Moreton C Cullimore (Gravels) Limited

Bow Farm

Application for an Environmental Permit – the Deposit of Waste to Land as a Recovery Activity

Site Condition Report

1.0 SITE DETAILS	
Name of the applicant	Moreton C Cullimore (Gravels) Limited
Activity address	Bow Farm Bow Lane Ripple Worcestershire GL20 6EW
National grid reference	SO 87565 36504

Date and version of Site Condition Report	November 2025 SCR V1

Supporting information	Submitted with the Environmental Permit application: • Environmental Risk Assessment (Appendix Gi) • Environmental Setting and Site Design (ESSD) (Appendix Gii) • Waste Acceptance Criteria and Procedures (Appendix Giii) • Hydrogeological Risk Assessment (HRA) (Appendix Giv) • Stability Risk Assessment (SRA) (Appendix Gv) • Gas Risk Assessment (GRA) (Appendix Gvi)

2.0 Condition of the land at permit issue	
Environmental setting including: • geology • hydrogeology • surface waters	**Geology** The geological setting of the site has been determined based on a review of published information and historical and recent site

	investigation information. The bedrock mudstone is overlain by a series of stepped river terrace deposits of sand and gravel formed during the Pleistocene by the early River Severn system. The terrace deposits are believed to have formed in a braided river environment in which lateral variation from clay or silty channel fill to gravel islands can be expected. Erosion of the bedrock clay may lead to thickening of terrace deposits. The terrace deposits collectively belong to the Severn Valley Formation. The youngest terrace deposit at Ripple is concealed beneath alluvial sediment of the modern River Severn. The four lowest (youngest) of the River Severn terrace sand and gravel deposits are present on the site: **Kidderminster Station Member (BGS 4th Terrace of the River Severn)** - The upper surface level is *c.* 32-33mAOD and is found only at the eastern boundary of the full site area east of Ripple Brook. The terrace deposit comprises predominantly brown and red brown silty sand with pockets of fine and coarse gravel beneath a thin soil cover. The maximum proven thickness of this Member at the site is 4.7m, where reddish-brown silty sand with rare gravel is present. **Holt Heath Member (BGS 3rd Terrace or Main Terrace of the River Severn)** - The Holt Heath Member underlies the level ground lying at *c.* 15-17mAOD between the processing plant area and Puckrup Lane, to the east of the Phases 1 to 9 excavation area. A wedge-shaped remnant of this terrace also lies between the northern site boundary and Ripple Brook, extending north of the M50 as far as Ripple Village. It is evident that part of the terrace has been excavated in the past, possibly during construction of the M50 bridge in 1960. **Worcester Member (BGS 2nd Terrace of River Severn)** - The Worcester Member is the main sand and gravel resource on the site within the Phases 1 to 9 excavation area and forms a prominent landform 3 to 4m above the floodplain. On the site, the front edge of the terrace forms a well-defined slope between the top of the terrace deposit at 12-14mAOD and the floodplain at 9-10mAOD. The terrace deposit appears to be continuous but thins to the edge of the site area against the rising bedrock mudstone adjacent to Bow Lane. A thickness of 5.5m of terrace deposit has been proven. The

	deposit is described as medium dense, reddish-brown slightly clayey and occasionally pebbly fine to medium sand. The gravel and clay content varies but the terrace deposit is always predominantly sand. **Power House Member (BGS 1st Terrace of River Severn)** - The current channel and floodplain of the River Severn are cut into the Power House Member, the youngest of the terrace gravel deposits of the Severn Valley Formation. The deposit is described as brown medium to fine grained sandy gravel. The deposit is entirely obscured by silty clay alluvium and overbank sediments. The maximum thickness of the sand and gravel deposit intersected on site was 3.3m. This is consistent with reported thickness from Ripple Quarry (adjacent to the north of the site) which reported an average thickness of 3.19m over the proposed extraction area with a maximum of 6.25m and minimum of 1.5m. Similar variation should be expected at Bow Farm. The solid bedrock geology underlying the site comprises the Triassic Branscombe Mudstone Formation of the Mercia Mudstone Group which consists of a sequence of red-brown mudstones and siltstones. See also Appendix Gii (ESSD) and Appendix Giv (HRA). **Hydrogeology** The superficial deposits, including the Worcester Member (2nd Terrace), at the site and the surrounding area is classified by the Environment Agency's Aquifer Designation Dataset for England and Wales map, accessed through the Defra Magic Map application, as a 'Secondary A' superficial aquifer, defined as 'permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of baseflow to rivers'. The bedrock at the site and the surrounding area is shown on the Aquifer Designation map as a 'Secondary B' aquifer, defined as 'mainly lower permeability layers that may store and yield limited amounts of groundwater through characteristics like thin cracks (called fissures) and openings or eroded layers'. Site investigations have shown the solid geology underlying the site comprises the Triassic Branscombe Mudstone Formation of the Mercia Mudstone Group which consists of a sequence of red-brown mudstones and siltstones. The

	existence of the mudstone dominated bedrock at the site means it does not transmit groundwater flow. The site is not located within a groundwater Source Protection Zone (SPZ). For more information regarding the hydrogeological setting of the site see Appendix Giv (HRA). **Surface Waters** The River Severn is located *c.* 25m to the west of the Environmental Permit application area and *c.* 400m to the west of the Phases 1 to 9 excavation area, at its closest approach. The River Severn is affected by high tides and tidal gates on the River Avon at Tewkesbury. The Ripple Brook is a tributary of the River Severn and runs north to south to the east of the site, before joining the Mythe Brook. The Mythe Brook then meets the River Severn *c.* 1.5km to the south of the site. The nearest external surface water bodies are a pond feature located adjacent to the centre of the site and the lake feature to the west of the site that is the site of the former Ripple Quarry. There are no identified springs located within *c.* 500m of the site. The majority of the Phases 1 to 9 excavation area is located within fluvial flood risk Flood Zone 1 (less than 0.1% annual chance of flooding from rivers) and Flood Zone 2 (between 0.1% and 1% annual chance of flooding from rivers). Only the extreme southern and western edges of the Phases 1 to 9 excavation area are located in Flood Zone 3 (annual chance river flooding is greater than 1%). Flood defences exist on the banks of the River Severn and the Mythe Brook. Flexible Working Areas A and B are situated within Flood Zone 3. Part of the site situated in Gloucestershire, to the east of Ripple Brook, is also located within fluvial flood risk Flood Zone 3. The Environmental Permit Application area is situated within a low (between 0.1% and 1% annual chance of flooding from surface water) or very low (less than 0.1% annual chance of flooding from surface water) pluvial flood risk area. For more information regarding the

	hydrological setting of the site see Appendix Giv (HRA).
Pollution history including: • pollution incidents that may have affected land • historical land-uses and associated contaminants • any visual/olfactory evidence of existing contamination • evidence of damage to pollution prevention measures	**Pollution incidents that may have affected the land** Environment Agency information indicates that there are no pollution incidents within 1km of the site. **Historical land uses and associated contaminants** A greenfield site used for agriculture. **Visual/olfactory evidence of existing contamination** None. **Evidence of damage to pollution prevention measures** None.
Evidence of historic contamination, for example, historical site investigation, assessment, remediation and verification reports (where available)	None.
Baseline soil and groundwater reference data	See Appendix Gii (ESSD) and Appendix Giv (HRA).

3.0 Permitted activities	
Permitted activities	The works approved by Planning Permission 19/000048/CM (Worcestershire County Council) and Planning Permission 19/0081/TWMAJM (Gloucestershire County Council) provide for, *inter alia*, site restoration using imported inert fill material at Bow Farm, Ripple, Worcestershire (the Bow Farm site). Planning Permission 19/0081/TWMAJM was approved by Gloucestershire County Council through by the successful appeal (Appeal Ref. APP/T1600/W/23/3324695) by the applicant following initial refusal of Planning Permission 19/0081/TWMAJM. Completion of the approved site restoration scheme, involving the restoration of the mineral extraction areas requires 1.4Mm^3 (approximately 2.45Mt using a standard conversion factor of 1.75t/m^3) of imported

	inert fill material within Phases 1 to 9 of the excavation area in the main site area. The approved site restoration scheme also provides for excavation and low-level restoration of Flexible Working Areas A and B in the west of the site. Flexible Working Areas A and B will only be excavated seasonally during non-high flow periods of the River Severn, located *c.* 25m to the west at its closest approach. Restoration of Flexible Working Areas A and B will be to wetlands and water features using only site derived mineral waste (silts and clays) and will have a final landform below pre-extraction ground levels. No imported inert fill material will be placed in Flexible Working Areas A and B. An application is being submitted for a Bespoke Environmental Permit (use of waste in a deposit for recovery operation). The applicant is Moreton C Cullimore (Gravels) Limited. Within the Environmental Setting and Site Design Report (Appendix Gii), Drawing No. BOWFEPR2511-1 shows the site location and Drawing No. BOWFEPR2511-2 shows the different areas of the site, including the excavation area Phases 1 to 9 where imported inert fill material will be placed under the EPR Permit. Drawing No. BOWFEPR2511-3 shows the EPR Permit application area within the context of the site approved under the Planning Permissions. A site plan is presented as Drawing No. BOWFEPR2511-4. The phasing of the excavation and infilling of quarry excavation area Phases 1 to 9, and Flexible Working Areas A and B in the west of the site, approved by Planning Permission 18/06840/WCM, is shown within the drawings provided within Appendix 1 of the Waste Recovery Plan (Appendix I of the EPR Permit variation application). The EPR Permit application area is *c.* 65ha. The area of quarry excavation Phases 1 to 9, into which the imported inert fill material will be placed, is *c.* 31ha. The application is submitted on the basis that the permanent deposit of 1.4Mm^3 imported inert fill within excavation area Phases 1 to 9 at the Bow Farm site is a waste deposit for recovery activity and not a waste disposal activity. The recovered waste will be imported inert fill material sourced from construction sites within the general Tewkesbury area.

	To ensure that the recovered waste material is suitable for its intended use, the works will be managed by staff having the appropriate level of technical competence with relevant qualifications gained from one of the accepted industry schemes. Waste Acceptance Criteria inspection procedures and protocols will be in place to ensure that the inert fill material used in the works is as described on Waste Transfer Notes, is permitted by the Environmental Permit and is fit for purpose (see Appendix Giii (Waste Acceptance Criteria and Procedures)). Waste types to be provided for in the Environmental Permit are detailed in Appendix H (Waste types).
Non-permitted activities undertaken	The works approved by Planning Permission 19/000048/CM (Worcestershire County Council) and Planning Permission 19/0081/TWMAJM (Gloucestershire County Council) provide for extraction of sand and gravel and site restoration using imported inert fill material at Bow Farm, Ripple, Worcestershire (the Bow Farm site). Planning Permission 19/0081/TWMAJM was approved by Gloucestershire County Council through by the successful appeal (Appeal Ref. APP/T1600/W/23/3324695) by the applicant following initial refusal of Planning Permission 19/0081/TWMAJM.
Document references for: • plan showing activity layout; and • environmental risk assessment.	**Plan showing activity layout** Appendix D of the Environmental Permit Application. **Environmental risk assessment** Appendices Gi – Gvi of the Environmental Permit Application.