



Client – [REDACTED]

Site – Plas Fron Lodge

Reference – 20240014-PRA

Location – Wrexham

Central Grid Reference – SJ 37862 46252

Date – 23rd February 2024

Preliminary Roost Assessment (PRA)

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Revision: 1

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Disclaimer

This report has been prepared by Switch Ecology Ltd for the sole use of the commissioning party. The report may not be relied upon by any other party without written agreement from Switch Ecology Ltd.

In line with Chartered Institute of Environmental and Ecological Management (CIEEM) recommendations the findings of this survey are deemed valid for 18 months from the date of the survey.

1. Summary

Purpose	Planning permission is being sought for the demolition of an existing single storey extension at Plas Fron Lodge and the construction of a new two-storey extension on the property. A Preliminary Roost Assessment of the building was commissioned to support the application for planning permission.
Results	Cofnod returned a single bat record and occasional records of bird species within the 500m search area, none relating to the building covered by this survey. The building was assessed to provide a moderate potential to support roosting bats due to voids around the eaves of the main building and gaps behind the fascia on the single storey extension. The presence of bat droppings in two areas of the building confirms the presence of at least two bat roosts in the building with eDNA analysis confirming the species of bat present in the roof void to be whiskered bats. The land around the building was assessed to provide a moderate value foraging and commuting habitat for bats with close connections to areas of woodland to the south of the building. The building provides nesting opportunities for various bird species. No active nest sites were identified during the survey although the presence of bird droppings on the brickwork around the eaves implies that birds have previously nested in the building.
Recommendations	No works should commence on the building prior to a Natural Resources Wales licence being obtained to cover the works. The licence application should be supported by additional bat surveys, carried out in line with the Bat Conservation Trust Good Practice Guidelines (2023) for roost classification. On completion of the surveys, and receipt of planning permission, the licence application should be prepared, including a method statement outlining the mitigation that will be put in place during the works, time restrictions and any enhancements that will be provided. On receipt on the licence the works should be completed in line with the licence method statement. A sensitive lighting scheme should be implemented during all phases of the works, in line with Bat Conservation Trust and Institute of Lighting Professionals Guidance (2023). The works should avoid the nesting season where possible. Any works that commence during the nesting season should be immediately preceded by a thorough nesting bird survey carried out by a suitably experienced surveyor. Any nests identified must remain undisturbed until the young have fledged from the nest. Consideration should be given to including additional nesting opportunities in the new extension, in the form of nest boxes integrated into the brickwork of the building, as an enhancement to the site.
Conclusions	The proposed works will have a direct impact on bat roosts present in the building. If the works are carried out under licence, including measures to retain the roost in the roof void and mitigation to compensate for the bat roosts lost in the extension, the overall impact of the works on roosting bats is likely to be a low impact on a local level. If the works avoid the nesting season, where possible, are preceded by further surveys for nesting birds, where required, and include enhancements to provide additional nesting opportunities, the impact on nesting birds will be negligible.

2. Introduction

2.1. Purpose

2.1.1. Planning permission is being sought for the demolition of an existing single storey extension at Plas Fron Lodge and the construction of a new two-storey extension on the property.

2.1.2. A Preliminary Roost Assessment (PRA) of the building was commissioned to support the application for planning permission.

2.2. Site Description and Location

2.2.1. The site comprises Plas Fron Lodge, a detached private residence to the southeast of Wrexham.



Figure 1: Showing the location of the building covered by this survey.

2.2.2. The building comprises a two-storey main building with a single storey extension on the southwest elevation and a lean to on the northwest elevation.

2.2.3. The walls of the building comprise solid brick walls with wooden windows and doors. The eaves of the building are open around the main building with a wooden fascia board present on two elevations of the single storey extension and nothing on the third elevation.

2.2.4. The roof of the building comprises a slate covered pitched roof over the two storey areas of the building, a sloping corrugated metal roof over the extension and a sloping part slate and part corrugated metal roof over the lean to. Two brick chimney stacks are present on the main roof of the building.



Figure 2: The southeast elevation of the building.



Figure 3: The northeast elevation of the building.



Figure 4: The roof void within the building.

2.2.5. Internally the main building has a single loft space that extends throughout the entire roof void. The extension comprises a single room that is open to the inside of the roof with no separated roof void.

2.2.6. The land immediately surrounding the building comprises the gardens associated with Plas Fron Lodge to the south and west and a parking area associated with the building to the east. To the north the land comprises a large arable field.

2.2.7. The wider surrounding area comprises open arable and grazing land with occasional mature trees and areas of woodland. The River Dee is located 750m to the east of the site and the town of Wrexham is located 6km to the northwest.



Figure 5: Showing the site in context with the wider surrounding area.

2.3. Proposals

2.3.1. The proposals are to demolish an existing single storey extension to the rear of the property and to construct a two-storey extension on a larger footprint. The extension will tie into the existing roof void on the southwest elevation of the building.

2.3.2. The plans in Appendix I of this report show the proposed elevations of the building.

3. Methodology

3.1. Desk Study

3.1.1. A desk study to identify existing records of designated sites, bats and birds within 500m of the survey area was carried out with Cofnod.

3.1.2. The MAGIC website was searched for records of statutory designated sites within 2km of the survey area.

3.2. Field Study

3.2.1. A field survey of the site was undertaken by Steven Whitcher (MCIEEM) on the 15th February 2024. The Preliminary Roost Assessment (PRA) was carried out in accordance with the Bat Conservation Trust Good Practice Guidelines, 4th edition (2023) and was also advised by BTHK Bat Roosts in Trees - A Guide to Identification and Assessment for Tree-Care and Ecology Professionals (2018) and BRHK Bat Roosts in Rock – A Guide to Identification and Assessment for Climbers, Cavers & Ecology Professionals (2021).

3.2.2. The weather at the time of the survey was cloudy but mild with a light breeze (BWS-1) and a temperature of 12°C.

3.2.3. During the survey all buildings, structures and trees were searched for bat roosting potential or evidence of existing roosts, including:

- Checking buildings, structure and trees for cracks, voids or other Potential Roost Features (PRF).
- Looking for signs of staining or worn areas indicating a roost entrance.
- Searching for droppings, foraging remains such as wings or other field signs.

3.2.4. The inspection included a visual inspection using a bright torch (1 million candle power), ladders and also an inspection with binoculars, a pole camera and an endoscope, where applicable.

3.2.5. The habitat around the site was also assessed for its suitability to support foraging and commuting bats by looking at the value of the surrounding habitat and the connectivity of the site to the wider area.

3.3. eDNA Survey

3.3.1. Bat droppings were collected from the roof void of the building during the PRA and sent for analysis by SureScreen Scientifics.

3.4. Limitations/Constraints

3.4.1. This PRA was carried out as a daytime survey and therefore does not provide accurate information on bat emergence or entry or on foraging and commuting activity in the surrounding area.

4. Results and Interpretation

4.1. Desk Study

4.1.1. Cofnod did not return any existing records of designated sites within the 500m search area.

4.1.2. The closest statutory site identified on the MAGIC website comprises Afon Dyfrdwy Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC), which is located 750m to the east.

4.1.3. Cofnod returned a single bat record within the 500m search area. The record relates to the presence of common pipistrelle (*Pipistrellus pipistrellus*) 450m to the northwest.

4.1.4. Cofnod returned occasional records of bird species within the 500m search area, although no records specific to the building covered by this survey. The closest record refers to the presence of barn owl (*Tyto alba*) at Plas Fron, which is located 120m to the southwest.

4.2. Field Study

4.2.1. The walls of the building were generally found to be in a good condition with no visible cracks or voids and the windows and doors intact and sealed into the brickwork.

4.2.2. The eaves around the main building were found to be open providing opportunities for bats and birds to access the walls tops on all sides of the building. No bat field signs were identified although occasional areas of bird droppings were visible around the eaves of the main building, implying previous nesting activity.



Figure 6: Voids at the gable end of the building. Figure 7: Bird droppings around voids in the eaves of the building.

4.2.3. The fascia boards on the extension displayed occasional voids, particularly on the southwest elevation of the building. A single bat dropping was identified underneath gaps in the fascia board in two locations on the southwest elevation of the extension.

4.2.4. The bat droppings were individual droppings present on the brickwork with no signs of additional bat droppings on the floor below. An accurate species identification could not be carried out and the samples were too small to collect for eDNA analysis, although the droppings were indicative of pipistrelle species (*Pipistrellus sp.*).



Figure 8: Showing the location of droppings identified under the fascia board.

4.2.5. The roof of the building was found to be in a generally good condition with tight fitting slates and the ridge tiles in place and relatively well sealed. The leadwork around the chimney stacks was in good condition with no obvious voids.



Figure 9: The roof and leadwork to the southwest.



Figure 10: The tight-fitting slates and ridge tiles.

4.2.6. No other bat field signs were visible around the exterior of the building at the time of the survey.

4.2.7. The roof void of the building was found to display purlin and rafter timbers and an internal lining of partial bitumen felt and partial Breathable Roofing Membrane (BRM).

4.2.8. Several hundred bat droppings, fresh and old, were identified scattered throughout the roof void with occasional concentrations under the ridge and on the gable end on the northwest elevation of the building, including droppings on the brickwork and the loft floor below. No bats were visible in the roof void at the time of the survey.



Figure 11 Bat droppings on the loft floor.



Figure 12: Bat droppings on the gable end wall.

4.2.9. Overall, the building was assessed to provide a moderate potential to support roosting bats due to voids around the eaves of the main building and gaps behind the fascia on the single storey extension. The presence of bat droppings in two areas of the building confirms the presence of at least two bat roosts in the building.

4.2.10. The land around the building was assessed to provide a moderate value foraging and commuting habitat for bats with close connections to areas of woodland to the south of the building. A through assessment of the foraging and commuting activity around the site was not carried out during the survey.

4.2.11. The building provides nesting opportunities for various bird species. No active nest sites were identified during the survey although the presence of bird droppings on the brickwork around the eaves implies that birds have previously nested in the building.

4.2.12. House sparrows (*Passer domesticus*) were identified around the building at the time of the survey.

4.3. eDNA Survey

4.3.1. During the PRA bat droppings were collected from the roof void of the property and sent to SureScreen Scientifics for analysis.

4.3.2. The results of the eDNA analysis confirm the species of bat roosting in the roof void to be whiskered bat (*Myotis mystacinus*).

4.3.3. Figure 13 includes an extract from the SureScreen Scientifics eDNA report with the full report included in Appendix III of this report.

Lab ID	Site Name	OS Reference	Sample Type	Species Name	Match(%)
83037	Plas Fron Lodge - 0014	SJ 37862 46252	Bat Dropping	Whiskered bat (<i>Myotis mystacinus</i>)	98.47
Genetic Sequence ATTATATCGGAGGCTTTGGGATTGACTAGTGCCCTGATGATTGGCGCTCCTGATATCCTTCCCCGGATAAAT AATATAAGTTTCTGACTACTTCCCCATCTTTCTTATTACTACTGGCCTCGTCTATAGTTGAAGCAGGGGAGGAA CTGGTTGAACAGTTTATCCCCCTAGCAGGAAATCTTGCATCATGCGAGGAGAGA					

Figure 13: Extract from the SureScreen Scientifics eDNA report.

4.4. Interpretation

4.4.1. The bat droppings in the roof void of the building confirm the presence of a bat roost in that area with the eDNA analysis confirming the species of bat to be whiskered bats. The presence of scattered droppings throughout the roof void with occasional concentrations confirms that the bats utilise the roof void for light sampling/foraging as well as roosting.

4.4.2. The droppings on the gable end on the northwest elevation of the building imply that the roost access may be located in that area, although further surveys would be required to confirm the roost access and classification.

4.4.3. The proposed works will retain the existing roof void in its current form and will therefore not have an impact on the bats through the loss of the roost in the roof void. However, the works will tie into the existing roof void and therefore the works will impact the environment within the roost and will potentially cause disturbance to any bats present in the roost at the time of the works. The level of disturbance will depend highly on the timing of the works.

4.4.4. The presence of individual bat droppings underneath gaps in the fascia board on the single storey extension of the building implies that bats utilise the gaps in the fascia as roost locations. The bat droppings identified during the survey imply that the species of bat present is likely to be a pipistrelle species.

4.4.5. The proposed works include the demolition of the existing single storey extension and therefore the works will have a direct impact on the roost/roosts present behind the fascia of the extension and any bats present in the roost/roosts at the time of the works.

4.4.6. The proposed works are confined to the building and will not cause the loss of areas of vegetation in the surrounding area. Therefore, if a sensitive lighting scheme is implemented during all phases of the works the impact on foraging and commuting bats is likely to be negligible.

4.4.7. The building provides opportunities for nesting birds with house sparrows present around the building during the survey and old droppings, implying previous nesting activity. Therefore, if the proposed works are carried out during the nesting season, which extends from March to September each year, the works may have a direct impact on nesting birds if they are present in the areas of the building impacted by the works.

4.4.8. Nests present in other areas of the building are unlikely to be directly disturbed by the proposed works, although there will be an increase in disturbance around the building during the works.

5. Recommendations

5.1. It is recommended that no works commence on the building prior to a Natural Resources Wales (NRW) licence being obtained to cover the works. The NRW licence can only be applied for once planning permission has been granted.

5.2. It is recommended that the NRW licence application is supported by additional bat surveys, carried out in line with the Bat Conservation Trust (BCT) Good Practice Guidelines (2023) for roost classification. The surveys should comprise up to three bat activity surveys carried out during the peak survey season, which is May to August, by sufficient surveyors and Night Vision Aids (NVA) to cover all areas of potential around the building. The surveys should be separated apart by at least three weeks to achieve a spread across the season.

5.3. On completion of the surveys, and receipt of planning permission, it is recommended that the NRW licence application is prepared, including a method statement outlining the mitigation that will be put in place during the works, time restrictions and any enhancements that will be provided. On receipt on the NRW licence the works should be completed in line with the licence method statement.

5.4. It is recommended that a sensitive lighting scheme is implemented during all phases of the works, in line with BCT and Institute of Lighting Professionals (ILP) Guidance (2023).

5.5. It is recommended that the works avoid the nesting season, which extends from March to September, where possible. Any works that commence during the nesting season must be immediately preceded by a thorough nesting bird survey carried out by a suitably experienced surveyor. Any nests identified must remain undisturbed until the young have fledged from the nest.

5.6. The works will retain nesting potential around the building although it is also recommended that consideration is given to including additional nesting opportunities in the new extension, in the form of nest boxes integrated into the brickwork of the building, as an enhancement to the site.

6. Conclusions

6.1. The proposed works will have a direct impact on bat roosts present in the building. If the works are carried out under licence, including measures to retain the roost in the roof void and mitigation to compensate for the bat roosts lost in the extension, the overall impact of the works on roosting bats is likely to be a low impact on a local level.

6.2. If the works avoid the nesting season, where possible, are preceded by further surveys for nesting birds, where required, and include enhancements to provide additional nesting opportunities, the impact on nesting birds will be negligible.

7. References

BTHK (2018). Bat Roosts in Trees – A Guide to Identification and Assessment for Tree-Care and Ecology Professionals. Exeter: Pelagic Publishing.

BRHK (2021). Bat Roosts in Rock – A Guide to Identification and Assessment for Climbers, Cavers & Ecology Professionals. Pelagic Publishing, Exeter.

Collins, J. (ed.)(2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition). The Bat Conservation Trust, London.

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CIEEM (2017) Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.

Legislation and Policy.

Conservation of Habitats and Species Regulations 2017. Available at <http://www.legislation.gov.uk/uksi/2017/1012/contents/made> (Accessed 20th March 2023).

Countryside Rights of Way Act 2000. Available at <http://www.legislation.gov.uk/ukpga/2000/37/contents> (Accessed 20th March 2023).

The Habitats Directive. Available at http://www.ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm (Accessed 20th March 2023).

National Planning Policy Framework (2021). Available at <http://www.gov.uk/guidance/national-planning-policy-framework> (Accessed 20th March 2023).

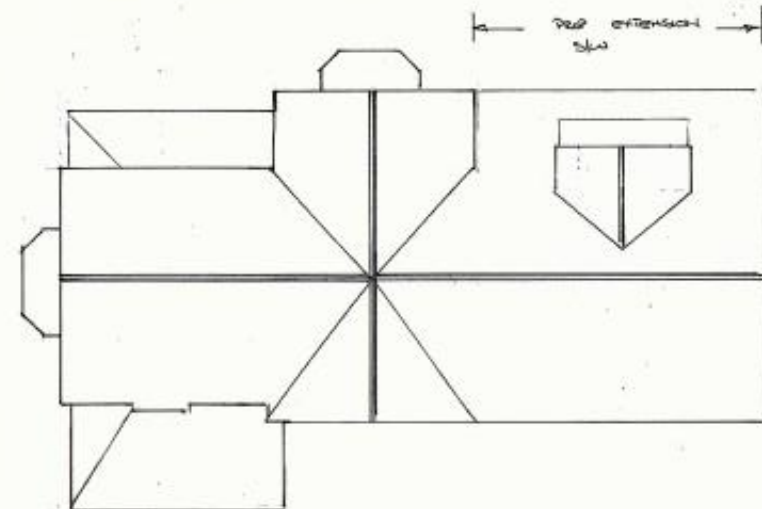
Natural Environment and Rural Communities (NERC) Act 2006. Available at <http://www.legislation.gov.uk/ukpga/2006/16/contents> (Accessed 20th March 2023).

The Wildlife and Countryside Act 1981. Available at <http://www.legislation.gov.uk/ukpga/1981/69> (Accessed 20th March 2023).

Appendix I: Development Plans



BRICKWORK TO MATCH EXIST
STONE CILLS TO S.E. ELEVATION
TO MATCH EXIST
SLATE ROOF
DORMER GABLE + CHIMNEY IN LEAD
PORCH RENDERED ROUGH CAST + PAINT FIN
THROOF H.W. LONGER PAINT FIN



PROPOSED ELEVATIONS + ROOF

RAS FROM LODGE
CROSS LINES LL13 OTF

SCALE 1:100

Appendix II: Planning Policy and Species Legislation Summary

1. Planning Policy

1.1. The National Planning Policy Framework (NPPF) sets out the governments planning policies and how they should be applied. Section 15 of the policies refers to 'Conserving and enhancement the natural environment'. This outlines how local authorities should deal with biodiversity when considering planning applications.

1.2. NPPF paragraph 180 States:

When determining planning applications, local planning authorities should apply the following principles:

- a) If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
- b) Development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special interest, and any broader impacts on the national network of Sites of Special Scientific Interest;*
- c) Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and*
- d) Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.*

2. Legislation Summary

Species	Legislation	Offences include
Bats	Conservation of Habitats and Species Regulations 2017 (as amended)	○ Deliberately kill, injure or capture a bat; ○ Deliberately disturb bats; ○ Damage or destroy a breeding site or resting place of a bat.
	Wildlife and Countryside Act 1981	○ Obstruct access to any structure or place which any bat uses for shelter or protection; or ○ Disturb any bat while occupying a structure or place which it uses for that purpose.
Birds	Wildlife and Countryside Act 1981	○ Intentionally kill, injure, or take any wild bird; ○ Intentionally take, damage or destroy a nest of any such bird whilst it is in use or being built; or ○ Intentionally take or destroy an egg of any such bird.

Local authorities therefore have a duty to consider protected species as a material consideration when assessing planning applications. The ODPM Government Circular 06/2005 states: *'It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision.'*

Appendix III: **eDNA Analysis Report**

Folio No: 82-2024
Purchase Order: 20240014
Contact: Switch Ecology
Issue Date: 23.02.2024

Biological Report

Technical Report

Folio No: 82-2024
Purchase Order: 20240014
Contact: Switch Ecology
Issue Date: 23.02.2024



Biological Sample Analysis

Summary

Most biological materials (tissue, feces, hair, blood, etc.) contain small amounts of DNA from the organism of which it originated. Using molecular methods such as PCR (polymerase chain reaction) and DNA sequencing, SureScreen Scientifics are able to analyze an unknown sample to determine which species the sample originates from our methods are optimized for the detection of species including bats (over 92% of bat species worldwide can be identified including all 18 UK bat species), mammals; bees, wasps & hornets; birds; fish; plants (from roots, leaves, stem and even dried wood) and many more species.

Results

Lab ID	Site Name	OS Reference	Sample Type	Species Name	Match(%)
83037	Plas Fron Lodge - 0014	SJ 37862 46252	Bat Dropping	Whiskered bat (Myotis mystacinus)	98.47
Genetic Sequence ATTATATCGGAGGCTTTGGGATTGACTAGTGCCCTGATGATTGGCGCTCCTGATATATCCTTCCCCGGATAAAT AATATAAGTTTCTGACTACTTCCCCATCTTTCTTATTACTACTGGCCTCGTCTATAGTTGAAGCAGGGGCAGGAA CTGGTTGAACAGTTTATCCCCCTAGCAGGAAATCTTGCATCATGCGAGGAGAGA					

Matters affecting result: none
Reported by: Jennifer Higginbottom

Approved by: Christopher Troth



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Methodology

Once samples have arrived in the laboratory, the DNA is isolated using a commercial DNA extraction kit. Using PCR, DNA (if present within the sample) is amplified using universal molecular markers designed to amplify a short fragment of the DNA of the target species group (i.e. mammal, fish, arthropod, reptile, plant etc.). If amplification is successful, the resulting DNA sequence is revealed using a process known as Sanger Sequencing in order to obtain the genetic sequence of the mitochondrial gene within the sample. The sequence results are aligned against a library of known reference sequences using bioinformatics software, which enables us to determine which species the DNA sequence from the sample matches with, informing the species identity and sequence similarity (match %).

If the initial analysis is unsuccessful, the entire process is repeated up to two additional times with a fresh reserve sample (if available) in order to obtain a species identification. If no DNA is detected after three attempts, then we can be confident that any further analysis of the sample will likely also fail to result in species identification.

Interpretation of Results

Sample Type:	The sample you send to us can come from a variety of sources. Fecal, dropping, urine, hair, blood, carcass (skin, flesh, bone), gamete, plant matter or unknown biological material all contain DNA that we can test for in order to identify the species of origin.
Genetic Sequence:	The unique DNA sequence obtained from the sample.
Match (%):	How closely matched the DNA sequence from your sample is to the sequences within our reference database. This can be interpreted as a score of result accuracy, with the maximum score of 100% indicating an exact match of the sample to the indicated species' reference sequence. Lower scores (80-99%) indicate some variation between the sample and reference sequence, likely due to natural variation between individual genetic sequences and/or systematic variations generated through the sequencing process. Scores below 80% similarity should be interpreted with care and can indicate part degraded or part contaminated samples.
Inconclusive Result:	Degraded sample: DNA is degraded and we are unable to determine species identification due to degradation of sample DNA. This can happen either before sample collection (old samples, exposure to UV etc.) or after sample collection if stored for long periods before analysis or not handled correctly. Inhibited/contaminated sample: We are unable to determine species identity due to contamination or the suspected presence of large quantities of PCR inhibitors. Contamination sources can originate from other species which could have come into contact with the samples, or human contamination during sample collection.
Alternative Result:	Sometimes, for targets such as bat dropping analysis, other mammalian species such as rodents are detected. We find this to be a common occurrence as some bat droppings can be similar in appearance to rodent droppings. Although sometimes unexpected, repeat analyses in these cases would likely return the same results.