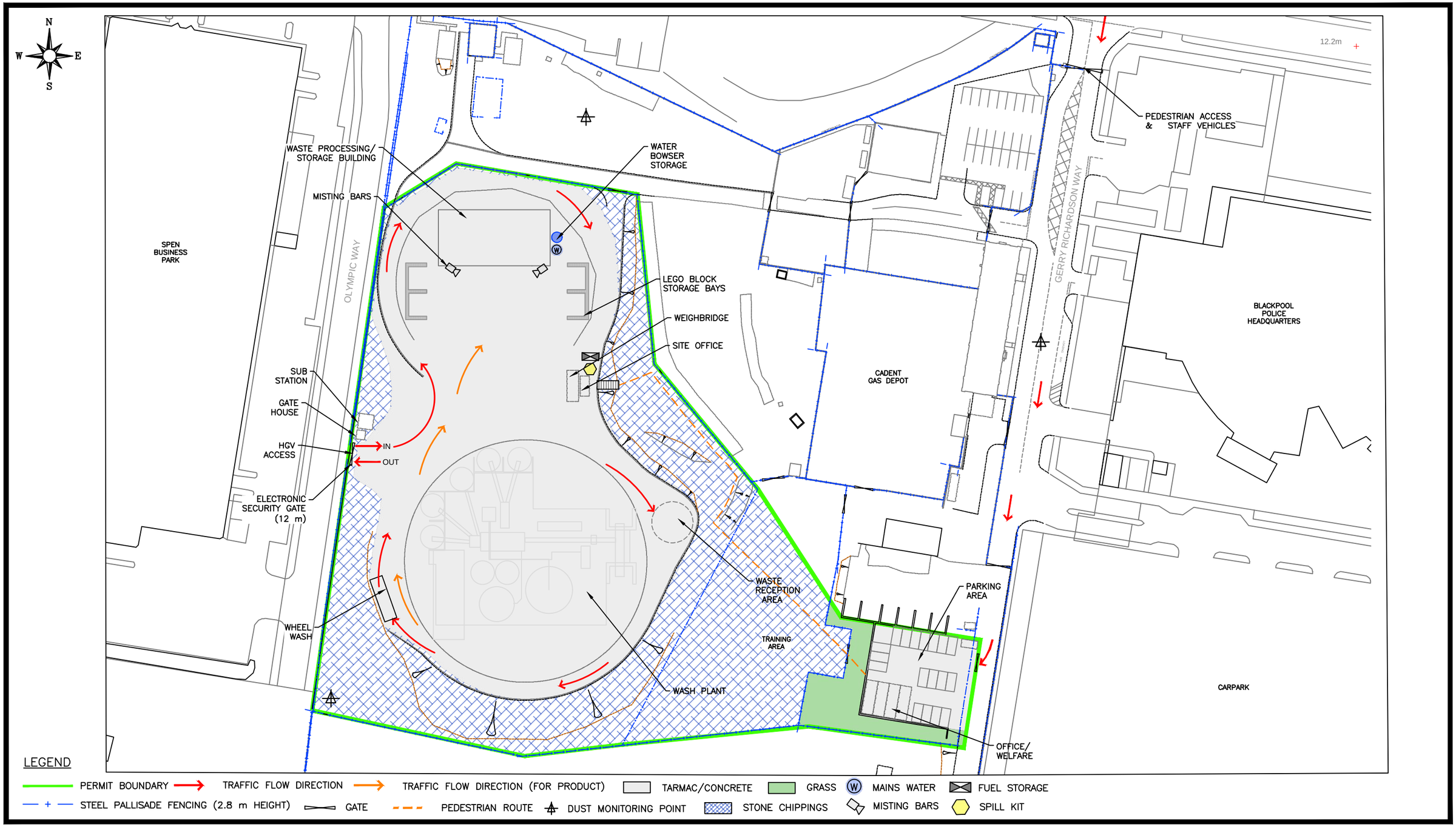
7.5 Risks from mud on the road will be mitigated through use of a wheel wash and regular road sweeping.

7.6 Risks from dust will be minimised by carrying out crushing within the building, use of storage bays, dampening and daily monitoring and management.

7.7 In conclusion it has been demonstrated that the risks posed by the proposed operation can be mitigated so they will not have a significant impact on the surrounding environment.

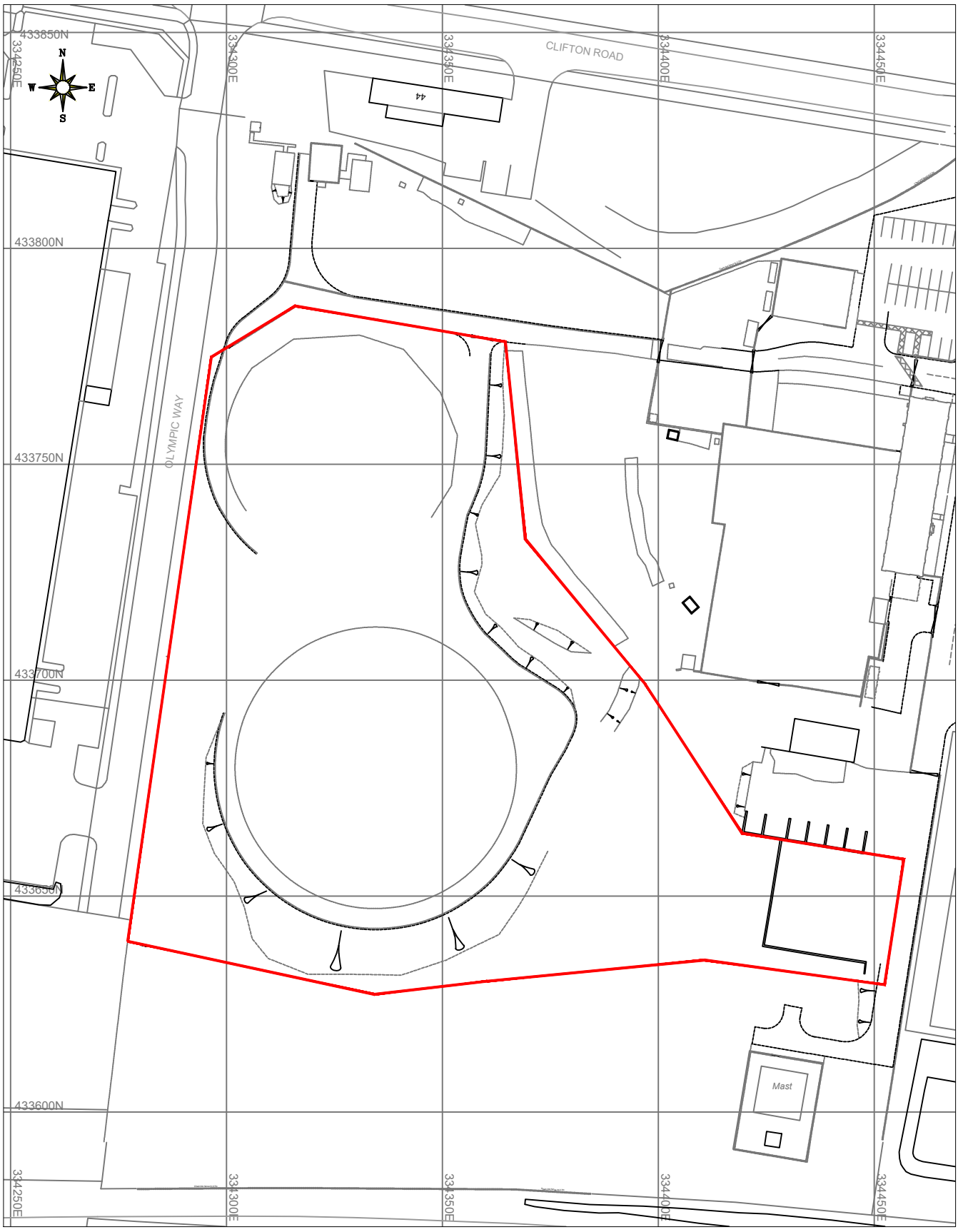
APPENDIX A

Drawings



STARLING ENVIRONMENTAL LIMITED
67 Chorley Old Road, Bolton, Greater Manchester, BL1 3AJ
www: starlingenvironmental.co.uk
email: claire@starlingenvironmental.co.uk
Tel: 07989 673122

CLIENT: JN CIVILS LIMITED		DRAWN BY. M.Y.B	APPROVED BY. C.G
JOB TITLE. AGGREGATE RECYCLING FACILITY, OLYMPIC WAY, BLACKPOOL		DATE. 10/07/23	DRAWING No. 102/01B
DRAWING TITLE. SITE LAYOUT PLAN		SCALE @ A3. 1:1000	



LEGEND ——— SITE BOUNDARY

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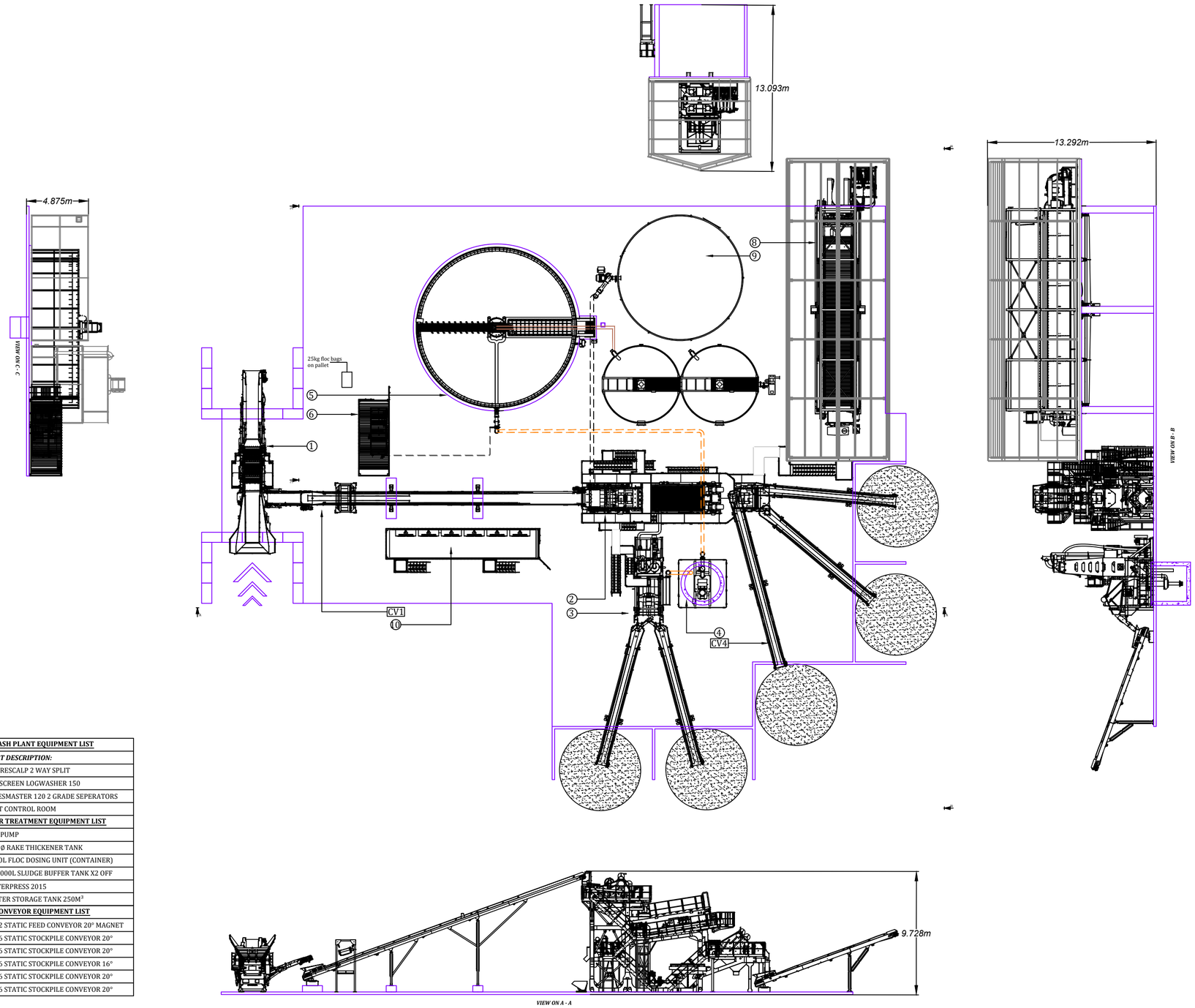
CLIENT: JN CIVILS LIMITED		DRAWN BY: M.Y.B	APPROVED BY: C.G
JOB TITLE: AGGREGATE RECYCLING FACILITY, OLYMPIC WAY, BLACKPOOL		DATE: 17/07/23	DRAWING No. 102/02
DRAWING TITLE: SITE LOCATION PLAN		SCALE @ A4: 1:1,250	



WASH PLANT EQUIPMENT LIST	
TAG ID:	*PART DESCRIPTION:*
1	AGGRESCALP 2 WAY SPLIT
2	PRESCREEN LOGWASHER 150
3	FINESMASTER 120 2 GRADE SEPERATORS
10	40FT CONTROL ROOM
WATER TREATMENT EQUIPMENT LIST	
4	VSP PUMP
5	12MØ RAKE THICKENER TANK
6	5000L FLOC DOSING UNIT (CONTAINER)
7	150,000L SLUDGE BUFFER TANK X2 OFF
8	FILTERPRESS 2015
9	WATER STORAGE TANK 250M^3
CONVEYOR EQUIPMENT LIST	
CV1	7532 STATIC FEED CONVEYOR 20° MAGNET
CV2	4026 STATIC STOCKPILE CONVEYOR 20°
CV3	4026 STATIC STOCKPILE CONVEYOR 20°
CV4	5026 STATIC STOCKPILE CONVEYOR 16°
CV5	4026 STATIC STOCKPILE CONVEYOR 20°
CV6	4026 STATIC STOCKPILE CONVEYOR 20°

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CLIENT.
JN CIVILS LIMITED

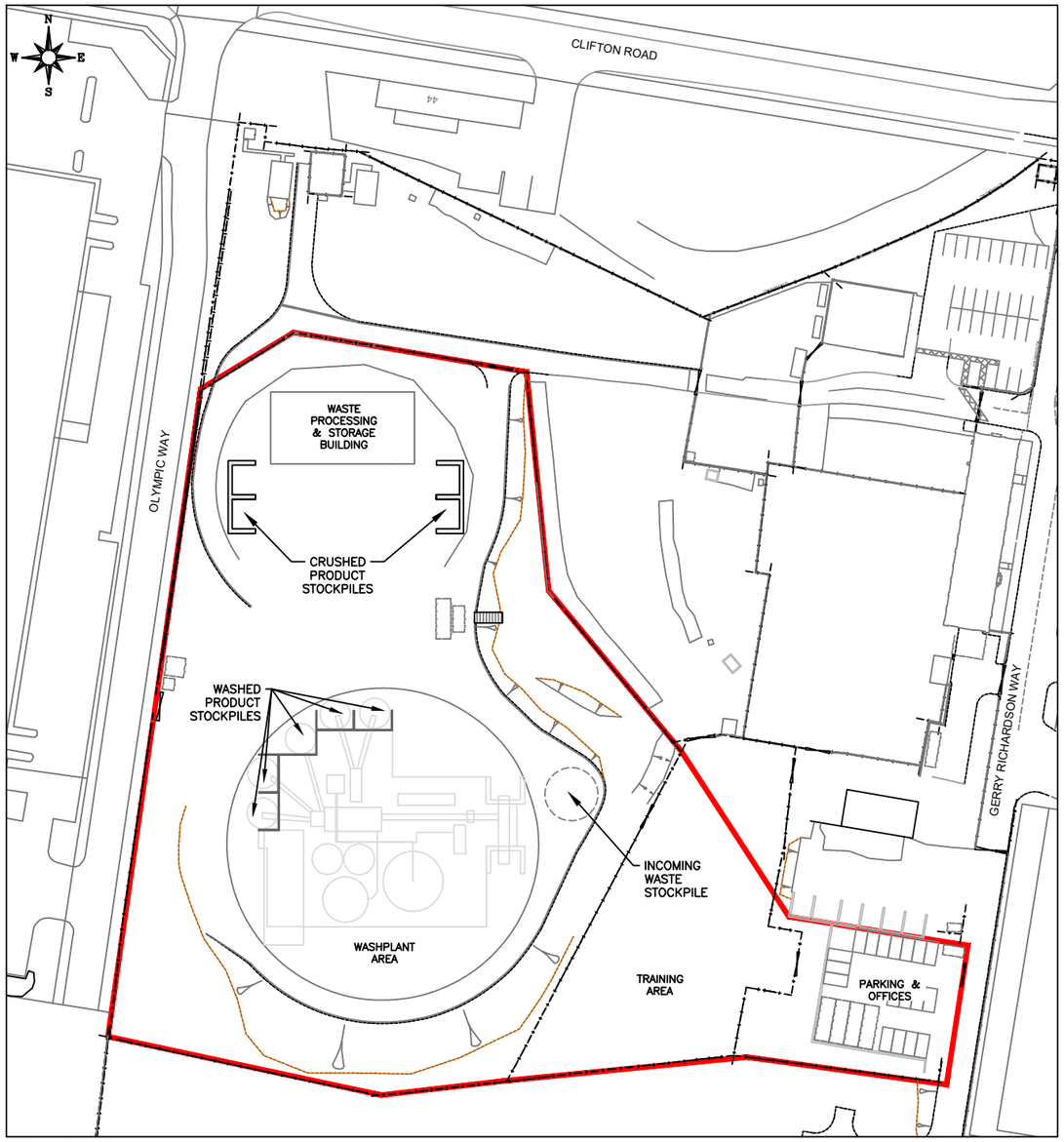
JOB TITLE.
AGGREGATE RECYCLING FACILITY
OLYMPIC WAY
BLACKPOOL

DRAWING TITLE.
WASH PLANT LAYOUT AND ELEVATIONS

REV.	DESCRIPTION	DATE	BY

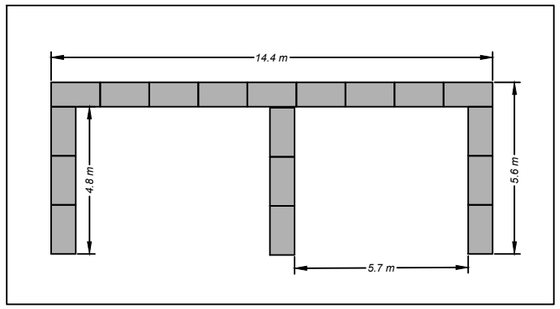
DRAWN BY. M.Y.B
APPROVED BY. C.G
DATE. 20/10/23
DRAWING No. 102/05
SCALE @ A2. AS SHOWN

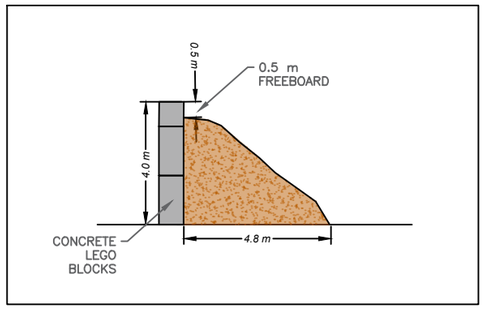
STOCKPILE LOCATION PLAN



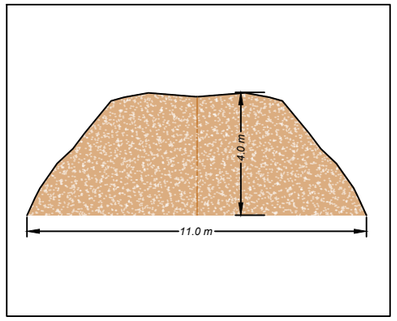
SCALE 1:1250

CRUSHED PRODUCT STOCKPILE & BAYS
(SCALE 1:200)

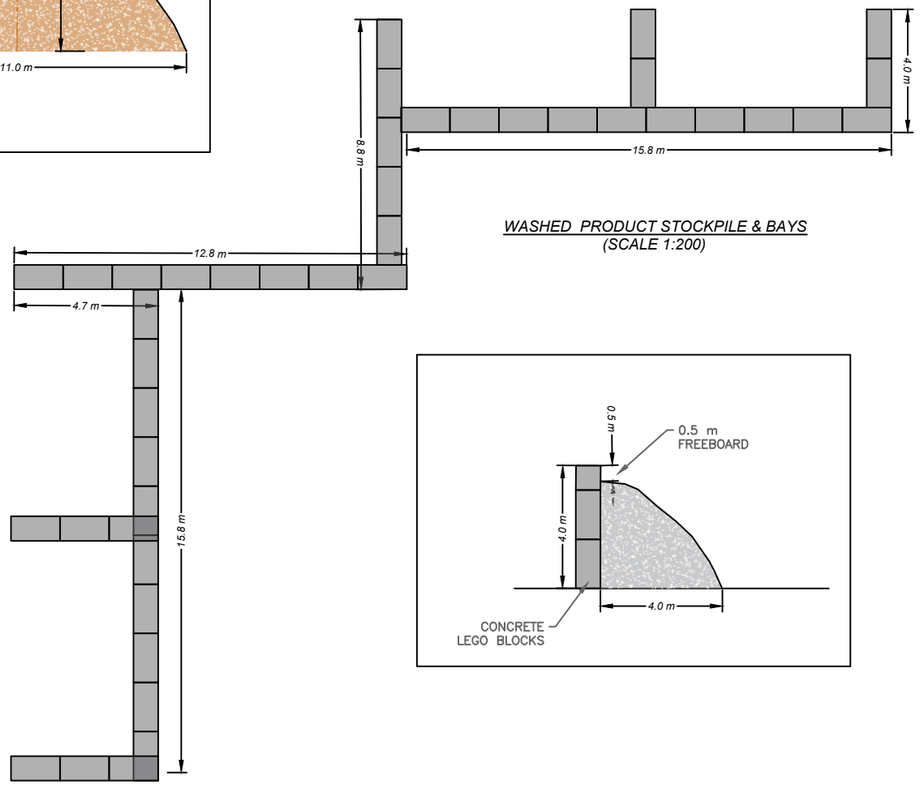




INCOMING WASTE STOCKPILE
(SCALE 1:200)



WASHED PRODUCT STOCKPILE & BAYS
(SCALE 1:200)



LEGEND

SITE BOUNDARY

FURTHER DETAILS: A WHITE PAINTED LINE WILL SHOW THE MAXIMUM HEIGHT FOR PRODUCT TO BE STORED SO THAT THERE IS ALWAYS A 0.3 M FREEBOARD FOR EACH STORAGE BAY.

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Tel: 07989 673122

CLIENT: JN CIVILS LIMITED

JOB TITLE: AGGREGATE RECYCLING FACILITY OLYMPIC WAY BLACKPOOL

DRAWING TITLE: STOCKPILE LOCATION & DETAIL PLAN

REV.	DESCRIPTION	DATE	BY

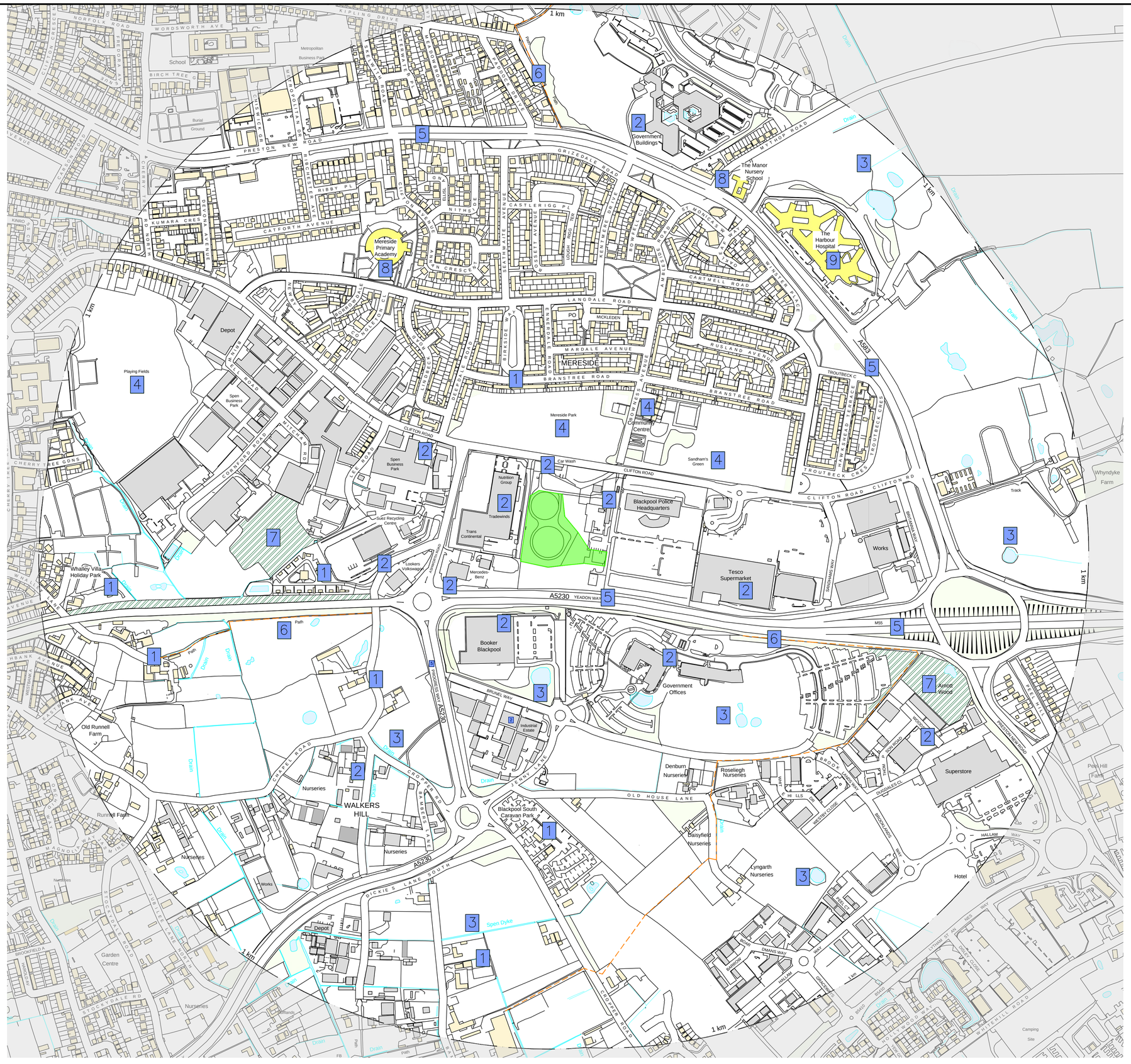
DRAWN BY: M.Y.B

APPROVED BY: C.G

DATE: 06/11/23

DRAWING No.: 102/10

SCALE @ A3.: AS SHOWN



LEGEND

- PERMIT AREA
- 1 KM RECEPTOR BOUNDARY
- FOOTPATHS
- RESIDENTIAL AREA
- INDUSTRIAL/COMMERCIAL AREA
- PRIORITY HABITAT
- WATERBODIES/WATERWAYS
- 1 RECEPTOR REFERENCE

PREVAILING WIND DIRECTION (FROM THE WEST)

REV.	DESCRIPTION	DATE	BY

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Greater Manchester, BL1 3AJ
www: starlingenvironmental.co.uk
email: claire@starlingenvironmental.co.uk
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CLIENT.

JN CIVILS LIMITED

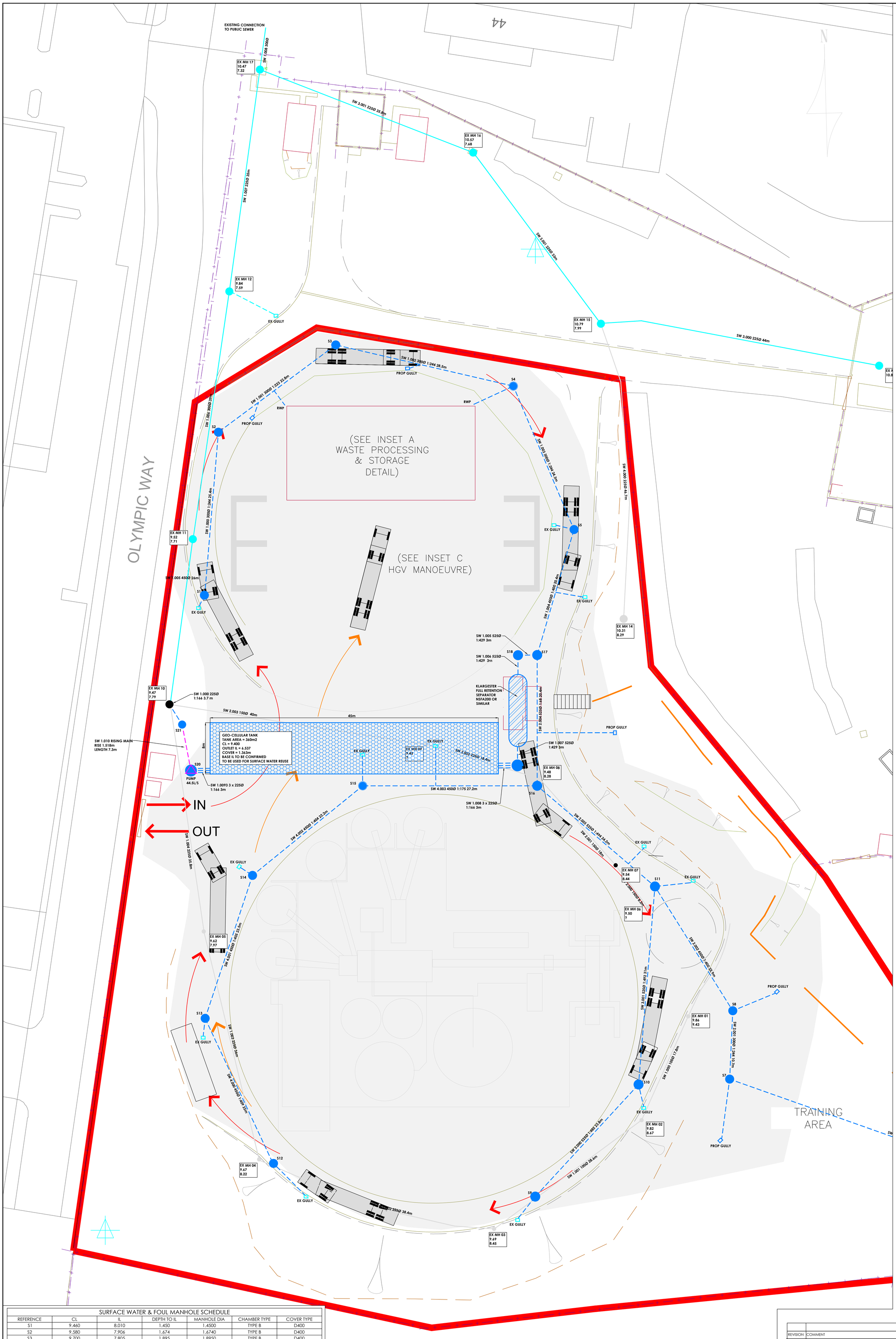
JOB TITLE.

AGGREGATE RECYCLING FACILITY
OLYMPIC WAY, BLACKPOOL

DRAWING TITLE.

RECEPTORS WITHIN 1 KM

DRAWN BY.	APPROVED BY.	DRAWING No.
M.Y.B	C.G	106/13
DATE. 18/05/24	SCALE @ A1. 1:4000	



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7. PROPOSED FINISHED LEVELS HAVE ONLY BEEN ASSUMED AND SHOULD BE FINALISED BY A CIVIL ENGINEER.
8. POSITION OF SOIL VENT PIPES & RAINWATER DOWN PIPES TO BE CONFIRMED BY THE ARCHITECT.

KEY

SW 1.000	PROPOSED SURFACE WATER DRAIN
EX SURFACE WATER	EXISTING PRIVATE SURFACE WATER SEWER
EX SURFACE WATER	EXISTING PRIVATE SURFACE WATER SEWER TO BE ABANDONED
SW 1.000	PROPOSED SURFACE WATER RISING MAIN
S1	PROPOSED SURFACE WATER MANHOLE
S1	EXISTING PRIVATE SURFACE WATER MANHOLE
EX MH	EXISTING PRIVATE SW MANHOLE TO BE ABANDONED
	FULL RETENTION SEPARATOR
PROP GULLY	PROPOSED GULLY
EX GULLY	EXISTING GULLY
PUMP	PUMPING STATION
	ATTENUATION TANK

PROPOSED LEVELS

COVER LEVELS HAVE BEEN BASED ON EXISTING LEVELS

SURFACE WATER ATTENUATION

GEO-CELLULAR TANK AREA = 360m2
CL = 9.400
OUTLET IL = 6.537
COVER = 1.363m
BASE IL TBC TO BE USED FOR SURFACE WATER REUSE.

CRATES TO BE SUITABLE FOR TRAFFICKED AREAS
SPECIFICATION TO BE PROVIDED BY CHOSEN MANUFACTURER

FLOW CONTROL

PUMP CHAMBER S20
DISCHARGE RATE = 44.5L/S
CHAMBER TO INCLUDE BACKUP PUMP AND HIGH LEVEL ALARM SYSTEM

PUMP SPECIFICATION TO BE PROVIDED BY CHOSEN MANUFACTURER

POLLUTION CONTROL

KLARGESTER NSFA200
FULL RETENTION SEPARATOR OR SIMILAR

PROPOSED DISCHARGE RATES

1 IN 1 YEAR = 44.5L/S
1 IN 30 YEAR = 44.5L/S
1 IN 100 YEAR + 50% CLIMATE CHANGE = 44.5L/S

SURFACE WATER & FOUL MANHOLE SCHEDULE

REFERENCE	CL	IL	DEPTH TO IL	MANHOLE DIA	CHAMBER TYPE	COVER TYPE
S1	9.460	8.010	1.450	1.4500	TYPE B	D400
S2	9.580	7.906	1.674	1.6740	TYPE B	D400
S3	9.700	7.805	1.895	1.8950	TYPE B	D400
S4	10.400	7.688	2.712	2.7120	TYPE B	D400
S5	9.700	7.438	2.262	2.2620	TYPE B	D400
S6	10.000	8.221	1.779	1.7790	TYPE B	D400
S7	10.000	7.989	2.011	2.0110	TYPE B	D400
S8	10.000	7.795	2.205	2.2050	TYPE B	D400
S9	9.500	7.775	1.725	1.7250	TYPE B	D400
S10	9.700	7.726	1.974	1.9740	TYPE B	D400
S11	9.500	7.663	1.837	1.8370	TYPE B	D400
S12	9.670	8.020	1.650	1.6500	TYPE B	D400
S13	9.630	7.958	1.672	1.6720	TYPE B	D400
S14	9.610	7.900	1.710	1.7100	TYPE B	D400
S15	9.500	7.845	1.655	1.6550	TYPE B	D400
S16	9.480	7.614	1.866	1.8660	TYPE B	D400
S17	9.600	7.312	2.288	2.2880	TYPE B	D400
S18	9.600	7.305	2.295	2.2950	TYPE B CATCH PIT	D400
SEP	9.450	7.298	2.152	2.1520	SEPARATOR	D400
S19	9.500	7.291	2.209	2.2090	TYPE B	D400
TANK	9.400	6.537	2.863	2.8630	GEO-CELL TANK	D400
S20	9.500	6.519	2.981	2.9810	TYPE B	D400
EXMH10	9.470	8.037	8.015	1.4630	TYPE B	D400

REVISION	COMMENT	DATE	BY

GEO-ENVIRONMENTAL CONSULTING

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Suite 1, No 3 Mitton Road Business Park, Mitton Road,
Whalley, Clitheroe BB7 9RX
TEL: 01254 377622

CLIENT:	JN CIVILS LTD
DATE:	14/12/2023
STATUS:	
PROJECT:	OLYMPIC WAY, BLACKPOOL
DRAWN BY:	CV
SCALE:	1:200
DRAWING TITLE:	PROPOSED DRAINAGE LAYOUT SHEET 1 OF 2
SIZE:	A0
DRAWING REFERENCE:	2023-065-02
REVISION:	

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- EX SURFACE WATER — EXISTING PRIVATE SURFACE WATER SEWER
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- ATTENUATION TANK

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OUTLET IL = 6.537
COVER = 1.363m
BASE IL TBC TO BE USED FOR SURFACE WATER REUSE.

CRATES TO BE SUITABLE FOR TRAFFICKED AREAS
SPECIFICATION TO BE PROVIDED BY CHOSEN MANUFACTURER

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PUMP CHAMBER S20
DISCHARGE RATE = 44.5L/S
CHAMBER TO INCLUDE BACKUP PUMP AND HIGH LEVEL ALARM SYSTEM

PUMP SPECIFICATION TO BE PROVIDED BY CHOSEN MANUFACTURER

POLLUTION CONTROL

KLARGESTER NSFA200
FULL RETENTION SEPARATOR OR SIMILAR

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SURFACE WATER & FOUL MANHOLE SCHEDULE

REFERENCE	CL	IL	DEPTH TO IL	MANHOLE DIA	CHAMBER TYPE	COVER TYPE
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S11	9.500	7.663	1.837	1.8370	TYPE B	D400
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EXMH10	9.470	8.037	8.015	1.4630	TYPE B	D400

REVISION	COMMENT	DATE	BY

GEO-ENVIRONMENTAL CONSULTING

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Suite 1, No 3 Mitton Road Business Park, Mitton Road, Whalley, Clitheroe BB7 9RX
TEL: 01254 377622

CLIENT: JN CIVILS LTD
DATE: 14/12/2023
STATUS:
PROJECT: OLYMPIC WAY, BLACKPOOL
DRAWN BY: CV
SCALE: 1:200
DRAWING TITLE: PROPOSED DRAINAGE LAYOUT SHEET 2 OF 2
SIZE: A0
DRAWING REFERENCE: 2023-065-03
REVISION:

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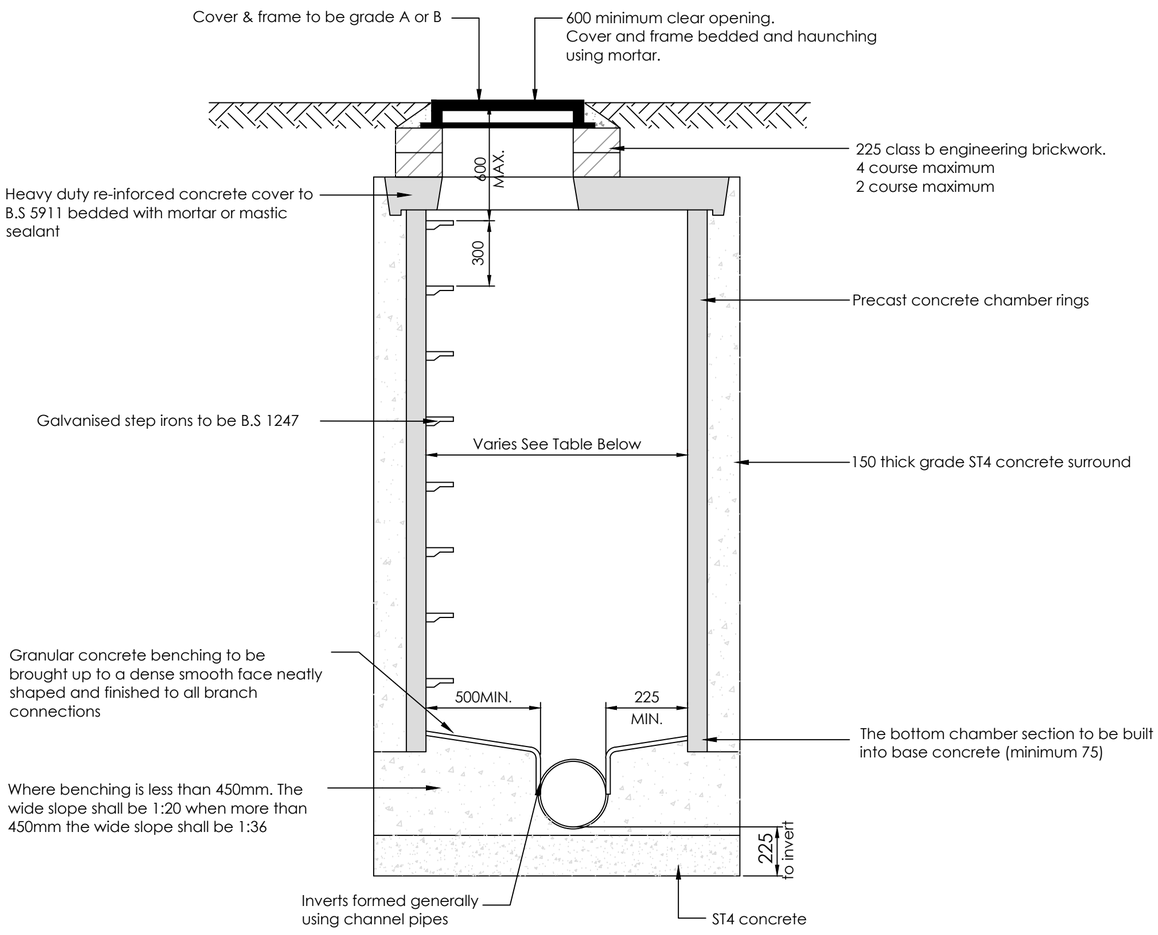
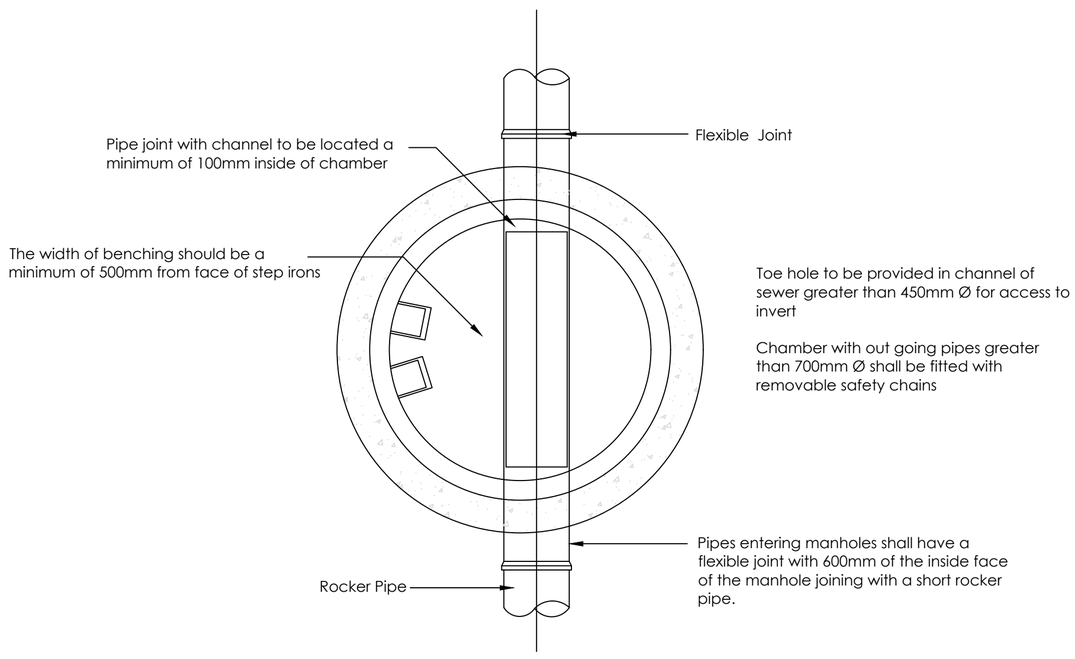


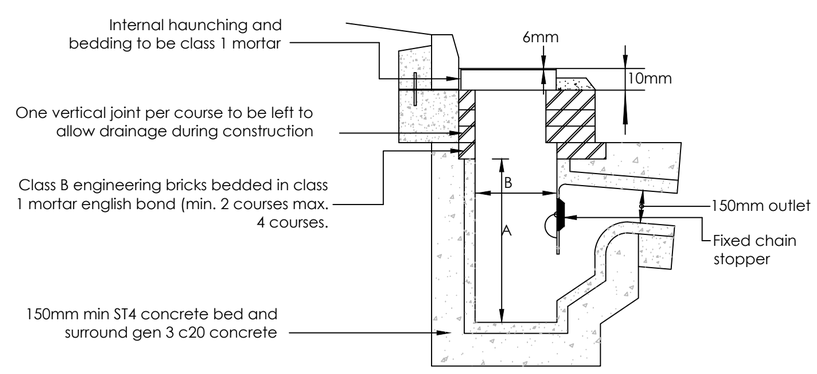
Typical Manhole Detail - Type B
Scale 1:20

(1.35m - 3m Deep with Step Irons)



Notes:
Double width step rungs to be Type D Class 1 complying to BS EN 13101:2002 spaced at 250mm centers, cast in vertical alignment.

Manhole covers shall/must have a clear opening of 600mm and shall be Class D400 to BS EN 124 with 150mm deep frames in highways.



Gully grated to be BS EN 124 class 250.

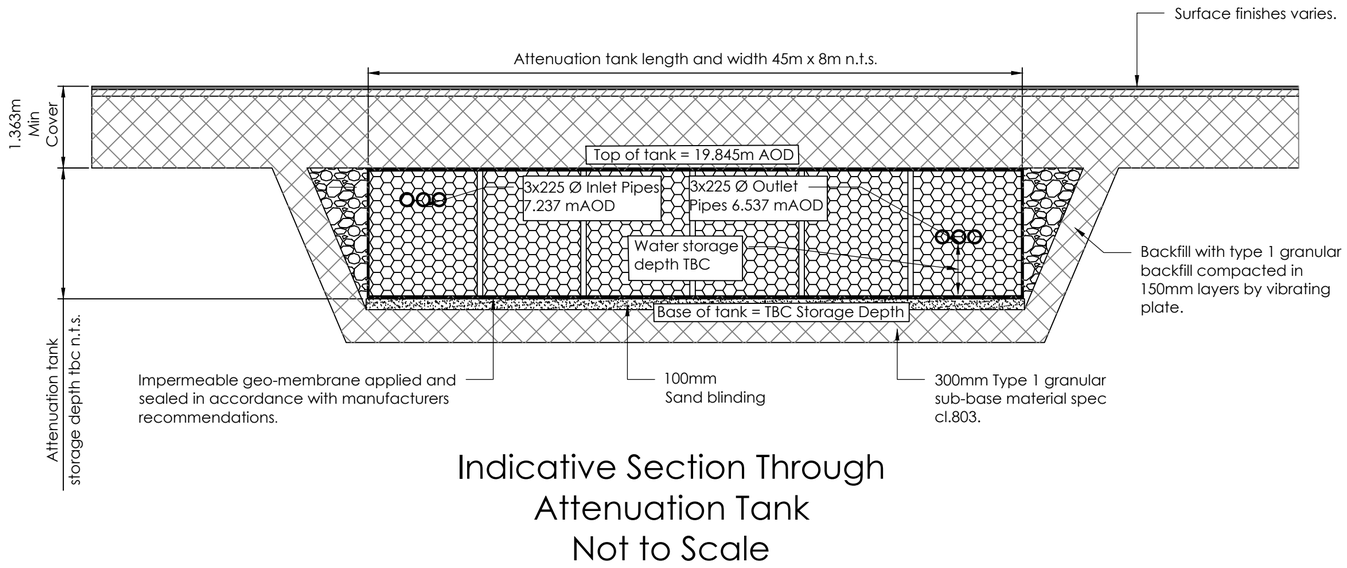
Ductile iron with captive hinge size 325 x 312mm clear opening.

Pedestrian friendly mesh type gravel to be fitted in shared access ways.

Gully Dimensions:
A = 750mm B = 375mm

Trapping p.conc gully pot to BS 5911 PA4-2

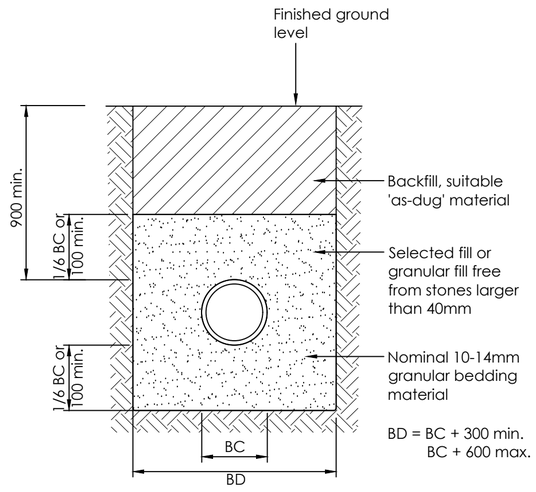
Pre-Cast Concrete Road Gully (1:20)



Indicative Section Through Attenuation Tank
Not to Scale

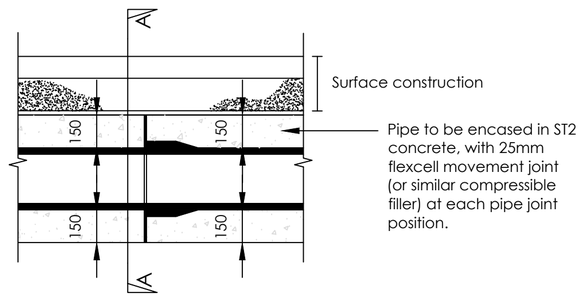
Installation Method:

- Specialist supplier to prepare and submit appropriate layouts, schedules and details to enable fully compliant installation of geo-cellular units
- Excavate
- Install sub-base
- Install impermeable geomembrane (in accordance with manufacturers recommendations)
- Install crate units + connections (in accordance with manufacturers recommendations)
- Install inspection chambers as required
- Install crate end plates
- Cover sides & top with geotextile membrane (note: care taken not to rip, tear or puncture membrane
- Seal membrane
- Lateral backfilling
- Cover & backfill



Typical Trench Detail
Scale 1:10

NOTE: To be used where cover depth:
- >0.6m fields & gardens
- >0.9m lightly trafficked areas e.g. light roads & drives



Joints for Concrete Encased Pipes
Scale 1:10

Minimum Recommended Trench Widths for Structured Wall Pipes in Poor Ground Conditions.

Native soil modulus between 3 & 4 MPA
Typical soil Classifications: Very loose gravel, loose sand, medium dense clayey silty sand, firm clay

Nominal pipe diameter (mm)	150	225	300	375	450	525	600	750	900
Minimum trench width (mm)*	450	525	600	750	900	1050	1200	1500	1800

* A vertical trench face has been assumed to allow a modulus of 7MPA to be achieved for the pipe bedding and sidefill material.

Other assumed values:
Depth of cover = 6m (max)
Traffic loading = main road
Pipe stiffness = SNB

Note: Where the native soil modulus is below 3MPA or the depth of cover exceeds 6m, guidance should be sought from the pipe manufacturer regarding structural design and installation details.

Extract from Table A2 WIS 4-08-02

Processed granular bedding & sidefill materials for flexible pipes

Pipe nominal bore (mm) (see note D)	Nominal Maximum particle size (mm)	Materials specified in British Standards (see note A)
100	10	10mm nominal single size
Over 100 to 150	15	10 or 14mm nominal single size or 14mm to 5mm graded
Over 150 to 300	20	10-14mm or 20mm nominal single size or 14-5mm graded or 20-5mm graded
Over 300 to 500	20	14 or 20mm nominal single size or 14-5mm graded or 20-5mm graded
Over 500	40	14 or 20mm or 40mm nominal single size or 14-5mm graded or 20-5mm graded or 40-5mm graded

Notes:
A. Processed granular materials to include aggregates and air cooled blast furnace slag to BS EN 12620:220 + A1:2008; and lightweight aggregates to BS EN 13101:2002.
B. -
C. For the purpose of this table, PE pipe of 630mm OD can be regarded as having nominal bores of over 550mm, irrespective of wall thickness.
D. Nominal bore is used in preference to DN because of the different nominal size classifications for flexible pipes.

SURFACE WATER ATTENUATION

GEO-CELLULAR TANK AREA = 360m2
CL = 9.400
OUTLET IL = 6.537
COVER = 1.363m
BASE IL TBC TO BE USED FOR SURFACE WATER REUSE.

CRATES TO BE SUITABLE FOR TRAFFICKED AREAS
SPECIFICATION TO BE PROVIDED BY CHOSEN MANUFACTURER

FLOW CONTROL

PUMP CHAMBER S20
DISCHARGE RATE = 44.5L/S
CHAMBER TO INCLUDE BACKUP PUMP AND HIGH LEVEL ALARM SYSTEM

PUMP SPECIFICATION TO BE PROVIDED BY CHOSEN MANUFACTURER

POLLUTION CONTROL

KLARGESTER NSFA200
FULL RETENTION SEPARATOR OR SIMILAR

REVISION	COMMENT	DATE	BY

GEO-ENVIRONMENTAL CONSULTING

BEK ENVIRONMENTAL CONSULTING ENGINEERS LTD
Suite 1, No 3 Mitton Road Business Park, Mitton Road, Whalley, Clitheroe BB7 9RX
TEL: 01254 377622

CLIENT: JN CIVILS LTD	DATE: 14/12/2023
	STATUS:
PROJECT: OLYMPIC WAY, BLACKPOOL	DRAWN BY: CV
	SCALE: AS SHOWN
DRAWING TITLE: TYPICAL DRAINAGE DETAILS	SIZE: A0
DRAWING REFERENCE: 2023-065-04	REVISION:

APPENDIX B

Wash Plant Monitoring Plan

1.0 GENERAL

This monitoring plan is in place to achieve the following goals:

- Characterise the washwater and filtercake
- Build up a picture of variation
- Establish if contaminants are becoming concentrated

Monitoring will be carried out by trained, competent personnel.

2.0 WASHWATER MONITORING

2.1 Sampling Location

Samples of wash water will be taken from the point where it weirs over the lip of the settlement tank.

2.2 Sampling Procedure

Samples will be collected from the sample point by holding a sampling bottle directly under the flow of water. Sample bottles are filled in compliance with the instructions provided by appropriate UKAS accredited laboratory. Any preservatives required for particular samples are pre-filled in the bottle by the laboratory.

Bottle labels are filled in to include the site name, date, monitoring point or location reference. A chain of custody is completed for the sample.

Once collected, samples are placed in a cool box containing freezer blocks to keep them at a consistent temperature. They are then taken to an appropriate UKAS accredited laboratory.

Samples are tracked from site and through the laboratory process using a chain of custody form, this is included when the samples are sent to the laboratory. This typically includes information regarding the sample number, type, date, time of sampling and the analyses to be performed.

2.3 Analytical Parameters

Wash water samples will be analysed for the following suite:

pH
Electrical Conductivity
Dissolved Organic Carbon
Metals (As, Cd, Cu, Cr, Pb, Ni, Sn & Zn)
Total TPH
Total PAHs

3.0 FILTERCAKE MONITORING

3.1 Sampling Location

Samples of filtercake will be taken from below the filter plant housing, where filtercake is dropped and stored.

3.2 Sampling Procedure

Samples will be collected by scooping the filtercake into containers provided by the laboratory.

Samples will be labelled, stored and submitted to an accredited laboratory for testing as described in section 2.2 above.

3.3 Analytical Parameters

Filtercake samples will be analysed for the following suite:

pH
Total Organic Carbon
Metals (As, Cd, Cu, Cr, Pb, Ni, Sn & Zn)
Total TPH
Total PAHs

4.0 SAMPLING FREQUENCY, DATA RECORDING AND REVIEW

It is proposed to take monthly samples for the first six months and then the frequency will be reviewed.

When results are received from the laboratory they will be reviewed by the Technical Advisor, filed securely and logged onto a master spreadsheet.

After six months of data collection a report will be produced on the characterisation and variability of the washwater and filtercake and the monitoring plan will be reviewed.

If contaminants are observed to be building up then an action plan will be proposed to reduce contaminants to an acceptable level.

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