

Compliance Assessment Report CAR_NRW0048717

Permit being assessed: VP3095FS.

For: Soil and Aggregates Treatment Plant, **held by:** Neal Soil Suppliers Ltd

At: Atlantic Ecopark, Newton Road, Rumney, Cardiff, CF3 2EJ.

Type of assessment: Audit,

Reason: Routine.

On: 03/07/2025.

Parts of permit assessed: 2.3 and 4.2.

NRW Lead Officer: Geraint Harris.

Report sent to: Group Technical Manager, Group Technical Manager, on 03/07/2025.

1. Summary of our findings (full details in section 4)

Part of permitted activity assessed (compliance criteria)	Assessment result	Permit condition
IR2C - Installations - Operations - Operating techniques	Action only (X)	
IR2C - Installations - Operations - Operating techniques	Action only (X)	
IR2C - Installations - Operations - Operating techniques	Action only (X)	
IR4B - Installations - Information - Reporting	Action only (X)	

Result types are explained in more detail in the 'Important Information' section below.

Total non-compliances recorded	Total non-compliance score
0	0

How we use the non-compliance score to calculate your annual fee is explained in the 'Important Information' section below.

2. What action is required?

Criteria	Action needed	Complete by
IR2C	In response to Action 7 of CAR form CAR_NRW0046092, NSSL states that approximately 125 tonnes of fines are produced per day. Based on this, am I correct in thinking that during months 1 and 2, NSSL will generate weekly batches of approximately 875 tonnes each (125 tonnes/day × 7 days)?	11/08/2025

Criteria	Action needed	Complete by
	These weekly batches will be sampled and tested individually. Then, after month 2, NSSL will move to testing one batch per month, which will comprise approximately 4,500 tonnes?	
IR2C	Please update your compliance sampling plan with your technical justification for using judgemental sampling. Also please update your compliance sampling plan with the additional background information mentioned earlier.	11/08/2025
IR2C	Please provide NRW with copies of your compliance reports and subsequent appendices that have been completed to date. *see new action 3 below.	11/08/2025
IR4B	NRW would like to know why an R code is being assigned to all incoming 170107 waste when it's evident that some of it isn't being treated and is being disposed of at landfill.	11/08/2025

Compliance criteria codes are listed in the 'Important information' section below.

3. What will happen next?

Any non-compliance we have identified and recorded on this form is an offence. It can result in criminal prosecution and/or suspension or revocation of your permit.

You are non-compliant with your permit.

We are currently considering taking enforcement action against you for the non-compliance recorded above. We will contact you in due course.

4. Details of our assessment

Basic and Compliance Sampling Plan Review

The objective of designing the sampling plan is to ensure that the results identify, with a high degree of statistical confidence (reliability), whether a waste is hazardous waste or not^[1]. Where sampling is required, Appendix D of WM3 provides guidance to help operators carry out this process correctly^[2]. This guidance is based on current European and British Standards, along with supporting technical reports, on the characterisation and sampling of waste materials². Environmental regulators will use these documents as the basis for assessing sampling procedures during regulatory activities². Accordingly, this guidance has been used to assess NSSL's basic characterisation of their qualifying fines.

NRW received Neal Soil Suppliers' Ltd (NSSL) 'Basic Characterisation for Qualifying Fines' procedure which outlines how they characterised their 191212 coded waste using WM3. An initial review was conducted by the site's regulator, Geraint Harris, and documented in compliance report CAR_NRW0046092. However, as noted in that report, further questions may be raised once the relevant NRW specialists have had opportunity to review the document.

The first point to consider is Neal's have labelled the fines from their "Warrior" process as "Qualifying fines". These are generated from a treatment process where various wastes from numerous sources are screened, blended and crushed. The guidance document *Landfill Disposals Tax: Qualifying Mixtures*

of Materials – Fines outlines the criteria which must be met for fines to be classified as qualifying fines. An assessment of whether NSSL's fines satisfy the Welsh Revenue Authority's guidance criteria has not been included in this review and may be subject to a future review by the WRA.

The following sections contain additional points and requests related to compliance report CAR_NRW0046092.

Objectives

A testing programme for hazardous waste assessment should normally have only one objective; to obtain sufficient information on the nature, composition and properties of the waste to determine if it is a hazardous waste, to assign hazardous properties, and to inform allocation of the appropriate List of Waste (LoW) code[3].

NSSL's objectives are clearly stated within their sampling plan and no further comments/actions are necessary.

Technical Goals

The testing programme for hazardous waste assessment should be broken down into specific technical goals. In the sampling plan each of these technical goals should be further broken down into detailed instructions and technical specifications that should address, for example[4]:

- define the population to be sampled
- assess variability
- select the sampling approach
- select constituents to be studied
- identify the scale
- choose the statistical approach

NSSL have include some of these technical goals within their sampling plan. These goals, as well as other areas of Appendix D, will be discussed below.

Level of testing

With regards to determining the level of testing required appendix D states that “the testing level is the type(s) and frequency of investigation required to meet the technical goals and deliver the objective. This is largely determined by how much information operators already have, and how much is unknown”[5]

NSSL had chosen to undertake basic characterisation which is a thorough initial investigation of a waste. NRW agrees with this level of testing since no previous basic characterisation had been conducted on this waste stream.

Background information

The background section should include more detailed information, such as a comprehensive list of waste inputs; the location and accessibility of the generated fines; storage and segregation procedures; and measures for identifying and excluding unsuitable material. Additional details should also be provided on the expected tonnage, any further processing (e.g. blending), particle size, and any known

or potential hazards. Furthermore, operational procedures that may influence the chemical, biological, or physical properties of the waste should be described. As NSSL will be required to carry out compliance testing on an ongoing basis, we expect the above information to be incorporated into their compliance sampling plan moving forward.

Identify the constituents to be tested

NSSL have listed the constituents they plan on/have tested. In addition to the testing in Table 9.2 of their sampling plan, NRW, required the following to be included:

- Total sulphate SO₄
- Total phosphate (not “orthophosphate” or soluble phosphates)
- Speciated chromium – total Cr(VI) and Cr(III) by calculation
- Removed material (e.g. “non-grindables” or “inert” materials like lumps metal, stones etc.)
- Acid/alkali reserve (if concrete fragments are present)
-

In response NSSL stated “*Having reviewed this request, we are not going to adopt these additional requirements as the current WM3 assessments undertaken cover the appropriate determinands based on understanding of the materials. Please note that Speciated Chromium is already being done, as this allows the correct classification away from Chromate compounds as there will be insufficient Chromium 6 for chromate compounds.*”

Since acid soluble sulphate is part of the analysis suite, NRW will not action this any further and are satisfied that for hazardous waste classification the appropriate determinands are being tested.

Action 10 was submitted to NSSL in compliance report CAR_NRW0046092 and stated: “Please can you explain how the samples have been prepared for the WM3 testing and whether, like in LOI testing, any certain sized material was removed or ground down?:

In response NSSL said that their “*Lab certificates reveal that the material was classified as a soil and accordingly, lumps >10mm were removed before analysis. This is stated on the laboratory certificates.*”

The analytical tests report from Chemtech, that were shared with NRW, did not contain this information. Where oversized material is removed from the waste it is essential that the nature of this material is assessed and recorded. This is important for checking for materials such as oversized pieces of plasterboard which may have implications for sulphur generation and disposal sites. NRW recommend that NSSL ask the analytical labs to photograph and describe the types of oversized material being removed from each batch.

Population and Variability

Appendix D states that “the sampling plan should contain a description of the population or subpopulations to be sampled to avoid ambiguity.”^[6] The ‘population’ is the total amount of waste that an operator wants to obtain information on by sampling. Examples might include:

- A container of waste

- A batch of waste from a process, or
- a continuous stream of waste produced by a production process in a specific period of time (e.g. a day, a week, a month).

WM3 states that *“it is important to note that the population must always be defined explicitly with reference to spatial or temporal factors, otherwise it is impossible to determine if sampling of that population is representative or not”*^[7]. Upon reviewing NSSL’s *Basic Characterisation for Qualifying Fines*, it is apparent that the population is defined using temporal factors. However, the submitted sampling plan does not clearly specify the actual population and subpopulation used in the sampling regime, nor does it provide justification to demonstrate that this approach is proportionate. As a result, a series of actions were issued to NSSL in compliance report CAR_NRW0046092.

In response to compliance report CAR_NRW0046092, NSSL stated that the sampling population for the basic characterisation comprised approximately 12,750 tonnes of material generated between 17th July and 17th November 2024. However, no justification has been provided to demonstrate that this population is suitably representative of the overall population.

WM3 states: *“The term ‘overall population’ is sometimes used to indicate a wider population, of which the sampled population(s) is itself a subset. For example, the entire lifetime operational output of a process would be an ‘overall population’. From within this overall population, one or more populations might be defined for sampling and assessment purposes. In some instances, it may be possible to apply the results of sampling a population to an overall population; however, to do so, the onus is on the producer to demonstrate during the testing programme that the overall population does not differ from the population.”*⁷

One such method of demonstrating this is through the implementation of robust waste acceptance and segregation procedures. However, NSSL’s *Characterisation for Qualifying Fines* does not provide sufficient detail on any such procedures within the submitted sampling plan.

In the absence of detailed information on waste acceptance, sorting, and segregation procedures within NSSL’s sampling plan, it appears that the company has undertaken sampling and testing of mixed inputs to the Warrior process. Specifically, they have sampled and tested what appears to be 25 batches of fines. However, the haz-waste-online results for batches 20 and 21 exhibit identical data for every parameter tested, indicating a potential error.

When ‘fines’ are generated by processing a diverse range of inputs from skips and lorries each potentially differing significantly in composition the resulting mixture can become more homogeneous over time as materials are combined into a stockpile and processed together. This cumulative blending may lead to a more consistent ‘mix’ of wastes, which could be reflected in the analysis data.

In the absence of detailed waste acceptance, sorting, and segregation procedures within NSSL’s sampling plan, the current analysis data can still be utilised to assess whether there is a consistent mix of wastes feeding the Warrior process. This assessment is crucial to determine if the current sub-populations are representative of the overall population, as defined in WM3 guidance

Consequently, Chart 1 below was created using all available waste input analysis data for the Warrior

finest, excluding Batch 21 due to data inconsistencies.

For each chemical contaminant of concern, the variation that characterises the mean concentration is of primary concern, rather than the variation of individual sample concentrations. This measure of dispersion is termed the standard error of the mean (SEM). The SEM is used to estimate the interval within which the true mean chemical concentration likely falls, assuming a normal (bell-shaped) distribution of individual concentrations.

For evaluating solid wastes, a 90% confidence interval (CI) is typically selected^[8]. This means that, if the sampling is representative, the true mean is expected to fall within this interval in 90 out of 100 samples. The upper limit of the 90% CI is then compared with the appropriate regulatory threshold. If the upper limit is below the threshold, the chemical contaminant is not considered to be present at a hazardous level; otherwise, the opposite conclusion is drawn.

This statistical approach aligns with the methodology outlined in Appendix D of WM3, which provides guidance on assessing and classifying waste based on chemical composition.

In accordance with WM3 Appendix C, which provides a range of low concentration cut-offs for hazardous property assessments, a conservative approach was adopted by applying the 0.1% threshold to all substances tested by NSSL. The analysis indicates that the upper limits of the 90% confidence intervals for each chemical contaminant are well below this 0.1% cut off. This suggests a consistent 'mix' of wastes being fed into the Warrior process.

Consequently, it is reasonable to propose that a temporal subpopulation, defined over a period such as a day or possibly a week, may be representative of the overall population. This consistency implies that the overall population is unlikely to differ significantly from the sub-populations. Additionally, the scale and number of samples utilized appear to be sufficient for this assessment. These findings will be discussed in greater detail within the subsequent sections of this report.

Chart 1



WM3 guidance emphasises the importance of defining subpopulations based on both spatial and temporal factors to ensure representativeness. The absence of clear definitions and justifications for the subpopulations in NSSL's sampling plan necessitates further information to assess the appropriateness of the sampling strategy.

In response to Action 7 of Compliance Report CAR_NRW0046092, which requested clarification on the volume of waste represented by each sample, NSSL provided the following information:

“Action 7 The volume of waste represented by each sample is the volume of waste produced by successive samples. The sampling period extended from 17 July to 17 November, and it is estimated that during this period 12,750 tonnes of fines were produced (at a rate of around 125tonnes per day) As the sampling plan is defined temporally rather than by area it will be representing the quantity of

waste produced between successive samples. A statistical analysis of the classification data reveals that the data is consistent and does not include any results that provide a different classification (that could be considered a sub-population defined by temporal changes), and therefore this approach is appropriate.”

This response outlines the temporal division of the waste into subpopulations but does not provide specific details on the volume of waste each sample represents. According to WM3 guidance, particularly Appendix D, it is essential to define the sampling plan comprehensively, including the volume or mass of waste each sample represents, to ensure the representativeness and reliability of the sampling process.

In response to Action 6 of Compliance Report CAR_NRW0046092, which requested clarification on whether the laboratories received the samples on the same dates they were taken, NSSL provided the following information:

“The samples were dispatched to the laboratory either on the day they were taken or after a small batch of samples had been gathered. They were dispatched by courier. The lab receipt is therefore no less than the day after sampling but maybe a few days later. The laboratory certificates provide the date of sampling.”

Actions 6 and 7 were submitted to NSSL to gain clarity on both the subpopulations and the scale of waste, as the sampling plan in NSSL’s ‘Basic Characterisation for Qualifying Fines’ was ambiguous. It is crucial to give due consideration to 'scale' when defining the subpopulation, as the scale determines the minimum quantity of material below which variations are considered insignificant^[9]. Therefore, the chosen scale should be informed by an understanding of the potential heterogeneity within the waste, ensuring that a large scale does not obscure relevant smaller subpopulations^[10]. For fines waste, sampling is typically conducted from a single stockpile or heap, possibly located directly beneath the screen/trommel or accumulated in a large stockpile awaiting removal from the site. If the input wastes were well-controlled, justifying a larger scale, such as a week or even a month, may be appropriate.

In the section titled 'Scale of Sampling' within NSSL’s ‘Basic Characterisation for Qualifying Fines’, NSSL states:

“Sampling waste output within a single day will not capture large scale variations and may lead to systemic bias that underestimates variability (unless a stockpile of waste has been developed over a protracted time period allowing sampling to span larger timescales by stratified random sampling). Accordingly, daily to weekly sampling is considered appropriate for the basic characterisation as this allows sufficient time for any variation in the feedstock production to be seen in the waste”.

The information provided thus far does not offer a clear indication of the exact scale and how it is sufficient. A daily sample could consist of 125 tonnes, whereas a weekly sample could consist of 870 tonnes. NSSL has not provided any information relating to how many days of trommel fines production each batch represents or how much volume each batch represents.

In their response to action 6 of CAR form CAR_NRW0046092, NSSL state “The laboratory certificates provide the date of sampling”, however upon review this information cannot be found on

the information sent to NRW to date. Upon reviewing the Basic Characterisation for NSSL and the response to CAR Form CAR_NRW0046092, the only details available are the dates when the samples were sent for analysis and that each sample could be a daily or weekly composite. Samples 21 to 24 were received on the 30th of October and sample 25 on the 18th of November. Does this mean that batch 25 consists of 19 days of fines production (approximately 125tonnes x 19days = 2375tonnes)??. This assumes that the trommel was operated at maximum capacity every day during that period. What this does demonstrate is there may be some inconsistency with the scale used.

Table 2 (below) summarises the information provided to date, showing the number of days between the dates the laboratories received the samples. However, it remains unclear how much waste each sample represents.

Without specific details, such as the number of days of trommel fines production or the volumes/tonnage each batch consists of, it is not possible to determine whether the scale is sufficient. Since the scale defines the minimum quantity of material below which variations are judged to be unimportant, the provided information does not allow for an assessment of whether the selected scale is appropriate.

In NSSL's sampling plan it is stated that smaller batches may lead to a *systemic bias that underestimates variability*. However, if the scale is too large, it might mask relevant smaller subpopulations.

Since the sampling has already been undertaken an alternative approach to determining whether the scale is sufficient could be to undertake a statistical review of the data to ascertain if there is significant variability in the concentrations of chemicals within the outgoing waste. This can also be used to ascertain if the number of samples is correct. This will be discussed in the next section.

Table 1

Inputs Batch	Date	Outputs Batch	Date
0	17th July	0	17th July
1	23rd July	1	23rd July
2	23rd July	2	23rd July
3	23rd July	3	23rd July
4	29th July	4	29th July
6	1st Aug	6	1st Aug
7	8th Aug	8	8th Aug
8	14th Aug	9	14th Aug
9	20th Aug	10	20th Aug
10	20th	11	20th

11	Aug 20th	12	Aug 20th
12	Aug 21-Aug	13	Aug 21-Aug
13	27-Aug	14	27-Aug
14	19th Sept	15	19th Sept
15	19th Sept	16	19th Sept
16	19th Sept	17	19th Sept
17	4th Oct	18	4th Oct
18	4th Oct	19	4th Oct
19	4th Oct	20	4th Oct
20	30th Oct	21	30th Oct
21	30th Oct	22	30th Oct
22	30th Oct	23	30th Oct
23	30th Oct	24	30th Oct
24	18th Nov	25	18th Nov
25	18th Nov		

Table 2

Batches	Dates Received by Labs	Days Between Dates
0	17th July	?
1,2 & 3	23rd July	6
4	29th July	6
6	1st Aug	3
7	8th Aug	7
8	14th Aug	6
9,10 &11	20th Aug	6
12	21-Aug	1
13	27-Aug	6
14, 15 &16	19th Sept	23
17, 18 & 19	4th Oct	15
20, 21, 22, & 23	30th Oct	26
24 &25	18th Nov	19

Samples

The objective of designing the sampling plan is to ensure that the results identify, with a high degree of statistical confidence (reliability), that a waste is a hazardous waste or not. The closer the levels of hazardous substances in the waste are to hazardous waste thresholds, and the more variable they are

the greater the need for reliability. Conversely reliability is perhaps less important where the composition is consistently well above or below thresholds. To achieve reliable conclusions:

- sufficient samples have to be taken to address heterogeneity
- the sampling plan will need to be more robust where the range of hazardous substance concentration in the samples spans a threshold
- subpopulations need to be identified and sampled separately[11]

Using many samples gives you an estimate of the mean, and information on the variability/heterogeneity of the material. Using a composite sample, generated from taking multiple increments, gives you an estimate of the mean, but not the variability[12]. NSSL's Basic Characterisation shows that the population of the outgoing material was considered to be 12570 tonnes split over 24 batches (subpopulations). Each of these subpopulations consisted of a composite sample, generated from taking 6 increments across a designated waste pile.

In response to Action 8 of Compliance Report CAR_NRW0046092, which sought to understand NSSL's reasoning for their sampling approach, NSSL provided the following information:

“The number of samples is sufficient to represent the entire waste stream. Current guidance indicates that samples should be taken for classification purposes on the following basis.

Amount of waste (tonnes)	Homogeneous waste (number of samples)	Heterogeneous and new waste (number of samples)
Less than 100 t	2	5
100 to 500 t	3	8
500 to 1,000 t	5	14
1,000 to 10,000 t	11	22
Plus (per additional 10,000 t)	+5 (pro rata)	+10 (pro rata)

The 12750tonnes of waste therefore should have been sampled and tested on 25 occasions (if the waste is heterogeneous). The 24 samples and tests therefore align with guidance. A review of the dataset however reveals that the waste stream is not heterogenous, as it forms a tightly clustered spread of values for each determinand with a single frequency peak. The data therefore shows that the waste could have been sampled at a lower frequency. An alternative approach to determining whether the sampling is sufficient is to use statistical tests such as that advocated in the previous guidance on waste classification. This number of samples is considered sufficient as it provides a high degree of detecting non-compliant samples. This is best illustrated by reference to Figure 1 which shows the statistical power of random sampling for various sample numbers.”

Without knowing the exact volume of each batch of waste, it is difficult to assess whether the number of samples taken is sufficient. This is because NSSL has not provided any information on how many days of trommel fines generation each batch represents or the volume of waste per batch. The only information available is the date the samples were received.

NSSL stated that approximately 12,570 tonnes of material were sampled during basic characterisation. Since 24 batches were sampled and tested during this period, we can assume that each batch averaged

According to the guidance referenced by NSSL in their response to Action 8, each batch would require around 5 samples for homogeneous waste and 14 samples for heterogeneous waste. NSSL's sampling plan indicates that they took 6 samples per batch for the outgoing material and 9 samples per batch for the inbound material.

As mentioned in the response to Action 6, NSSL states that an alternative approach to determining whether the sampling is sufficient is to use statistical tests. Upon review of the analytical data by NRW, we agree that the waste analysed to date has demonstrated less heterogeneous properties. The aforementioned guidance states that for homogeneous waste, between 500 and 1,000 tonnes should be tested with 5 samples. Therefore, NSSL's 6 samples for outbound fines and 9 for inbound fines may be considered sufficient. This conclusion is supported by the fact that the upper limit of the 90% confidence interval for each chemical component falls well below the appropriate regulatory threshold of 0.1%, as shown in the graph below.

Mean Concentration of Chemical Components and Their 90% Confidence levels

Chemical Component	Mean Concentration (%)	90% Confidence Level (Lower)	90% Confidence Level (Upper)
TPH	0.022	0.018	0.026
Arsenic	0.001	0.000	0.002
Beryllium	0.000	0.000	0.000
Boron	0.002	0.001	0.003
cadmium	0.000	0.000	0.000
chromium III	0.009	0.008	0.010
chromium VI	0.000	0.000	0.000
Copper	0.006	0.005	0.007
Lead	0.011	0.010	0.012
Mercury	0.003	0.002	0.004
Nickel	0.003	0.002	0.004
Vanadium	0.017	0.015	0.019
Zinc	0.029	0.027	0.031
fluorene	0.000	0.000	0.000
naphthalene	0.000	0.000	0.000
acenaphthylene	0.000	0.000	0.000
acenaphthene	0.000	0.000	0.000
anthracene	0.000	0.000	0.000
fluoranthene	0.000	0.000	0.000
pyrene	0.000	0.000	0.000
benzo[a]anthracene	0.000	0.000	0.000
chrysene	0.000	0.000	0.000
benzo[b]fluoranthene	0.000	0.000	0.000
benzo[k]fluoranthene	0.000	0.000	0.000
benzo[a]pyrene; benzo[def]chrysene	0.000	0.000	0.000
indeno[123-cd]pyrene	0.000	0.000	0.000
dibenz[a,h]anthracene	0.000	0.000	0.000
benzo[ghi]perylene	0.000	0.000	0.000
Phenol	0.000	0.000	0.000
Antimony	0.001	0.000	0.002
Barium	0.052	0.047	0.057
Mo	0.000	0.000	0.000

The sampling plan often requires a balance between achievable reliability and the cost of sampling. An initial basic characterisation exercise may help to inform this balance. Therefore, despite some ambiguity surrounding the scale and subpopulations used during this basic characterisation, the

statistical analysis demonstrates that the confidence limits for each chemical component fall well below conservative thresholds. As such, it would be unreasonable to request that NSSL repeat or continue their basic characterisation.

However, it is essential that their ongoing waste characterisation remains suitably accurate and appropriate.

Neal has provided another document titled *Neal Soil Supplier Ltd – Movement of Waste from NSSL to RML*. Upon review, this document outlines NSSL's ongoing compliance testing of the fines from the Warrior process. Based on this review, I have noted a few observations and proposed actions in the following text.

The first observation, highlighted in CAR form CAR_NRW0046092, was that the format of this sampling plan differs from that used in the basic characterisation. As a result, Action 11 was raised to NSSL to clarify why the format was different:

Action 11: Please explain why you haven't used the same format for your sampling plan for compliance testing. Due: 14th February 2025

In response, NSSL stated:

“Action 11: The format of the sampling plan is not mandated, and when prepared by different staff, a different format may be used, though the scope of content should be similar. As this is simply formatting, the Sampling Plan could be prepared in any preferred format.”

NRW agrees that while the format is not mandated, it is essential that all relevant sections outlined in WM3 Appendix D are included. Therefore, the compliance sampling plan (*Neal Soil Supplier Ltd – Movement of Waste from NSSL to RML*) has been reviewed against the requirements of Appendix D.

Objectives

NSSL's objectives are clearly stated within their sampling plan and no further comments/actions are required.

Background information

This sampling plan does not include a dedicated Background section. A comprehensive sampling plan should contain background information such as a detailed list of waste inputs, measures for managing or excluding unsuitable material, any known or potential hazards, and operational procedures that could affect the chemical, biological, or physical properties of the waste. It should also outline procedures for introducing new waste streams.

As NSSL will need to undertake compliance testing on an ongoing basis, NRW would expect to see the above information clearly included in their future compliance sampling plans.

Population and Variability

NSSL have stated that “due to the consistency in process and types of materials, a sliding scale approach will be used for assessment of waste pending suitability for RML this can be seen in table 8.1.” Table 8.1 is copied below:

Table 8.1 – Schedule of Testing at NSSL

Testing Month 1 and 2	per batch (4500t)	per month
1 SO ₄ , TOC per 125t per waste type	36	-
1 WM3 per waste type per 1500t	3	-
1 WAC per waste type per 4500t	1	-
Testing Month 3 to 6		
1 SO ₄ , TOC per 250t per waste type	18	-
1 WM3 per waste type	1	-
Testing to End of Cell 9		
1 SO ₄ , TOC per 500t per waste type	9	-
1 WM3 per month per waste type	-	1
1 WAC per month per waste type	-	1

In section 6 of their plan NSSL states *“Each week, the waste fractions generated by the recycling process will be transferred to dedicated waste storage areas referred to as the ‘Batch Storage’ areas. Each Batch Storage area will measure approximately 50m x 50m and will allow storage of waste from one week of production. Each Batch in storage will be provided with a unique identifier reference and within the storage area each waste type will be stockpiled separately. Each Batch Storage area will hold approximately 4500 tonnes of waste.”*

NSSL also states *“The sampling frequency is shown on Table 8-1. For example, if one waste type comprises the entire Batch, and the weekly batch has a mass of 1500tonnes then at a sampling rate of one per 125tonnes, there will be 12 samples taken for So₄ and TOC testing in the first two months. This will fall to 6 samples between months 3 and 6. A single WM3 sample and test will be taken in the first two months and then 1 sample and test when the cumulative quantity reaches 4500t.”*

New Action 1: In response to Action 7 of CAR form CAR_NRW0046092, NSSL states that approximately 125 tonnes of fines are produced per day. Based on this, am I correct in thinking that during months 1 and 2, NSSL will generate weekly batches of approximately 875 tonnes each (125 tonnes/day × 7 days)? These weekly batches will be sampled and tested individually. Then, after month 2, NSSL will move to testing one batch per month, which will comprise approximately 4,500 tonnes? **Due 11th August 2025.**

From my understanding of NSSL’s compliance plan, they intend to collect several scoops (exact number not specified) from a single 9 m² section of the fines pile to generate a composite sample for characterising the waste.

However, the overall dimensions of the fines stockpile, as stated in Section 6.2, are approximately 50m × 50m (2,500m²). Given this, collecting samples from just a 9m² area represents a very small proportion of the total batch. This suggests the sampling approach is more judgemental in nature rather than probabilistic, which raises concerns about the representativeness of the sample for the entire batch.

WM3 defines judgemental sampling as a method where part of the waste is excluded from sampling (non-probabilistic) or has a reduced chance of being sampled (partially probabilistic)[13]. In contrast, probabilistic sampling is described as having an equal chance of sampling any individual part of the

waste, implying that the entire population is accessible for sampling. This approach allows the reliability of the resulting conclusions to be quantified statistically. For this reason, WM3 recommends that sampling plans for waste classification and hazardous waste assessment should be based on probabilistic sampling wherever possible.

In NSSL's basic characterisation, a probabilistic sampling approach was adopted using stratified random sampling. However, for the compliance sampling plan, NSSL has adopted a more judgemental sampling approach.

WM3 further states that when judgemental sampling is used, the technical justification for choosing this method over probabilistic sampling must be clearly set out in the sampling plan. Additionally, the sampling should approximate probabilistic sampling as closely as possible. Any assumptions regarding un-sampled sub-populations should be supported by evidence to justify this approach.

Such justifications have not been included in the current compliance plan.

New Action 2: Please update your compliance sampling plan with your technical justification for using judgemental sampling. Also please update your compliance sampling plan with the additional background information mentioned earlier. **Due 11th August 2025**

In section 10.1.1. NSSL state: "Upon completion of the review of the data for each batch, a report shall be produced. This will indicate the batch number, its date of testing and its batching pad location. All the data will be included as an appendix and the data will be summarised for statistical analysis in the report. A narrative will explain the process of evaluation and will conclude with a statement that the waste meets the required criteria upon screening, or is considered acceptable after further analysis (in whole or in part) or fails to meet the criteria and is rejected. This document will be produced for every batch and will be kept with the site records. A copy of this report will be forwarded to RML for its "in principle" acceptance of the batch to allow transfer to Withy hedge to take place"

Since Basic characterisation was completed in November 2024, there must be several of these reports completed to date.

New Action 3: Please provide NRW with copies of your reports and subsequent appendices that have been completed to date. **Due 11th August. 2025.**

Actions and Responses from CAR NRW0046092:

Action 4: NRW would like to know why wasn't the 8396.5 tonnes of 170107 over this period, treated? Why are Neal's sending this inert material to a landfill when they have a permit that allows them to treat under an a QP? Due 14th February 2025.

NSSL response: The concrete, tiles, bricks, ceramics and stone were not processed further prior to leaving site. This was purely a commercial decision on our part.

Action 5: Please explain how you currently make sure that this 170101 material doesn't contain any non-inert materials? Due 14th February 2025.

NSSL response: We understand that this must mean 17 01 07 material rather than 17 01 01 as stated in the action. The material is composed of generally coarse particles of common construction aggregates and visual inspection can clearly determine whether the material is as described. The visual appearance, colour and odour of the material is examined upon receipt and only materials with no suspicion of contamination is accepted. Prior to receipt, any large sources from construction projects will confirm that the material is clean inert material without any risk of contamination.

Looking as far back as 2023 NSSL have assigned all of their incoming 170107 wastes with the following R code, R05.03.02. However, as can be seen in the response to action 4 above, and NSSL's waste returns, it appears that some of this waste isn't being treated and is leaving the site to go to a landfill under a D.05 code. NSSL's waste returns should reflect this.

Year	Received (tonnes)	Removed (tonnes)
2025 (Q1)	27560 (R05.03.02)	19687.41 (D.05)
2024	96970 (R05.03.02)	8130 (D.05)
2023	86810 (R05.03.02)	336.28 (D.05)

New Action4: NRW would like to know why an R code is being assigned to all incoming 170107 waste when it's evident that some of it isn't being treated and is being disposed of at landfill. **Due 11th August 2025.**

Actions and Responses from CAR NRW0048093

Action 1: Please provide NRW with a procedure for how you will ensure you receive all of the correct information from waste producers as highlighted above and how you will store this information within your document management system going forward. Due the 6th of June 2025.

NRW have received a response to this action. In summary NSSL have said that their "pre-acceptance procedure outlines the requirement for all relevant waste information to be provided by the producer prior to acceptance. This includes, where applicable, site investigation reports, chemical analyses, waste characterisation documents, and supporting evidence of origin. This pre-acceptance process is fully aligned with current regulatory guidance and remains in operation as part of our compliance assurance. We acknowledge that this procedure has previously been reviewed by NRW and can confirm it is currently undergoing minor updates to reflect improved internal workflows. Once complete, the revised version will be provided to NRW for reference."

NRW awaits receipt of the revised procedure.

Action 2: Please provide an explanation as to why the trommel fines from Atlantic require further processing at NSSL, considering that both sites use screens of the same size. Additionally, outline the benefits of undertaking this further processing. Due: 6th June 2025.

NSL response: Although both ARL and NSSL utilise screening equipment with comparable aperture sizes, the requirement for further processing arises due to the composition of the trommel fines material produced at ARL. Specifically, the material still contains a residual fraction that is not fully separated during the initial screening stage. The facilities and processes available at NSSL allow for

enhanced mechanical separation of these materials. In particular:

Enhanced Recovery: NSSL's setup enables further segregation and clean-up of the material by utilising air density separation. The light fraction is then returned to Atlantic.

NRW would like to learn more about this process. I will be in contact soon to arrange a visit to NSSL to see the system in operation and understand how it works in practice.

Action 3: Please clarify why this Phase 1 material is being sent to NSSL instead of being disposed/removed from site directly. Due 6th of June 2025.

NSSL response: The material is consigned to NSSL where this issue is rectified as explained in Action 2 above.

NRW have no further comments at this point.

Action 4: Please confirm if NSSL receives waste coded 170107 from Atlantic Recycling and what process generates it? Due 6th of June 2025.

NSSL response: Neal Soil Suppliers Limited does receive waste coded as 17 01 07 from Atlantic Recycling Limited; this material falls under the category of inert construction and demolition waste (Concrete, bricks, tiles and ceramics). The waste is typically, skip arisings which are accepted at Atlantic and transferred unprocessed to NSSL for treatment.

Action complete no further actions.

Actions 5 and 6 from compliance report CAR_NRW0048093 are ongoing and follow up questions have been sent via email.

End.

[1] Waste Classification: Guidance on the classification and assessment of waste (1st Edition v1.2.GB), appendix D7.

[2] Waste Classification: Guidance on the classification and assessment of waste (1st Edition v1.2.GB), appendix D1.

[3] Waste Classification: Guidance on the classification and assessment of waste (1st Edition v1.2.GB), appendix D3.

[4] Waste Classification: Guidance on the classification and assessment of waste (1st Edition v1.2.GB), appendix D3 - D4.

[5] Waste Classification: Guidance on the classification and assessment of waste (1st Edition v1.2.GB), appendix D5

[6] Waste Classification: Guidance on the classification and assessment of waste (1st Edition v1.2.GB), appendix D6.

[7] Waste Classification: Guidance on the classification and assessment of waste (1st Edition v1.2.GB), appendix D6

[8] Waste Classification: Guidance on the classification and assessment of waste (1st Edition v1.2.GB), appendix D14

[9] Waste Classification: Guidance on the classification and assessment of waste (1st Edition v1.2.GB), appendix D14

[10] Waste Classification: Guidance on the classification and assessment of waste (1st Edition v1.2.GB), appendix D10.

[11] Waste Classification: Guidance on the classification and assessment of waste (1st Edition v1.2.GB), appendix D17

[12] Waste Classification: Guidance on the classification and assessment of waste (1st Edition v1.2.GB), appendix D21

[13] Waste Classification: Guidance on the classification and assessment of waste (1st Edition v1.2.GB), appendix D18.

If you have any queries about this report, or to discuss completion of any actions, please contact the NRW Officer named above.

Important information

Legal status of this report

Your permit is issued to you under the Environmental Permitting Regulations. You have a responsibility to comply with the conditions of your permit and prevent pollution/harm of the environment. You must also ensure that you comply with any other relevant legislation that may apply to your site's operations.

This report explains the findings of our assessment and any action you are required to take. We categorise non-compliance using our guidance for assessing non-compliance at regulated sites.

When we find potential non-compliance/s we will normally give you advice on how to maintain compliance.

To correct non-compliance, we may:

- require you to take specific actions
- issue a notice
- review the conditions of your permit.

Any advice and guidance we give will be without prejudice to any other enforcement response that we consider may be required.

Assessment results and non-compliance categories (used in section 1):

Assessment result	Description
Assessed (A)	Assessed or assessed in part, no evidence of non-compliance found
Action only (X)	Action only relating to the activity assessment
Ongoing (O)	Ongoing non-compliance, not scored

Non-compliance category	Description	Score
C1 Major	Potential to have a major, serious, persistent and/or extensive impact or effect on the environment, people and/or property	60
C2 Significant	Potential to have a significant impact or effect on the environment, people and/or property	31
C3 Minor	Potential to have a minor or minimal impact or effect on the environment, people and/or property	4
C4 No environmental impact	Non-compliance at a regulated site that cannot foreseeably have any impact on the environment, people and/or property	0.1

How we use assessment scores

The number and severity of non-compliances recorded in a year will affect your annual subsistence fee the following year. A non-compliance factor is added to your site's Operator

Performance Risk Appraisal (OPRA) score when we calculate your fee to reflect the additional resource we use to assess permit compliance.

If your assessment result in Section 1 is suspended, what does this mean?

In line with our guidance, we may suspend scores for up to six months to allow time for remedial action to be taken. Suspended scores will be re-instated if the action is not completed.

Full list of Industry compliance criteria (used in section 1 and 2):

1. Management

- IR1A – General management
- IR1B – Finance (only applicable to Landfill)
- IR1C – Energy efficiency
- IR1D - Efficient use of raw materials
- IR1E - Avoidance, recovery and disposal of wastes produced by the activities
- IR1F - Multiple operator installations

2. Operations

- IR2A – Permitted activities
- IR2B – The site
- IR2C – Operating techniques
- IR2D – Technical requirements
- IR2E – Improvement programme
- IR2F – Pre-operational conditions
- IR2G – Landfill engineering (only applicable to Landfill)
- IR2H – Waste acceptance (only applicable to Landfill)
- IR2I – Leachate levels (only applicable to Landfill)
- IR2J – Closure and aftercare (only applicable to Landfill)
- IR2K – Landfill gas management (only applicable to Landfill)

3. Emission and Monitoring

- IR3A – Emissions to water, air or land
- IR3B – Emissions of substances not controlled by emission limits
- IR3C – Odour
- IR3D – Noise and vibration
- IR3E – Monitoring
- IR3F – Pests
- IR3G – Air quality management plans
- IR3H – Monitoring for the purposes of the Industrial Emissions Directive (this heading includes Large Combustion Plants)
- IR3I – Fire

4. Information

- IR4A – Records
- IR4B – Reporting
- IR4C – Notification

Enforcement response

Any non-compliance with a permit condition is an offence and we may take legal action against you. Action we take can include prosecution, serving a notice on you and/or

suspension or revocation of your permit. See our Enforcement and Sanctions Guidance for further information.

Data protection notice

You should make sure that anyone named in this report knows that the information it contains will be processed by Natural Resources Wales to fulfil its regulatory and monitoring functions and to maintain the relevant public register(s).

We may also use and/or disclose the report in connection with:

- offering or providing you with our literature or services relating to environmental matters
- consulting with the public, public bodies and other organisations (e.g. Health and Safety Executive, local authorities) on environmental issues
- carrying out statistical analysis, research and development on environmental issues
- providing public register information to enquirers
- investigating possible breaches of environmental law
- assessing customer service satisfaction and improving our service
- Freedom of Information Act or Environmental Information Regulations requests.

We may also pass it on to our agents or representatives to do these things on our behalf.

Disclosure of information – this report will be available to view on-line

If you think this report contains commercially confidential information that should not be placed on our public register, you must contact your local Natural Resources Wales office within **fifteen working days** of receiving this report, using the contact details in the accompanying email or letter. You must give a full explanation of why it should not be added to our public register, including specifying which information is commercially confidential. We will assess your request and respond to you within twenty working days to let you know if we agree to your request.

What do I do if I disagree with the report or have a complaint?

If you disagree with this compliance assessment report, you should contact the lead officer without delay to discuss your concerns.

If you are unable to resolve the issue with the lead officer or their line manager you should contact our Customer Contact team on 0300 065 3000 (Monday to Friday 08:00 to 18:00), or email enquiries@naturalresourceswales.gov.uk for details of how to raise your dispute further through our Complaints and Commendations procedure.

If you are dissatisfied with our response, you can contact the Public Services Ombudsman for Wales by phone on 0300 7900203 or by email at ask@ombudsman.wales

Welsh Language Standards

We are committed to establishing Natural Resources Wales as a naturally bilingual organisation. We will provide compliance reports in your preferred language.