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## 1. Purpose

- 1.1 This SSI has been prepared in order to satisfy the requirements of the environmental permit for sludge treatment by anaerobic digestion at: -

Ellesmere Port WwTW Sludge Treatment Facility  
 Little Stanney  
 Cheshire  
 CH2 4HZ

Environmental Permit: EPR/ZP3031LJ


## 2. Responsibility

- 2.1 All Standard Operating Procedures, Instructions and other documented operational procedures and activities are to be carried out by appropriate UU personnel involved with the reception, handling and processing of sludge imports.
- 2.2 All staff involved in the reception, handling and processing of sludge imports will be made aware of this procedure and trained in its content.

## 3. Objective

- 3.1 This SSI sets out the procedures for the acceptance of waste for sludge treatment, and includes the following sections: -

- Section 4: Permitted Waste types
- Section 5: Waste Pre-acceptance
- Section 6: Waste Acceptance
- Section 7: Waste non-conformance and rejection
- Section 8: Waste audit and review
- Section 9: Sampling
- Section 10: Appended Forms
  - WwTW Sludge Waste Declaration Form
  - WwTW Technical Evaluation Review Form

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3.2 The waste types covered under this procedure are sewage sludges from WwTW. As such they are considered to be low risk in terms of process safety, occupational safety and environmental impacts. As per the BREF guidance, the waste pre-acceptance and acceptance procedures in this SSI have been drafted to be proportionate to the risk posed.


#### 4. Permitted Waste types

4.1 Only those waste types listed in the environmental permit will be accepted at site, these are summarised in Table 4.1.

**Table 4.1: Summary of Permitted Waste Types (pending permit issue)**


Import Stream	EWC Code	Origin
Imported Sludge	<b>19 08 05</b> Sludges from the treatment of urban wastewater.	Sewage sludge arising from other WwTW (comprising of raw sludge from sewage settlement and/or surplus activated sludge/humus sludge from biological stages).
Thickened Imported Sludge	<b>19 02 06</b> Sludges from the physico/chemical treatment other than those mentioned in 19 02 05.	Sewage sludge arising from other WwTW (comprising of thickened sludge arising from sewage settlement and/or surplus activated sludge/humus sludge from biological stages).
Indigenous sludge <sup>(note 1)</sup>	<b>19 08 05</b> Sludges from the treatment of urban wastewater.	Indigenous sewage sludge arising from Ellesmere Port WwTW.
Indigenous Surplus Activated Sludge (SAS) <sup>(note 1)</sup>	<b>19 08 05</b> Sludges from the treatment of urban wastewater.	Indigenous surplus activated sewage sludge arising from Ellesmere Port WwTW
Centrate liquor	<b>19 08 99</b> Wastes from wastewater treatment plants not otherwise specified	Centrate imported from other UUW sludge treatment sites in the event of operational issues at the origin site (contingency only).
Imported digestate	<b>19 06 06</b> Digestate from anaerobic treatment of animal and vegetable waste	Digestate imported from another UUW sludge treatment sites if there are treatment issues at the origin site (contingency only) or required for digester seeding.

Note 1 - The EWC does not apply for the classification of indigenous sludges and SAS unless these streams are considered for removal off-site.

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## 5. Waste Pre-Acceptance

- 5.1 Waste characterisation and pre-acceptance is provided for each sludge import to Ellesmere Port WwTW. This is provided through completion of the “WwTW Sludge Waste Declaration Form”. The WwTW Sludge Waste Declaration Form is completed by a representative of the WwTW production site or production area with knowledge and authority to provide this information (e.g. Process Controller, Technical Officer, Production Manager, Area Production Manager).
- 5.2 The characterisation provided on the WwTW Sludge Waste Declaration Form is required in order for a technical assessment of the waste to be completed. This will determine an import’s suitability for processing at Ellesmere Port WwTW and if deemed suitable how this will be processed. The characterisation includes but is not limited to: -
- Waste source details (i.e. WwTW name and location).
  - Waste description
  - EWC code (checked to confirm it is listed on the permit).
  - Physical form and any physical contaminants.
  - Estimated volumes, frequency and annual quantities.
  - Details of any representative analysis or provision of a suitable sample to enable analysis.
- NOTE: the WwTW Sludge Waste Declaration Form includes a range of potential parameters. This list is not exhaustive and any other relevant parameters should be highlighted where known. Not all parameters listed may be appropriate for the source import, the relevance of their inclusion on the Declaration (and the subsequent technical assessment) is determined by the technical resource completing the assessment.
- 5.3 The information on the WwTW Sludge Waste Declaration shall be reviewed by the source import site if the waste changes, the process generating the waste changes or at least annually.
- 5.4 Following completion of the WwTW Sludge Waste Declaration Form this information will be reviewed by an appropriate Technical Resource representing Ellesmere Port WwTW. This may be the Process Controller, Technical Officer, Production Manager or Production Engineer. The technical assessment shall: -

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- Confirm that the import is a permitted import for Ellesmere Port WwTW.
- Consider all the details provided for the source import stream and identify if any further information or parameters are required.
- Technically assess the parameters detailed (including any analysis listed on the WwTW Sludge Waste Declaration Form) and assess these against any known restrictions, limits or processing requirements.

NOTE: not all parameters listed within the WwTW Sludge Waste Declaration Form may be appropriate for inclusion or needed for the technical assessment. The relevant parameters will be determined by the technical resource completing the assessment.

These factors will be considered in order to ensure the incoming waste can be treated effectively and give rise to no additional environmental risks or nuisance.

5.5 The Technical Assessment will confirm if the proposed import stream is suitable for acceptance and treatment at Ellesmere Port WwTW. This will be recorded and the appropriate Production sites (ie. personnel at the import and export) shall be informed. Where there are any changes following a Pre-acceptance review this will be noted and instructed to the relevant teams as required to ensure the required changes are implemented.

5.6 The Technical Assessment will be recorded on the WwTW Technical Review Form (see Appended Forms Section 10).


5.7 Pre-acceptance records for waste accepted will be kept for a minimum of 3 years.

## 6 Waste Acceptance


6.1 The Production Manager (Ellesmere Port WwTW) is responsible for the approval of incoming waste with technical support provided by the Process Controllers, Production Engineer or Technical Officer as required.

Imports to site are either Indigenous Sludges (from Ellesmere Port WwTW) or from tankered imports from other WwTW.

6.2 All imports of site Indigenous and tankered imports will have undergone pre-acceptance characterisation and technical evaluation as detailed in Section 5 of this procedure.

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- 6.3 **Indigenous sludges** from site's Primary Settlement Tanks and Surplus Activated Sludge (SAS) processes are a key component that is the import to the Ellesmere Port sludge system. These Indigenous sludges are received via enclosed pipework into the appropriate reception system/tank for the sludge being handled.
- 6.4 **Imported sludges** received by road tanker from other WwTWs consist of raw sludge that is made up of Primary Settlement Tank Sludge and/or Surplus Activated Sludge (SAS) / humus sludge from the biological stages. These raw sludges are transported from other WwTW by road tanker are then offloaded at the specified tanker offloading points. The transfer is through enclosed pipework.
- 6.5 **Imported digestate** is only received as a contingency from another Uuw sludge treatment site in the event that there are treatment issues at the origin site. Liquid digestate is received by road tanker and discharged into the indigenous sludge wet well for processing. Digestate may be transferred directly into a digester, if required for seeding purposes.
- 6.6 **Centrate liquor** is only received as a contingency from another Uuw sludge treatment site in the event of operational issues at the origin site. Centrate is received by road tanker and discharged directly into the centrate holding tank.
- 6.7 All incoming tanker loads are pre-arranged via the UU Sludge Production Planning team who will schedule the appropriate imports and the number of imports to Ellesmere Port WwTW. The volume of imports by road tanker will be managed in line with sludge processing capabilities and capacities and take account of site indigenous import volumes.
- 6.8 Sampling of imports on arrival to Ellesmere Port WwTW is not required as the material consists of sewage sludge from WwTWs. Where there are operational or technical reasons to carry out sampling these will be done as detailed in Section 9 of this procedure.
- 6.9 Tankered imports that are scheduled to Ellesmere Port WwTW are offloaded through systems and the following information is recorded: -
- Date accepted
  - Source-site details
  - Intended acceptance route (e.g. raw sludge tanks or thickened sludge tanks)

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- Load reference number (imported loads only)
- Quantity received
- Solids content (where probe fitted).

6.10 Imported loads will not be accepted if the load does not conform to the norm or if there are grounds for rejection as detailed in Section 7 of this procedure.

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## 7 Waste non-conformance and rejection

7.1 As detailed earlier in this procedure the imports to Ellesmere Port WwTW are sewage sludges from other WwTWs and as such their composition is expected to be in line with sewage sludge.

There are some basic parameters (e.g. solid content) that can be used to validate that the sludge is in line with the operational parameters or the band that is expected. These can be remotely monitored (for example with the use of sludge loggers fitted with a solids probe) but can also be validated by spot sampling of the sludge as required.

Import / load non-conformance may also be triggered retrospectively following an identified issue or from performance monitoring.

7.2 The grounds for rejecting a load are: -


- The import is not expected or planned in to site.
- There is insufficient storage or capacity to process the import on the date planned.
- The pre-acceptance assessment has not been completed for the import.
- There are concerns raised on the suitability or compatibility of the import material (this may be triggered through spot checks or retrospective monitoring).

These grounds for rejection will require a technical intervention from a member of the Site Production team at Ellesmere Port WwTW in order to investigate and review the issue at hand.

Only a member of the site team will be able to confirm if it is appropriate to receive a non-conforming import. Details of this non-conformance will be recorded.

Following this investigation and review if the decision is that the import cannot be received this will be rejected. All rejected loads will be notified to UU's Sludge Production Planning team and the relevant managers for the sites (import and export) will be notified. Details of rejected loads will be recorded.

7.3 If a problem is identified following acceptance of a load (e.g. via process control monitoring), all loads from the identified source will be stopped pending investigation. The relevant UU production site teams will be contacted and the waste stream will be re-assessed before future loads are accepted.

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## 8 Waste audit and review

### 8.1 Waste import review:

All imports to Ellesmere Port WwTW undergo Pre-acceptance in accordance with Section 5 of this procedure. The pre-acceptance information and technical assessments will be reviewed if the waste import changes, if the process generating the waste changes or at least annually.

Due to the well-known nature of the waste imports it is not expected that imports will vary substantially. Any parameters that require monitoring or review will be identified at the Pre-acceptance stage or on subsequent reviews and this will identify the appropriate frequency.

### 8.2 Waste audit:

Periodic audits of waste imports accepted will be carried out. These are conducted by the Environmental Regulatory Advisors (ERAs). These audits are aimed to assess the company's compliance with this procedure by reviewing the information held and the systems followed. These audits will be carried out annually and will assess a representative selection of imports for the permitted facility.

Audits will be recorded in the company's QA system.

## 9 Sampling


### 9.1 Pre-acceptance sampling:

All sludge imports received at Ellesmere Port WwTW will have undergone waste classification and pre-acceptance in line with Section 5 and Section 6 of this procedure.

This will include a representative sample of the sludge material being obtained. This will be from the appropriate point or points on that site, for example the raw sludge holding tank, sludge distribution or sludge loading point.

Details of the point of sampling will be recorded.



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**9.2 Waste acceptance sampling:**

In line with guidance, samples of individual imports of sewage sludge are not required to be sampled on arrival at Ellesmere Port WwTW.

Some imports are received through loggers and this allows the source material to be recorded along with a record of the solids content, date and time of offload, source site (and reference) of the sludge import and the sludge volume.

This acts as a remote system for logging and controlling sludge import activity and allows United Utilities as operator to control and monitor the imports to site.

**9.3 Spot sampling and Process sampling:**


It may be required from time to time to sample import deliveries either individually (spot sampling) or combined (process sampling) for monitoring purposes. Spot sampling may also be undertaken as part of the auditing approach in Section 8 where it is considered appropriate.

NOTE: Seasonal variation may affect the composition of the imports, as such it may be necessary to obtain samples which represent these variations, either through spot sampling or process sampling. The requirement of this will be determined by the Process Controller, Technical Officer or Production Engineer (as appropriate).

9.4 Samples will be obtained in suitable, clean containers and transferred to appropriate sample bottles in a timely manner.

9.5 Where samples are to be sent for testing and analysis at an off-site laboratory, the sample bottles will be kept in the appropriate sample holding point whilst a courier is arranged for the collection and transfer to the laboratory.

9.6 Testing and analysis at the off-site laboratory will be to accredited UKAS standards.

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## 10 Appended Forms

There are 2 standard forms that are used as part of the Pre-acceptance and Technical Assessment of WwTW Sludge Waste Imports these are: -

- (1) WwTW Sludge Waste Declaration Form.
- (2) WwTW Sludge Waste Technical Assessment Review Form.

Both of these forms will be held on UU's QA system and completed versions of these forms will be held as a record for the Pre-acceptance steps carried out.

**END OF PROCEDURE**

## WwTW SLUDGE WASTE DECLARATION FORM

**NOTE : All areas in BLUE must be completed**

For multiple sites in an operational area this can be completed as a spreadsheet with the relevant detail completed for each site/source.

### (1) Production Site Details (confirm UU or 3rd party)

<b>WwTW Name</b>	
<b>Address</b>	
<b>Post Code</b>	
<b>Company (if 3rd party)</b>	
<b>Site Contact(s)</b>	
<b>Phone No</b>	
<b>Email</b>	

### (2) Waste Details

<b>Waste Description</b>	
<b>Process generating waste</b>	
Please provide details if the WwTW sludge is screened or unscreened. What composition of WwTW sludge is typically from PSTs and what is from SAS/Humus Sludge from biological stages. Identify any other relevant details. Approximations are ok.	
<b>Volume of waste</b>	<b>Frequency of Movement</b>
<b>Total Annual Volume</b>	<b>EWC Code</b>

(3) Composition	Y/N or N/A	Details	Composition	Y/N or N/A	Details
Chemical Oxygen Demand (COD)			pH (Typical range)		
Total Organic Carbon (TOC)			Iron		
Suspended Solids			Aluminium		
Total Solids			Arsenic		
Volatile Solids			Chromium		
Volatile Fatty Acids			Copper		
Fats, oils or greases			Lead		
Carbohydrates			Magnesium		
Calorific Value			Nickel		
Biochemical Methane Potential			Selenium		
Fluoride			Zinc		
Ammonium Compounds			Cobalt		
Total Nitrogen			Molybdenum		
Phosphate			Cadmium		
Total Sulphur			Mercury		
Sulphate or Sulphides			Potassium		
Other Nutrients (if applicable)			Other metals (list as appropriate)		
Particle Size (where appropriate)					
Physical Contaminants (e.g. rag - provide detail)					
Fibre Content (where appropriate)					
Other (please detail as appropriate)					

### (4) Pre-acceptance Sampling Information

<b>Sampling Location Point</b> (include tank or tanks reference where applicable)	
<b>Sample taken by</b>	
<b>Method of Sampling</b>	
<b>Sample Date</b>	
<b>Operating conditions</b>	

(5) I hereby confirm that the information provided is accurate to the best of my knowledge & the sample is representative

<b>NAME (Print)</b>	
<b>SIGNATURE</b>	
<b>POSITION</b>	
<b>DATE</b>	



## **Technical Evaluation Review Form (WwTW Sludge Imports):**

This form is to be completed as a checklist for the Technical Evaluation as part of the Pre-acceptance review. Additional information shall be referenced and attached to this assessment as required.

**Waste Producer (if not United Utilities):**

**WwTW Imports Site(s):**

**Waste Description:**

**EWC code assigned:**

**Proposed or Current Reception Site(s):**

**Waste specific Pre-acceptance tests (where applicable):-**

**Recommended Reanalysis Suite:-**

**Recommended Reanalysis Frequency:-**

**EWC Check & Validation:**

**Is EWC code on Permit List?      YES / NO**

**Provide details of any waste import specific COSHH requirements:**

**Treatability / BAT Assessment (provide details, comments or recommendations):**

**If this is an annual Pre-acceptance review, has there been any change from previous WwTW Sludge Waste Declaration?      YES / NO**

**If YES provide details:**

**Name:**

**Position:**

**Signature:**

**Date:**