Cyfoeth Naturiol Cymru
Natural Resources Wales

Natural Resources Wales permitting decisions

Determination of application to vary environmental permit EPR/ZP3933NJ, Operated by The Treatment Hub Limited.

Application for a Bespoke Permit Variation

The application number is:	**PAN-011960**
The Applicant / Operator is:	**The Treatment Hub Limited**
The Installation is located at:	**Building 2, Westfield Industrial Park, Waunarlwydd, Swansea, SA5 4SF**

Refusal

We have decided to refuse the permit variation for Building 2, Westfield Industrial Park operated by The Treatment Hub Limited.

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements.

Purpose of this document

This decision document:

- explains how the application has been determined
- provides a record of the decision-making process
- shows how all relevant factors have been taken into account
- justifies the specific conditions in the permit other than those in our generic permit template.

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

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Key issues of the decision

The application form C2, part 2b states that the application is to i) increase the storage volume and ii) reflect current/ future activities at the Treatment Hub (see exert below).

2b Provide a non-technical summary of your application

Please give us brief details of all the proposed changes to current activities, and any new activities you want to add to your permit.

You can use the box below, in Table 1 below. Or, you can use a separate sheet and send it to us with your application form. Tell us below the reference you have given this document.

Document reference	TTH/SSF/01-20/004 (Revision 4 dated October 2020).

Table 1 – Details of the proposed changes
Two proposed changes i) increase storage volume to 12,000 tonne and ii) reflect current / future activities at the Treatment Hub.

The application included the above referenced supporting document. And within that document, further aspects to be varied were described.

The executive summary expanded on the above slightly with the following:

In summary the main changes are follows:

- Variation of the permitted volumes stored within the Treatment Hub at any one time
- Variation of waste handling procedures within the Treatment Hub to better reflect the types and subsequent processing of wastes
- Variation of the actual soil management (processing) / treatment / recycling processes undertaken at the Treatment Hub

However this states “main” changes, indicating that it is not describing all of the proposed changes.

It then describes the treatment:

Where treatment is required or considered beneficial, there are essentially two options:

- Natural biodegradation of non-recalcitrant and / or partially recalcitrant hydrocarbon pollutants – this would enable hazardous soils containing these pollutants to be degraded with the intention of reclassifying said soils from 17-05-03 to 17-05-04 or can allow concentrations to be reduced to meet particular product specifications. This will only apply if (i) the type and concentrations of hydrocarbon pollutants are amenable to this process i.e. they are inherently or sufficiently biodegradable for this intention and (ii) the other pollutants within the soils would not render the soils hazardous (for example the presence of elevated metals). This will necessitate effective stockpile management to ensure that only soils that are capable of being processed by natural biodegradation are processed by this route. It should be noted that the compounds most amendable to bioremediation, such as BTEX compounds and naphthalene, are often the environmental risk-driver compounds. This is important when considering treatment to achieve a product specification.
- Chemical and / or physical stabilisation to render the material suitable for reuse – this would be a waste recovery process and in this respect it should be noted that the E-Clay Stabilisation Process is licensed as a waste recovery process

The non-technical summary described:

The following proposed changes to the original permit are as follows:

- To vary the volumes of material stored within the Treatment Hub at any one time. It is proposed to increase the volume of stored materials from 5,250 tonnes to ↑12,000 tonnes
- To increase the number of waste materials accepted to reflect market / customer requirements and previous experience of waste management in line with waste hierarchy principles. The additional EWCs are for wastes that have been identified that can treated analogously to soils, and thus have a recycling capacity within the Treatment Hub's proposed modus operandi. The following EWCs have been added to the original permitted list of EWCs for the reasons stated:
    - 16-03-03 (& 04) - wastes not otherwise specified in this list, off-specification batches and unused products, inorganic wastes containing hazardous substances (inorganic wastes other than those mentioned in 16-03-03)
    - 10-03-20 - wastes from thermal processes, wastes from aluminium thermal metallurgy, flue-gas dust other than those mentioned in 10-03-19
- To vary waste handling / management procedures at the Treatment Hub to reflect the range of waste types accepted and processing / treatment activities - the Treatment Hub has shown it is capable of processing / treating and recycling a greater number of EWC types and this has been demonstrated by the wider range of wastes undergoing treatment in conjunction with the listed EP activities. These activities are detailed within the Environmental Management System (EMS)
- To vary the processes undertaken at the Treatment Hub as set out below:

S5.3part A (1) a) iii Blending or mixing prior to submission to any other activities listed in this section.

S5.4A(1)(b) ii Physico-chemical treatment

However, the supporting document then goes on to describe additional activities taking place that had not previously been described in the existing site operating techniques.

In order to reach a decision on the proposed changes, we first clarify what changes have actually been described/proposed. We have reviewed the application documents and collected the information presented into 7 proposed changes as follows:

1. **Stockpiling "compatible" wastes together**
2. **Blending and mixing wastes**
3. **Re-assess and re-describe waste without treatment**
4. **Biodegradation**
5. **Add wastes as a form of treatment (raw material replacement)**
6. **Add waste codes to permitted wastes**
7. **Increase waste storage volumes/quantities**

In the next section we will examine each of these 7 proposed changes in turn, starting with a look at what the application is proposing and then reviewing the proposal.

Proposed Changes

1. **Stockpiling "compatible" wastes together**.

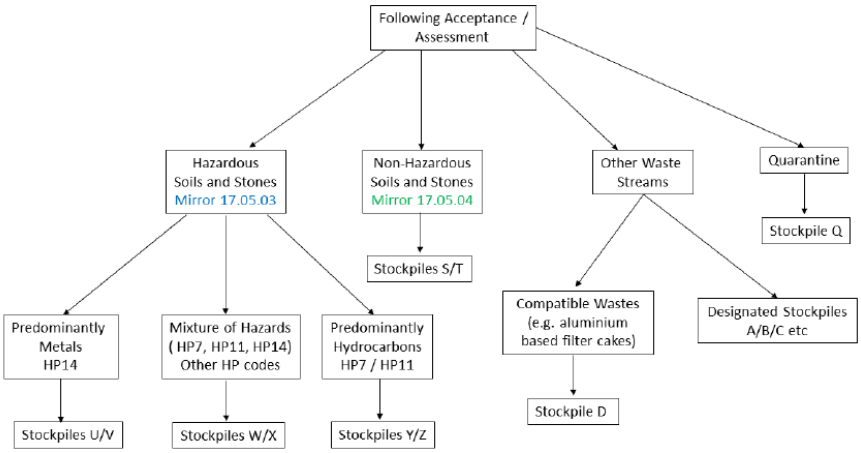
Proposal:
Page 17 of the supporting document describes this happening:

Stockpile Management:

Due to the nature of processing undertaken at the Treatment Hub, many very small batches of compatible wastes are typically combined with larger quantities of *compatible* wastes in accordance with the stated definition of bulking. In this respect it should be noted that the Treatment Hub commonly accepts very small loads, sometimes as little as a few tonnes. It is obviously impracticable to process these small loads separately. The definition of bulking is 'the mixing of hazardous wastes with wastes of the same EWC code, same hazardous properties and similar constituents'. This principle equally applies, of course, to the bulking of non-hazardous wastes.

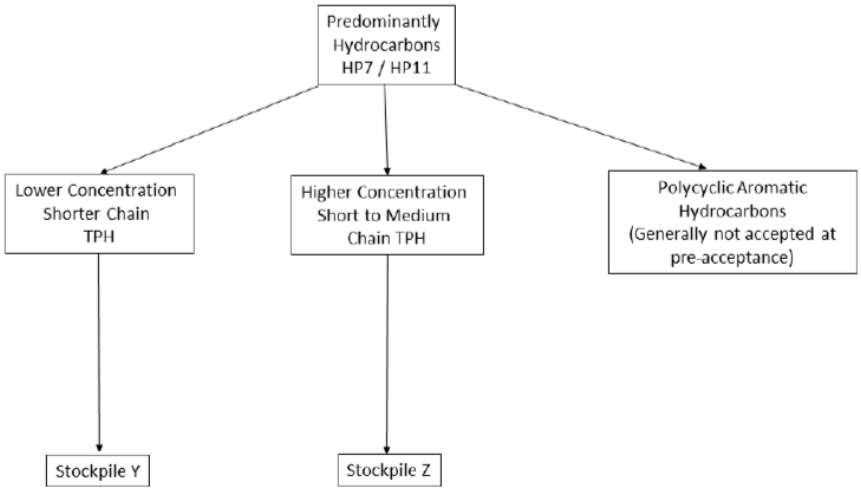
On page 21 of the application supporting document it shows the following flow diagram:

Figure 5 – Stockpiling of Wastes



And on page 22 this:

Figure 6 – Segregation of Hydrocarbon Contaminated Wastes



Page 18 shows a proposed layout plan:

Figure 3 – Illustration Showing Proposed Stockpile Arrangement

Page 18:

- Soil Stockpiles: these are stockpiled soils pending future assessment, processing and treatment (where required). Treatment will only be necessary for a designated beneficial use or for the generation of a recycled material for a designated purpose.

Page 26 clarifies:

- A stockpiling / storage area comprising of:
    - Materials pending assessment
    - Materials pending processing / treatment as required
    - Materials undergoing processing
    - Materials undergoing treatment
    - Processed materials awaiting validation testing
    - Treated materials awaiting validation testing
    - Validated materials awaiting collection off site
    - Quarantine

Page 19 of the supporting document:

These processes are as defined by EMS (Procedure TH-1.2 Waste and Materials Storage and TH-1.5 Process Control).

Section 1.5 of the EMS is actually entitled "1.5 - Processing of Wastes" (does not detail process controls).

Review of proposal:

The site plan in figure 3 does not match with the stockpiles shown on the flow diagrams in figures 5 and 6.

The additional information provided on page 26 of the supporting document confirms that stockpiles include materials pending assessment, materials undergoing treatment and treated materials awaiting validation testing.

Criteria for establishing the degree of compatibility and criteria for establishing if the compatibility is sufficient to permit them to be combined for storage and treatment is not given

The wastes would be stockpiled together, not just from different sources and with different levels of contaminants but they also include wastes at different stages of processing combined within the stockpiles. The application does not explain how the treatment process will be managed to treat different parts of the stockpiles in different ways when they are co-located in the same stockpile. In addition the application does not detail comprehensive monitoring and sampling and analysis of each of the different elements of the stockpiles or describe how wastes can be separated, if needed, following testing if some required further or different treatment.

No clear description of how the process will be controlled, or details of how the end result for the many different parts of the same stockpile will be determined and how different parts will be re-separated if they continue to have different properties and concentrations of contaminants, while being at different stages of treatment (as the application gives no explanation of the stockpiles being comprehensively and thoroughly mixed).

This proposed process with its lack of controls and standards is not acceptable and this element is refused.

2. **Blending and mixing wastes.**

Proposal:

The non technical summary describes:

- To vary the processes undertaken at the Treatment Hub as set out below:

S5.3part A (1) a) iii Blending or mixing prior to submission to any other activities listed in this section.

S5.4A(1)(b) ii Physico-chemical treatment

Page 51 states:

Emissions to Air:

The proposed installation will not have any emissions to air.

And:

Fugitive Emissions:

There are no new fugitive emissions arising from the proposed new plant. The site has strict acceptance criteria that prohibit materials with concentrations of VOC (Benzene) greater than 1ppm. All materials transported to site will have previously been tested and certified to meet Facility Acceptance Specification prior to delivery.

It is not clear if this is a separate procedure, or if it is another description used to describe the combined stockpiles as outlined in point 1 above.

Blending and mixing may in some circumstances be similar to the stockpiling of wastes together as described in point 1, but differs in that stockpiling together can occur without blending and with only mixing at the margins of the different waste streams. This appears to be a proposal to carry out a mixing and blending activity as opposed to simply stockpiling the wastes together in larger stockpiles.

Review of proposal:

The process for blending or mixing has not been described further. It may simply be that this is a different description of stockpiling the wastes together. However, real mixing and blending would need to specify process and measures to ensure that materials of different consistencies could successfully be mixed and blended. Without such explanations and process controls this proposal cannot be assessed and resultant potential emissions such as noise and dust assessed for potential impacts

This element of the application is refused.

3. **Re-assess and re-describe waste without treatment.**
Proposal:

The application forms and explanation of operations to be varied does not describe this aspect of the operation. It is simply described as taking place within the supporting document as described below.

This is described on page 23 to 25 of the supporting document

Soils are classified as either 17-05-03 or 17-05-04 (mirror hazardous or mirror non-hazardous respectively) reflecting the heterogeneous nature of the materials. The Treatment Hub typically accepts soils which have been classified by the waste producer as mirror hazardous – this is normally based on an site investigation assessment etc which can often relate to one borehole or trial pit location for a designated mirror hazardous waste classification – it is invariably the case in practice that the majority of waste soils excavated from the designated location are inherently mirror non-hazardous when reassessed reflecting the natural mixing of heterogeneous soils through excavation, loading onto lorries etc and transportation.

The pre-acceptance procedures therefore necessitate a reassessment of soils on receipt at the facility (at which point the Treatment Hub becomes the waste holder). This assessment is carried out fully in accordance with the stated requirements in WM3 (which also confirms it is the *'duty'* of the waste holder *to determine if a 'mirror entry' is hazardous or non-hazardous and that steps 4 – 7 need to be completed before the appropriate mirror waste code can be applied to the soil waste).*

The pre-acceptance, acceptance and assessment of soils are shown in Figures 7 and 8 below.

Figure 7 – Pre-Acceptance / Acceptance / Assessment of Soils Classified as Mirror Hazardous by the Waste Producer

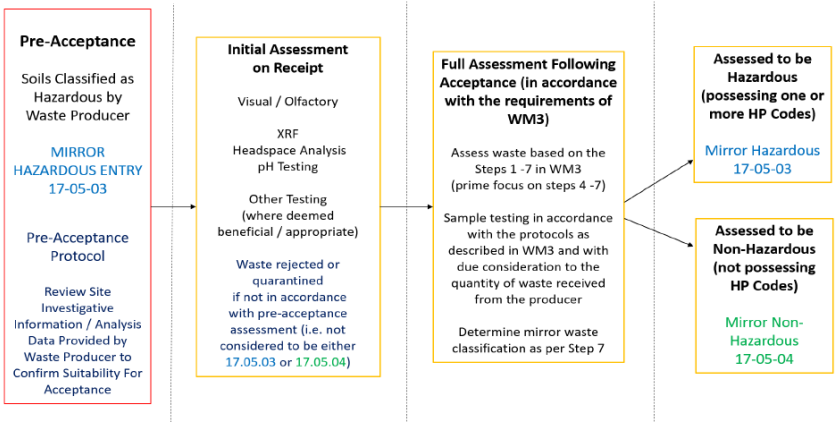
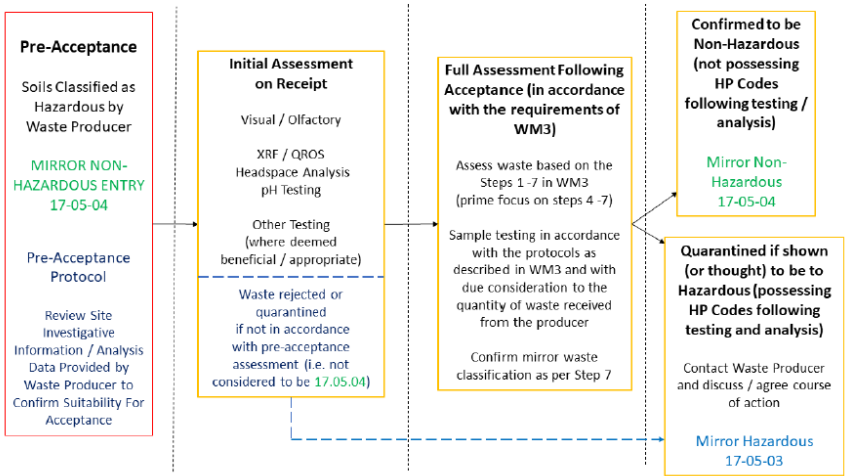


Figure 8 – Pre-Acceptance / Acceptance / Assessment of Soils Classified as Mirror Non-Hazardous by the Waste Producer



Page 34 of the supporting document provides the following additional information

4. Treatment Protocols (Soils):

Treatment can involve a combination of the techniques as summarised below. It is commonly the case, particularly for soils which are by definition heterogeneous, that NO treatment is required to achieve required outcomes.

Review of proposal:

The heading “proposal” above references the fact that this is described in the application supporting document which would potentially, if approved, form part of the operating techniques. There is actually no “activity” being applied for here as the waste undergoes no processing in this scenario. However, the application supporting document describes this as taking place for the majority of wastes received.

The statement that “the majority of waste soils excavated from the designated location are inherently mirror non-hazardous when reassessed” is concerning. It is concerning that waste producers are consistently making mistakes which the operator is not identifying during pre-acceptance. The applicant has made it clear that a significant proportion of the received waste arrives from sites that produce a large number of repeat lorry loads, it is therefore a surprise that miss-descriptions are not identified earlier and corrected as part of the confirmatory testing.

The existing environmental permit, and this is standard for permits for waste management sites includes the following condition:

2.3.3 Waste shall only be accepted if:

(a) it is of a type and quantity listed in schedule 2 table S2.2 and

(b) it conforms to the description in the documentation supplied by the producer and holder.

This again illustrates the need for the site to have adequate procedures to ensure that waste received is as described and does not need to be re-classified.

If instead, the incoming waste loads contain a mixture of both hazardous and non-hazardous waste, this would be a load of mixed hazardous and non-hazardous waste. Therefore it would be best described as 19 02 04 premixed wastes composed of at least one hazardous waste. This can be the case when contaminated soils are removed from a development site as in order to capture all of the hazardous waste, the excavations cut beyond the boundaries of the hazardous waste soils into the less contaminated soil immediately adjacent simply because it is not possible for them to precisely delineate the exact boundary of the hazardous soil. Indeed the extract from the application supporting document above talks about mixing during excavation, loading into lorries and transport.

The application proposes taking an unspecified number of samples from unspecified quantities of waste soils and then simply re-classifying the soils, this has not been sufficiently justified.

This procedure is not described in the existing operating techniques, nor is it described in the application forms as a part of the variation. However as detailed above it is described as taking place in the application supporting document. As there is no actual variation of the permit that is requested and no proposed treatment activity, there is no variation to be either approved or refused.

This procedure, described as taking place for the majority of the waste, is not recognised as being an appropriate operating technique.

4. **Biodegradation.**
Proposal:

The Existing permit does not include the activity S5.3 A1 a i [SECTION 5.3 Disposal or recovery of hazardous waste Part A(1) (a) Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving one or more of the following activities— i) biological treatment;] and this has not been applied for in the part of the application that lists the additional activities to be added to the permit (see non-technical summary where they propose adding two processes).

However biological treatment is described in the supporting document.

This is described on page 5

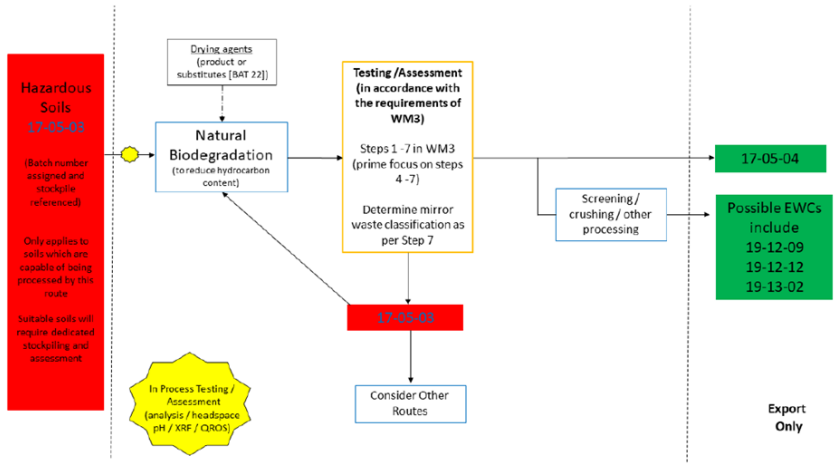
> Natural biodegradation of non-recalcitrant and / or partially recalcitrant hydrocarbon pollutants – this would enable hazardous soils containing these pollutants to be degraded with the intention of reclassifying said soils from 17-05-03 to 17-05-04 or can allow concentrations to be reduced to meet particular product specifications. This will only apply if (i) the type and concentrations of hydrocarbon pollutants are amenable to this process i.e. they are inherently or sufficiently biodegradable for this intention and (ii) the other pollutants within the soils would not render the soils hazardous (for example the presence of elevated metals). This will necessitate effective stockpile management to ensure that only soils that are capable of being processed by natural biodegradation are processed by this route. It should be noted that the compounds most amendable to bioremediation, such as BTEX compounds and naphthalene, are often the environmental risk-driver compounds. This is important when considering treatment to achieve a product specification.

Page 34 describes

> The natural biodegradation process will involve the temporary stockpiling of contaminated soils for a period whereby the hydrocarbon contamination levels have decreased to an acceptable level. In the event that the natural biodegradation process does not achieve the desired / required degree of biodegradation within a designated timeframe (or there is no evidence to suggest that the targets can be achieved) then the soils will be reassessed for other processing / treatment routes. If there is sufficient confidence that the target objectives can be achieved with an extended time period then the soils will be left to continue naturally biodegrading (subject to space and logistical considerations). This is summarised in Figure 9 above.

Figure 9 shows

Figure 9 – Processing of Soils Classified as Mirror Hazardous by the Treatment Hub



Page 26 describes

- Addition of additives which will assist in natural biodegradation processes

"Environmental Management System TTH / EMS / 001 Rev 3" which in section 1.5 states: Stockpiling pending natural biodegradation and ongoing assessment; Addition of additives which will assist in natural biodegradation processes

The flow chart in figure 11 (below) also shows non-hazardous soils undergoing the biodegradation process.

The document entitled "Trommel Fines Technical Assessment" received on 8 January 2021 reports their findings from a single trial where a specific trommel fines waste stream was mixed with a specific waste soil. This trial claimed to show benefits in drying and in promoting natural degradation.

Review of proposal:

Whilst the application refers to the process as "natural" biodegradation, we are talking about treating wastes so heavily contaminated with hydrocarbons that they are classified as hazardous waste. The application does not provide an explanation as to how the process will take place and be controlled. The process description makes no mention of biological agents, but it is assumed that these are the basis of this proposed process.

It does not say how the process will be managed effectively when it has already described the "heterogenous" nature of the wastes and the proposal to co-stockpile and treat different wastes together. This will inevitably mean co-treating wastes containing different hydrocarbon contaminant loadings and at different stages in treatment (as the storage and treatment stockpiles appear to be one and the same as discussed previously).

The application makes no mention of process controls necessary to manage the operation such as controlling temperature or mixing or turning the waste to regulate aeration, no mention of introduction of air on control of aeration, no mention of mixing of bacteria (if bacteria are indeed a part of the process). No control of rate or ratio of addition of additives to aid the degradation process.

The application outlines the potential to introduce additives to the waste soil to help the degradation process, as described previously, but does not explain the means that these wastes will aid the process. It does not explain how the ratio of the quantity of additive to the quantity of waste to be treated will be determined or implemented and controlled. It does not explain the means of applying the additive, or mixing the additive. The applicant has clearly stated that the soil wastes to be treated are heterogenous but has not explained how the process will be managed and controlled to successfully treat this variety of wastes with their inherently different properties. The application has made reference to the Sector Guidance Note S5.06 in their permit variation support document, however the proposal does not include any defined process controls, as described in the guidance.

The application does not explain what emissions will result from the treatment process other than to say there will be no emissions at all, from any operation or process (as detailed in point 3 above). No justification of the statement that there will be no emissions from the degradation process or of the mixing and blending of the additives. These hydrocarbons

appear to disappear, presumably into the air. We anticipate that the proposal will result in emissions (CO_2 and volatile hydrocarbons as a minimum), however the applicant has not supplied sufficient information for them to be quantified and for any potential impacts to be assessed.

The process seems instead to rely on leaving the waste in a pile and re-testing hydrocarbon content from time to time. There isn't a clear regime for sampling from these proposed large combined stockpiles to ensure that all materials meet the standard rather than just the location of potentially very limited number of samples (or even just a single sample). No details of assessment of other potential contaminants (it does not necessarily follow that hydrocarbons will be the only contaminant present in these waste streams).

The reference to CL:AIRE Definition of Waste Code of Practice is not backed up in the application with evidence as to how this can be achieved in practice.

Regarding the trommel fines assessment, referenced above, this was a very limited single trial and the applicant has not proposed any specific process, with associated process controls within the variation application documents.

The application for this process so far as it has been made is refused on the basis of insufficient information on the process, the process controls, the emissions and emission controls.

5. **Add wastes as a form of treatment (raw material replacement).**
   Proposal:

   To treat waste soils with other specified wastes in order to create a product or a non-hazardous waste for re use or disposal as non-hazardous waste.

   This is applied for with respect to both hazardous and non-hazardous soils.

   Page 6 states

   Where possible we have identified / continue to identify several waste streams which compliment these processes or act as a full or partial replacement of raw materials used within these processes. This in accordance with the requirements and ethos of BAT 22.

   Page 26 states

   - Addition of waste substitutes (pozzolans etc) to improve the physical properties of the material [BAT 22]
   - Addition of waste substitutes for the chemical and physical stabilisation process (for example pozzolans and E-Clay reagent substitutes [BAT 22])

   Page 34 states

   - Advanced stabilisation using modified clays (E-Clays / other additives / E-Clay substitute reagents such as aluminium based filter cakes). The treatment process involves encapsulation in which there are no material changes to the individual components. The designated clay formulation will comprise modified pillared clays designed to absorb and chemically immobilise the identified contaminants of concern, further additives are used to complement this treatment process.

Page 42 states

8. Use of a Waste to Treat a Waste [BAT 22]:

The use of a waste to treat a waste is advocated in BAT 22 with the prime objective of saving on raw materials.

This rationale is also referenced in Sector Guidance Note IPPC S05.06. The guidance states that the operator should 'take advantages of any synergies between wastes'.

There are, for example, distinct benefits derived from the use of pozzolanic waste streams for the treatment of filter cakes. Equally there are distinct benefits derived from the use of waste materials which provide a drying capability for treating wastes with a high moisture content including filter cakes.

The Treatment Hub will consider the potential benefits of other [future] waste streams in accordance with BAT 22.

Figure 10 shows

Figure 10 – Processing of Soils Classified as Mirror Non-Hazardous by the Treatment Hub

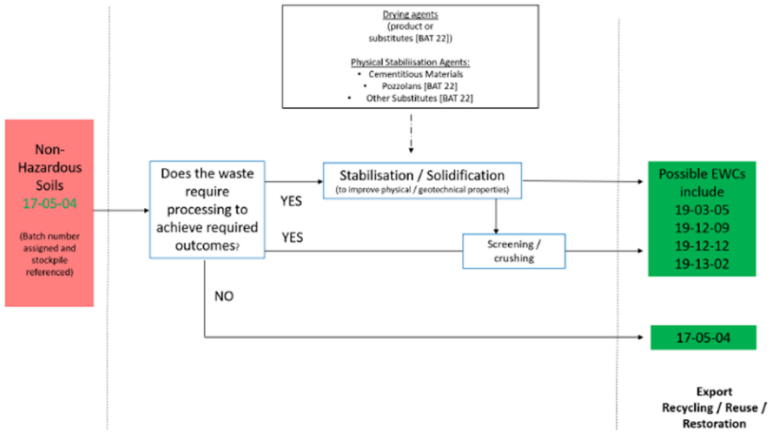


Figure 11 shows

Figure 11 – Processing of Soils for Generating Waste Derived Products

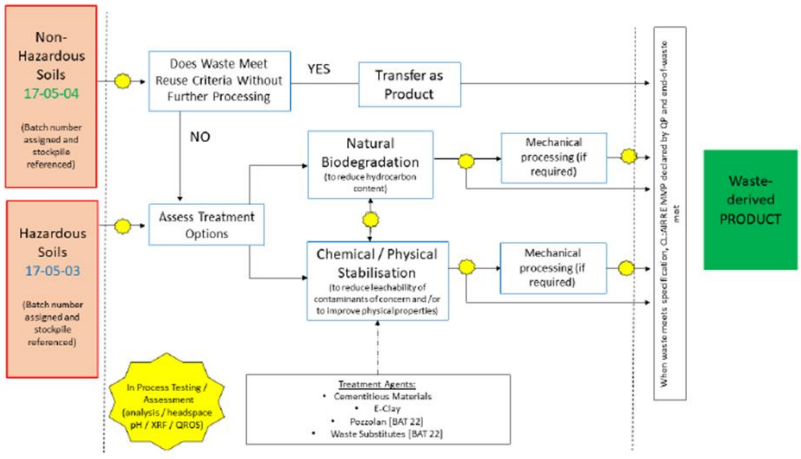


Table 2 shows

Table 2 – Summary of Current / Future Substitute Waste Streams [BAT 22]

Waste Stream	EWC Code / HP Code (Haz Only)	Beneficial Properties	Application
Filter Cake	11-01-09 – Mirror Hazardous HP7, HP14	Presence of High Levels of Aluminium	Treatment of Soils - Provides effective substitute for aluminium additive in treatment materials (thereby saving on raw materials)
Filter Cake	11-01-10 – Mirror Non-Hazardous	Presence of High Levels of Aluminium	Treatment of Soils - Provides effective substitute for aluminium additive in treatment materials (thereby saving on raw materials)
Mine Water Sludge	19-02-06 – Mirror Non-Hazardous	Presence of High Levels of Iron (Ferric)	Treatment of PAH Contaminated Soils - Provides effective substitute for ferric additive in treatment materials (thereby saving on raw materials)
Wood Burner Waste - Bottom Ash	19-01-11 – Mirror Hazardous HP8, HP14	Pozzolanic Properties	Treatment of Soils - Provides effective substitute for cementitious materials (thereby saving on raw materials)
Wood Burner Waste - Fly Ash	19-01-13 - Mirror Hazardous HP7, HP14	Pozzolanic Properties	Treatment of Soils - Provides effective substitute for cementitious materials (thereby saving on raw materials)
Trommel Fines	19-12-09 17-05-04 - Mirror Non-Hazardous	Drying Agent	Provides a suitable additive for improving the physical properties of wastes (particulary wastes with a high moisture content)
Cement	16-03-03 – Mirror Hazardous Not Known	Pozzolanic Properties	Treatment of Soils - Provides effective substitute for cementitious materials (thereby saving on raw materials)
Bag dust	10-03-20 - Mirror Non-Hazardous	Pozzolanic Properties	Treatment of Soils - Provides effective substitute for cementitious materials (thereby saving on raw materials)

"Technical rationale" documents were received on 8 January 2021. These are reports of specific trials of some of the above waste streams in use with specific other wastes.

The applicant also points out the requirements of BAT conclusions 2 and 22. Citing this as reason for using wastes to treat other wastes.

BAT 22. In order to use materials efficiently, BAT is to substitute materials with waste.

Description

Waste is used instead of other materials for the treatment of wastes (e.g. waste alkalis or waste acids are used for pH adjustment, fly ashes are used as binders).

Applicability

Some applicability limitations derive from the risk of contamination posed by the presence of impurities (e.g. heavy metals, POPs, salts, pathogens) in the waste that substitutes other materials. Another limitation is the compatibility of the waste substituting other materials with the waste input (see BAT 2).

Review of proposal:

For non-hazardous waste soils:

The flow chart included in the application as figure 10 on page 29 shows that wastes may be added for drying or stabilisation. It then shows the output being classified as

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

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)

19 12 12 other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11

19 13 wastes from soil and groundwater remediation

19 13 02 solid wastes from soil remediation other than those mentioned in 19 13 01

For proposed output 19 03 05

For some of the listed wastes used as treatment materials it may be theoretically possible to produce 19 03 05 (such as by using non-hazardous wastes). However the list of wastes used as treatment substitutes includes some hazardous wastes. The applicant has not justified how the use of these hazardous wastes would be mixed with non-hazardous soils to produce the non-hazardous output. In addition process controls on quantities of these wastes to be added have not been provided.

As the list of proposed wastes includes several wastes that are hazardous in their own right then this proposal will in many cases cause the classification of the material to move from non-hazardous to hazardous. This is an unsatisfactory proposal.

For proposed output 19 12 09

This would appear to be relevant only for soils that require screening alone.

For proposed output 19 12 12

This would appear to be relevant only for soils that require screening or crushing alone.

For proposed output 19 13 02

As with proposed outcome 19 03 05 above, it may be theoretically possible to produce a material that would meet this code. However the process is not described in sufficient detail and the absence of process controls or detailed and comprehensive monitoring means that we cannot fully assess if the applicant will be able to achieve this in those theoretical situations. However for the other situations, such as when hazardous wastes are mixed with the non-hazardous soils, then this description would not be appropriate.

For proposed “product” without any treatment this would appear to be inappropriate, as it remains untreated and is simply the waste as was imported and not a product (as shown on top line of flow diagram figure 11).

The flow chart in figure 11 also shows a possible pathway for non-hazardous soil to have wastes added, the purpose is described differently from table 10 (discussed above), this time the stated purpose is chemical or physical stabilisation. This flow chart gives the output as a “waste derived Product”.

The applicant has not provided technical detail as to how the addition of other “treatment” wastes will be controlled. With the list including wastes so contaminated that they themselves are classified as hazardous, the necessary controls need to be comprehensive. The pathway to create waste derived product or some of the proposed re-categorisations of the waste listed above are not adequately justified.

The reference to CLARE code of practice for the material to be considered a product and no longer a waste is not backed up in the application with evidence as to how this can be achieved in practice.

For all wastes starting as non-hazardous soils, the mixing of these waste soils with other wastes would be expected to result in a mixture best categorised as 19 02 03 or 19 02 04 (depending on whether the added waste was hazardous or not):

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 02 wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation)

19 02 03 premixed wastes composed only of non-hazardous wastes

19 02 04 premixed wastes composed of at least one hazardous waste

The applicant has described how these wastes **may** improve one or more properties of the waste soil, but this does not change the fact that they are mixed waste and in many scenarios the mixture would contain at least one hazardous waste and therefore become 19 02 04. (because several of the proposed wastes to be used as treatment materials contain hazardous substances). Thereby creating a hazardous waste from a non-hazardous waste and creating a non-soil waste from a soil waste.

For hazardous waste soils.

The flow chart included in the application as figure 9 (shown above in section 5) shows a potential route where other wastes may be added as a drying agent and natural biodegradation taking place. It then shows the output being classified as 17 05 04 (see comments in section 5 which reviewed the biodegradation). Alternatively it shows further processing via screening, crushing or other processing to produce the following waste streams

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 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)

19 12 12 other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11

19 13 wastes from soil and groundwater remediation

19 13 02 solid wastes from soil remediation other than those mentioned in 19 13 01

These above descriptions are inconsistent with the described starting point as a waste soil containing hazardous substances as these post mixing descriptions are all wastes that do not contain hazardous substances. The details provided by the applicant show no separation of hazardous fractions from within the waste, hence it must still be present.

The flow chart in figure 11 shows wastes added for the purposes of chemical or physical stabilisation, with the new combined waste going on to become a “Waste derived Product”.

For all wastes starting as hazardous soils, the mixing of these waste soils with other wastes would be expected to result in a mixture best categorised as 19 02 04:

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 02 wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation)

19 02 04 premixed wastes composed of at least one hazardous waste

The applicant has described how these wastes **may** have one or more beneficial properties, but this does not change the fact that they would be a mixed waste containing at least one hazardous waste and therefore be 19 02 04. Such a material would not be described as a waste derived product. Indeed it would no longer be a waste soil, as it would consist of waste soil and another non-soil waste.

It may in certain circumstances produce stabilised hazardous waste but this would not be described as a “Waste derived Product” and would remain a hazardous waste (simply in a potentially more stabilised form)

Some waste used as additives may have the potential to improve some characteristics of the waste being treated, such as reduced leachability of some components, however other characteristics may be worse and the evidence supplied in the “technical rationale” is totally inadequate. The application does not include details of process controls or standards.

Giving these “technical rationale” examples is not the same as proposing an activity. This is because neither these “technical rationale” nor other parts of the application make specific proposals for how it is intended to use these wastes and what process controls, monitoring, management, sampling and monitoring etc will be used. It also does not give a detailed explanation of how the treatment wastes are proposed to work. It does not show that all other “non-treatment” constituents of the treatment wastes are monitored, both before treatment and in the resultant combined waste. A one off example showing limited results of a specific trial is not the same as a proposal for use in a wide variety of different scenarios.

The BAT conclusions do propose the use of wastes where appropriate. However, the BAT conclusions do not describe the resultant output material as a product or as a non-hazardous waste. Using these wastes to potentially make the other hazardous wastes more stable and easier to dispose of by virtue of the improved properties may have a degree of benefit but it does not follow that the materials can be deemed a product and exported for future use or be reclassified from hazardous waste to non-hazardous waste. The lack of details and process controls means even a limited benefit is far from certain.

This aspect of the application is refused.

6. **Add waste codes to permitted wastes.**
   Proposal:

Page 12 states

- To increase the number of waste materials accepted to reflect market / customer requirements and previous experience of waste management in line with waste hierarchy principles. The additional EWCs are for wastes that have been identified that can treated analogously to soils, and thus have a recycling capacity within the Treatment Hub's proposed modus operandi. The following EWCs have been added to the original permitted list of EWCs for the reasons stated:
  - 16-03-03 (& 04) - wastes not otherwise specified in this list, off-specification batches and unused products, inorganic wastes containing hazardous substances (inorganic wastes other than those mentioned in 16-03-03)
  - 10-03-20 - wastes from thermal processes, wastes from aluminium thermal metallurgy, flue-gas dust other than those mentioned in 10-03-19

Page 31 states

3. Permitted EWC Codes:

The existing permitted EWCs are shown in Table 1 below.

The Treatment Hub does not wish to expand its range of acceptable EWCs at this variation stage to simplify the process, other than the inclusion of 16.03.03 and 10.03.20.

The rationale for 16.03.03 will allow the Treatment Hub to accept and process waste cement from a local supplier. Currently this cement goes to landfill and although out of date still has significant benefit to the treatment operations at the Treatment hub and would wholly / partly negate the need to bring in virgin cement, the production of which has a significantly high carbon footprint. Accepting this material would satisfy the requirements of BAT 11, 22 and 23. This has become more critical with the closure of Western Bio Energy which currently supplies regular volumes of Bottom Ash and Fly Ash which served as a partial replacement for the use of cement and other cementitious materials.

The rationale for 10.03.20 will allow the Treatment Hub to accept and process waste non-hazardous flue dust from a local manufacturing facility. Currently this waste goes to landfill. At the Treatment Hub we have undertaken a number of trials which has demonstrated that the material is a highly effective drying agent - the material does not include any components (contaminants) which will impact any of the treatment strategies used. The material would be used to replace the fly ash previously taken from Western Bioenergy which has now ceased all operations on site. Accepting this material would satisfy the requirements of BAT 11, 22 and 23.

Review of proposal:

These wastes are described in the waste classification as:

10	WASTES FROM THERMAL PROCESSES
10 03	wastes from aluminium thermal metallurgy
10 03 20	flue-gas dust other than those mentioned in 10 03 19

16	WASTES NOT OTHERWISE SPECIFIED IN THE LIST
16 03	off-specification batches and unused products
16 03 03	inorganic wastes containing hazardous substances

The extract above shows the intention to treat these proposed new wastes “analogously” to the waste soils. Details of controls and limits have not been provided.

However, these are not soils, if unspecified quantities of these wastes were to be mixed with the waste soils then it is unknown what categorisation that new material will become.

The applicant has not demonstrated that these will be managed or quantified any emissions that could be generated.

This aspect of the application is also refused.

7. **Increase waste storage volumes/quantities.**
   Proposal:

   Page 5 states

   > The original permit application (2013) was primarily for the treatment, processing and recycling of a limited number of individual waste streams across a restricted number of EWCs. The permitted temporary storage volume of 5,250 tonnes (as stated in Section 4.8.3 of the Sol Environmental document SOL0113ESP01 [Application Supporting Documentation – dated January 2013]) was based on an envisaged 15% of the anticipated total annual throughput of the prime waste stream (i.e. filter cake from Tata Trostre).
   >
   > *This does not reflect current operational requirements or capabilities*. The permit variation proposes that the current permitted area allows for a capacity of up to **12,000 tonnes** for normal / existing operational requirements.

   Review of proposal:

While the proposed additional waste will be stored within a building and on a concrete floor, there remain unknown diffuse emissions to air from the activities being carried out (biodegradation). As the application makes clear that these activities are occurring “naturally”. It is not appropriate to approve increases in waste quantities to be stored and processed because there appears to be little if any distinction between storage and processing areas in the operations, without having the opportunity to assess the emissions, the applicant has simply stated that there are none, but this does not seem to fit with their description of the ongoing biodegradation and “disappearance” of the hydrocarbons.

In addition, the capacity of the site to store/treat an increased volume is significantly dependent upon the co-stockpiling of different wastes into a reduced number of larger stockpiles, rather than keeping them separate and with gaps between them. The applicant has not demonstrated the capacity to store the additional volume if the stockpiles are kept separate.

The proposal to increase the storage capacity is refused.

1 Our decision

We consider that, in reaching that decision, we have taken into account all relevant considerations and legal requirements and that the permit will ensure that a high level of protection is provided for the environment and human health.

This Application is to vary the permit of an installation which is subject principally to the Environmental Permitting Regulations 2016 (EPR) and is subject to the requirements of the Industrial Emissions Directive (IED).

This document should be read in conjunction with the application and supporting information and permit.

2 How we reached our decision

2.1 Receipt of Application

The Application was accepted as duly made on 19 November 2020. This means we considered it was in the correct form and contained sufficient information for us to begin our determination, but not that it necessarily contained all the information we would need to complete that determination.

The Applicant made no claim for commercial confidentiality initially on with receipt of additional information. However after receiving additional information, a complaint that this information had not been treated as confidential was received, though no claim for confidentiality, no details of what elements were thought to be confidential and no explanation or justification for why they should be treated as confidential were received. We have/have not received information in relation to the Application that appears to be confidential in relation to any party.

2.3 Requests for Further Information

In order for us to be able to consider the Application duly made, we needed more information. We requested further information relating to proposed treatment processes. Upon receipt of this information we were able to consider the application Duly Made.

Further information was also requested by way of a Schedule 5 Notice requiring further information relating to proposed treatment techniques, processes, process controls and environmental management systems. The Schedule 5 Notice was sent on 8 January 2021. The Applicants response to the Schedule 5 Notice was provided on 28 January 2021.

A copy of the information notice and e-mails requesting further information were placed on our public register as were the responses when received.

3 Assessment of potential environmental impacts

3.1 Assessment of Impact on Air Quality

This could not be fully assessed as the operator simply said there would be zero emissions. However processes such as biodegradation were proposed and no explanation of how zero emissions were to be delivered without any form of emission collection or treatment.

3.2 Assessment of impact to surface and ground water

No change proposed

3.3 Emissions to sewer

No change proposed.

3.4 Fugitive emissions

This could not be fully assessed as the operator simply said there would be zero emissions. However processes such as biodegradation were proposed and no explanation of how zero emissions were to be delivered without any form of emission collection or treatment.

3.5 Assessment of odour impact

This could not be fully assessed as the operator simply said there would be zero emissions. However processes such as biodegradation were proposed and no explanation of how zero emissions were to be delivered without any form of emission collection or treatment.

3.6 Noise Assessment

This could not be fully assessed as the operator simply said there would be zero emissions. However processes such as biodegradation were proposed and no explanation of how zero emissions were to be delivered without any form of emission collection or treatment.

3.7 Impact on Habitats sites, SSSIs, non-statutory conservation sites etc

This could not be fully assessed as the operator simply said there would be zero emissions. However processes such as biodegradation were proposed and no explanation of how zero emissions were to be delivered without any form of emission collection or treatment.