

Proposed Sand and Gravel Quarry, Lea Castle Farm

Planning Inspectorate ref: APP/E1855/W/22/3310099

Dust Monitoring Proposals

1. Introduction

- 1.1. The following are provided as proposals for deposition dust monitoring as set out in recommended Condition 32. The proposals are provided at this stage in respect of a request received from Worcestershire County Council (WCC) to provide suggested 'dust limits' for review by Worcester Regulatory Services (WRS).
- 1.2. These proposals would be included within the Dust Management Plan (DMP) that would be required under that condition and that would be subject to agreement with the MPA prior to the commencement of development. The DMP would also include for other wider aspects such as dust suppression measures to be employed, visual monitoring, response to complaints and contingency measures. As such the proposed monitoring set out below should be considered within the wider context of the DMP that would be provided.

2. Quantitative Dust Monitoring

- 2.1. The dust monitoring scheme would be designed taking into account the layout of the site and the progressive nature of the works.
- 2.2. Monitoring would be undertaken for at least a 3-month period ('Baseline Period') prior to the onset of the soil stripping and bund creation activities to be undertaken as part of the Initial Works. A report would be provided to WCC / WRS within 2 weeks of the initial deployment of the Baseline Monitoring confirming the actual monitoring locations and analytical laboratory utilised.
- 2.3. Monitoring would continue during the operational period until the completion of restoration in the relevant areas or as otherwise agreed with the MPA.

Monitoring Methodology

- 2.4. Monitoring would be undertaken using combined deposition / directional dust gauges; these comprise 'Frisbee-type' dust deposition samplers with an adhesive 'sticky pad' directional dust sampler around the collection bottle.
- 2.5. All gauges will be installed by a suitable qualified and experienced supplier under supervision of an environmental consultant.
- 2.6. Samples would be collected on at least a monthly basis and submitted for analysis at an UKAS-accredited laboratory. Analysis would be undertaken for the following:

- Mass of dissolved and undissolved solids to determine the deposition rate as mg/m²/day using Method No.FD01: *The determination of Fugitive Dust* based on BS 872:2005 (mass of dust (mg) is the UKAS accredited test); and
- % Effective Area Covered (%EAC) to determine surface soiling and direction of impact using Method No.FD05: *The determination of reflectance values using a smoke stain reflectometer* (% reflectance is the UKAS accredited result reported).

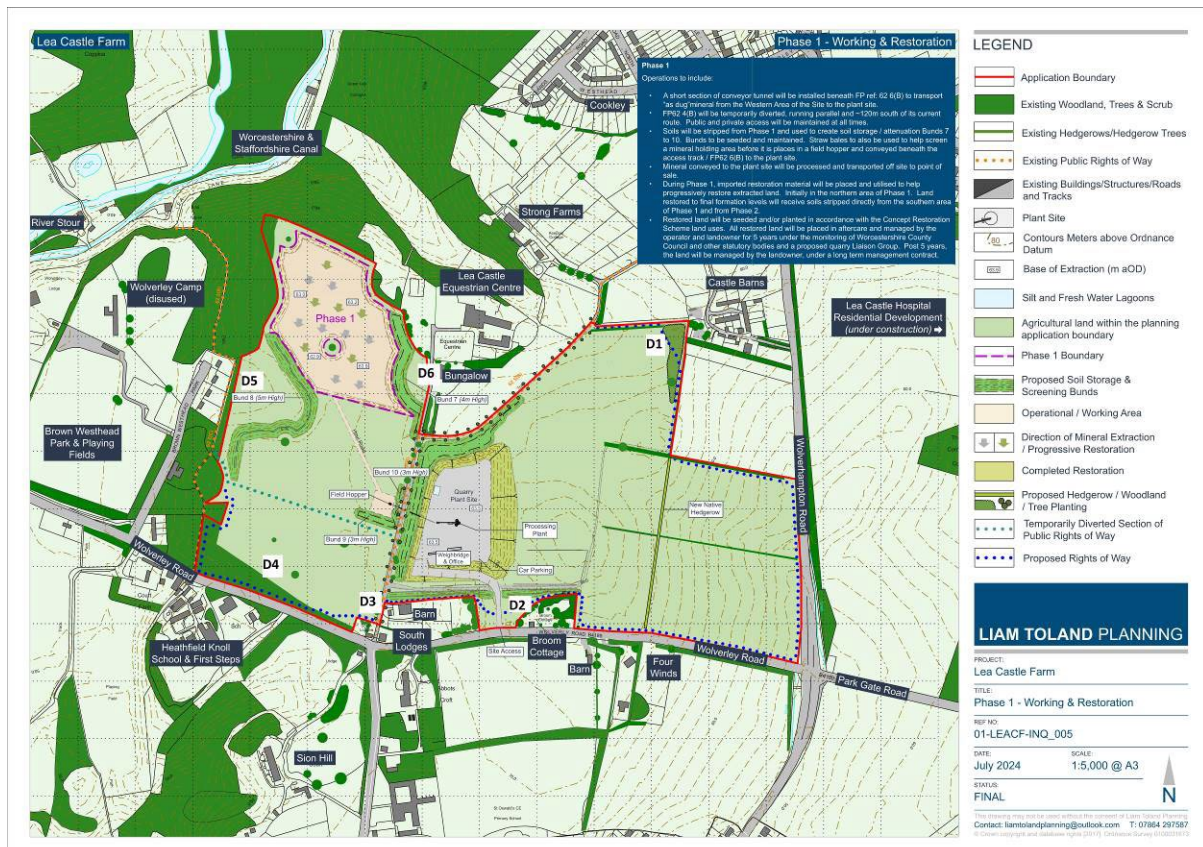
Monitoring Locations

- 2.7. The initial proposed locations are as summarised below and provided in Drawing D01.
- 2.8. The actual locations would be determined by conditions at the time of monitor deployment. This would take into account factors such as access, health and safety, physical constraints and security. These factors are particularly relevant during the Initial Works when access to some areas may be restricted.
- 2.9. The locations would be confirmed to WCC on completion of deployment.

Table 1: Proposed Initial Dust Monitoring Locations

ID	Location	Comments
D1	Northeast Site Corner	Closest area of site to Castle Barns
D2	Southeastern edge of site	To represent Broom Cottage
D3	Southern edge of Site	To represent South Lodges
D4	Southwestern edge of Site	Closest accessible part of site to Heathfield Knoll School and First Steps
D5	Western edge of site	To represent properties on Brown Westhead Park
D6	Northern edge of Site	To represent The Bungalow

Figure D01: Proposed Dust Monitoring Locations



Assessment Criteria

2.10. There are no UK statutory or recommended dust deposition rates which constitute an acknowledged nuisance. Consequently, the deposited and directional dust data obtained would refer to current 'custom and practice' benchmarks as indicative thresholds for possible nuisance derived from Government sponsored best practice guidance¹, Institute of Air Quality Management Guidance² and Environment Agency³, as follows:

- Deposited dust:
 - For locations of relevant exposure: 140 mg/m²/day (based upon 'complaints likely in open country'²);
 - For locations at site boundary and at least 50m from off-site receptors: 200 mg/m²/day (based upon 'custom and practice' limit)²;
- Soiling: 0.5% EAC/day.

2.11. These would be applied as 'trigger' thresholds for investigation to identify the likely dust source(s), taking account of the direction data and sampling location, and using site records.

¹ MIRO, Management, mitigation and monitoring of nuisance and PM10 emissions arising from the extractive from extractive industries: an overview, Report to the Mineral Industry Research Organisation (MIRO), AEAT/ENV/R3141 Issue 1, February 2011

² Guidance on Air Quality Monitoring in the Vicinity of Demolition and Construction Sites, 2018

³ Environment Agency, Monitoring of particulate matter in ambient air around waste facilities, M17, 2014

However, it is anticipated that any significant dust event would be identified via the routine daily visual assessments as would be set out in the DMP, with the corrective action referred to.

- 2.12. It should be noted the locations are all proposed within the site boundary and not at receptor locations. The appropriate trigger thresholds for each monitoring location would be dependent on the final siting of the monitors and proximity to receptors. The results should therefore be interpreted accordingly and should additionally take into account any screening provided.

Reporting and review

- 2.13. A summary report would be provided to WCC on completion of the 3-month Baseline Monitoring. This would detail the dust deposition and soiling results over the baseline period and would include any recommendations for alterations to the initial monitoring locations, methodology and assessment criteria based on the findings.
- 2.14. The quantitative monitoring results would subsequently be reported to the site operator and collated and reported to WCC on a monthly basis. The monthly reports would detail the dust deposition and soiling results and would include commentary of any exceedances identified of the above trigger thresholds and what remedial actions or contingencies were put in place.
- 2.15. A summary report would be produced to form part of the first DMP Review 6 months after the commencement of the development. This would include a review of the monitoring programme, including locations, duration and frequency of on-going monitoring and reporting frequency, taking into account phasing and operational areas.
- 2.16. Subsequent monitoring locations, along with duration and frequency of monitoring, would be subject to review on the basis of the results obtained as part of the DMP periodic review.
- 2.17. The dust monitoring results would be used to identify any increase or trend in dust deposition rates, verify (or otherwise) any complaints from neighbours, and provide a further basis for future remedial action / mitigation measures.
- 2.18. Any proposed alterations to the dust monitoring methodology to be employed and reporting regime, including locations, duration and frequency, would be submitted in writing to WCC and agreement obtained from WCC in writing prior to implementation. This may be carried out either as per of the regular DMP review or if necessary due to circumstances at other times.

3. Summary

- 3.1. The above outlines the proposed deposition dust monitoring as set out in recommended Condition 32, should planning permission be granted.

- 3.2. These proposals would be included within the Dust Management Plan (DMP) that would be required under that condition and would be subject to agreement with the MPA prior to the commencement of development. As noted above the proposed monitoring should be considered within the wider context of the DMP that would be provided, which would include for dust suppression measures to be employed, visual monitoring, response to complaints and contingency measures.