7. CONSOLIDATING PLANNING APPLICATION ACCOMPANIED BY AN ENVIRONMENTAL STATEMENT FOR REVISED WORKING AND RESTORATION PROPOSALS, INCLUDING A REDUCTION TO THE END DATE FOR MINERAL OPERATIONS, RESTORATION OF THE DEEP DALE TIP AREA AND RETENTION OF THE ASPHALT PLANT AT TOPLEY PIKE QUARRY, KING STERNDALE, BUXTON, DERBYSHIRE (NP/HPK/0814/0882/M3925 CNFD)

Applicant: Aggregate Industries UK Limited

***Summary of Proposals*:** This consolidation application, with an Environmental Statement, for major minerals EIA development at Topley Pike Quarry, includes proposals for:

- Consolidating and updating operations approved under a 1947 Ministerial (Interim Development Order) permission and a 1966 planning permission for mineral extraction, to consolidate and rationalize future minerals development.

- Relinquishment / revocation of all the extant planning permissions.

- A revised working and restoration scheme for the whole quarry with revised mineral extraction phasing, progressive tip removal, progressive backfilling and restoration, landscaping, a lake, biodiversity and aftercare proposals.

- Working the quarry to a uniform depth limit instead of working to different depths in the eastern and western halves of the quarry under the existing permissions.

- A small lateral north-eastern extension of the quarrying area into the existing Plant Area.

- Continued operation/use and control of all mineral activities for the extraction and processing of limestone and associated ancillary development, operational use of land in connection with the quarry, use of process buildings, plant, structures, stocking areas and storage bays, access, internal roadways, and other ancillary development.

- The removal of the former quarry silt lagoon tip (the 'Deep Dale tip'), dam and culvert from within Deep Dale, with redistribution of the tip material into the western end of the quarry for restoration and elsewhere within the disturbed area of the dale.

- Restoration of the disturbed part of Deep Dale to its original valley landform, providing for regrading, long term landform stabilisation and restoration of the dale and daleside.

- Regularisation of minor items of plant and buildings within the authorised Plant Site.

- Retention and continued operation of the asphalt plant until mineral extraction is completed or until 31st December 2025, whichever is the earlier.

- Cessation of mineral operations by 31st December 2025 instead of February 2042 as allowed under the extant permissions, with restoration thereafter completed within 12 months, by December 2026.

The permitted limestone reserves in the quarry are estimated at 2,800,000 tonnes based on working the eastern half down to 240mAOD and western half to 210mAOD. It is proposed to work the whole quarry (west and east) down to 225mAOD, providing an estimated 3,190,000 tonnes of workable limestone reserves (as at 1 January 2013), a net gain of 390,000 tonnes. Production would be about 250,000 tonnes per annum, which equates to a life of

approximately 13 years from January 2013, until the end of 2025.

Site and Surroundings

Application Site: This comprises 31.5 hectares (ha) of land, occupied by Topley Pike Quarry with plant site (29 ha), Deep Dale tip and other land in the dale (2.5 ha), and associated areas covered by extant mineral planning permissions (excluding land south of the tip where no development has occurred or is proposed).

Quarry Site and Setting: Topley Pike limestone quarry is in a rural area 4.5km southeast of Buxton, south of the A6 road within a narrow plateau between Wye Dale and the River Wye (to the north) at 232-240mAOD and Deep Dale (to the south and east) at 250-240mAOD. King Sterndale village 600m to the west comprises scattered properties, the nearest being Sterndale Green Farm (100m from the western quarry boundary at an elevation of 320mAOD). The nearest individual farmsteads are Chelmorton Flat, 900m south east, Topleyhead Farm, 700m east, Middle Farm in Cowlow, 400m north-west, and Meadow to the north-east. The active working quarry and infrastructure occupy 26ha of the 29ha quarry site; the other 3ha are calcareous grassland, semi-mature broadleaved woodland, immature broadleaved plantation and scattered scrub. The crest of the highest quarry faces (original ground level) is at 318mAOD. The quarry void (about 18 ha) has a floor at 240mAOD in the east, 225mAOD in the west; the void is surrounded by steep quarry faces to the north, west and south with surrounding ground levels 300-310m. The north-west corner of the quarry has been worked and abandoned at a level of 280mAOD, leaving a re-vegetated elevated platform along the quarry face. Quarry waste (scalpings and filler dust) from former extraction and processing has been deposited (Tip No.3) in the southwest corner of the quarry, leaving an uneven landform rising from 240-270mAOD. The excavations are screened by a ridge along the northern site boundary with a densely wooded steep slope obscuring much of the development; and a retained ridge of rock along the southern boundary with Deep Dale. The quarry plant and stockfield area is on a 252mAOD platform in the north-eastern corner of the quarry.

Deep Dale Site: Deep Dale, a narrow steep-sided valley, contains limestone cliffs, screes, rich flora and calcareous grassland; it abuts the eastern and southern quarry boundaries and has a floor elevation of 253mAOD falling north-eastwards to 238mAOD where it meets Wye Dale (at the quarry access). The south valley side rises to 310mAOD. The eastern valley side, a man-made slope from former tipping (probably 1960's/70's) of quarry waste, naturally re-vegetated and planted with trees, rises steeply from the base of Deep Dale to the top of the eastern quarry edge. The central part of this slope was subject to landslip in 2010; the slip area has not been restored since it is proposed to gain access into the quarry at this point for transporting materials from Deep Dale tip, a disused former above tipping and silt lagoons area for quarry waste. The north valley side rises to 300mAOD above the tip, which covers 2.5 ha and forms a bunded plateau on the valley floor, rising to 262mAOD in the west, 266mAOD in the east. The tip is bounded to the south by a tree planted screening mound alongside which runs the diverted route of footpath 37. The Deep Dale winterbourne stream (dry in summer) flows east through the valley; the southern stream section is culverted for 472m under the tip, re-emerging in the south-east corner of the site in a 1m to 2m wide, 30cm deep channel; the stream then flows northwards for 300m to the River Wye. The setting of the quarry would remain unchanged, but within it the Deep Dale tip would be progressively removed and the quarry and dale would be restored and landscaped.

Environmental Summary

Adverse impacts on valued characteristics and amenity of the natural zone would be minimised in accord with Policies LC1 and LM1. There would be no adverse significant

material change in the visual and landscape context of the quarry and plant site. There would be some loss of trees but not significant loss of amenity value. Landscape restoration would substantially enhance the visual appearance of the quarry. The relatively short term adverse visual impact of removing the visually incongruous Deep Dale tip would be substantially compensated by permanent landscape restoration of the dale. Negative landscape and visual impacts would be reduced. The proposed lake would not be in keeping with landscape character but the positive effect of landscape restoration would contribute to conservation and enhancement of the National Park compliant with Core Strategy Policy MIN1(B). No footpaths, bridleways, or key recreational amenities would be directly affected other than footpath 37. Ultimate removal of Deep Dale tip and reinstatement of the dale and footpath would have significant long-term benefits in improving the landscape and visitor enjoyment of it, in accord with the Recreation Strategy (Action Ref.E6) and Action Plan (Action Ref.E4) (access open countryside and improve access), Policies LM1 (recreational interests / public rights of way), RT1 (sustainable access), T6 (walking routes) and LC20 (public rights of way), and the NPPF (protect and enhance public access).

Analysis of surface and groundwater monitoring data shows no evidence that quarry dewatering affects watercourse flows, local springs, private or licensed abstractions or environmentally sensitive features. The conclusions are that there is limited hydraulic continuity through the limestone between the quarry and watercourses; that dewatering affects groundwater levels in the immediate vicinity of the quarry sump; that the effects of this, given low permeability of the Woo Dale Limestone and lack of known or expected conduits, does not extend beyond the immediate environs of the quarry, has no direct impact on Deep Dale, nor adversely affects the hydrological integrity of the River Wye; that there would be no additional groundwater and surface water impacts associated with extraction to 225mAOD; and that dewatering to 15m depth poses only a very small and acceptable risk on river flows. Site water containment, catchment, recirculation and discharge arrangements accord with NPPF and Core Strategy objectives to protect the water environment and reduce flood risk, and specifically with Policies LM1 (surface and groundwater resources), CC1 (water efficiency), CC5 (water conservation), and LC22 (surface water).

The site is in a highly sensitive area adjacent to the Peak District Dales Special Area of Conservation (SAC) and Wye Valley and Topley Pike and Deep Dale Sites of Special Scientific Interest (SSSI). The Authority has statutory duties to conserve species, habitats and biodiversity. Extensive ecological surveys have been undertaken. The site and surroundings contain priority habitats and species of principal importance. Mitigation would reduce impacts on ecology and restoration would significantly enhance the ecological value of the site with habitat creation, tree planting, a lake with shallows and reinstatement of the Deep Dale stream. A Biodiversity Management Plan would be adopted. The resultant enhanced local biodiversity would accord with Policies L2, LM1 and LC17, 18, 19 & 20. A hydrological impact assessment concludes the development is unlikely to have significant impact on hydrology outside the quarry, can be carried out without adversely affecting the hydrology of the SAC and SSSIs, and continued dewatering of the quarry down to 225mAOD would not impact on ecologically sensitive water dependant features. Therefore there would be no 'likely significant effect' upon the SAC and no requirement to undertake an 'appropriate assessment' under the Habitats Regulations. There would be no adverse impact on features of geological interest within the quarry and the restoration of the Deep Dale tip area would have significant, beneficial impact on the Deep Dale Regionally Important Geological Site (RIG). There would be no impact on archaeology or cultural heritage and the restoration of the quarry and Deep Dale would enhance the wider setting which contains heritage features in accord with Policy L3.

With appropriate designs and management (monitoring and adaptation of working) the limestone resource can be quarried without compromising the safety of personnel or site

boundaries; and the quarry void would be to a geotechnically stable configuration for restoration. The proposal is acceptable under NPPF (para.143) and Policies LM1 (subsidence, landslips, land instability) and LC25 (unstable land). The tip is comprised of lagoon silts and granular material. Its disturbance does not pose significant risk to human health. Contaminants are low, leachate minimal. There is no evidence of degradation of surface or groundwater quality and no risk to groundwater from hazardous substances by moving the silts into the quarry. The risk to flora and fauna is very low. There may be localised 'hot spots' of organic contaminants in the granular bund materials which would have to be remediated; subject to this, the relocation would reduce the risk of hazardous substances entering groundwater and provide additional safeguards for protection of the aquifer; nevertheless the Environment Agency says the contamination potentially poses a risk to controlled waters and further risk assessment and remediation should be carried out to mitigate the risks. Subject to a Remediation Strategy and Implementation and Verification Plan approved by the Agency, and given control over noise and dust, the method of handling waste material within the quarry and in particular from Deep Dale tip would comply with Policies CC3, LW2, LC21 (pollution and disturbance) and LC24 (contamination).

Dust arrestment measures, statutory controls and conditions would ensure effective Air Quality Management. The Benninghoven asphalt plant operates within stringent limits on airborne emissions; with bag filtration this plant has yielded significant benefits in air quality protection including improved dust arrestment, particulate emissions abated to well within the prescribed limit, continuous particulate (emissions) monitoring, improved fume emissions, and elimination of smoke plumes. Dust from the quarry and works in Deep Dale would be adequately controlled; and retention of the asphalt plant is unlikely to have any significant or additional impact on air quality; all compliant with LP Policies LC21 (adequate measures to control emissions) and LM1 (risk and impact of dust) and the NPPF. The proposals accord with carbon reduction and clean air objectives of the Core Strategy and Climate Change Policy. Maintenance of current site lighting arrangements would not introduce additional or significant impacts where the lighting can be observed from near, middle and long distance views and this would accord with the Dark Sky initiative.

The noise predictions and recommendations, including maximum operational noise levels, are consistent with British Standards and NPPF advice. The asphalt plant is unlikely to generate significant noise impact. Noise conditions would provide adequate safeguards against noise pollution and comply with LP Policy LM1. With good blast design and practice vibration should be of a relatively low order of magnitude well within the BS 6472-2: 2008 recommendations, and should not have cosmetic or structural effects on property. Air overpressure should be low at a safe level, but would be perceptible on occasions at the closest properties. Blasting has given rise to complaint which has been investigated. The proposed scheme and methodology of blasting with additional safeguards should adequately control impact on local residential amenity and the peaceful recreational amenity of Deep Dale, compliant with the NPPF and LM1. Given the Highway Authority response there are no sustainable overriding highway objections to the proposed development. The proposal accords with Core Strategy Policy T1 (sustainable access and transport) and other relevant Development Plan and national policies referenced in this report.

RECOMMENDATION

That the application be APPROVED subject to:

1. **A Section 106 Legal Agreement entered into by the applicant and land owners to include Planning Obligations to cover [Recommended Heads of Terms]:**

A. **Continued operation of the quarry and associated development under the terms of the new permission from the date of that permission;**

B. **Establishment of a Liaison Committee with a formal constitution (to include Aggregate Industries, High Peak Borough Council EHO and representatives of the Parish Meeting.**

C. **Off-site monitoring of water flows and quality in the River Wye, springs feeding baseflow into the Wye, and springs in Deep Dale; and a map of springs discharging into the Wye close to the quarry boundary and upstream.**

D. **The relinquishment / revocation (without compensation) of all extant planning permissions for the site, including the mineral planning permissions Code Nos: /HPK/1093/127 and NP/CHA/866/6, the current asphalt plant permission (NP/HPK/0313/0226) and all other ancillary development permissions.**

2. Planning Conditions to cover [Recommended Heads of Terms for Conditions]:

Parameters: **Definition of the site, scope of permission, approved details (plans, documents, environmental reports); keep approved details in site office; public information sign for nuisance/complaints.**

Timescales: **Date of commencement to be the date of decision notice; duration of permission to cease 31 December 2025 for mineral extraction; 30 June 2026 for final landform creation; 31 December 2026 for restoration completion (quarry and Deep Dale); advance timing of removal of Deep Dale tip if opportunity arises; ultimate removal of built/ancillary development by 31 December 2026 (excluding plant/machinery for aftercare and land, woodland, lake and habitat management; notification dates for key stages of the development.**

Approved working times**: For drilling, blasting, mineral working, processing, vehicle movements per the times in this report under *'Times of Operation'* and *'Blasting Times'*.**

Ancillary development: **Remove permitted development rights for buildings, structures, fixed plant and machinery; colour(s) of ancillary development including the asphalt plant; parking of plant and vehicles; ultimate clearance when no longer required.**

Approved access: **existing access to the A6 only; maintenance of access hard surface, access gate/barrier, access drainage, adequate parking and manoeuvring areas; sheeting HGV's; highway cleanliness (keep free of mud, stone, contaminants and surface water run-off from the site, wheel, carriageside, underside wash if necessary).**

Working Scheme: **scheme of operations as submitted; no new temporary or permanent tipping above original ground other than to approved restoration landform; backfilling of all overburden, interburden and mineral rejected at the point of excavation; detailed methodology for excavating Deep Dale tip.**

Mineral extraction: **quarrying depth to be restricted to 225mAOD; quantity of extraction from the quarry to be a maximum 250,000 tonnes per annum.**

Waste materials control: **all new waste tips to be contained within the quarry excavations, except for the approved redistribution of Deep Dale tip materials for the restoration of Deep Dale; no mineral wastes to be removed from the site unless contaminated and inappropriate for use for site restoration; all retained mineral wastes to be used for quarry infilling, for containment cell construction and stabilisation of lagoon materials transferred from the Deep Dale tip, restoration and landscaping.**

Transportation: **Limit on exportation from the site of 250,000 tonnes per annum except where, in the event that that a higher level of output may be deemed necessary for market reasons over certain time periods, such specified higher limit as may be approved in consultation with the Local Highway Authority upon submission of a Transport Statement demonstrating likely traffic impact on the local highway network; continued monitoring of HGV arrival and departure movements and provision of records on request.**

Resource Monitoring: **Monthly monitoring and annual returns of excavated limestone; waste stone / materials deposited; and production levels (dry aggregate and asphalt coated stone) (confidential basis).**

Noise control: **Noise control and suppression measures, during quarrying, backfilling, soil stripping, Deep Dale tip removal, materials translocation and restoration; noise limits for normal and temporary operations, at noise sensitive properties; noise monitoring in response to justifiable complaint; reversing alarms to be non-audible, ambient related or low tone devices.**

Dust prevention and control: **A dust action plan: best practicable means; assessment for dust suppression at the start of each working day and when conditions are dry or windy; quarry visual monitoring during drilling, blasting, quarrying, tipping, processing, materials storage, on-site trafficking, loading and movement of road lorries, Deep Dale visual monitoring during soil stripping and handling, tip removal, materials transfer, tipping, regrading and restoration; if visible emissions of airborne dust migrate outside site boundary, the activity responsible to be suspended or undertaken elsewhere until prevailing meteorological conditions permit or remedial action is initiated to reduce the emission; log book to be kept on site of any dust complaints and action taken to control the dust; speed limits on haul routes, regularly graded; minimise areas exposed to wind erosion; use road sweeper and water bowser; suitable dust arrestment and extraction equipment and filters compliant with manufacturer's recommendations; cessation of operations in event of dust nuisance exceeding a 'nuisance threshold'.**

Smoke and Fumes Control: **no burning of rubbish or wastes.**

Highway cleanliness**: Provision for vehicle washing facilities if necessary.**

Storage of rubbish and scrap: **All rubbish, debris, disused machinery, scrap and other waste materials generated on the site (other than mineral waste and Deep Dale tip content waste) to be regularly collected and stored in a tidy manner in an agreed location, pending removal for disposal; at the request of the MPA the contained location shall be screened by a low level earth bund.**

Blasting control: **A blasting programme (future rate of blasting) including the predicted frequency of blasts, which shall not exceed one blast every two**

weeks; a scheme of blasting principles: compliance with consultants recommendations, minimising frequency, good design and initiation methods, adaption of charge weights to local circumstances, use of electronic detonators in particular in the western half of the quarry, response to prevalent weather, measures to minimise ground vibration, flyrock and air overpressure, and prohibition of secondary blasting (except in emergencies); a blasting method statement; measures to minimise air overpressure (initiation technique, control at source and magnitude at distance); ground vibration at occupied residential / vibration sensitive buildings not to exceed 6mms^{-1} ppv in resultant vector (95% confidence level measured over any six months period) nor a maximum of 10 mm/s^{-1}; blasting times, advance notification of blasting events to the MPA, EHO and residents; signage on footpath routes to warn users of blasting times; sentries when blasting is imminent at closest approach to footpaths; equipment calibration and blast monitoring at sensitive properties (including Green Farm and the Cottages at King Sterndale); monitoring ground vibration / air overpressure in the event of complaint.

Site lighting control: **No additional floodlighting / floodlighting towers unless approved.**

Stone storage and stockpiles: **Primary processed stone in quarry, asphalt production stone in existing bays in Plant Area, no higher than 2m).**

Dewatering control and protection of water dependent features: **Environment Agency and Natural England requirements; restrict dewatering to 225mAOD; approved water environment monitoring (rainfall, groundwater levels, dewatering and Deep Dale flow monitoring), mitigation proposals and Hydrogeological Impact Assessment; cessation of pumping in the event of incident deleterious to the water environment.**

Drainage and water pollution control: **Environment Agency requirements; surface water drainage containment and management strategy; no discharge of contaminated drainage into ground, ground water or surface water; storage and containment of potential contaminants (oils, fuels, chemicals); vehicles, mobile plant and machinery maintenance only in an impermeable and bunded designated area; regular removal from the site of waste oils, lubricants, chemicals in suitable containers; maintenance of oil absorbent booms in settlement lagoons to hold and treat water prior to discharge.**

Contamination control (Deep Dale Tip removal): **Environment Agency requirements; remediation strategy for contamination risks, further risk assessment, site investigation, trial pitting, further assessment of risk to potential receptors (including off-site), options appraisal, verification plan, monitoring / watching brief, geotextile membranes on soft ground, remediation, maintenance, arrangements for contingency action; all water run-off to drain into sump; contain all pollutants / tip drainage away from the stream.**

Protection of speleological and geological interests: **The MPA to be notified of any natural cave systems or other karst features encountered of special speleological interest; access to survey and record those features; recording features of geological interest below 240mAOD, by a qualified geologist, prior to final cessation of dewatering; records to be made available to the MPA and British Geological Survey.**

Protection of ecological interests: **nature conservation and protected species; control of vegetation disturbance during bird breeding / nesting season (March to August); re-survey prior to new disturbance; replacement bird nest boxes; control of ongoing quarrying/disturbance to cliff faces and provision of retained faces for nesting.**

Protection of trees / vegetation: **demark affected trees; protect retained trees/ shrubs.**

Soils strategy (conservation and protection): **Quantification of accessible/available 'soil resource', in interim storage mounds and/or concentrated or dispersed within previously tipped material; vegetation clearance of any soils to be stripped; soil handling, stripping, storage and placement methodology; separate recovery and storage of soils and soil forming materials; prevention of compaction and trafficking over soils in store; areas where soils are to be used (with details of volume, depth and treatment); testing of soils for nutrient and pH status and free from contamination.**

Restoration and landscaping schemes: **phased submissions (restoration, drainage, landscaping proposals) for approval; infilling materials only as derived from the site in quantities for correct contours; monitoring approved restoration levels, tipping, stabilisation and regrading in the quarry and Deep Dale; quarry bench treatment; drainage; pre-soiling treatments control; treatment and appearance of final excavation and infill surface; no importation of soils and soil ameliorants without prior approval; selective, sequential replacement and use soils and soil-making materials; use only of local provenance native species in any seeding and planting schemes (if possible subject to licence, grasses seed to be collected within Deep Dale SSSI); planting mix (to include willow only in association with the lake, sycamore in selected areas, and ash should disease resistant strain(s) become available); natural regeneration preferred method of grassland, shrub and aquatic vegetation establishment; no planting of aquatic and marginal zones; hydroseeding control; woodland planting in the north-east corner of the quarry to extend to the lake margin; planting maintenance.**

Restoration drainage: **controlled restoration water level to reflect natural levels; approval and implementation of a scheme for reinstating the Deep Dale Stream to open watercourse, with flood flow capacity (1 in 100 years), climate change design, and biodiversity; and of a long-term surface water management strategy.**

Biodiversity and habitat creation, establishment and management schemes: **Approval of a detailed Biodiversity Management Plan; approval and implementation of detailed phased adaptive habitat management / establishment proposals for the site (quarry, works site and Deep Dale); to include restoration biodiversity distribution/mosaic plans relative to restoration topography, site (including substrate) ground preparation, interventional techniques; sowing rates, no seeding in natural succession areas, control of invasive species, grazing management, cutting regime, no use of organic mulches, and maintenance of bare ground habitat; monitoring; management for a period of 6 years; records of habitat management to be kept.**

Post-restoration aftercare scheme: **Within a 5 year aftercare period; timing of aftercare commencement; aftercare records to be submitted in an Aftercare Report between 31 March and 31 May each year; aftercare meetings between May and August each year.**

Maintenance of landscaping schemes/woodland management: **For a period of 6 years from planting / seeding or throughout the approved working life of the site, whichever is the later date; records of landscaping management to be kept; maintenance of asphalt plant screen planting whilst the plant is on site.**

Recreational Access Provision: **Agreement on size, text, layout and locations of site information boards and publicity brochure for the temporary stopping-up of footpath 37, to include a map of the stopped up section and diversion route, and to explain the proposals for the restoration of Deep Dale; submission for approval of an plan to show the access provision to enable public viewing of the restored quarry and lake.**

Other: **Any other conditions considered necessary in agreement with the applicant.**

3. To delegate authority to the Director of Planning to finalise detailed conditions following consultation with the Chair and Vice Chair of the Planning Committee.

Key Issues

The proposal is major development which is not usually permitted in National Parks. It is necessary to establish whether there are exceptional circumstances that would justify the grant of planning permission and whether the environmental and social impacts are acceptable. The key issues are: the (a) consequences of continued working under extant consents; (b) limitations of determination of Environment Act Review applications; (c) visual impact, sensitive local landscape and environment; (d) visitor recreation and local footpaths; (e) removal of Deep Dale tip and restoring the dale; (f) potential impacts on the water environment, SAC and SSSI's; (g) Deep Dale ecological resource; (h) asphalt plant air quality control and sustainability; (i) blasting issues; and (j) need for high quality restoration.

Planning History

Early Site History and Quarrying Permissions: The quarry dates from 1879, at that time small, close to the access road by the A6, and served by a siding from the railway line then present along the Wye valley. By the 1920's the quarry was larger; and by 1949 significantly larger with buildings present. At that time Deep Dale was an undisturbed natural valley. Since the 1940's the quarry operated under the following extant mineral planning permissions, which cumulatively cover an area of 32 hectares:

1. Ministerial Interim Development Order 1946 permission (reference: IDO 1986/621/5) dated 25 November 1947 for the eastern part of the site *"to develop for quarrying purposes lands in and adjacent to Topley Pike Quarries"*; later registered on 6 May 1992 (NP/HPK/0392/026 1992) and reviewed in 1993/4 (NP/HPK/1093/127) under the Planning and Compensation Act 1991 with new conditions determined on 11 January 1994; as modified by a Certificate of Lawful Use of Development (CLUD) for the extraction of stone until 22 February 2042 (NP/HPK/0103/007) dated 19 September 2003. This permission expires on 21 February 2042.

2. Planning permission (Code No: NP/CHA/866/6) dated 21 December 1966 for the western part of the site for *"Extension to quarrying area"* for Derbyshire Stone Quarries Limited; this also granted permission to tip quarry spoil in Deep Dale (now referred to as the 'Deep Dale tip'); this permission is currently subject to a stalled review under the Environment Act 1995. This permission also expires on 21 February 2042.

Quarrying Refusal: An application (NP/HPK/1183/981) to extend the quarry south-

westwards towards Christ Church into 7.7ha of limestone pasture south of Sterndale Green was refused permission on 2 March 1984 for reasons that the development would substantially erode the quality of this area of the National Park; no overriding national or local need for the minerals; available practicable alternative sources of supply; and detriment to the amenities of local communities. On 27 May 1986, after a public local enquiry, an appeal by Tarmac Roadstone was dismissed, for reasons of adverse impact on the environment, character and natural beauty of the National Park, loss of amenity, and risk to botanically important habitat within an SSSI.

Ancillary Development Permissions and Plant and Stockfield Area: There are several ancillary planning permissions for: office and weighbridge buildings (1954); extend spoil disposal (1958); limestone processing plant (1961) (including kiln buildings in Deep Dale); coating plant (1962); extend spoil disposal area (1963); transport garage (1963); advertisement sign (1964); additional lime plant (1965); office building extension (1967); transport garage extension (1968); office extension (1968); canteen (1970); pump house (1970); workshop (1970); butane fuel storage tank (1972); conveyor and hoppers (1972); pair of storage bunkers (1972); screen house and storage bunkers (1973); office building extension (1974); filler silo for storing limestone dust (1974); 70 foot exhaust stack (1977); methylene chloride storage shed (1985); and signs (1998). The planning permission NP/HPK/1093/127 delineates a 'Plant and Stockfield Area' at the eastern end of the quarry, within which permitted ancillary development rights remain but details of new or replacement fixed plant and equipment must be agreed with this Authority. A temporary 3 year conditional permission granted in 2007 (NP/HPK/1006/0921) for the Benninghoven asphalt plant, stock bays, ancillary welfare facilities and landscape planting, required the cessation of all tipping operations at Deep Dale tip by 30 June 2007; the permission has since twice been renewed for further three year periods, in 2010 (NP/HPK/0310/0235) and 2013 (NP/HPK/0313/0226), now expiring on 1 April 2016; in each renewal the permission prevents further tipping in Deep Dale

Lime Kilns and Rail Link: Lime kilns and bunkers north east of Deep Dale tip were constructed in 1963 and were operational until 1979, producing 50t of lime per day. The waste from the kilns including the dust, bullheads (un-burnt lime) and similar products was taken for disposal at landfills as it was deemed to be too hazardous to be disposed of on site. The kilns are now demolished and their site cleared. In 1970 the rail head was removed so the quarry is now only served by road transport.

Environment Act 1995 Reviews: The Environment Act 1995 (Section 96) requires Schedule 13 Initial Reviews of Old Mineral Permission's (ROMP's) where the main or only permission was granted 1948-1982 and Schedule 14 Periodic Reviews thereafter; in both cases land and mineral owners are required to submit new schemes of environmental conditions for approval ("determination") to impose modern conditions on the operation of mineral sites for improved environmental protection. The Review only applies to permissions for winning and working of minerals and not for mining ancillary development; the Authority can only review conditions, not the development permitted; and determination should not prejudice adversely to an unreasonable degree the economic value of working or asset value of the site.

Topley Pike West Review: A Schedule 13 application (NP/HPK/0998/141) for the initial review of a 'Phase 1 Active Site' (where the predominant permission had been granted between 30 June 1948 and 30 April 1969) and determination of new conditions for the 1966 (Topley Pike Quarry west) permission was submitted by former operators Tarmac Quarry Products in September 1998. This included schemes of working and restoration and 21 proposed replacement conditions. In the absence of adequate environmental information, the application became a "stalled ROMP" which the Authority was unable to determine; English Nature (now Natural England) and the Environment Agency had strong concerns

about potential detrimental effects, of working the western half of the quarry to 210mAOD, on the water and ecological environment of the locality. The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 ('EIA Regulations 1999') generated two high court judgements that year that the imposition of conditions under the review constituted "development consent" under Directive 85/337/EEC (the 'EIA Directive' as amended by Directive 97/11/EC). Since determination without EIA had been confirmed as non-compliant with Directives and unlawful, and in the absence of procedure to retrospectively require EIA, a time limit in law to submit one, and environmental information required by statutory consultees, the ROMP application remained stalled. Later the Town and Country Planning (Environmental Impact Assessment) (Mineral Permissions and Amendment) (England) Regulations 2008 provided a multi-stage time-limited process to overcome this problem of stalled ROMP's; pursuant to that in November 2008 an EIA screening opinion [under Regulations 5(4) & (5)] confirmed that the remaining mineral development at Topley Pike Quarry is EIA development and an Environmental Statement (ES) must be submitted. By that time negotiations were underway with the operators, Aggregate Industries, for this consolidation application which, if approved, would replace the ROMP. It became appropriate to agree [Regulation 5(7)] extensions of time (currently to 31 December 2015) to submit an ES for the ROMP pending submission and a decision on this planning application.

Topley Pike East Review: Under the provisions of paragraph 7 to Schedule 14 of the Environment Act 1995, extensions of time (also currently to 31 December 2015) have been agreed for submission of the (15 year) First Periodic Review Application for Topley Pike Quarry (East), to determine the conditions to which the 1947 permission, as amended by review in 1994, are to be subject.

This Application an Alternative to the ROMP's: The principle of exploring less harmful replacement permissions conforms to Government advice on dealing with Stalled ROMPs (such as Topley Pike). Guidance in the 2008 EIA Regulations is clear in enabling alternative options (to ROMP determinations) for consolidation permissions to work mineral sites; the DCLG 'Environmental Impact Assessment and Reviews of Planning Permissions: Guidance on regulations applying environmental impact assessment to stalled and other reviews of conditions attached to mineral planning permissions in England' states: *"In some cases, an ES or further information has not been provided because applicants…are intending to submit…planning applications to consolidate several permissions (thus avoiding the need to progress the review of the old mineral permission(s)…".* As an alternative to the stalled initial review and periodic review, this application incorporates a more environmentally sustainable scheme of operating and restoring Topley Pike Quarry and Deep Dale than could be achieved by ROMP determinations; and the benefits of imposing new conditions would be combined with resolving other planning issues, including proper consolidated control of all operations and development, and notably removal of the incongruous tip and associated infrastructure from Deep Dale and stabilisation of the old man-made embankments.

The Principle of Granting a New Permission in Exchange for Old Permissions: The National Park Management Plan refers to the Core Strategy objective to gradually reduce mineral activity in the Park. The principle of exchange of consents is enshrined in policy MIN1; the Core Strategy (para.14.18) refers to allowing proposals where relevant exceptional circumstances exist to grant new or extended mineral consents and says the policy approach needs to be flexible enough to allow positive environmental enhancement through exchanges of historical consents which may be unacceptable in modern planning terms for alternatives at other more suitable locations; that this should still encompass the objective of working towards the gradual reduction of aggregates within the Park; and identifies Topley Pike Quarry as a candidate site for such circumstances.

Pre-Application Negotiations and EIA Screening and Scoping: Extensive pre-application

meetings, inspections and negotiations with the applicant, the Environment Agency and Natural England have sought to ensure (without prejudice to any decision) that this application provides significant environmental benefits beyond that which could be achieved through determination of the ROMP's. This process followed Government guidelines for "pre-application engagement and front loading" in the National Planning Policy Framework. An EIA screening opinion that the proposal is EIA Schedule 2 Development under the EIA Regulations 1999 (as amended) was followed by a detailed statutory EIA scoping opinion plus additional advice and guidance notes. The application has been subject to extensive validation checks to ensure adequate environmental information.

Existing Site Development

Quarry Development: The existing quarry extends down to 240mAOD in the eastern half and 226mAOD in the western half. The working face heights are 10m to 15m, with sub-vertical faces and bench widths of 10m. The older, completed faces up to 45m high with bench widths as narrow as 1m have not been worked for many years. Limestone is extracted from the working face by blasting, picked up by excavator or loading shovel and transported to mobile primary crushing plant close to the working quarry face. In the western half of the quarry, to work the limestone below groundwater level (238-240mAOD), excavations are dewatered by pump on the quarry floor; the sump water is pumped down one or both of two flexible pipelines (according to dewatering levels) and discharged into lined engineered settlement lagoons in Deep Dale; the settled water overflows from the end lagoon into Deep Dale stream which flows north via a culvert into the River Wye. Quarry waste (scalpings and filler dust) from historic limestone extraction and processing has been deposited in Tip No.3 in the south west corner of the quarry, leaving an uneven landform rising from 240mAOD in the north to 270mAOD in the south corner. The abandoned north west corner of the quarry, historically worked to 280Maod, has naturally re-vegetated.

Limestone Processing and Ancillary Development: The quarry produces limestone aggregates and coated stone from the on-site asphalt plant. Production in recent years has been around 250,000 tonnes per annum, 120,000 tonnes of which was coated stone. All primary and secondary processing is through mobile plant on the quarry floor. The blasted rock is loaded into a primary crusher, which crushes the limestone. There are two triple deck mobile screens which screen the stone down to arrange of sizes. The screened product is loaded onto road lorries (HGVs) for transport off site via the weighbridge, or on dump trucks and taken to stockpiles on the quarry floor or to the asphalt plant. A site cabin and mobile generator are also on the quarry floor. The limestone processing plant, asphalt plant, offices, canteen, drying room, sample store weighbridges, workshop, mobile fuel tank, stock bays, associated plant and machinery and car park are located at about 252mAOD in the delineated plant and stockfield area east of the quarry void.

Asphalt Plant: Asphalt production has taken place at the quarry since the 1950's. Before 2006 a 'Parker' roadstone coating plant used a wet dust suppression system; following the 1966 permission, the resulting slurry was pumped to the Deep Dale tip lagoon. In 2006 this outdated plant (unable to meet modern emissions standards) was replaced with a modern dry process 'Benninghoven' plant which occupies 0.6 ha of the plant and stockfield area. This comprises a cold feed unit (hoppers), insulated dryer and burner unit, dust collection unit (including a 28m high stack and other components up to 17m high), screen and mixing unit, filler supply silo unit, 60,000 litres capacity bitumen tanks, mixed material storage silo unit, control cabin, associated buildings, plant, machinery, covered and open stock bays that store crushed limestone and dust for the asphalt plant, and ancillary welfare facilities. A retrospective application for the Benninghoven' plant proposed removal of the Parker plant and other derelict buildings, and landscaping. This was subject to EIA, given the scale and location, local landscape and amenity, potential noise and emissions, and environmental sensitivity of the area in a prominent position in the National Park, close to a Special Area of

Conservation; permission was granted in 2007 because the development was acceptable in siting and design for the temporary period permitted, and removal of derelict and obsolete structures, cessation of waste disposal at the Deep Dale tip lagoons, and landscaping, would benefit the environment and amenities of the locality. Those benefits have been realised, the old plant removed and mitigation measures implemented.

Deep Dale Tip: This tip took slurry from the former wet dust suppression systems on the limestone processing and asphalt plants. The lagoons were constructed with granular bunds at the upstream (western) and downstream (eastern) ends and contain granular material from the quarry and dust slurry from the dust suppression systems of both the limestone processing and asphalt plant. The Deep Dale stream was culverted beneath the lagoon in a 900mm square concrete box culvert, and footpath 37 was realigned from its definitive route along the valley floor to its current route south of the tip. The lagoon was then able to receive slurry pumped from the plant site, whilst the lagoon water was recycled and pumped to the quarry for reuse in dust suppression. The lagoon has been filled and partially emptied on several occasions. Slurry disposal was no longer required when the old Parker plant was removed in 2006 and replaced with the dry process Benninghoven plant. Tipping in Deep Dale tip ceased in June 2007. Site investigations (2005–2011) confirm the residual tip comprises 35% lagoon silt material and 65% granular bund material either side of the silts. The lagoon sediments (clay-silts / fine limestone dust with traces of hydrocarbons, interbedded with sand and silty sands) are 16-17m deep and the granular bunds up to 22m thick. The bunds and eastern part of the tip comprise limestone 'fines' from processing, specification aggregates (scalpings), clay, silt, sand and weathered top-rock (cobble and boulder sized), and small amounts of limestone gravel, waste tarmac and other inert wastes. The permission NP/CHA/866/6 requires the tip to be grass seeded and tree planted upon completion of tipping; this has been postponed pending outcome of this application. The tip surface has naturally regenerated. There is no requirement to move the tip or relocate the lagoons.

Deep Dale (Eastern Section): East of Deep Dale tip, the slope rising from the valley floor to the top of the eastern edge of the quarry (termed the "eastern valley side") was formed from tipped quarry waste materials in the 1960's/70's. This slope has naturally re-vegetated and has been planted with trees. The central part of the slope suffered a landslip in June 2010; the slip area has not been restored as it is located at a point where it is proposed to provide access into the quarry for transporting some of the materials from Deep Dale tip (Phase D explained under 'Phased Working and Restoration' later in this report). It is also proposed to create a cut in the valley side at this point, to provide a controlled outflow for the lake to be formed in the quarry restoration. The water management lagoons are situated immediately north-east and north of the area of slippage.

Future Site Development under Extant Permissions

Continued Site Working: The extant mineral permissions limit the depth of limestone extraction to 240mAOD in the eastern half of the quarry and a voluntary depth limit of 210mAOD had been agreed by the former operator through the ROMP process in the western half. If this application is refused the quarry development would progress to the extent allowed by the extant permissions, subject to any restrictions imposed on dewatering (and therefore quarry depth) by the Environment Agency. The limestone would be extracted from the eastern half of the quarry down to 240mAOD, creating a flat dry quarry floor; whilst extraction down to 210mAOD in the western half would involve dewatering to that depth. To enable limestone extraction in the south west corner of the quarry, the quarry waste in Tip No 3 would be removed and used to create batters along the finished northern faces.

Restoration Strategy under Extant Consents: There is no approved restoration scheme for Topley Pike Quarry. A restoration scheme for the IDO area (eastern half of the quarry)

required under the reviewed conditions (NP/HPK/1093/127) is in abeyance pending the outcome of this application. There is no requirement for a restoration scheme for the western half of the quarry under the 1966 permission (NP/CHA/866/6). If this application is refused a restoration scheme for the whole quarry would be prepared under the Environment Act Reviews. In that eventuality, upon completion of extraction the western half would be restored to 238-240mAOD resulting in a water area up to 30m deep, surrounded by steep quarry faces; and the eastern half would be a level quarry floor at 240mAOD with steep faces to the north, south and south east. The quarry floor would regenerate naturally. Minor re-grading of the Deep Dale tip area with soil spreading and seeding would be carried out, but the current landform would remain across most of the tip and natural vegetation retained. The culvert beneath the tip and dam structure would remain. Some seeding and planting within the dale would take place (required by the 1966 permission), having regard to the natural regeneration.

The Proposed Development

Limestone Extraction and Primary Processing: It is proposed to extract limestone down to 225mAOD across most of the quarry floor, which would involve a 15m increase in the permitted depth of extraction in the eastern half of the quarry and a 15m reduction in the permitted depth of extraction in the western half. A minor lateral extension of quarrying of 0.08 ha is also proposed into the southern area of the existing plant site at present occupied by a workshop. The current methods of (i) extraction involving dewatering and pumping to the existing settlement lagoons, and (ii) processing using the mobile processing plant on the quarry floor, would continue.

Ancillary Development: The application proposes the retention and use of existing site buildings, plant and access). The asphalt plant would be retained until mineral extraction has ceased. The weighbridges, office/welfare facilities and access road would continue to be use. HGV's would be loaded with processed limestone material or with coated material from the asphalt plant for transport off site via the weighbridge.

Times of Operation: Working times for quarrying and the primary crushing plant would remain as existing, 0600hrs to 1900hrs weekdays and 0600hrs to 1600hrs on Saturdays. No primary crushing operations or winning or working of minerals would take place on Sundays or public holidays. The working hours for other processing operations, transport and the asphalt plant would remain unrestricted between 0000hrs to 2400hrs Mondays to Sundays. The proposed tip removal and restoration operations within Deep Dale are 0600hrs to 1800hrs weekdays; these operations would not be carried out at weekends or on public holidays. The Deep Dale works would be carried out mainly between April and September each year, weather permitting. The times for detonation of explosives are discussed later in this report under *'Blasting Times'*.

Phased Working and Restoration: The revised working and restoration scheme takes account of proposed changes to the limit of extraction and the relocation of Deep Dale tip material into the quarry. The scheme has been split into four operational phases, which reflect the timing of operations to move previously tipped materials (from Tip 3 in the south west quarry corner and from Deep Dale), rather than the continuous process of limestone extraction. The rate of production has been used for the expected indicative timing for each phase of working and restoration:

Phase A (mid 2012 to mid-2014) (implemented) – Recent site operations co-ordinated with the proposed working and restoration scheme have proceeded in the western part of the quarry in line with the Phase A proposals. The operator has continued this operation compliant with the extant 1966 consent, down to 225mAOD, the maximum proposed extraction depth. Dewatering has continued but no lower than 225mAOD and the water

pumped through flexible pipeline(s) to the settling lagoons east of the quarry void. About 418,600 tonnes of limestone has been extracted during Phase A, processed using mobile plant on the quarry floor, and transported to the asphalt plant or off site direct to market.

Phase B (2014 to end 2017) – About 227,000m^3 of quarry waste materials (limestone scalpings and filler dust) in Tip 3 are being progressively removed. Some 176,000m^3 would be placed on Tip 4 in the northwest of the quarry, where extraction is completed, to develop a restoration landform with a platform above 240mAOD for future deposit of lagoon silt materials from Deep Dale tip; the extension of Tip 4 would build out from the quarry base upon a level surface of insitu limestone. Towards the end of Phase B about 51,000m^3 of the materials from Tip 3 would be used to create a new access ramp into the south eastern corner of the quarry. As Tip 3 is removed, limestone extraction would take place beneath it, in a southerly direction, down to a base level of 225mAOD; extraction to 225mAOD would also take place eastwards. Dewatering of the quarry floor would continue no lower than 225mAOD. About 847,000 tonnes of limestone would be extracted during Phase B and processed through the quarry mobile plant then taken to the asphalt plant or direct to market.

Phase C (end 2017 to end 2021) – The removal of Deep Dale tip would commence at the start of Phase C following temporary closure of Footpath 37 and removal of woodland at the eastern end of the tip and trees immediately south of the tip. To enable the transport of excavated tip materials into the quarry by dump trucks, a track which runs from the eastern end of the tip around the south-eastern rim of the quarry would be improved; this would join the new access ramp in the south east of the quarry created during Phase B. About 154,000m^3 of tipped material would be removed from the tip during Phase C, down to 257mAOD, in shallow horizontal strips, using a hydraulic excavator, and transported into the quarry where, with Tip 3 material, it would be placed in layers to profile the western (Tip 4) restoration landform. All lagoon silts would be placed above 240mAOD. At the end of Phase C the access ramp would be removed and the 51,000m^3 of quarry waste in the ramp would be placed in the quarry also as part of the new western restoration landform. About 1,060,000 tonnes of limestone would be extracted in an easterly direction during Phase C; extraction and dewatering would continue to no lower than 225mAOD. The limestone would be processed on the quarry floor before removal to the asphalt plant or direct to market.

Phase D (end 2021 to end 2025) – During this phase Deep Dale tip materials below 257mAOD would be excavated; about 102,000m^3 would be removed using the same method as in Phase C. About 42,000m3 would be placed in the western quarry (Tip 4) restoration landform, keeping the silts above 240mAOD. The dump truck access track between the tip and quarry would become too steep for this phase of tip excavation, so a new temporary access track would be formed from the south-eastern corner of the tip along the Deep Dale valley floor, and a cutting would be made in the eastern valley side (where the landslip occurred in 2010) to enable access into the quarry that way. About 24,000m^3 of granular material from the tip would be used to construct a new access ramp from this cutting down to the quarry floor. Once this is available the main access ramp in the north-east of the quarry would be removed and the 40,000m^3 of material from the ramp would be used as part of the new western restoration landform. The eastern valley side south of the cutting would be re-profiled to a stable final landform using 36,000m^3 of granular tip material; the northern side of the cutting would be regraded. The remaining mineral reserves in the east of the quarry, 950,000 tonnes of limestone, would be worked in easterly and northerly directions. The workshop and other plant and buildings would be removed from the south western part of the plant site to enable extraction in that area. Extraction and dewatering would continue to no lower than 225mAOD. The limestone would continue to be processed on the quarry floor before removal to the asphalt plant or direct to market.

Post Cessation Restoration Operations (2026) – During this Phase, which follows removal of Deep Dale tip, the temporary haul road from the dale into the quarry would be removed.

Final re-grading and soil / substrate placement would take place along the full length of the restored valley. The surface watercourse along the valley floor would be reinstated. Once all restoration operations, seeding and planting are completed in the dale, footpath 37 would be reinstated. Upon completion of limestone extraction, dewatering would stop and the quarry would, over 8-9 months, fill with water to a fluctuating level around 238-240mAOD. The asphalt plant, other plant, buildings and hardstandings would be removed and the plant site surface prepared for restoration to woodland and calcareous grassland. The restored section of Deep Dale, restoration landform in the west of the quarry, and the area of the new outflow / cutting would be seeded and planted.

Restoration Strategy: The primary aims of the concept restoration strategy, submitted for the whole of the quarry and areas of Deep Dale including Deep Dale tip, are to: (i) restore the quarry and Deep Dale tip to a landform in keeping with the unique characteristics of the Limestone Dales Landscape Character Type; (ii) create areas of calcareous grassland and new native broadleaved mixed woodland; (iii) optimise wildlife gain providing mosaic grassland, scrub, woodland, rocky outcrops, scree slopes and river habitats (reinstatement of the Deep Dale seasonal stream; (iv) improve ecological potential of the proposed lake, creating shallows for wetland birds; (v) mitigate the temporary loss of grassland habitats and habitats suitable for invertebrates; and (vi) maximise opportunities for people to enjoy the Limestone Dales landscape by restoring Deep Dale and improving the footpath network. Alternative quarry restoration designs have been considered to ensure a natural landform with shallows around the lake shore to maximise biodiversity. A range of habitat creation alternatives have also been considered, to produce a variety of habitats most suited to each of the restoration areas. For each area options such as natural regeneration versus hydraseeding; appropriateness of tree and shrub planting; consideration of different seed sources; whether to use soil forming materials etc., have been considered. The restoration proposals for the quarry and Deep Dale take account of known ecological interest, seek to balance impacts on species and habitats, mitigate impacts of the operational phase, and provide ecological enhancement.

Quarry Restoration: Upon completion of limestone extraction, dewatering would cease and the quarry void would gradually fill with water over 8-9 months (with a rise to 235mAOD within 4 months) to form a large lake. Due to the final depth of water and available materials it is not proposed to create islands in the lake; instead, the final landform in the south western part of the quarry has been designed to provide a large area of shallows. The lip of the lake would not be lower than 241mAOD at the south eastern area of the void. The final lake level would fluctuate between 240m and 238mAOD, allowing ephemeral communities to develop. The shallows would be inaccessible and would re-colonise naturally (e.g. with bulrush, phragmites and canary grass). The western restoration landform would be at a shallow gradient where it meets the lake shore, providing further shallows; this part of the lake would have crenulated margins to create visually and ecologically more interesting micro-topography around the western shore. The remainder of the lake shore would be surrounded by steep quarry faces but a terrace would be created between 238m - 240mAOD to enable marginal aquatic species to develop. The access ramp in the south eastern corner of the void would be retained and re-profiled to create an area protruding just above the maximum final water level of 240mAOD; this, together with a small outflow channel in the eastern side of the Dale to the Deep Dale culvert (at lagoon 2), would allow passive control of the lake level / outfall, whilst fragmenting the eastern lake shore and enabling establishment of a wider range of habitats. No material would be imported for the quarry restoration other than from the Deep Dale tip. All plant and machinery would be removed from the asphalt / plant site when no longer required. An area of upland Ash woodland would be planted to supplement existing planting around the north of the plant site; other areas would be left bare to re-colonise.

Removal of Deep Dale Tip: About 257,000^{3}m of materials would be removed from Deep

Dale tip. Two options for relocating the lagoon silt have been assessed, (i) conventional earthworks and (ii) re-slurrying the material and pumping it into bunded areas in the western part of the quarry; the conventional option is the most sustainable. The materials would be removed in a series of shallow lifts using a 360º tracked hydraulic excavator, and loaded into articulated dump trucks for transportation. Some 220,600^{3}m of granular and silt materials would be removed contiguously, transferred into the quarry, and placed within bunds of granular material and/or mixed together and placed in 1000mm thick compacted layers, in the restoration landform in the west of the quarry. The silts would be placed above 240mAOD, the final maximum level of the proposed lake. Granular material may be used with quarry waste to fill restoration areas below 240mAOD. A further 36,400^{3}m of granular material would be relocated at the eastern end of Deep Dale to stabilise the perimeter embankment and recreate the daleside landform. The Deep Dale tip operations would take 8 years, from 2017/18 to 2025. The quantity and timing of materials movements would depend on the weather. Flexibility on quantities removed and timing would be necessary to a safe operation at the optimum time of year.

Deep Dale Restoration: When the tip has been removed and the stream is not flowing, the concrete culvert would be broken up and removed to the quarry for recycling. Once all tipped materials and culvert have been removed from the dale, the haul road into the quarry would be removed. Where the lagoon silts are removed a 5cm depth of silt would be left on the original valley sides for vegetation establishment. Where granular fill is removed, the surface would be broken to create varied local topography. Any soils would be stripped prior to regrading, then replaced on the restored landform. Final re-grading and soil/substrate placement would take place along the full length of the restored section of valley. There may be a buried escarpment below the northern side of the tip; where original valley sides are exposed, any original rock outcrops and scree slopes would be retained. At the eastern end of the dale the southern slopes would be re-profiled to shallower angle to create a stable landform. The northern half of this valley side at a shallower angle would not require re-grading. The Deep Dale stream would find its natural course along the floor of the restored valley; marshy grassland species should colonise the seasonal stream area; and rocks would be placed in the stream path to restrict the watercourse at intervals to allow broad, damp seepages. Footpath 37 would be reinstated along its original (definitive) route on the valley floor.

Post-Restoration Landscaping and Habitat Creation: Landscaping and habitat creation would take place in the first planting and seeding seasons after the landform is completed. The restored Deep Dale, the restoration landform in the western quarry void and the area of the new outflow/cutting would be seeded and planted after the surface has been broken up to create varied local topography. In Deep Dale planting would be into the restored valley sides; compaction would be alleviated by ripping; trees would of local provenance, pit planted at 45-60cm. Natural regeneration will be the preferred method of vegetation establishment with hydroseeding if appropriate. The quarry would be restored to upland woodland with calcareous grassland on the flanks sloping down to the lake. The quarry faces and benches would be left bare to re-colonize in keeping with vegetation establishment on the older benches and faces; this low fertility low management habitat would slowly develop into an open mosaic habitat of benefit to invertebrates. The redeposited and graded silt/soil material would be hydroseeded, if appropriate, with a 100% calcareous grassland species seed mix; if practical, grasses would be collected from Deep Dale SSSI or otherwise locally sourced. A range of indigenous species is proposed. The indigenous woodland is ‘Upland Ash Woodland’ but, due to Ash dieback disease (Chalara fraxinea), the use of Ash is excluded (subject to review when planting in about 12 years’ time); the proposed species mix includes lime, rowan, field maple, bird cherry, hazel, blackthorn, hawthorn, buckthorn and dog rose. A total of 100 new trees are proposed.

Post-Restoration Aftercare and Biodiversity Management: Restored areas would

undergo five years aftercare. An outline scheme sets out the broad principles of aftercare for each restored habitat. A detailed aftercare scheme for each restored area would be submitted for approval 6 months prior to commencement of restoration in each area; the aftercare schemes would demarcate areas on a plan in different stages (years) of aftercare and provide details of grass seed mixes, seed sources, application and timing; grassland management and weed control; tree planting mixes, tree sources, sizes, spacing and protection; annual tree maintenance programme to ensure 90% stocking rate at the end of 5 years; any fencing or means of enclosure required for safety or protection of restored habitats; annual monitoring of restored habitats and review of future aftercare works. Once the proposed quarry lake fills with water the western half of the quarry would be inaccessible and no aftercare in this area would be possible, so this area has been designed to self-establish habitats that do not require ongoing management. An Outline Biodiversity Management Plan (BMP) has been submitted and a detailed BMP would be prepared in liaison with Derbyshire Wildlife Trust and PDNPA ecologist and submitted for approval within 12 months of any grant of planning permission.

Consultations

High Peak Borough Council Environmental Health (EHO): Has no comments to make, other than that the process is prescribed and that dust emissions from the site will continue to be regulated by HPBC under Permit reference P11C-3/08 (and as varied).

Derbyshire County Council (DCC) Economy, Transport and Environment (Planning): The quarry benefits from its location at the meeting point of Deep Dale and Wye Dale, with the majority of views screened by the valley sides to both dales. Only two of the viewpoint photo locations (13 and 14) are outside the National Park, both north of the site where there is view from a footpath on the upper rim of Wye Dale. From viewpoint 13 much of the quarry is screened by the other side of the Wye Dale valley slopes. At viewpoint 14 visual impacts are greater with a relatively open view into the eastern end of the quarry. From this location the quarry has a notable adverse impact, which will continue throughout the remaining life of the quarry to 2025. Post-restoration, the visual impact is assessed as moderate adverse primarily as visual receptors (footpath users) at this location will see the restored water body within the quarry; this would be a large incongruous feature distinctly at odds with the character of the wider landscape. These judgements are concurred with and it is accepted that it will be difficult to mitigate the adverse effects associated with this large water body. The additional planting in the north-east corner is supported in assisting to mitigate views from viewpoint 14; it is recommended this be developed further to create a more extensive woodland block that extends to the water's edge where it would provide greater visual screening. This may require planting onto the quarry benches in this location so consideration should need to be given to the treatment of these benches on restoration.

The overall approach to restoration is appropriate to the landscape character. The removal of Deep Dale tip is a major benefit of this revised working scheme despite the fact that it will take 8 years to complete and will lead to loss of some established woodland. This removal will lead to reinstatement of the natural daleside, realignment of the footpath and stream in the valley bottom, and provides potential to create other more appropriate limestone habitat. The progressive removal and restoration of this tip could have significant bearing on overall impact. Asks is there opportunity to remove the tip from west to east.

In the proposed woodland planting mixes, ash is excluded owing to problems with Ash Dieback. The situation should be monitored throughout the quarry development; should a disease resistant strain of this species become available then this should be reintroduced into the mix at that time to maintain continuity with the established landscape character. Willow might also be included as a minor component of the species mix in some areas, particularly in association with the water body at the bottom of the quarry void. The inclusion

of some sycamore may also be beneficial as it is prevalent in woodland throughout the White Peak and has distinct advantages in mitigating visual impacts.

In summary the development as proposed is supported, subject to the aforementioned minor points. There are no direct or indirect impacts on the landscape outside the National Park designation and visual impacts are restricted to a few elevated vantage points across the Wye Valley to the north.

Derbyshire County Council (Highways): Whilst the application includes proposals to cease mineral extraction 17 years sooner than the quarry's existing permitted completion date, the details submitted suggest the annual level of extraction will not increase, with average levels of 250,000 tonnes being maintained. The Highway Authority is unaware of any operational issues arising due to traffic generated by the site in recent years where extraction levels have been approximately 250,000 tonnes per annum, so there are no grounds for a highway safety objection. Therefore, the Highway Authority has no objections subject to conditions to restrict the extraction from the quarry to a maximum 250,000 tonnes per annum to prevent significant increase in traffic levels and, should a higher level of output become necessary, for a Transport Statement. Has specific advice about protecting Public Rights of Way in the locality.

King Sterndale, Staden and Cowdale Parish Meeting: The Parish generally support the application because it gives controls over quarrying depth, mineral extraction timescale and lower blast vibration limits along with restoration of Deepdale, provided a several conditions are met. These relate primarily to blasting (ground vibration and air overpressure limits, no secondary blasting, blasting times, reduced blast levels and vibration in the western half of the quarry, other blast mitigation measures in the vicinity of King Sterndale, vibration monitoring in the village, prior notice of blasts and blasting frequency), quarry machinery sound levels, dust levels, light pollution not to be visible from the parish, mineral extraction to cease by 31 December 2025, Deepdale to be restored by 31 December 2026, and regular liaison meetings in line with that agreed with the Parish during their meeting on 4 June 2015. The Parish appreciates the neighbourly approach being taken by the applicant, and the support from Environmental Health and the controls being put in place by Peak Park Planning.

[Officer Notes: (i) PDNPA Officers have attended King Sterndale Parish meetings to provide advice about the application and current limits on the Authority's powers of control, discuss resident's concerns, in particular about quarry blasting, to seek the Parish / residents views, and to proffer establishment of a formal liaison committee to keep the Parish informed about the quarry operations; (ii) the Parish Meeting and some residents have requested compensation for owners of affected buildings in the event of damage by blasting, but this is not a planning matter which would normally involve or fall within the remit of the Authority).

Natural England: Does not object to the proposals in relation to potential impacts upon internationally and the nationally designated sites. Has substantial comments, as follows *(officer summary)*:

Internationally and Nationally Designated Sites: The site includes land within the Peak District Dales SAC, a European site afforded protection under the 'Habitats Regulations', and it is adjacent to the river Wye, which forms part of this European site. It is potentially linked hydrologically to the SAC and nationally designated sites dependent upon groundwater and springwater flows for the maintenance of their notified features, including the river Wye, part of the Wye Valley SSSI, Topley Pike and Deep Dale SSSI, Lathkill Dale SSSI and Monks Dale SSSI, all constituents of the SAC. Given proposals for dewatering the quarry to work 15m below the estimated local groundwater levels, and direct landtake from the SAC, there is potential to affect its interest features.

Topley Pike and Deep Dale SSSI: The proposals involve direct landtake from the nationally designated SSSI within the SAC, notified under the Wildlife and Countryside Act. These losses are only those associated with the removal of the Deep Dale tip area, a small part of which falls within the SSSI boundary, but which is of recent origin and less botanical interest than the older and more species rich limestone daleside slopes elsewhere within the SSSI. The loss of this relatively small area of calcareous grassland is likely to be sufficiently offset through the restoration. Natural England is satisfied that any potential impacts upon nearby SSSI interests would be avoided, the development would not damage or destroy the interest features for which the site has been notified, the SSSI does not represent a constraint in determining the application, and there is no objection in relation to the SSSI.

Hydrogeological Impact Assessment (HIA): The proposed working depth of 225mAOD is considerably less deep than earlier proposals for working and dewatering to 210mAOD, highlighted as having inherent risks and uncertainties of dewatering in this hydrogeological environment. A 2003 Hafren Water report *"An investigation of the Water Environment in the vicinity of Topley Pike Quarry"* identified potential impacts*"*; a 2003 Limestone Research Group (LRG) critique of the Hafren report, concluded significant risk; and a 2006 Steve Bennett Groundwater Consultants report, concluded significant risk of unpredictable and unquantifiable impacts upon the water environment from dewatering to 210mAOD, given the karst geological environment, and recommended future working be limited to 225mAOD, employing wet working methods to avoid dewatering. The designated section of the river Wye begins downstream of the point where the quarry water is discharged back into the Wye; therefore in terms of direct impact upon water flows in the river, any potential impacts from dewatering upon flow would appear likely to be fully compensated for.

Likelihood of Significant Effects: Objection withdrawn on the basis that the supplementary information (and discussions with the applicant and consultants) is sufficient for the PDNPA (as 'competent authority') to use as the first part of the Habitats Regulations Assessment ('HRA') of the proposals under Regulations 61 and 62 of the Habitats Regulations; and to conclude that there would be no 'Likely Significant Effect' (LSE) upon the Peak District Dales SAC. Natural England is confident, subject to hydrological monitoring and reporting, that the development would not result in LSE upon nearby freshwater dependant European sites; and that no further assessment under the Habitats Regulations, and specifically no Appropriate Assessment, is required.

Scheme of Hydrological Monitoring: The monitored response of boreholes to dewatering appears limited, but a precautionary approach would be sensible. Strongly support the proposal to implement a strict monitoring scheme to ensure that the predicted low risk of impact is borne out. This will need to be covered by condition (on which Natural England would need to be satisfied) and include reporting at least on an annual basis, with a detailed mechanism to ensure that should any unexpected consequences of dewatering be picked up, remedial action can be implemented straight away to minimize or reverse the impacts.

Wider biodiversity considerations: The Authority should assess and consider other possible impacts on local sites (biodiversity and geodiversity), local landscape character, and local or national biodiversity priority habitats and species, and information from appropriate bodies.

Protected Species: Natural England's Standing Advice on protected species is a material consideration; it includes a habitat decision tree for deciding any 'reasonable likelihood' of protected species being present, and other advice including flow charts for individual species to enable assessment to be made of a protected species survey and mitigation strategy. The Standing Advice does not indicate or provide any assurance that development is unlikely to affect European Protected Species (EPS); nor does it mean Natural England has reached any views as to whether a licence may be granted.

Protected Landscapes: The landscape and visual impacts of the development must be considered in the context of appropriate National Park Character Assessment / Landscape Strategies and planning policies. Broadly concur with the Landscape and Visual Impact Assessment. The restoration, to a mix of agriculture and nature conservation, would in the long term result in significant enhancements to the current quarry landscape, although in the short term there would be limited but necessarily adverse impacts particularly associated with the removal of the Deep Dale tip.

Biodiversity enhancements: The application may provide opportunities to incorporate features which are beneficial to wildlife, such as roosting opportunities for bats or installation of bird nest boxes. The authority should consider securing measures to enhance biodiversity in accordance with Paragraph 118 of the NPPF. Attention is drawn to Section 40 of the Natural Environment and Rural Communities Act (2006) which states that '*Every public authority must…have regard…to the purpose of conserving* biodiversity'; and Section 40(3) which states that 'conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat'.

Restoration: Support proposals to restore the site to semi-natural and locally appropriate habitats, including calcareous grassland and broadleaved woodland. The removal of Deep Dale tip and restoration to a limestone daleside profile would involve land within Topley Pike and Deep Dale SSSI and the Peak District Dales SAC, but loss of this very small area of calcareous grassland (0.2ha, part of a total of 2ha of this habitat type to be lost overall), would be sufficiently mitigated through overall gains in this grassland type in the restoration. Habitats should be allowed to develop through natural regeneration. Strongly recommend minimum seeding of the restored landform; any reseeding should use locally harvested seed sources, as may be advised by Derbyshire Wildlife Trust. There should be no unnecessary tree planting, and only locally sourced native species; trees and grassland should be allowed to regenerate naturally.

Environment Agency (EA): The development will be acceptable if measure(s) are implemented and secured by way of planning conditions *[Officer recommendation adopts the EA conditions with advice notes]*. These aim to restrict the extent of quarry workings and dewatering; protect controlled waters; control restoration water level to reflect natural levels and reduce flood risk; ensure ongoing protection of water resources and water dependent features; ensure contamination remediation strategy during removal of the Deep Dale tip; ensure containment of liquid storage facilities; and ensure reinstatement of the Deep Dale stream to open watercourse to manage flood risk and contribute to biodiversity. The EA support removal of the stream culvert which will open up 472m of watercourse re-instated to its original position within Deep Dale; the stream flows into the River Wye for which there are water vole records; the EA favour restoring the stream to provide suitable water vole habitat.

High Peak Borough Council (HPBC) Planning / Derbyshire Dales District Council (DDDC) (Planning & Development Services) (neighbouring Authority) **/ Communities and Local Government (DCLG)** (EIA Application) **/ Severn Trent Water Ltd / Health and Safety Executive / Central Networks East:** No comments received from these consultees.

Publicity and Representations

Friends of the Peak District (FPD) [also representing the **Campaign to Protect Rural England (CPRE) and the Campaign for National Parks (CNP)]:** The proposals have significant benefits, bringing forward the end date for working, an improved restoration scheme, removal of the Deep Dale tip and restoration of the dale landscape. Closure of a major section of Footpath 37 for a fairly long period is unfortunate and the diversion route is

not as commodious; however, recognise this will be temporary and the restored route will be a welcome improvement. Support the stated aim of the Restoration Strategy *'providing wildlife and amenity enhancement'*. Happy with the proposed benefits in terms of a final landform and habitats consonant with BAP *(Biodiversity Action Plan)* aims and fit with landscape character key characteristics. It is not stated how these amenity benefits are to be accessed and enjoyed; would hope that permanent access, by dedication, should be possible. The Restoration Strategy hints that land management is to be carried out by Derbyshire Wildlife Trust suggestive that the site will become one of their reserves; the biodiversity benefits are laudable. Such sites can provide wider benefits for recreation, such as rock climbing [working closely with the British Mountaineering Council (BMC) that has a pioneering project looking at diversifying quarry after-use]; would be pleased, given retention of craggy outcrops, cliff/faces and benches, if options could be explored to retain larger, mature faces that may provide rock climbing opportunities; the BMC has demonstrated at other quarry sites that issues of liability and health and safety can be overcome.

[Officer comment: The applicant is not in a position to offer public access into the restored quarry: post-completion of restoration and statutory aftercare period, the quarry will revert to the landowner family and the access to the Chatsworth Estate. The public access element of the proposals relate to Deep Dale rather than the quarry].

Other Representations: Representations received from three residents (two households); are viewable in full on the planning website. In summary the comments received relate to:

a) concern about impact of vibrations, potential damage to buildings and value of property;
b) the maximum levels of blasting - all blasts are supposed to be within acceptable limits;
c) potential increase in blasts (how many?) to extract 3mt by the new end date of 2025;
d) bowing and cracking to walls in Listed Buildings may be due to previous blasting;
e) question need to extract further rock from the north-west corner of the quarry;
f) blasting in the eastern half of the quarry would have less of impact;
g) ramifications of underground blasts, regarding rifts that run near houses and water table;
h) records from particular blasts should be investigated;
i) need mitigation to reduce future vibration;
j) request continued independent blast monitoring for residents (includes listed properties);
k) the quarry should meet the cost of equipment and independent monitoring;
l) request monitoring for movement and damage to property during blasts;
m) to make good damage to property to the satisfaction of residents and English Heritage;
n) to compensate for buildings damage rather than protracted legal proceedings.

[Officer comments: no underground blasting is proposed; the effects of quarry blasting, investigation of records of incidents complained of, and mitigation measures are referred to later in this report; the EHO has agreed to carry out blast monitoring independent of monitoring by the site operator, both of whom have and actively use monitoring equipment; points (m) and (n) are not planning issues within the remit of this Authority].

Main Local Plan Policies

Applications for planning permission must be determined in accordance with the Development Plan unless material considerations indicate otherwise [s38 (6) Planning and Compulsory Purchase Act]. The courts have held that if proper regard is not had to policy, the decision (if referred to a court) would be quashed. In the National Park the Development Plan comprises the Core Strategy 2011 and saved policies in the Peak District National Park Local Plan 2001 *(being replaced by a Development Management Policies Development Plan Document and Proposals Map)*. The merits of the proposals have been assessed against relevant Development Plan policies and other material considerations as follows:

The **Peak District National Park Local Development Framework Core Strategy Development Plan Document ("CS")** (adopted October 2011) provides the spatial planning expression of the **National Park Management Plan (NPMP)** (2012 – 2017): The Core Strategy provides for conservation and enhancement of the landscape, biodiversity, tranquillity, cultural heritage, recreation and settlement, supports economic development but seeks reduction in the adverse impact of mineral operations. The Strategy is focussed on working towards the continued gradual reduction of aggregates and other land-won minerals within the National Park but recognises that the ability to achieve this policy aim is limited by the high level of extant permitted mineral reserves within the Park. The Strategy seeks to disallow new sites or extensions to existing sites on the basis that there remains no case for granting major planning permissions for aggregates working in the Park; that existing permissions allow significant output for many years; and that as sites are worked out or become time-expired there is likely to be a gradual rundown in output whilst retaining sufficient permitted reserves to meet the aggregates apportionment figure for the Park.

Relevant LDF Core Strategy Policies: MIN1 (minerals development); GSP1 (national park purposes and sustainable development); GSP2 (enhancing the National Park); GSP3 (development management); GSP4: planning conditions and agreements); DS1 (development strategy); L1 (landscape character); L2 (sites of biodiversity or geo-diversity importance); L3 (cultural heritage assets); RT1 (recreation); CC1 (climate change mitigation); CC2 (low carbon development); CC3 (waste management); CC5 (flood risk and water conservation); T1 (sustainable transport); T2 (reducing traffic); T4 (managing freight transport); and T6 (routes for walking etc.).

Relevant saved Local Plan Policies: LM1 (environmental impact of mineral activity); LM9 (ancillary mineral development); LC1 (Natural Zone); LC4 (design, layout and landscaping); LC15 (cultural heritage sites); LC16 (archaeological sites); LC17 (wildlife, geological / geomorphological importance); LC18 / LC19 (nature conservation); LC20 (trees, woodlands, landscape features); LC21 (pollution and disturbance); LC22 (surface water runoff); LC24 (contaminated land); LC25 (unstable land); LW2 (waste management); LT9 (freight transport and lorry parking): and LT20 (public rights of way).

The National Park Management Plan (NPMP) Corporate Strategies and Action Plans

Other relevant Peak District Policy Documents include the **NPMP** and within that context the **Landscape Strategy and Action Plan (LSAP)** (July 2009) including Landscape Guidelines, Management Guidelines and Action Plan objectives; **Biodiversity Action Plan (BAP)** (2011-2020); **Climate Change Action Plan (CCAP)** (2009-2011) and Supplementary Planning Document **Climate Change and Sustainable Building ("CCSPD")** (March 2013); **Recreation Strategy (RS)** (2010-2020) & **Action Plan (RSAP)** (2011-2013); and **Cultural Heritage Strategy (CHS)** (2005).

National Planning Policy Framework ('NPPF')

The Government's NPPF policies for England (27 March 2012) and Minerals Planning Practice Guidance (MPPG, updated 17 October 2014) are material considerations. The NPPF affords National Parks the highest status of protection for landscape and scenic beauty. Core NPPF Planning Principles relate to conserving and enhancing the natural environment and reducing pollution; relevant NPPF policy relates to sustainable development and transport, climate change, conserving and enhancing the historic environment and valued landscapes, geological conservation, minimising impacts on and providing net gains in biodiversity, preventing air, noise and water pollution and land instability, and remediating and mitigating despoiled, degraded and derelict land. The NPPF (para.144) says great weight should be given to the benefits of mineral extraction; but as far as is practical provide for the maintenance of landbanks of non-energy minerals from outside National Parks; ensure, no

unacceptable adverse impacts on the natural and historic environment and human health; take into account the cumulative effect of multiple impacts; ensure control, mitigation or removal at source of noise, dust and particle emissions and blasting vibrations; establish noise limits in proximity to noise sensitive properties; and provide earliest possible restoration and aftercare to high standards. The Development Plan policies are the primary policies for determining this application but their relationship to the NPPF has been considered and there is nothing in that which overrides the locally specific relevant policies.

Assessment (Set against the Policies and Principles)

Assessment for Sustainable Development

The NPPF (para.197) says planning authorities should apply the presumption in favour of sustainable development. Given "imperative need" for sustainable and environmentally sound development (Resolution 42/187 United Nations General Assembly), Local Plan and NPPF guidelines, the application has been assessed for sustainable development within guiding principles in the UK Sustainable Development Strategy 'Securing the Future' (2005) updated by 'Governing for the Future: The opportunities for mainstreaming sustainable development' (2011). The three dimensions to sustainable development for the planning system: (i) an "economic role", (ii) a "social role" and (iii) an "environmental role" (protect and enhance our natural, built and historic environment, improve biodiversity, use natural resources prudently, minimise waste and pollution, mitigate and adapt to climate change). The NPPF requires planning authorities to work proactively with applicants to secure developments that improve economic, social and environmental conditions. In this case the detailed pre-application scoping opinion, guidance and advice issued by this Authority and extensive negotiations with the applicant and consultants have sought to ensure that this application offers sustainable development with respect for local distinctiveness and net environmental benefits.

Core Strategy policies for sustainable development requires clear justification for new development. A vigorous assessment of the application against the policy framework has been undertaken within the context of sustainability to conserve and enhance valued characteristics of the locality and National Park purposes. The applicant operates Quality and Environmental Management Systems to ISO 9001 and 14001 standards and as a pioneer of best practice states commitment to sustainability (certificated to BES 6001 'Responsible Sourcing of Construction Products' and member of the UK Green Building Council), protection of the environment and being a good community neighbour.

Assessment for Exceptional Circumstances

Exceptional Circumstances and National Policy: The scale of the proposal is large and the development is major. As set out in the NPPF, in securing national park purposes, major development should not take place other than in exceptional circumstances. Paragraph 116 of the NPPF states *"planning permission should be refused for major development in these designated areas except in exceptional circumstances and where it can be demonstrated they are in the public interest. Consideration of such applications should include an assessment of the need for the development, including in terms of any national considerations, and the impact of permitting it, or refusing it, upon the local economy; the cost of, and scope for, developing elsewhere outside the designated area, or meeting the need for it in some other way; and any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated."*

Exceptional Circumstances and the Development Plan: Policies GSP1 and MIN1 of the Core Strategy collectively state that major development should not take place within the National Park other than in exceptional circumstances; and that proposals for new mineral

extraction or extensions to existing mineral operations (other than fluorspar and local small scale building and roofing stone covered by policies MIN2 and MIN3) will not be permitted other than in the exceptional circumstances set out in National Planning Policy. Reference to these exceptional circumstances in paragraph 14.2 of the Strategy says the consideration of major mineral development proposals must assess need, availability of alternatives, environmental effects, and the impact on local economy of permitting or refusing the development; paragraph 14.18 says the minerals strategy for the Park needs to reflect flexibility to allow proposals where relevant exceptional circumstances exist. These tests are rigorously examined in the assessment that follows in line with 'English National Parks and the Broads UK Government Vision and Circular 2010' guidance which requires major development to be in the public interest.

Assessment of Change to the Quarry Working Proposals

Depth of Working: Quarrying is proposed down to 225mAOD across the whole quarry. The depth of working in the 1947 IDO (eastern) area is restricted to 240mAOD and limited reserves remain in that area. There is no depth limitation in the 1966 permission (western) area. In 1998 the proposed depth of working in this area had been identified by the then operator (Tarmac Quarry Products) as 210mAOD for the purposes of the ROMP, a target later adopted by Aggregate Industries. Quarrying to this level would involve working beneath the water table with inevitable disturbance to the water environment. A report in 2003 identified that watertable control would be necessary for the deeper working following which the excavations would be allowed to fill with water to an equilibrium with the surrounding limestone aquifer. Much of the 1966 area has now been worked down to the 225mAOD limit proposed in this application.

Proposed Additional Quarrying in the IDO Area: This would be a small "internal extension" in the north-east corner of the consented extraction area and the 15m deeper working of the resource beneath the current depth limit within the consented area.

Proposed Revocation of Existing Permissions: The applicant is agreeable to a Section 106 Agreement for Planning Obligations providing (inter-alia) for relinquishment / revocation (without compensation) of the extant mineral permissions and all permissions for buildings / ancillary development on the site, including for the asphalt plant, in substitution for the new consolidation permission, which would bring all the development under modern standards of control. The relinquishment would accord with LDF Policy GSP4 and be fairly and reasonably related in scale and kind to the exchange and reasonable in all other respects.

Assessment of Mineral Reserves

Resource Assessment and Reserve Constraints: The quarry is extracting Woo Dale limestone. The limestone reserve has been subject to geological borehole investigations to generate a geological computer model of the quarry; since no mineral extraction is proposed outside the existing site boundary no additional boreholes have been necessary to prove the reserve. The limestone is confirmed as closed and tight without voids or cavities, and unweathered. Exploitation beyond that proposed in this application is unlikely to be viable, practical or sustainable on policy grounds.

Consented and Proposed Reserves: About 1,825,000 tonnes of permitted limestone reserves remain to be worked, beneath the existing lowest quarry floor level of 225mAOD to an extraction depth of 210mAOD, in the western half of the quarry. These reserves would be relinquished in exchange for recovering 2,215,000 tonnes of new reserves, beneath the existing quarry floor level of 240mAOD to a new maximum extraction depth of 225mAOD, in the eastern half of the quarry. In addition to levelling out the quarry floor from west to east, this would also provide a net gain in consented limestone reserves of about 390,000 tonnes.

Reserve Comparison **(**As of 1st January 2013)			
Quarry Area	Permitted Reserves (workable) (tonnes)	Proposed Reserves (tonnes)	Consolidating Scheme Gain / Loss (tonnes) *(Depth)*
East	150,000	2,365,000	2,215,000 Gain *(240m-225mAOD)*
West	2,650,000	825,000	1,825,000 Loss *(225m-210mAOD)*
Total	2,800,000	3,190,000	390,000 Net Gain

[*Note:* At the expected future production rate of 250,000 tonnes per annum, these reserves equate to a life of approximately 13 years (from January 2013). The estimated timing of future working and restoration Phases A, B, C and D are based on this rate of production. The applicant says this small overall gain in reserves is compensated for by reduction in the life of the quarry from 2042 to 2025].

Reserve Equitability

Increased Mineral Reserves in Perspective: The proposed net increase of 390,000 tonnes of limestone represents just 13.93% over current permitted reserves; all the additional reserves lie beneath the existing disturbed footprint of the quarry excavations and a small part of the adjacent processing plant site, beyond which there would be no lateral extension; and the 15m increase in depth of working in the east would be balanced by the 15m reduction in depth in the west. This moderate increase needs to be weighed against the overriding benefits of the proposals collectively for assessment of exceptional circumstances. Importantly, this 'increase' in additional reserves is based on calculations related to the voluntary depth limit of 210mAOD in the western part of the quarry, but quarrying could proceed down to 210m should the application be refused, and operations continue under existing consents. With an unrestricted depth of quarrying under the 1966 permission, the previous site operators (Tarmac Quarry Products) could, if they had so chosen, have quarried much deeper (subject to a dewatering licensing); however, they offered the 210m limit as a condition in the Schedule 13 Initial ROMP application (NP/HPK/0998/141). If that limit had not been volunteered, the current proposals could have demonstrated a considerable reduction (loss) in overall (1966) consented reserves. In any calculation, by reducing the permitted life of the quarry from 2042 to 2025, the proposals would, in terms of timescale, bring forward gradual reduction in the number of aggregate quarries within the National Park, compliant with policy.

The Spatial Perspective: Less than 0.08 ha (756m^2) beyond the current excavation boundaries are proposed to be worked. The lateral extension would be wholly contained within the established footprint of the existing quarry site immediately adjacent (east) of the existing permitted excavation boundary encroaching into the authorised Plant Area beneath the workshop. This is insignificant within the scale of the existing quarry site.

Equitability and Policy Objectives: Whilst minerals policy aims to work towards less mineral extraction in the Park (crucially aggregates), it does not specifically resist extended quarry sites nor does it require equal or lesser reserve tonnages in exchange applications that could, as this application seeks to do, legitimately work towards the overall policy objective by finalising the extent of the reserve and incorporating landscape and environmental benefits. As stated in the Core Strategy (para.4.7) *"the challenge is to progressively reduce the negative impact of quarries on the landscape, surrounding communities and visitors' enjoyment*" and to "*manage development at a landscape scale*" (para.9.4). Given exceptional circumstances, it would be inappropriate to simply apply the concept of equitability to a numerical focus on equal mineral reserve exchanges within different parts of the quarry. It is demonstrably more important in the interests of National Park purposes to secure improvements in environmental terms through overriding timescale, community, environmental, restoration, landscape enhancement, biodiversity, and visual and

recreational amenity benefits that satisfy the guiding principles for sustainability. A summary assessment of benefits and concessions set against disbenefits of the proposals and disbenefits of retaining the old permissions and determining the ROMPs is provided later in this report from which the environmental and sustainable equitability of the proposals may be judged; in that judgement is a need to ensure that exceptional circumstances are demonstrated and the development set against the ROMP alternatives would lead to net conservation and enhancement of the character of this area of the Park.

Reserve Equitability and Compensation Issues: Any action intended to limit the 210mAOD excavation depth in the 1966 permission area through the Review process rather than by approval of this consolidation application would give rise to compensation issues. There are two possible alternative mechanisms for restricting the excavation depth by ROMP determination but in either case compensation would be payable in the first instance by the Authority: (i) the potential for compensation would arise if condition(s) are imposed through the Review which restrict working rights (a condition to limit the working depth would breach the threshold for compensation because it would adversely affect the economic viability of the approved mineral operation by reducing reserves); or (ii) the matter could be addressed via Regulation 50 Review under the Habitats Regulations 1994 (the findings of appropriate assessment could trigger modification or revocation under Section 97 of the Town and Country Planning Act 1990) (a voluntary obligation by the operators under Section 106 of the Act is thought unlikely without compensatory reserves).

If this application is refused, the Authority would have a duty to determine the ROMPs, including the current stalled ROMP which proposes quarrying down to 210mAOD, but it also has a duty to protect the SAC interests compliant with EU Directives, and the two duties may not be compatible. The possibility of modification of the depth of working under the 1994 Habitats Regulations (Regulation 50 procedure) has been considered; this would be on the grounds that quarrying deeper then 225mAOD may have significant impact on the SAC, and such “exceptional circumstances” would justify a restriction of working rights in the ROMP determination; however, correspondence with DEFRA yielded no conclusive response about possible Government compensation for this which is thought unlikely in the current economic climate. Alternatives have been considered that could secure workable reserves whilst protecting the water environment, on the premise that the potential hydrological impact of continued quarrying would predominantly (but not wholly) be a factor of depth. The current application proposals offer the best negotiated solution.

Production and Demand

Recent and Forecast Production / Output Levels	
Limestone production historic maximum	300,000 tonnes per annum
Limestone production in 2011	203,000 tonnes
Limestone production in 2012	165,000 tonnes
Annual export tonnages range 2003 - 2013	150,000 - 300,000 tonnes
Average annual limestone output 2003 - 2013	250,000 tonnes per annum
Anticipated average future limestone production	250,000 tonnes per annum
Includes anticipated average future coated stone	120,000 tonnes per annum

The reduced 2012 output reflected the need to establish a consistent dewatering regime in the western half of the quarry, which affected production for a few months. Production in 2013 focussed on supplying limestone to the asphalt plant. An average annual production of 250,000 tonnes per annum is expected for the remaining life of the quarry. The forecast future annual limestone production would be 25-30% higher than in very recent years, but less than historic production levels and concomitant with the substantial reduction in the remaining life of the quarry. Noting the flexible approach in the NPPF, this figure would be

subject to annual variations depending on market conditions. The weighbridge records load tonnages exported; it is recommended that this record for production monitoring purposes continues.

Duration

Proposed Working and Restoration Timescales: Policy LM1 requires, where appropriate, evidence that development can be completed within an agreed period. At the expected future rate of production of 250,000 tonnes per annum, the proposed reserves equate to a life of about 11 - 12 years (as at 2013).Thus this application proposes an end date for final cessation of mineral extraction and processing operations of 31 December 2025. This date allows for operational flexibility and future market conditions, but reserves could be exhausted beforehand, in which case mineral extraction and processing would cease earlier. Final restoration and landscaping would be completed during 2026.

Existing v Proposed Timescales: The current planning permissions require mineral extraction to cease by February 2042. The legislature has clarified that this period cannot be reduced by recourse to the Review process. However, based on anticipated production rates, and notwithstanding the proposed additional net reserves, the proposed working timescale in this application would significantly reduce the approved life of the site by 17 years. Securing a shorter permission timescale would facilitate the earliest cessation of working. Thus the proposed duration compares favourably with the extant timescale for winning and working which must be specified in any ROMP determination.

Timescale for Deep Dale Tip Removal: An earlier and shorter timescale than that proposed for removal of the Deep Dale tip would be preferable, to ensure the earliest possible completion of restoration and aftercare works in the dale and daleside/ridge. However, the applicant has justified the delay in commencing the removal of the tip until the start of Phase C (late 2017) on the grounds that it not possible to start earlier. This is because quarry waste in Tip 3 must first be removed and placed in the north west of the quarry (during Phase B) to provide a large enough area above the final restored water level of 240mAOD to accommodate the lagoon silts; and an 8 year period is necessary because large volumes of tip materials cannot be removed and placed at one time; sufficient time is needed for the materials to dry out before more can be added; also, the Deep Dale tip area needs time to dry out and stabilise following removal of each layer.
Extended Timescale for Retention of Asphalt Plant: In consideration of the extra timescale sought, the environmental impacts and benefits identified and assessed in 2006, 2010 and 2013, the established landscaping scheme, and other mitigation measures undertaken compliant with the permission, all remain relevant. To retain the asphalt plant for the period of continued operation of the quarry would not introduce any new or significant environmental impacts, such as to give rise to overriding objections from an environmental, amenity or landscape perspective; and from an air quality perspective it is in the public interest to retain the efficient plant rather than transferring stone for coating elsewhere.

Assessment of Land Rehabilitation Proposals

Policy Context for Deep Dale and Quarry Restoration: The NPPF (para.109) says the planning system should enhance the natural environment by remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land and (para.144) requires high quality restoration and aftercare of worked land at the earliest opportunity. Core Strategy Policy MIN1 requires restoration schemes for new minerals proposals or where existing sites are subject to mineral review, and (para.7.23) proposals must be justified by enhancement for overall benefit for natural beauty and wildlife, acknowledging that (para.14.33) the restoration of mineral workings *"is a significant opportunity to achieve National Park Authority outcomes"* for amenity (nature conservation) after-use, enhancing landscape,

recreational opportunities, biodiversity, geodiversity and cultural interest. These outcomes focus mainly, but not exclusively, on amenity (nature conservation) after-uses, and should include wildlife, landscape enhancement and recreation features.

Quarry and Deep Dale Restoration Strategy: It is important to ensure a comprehensive quarry restoration with a design that complements and reinforces landscape character and meets objectives in the LSAP. Whilst the Deep Dale tip was originally intended to be permanent, and there is currently no requirement to remove the tipped materials, Authority officers have sought to have this part of Deep Dale restored back to its original valley landform. Following site investigations, the applicant agreed to remove the tip and restore the dale. It is proposed to improve the landscape of Deep Dale and restore the site for nature conservation, biodiversity and recreation. The NPPF (para.109) refers to the need to protect soils so the officer recommendation proposes a comprehensive soils strategy for conservation and restoration and a detailed annual aftercare programme. Overall the restoration would enhance landscape character in accord with LDF Policy GSP2.

Assessment of Environmental Impacts

CS Policy GSP1 says where a proposal for major development can demonstrate significant net benefit to the National Park, every effort to mitigate potential localised harm and compensate for any residual harm to the area's valued characteristics should be secured. The following assessments examine potential for localised impacts and mitigation:

Landscape and Visual Impact Assessment (LVIA)

Landscape and Landscape Character: The site lies within an attractive part of the National Park in the designated White Peak National Character Area 52 (52,860 ha). The Peak District Landscape Strategy and Action Plan (LSAP) shows the site within the White Peak Regional Landscape Character Area (LCA) characterised by elevated limestone plateau pastures dissected by deeply cut dales and gorges. The LCA comprises Landscape Character Types (LCT) of high sensitivity given the Park designation and high value placed on the area and the landscape. Three LCT's relate to the site:

- Limestone Village Farmlands: Most of the quarry falls within this LCT which includes gently undulating plateau, pastoral farmland, drystone walls, narrow strip fields, scattered boundary trees, tree groups, village pastures, limestone and gritstone buildings and relict lead mining; the priority is to protect the historic pattern of enclosure, nucleated settlement pattern, integrity and setting of traditional buildings, whilst restoring the biodiversity of the pastoral farmland.

- Limestone Dales: The north-eastern and southern parts of the site (including Deep Dale tip) fall within this LCT which includes steep sided dales, the larger dales with rivers within rocky river beds, the smaller dales dry or with winterbourne streams, craggy outcrops, cliffs and scree slopes, limestone grassland, interlocking blocks of ancient semi-natural woodland, secondary woodland, scrub and historic mineral working; the priority is to protect and manage the mosaic of internationally important grassland, scrub, woodland, rock, river habitats, and cultural heritage, enhance diversity and opportunities for people to enjoy the landscape.

- Limestone Plateau Pastures: To the east and south-west of the quarry this LCT includes rolling upland plateau, pastoral farmland enclosed by limestone walls, regular small to medium sized rectangular fields, field dewponds, farm limekilns, tree groups and shelter belts, isolated stone farmsteads and field barns, medieval granges, relict lead mining and quarrying prehistoric hilltop monuments, open character; the priority is to protect the historic pattern of enclosure and wooded character, restoring biodiversity of the pastoral

farmland, and expanding boundary trees, within a sustainable farming system.

Receptor Value and Sensitivity of the Landscape: All three LCTs have very high receptor value, given the location within the National Park, SSSI's and SAC *(see Ecology and Environmental Designations later in this report)*, and intrinsic cultural, historic, landscape and ecological values. The LCT's sensitivity to the quarry is assessed as follows (summary):

LCT	Criteria	Assessed	Reason (taking account of receptor value)
Limestone Village Farmlands	Susceptibility to the quarry	Medium	Complex rural small scale landscape; intimate views, restricted by undulating upland plateau and boundary trees; but large quarried voids.
	Sensitivity	High	
Limestone Dale	Susceptibility to the quarry	High	Secluded, intimate landscape, views tightly controlled by landform and tree cover, key LCT characteristics diminished by the quarry.
	Sensitivity	Very High	
Limestone Plateau Pastures	Susceptibility to the quarry	High	Rolling upland plateau; some open views; historic, discrete, sparse settlement; some enclosure by stone walls and tree groups.
	Sensitivity	Very High	

Site Specific Landscape Appraisal, Quality and Value: Discordant elements include the quarry and ancillary development. CS Policy GSP3 sets out development principles to respect, conserve and enhance valued characteristics of a site and buildings. As an active quarry with ancillary development it may be held to have few valued characteristics, but selective development management principles apply in terms of impact, scale, siting, landscaping, materials, design, access, ground conditions and water demand, given the need to reduce impact on the character and setting of the surrounding landscape.

The Natural Zone: The site is wedged between two Limestone Dale Section 3 - Natural Zone areas (i) the wooded slopes on the south side of the Wye valley adjacent to the north-west boundary of the quarry, and (ii) the wooded slopes on the eastern and southern sides of Deep Dale, Churn Hole, the rock ridge between the quarry and Deep Dale tip, and Deep Dale south-west of Deep Dale tip. Policy L1 reinforces Policy LC1 which strongly restricts development in (but not adjacent to) the Zone to exceptional circumstances in the interests of the National Park. The development would not involve significant incursion into the Zone. Whilst some limited works within the Deep Dale part of the Zone may be necessary to complete the restoration and enhancement of that area for natural purposes, this in landscape terms would not significantly harm the visual and spatial integrity of the Zone.

Zone of Theoretical Visibility (ZTV): The visual influence of the quarry is restricted by topography and landform to a 3km area from the site boundary, in a south east to north west swath of land. The ZTV has regard to landform, but not intervening built structures, vegetation, trees or woodland blocks that may further restrict views. Nevertheless the existing and proposed ZTV's help establish worst case scenarios, based on Phase D development components, namely (i) extension of working activity into Deep Dale, (ii) creation of a peripheral access track to transport Deep Dale material into the quarry, and (iii) regrading works associated with the south eastern flank of the quarry within Deep Dale.

Existing Incongruous Visual Elements and Visual Mitigation: Existing and proposed visual elements that mitigate against the LCT's include: Deep Dale tip with bunds which effectively block the dale feature; the quarry with exposed engineered faces and benches and extraction techniques producing engineered forms within the landscape; the quarry plant site; quarry vehicle movements and excavation activities; extraction below the water table; and placement of large volumes of quarry waste and deposited tip material. Set against all that the quarry is generally contained within a locally discrete area and screened by higher ground and natural landform features. Naturally regenerated vegetation around the north

eastern site periphery and vegetation on the western flank of the eastern section of Deep Dale help screen and integrate the plant site, Deep Dale tip and other operational / disturbed ground into the landscape. Small areas of tree and shrub planting around the periphery of the quarry and Deep Dale tip also offer limited screening of areas of site disturbance.

Landscape Mitigation Strategy: Existing landform modulations and peripheral woodland screen belts would be retained. Visual and landscape mitigation includes the Deep Dale reinstatement; integration of quarry benches and faces to less engineered final form, which would weather and naturally regenerate, blending exposed rock colours into the landscape; creation of a water management channel from the quarry into Deep Dale to reflect naturally occurring spring / ephemerally wet valley / dale elements; and restoration and enhancement planting of locally indigenous broadleaved woodland, trees and scrub with species rich limestone grassland in the quarry and restored areas of Deep Dale. The Deep Dale restoration and watercourse and footpath reinstatement would provide substantial long term compensation and benefits for the relatively short-term visual disruption, within the context of the Limestone Dales LCT, significantly improving visual and amenity interests. All this would accord with the White Peak landscape guidelines.

Magnitude and Significance of Landscape Effects: The landscape assessment methodology includes criteria to determine the nature (sensitivity), susceptibility, value and change of landscape receptors and views obtained; the change and magnitude of effects on landscape receptors; the overall significance of effects [magnitude + sensitivity of receptor]; and correlation of the nature of effects with the nature of the landscape or visual receptors. The effects on landscape character are significant in terms of large scale disturbance of a quarry of this size; however, the magnitude has been compared to that of the existing quarry and ancillary development, and the Deep Dale tip, the cumulative adverse effects of which have been in place for a long period of time. The quarry does not contain characteristic features of the Limestone Village Pastures LCT in which it is predominantly sited; and the Deep Dale tip is an uncharacterful feature within the Limestone Dales LCT. The development would shorten the life of the quarry and reduce the time over which landscape receptors experience the continued negative effects. Whilst removal of the tip would adversely affect the local landscape (given the lack of possible mitigation, temporary footpath closure, and haul road construction within this secluded landscape), once restored the landscape character of the dale would be significantly improved:

Summary of Assessed Magnitude of Visual Effects		
LCT	Magnitude of Effect	Significance of Effect
Development Stage		
Limestone Village Pastures	Very Low, Beneficial	Very Slight Beneficial
Limestone Dale	Medium, Adverse,	Substantial Adverse
Limestone Plateau Pastures	Neutral	Neutral
Post Restoration Stage		
Limestone Village Pastures	Medium, Beneficial	Moderate Beneficial
Limestone Dale	High, Beneficial	Substantial Beneficial
Limestone Plateau Pastures	Neutral	Neutral

Residual Landscape Effects: The quarrying activities would be confined to the existing disturbed quarry area. Given the aquifer and water table, and available material for infilling the excavations, the lake would be an unavoidable feature in the quarry restoration. The lake, within the quarried cliff faces and benches would not be in keeping with the character of the Limestone Village Pasture LCT in which it would be set, and this would not be consistent with the principle of Policy L1 to enhance valued landscape character, hence the landscape

consultant's adverse rating. However, the creation of shallows, and a more organic shaped landform would help integrate the western and eastern quarry margins into the local landscape character setting; native broadleaf planting, calcareous grassland and natural regeneration, would further integrate the quarry into its setting and increase landscape amenity with new habitats. The alternative continued working under extant consents, without generation of restoration material from Deep Dale tip, would result in a smaller, much deeper lake occupying the western half of the quarry, less conducive to good restoration design, landscape integration and local landscape character. The Deep Dale restoration would have substantial beneficial significance on the Limestone Dale LCT.

Visual Impact

Natural Screening: Given the topography and surrounding vegetation, the quarry is contained within a locally discrete area and the void is from most views screened by higher ground and natural landform features. Areas of naturally regenerated vegetation around the north eastern periphery of the site, together with vegetation on the western flank of the eastern end of Deep Dale help to screen and integrate into the landscape the quarry plant, Deep Dale tip and other operational / disturbed ground. Small areas of tree and shrub planting around the periphery of the quarry and the Deep Dale also offer limited screening.

Principal Representative Viewpoints and Visual Receptors: These include views from within Deep Dale and Wye Valley, the A5270, footpaths south and north of the site and the A6 corridor. Visual receptors include isolated dwellings and farmsteads such as Arden Villas, Chelmorton Flat, Calton Farm, Topleyhead Farm, Mosley Farm and Woolow Farm; settlements with public open space including King Sterndale and Cowlow; recreational users of this area including Deep Dale, the Wye Valley and Monsal Trail; and transient receptors including users of local footpaths, the A6, the A5270 and Hardybarn Lane.

Magnitude and Significance of Visual Effects: *(officer summary)*:

Viewpoint Receptors *[Views, Magnitude of Effect and Significance of Effect]*			
Stage	*Views Obtained*	*Magnitude*	*Significance*
Wye Dale & Monsal Trail Car Park & Trail (0.06km from quarry): High sensitivity			
Existing	High plant, asphalt chimney; limited by vegetation.	Medium adverse	Notable adverse
Development	Similar to existing.	Medium adverse	Notable adverse
Restored	The resulting 'dale' ridge.	Medium beneficial	Moderate beneficial
Footpath 15 (east of the site) (0.01km from quarry): Medium sensitivity			
Existing	Site access / entrance, office, plant, upper west quarry face.	Medium adverse	Moderate adverse
Development	Similar to existing.	Medium adverse	Moderate adverse
Restored	Planting/natural regeneration.	Medium beneficial	Slight beneficial
Footpath 15 (lagoon area) (0.01km from quarry): Medium sensitivity			
Existing	Landslip, lagoons, pumps.	Medium adverse	Moderate adverse
Development	Earthworks, haul road / ramp, Deep Dale tip operation, dale restoration, lagoon works.	Medium adverse	Moderate adverse
Restored	Deep Dale restored to natural profile / vegetation structure.	Medium beneficial	Slight beneficial
Footpath 19 (Junction Churn Hole & Deep Dale) (0.01km from quarry): Medium sensitivity			
Existing	'Dale profile' slopes, 'made ground', natural regeneration.	Low adverse	Slight adverse
Development	Deep Dale tip removal, 8 yrs.	Very high adverse	Substantial adverse
Restored	Reinstated dale.	Medium beneficial	Slight beneficial

Footpath 37 (south section of Deep Dale) (0.00km from quarry): Medium sensitivity			
Existing	Deep Dale valley floor and quarry tip; east culvert portal.	Medium adverse	Moderate adverse
Development	Deep Dale tip removal, 8 yrs.	High adverse	Notable adverse
Restored	Reinstated dale landform, vegetation and stream.	Very high beneficial	Notable beneficial
Footpath 37 (south western area of Deep Dale) (0.13km from quarry): Medium sensitivity			
Existing	Deep Dale valley floor and quarry tip; west culvert portal.	Medium adverse	Moderate adverse
Development	Deep Dale tip removal, 8 yrs.	High adverse	Notable adverse
Restored	Reinstated dale landform, vegetation and stream.	Very high beneficial	Notable beneficial
Footpath 19 (northern end) (0.05km from Quarry): Medium sensitivity			
Existing	Quarry faces, benches, plant, operational areas, Deep Dale and tip from close distance.	High adverse	Notable adverse
Development	Progressive working and restoration, quarry and dale.	High adverse	Notable adverse
Restored	Planting, grassland, natural regeneration, quarry + dale.	Low adverse	Slight adverse
Footpath 19 (central section) (0.25km from Quarry): Medium sensitivity			
Existing	N+W upper quarry faces, dale N ridge screens quarry floor, set in wider landscape.	Medium adverse	Moderate adverse
Development	As existing, plus dale works / movements for restoration.	Medium adverse	Moderate adverse
Restored	Regenerating quarry benches + faces, upper dale ridge.	Low adverse	Slight adverse
A5270 / Footpaths 30 & 32 (1.32km from quarry): Medium sensitivity			
Existing	N+W quarry faces at distance within landscape; intervening vegetation and landform.	Low adverse	Slight adverse
Development	Minor glimpses of machinery restoring Deep Dale.	Low adverse	Slight adverse
Restored	Quarry face / top of dale ridge integrated in landscape.	Very low adverse	Very slight adverse
Arden Villas (1.32km from quarry):High sensitivity			
Existing	N+W quarry faces in wide landscape; intervening vegetation and landform.	Low adverse	Moderate adverse
Development	Minor glimpses of machinery restoring Deep Dale.	Low adverse	Moderate adverse
Restored	Quarry face / top of dale ridge integrated in landscape	Very low adverse	Slight adverse
Users of the A5270 (1.03km from Quarry): Low sensitivity			
Existing	Upper+middle quarry faces, benches, dale ridge, distant.	Low Adverse	Very Slight Adverse
Development	Restoration works: material movement to NW quarry area and from Deep Dale.	Low Adverse	Very Slight Adverse
Restored	Upper quarry faces, benches, dale ridge integrated in landscape.	Very low adverse	Minimal adverse
Footpath 2 (north of Chelmorton Flat) (0.66km from quarry): Medium sensitivity			

Existing	Upper+middle quarry faces, benches, dale ridge, distant.	Low adverse	Slight adverse
Development	Restoration works: material movement to NW quarry area and from Deep Dale.	Low adverse	Slight adverse
Restored	Upper quarry faces, benches, dale ridge integrated.	Very low adverse	Very slight adverse
Footpath 9 (Wye Dale) (0.24km from quarry): Medium sensitivity			
Existing	Over Wye Dale, regenerating NE quarry ridge; site access, plant site, NE Deep Dale.	Low Adverse	Slight Adverse
Development	As existing but restoration planting to plant site.	Low Adverse	Slight Adverse
Restored	As existing with planting and natural regeneration.	Very low adverse	Very slight adverse
Footpath 9 (Wye Dale NE of Monsal Car Park) (0.45km from quarry): Medium sensitivity			
Existing	Quarry access, floor, faces, benches, plant, operations, east end of Deep Dale + tip.	High Adverse	Notable adverse
Development	Quarrying, restoration and Deep Dale stabilisation work.	High Adverse	Notable adverse
Restored	Restored Deep Dale and quarry, lake, regeneration, landscaping.	Medium adverse *(given LCT lake deviation)*	Moderate adverse *(given LCT lake deviation)*

Visual Impact and Mitigation of the Asphalt Plant: Landscape and Visual Impact Assessments (LVIAs) in 2010 and 2013 provided assessments of the asphalt plant. The principal Zone of Visual Influence (ZVI) is a limited section of hillside to the north above Wye Dale, a maximum 500m away from the site. At low elevations, from the Monsal Trail Wyedale car park and the A6, the plant is well screened by woodland and steep slopes; to the north-west by quarry faces and, other than the top of the stack, to the east by a steep wooded bank down to the road. Views into the site from higher elevations have been assessed from public footpaths 8 and 9 (Green Fairfield Parish), 15 (Blackwell Parish) and 19 (Chelmorton Parish). The visual significance of the plant was rated slight to moderate; all viewpoints are of medium sensitivity, except the car park, which is of high sensitivity, but magnitude there is low and significance moderate. The plant has a stack height of 28m rising to an elevation of 280m AOD, 10m lower than the surrounding limestone plateau. It is not possible to totally visually screen higher elements, the stack in particular, from higher ground. Mitigation measures were implemented in 2007: The buildings and structures are finished in an approved colour [chimney stack, eastern facades, and stock bays frame painted Olive Green]; landscaping has raised adjacent ground by soil placements east of the plant, on which native woodland tree and shrub species have been planted (to screen stock bays and main plant from the A6 and Monsal Trail car park); east of the woodland planting area retaining wall native climbers have been planted; a bund has been widened and trees planted south-east of the aggregates plant; and retaining walls have been improved. Given this mitigation the visual impact of the asphalt plant is significantly reduced. Planting maintenance has been important. It would be appropriate to ensure continued planting maintenance (as necessary) for the extended life of the plant, to guarantee increasing effectiveness. There would be no additional adverse landscape or visual impact due to retaining the plant.

Visual Impact of Emissions to Air: Visual emissions to air can result in adverse impacts to visual receptors and landscape character. Subject to stringent dust control measures, and given existing control over the asphalt plant emissions *(see 'Air Quality and Dust Impact*

Assessment' later in this report) there are unlikely to be significant dust impacts on visual amenity or the landscape. On very cold days condensing steam from the asphalt plant emissions could occur but the potential impacts are assessed as minimal to slight adverse.

Trees and Woodland Impact Assessment

Existing Trees, Woodland and Shrub: These include mixed deciduous woodland parallel with the eastern site boundary from Deep Dale brook; trees and woodland in Churn Hole; on the north and south boundaries of the dale southwest of the site; and individual trees outside the east and north boundaries. All contribute to visual amenity and structural landscape form. Some are visually prominent, others very secluded due to local topography. The planting composition is varied with mature, young, mixed, uneven, age structure. None of this vegetation would be physically affected by the development. There is no ancient woodland or Tree Preservation Orders within or immediately adjacent to the site and tree cover in the operational quarry area is largely absent. However, eight principal woodland block areas are within / around the quarry boundary, as follows:

On Site Perimeter Woodland Areas (A)			
A	Location	Woodland Character	Visibility (from)
1	NE site boundary / Deep Dale outer slope / Wye Dale.	Planted mix native deciduous species.	A6 / Monsal Trail car park; part screens quarry plant.
2	E Deep Dale outer slope / embankment slip area.	Naturally regenerated trees / shrubs.	Footpath 15; helps integrate disturbed ground in setting.
3	SE flank of Deep Dale, side adjoining quarry.	Sparse woodland, wide area, disturbed ground.	Footpath 15.
4	E retaining bank ('dam') to Deep Dale tip / silt lagoon.	Dense woodland disturbed ground.	Footpaths 15, 19, and 37.
5	N Deep Dale slopes adjoins north edge of Deep Dale tip.	Single woodland block and individual trees.	Footpaths 15, 19, and 37.
6	S & SE site boundary, in Deep Dale.	Two sets of linear tree/shrub planting.	Footpath 37.
7	SW site edge within Deep Dale.	Woodland on placed quarry waste.	Footpath 37.
8	NE outer slope of quarry, part of Wye Dale.	Mature woodland with understorey species.	A6, Monsal Trail car park, Footpaths 9 and 22.

Assessment of Tree and Woodland Value: The visual value of woodland and trees has been assessed using the Helliwell Amenity Valuation (HAV) System, endorsed by the Tree Council and the Arboricultural Association in Guidance Note 4: *Visual Amenity valuation of trees and woodlands (the Helliwell System)* (2008). For Topley Pike the evaluation is based upon woodlands and tree blocks rather than individual trees, because the vegetation largely comprises woodland block elements rather than distinctive individual trees. The appraisal is based on evaluation of (i) size, (ii) position, (iii) population, (iv) woodland composition and structure, (v) compatibility, and (vi) presence of other trees and woodland in the vicinity), relative to significance to local landscape character.

Helliwell Amenity Valuation (HAV): Summary Scores								
Valuation Factors	Woodland Area							
Scope Range	1	2	3	4	5	6	7	8
Total Scores 2.5min to 23.5max	9	8	8.5	9.5	8.5	7.5	9	15.5

Analysis: The affected woodlands are of relatively low amenity value. Area 8 with the highest amenity value is a main local visual feature. The other woodland areas have relatively low

scores being small, not prominent landscape features (and comprise even-aged young woodland or mature woodland without very large or individual trees.

Impact on Trees and Woodland: The higher valued amenity woodlands Areas 1 and 8 would not be disturbed; Areas 2 and 5 would be part disturbed by restoration works in Deep Dale between 2017 to 2025; Areas 3, 4, 6 and 7 would be removed for restoration of the dale (years 2017 to 2025). Thus the development would result in the loss of 4 woodland blocks and 2 part blocks, totalling 0.85ha within the site; and phased progressive restoration to Deep Dale would temporarily cause visual disturbance to the envelope of amenity views and context of adjacent trees, woodland and shrubs. The greatest visual loss would be the Area 4 woodland necessary to remove the Deep Dale tip and secure reinstatement of the dale. These woodlands are planted or regenerated on landforms created by the quarry operations.

Replacement Planting and Management: Mitigation for tree loss would be achieved by landform and landscape restoration and enhancement planting of locally indigenous trees and scrub with species rich grassland within the quarry and restored areas of Deep Dale. The restoration would result in a more beneficial structure to the tree, woodland and shrub setting and visual amenity value of the vegetation. About 2.85ha of new planting would be undertaken using native and locally indigenous tree and shrub species, including Small leaved Lime, Rowan, Field Maple, Bird Cherry, Hazel, Hawthorn, Blackthorn, Buckthorn and Dog Rose. Whilst the dales woodlands are dominated by Ash, given national and Authority action plans regarding the Chalara (Ash Dieback) disease, Ash is not included in the planting mix. The planting would contribute positively to woodland and landscape character. All new planting would be subject to five years maintenance.

Countryside Access and Recreation Impact Assessment

Open Access Land and Recreational Amenity: The White Peak is a highly valued recreational resource. There are areas of Open Access Countryside, designated under the Countryside and Rights of Way Act 2000, close to the Site, mainly associated with Wye Dale and the Dales that branch off from the River Wye. Deep Dale is a popular recreational amenity. Its valued characteristics are bound up with the qualities of its setting within the wider landscape. It is evident from visitor popularity that the quarry has not had significant detrimental impact on the recreational use and visitor enjoyment of Deep Dale, the Monsal Trail and locality.

Public Rights of Way (PROW): There are several public right of way footpaths in addition to open countryside in the vicinity of the site: The Monsal Trail (former Midland Railway) bridleway runs past Wyedale car park opposite the quarry access. Footpath 15 starts near the quarry entrance and runs southwards outside the eastern quarry boundary; at the south eastern corner of the quarry it splits into three with one route west into Deep Dale as diverted footpath 37, one south-south-west along the Caxterway Lane Track towards the A5270 as footpath 19, and one south through Churn Hole towards the A5270 as footpath 29. The definitive route of footpath 37 is north of the current diverted route; it runs westwards along the original line of the valley bottom in the area now buried under Deep Dale tip, currently neither accessible nor safe to walk on. The diverted route is protected and partly screened from the tip by a fence, mound and tree planting; it rejoins the definitive route at the western end of the tip. The definitive route of footpath 19 is different to the route used by walkers; the used route bypasses the first 50m of the definitive route following footpath 29 for 30m, then the diverted Footpath 37 for 40m before re-joining the definitive route. The development may have significant impacts on the recreational use and visitor enjoyment of Deep Dale. The visual impacts on recreational footpaths are addressed in this report under *'Visual Impact'* and dust and noise impacts are addressed in the Air Quality and Dust Impact and Noise Assessments later in this report.

Footpath Closure, Effects and Mitigation: Core Strategy Policy T6 seeks to safeguard and enhance the rights of way network to improve connectivity and accessibility; similarly the Derbyshire Rights of Way Improvement Plan (2007) and Statement of Action (2013–2017) seek to ensure the network is open and available for use and to provide a more connected, safe and accessible network. Wherever possible footpaths should be accommodated along existing legal alignments (or a formal diversion order will need to be applied for). The application includes proposals to use Section 257 of the Town and Country Planning Act 1990 to obtain an Order for temporary closure of 400m of previously diverted footpath No.37 along the southern edge of Deep Dale Tip, for up to eight years. The footpath runs on a level raised by previous tipping and the tipped materials have to be removed to uncover the natural southern valley side slope for the Deep Dale restoration. This closure would indirectly effect the footpath network: users of footpath 37 heading in a northerly direction would not be able to continue along the south of the tip to access footpaths 15, 29 and 19, and vice-versa. However, walkers would be directed along footpaths 19 and 18 to rejoin footpath 37 in Deep Dale 1km further south. The alternative footpath 37 1,300m route would replace the current 1,050m; some 650m would remaining open, but not as a through route. Information boards would be sited and a publicity brochure made available to local Visitor Centres and, if necessary, placed in a weatherproof structure in Wyedale car park. Once the dale is restored, footpath 37 would be reinstated on its original route along the valley floor.

Recreation and Public Safety: The quarry boundary, Deep Dale tip and Deep Dale restoration areas would be securely fenced to prevent public access to the operational area. DCC Public Rights of Way Section had requested consideration be given to providing additional parking for use as a Wyedale overspill car park for Monsal Trail users, a safe A6 road crossing and a footpath link to facilitate an extension of the Monsal Trail into Buxton. In consideration of this the applicant does not own land close to the Monsal Trail car park suitable for use for car parking; and a 'safe crossing' of the A6 would be a complex issue to resolve given that this is a busy A Road. The applicant is, however, willing to work with DCC through discussion with the Highway Authority.

Long Term Footpath Benefits: Footpaths 37 and 19 would be reinstated along their original, definitive routes once Deep Dale is restored. The main benefits on footpaths users would be the Deep Dale restoration and footpath 37 reinstatement along the valley floor. Users of footpath 37 would be able to walk through a natural valley for the full length of Deep Dale, which has not been possible since Deep Dale tip started operating in the 1960's. This would provide a superior route more compatible with the rest of footpath 37 and located within a much improved, natural landscape within which users would experience significantly improved views, consistent with the White Peak guidelines.

Hydrogeological and Hydrological Assessment

Aquifer and Springs: The site bedrock, the Woo Dale Limestone, is a Principal Aquifer requiring protection from pollution and derogation. The site is within a Zone 3 Source Protection Zone (SPZ3) for the groundwater resource. Drainage of the main of limestone mass is eastwards towards the River Derwent; locally the natural drainage has been substantially affected by past mining activities, which increased east-west groundwater flows. The local hydrogeology is complicated and conduit groundwater flows highly unpredictable is because the limestone is heavily faulted; however, it is concluded that the limestone in the quarry is a minor aquifer. Nevertheless it has been important to ensure that there is no potential for significant impacts on groundwater quality, conduit systems, local water resources, licensed abstractions, Deep Dale springs or water quality in the River Wye. The closest springs are north of the site associated with the River Wye and Woo Dale valley. Local springs and seepages vary between perennial, seasonal and ephemeral. Springs are recorded in Chee Dale, Cow Dale, Monks Dale, Deep Dale and Wye Dale; most are overflow

springs (seasonal discharge), indicative of unconfined flow in the vadose zone, but some represent perched groundwater. Springs close to the site discharge to the River Wye and its tributaries; those at the river are baseflow springs; that in Woo Dale is an overflow spring. Some are of European importance, i.e. alkaline fen and tufa-forming springs in Monk's Dale.

Quarry Dewatering: The quarry operates under a discharge consent which allows the discharge of water, non-volatile organics <5mg/l and a suspended solids load of <50mg/l. Much of the quarry had been worked in a dry state, but dewatering took place in the western part of the quarry until early 2007, with limestone extraction down to 230mAOD, then recommenced in January 2011 to enable continued extraction below the water table; the floor is now down to 225mAOD. The dewatering "skims" the top off the groundwater which naturally flows through the limestone. The proposed working depth of 225mAOD would continue to involve extraction to 15m below the water table; dewatering would continue with the water being pumped to the existing settlement lagoons. Since the Environment Agency has raised no objection subject to a depth restriction of 225mAOD, it is implicit that a dewatering licence for that depth may be granted when 'Water Transfer Licence' controls come into effect under Section 1 of the Water Resources Act 2003.

Impact Assessment Data**:** Dewatering is likely to drawdown groundwater and has potential to impact on local hydrology. A Hydrogeological Impact Assessment (HIA) assesses the impact of continued dewatering to 225mAOD. The HIA includes information on hydrological catchments for the River Wye and Deep Dale, analysis of the river character from Buxton Sewage Treatment Works to Chee Dale, river gauging station data, groundwater and surface water monitoring data, borehole logs, BGS borehole records, hydrographs, flow duration curve, and water quality sampling results. A Technical Note provides information about tracer dye checks of flowpaths in the limestone.

Surface and Groundwater Monitoring: A scheme of monitoring was installed in 2011 to target potential interaction between quarry dewatering and flows within the River Wye and Deep Dale systems. The scheme seeks to quantify the site water balance and assess current and future groundwater inflow rates, to assess natural flows from the dale and potential correlation with groundwater levels, to assess water gains / losses, and to monitor groundwater level changes and any relationship with the Wye and Deep Dale valley systems. The monitoring regime at the quarry includes four monitoring boreholes into the limestone, monitoring dewatering rates (borehole water level); stress (sump) testing; rainfall measurements; and flow monitoring in Deep Dale.

Impact of Dewatering on Deep Dale and River Wye Recharge: Groundwater flows are controlled by stratigraphy and fault zones in close proximity to the quarry boundaries, creating flow zones and low permeability barriers, with a localised flow system through the quarry. The HIA says there is no direct connection from the quarry sump to the River Wye, since the two areas are separated by a fault barrier which creates two independent hydrological facies. Whilst the sump intersects groundwater flow along the Wye corridor, there is no observable influence on the river from dewatering. The monitoring indicates groundwater feeding the river west of the quarry far exceeds that intercepted by dewatering. One borehole monitors Deep Dale and a different hydrogeochemical signature indicates this is within a different localised groundwater flow system, not influenced by dewatering, with groundwater levels 2 to 6m below the northern end of the dale, emphasising the stream is an ephemeral, losing stream. The river stage at the end of the monitoring period showed no net fall compared with the start. The conclusions are that the abstraction process is non-consumptive; all dewatered groundwater is channelled to the river downstream of the quarry; the monitored net baseflow and recharge to the river remained unchanged by dewatering; and it is likely that discharging pumped water into the settlement ponds, and out to the river via the Deep Dale channel and culvert, is compensating the interception, such that dewatering effects are limited to the immediate quarry environs with no direct impact on the dale or the river.

Future Water Monitoring: The current monitoring regime (groundwater levels, surface water locations and rainfall) would continue until limestone extraction ceases; the monitoring would comprise the current scheme supplemented by an annual data report and pentannual interpretive report. As a pre-cautionary measure in the unlikely event that a negative effect is observed, or in the annual data return or interpretive report (of trends in ground water level and measured flows), there would be immediate cessation of pumping until the effect is discussed and agreed with the Environment Agency, Natural England and this Authority. A Section 106 planning obligation should ensure continued off-site monitoring, and conditions are recommended to maintain monitoring within the site and cessation of pumping in the event of an incident potentially deleterious to the water environment and dependent ecology.

Maintenance of Surface Water Quality: The stretch of the River Wye between Ashford Quarry 1.25km northeast of the site and Topley Pike 0.25km northwest of the site has a moderate ecological status and good chemical 'at risk' status. To maintain this, all site water would be pumped to settlement lagoons to allow suspended solids to drop out. In the event of accidental spillage of fuels or oils, the management system incorporates oil absorbent booms to hold and treat water prior to discharge. There should be no change in groundwater chemistry or quality and no impact on discharge water quality, due to dewatering.

Groundwater Quality and Licensed Abstractions: The groundwater is good quality. There are local water producing boreholes and springs. Within 2.5km of the quarry there are, under the Water Resources Act 1991 and Water Act 2003, four deregulated licences, one for Topley Pike Quarry process water; five abstraction licences, one for Aggregate Industries process water; seven discharge permits, one for Topley Pike Quarry to discharge water via settlement lagoons to the River Wye; and three private supplies. The Environment Agency Catchment Abstraction Management Strategy (CAMS) assesses water available for abstraction licensing. An environmental flow indicator (EFI), a scenario where licences abstract at full capacity (Fully Licensed Scenario), and the actual average amount of water abstracted over 6 years (Recent Actual Scenario) are used for different flow conditions which take account of natural change in river flow through the year. The quarry is in the Buxton Groundwater Management Unit (GWMU) area which has assessed "Water Not Available for Licensing" (more water has recently been abstracted than the amount available). However, no licensed or registered private groundwater supplies, landfills or springs have been identified as at risk from the proposed workings.

Quarry Flood Risk Assessment and Surface Water Management: The quarry is not within a defined flood risk zone. All runoff from the quarry void and production area that flows naturally or is pumped to lagoons is captured after settlement in the quarry sump. About 95% of incident rainfall gravitates to low points within the quarry or infiltrates to ground on bench or quarry floors. The remaining 5% is captured by the site drainage system that drains to lagoon 1 which has 300m^3 freeboard storage providing attenuation for a 1 in 100 year (+20%) flood event. A high level controlled flow outlet discharges to lagoon 2 prior to discharge from the site. If dewatering ceased at any stage, the base of the quarry would flood to approximately 238-240mAOD and the groundwater flow regime would essentially be restored to the pre-dewatering setting.

Deep Dale Flood Risk Assessment and Surface Water Management: The Environment Agency flood risk map shows flooding within Deep Dale; the flood zone is occupied by Deep Dale tip with flows culverted beneath it, and flooding down the valley is controlled by the culvert capacity. Downstream of the culvert a wide channel accommodates flows, although the stream banks are shallow with low-lying ground 1-2m either side which may be prone to flooding; downstream of the channel is another culvert restriction. Any flooding would be most likely to occur up-gradient of the tip culvert. During the removal of Deep Dale tip, surface water from the disturbed area would drain into a sump. The final phase of tip removal would take place during a dry spell in the summer when the stream is not flowing, to

minimise the risk of workings being flooded; should water have to be removed from the excavation it would be pumped via flexible pipeline to the existing settling lagoons. Since the 2010 landslip, the lagoons have been re-profiled, butyl lined, and a bund of limestone chippings installed on the west bank. A management plan would be agreed with the Agency to include control measures for sediment mobilisation and flood evacuation procedures. The stream would be unaffected until most tip material has been excavated and the culvert removed, following which restriction in the valley would focus on the lower culvert which has capacity to accommodate high magnitude storm events. In the event that the culvert capacity is breached, flows would back up the Deep Dale channel and overbank into a plateau area within the valley.

Contaminants, Fuel Storage and Liquid Waste: No pollution incidents have been recorded at the quarry or from the asphalt plant or Deep Dale tip. Any water pumped would be tested prior to discharge. The environmental management system includes collection and treatment of liquid waste from vehicle maintenance. Liquid storage tanks would comply with pollution prevention guidelinesfoul sewerage would be contained within a holding tank and emptied by tanker. Vehicle maintenance would occur within designated areas that allow for containment of spillages from oils, fuels or lubricants. Based on environmental best practice, the risk to the water environment from potential spillage / discharge is considered to be very low.

Landfills: There are four historic landfill sites within 2.5km of the quarry. None of these landfills should be affected by effects on local hydrology / hydrogeology.

Drainage, Evaporation and Proposed Lake: Hydrological impacts on the Deep Dale stream would be insignificant; the re-creation of open channel would increase the length of the watercourse, but the volume of surface water that enters the channel would not increase significantly. The new quarry lake would change local hydrology and may make sustained flows at the lower end of Deep Dale more common; the open water body would increase annual evaporative losses, but this is negligible within the context of the local water system.

Ecology and Biodiversity

Ecology and Environmental Designations: The site lies immediately adjacent to the Peak District Dales Special Area of Conservation (SAC) (2,326 ha) of international conservation importance (a ‘European Site’ part of the network ‘Natura 2000’ sites containing rare, endangered or vulnerable habitats and species), between the Wye Valley Site of Special Scientific Interest (SSSI) immediately north of the quarry, and Topley Pike and Deep Dale SSSI (50.59ha) to the south. The SAC boundary is coincident with both SSSI boundaries in the vicinity of the quarry. The SAC includes a diverse range of habitats and species including semi-natural dry calcareous grasslands and scrubland facies, forests of slopes, screes and ravines, European dry heaths, calaminarian grasslands, alkaline fens, calcareous and calcshist screes and rocky slopes with chasmophytic (rock crevice) vegetation, white-clawed crayfish, brook lamprey and bullhead. Both SSSIs are notified for the importance of the White Peak limestone dales, with exposed areas of high geological and geomorphological interest and important semi-natural woodland, scrub, species-rich grassland and stream habitats. Both SSSIs contain some of the most flower-rich habitats that remain in the White Peak, including large areas of species-rich calcareous / calcicolous, mesotrophic and acidic grassland, which support a number of nationally rare or scarce plant species. The Wye Valley SSSI includes several dry side dales including parts of Deep Dale (Taddington), Hay Dale, Tideswell Dale, Blackwell Dale, Flagg Dale, and Woo Dale. A wide variety of habitats within the dale system include permanent running water, woodland, limestone cliffs, local areas of open scree and tall-herb grassland., and woodland developed on cliffs and steep, often scree-covered slopes.

The Topley Pike and Deep Dale SSSI in moist areas contain ferns and bryophytes. The cliffs and screes in Deep Dale have a rich flora, with typical leached limestone grasslands along the upper edge and areas of ash dominated broad leaved woodland with sycamore. A small part (0.2ha) of the Topley Pike and Deep Dale SSSI, on the western edge of the Deep Dale tip area, lies within the site, but it does not include the SAC designated features and loss of grassland here should not affect the SSSI conservation objectives or integrity of the designated site. Limestone dust deposited on the Deep Dale tip has destroyed the typical zonation on limestone dale sides, but calcicolous plants thrive. The calcareous grassland within the SSSI/SAC section of the site is untypical grassland; no national rare or scarce plants are present, but nationally declining or restricted distribution species are; it supports more than 30 plant species associated with semi-natural grassland communities.

Deep Dale and Topley Pike SSSI is a Derbyshire Wildlife Trust Local Nature Reserve (LNR). The site includes a Key Ecological Area of unimproved calcareous grassland, a non-statutory designation based on the historical presence of field woundwort, but not recorded in 2011 and 2013 botanical surveys. The site is also designated a RIGs site. There are no non-statutory sites of nature conservation interest within the site. There are 26 Local Wildlife Sites within 5km of the site, the nearest being Tunstead Quarry 500m to the north, designated for its unimproved calcareous grassland. Five other SSSI's are within 5km of the site [(Wye Valley (the nearest); Monk's Dale; Duchy Quarry; Waterswallows Quarry and Calton Hill]. The Derbyshire Dales National Nature Reserve (NNR) is approximately 4km northeast of the site. There are also three other LNRs within 5km of the site (Priestcliffe Lees, Miller's Dale Quarry and Chee Dale).

Wildlife Protection: Several species and habitats with potential to exist within the site or local area are collectively protected by the Wildlife and Countryside Act (WCA) 1981 as amended by the Countryside and Rights of Way (CRoW) Act 2000, the Protection of Badgers Act (1992), the Wild Mammals (Protection) Act (1996), the Natural Environment and Rural Communities (NERC) Act 2006, the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended 2009), and the Conservation of Habitats and Species Regulations 2010:

The Biodiversity Duty: Regulation 3(4) of the 1994 Regulations imposes a statutory duty on the Authority to have regard to the Habitats Directive 92/43/EEC in the exercise of any functions. The Authority also has a duty, under Section 40 of the NERC Act 2006, to the conservation of biodiversity ('the Biodiversity Duty') including a legal duty to European Protected Species ("EPS") in determining applications for development which may impact on them. The Authority also has a duty to ensure planning decisions include conditions to avoid conflict with the statutory protection afforded to wildlife by the WCA and Regulations, the statutory duty of the Authority to protect wildlife, and compliance with relevant Development Plan policies to protect wildlife. The Governments guidance on 'Protected species and sites: how to review planning proposals' (12 May 2015), and 'Wild birds: surveys and mitigation for development projects' (28 March 2015) collectively requires Natural England's Standing Advice to be applied to planning decisions. Under the Biodiversity Duty the Authority must show regard for conserving biodiversity in all its actions, including issuing planning permissions; the recommended conditions, subject to monitoring and enforcement, would discharge this duty.

Duty to Consider Derogation Tests: The Habitats Directive provides for derogation from the prohibitions providing conditions are met; those derogations are transposed into the Conservation of Habitats and Species Regulations 2010 as a licensing regime that allows what would otherwise be an unlawful act to be carried out lawfully. Under Regulation 53 three "derogation tests" must be applied by Natural England in considering licencing applications. This Authority, when deciding whether to grant planning permission, must consider the

likelihood of derogation and the tests; failure to do so would breach Regulation 3(4). The tests (in summary) are: (i) to preserve public health, public safety, or other imperative reasons of overriding public interest, including of a social or economic nature and beneficial consequences of primary importance for the environment [*Regulation 53(2)(e) 'mitigation licences'*]; (ii) no satisfactory alternative that will cause less harm to the species [*Regulation 53(9)(a)*]; and (iii) that the action authorised will not be detrimental to the maintenance of the population [*Regulation 53(9)(b)*] (i.e. favourable conservation status of the species must be maintained which may necessitate the creation of new habitats to offset any damage).

Habitats Assessment: Regulation 61 applies Article 6(3) of the Habitats Directive making it the responsibility of this Authority (as the 'competent authority') to carry out an Appropriate Assessment if significant impacts on a European Site are considered likely. The European Commission's guidance in relation to Habitats Assessment recommends a four stage approach to address the legislation as follows:

Summary of Habitat Regulations Assessment ('HRA') Process		
Stage	Description	Legislation
1] Screening:	"Test of likely significant effect" on Natura 2000 site	Habitats Directive Article 6(3) & Habitats Regulations 61(1)
2] Appropriate Assessment by the competent authority (in this case PDNPA):	If likely to have significant effect on integrity of a European site; considers impacts, implications relative to the site's conservation objectives, and mitigation.	
3] Assessment of alternative solutions:	If not possible to fully mitigate adverse impacts.	Habitats Directive Article 6(4) & Habitats Regulation 62
4] Assessment where adverse impacts / no alternative solutions:	Assesses compensatory measures where the project or plan should proceed for Imperative Reasons of Overriding Public Interest (IROPI).	

Given confirmation by Natural England that the information provided is sufficient for the stage 1 screening, and conclusions that there would be no 'Likely Significant Effect' upon the Peak District Dales SAC and an Appropriate Assessment / further HRA is not required, it has not been necessary to progress the habitats assessment to stage 2.

Biodiversity Action Plans (BAP) Context: The UK Biodiversity Action Plan (UKBAP 1992-2012) includes detailed action plans for priority habitats and species. The UK Post-2010 Biodiversity Framework succeeds the UKBAP and identifies activities to complement biodiversity strategies in achieving the international Strategic Plan for Biodiversity (2011-2020) 'Aichi targets' supporting the Convention on Biological Diversity. The Peak District Biodiversity Action Plan (LBAP 2011-2020) identifies local priority habitats and species.

Habitats and Species of Principal Importance: Lists of habitats and species of principal importance for conservation of biodiversity in England under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006, comprise 56 habitats and 943 species identified as requiring action in the UK BAP and which are important conservation priorities in the UK Post-2010 Biodiversity Framework.

Ecological (Site Habitat and Species) Surveys: A desk study (2010 trawl data) determined the sites of conservation value within 5km radius of the centre of the site. A range of wildlife field surveys undertaken during appropriate survey seasons recorded the presence and value of habitats and wildlife in the vicinity of the site. These included Extended Phase 1 Habitat Survey (2010 & 2013); Phase 2 Botanical Survey (2010 & 2011); Breeding Birds Surveys (2010-2011); Badger Survey (2010) (confidential); Otter Survey (2010 & 2013); Water Vole Survey (2010 & 2013); Bats (trees and buildings) Surveys (2010 & 2013); Reptile Surveys (2010); Amphibians (Great Crested Newt) Survey (2010) (two settling lagoons); Invertebrate Surveys (2010 & 2011); Invasive Species Surveys (2010, 2011 & 2013); and additional (update) surveys (2013).

Summary of Main Habitats within the Site: A Phase 1 Habitat Survey (2013) identified principal habitats within the site and NVC plant communities: The majority of self-set trees are ash, sycamore and goat willow on grassy slopes along the quarry edge. Within the Deep Dale tip area there are small immature broadleaved plantations with species-poor ground flora composed of tall ruderal vegetation such as common nettle, willowherbs and cow parsley. The south west corner spoil tip has developed sparse open grassland community with patches of scrubby, immature broadleaved woodland that varies from open to closed canopy. The land-slip led to loss of broadleaved plantation woodland on a 30m-wide section of the east-facing slope adjacent to the settling lagoons; this area currently supports an open community of tall-herbs and short, ephemeral plants.

Summary of Botanical Survey Results:

- *Woodland and Scrub* (1.5ha) comprising: *Semi-mature woodland:* 1.0ha (UK BAP Priority Habitat); *Immature deciduous* plantation*:* 0.4ha; *Scrub:* Willow (Salix) 0.1ha; No ancient woodland or veteran trees are affected by the development.

- *Semi-Natural Grasslands* (2.9ha): These comprise: *'CG2c' Grasslands:* UK BAP Priority Habitat; 66 plant species recorded in Deep Dale tip area; 45 in the field east of the tip; species-rich, but lack characteristic species on Deep Dale slopes; conservation interest enhanced by grass-of-parnassus; no rare or scarce plants; nationally declining or restricted distribution species are present; *'MG1' Tussocky Grasslands:* Species-rich areas fringing CG2c areas and east end of Deep Dale; potential habitat for small mammals and invertebrates; ubiquitous throughout Britain; no nationally rare or scarce plant species; and *'OV28' Marshy / Muddy Grassland:* Several small patches; no rare or scarce species; widespread community; 35 plant species recorded; all except three also found in CG2c and MG1 areas.

- *Aquatic and Swamp Habitat* (0.2ha) (includes Settling Lagoons): These comprise: *MG8 Mesotrophic Grassland:* 0.05ha either side of open section of Deep Dale stream; *Marshy Grassland:* Along unculverted eastern section of Deep Dale stream, seasonally wet; sweet vernal grass; marsh marigold; red fescue; *Yorkshire*-fog; meadow buttercup.

- *Invasive Species****:*** None recorded within the site.

Summary of Species Surveys Results:

- *Badger:* A confidential report of any badger activity / setts in the locality.

- *European Brown Hare:* There are 4 records of brown hare, the nearest 0.4km from the site. This species was not recorded during the surveys and, given a lack of arable habitats, it is unlikely that breeding hares and leverets would use the site.

- *Otters and Water Vole****:*** There are 19 water vole records in the area, the nearest 150m from the northern site boundary at the River Wye. There was no evidence for the presence of otters and water vole using this section of the Deep Dale stream which is unlikely.

- *Bats:* Breeding populations are highly unlikely within the site. Most trees in the Deep Dale area are semi-mature and offer no roosting potential; two willow trees to the east have potential. Site buildings have no internal roof voids or roosting potential; there is no evidence of bats and roosts are unlikely in the buildings. The tip grassland and scattered groups of semi-mature trees offer foraging and commuting habitat, but open areas within the quarry, are sub-optimal.

- *Birds (breeding survey):* 37 recorded bird species include the song thrush, a UKBAP Priority Species and Species of Principal Importance and (Red List) high conservation concern, and ten (Amber List) species of medium conservation concern. The Red List song thrush is a possible breeder and 3 of the 10 Amber List species were breeding on the site. The quarry face is used by jackdaw and peregrine falcon to nest (2013); peregrine, listed on Schedule 1 of the WCA, was recorded as a breeder on site (this species is an uncommon breeder, with breeding attempts registered at 20 sites in Derbyshire in 2009). Raven, an uncommon resident, uses quarry faces to nest and was seen locally (2011 and 2013); but no confirmation of this species breeding was recorded by the surveys. Others recorded are (green list) species of low conservation concern or no recognised status. 24 species identified are confirmed or probable breeders including the (amber list) dunnock, whitethroat and willow warbler. The site provides foraging habitat for several species.

- *Reptiles:* There are 5 records for slow worm, common lizard, adder and grass snake within the area. A common lizard was found within the site in 1997. No reptiles or evidence for them was recorded during targeted surveys; their presence in the quarry, is unlikely.

- *Great crested newts (GCN's):* Not found and unlikely to be present. The nearest record is 600m from the site separated by the A6 and River Wye, physical barriers limiting the movement of newts towards the site.

- *Native White-Clawed Crayfish:* Not found. No records within the search area. The Deep Dale stream is a sub-optimal habitat for and unlikely to support this species, due to the lack of suitable refugia and water during the summer.

- *Invertebrates:* The surveys identified 138 invertebrate species on Deep Dale tip, with 2 beetles of nationally scarce conservation status, but no Red Data Book species. The south west corner survey recorded 207 species with 1 beetle nationally scarce. The Small Heath butterfly was found. Most species common and widespread. No Local BAP species.

Potential Ecological Effects, Mitigation and Compensation: Operational Phases A to C will involve temporary loss and fragmentation of habitats, with potential impacts, as follows:

Woodland and Scrub: In the eastern section of Deep Dale tip 0.4ha of semi-mature broadleaved and immature plantation woodland would be lost for re-profiling the slopes. About 0.7ha of semi-mature woodland (the western section of slope above Deep Dale tip) would not be affected; retained woodland would maintain habitat links with neighbouring woodland. Compensation would be woodland planting around the eastern valley side and where woodland is removed; replanting locally native mixed broadleaved woodland would create a positive net gain in woodland habitat and enhance the quality of woodland within the local landscape. There would be permanent loss of a small area (0.1ha) of grey willow and goat willow, but the impact of this would be insignificant.

Calcareous Grassland: There would be partial temporary loss of 2.3ha of (CG2c) calcareous grassland (including 0.2ha within the SSSI / SAC boundary) in the eastern valley side which is also the Key Ecological Area (NG116), Deep Dale tip area, and Tip 3. However, the grassland is of recent origin, the botanical assemblage is not typical of CG2c communities, extensive areas of adjacent limestone dale support better quality, more-typical CG2c grassland, and loss of the grassland would not fragment grassland in the local area. The Deep Dale reinstatement would promote 2ha of new calcareous grassland habitat, larger than existing, mitigating loss. Extensive parts of the restored dale would be hydro-seeded with a suitable local seed mix if appropriate, but natural regeneration is expected to be the preferred method of establishment. Long-term, the loss of CG2c grassland characterising Key Ecological Area NG116 would be fully compensated with a net gain in this habitat.

Marshy Grassland: The open stream channel east and west of the culvert would not be affected. There would be temporary loss of 0.6ha of (OV28) muddy grassland; given the small area of loss, low botanical diversity, local abundance and ubiquity of this community, and species abundant in neighbouring habitats, its loss would be insignificant; the impact on aquatic macrophyte communities would be neutral. The reinstatement of 472m of stream would provide opportunities to expand this habitat; with removal of the culvert there may be rapid improvements in diversity, invertebrate assemblages and possibly fish species, and the significance of impact would change to positive and significant at site level.

Mesotrophic Grassland: The development would not result in any loss of the Cynosurus cristatu - Caltha palustris (crested dog's tail-marsh marigold) (MG8) grassland. This habitat would spread into the Deep Dale tip area in association with the reinstated stream, yielding a positive impact on this habitat.

Bare ground: The development would result in loss of 13.6ha of bare ground. The majority of loss would be the working quarry floor. The restoration would provide bare rocky ground on quarry faces and benches, to allow colonisation by pioneer plant communities and micro-habitat niches for invertebrates developing into "Open Mosaic Habitats on Previously Developed Ground", a Habitat of Principal Importance. The Deep Dale restoration may expose rocky outcrops and scree slopes; new outcrops and scree slopes would be created.

Aquatic Habitat: Streams are Habitats of Principal Importance under the NERC Act 2006. The reinstatement of the Deep Dale stream could alter surface water run-off; any impacts on stream flows and water quality could have adverse implications for species within the stream corridor. The removal of material from Deep Dale tip would expose substrates previously stabilised by vegetation; without control measures this could increase sedimentary load in the stream; high levels of suspended solids can impact on aquatic species. Suspended solids would also be deposited downstream, with silt accumulation which may smother the stream bed that support sensitive flora and fauna. Measures for protection of the stream from pollutants and contamination are described earlier in this report. The reinstated stream would develop a natural course and channel, higher ecological value and functionality. The reinstatement to open channel would contribute to the Peak District LBAP target for rivers and streams in SSSIs.

Badger: With mitigation measures and legal protection (administered by Natural England) any badger interests would be protected, and the restoration would enhance habitat opportunity.

Bats: No works would be undertaken on final quarry faces that could affect any roosting bats. The quarry would continue to provide bat commuting links and foraging habitat. Loss of scrub and woodland could disturb bats, but woodland stands and grassland on the south side of the dale would maintain potential foraging and commuting routes. The quarry and asphalt plant operate during darkness in winter, but adverse impact on inactive bats at that time is not anticipated. No adverse impacts on bats are anticipated during restoration which would create new habitats providing additional foraging and roosting habitat and commuting routes.

Birds: Calcareous grassland used by house martin, swallow and swift, and scrub and immature woodland east of Deep Dale, would be temporarily lost. Tree and shrub removal from Deep Dale may displace birds and reduce breeding and foraging habitat; this could impact on species of conservation concern (e.g. dunnock, whitethroat and willow warbler). Further indirect disturbance from lighting and noise can affect normal diurnal rhythms and communications and the use of machinery during restoration could cause temporary displacement of birds. Impacts would be avoided by carrying out work (e.g. vegetation removal) that may affect nesting habitats outside the nesting season (March-August). Woodland planting within Deep Dale, restoration of calcareous grassland, lake creation with marginal shallows for wetland birds, and reinstatement of the Deep Dale stream, would

provide replacement foraging and nesting habitat for several species. Nesting habitat associated with cliff faces will also be protected and sufficient cliff nesting habitat provided in the long term.

Great crested newts: Settling lagoons on the east boundary provide sub-optimal breeding habitat for GCN due to water quality, lack of aquatic vegetation and steep concrete sides. Given physical barriers from the nearest newt site adverse impact on this species is unlikely.

European Brown Hare, Water Vole, Reptiles, Native White-Clawed Crayfish: Adverse impact on any of these species is unlikely.

Lepidoptera and Other Invertebrates: The Small Heath butterfly is a widespread but declining Species of Principal Importance. Suitable grassland habitat in the local area would remain abundant and there would be no loss of habitat continuity in the local area. Habitats that support conservation status invertebrates would be temporarily lost, an impact only significant at a local level. There is considerable scope for creating enhanced invertebrate habitat, with long-term benefits, including creation of south and south-east-facing slopes in Deep Dale; surfacing groundwater forming broad, damp seepages that can support a specialised assemblage of invertebrates; improved calcareous grassland to encourage spread and distribution of small heath butterfly; and microclimates within recreated topography. The mitigation would reduce impact significance to positive and significant at local level. The overall significance of impact would be positive.

Residual Ecological Impacts: The mitigation would reduce residual impacts on ecology and the ecological value of the site would be enhanced. Habitat creation would include large areas of tree planting, a lake with shallows designed for wetland birds (e.g. breeding ducks and waders), and reinstatement of the Deep Dale stream. If appropriate seeds from the SSSI would be sown in the restoration area to accelerate habitat development, and the selective use of soils would enhance suitability for plants and invertebrates. The restoration would create 'Open Mosaic Habitats on Previously Developed Ground', a Habitat of Principal Importance. The impact would change to positive and significant at site level.

Summary of Habitat Gain or Loss			
Habitat type	Current area of habitat	Total area habitat loss	Future habitat area
Calcareous grassland	2.3ha	2.3ha	5.27ha
Ephemeral grassland & scrub	1ha	1ha	0ha
Marshy grassland	0.05ha	0ha	0.08ha
Bare ground	13.6ha	13.6	6.92ha
Rocky outcrops & scree slopes	0ha	0ha	0.22ha
Semi-mature / immature woodland & scrub	1.5ha	1.18ha	0.32ha
Lowland mixed woodland	0ha	0ha	1.04ha
Seasonal stream & marshy grassland	0 m *(within site)*	0 metres	472 metres
Lake	0ha	0ha	9ha

Summary of Residual Effects on Habitats / Species		
Receptor	Impact significance (prior to mitigation)	Impact significance (after mitigation)
SAC / SSSI's, semi-mature woodland, birds, bats, invertebrates, watercourse (stream/river)	Adverse, significant at local level (high)	Positive (High)
Calcareous Grassland	Adverse, significant at local level (high)	Positive (Moderate)
Badger	Confidential	Neutral

Biodiversity Management Plan (BMP): Without comprehensive restoration and habitat

management, willow scrub would establish within the grassland over 10 to 20 years. The Deep Dale grassland is already rapidly changing to areas of willow scrub, which would significantly decrease botanical diversity and ecological interest. To avoid this, a detailed BMP for the site would be prepared in liaison with this Authority and Derbyshire Wildlife Trust and submitted for approval within 12 months of any permission.

Hydro- Ecological Assessment

Impacts on Important Water Dependent Ecology: It had been thought that the water regime cannot be modelled and confident predictions cannot be made as to where water will flow in the event of disruption of the natural system. This could have potential serious impacts including; draw down of the water table / aquifer, derogation of base flows and water quality in the River Wye; interception / loss of conduit systems; derogation / loss of Deep Dale springs; dewatering of wetlands and water dependent features/habitats with negative impacts on the SAC, the Topley Pike SSSI, the Wye Valley SSSI and the Lathkill Dale SSSI; and effect on licensed abstractions in the locality. Previous proposals to access reserves under extant consents would have involved significant de-watering to 210mAOD and could, potentially, have adverse impacts on local hydrology and designated areas of water dependent ecology that could extend a considerable distance from the quarry. Following extensive discussions, a draft consolidation scheme (May 2010) for scoping indicated working restricted to a depth of 230mAOD throughout the quarry, which would not require active dewatering. This was considered an appropriate solution. However, the current proposals to quarry down to 225mAOD re-introduce the requirement for dewatering (to a maximum level of 227mAOD). Consequently, concern focuses on the potential impacts on hydrology, hydrogeology, the aqueous environment, wildlife dependent species, and habitats associated with the SAC, River Wye and a winterbourne stream in Deep Dale.

Dewatering v Wet Working: It was implicit in the 2010 scheme that there would be no dewatering, although wet extraction would be employed, so quarrying would have still involved part working beneath the water table level. Set against the potential impacts of dewatering, English Nature (now Natural England) had asked that the possibility of wet working be fully investigated, assumed practicable over depths of 10 to 15m, with local groundwater levels of 238-240mAOD, the premise being that extraction to 225mAOD may only require minimal dewatering, reducing potential impacts upon freshwater features. In considering the relative merits of wet working, there remained the potential for 'wet' extraction to significantly and detrimentally impact on the water environment and local ecology, including features of European importance. Also, working below water would be technically difficult, less efficient, and more costly compared with dewatering, and would leave substantial limestone reserves in the base of the water filled void. Given the considerable importance of the water regime and designated status of the adjacent area, a hydrological / hydrogeological assessment has been necessary to demonstrate the (fluctuating) location of the water table, the possibilities of avoiding dewatering, that dewatering or 'wet' working would not adversely impact on designated interests, that any aquifer recharge would be strictly controlled including preserving water quality, and that no unacceptable harm to interests of acknowledged importance would occur.

Potentially Affected Aqueous Species and Habitat: In considering dewatering and the SAC interests and ecology, the following habitats and species are of primary importance:

Alkaline Fens: This is a habitat of European and national importance, a complex assemblage of vegetation types characteristic of sites with tufa-forming springs or peat formation with a high water table and a calcareous base-rich water supply. This habitat is extremely rare in the UK context, due to its very specific hydro-geological characteristics. Of two main NVC types associated with tufa, one (the M37 NVC type) is present in the Peak District Dales SAC as a qualifying feature. Alkaline fen and tufa-forming spring habitats are found in Woo Dale (the

nearest to the quarry about 0.5km to the north), Chee Dale and Monks Dale. Alkaline fen is the only SAC interest feature directly supported by groundwater and surface water.

Bullhead: The only freshwater cottid in the UK; present throughout the Wye catchment but difficult to survey, and there is no species population data within the area. The riverine habitat has pockets of suitable bullhead habitat, some sub-optimal. It is likely that bullheads use tributary streams, but unlikely in the ephemeral Deep Dale stream.

Brook Lamprey: Like the bullhead, brook lamprey are present throughout the Wye catchment, are difficult to survey, and there is no species population data available. The River Wye supports suitable spawning habitat, some likely to provide optimal larvae habitat. Lampreys may use some tributary streams but unlikely in the ephemeral Deep Dale stream.

Habitat Distribution: Four tributary streams are within the area: two have limited access for fish and appear ephemeral; the other two are accessible to fish and support habitats possibly suitable for bullhead and lamprey. The Deep Dale stream is not accessible to fish. Where the Flag Dale stream discharges into the river in Chee Dale it is characterised by springs, in an area that supports a range of plants likely to provide seasonal cover for fish; the most valuable habitat is likely to be in the area of springs near the confluence with the river.

Assessment of Risks of Dewatering to Water Dependent Ecology: The Hydrogeological Impact Assessment indicates groundwater impacts are not anticipated beyond the quarry boundary; that no springs or environmentally sensitive features are at risk from the workings; and it is highly unlikely that quarry dewatering would change the characteristics of surface water features,. Given that assessment and having regard to distance to the nearest alkaline fen and separation from the quarry by the River Wye, it is extremely unlikely that the fens, bullhead, or lamprey would be adversely affected by the development.

Geodiversity Assessment

Geology: The geology beneath the site comprises the Woo Dale Limestone Formation of the Carboniferous Limestone. Superficial deposits (alluvium) are present along Deep Dale and River Wye. The limestone surrounding the site comprises the Eyam Limestone Formation, underlain sequentially by the Monsal Dale, Bee Low and Woo Dale Limestone Formations. The Millstone Grit overlies the limestone. Regionally, tectonic activity resulted in beds dipping in a multitude of directions between 1 to 10 degrees; there has been extensive faulting. Mineral lobes are also extensive. There are three faults in close proximity to the quarry; the most northerly is in close proximity to the Wye Valley, with fault features identifiable in the river bed; the second is between the river and quarry, seen as a fault plane in the north eastern corner of the quarry, and transecting the lower section of Deep Dale; the third fault cross cuts the southern boundary of the quarry and Deep Dale.

Geological Conservation Within the Quarry: The NPPF (para.109) seeks the protection and enhancement of geological conservation interests; this is taken into account in the quarry restoration design. Faults and localised mineralisation are exposed in the Woo Dale limestone quarry faces. The continued operation of the quarry would not materially affect visible features of geological interest. Most mineral extraction would take place between 240-225mAOD providing new geological exposures; however, the final faces at this depth would be under water when the quarry is restored and dewatering ceases. Features of geological interest found below 240mAOD should be recorded, the records to be available to this Authority and British Geological Survey.

Deep Dale Regionally Important Geological Site (RIG): This RIG (1992) covers the east west section of Deep Dale south of the quarry and extends south along the full length of the valley to where it splits into Back Dale and Horseshoe Dale. The RIGS Register identifies the

main points of interest as the Deep Dale dry valley; Chee Tor Limestones; fault; and mineralisation. Despite the designation that part of the RIGS affected by the Deep Dale tip is not currently geologically or geomorphologically representative of the majority of the Dale. The removal of tipped material within Deep Dale and reinstatement of the original dale landform would expose the original valley sides; this would be likely to reveal areas of original rocky outcrops and scree slopes which would be retained as part of the restoration. Also, the re-profiling of the southern part of the eastern valley side east of the tip area would change the potentially unstable steep tipped quarry waste materials slope to a shallower gradient consistent with the natural valley sides elsewhere within Deep Dale.

Archaeological and Cultural Heritage Impact Assessment

Cultural Heritage in the Locality: Regard has been given to the Ancient Monuments and Archaeological Areas Act 1979 and Planning, Listed Buildings and Conservation Areas Act 1979 with reference to the National Monuments Record ('NMR'). Scheduled Ancient Monuments (SAM's) present within 2km of the site include Cow Low Bowl Barrow (Tunstead Quarry) and an Oval Cairn and Round Cairn at Gospel Hillocks (Cowdale). Cowdale Quarry is a Scheduled Ancient Monument for its industrial heritage. Ten listed buildings are present within 2km; the nearest are Grade II listed buildings of King Sterndale including the Village Cross, House and Cottages, and Green Farmhouse, all within 250m to the west of the site.

Site Specific Impact on Archaeology / Cultural Heritage: The development would only affect land already subject to quarrying or tipping and related disturbance. All future mineral extraction would be contained within existing deep excavations and the restoration of Deep Dale tip would only disturb the dale where it has been subject to quarry working, tipping and embankment formation, dam and culvert construction; consequently, the whole of the area identified for working and restoration is already substantially disturbed and there would be no site specific impact on archaeology or cultural heritage.

Potential Impacts on the Setting of Heritage Features: English Heritage 'Conservation Principles, Policies and Guidance' (2008) relates 'the setting' to the surroundings in which a place is experienced, its local context, present and past relationships to adjacent landscape; the setting of a significant place will be guided by the extent to which material change within it enhance or diminish the place's significance. In this context the development would have negligible additional impact on the setting of cultural heritage interests in the locality. The temporary visual manifestations of removing Deep Dale tip may be visible, at some distance away, from the interest features. The restoration of the quarry and Deep Dale would enhance the wider setting in which the heritage features reside.

Christ Church: There is local concern that blasting vibration *(see 'Blasting Assessment' later in this report)* may have damaged listed buildings at King Sterndale, notably the Grade 2 Listed Christ Church built in 1848-9. An Authority inspection in 1996 recorded a bulge in the north wall and cracking in the wall and mortar. The 2007 Quinquennial Inspection for the Diocese reported that "old settlement remains active" and recorded bulges in external walls, settlement cracks and other deterioration. In January 2008 English Heritage refused a grant for repairs and an inspection recorded no apparent movement in wall cracks in masonry joints over 10 years. In August 2008 English Heritage identified poor bondage between the outer and inner faces allowing the wall to delaminate and wall fracture induced by corroding ferrous supports. In May 2013 The National Church Fabric Survey assessed the church to be in 'very bad condition' but English Heritage reviewed this considering the church to be in good condition, so it is no longer classed 'at risk'. The structure had moved in the past, there have been references to active settlement and vibration from quarrying, but there is no sustainable conclusion on attribution of cause of past deterioration.

Geotechnical and Stability Assessment

Geotechnical Assessment: A Regulation 33 (Quarries Regulations 1999) Geotechnical Assessment for removal and placement of Deep Dale tip material into the quarry, includes (i) *Near surface investigation*: topographical survey to show mineralised fault locations and "collapse" features ('sink-holes') in the silt lagoon, and old workings of the mineralised fault on the south side of Deep Dale; (ii) *Deep investigation:* through the whole tip to determine density and derived shear strength; and (iii) *Slope and ground bearing stability analysis:* using cross sections along the length of the tip to ensure safe removal in successive layers using the suggested plant; across the tip to ensure the valley sides would be stable throughout; and through the extended Tip 4 in the quarry to ensure this would be stable during construction, build-up with silt layers and restoration.

The Landslip Zone: The landslip on 25 June 2010 within the Deep Dale eastern valley side buried the settlement lagoons and part of footpath 15, and destroyed a significant section of a treed embankment. A stability back-analysis of the slope failure concluded that it occurred due to high seismic loading by a blast in the quarry. The eastern valley side south of this location exhibit slope angles near 40º which indicate slopes approaching or possibly exceeding "unity". The eastern valley side north of the landslip exhibit tree covered slopes at 36º, and it is concluded this should be stable so long as further blasts ensure minimal seismic loading.

Geotechnical Design for Stability: All quarry faces have been designed for long-term stability. Analysis sections show progressive removal of the Deep Dale tip upper, middle and lower layers; and stability of the upper (north) lower (north) and lower (south) tip scree side slopes. The extended Tip 4 would be stable with slope angles of 1:3 (27º); the relocated Deep Dale material onto Tip 4 would be classified under the Mines and Quarries Act as a quarry tip and the design of this and resultant landform must be approved by a qualified, experienced geotechnical specialist. The celled tip restoration slopes would be no steeper than 32º and designed to be stable. A Technical Note details the methodology for layered construction and compaction of the less stable eastern valley slopes. The loose tipped "overly steep" southern part of the eastern valley side, in the 2010 landslip area, would be buttressed with granular material at slopes between 14º and 26º to ensure long term stability; these slopes would be considerably shallower than the 40º existing slopes and would provide geotechnical support (with a factor of safety of 3.24 to 1.66). The northern part of the eastern valley side would be left insitu with a tree covered 36º slope. Quarry face and Deep Dale stability monitoring would continue throughout the development compliant with the Quarries Regulations 1999.

Deep Dale Tip Relocation Impact Assessment

Preliminary Contamination Hazard Assessment: This includes historical maps and data, photographs, exploratory records, groundwater monitoring, laboratory chemical test results, laboratory geotechnical test results, groundwater risk assessment, chemical test results of soil, water and leachate, and guidance for classification of soil as waste. Conceptual site models (schematic sections) of Deep Dale tip and placement of the materials from it in the quarry (on Tip 4) show predicted geological and hydrological settings, major on-site potential contamination sources and vulnerable receptors. The principal issue is how safe it would be (for the environment and operatives) to disturb and excavate the tip and relocate materials from it, notably potential problems in handling and stabilising the lagoon silts. Chemical data from previous investigations had shown potential for shallow materials from the tip lagoon to leach contaminants and impact controlled waters. The potential receptors of contamination are the Deep Dale stream, the principal aquifer, the River Wye, ecosystems and SAC.

Deep Dale Tip Investigation: This included a wide range of exploratory and testing methods, including pits, boreholes, water sampling and soil sampling, an options appraisal

on suitability for reuse of materials in restoration, and a geotechnical assessment of materials for trafficability. The boreholes recorded lagoon depths between 8.34m and 15.88m with low drainage / permeability. The lagoon sediment comprises limestone dust; with calcium (37% by weight) and smaller but significant amounts of magnesium, aluminium and manganese. Low contaminant concentrations were found in both silts and granular materials; the lagoon material was not producing leachate; groundwater & surface water analysis showed most concentrations below laboratory reporting limit; those above exceeded screening criteria for aluminium, antimony, copper, zinc, ammoniacal nitrogen, and petroleum hydrocarbon (PHC); no hydrocarbons measured in the highest risk range; measured phytotoxic metals (copper, chromium, nickel and zinc) are lower than guideline values for protection of plants in the MAFF 'Code of Good Agricultural Practice for the Protection of Soil' and there is no risk to plants due to phytotoxicity.

Contamination Assessments: These conclude that no remediation measures are required to address risks to controlled waters other than the hotspot(s); the existing tip materials in their current location are not a significant source of contaminants, and pose negligible risk to humans, ecology or controlled water receptors and groundwater. Contaminants in groundwater in one 'hot spot' location would need remediation; additional investigation may be necessary to find any other hotspots; deeper lagoon materials will require sampling and chemical analysis as the operation takes place. DCC asks if the tip could be dismantled west to east to limit overall impact and provide some early restoration and habitat creation, with benefits at a later stage in extending habitat along the dale; however, the proposal is to excavate the tip from top down in a series of lifts; this safer technique would prevent lateral 'spill-out' of any rewatered silts during recovery of the waste materials.

Options for Moving Lagoon Silts: The relocation of lagoon material using conventional long reach excavator and loading into dump trucks for transport would have lower safety hazards than slurry pumping and would use negligible water. The granular materials have to be moved this way so all tip materials would be moved using the same machinery; the silts and granular materials can be removed together in horizontal strips and mixed to create a homogenous material that is geotechnically more stable. The disadvantage of this method is that, due to stability and safety issues, only a limited volume of lagoon silts can be moved each season, so it will take up to 8 years to move the whole tip. The alternative slurry pumping option was rejected given several disadvantages: a large volume of water would be required; more settlement of the new landform is likely, as the lagoon material will have much higher initial moisture content; pumping would need surface water control and lagoon construction for recycling water, necessitating a higher level of safety and security; the relocated slurry could produce an unstable tip within the quarry; re-slurrying the silt could mobilise contaminants; uncertainty as to how quickly the lagoon could drain and become stable enough to take the next tranche of slurry; therefore a longer period of time would be required before the final landscaping and vegetation could be established.

Moving Deep Dale Tip Risk Assessment: The tip can be safely removed in a series of layers using 25 tonne excavator and articulated dump trucks. Regular monitoring of ground conditions would be necessary: Perched groundwater is likely to be present in the silt, and possibly the granular materials; with a moisture content around 35%, the lagoon material must be dried before handling and compaction. Temporary access roadways across the tip would have to be constructed. If ground conditions firm with depth, heavier plant could be used to remove the lower levels. A watching brief should be maintained for higher contaminant concentrations; if encountered, these materials should be segregated and stockpiled, pending chemical analysis and off-site disposal or re-use. A surface water control plan would prevent drainage mobilising silt and discharging into the stream. With a design angle of 32º for re-exposed scree slopes underneath the tip, the slopes would be stable but with low factors of safety.

Use of Lagoon Material in the Quarry Risk Assessment: Almost all of the Deep Dale tip materials would be suitable for use for restoration, but a small portion may require treatment, recycling or off-site disposal to landfill. The moisture content of the bund material is 2% above the optimum for use in earthworks. The main risk associated with using the lagoon material is groundwater and surface water contaminants leaching and entering the river; other potential contaminants mostly appear to present no overall risk. The lagoon material is not suitable for bio-remediation given moisture content, grain size, need to add coarser, granular material to aerate it, and need for specialist excavator equipment to allow low bearing pressure and long reach and/or temporary roads for haulage wagons. Whilst this renders the materials unsuitable for placement below the water table, they would be located above projected water table levels.

Waste Impact Assessment

Pollution Impacts of Handling Quarry and Plant Process Waste: The proposals to re-excavate and relocate quarry waste, silt and granular material and the continued generation of quarry and processing plant waste, may have significant environmental impacts. The potential impacts on the aqueous environment and of noise and dust are addressed elsewhere in this report; the effective pollution controls exercised by the Environment Agency are outlined below:

Environment Agency Control and Mitigation: The removal of Deep Dale tip and its placement in the quarry and restoration works would be subject to a Remediation Strategy and Implementation and Verification Plan in accordance with procedures in the Environment Agency Contaminated Land Report CLR 11 'Model Procedures for the Management of Land Contamination'. This would address environmental issues including ecological mitigation, surface water management, dust and noise. The lagoon and bund materials are technically waste once excavated, and can only be re-used on site if (i) procedures are followed in the CL:AIRE ('Contaminated Land: Applications in Real Environments') 'The Definition Of Waste: Development Industry Code of Practice' given certainty that the material would be used "for the purposes of construction in its natural state on the site from which it was excavated" or (ii) the site applies for a full Environmental Permit from the Environment Agency under the Environmental Permitting Regulations 2007. Given compliance with the Code of Practice exemption from an Environmental Permit would not be necessary, but a Materials Management Plan would be required for Agency approval. The application provides justification for dealing with the materials by meeting the main requirements of the CL:AIRE protocol that the material (i) will not create unacceptable risk of pollution to the environment or harm to human health; (ii) is suitable for use without treatment (contaminated material in the granular bund would be taken off site to landfill or treated so it can then be reused on site; and there will be (iii) certainty of use and quantity of material.

<u>Environmental Impact Assessments</u>

Air Quality and Dust Impact Assessment

Dust Climate (Existing Air Quality): Levels of deposited dust around Topley Pike Quarry should be 38-39 mg/m²/day annual median subject to variations, particularly during dry weather, influenced by local agriculture, road traffic and the quarry dust. Deposited dust has been measured at the closest residential properties and compared with this norm and standard nuisance deposit level shown below. The recorded measurements are reasonably typical of a rural area; for comparison, 56 mg/m²/day for residential areas and town outskirts and 90 mg/m²/day for commercial centres are typical. During inspection in May 2015 no visible dust was observed beyond the boundaries of the site.

Topley Pike Locality: Baseline and Existing Air Quality and Criteria		
Description	Existing Air Quality (Deposited Dust)	Nuisance Criteria
Expected General Deposit (Rural Area)	39 mg/m²/day	200 mg/m²/day
Monitoring Location:		
Woolow Farm (north-west of quarry)	12 mg/m²/day	200 mg/m²/day
Upper Farm, Cowlow (north of quarry)	24 mg/m²/day	200 mg/m²/day
Sterndale Green Farm (west of quarry)	34 mg/m²/day	200 mg/m²/day
Topley Head Farm (east of quarry)	46 mg/m²/day	200 mg/m²/day

Potential Dust Generation and Susceptibility: Dust in the community is perceived as an accumulated deposit on surfaces; when the accumulation rate is sufficiently rapid the dust is potentially a nuisance. The generation and dispersal of dust is dependent on prevalent meteorological conditions, in particular dry weather, wind speed and direction. Particles less than 30 microns may be wind carried as fugitive dust. Potential dust sources include vegetation clearance, soils stripping and handling, drilling, use of explosives, excavations, earthworks, tipping quarry and process waste, dismantling Deep Dale tip, relocation and tipping of granular material and fines, plant and vehicles on haul roads, mineral treatment, loading, transportation, and restoration works.

Dust Impact on Footpaths and Ecology: Users of Footpath 15 would pass within 20m of operations on the eastern valley side, dump trucks moving Deep Dale material into the quarry, and any related dust fallout. Dust may also impact on the woodland, scrub and grassland by smothering stomatal pores, which can affect respiration and evapotranspiration, and changes to leaf biochemistry and on invertebrates. The proper control of dust would be important to prevent all this.

Dust Control, Mitigation and Dust Action Plan (DAP): The quarrying operations are subject to substantial dust control in the Environmental Permit. The controls extend over (i) materials handling (for open storage, stockpiles, drop heights, spillage, containment, arrestment on plant, machinery, in buildings, water suppression, limit on operating units, crushing and screening locations); (ii) over roadstone coating (arrestment on equipment); (iii) over transport and loading (roadways wetted and kept clean; segregated quarry and highway traffic, material water conditioned, loading vehicles, vehicles sheeted or enclosed other than for specified washed stone, vehicle exhausts, radiator fans blanking plates on dump trucks and loading shovels); and (iv) over preventative maintenance on plant and equipment. Water is effectively used at the site for dust suppression. These dust control measures would also be employed as appropriate to operations within Deep Dale. The Deep Dale tip lagoon silts have high water content which would prevent fugitive dust emissions during disturbance; the granular material is damp and coarser. Other measures can be required as part of an Environmental Management System (EMS), including vehicle washing in the event this becomes necessary (no vehicle washing is undertaken on site at present).

Air Quality and the Asphalt Plant: Quarrying and roadstone coating are prescribed processes under the Pollution Prevention and Control Act 1999, and Environmental Permitting (England and Wales) Regulations 2010 (as amended). The Benninghoven plant is subject to air quality control. High Peak Borough regulates the installation under an Environmental Permit which limits particulate emissions to 50mg/m^3. The permit requires continuous monitoring of stack emissions; an alarm triggers if the concentration exceeds 40 mg/m^3; consultants annually monitor and report on particulate emissions and records are submitted to the Borough quarterly. Air Quality Assessments since 2006 have shown that

the plant generates significantly less particulate release than the former pre-dryer and Parker wet arrestment coating plant. The average particulate concentration is well within the 50mg/m^3 limit; the Benninghoven plant a yields 96.5% reduction in dust mass from the old plant which produced an excess 11.8 kg of dust per hour over current levels; operation of the Benninghoven plant 8 hours per day, 6 days per week, 50 weeks per year amounts to an annual reduction of 28.3 tonnes of dust; particulate emissions are reproducibly low, well-controlled and effectively monitored. During EHO inspection in April 2015 the level was down to 4.2 mg/m^3 and all other emissions were compliant; retention of the plant is recommended given substantial reductions in dust release.

Air Quality and Climate Change Management

Relevant Climate Change Action Plan Criteria: These are: appropriate ecosystem management to reduce impact on species and habitats; protected species surveys; robust, expanded and linked habitats; biodiversity gains; actions through the BAP and programmes of low carbon land management; protected landscape and cultural heritage; sustainable drainage, flood risk alleviation; conserving water; minimising waste and waste water; use of site derived waste on site; efficient and sustainable use of land and buildings; sustainable transport and accessibility.

Climate Change Mitigation: With no proposals to materially increase the level of traffic serving the site there would be no significant additional environmental burdens including carbon, fumes and dust on the public highway and communities consistent with the objectives of Core Strategy Policies CC1 (mitigation) and CC2 (low carbon). The proposed development management, air pollution control, water conservation and containment, sustainable drainage, traffic control, green use restoration using site derived wastes, landscaping, habitat creation, landscape and biodiversity management, would collectively minimise impacts in terms of carbon loss and airborne emissions. Landscaped areas would contribute to oxygen replenishment in the local environment.

Noise Assessment

Noise Sensitive Locations and Noise Climate: The locations chosen for assessment are Sterndale Green Farm, Woolow Farm, Upper Farm Cowlow, Topley Head Farm (and holiday cottages), and footpaths 15, 19, 29 and 37. Measured ambient noise [LAeq or A-weighted equivalent continuous noise level (average sound energy)] at noise sensitive locations in July 2013 used calibrated sound level meters; four 2 hour daytime noise surveys were undertaken where possible in compliance with BS7445:2003. Noise levels on footpaths southeast of the quarry were measured in July 2014 in two 1-hour and two 2-hour daytime noise surveys.

Noise Nuisance Criteria, Attenuation and Predictions: The World Health Organisation (WHO), Guidelines for Community Noise (1999) (Section 4) states that, during daytime, the outdoor sound level from steady, continuous noise should not exceed (i) to protect most people from being seriously annoyed, 55 dB LAeq on balconies, terraces and outdoor living areas, and (ii) to protect most people from being moderately annoyed, 50 dB LAeq. Noise predictions have been calculated in accordance with BS5228-1: 2009 ‘Code of Practice for Noise and vibration control on construction and open sites - Part 1: Noise’ The predictions take account of a barrier attenuation of 15 dB(A), plant complement, reverse warning systems, periods of plant operation, distances, presence or absence of screening, soft ground absorption, reflection from building façades and angle of view corrections. The predictions assume 48 vehicle movements per hour, a correction factor for mobile plant and all combinations of plant working simultaneously at the closest point to prediction locations; they are intermittent "worst possible case scenarios" to indicate the maximum noise level to which properties may be exposed, but they may be of relatively short duration and noise

beyond the site should be significantly less most of the time.

Measured Environmental Noise Levels around Topley Pike Quarry compared with Worst Case Predicted Noise Levels at Noise Sensitive Residential Properties						
Location	Existing Noise Levels / dB(A)		Predicted Worst Case /dB $L_{Aeq,1h}$	Difference / dB(A)		
	$L_{Aeq,1hr}$ Ambient	$L_{A90,1hr}$ Background		Existing LAeq	NPPF L_{A90}+ 10	NPPF Max 55 L_{Aeq}
Woolow Farm	43	37	42	-1	-5	-13
Upper Farm, Cowlow	45	33	40	-5	-3	-15
Sterndale Green Farm	43	36	42	-1	-4	-13
Topley Head Farm	47	38	41	-6	-7	-14

Analysis: The worst case predicted noise levels occur at Woolow Farm and Upper Farm, Cowlow during placement of material in the north-western part of the quarry; at Sterndale Green Farm during placement of material in the west of the quarry void; and at Topley Head Farm during placement of material in the eastern part of the tipping area. However, the predicted levels fall below the measured ambient level at each of these properties, well below the 55 dB LAeq,1h criterion, and accords with the NPPF.

Measured Environmental Noise Levels around Topley Pike Quarry compared with Worst Case Predicted Noise Levels at Recreational Footpaths								
Location / Footpath	Existing Noise Levels / dB(A)		Predicted Worst Case	Difference / dB(A)				
				Existing	NPPF		WHO Guidelines	
	$L_{Aeq,1hr}$ Ambient	$L_{A90,1hr}$ Background	dB $L_{Aeq,1h}$	LAeq	L_{A90} + 10	Max 55 L_{Aeq}	LAeq 55+ 'Seriously Annoyed'	LAeq 50+ 'Moderately Annoyed'
South of lagoons15	49	42	55	+6	+3	0	0	+5
Junction 15/19/29	45	40	56	+11	+16	+1	+1	+6
37	45	39	Temporary closure					
Junction 37/19	46	38	67	+21	+19	+12	+12	+17

Analysis: The worst case predicted noise level for footpath 15, 5dB above the 'moderately annoyed' criterion, would only occur along short stretches of the footpath, beyond which it is screened by topography and tree cover. The worst case at the junction of footpaths 15/19/29 is 1dB above 'seriously annoyed' criterion; from this junction the route south along footpath 29 to Churn Hole provides a screen from site activity which attenuates the worst case level; and the connection to footpath 19 from this junction is further south along footpath 29 affording increased attenuation. Temporary closure of footpath 37 would ensure footpath users do not experience significant noise from restoration operations in Deep Dale. The worst case 67dB LAeq,1h at the junction of footpaths 37/19 would be significant, at 19dB above the LA90 + 10dB NPPF criterion. All worst case predictions relate to works undertaken at their closest approach to Deep Dale tip.

Noise Standards v Noise Level Recommendations: The MPPG on 'Noise emissions' specifies recommended noise limits at noise sensitive property, as follows: aim to establish a limit that does not exceed background noise level ($L_{A90,1h}$) by +10dB(A) during normal working hours (0700-1900hrs); if difficult to achieve without imposing unreasonable burdens on the mineral operator, the limit to be as near that level as practicable and not to exceed 55dB(A) LAeq 1hr (free field); for evening operations (1900-2200hrs) limits should not

exceed background noise level (LA90,1h) by +10dB(A) nor exceed 55dB(A) LAeq, 1h (free field); night-time (2200 – 0700hrs) limits should not exceed 42dB(A) LAeq 1hr (free field); tonal noise may require specific limits and peak or impulsive noise (including some reversing bleepers) may require separate limits independent of background noise; increased temporary daytime noise limits up to 70dB(A) LAeq 1hr (free field) (regarded as the normal maximum) for periods up to 8 weeks in a year are permissible for site preparation, soil-stripping, construction and removal of baffle, soil storage and spoil mounds, haul road construction and maintenance, construction of new permanent landforms and restoration work that brings longer-term environmental benefits; a lower limit over a longer period where work is likely to take longer than 8 weeks; in some wholly exceptional cases, a higher limit for a very limited period may be appropriate to attain the environmental benefits.

Asphalt Plant Noise: Previous assessments based on measured surveys at Woolow Farm, King Sterndale, Sterndale Green Farm, Cowlow and Topley Head Farm calculated that the impact of noise from the asphalt plant is minimal and not detrimental to local amenity. An assessment in August 2011 found compliance with permitted noise limits at all locations (at Topley Head Farm the night-time permissible level was increased by road traffic not the asphalt plant). The plant operates within modern noise limits set out in current guidance. The current permission imposes noise limits at nearby noise sensitive properties; monitoring confirms previous and ongoing compliance with these limits. The Authority has not received complaints about noise from the operation of the plant.

Noise Control and Mitigation: The officer recommendation includes noise maxima and controls for the whole site to ensure continued mitigation to acceptable limits; including adoption of noise control recommendations by the noise consultants. Importantly, most mineral working would take place in the eastern half of the quarry, more distant from King Sterndale properties than would be the case under the current permissions. The predictions demonstrate that, without exception, the noise at residential receptors would not exceed the recommended limits.

Blasting Assessment

Quarry Blasting and Blast Sensitive Properties: The use of high explosives involves drilling and detonation at supersonic speeds, with potential impacts of noise, dust, vibration, air blast and flyrock. The proposed extraction would utilise up to 15m face heights employing explosive charge weights of 60-65 kg. The optimum blast design may vary from blast to blast given site specific conditions in order to comply with recommended vibration criteria. Sterndale Green Farm, Woolow Farm, Upper Farm (Cowlow) and Topley Head Farm are identified as the nearest potential blast vibration sensitive receptors.

Prediction, Control and Measurement of Ground Vibration: The application sets out the vibration the detailed criteria used in assessing the potential impact of vibration. Ground vibration radiates away from blast points attenuating at distance. Parameters for assessing impulsive vibration are particle velocity and frequency; the prediction method utilises separation distances and charge weights. The maximum peak particle velocity (ppv) is plotted against scaled distance. Levels of vibration from production blasts have been used to generate a regression line plot for blasting to a controlled maximum peak particle velocity with a 95% confidence limit. This defines the maximum instantaneous explosive charge weights (MIC'S) to comply to vibration criterion of 6 mms-1, as follows.

Allowable Maximum Instantaneous Explosive Charge Weights										
Blast to Receiver Separation Distance (metres)										
100	150	200	250	300	350	400	450	500	550	600

Allowable MIC (kg) to limit to 6 mms-1 95% confidence										
14	31	56	88	126	171	224	283	350	423	504

This regression analysis shows the presently utilised instantaneous charge weight of 64 kg could be used about 220m from property whilst complying with recommended vibration criterion. Using this analysis, predicted future vibration levels at the nearest vibration sensitive properties from blasting in the quarry using an instantaneous explosive charge weight of 64 kg are as follows:

Topley Pike Locality: Predicted Ground Vibration Levels				
Location	Nearest Distance to Site (m)	Vibration criterion mms-1 95% confidence	Vibration Level (*64 kg MIC)* Peak Particle Velocity mms-1	
		Recommended	Mean	Maximum 95% confidence
Woolow Farm	350	6.0	1.3	1.8
Upper Farm, Cowlow	350	6.0	1.1	1.5
Topley Head Farm	550	6.0	0.7	1.0
Sterndale Green Farmhouse	120	6.0	4.8	6.0*

(* Maximum instantaneous explosive charge weights reduced to comply with vibration criteria).

Airborne Vibration (Air Overpressure) Criteria, Control and Mitigation: The detonation of explosives generates transient airborne pressure waves; the maximum pressure above atmospheric is peak air overpressure. These waves comprise energy over a wide frequency range; energy above 20 Hz is perceptible to the human ear as sound, that below is inaudible but sensed as concussion; sound and concussion together is air overpressure measured in decibels (dB) or pounds per square inch (p.s.i.) over the frequency range. Airborne pressure waves are produced from rock displacement, ground induced airborne vibration, release of gases and insufficiently confined explosive charges. Meteorological factors (wind speed and direction, temperature, humidity, cloud cover at various altitudes) influence air overpressure. The planning standard for maximum air overpressure is 120dB, nuisance standard 130Db, and recommended safe limit 133dB at property. King Sterndale Parish Meeting requests air overpressure from blasting not to exceed 120dB; however, Government guidance does not recommend a limit; it is generally accepted that a limit should not be defined because it is impracticable to predict the effects of variable weather conditions. Adequate control depends on well designed and executed blasts with controlled ground vibration limits, attention to accurate face profiling and drilling, loading, placement, stemming and confinement of explosives, having regard to geological weaknesses, and optimum detonation technique.

Investigation of Blast Incident Complaints: Blasting incidents in 2014-15 in the western area of the quarry have given rise to complaints and these have been investigated. The operator's blast monitoring results have been obtained and analysed. The instrumentation used recorded peak values of seismic vibration in terms of particle velocity, acceleration and displacement in the longitudinal, vertical and transverse axes together with resultant velocity value, frequency, air overpressure, and the dates and times at which the vibration events occurred. All recorded ground vibration levels fell within Government and British standards, substantially below trigger levels for cosmetic damage; nevertheless some recordings were higher than normally expected, conducive to a high level of perception by residents, highlighting the need to secure effective controls. Discussions have taken place with the operator and EHO about self-regulated blasting practice, blast monitoring, future working and blasting, mitigation and likely control by this Authority.

Perception and Damage Levels: There is a difference between public perception of ground vibration and air overpressure ('airblast') (the noise element) and British Standard accepted trigger levels for cosmetic and structural damage to properties: *"There is a major difference*

between the sensitivity of people in feeling vibration and the onset of levels of vibration which damage the structure. Levels of vibration at which adverse comment from people is likely are below levels of vibration which damage buildings, except at lower frequencies" (BS.7385). Air pressure wave frequency components, audible and inaudible, cause structures to vibrate in a way which can be confused with ground vibrations and cause residents to think the ground is shaking their homes. The weakest parts exposed to air overpressure are windows; poorly mounted prestressed windows may crack at 150 dB (0.1 p.s.i.), most crack at 170 dB (1.0 p.s.i.); structural damage may occur at 180 dB (3.0 p.s.i.). The maximum value of peak particle velocity is of most significance and the standard worldwide for investigations into vibration with respect to damage of structures and human perception. Awareness of blast induced vibration occurs at around 1.5 mms-1, sometimes as low as 0.5 mms-1. Such levels routinely occur in domestic property but when associated with blasting activities give rise to subjective concern. Changes in humidity and temperature can induce strain equivalent to blast induced vibration from 30–75 mms-1 and domestic activities will produce strain levels corresponding to vibration of up to 20 mms-1. Cracks in domestic properties may be wrongly attributed to blasting and may be caused by fatigue, ageing, drying out of plaster, shrinkage, swelling of wood, chemical changes in mortar, bricks, plaster and stucco, structural overloading and differential foundations.

Blasting, Property Damage and Listed Buildings: Most complaints arise from concern over possible rather than actual property damage. The representations suggest a causal link between blasting and past damage to listed buildings, notably Christ Church. Most buildings in King Sterndale are of limestone construction comprised of two mortared stone walls with loose rubble infill between them, keyed by through stones; the Parish consider that vibration could / has caused settlement in the rubble infill resulting in bowing and cracking of walls, as seen in the Grade listed Green Farm (in contrast to brick and concrete buildings, which it is claimed are more resistant to vibration damage). However, there is no specific or conclusive evidence for attribution of structural defects in the protected buildings to use of explosives in the quarry; or whether or not previous / historical blasting has contributed to the structural condition of the Church, Green Farm, the Grade II listed Cottages (also with cracks in walls), and other King Sterndale buildings. Nevertheless, positive action for the future protection of buildings and amenity should be pursued through (i) statutory duties for protection of cultural heritage and historic (listed) buildings in the Parish, and (ii) securing, through this application if approved, better controls for the mitigation of blasting effects.

Existing Inadequate Control v Reduced Blasting Impact: There are no controls on blasting in force for the western half of the quarry other than condition 6 of NP/CHA/866/6 which restricts blasting to between 1500hrs and 1700hrs weekdays and 12 noon to 1500hrs Saturdays (scheme approved in 1968), an unsatisfactory situation for that part of the quarry closest to King Sterndale. For the eastern (IDO) area condition 21 (of NP/HPK/1093/127) restricts blasting to between 0900hrs to 1700hrs weekdays (except for safety in exceptional circumstances) with no blasting Saturdays, Sundays or Bank Holidays; condition 22 limits ground vibration at occupied residential premises to 10mm/sec ppv (95% confidence level), and requires 'Best Available Techniques Not Entailing Excessive Cost' to be adopted to limit air over pressure. Over time it had been incumbent upon the operator to self-regulate in line with current standards. The current application offers an opportunity to address the impacts of blasting through revised extraction depths and improved planning control. Throughout the remaining life of the quarry less blasting would take place at the western end (the operators would no longer have consent to quarry much deeper in that area). The final area of stone in the south-western corner of the quarry down to 225mAOD would be extracted within two years, compared with working down to 210mAOD over a considerably longer period under extant consent. That means less blasting overall closer to King Sterndale. The Authority would gain better control over blasting through new modern standard conditions.

Future Blasting Mitigation: This is down to good blasting design, including maximum

instantaneous charge weight (MIC), blast ratio (tonnes of rock per kilogramme of explosive), free face reflection, delay interval, initiation technique, direction and blast geometry associated with hole diameter, depth, burden, spacing, loading density, stemming, and double-decking (splits explosives in two, to half MIC levels). Vibration can be controlled by charge reduction methods, decking strategies, blast geometry, smaller boreholes, and use of electronic detonators. With competent blasting specifications and drillhole stemming, resultant air overpressure should be to safe levels with minimal risk of flyrock. It is proposed that blasts be designed to a vibration criteria of 6 mms-1 ppv at 95% confidence level, with a maximum vibration limit of 12 mms-1 ppv (in accordance with BS.6472-2: 2008: 'Guide to evaluation of human exposure to vibration in buildings. Blast-induced vibration') for mitigation of magnitude of vibration to acceptable levels, such as not to cause cosmetic damage to property. The recommended conditions can address these matters.

Blasting Times: Given anomalies between approved west and east quarry blasting times, regularisation is sought to allow blasting in both areas of the quarry between 0900-1700hrs weekdays (current practice). King Sterndale Parish requests restriction on blasting to between 1230-1600hrs weekdays; but given daily variations in weather, optimum periods to blast in conditions that minimise air overpressure, and health and safety considerations, officers consider that that such restriction would be onerous and not conducive to minimising impact. It is recommended the longer hours sought (0900-1700hrs) be accepted subject to a 1000hrs start for the western part of the quarry, and, where practicable, blasting in that area should be carried out during the times specified by the Parish, with no blasting at weekends or on public holidays.

Blasting and Footpath Users: Vibration and noise from blasting would be perceptible on footpaths 15, 29, 19 and 37 east and south of the quarry. To ensure the safety of users of footpath 15, blast sentries are stationed on the footpath at key locations. Audible siren warnings are made five minutes, one minute and immediately before each blast. It is recommended that signage be provided and maintained along the footpath routes to warn users of blasting times and that, when blasting is imminent at the closest approach to the footpaths, sentries will continue to be used.

Future Blasting Rate and Monitoring: The blasting rate should not materially increase (production would not significantly change). It would not be practicable to quantify programming / frequency and number of future blasts (rock splitting from each blast depends on many factors). Nevertheless, an envisaged number of blasts programme for each working area of the quarry would aid continuing assessment of impact, reflecting reduction in blasting at the western end of the quarry in exchange for increased blasting at the eastern end further away from King Sterndale. It would be important to secure a continuing programme of blast vibration monitoring at potentially affected buildings (e.g. Green Farm) for each and every blast, to ensure compliance with recommended vibration criteria and continually updated regression analysis. The operator will keep the EHO advised of future blasting events to facilitate combined monitoring (to check vibrograph calibration and accuracy / reliability of records); and monitoring separate stations for a wider range of recordings.

Lighting Impact Assessment

Site Lighting: It is important to prevent light spillage beyond site boundaries and to mitigate glare into the night sky in line with the UNESCO supported Dark Skies Initiative and quest for international recognition as a "Dark Sky Park". External lighting at Topley Pike Quarry is necessary for security and safety for the movement of people, machines and vehicles in hazardous areas, and 24 hour operation of the asphalt plant. The operations within Deep Dale would only take place during daylight hours so artificial lighting within the Dale would not be needed. The application does not propose additional floodlighting and but a condition is recommended to control this.

Highways and Traffic Impact Assessment

Mineral Transport, Highway Capacity and Road Safety: There is no restriction on HGV movements, numbers or routeing, and this is proposed to continue as it is essential that quarry products, particularly asphalt, can be supplied 24 hours per day to supply off peak and night time road works. There are no congestion issues with traffic entering and leaving the site and the traffic is acceptable to the Local Highway Authority. Monthly operational quarry HGV movement data shows relatively consistent product movements during spring/summer/autumn months, with less movements reflecting lower demand during winter months. Should a higher production level be required at any time, that would be subject to a Transport Statement for DCC Highways / Authority approval.

Topley Pike Quarry Annual Total HGV Movements (Despatch) 2011 – 2012			
Year	Asphalt	Dry Stone	Year Total
2011	7,611	3,716	11,327
2012	7,170	3,236	10,406

In 2006 new vehicle movement arrangements for asphalt plant traffic were introduced and changes to the plant and stockfield area removed quarry traffic from the top of the banking above the A6, reducing visual impact. The weighbridges record HGV arrival and departure. About 20-25 light vehicles per day (employees, visitors, contractors) also access the quarry. The road safety record shows no accidents or HGV related accidents within the local area.

Site Access, Parking Highway Cleanliness: Access and egress is via an established asphalt surfaced access road, wide enough for two HGVs, direct from the A6. The access is secured by gate 40m in from the highway, locked when the quarry is not operating. The access junction is on a straight stretch of highway with good visibility in both directions (the speed limit on this section of the A6 is 50mph). Adequate parking and manoeuvring space is available. The access road and plant site are kept clean by road sweeper. All loaded HGVs are sheeted. These measures limit dust and dirt on the highway; there is little evidence of deposition onto the highway from site vehicles and no recent record of related complaints. There is no wheel wash for HGVs; I recommend to provide one if this become necessary.

Cumulative Impacts: The NPPF (para.143) and Policy LM1 require account to be taken of the cumulative effects of multiple impacts from individual sites and/or a number of sites in a locality. The LVIA rating of cumulative landscape and visual effects of the proposed development in the context of the surrounding area and other quarry sites in the vicinity (e.g. Ashford Dale, Cowdale, Tunstead) is slight to negligible/neutral during working, and moderate and beneficial following restoration.

Economic Considerations: Aggregate Industries is the second largest producer and supplier of construction materials including aggregates, coated roadstone (asphalt), ready-mixed concrete and pre-cast concrete products; imports and supplies cement materials; and has a national road surfacing and contracting service. It operates over 60 quarries and 40 asphalt plants in the UK, with sales in excess of 25mt per annum, and employs about 5,000 people. The Core Strategy (para.4.28) says *"the challenge is to manage down the adverse environmental impacts of the* (sic: minerals) *industry, respecting the fact that it provides jobs and building materials that are valuable locally and nationally"*. The 2011 National Parks Census identified 185 residents employed in 'Mining & Quarrying' (1% of all employment) in the Peak District National Park. In that context the quarry makes a useful contribution to the local economy, directly employs 12 staff and provides work for four full time contractors. Most of these workers live in the local area. The annual wages and salaries bill for the quarry is in excess of £500,000. The asphalt plant, which supplies coated roadstone to contracts in

the Park and nearby counties, provides direct employment, and indirect employment for haulage services. Aggregate Industries spends around £1.2 million per annum on external haulage, providing employment for 18-20 contract hauliers. This haulage work sustains local employment; the quarry also uses a wide range of sub-contractors and suppliers, many locally based.

Alternatives to the Grant of Planning Permission

Alternative Sites: The quarry already has planning permission to extract mineral reserves which form part of the landbank of permitted aggregate reserves in the Peak District National Park, and the proposed additional reserves are limited and associated with the redesigned working and restoration methodology for the quarry; the applicant has not, therefore, considered a study of alternative reserve sites to be necessary for the proposed development.

Alternatives to the Submitted Working Scheme: Several possible working strategies for the quarry had been identified as an alternative to (i) the scheme in this application and (ii) pursuing the ROMPs. These included various methods of working the western face of the quarry to enable excavating down to 210mAOD whilst retaining the eastern IDO area at 240mAOD. Any options should be based on the premise that the potential hydrological impact of continued quarrying would predominantly (although not wholly) be a factor of depth. It is considered that the submitted scheme strikes the right balance in that it would facilitate level working across the quarry to no deeper than 225mAOD, with less potential implications for hydrological effects, an improved landform, and better quality restoration whilst securing removal of Deep Dale tip and reinstatement of the dale.

Alternative Mechanism for Depth Restriction by Review: Possible alternative mechanisms for restricting the excavation depth by Review rather than through this application and the pecuniary disbenefits of that approach are addressed under *'Reserve Equitability and Compensation Issues'.*

Alternatives to Topley Pike Limestone: Other possible options considered include the grant of permission for an extension of quarrying elsewhere, in a less sensitive environment, in exchange for revocation in whole or in part of quarrying rights at Topley Pike. No suitable alternative sites for such an exchange have been identified, and the applicant asserts that Topley Pike stone is of particularly good quality. Given current permitted reserves at the site and elsewhere and the availability of alternative sources, it cannot be conclusively demonstrated that the development is essential to meet a national need which overrides national policy to protect the National Park. Other aggregate resources exist outside and within the Park and national policy favours maintenance of landbanks of non-energy minerals from outside the Park. There is an estimated reserve (active + inactive sites) of 789.5 million tonnes [including 710mt limestone in Derbyshire (including Topley Pike) + 78.2mt limestone in the National Park] of rock for aggregate use in this area, sufficient for 62 years provision (based on the former joint apportionment figure for 2005-2020 of 12.8 million tonnes (8.74mt for Derbyshire and 4.05mt for the PDNP).

Alternative Location for the Asphalt Plant: The asphalt plant stands in an area identified for plant in the 1994 review. Alternative locations considered do not provide similar opportunities for visual screening. Relocating the plant into the quarry void was ruled out for operational and safety reasons. The applicant considered an off-site location but this would generate additional vehicular movements. Asphalt has historically been produced at Topley Pike as an ancillary operation and policy LM9 supports ancillary mineral development where there are clear benefits in a close link with the quarry producing the mineral to be processed, and the development is removed when mineral working expires.

Alternative Options and Outcomes if Permission is Refused: These could be: (1) the applicant submits an appeal which is upheld; (2) the applicant submits an appeal which is dismissed; or (3) the applicant does not submit an appeal. In the event of options (2) or (3) the Authority would be statutorily bound to progress and determine the stalled ROMP application by recommencing the 2008 Regulations multi-stage procedure for submission of a new environmental statement to relate to the extant ministerial permissions. In this eventuality quarrying would continue in the manner described in *'Future Site Development under the Extant Permissions'* earlier in this report. The disbenefits of this are summarised below *under 'Disbenefits of Retaining the Old Permissions and Determining the ROMP'*.

Summary Assessment of Benefits, Concessions and Disbenefits: The issue is whether there are exceptional and sustainable circumstances and it is in the public interest to allow the development. The following summary lists assessed criteria that cumulatively demonstrate net environmental benefits, sustainability, and exceptional circumstances.

Applicant's / Consultant's Stated Benefits of the Proposal: (Officer collation):
- A single, comprehensive, modern planning permission for the whole quarry.
- No need to progress Environment Act Reviews under the current mineral permissions.
- A shorter end date for cessation of mineral operations (December 2025 instead of 2042).
- Gives certainty as to when quarrying operations will finish and the quarry will be restored.
- Restoration of the Deep Dale tip area back to its original valley landform.
- Protection and enhancement of a valued landscape, significantly improved.
- Removal of a tip feature that has an adverse visual impact.
- Enhanced landscape character and visual amenity.
- Restoration of a stretch of Deep Dale stream that is currently culverted.
- Increased and enhanced biodiversity through habitat creation.
- Will improve the quality of the footpath network and recreational opportunities.
- 15 metres reduction in depth of limestone extraction in the western half of the quarry.
- Enables the MPA to limit this depth of extraction without payment of compensation.
- Prevents dewatering below 225mAOD and potential adverse impacts on local hydrology.
- Prevents any potential adverse impacts on designated areas of ecological interest.

Concessions obtained from Applicant: *('Without Prejudice' Pre-Application Negotiations)*
- Surrender of deeper working in hydrological / hydro-ecological sensitive western area.
- This is a "once and for all" quarry development plan, no options for extensions.

Officer Summary of the Benefits of the Proposal:
- ✓ More environmentally beneficial than progressing the ROMP.
- ✓ Shorter working timescale (for working and restoration reduced by as much as -16 years).
- ✓ Relinquishment of all the old permissions in exchange for a new permission.
- ✓ New permission for whole site with imposition of modern standards of regulatory control.
- ✓ The new mineral development to be confined to within the current quarry site footprint.
- ✓ Brings all site development and operations under modern environmental conditions.
- ✓ Secures better planning control over environmental effects (noise, dust, blasting, etc).
- ✓ Less blasting in the western end of the quarry closest to King Sterndale.
- ✓ Early cessation of quarrying (within about 2 years) in the area closest to King Sterndale.
- ✓ Eliminates unrestricted working depth in the western half of the quarry.
- ✓ Quarrying in western half of quarry reduced to 225mAOD instead of 210mAOD.
- ✓ Depth of extraction in area closest to King Sterndale to be reduced by 15m.
- ✓ Shallower working, less dewatering, protects water dependent ecological interests.
- ✓ Secures progressive dismantling and removal of Deep Dale tip (currently not required).
- ✓ Deep Dale would be freed of the incongruous tip within eight years.
- ✓ Secures the stabilization and reinstatement of Deep Dale.
- ✓ Secures removal of the culvert and return to open watercourse of the Deep Dale stream.
- ✓ Substantially better (modern standard, negotiated) phased and progressive restoration.

- ✓ Promotes habitat creation and biodiversity.
- ✓ Enables aftercare and land management.
- ✓ Secures reinstatement of Footpath No.37 on it correct (definitive map) alignment.

Officer Summary of the Disbenefits of the Proposal:

- × Continued quarrying (increased reserve) in the National Park.
- × Major development set against policies to constrain and gradually reduce quarrying.
- × Quarrying 15m deeper (240mAOD down to 210mAOD, eastern half of quarry).
- × Additional disturbance from removal of Deep Dale tip.
- × Loss of small trees for stabilising and restoring the sides of Deep Dale.
- × Temporary closure of 400m length of Footpath No.37.

Benefits of Retaining the Old Permissions and Determining the ROMP:

- o Imposition of updated conditions for environmental controls, restoration and aftercare.

Disbenefits of Retaining the Old Permissions and Determining the ROMP:

- o Retention of the 2042 timescale.
- o Improved environmental controls less than consolidation scheme.
- o Quarrying to greater depth within the western area.
- o Potentially more environmentally damaging.
- o Increased dewatering, potentially prejudicial to hydrology and water dependent ecology.
- o Greater potential risk to SAC and SSSI's.
- o Increased potential of perception, blasting, noise and dust disturbance for residents.
- o Undesirable retention of the Deep Dale tip and less restoration potential for Deep Dale.
- o Long term landscape and visual attributes of Deep Dale despoiled by the Tip.
- o Reduced long term visitor enjoyment of Deep Dale.
- o Deep Dale stream remains in culvert.
- o Less wildlife / biodiversity gain.
- o Less landscape and visual impact.

Conclusions

This proposal would consolidate and bring all development, operations and uses under one permission, with revised working depths and alternate reserves within ancillary mining land. Notwithstanding additional extraction, the application carries overall net benefits for the National Park that meet the public interest test as set out in the NPPF and the Authority's Core Strategy. The application offers net planning control and environmental benefits beyond that which may be achieved through the ROMP. The most significant benefits would be removal of the Deep Dale tip and reclamation of Deep Dale; protection of the water environment, SAC, SSSI and important water dependent ecology by reducing the depth of working and dewatering; the opportunity for improved quarry restoration design and biodiversity; and a considerably shorter working timescale. There would be updated standards of working, restoration, landscaping and aftercare, substantial progressive restoration, biodiversity and wildlife habitat development, and long term land management.

Weighed against the benefits, and given implementation of effective impact mitigation measures, the development would not adversely impact to an unacceptable degree on the characteristics of the National Park (landscape character, environment and amenity, in terms of visual appearance, the aqueous environment, ecology, recreation, archaeology, cultural heritage, residential amenity, noise, dust, blasting, lighting, highways and traffic). The alternative continued quarrying under extant consents would have greater impacts and less residual major benefits.

The continued use of the asphalt coating plant is unlikely to have any additional effects on

the environment and, given effective permit and emissions control, it would be in the public interest to retain and use the plant for continued processing of the limestone.

The proposal supports controlled, time limited sustainable economic development whilst seeking to protect and enhance the natural and historic environment in line with principles for sustainability; the development is sustainable within the context of guidelines which trigger presumption in favour of approval. Exceptional circumstances have been demonstrated to support the proposals within the National Park. Whilst specific policy issues arise, on balance, the development complies with Development Plan policies and the NPPF.

Human Rights: Any human rights issues have been considered and addressed in preparing this report.

Financial Considerations: The correct application fee has been paid.

List of Background Papers (not previously published): None.