



Waste Acceptance Procedures

South Tees Development Corporation

June 2025

MAMX-ATK-ENV-FDRXX-RP-EN-000004

FOUNDRY CENTRAL EAST

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Document history

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Client signoff

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Contents

1.	Introduction.....	5
1.1	Document Structure	5
1.2	Objectives	6
2.	Roles and Responsibilities.....	7
3.	Waste Acceptance.....	9
3.1	Overview	9
3.2	Step 1 – Pre-Acceptance of Waste	13
3.3	Step 2 – Acceptance of Waste for Material Recovery	13
3.3.1	Wastes Generated from the Site.....	13
3.3.2	Wastes Generated within the Wider Teesworks Site.....	14
3.3.3	Wastes Generated Offsite (Mudstone)	14
3.4	Step 3 - Material Recovery	15
3.4.1	Treatment.....	15
3.4.2	Sampling and Testing	15
3.4.3	Waste Acceptance Criteria	15
3.5	Step 4 – Acceptance for Backfilling	17
3.6	Recovery	17
3.7	Non-conforming wastes	17
4.	Documentation and Records	19
4.1	Tracking System	19
4.2	Required Documentation	19
4.3	Required records.....	20
	References	21
Appendix A.	Example Form Suite	24
Appendix B.	Accepted Waste Types	25
Appendix C.	Waste Acceptance Criteria	27
C.1	Pre Acceptance Documentation	27
C.2	Leachate Waste Acceptance Criteria.....	28
C.3	Human Health reuse Criteria	29
	31	

Tables

Table 1-1 - Document Suite Structure to Support Permit Application	6
Table 2-1 - Roles and Responsibilities	7



Table 3-1 - Definitions Excerpt	9
Table 3-2 - Acceptance Procedure Summary	9
Table 3-3 - Waste Acceptance Criteria Testing Frequencies	16
Table 4-1 - Waste Acceptance Suite of Forms	19
Table 4-2 - List of Acceptable Waste Types	25

Figures

Figure 3-1 - Waste Acceptance Procedure Summary Flow Diagram.....	12
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1. Introduction

AtkinsRéalis has been commissioned by South Tees Development Corporation (STDC) to apply for a bespoke environmental permit for deposit for recovery. The permit is for activities associated with the treatment, storage and backfill associated with the construction of a development platform at Foundry Central East, located within the Teesworks site.

As part of the permit application waste acceptance procedures are required, which are set out within this document. These procedures have been written in accordance with the Environment Agency (EA) Guidance: Waste acceptance procedures for deposit for recovery [1].

1.1 Document Structure

This document forms part of the additional information suite that is provided as part of the application for the Foundry Central East bespoke environmental permit for deposit for recovery. The structure of the additional information documents is shown in Table 1-1 and is designed so that information is not duplicated across documentation where possible. To facilitate this core information regarding the site, its setting and details of the development are provided within the Deposit for Recovery Bespoke Permit Non-technical Summary and Additional Information [2] (referred to herein as the Non-technical summary) and therefore are not duplicated here. As such it is recommended that the reader reads the Non-technical Summary prior to reading this document.



Table 1-1 - Document Suite Structure to Support Permit Application

Suggested Reading Order	Document Title	Document Reference	
1	Waste Recovery Plan [3]	MAMX-ATK-ENV-FDRXX-RP-EN-000005	<div> <div>Permit Forms (Parts A, B2, B4, F1)</div> </div>
2	Non-technical Summary and Additional Information [2]	MAMX-ATK-ENV-FDRXX-RP-EN-000002	
3	Conceptual Site Model, Risk Assessment and Environmental Setting and Site Design Report [4]	MAMX-ATK-ENV-FDRXX-RP-EN-000003	
4	Hydrogeological Risk Assessment [5]	10047374-AUK-XX-XX-RP-ZZ-1038-01	
5	Ecological Risk Assessment [6]	INCA 2024-37	
6	Waste Acceptance Procedures [7]	MAMX-ATK-ENV-FDRXX-RP-EN-000004	
7	<i>Environmental Management System Summary</i> [8]	MAMX-ATK-ENV-FDRXX-RP-EN-000006	
Document Signpost			
Required reading			
This document			
Permit additional information documents			

1.2 Objectives

The objectives¹ of the Waste Acceptance Procedure are to make sure that waste is only accepted if it:

- Is suitable for the intended activity.
- Is allowed under the permit.
- Is considered in the risk assessments for the permit.

and to:

- Make sure that the waste does not cause pollution.
- Determine which waste will be accepted and from what sources.
- Prevent waste arriving at the site that is not authorised by the permit.

Provide supporting evidence when preparing the permit surrender application.

¹ Reproduced from Environment Agency Guidance 'Waste acceptance procedures for deposit for recovery' [16]

2. Roles and Responsibilities

Table 2-1 defines the roles and responsibilities for all parties participating in the delivery of the works and therefore are involved with the waste acceptance procedures at the site

Table 2-1 - Roles and Responsibilities

Organisation	Role
STDC	Landowner and legal Operator and Producer ² of the permitted site.
	STDC (and their representative(s)) will ensure that the contractor who is working within their permitted site, are doing so as per the activities defined in this procedure. They will manage communication between all parties; ensure compliance with permit conditions and have overall responsibility to liaise with the Environment Agency (as per the requirements of the permit), although day to day this is likely to be undertaken by STDC's consultants.
	As Producer STDC (and their representatives(s)) will ensure that waste produced is classified in accordance with Technical Guidance WM3: Waste Classification – Guidance on the classification and assessment of waste [9] and that the requirements placed upon them under the waste duty of care are met.
AtkinsRéalis	Waste Activity Manager (WAMITAB Scheme)
	Employed by the Operator to ensure compliance with environmental permitting regulations 2016 and the environmental permit. Will hold or be working towards CIWM Level 4 certified medium risk operator competence for non-hazardous waste treatment and transfer or CIWM Level 4 certificate in waste and resource management.
AtkinsRéalis	Waste and Materials Management Consultant representative to STDC.
	Responsible for: <ul style="list-style-type: none"> management and implementation of the waste acceptance procedure; approval for waste and materials for material recovery; oversee compliance with the environmental permit; advise STDC on legislative requirements; delegated authority to liaise the Environment Agency, regarding waste acceptance, on behalf of STDC; and maintaining material recovery records including of waste acceptance, storage, treatment, backfilling and recovery.

² Of wastes generated within the Site boundary and the wider Teesworks boundary.

Organisation	Role
Arcadis	<p>Ground Remediation Consultant representative to STDC.</p> <p>Responsible for:</p> <ul style="list-style-type: none"> collection of samples and management of laboratory testing; determine whether material is suitable for use by comparison of sample results against the geotechnical and environmental re-use criteria as detailed within the Earthworks Specification [10, 11] and Remediation Strategies [12, 13] to demonstrate suitability; determine whether material is considered within the Hydrogeological Risk Assessment [5]; comparison of leachate results against acceptance criteria derived from the Hydrogeological Risk Assessment [5]; groundwater monitoring and assessment as required by the Hydrogeological Risk Assessment [5]; watching brief for the works; advising the placement location of material based on results in line with the Earthworks Specification [10, 11] and Remediation Strategies [12, 13]; and delegated authority to liaise the Environment Agency, regarding risk to groundwater and Redcar and Cleveland Contaminated Land Officer, regarding contamination risk, on behalf of STDC.
Earthworks Contractor	<p>Earthworks Contractor</p> <p>Responsible for:</p> <ul style="list-style-type: none"> undertaking the works (excavation, treatment, storage, backfilling) in accordance with their contract with STDC, the conditions of the permit and the requirements of the Earthworks Specification [10, 11] and Remediation Strategies [12, 13]; communicating encounters of suspected unacceptable waste and segregating waste appropriately; completion of waste acceptance forms; completion of waste transfer notes/hazardous waste consignment notes when waste is transferred off-site; producer and holder of the CEMP, and timely provision of information to STDC and their representatives.

Table note

Organisation colours are used throughout this document to help communicate role / activity holders noting that overall responsibility sits with the permit operator.



3. Waste Acceptance

Terms of reference is included within the Non-technical Summary [2]. For convenience, pertinent terms to this report are summarised below:

Table 3-1 - Definitions Excerpt

Material Recovery	Term used to describe the permitted activity, which consists of the whole recovery operation, including preparation for backfilling (treatment, sampling and storage) and backfilling. Material Recovery has been achieved at the point of recovery.
Treatment	Term used to describe the material processing to enable its suitability for backfilling. This will be a mixture of crushing, screening, blending and stabilisation as required.
Waste	Term used to describe the excavated waste, during its excavation and storage, prior to waste acceptance.
Non hazardous	Within this document is applicable as non hazardous waste, as defined in WM3 [9].
Material	Term used to describe the material following waste acceptance which is being treated, stored or backfilled during material recovery.
Backfilling	Term used to describe the placement of material in accordance with the Earthworks Specifications [10, 11] and therefore has been accepted as suitable for its intended use as set out by the waste recovery plan.
Recovery	The point at which the waste has been placed in the ground in accordance with the Earthworks Specifications [10, 11]. At this point the material is considered to be recovered and material recovery is complete.

3.1 Overview

During this material recovery process there are several steps towards material acceptance that act as decision points in the management of waste / material. This approach is required as the suitability for the intended use of the majority of waste types will only be achieved following treatment under the Foundry Central East environmental permit.

A summary of the procedure is presented in Table 3-2.

Table 3-2 - Acceptance Procedure Summary

Step	Name	Action	Undertaken by
1	Pre-acceptance check	Visual check by contractor during excavation and stockpiling to confirm waste type is listed in the Waste Recovery Plan [3] and is free from visual and olfactory evidence of contamination.	Earthworks contractor



Step	Name	Action	Undertaken by
		Check that the required information regarding the characteristics and origin of the waste has been provided / collected.	AtkinsRéal
2	Acceptance of waste (site won and / or wider Teesworks site) for material recovery	Visual check of stockpile by STDCs representative AtkinsRéal to confirm waste type is listed in the Waste Recovery Plan [3] and is free from visual and olfactory evidence of contamination.	AtkinsRéal
3	Material recovery	Preparation for backfilling including treatment (where required) including storage,	Earthworks contractor
		Sampling (undertaken by STDCs representative Arcadis), laboratory analysis and assessment against the waste acceptance procedure (Criteria 1 and 2*).	Arcadis
		Assessment against the waste acceptance procedure (Criteria 3*).	AtkinsRéal
4	Acceptance for backfill decision	Confirmation of acceptance and subsequent backfilling with this material in accordance with the Earthworks Specification [10].	AtkinsRéal
Recovery		Placement in the ground in accordance with the Earthworks Specification [10]. At this point the material is considered to be recovered and material recovery is complete.	Earthworks contractor

Table note

*Criteria 1, 2 and 3 are detailed in Figure 3-1 and Section 3.4.3.

Figure 3-1 presents a summary of the Waste Acceptance Procedure which will be followed. The acceptance of waste within the permit boundary is based on the collation of qualitative and quantitative evidence undertaken at fixed points in the waste acceptance procedures, and an established communication protocol using AtkinsRéal Waste and Materials Management System. The evidence used as part of the waste acceptance procedure includes:

- Intrusive ground investigation data and laboratory analytical results which has been used to classify in situ wastes (prior to excavation);
- Qualitative visual assessment by experienced earthworks contractors and waste consultants;
- Laboratory analytical results and waste classification assessments on treated waste;
- Geotechnical validation of treated waste;
- Waste and Materials Management System to track waste origin and destination and to document and communicate decisions between the operator and the Contractor (detailed in Section 4).

Records required throughout the process are captured on a suite of forms associated with the Waste and Materials Management System which will be used to track waste origin and destination and to document and communicate

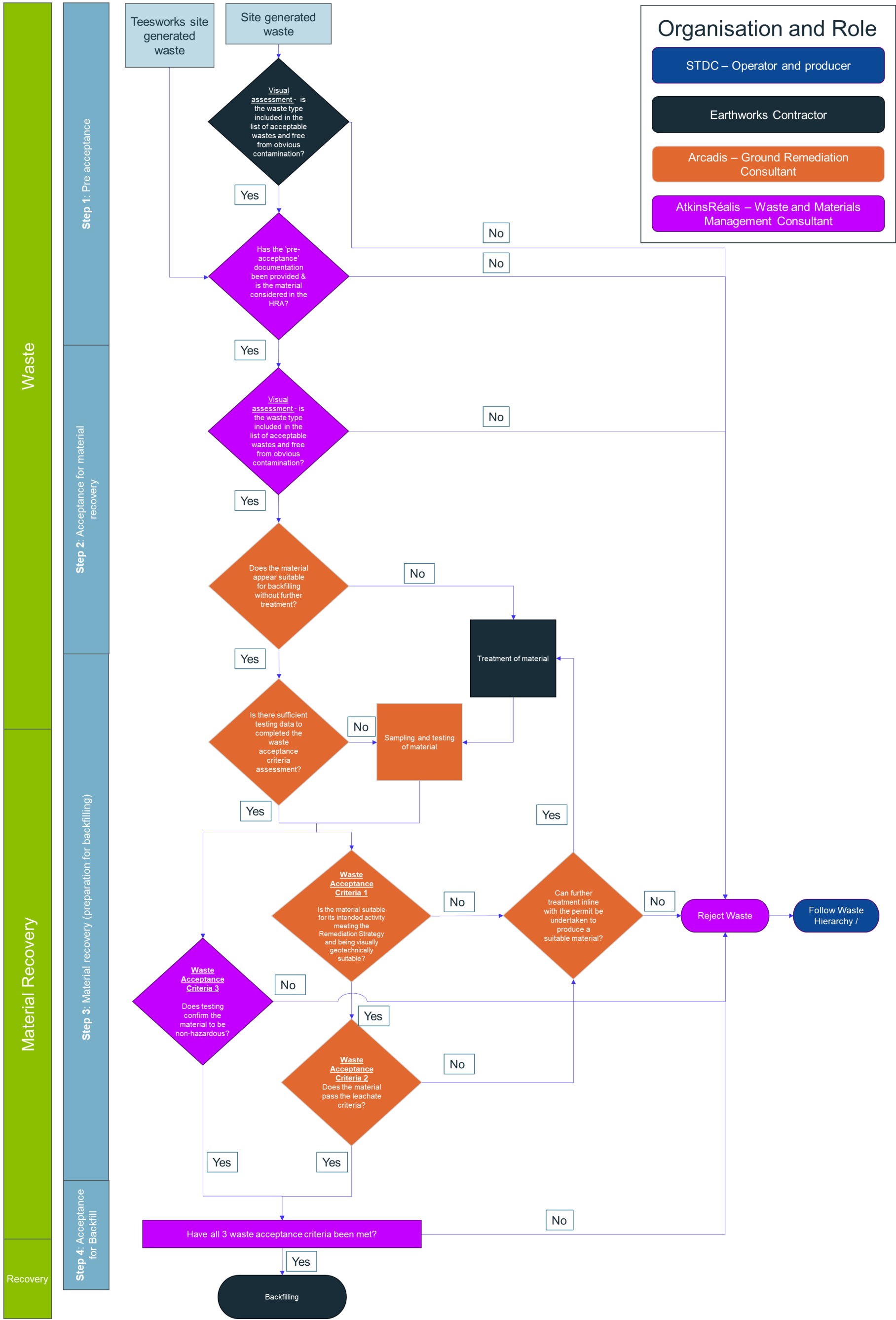


decisions between the operator and the Earthworks Contractor. These forms are summarised in Section 4.2 and a copy provided in Appendix A.

Note, these forms are applied to sites and material management across the Teesworks site and are subject to revision as required, as presented they show each route through the process.



Figure 3-1 - Waste Acceptance Procedure Summary Flow Diagram



3.2 Step 1 – Pre-Acceptance of Waste

The Earthworks Contractor will pre-accept the waste based on a visual assessment. This is to identify that:

- the material is of a waste type included in the Waste Recovery Plan [3] and is shown in Appendix B; and
- there is no indication (visual / olfactory) of gross contamination.

The Earthworks Contractor's decision to pre-accept the waste, is recorded via the Waste and Materials Management System as described in Section 4.2 and presented in Appendix A. This system includes description of the material, volumes and location of the stockpile, which is communicated to STDC's waste and materials management consultant AtkinsRéalis.

3.3 Step 2 – Acceptance of Waste for Material Recovery

3.3.1 Wastes Generated from the Site

Following receipt of the Waste and Materials Management System form from the Earthworks Contractor, the documentation shall be factually checked, and each stockpile shall be visually inspected by STDC's waste and materials management consultant AtkinsRéalis.

Following review of the submitted information and visual inspection, the waste will be compared against the basic characterisation of the waste which was undertaken in accordance with WM3 [9] using data collected during the ground investigation at the site prior to works commencing and ensuring that the information presented in Appendix C.1 is provided for the waste.

The waste may be accepted if:

- it reflects the basic characterisation which was undertaken prior to works commencing;
- the waste is of a waste type included in the Waste Recovery Plan [3], (also presented in Appendix B);
- the waste is of a type and source detailed within the Hydrogeological Risk Assessment [5]; and
- there is no indication (visual / olfactory) of gross contamination such as:
 - non aqueous phase liquids;
 - tar;
 - sinter / sinter feedstock materials; and
 - any waste which by its colour or odour suggests it may be contaminated by substances requiring further investigation.

Only wastes that meet the requirements of the Waste Recovery Plan [3] are to be considered for input into the material recovery operation.

If the waste meets the EWC code within the Waste Recovery Plan [3], but does not reflect the basic characterisation already undertaken, the waste can still be accepted for material recovery, but basic characterisation will be required as part of material recovery Step 3 and review of its alignment with the Hydrogeological Risk Assessment [5].



3.3.2 Wastes Generated within the Wider Teesworks Site

This scenario is applied to waste generated by STDC on the wider Teesworks site. The proposal to use waste from the wider Teesworks site is notified via the Waste and Materials Management System, to STDC's waste and materials management consultant AtkinsRéalis by the Earthworks Contractor, prior to importing the waste.

There are two routes for the use of waste from the wider Teesworks site:

- a) As dug material that would be transported to the site and treated within the permit boundary;
- b) Waste that is suitable for recovery without the requirement for treatment within the permit boundary (for example, aggregate manufactured in accordance with the WRAP Quality Protocol [14]).

Following review of the submitted information which will include the information presented in Appendix C.1, the material is visually inspected by STDC's waste and materials management consultant AtkinsRéalis.

The waste may be accepted if:

- It has undergone basic waste classification and shown to be non-hazardous in accordance with WM3 [9];
- the material is of a waste type included in the Waste Recovery Plan [3] (also presented in Appendix B);
- the waste is of a type and source detailed within the Hydrogeological Risk Assessment [5]; and
- there is no indication (visual / olfactory) of gross contamination.

Acceptance of the waste for material recovery is notified to the Earthworks Contractor via the Waste and Materials Management System.

3.3.3 Wastes Generated Offsite (Mudstone)

Mudstone has been generated by Anglo American at the Woodsmith polyhalite mine and has been used on other plots of land at Teesworks to develop construction platforms under a Material Management Plan. The mudstone is generated from the bore of a tunnel at depth, and therefore is considered to be clean and naturally occurring. Basic characterisation has been undertaken and provided by the producer of the waste.

Mudstone will be transferred to the site under a duty of care waste transfer note with the information submitted to the STDC waste and materials management consultant AtkinsRéalis by the waste producer via the Waste and Materials Management System.

3.4 Step 3 - Material Recovery

Step 3 encompasses the preparation for backfilling, which includes treatment (crushing, screening, blending and stabilisation as required), sampling and testing of material, and assessment against the waste acceptance criteria.

3.4.1 Treatment

Prior to starting treatment, the Earthworks Contractor will notify STDC's waste and materials management consultant AtkinsRéalis of the intention to create a new stockpile via the Waste and Materials Management System. The submission of the notification triggers the start of material recovery, and informs STDC Ground Remediation consultant Arcadis to start the sampling as the stockpile is being treated.

Material is to be treated, where deemed necessary by STDC Ground Remediation consultant Arcadis, in line with the permit to render it suitable for use in line with the Earthworks Specification [15, 10]. The Earthworks Contractor will screen, crush and blend and stabilise the material as required.

3.4.1.1 Treatment Types

Material is to be treated to create a geotechnically suitable backfill material, where deemed necessary by STDC Ground Remediation consultant Arcadis, in line with the permit to render it suitable for use in line with the Earthworks Specification [15, 10]. The treatment types included within the permit are:

- Screening of excavated waste into grain-size fractions using screening plant;
- Crushing of oversize fractions using crushing plant;
- Blending of materials/stockpiles to create a suitable geotechnical material for backfilling using excavators and dozers;
- Stabilising of excavated waste by the addition of lime for dewatering and binding create a geotechnical suitable material using soil stabiliser plant.

3.4.2 Sampling and Testing

All testing on material is to be undertaken during creation of the stockpile when it is considered that the material is in the form suitable for its intended use i.e. following treatment.

Where more than one stockpiles are being blended together to achieve a geotechnically suitable material in accordance with the Earthworks Specification [15, 10], these will be tested and assessed against the waste acceptance criteria, and accepted for backfilling prior to being blended. The material will only be tested to demonstrate geotechnical suitability (as required) following blending.

Note, physical properties that are a result of the method of fill placement and compaction are not required to have been completed to demonstrate the physical suitability of the material, for approval as material recovery.

3.4.3 Waste Acceptance Criteria

Chemical and geotechnical results will be assessed by STDC's suitably qualified consultants; AtkinsRéalis specialising in waste classification as waste and materials management consultant, and Arcadis specialising in geo-environmental ground remediation.

There are three waste acceptance criteria, as defined in the following documents, confirming the suitability of the material:

- Criteria 1 - Remediation (reuse) criteria, protective of human health [13, 12] and Earthworks Specifications [10, 15];
- Criteria 2 - Hydrogeological Risk Assessment [5], protective of groundwater; and
- Criteria 3 - Waste classification (non hazardous) in accordance with WM3 [9] and the type of waste included within the Waste Recovery Plan [3].

For a material to be accepted for backfilling (Stage 4), the three waste acceptance criteria need to have been met.

The testing requirements within these documents comprise the waste acceptance criteria for material recovery described in the sections below. Note the material is not biological in origin and there are no biological requirements to determine that is its suitable for use other than the material being a waste type included in the Waste Recovery Plan [3]. A summary of the waste acceptance criteria is presented in Appendix C.

3.4.3.1 Chemical Suitability

3.4.3.1.1 Remediation Strategy (Criteria 1) and Hydrogeological Risk Assessment (Criteria 2)

Chemical suitability for backfilling is also to be determined through compliance with the Remediation Options Appraisal, Enabling Earthworks and Remediation Strategies [13, 12], submitted and approved by the local planning authority, and the Hydrogeological Risk Assessment [5].

The Remediation Options Appraisal, Enabling Earthworks and Remediation Strategies [13, 12] (referred to as the remediation strategies), presents the remediation objectives that are required to address the identified contaminant linkages in respect to human health. Material is only to be accepted for backfilling that is in compliance with the requirements of this document. This includes reuse criteria including limitations on the suitability of some materials for particular end uses such as for a surface material, a list of required determinands for analysis and screening and the frequency of soil testing (summarised in Table 3-3).

Based on the outcome of the Hydrogeological Risk Assessment [5], acceptance criteria for leachate have been generated, as presented in Appendix C.2. The leachate testing is specified at the frequency shown in Table 3-3.

Waste materials not included within the Hydrogeological Risk Assessment [5] or materials from different sources are to be assessed prior to acceptance to demonstrate they are of no greater risk than the materials included within the hydrogeological risk assessment.

Table 3-3 - Waste Acceptance Criteria Testing Frequencies

Waste types	Frequency		
	Soil Waste Classification	Soil Human Health	Leachate Groundwater
Site derived materials			
Slag dominant made ground	One sample per 1,000 m ³	One sample per 2,000 m ³	One sample per 1,000 m ³
All other made ground types	One sample per 1,000 m ³	One sample per 1,000 m ³	One sample per 1,000 m ³
Non-site derived materials			
All waste types	One sample per 1,000 m ³	One sample per 1,000 m ³	One sample per 1,000 m ³

Waste acceptance leachate testing will be undertaken at a frequency of 1 sample per 1,000 m³.



Where samples exceed within a stockpile, the sampling frequency may increase to allow further material characterisation in line with Appendix C.2.

3.4.3.2 Geotechnical Suitability

3.4.3.2.1 Earthworks Specifications (Criteria 1)

To ensure the materials placed meet the required engineering properties, the materials are to be assessed in accordance with the Earthworks Specification [10, 15]. These results are to be assessed by an Arcadis suitably qualified and experienced geotechnical engineer. Note, physical properties that are a result of the method of fill placement and compaction are not required to have been completed to demonstrate the physical suitability of the material, and therefore undertaken for approval as material recovery.

3.4.3.3 Waste Classification (Criteria 3)

Compliance testing of the material is to be undertaken to check a material classification against the basic characterisation undertaken prior to excavation. Required determinands and the frequency of chemical testing is based on the outcome of the basic characterisation. This compliance testing will be used to undertake compliance waste classification of the material to confirm suitability as non hazardous waste in accordance with WM3 and the type of material aligns detailed within the Waste Recovery Plan [3]. If a new source of material is found, but it is a waste type included in the Waste Recovery Plan [3], a basic characterisation will be undertaken, and the sampling plan and testing suite will be chosen to reflect the material type, its source etc.

3.5 Step 4 – Acceptance for Backfilling

Acceptance for backfilling is required to ensure that prior to backfilling and subsequent recovery all objectives set in Section 1.2 are met. The acceptance of the material for backfilling is recorded and communicated to the Earthworks Contractor via the Waste and Materials Management System, which includes details of placement location.

3.6 Recovery

Recovery has been achieved upon completion of backfilling in accordance with the requirements of the Earthworks Specifications [10, 11].

3.7 Non-conforming wastes

If the waste does not meet the criteria above, then the non-conformance procedure is followed which includes a record in the relevant form with the following details:

- date and time;
- Earthworks Contractor's details;
- description of the waste;
- volume of waste;
- waste code;
- samples taken (if required); and
- actions agreed and taken.

Waste arising from within the site that is identified as non-conforming will be quarantined, sampled, analysed and classified in accordance with WM3. If, after waste classification, the waste is still considered to be non-conforming and not suitable for acceptance at the site, the waste will be transferred off-site to a suitably permitted waste facility in accordance with the Waste Duty of Care Code of Practice.

Any waste that has arisen from the wider Teesworks site and is identified as non-conforming following transport to the site, will be rejected at the site gate, but as acceptance for backfilling will be undertaken prior to transportation, the likelihood that this will happen is low.



4. Documentation and Records

4.1 Tracking System

For recovered materials produced by STDC within the Teesworks site, including within the Foundry Central East site, waste transfer and acceptance will follow the Waste and Materials Management System in accordance with Figure 3-1 and Section 3. This system captures the information required under the Duty of Care Code of Practice and allows for its location and provenance to be tracked on site. Waste / material being received into the site under the environmental permit from the wider Teesworks site will also be tracked under the waste and materials management system which follows the duty of care. The required documentation is described in more detail below.

4.2 Required Documentation

Documentation required to facilitate and record the waste acceptance process will be through a suite of Microsoft Forms, with automated email confirmations to trigger actions by the relevant party, known as the 'Waste and Materials Management System'. The MS Form outputs are collated into a searchable stockpile viewer dashboard, which will be refreshed weekly as a minimum and will facilitate an efficient system for recording the outputs of the waste acceptance process. The suite of forms detailed below is the current version, and may be updated to accommodate additional information requirements as the project need arises. The form suite is presented in Appendix A. Note that branching has been included in the live forms to guide the user depending on question response, and therefore the examples presented in Appendix A are the full versions.

Table 4-1 - Waste Acceptance Suite of Forms

Form Title	Form Acronym	User	Intention of Form
Stockpile Identification Number Request	SPID	Earthworks contractor	Requests a stockpile identification number and documents the waste origin, type and treatment intention. Documents Step 1 visual assessment.
<i>Response: Email confirmation of stockpile ID issued. Step 2 visual assessment documented.</i>			
Stockpile Completion Notification	SCN	Earthworks contractor	Confirms to STDC that a stockpile has reached capacity and treatment for that stockpile is complete.
<i>Response: Sampling and laboratory testing undertaken, followed by assessment against the waste acceptance criteria (Step 3).</i>			
Stockpile Assessment Outcome Confirmation	SC	AtkinsRéalis on behalf of STDC	Documents decision of acceptance for backfilling (Step 4) or non-conformance and confirmation of this is issued via email to the Contractor. If waste is non-conforming then further actions are detailed.
<i>Response: Contractor places material as backfill.</i>			
Stockpile Placement Notification	SPN	Earthworks Contractor	Confirms to STDC the placement location and method for recovered material (Recovery).

A searchable Power BI dashboard will track the movement of waste from excavation to placement. Data from the dashboard will be used for the quarterly reporting of treatment throughput, and permit compliance as a requirement of the Deposit for Recovery environmental permit.

4.3 Required records

Records that will be collected as part of the waste acceptance process include:

- completed waste acceptance forms;
- records of non-conforming wastes;
- excavation extents and depths supported by topographic survey data;
- volumetric measures of waste excavated and transferred off-site to a suitably permitted waste facility, documented in waste transfer notes or hazardous waste consignment notes, supported by weighbridge tickets;
- volumetric measures of treated waste supported by topographic survey data;
- volumetric measure of recovered waste volume (fill volume) supported by topographic survey data;
- laboratory certificates for waste samples; and
- site drawings and topographic plans will be developed by the Earthworks Contractor to demonstrate that:
 - site levels have been restored to the agreed formation levels; and
 - the location of recovered materials is documented on as-built drawings.

The records listed above will be collated on SharePoint, available to the project team.

References

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- [14] E. Agency, “WRAP Quality Protocol: Aggregates from Inert Waste,” 22 October 2013. [Online]. Available: <https://www.gov.uk/government/publications/quality-protocol-production-of-aggregates-from-inert-waste>.



- [15] Arcadis, "Earthworks Specification Foundry Central West: 10035117-AUK-XX-XX-RP-ZZ-907-02-FCW_Earthworks Spec. Revision 02," May 2024.
- [16] Environment Agency, "Guidance - Waste acceptance procedures for deposit for recovery," Environment Agency, 29 June 2023. [Online]. Available: <https://www.gov.uk/government/publications/deposit-for-recovery-operators-environmental-permits/waste-acceptance-procedures-for-deposit-for-recovery>. [Accessed 4 December 2023].
- [17] Arcadis, "Phase 1 Desk Study Foundry Central West 10047374-AUK-XX-XX-DR-ZZ-735-02-FCW_Phase 1," 2024.

APPENDICES

Appendix A. Example Form Suite



Stockpile ID Request (SPID)

Use this form prior to creating a new stockpile. All fields must be completed. If you don't know an answer to any of the questions, please enter 'Unknown'. A stockpile reference number will be provided via email.

* Required

Select Stockpile Type

1

Contractor name (company name) *

2

Contractor contact name *

3

Contractor contact email *

4

Project name or contract name *

5

Date form submitted *



6

Anticipated stockpile volume (m3) *

7

Anticipated Location Easting (6 digits) *

8

Anticipated Location Northing (6 digits) *

9

Date stockpile creation will start *

10

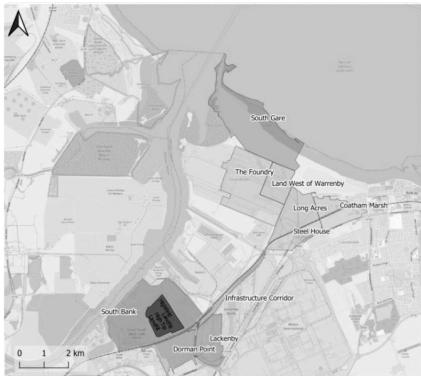
What kind of stockpile do you want to create? *

- ☐ Unprocessed / as dug material from excavation
- ☐ Unprocessed material from above ground demolition
- ☐ Processed material from a parent stockpile
- ☐ Move material from wider Teesworks site
- ☐ Imported product
- ☐ Other

Unprocessed material stockpile information - earthworks

11

Source of material (site area) *



- ☐ DMP - Dorman Point
- ☐ FOU - The Foundry
- ☐ LAC - Lackenby
- ☐ LWW - Land West of Warrenby
- ☐ MAM - Legacy
- ☐ SBW - South Bank
- ☐ SHO - Steel House
- ☐ TLA - Long Acres

12

Material origin grid square(s) *

13

Material origin depth(s) (m AOD) *

14

Material origin structure or site area description (e.g. stockhouses, adjacent to red main or project specific area) *

15

Will the stockpile be a feedstock? *

☐ Yes

☐ No

16

Material type *

☐ Slag dominant material

☐ Granular made ground

☐ Cohesive made ground

☐ Concrete

☐ Brick (masonry)

☐ Brick (masonry) and concrete

☐ Sinter (Generally described as a black fine gravel)

☐ Waste (Comprising significant amounts of waste materials including metal, wood, and plastic in addition to the Made Ground deposits.)

☐ Refractory brick

☐ Other

17

Is there an intention to process using the Factory Production Control? *

☐ Yes

☐ No

Processed material stockpile information

18

Parent stockpile ID (do not include spaces e.g FOU-SP120) *

19

Anticipated date processing will finish *

20

Material grade *

For example 1A, 6A etc.

21

Material type *

- ☐ Slag dominant material
- ☐ Granular made ground
- ☐ Cohesive made ground
- ☐ Concrete
- ☐ Brick (masonry)
- ☐ Brick (masonry) and concrete
- ☐ Sinter (Generally described as a black fine gravel)
- ☐ Waste (Comprising significant amounts of waste materials including metal, wood, and plastic in addition to the Made Ground deposits.)
- ☐ Refractory brick
- ☐ Other

22

Evidence of visual or olfactory contamination *

☐ Yes

☐ No

23

Describe the contamination *

24

Reason for processing *

☐ aggregate production under Earthworks Specification

☐ aggregate production under the Factory Production Control

☐ rescreen to achieve geotechnical suitability (non-hazardous waste only)

☐ rescreen to achieve chemical suitability (non-hazardous waste only)

☐ Other

25

Will the material be *

☐ waste (processed using an Environmental Permit or LEP)

☐ non-waste (processed under a Materials Management Plan (MMP))

26

Environmental Permit reference *

27

List the machinery type(s) used and associated serial numbers *

MMP reference *

- ☐ Prairie / Dorman Point MMP (10035118-AUK-XX-XX-RP-ZZ-0119-06)
- ☐ South Bank Quay and Priorities Area MMP (5210524-STDC-SB-MMP)
- ☐ South Bank Western Access Road MMP (5212569-STDC-SBAR-MMP-002)

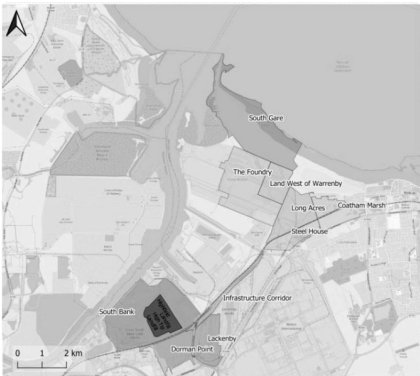
List the machinery type(s) used, associated serial numbers and Local Authority mobile plant permit *

--

Unprocessed material stockpile information - demolition

30

Source of material (site area) *



- ☐ DMP - Dorman Point
- ☐ FOU - The Foundry
- ☐ LAC - Lackenby
- ☐ LWW - Land West of Warrenby
- ☐ MAM - Legacy
- ☐ SBW - South Bank
- ☐ SHO - Steel House
- ☐ TLA - Long Acres

31

Material origin grid square(s) *

32

Material origin structure *

33

Will the stockpile be a feedstock? *

☐ Yes

☐ No

34

Material type *

☐ Concrete

☐ Brick (masonry)

☐ Brick (masonry) and concrete

☐ Sinter (Generally described as a black fine gravel)

☐ Waste (Comprising significant amounts of waste materials including metal, wood, and plastic in addition to the Made Ground deposits)

☐ Refractory brick

☐ Other

35

Is there intention to process under the Factory Production Control? *

☐ Yes

☐ No

Material excavation detail

36

Visual material description *

37

Is the material a waste or non-waste *

- ☐ Non-waste (excavated under Materials Management Plan)
- ☐ Waste

38

MMP reference *

- ☐ Prairie / Dorman Point MMP (10035118-AUK-XX-XX-RP-ZZ-0119-06)
- ☐ South Bank Quay and Priorities Area MMP (5210524-STDG-SB-MMP)
- ☐ South Bank Western Access Road MMP (5212569-STDG-SBAR-MMP-002)

39

Evidence of visual or olfactory contamination *

- ☐ Yes
- ☐ No

40

Describe the contamination (depth, extent, type) *

Waste input for FPC detail

Link to FPC: <https://ssisteel.sharepoint.com/sites/MaterialsManagement2-StockpileManagement/Shared%20Documents/Forms/AllItems.aspx?csf=1&web=1&e=ROba4k&cid=6133d96c%2D26c6%2D4daa%2D9ecb%2Df69279f3e441&FolderCTID=0x012000A189A92E68A2EC48A542F1CB3CCB711B&id=%2Fsites%2FMaterialsManagement2%2DStockpileManagement%2FShared%20Documents%2FStockpile%20Management%2F02%5FTechnical%2F02%2E03%5FSpecification%2FPublished&viewid=c118f048%2Dbd8d%2D4ccc%2D9fb1%2D941778277229>

41

Visual inspection of waste input material undertaken by (name of person) *

42

Inspection date *

43

Waste input material source and description *

44

Is the material being separated based on source (taken to be a single structure or part thereof)? *

- ☐ Yes
- ☐ No

Waste Code (select all that apply) *

- ☐ 01 04 09 Waste sand and clays (waste sand only, must not include contaminated sand)
- ☐ 17 01 01 Concrete (must not include concrete slurry)
- ☐ 17 01 02 Bricks (excluding refractory 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 [hazardous] (excluding refractory bricks)
- ☐ 17 03 02 Bituminous mixtures other than those mentioned in 17 03 01 [hazardous] (allowed only if 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 [hazardous]), 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 [hazardous] (must not contain any contaminated soil or stone from contaminated sites)
- ☐ 17 05 08 Track ballast other than those mentioned in 17 05 07 [hazardous] (Allowed only if does not contain soil and stones from contaminated sites)
- ☐ 19 12 09 Minerals (for example sand and stones) (must not contain contaminated concrete, brick, tiles, sand, stone or gypsum from recovered plasterboard.)

Visual Inspection: Is material compliant with waste acceptance criteria as described in the Factory Production Control? *

- ☐ Yes
- ☐ No

Suggested remedial action *

Imported Product

48

Product type (e.g. topsoil) *

49

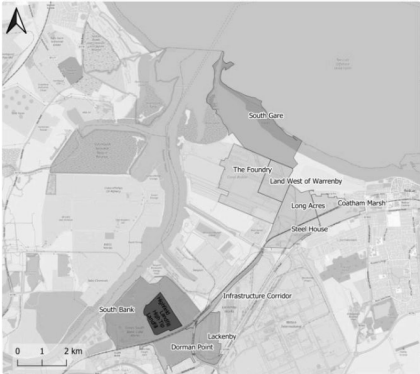
Product use (e.g. pipe bedding adjacent to SeAH plot) *

50

Product source (full address) *

51

Material destination *



- ☐ DMP - Dorman Point
- ☐ FOU - The Foundry
- ☐ LAC - Lackenby
- ☐ LWW - Land West of Warrenby
- ☐ MAM - Legacy
- ☐ SBW - South Bank
- ☐ SHO - Steel House
- ☐ TLA - Long Acres

52

Product specification obtained from supplier? *

☐ Yes

☐ No

53

Have laboratory results been obtained and uploaded
here: https://ssisteel.sharepoint.com/f/r/sites/MaterialsManagement2-StockpileManagement/Shared%20Documents/Stockpile%20Management/02_Technical/02.08_Stockpile%20Management/Laboratory%20Data?csf=1&web=1&e=57fjti *

☐ Yes

☐ No

Transfer material from wider Teesworks site

54

Parent stockpile ID (do not include spaces e.g FOU-SP120) *

55

Parent Stockpile Location Easting (6 digits) *

56

Parent Stockpile Location Northing (6 digits) *

57

Is the parent stockpile *

- ☐ unprocessed waste
- ☐ processed waste
- ☐ unprocessed non-waste (excavated under a Materials Management Plan (MMP))
- ☐ processed non-waste (processed under a Materials Management Plan (MMP))
- ☐ product (processed using the Factory Production Control)
- ☐ Unknown

58

Material type *

- ☐ Slag dominant material
- ☐ Granular made ground
- ☐ Cohesive made ground
- ☐ Concrete
- ☐ Brick (masonry)
- ☐ Brick (masonry) and concrete
- ☐ Sinter (Generally described as a black fine gravel)
- ☐ Waste (Comprising significant amounts of waste materials including metal, wood, and plastic in addition to the Made Ground deposits.)
- ☐ Refractory brick
- ☐ Other

59

Description of the material based on visual observation *

60

Material grade *

61

Volume of material to be transferred (m3) *

62

Testing undertaken *

- ☐ Yes
- ☐ No

63

Evidence of visual or olfactory contamination *

☐ Yes

☐ No

64

Describe the contamination *

65

Confirm whether the transfer of material is *

☐ between two MMPs

☐ from an MMP area to an environmental permit boundary

☐ from an MMP to wider site (no environmental permit)

☐ between environmental permit boundaries

☐ from wider Teesworks site to environmental permit boundary

☐ between wider Teesworks plots without an environmental permit

☐ Other

66

EWC Code (with spaces, in the format XX XX XX) *

67

SIC code for waste-generating industry *

68

Waste carrier company name *

69

Waste carrier address and post code *

70

Waste carrier registration number *

71

Waste carrier type *

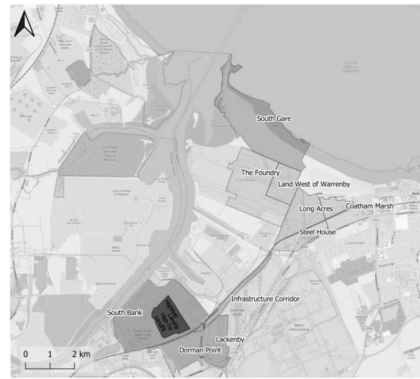
- ☐ Carrier
- ☐ Broker
- ☐ Dealer

72

Destination Environmental Permit reference *

73

Destination site area *



- ☐ DMP - Dorman Point
- ☐ FOU - The Foundry
- ☐ LAC - Lackenby
- ☐ LWW - Land West of Warrenby
- ☐ MAM - Legacy
- ☐ SBW - South Bank
- ☐ SHO - Steel House
- ☐ TLA - Long Acres

74

Start date of transfer *

75

Is the stockpile to be merged with an existing stockpile *

- ☐ Yes
- ☐ No

76

Provide the stockpile ID of the existing stockpile *

Stockpile Completion Notification (SCN)

Use this form to notify STDC of the completion of a stockpile. Upon stockpile completion (e.g. finished processing) no further material shall be added to the stockpile.



1. Stockpile ID (do not include spaces e.g FOU-SP120)

2. Stockpile completion date

3. Stockpile volume (m3)

4. Stockpile survey date

5. Stockpile survey drawing reference

6. Add link to stockpile survey file location at

https://ssisteel.sharepoint.com/:f:/r/sites/MaterialsManagement2-StockpileManagement/Shared%20Documents/Stockpile%20Management/02_Technical/02.05_Surveys/Published?csf=1&web=1&e=LT9la7

7. Material grade (e.g. 1A, 6A)

8. Is the material

- ☐ waste
- ☐ product (processed under the Factory Production Control)
- ☐ non-waste (processed under Materials Management Plan)

This content is neither created nor endorsed by Microsoft. The data you submit will be sent to the form owner.



Stockpile Assessment Outcome Confirmation (SC)

AtkinsRéalis to use this form to communicate to project team the outcome of testing and analysis on waste stockpiles (not required for material reused under MMP).

* Required

Stockpile details

1. Stockpile ID (do not include spaces e.g FOU-SP120) *

2. Name of person completing form *

3. Email of person completing form *

4. Contractor to be notified (email) *

5. Stockpile Volume (m3) *

6. Stockpile Location Easting (six digits) *

7. Stockpile Location Northing (six digits) *

8. The material was processed as: *

- ☐ product (under FPC)
- ☐ waste (under Environmental Permit)

9. Date form completed *

Product

10. The material is *

- ☐ FPC conforming
- ☐ FPC non-conforming

11. Suggested remedial action to achieve FPC conformance *

Arcadis confirmation

12. Has Arcadis confirmation been received (via MS Form)?

☐ Yes

☐ No

13. Does the stockpile meet the Arcadis acceptance criteria for the destination site?

☐ Yes

☐ No

Waste

14. The waste classification is *

- ☐ Non-Hazardous
- ☐ Hazardous

15. EWC codes for off-site disposal *

16. Is the EWC code(s) included in the List of Wastes in the Waste Recovery Plan for the site? *

- ☐ Yes
- ☐ No

17. Confirm the EWC code(s) *

18. Environmental permit document reference *

Confirmation

19. Suitability *

- ☐ The material is suitable for placement
- ☐ The material is not suitable for placement
- ☐ Other

20. Volume *

- ☐ Total stockpile volume to be drawdown for placement
- ☐ Partial stockpile volume to be drawdown for placement

21. Partial volume required by contractor (m3) *

22. Comment on placement location (final layer, particular remediation area) *

To be copied from Arcadis response

23. Comment on compaction method (layer thickness, no. passes, plant) *

To be copied from Arcadis response

24. Comment on further actions (if applicable) *

This content is neither created nor endorsed by Microsoft. The data you submit will be sent to the form owner.

Stockpile Placement Notification (SPN)

Use this form to inform STDC of stockpile placement location.

1

Stockpile ID (do not include spaces e.g FOU-SP120)

2

Contractor company name

3

Project name (e.g. NZT, Hinterland etc.)

4

Placement area (site area)



- ☐ DMP - Dorman Point
- ☐ FOU - The Foundry
- ☐ LAC - Lackenby
- ☐ LWW - Land West of Warrenby
- ☐ SBW - South Bank
- ☐ SHO - Steel House
- ☐ TLA - Long Acres

5

Placement start date

6

Placement completion date

7

Was the total stockpile volume used?

☐ Yes

☐ No

8

What volume remains? Upload survey to https://ssisteel.sharepoint.com/:f:/r/sites/MaterialsManagement2-StockpileManagement/Shared%20Documents/Stockpile%20Management/02_Technical/02.05_Survey/s/Published?csf=1&web=1&e=VphekC

9

Placement location(s) (grid squares e.g. AB01)

10

Placement depth (s) (mAOD)

11

Placement layer(s) (e.g. layer 5, final layer etc.)

12

Placement layer thickness (mm)

13

Compaction method (compaction plant, number of passes etc.)

14

Placement mechanism

- ☐ Material placed as a waste
- ☐ Material placed under Materials Management Plan
- ☐ Material is a product

15

Document name or reference (e.g. permit reference, MMP name)

This content is neither created nor endorsed by Microsoft. The data you submit will be sent to the form owner.

Appendix B. Accepted Waste Types

Table 4-2 - List of Acceptable Waste Types

Waste Code	WM3 Waste Description	Entry Type	Additional Restrictions
01 – Wastes Resulting from exploration, mining, quarrying, and physical and chemical treatment of minerals			
01 01 Wastes from mineral extraction			
01 01 02	Wastes from mineral non-metalliferous extraction	AN	
01 04 Wastes from physical and chemical processing of non-metalliferous minerals			
01 04 08	Waste gravel and crushed rocks other than those mentioned in 01 04 07	MN	
10 Wastes from thermal processes			
10 02 Wastes from the iron and steel industry			
10 02 01	Wastes from the processing of slag	AN	Sourced from the Teesworks site
10 02 02	Unprocessed slag	AN	Sourced from the Teesworks site
16 Wastes not otherwise specified in the list			
16 11 Waste linings and refractories			
16 11 04	other linings and refractories from metallurgical processes other than those mentioned in 16 11 03	MN	Limited to refractory bricks obtained from demolished structures associated with the Teesworks and also excavated as a constituent of the made ground from the Teesworks site.
17 Construction and Demolition Wastes (Including Excavated Soil from Contaminated Sites)			
17 01 Concrete, bricks, tiles and ceramics			
17 01 01	Concrete	MN	
17 01 02	Bricks	MN	
17 01 03	Tiles and ceramics	MN	
17 01 07	Mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06	MN	
17 05 Soil (including excavated soil from contaminated sites), stones and dredged spoil			
17 05 04	Soil and stones other than those mentioned in 17 05 03	MN	



Waste Code	WM3 Waste Description	Entry Type	Additional Restrictions
19 Wastes from waste management facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use			
19 03 Stabilised / solidified wastes			
19 03 05	Stabilised wastes other than those mentioned in 19 03 04	AN	Input materials for stabilisation are to be sourced from the Teesworks site and the site and be listed within this table.
19 12 Wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified			
19 12 09	Minerals (for example sand, stones)	AN	
19 12 12	Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11	MN	
19 13 Wastes from soil and groundwater remediation			
19 13 02	Solid wastes from soil remediation other than those mentioned in 19 13 01	MN	Limited to materials listed within this table that are sourced from the Teesworks site and subsequently remediated on the Teesworks site to remove their hazardous properties

Table Notes

AN – Absolute non-hazardous

MN – Mirror non-hazardous



Appendix C. Waste Acceptance Criteria

C.1 Pre Acceptance Documentation

The following information is required to be compiled and provided by the waste producer of the waste for each waste stream at the pre-acceptance stage.

- The full address where the waste was produced.
- The identity of the producer.
- All reasonably identifiable previous uses of the producer site for excavation wastes.
- The process giving rise to the waste.
- The physical appearance of the waste including colour and texture.
- Volume of the waste and a conversion to tonnes (using a conversion factor for the volume (cubic meters) to weight (tonnes) for each waste stream.
- Evidence that the material complies with Table 4-2 - List of Acceptable Waste Types, including waste classification.

For material generated within the boundary of the wider Teesworks site (including material within the boundary of the permit) this information is presented in the Waste and Material Management System.



C.2 Leachate Waste Acceptance Criteria

Waste acceptance criteria for leachate have been derived, these define the upper concentration limits for the identified contaminants of concern and are based on the outcomes of the Hydrogeological Risk Assessment [5]. these are presented in the following memo:



SUBJECT
Development of Waste Acceptance Criteria: Groundwater
Resource Protection

DATE
24 April 2025

DEPARTMENT
Site Evaluation and Restoration

COPIES TO
Julian Ingram, Environment Agency
Selina Franklin, Environment Agency
Sarah Bullock, AtkinsRéalis
Andy Hogg, AtkinsRéalis
Jonathan Miles, Arcadis
Andy Smith, Arcadis

TO
Jordan Gibson, Environment Agency

OUR REF
10047374-AUK-XX-XX-CO-YY-1104-01-Foundry Central East
WAC Memo

PROJECT NUMBER
10047374

FROM
Simon Hay

T M 07825326420 **E** simon.hay@arcadis.com

Introduction

Waste acceptance criteria (WAC) in respect to groundwater resource protection have been developed to support the waste acceptance procedure developed to support the permit application. The groundwater resource waste acceptance criteria are to be used to assess soil leachate data. Other WAC in respect to human health and waste classification are also outlined within the waste acceptance procedures but are not discussed within this memo.

The WAC are based on the site-specific ConSim model developed in the Hydrogeological Risk Assessment (HRA) [Arcadis Report ref: 10047374-AUK-XX-XX-RP-ZZ-1038-01] and have been defined for the priority hazardous and non-hazardous substances identified, including:

- Arsenic (hazardous)
- Hexavalent Chromium (hazardous)
- Lead (hazardous)
- Mercury (hazardous)
- Benzo(a)pyrene (hazardous)
- Naphthalene (non-hazardous)
- Benzene (hazardous)
- Ammoniacal Nitrogen (non-hazardous)
- Total Cyanide (non-hazardous)

The WAC developed are applicable to the nine recovered wastes assessed in the HRA, including:

- Foundry Central East Made Ground
- Foundry Central East Sand Fill
- Foundry Central West Made Ground
- Steel House Made Ground
- Land West of Warrenby Made Ground
- South Bank Quay Made Ground
- Concrete

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- Refractory Brick
- Mudstone

Approach

Concentrations were modelled in the HRA as a triangular distribution, representing minimum, likely and maximum measured concentrations.

The modelling provided justification that worst-case leachate concentrations (defined in the HRA based on maximum concentrations across the nine recovered wastes assessed) of substances meet the requirements to prevent hazardous and limit non-hazardous substances from entering groundwater.

In line with the approach requested by the Environment Agency on 17th December 2024, maximum, worst-case, modelled concentrations have been used to determine WAC.

Waste Acceptance Criteria

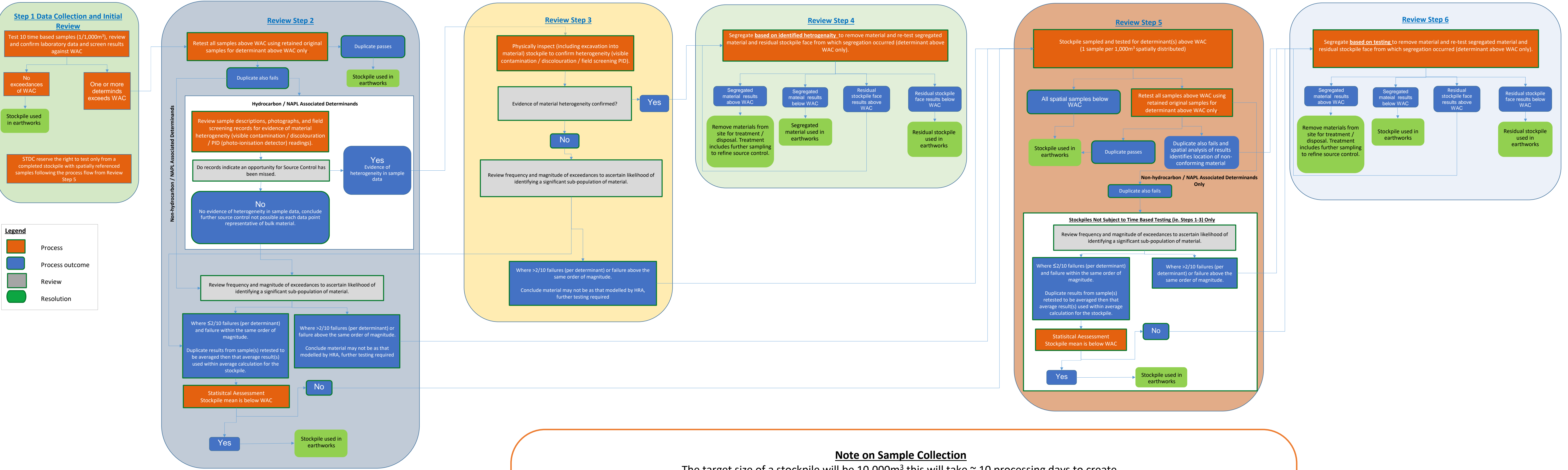
The WAC are presented in the table below. These may be applied to the nine recovered wastes.

Substance	WAC	Units	Comment
Arsenic	103	µg/l	Maximum modelled concentration (worst-case)
Chromium (VI)	118	µg/l	Maximum modelled concentration (worst-case)
Lead	2044	µg/l	Maximum modelled concentration (worst-case)
Mercury	5.67	µg/l	Maximum modelled concentration (worst-case)
Naphthalene	1040	µg/l	Maximum modelled concentration (worst-case)
Benzo(a)pyrene	9.80	µg/l	Maximum modelled concentration (worst-case)
Benzene	58.7	µg/l	Maximum modelled concentration (worst-case)
Ammoniacal Nitrogen as N	34	mg/l	Maximum modelled concentration (worst-case)
Cyanide (Total)	177	µg/l	Maximum modelled concentration (worst-case)

While the above criteria have been derived based on the available laboratory test data (maximum modelled concentrations), for some substances, it is possible that higher concentrations may also meet the requirement to limit and prevent inputs to groundwater for hazardous and non-hazardous substances.

The results of the ConSim modelling, presented in the HRA, indicate that the predicted concentrations of some substances are several orders of magnitude below the MRV or WQS at the relevant modelled compliance point. This demonstrates that higher modelled source concentrations would also not exceed these criteria at the relevant modelled compliance point. In these cases, it may be appropriate to revise the WAC if, on collection of waste acceptance test data, current WAC are regularly exceeded, and the concentration exceeding can be demonstrated to meet the requirement to limit and prevent inputs to groundwater.

Process Flow for the Assessment of Leachate Samples Against the WAC



Note on Sample Collection

The target size of a stockpile will be 10,000m³ this will take ~ 10 processing days to create. Samples are proposed to be collected from the processing equipment each day, as such these cannot be geolocated located within the final stockpile. This approach allows testing to begin at processing day 1 and have initial results available before the stockpile is completed. Waiting until a stockpile is complete to collect geolocated samples would introduce significant delay. The approach also has H&S benefits.

Overall sample frequency will be 1 sample representative of the material per 1,000m³, and will include sufficient material to allow repeat testing of each sample. STDC reserve the right to test only from a completed stockpile with spatially referenced samples following the process flow from Review Step 5.

Assumption

All parties have accepted that for WAC determinants source control isn't possible for the bulk of the waste, and for metals in all cases. Source control should be possible for NAPL and WAC determinants when associated with NAPL (benzene, naphthalene, benzo(a)pyrene, and cyanide)

C.3 Human Health reuse Criteria

The rationale for the Human Health Reuse Criteria and assessment of the suitability of waste for backfilling is presented in the Arcadis Remediation Strategies [13, 12]. Criteria values are presented in the excerpt below.



Contaminant of Concern	Units	Human Health (Commercial Worker)#	Source
Metals			
Arsenic	mg/kg	640	S4UL
Boron, Water Soluble	mg/kg	240,000	S4UL
Cadmium	mg/kg	190	S4UL
Chromium	mg/kg	8,600	S4UL
Chromium, Hexavalent	mg/kg	33	S4UL
Copper	mg/kg	68,000	S4UL
Lead	mg/kg	2,300	C4SL
Mercury	mg/kg	58*	S4UL
Nickel	mg/kg	980	S4UL
Vanadium	mg/kg	9,000	S4UL
Zinc	mg/kg	730,000	S4UL
Cyanide, Free	mg/kg	66	DQRA
Thiocyanate	mg/kg	230	USEPA
PAHs			
Naphthalene	mg/kg	1,900	Wood
Acenaphthylene	mg/kg	83000**	S4UL
Acenaphthene	mg/kg	84000**	S4UL
Fluorene	mg/kg	63000**	S4UL
Phenanthrene	mg/kg	22,000	S4UL
Anthracene	mg/kg	520,000	S4UL
Fluoranthene	mg/kg	23,000	S4UL
Pyrene	mg/kg	54,000	S4UL
Benzo(a)anthracene	mg/kg	170	S4UL
Chrysene	mg/kg	350	S4UL
Benzo(b)fluoranthene	mg/kg	44	S4UL
Benzo(k)fluoranthene	mg/kg	1,200	S4UL
Benzo(a)pyrene	mg/kg	77	Wood
Indeno(1,2,3-c,d)pyrene	mg/kg	500	S4UL
Dibenzo(a,h)anthracene	mg/kg	3.5	S4UL
Benzo(g,h,i)perylene	mg/kg	3,900	S4UL
Petroleum Hydrocarbons			
Aromatic C5-C7	mg/kg	26000**	S4UL
Aromatic C7-C8	mg/kg	56000**	S4UL
Aromatic C8-C10	mg/kg	3500**	S4UL
Aromatic C10-C12	mg/kg	16000**	S4UL
Aromatic C12-C16	mg/kg	36000**	S4UL
Aromatic C16-C21	mg/kg	28,000	S4UL
Aromatic C21-C35	mg/kg	28,000	S4UL
Aliphatic C5-C6	mg/kg	3200**	S4UL
Aliphatic C6-C8	mg/kg	7800**	S4UL
Aliphatic C8-C10	mg/kg	2000**	S4UL
Aliphatic C10-C12	mg/kg	9700**	S4UL
Aliphatic C12-C16	mg/kg	59000**	S4UL
Aliphatic C16-C35	mg/kg	1,600,000	S4UL
Aliphatic C35-C44	mg/kg	1,600,000	S4UL
BTEX and MTBE			
MTBE	mg/kg	210	USEPA
Benzene	mg/kg	27	S4UL
Toluene	mg/kg	56,000	S4UL
Ethylbenzene	mg/kg	5,700	S4UL
m & p-Xylene	mg/kg	5,900	S4UL
o-Xylene	mg/kg	6,600	S4UL
Asbestos			
Asbestos (Bulk Fill)	n/a	Visible ACM	Arcadis
Asbestos (Surface layer)	n/a	Criteria 1. 90% upper confidence level of mean <0.001% Criteria 2. <0.005% maximum concentration Criteria 3. No quantified asbestos in >80% of samples (Material proposed for use as the top 200mm layer tested at a frequency of 1 sample per 500m3 in either stockpiles or on placement.)	Arcadis

MAMX-ATK-ENV-FDRXX-RP-EN-
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Contaminant of Concern	Units	Human Health (Commercial Worker)#	Source
Indicative Volatile Organic Compounds - Exact suite subject to contracted environmental laboratory. For use only if indicated field screening.			
Vinyl chloride	mg/kg	0.059	S4UL
1,1-Dichloroethene	mg/kg	1,000	USEPA
Trans-1,2-Dichloroethene	mg/kg	23,000	USEPA
1,1-Dichloroethane	mg/kg	16	USEPA
Cis-1,2-Dichloroethene	mg/kg	2,300	USEPA
Bromochloromethane	mg/kg	630	USEPA
Chloroform	mg/kg	99	S4UL
1,1,1-Trichloroethane	mg/kg	660	S4UL
Carbon tetrachloride	mg/kg	2.9	S4UL
1,2-Dichloroethane	mg/kg	0.67	S4UL
Trichloroethene	mg/kg	1.2	S4UL
1,2-Dichloropropane	mg/kg	11	USEPA
Dibromomethane	mg/kg	99	USEPA
Bromodichloromethane	mg/kg	1.3	USEPA
cis-1,3-Dichloro-1-propene	mg/kg	8.2	USEPA
trans-1,3-Dichloro-1-propene	mg/kg	8.2	USEPA
1,1,2-Trichloroethane	mg/kg	5	USEPA
Tetrachloroethene	mg/kg	19	S4UL
1,3-Dichloropropane	mg/kg	23,000	USEPA
Dibromochloromethane	mg/kg	39	USEPA
1,2-Dibromoethane	mg/kg	0.16	USEPA
Chlorobenzene	mg/kg	56	S4UL
1,1,1,2-Tetrachloroethane	mg/kg	110	S4UL
Styrene	mg/kg	35,000	USEPA
Tribromomethane	mg/kg	86	USEPA
Bromobenzene	mg/kg	1,800	USEPA
1,1,2,2-Tetrachloroethane	mg/kg	270	S4UL
1,2,3-Trichloropropane	mg/kg	0.11	USEPA
2-Chlorotoluene	mg/kg	23,000	USEPA
4-Chlorotoluene	mg/kg	23,000	USEPA
1,3,5-Trimethylbenzene	mg/kg	1,500	USEPA
tert-Butylbenzene	mg/kg	120,000	USEPA
1,2,4-Trimethylbenzene	mg/kg	1,800	USEPA
sec-Butylbenzene	mg/kg	120,000	USEPA
1,3-Dichlorobenzene	mg/kg	30	S4UL
1,4-Dichlorobenzene	mg/kg	4,400	S4UL
1,2-Dichlorobenzene	mg/kg	2,000	S4UL
Butylbenzene	mg/kg	58,000	USEPA
1,2-Dibromo-3-chloropropane	mg/kg	0.064	USEPA
1,2,4-Trichlorobenzene	mg/kg	220	S4UL
Hexachloro-1,3-butadiene	mg/kg	31	S4UL
1,2,3-Trichlorobenzene	mg/kg	102	S4UL
Indicative Semi Volatile Organic Compounds - Exact suite subject to contracted environmental laboratory. For use only if indicated field screening.			
Phenol	mg/kg	760	S4UL
1,3-Dichlorobenzene	mg/kg	30	S4UL
1,4-Dichlorobenzene	mg/kg	4,400	S4UL
1,2-Dichlorobenzene	mg/kg	2,000	S4UL
3&4-Methylphenol	mg/kg	82,000	USEPA
2,4-Dimethylphenol	mg/kg	16,000	USEPA
2,4-Dichlorophenol	mg/kg	2,500	USEPA
1,2,4-Trichlorobenzene	mg/kg	220	S4UL
4-Chloro-3-methylphenol	mg/kg	82,000	USEPA
2-Methylnaphthalene	mg/kg	3,000	USEPA
Hexachlorocyclopentadiene	mg/kg	7.5	USEPA
2,4,6-Trichlorophenol	mg/kg	210	USEPA
2,4,5-Trichlorophenol	mg/kg	82,000	USEPA
2-Chloronaphthalene	mg/kg	60,000	USEPA
2-Nitroaniline	mg/kg	8,000	USEPA
2,6-Dinitrotoluene	mg/kg	1.5	USEPA
2,4-Dinitrotoluene	mg/kg	7.4	USEPA
Dibenzofuran	mg/kg	1,000	USEPA
Diethyl phthalate	mg/kg	660,000	USEPA
4-Nitroaniline	mg/kg	110	USEPA
Azobenzene	mg/kg	26	USEPA
Hexachlorobenzene	mg/kg	110	S4UL
Pentachlorophenol	mg/kg	400	S4UL
Butylbenzyl phthalate	mg/kg	1,200	USEPA
Bis(2-ethylhexyl)phthalate	mg/kg	160	USEPA
Di-n-octyl phthalate	mg/kg	8,200	USEPA



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