SECTION 3 WORKING SCHEME

3.1 General

3.1.1 The approved development is for a southern extension to Passenham Quarry, located to the south of Milton Keynes. The quarry currently extracts sand and gravel to supply to the local market. The existing operations also have consent for a recycling facility, which is yet to be constructed. The scheme approved is to extend the mineral workings across an 18.2 hectare area located to the south of the plant site (refer Plan P14/PL15/03C).

3.1.2 The original working scheme approved under decision notice 15/00035/MINFUL was subject to variation via a non material amendment granted on 14 December 2015. This was followed by a second non material amendment granted on 27 May 2016. Since then, GRS has continued to operate the site but has decided that approved bunds T4 and S4 are no longer required in support of the operations in Phase 12. As such a further variation to the approved scheme is required and this is set out below.

3.1.3 The extension area comprises three agricultural fields to the south of the plant site. The 14.8 hectare proposed extraction area has been delineated, based on intrusive investigations undertaken by the Applicant Company and applying stand-offs to the existing land uses (including recreational premises and ecological assets) where necessary. A 20 m stand-off has been provided relative to the River Great Ouse, consistent with pre-application engagement with the MPA and EA.

3.1.4 In order to recover these minerals, the existing plant site and ancillary facilities, comprising weighbridge, site management office and access, will be retained and supplemented by the development of a new haul road system, the routes of which are indicated on Plan P14/PL15/03C.

3.1.5 A phased working and restoration scheme has been prepared to ensure that the minerals are recovered in an efficient and systematic manner enabling the continued phased working and restoration of the site in accordance with good practice. Phase 10A has been subject to mineral extraction and is now restored. The 2016 NMA enables GRS to access the eastern elements of Phase 11 as the next phase of mineral extraction before accessing Phase 10B. Extraction operations are currently in the latter phase.

3.1.6 The scheme has been designed to take into account the best practice guidance detailed in the Development and Implementation Supplementary Planning Guidance (SPG) adopted by the MPA. The capacity and context of the environs surrounding the site have been considered at all times of the design leading to an iterative process that

is considerate of the setting. In sensitivity terms however, the land uses on and directly adjacent to the proposed extension area, are only considered to have a low sensitivity to change (refer to paragraph 2.60 of the Development and Implementation SPG).

3.1.7 The scope for conflict is however acknowledged and all operations would therefore be undertaken in accordance with industry best practice and within planning and environmental controls to ensure that impacts are minimised as far as practicably possible.

3.1.8 A key feature in this regard, in particular in the context of the adjacent country club will be the use of campaign extraction techniques. It is envisaged that due to the nature of the geology it will be necessary to campaign dig the sand and gravel with a 40,000-50,000 tonne stockpile being established in the vicinity of the feed hopper, at the plant site (refer to plan P14/PL15/03C). This will comprise a period of almost constant extraction within the consented hours of working over a period of six to eight weeks.

3.1.9 In the intervening periods importation/restoration activity would continue to minimise the scope for restoration lag. This approach minimises the duration of heavy plant activity on site reducing the scope for noise and dust emissions, and therefore the scope for conflict.

3.1.10 The scheme has been developed with specific regard to the protection of existing environmental and cultural assets. Owing to its proximity in a rural environment, the proposed extraction area will not overly impinge on residential amenity. For those limited number of residential premises in the proximity, a specific set of mitigation measures has been developed consistent with Paragraph 2.66 of the Development and Implementation SPG, including the application of appropriate stand-offs or separation area, the use of screening bunds, and appropriate internal routing of heavy plant and HGV activity.

3.1.11 Detailed consideration of bund design has been undertaken and this, along with the formulation and implementation of a phased working sequence and materials handling, will mitigate impacts associated with the proposals.

3.1.12 The site's location within the floodplain has also meant careful design of soils bunds and materials handling, as well as the continued implementation of a Flood Evacuation Plan to be carried over from the current operations.

3.1.13 Within the area of the site regulated by Milton Keynes Council, mineral extraction and restoration operations are complete and the area in aftercare.

3.2 Proposed Working Sequence

3.2.1 The extraction area has been divided into three phases. The existing site has nine phases of mineral extraction and therefore the three phases within the proposed extension area have been designated as Phases 10, 11, and 12. The extent of the proposed phases is shown on plan P14/PL15/03C. In addition, this section of the report is supported with three plans which indicate the proposed development of the deposit over time. These are as follows:

- Plan P14/PL15/0301B Initial Works and Phase 10;
- Plan P14/PL15/0302A Phase 11; and
- Plan P14/PL15/0303A Phase 12.

3.2.2 Phase 10 is split into two sub-phases because of them being separate extraction areas. Phase 11 has also been split via the 2016 NMA to take account of the proposed development of the deposit as detailed below.

Pre-Extraction

3.2.3 Prior to the commencement of extraction, operations within the proposed extension, it will be necessary to undertake a number of pre-extraction operations (see plan P14/PL15/0301B). These comprise:

- installation of groundwater and surface water monitoring points and collection of baseline data to continue to inform setting of the site;
- establishment of a haul road(s) to accommodate the importation of inert restoration material using road-going heavy goods vehicles;
- fencing of the extraction and soils storage areas in accordance with arboricultural advice;
- undertake pre development ecology checks;
- establish water management regime for the extension area;
- undertake the initial soils strip (subject to archaeological requirements) to enable the construction of bunds to protect the amenity of residences at Kingfisher House etc. In relation to the bunds, the following heights will be respected:
    - topsoil - maximum height 3 m;
    - subsoil - maximum height 5 m;

Haul Route

3.2.4 In respect of the haulage of materials, it will be necessary to establish a haul road to connect the proposed extension area with the operations in the plant site. This will include some limited hedgerow removal along the hedge between the plant site and the extension and the

erection of a "bat bridge" in accordance with the scheme approved under Condition 40 of the consent.

3.2.5 The haul road would be used for hauling minerals using articulated dumper trucks as well as importing waste materials using road-going HGVs. Dependent on rates of extraction and/or, if required, overburden, movements would be an average 100 dumper truck movements per day along the route(s). Movements associated with inert materials importation would be up to 60 movements per day (6 per hour).

3.2.6 The haul route will be operated in accordance with defined protocols that will define the following:

- restrictions on the use of the haul road(s) in adverse weather conditions;
- appropriate daily checks on plant and equipment using the routes;
- prompt reporting of any spillages with appropriate definition of escalation actions; and
- daily inspection of all associated infrastructure to identify and fix any breakages

Water Management / Silt Lagoons

3.2.7 It is proposed to manage water in the proposed extension area within the existing water management system (refer to plan P14/PL15/03C) in the plant site for the duration of the proposed extension. Within the current operation, water is taken from the extraction area (to allow the workings to be undertaken dry) and pumped to the freshwater lagoons in the plant site. It is proposed to maintain this arrangement going forwards using a system of pipes and ditches pump/feed the water from the extraction area up to the plant site lagoons. From the lagoons the water will either be abstracted for use in the onsite mineral washing plant or discharged off site in accordance with the conditions appended to the sites Environmental Permit.

3.2.8 As the scheme develops it will be necessary to handle dewatering effluent, and remove existing drains which in particular cross Phase 12. In this regard, it is proposed to enhance the drain that that runs between the existing site and proposed extension as a compensatory measure to accommodate the drainage the drainage through the IDB network. The locations of the enhanced drain and connector drain are shown on plan P14/PL15/03C.

3.2.9 In consideration of flood risk and consistent with the advice offered by the EA during scoping and other pre-application discussions, the working scheme is based on a resilience-based approach to flood risk. Each extraction phase has been designed to maintain floodplain storage and conveyance for up to 1:100 flood events. Where necessary,

suitable floodplain compensation is available using the extraction void. The scheme has been designed to comply with key measures in the NPPF, including:

- remaining safe in times of flood;
- no net losses in floodplain storage;
- no impediment to water flows; and
- no net increase in flood risk elsewhere.

3.2.10 Section 3 of the HIA reproduced at Appendix 7(i) includes detailed consideration of rates of groundwater inflow and potential zones of influence as they pertain to de-watering operations. As the scheme will integrate into the existing water management regime on site, no additional land disturbance is necessary, consistent with minimising impact in the floodplain.

Mineral Extraction

3.2.11 Once the above infrastructure has been established, this will then allow the commencement of sand and gravel extraction operations. By reference to Plan P14/PL15/03C, it can be seen that the mineral resource will be recovered via three phases of working. It is proposed that each phase of working taking approximately one and a half to two years to extract.

3.2.12 Wherever possible, it is envisaged that no more than two phases will be fully open at any one time, with progressive working and restoration techniques used to ensure the timely restoration of preceding areas of extraction.

Phase 10

3.2.13 With reference to Plan P14/PL15/0301B, Phase 10 will commence with the stripping of topsoil resources from Phase 10A (circa 4,895m³) to create amenity bunds along the southern boundary of the extraction area in bund TA 1. Topsoils stripped from under TA1 will be used to create safety bunds along the overhead powerline situated in the south of the phase. Subsoil (circa 3,600m³) will then be stripped and placed in Subsoil Store SA1.

3.2.14 There are no overburden resources in the southern elements of the phase (i.e Phase 10B), however where present, overburden will then be stripped. If possible, this material will be transported to the extraction void to supplement imported inert restoration materials in restoring that part of the site to final restoration levels.

3.2.15 Mineral extraction operations can then commence which will be advanced in a westerly direction as shown on plan P14/PL15/0301B. In places there is a thin interburden layer within the mineral layer and, where encountered, this material will be stripped separately and directly placed in the extraction void either as liner material or fill material. In total it is estimated that there is 37,000m³ of overburden and interburden to be removed to allow the full extraction of the mineral in phase 10.

3.2.16 Mineral will be extracted using an excavator or loading shovel that will load articulated dump trucks. The articulated dump trucks will transport the extracted mineral to the plant site feed stockpile via the internal haul road as shown on plan P14/PL15/0301B. It is estimated that Phase 10, which contains between 160,000-200,000 tonnes of gravel will take approximately one and a half to two years to strip and extract.

3.2.17 A key element of the proposed working scheme is the progressive restoration of the mineral workings to minimise environmental impact and allow the use of the reinstated land as soon as possible. In this regard, once the lower gravel face is advanced sufficiently, restoration operations can commence by the importation of inert restoration materials under the provisions of an Environmental Permit. It is proposed to import suitable materials at a rate of up to 150,000 tonnes per annum, in order to achieve a beneficial and satisfactory restoration scheme (refer Section 4 and Plan P14/PL15/04 as amended via the scheme approved under condition 41 of the consent).

3.2.18 It is proposed to complete the extraction operations in Phase 10A, then move to the eastern sub-phase within Phase 11 (refer to Plan P14/PL15/0302A), prior to completing extraction in Phase 10B.

Phase 11

3.2.19 Towards the end of extraction operations in Phase 10A, stripping operations will commence in Phase 11. The topsoil (circa 6,250m³) and subsoil (circa 12,500m³) resources from this phase will be stored in the base of Phase 10A in bunds T3 and S3. Bunds T2 and S2 will also be relocated into the base of Phase 10A or temporality windrowed within the permission boundary to allow the full recovery of mineral for that phase. Overburden from Phase 11 (circa 14,635m³) will be stripped and used to supplement the imported inert restoration materials to restore Phase 10.

3.2.20 It is proposed to initially strip the soils and overburden and recover the mineral resources from the eastern elements of Phase 11. This will allow the haul road in the western elements of Phase 11 to remain in place to service the extraction and restoration operations in Phase 10.

3.2.21 The extraction face will be advanced in a general easterly direction using the same extraction methodology as identified at paragraph

3.2.16 above. When sufficient gravel has been extracted the middle clay interburden (circa 4,500m³ in total) will be exposed and progressively stripped to expose the lower mineral layer. This material will continue being directly placed in the Phase 10 void. The gravel resources in Phase 11 amount to between 100,000-150,000 tonnes and will take about 1 year to extract.

Phase 12

3.2.22 Soils from Phase 12 will be stripped and directly placed in Phases 10 and 11 wherever possible to complete the restoration of these phases to the approved contours (refer to plan P14/PL13/0303A). Overburden stripping in Phase 12 will commence in the north, working in a southerly direction. This material, together with the interburden in the mineral layer (totaling approximately 55,000m³), will be directly placed in the phase 11 and or Phase 10B void to supplement imported restoration materials.

3.2.23 Extraction of the mineral layer will continue in a southerly direction. The gravel resources in this phase are between 200,000-250,000 tonnes and will take approximately two to two and half years to extract.

3.2.24 Once the extraction operations in Phase 12 are completed and assuming the restoration operations in Phase 10 are complete, the last area of mineral extraction will be the western elements of Phase 11.

Post Extraction infilling and Final Restoration.

3.2.25 On completion of mineral extraction from Phase 12, Phases 10 and 11 will be restored to formation level and infilling operations will have moved into the Phase 12 void. Phase 11 restoration will be completed before the placing of subsoil and topsoil resources from Bunds T3 and S2. It is anticipated that it will take approximately a further 2 years of importation of inert materials to restore Phase 12 to formation level. When this has occurred final restoration will be achieved by the spreading of subsoil from the remaining storage bunds onto Phase 12.

3.2.26 The plant site area and silt lagoons will be restored in accordance with the approved restoration plan using topsoil and subsoil materials already stocked on site, supplemented by imported inert materials as per the existing approved scheme.