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Report No 17832/4A

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ENVIRONMENTAL SETTING AND SITE DESIGN for THE OUSEBURN TRIANGLE, SHEFFIELD

Prepared for

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Sheffield
S4 8DT

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1. INTRODUCTION

1.1 Report Context

1.1.1 The Arley Consulting Company Limited (TACCL) has been commissioned by The Ouseburn Triangle Limited (TOTL), the operator of the proposed site, to prepare an environmental setting and site design (ESSD) report to support a deposit for recovery permit application for land at the 'Ouseburn Triangle'(also known as 'Nunnery Triangle' or 'Darnall Triangle'), Sheffield.

1.1.2 The site is located approximately 2 kilometres to the east of Sheffield City Centre and comprises an area of waste ground with a disused railway cutting along the eastern boundary of the site.

1.1.3 Outline planning permission was granted by Sheffield City Council (SCC) in December 2017 for the erection of 100 homes requiring the infilling of the existing railway cutting, provision of new access, creation of public open space and the establishment of an ecological and geological enhancement area.

1.1.4 As part of the development the eastern cutting will be infilled to enable the construction work. It is proposed to use inert construction, demolition and excavation waste as a direct substitute for primary aggregates.

1.1.5 A Waste Recovery Plan[1] (WRP) was submitted to the Environment Agency (EA) in December 2017 as pre-application to a bespoke permit application. The EA accepted that the proposed activity was 'recovery' in an email dated 19 January 2018.

1.1.6 The ESSD report has been prepared in accordance with current EA guidance, specifically *Template: Conceptual Site Model, Environmental Setting and Site Design Report*, dated 14 October 2016.

[1] TACCL, December 2017, Waste Recovery Plan for The Ouseburn Triangle, Sheffield (Report Ref 17832/01)

2. SITE DETAILS

2.1 Site Location and Access

2.1.1 Ouseburn Triangle covers an area of approximately 4.9 hectares and is located approximately 2 kilometres to the east of Sheffield City Centre, and 500 metres to the south-east of Attercliffe district centre on Attercliffe Road.

2.1.2 The approximate National Grid Reference for the centre of the site is SK 38120 87980. The site location is shown on Drawing No 17832/01 presented in Appendix F.

2.1.3 The site is accessed from Kettlebridge Road close to its junction with Ouseburn Road at National Grid Reference SK 38342 87953.

2.1.4 The site is roughly triangular in shape and bordered to the east by residential properties along Hurworth Crescent and Ouseburn Road and Ouse Road Allotments, and to the south and west by active railway lines.

2.2 Site Classification

2.2.1 It is proposed to use suitable construction, demolition and excavation waste in order to achieve the topography required for the development in accordance with the WRP already approved by the EA.

2.2.2 Under the Environmental Permitting Regulations 2010 and supporting EA guidance, this activity should be regulated under a bespoke deposit-for-recovery environmental permit.

2.3 Application Boundaries and Site Security

2.3.1 The application boundary is shown in green on the site layout plan, which is presented in Appendix F as Drawing No 17832/02A.

2.3.2 The eastern boundary is defined by a retaining wall and wooden fence structure adjacent to residential properties. The boundary adjacent to the Ouse Road Allotments is formed by a chain link fence.

2.3.3 The southern boundary is sloped with wooded areas with a palisade fence defining the extent of the site.

2.3.4 The western boundary is fenced with continuous palisade fencing adjacent to the railway line.

2.3.5 There is a disused bailey-type bridge at approximate grid reference SK 38188 87918, which historically connected the industrial works to the rail network. This is access point is now closed off by the southern boundary palisade fence. A lockable foot-gate is located in the section of the fence.

2.4 Adjacent Waste Management Activities

2.4.1 Based on information extracted from the EA Public Register online database[2], it can be confirmed that there are no relevant, adjacent former waste management activities.

2.4.2 There are several exemptions registered within 1km of the site, including a U1 registered to MHH Contracting Limited at the application site. This exemption has been used to facilitate access to allow site investigation works carried out as part of the planning application.

2.4.3 The closest permitted waste activity is regulated under a metal recycling permit issued to Mr T Lewis & Mr P Stevenson, permit number UP3798ZW, which is approximately 250 metres to the south-east of the site boundary.

2.4.4 The permitted waste management activities within 1 kilometre of the site, as recorded on the EA public register online database are summarised in Table 1 below.

Permit No	Permit Type	Operator	Approximate distance from site
CB3306FS	Soil treatment	O'Connor Utilities Limited	750 m
UP3798ZW	Metal recycling	Mr T Lewis & Mr P Stevenson	250 m
HB3233AY	Composting	The Green Estate Ltd	850 m
UP3198ZU	Transfer station	Richard Fletcher (Metals) Ltd	850 m

Table 1: Permitted Waste Activities Within 1 km of the Site (based on postcode S9 3AJ)

2.5 Site Context

Topography

2.5.1 The topography of the site has been established by surveying, a copy of which is presented in the Appendix F of the Waste Recovery Plan[1].

[2] EA, Public Register online database, available at https://environment.data.gov.uk/public-register/view/search-all (accessed 9.3.2018)

2.5.2 The highest level recorded at the site is 76.9 mAOD, which is recorded to the south of a plateau area at the centre of the site. The eastern boundary is recorded at around 69 mAOD at the southern end, close to the site access point, 73 mAOD to the centre, and 66 mAOD at it most northerly point. The western boundary slopes from the centre of the site to a lower topography, ranging from 61 mAOD at the most northerly point to 66 mAOD in the southwestern corner. The southern boundary slopes towards the fence line from the high point of 76 mAOD to 68 – 69 mAOD along the boundary line.

2.5.3 There is a significant rail cutting running parallel for most of the length of the eastern boundary. The lowest point in the cutting is recorded around 60 mAOD at its most northern point.

2.5.4 A second smaller 'cutting' runs broadly along the southern boundary to a low point of around 68 mAOD at the eastern end.

2.5.5 The site is mostly scrubland with some cliff exposures of bedrock. Some recent earthworks have been completed to facilitate site investigation work.

Local environmental receptors

2.5.6 The area around the site is urban in character and includes residential, commercial and industrial, and sports recreational uses, along with allotments and a large animal shelter.

2.5.7 The site comprises a Local Wildlife Site, known as the Nunnery Triangle, which will be partially retained and enhanced in a designated area to the south of the site.

2.5.8 The closest residential properties are located on Hurworth Crescent adjacent to the eastern site boundary. The residential area extends throughout most of the north east quadrant beyond the site boundary.

2.5.9 The residential area to the east includes a secondary school, the Al-Huda Academy, around 120 metres to the east. In addition, several restaurants and shops are located on Staniforth Road, approximately 100 metres to the north-east.

2.5.10 The area to the south of the site is generally industrial in character and includes a variety of industrial, manufacturing and commercial activities. Most prominently, Parkway Works, which consists of several industrial units, and William Cook Cast Products, a cast metal producer, are both located within 100 metres of the southern boundary.

2.5.11 Land-use to the west of the site is mixed and includes several different activities.

2.5.12 Sheffield Hallam University Athletics Centre and Powerleague, which provides football facilities, are located approximately 70 metres from the western boundary.

2.5.13 The RSPCA Sheffield Animal Shelter is located approximately 110 metres to the west of the site. The Centre provides animal housing, veterinary facilities and allows limited public access.

2.5.14 The nearest surface water feature is a pond located approximately 115 metres to the east of the site.

2.5.15 The closest watercourse is the Kirk Bridge Dike approximately 400 metres to the east of the site. The Kirk Bridge Dike is a tributary of the River Don, with main river course some 750 metres to the north east. The Sheffield and Tinsley Canal is approximately 350 metres to the north.

2.5.16 Kettlebridge 'Doorstep Green' is approximately 30 metres from the south-east corner of the site and Ouseburn Road 'Local Open Space' is approximately 45 metres to the north-east. These are community greenspace and recreation areas.

2.5.17 Approximately 300 metres to the north of the site boundary there is an area designated within the Priority Habitat Inventory (England) as 'Deciduous Woodland', part of which is also identified for 'Woodland Improvement' under habitat-related Country Stewardship targets. This area is to the north of the Sheffield Council Depot and incorporates the banks of the canal.

2.5.18 There are no nature protection zones within 500 metres of the site.

2.5.19 A summary of land uses and likely environmental receptors is presented in Table 2.

Receptor	Direction from Site	Distance from Site (m)
Domestic Dwellings		
Properties on Hurworth Crescent	E	adjacent
Properties on Ouse Rd, Nidd Rd, Ouseburn St	NE	40
Properties on Ouseburn Rd, Spofforth Rd, Myton Rd	ENE	adjacent
Industrial/Commercial Premises		
European Tyres Direct Limited, Ouse Rd	NE	85
Units to the West on Broad Oaks, Jessell St & Cottingham St	W	35
Units to the South on Parkway Ave, Kettlebridge Rd & Parkway Drive	S	45
Sheffield Council Depot	N	195
Restaurants on Staniforth Road	N/NE	100 (closest)
Convenience Stores on Staniforth Road	N/NE	120 (closest)
RSPCA Sheffield animal shelter	W	110
Public Amenity		
Ouse Road allotments	NE	adjacent
Ouseburn Road Local Open Space	NE	45
Kettlebridge Doorstep Green	E	30
Sheffield Hallam University Athletics Centre	W	200
Powerleague (football facilities)	W	60
Secondary School (Al-Huda Academy)	E	120
Noor al Hadi Mosque	NNW	125
Elahi Jame Masjid & Cultural Centre	NW	>250
Pakistan Muslim Centre	W	210
Grade II Listed		
Kettlebridge Nursery First School (now Al-Huda Academy)	NE	135
Caretakers House & Gateways at Kettlebridge Nursery First School	NE	125
Railings & Gates at Kettlebridge Nursery First School	NE	85
Highway or Minor Road		
B6200 Staniforth Road	NNW - NE	80
Ouse Rd, Nidd Rd & Closes	NE	28
Ouseburn Rd, Ribston Rd & Closes	ENE	Adjacent to entrance
Swarcliffe Rd	NNE	120
Broad Oaks, Stadium Way, Essell St, Cottingham St & Woodbourn Rd	W	46
Parkway Ave, Ketteridge Rd & Parkway Drive	S	40
Railways		
Sheffield to Rotherham Line	W	<10
Sheffield to Worksop Line	S	<10
Controlled Waters		
Pond (associated with Hydroponics business)	E	130
Geological Receptors		
Geological Features on site	-	-
Ecological Receptors		
Nunnery Triangle (Local Wildlife Site)	-	-

Table 2: Land Uses and Environmental Receptors within 250 metres of the Site

3. HISTORICAL DEVELOPMENT

3.1 Historical Site Development

Historical Land Use	Time of operation
Coal Pit	pre-1855to 1893
Railway Lines	Pre-1893 – 1993
Clay Pit/Kiln	1893-1905
Allotment Gardens	1903-1935
Well	1903-1935
Electrical Transformer House	Pre-1956 -1993
Electricity Sub-station	Pre-1986 – Present

Table 3: Historical Activities that have Occurred on-site Prior to the Development

3.1.1 Eastwood & Partners were commissioned, on behalf of TOTL, to carry out a Phase I Geotechnical and Geo-environmental Site Investigation[3] at the site. The key points established in that report in relation to the historic development of the site are summarised in the following paragraphs. The Phase I report is appended to the WRP.

3.1.2 The earliest available records show the site to comprise predominantly of fields in 1855. An 'old coal pit' is identified at the northernmost point of the site, but this does not appear on the next available map in 1893. The railway line to the south of the site is present at this time.

3.1.3 The 'Darnall Curve', which is the now disused railway cutting on the site running broadly parallel with the eastern site boundary, had been constructed by 1893. The railway line to the west of the site had also been constructed by this point. A clay pit is recorded crossing the north tip of the site with an adjacent 'kiln' beyond the site boundary; these features are no longer shown by 1905. Rough grassland and heath is recorded in the centre of the site.

3.1.4 In 1903 and 1906 maps show allotment gardens and a well in the centre of the site, and a small pond on northern part of NE boundary. By 1935, the centre of site had returned to rough ground or heath, with no allotments or wells shown on the map.

[3] Eastwood & Partners, November 2016, Phase 1 Geotechnical and Geo-environmental Site Investigation, Darnall Triangle, Off Ouseburn Road, Sheffield (Report Ref 39966-001)

3.1.5 The development of several buildings had occurred by 1923 buildings constructed in the northern part of the north-east boundary. These buildings had been removed by 1948.

3.1.6 By 1956 embankments are shown in the centre of the site and an additional railway siding had been developed in the south part of the site within a cutting. A transformer house had also been constructed in the south east corner of the site. The transformer house appears to have been removed by 1993.

3.1.7 The 1981 map shows further embankments features in the centre of the site, and by 1986 an electricity substation has been constructed to the north of the cutting in the south east corner of the site. By 1993, the north-eastern and the southern railway lines within the site boundary are no longer shown.

3.1.8 The site remains broadly unchanged to present day.

3.2 Development of the Surrounding Area

3.2.1 A description of the historical development of the area surrounding the site was included in the Eastwood & Partners Report[3]. The key features are summarised in the following paragraphs.

3.2.2 The earliest railway line constructed appears to be the line to south of the site boundary, which is present on the 1855 map. The western railway line appears on the 1894 map, along with a Railway Carriage Works approximately 400 metres to the east. Railway sidings appear to have been developed around 250 metres to the west by 1906. By 1956, the lines to the immediate southeast of the site have expanded to include several sidings and ancillary structures.

3.2.3 Kirk Bridge Dike is shown 350 metres to the east of the site, although this watercourse is not present in any form on the 1968 map and assumed to have been culverted.

3.2.4 The 'Sheffield Canal', which is now referred to as 'Sheffield and Tinsley Canal', can be seen on the 1855 map, and was originally constructed in the early 1800s. The canal is approximately 350 metres to the north of site.

3.2.5 Historic maps show coal mining activity from 1855, the earliest available map. These records show several coal pits and an old shaft approximately 100 to 300 metres north of the site.

3.2.6 By 1894, the Nunnery Colliery had been established approximately 250 metres to the south-west of the site. The colliery was developed over the following years and by 1906 the operation was within around 25 metres of the south western corner.

3.2.7 The Nunnery Colliery was recorded as disused by 1968 and extensive spoil heaps were recorded from approximately 100 metres to the south of the site. A foundry had been constructed on the colliery site by 1981, along with several other industrial units.

3.2.8 The 1894 map shows a brick works present approximately 150 metres to the north of the site. Associated pits and embankments are shown on subsequent maps up to 1924.

3.2.9 Kettlebridge Brick Works and associated pits are present close to the south eastern corner of the site, on the 1905 map. However, by 1923 this area had been developed as housing.

3.2.10 An increase in residential development is recorded on the 1906 map, most significantly in areas immediately to the north-west and north-east of the site. By 1924, areas adjacent to the western and eastern boundaries are completely residential.

3.2.11 The 1987 map shows that most of the housing to the north-west and some to the north-east had been removed. By 1993 an athletics centre had been developed to the north-west and it is still present approximately 150 metres to from the site.

3.2.12 Today, the surrounding areas can be broadly characterised as residential to the north and north east, industrial and commercial to the south and north-west. Active railway lines run adjacent to the southern and north western site boundaries. Sport facilities, including an athletics stadium can be found 150 metres to the north-west and allotments along the northern part of the north eastern boundary.

4. PROPOSED DEVELOPMENT

4.1 Waste Activity

4.1.1 It is proposed to import inert wastes in order to infill the disused railway cuttings to allow the construction of 100 residential dwellings in accordance with outline planning permission issued in December 2017.

4.1.2 The scheme requires the infill of the disused railway cutting that runs adjacent to the eastern site boundary. It is proposed that this activity will be completed under an environmental permit for the deposit of waste for recovery.

4.2 Waste Types

4.2.1 The proposed waste types are those identified in current EA guidance for the acceptance of waste for recovery on land[4], and are those acceptable without testing other than for classification purposes. These waste types are presented in Table 4.

4.2.2 The proposed waste types have been chosen as very low risk waste types to minimise the environmental risks and to ensure their recovery causes no detriment to the site and surrounding areas.

4.3 Waste Volumes

4.3.1 The proposed volume of waste to be recovered is 73,321 m^3, or 132,000 tonnes based on a conversion rate of 1.8 g/cm^3. The justification for this volume is set out in the approved Waste Recovery Plan[1].

4.3.2 Waste input rates will be dependent on the availability of suitable materials and the progressive development of the site. Therefore, it is proposed to set an annual limit of 132,000 tonnes, in order to maintain market flexibility and ensure the efficient completion of the site.

[4] EA, Waste acceptance procedures for waste recovery on land, available at https://www.gov.uk/guidance/waste-acceptance-procedures-for-waste-recovery-on-land (assessed 03.04.2018)

WASTE CODE	DESCRIPTION
01 01	**Waste from mineral excavation**
01 01 02	Waste from non metalliferous excavation
01 04	**Waste from physical and chemical processing of non-metalliferous minerals**
01 04 08	Waste gravel and crushed rocks other than those containing dangerous substances
01 04 09	Waste sand and clays
10 12	**Waste from manufacture of ceramic goods, bricks, tiles and construction products**
10 12 08	Waste ceramics, bricks, tiles and construction products (after thermal processing)
17 01	**Concrete, bricks, tiles and ceramics**
17 01 01	Concrete
17 01 02	Bricks
17 01 03	Tiles and ceramics
17 01 07	Mixtures of concrete, bricks, tiles and ceramics
17 05	**Soil (excluding excavated soil from contaminated sites), stones and dredging spoil**
17 05 04	Soil and stones
19 12	**Waste from mechanically treating waste (for example sorting, crushing, compacting, pelletising) not otherwise specified**
19 12 09	Minerals (for example, sand, stones)
20 02	*Garden and park waste (including cemetery waste)*
20 02 02	Soil and stones

Table 4: Proposed Waste Types

4.4 Hydrogeological Risk Screening

4.4.1 The waste types accepted will be restricted to uncontaminated inert waste. They will not give rise to the discharge of hazardous substances or non–hazardous pollutants; therefore no further risk screening is required.

4.5 Final Landform and After-use

4.5.1 The final landform is set out on LLW Engineering Precision Ltd Drawing No 002, which is available in the appendices of the WRP[1] along with several cross sections.

4.5.2 The completed waste recovery site will become a residential area as part of the development scheme authorised in the December 2017 planning permission. This scheme includes 100 hundred dwellings and associated infrastructure.

5. PATHWAYS AND RECEPTORS

5.1 Climate

5.1.1 Climatological data is available from a number of sources including the Met Office.

5.1.2 Information relating to wind speeds and direction for the meteorological station at Robin Hood Airport, approximately 30 kilometres north-east of the site, were obtained by SLR Consulting Limited as part of the Air Quality Risk Assessment[5], which is appended to the Environmental Risk Assessment (Report No 17832/03). The wind rose data is presented in Appendix A of this report.

5.1.3 Long term average weather data has been obtained from the Met Office for the Sheffield Cdl weather station. From this information it can be seen that the mean annual rainfall for the climate period 1981 – 2010 is 834.6 mm, and the average number of days with >1mm rainfall is 131.6. This information is presented in Appendix A.

5.2 Geology

5.2.1 Online BGS data shows that superficial drift strata are absent beneath the site with solid strata comprising sandstone, siltstone and mudstone of the Pennine Middle Coal Measures.

5.2.2 According to BGS maps for the area the strata beneath the site are indicated to dip between 4° and 7° to the north-east.

5.2.3 SLR Consulting Ltd has completed a Geology and Geo-Conservation Report[6] at the site in response to requirements raised within pre-application advice provided by SCC. This report is available in Appendix D.

5.2.4 The site is registered as a Regionally Important Geological Site (Ref RIGS 300 & 301) which is a non-statutory designation that aims to recognise and protect important earth science and landscape features.

5.2.5 The SLR report recommends a number of actions in order to preserve some of the geological features of the site and these will be addressed as matters under the planning regime.

[5] SLR Consulting Limited, November 2016, Air Quality Assessment (Report ref SLR 410.06579.00001)
[6] SLR Consulting Ltd, November 2016, Geology and Geo-Conservation Report (Report Ref 416.06618.00001 V1)

5.3 Hydrology

5.3.1 The nearest surface water feature is a pond located approximately 115 metres to the east of the site. Kirk Bridge Dike is believed to be culverted and can be found approximately 400 metres to the east. The Kirk Bridge Dike is a tributary of the River Don, with main river course some 750 metres to the north east. The Sheffield and Tinsley Canal is approximately 350 metres to the north.

5.3.2 Online EA data, accessed through the Catch Data Explorer[7] described the River Don, specifically the 'Don from River Loxley confl to River Don Works', as 'heavily modified'. The water quality is reported as 'poor' based on 2016 data, the most recently available monitoring cycle results.

5.3.3 There are no surface water features within the site boundary. A well was recorded on the 1855 map; however this was no longer present by 1935. The historic well was not located within the railway cutting, which is the proposed area of waste deposit.

5.3.4 A combined sewer is located to the east of the site within Ouseburn Road, but no existing sewers or drains have been identified within the site itself.

5.4 Flood Risk

5.4.1 The site is not at risk from flooding from rivers or the sea. However the site is located in an area with limited potential for groundwater and surface water flooding. A flood risk assessment has been produced by EWE Associates Limited (Report Ref 2016/2057 Rev A, dated January 2017). This was submitted with the planning application and is available within the appendices of the WRP.

5.5 Hydrogeology

5.5.1 The proposed waste deposit will be above the water table and there are no proposed discharges to surface water.

5.5.2 The site is not located within a groundwater source protection zone.

5.5.3 The underlying Coal Measures strata are defined as a Secondary A aquifer by the EA. A 'Secondary A' aquifer is described by the EA as consisting of '*permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers*'.

[7] EA, Catchment Data Explorer for Don from River Loxley confl to River Don Works, available at http://environment.data.gov.uk/catchment-planning/WaterBody/GB104027057412 (accessed 04.04.2018)

5.5.4 The aquifer is defined by the EA as 'high' with respect to groundwater vulnerability.

5.5.5 There are no licenced groundwater abstractions within 250 m of the site.

5.6 Mining

5.6.1 It has been established that the site and surrounding area have been associated with mining works. The Eastwood & Partners report[3] sets out the documented history of these workings. The relevant points are summarised in the following paragraphs.

5.6.2 The site is underlain by a number of coal seams including the Shallow Wood Coal which is inferred to outcrop across the south-western corner of the site, and the Haigh Moor Coal seam, located approximately 18 metres below the Shallow Wood Coal.

5.6.3 A Coal Authority (CA) mining report[8], obtained by E&P for the Phase I investigation and presented in Appendix C, states that the site could be affected by underground mining in two seams at 170 and 300 metres depth, last worked in 1950. It is likely that coal at or close to the surface may also have been worked in the past.

5.6.4 A mine entry is recorded just beyond the northern tip of the site, although the CA has no records of treatment for this entry. There may be other unrecorded shafts or entries present at the site.

5.6.5 Further information regarding coal workings is to be established in the Phase 2 site investigation which is required by planning condition.

5.7 Local Wildlife Site

5.7.1 The site is designated as a Local Wildlife Site (LWS) by Sheffield City Council and is known as the Nunnery Triangle. Planning permission now restricts the LWS to the southern area of the site, which will remain undeveloped.

5.7.2 A habitat survey was carried out by Skyline Ecology in support of the planning application. The resulting report[9] sets out recommendations to mitigate the impacts of the development and is presented in Appendix E.

5.7.3 It has been agreed that a strip of land to the south of site will be set aside as an 'Ecological – Geological Enhancement Area' in order to retain and enhance the existing LWS.

[8] The Coal Authority, May 2016, CON29M Non-Residential Mining Report (Ref 51001173527001)

[9] Skyline Ecology, December 2016, Phase 1 Habitat Survey, Protected Species Survey and Management Recommendations (Report ref SE_157_rep_002_ph.docx)

5.7.4 The development of the enhanced LWS will include the translocation of seed and turf from other areas of the site in order to maintain the habitat diversity, and will set in place a sustainable management strategy. These matters will be addressed under planning conditions.

5.8 Amenity

5.8.1 Amenity receptors are set out in Section 2.5 and summarised in Table 2. The Environmental Risk Assessment (Report No 17832/3A) sets out the pathway and receptor relationship.

5.8.2 The site is located in an Air Quality Management Area (AQMA) that covers most of the Sheffield area, and considered nitrogen dioxide and particulate matter.

5.8.3 Particulate monitoring is included in the EMS for the site with additional operational controls in place in to mitigate any risks to the receptors shown in Table 2.

6. POLLUTION CONTROL MEASURES

6.1 Site Containment

6.1.1 There is no requirement to construct any enhanced geological barrier or for the waste deposit to be capped upon completion due to the very low risk nature of the proposed waste types

6.2 Site Completion

6.2.1 The purpose of the permitted activity is to fill the disused railway cutting in order to achieve the topographical profile required by the approved architectural designs.

6.2.2 Upon achieving the required levels the waste deposit will cease and the site will be deemed complete.

6.2.3 The final levels are commensurate to surrounding topography and are illustrated in a series of cross-sections available in the WRP[1].

6.2.4 The nature of the waste types accepted is not considered likely to undergo any significant settlement. Therefore, there is no distinction between pre- and post-settlement levels.

6.2.5 The material placement will be carried out to a geotechnical specification to be approved by SCC, suitable for subsequent construction works.

6.3 Surface Water Management

6.3.1 Surface water will be managed within the site boundary and there are no existing or proposed discharges.

6.3.2 A Surface Water Drainage Design and Strategy is to be submitted to the Planning authority for their approval in accordance with pre-commencement conditions 12 and 13 of the planning permissions.

6.4 Permit Surrender Conditions

6.4.1 Once the filling activity is complete, the site will be surveyed in order to confirm the final contours and ensure compliance with relevant permit and planning conditions and then the permit will be surrendered.

7. OTHER ENVIRONMENTAL MONITORING

7.1 Weather

7.1.1 Meteorological information will be available through an on-site weather station. Wind speed and direction will be used in order to manage the risks of dust and particulate emissions.

7.1.2 The prevailing wind speed and direction has been established in an Air Quality Assessment report prepared by SLR Consulting Limited[10] and appended to the Environmental Risk Assessment (Report 17832/3A). The assessment shows that wind blows predominantly from the south and west, with typical speeds of 5 to 11 metres per second.

7.2 Gas Monitoring

7.2.1 The inert nature of the waste accepted at the site will result in negligible generation of methane and carbon dioxide due to the lack of biodegradable material. Therefore, it is not proposed to install any gas monitoring infrastructure.

[10] SLR Consulting Limited, November 2016, Air Quality Assessment (Report ref SLR 410.06579.00001)

8. SITE CONDITION REPORT

8.1 Site Details & Proposed Development

8.1.1 The Ouseburn Triangle Recovery Site will be located within a roughly triangular area of waste ground with disused rail cuttings running along the eastern and southern boundaries of the site.

8.1.2 The approximate National Grid Reference for the centre of the site is 38120 87980. A site location plan (Drawing No 17832/01) is presented in Appendix F.

8.1.3 Outline Planning Permission (Ref 16/04500/OUT Dated 6 December 2017) was granted by Sheffield City Council (SCC) in December 2017 for the erection of 100 new homes requiring the infilling of the railway cutting that runs parallel to the eastern boundary.

8.1.4 It is proposed that the infilling of the railway cutting is carried out under an Environmental Permit as a deposit of waste for recovery activity. The waste recovered will be restricted to a limited range of inert, uncontaminated waste types. The proposed waste types are listed in Section 4 of the ESSD.

8.2 Previous Site Uses

8.2.1 The site history is described in Section 3.1 of the ESSD and is based on information from a Phase I report[3] prepared by Eastwood & Partners (E&P).

8.2.2 The most significant former use is from the now disused railway lines, one running parallel to the eastern boundary and another along the southern boundary.

8.2.3 In addition, there are records of coal mining activity within and around the periphery of the site. An electrical transformer house was present up to 1993, and an electrical sub-station can still be found close to the south east corner of the site.

8.2.4 The land has been derelict for several years and has been subjected to significant amounts of fly-tipping.

8.3 Sources of Information

8.3.1 This report has considered information from several sources including the following:

- The Environment Agency Website;
- The British Geological Survey Website;
- The Magic Website, managed by Natural England;

8.3.2 In addition, information set out in the E&P Phase I report[3] has been referenced, including the reports obtained by E&P for the purposes of the site investigation. These include:

- A Landmark Envirocheck Report (obtained May 2016);
- A Coal Authority Non-Residential Mining Report (Dated May 2016).

8.3.3 A site walkover was carried out by TACCL in March 2018 in order to establish current site conditions.

8.4 Geology & Hydrogeology

8.4.1 The British Geological Survey (BGS) online maps[11] show the site mostly overlies sandstone from the Pennine Coal Measures, with the undivided mudstone/siltstone/sandstone member found to the south-west and north corners of the site. There are no superficial deposits reported.

8.4.2 No geological faults are reported within the site.

8.4.3 The site is registered as a Regionally Important Geological Site (RIGS), referenced as RIGS 300 and 301, which is a non statutory designation recognising the importance of geological features. The management of the RIGS will be addressed under the planning regime.

8.4.4 The Magic website[12], shows the site to overlie a 'Secondary A' aquifer. The site does not lie within a Groundwater Source Protection Zone and there are no licensed surface water abstractions reported.

8.5 History of incidents

8.5.1 The Landmark Envirocheck Report, obtained by Eastwood & Partners (E&P) for the Phase 1 site investigation report[3], records two pollution incidents within 250 metres of the site.

[11] http://www.bgs.ac.uk/data/mapViewers/home.html (accessed April 2018)
[12] http://www.natureonthemap.naturalengland.org.uk/home.htm (accessed March 2018)

8.5.2 A 'significant' pollution incident involving inert suspended solids was reported 213 metres to the south-west of the site in 1992, and a 'minor' incident involving 'solvents' was reported 215 metres to the south-east in 1997.

8.5.3 Given the time passed since these incidents occurred, it is unlikely that they will have any impact on the current site condition. An extract from the Envirocheck Report is presented in Appendix B.

8.6 Coal Mining History

8.6.1 A Coal Authority (CA) report[8] was obtained by E&P for the Phase I investigation, which considers the potentials impacts from coal mining activity.

8.6.2 The report confirms that the site is located in an area where there may have been surface coal workings.

8.6.3 There are also records of underground mining at depth that could affect the surface area of the site. These seams were last worked in 1950 and the CA expect that any related ground movement should have stopped.

8.6.4 The report states that there are no records of any mine gas emissions requiring action.

8.7 Objectives of the Site Condition Report

8.7.1 This report fulfils the environmental permit application requirement set out in application form Part B2, Section 5b.

8.7.2 The report has been prepared using appropriate EA guidance and the template set out in relevant section of the EA ESSD template[13].

8.7.3 The aim of this report if to establish the baseline conditions of the new recovery site and to provide an indication of the potential environmental impacts expected as a result of the proposed activities.

8.8 Site Investigation

8.8.1 A Phase I site investigation report[3] was prepared by Eastwood and Partners (E&P) in November 2016 in order to support the planning application.

8.8.2 The recommendations made by E&P in the Phase I investigation, specifically a Phase II intrusive investigation, will be carried out prior to the start of any site development works.

[13] Environment Agency, October 2016, Template: Conceptual Site Model, Environmental Setting and Site Design Report (Version 1)

8.8.3 This requirement will be implemented in accordance with condition 10 of the planning permission (Ref 16/04500/OUT Dated 6 December 2017).

8.9 On-site Observations

8.9.1 A site walkover over was carried out by TACCL accompanied by representatives from TOTL on 13 March 2018. The following key observations were noted.

8.9.2 Ground conditions were generally dry under foot with some slightly damp areas likely to have been caused by recent heavy rainfall.

8.9.3 The area appears derelict with significant amounts of fly-tipped waste, in particular along the fence line adjacent to the houses on Hurworth Road. Fly-tipped wastes will be removed prior to the placement of any waste.

8.9.4 The rail cutting, which is to be backfilled, contains the ballast from the previously removed tracks. This valuable, granite ballast stone will be recovered prior to the placement of waste.

8.10 Potential Environmental Impacts of Proposed Activity

8.10.1 The waste types accepted will be restricted to uncontaminated inert waste. They will not give rise to the discharge of hazardous substances or non–hazardous pollutants.

8.10.2 Site facilities, including the site office and wheel cleaning facilities, will be self-contained and installed on a temporary basis. No permanent structures are proposed.

8.10.3 There will be no fuel or chemical storage on site.

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Appendices supplied separately

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