# Appendix 5: Dust Management Plan (DMP)

**Project:** Hydro Aluminium Site Redevelopment, Wrexham Industrial Estate

**Principal Contractor:** UK Engineering

## 1.0 Introduction and Scope

This Dust Management Plan outlines the procedures to control and mitigate dust emissions during the construction phase at the Hydro Site. The primary focus of this plan is on Phase 1 (site setup, remediation, and clearance) and Phase 2 (groundworks, drainage installation, and formation of attenuation ponds). These phases involve significant earth-moving activities utilising 360 excavators, dumpers, and muck-away HGVs.

## 2.0 Regulatory Framework

Operations must comply with Wrexham County Borough Council (WCBC) planning conditions and Natural Resources Wales (NRW) guidelines, alongside the following overarching statutory UK and Welsh legislation:

- **Environmental Protection Act 1990 (Part III):** Classifies dust emissions that affect local amenities or pose health risks as a "statutory nuisance," giving local authorities the power to serve abatement notices.
- **Control of Substances Hazardous to Health Regulations 2002 (COSHH):** Protects workers from exposure to hazardous dust, particularly Respirable Crystalline Silica (RCS) generated during concrete and block cutting.
- **Environment Act 1995 (Local Air Quality Management):** Requires local authorities to assess air quality; construction sites must not cause breaches of local air quality objectives.
- **Well-being of Future Generations (Wales) Act 2015:** Mandates sustainable development practices, including minimising environmental pollution and protecting public health in Welsh communities.

## 3.0 Potential Dust Sources

During the initial groundworks and utilities installation, the primary sources of dust generation will include:

- Excavation and earthworks by 360 excavators.
- Movement of dumpers and muck-away HGVs over unpaved ground.
- Topsoil stripping and stockpiling.
- Cutting of concrete, blocks, or paving for utility trenches.
- Track-out of mud and debris onto the public highway, which subsequently dries and becomes airborne dust.

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## 4.0 Dust Control & Mitigation Measures

To prevent dust nuisances and ensure environmental compliance, the site will implement the following comprehensive mitigation measures. While the Construction Dust Risk Assessment (Annex 2) classifies the site activities as having a Negligible risk of dust impacts, the following measures have been adopted proactively as good practice, aligning with the 'Highly Recommended' and 'Desirable' measures for Low Risk sites in accordance with Section 8.2 of the IAQM Guidance.

### 4.1 Communications and Site Management

- The name and contact details of the person(s) accountable for air quality and dust issues on the site will be displayed on the site boundary.
- The head office contact information will also be prominently displayed.
- All dust and air quality complaints will be recorded, the causes identified, and appropriate measures taken to reduce emissions in a timely manner.
- The complaints log, along with records of any exceptional incidents that cause dust emissions on- or off-site, will be made available to the local authority upon request.

### 4.2 Preparing and Maintaining the Site

- The site layout will be planned so that machinery and dust-causing activities are located away from receptors, as far as is practically possible.
- Solid screens or barriers will be erected around dusty activities or the site boundary that are at least as high as any stockpiles on site.
- Site runoff of water or mud will be actively avoided.
- Site fencing, barriers, and scaffolding will be kept clean using wet methods.
- Materials that have a potential to produce dust will be removed from the site as soon as possible, unless being re-used on site.

### 4.3 Operating Vehicles, Machinery, and Sustainable Travel

- An on-site speed limit of 10 mph will be strictly enforced on unsurfaced haul roads and work areas, and a maximum of 15 mph on surfaced areas.
- All vehicles must switch off engines when stationary to prevent idling.
- The use of diesel or petrol-powered generators will be avoided, utilizing mains electricity or battery-powered equipment where practicable.

### 4.4 Specific Operations and Waste Management

- Cutting, grinding, or sawing equipment will only be used in conjunction with suitable dust suppression techniques, specifically on-tool active water suppression or local exhaust ventilation systems.

- An adequate water supply will be ensured on the site for effective dust/particulate matter suppression and mitigation.
- Enclosed chutes, conveyors, and covered skips will be utilized.
- Drop heights from excavators, loading shovels, hoppers, and other handling equipment will be minimized, and fine water sprays will be used on such equipment wherever appropriate.
- Equipment will be readily available on site to clean any dry spillages as soon as reasonably practicable using wet cleaning methods.
- Bonfires and the burning of waste materials are strictly prohibited.

### 4.5 Earthworks Specific Measures

- Earthworks and exposed areas or soil stockpiles will be re-vegetated to stabilize surfaces as soon as practicable.
- Where it is not possible to re-vegetate or cover with topsoil, Hessian, mulches, or trackifiers will be used as soon as practicable.
- Topsoil will be stored in bunds that do not exceed 2m in height to prevent anaerobic conditions.
- Soil bunds will be positioned away from trafficking areas to minimize disturbance and compaction.

### 4.6 Trackout Specific Measures

- Water-assisted dust sweeper(s) will be utilized on access and local roads to remove any material tracked out of the site as necessary.
- Dry sweeping of large areas will be avoided.
- All lorries and skips entering and leaving the site transporting loose materials must be covered and exit the site to the left heading into the industrial estate along Bridge road to Redwither Road, to avoid the nearby village of Pentre Maelor.
- On-site haul routes will be inspected for integrity, and necessary repairs to the surface will be instigated as soon as reasonably practicable.
- A wheel washing system (featuring rumble grids to dislodge accumulated dust and mud prior to leaving the site) will be implemented where reasonably practicable.

## 5.0 Monitoring and Responsibilities

- **Daily Inspections:** The Site Manager is responsible for conducting daily visual dust inspections at the site boundary.
- **Off-site Monitoring:** Regular off-site inspections will be undertaken, including regular dust soiling checks of surfaces such as street furniture and cars within 100m of the site boundary, with cleaning provided if necessary.

- **Increased Frequency:** The frequency of site inspections by the accountable person will be increased when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
- **Compliance Logging:** Regular site inspections will be carried out to monitor compliance with the Dust Management Plan, with results recorded and the inspection log made available to the local authority when asked.

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## Annex 1 - Weekly Dust Management Inspection Sheet

This sheet is to be completed weekly by the Site Manager to ensure ongoing compliance with the DMP. (Note: This supplements the required daily visual boundary checks.)

| Inspection Item | Yes / No / N/A | Comments / Corrective Actions |
|---|---|---|
| **Communications & Management** | | |
| Is the accountable person's contact info prominently displayed on the site boundary? | | |
| Is the dust and air quality complaints log up to date and available for inspection? | | |
| Are daily on-site and regular off-site visual boundary checks being completed and recorded? | | |
| **Site Operations & Machinery** | | |
| Are speed limits (10mph unpaved, 15mph surfaced) strictly adhered to by all traffic? | | |
| Are all vehicle engines switched off when stationary (no idling)? | | |
| Are solid screens or barriers intact around dusty activities or stockpiles? | | |
| Is the site fencing, barriers, and scaffolding being kept clean using wet methods? | | |
| Do all cutting/grinding tools have active water suppression or exhaust ventilation? | | |
| Are drop heights from excavators, shovels, and hoppers being actively minimized? | | |
| Is there an adequate water supply actively available on-site for dust suppression? | | |
| Is the site entirely free of bonfires or burning of waste materials? | | |
| **Earthworks & Stockpiles** | | |
| Are soil storage bunds kept under | | |

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| Inspection Item | Yes / No / N/A | Comments / Corrective Actions |
|---|---|---|
| 2m in height and away from vehicle traffic? | | |
| Are exposed earthworks or inactive stockpiles properly covered, mulched, or seeded? | | |
| **Trackout & Transport** | | |
| Are all HGVs, lorries, and skips covered before entering and leaving the site? | | |
| Are vehicles checked for debris and using wheel washing/rumble grids prior to exit? | | |
| Is the public road clear of tracked mud, and is a water-assisted sweeper deployed? | | |
| Are on-site haul routes regularly inspected for surface integrity and repaired? | | |

**Inspected By (Name):**

**Signature:**

**Date:**

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## Annex 2 - Construction Dust Risk Assessment

**Introduction** This dust risk assessment has been undertaken in accordance with the Institute of Air Quality Management (IAQM) Guidance on the assessment of dust from demolition and construction (Version 2.2, January 2024). The assessment determines the risk of dust impacts arising from the proposed activities and identifies the commensurate level of site-specific mitigation required.

### STEP 1: Screen the Need for a Detailed Assessment

An assessment will normally be required where there is a human receptor within 250m of the boundary of the site or within 50m of the route(s) used by construction vehicles on the public highway, up to 250m from the site entrance(s). An assessment is also required if an ecological receptor is within 50m of the site boundary or construction vehicle routes.

**Site Screening Outcome:** A detailed assessment is required because there are highly sensitive human receptors (approximately 35 residential properties located on The Oval and Bridgeway East in Pentre Maelor) situated within 250m of the site boundary. The presence of these human receptors within the screening distance triggers the requirement for a detailed Dust Risk Assessment in accordance with Step 1 of the IAQM guidance

### STEP 2A: Define the Potential Dust Emission Magnitude

The dust emission magnitude is based on the scale of the anticipated works and is classified as Small, Medium, or Large for four separate activities: Demolition, Earthworks, Construction, and Trackout.

| Activity | Dust Emission Magnitude | Justification / Criteria |
|---|---|---|
| **Demolition** | N/a | No existing structures are being demolished. The removal of legacy stockpiled material falls entirely under Earthworks. |
| **Earthworks** | Small | Total site area (4,300m$^2$) is <18,000~m$^2$, with a maximum of 3 heavy earth-moving vehicles active at any one time (threshold is <5). Activity involves the excavation and removal of existing legacy soil mounds. |
| **Construction** | Small | While total building volume is 20,000m$^3$, the construction utilizes steel frames and steel sheeting, matching the IAQM criteria for "construction material with low potential for dust release". |

| | | |
|---|---|---|
| **Trackout** | Small | Outward vehicle movements (10-15 HDVs) are below the $< 20$ HDV threshold, and vehicles travel entirely over paved concrete roadways (unpaved length $< 50$m). |

**4.0 STEP 2B: Define the Sensitivity of the Area**

The sensitivity of the area takes into account the specific sensitivities of receptors in the area, the proximity and number of those receptors, local background $PM_{10}$ concentrations, and site-specific factors. Sensitivities are classified as High, Medium, or Low.

| Potential Impact | Demolition | Earthworks | Construction | Trackout |
|---|---|---|---|---|
| **Dust Soiling** | Low | Low | Low | Low |
| **Human Health** | Low | Low | Low | Low |
| **Ecological** | Negligible | Negligible | Negligible | Negligible |

*Note: The values in the table above must be derived using Tables 2, 3, and 4 from Section 7.3 of the IAQM guidance based on your exact distance to local dwellings and habitats.*

According to census records, the Pentre Maelor housing estate has a population of 305. Based on this population, the village consists of approximately 120 to 150 domestic properties in total (within a 250m radius of The oval and Bridgeway E contains approximately 35 properties and the closest is 80m approx. 8 properties).

The location has 10–100 High Sensitivity receptors, and the local background $PM_{10}$ is $< 24\ \mu g/m^3$. According to Table 3, at any distance up to 250m. North Wales Authorities Collaborative Project 2025 Air Quality Progress Report and Site Air Pollution | Air Quality In Wales.

Assuming the HGVs exit onto the main industrial estate roads and away from the village.

There are no statutory or locally designated nature sites within 50 meters of the site boundary or road routes (Natural Resources Wales / Find protected areas of land and sea)

**5.0 STEP 2C: Define the Risk of Impacts**

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The dust emission magnitude (Step 2A) is combined with the sensitivity of the area (Step 2B) to determine the risk of impacts with no mitigation applied. This dictates the mitigation measures required in the Dust Management Plan.

| Potential Impact | Demolition | Earthworks | Construction | Trackout |
|---|---|---|---|---|
| **Dust Soiling** | N/a | Negligible | Negligible | Negligible |
| **Human Health** | N/a | Negligible | Negligible | Negligible |
| **Ecological** | N/a | Negligible | Negligible | Negligible |

**Notes:** Demolition, is marked as N/A in Step 2A, the risk of impacts is also N/A.

Earthworks has a small magnitude and a Low sensitivity for dust soiling and human health. According to Table 7 of the IAQM guidance, a Small magnitude combined with a Low sensitivity results in a Negligible risk.

Construction has a Small magnitude and a Low sensitivity. According to Table 8 of the IAQM guidance, a Small magnitude combined with a Low sensitivity results in a Negligible risk.

Trackout: has a Small magnitude and a Low sensitivity. According to Table 9 of the IAQM guidance, a Small magnitude combined with a Low sensitivity results in a Negligible risk.

Ecological has a sensitivity that was already determined to be Negligible in Step 2B, the resulting risk remains Negligible across all activities.

### 6.0 STEP 3: Site-Specific Mitigation

Based on the results identified in Step 2C, the risk of dust impacts across all proposed activities is classified as Negligible. According to the IAQM guidance, for cases where the risk is assigned as negligible, no mitigation measures beyond those required by legislation are strictly required. However, to ensure best practice and proactive environmental stewardship, the site will voluntarily adopt the appropriate 'Highly Recommended' and 'Desirable' mitigation measures outlined in Section 8.2 of the IAQM guidance for Low Risk sites as part of good practice. These specific measures are detailed extensively in Section 4.0 of the main Dust Management Plan.

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### 7.0 STEP 4: Determine Significant Effects

The IAQM guidance states that for almost all construction activity, the aim should be to prevent significant effects on receptors through the use of effective mitigation, meaning the residual effect will normally be 'not significant'.

- Conclusion: Given the site's inherent 'Negligible' risk profile and the strict implementation of the comprehensive, good-practice dust mitigation measures outlined in the site Dust Management Plan, the residual effects of dust from the earthworks, construction, and trackout phases of this project are considered to be not significant.