PLANNING APPLICATIONS COMMITTEE

Wednesday, 16th September, 2020

10.00 am

Online

AGENDA

PLANNING APPLICATIONS COMMITTEE

Wednesday, 16th September, 2020, at 10.00 am
Online

Ask for: **Andrew Tait**

Telephone: **03000 416749**

Membership (13)

Conservative (10): Mr R A Marsh (Chairman), Mr R A Pascoe (Vice-Chairman), Mr M A C Balfour, Mrs R Binks, Mr A Booth, Mr A H T Bowles, Mr P C Cooper, Mr H Rayner, Mr C Simkins and Mr J Wright

Liberal Democrat (1): Mr I S Chittenden

Labour (1) Mr J Burden

Independents (1) Mr P M Harman

In response to COVID-19, the Government has legislated to permit remote attendance by Elected Members at formal meetings. This is conditional on other Elected Members and the public being able to hear those participating in the meeting. This meeting of the Cabinet will be streamed live and can be watched via the Media link on the Webpage for this meeting.

Representations by members of the public will only be accepted in writing. The transcript of representations that would normally be made in person will be provided to the Clerk by 12 Noon two days ahead of the meeting and will be read out by the Clerk of the meeting at the appropriate point in the meeting. The maximum length of time allotted to each written representation will be the 5 minutes that it takes the Clerk to read it out.

UNRESTRICTED ITEMS

(During these items the meeting is likely to be open to the public

A. COMMITTEE BUSINESS

1. Substitutes

2. Declarations of Interests by Members in items on the Agenda for this meeting.

3. Minutes - 2 September 2020 (Pages 1 - 4)

4. Site Meetings and Other Meetings

B. GENERAL MATTERS

1. General Matters

C. MINERALS AND WASTE DISPOSAL APPLICATIONS

1. Application TM/19/2396 (KCC/TM/0211/2019) - Temporary development of an Anaerobic Digestion plant with ancillary gas-to-grid plant and associated infrastructure (part retrospective) at Blaise Farm Quarry, Blaise Quarry Road, Kings Hill, West Malling; Blaise Biogas Ltd (Pages 5 - 62)

2. Application TM/88/1002/RVARA (KCC/TM/0121/2020) - Details pursuant to Conditions 4,7,8,12,17 and 27 of Permission TM/88/1002 relating to 5-year schemes of working restoration and aftercare, prior approval for static replacement processing plant and ancillary mobile plant and ancillary mobile plant and equipment, amended internal road layout, replacement weighbridge and weighbridge office, wheel wash, storage and staff welfare facilities and updated schemes of blasting and blast monitoring at Blaise Farm Quarry, Blaise Quarry Road, Kings Hill, West Malling; Gallagher Aggregates Ltd (Pages 63 - 236)

D. DEVELOPMENTS TO BE CARRIED OUT BY THE COUNTY COUNCIL

E. MATTERS DEALT WITH UNDER DELEGATED POWERS

1. County matter applications (Pages 237 - 240)

2. County Council developments

3. Screening opinions under Town and Country Planning (Environmental Impact Assessment) Regulations 2017

4. Scoping opinions under Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (None)

F. KCC RESPONSE TO CONSULTATIONS

No items

G. OTHER ITEMS WHICH THE CHAIRMAN DECIDES ARE URGENT

EXEMPT ITEMS

(At the time of preparing the agenda there were no exempt items. During any such items which may arise the meeting is likely NOT to be open to the public)

Benjamin Watts
General Counsel
03000 416814

Tuesday, 8 September 2020

(Please note that the background documents referred to in the accompanying papers may be inspected by arrangement with the Departments responsible for preparing the report. Draft conditions concerning applications being recommended for permission, reported in section C are available to Members in the Members' Lounge.)

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KENT COUNTY COUNCIL

PLANNING APPLICATIONS COMMITTEE

MINUTES of a meeting of the Planning Applications Committee held in the Online on Wednesday, 2 September 2020.

PRESENT: Mr R A Marsh (Chairman), Mr R A Pascoe (Vice-Chairman), Mr M A C Balfour, Mr A Booth, Mr A H T Bowles, Mr D L Brazier (Substitute for Mrs R Binks), Mr J Burden, Mr I S Chittenden, Mr P C Cooper, Mr P M Harman, Mr H Rayner, Mr C Simkins and Mr J Wright

ALSO PRESENT: Mrs R Binks, Ms K Constantine, Mrs L Hurst and Mr B H Lewis

IN ATTENDANCE: Mrs S Thompson (Head of Planning Applications Group), Ms M Green (Principal Planning Officer), Mrs S Benge (Transport and Development Manager) and Mr A Tait (Democratic Services Officer)

UNRESTRICTED ITEMS

34. Minutes - 15 July
(Item A3)

RESOLVED that the Minutes of the meeting held on 15 July 2020 are correctly recorded and that they be signed by the Chairman.

35. Site Meetings and Other Meetings
(Item A4)

The Head of Planning Applications Group updated the Committee on progress in respect of the intended site inspection of Covers Farm in Westerham. She explained that, having investigated the possibility of using a drone, she had been forced to conclude that for a number of reasons, this option would not appear to be practical. She would continue to investigate alternative arrangements.

36. Proposal TH/19/1696 (KCC/TH/0256/2019) -Construction of a new railway station consisting of two platforms connected via an existing underpass (to be refurbished) with stair and lift access and associated infrastructure including vehicle and cycle parking, public announcement system, drainage, security and lighting, landscaping, level crossing upgrade works, and vehicle, pedestrian and cycle access including the creation of a vehicle access onto the A299 Hengist Way with associated highway works and a footway/cycle link to Clive Road at Land to the north and south of the A299 (Hengist Way) and to the east of the A256 (Richborough Way) including an existing railway line and part of the A299, Cliffsend (Thanet Parkway Station); KCC Growth, Environment and Transport
(Item D1)

(1) Mr J Burden informed the Committee that he was a Member of the Kent and Medway Economic Partnership in his capacity as Leader of Gravesham BC. He

had not, however, participated in any discussions of the planning application and was therefore able to approach its determination with an open mind.

(2) Ms K Constantine, Mrs R Binks and Mr B Lewis were present as Local Members and spoke. In addition, Mr P Messenger had indicated his intention to be present. Due to technical difficulties, he was unable to speak, but the Chairman agreed to accept a question which he was able to ask through the Teams Chat Function. This was duly responded to by the Head of Planning Applications Group.

(3) The Clerk to the meeting read out representations from Mr David Morrish of CPRE Kent as well as the response on behalf of the applicants from Ms Katie Pettit (KCC Principal Transport Planner – Strategy).

(4) On being put to the vote, the recommendations of the Head of Planning Applications Group were carried by 8 votes to 5. The Chairman ruled that although Mr H Rayner was unable to state his vote due to technical difficulties, his intended vote would be counted as set out in the Teams Chat Function as he had clearly been present throughout the entire discussion of the application.

(5) RESOLVED that subject to compliance with the agreed Memorandum of Understanding:-

(a) permission be granted to the proposal subject to conditions, including conditions covering the standard 3 year time limit for implementation; the development being carried out in accordance with the permitted details; the submission and approval of details of all materials to be used externally prior to the commencement of the construction of the station and car park; he submission prior to the commencement of the construction of the station and car park of a detailed scheme of external lighting including lux levels and light spill diagrams and details of how the lighting aims to minimise impacts to foraging and commuting bats; the submission of a biodiversity plan demonstrating biodiversity net gain; tree retention and protection of those trees which are to be retained, including root protection areas; the submission and approval of a scheme of landscaping and tree planting prior to the commencement of the development (apart from enabling works and site clearance), including the provision of early tree planting if possible; implementation of the approved landscaping scheme in the first planting season following completion of the development and replacement of any trees/plants that are damaged/diseased/dead within 5 years of the completion of the development; the submission for approval by the County Planning Authority of details of any mounding proposed; all tree work being undertaken in accordance with British Standard BS3998:2012 ‘Recommendations for Tree Work’; the submission of details of the permanent bus shelter facilities prior to bus services commencing, and their ongoing retention thereafter; the provision and permanent retention of vehicle parking spaces prior to use of the site commencing; the submission of details of the Electric Vehicle Charging Points as indicated on the application drawings, and their ongoing retention thereafter; the submission of details of secure, covered cycle parking facilities prior to use of the site commencing, and their ongoing retention thereafter; the submission for approval within 6 months of the date of the permission of a scheme of access and construction works setting out any path alignment, surfacing,

width and signage details; the delivery of the approved PROW works prior to first use/occupation of the development; the implementation of the archaeological scheme of investigation; the submission of a detailed Sustainable Surface Water Drainage Scheme prior to the commencement of the development (works on the main station and car park); the submission of a verification report pertaining to the approved SuDs scheme prior to first occupation/use of the development; control over the infiltration of surface water into the ground; restrictions on piling and other foundation designs using penetrative methods; the submission prior to commencement of the development of a remediation strategy to deal with the risks associated with land contamination (works on the main station and car park); the submission prior to first use of the development of a verification report regarding the remediation strategy; development ceasing should contamination not previously identified be found to be present at the site; the installation of the 2.4 metre high acoustic barriers to the rear of the platforms prior to first use of the development; the submission for approval of a Construction Environmental Management Plan prior to the commencement of phases B, C & D, including details regarding the protection of bats, reptiles, badgers, hedgehogs and breeding birds, mitigation measures required to protect the amenity of the locality from adverse noise and dust arising from construction, measures to ensure that the local highway network would not be adversely affected by construction activities, hours of working, details regarding contractor liaison with the local community and the provision of details of site personnel for local residents to contact should matters arise; and

(b) the applicants be advised by Informative that:-

(i) they are encouraged to consider the provision of a suitable all movements access in the future should further funding/land become available;

(ii) they should give consideration to the inclusion of canopy structures within the car park which could incorporate an array of solar panels. Such development would need to be subject to a separate detailed planning application;

(iii) their attention is drawn to the advice and guidance provided by Southern Water with regard to protection of apparatus, sustainable drainage, foul and surface water drainage, petrol interceptors and land drainage. The letters containing this advice would be attached to the decision notice; and

(iv) they are encouraged to explore the potential to incorporate public art into the development. In addition to dialogue with British Transport Police, the applicant and Network Rail are encouraged to have further dialogue with the Designing Out Crime Officer at Kent Police;

37. Matters dealt with under delegated powers
(Items E1- E5)

(1) Mr J Burden informed the Committee that, although the four school applications which had been determined in item F2 were within the area of Gravesham BC, he had not participated in the discussions of any of them.

(2) RESOLVED to note matters dealt with under delegated powers since the last meeting relating to:-

(a) County matter applications;

(b) County Council developments;

(c) Screening Opinions under the Town and Country Planning (Environmental Impact Assessment) Regulations 2017;

(d) Scoping Opinions under the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (None);

(e) The Urgent decision taken pursuant to the Urgent Matter protocol in respect of the request by Gallagher Aggregates Ltd for extended operating hours at Blaise Farm Quarry, Kings Hill, West Malling to supply an urgent Brexit-related Government contract for the Ashford Inland Port Project.

38. KCC Responses to consultations
(Items F1- F2)

RESOLVED to note Kent County Council's responses to the following consultations:-

(a) The Written Statement to the Examination of the Folkestone and Hythe District Council Core Strategy Review; and

(b) Application SW/18/502/EIHYB - Housing Proposal at Land North Quinton Road, Sittingbourne

SECTION C
MINERALS AND WASTE MANAGEMENT

Background Documents - the deposited documents; views and representations received as referred to in the reports and included in the development proposals dossier for each case; and other documents as might be additionally indicated.

Item C1

Temporary development of an Anaerobic Digestion plant with ancillary gas-to-grid plant and associated infrastructure (part retrospective) at Blaise Farm Quarry, Blaise Quarry Road, Kings Hill, West Malling, Kent ME19 4PN - TM/19/2396 (KCC/TM/0211/2019)

A report by Head of Planning Applications Group to Planning Applications Committee on 16 September 2020.

Application by Blaise Biogas Ltd for Temporary development of an Anaerobic Digestion plant with ancillary gas-to-grid plant and associated infrastructure (part retrospective) at Blaise Farm Quarry, Blaise Quarry Road, Kings Hill, West Malling, Kent ME19 4PN - TM/19/2396 (KCC/TM/0211/2019)

Recommendation: Permission be granted subject to conditions.

Local Members: Sarah Hohler, Trudy Dean & Matthew Balfour Unrestricted

Site description

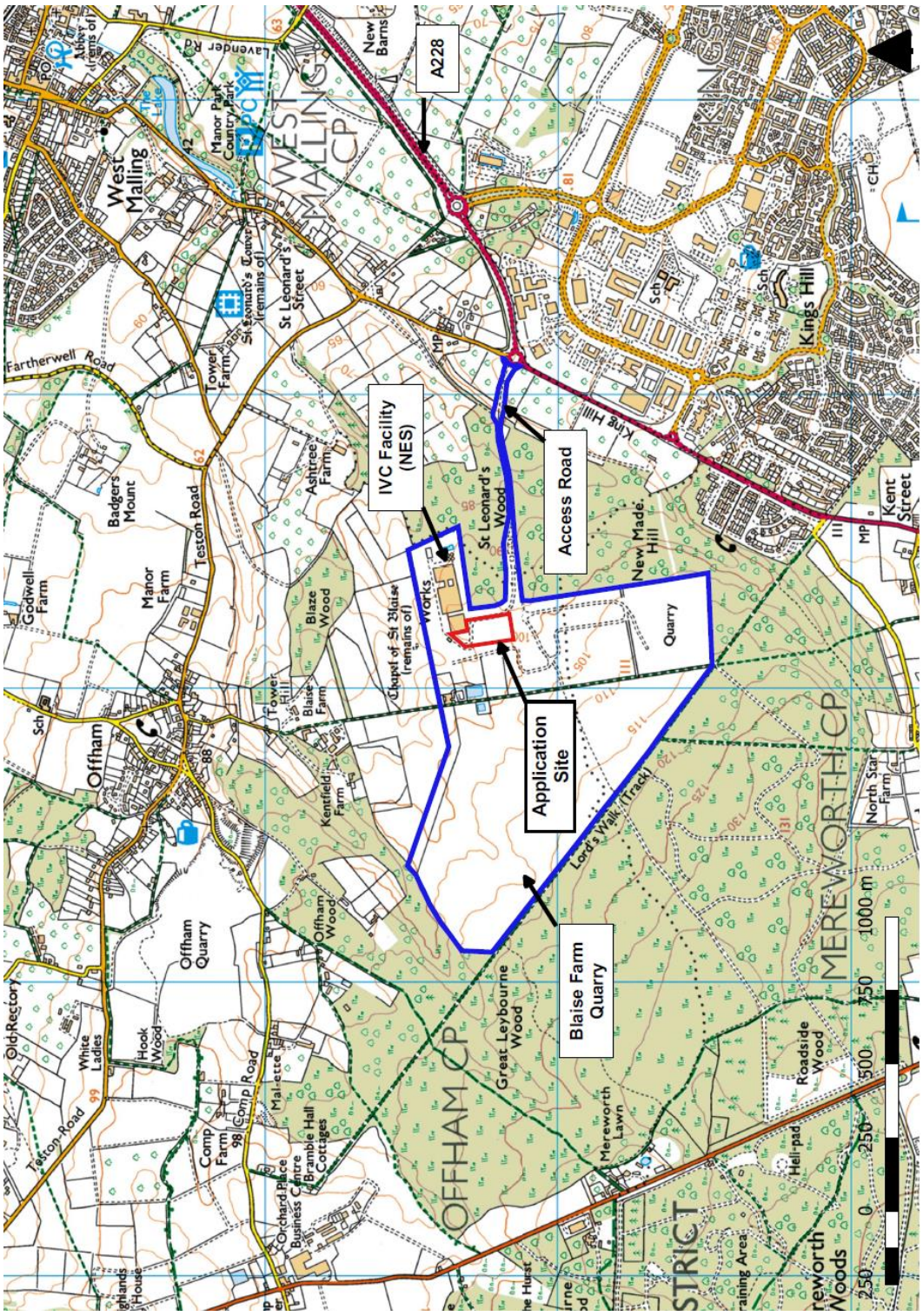
1. The application site is located alongside the existing In-Vessel Composting (IVC) facility operated by New Earth Solutions (Kent) Ltd within the excavated quarry void in the north eastern corner of Blaise Farm Quarry near Kings Hill, West Malling.

2. The excavated area is approximately 15 to 20m lower than the adjacent unexcavated ground and is bounded to the east by St Leonard's Wood, to the north by farmland and planting associated with the quarry and to the west / south by those parts of the quarry that have yet to be fully worked. Offham lies about 750m to the north, West Malling about 1.4km to the north west and Kings Hill about 750m to the south west. Mereworth and Herne Pound lie further to the south. The nearest residential property (Blaise Farm House) is about 590m to the north west. A number of other residential properties lie beyond this distance between the site and both Offham and West Malling.

3. Access to the existing IVC Facility and the proposed facility is via a purpose built access road from the existing quarry access road and the A228 West Malling roundabout near Kings Hill.

Temporary development of an Anaerobic Digestion plant with ancillary gas-to-grid plant and associated infrastructure (part retrospective) at Blaise Farm Quarry, Blaise Quarry Road, Kings Hill, West Malling, Kent ME19 4PN - TM/19/2396 (KCC/TM/0211/2019)

Site Location Plan



4. The site lies in the Metropolitan Green Belt and St Leonard's Wood is designated as both Ancient Woodland and a Local Wildlife Site (LWS). The remains of the Chapel of St Blaise (Scheduled Ancient Monument) lie about 100m to the north. The quarry has the benefit of a mineral permission (TM/88/1002) granted in 1994 which provides for the winning and working of ragstone until 2063. A public right of way (Footpath MR286) lies about 130m to the west of the application site. This will need to be diverted further west to facilitate mineral working at the quarry and to provide continuity for pedestrians wishing to access Footpath MR260 (Lords Walk) to the south west.

5. The application site currently contains the majority of the proposed Anaerobic Digestion and gas to grid facility, reflecting the part retrospective nature of the application. Although not allocated for any specific purpose in the development plan, Blaise Farm Quarry is safeguarded for mineral working in the Kent Minerals and Waste Local Plan.

6. The locations of Blaise Farm Quarry, site access, the application site and the existing IVC facility are illustrated on the drawing on page C1.2.

Planning History and Background

7. Waste management development at Blaise Farm Quarry was first permitted in 2005 (TM/03/1155). The permission provided for a composting facility on unexcavated land near the centre of the quarry capable of composting of up to 50,000 tonnes per annum (tpa) of green waste and green/garden, food, vegetable, cardboard (GFVC) waste. The permission was not implemented and has lapsed.

8. The existing IVC facility was first permitted in 2006 (TM/06/762). The permission, which provided for the treatment of up to 50,000tpa of source segregated GFVC waste to produce compost in an enclosed process, started operating in September 2008. Only one of the two phases initially proposed has ever been built. A number of further permissions were granted by KCC or allowed on appeal for the IVC facility (including TM/09/3231 in May 2010). That permission provided for an increased capacity[1] and a wider waste catchment area[2] than was initially permitted and for waste deliveries on some bank and public holidays. The permission also required the IVC facility to cease operating in September 2028 and the site to be restored within a further 2 years.

9. Planning permission was granted for the installation of renewable energy generating equipment and amendments to the IVC facility in November 2011 (TM/10/3056). This was intended to replace about one third of the consented (but not built) southern composting hall. The permission was not implemented and has lapsed.

10. Planning permission was granted for an Anaerobic Digestion (AD) and Advanced Thermal Conversion (ATC) facility in April 2013 (TM/12/2549). This was intended to

[1] 100,000tpa as opposed to 50,000tpa.

[2] Kent, Medway, Surrey, East Sussex, West Sussex, Brighton & Hove for the life of the facility; LB Bromley and LB Bexley for a temporary period until 31 December 2015; and Essex for a temporary period until 31 March 2014 and additionally limited to no more than 10,000tpa.

replace the unbuilt second phase of the IVC facility, amend some of the built elements of the IVC facility, share some components with the IVC facility (e.g. new site offices, surface water drainage and balancing pond) and provide operational linkages between the two facilities. Planning permission TM/12/2549 contained 35 conditions including:

2. Operations to cease no later than 20 years from commencement of AD and ATC operations and for the site to be restored to forestry, ecological and amenity after-use;
15. A waste catchment area defined as Kent, Medway, Thurrock, Havering, South East London Waste Partnership Authorities (London Boroughs of Greenwich, Southwark, Lewisham, Bromley and Bexley), Surrey, West Sussex, East Sussex, Brighton & Hove, Essex and Southend-on-Sea;
19. No more than a combined limit of 100,000 tonnes of waste to be imported to the IVC and AD facilities in any one calendar year;
22. No more than a combined total of 120 HGV movements (60 in / 60 out) for the IVC, AD and ATC facilities per day. On Saturdays when the facilities are open (0700-1300) the combined daily limit is reduced to 66 movements (33 in / 33 out) and
21. Hours of operation (as follows):

Day	Deliveries		Exports	
	Start	Finish	Start	Finish
Monday-Friday	0700	1800	0700	1800
Saturdays April-June and Saturday following Bank/Public Holiday	0700	1730	0700	1300
Saturdays July-March	0700	1300	0700	1300
Sundays	None	None	None	None
Bank/Public Holiday	0700	1730	0700	1730
25th, 26th December, 1st January	None	None	None	None

11. Pre-commencement conditions 4 (surface water drainage scheme) and 5 (site lighting scheme) were discharged in July 2013 (TM/12/2549R4&R5) and a non-material amendment (the relocation of two pumping containers) approved in November 2013 (TM/12/2549/R). Planning permission TM/12/2549 was lawfully implemented on 11 April 2018 and therefore remains extant. However, as commercial AD / ATC operations have not commenced, the date for cessation of the development is not yet known.

12. Planning permission was granted for a gas to grid facility in February 2014 (TM/13/3657). This was intended to be ancillary to the AD / ATC facility and linked to its life. The permission included no pre-commencement conditions and it was lawfully implemented on 7 January 2019 and therefore remains extant.

13. Two further planning permissions have been granted for the IVC facility. One in December 2013 (TM/13/1299) further amended the waste catchment area to reflect that at the permitted AD / ATC facility (but retained the earlier 100,000tpa waste limit for the IVC facility alone, rather than introducing the 100,000tpa limit on waste for the IVC, AD / ATC facilities combined). The other in April 2014 (TM/14/532) aligned the

operational life of the IVC facility to that of the permitted AD / ATC facility (and did introduce the combined 100,000tpa limit on waste for the IVC, AD / ATC facilities). New Earth Solutions (Kent) Ltd has informed KCC that each of the IVC planning permissions have been implemented.

14. A number of Section 106 Agreements have been secured alongside the above planning permissions. The most recent of these (dated 18 December 2013) relates to all waste management development in that part of Blaise Farm Quarry to which the IVC, AD, ATC and gas to grid planning permissions referred to in paragraphs 8 to 13 above apply as well as any subsequent temporary waste management development in these areas. The Section 106 Agreement provides obligations relating to a liaison committee, vehicle routeing and restoration. The liaison committee is required to meet at least every 6 months (or other such intervals as may be agreed) and involve representatives of those owning / operating the waste management facilities, KCC, Offham Parish Council and the local community. The vehicle routeing requires the operators to use best endeavours to prevent HGVs associated with their operations travelling through Offham, Mereworth and West Malling villages unless collecting waste from them. The restoration obligation requires the owner of Blaise Farm Quarry (Hanson) not to obstruct the restoration of the waste management facilities and make available sufficient restoration materials from the quarry, as well as create a new footpath across Blaise Farm Quarry (north to south) to replace Footpath MR286.

15. A number of changes have occurred in terms of site ownership and lease arrangements since 2006. Whilst New Earth Solutions (Kent) Ltd (NES) still operates the IVC facility, the AD / ATC and gas to grid elements are now within the control of Blaise Biogas Ltd (BBL). It is also worth noting that Gallagher Aggregates Ltd now operates Blaise Farm Quarry under a lease arrangement with Hanson.

16. It should also be noted that the development that has taken place since planning permissions TM/12/2549 (the AD / ATC facility) and TM/13/3657 (the gas to grid facility) were implemented in 2018 and 2019 has departed from what has been permitted.

17. BBL submitted four planning applications in August / September 2019. Three were submitted under Section 73 of the Town and Country Planning Act 1990 (as amended) and the other (this application) under Section 73A. The "Section 73" applications sought to "vary" planning permissions TM/12/2549 (AD / ATC) [TM/19/2397], TM/13/3657 (gas to grid) [TM/19/2399] and TM/14/532 (IVC) [TM/19/2398]. The proposed variations to the AD / ATC and gas to grid permissions were intended to secure planning permission for what BBL was constructing on site and for the facility it wanted to operate (whilst safeguarding the ATC element). The proposed variation to the IVC facility was intended to remove ambiguity about the 100,000tpa combined waste limit imposed on planning permission TM/14/532 by proving the IVC facility with a separate limit.

18. The "Section 73A" application (TM/19/2396) was submitted both to secure planning permission for what BBL wanted (as distinct from what it had planning permission for) and remove the combined limits on waste and HGV movements and acknowledge the

fact that what had been and was continuing to be built on site was not the same as that provided for by planning permissions TM/12/2549 and TM/13/3657. Notably, the Section 73A application does not include an ATC element.

19. Following concerns expressed by NES and advice from KCC's Solicitors (Invicta Law), BBL has agreed that KCC should delay consideration of the Section 73 applications pending determination of the Section 73A application with a view to withdrawing them if planning permission is granted. The Section 73A application (TM/19/2396) is now the subject of this report.

The Proposal

20. The application proposes the temporary development of an AD plant with ancillary gas to grid plant and associated infrastructure. The application is part retrospective, reflecting the development that has already taken place. Drawings illustrating the proposed development and the AD / ATC and gas to grid facilities already permitted are included in Appendix 1.

21. The application (as submitted at the end of August 2019) was accompanied by a Planning Design & Access Statement, a Transport Statement, a Sustainability Statement, an Odour Assessment, an Air Quality Assessment, a Bioaerosol Risk Assessment, a Green Belt, Landscape and Visual Impact Appraisal, a Flood Risk Assessment, an Ecology Statement, a Noise Assessment and a Surface Water Drainage Strategy.

22. As a result of concerns being raised by the operator of the IVC facility (NES) (and its parent company DM Topco Ltd) about the proposed surface water drainage arrangements, responses from the Environment Agency and KCC SUDS and my own consideration of the application, additional information was submitted in February, March and April 2020. The information included: an updated Surface Water Drainage Strategy; a complementary report (the Containment Bund Design Report) relating to water management arrangements within the containment bund (i.e. the area containing the main and other tanks containing liquids); a Phase 2 Intrusive Ground Investigation, Interpretive Report; further information relating to groundwater depth and soakaways; new drawings illustrating the proposed drainage arrangements (including a soakaway / crate system); clarification on the proposed site surfacing (particularly in front of the waste reception building); replacement drawings showing the proposed site layout now wanted by the applicant (including the relocation of some of the plant and equipment); and a reduction in the size of the application site (i.e. a revised red line) to better reflect the extent of the land required for the proposed development and BBL's lease area and avoid including land under the ownership / control of NES (including the NES site offices, weighbridge and parking areas and the pond and associated drainage ditches which were previously intended to be shared with the IVC facility). The applicant formally requested that the planning application be amended to reflect the alteration to the red line. Further concerns and queries by NES, the Environment Agency and KCC SUDS led to an Addendum to the Drainage Strategy being submitted in June 2020.

23. The application proposes a waste reception / processing building (47m x 31m x 12m ridge height) which would be fully enclosed and serve as a delivery point for incoming refuse collection vehicles (RCVs) and other HGVs (including covered bulkers, RoRo skip lorries and tankers) and a collection point for liquid and solid digestate. The building would also accommodate a de-packaging unit, a feeding unit, a dedicated liquid waste reception area and tank and a mixing pit. Vehicles would enter and leave the building via four fast opening / closing electric roller shutter doors. Four main tanks (28m diameter, 13.5m height to tip of the domes) are proposed within a concrete bunded area (2 fermenter tanks, 1 post-fermenter tank and 1 digestate storage tank). The fermenter and post-fermenter tanks would be linked by an associated technical building. Other tanks within the bunded area would include 1 water tank, 3 reception tanks (3m diameter), 3 pasteurisation tanks (3m diameter), 1 ferric chloride tank (3.75m diameter) and 1 pre-storage tank (10m diameter). The bunded area would also accommodate a gas cooling unit and 3 carbon and VOC (volatile organic compound) filters. The gas to grid facility would comprise 6 propane tanks, a gas conditioning / upgrading unit and a gas entry unit. Other development would include a combined heat and power (CHP) unit, a boiler and exhaust stack, a septic tank, a back-up generator and emergency flare, a biofilter, an odour control unit and a weighbridge and site office.

24. The main physical changes to the development provided for by planning permissions TM/12/2549 (AD / ATC) and TM/13/3657 (gas to grid) are:

- A reduction in the number of digestate storage tanks (4 rather than 6) to reflect operational changes;
- Re-siting of the buffer tank and pasteurisation tanks;
- Combining the waste reception and digestate offtake into one building and siting it centrally so that the building sits closer to the bunded tanks, reducing pipe runs and benefitting the odour abatement process;
- The reception building would be 2m off the bunded area and incorporate separate bay for liquid inputs and solid offtakes;
- An alternative odour abatement system;
- Removal of ATC component to allow for re-siting of the waste reception and digestate offtake building;
- The re-location of pre-treatment tanks within the bunded area and integrated with gas storage;
- Locating the pumping station between the main tanks within the bunded area;
- Siting the weighbridge in front of the office and the relocation of staff / visitor parking;
- Amendments to the drainage infrastructure to allow the AD plant to operate independently from the IVC facility;
- Realignment of the access road through creation of a new slip road to provide contingency for HGV parking or queueing;
- Reducing the size of the bunded area;
- The re-siting of the CHP unit;
- Reducing the number of CHP units due to the use of the gas to grid plant (thereby reducing exhaust emissions); and

- The gas to grid infrastructure employing a membrane filter rather than water tower.

25. Incoming waste would be delivered in a range of HGVs which would pass through the weighbridge and into the yard and reverse into the waste reception building. Fast opening / closing electric roller shutter doors would ensure that the building remains fully enclosed other than for entry and egress. Overhead extraction would ensure that the reception building is kept at a slight negative pressure, minimising the risk of fugitive odour escapes when the doors are opened for access and egress. Extracted air would pass through an odour abatement plant prior to release to the atmosphere.

26. Food and mixed green / food waste would be tipped onto a sealed floor within the building where it would undergo visual inspection. Gully drains set within the floor would capture any excess moisture. Material would be loaded into a hopper and pass through a de-packaging unit. A dedicated liquid reception point (with tank) and an area for dry solid wastes that may require a degree of mixing / blending would also be housed within the building. From this point, the AD plant would operate as a sealed system with the small buffer tank, two primary digestion tanks (where paddles would agitate the material), secondary digester tank and liquid digestate storage tank connected by a series of pipes, allowing for the controlled flow of digestate and biogas. Ferric Chloride would be stored within IBCs (intermediate bulk containers) within the bund and added (as required) to reduce the build-up of hydrogen sulphide within the process. Flexible membrane roofs on the main tanks would allow for pressure variations, with pressure release valves a standard safety feature. Biogas yields would decrease through the various stages. The substrate within the digestion tanks would then be macerated to a minimum of 12mm and the digestate pasteurised by means of being heated to a minimum temperature of 70 degrees Celsius continuously for 1 hour before entering the digestate storage tank in anticipation of onward dispatch. Solid digestate would be separated out and taken off site in skips for blending or direct agricultural application, whilst liquid digestate will be transferred into tankers (which will vent inside the building) for transfer to on-farm lagoons or direct agricultural application. The biogas would feed into the CHP unit and boiler providing both heat and electricity for the process. Residual biogas would be cooled and screened to remove any particulate matter, before being supplemented with propane to produce a biomethane for injection into the mains. Thereafter it would be drawn down by homes and businesses to provide heat and power on demand.

27. Other than the omission of the ATC plant and changes to the design and layout described above (which would result in the development being lower in height and having a smaller footprint), the proposed development is broadly similar to that already permitted. The tanks and buildings would be clad in grey, the hours of operation would be the same (see paragraph 10 above), all waste operations would continue to take place entirely within buildings or structures designed for these activities with appropriate odour management controls and operations would also be regulated by an Environmental Permit. Although not explicitly referred to in the application, it is understood that the applicant envisages the temporary period sought being aligned with that set out in condition 2 of planning permission TM/12/2549 (i.e. operations to cease no later than 20 years from the commencement of commercial AD operations

and the site restored thereafter in the way already permitted). I intend to consider the application on that basis.

28. A number of other changes are proposed to reflect the fact that the AD / gas to grid plant would no longer be operated by NES (the IVC operator) and as BBL wishes to secure additional AD capacity. The key changes are:

- The AD and gas to grid plant would be self-contained in terms of drainage, as opposed to sharing surface water and foul drainage arrangements with the IVC facility;
- The AD plant would deal with up to 75,000tpa of waste, as opposed to sharing a combined 100,000tpa with the IVC facility; and
- The AD / gas to grid plant would generate up to 78 HGV movements (39 in / 39 out) per day Monday to Friday and 38 HGV movements (19 in / 19 out) on Saturdays, as opposed to sharing up to 120 HGV movements (60 in / 60 out) per day Monday to Friday (reduced to 66 movements (33 in / 33 out) on Saturdays) with the IVC facility.

29. In terms of drainage, the application proposes that water from roads and hardstanding would be drained by gully's, channels and manholes via a full retention interceptor and into a soakaway. The soakaway would be a combination of approved filtration Ministry of Transport (MOT) Type 3 stone and double stacked Polystorm Xtra infiltration crates arranged in a 40m x 6m x 0.4m formation under the asphalt hardstanding in front of the main reception building. The crates would provide 96m^3 capacity and the MOT Type 3 stone a further 290m^3. The roof of the waste reception / processing building would drain to the soakaway via gutters and downpipes. All liquid within the waste reception / processing building would be collected, stored and pumped into the AD process itself to prevent this being discharged to the soakaway. Any liquid within the containment bund (including rainwater falling into this area) could not be discharged until tested and certified as clean and able to be released. Any discharge from this area would be carefully controlled to prevent pollution. The area on which the gas to grid and related equipment would be located would be surfaced with MOT Type 1 material where water would drain directly to ground. A management and maintenance regime is proposed in order that the system continues to work effectively for the life of the AD facility.

30. In terms of the waste capacity, the applicant (BBL) states that the previous arrangement whereby the IVC and AD facilities would share up to 100,000tpa of waste would no longer be workable given that the two facilities would be operated independently by different owners. It states that each facility requires a separate limit in order that neither is prejudiced and both can operate effectively. It notes that whilst the latest IVC facility planning permission (TM/14/532) has a combined 100,000tpa waste limit, the previous one (TM/13/1299) has a 100,000tpa waste limit for the IVC facility alone (on the basis that phase 2 of the IVC facility could still have been developed at the time that permission was granted). It states that as the Environmental Permit for phase 1 of the IVC facility only provides for up to 75,000tpa, the 75,000tpa waste capacity now proposed for the AD facility would effectively provide a new combined limit of 150,000tpa (as opposed to a theoretical 175,000tpa

limit). Although not subject to this report, it should be noted that planning applications TM/19/2397 and TM/19/2398 (see paragraph 17 above) effectively proposed this 150,000tpa combined limit by seeking planning permission for the AD / ATC and IVC facilities to both be able to handle up to 75,000tpa each. The applicant also states that regardless of these issues, there is a need for additional AD capacity which justifies the 75,000tpa limit now proposed.

31. In terms of the HGV movements, the applicant (BBL) states that the arrangement whereby the IVC and AD facilities would share up to 120 HGV movements (60 in / 60 out) per day Monday to Friday, reduced to 66 HGV movements (33 in / 33 out) on Saturdays, is no longer workable given that the AD and IVC facilities would be operated independently by different owners and given the proposed 75,000tpa waste capacity. It states that the AD and IVC facilities require a separate HGV limit in order that neither is prejudiced and both can operate effectively. It notes that the IVC facility is restricted to 82 HGV movements (41 in / 41 out) per day Monday to Friday, reduced to 42 HGV movements (21 in / 21 out) on Saturdays, and that if the IVC facility were to operate using all of its permitted HGV movements this would only allow 38 HGV movements (19 in / 19 out) per day Monday to Friday and 24 HGV movements (12 in / 12 out) on Saturdays at the AD facility. It therefore proposes that the AD facility should have a separate limit of 78 HGV movements (39 in / 39 out) per day Monday to Friday and 38 HGV movements (19 in / 19 out) on Saturdays, representing an increase in the combined limits of 40 HGV movements (20 in / 20 out) per day Monday to Friday and 14 HGV movements (7 in / 7 out) on Saturdays. It states that the theoretical combined limit of 160 HGV movements (80 in / 80 out) per day Monday to Friday and 80 HGV movements (40 in / 40 out) on Saturdays should be regarded as a worst case scenario given that neither facility would be likely to operate at full capacity. No peak time restrictions are proposed for the AD / gas to grid facility (as is currently the case), although no more than 9 HGV movements may take place associated with the IVC facility between each of 08:00 and 09:00 hours and 16:30 and 17:30 hours.

Planning Policy Context

32. **National Planning Policies** – the most relevant National Planning Policies are set out in the National Planning Policy Framework (NPPF) (May 2019), the associated National Planning Practice Guidance (NPPG) and the National Planning Policy for Waste (NPPW) (2014). Other relevant policies / strategies include Our Waste, Our Resources: A Strategy for Waste (2018), the Clean Air Strategy (2019) and the Noise Policy Statement for England (2010). These are all material planning considerations.

33. **Kent Minerals and Waste Local Plan 2013-30 (July 2016)** – Policies CSM5 (Land-Won Mineral Safeguarding), CSW1 (Sustainable Development), CSW2 (Waste Hierarchy), CSW3 (Waste Reduction), CSW4 (Strategy for Waste Management Capacity), CSW6 (Location of Built Waste Management Facilities), CSW7 (Waste Management for Non-hazardous Waste), CSW16 (Safeguarding of Existing Waste Management Facilities), DM1 (Sustainable Design), DM2 (Environmental and Landscape Sites of International, National and Local Importance), DM3 (Ecological Impact Assessment), DM5 (Heritage Assets), DM10 (Water Environment), DM11 (Health and Amenity), DM12 (Cumulative Impact), DM13 (Transportation of Minerals

and Waste), DM15 (Safeguarding of Transport Infrastructure), DM16 (Information Required In Support of an Application) and DM19 (Restoration, Aftercare and After-use).

34. **Tonbridge and Malling Borough Council LDF Core Strategy (September 2007)** – Policies CP1 (Sustainable development), CP2 (Sustainable transport), CP3 (Green Belt), CP14 (Development in the Countryside) and Policy CP24 (Achieving a High Quality of Life).

35. **Tonbridge and Malling LDF Managing Development and the Environment DPD (April 2010)** – Policies CC3 (Water environment), NE1 (Local sites of wildlife, geological and geomorphological interest), NE2 (Priority habitats), NE3 (Biodiversity), SQ1 (Landscape and Townscape Protection and Enhancement), SQ4 (Air quality), SQ6 (Noise) and SQ8 (Transport infrastructure).

36. **Early Partial Review of the Kent Minerals and Waste Local Plan 2013-30 Pre-Submission Draft (November 2018)** – This proposes changes to Policies CSW4 (Strategy for Waste Management Capacity), CSW6 (Location of Built Waste Management Facilities), CSW7 (Waste Management for Non-hazardous Waste), CSW8 (Other Recovery Facilities for Non-hazardous Waste) and DM8 (Safeguarding Minerals Management, Transportation Production & Waste Management Facilities). One of the reasons for the Early Partial Review was to update the assumptions about waste management capacity underlying Policies CSW7 and CSW8 and the consequent impact on the need for a Waste Sites Plan. The Early Partial Review of the Kent MWLP was subject to an independent examination between 8 and 15 October 2019 and the Inspector's Report was published on 23 April 2020. The Report concludes that the Plan is sound provided that a number of main modifications are made. The main modifications were discussed at the examination hearings, subject to sustainability appraisal and public consultation and considered by the Inspector along with any representations made on them. The proposed modifications were subject to consultation and the responses considered. The intention is for the Early Partial Review of the Kent MWLP to be adopted by KCC at the County Council meeting on 10 September 2020. As it would be inappropriate to pre-empt the outcome of that meeting in this report (which has to be published on 8 September 2020), the policies are currently referred to in their draft form. However, for the reasons set out in this report the adoption of the Early Partial Review of the Kent MWLP would not affect my conclusions or recommendation. I will update Members appropriately at Committee.

37. **Tonbridge and Malling Borough Council Local Plan Regulation 19 Pre-Submission Publication (September 2018)** – Draft Policies LP11 (Designated Areas), LP12 (Local Natural Environment Designations), LP14 (Achieving High Quality Sustainable Design), LP18 (Sustainable Drainage), LP20 (Air Quality) and LP21 (Noise Quality).

Consultations

38. **Tonbridge and Malling Borough Council** – No objection.

39. **Offham Parish Council** – Objects to the application *(and to the three Section 73 applications)* for the following reasons:

Odour

- Odour from the IVC facility has caused significant nuisance to residents;
- Claims of no odour from the AD plant are unachievable;
- Lorries queueing to enter the AD plant (potentially up to an hour) would not be fully sealed and sheeting will not prevent odour escaping especially in hot weather;
- Lack of clarity over responsibility for monitoring enclosure / sheeting of lorries;
- As much odour protection equipment as possible should be installed (including an "air-lock" type system with inner and outer doors for HGVs to enter and leave the waste reception building); and
- Only one (of the three) roller shutter doors should be open at any one time.

Flies and vermin

- A robust management plan to prevent flies and vermin should be imposed including restricting door opening, lorry waiting times, lorry covering, site checks and management measures.

Traffic

- Increased HGV traffic (to add to that existing or proposed in the area);
- The roads in the area are already overburdened;
- Traffic through Offham has increased significantly over the last 5 years;
- Measures other than signage are required to prevent lorries travelling through the village; and
- Any increase in HGV movements should be compared with existing rather than permitted numbers.

Noise

- Working hours must be adhered to in order to protect amenity of residents (e.g. Saturdays limited to 7am to 1pm and none on Bank Holidays); and
- Measures are required to minimise nuisance and mitigate impact on neighbours (including from reversing alarms).

It has also expressed concerns about whether planning permission TM/12/2549 was lawfully implemented prior to 16 April 2018 and about construction activities associated with the proposed AD facility (including works at night and weekends and issues with noise and light pollution). It has also stated that regular liaison meetings should take place with KCC, TMBC, the Environment Agency and Parish Councils to encourage good working relationships and regular dialogue allowing issues to be raised and dealt with promptly. It has also reiterated / resubmitted its objections in 2012 to the AD / ATC application (TM/12/2549) in which it raised similar issues, primarily related to concerns about odour.

40. **West Malling Parish Council** – Objects to the application *(and to the three Section 73 applications)* for the following reasons:

Tonnage

- The impact on the local environment as a result of the proposed increase in the total tonnage of waste to be processed on the site (in terms of potential odour generation, localised air quality and flies).

Traffic

- The impact of increased HGV movements in what is an already overburdened road network (84 additional movements Monday to Friday and 38 additional movements on Saturdays);
- Pressure on approach roads (e.g. the Ashton Way by-pass for HGVs approaching from the North and King Hill for those from the south);
- Fewer HGV movements should be allowed;
- No HGVs should enter West Malling, Offham and other surrounding settlements unless they are collecting waste from these areas (this should be properly enforced, possibly using GPS tracking to encourage compliance);
- KCC should also consider how HGV movements can be incentivised to take place outside of peak hours to limit the impact on local roads during peak periods.

Catchment area

- Although AD is a more environmentally sustainable means of handling waste than other methods, the geographic (catchment) area that the plant is able to accept waste from should be reduced to limit the environmental damage of increased carbon (CO_2) emissions from transportation (West Sussex and parts of East Anglia are too distant).

41. **Kings Hill Parish Council** – Raises serious concerns about the application *(and on the three Section 73 applications)* for the following reasons:

Traffic

- Increased traffic on the A228 since 2012 and Kings Hill is continuing to expand with plans for a large number of additional dwellings;
- HGV movements associated with the AD plant would be additional to those generated by the IVC plant and would have a substantial impact; and
- Restricted hours of operation should be provided for vehicles entering and existing the AD plant to avoid peak traffic times.

Odours

- HGVs queueing to enter the plant would not be completely sealed (which is the only way to prevent odours) and some would only have a tarpaulin cover such that it is inevitable that odour will be released (particularly when parked or waiting, which could be up to an hour, and in hot weather).
- HGVs should be properly and completely enclosed or sheeted and this requirement should be monitored and enforced to protect residents; and
- Only one door should be allowed to open at any given time when vehicles are moving in and out to prevent odour and flies escaping.

It has also raised concerns about the build and operation of the AD plant and its

effects on Kings Hill, its residents and surrounding area due to proximity to residential properties and businesses, with up to 300 dwellings in close proximity to the site entrance.

42. **Mereworth Parish Council** – Has no comments to make on the application *(or on the three Section 73 applications)*.

43. **Environment Agency** – No objection subject to the following condition:

- If, during development, contamination not previously identified is found to be present at the site then no further development (unless otherwise agreed in writing with the Local Planning Authority) shall be carried out until a remediation strategy detailing how this contamination will be dealt with has been submitted to and approved in writing by the Local Planning Authority. The remediation strategy shall be implemented as approved. *[Reason: To ensure that the development does not contribute to, or is not put at unacceptable risk from, or adversely affected by, unacceptable levels of water pollution from previously unidentified contamination sources at the development site in line with paragraph 170 of the National Planning Policy Framework.]*

It has advised that the proposed development would require an Environmental Permit which would include conditions to manage risks to controlled waters and that the permit application is currently under consideration. It has also advised that advice be sought from KCC Sustainable Drainage (SUDS) on the long term viability of the proposed drainage.

44. **KCC Highways and Transportation** – No objection, subject to compliance with the proposed HGV limits and this being demonstrated and the obligations set out in the existing S106 Agreement relating to HGVs not being routed through villages such as Offham, Mereworth and West Malling and regular local liaison continuing to apply.

It notes that the proposed development would give rise to an additional 40 HGV movements per day Monday to Friday and 14 additional HGV movements on Saturdays, that the applicant advises that it is unlikely that these will occur in the morning and evening peaks periods as it is more effective for hauliers to operate outside of these times and that the traffic impact assessments have been based on an even distribution of HGV movements throughout the day. It advises that an average increase in vehicle movements of about 4 per hour is not a viable reason for it to recommend refusal of the application. However, it recommends that the applicant be required to maintain records of traffic movements and make these available to KCC to demonstrate compliance with the revised limits and that such records should contain the date of each movement and details of each load (as is required by condition 23 of planning permission TM//12/2549).

45. **KCC Sustainable Drainage (SUDS)** – No objection, subject to a condition requiring the implementation of a maintenance manual for the proposed sustainable drainage scheme which has been submitted to and approved in writing by KCC prior to occupation / first operation of the site. The maintenance manual shall (as a minimum)

include:

- A description of the drainage system and its key components;
- An as-built general arrangement plan with the location of drainage measures and any critical features clearly marked;
- Details of the future maintenance requirements of each drainage or SuDS component, and the frequency of such inspections and maintenance activities; and
- Details of who will undertake inspections and maintenance activities, including the arrangements for adoption by any public body or statutory undertaker, or any other arrangements to secure the operation of the sustainable drainage system throughout its lifetime.

It states that KCC as Lead Local Flood Authority recognise that a drainage strategy has been put forward that would appear to manage surface water on site for all storm events up to the 100 (+40%) with no above ground flooding. It also states that infiltration testing results contained within the 'Drainage Strategy and Details of Surface Water Drainage Scheme' report by Plandescil provides only a brief summary of the infiltration testing undertaken (rates obtained) and does not show a location of the test in relation to the proposed soakaway. The summary shows that the three tests undertaken in the test pit and all appear to show sufficient infiltration rates. It would have been beneficial to provide full details of the infiltration tests undertaken to fully support the design.

It advises that as with all infiltrating features situated on the Hythe Beds formation, there is a chance of encountering loosely infilled features known as ‘gulls’. It is acknowledged that ground investigations undertaken previously (Phase 2 Intrusive Ground Investigation, January 2020) do not appear to have identified any such features however, the specific soakaway design should always be at the advice of the applicants geo-technical engineer.

It welcomes the fact that any water falling within the containment bund area would be stored within the bund until it has been tested and is safe to be released to soakaways but recommends that the Environment Agency be consulted on the pollution control aspects of the proposed development.

It advises that its response has been provided using the best knowledge and information submitted as part of the planning application at the time of responding and is reliant on the accuracy of that information.

46. **KCC Ecological Advice Service** – No objection. It is satisfied that the construction and operation of the proposed AD and gas to grid facility would not have any significant impact on the adjoining Local Wildlife Site (LWS) and Ancient Woodland due to the location of the proposed development within the quarry at a much lower level than the surrounding unworked land provided any lighting is not situated any higher than the proposed buildings.

47. **KCC Air Quality** – No objection. It has reviewed the application documents (including the Air Quality Assessment, Odour Assessment and Bioaerosol Risk Assessment). It advises that it is satisfied with the methodology used in both the applicant's Air Quality Assessment (in terms of atmospheric emissions from the proposed combustion processes, gas upgrading unit and grid entry unit) and the Odour Assessment (in terms of potential odour sources on site) and their findings / conclusions (i.e. insignificant / low risk). It also advises that as HGVs would use the A228 and be unlikely to be routed through AQMAs, the proposed increase in HDV (heavy duty vehicle) movements would be below the Institute of Air Quality Management (IAQM) Guidance criteria of 100 HDV AADT (annual average daily traffic) required for a full assessment and that potential air quality impacts associated with operational road vehicle exhaust emissions are predicted to be negligible.

48. **KCC Noise Consultant** – No objection. It has reviewed the application documents (including the Noise Assessment). It advises that the applicant has appropriately used guidance provided by BS4142:2014 to support the assessment and that the report has demonstrated that the predicted levels of noise are not expected to cause any adverse effect on noise sensitive properties. It also advises that the proposed development would continue to meet the requirements of condition 28 of TM/12/2549 (which requires the BS4142 noise rating level not to exceed the background sound level LA90 at any noise sensitive property). It further advises that the applicant has also assessed the noise impact at both the quarry offices and IVC building and that the results show that the noise would be acceptable and well within BS8233 guidelines on internal noise levels for offices.

49. **KCC Waste Management** – Supports the application as it would meet the requirements of the Waste Disposal Authority (WDA).

    It states that the WDA has a statutory duty to seek provision for dealing with domestic waste arisings in Kent, that KCC also provides a network of 18 Household Waste Recycling Centres (HWRCs) providing facilities for re-use, recycling and safe disposal, for a range of material streams delivered by Kent residents and that KCC's Kent Waste Disposal Strategy (which was endorsed by Members in July 2017) sets out the current position, identifies the future pressures and outlines how a sustainable waste management service will be maintained.

    It advises that the Government's Environment Bill (which was re-introduced to parliament following the general election on 30 January 2020) sets out how the UK plans to protect and improve the natural environment in the UK and that the initial DEFRA response to the consultation on the resources and waste strategy is that local waste collection authorities (WCAs) will have a mandatory requirement to collect separate food waste. It also advises that existing law (which has transitioned from the European Commission) adopted an ambitious Circular Economy Package to help make the transition to a stronger and more circular economy where resources are used in a more sustainable way. The revised Waste Framework Directive (2018/851) was published in the Official Journal of the European Union in June 2018 and states that food waste must be separately collected by 2023 putting the onus on the WDA to facilitate disposal of this separated material stream.

It states that Kent wishes to become self-sufficient with regard to food waste infrastructure and to have this provided through a local facility to receive and process Kent's food waste for current requirements and its future needs (based on population growth and the drive from Central Government to ensure weekly food waste is collected from every household by 2023). It is therefore seeking an AD Facility built locally to receive Kent's food waste which would:

- provide significant savings from negotiated gate fee compared to current disposal cost;
- reduce carbon emissions and footprint in negating haulage out of County;
- avoid landfill as a disposal method to meet landfill diversion targets;
- support local employment and businesses;
- meet the requirements of central Government's waste strategies and Policies; and
- Meet additional waste disposal tonnage requirements from population growth.

It advises that food waste in Kent is currently either collected, co-mingled with green waste and processed to produce compost at the IVC facility at Blaise Farm Quarry or collected separately and hauled out of the County. These contracts are expensive in relation to gate fees due to the haulage element being included in the price and as IVC is a more expensive treatment of the mixed food and green waste than an AD treatment.

It states that it has been seeking an alternative disposal method for food waste due to the high costs (currently in excess of £3.3M pa) and included the requirement to build an AD Plant in its Organics Contract. However, it advises that Government subsidies (which were available at the time of the procurement) were later withdrawn and the Provider was unable to fund the build costs and a reduction in the gate fee. It also states that the need to find a local site has become more urgent due to the forecasting of more food waste and the ambition of the Government to pursue more frequent and consistent food waste collections.

50. No responses have been received from **South East Water** and **CPRE Kent**.

Representations

51. The application was publicised by site notice and newspaper advertisement and the occupiers of all properties within 250 metres of the site (including access road) were notified in October 2019.

52. Nine (9) representations have been received (all objections). Of these five (5) were from those representing the operator of the IVC facility (NES) (and its parent company DM Topco Ltd) and three (3) were from the same individual / family / business.

53. The objections raised by local residents relate to:

- Odour (lack of twin door sealed air system);

- Noise (from construction operations and reversing alarms);
- Flies;
- Increased waste capacity;
- Increased traffic;
- Impact on residential properties (including new and proposed development in the area) and local businesses (e.g. corporate events, wedding venue and removals company);
- Poor site management for many years; and
- History of complaints.

54. NES has objected to all four of the applications referred to in paragraphs 17 to 19 above. Its objections to the S73 applications TM/19/2397, TM/19/2398 and TM/19/2399 relate (at least in part) to their validity. It believes that application TM/19/2397 exceeds what is possible under S73 of the Town and Country Planning Act 1990 (as amended) as it proposes a fundamental alteration to planning permission TM/12/2549 and that it must be refused. It argues that application TM/19/2398 can only be refused as it is dependent on application TM/19/2397. It has also questioned the validity of applications TM/19/2397 and TM/19/2399 as it does not believe that planning permissions TM/12/2549 and TM/13/3657 were lawfully implemented. It further objects to application TM/19/2397 on the grounds that the proposed conditions are potentially unlawful in that they purport to regulate development on third party land such that the applicant could not guarantee compliance and KCC could probably not enforce.

55. Its objections to the application subject to this report (i.e. the S73A application TM/19/2396) relate to a perceived lack of meaningful pre-application engagement by the applicant, the part retrospective nature of the development, the potential impact of the proposed development on the IVC facility and the perceived inadequacy of the information submitted in support of the application. It has also expressed concerns about impacts associated with the development that has already taken place, including the discharge of ponded water onto its land and soakaway. Its earlier concern that the application site extended onto NES land was overcome by the amended application boundary in April 2020. Its ongoing concerns are (in more detail) that:

    - Granting permission would have potentially unacceptable planning impacts on the surrounding area and severe and detrimental impacts on the business of the IVC facility:
        - It states that the IVC facility has planning permission to operate at up to 100,000tpa and objects to anything that could prejudice this since it has plans to fully utilise this capacity;

    - The application makes insufficient provision for drainage at the site:
        - It is not satisfied that the assumed infiltration / permeability rates are correct or that the proposed soakaway would operate as proposed due to the geology at the site and is concerned that this could result in surface water being discharged onto the IVC facility or causing localised flooding;
        - The investigations have been undertaken by the contractor rather than

a qualified, competent and independent consulting geotechnical engineer;
- There is a lack of information on the proposed pollution testing; and
- Planning permission should not be granted until it can be proven that the drainage design is underpinned by a robust site investigation (which has been completed by an independent geotechnical engineer of suitable experience and qualification) and the design and maintenance of the drainage must meet KCC and the Environment Agency approval (fully taking into account climate change).

Local Member

56. County Council Members Sarah Hohler (Malling North), Trudy Dean (Malling Central) and Matthew Balfour (Malling Rural East) were notified in October 2019.

57. No comments have been received from the Local Members at the time of writing this report.

Discussion

58. The application is being reported to KCC's Planning Applications Committee for determination as planning objections have been received from Offham, West Malling and Kings Hill Parish Councils (PCs) and those who have submitted representations.

59. Section 38(6) of the Planning and Compulsory Purchase Act 2004 requires that planning applications are determined in accordance with the development plan unless material considerations indicate otherwise. In the context of this application, the development plan policies outlined in paragraphs 33 to 35 above are of most relevance. Material planning considerations include the national planning policies referred to in paragraph 32 and the draft development plan policies in paragraphs 36 and 37. As noted in paragraph 36 above, the intention is for the Early Partial Review of the Kent Minerals and Waste Local Plan (MWLP) to be adopted by KCC at the County Council meeting on 10 September 2020. Whilst its policies are referred to in draft form in this report, I am satisfied that were the Plan to be adopted it would not affect my conclusions or recommendation on the proposed development.

60. The main issues that require consideration are as follows:

- The principle of the development;
- Need;
- Green Belt;
- Landscape and visual impact;
- Noise;
- Air quality;
- Water environment;
- Traffic and transportation; and
- Ecology.

These issues are addressed in the following sections, together with other issues that have been raised or require consideration.

The principle of the development

61. Planning permission already exists for an AD plant and a gas to grid plant at the site by virtue of planning permissions TM/12/2549 and TM/13/3657. Although Offham PC and NES have questioned whether one or both of these permissions were lawfully implemented and therefore expressed doubts about their validity, I am satisfied that they were and that the permissions remain extant. The key issue when considering this application is therefore not whether there should be an AD and gas to grid plant at Blaise Farm Quarry, rather it is whether what is now proposed is acceptable in the context of what is already permitted.

Need

62. Paragraphs 7 to 14 of the NPPF sets out national policy on achieving sustainable development, including the three overarching objectives (economic, social and environmental) which are interdependent and need to be pursued in mutually supportive ways. The presumption in favour of sustainable development means approving development proposals that accord with an up-to-date development plan without delay. Paragraph 80 states that planning decisions should help create the conditions in which businesses can invest, expand and adapt. Significant weight should be placed on the need to support economic growth and productivity, considering both local business needs and wider opportunities for development. Paragraphs 182 and 183 require planning decisions to ensure new development can integrate with existing business and community facilities. Where there are significant adverse effects the applicant (or "agent of change") should be required to provide suitable mitigation before the development has been completed. The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively.

63. Paragraph 1 of the NPPW states that positive planning plays a pivotal role in delivering the country's waste ambitions through: delivery of sustainable development and resource efficiency, including provision of modern infrastructure, local employment opportunities and wider climate change benefits, by driving waste management up the waste hierarchy; ensuring that waste management is considered alongside other spatial planning concerns, such as housing and transport, recognising the positive contribution that waste management can make to the development of sustainable communities; providing a framework in which communities and businesses are engaged with and take more responsibility for their own waste, including by enabling waste to be disposed of in line with the proximity principle; and helping to secure the re-use, recovery or disposal of waste without endangering human health and without harming the environment, amongst other matters. Paragraphs 4 and 5 require waste planning authorities (WPAs) to consider new waste management facilities in

appropriate locations, including industrial sites, the re-use of previously developed land, employment uses, and redundant agricultural and forestry buildings. Paragraph 7 states that in determining applications WPAs should (amongst other things) only expect applicants to demonstrate the quantitative or market need for new or enhanced waste management facilities where proposals are not consistent with an up-to-date Local Plan and that in such cases they should consider the extent to which the capacity of existing operational facilities would satisfy any identified need.

64. Policies CSW1 and CSW2 of the Kent Minerals and Waste Local Plan (Kent MWLP) reflect the national requirements on sustainable waste development, including driving waste management up the waste hierarchy. Policy CSW4 states that the strategy for waste management capacity in Kent is to provide sufficient waste management capacity to manage at least the equivalent of the waste arising in Kent plus some residual non-hazardous waste from London. As a minimum it is to achieve the targets for recycling and composting, reuse and landfill diversion identified in the Kent Joint Municipal Waste Management Strategy (as amended). Policy CSW6 had assumed that sites would be identified in a Waste Sites Plan to meet the need identified in Policy CSW7 and indicates that planning permission will be granted for uses identified as appropriate to such sites providing the proposals meet a number of criteria. However, it also provides support for additional capacity within or adjacent to an existing mineral development or waste management use where this is demonstrated to be needed, where waste would be dealt with further up the hierarchy, or where it is replacing capacity lost at existing sites providing these meet the relevant criteria, where there is no adverse impact on the environment and communities and where such uses are compatible with the development plan. Paragraph 6.7.3 of the Kent MWLP states that although the Needs Assessment for waste facilities (Jacobs, January 2012) showed no lack of capacity for preparation of non-hazardous waste for reuse or recycling during the whole of the plan period, it did show a capacity gap emerging in 2024 for treating green and kitchen wastes which Policy CSW7 seeks to address. It further states that the additional capacity required for composting is a minimum whilst the figure for energy from waste (EfW) capacity is a maximum reflecting their relative positions in the Waste Hierarchy (whereby it is preferable to process organic waste to produce compost to burning it to produce heat / power and the use of organic waste to produce a gas that may be used as a fuel via AD is preferable to its direct combustion). Policy CSW7 identifies a need for a minimum of 64,000tpa of additional treatment capacity for green and kitchen waste. Amongst other things, it also states that waste management capacity for non-hazardous waste will be provided through IVC and AD and that sites for the management of green waste and / or kitchen waste in excess of 100 tonnes per week (tpw) should be Animal By Product Regulation (ABPR) compliant.

65. Notwithstanding the above, it should be noted that Policy CSW4 is proposed to be amended in the Early Partial Review of the Kent MWLP. Whilst draft Policy CSW4 still states that the strategy for waste management capacity in Kent is to provide sufficient waste management capacity to manage at least the equivalent of the waste arising in Kent plus some residual non-hazardous waste from London, it now proposes, as a minimum, to achieve 50%, 55% and 60% targets for recycling and composting in 2020/21, 2025/26 and 2030/31 respectively for local authority collected waste and

commercial and industrial waste where this is to include organic waste (including green and kitchen waste) treatment by anaerobic digestion. Draft Policy CSW7 no longer proposes any specific additional waste capacity and instead states that waste management capacity for non-hazardous waste that assists Kent in continuing to be net self-sufficient while providing for a reducing quantity of London's waste**,** will be granted planning permission provided that: (1) it moves waste up the hierarchy; (2) recovery of by-products and residues is maximised; (3) energy recovery is maximised (utilising both heat and power); (4) any residues produced can be managed or disposed of in accordance with the objectives of Policy CSW 2 (i.e. the waste hierarchy); and (5) sites for the management of green waste and / or kitchen waste in excess of 100tpw are ABPR compliant (such as IVC or AD). Importantly, draft Policies CSW4 and CSW7 and the supporting text are still clear that there is no intention to restrict the amount of new capacity for recycling or preparation of waste for reuse or recycling or for the provision of additional capacity for green and / or kitchen waste treatment since the sooner it is delivered the greater the impact will be on reducing organic waste going to landfill and conserving existing non-hazardous landfill capacity for any waste that cannot be reused, recycled, composted or recovered. In this way, the Early Partial Review of the Kent MWLP continues to provide positive support for new AD and IVC capacity. Draft Policy CSW6 removes all reference to a Waste Sites Plan and, instead, provides a criteria based policy against which all waste proposals will be assessed.

66. The Kent Waste Needs Assessment: Non-Hazardous Waste Recycling / Composting Capacity Requirement (BPP Consulting, September 2018 Update), which underpins the Early Partial Review of the Kent MWLP, identifies 95,000tpa of consented AD capacity (including 50,000tpa at Blaise Farm Quarry) within a total composting capacity (including open windrow composting, IVC and AD) of 233,000tpa in 2017. The assessment concludes that the combined consented recycling / composting capacity would be sufficient to meet the proposed higher overall recycling / composting targets associated with the management of non-hazardous waste over the Plan period as proposed in the revision to Policy CSW4 and that net self-sufficiency in recycling / composting capacity could be achieved in Kent without provision for additional capacity. The table below (which includes the information from the assessment) shows the consented composting capacity in 2017.

Site Name	**Capacity (tpa)**	**Capacity Type**
Shelford Landfill Site (Canterbury)	20,000	Open windrow (green waste only)
Hope Farm (Folkestone)	18,000	Open windrow (green waste only)
Conghurst Farm (Hawkhurst)	5,000	Open windrow (green waste only)
Countrystyle Recycling Ltd (Ridham Dock)	45,000	IVC (green waste, food waste & card)
Blaise Farm Quarry (West Malling)	50,000	IVC (green waste, food waste & card)
Total Composting	**138,000**	
Blaise Farm Quarry (West Malling)	50,000	AD (food waste & some green waste)

Richborough (Sandwich)	25,000	AD (food waste & some green waste)
Otterpool Quarry (Folkestone)	20,000	AD (food waste & some green waste)
Total AD	**95,000**	
Grand Total	**233,000**	

67. As noted earlier in this report, the IVC and AD / ATC waste planning permissions at Blaise Farm Quarry have imposed a number of different limits on waste capacity. The initial limit imposed for the IVC facility in 2006 (TM/06/762) was 50,000tpa. This limit was increased to 100,000tpa in 2010 (TM/09/3231) and was retained in 2013 (TM/13/1299). In each case, the limit applied only to the IVC facility. In 2013 a combined limit of 100,000tpa was imposed on the AD / ATC facility (TM/12/2549). This limit was intended to apply to both the AD / ATC and IVC facilities and had been proposed by the applicant (NES). The same 100,000tpa combined limit was imposed on the IVC facility in 2014 (TM/14/532) for consistency. The figures used in the waste assessment and set out in above table have assumed that the IVC and AD facilities would each handle 50,000tpa of waste (as proposed / assumed in the relevant planning applications).[3] Until recently the combined limit / shared approach appeared to be acceptable to all parties since the facilities were to be owned and operated by the same company (NES). However, a problem has now arisen due to the subsequent separation of the IVC and AD / ATC elements between different operators (NES and BBL). This has largely come to light as a result of the construction of the AD / gas to grid facility and the submission of the four planning applications referred to in paragraph 17 above.

68. Although the approach to waste capacity adopted at Blaise Farm Quarry appeared entirely reasonable at the time, it is now evident that it has created a problem in that NES can arguably rely on planning permission TM/13/1299 (which provides 100,000tpa of IVC capacity) and compost up to 75,000tpa of waste (i.e. the quantity allowed under the Environmental Permit). This would mean that the AD facility could only handle up to 25,000tpa. The position would be worse for BBL if the quantity allowed under the Environmental Permit were increased (potentially to 100,000tpa). The problem is also complicated in planning terms as it would be very difficult (if not impossible) for KCC to enforce the 100,000tpa combined limit due to the different operators. On the face of it, the current application is proposing to increase the permitted AD capacity beyond the assumed 50,000tpa to 75,000tpa, however, based on the above, it is clear that it is not as straightforward as this. Indeed, the result could be that overall permitted composting capacity at Blaise Farm Quarry could increase to as much as 175,000tpa. Regardless of this, the application must be treated on its merits (i.e. the provision of a 75,000tpa capacity AD facility with up to 78 HGV movements per day). The highway implications are addressed elsewhere in this report.

69. In considering the consented composting capacity referred to above, it is clear that the Kent MWLP waste strategy assumes 50,000tpa of AD capacity at Blaise Farm Quarry. It should also be noted that Shelford (20,000tpa) has ceased operating and that

[3] The ATC element was always intended to be parasitic on the AD and IVC facilities such that it would deal with waste imported as part of those operations that was unable to be composted or digested.

Richborough (25,000tpa) and Otterpool (20,000tpa) are still not operational (and show no current sign of being built) despite being subject to extant planning permissions. On this basis, the 25,000tpa of assumed additional proposed AD capacity at Blaise Farm Quarry could arguably assist in off-setting some of the 45,000tpa of AD capacity that may never become operational elsewhere. It is also worth noting that if NES were to rely on planning permission TM/13/1299 (which provides 100,000tpa of IVC capacity), rather than TM/14/532 (which provides for this capacity to be shared with the AD facility), any additional IVC capacity would serve to offset the composting capacity which is now unavailable at Shelford. In my view, the absence of operational AD facilities at Richborough and Otterpool adds weight to permitting additional AD capacity at Blaise Farm Quarry and the freeing up of IVC capacity at Blaise Farm Quarry may be seen positively given the closure of Shelford.

70. Although objections have been received from West Malling PC and those making representations about the proposed increase in waste capacity, it should be noted that controls associated with operations at the existing IVC facility and the permitted and proposed AD facility are primarily a matter for the Environmental Permit. It should also be noted that regardless of its permitted tonnage, the capacity of the existing IVC facility is also constrained by limits on HGV movements.

71. Having regard to all of the above matters, I am satisfied that there is strong case for permitting additional AD capacity and that granting planning permission for what is proposed would be consistent with relevant planning policies subject to the imposition of conditions limiting the nature of the waste types to those proposed and the facility importing no more than 75,000tpa.

Green Belt

72. Paragraph 133 of the NPPF states that the Government attaches great importance to Green Belts, that the fundamental aim of Green Belt policy is to prevent urban sprawl by keeping land permanently open and that the essential characteristics of Green Belts are their openness and permanence. Paragraph 134 states that Green Belts serve 5 purposes. These include checking the unrestricted sprawl of large built-up areas, preventing neighbouring towns merging into one another and assisting in safeguarding the countryside from encroachment. Paragraph 143 states that "inappropriate development" is, by definition, harmful to the Green Belt and should not be approved except in "very special circumstances". Paragraph 144 states that when considering any planning application, local planning authorities should ensure that substantial weight is given to any harm to the Green Belt and that very special circumstances will not exist unless the potential harm to the Green Belt by reason of inappropriateness, and any other harm resulting from the proposal, is clearly outweighed by other considerations. Paragraph 145 states that with the exception of certain types of development, local planning authorities should regard the construction of new buildings as inappropriate in the Green Belt. The exceptions include the extension or alteration of a building (provided that it does not result in disproportionate additions over and above the size of the original building) and the replacement of a building (provided the new building is in the same use and not materially larger than the one it replaces). Paragraph 147 states that elements of many renewable energy projects will

comprise inappropriate development when located in the Green Belt and that in such cases developers will need to demonstrate very special circumstances if projects are to proceed. It also states that such very special circumstances may include the wider environmental benefits associated with increased production of energy from renewable sources. Paragraph 6 of the NPPW states that Green Belts have special protection in respect to development and that in preparing local plans WPAs should first look for suitable sites and areas outside the Green Belt for waste management facilities that, if located in the Green Belt, would be inappropriate development. The National Planning Practice Guidance (NPPG) advises that in assessing the impact on the openness of the Green Belt, matters to consider include both spatial and visual impacts, the duration of the development and its remediability and the degree of activity likely to be generated (such as traffic).

73. Policy DM4 of the Kent MWLP states that proposals for waste development within the Green Belt will be considered in light of their potential impacts and shall comply with national policy and the NPPF. Policy CP3 of the Tonbridge and Malling Borough (TMBC) Local Development Framework (LDF) Core Strategy and draft Policy LP11 of the TMBC Local Plan Regulation 19 Pre-Submission Publication (September 2018) (the emerging TMBC Local Plan) require that development comply with national policy on Green Belt. The Kent MWLP Early Partial Review proposes no change to Policy DM4.

74. Although the proposed development would effectively replace that already permitted by planning permission TM/12/2549 (which has been partially implemented), it would not be regarded as a "replacement building" for the purposes of paragraph 145 of the NPPF. The proposed development therefore represents inappropriate development in the Green Belt such that it is necessary to consider whether there are very special circumstances that would warrant setting aside the general presumption against development.

75. The proposed development lies within an active quarry where permissions have already been granted for IVC, AD / ATC and gas to grid facilities and where the sensitivity of the Green Belt to change and the acceptability of the consented development on the landscape have already been considered to be acceptable by KCC. All of the extant waste permissions are temporary and require the restoration of the site. This would remain the case. The proposed development would have a smaller building footprint, smaller volume and lower height than the permitted development, resulting in a smaller visual envelope. There would be five fewer digestate tanks (with the four proposed tanks in the same location and on the same footprint as four of those already permitted) and the water tower (part of the gas to grid infrastructure) would be replaced by a smaller membrane filter system. The ATC element is also no longer proposed. The proposed lighting scheme would not be materially different to the extant scheme and therefore cause no additional harm. The proposed AD / gas to grid facility would not be particularly visible and would share existing access roads with the IVC facility and quarry. I am therefore satisfied that the proposed development would have minimal impact and harm on the openness of the Green Belt in terms of visual impact and spatial impact.

76. It is proposed that the life of the AD / gas to grid facility would be the same as that already permitted (i.e. 20 years from the commencement of commercial AD operations) and that the site would be restored in the same way as currently required. This is capable of being secured by a condition requiring the cessation of operations at the end of this 20 year period, the removal of the facility and all associated infrastructure within a further 12 months and the restoration of the site to forestry, ecological and amenity after-use within a further 12 months (i.e. as required by condition 2 of planning permission TM/12/2549). This limited duration and remediability also serves to reduce the potential impact and harm of the proposed development in terms of openness.

77. Although the proposed increase in HGV movements (up to an additional 40 movements per day) would have a greater impact than the permitted development, I do not regard this as significant in terms of the degree of activity having regard to the advice from KCC Highways and Transportation and as vehicles would be largely hidden from external views until they join the A228 at the roundabout at the eastern end of the quarry access road.

78. KCC has previously been satisfied that the AD / ATC and gas to grid facilities at Blaise Farm Quarry would cause limited harm to the openness of the Green Belt. Given that the proposed development would arguably have less impact than that already permitted, I consider that any harm to the openness of the Green Belt would be even less in this case.

79. In permitting TM/12/2549 in 2013, KCC accepted that very special circumstances existed to overcome the usual presumption against development in the Green Belt. I consider those set out as follows (which are very similar to those accepted previously) to represent the very special circumstances in this case:

- the fall-back position (i.e. permission already exists for an AD facility with a larger volume and footprint, with some components of greater height than now proposed);
- the temporary nature of the proposed facility;
- the need for and encouragement of development of additional treatment capacity for green / kitchen waste to reduce organic waste going to landfill (as recognised in the Kent MWLP and in the Early Partial Review of the Kent MWLP);
- the strategic location and accessibility of the site, allowing it to act as a sub-regional treatment facility;
- site specific circumstances (the physical location of the site within a quarry void serving to minimise harm by virtue of visual impact on the openness of the Green Belt, the quarry itself is active meaning that the intermediate landscape is one of continuous change, the co-location with the established quarry facility benefits from shared infrastructure such as access road and the excellent access to the strategic highway network);
- co-location benefiting from shared infrastructure with the existing quarry and existing IVC facility);
- sustainability benefits (allowing for the treatment of pure food waste from the

local area to be treated locally, the generation of renewable energy, the production of digestate displacing the need for artificial nitrogen based fertilisers, economic resilience provided to householders and businesses by decentralised energy generation, economic resilience provided to agricultural enterprises with digestate and the creation of additional jobs); and

- amenity benefits (ensuring that separated pure food waste would be treated using the most appropriate technology, minimising potential for adverse amenity impacts such as propensity for odours).

80. Given the limited harm caused to the openness of the Green Belt (which is less than that associated with the extant AD / ATC permission), the clear benefits of AD in terms of dealing with food waste in the most appropriate manner, the desirability of additional AD capacity in Kent (given the uncertainty as to whether other permitted AD facilities will be developed and become operational) and the generation of renewable energy / biogas and production of digestate, I consider that there are sufficient very special circumstances to clearly outweigh the usual presumption against inappropriate development in the Green Belt. I also consider that the proposals need not conflict with Green Belt policy provided appropriate controls are imposed to address those issues highlighted elsewhere in this report.

81. The application was advertised on the basis that the proposed development may not accord with the provisions of the development plan in force in the area in which the land to which the application relates is situated due to being in the Green Belt. The proposed development also exceeds the threshold of 1,000 square metres of new building floorspace for which an application must be referred to the Secretary of State for Communities and Local Government under the Town and Country Planning (Consultation) (England) Direction 2009. Accordingly, if Members resolve to grant planning permission it would be necessary to establish whether the Secretary of State first wishes to call-in the proposal for his own determination before any permission is granted.

Landscape and visual impact

82. Paragraph 170 of the NPPF states that planning decisions should contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes and recognising the intrinsic character and beauty of the countryside. Paragraph 175 states that when determining planning applications, local planning authorities should refuse development that would result in the loss of irreplaceable habitats such as Ancient Woodland unless there are wholly exceptional reasons and a suitable compensation strategy exists. Paragraph 180 states that planning decisions should ensure that new development is appropriate for its location taking into account the likely effects of pollution on the natural environment and that in doing so they should limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation. Paragraph 7 of the NPPW states that when determining waste planning applications WPAs should consider the likely impact on the local environment and on amenity against various locational criteria and other matters. These include landscape and visual impacts (e.g. design-led solutions that respect landscape character, the need to protect landscapes or designated areas of

national importance and any localised height restrictions) and potential light pollution.

83. Policy DM1 of the Kent MWLP supports sustainable development and states that proposals will be required to demonstrate that they have been designed to protect and enhance the character and quality of the site's setting. Policy DM2 states that proposals for waste development likely to have any unacceptable adverse impact on Ancient Woodland will not be permitted unless the need for, and the benefits of, the development in that location clearly outweigh any loss. Policy DM11 states that waste development will be permitted if it can be demonstrated that it is unlikely to generate unacceptable adverse impacts from illumination and visual intrusion. Policy DM12 states that permission will be granted for waste development where it does not result in an unacceptable adverse cumulative impact on the environment. Policy DM19 requires that provision be made for high standards of restoration, aftercare and after-use for temporary waste management development such that the intended after-use of the site is achieved in a timely manner. It also sets out further detail on what is expected in terms of restoration and aftercare. Draft Policy CSW6 of the Kent MWLP Early Partial Review states that planning permission will be granted for facilities that may involve prominent structures (including chimney stacks) subject to the ability of the landscape to accommodate the structure after mitigation

84. Policy CP1 of the TMBC LDF Core Strategy states that the need for development will be balanced against the need to protect and enhance the natural environment and that the quality of the natural environment and countryside will be preserved and, where possible, enhanced. Policy CP24 states that all development should be well designed and of high quality, respecting the site and surroundings. Policy SQ1 of the TMBC LDF Managing Development and the Environment (MDE) Development Plan Document (DPD) states that proposals should protect, conserve and where possible enhance local character and distinctiveness. Draft Policies LP1 and LP14 of the emerging TMBC Local Plan include similar requirements.

85. As noted above, the proposed development is within that part of Blaise Farm Quarry that has already been worked to a significantly lower level than the surrounding land and is largely surrounded by woodland which limits views into the site from all locations other than from Footpath MR286 which crosses the permitted quarry area north to south. The proposed facility lies immediately adjacent to the existing IVC Facility, would replace the previously permitted phase 2 of the IVC facility and the larger AD / ATC facility and be seen in the context of the operational quarry. The proposed facility would occupy a smaller footprint, be of smaller volume and its component parts would be of lower overall height than the consented development. The main buildings (including reception building) and digestate tanks would be coloured grey which would further assist in enabling them to blend in with the surroundings. The proposed development would also be temporary and the land would be restored at the end of its permitted life in accordance with the existing requirements.

86. I am satisfied that the proposed development would have no greater impact than what is already permitted and is acceptable when considered against the above planning policies subject to the imposition of conditions requiring that the development be completed and maintained as proposed, the removal of the facility at the end of its

permitted life and the restoration and aftercare of the land as currently required by the AD / ATC, gas to grid and IVC permissions following its removal.

Noise

87. Paragraph 170 of the NPPF states that planning decisions should contribute to and enhance the natural and local environment by preventing new development from contributing to unacceptable levels of noise pollution. Paragraph 180 states that planning decisions should ensure that new development is appropriate for its location taking into account the likely effects of pollution on the natural environment and that in doing so they should mitigate and reduce to a minimum potential adverse impacts resulting from noise, avoid noise giving rise to significant adverse impacts on health and the quality of life and protect tranquil areas. Paragraph 7 of the NPPW states that when determining waste planning applications WPAs should consider the likely impact on the local environment and on amenity against various locational criteria and other matters. These include potential noise pollution and impact on sensitive receptors (linked to proximity). The NPPW states the operation of large waste management facilities can produce noise affecting both the inside and outside of buildings (including noise and vibration from goods vehicle traffic movements to and from a site) and that intermittent and sustained operating noise may be a problem if not properly managed (particularly if night-time working is involved).

88. Policy DM11 of the Kent MWLP states that waste development will be permitted if it can be demonstrated that it is unlikely to generate unacceptable adverse impacts from noise. It further states that proposals will also be required to ensure that there is no unacceptable adverse impact on the use of other land for other purposes. Draft Policy CSW6 of the Kent MWLP Early Partial Review requires waste development that avoids sites on or in proximity to land where alternative development exists / has planning permission for alternate uses that may prove to be incompatible with the proposed waste management uses on the site.

89. Policy CP1 of the TMBC LDF Core Strategy states that the need for development will be balanced against the need to protect and enhance the natural environment and that residential amenity will be preserved and, where possible, enhanced. Draft Policy LP21 of the emerging TMBC Local Plan states that development will only be permitted if it can be demonstrated that it is located, designed and controlled to minimise the impact of noise on neighbouring properties and the prevailing acoustic environment.

90. Objections have been received from Offham PC and those making representations about noise impact. Offham PC considers that working hours must be complied with and that measures are required to minimise nuisance and mitigate impact and protect the amenity of local residents (including from reversing alarms). It has requested that no working should take place on Bank Holidays and only between 07:00 and 13:00 on all Saturdays. Local residents have also referred to noise from reversing alarms as well as from construction operations.

91. KCC's Noise Consultant has no objection and has advised that it is satisfied that the proposed development would continue to meet the requirements of condition 28 of

TM/12/2549 (which requires the BS4142 noise rating level not to exceed the background sound level LA90 at any noise sensitive property) and therefore not cause any adverse effect on noise sensitive properties. It is also satisfied that any noise impact on the IVC facility would be acceptable and well within BS8233 guidelines on internal noise levels for offices.

92. Condition 29 of TM/12/2549 states that noise from temporary operations such as those associated with final restoration of the site shall not exceed 70dB$_{LAeq,1hr}$ when measured at any noise sensitive property for up to 8 weeks in any 12 month period. This is consistent with the noise limit imposed on the IVC permissions and that applied to the most recent 5-year Working, Restoration and Aftercare Scheme approved pursuant to the mineral permission (TM/88/1002) at Blaise Farm Quarry (which itself includes no specific noise limits).

93. The application proposes the same working hours as provided for by condition 21 of TM/12/2549. This allows deliveries and exports on all Bank Holidays (between 07:00 and 17:30 hours) except 25 and 26 December and 1 January. Having previously been accepted, and since deliveries are also permitted at the IVC facility between these times on Bank Holidays, I see no reason to further restrict the development as has been suggested by Offham PC. Similarly, neither TM/12/2549 nor the IVC permissions preclude the use of tonal reversing alarms on site. Given this and since the facilities would be served by vehicles intended to be used primarily on the public highway I do not propose that additional restrictions be imposed. However, it would be appropriate to include an informative encouraging the applicant to employ measures to minimise the noise impact associated with reversing alarms where possible. Since the AD and gas to grid facility is almost complete, significant further noise associated with construction is unlikely. However, it would be appropriate to impose a condition restricting any remaining construction works to normal operating hours to minimise any further noise impacts. It would also be appropriate to restrict repairs and maintenance and all other operations not directly associated with the anaerobic digestion, gas generation and associated operational processes themselves to the same hours unless written approval has first been obtained from KCC. The only exception to this should be where there is insufficient time to secure the prior approval for urgent repairs or operations. In such circumstances, I consider it appropriate for the operator to notify KCC in writing of the date and time(s) and reason for and nature of those works on the next available working day. These matters are also capable of being addressed by condition.

94. I am satisfied that the proposed development would have no greater impact than what is already permitted and is acceptable when considered against the above planning policies subject to the imposition of conditions requiring that the above noise limits be met, the proposed working hours complied with (with additional limitations on the times for repairs and maintenance as set out above) and further construction works only being undertaken during normal operating hours, together with an informative encouraging measures to minimise the impact of reversing alarms.

Air quality

95. Paragraph 170 of the NPPF states that planning decisions should contribute to and enhance the natural and local environment by preventing new development from contributing to unacceptable levels of air pollution and that development should wherever possible help to improve local environmental conditions such as air quality. Paragraph 180 states that planning decisions should ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. Paragraph 181 states planning decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking account of the presence of Air Quality Management Areas (AQMAs). Paragraph 183 states that the focus of planning decisions should be on whether the proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes) and that planning decisions should assume that these regimes will operate effectively. Paragraph 7 of the NPPW states that when determining waste planning applications WPAs should consider the likely impact on the local environment and on amenity against various locational criteria and other matters. These include the proximity of sensitive ecological and human receptors and the extent to which adverse emissions (including odour) can be controlled using appropriate and well-maintained and managed equipment and vehicles.

96. Policy DM11 of the Kent MWLP states waste development will be permitted if it can be demonstrated that it is unlikely to generate unacceptable adverse impacts from dust, odour, emissions bioaerosols or exposure to health risks and associated damage to the qualities of life and wellbeing to communities and the environment. It states that this may include production of an air quality assessment of the impact of the proposed development and its associated traffic movements and necessary mitigation measures required through planning condition and / or planning obligation. It further states that proposals will also be required to ensure that there is no unacceptable adverse impact on the use of other land for other purposes. Policy DM12 states that permission will be granted for waste development where it does not result in an unacceptable adverse, cumulative impact on the amenity of a local community. Policy DM13 states that development should demonstrate that emissions associated with road transport movements are minimised as far as practicable, including by emission controls and reduction measures (e.g. the use of low emission vehicles and vehicle scheduling to avoid movements in peak hours). Draft Policy CSW6 of the Kent MWLP Early Partial Review requires waste development that avoids sites on or in proximity to land where alternative development exists / has planning permission for alternate uses that may prove to be incompatible with the proposed waste management uses on the site and does not give rise to significant adverse impacts on AQMAs. In respect of development which may give rise to bioaerosols (such as composting) it states that facilities should be located at least 250m from any potentially sensitive receptors.

97. Policy CP1 of the TMBC LDF Core Strategy states that the need for development will be balanced against the need to protect and enhance the natural environment and that

residential amenity will be preserved and, where possible, enhanced. Policy CP24 states that all development should be well designed and of high quality, respecting the site and surroundings. It also states that development which by virtue of its design would be detrimental to amenity will not be permitted. Policy SQ4 of the TMBC LDF MDE DPD states that development will only be permitted where the proposed use does not result in a significant deterioration of the air quality of the area (either individually or cumulatively with other proposals or existing uses in the vicinity), would not result in the circumstances that would lead to the creation of a new AQMA and there is no impact on the air quality of designated sites of nature conservation interest or appropriate mitigation is proposed to alleviate any such impact. Draft Policy LP20 of the emerging TMBC Local Plan states that development (either individually or cumulatively with other proposals or existing uses in the vicinity) that could directly or indirectly result in material additional air pollutants and a significant worsening of levels of air quality within the area surrounding the development site will not be permitted unless evidenced, specifically identified and detailed measures to offset or mitigate those impacts are introduced as part of the proposal.

98. Objections have been received from Offham PC, Kings Hill PC and those making representations about odour impact. These include reference to odour from the IVC facility previously causing significant nuisance to residents, claims of no odour from the AD plant being unachievable, lorries queuing to enter the AD facility giving rise to odour (as they would not be fully sealed), a lack of clarity over responsibility for monitoring enclosure and sheeting, the need for the installation of as much odour protection equipment as possible, the desirability of an air-lock type system (with inner and outer doors for HGVs to enter and leave the waste reception building) and the suggestion that only one of the three roller shutter doors should be open at any one time. West Malling PC has also raised concerns about the additional air quality impacts (e.g. CO_2) associated with traffic given the size of the waste catchment area and the proposed increase in tonnage.

99. KCC's Air Quality Consultant has no objection and has advised that it is satisfied with the applicant's air quality assessment and considers the risk to neighbouring facilities (residential and industrial) from air quality and odour exposure to be low. It has also advised that potential air quality impacts associated with operational road vehicle exhaust emissions are predicted to be negligible. The Environment Agency has no objection on air quality grounds and has advised that the proposed development would be controlled by an Environmental Permit which would provide detailed operational controls.

100. Informative (b) of TM/12/2549 states that detailed controls in respect of emissions (e.g. odour and bioaerosols) will be matters for the Environmental Permit. This approach remains appropriate as it is supported by paragraph 183 of the NPPF. Condition 11 of TM/12/2549 precludes the open storage of waste, contaminated materials or finished products outside buildings, tanks and structures permitted for these purposes. Condition 13 requires all doors on the AD waste reception building to remain closed at all times except when vehicles are entering and leaving the building or for maintenance purposes. Condition 27 states that all loaded, open backed vehicles entering or leaving the site should be properly enclosed or sheeted.

101. As noted in paragraph 25 above the proposed waste reception / processing building would be fitted with fast opening / closing electric roller shutter doors to enable the building to remain fully enclosed other than for entry and egress. Overhead extraction would ensure that the building is kept at a slight negative pressure, minimising the risk of fugitive odour escapes when the doors are opened for access and egress, and extracted air would pass through an odour abatement plant prior to release to the atmosphere. Notwithstanding paragraph 183 of the NPPF, conditions similar to those above could usefully be imposed again if planning permission is granted. Although the use of an air-lock type system advocated by some respondents may further assist in reducing the potential for odour escaping from the building, it would also significantly increase the size of the building given the size of some of the vehicles (particularly tankers) used to transport imported waste or exported product. Given that the Environment Agency has raised no objection to the design and layout of the proposed development and is content that it can address operational issues (such as odour) via an Environmental Permit I can see no planning reason to require this. Similarly, detailed arrangements for odour containment (beyond those currently provided for by conditions 11, 13 and 27 of TM/12/2549) should also be dealt with as necessary in the Environmental Permit.

102. Although the proposed development would allow more waste to be handled at the site than currently permitted and up to 40 additional HGV movements (20 in / 20 out) per day Monday to Friday (and 14 (7 in / 7 out) on Saturdays), no change is proposed the extent of the waste catchment area referred to in paragraph 10 above. In the absence of the additional capacity, the waste would need to be treated or disposed of elsewhere (potentially by landfill). AD is acknowledged to have an important role to play in waste management terms by reducing the production of methane and other greenhouse gases (such as those created from landfill under aerobic conditions). It should also be noted that KCC was previously unable to maintain a far more limited waste catchment for the IVC facility focussed more closely on the County on appeal. In general terms, operators will seek to reduce the distance that waste travels to be re-used, recycled, recovered or disposed of. The provision of additional AD capacity should be seen as positive in these contexts regardless of exactly where it is sourced from.

103. I am satisfied that although the proposed development would be likely to handle more waste and give rise to a greater number of HGV movements than provided for by TM/12/2549, it is acceptable when considered against the above planning policies subject to the imposition of conditions similar to the requirements of conditions 11, 13 and 27 of TM/12/2549. I also consider it appropriate to include an informative similar to informative (b) of TM/12/2549.

Water environment

104. Paragraph 163 of the NPPF states that when determining planning applications, local planning authorities should ensure that flood risk is not increased elsewhere. Paragraph 170 states that planning decisions should contribute to and enhance the natural environment by preventing new and existing development from contributing to,

being put at unacceptable risk from, or being adversely affected by unacceptable levels of water pollution. Paragraph 178 states that planning decisions should ensure that a site is suitable for its proposed use taking account of ground conditions and any risks arising from land instability and contamination (including risks arising from former activities such as mining). Paragraph 180 states that planning decisions should ensure that new development is appropriate for its location considering the likely effects (including cumulative effects) of pollution on the natural environment. Paragraph 183 states that the focus should be on whether the proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes) and that planning decisions should assume that these regimes will operate effectively. Paragraph 7 of the NPPW states that when determining waste planning applications WPAs should consider the likely impact on the local environment and on amenity against various locational criteria. These include the protection of water quality and resources and flood risk management. It also re-iterates that WPAs should concern themselves with implementing the planning strategy and not with the control of processes which are a matter for the pollution control authorities.

105. Policy DM1 of the Kent MWLP states that waste proposals should be designed to incorporate measures for water recycling where possible and utilise sustainable drainage systems wherever practicable. Policy DM10 states that planning permission will be granted for waste development where it would not result in the deterioration of physical state, water quality or ecological status of any water resource and water body, have an unacceptable impact on groundwater Source Protection Zones (SPZs) or exacerbate flood risk. Draft Policy CSW6 of the Kent MWLP Early Partial Review states that planning permission will be granted for proposals that avoid Groundwater Source Protection Zone 1 or Flood Risk Zone 3b.

106. Policy CP1 of the TMBC LDF Core Strategy states that the need for development will be balanced against the need to protect and enhance the natural environment and that water quality will be preserved and, where possible, enhanced. Policy CC3 of the TMBC LDF MDE DPD states that development will not be permitted if it has an unacceptable effect on the water environment, including surface water and groundwater quality and quantity, river corridors and associated wetlands. Policy SQ5 states that all development will be expected to ensure that adequate water and sewerage infrastructure is present or can be provided in order to meet future needs without compromising the quality and supply of services for existing users. It also states that development proposals will not be permitted unless they incorporate sustainable drainage systems (SUDS) appropriate to the local ground water and soil conditions, local drainage regimes and in accordance with the Groundwater Regulations and that development proposals incorporating SUDS must include an agreement to ensure future management, maintenance and replacement, when necessary, of the SUDS structures. Draft Policy DM17 of the emerging TMBC Local Plan states that the flood risk policy in the NPPF will be applied. Draft Policy DM18 states that SUDS for the management of run-off must be provided for as part of major development.

107. Objections have been received from NES about surface water drainage. Its concerns (which are set out in more detail in paragraph 55 above) are that the information relied upon to assess the proposed surface water drainage arrangements is flawed and that the proposed drainage is inadequate and would lead to water being discharged onto its land and the IVC facility. It has also expressed concerns about impacts associated with the development that has already taken place (including the discharge of ponded water onto its land and soakaway).

108. No objections have been received from the Environment Agency or KCC SUDS, in both cases subject to conditions. The Environment Agency has requested a condition to address potential contamination during the construction of the facility. Since the facility has already largely been built the continued need for this condition is questionable. However, it would continue to address the scenario in which any unexpected contamination is found prior to the completion of the development. KCC SUDS has requested a condition to secure the implementation of a maintenance manual for the proposed sustainable drainage scheme. This would serve to reduce the potential for the drainage and associated soakaway to fail and lead to surface water being discharged onto adjoining land. It has also acknowledged that further detail in support of the proposed drainage arrangement would have been helpful. However, it is content that what has been submitted is acceptable.

109. It is clear that problems relating to surface water drainage arose during the construction of the AD facility. It is understood that this resulted from a number of issues, including periods of heavy rainfall, the frequent use of a water bowser to clean the access road shared by the minerals and waste operations at Blaise Farm Quarry (to reduce the risk of mud and other materials being tracked towards the site entrance) and the diversion of water from one area to another. Although the likelihood of similar problems cannot be entirely ruled out, the fact that the AD facility is now largely built should minimise this risk as water from a large part of the facility is within the containment bund (and would be released in a controlled manner in accordance with the Environmental Permit) and as drainage from the roof of the reception building and vehicle manoeuvring area direct surface water to the soakaway via interceptors. A smaller part of the facility (containing the gas to grid facility, CHP plant and propane tanks) would drain naturally through a granular (Type 1) surface but would be surrounded by the surfaced vehicle manoeuvring area. A further part of the site (which would be unused) to the north of the AD facility and west of the IVC reception building would remain in its current (unsurfaced) form. In the event that the proposed drainage and soakaway arrangements fail to adequately prevent surface water draining onto adjoining land, alternative proposals would need to be brought forward to supplement these. The unused area of land referred to above would appear capable of accommodating additional surface water drainage should the need arise. A condition could be imposed to ensure that this area of land remains unused and available for this purpose unless planning permission is secured for some alternative use. It would also be appropriate to include a condition stating that surface and process water must not be discharged onto land outside the lateral extent of the application site in order to prevent flooding or interfere with adjoining land or associated uses. The proposed changes to the internal road layout at the quarry and the creation of a bund between the minerals and waste operations (referred to in the report at Item C2 relating to

application TM/88/1002/RVARA) should also assist in reducing the potential for surface water from the quarry operations interfering with either of the waste management facilities.

110. Notwithstanding the concerns expressed by NES, it is important to note that both the Environment Agency and KCC SUDS are content with the proposed surface water drainage arrangements (subject to conditions), that the Environment Agency has indicated that it can address the matter further as necessary when determining the Environmental Permit application and that the AD facility cannot operate without an Environmental Permit. Given this, I consider that the proposed development is acceptable when considered against the above planning policies subject to the imposition of the conditions requested by Environment Agency and KCC SUDS, a condition to ensure that the land to the north of the AD facility and west of the IVC reception building remains unused unless planning permission is secured for some alternative use and a condition stating that surface and process water must not be discharged onto land outside the lateral extent of the application site.

Traffic and transportation

111. Paragraph 108 of the NPPF states that in assessing applications, it should be ensured that safe and suitable access to the site can be achieved for all users and that any significant impacts from the development on the transport network (in terms of capacity or congestion) or any highway safety can be cost effectively mitigated to an acceptable degree. Paragraph 109 states that development should only be prevented or refused on highway grounds if there would be an unacceptable impact on highway safety or the residual cumulative impacts on the road network would be severe. Paragraph 7 of the NPPW states that when determining waste planning applications WPAs should consider the likely impact on the local environment and on amenity against various locational criteria. These include the suitability of the road network and the extent to which access would require reliance on local roads.

112. Policy DM11 of the Kent MWLP states that waste development will be permitted if it can be demonstrated that it is unlikely to generate unacceptable adverse impacts from traffic. Policy DM13 states that waste development will be required to demonstrate that emissions associated with road transport movements are minimised as far as practicable and by preference being given to non-road modes of transport. Where development requires road transport, it states that proposals will be required to demonstrate that: (1) the proposed access arrangements are safe and appropriate to the scale and nature of movements associated with the proposed development such that the impact of traffic generated is not detrimental to road safety; and (2) the highway network is able to accommodate the traffic flows that would be generated, as demonstrated through a transport assessment, and the impact of traffic generated does not have an unacceptable adverse impact on the environment or local community. Policy DM15 states that development will be granted planning permission where it would not give rise to unacceptable impacts on road transport or where these impacts are mitigated. Policy DM17 indicates that traffic management measures will be secured where appropriate (by planning obligation) where such objectives cannot be achieved by planning conditions. Draft Policy CSW6 of the Kent MWLP Early

Partial Review states that planning permission will be granted for proposals that are well located in relation to Kent's Key Arterial Routes, avoiding proposals which would give rise to significant numbers of lorry movements through villages or on unacceptable stretches of road.

113. Policy CP2 of the TMBC LDF Core Strategy states that new development that is likely to generate a significant number of trips should (amongst other things) be compatible with the character and capacity of the highway network in terms of the volume and nature of traffic generated. Policy SQ8 of the TMBC LDF MDE DPD states that development should only be permitted if it is demonstrated that the necessary transport infrastructure is in place (or can be provided), that there would be no significant harm to highway safety and that traffic can be adequately served by the highway network.

114. Objections have been received from Offham PC, West Malling PC, Kings Hill PC and those making representations about traffic impact. The objections are that existing roads are already overburdened and that the proposed development, along with other committed or potential development in the area, would exacerbate this and have a significant adverse impact. Other concerns are that there may be an increase in HGVs travelling through local villages such as Offham and West Malling. In this context it has been suggested that HGVs should only enter local villages if they are collecting waste from within them and that measures other than signage at the site advising drivers of routeing arrangements should be required. It has also been suggested that KCC consider how HGV movements could be incentivised to take place outside peak hours (or restricted somehow) to limit the impact on local roads during peak periods.

115. KCC Highways and Transportation has no objection subject to compliance with the proposed HGV limits and the obligations set out in the existing S106 Agreement relating to HGVs not being routed through villages such as Offham, Mereworth and West Malling and regular local liaison continuing to apply. It advises that it is not viable for it to object given that the average increase in HGV movements would be about 4 per hour and that there is no reason to impose peak hour restrictions. It recommends that the applicant be required to maintain records of traffic movements and make these available to KCC to demonstrate compliance with the revised limits and that such records should contain the date of each movement and details of each load (as is required by condition 23 of planning permission TM//12/2549).

116. I am satisfied that although the proposed development may give rise to a greater number of HGV movements than provided for by TM/12/2549, it is acceptable when considered against the above planning policies subject to the imposition of conditions limiting the number of HGV movements to no more than 78 (38 in / 38 out) per day Monday to Friday and 38 (19 in / 19 out) on Saturdays and records of the dates and times of vehicle movements and their loads being maintained by the operator and made available to KCC on request. I am also satisfied that the existing S106 Agreement will continue to appropriately address HGV routeing and community liaison.

Ecology

117. Paragraph 170 of the NPPF states that planning decisions should contribute to and enhance the natural environment by protecting and enhancing sites of biodiversity value (in a manner commensurate with their statutory status or identified quality) and minimising impacts on and providing net gains for biodiversity. Paragraph 175 states that when determining planning applications, local planning authorities should refuse development which that would result in significant harm to biodiversity if this cannot (as a last resort) be compensated for. Paragraph 7 of the NPPW states that when determining waste planning applications WPAs should consider the likely impact on the local environment against various locational criteria. These include protecting ecological networks and protected species.

118. Policies DM1, DM2 and DM3 of the Kent MWLP seek to protect and enhance biodiversity interests or mitigate and if necessary compensate for any predicted loss. Draft Policy CSW6 of the Kent MWLP Early Partial Review states that planning permission will be granted for proposals that do not give rise to significant adverse impacts upon (amongst others) Local Wildlife Sites (LWS) and Ancient Woodland.

119. Policy CP1 of the TMBC LDF Core Strategy states that the need for development will be balanced against the need to protect and enhance the natural environment and that the quality of the natural environment will be preserved and, where possible, enhanced. Draft Policy LP13 of the emerging TMBC Local Plan states that development must protect and where possible enhance (amongst others) LWS.

120. No ecological objections have been raised. KCC Ecological Advice Service has advised that it is satisfied that the proposed development would not have any significant adverse impact on the adjoining LWS and Ancient Woodland as the proposed facility would be within the quarry at a much lower level than the surrounding land on which these are located provided lighting is not situated any higher than the proposed buildings.

121. I am satisfied that the proposed development is acceptable when considered against the above planning policies subject to the imposition of conditions restricting lighting to the height of the proposed buildings and ensuring that it is designed, positioned, maintained and used to avoid light spillage and minimise impact on surrounding land and associated interests.

Other issues

122. Other issues or concerns that have been received relate to cumulative impact, waste catchment, litter, vermin, birds, poor site management, a history of complaints, the part retrospective nature of the application, the proximity to housing, impact on residential and business properties, the need for ongoing liaison.

123. Cumulative impact: Planning permission already exists for an AD / ATC and gas to grid facility at the site. The main differences now proposed relate to the total tonnage and HGV movements. These issues are addressed earlier in this report and I am satisfied

that the proposed development would not give rise to unacceptable cumulative impact.

124. Waste catchment: No change is proposed to the waste catchment permitted by TM/12/2549 (AD / ATC) which is consistent with that for the IVC facility. Whilst the waste catchment was originally for a much smaller area, it has been increased a number of times (including on appeal). I am satisfied that there is no reason to restrict the waste catchment further than already provided for by TM/12/2549 and that seeking to do so is unlikely to be supported on appeal.

125. Litter, vermin, birds: The control of litter, vermin and birds are operational matters for the Environmental Permit and will be addressed separately by the Environment Agency. Paragraph 183 of the NPPF states that the focus in making planning decisions should be on whether the proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes) and that planning decisions should assume that these regimes will operate effectively. Notwithstanding this, it should be noted that all waste would be handled inside and that the majority of the operation is undertaken in sealed conditions. It should also be noted that modern, well run waste management facilities are also capable of being operated without giving rise to significant problems associated with these issues.

126. Poor site management and history of complaints: It is understood that the concerns about poor site management and history of complaints primarily relate to odour associated with the existing IVC facility. However, a number of complaints were received about noise associated with the construction of the AD facility during unsocial hours and the drainage issues referred to and addressed earlier in this report. The issue of odour associated with the AD facility is also addressed above.

127. Part retrospective nature of the application: Wholly or partially retrospective applications must be determined in the manner set out in paragraph 59 above. In this case, planning permission TM/12/2549 already exists for an AD / ATC and gas to grid facility. This report explains the differences between what is permitted and proposed and why planning permission should be granted.

128. Proximity to housing, impact on residential and business properties: Impacts relating to proximity to housing and businesses are addressed in the relevant sections above.

129. Need for ongoing liaison: The existing S106 Agreement already requires the operator of the AD facility to participate in liaison meetings and this would not change if planning permission is granted. No further S106 Agreement or variation thereto is necessary to ensure this remains the case. It is worth noting that the AD developer has sent at least one representative to each of the recent liaison meetings.

Conclusion

130. Objections have been received from Offham, West Malling and Kings Hill PCs and those who have submitted representations (including the adjoining waste operator (NES)). However, there are no objections from technical consultees subject to

conditions.

131. Planning permission already exists for an Anaerobic Digestion (AD) plant and a gas to grid plant at the site and I am satisfied that those permissions were lawfully implemented. The key issue when considering this application is therefore not whether there should be an AD and gas to grid plant at Blaise Farm Quarry, rather it is whether what is now proposed is acceptable in the context of what is already permitted.

132. I am satisfied that there is strong case for permitting additional AD capacity and that granting planning permission for what is proposed would be consistent with relevant planning policies subject to the imposition of the conditions referred to in this report.

133. I am satisfied that the following can be considered to represent the very special circumstances necessary to outweigh the usual presumption against inappropriate development in the Green Belt:

- that there would only be limited harm to the openness of the Green Belt (and that this would be less than that associated with the extant AD / ATC and gas to grid permissions);
- that there are clear benefits of AD in terms of dealing with food waste in the most appropriate manner;
- that it is desirable to secure additional AD capacity in Kent (given the uncertainty as to whether other permitted AD facilities will be developed and become operational); and
- that it would generate renewable energy / biogas and produce digestate.

I also consider that the proposals need not conflict with Green Belt policy provided appropriate controls are imposed to address those issues highlighted elsewhere in this report.

134. I consider it necessary to refer the application to the Secretary of State for Communities and Local Government in accordance with the Town and Country Planning (Consultation) (England) Direction 2009 to establish whether he wishes to call-in the proposal for his own determination before any permission is granted as the proposed development exceeds the threshold of 1,000 square metres of new building floorspace.

135. I am also satisfied that the proposed development is acceptable in terms of landscape and visual impact, noise, air quality, the water environment, traffic and transportation and ecology, subject to the imposition of the conditions referred to in this report. I therefore recommend accordingly.

Recommendation

136. I RECOMMEND that the application BE REFERRED to the Secretary of State for Communities and Local Government under the Town and Country Planning (Consultation) (England) Direction 2009 and that SUBJECT TO no intervention by him

that PLANNING PERMISSION BE GRANTED SUBJECT TO:

(i) conditions covering amongst other matters:

- Operations to cease no later than 20 years from commencement of commercial AD operations, the removal of the facility and all associated infrastructure within a further 12 months and the restoration of the site to forestry, ecological and amenity after-use within a further 12 months;
- No more than 75,000 tonnes of waste to be imported to the AD facility each year (as proposed);
- No more than 78 HGV movements (39 in / 39 out) per day Monday to Friday and 38 HGV movements (19 in / 19 out) on Saturdays (as proposed);
- Hours of operation (as currently permitted / proposed but reworded to reflect the fact that the AD and gas to grid operation is technically carried out on a 24 hours a day, 7 days a week and 365 days a year basis and that it is the deliveries and exports that are specifically restricted);
- Any remaining construction work taking place during normal working hours;
- The waste catchment being as currently permitted;
- Only organic waste (and associated packaging) to be imported to or deposited, stored or processed at the facility;
- Removal of permitted development rights in respect of new, extended or altered buildings, plant and machinery;
- External lighting only used where necessary and designed and positioned to minimise light spill;
- No open storage of waste, contaminated materials or finished products outside buildings, tanks and structures permitted for these purposes;
- The doors on the AD waste reception building to remain closed at all times except when vehicles or persons are entering and leaving the building or for maintenance purposes;
- All loaded, open backed vehicles entering or leaving the site to be properly enclosed or sheeted;
- Site fencing to be maintained and repaired as necessary;
- The external colour treatment of all plant and buildings as proposed;
- No public deliveries and sales;
- Records of waste quantities / sources being maintained and made available to KCC on request;
- Records of the dates and times of vehicle movements and their loads to be maintained and made available to KCC on request;
- Signs advising all HGV drivers associated with site operations not to travel through the settlements of Offham, Mereworth and West Malling unless they are collecting waste from within those settlements;
- Measures to prevent mud or other materials being deposited on the highway;
- Noise limits (for day to day and temporary operations);
- Potential contamination / remediation strategy;
- Prior approval and implementation of a sustainable drainage maintenance manual;
- Surface and process water not being discharged onto land outside the lateral

extent of the application site;
- No development taking place on the land within the application site to the north of the AD facility and west of the IVC reception building unless planning permission is secured for some alternative use; and
- Restoration and aftercare (and related issues, including soil handling).

(ii) informatives relating to the following:

- Detailed controls in respect of emissions (e.g. odour and bioaerosols) being matters for the Environmental Permit;
- The nature and form of the required restoration scheme (as previously);
- The need for the operator of the Anaerobic Digestion plant to maintain a close working relationship with the landowners and other operators at Blaise Farm Quarry to minimise the possibility of any difficulties arising during the operation of the facility and ensure that effective restoration is provided when the site is restored;
- The requirements of the existing S106 Agreement (e.g. the liaison committee, HGV routing arrangements and site restoration); and
- Encouraging measures to minimise the impact of reversing alarms.

137. I also RECOMMEND that the applicant be asked to formally withdraw planning applications TM/19/2397, TM/19/2398 and TM/19/2399 (i.e. the Section 73 applications referred to in paragraph 17 of this report).

Case Officer: Jim Wooldridge	Tel. no. 03000 413484

Background Documents: see section heading.

Appendix 1 to Item C1

Temporary development of an Anaerobic Digestion plant with ancillary gas-to-grid plant and associated infrastructure (part retrospective) at Blaise Farm Quarry, Blaise Quarry Road, Kings Hill, West Malling, Kent ME19 4PN - TM/19/2396 (KCC/TM/0211/2019)

See separate Appendix 1 which contains the following drawings illustrating the proposed development and permitted development:

- Drawing number 24328/651 Rev C titled "Overall Site Layout" dated 20 March 2020
- Drawing number 24328/655 Rev 0 titled "As Built Site Layout" dated 6 February 2020
- Drawing number 24328/660 Rev C titled "As Built Site Cross Sections" dated 20 March 2020
- Drawing number 24328/005 Rev B titled "Proposed Drainage Layout" dated 6 February 2020
- Drawing number 24328/020 Rev 0 titled "Surface Water Drainage & Soakaway Design" dated 6 February 2020
- Drawing number 24328/1050 Rev A titled "Proposed External Lighting Levels Plan" dated 16 August 2019
- Drawing number 24328/020 Rev 0 titled "Reception Building Elevations Sheet 1 of 2" dated 14 June 2019
- Drawing number 24328/021 Rev 0 titled "Reception Building Elevations Sheet 2 of 2" dated 14 June 2019
- Drawing number 24328//122 Rev 0 titled "Reception Building Floorplan" dated 14 June 2019
- Drawing number 001 Rev E titled "Site Plan" dated 13 July 2012 [Planning permission TM/12/2549 site layout]
- Drawing number 003 Rev F titled "Elevations" dated 23 July 2012 [Planning permission TM/12/2549 site elevations]
- Drawing number 6058_10_11 titled "Consented Site Layout Indicating Proposed Bio-gas to Grid Compound" dated September 2013 [Planning permission TM/13/3657 layout in context of planning permission TM/12/2549]

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Appendix 1 to Item C1

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GENERAL NOTES:

1. All dimensions noted are in millimetres unless stated otherwise.
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3. Do not scale from this drawing, if dimensions are not clear ask.
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5. Plandescil Ltd. to be immediately notified of any suspected omissions or discrepancies.
6. This drawing is to be read in conjunction with all other relevant documents relating to the project.
7. As Built layout based on proposed site layout (as witnessed to be constructed on site). As built Topographical survey yet to be carried out.

FOR PLANNING

Key

- Proposed Concrete Surface
- Proposed Asphalt Surface
- Proposed D.O.T Type 1 Surface
- Existing Building
- Redline Boundary (Area -15655m²/1.5655ha)

Proposed Plant Key

1	Fermenter Tank (2No 28.00mØ)
2	Post Fermenter Tank (28.00mØ)
3	Digestate Storage Tank (28.00mØ)
4	Technical Building
5	Pre-Storage Tank (10.00mØ)
6	Pasteurisation Tank (3No 3.00mØ)
7	Gas Cooling System
8	Emergency Generator
9	Gas Upgrading Unit
10	Weighbridge
11	Boiler
12	LV Board
13	CHP
14	Technical Container
15	Storage Area (internal to Building)
16	Feeding System (internal to Building)
17	Separation (internal to Building)
18	Ferric Chloride Tank (3.75mØ)
19	Reception Tank (3No 3.00mØ)
20	Mixing Pit (8.00mØ)
21	Odour Control Unit
22	Site Office
23	Flare
24	Intake Station (2No. internal to Building)
25	Bund Ramp
26	Depackaging Unit
27	Propane Tanks
28	Grid Entry Unit
29	Water Tank
30	Exhaust Stack
31	Sump Pit
32	Active Carbon & VOC Filter's (3No. Total)
33	Transformer
34	Septic Tank
35	Car Parking
36	Bund Gate

1:500 - DRAWING SCALE REFERENCE (m)

20 10 5 0 10 20 30 40 50

Rev	Date	Rev By	Chkd	Description
C	20-03-20	JHB	OAJ	Site Boundary Amended
B	18-03-20	JHB	OAJ	Site Boundary Amended
A	03-03-20	JHB	OAJ	Site Boundary Amended
0	06-02-20	-	OAJ	First Issue

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civil / structural / environmental / surveying

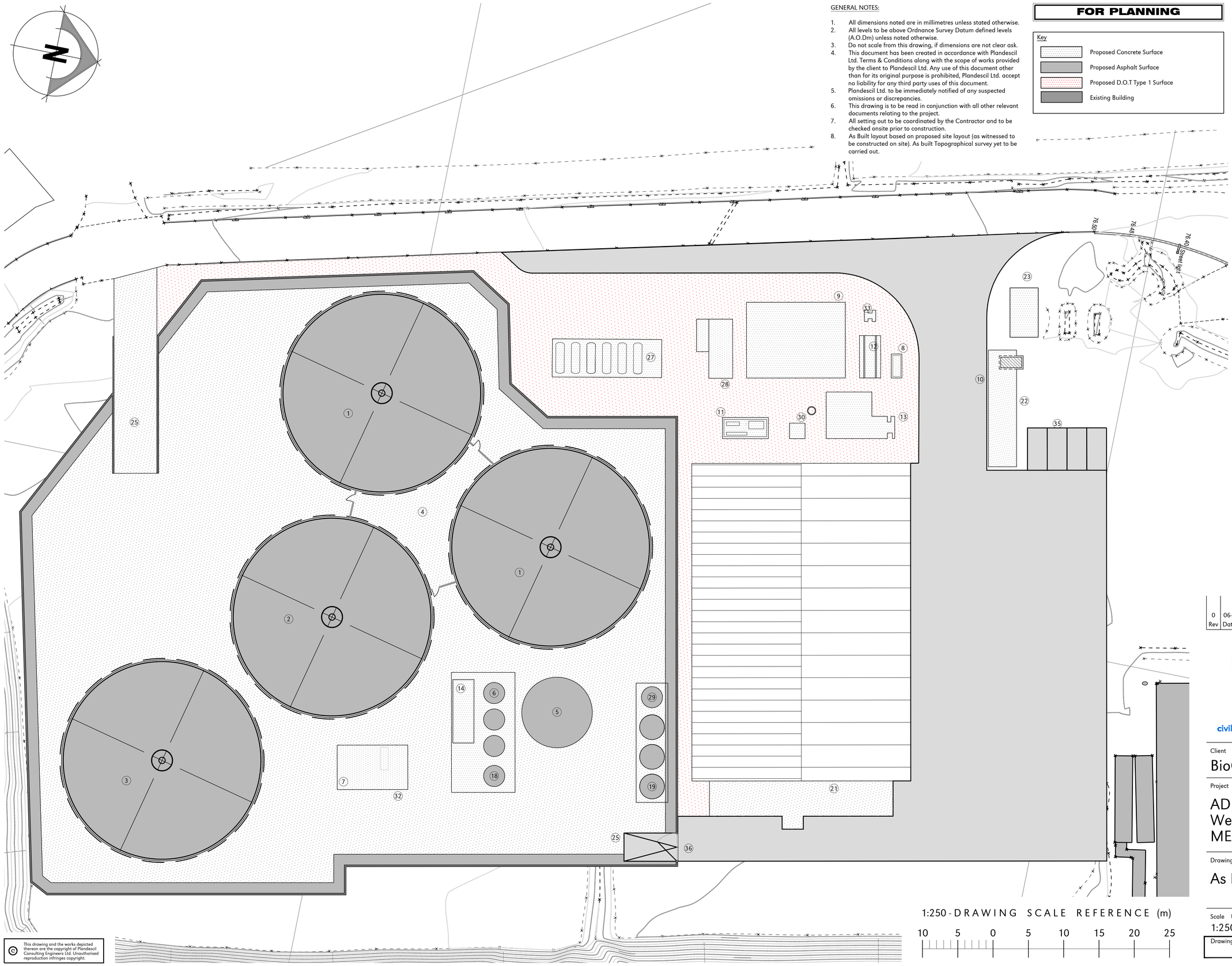
Client
BioConstruct

Project
AD Plant, Blaise Farm Quarry,
West Malling, Kent,
ME19 4PN

Drawing Title
Overall Site Layout

Scale U.N.O.	Date	Drawn By
1:500 (A1)	February 2020	TOH

Drawing No. 24328/651 Rev C



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5. Plandescil Ltd. to be immediately notified of any suspected omissions or discrepancies.
6. This drawing is to be read in conjunction with all other relevant documents relating to the project.
7. All setting out to be coordinated by the Contractor and to be checked onsite prior to construction.
8. As Built layout based on proposed site layout (as witnessed to be constructed on site). As built Topographical survey yet to be carried out.

FOR PLANNING

Key

- Proposed Concrete Surface
- Proposed Asphalt Surface
- Proposed D.O.T Type 1 Surface
- Existing Building

Proposed Plant Key

1	Fermenter Tank (2No 28.00mØ)
2	Post Fermenter Tank (28.00mØ)
3	Digestate Storage Tank (28.00mØ)
4	Technical Building
5	Pre-Storage Tank (10.00mØ)
6	Pasteurisation Tank (3No 3.00mØ)
7	Gas Cooling System
8	Emergency Generator
9	Gas Upgrading Unit
10	Weighbridge
11	Boiler
12	LV Board
13	CHP
14	Technical Container
15	Storage Area (internal to Building)
16	Feeding System (internal to Building)
17	Separation (internal to Building)
18	Ferric Chloride Tank (3.75mØ)
19	Reception Tank (3No 3.00mØ)
20	Mixing Pit (8.00mØ)
21	Odour Control Unit
22	Site Office
23	Flare
24	Intake Station (2No. internal to Building)
25	Bund Ramp
26	Depackaging Unit
27	Propane Tanks
28	Grid Entry Unit
29	Water Tank
30	Exhaust Stack
31	Sump Pit
32	Active Carbon & VOC Filter's (3No. Total)
33	Transformer
34	Septic Tank
35	Car Parking
36	Bund Gate

Received - 7 February 2020
Planning Applications Group

Rev	Date	Rev By	Chkd	Description
0	06-02-20	-	OAJ	First Issue

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civil / structural / environmental / surveying

Client
BioConstruct

Project
AD Plant, Blaise Farm Quarry, West Malling, Kent, ME19 4PN

Drawing Title
As Built Site Layout

1:250 - DRAWING SCALE REFERENCE (m)
10 5 0 5 10 15 20 25

Scale U.N.O.	Date	Drawn By
1:250 (A1)	February 2020	TOH

Drawing No.	Rev
24328/650	0

Note:

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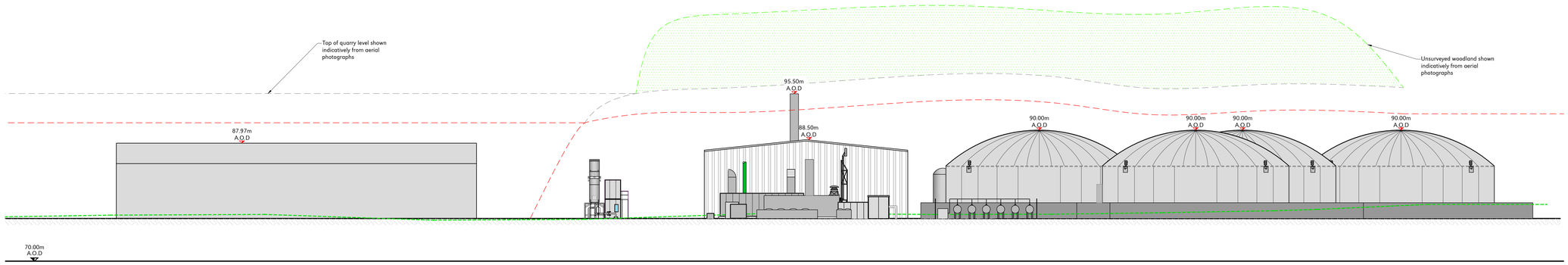
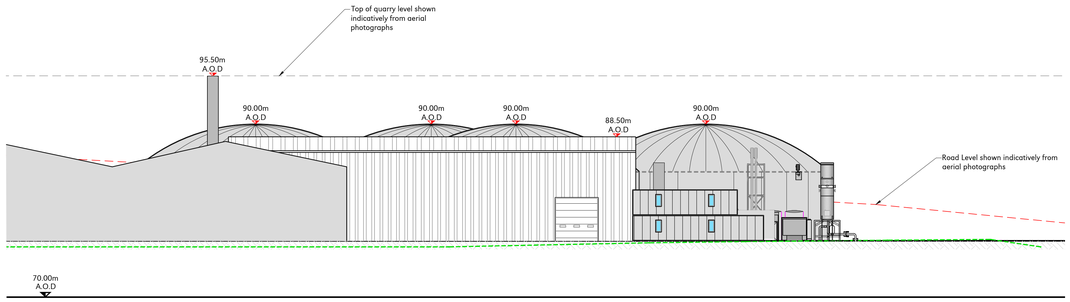
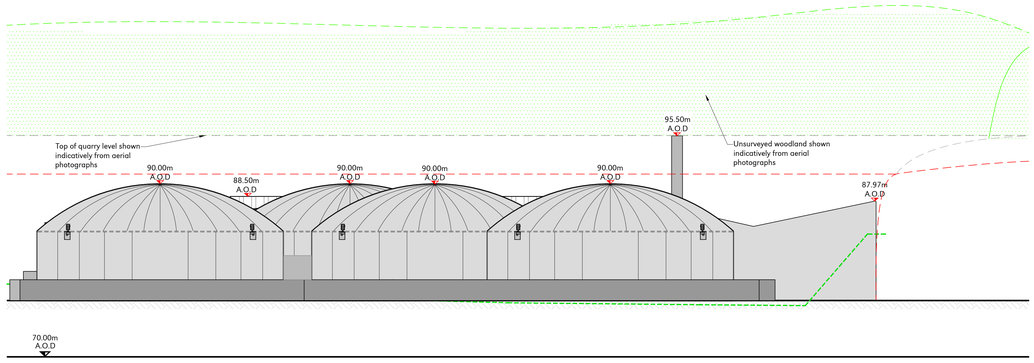
5. This drawing is to be read in conjunction with all other relevant documents relating to the project.
6. As Built layout based on proposed site layout (as witnessed to be constructed on site). As built Topographical survey yet to be carried out.



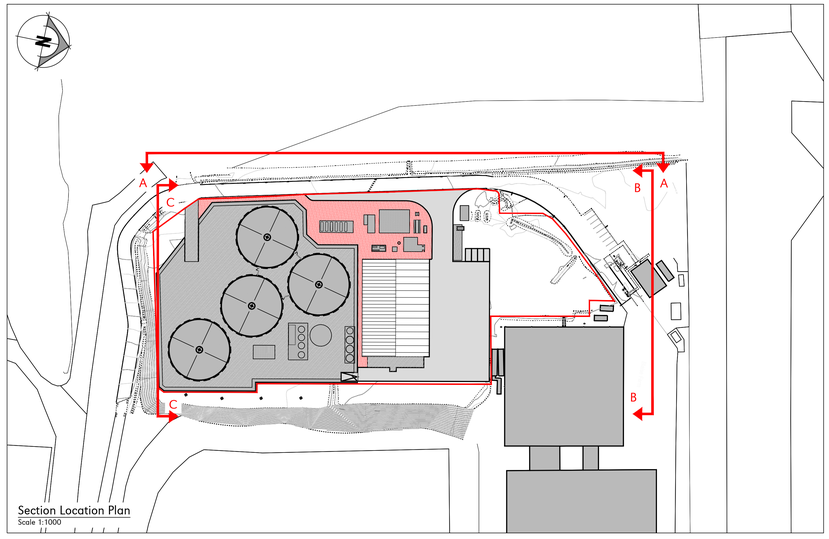
Section A-A
Scale 1:250



Section B-B
Scale 1:250



Section C-C
Scale 1:250



Section Location Plan
Scale 1:1000

1:250 - DRAWING SCALE REFERENCE (m)

10 5 0 5 10 15 20 25

1:1000 - DRAWING SCALE REFERENCE (m)

40 20 10 0 20 40 60 80 100

Key

- Existing Ground Level
- Top of Quarry Bank
- Top of Quarry Wall - Indicatively Drawn

FOR PLANNING

Rev	Date	Chkd	Description
C	20-03-20	OAJ	Site Boundary Amended
B	18-03-20	OAJ	Site Boundary Amended
A	03-03-20	OAJ	Site Boundary Amended
0	06-02-20	OAJ	First Issue

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civil / structural / environmental / surveying

Client
BioConstruct

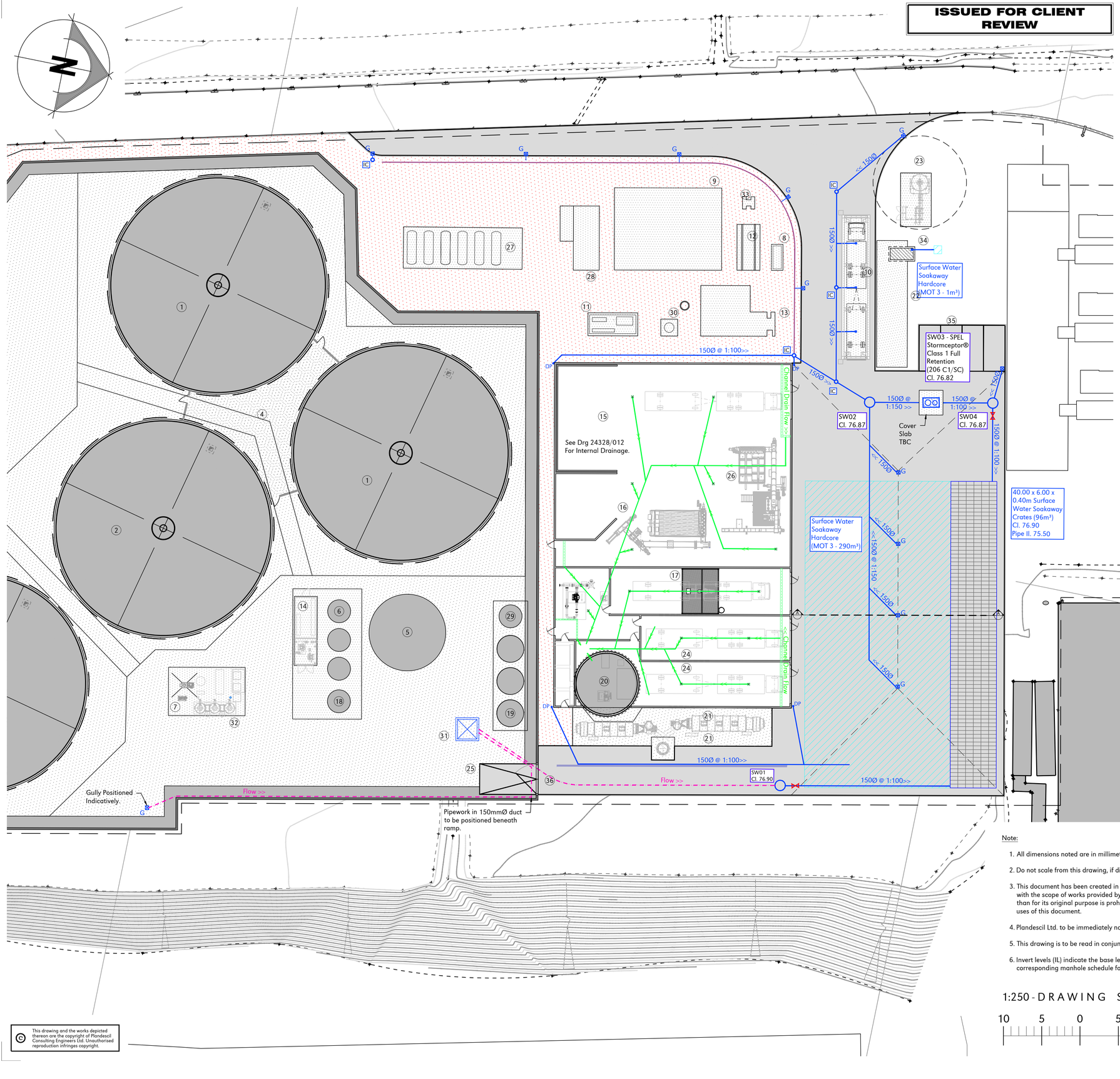
Project
AD Plant, Blaise Farm Quarry, West Malling, Kent, ME19 4PN

Drawing Title
As Built Site Cross Sections

Scale U.N.O.	Date	Drawn By
As Noted (A0)	February 2020	TOH

Drawing No. 24328/660 Rev C

ISSUED FOR CLIENT REVIEW



Drainage Key

- Pumped Leachate Drainage (LD) (Above Ground)
- Leachate Drainage (LD)
- Leachate Gully (LD)
- Leachate Manhole (LD)
- Proposed Leachate Sump (LD)
- Leachate Inspection Chamber (LD)
- Surface Process Water Channel (PW)
- Pumped Process Water Drainage (PW)
- Surface Water Perforated Pipe (SW)
- Surface Water Inspection Chamber (SW)
- Surface Water Gully (SW)
- Surface Water Downpipe (SW)
- Surface Water Manhole (SW)
- Valve
- 40.00 x 6.00 x 0.40m Surface Water Soakaway Crate (96m³)
- Surface Water Soakaway Hardcore (MOT 3 - 290m³)
- Filter Drain

Key

- Proposed Concrete Surface
- Proposed Asphalt Surface
- Proposed Armco Barrier
- Proposed D.O.T Type 1 Surface

Proposed Plant Key

1. Fermenter Tank (2No 28.00mØ)
2. Post Fermenter Tank (28.00mØ)
3. Digestate Storage Tank (28.00mØ)
4. Technical Building
5. Pre-Storage Tank (10.00mØ)
6. Pasteurisation Tank (3No 3.00mØ)
7. Gas Cooling System
8. Emergency Generator
9. Gas Upgrading Unit
10. Weighbridge
11. Boiler
12. LV Board
13. CHP
14. Technical Container
15. Storage Area (internal to Building)
16. Feeding System (internal to Building)
17. Separation (internal to Building)
18. Ferric Chloride Tank (3.75mØ)
19. Reception Tank (3No 3.00mØ)
20. Mixing Pit (8.00mØ)
21. Odour Control Unit
22. Site Office
23. Flare
24. Intake Station (2No. internal to Building)
25. Bund Ramp
26. Depackaging Unit
27. Propane Tanks
28. Grid Entry Unit
29. Water Tank
30. Exhaust Stack
31. Sump Pit
32. Active Carbon & VOC Filter's (3No. Total)
33. Transformer
34. Septic Tank
35. Car Parking
36. Bund Gate

Note:

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5. This drawing is to be read in conjunction with all other relevant documents relating to the project.
6. Invert levels (IL) indicate the base levels of manholes and leachate tank. Refer to the corresponding manhole schedule for pipe invert levels.

1:250 - DRAWING SCALE REFERENCE (m)

10 5 0 5 10 15 20 25

Rev	Date	Chkd	Description
B	06-02-20	OAJ	Section Marker Added
A	19-11-19	OAJ	Drainage Amended to Suit Site Updates
0	10-09-19	OAJ	First Issue

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civil / structural / environmental / surveying

Client
BioConstruct

Project
AD Plant, Blaise Farm Quarry, West Malling, Kent, ME19 4PN

Drawing Title
Proposed Drainage Layout

Scale U.N.O.	Date	Drawn By
1:250 (A1)	September 2019	JHB

Drawing No. 24328/005 Rev B

GENERAL NOTES:

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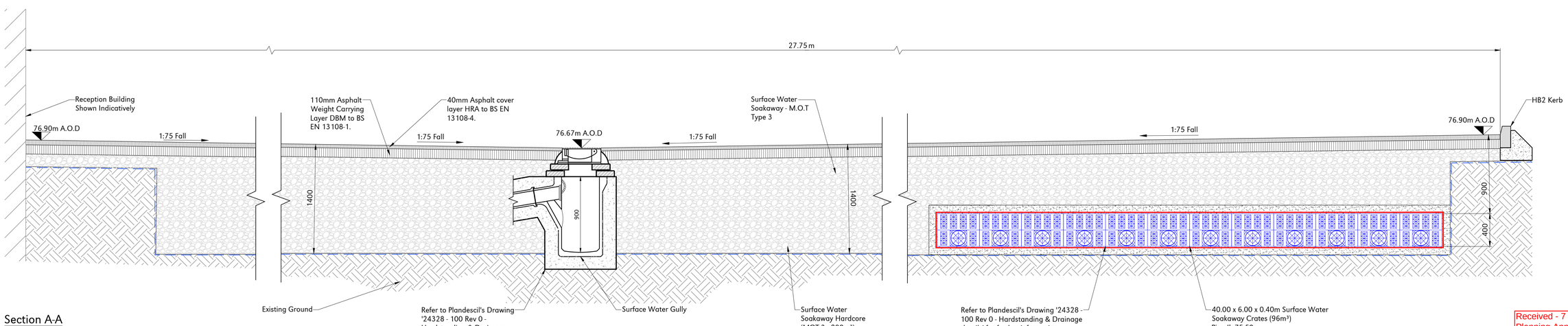
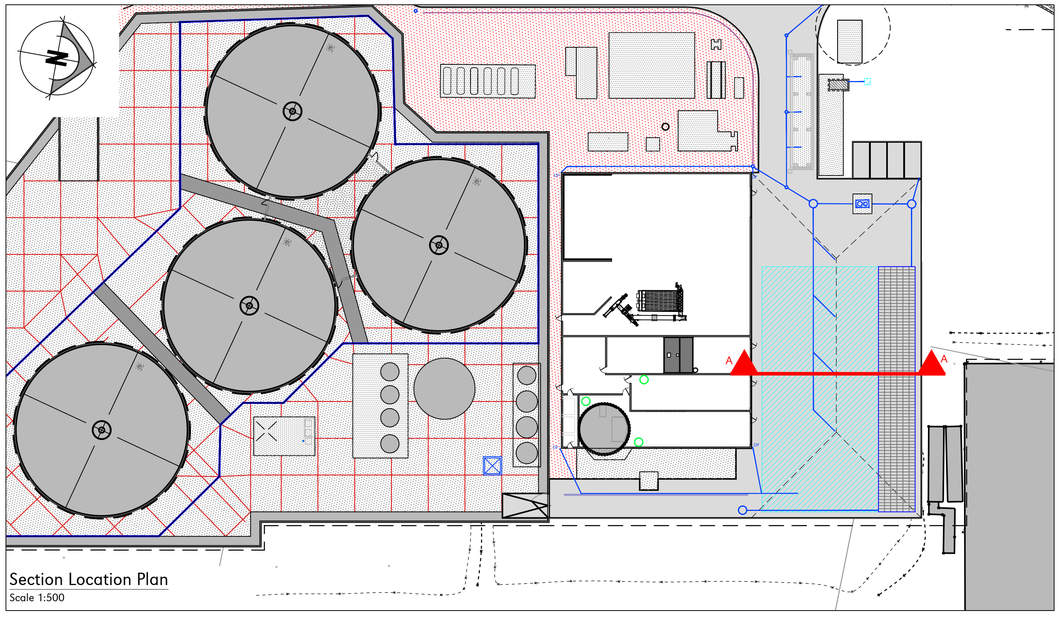
5. Plandescil Ltd. to be immediately notified of any suspected omissions or discrepancies.
6. This drawing is to be read in conjunction with all other relevant documents relating to the project.
7. Refer to Plandescil Ltd Drawing - 24328 - 005 Rev B - Proposed Drainage Layout



Section A-A
Scale 1:20



Section Location Plan
Scale 1:500

1:500 - DRAWING SCALE REFERENCE (m)

20 10 5 0 10 20 30 40 50

1:20 - DRAWING SCALE REFERENCE (m)

1.0 0.5 0 0.5 1.0 1.5 2.0 2.5

ISSUED FOR CLIENT REVIEW

Rev	Date	Rev By	Chkd	Description
0	06-02-20	-	OAJ	First Issue

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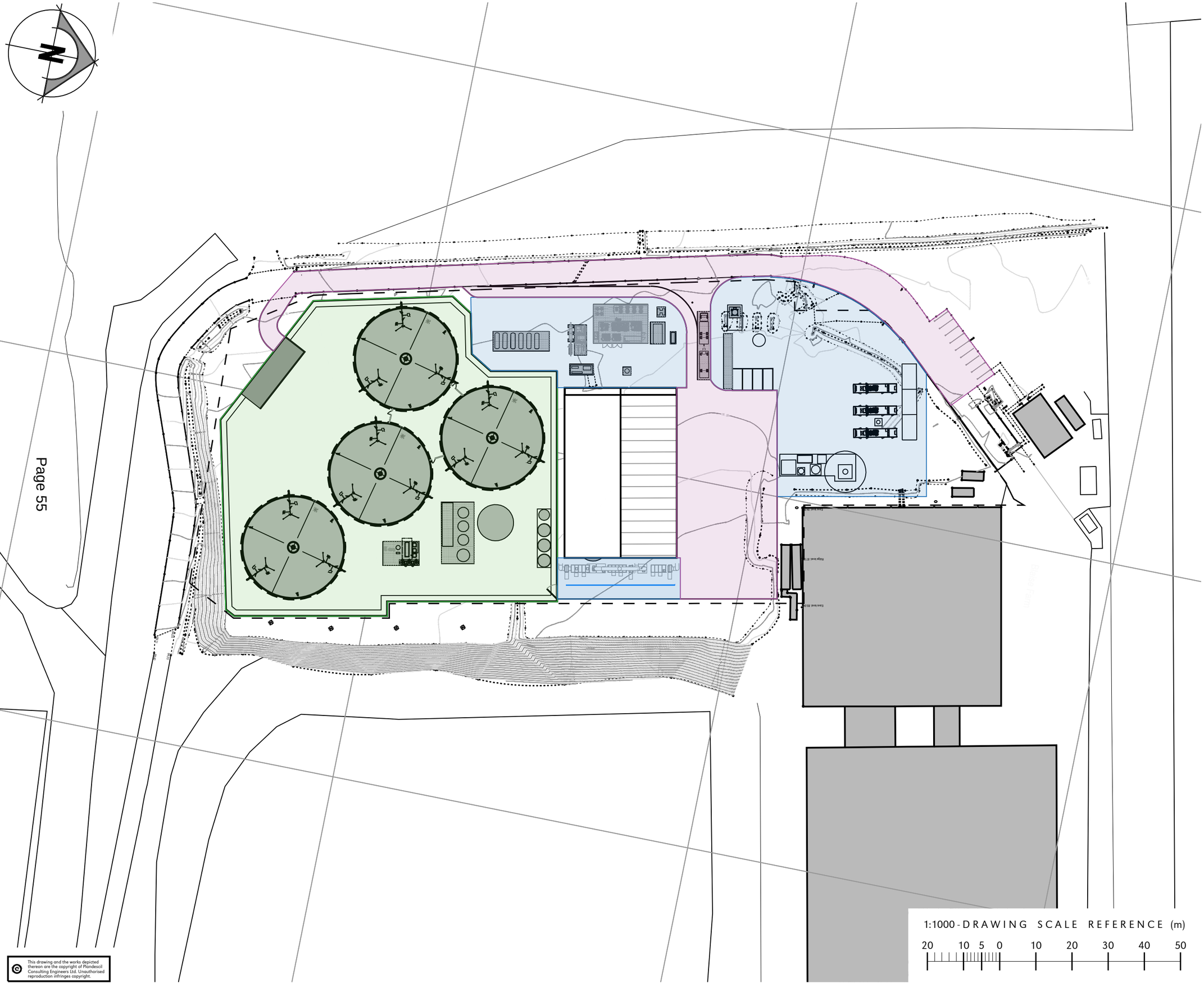
Client
BioConstruct

Project
AD Plant, Blaise Farm Quarry, West Malling, Kent, ME19 4PN

Drawing Title
Surface Water Drainage & Soakaway Section

Scale	U.N.O.	Date	Drawn By
As Noted (A1)		February 2020	TOH

Drawing No. 24328/020 Rev 0



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Proposed External Lighting Levels Key:

- No Lighting (ATEX Zone)
- 20/05 Lux
- 50/20 Lux

Illumination In Lux - Average/Minimum

FOR PLANNING

Rev	Date	Chkd	Description
A	16-08-19	OAJ	Minor Amendments
0	14-06-19	OAJ	First Issue

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Client

BioConstruct

Project

AD Plant, Blaise Farm Quarry, West Malling, Kent, ME19 4PN

Drawing Title

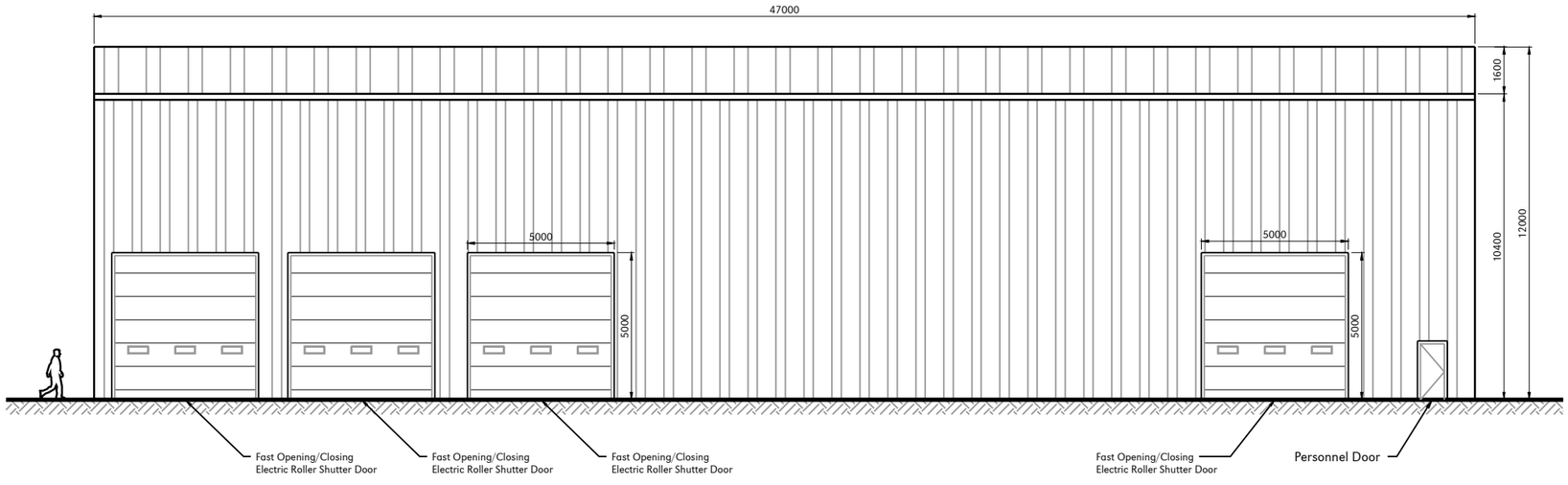
Proposed External Lighting Levels Plan

Scale U.N.O.	Date	Drawn By
1:1000 (A3)	June 2019	MJP

Drawing No. 24328/1050 Rev A

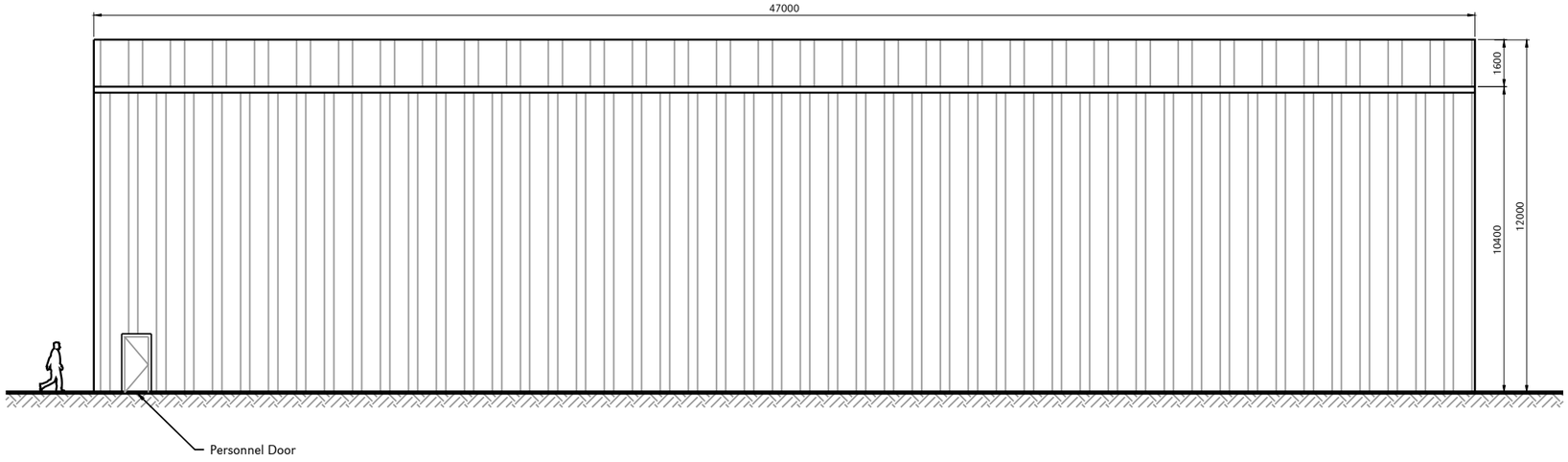
1:1000 - DRAWING SCALE REFERENCE (m)

20 10 5 0 10 20 30 40 50



Front Elevation

Scale 1:200



Rear Elevation

Scale 1:200

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1:200 - DRAWING SCALE REFERENCE (m)

5 0 5 10

FOR PLANNING

Rev	Date	Chkd	Description
0	14-06-19	OAJ	First Issue

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civil / structural / environmental / surveying

Client

BioConstruct

Project

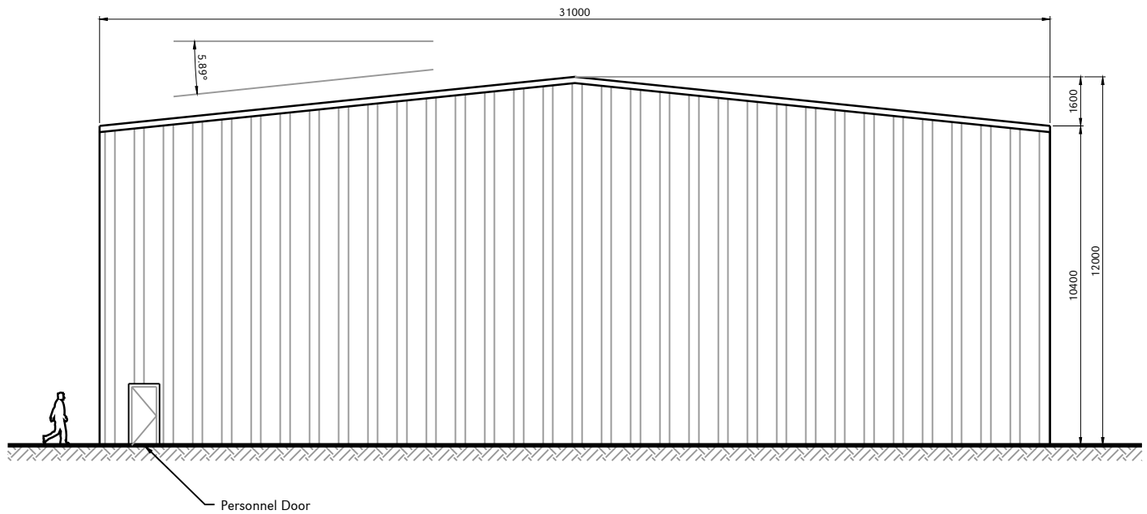
AD Plant, Blaise Farm Quarry,
West Midlands, Kent,
ME19 4PN

Drawing Title

Reception Building Elevations
Sheet 1 of 2

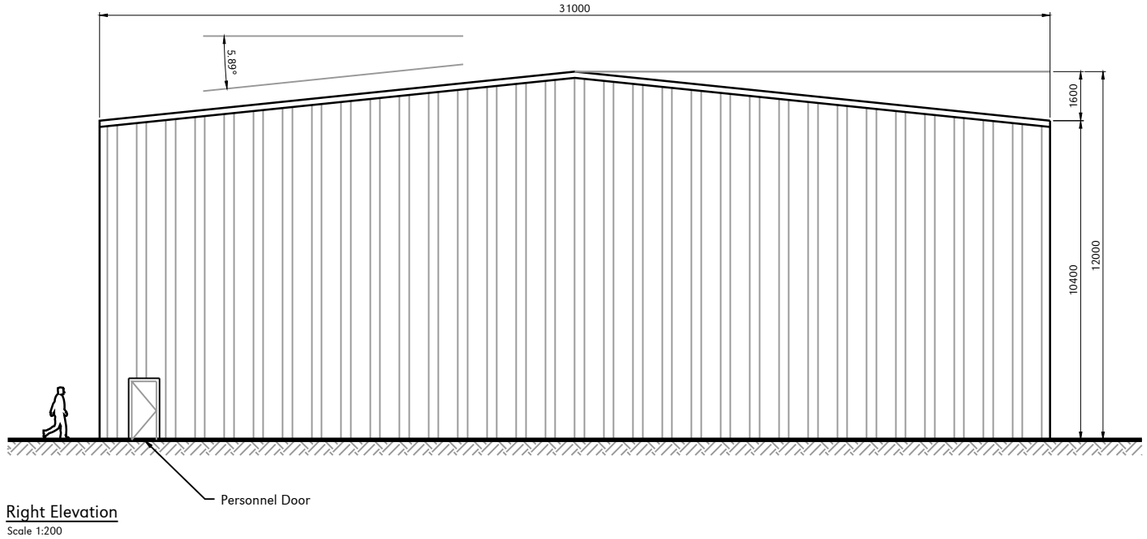
Scale U.N.O.	Date	Drawn By
1:200 (A3)	May 2019	MJP

Drawing No.	Rev
24328/120	0



Left Elevation

Scale 1:200



Right Elevation

Scale 1:200

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1:200 - DRAWING SCALE REFERENCE (m)

5 0 5 10

FOR PLANNING

Rev	Date	Chkd	Description
0	14-06-19	OAJ	First Issue

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civil / structural / environmental / surveying

Client

BioConstruct

Project

AD Plant, Blaise Farm Quarry, West Midlands, Kent, ME19 4PN

Drawing Title

Reception Building Elevations Sheet 2 of 2

Scale U.N.O.	Date	Drawn By
1:200 (A3)	May 2019	MJP

Drawing No.	Rev
24328/121	0

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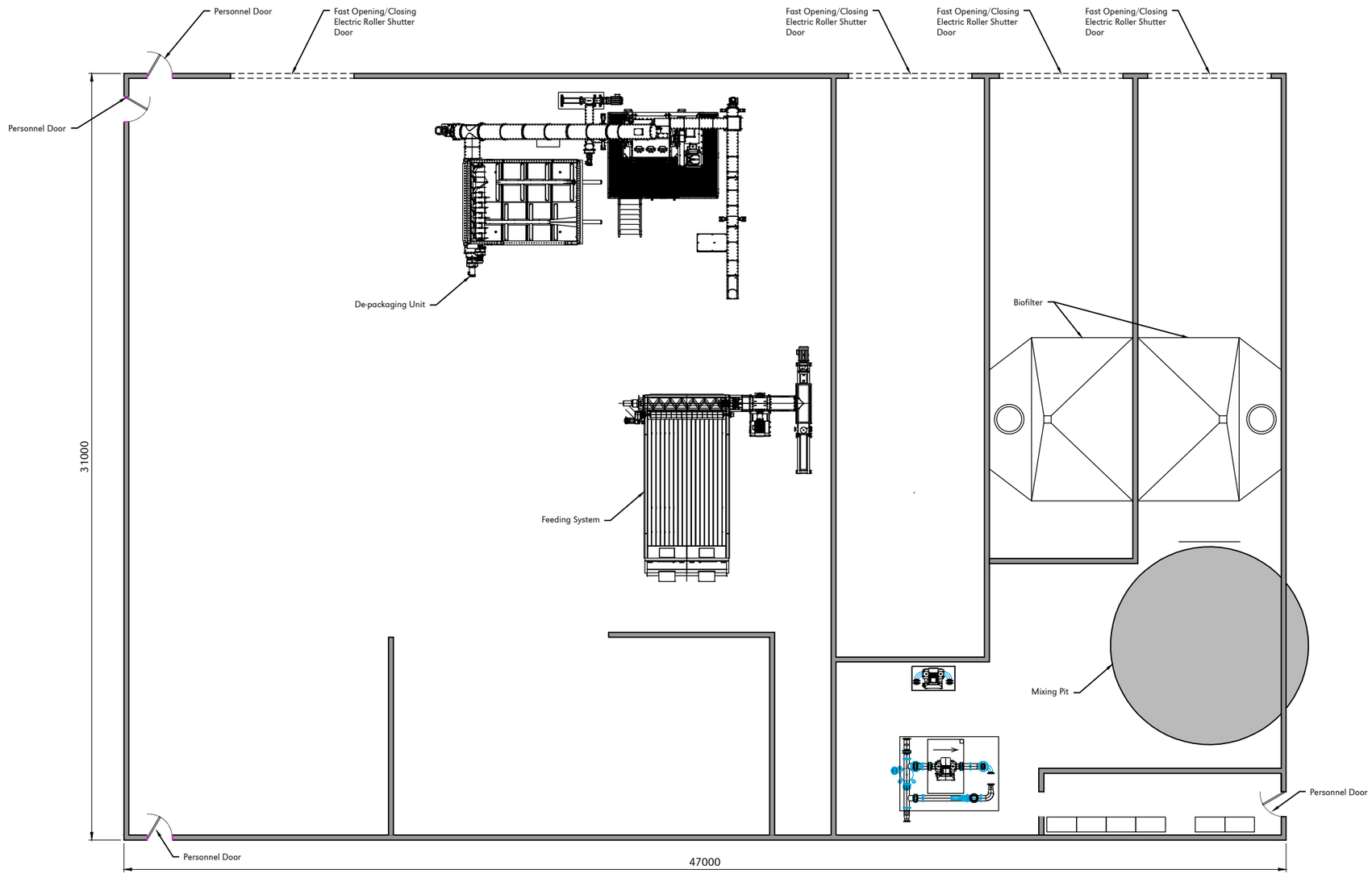

1:200 - DRAWING SCALE REFERENCE (m)

5 0 5 10

FOR PLANNING

Rev	Date	Chkd	Description
0	14-06-19	OAJ	First Issue

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Client
BioConstruct

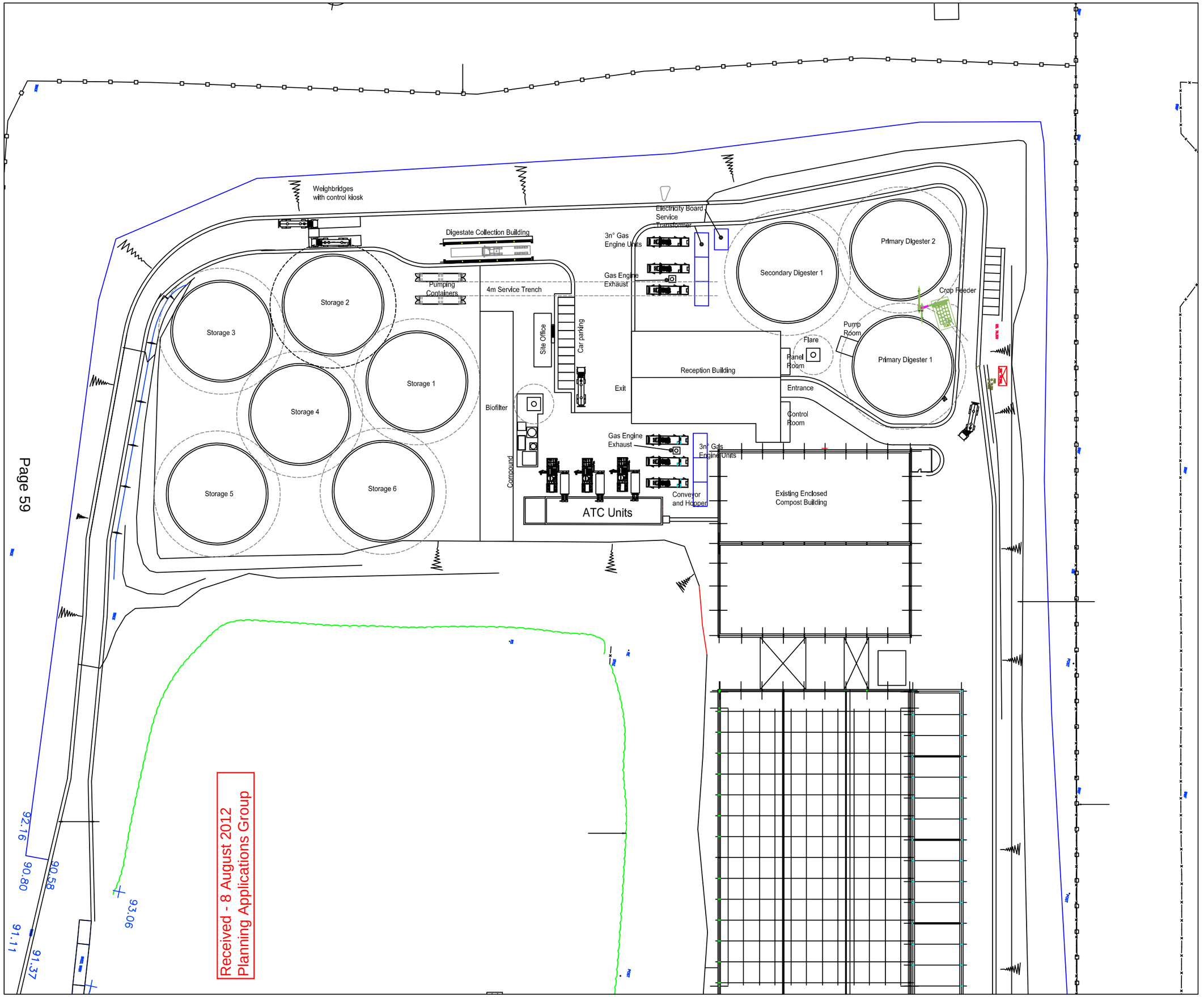
Project
AD Plant, Blaise Farm Quarry, West Midlands, Kent, ME19 4PN

Drawing Title
Reception Building Floorplan

Scale U.N.O.	Date	Drawn By
1:200 (A3)	May 2019	MJP

Drawing No. 24328/122 Rev 0

Notes.



Page 59

Rev	Description	Date	By
E	Amended to client comments	13.07.12	JI
D	Amended to client comments	22.06.12	JI
C	Amended to client comments	28.05.12	AS
B	Amended to client comments	21.05.12	JM
A	Amended to client comments	05.04.12	JM

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Chipping Norton,
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Fax 01608 677 711,
email mail@agrivert.co.uk

Project
Blaise Quarry
Anaerobic Digestion Facility

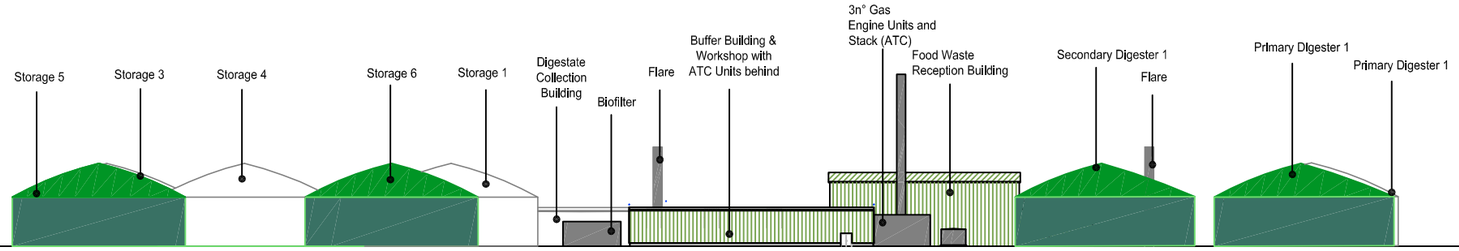
Title
Site Plan

Scale @ A3	Drawn by/Checked by	Date
1:1000	JM/JI	01.06.12

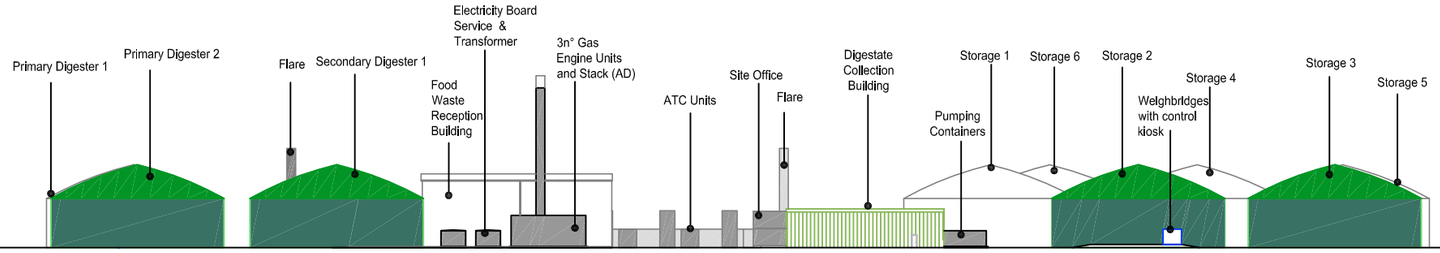
Job no.	Dwg No.	Revision
P023	001	E

Notes.

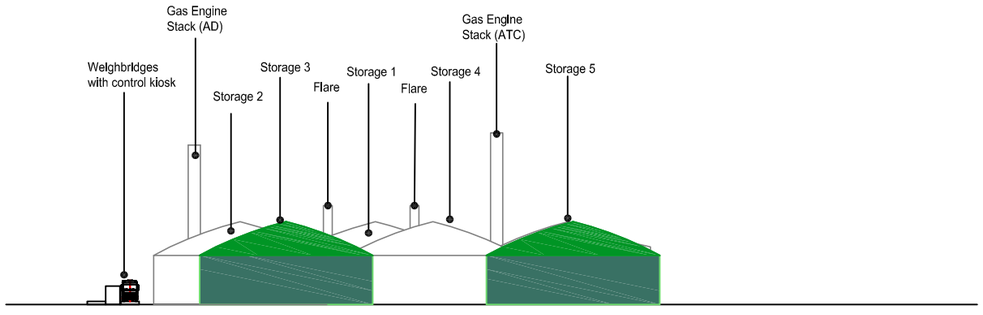
East Elevation



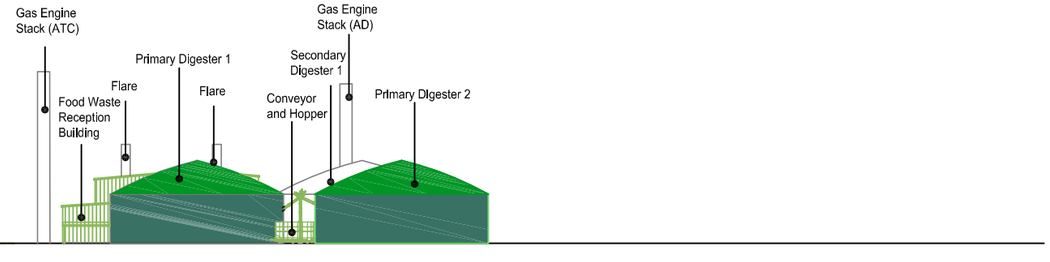
West Elevation



South Elevation



North Elevation



Rev	Description	Date	By
F	Amended to Client Comments	23.07.12	JI
E	Amended Buffer Building	19.07.12	JM
D	Amended to client comments	16.07.12	JI
C	Amended to client comments	13.07.12	JI
B	Amended to client comments	25.06.12	JI
A	Amended to client comments	22.06.12	JI

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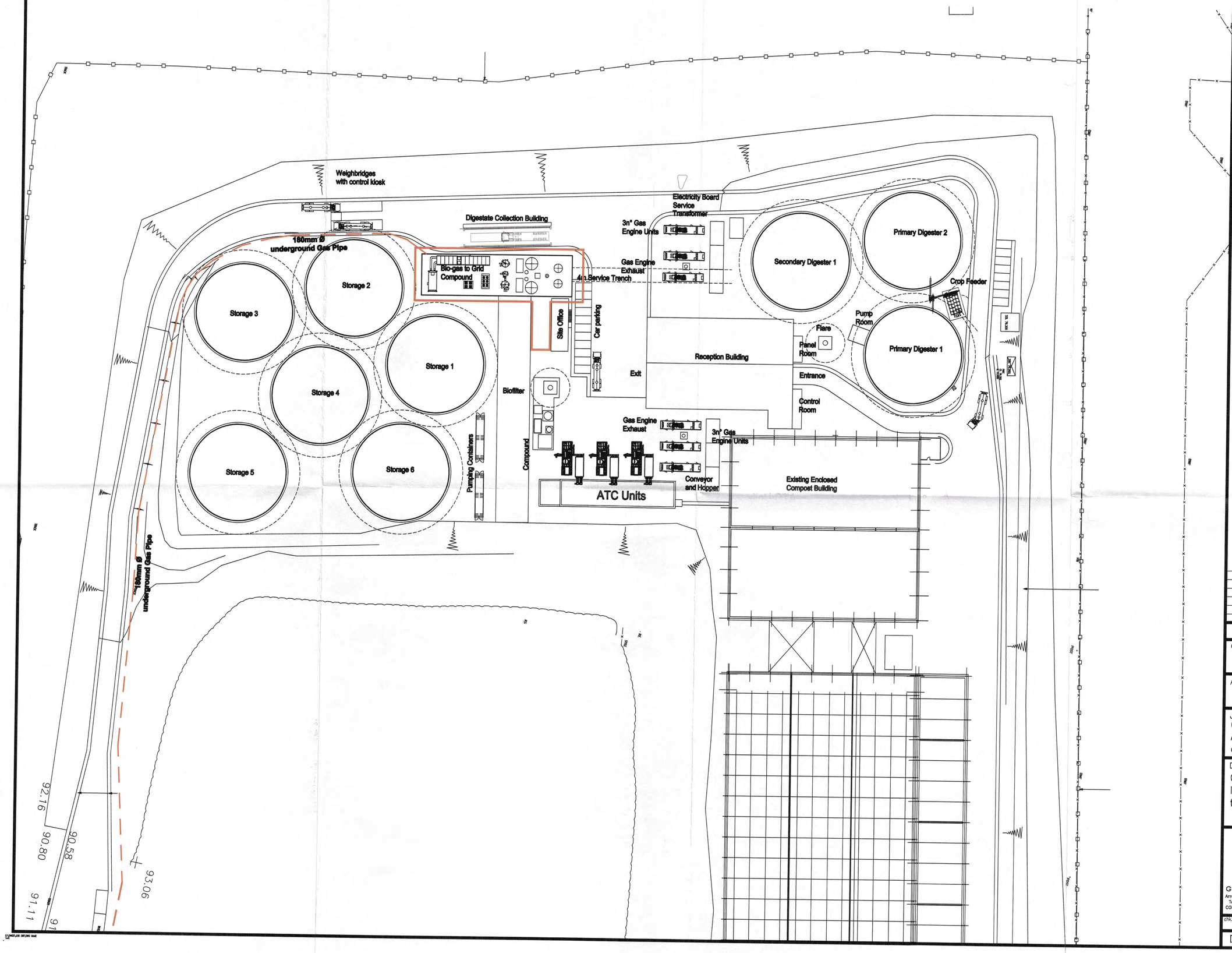
email mail@agrivert.co.uk

Project
Blaise Quarry
Anaerobic Digestion Facility

Title
Elevations

Scale @ A3	Drawn by/Checked by	Date
1:1000	JM/JI	14.06.12

Job no.	Dwg No.	Revision
P023	003	F



Notes:

THIS DRAWING IS NOT TO BE SCALED

1. Cross-references

This drawing is to be read in conjunction with all relevant architects' and engineers' drawings and specifications. Any inconsistencies or errors should be referred to the engineer immediately and confirmed in writing.

revision suffix	Revision details	Date

Client
New Earth Solutions Ltd.

Architect
New Earth Solutions Ltd.

Job title
Composting Facilities & Anaerobic Digestion Facility at Blaise Quarry

Drawing title
Consented Site Layout Indicating Proposed Bio-gas to Grid Compound

ggp
Graham Garner and Partners Limited
Arrowsmith Court 10 Station Approach Broadstone Dorset BH18 8AX
Telephone 01202 697341 Fax 01202 601852 Web www.ggpl.co.uk
CONSULTING CIVIL, STRUCTURAL AND GEOTECHNICAL ENGINEERS

chk.	date	scale @ A1	drawn
	09-13	1:500 (1:1000 @ A3)	PE

DRAWING No 6058_10_11

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Item C2

Request for approval of details pursuant to conditions 4, 7, 8, 12, 17 and 27 of planning permission TM/88/1002 relating to 5-year schemes of working, restoration and aftercare, prior approval for static replacement processing plant and ancillary mobile plant and equipment, amended internal road layout, replacement weighbridge and weighbridge office, wheel wash, storage and staff welfare facilities and updated schemes of blasting and blast monitoring at Blaise Farm Quarry, Blaise Quarry Road, Kings Hill, West Malling, Kent ME19 4PN - TM/88/1002/RVARA (KCC/TM/0121/2020)

A report by Head of Planning Applications Group to Planning Applications Committee on 16 September 2020.

Application by Gallagher Aggregates Ltd for approval of details pursuant to conditions 4, 7, 8, 12, 17 and 27 of planning permission TM/88/1002 relating to 5-year schemes of working, restoration and aftercare, prior approval for static replacement processing plant and ancillary mobile plant and equipment, amended internal road layout, replacement weighbridge and weighbridge office, wheel wash, storage and staff welfare facilities and updated schemes of blasting and blast monitoring at Blaise Farm Quarry, Blaise Quarry Road, Kings Hill, West Malling, Kent ME19 4PN - TM/88/1002/RVARA (KCC/TM/0121/2020)

Recommendation: Approval be given subject to conditions.

Local Members: Sarah Hohler, Trudy Dean & Matthew Balfour Unrestricted

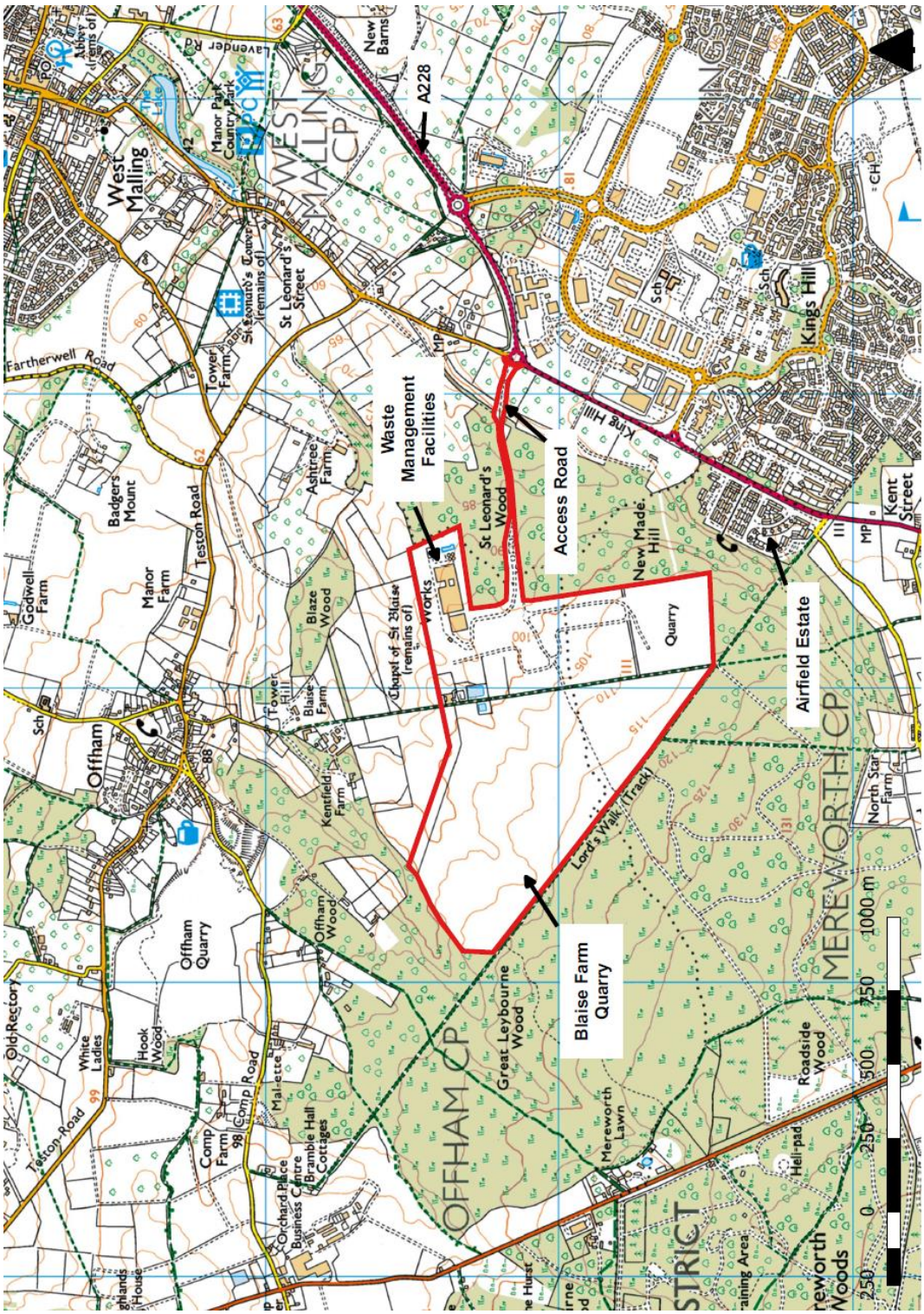
Site description

1. Blaise Farm Quarry (some 116 hectares) is located to the south of the village of Offham and to the west of the A228 and the residential area of Kings Hill. The quarry is bounded on all sides by woodland. The site is served by a purpose built surfaced access road onto the A228 West Malling roundabout located near Kings Hill. The site offices, weighbridge and parking facilities, etc. relating to the quarry, are currently located approximately 600 metres from the roundabout and are surrounded by woodland. Buildings and structures associated with the permitted waste management facilities lie in the north eastern corner of the quarry.

Item C2

Request for approval of details pursuant to conditions 4, 7, 8, 12, 17 and 27 of planning permission TM/88/1002 at Blaise Farm Quarry, Blaise Quarry Road, Kings Hill, West Malling, Kent ME19 4PN – TM/88/1002/RVARA (KCC/TM/0121/2020)

Site Location Plan



2. The nearest settlements are Offham (to the north of the quarry), West Malling (to the northeast), Kings Hill (to the east and southeast) and Mereworth (to the south). The nearest residential properties to the edge of the permitted quarry and the area proposed to be worked in the 4th 5-year plan are on the Airfield Estate (part of Kings Hill). These lie approximately 170m to the southeast of the edge of the permitted quarry at its nearest point (an area used for the placement and storage of overburden and hassock where extraction will not take place) and 425m from the nearest part of the area proposed to be worked in the 4th 5-year plan (Phase 3G). There are a number of isolated dwellings and farms between the quarry and Offham. The nearest is approximately 300m from the edge of the permitted quarry and 500m from the nearest part of the area proposed to be worked in the 4th 5-year plan (Phase 4C). The proposed static processing plant area would be at least 600m from any residential property.

3. The site lies in the Metropolitan Green Belt. With the exception of the tree belts planted immediately to the north of the quarry (as advance planting to screen the quarry from the north), all of the surrounding woodland (including St Leonard's Wood and Mereworth Woods) are designated as both Ancient Woodland and a Local Wildlife Site (LWS). An area of the woodland immediately to the east of the quarry and south of the existing site offices, weighbridge and parking facilities was initially proposed to accommodate a static processing plant. However, this has never been established and the woodland has been retained. The remains of the Chapel of St Blaise (Scheduled Ancient Monument) lie approximately 100m to the north of the previously worked area of the quarry (Phase 1) which now contains the waste management facilities. A public right of way (Footpath MR286) crosses the permitted quarry area north / south and will need to be diverted further west to facilitate ongoing mineral working at the quarry and to provide continuity for pedestrians wishing to access Footpath MR260 (Lords Walk) to the south west. Those parts of the site that have been worked (or are being worked) are as much as 35m lower (70m above ordnance datum (AOD)) than the surrounding unexcavated land (105m AOD). That part of the quarry that has yet to be worked (to the west) currently remains in agricultural use. The highest known rest of groundwater is 63m AOD.

4. The locations of the quarry, access road, waste management facilities and nearby settlements are illustrated on the drawing on page C2.2.

Planning History and Background

5. Planning permission (TM/88/1002) was granted for the winning and working of ragstone and restoration at a low level to agricultural use and construction of an access road at Blaise Farm Quarry in January 1994. The permission provided for the extraction of some 57 million tonnes (Mt) of ragstone (of which about 34Mt would be marketable and the rest quarry waste) over a 62-year period beginning with the date on which commercial mineral extraction started. It was envisaged that production would be about 550,000 tonnes per annum (tpa) generating an average of some 230 HGV movements per day. However, no limitations were imposed on either. The permission provided for the new access road from the A228 roundabout which now serves the quarry. The permission limited operations to take place between 0700 and

1800 hours Monday to Friday and between 0700 and 1300 hours on Saturdays unless approved beforehand by KCC (condition 15). It also made provision (condition 18) for blasting to be undertaken between 0900 and 0930 hours Monday to Saturday, 1200 and 1400 hours Monday to Friday and 1200 and 1300 hours on Saturday whilst restricting the explosive charge weight per delay of any one blast to no more than 10kg weight (i.e. a maximum instantaneous charge or MIC of no more than 10kg) and precluding secondary blasting.

6. The planning permission was amended in August 1998 (TM/98/460) to enable the 5-year date for implementation of the permission to be extended until 27 January 2003.

7. Approval (TM/88/1002/RVAR) was given in January 1999 for various details that had been reserved by condition. These included schemes of progressive working, restoration and aftercare for the first phase (i.e. Phase 1 or the 1st 5-year plan) (conditions 4, 7 and 8), schemes for woodland management and site landscaping (conditions 9 and 10), details of buildings and sanitary facilities (condition 12), areas reserved for parking cars and lorries (condition 13) and dust attenuation (condition 19), construction details for the access road (condition 25) and measures for wheel cleaning and the safe storage of fuels (conditions 27 and 29).

8. Commercial mineral extraction commenced in 2001 meaning that extraction may continue until 2063 (i.e. the 62 period referred to in condition 2 of TM/88/1002).

9. Mineral working in Phase 1 was initially undertaken without blasting. However, it soon became clear to Hanson (which still owns and was operating the site at that time) that it was essential for the effective working of the site. Condition 17 required a Schedule (scheme) of Blasting (which included measures to minimise nuisance / danger from ground vibration, air overpressure, noise, fly rock and dust) to be submitted to and approved in writing by KCC and for the scheme to be implemented as approved unless otherwise approved in writing by KCC. A scheme of blasting (which included a blast monitoring scheme) was approved by KCC in October 2002 subject to the following conditions and informatives:

Conditions:

(1) All blasting at Blaise Farm Quarry shall take place in accordance with the approved details.

(2) Ground vibration as a result of blasting operations within the Phase 1 Operations extraction area shall not exceed:-
   (a) a peak particle velocity of 6mms-1[1] in 95% of all blasts when measured over any period of one month as measured at any vibration sensitive location;
   (b) a peak particle velocity of 12mms-1 as measured at any vibration sensitive location; and
   (c) a peak particle velocity of 15mms-1 at the remains of the Chapel of St. Blaise.

[1] Millimetres per second can be expressed as mms-1 or mm/s. The term mm/s is used hereafter in this report.

(3) No blasting shall take place outside the Phase 1 Operations extraction area without the prior approval in writing of the Mineral Planning Authority.

(4) In addition to notifying those official bodies identified in Appendix 1 "Shotfiring Rules and Procedures" of the Vibrock Report dated 28 March 2002, the Operator shall also notify the Mineral Planning Authority of its intention to blast.

Informatives:

1. You are reminded that the approved scheme must be implemented as approved and that you should comply with the requirements of condition 18 at all times unless otherwise approved beforehand in writing by the Mineral Planning Authority.

2. You are advised that for the purposes of condition 4 above, you should telephone the offices of the Planning Applications Unit on 01622 221062 (or such other contact as shall be provided by the Mineral Planning Authority) on the day of the proposed blasting to advise of the intended time of blasting.

10. The first production blast took place in November 2002 and a further 20 blasts took place by the end of 2003. Apart from one trial blast approved by KCC using a MIC of more than 10kg, all of these were restricted to the 10kg MIC. The trial blast was undertaken in anticipation of Hanson seeking permission to increase the MIC in order to have more efficient blasting and less vibration.

11. The first complaint relating to blasting at the quarry was received in May 2003. This was from Kent Scientific Services (KSS) at Kings Hill about 700m from the quarry. It suggested that ground vibration from the quarry had caused cracks to appear inside its building. Blast monitoring was undertaken in May 2003 at the KSS building by Hanson and simultaneously in a slightly different location by Babtie (KCC's then Noise and Vibration consultant). Both recorded ground vibration measurements (respectively 0.381mm/s and 0.30mm/s) were far lower than those permitted (6mm/s). Babtie advised KCC that the figure was less than 1% of the prescribed cosmetic damage limit and provided a strong indication that vibration from the quarry posed no significant threat to the structure and that cracks in the breezeblock internal walls would not have been caused by vibration from blasting. It is understood that KSS subsequently employed Mouchel to undertake an examination of the building and that Mouchel advised it that the building was essentially safe although the cracks are unsightly and some remedial work should be undertaken. It was unable to say whether the cracks were due to or exacerbated by blasting and suggested that some of the cracks were probably due to the absence of the necessary expansion joints in some of the walls. KSS advised that its insurer would not pay to repair the cracks on the basis that they were not due to subsidence (although it is worth noting that the insurer would not pay for repairs to the KSS car park because it was due to subsidence).

12. The second complaint was received via Offham Parish Council in July 2003. It related to the concerns of a resident of Comp Lane about cracks in two walls and the ceiling of

an office building in his garden (about 900m from the quarry) as well as those of local residents more generally. Hanson undertook blast monitoring at the office building in July 2003 (recording ground vibration of 0.8mm/s). Further complaints led to KCC instructing Babtie to monitor a blast in November 2003 (which recorded ground vibration of 0.67mm/s). Babtie advised that whilst the vibration was clearly perceptible during the blast, the figure was less than 2% of the prescribed cosmetic damage limit and provided a strong indication that vibration from the quarry posed no significant threat to the structure. It also commented that it is common for those experiencing this level of vibration to associate it with cracks in buildings even though the relevant damage criterion in BS7385 is not exceeded and that cracks in walls are a sign of differential movement within a building (with various reasons contributing to this). Hanson undertook further investigations into the local resident's concerns which proved inconclusive as to the precise cause of the damage.

13. A number of other complaints were also received during 2003 from local residents in Offham and West Malling, some of which included allegations of damage to properties. This led to Offham Parish Council writing to KCC in November 2003 expressing concern about possible damage to property and to Offham Landfill Site from blasting. Amongst other things it did not accept that because the monitored vibrations were well within Government Guidelines meant that the blasting was completely safe on the basis that the Guidelines may not adequately take local conditions into account. It also requested written guarantees from KCC that the blasting had / would not structurally affect any property within the village or the landfill site and a cessation of blasting until such a guarantee was provided.

14. The above complaints were reported to a KCC Regulation Committee Member Panel on 7 January 2004. The Member Panel resolved (amongst other things) that:

- Offham Parish Council be informed that:
    - KCC could not give the assurances that it had sought about potential damage to properties;
    - there was no published information to support the view that structural damage may be caused by the blasts given that the planning permission was being complied with; and
    - it was for Hanson to decide whether to continue blasting and face potential legal claims from residents or others if it were subsequently established that blasting had caused any damage;
- Officers undertake a number of actions, including taking a report to the Regulation Committee setting out a formal procedure for dealing with complaints relating to blasting, the circumstances in which KCC would undertake independent blast monitoring and the extent of such monitoring and information on blasting related issues for the local community;
- Hanson be encouraged to review the 2002 blast monitoring scheme with KCC and submit a revised scheme for approval; and
- Officers investigate the use of specific limits on air overpressure for possible inclusion as part of any future permissions or approvals for blasting.

A copy of the report and minutes of the Member Panel meeting are included in Appendix 1.

15. In April 2004 a revised scheme of blasting and blast monitoring scheme was agreed between KCC and Hanson following consultation with Tonbridge and Malling Borough Council (TMBC), all four local Parish Councils (Offham, West Malling, Kings Hill and Mereworth) and the three KCC local members. It included additional monitoring locations (four as opposed to one for each blast), better notification to the local community on the timing of future blasts, the provision of blast monitoring results to all members of the Blaise Farm Quarry Liaison Group (in tabular form) and measures to facilitate independent monitoring by KCC (including Hanson reimbursing KCC for independent blast monitoring on up to 4 occasions each year).

16. A report updating Members on progress with the blasting issues was considered by KCC's Regulation Committee on 25 May 2004. The report also included details of the revised blast monitoring scheme approved in April 2004 and draft documents providing guidance on blasting at ragstone quarries in Kent and a procedure for dealing with complaints about blasting at ragstone quarries in Kent. The Regulation Committee resolved to note the content of the report and for officers to:

    - make the documents providing "Guidance on Blasting at Ragstone Quarries in Kent" and "Procedure for dealing with complaints relating to blasting at Quarries in Kent" publicly available;
    - keep all blasting related issues under review and update or supplement the documents as necessary; and
    - undertake independent blast monitoring for Hermitage Quarry without the requirement for the previous criteria for doing so to be met (and amend the procedure for dealing with complaints document to reflect this).

    A copy of the report to the Regulation Committee meeting (with revised recommendation) is included in Appendix 2. The guidance and procedure documents were published in May 2004. "Guidance on blasting at Ragstone Quarries in Kent" (KCC, May 2004) is included in Appendix 3 and should assist Members' understanding of the blasting issues referred to in this report.

17. Approval (TM/88/1002/R12) was given in April 2004 for an explosives store compound and a quarry manager's office (located between the site offices / weighbridge and quarry).

18. Approval was given in October 2006 for three trail blasts using a MIC greater than 10kg. By this time, operations at the quarry were being undertaken by Gallagher Aggregates Ltd (GAL) under a short term arrangement with Hanson (something which has since been formalised in a longer term contract).

19. Approval (TM/88/1002/R4&7) was given in March 2007 for the 2nd 5-year plan for progressive working and restoration in (i.e. Phase 2). The approval was conditional on (amongst other things) noise generated from normal day to day operations not exceeding 55dB$_{LAeq,1hr\ (free\ field)}$ and noise from temporary operations such as soil and

overburden stripping, movement, storage and replacement not exceeding 70dB $L_{Aeq,1hr}$ (free field) (both as measured at any noise sensitive property).

20. Approvals were given in May 2007, March 2010 and June 2011 for a series of trial blasts using a MIC greater than 10kg.

21. Approval was given in November 2012 (DC28/MR114) for a postponement of the First Period Review[2] from 11 August 2013 until 11 August 2028 on the basis that the existing planning conditions are judged to be satisfactory (conditions 4 and 7 of planning permission TM/88/1002 (as amended by TM/98/460) already provide for regular reviews of the schemes of progressive working and restoration and condition 8 provides for appropriate aftercare on a phased basis). Regard was also given to the desirability of not requiring applicants or developers to incur unnecessary expense and the Growth and Infrastructure Bill's aim of cutting red tape by providing Councils with more local discretion over whether they review the planning conditions for mineral sites, rather than following rigid, centrally-set targets. The more recent Planning Practice Guidance states that Mineral Planning Authorities should usually only seek a review of planning conditions when monitoring visits have revealed an issue that is not adequately regulated by planning conditions and which the operator has been made aware of and has not been able to address.

22. Approval (TM/88/1002/RVAR) was given in April 2016 for the 3rd 5-year plan relating to working, restoration and aftercare (i.e. Phase 3). It also included a review of wheel cleaning facilities. The approval was conditional on (amongst other things) the noise limits referred to above. It also contained a number of informatives, including a reminder that approval had not been obtained for a scheme of blasting outside the Phase 1 area and advising that whilst KCC considered the scheme approved for that area to remain generally acceptable the matter should be regularised by the submission of an appropriate scheme pursuant to condition 17 of planning permission TM/88/1002 for other phases.

23. A Scoping Opinion (KCC/SCO/TM/0325/2016) was issued in February 2017 relating to the proposed variation of condition 18 of planning permission TM/88/1002 to allow an increase in the maximum instantaneous charge when blasting from 10kg to 25kg. This stated that the EIA necessary to accompany the proposed application should address the impact of ground borne vibration and air overpressure on residential properties in the area, the adjoining waste management facilities, the remains of the Chapel of St Blaise, users of public rights of way crossing or immediately adjoining the site, any wildlife interest associated with the LWS adjoining areas more generally and Offham Landfill Site. No application has yet been submitted and blasting is still undertaken with a 10kg MIC. KCC also suggested that an updated Scheme of Blasting incorporating a Blast Monitoring Scheme relating to the entire site be included with the

[2] The Environment Act 1995 (as amended) enables Mineral Planning Authorities (MPAs) to require operators to review planning conditions on a periodic basis (no more than every 15 years) and submit new conditions and associated schemes of working, restoration and aftercare. However, it should be noted that an applicant can claim compensation as a result of any reviews of planning conditions where: the MPA determines conditions different from those it submitted; and the effect of new conditions, other than restoration or aftercare conditions, is to prejudice adversely to an unreasonable degree either the economic viability of the operation or the asset value of the site, taking account of the expected remaining life of the site.

planning application to replace the schemes approved for Phase 1 in 2002 and 2004.

24. On 3 August 2020 KCC approved a request by GAL to allow HGVs to arrive, be loaded and be dispatched outside the normal operating hours at Blaise Farm Quarry to supply an urgent Brexit related contract for the Ashford Inland Port Project off Junction 10A of the M20 at Ashford. The decision was made by Head of Planning Applications under the provisions of Section 10.15 of the KCC Constitution as there was an urgent need to make a decision and insufficient time to await the outcome of a formal planning application. The approval was conditional on:

- The additional hours (i.e. between 6:00 and 07:00 hours and 18:00 and 21:00 hours Monday to Friday and between 6:00 and 07:00 hours and 13:00 and 16:00 hours on Saturdays) only being used for the arrival, loading and dispatch of HGVs associated with the contract for the delivery of minerals for the foundation layer of the Ashford Inland Port Project;
- The additional hours only being used for the duration of the contract and all operations during the additional hours ceasing no later than 31 December 2020;
- GAL notifying KCC Planning Applications Group in advance of the actual dates for the commencement of the out of hours operations and of the actual cessation (when known);
- HGVs using the A228 (north of the quarry) to access Junction 4 of the M20 whenever this is possible. If it is not possible (e.g. it is closed), HGVs using the A228 (south of the quarry), A26, B2016 (Seven Mile Lane), A20 and M26 to access the M20; and
- GAL instructing HGV drivers not to travel through local villages (e.g. Offham, West Malling and Mereworth) and to use designated lorry parks or secured facilities at Blaise Farm Quarry and the delivery site at Ashford for overnight parking and take measures as necessary to secure compliance.

25. Although concerns and complaints about the effects of blasting have been received at various times since 2004 (excluding those periods when the quarry has been mothballed), the number and frequency of these has increased significantly in recent months. This appears to coincide with an increase in the frequency of blasting at the quarry (up to three times each week) and (to some extent) the beginning of the lockdown associated with the Covid-19 pandemic when many more people will have been at home when the blasts took place.

26. Extraction is currently taking place within the Phase 3 area in accordance with the 3rd 5-year plan approved in April 2016, although quarrying operations have not yet progressed onto or to the west of footpath MR286. KCC began publishing the blast monitoring results provided by GAL for both Blaise Farm Quarry and Hermitage Quarry online in April 2020. Those for Blaise Farm Quarry are available via the following link: https://www.kentplanningapplications.co.uk/Planning/Display/BLAST%20MONITORING%20RESULTS%20BLAISE%20FARM%20QUARRY All of the results demonstrate compliance with the vibration limits set out in paragraph 9 above.

Request for approval of details pursuant to conditions 4, 7, 8, 12, 17 and 27 of planning permission TM/88/1002 at Blaise Farm Quarry, Blaise Quarry Road, Kings Hill, West Malling, Kent ME19 4PN – TM/88/1002/RVARA (KCC/TM/0121/2020)

The Proposal

27. The application seeks the approval of details pursuant to conditions 4, 7, 8, 12, 17 and 27 of planning permission TM/88/1002 relating to 5-year schemes of working, restoration and aftercare, prior approval for static replacement processing plant and ancillary mobile plant and equipment, amended internal road layout, replacement weighbridge and weighbridge office, wheel wash, storage and staff welfare facilities and updated schemes of blasting and blast monitoring.

28. Although there is some overlap between the various elements in terms of the relevant conditions, the details can most logically be separated out for consideration as follows:

- The 4th 5-year plan for working, restoration and aftercare and wheel cleaning facilities (conditions 4, 7, 8 and 27);
- The static replacement processing plant and ancillary mobile plant and equipment, amended internal road layout, replacement weighbridge and weighbridge office, wheel wash, storage and staff welfare facilities (condition 12); and
- The updated scheme of blasting and blast monitoring (condition 17).

<u>The 4th 5-year plan for working, restoration and aftercare and wheel cleaning facilities (conditions 4, 7, 8 and 27)</u>

29. The 4th 5-year plan covers the period 2020 to 2025. It includes the proposed working and progressive restoration for the remainder of Phase 3 (sub-phases 3e to 3g) and the transition into Phase 4 (sub-phases 4a to 4c). The detailed proposals are set out in an accompanying document titled "Blaise Farm Quarry – Details required in accordance with Conditions 4, 7, 8 and 27 of planning permission TM/88/1002 – Fourth 5-year Working and Restoration Scheme: 2020 to 2025" and drawing number GAL-BG-20-08 Rev C titled "4th 5 Year Working and Progressive Restoration Scheme: Phases 3f to 4g (2020 – 2025)" (dated 27 May 2020). The document and drawing describe and illustrate how what is proposed complies with the requirements of conditions 4, 7 and 8 in terms of sub-phasing, direction and method of working, timing, soil handling procedures, waste hassock stockpile locations, heights and dimensions, progressive restoration, final restoration levels and proposed future use. Whilst it closely follows the scope, format and principles of the 3rd 5-year plan (relating to the period 2015 to 2020) approved in 2016, the 4th 5-year plan also incorporates (or assumes the use of) the proposed new static processing plant and ancillary mobile plant and equipment, amended internal road layout, replacement weighbridge and weighbridge office, wheel wash, storage and staff welfare facilities (which are described in further detail below). The new wheel wash arrangements are proposed following a review of the existing arrangements as required by condition 27. A drawing illustrating the proposed phased working is included in Appendix 4.

The static replacement processing plant and ancillary mobile plant and equipment, amended internal road layout, replacement weighbridge and weighbridge office, wheel wash, storage and staff welfare facilities (condition 12)

30. The applicant (GAL) states that until recently (and owing to confined space in the working area) it has been standard practice to follow the quarry phases with mobile plant and equipment to crush and screen at the exposed quarry face. However, whilst this has worked so far, there are two distinct disadvantages: (i) it necessitates double handling to enable processed material from the plant area to be transported to the stock area for sale; and (ii) for the duration of each blast the entire tracked (mobile) operation must be moved away from the exposed quarry face in accordance with Health and Safety requirements (with each withdrawal / re-siting of plant at the quarry face taking approximately two hours representing a loss of productivity of about 31,000 tonnes per annum (tpa)).

31. GAL states that the quarry has been developed to the point where a plant site can be created to allow for more efficient operations, processing and stocking of materials for the remaining length of the lease it agreed with Hanson in 2017. It would also allow a central production area to be maintained as extraction continues to the west. The plant site would be located within the void created by the removal of materials in Phase 3 at the lowest level of excavation.

32. GAL states that there has been a steady increase in sales from Blaise Farm Quarry with a 65% increase in market demand during the past 3 years which has led to the need for more efficient production practices. It states that centralising the processing operations would enable better productivity than the current methodology as the extraction area extends westwards and that transporting the primary blasted material to a central processing plant area is standard quarrying practice. It would also enable the Ancient Woodland and LWS in the location of the static plant site originally intended to the east to remain intact.

33. It is proposed to replace the existing tracked barrel, screen and conveyors which currently operate at approximately 85m AOD with a new skid mounted barrel, screen and conveyor configuration at a location on the quarry floor at approximately 72m AOD. There would be no additional processes, although the equipment would be more efficient. A new barrel screen would process blasted rock and scalp off underneath the barrel to 125mm down. The fine material would be further screened to produce three stockpiles: 125mm to 75mm; 75mm to 20mm; and 20mm down (i.e. the hassock fines for carriage and placement in the quarry void). Moving the hassock fines by conveyor to the next bench up would remove the need to transport approximately 250,000tpa by dumper truck from the lower bench working area, thereby reducing risk of dust, internal movements and fuel consumption / carbon emissions. The positioning of the barrel on the lower bench, together with the installation of associated processing equipment at a level of 72m AOD, would mean that crushing and screening would be carried out at a lower level and avoid the need to crush and screen at 85m AOD. The static plant would operate in a similar way to the existing mobile plant and in accordance with the permitted noise thresholds.

34. The plans accompanying the application show the configuration of the processing and other ancillary facilities which are critical to the efficient operation of the quarry. The weighbridge, wheel wash, welfare accommodation and associated parking which are currently situated at the top of the existing access road would be relocated to the plant site area. The replacement welfare facilities would be in a single storey steel hut similar in appearance and dimensions to the existing accommodation at the quarry. The weighbridge facilities would comprise a single storey prefabricated hut similar in dimensions and appearance to that which is installed at Hermitage Quarry. The explosives store compound (already approved) and a proposed ammonium nitrate storage compound (already in situ) would remain in their current locations between the existing quarry offices and quarry void).

35. The existing internal road junction near the quarry weighbridge and wheel wash would be reconfigured to improve access for vehicles travelling south into the quarry and to the north into the waste management facilities. The junction and length of access road into the quarry would be hard surfaced.

36. A bund to the north of the current excavation would be installed to prevent surface water from that part of the quarry operated by GAL from draining into that occupied by the waste management facilities and a pond would be created in the northeast of the plant site are to provide additional surface water drainage provision. Drawings illustrating the key elements referred to above are included in Appendix 4.

The updated scheme of blasting and blast monitoring (condition 17)

37. The application includes updated schemes of blasting and blast monitoring which would replace those previously approved for the Phase 1 area. GAL states that the earlier scheme has been updated to take account of current legislation, policies, British Standards and good practice guidance. It states that vibration prediction levels and locations have been revised and monitoring locations added to take account of the westerly advancement of the quarry. For the avoidance of doubt, it states that no change is proposed to the 10kg MIC (which it accepts would require a planning application accompanied by an Environmental Impact Assessment).

38. The proposed Schedule (scheme) of Blasting explains how the blasts are carried out (having regard to ground vibration and air overpressure) and how their effects are monitored against permitted limits. The proposed scheme uses best practice guidance / methodology to calculate the predicted ground vibration levels that would be experienced during the 4th 5-year plan period using 10kg MIC at each of five locations around the site. The locations and their respective predicted vibration levels are as follows (with the maximum representing the worst case when blasting is closest to the location):

Location	Vibration Level Maximum Peak Particle Velocity (mm/s)	
	Mean	Maximum
1. The remains of the Chapel of St Blaise	1	3
2. Blaise Farm (to the north)	0.3	0.7
3. Properties to East (The Crest on King Hill)	0.1	0.2
4. Properties the South East (the Airfield Estate)	0.1	0.3
5. Properties to North East (Ashtree Farm)	>0.1	0.2

In all cases these are well within the 6mm/s limit required in 95% of all blasts and significantly below maximum 12mm/s for any one blast. The scheme makes it clear that it is impracticable to set a maximum limit on air overpressure (with or without an appropriate percentile of exceedances being allowed) due to the significant and unpredictable effect of variable weather conditions. However, it states that with a sensible ground vibration limit, the economics of safe and efficient blasting will automatically ensure that air overpressures are kept to reasonable levels. A drawing showing the vibration prediction locations is in the proposed Schedule (scheme) of Blasting (which is included in Appendix 5).

39. The proposed Blast Monitoring Scheme identifies a number of potential monitoring locations ("stations") which lie between the blast site and vibration sensitive locations:

- Farm Gate (FG2)
- Offham Access Road (OAR)
- Central Site Station1 (CSS1)
- Central Site Station 2 (CSS2)
- Southern Site Station (SSS1)
- Ruins of St Blaise Chapel (BCR)
- Site Office (SO)
- Eastern Boundary (EB)
- Northern Boundary (NB)
- Beau Fighter Road (BFR1)
- New Earth Solutions (NES)

These are shown on a drawing in the proposed Blast Monitoring Scheme (which is included in Appendix 6). It proposes that monitoring be undertaken at the four stations which would give the best representations of the intensity of the blast vibration at the closest vibration sensitive location / property to the blast site based on a regression line produced from gathered data. It proposes that the results of blast monitoring be submitted to KCC as soon as possible after firing. The results would include a copy of the reading from the monitoring instrument (including the peak particle velocities in three mutually perpendicular planes), the date and time of the blast, the monitoring location, weather conditions and blast design details (including an accurate plan showing the position of the blast in relation to the monitoring location), the total explosive charge weight and maximum instantaneous charge weight.

40. The Blast Monitoring Scheme also proposes that GAL notify KCC of its intention to blast and the proposed time of the blast by email on the morning of a blast day and that the information also be sent by email and telephone to KCC, TMBC and one representative of each relevant parish council and local residents (if up to date email addresses are provided). The scheme states that complaints to the quarry management about blasting will be dealt with via the Company's complaints procedure (i.e. logged, investigated and measures taken where necessary to prevent further incident / reason for complaint), the results submitted to KCC within 72 hours of being completed and recorded on an electronic archive which can be made available to KCC on request and at liaison meetings. The scheme also provides for GAL pay (on request) the reasonable expenses incurred by KCC in undertaking independent monitoring at no more than one location on up to four occasions each year (with the location(s) to be determined by KCC in consultation with TMBC Environmental Protection Team and the relevant Parish Council(s).

Additional information from applicant

41. In support of the application, GAL states that Blaise Farm Quarry is one of only two sources of commercial limestone within the County and that the reserves are essential to the provision of construction materials. It also states that it is in a unique position to invest in the ongoing working of Blaise Farm Quarry and to make best use of the finite limestone resources and that it has already approved the expenditure necessary to renew the proposed barrel and screen configuration in this financial year with the intention of installing the new plant in Quarter 4. It further states that it would continue to comply with the conditions attached to the extant planning consent (including the need to maintain at least a 3m stand-off between the base of the excavation and the highest known rest of groundwater) and the noise limits imposed on the 3rd 5-year plan. In terms of the other conditions and informatives imposed on the 3rd 5-year plan, GAL states (amongst other things) that:

- Responsibility for ongoing woodland management rests with Hanson (as landowner) which will review and update the approved schemes as necessary;
- Whilst no changes are currently proposed to the required low level restoration scheme it may be necessary for some modifications to be made to reflect the restoration requirements of the waste management facilities when these are removed and that this will be done as part of subsequent phased working and restoration schemes;
- A temporary footpath diversion order is currently being considered by KCC for the necessary diversion of Footpath MR286 (which would see an alternative provided around the northern and western perimeter of the permitted quarry area); and
- The approved archaeological requirements (watching brief) are being complied with.

Drawings showing the proposed footpath diversion arrangements are included (for information only) in Appendix 7.

Planning Policy Context

42. **National Planning Policies** – the most relevant National Planning Policies are set out in the National Planning Policy Framework (NPPF) (May 2019) and expanded upon in the associated National Planning Practice Guidance (NPPG). These are material planning considerations.

43. **Kent Minerals and Waste Local Plan 2013-30 (July 2016)** – Policies CSM1 (Sustainable Development), CSM2 (Supply of Land-won Minerals in Kent), CSM5 (Land-won Mineral Safeguarding), DM1 (Sustainable Design), DM2 (Environmental and Landscape Sites of International, National and Local Importance), DM3 (Ecological Impact Assessment), DM4 (Green Belt), DM5 (Heritage Assets), DM10 (Water Environment), DM11 (Health and Amenity), DM12 (Cumulative Impact), DM13 (Transportation of Minerals and Waste), DM14 (Public Rights of Way), DM15 (Safeguarding of Transport Infrastructure), DM16 (Information Required In Support of an Application), DM17 (Planning Obligations), DM19 (Restoration, Aftercare and After-use) and DM20 (Ancillary Development).

44. **Tonbridge and Malling Borough Council LDF Core Strategy (September 2007)** – Policies CP1 (Sustainable Development), CP2 (Sustainable Transport), CP3 (Metropolitan Green Belt), CP14 (Development in the Countryside), CP24 (Achieving a High Quality of Life) and CP25 (Mitigation of Development Impacts).

45. **Tonbridge and Malling LDF Managing Development and the Environment DPD (April 2010)** – Policies CC3 (Water Environment), NE1 (Local Sites of Wildlife, Geological and Geomorphological Interest), NE2 (Priority Habitats), NE3 (Biodiversity), SQ1 (Landscape and Townscape Protection and Enhancement), SQ4 (Air Quality), SQ6 (Noise) and SQ8 (Transport Infrastructure).

46. **Early Partial Review of the Kent Minerals and Waste Local Plan 2013-30 Pre-Submission Draft (November 2018)** – The Early Partial Review of the Kent MWLP proposes no changes to the policies that are relevant to the determination of this application. The Early Partial Review of the Kent MWLP was subject to an independent examination between 8 and 15 October 2019 and the Inspector's Report was published on 23 April 2020. The Report concludes that the Plan is sound provided that a number of main modifications are made. The main modifications were discussed at the examination hearings, subject to sustainability appraisal and public consultation and considered by the Inspector along with any representations made on them. The proposed modifications were subject to consultation and the responses considered. The intention is for the Early Partial Review of the Kent MWLP to be adopted by KCC at the County Council meeting on 10 September 2020. As it would be inappropriate to pre-empt the outcome of that meeting in this report (which has to be published on 8 September 2020), the policies are currently referred to in their draft form. However, for the reasons set out in this report the adoption of the Early Partial Review of the Kent MWLP would not affect my conclusions or recommendation. I will update Members appropriately at Committee.

47. **Tonbridge and Malling Borough Council Local Plan Regulation 19 Pre-Submission Publication (September 2018)** – Draft Policies LP1 (Presumption in Favour of Sustainable Development), LP11 (Designated Areas), LP13 (Local Natural Environment Designations), LP14 (Achieving High Quality Sustainable Design), LP17 (Flood Risk), LP18 (Sustainable Drainage Systems (SuDS)), LP20 (Air Quality), LP21 (Noise Quality) and LP24 (Minerals and Waste).

Consultations

48. **Tonbridge and Malling Borough Council** – No objection.

In respect of vibration and noise, the Borough Council's Environmental Protection Team has commented as follows:

"The Applicant has submitted a Schedule of Blasting document, dated June 2020, to continue to demonstrate compliance with Condition 17 of Planning Permission TM/88/1002. The document explains how blasts are carried out and how their effects are measured and compared to predicted levels. I believe that the document shows that previous predicted maximum levels have been complied with and these results have recently become available online. I believe that if the measures proposed are adhered to, levels should be continued to be complied with. I would thus have no comments to make on these proposals. The Environmental Protection team has recently seen an increase in Residents reporting noticing the effects of the blasts (perceived to be vibrations) and I believe that this has primarily been due to air overpressure. All of the concerns raised have been connected with the possibility of damage being caused to Residents' properties, which is outside of the scope of the Environmental Protection Team."

49. **Offham Parish Council** – No comments on the application itself but states:

"The Parish Council is receiving a higher number of complaints about the increase in frequency of blasts and the effect on the village of blasting at the quarry. Blasting is causing great concern and anxiety to residents. The blasting may be within limits, but that does not mean it is acceptable and reports are that the effects are getting worse. The Parish Council is concerned that as work moves across the footpath into the wheat field and closer to the village, these problems will get worse. However, the Parish Council recognises that this is the 4th 5 year plan for the Quarry and that there are no changes to the frequency or size of blasts. In respect of this application the Parish Council has no comments, but will continue to seek action to reduce the effect of the blasts on the village and surrounding areas."

50. **West Malling Parish Council** – No comments on the application itself but states:

"West Malling Parish Council have considered the above application and do not wish to make any comments. The Council would however, wish to echo the comments previously submitted by Offham Parish Council regarding an increase in complaints from residents about the frequency of blasts and the detrimental effect that these blasts are having on residents of West Malling and the surrounding areas."

51. **Kings Hill Parish Council** – States that:

"The parish council recognises that this application is the 4th of a 5 year plan for Blaise Farm Quarry. We note that there are no changes to the size and frequency of the blasts. The parish council has the following comments: Kings Hill Parish Council is extremely concerned that since the beginning of June there has been an increase in complaints from residents who are rightly concerned with the increase in the number of blasts per week. The parish council wants to ensure that Gallagher works closely with KHPC in future to address the residents concerns. We request that Gallaghers / TMBC / KCC should undertake relevant measurements in Kings Hill."

52. **Mereworth Parish Council** – States that:

"There are concerns regarding the explosions which are already being felt in properties at the Airfield Estate – these will probably worsen with closer proximity."

53. **Environment Agency** – No objection subject to relevant conditions being carried over to any new permission. Its key requirements are:

- A minimum 3m standoff above the highest seasonal water table (i.e. the maximum depth of extraction to be at least 3m above the highest known rest level of groundwater);
- Surface water drainage being managed in accordance with approved drainage designs; and
- All equipment and processing machinery being maintained and operated in such a manner as to avoid any risk of pollution to the underlying aquifer body.

It has also suggested the following informative relating to fuel, oil and chemical storage: *"Care should be taken with all operations to ensure that all fuels, oils and any other potentially contaminating materials should be stored (for example in bunded areas secured from public access) so as to prevent accidental / unauthorised discharge to ground. The areas for storage should not drain to any surface water system. Where it is proposed to store more than 200 litres (45 gallon drum = 205 litres) of any type of oil on site it must be stored in accordance with the Control of Pollution (oil storage) (England) Regulations 2001. Drums and barrels can be kept in drip trays if the drip tray is capable of retaining 25% of the total capacity of all oil stored."*

54. **Natural England** – Has no comment to make.

55. **KCC Highways and Transportation** – No objection. It states that:

"The application includes proposals to improve the internal access arrangements and provide for greater separation between the minerals and waste uses within the quarry (both are accessed via the purpose built access road from the A228 roundabout). It is also proposed to increase the length of the surfaced road into the quarry and relocate the wheel cleaning facilities further into the site. Although I am not aware that mud or

other materials have been tracked onto the public highway, this should serve to further reduce that possibility. Given that the proposals would have no direct impact on the highway (as all the works are internal to the site and the mineral permission includes no specific limit on HGV movements or output), I would not wish to raise objection."

56. **KCC Public Rights of Way** – No objection subject to no works being carried out which would in any way affect the current alignment of Footpath MR286 until such time as the Public Path (Diversion) Order has been confirmed and certified and the diverted route is in place.

57. **KCC Noise and Vibration Consultant** – No objection. It states:

"We referred to your letter dated 30 June 2020 and have reviewed the application documents and in particular the Schedule of Blasting and the Blast Monitoring Scheme, both dated June 2020.

Schedule of Blasting

The applicant has provided an updated Schedule of Blasting in order to be compliant with Condition 17 of Planning Permission TM/88/1002. The document has reviewed the previous schedule from 2002 and details a number of measures, good practice and analysis of blasting to provide the assurances that noise and vibration from blasting at Blaise Farm Quarry will not cause unacceptable or adverse effects. The document does correctly note that whereas previously vibration limits were specifically identified in Minerals Planning Guidance 9 (MPG 9) and MPG 14, the current NPPF and associated PPGs does not offer any specific guidance. The former guidance documents advised that ground vibration limits of between 6mm/s and 10mm/s at a 95% confidence level with a maximum of 12mm/s measured at a sensitive receptor were considered acceptable. Current British Standard (BS) guidance supports these limits and we are satisfied that their use as limits is acceptable and appropriate to provide protection at the nearest receptors.

Notwithstanding the suggested limits of being between 6 and 10 mm/s, the Schedule does also provide an extensive list of good practice measures which provide supplementary assurances that the impact blasting may have is extensively controlled. The Schedule provides further details by way of a series of predicted levels at a number of representative receptors around the site. These have been calculated based on a proven industry acceptable methodology utilising previous measured results with resultant predictions which indicate levels at the sample residential receptors ranging between 0.2 and 0.7 mm/s. Although clearly not a dwelling, the assessment has also included as a sensitive receptor the remains of the Church of St Blaise which has a predicted level of 3 mm/s. The applicant notes that a vibration level of this magnitude will have no effect upon the remains of the Church of St Blaise and this is a view I would agree with as vibration levels would need to be in the order of 15 to 20 mm/s for the onset of any minor superficial damage to occur. The Schedule concludes noting that the predicted levels are well within the recommended vibration limit of 6 mm/s and we concur with this statement. The final section of the Schedule provides details of the site manager's rules which have been drawn up to comply with

Part V of the Quarries Regulations 1999. (2nd Edition) 2013. The rules are related to the health and safety at the site with specific regard to the manufacture, storage, use and control of explosives. We are satisfied that these rules provide further assurances to the proposed method of blasting at the quarry.

Blast Monitoring Scheme

The Blast Monitoring Scheme provides the methodology of how the actual monitoring will be carried out when blasting takes place. The document includes appropriate identification of sensitive receptors, the locations where the blast monitoring will be undertaken and how the resultant data will be used to create a regression line in order to predict the level of vibration at the other non-monitored sensitive receptors. The background to how this is derived is detailed in the Schedule of Blasting and we are comfortable that this is in accordance with industry standards and guidance. Results will be submitted to the MPA which will include the peak particle velocities in three mutually perpendicular planes together with the date and time.

We note that the applicant would notify the MPA of its intention to fire a blast via email on either the day before or the morning of a blast day. We believe that advising on the morning by email does not offer sufficient advance warning to the MPA and would recommend a longer notice period of at least three days. The Scheme proposes an annual review of the blast monitoring procedures if requested by either the MPA or operator and this is welcomed as is the offer by the operator to pay reasonable expenses incurred by the MPA for undertaking its own independent monitoring on up to four occasions each year.

In summary, we are satisfied that the Schedule of Blasting has been reviewed in line with updated guidance and the proposed vibration limits are appropriate. The applicant has undertaken predicted levels for the nearest sensitive receptors and the results show levels well below the appropriate limits. The Blast Monitoring Scheme details thoroughly the monitoring procedures to be utilised and we are satisfied is fit for purpose."

Representations

58. The application was not subject to any formal neighbour notifications as none were required by legislation or to meet the requirements of KCC's Statement of Community Involvement (SCI). However, five (5) representations from four (4) different people (all objections relating to blasting) have been received. Correspondence has also been received from Tom Tugendhat MP in which he noted local residents' concerns about blasting in the West Malling, Kings Hill, Mereworth and Offham area and requested that KCC undertake additional investigation on the impact of the level of blasts on nearby residents. The representations that have been received from local residents are as follows:

(i) *"I have to complain on the latest activities of this quarry. Blaise Farm's latest blasts have disturbed our Kings Hill community as these blasts seems to be escalating by the week. Many residents have complained for damages to their*

houses. The activities of this quarry need to stop ASAP. I understand that this quarry has been operating for decades but you are approving a growing community on Kings Hill with more and more houses even closer to this quarry. I am on phase 3 and there might be an underground passage that potential assist in transferring the magnitude of the blasts to our newly established development."

(ii) *"Further to my previous email* (see (i) above)*, please note the following concern: Vibration moves in waves. Especially when the quarry is undertaking blasts under the level where houses are located, it is only possible to measure the impact a blast has only within the perimeter of every house. At the end of the day, the further deep the quarry is blasting the greater the impact to the surrounding areas. The blasts results the quarry is reporting are irrelevant to every house as the only reliable measurements are within the perimeter of a specific building in the surrounding area and over the course of a calendar year. I appreciate that this quarry has been around for decades but not to the same depths and not with Kings Hill to it current size."*

(iii) *"We moved to Kings Hill in 2012 and had not, during our time here, heard, or felt the blasts at Blaise Farm. However, over the last year we have heard blasts and experienced the house shaking. We are some distance from this site but the impact has intensified. We note that there is a significant amount of technical data and technospeak within the application but no 'real life' reference to what residents are experiencing. We also note - over the past 3-4 years, applications for increased charging capacity, which has not been challenged. This is not our field of expertise and nor should it be, the application should include consultation with residents regarding the impact of the blasting on their properties and everyday lives. It is not acceptable - as we have noted from previous applications, to say that superficial cracking and 'perception' are not valid complaints and to state that these are at 'acceptable' levels. There is no indication as to who should bear the cost for the damage, however 'superficial' it is deemed to be by people that profit from operations at Blaise Farm. We strongly object to the current blast levels and most certainly any increase in them. I do not believe that anyone at the council has the technical knowledge or understanding either!!"*

(iv) *"As a resident of Kings Hill I object to this proposal and request that TMBC along with KCC, Gallagher, and all local parish councils carry out further investigations as to the sizes of the blast and frequency. The blast have been significantly louder and since the beginning of June causing houses to shake, windows to rattle and hair line cracks to appear in the houses. The blast sizes are having a significant impact on all surrounding parish council residents not just Kings Hill. Residential houses need to have monitoring equipment to measure the damage they are doing to property. I therefore object to this application until further investigation has taken place and the council, KCC and Parish Councils got Kings Hill, Offham and West Malling are happy about the impact on residents and their property The blasts also have my dog running around scared as to what the noise was so must be having a significant impact on the wildlife around*

the area."

(v) *"Objection. The site is getting too big and my house in Lambourne drive shakes regularly at 1.15 from the explosions."*

Local Members

59. County Council Members Sarah Hohler (Malling North), Trudy Dean (Malling Central) and Matthew Balfour (Malling Rural East) were notified in June 2020.

60. No comments on the application have been received from the Local Members at the time of writing this report although all three have relayed concerns expressed by their constituents, sought clarification on issues relating to blasting and requested that officers investigate the concerns in recent months.

Discussion

61. The application is being reported to KCC's Planning Applications Committee for determination as planning objections have been received from four individuals (five responses) who have made representations. No objections have been received from technical or other consultees, although the four local parish councils have expressed concerns about the impact and frequency of blasting and the number of complaints.

62. Section 38(6) of the Planning and Compulsory Purchase Act 2004 requires that planning applications are determined in accordance with the development plan unless material considerations indicate otherwise. In the context of this application, the development plan policies outlined in paragraphs 43 to 45 above are of most relevance. Material planning considerations include the national planning policies referred to in paragraph 42 and the draft development plan policies in paragraphs 46 and 47. As noted in paragraph 46 above, the intention is for the Early Partial Review of the Kent Minerals and Waste Local Plan (MWLP) to be adopted by KCC at the County Council meeting on 10 September 2020. Whilst its policies are referred to in draft form in this report, I am satisfied that were the Plan to be adopted it would not affect my conclusions or recommendation on the proposed development.

63. The main issues in this case are:

- The principle of the development; and
- Whether what is proposed accords with the requirements of the relevant conditions and whether it is acceptable having regard to planning policy and other material planning considerations.

These are addressed in the following sections having regard to each if the main elements of the proposal.

The principle of the development

64. Planning permission already exists for mineral extraction (including blasting) at Blaise Farm Quarry by virtue of TM/88/1002 (as amended by TM/98/460). The key issue when considering this application is therefore not whether quarrying (including blasting) should take place at Blaise Farm Quarry, rather it is whether what is now proposed is acceptable in the context of what is already permitted.

The 4th 5-year plan for working, restoration and aftercare and wheel cleaning facilities (conditions 4, 7, 8 and 27)

65. The proposed 4th 5-year plan sets out details which address each of the various provisions set out in conditions 4, 7 and 8 of planning permission TM/88/1002 (i.e. the progressive schemes of working, restoration and aftercare). Provisions 4a to 4f relate to how the quarry is to be worked, provisions 7a to 7i to how the quarry is to be progressively restored and provisions 8a to 8i to how the aftercare is to be undertaken. The proposals are explained in more detail in paragraph 29 above and the proposed phasing arrangement illustrated in the drawing at Appendix 4. On this basis, I am satisfied that the requirements of each of the conditions has been met.

66. The 4th 5-year plan also addresses the requirement of condition 27 to review the measures intended to ensure that vehicles leaving the site do not deposit mud or other materials on the public highway and explains that the current wheel cleaning facilities near the existing weighbridge and site offices would be replaced / relocated into the quarry void as part of the related proposals for a static replacement processing plant and ancillary mobile plant and equipment, amended internal road layout, replacement weighbridge and weighbridge office, wheel wash, storage and staff welfare facilities.

67. Other than the concerns and complaints about blasting (which are addressed elsewhere in this report), no recent complaints have been received about quarrying operations and implementation of the 3rd 5-year plan appears to have progressed satisfactorily with no significant impact on the environment or local amenity. No objections have been raised by technical or other consultees to the 4th 5-year plan. Given the similarities with the 3rd 5-year plan and the lack of objection, I see no planning reason not to approve the 4th 5-year plan. KCC Highways and Transportation is not aware that mud or other materials have been tracked onto the public highway whilst the current wheel cleaning arrangement has been employed and advises that increasing the length of the surfaced road into the quarry and relocating the wheel cleaning facilities further into the site should serve to further reduce that possibility. This element of the proposal can therefore also be viewed favourably. KCC Public Rights of Way has advised that no works should be carried out which would in any way affect the current alignment of Footpath MR286 until such time as the Public Path (Diversion) Order has been confirmed and certified and the diverted route is in place. This is addressed in relevant legislation but could usefully be emphasised by informative.

The static replacement processing plant and ancillary mobile plant and equipment, amended internal road layout, replacement weighbridge and weighbridge office, wheel wash, storage and staff welfare facilities (condition 12)

68. Planning permission is granted for certain types of mineral development by Part 17 of the Town and Country Planning (General Permitted Development) (England) Order 2015 (the GPDO). Class A of Part 17 provides permission for a range of development including the erection, extension, installation, rearrangement, replacement, repair or other alteration of any plant, machinery, buildings and private ways used in connection with the winning and working of minerals on land at a mine (i.e. a quarry) without the prior approval of the Mineral Planning Authority (MPA) subject to a number of limitations (such as height and floor space) and subject to the external appearance of the site not being materially affected. Class B of Part 17 grants permission for a wider range of development (including secondary industry such as ready mix concrete plants) at a mine and on ancillary mining land (i.e. land adjacent to and forming part of a quarry) subject to the prior approval of the MPA. Permission can only be exercised under Class B if the developer has first submitted to the MPA detailed proposals covering the siting, design and external appearance of the proposed development and obtained its written approval for the proposal. MPAs may only refuse to approve development proposed under Class B, or attach conditions to an approval, on the grounds that the proposed development would injure the amenity of the neighbourhood and modifications can reasonably be made or conditions reasonably imposed in order to avoid or reduce that injury or the proposed development ought to be, and could reasonably be, sited elsewhere.

69. Condition 12 of planning permission TM/88/1002 served to avoid the possibility that development falling within what is now Class A of Part 17 of Schedule 2 to the GPDO (2015) could be undertaken without the need for proper consideration of its potential impact and effectively meant that the consideration provided for by what is now Class B would necessitate the submission of details pursuant to the condition.

70. Given that the principal purpose of the proposed plant, machinery, buildings and private ways would be in connection with the winning and working of minerals at the quarry, as the external appearance of the quarry would not be materially affected (they would be located in the quarry void and / or surrounded by woodland), as the height of any building, plant or machinery in the excavated area would not exceed 15m above the excavated ground level or 15m above the lowest point of the unexcavated ground level immediately adjacent to the excavation and as no new or replacement buildings would exceed relevant size thresholds (i.e. a floor space exceeding 1,000 square metres (sqm) for new or replacement buildings and a cubic content exceeding 25% of an existing building for any replacement building), the proposed static replacement processing plant and ancillary mobile plant and equipment, amended internal road layout, replacement weighbridge and weighbridge office, wheel wash, storage and staff welfare facilities would require no approval from KCC and could simply be implemented by Gallagher Aggregates Ltd (GAL) were it not for condition 12. Even if what is proposed were considered against Class B, it is clear that approval should be given having regard to the relevant criteria.

71. Paragraph 203 of the National Planning Policy Framework (NPPF) states that it is essential that there is a sufficient supply of minerals to provide the infrastructure, buildings, energy and goods that the country needs and that since minerals are a finite natural resource, and can only be worked where they are found, best use needs to be made of them to secure their long-term conservation. Paragraph 205 states that when determining planning applications, great weight should be given to the benefits of mineral extraction, including to the economy.

72. Seeking to deliver a sustainable, steady and adequate supply of land-won minerals such as aggregates is included in the spatial vision and strategic objectives of the Kent Minerals and Waste Local Plan (Kent MWLP) and is reflected in Policy CSM2. Policy DM11 states that minerals development will be permitted if it can be demonstrated that it is unlikely to generate unacceptable adverse impacts from (amongst other things) noise, dust, vibration, emissions, illumination, visual intrusion, traffic or exposure to health risks and associated damage to the qualities of life and wellbeing to communities and the environment. Policy DM20 states that proposals for ancillary development within or in close proximity to mineral development will be granted planning permission provided it is necessary and that the environmental benefits in providing a close link with the site outweigh any environmental impacts. It also states that the operation and retention of any such development will be limited to the life of the linked mineral facility. Class A and B of Part 17 of Schedule 2 to the GPDO (2015) both require the removal of such development when mineral operations cease permanently and condition 14 of TM/88/1002 requires their removal at such time as they are no longer required for the working or restoration of the site.

73. Permitted development rights are not affected by land being in the Green Belt unless a Direction has been issued under Article 4 of the GPDO (2015) or some earlier iteration of the Order. No such Direction exists in this case. On that basis, there is no requirement to have regard to Green Belt policy in determining the application. This said, it is worth noting that paragraph 146 of the NPPF states that mineral extraction is not inappropriate development in the Green Belt provided it preserves openness and does not conflict with the purposes of including land in the Green Belt. Given size and location of the proposed development within the permitted quarry void and / or the surrounding woodland, and subject to being linked to the life of the mineral working (which it would be), it is clear that it would accord with paragraph 146 anyway. In this way, it would also accord with Policy DM4 of the Kent MWLP which states that proposals for minerals development within the Green Belt will be considered in light of their potential impacts and shall comply with national policy and the NPPF.

74. As set out in the Planning Policy Context section above there are a number of adopted and emerging development plan policies that are relevant to the determination of the application. These reflect, and are consistent with, the policies set out in the NPPF and associated National Planning Practice Guidance (NPPG)). The policies of particular relevance (given that planning permission already exists for mineral working and blasting at the site) are those which relate to local amenity and the environment since they provide the framework against which the proposed 4th 5-year plan and the details that have been submitted pursuant to condition 12 should be assessed. In terms of the proposed static plant and related elements this would also be consistent

with the limitations imposed in approving details under Class B of Part 17 of Schedule 2 to the GPDO (2015).

75. The proposed arrangement would reduce the need for double handling of materials and regularly relocating equipment and in so doing would assist in increasing efficiency and minimising emissions. Locating the plant at the lowest depth possible in the quarry void would better contain operations and further reduce potential effects such as noise, dust and visual impact and assist in minimising any impacts on the surrounding area (including woodland and associated biodiversity interest). Altering the internal road layout and relocating the wheel wash and other elements necessary for the effective operation of the quarry would reduce conflict between the quarry and waste operations. It would also avoid the need for vehicles using the waste facilities to travel on internal roads between the quarry and existing wheel cleaning facilities (which has the potential to result in mud and other materials being tracked towards or onto the public highway). The proposed installation of a bund between the operational quarry area / proposed plant site and the waste management facilities would provide better physical separation between the two and prevent surface water drainage from the quarry interfering with the latter. Surface water drainage would be improved by the proposed new pond in the north east of the plant site area.

76. It is clear from the above that the principle of what is proposed is already established and that there is clear planning policy support for its provision. It is also clear that what is proposed in the 4th 5-year plan and in respect of the details submitted pursuant to condition 12 would not have any significant impact on the environment or local amenity (subject to the re-imposition of the noise limit conditions imposed on the 3rd 5-year plan) and that the processing of mineral extracted from Blaise Farm Quarry should be undertaken at the site (ideally at a low level within the quarry void) rather than elsewhere. No objections have been received from technical or other consultees to the details submitted pursuant to condition 12 and I see no reason to withhold approval provided the noise limit conditions are re-imposed and any redundant buildings, containers or structures are removed from the site.

The updated scheme of blasting and blast monitoring (condition 17)

77. As explained in paragraphs 5 and 9 above, condition 18 of planning permission TM/88/1002 allows blasting to take place as part of the mineral working at the quarry at specified times and subject to a maximum instantaneous charge (MIC) of no more than 10kg whilst condition 17 requires that the blasting be undertaken in accordance with an approved Schedule (scheme) of Blasting which includes measures to minimise nuisance / danger from ground vibration, air overpressure, noise, fly rock and dust. Whilst GAL has considered seeking planning permission to increase the MIC from 10kg to 25kg and has undertaken a number of trial blasts with an MIC of more than 10kg (with KCC's agreement), blasting at the quarry is still undertaken with a 10kg MIC. The most recent trial blasts were undertaken in 2012 so the recent complaints cannot have been as a result of blasting with more than a 10kg MIC. Blasting continues to be undertaken in accordance with the scheme of blasting and blast monitoring approved by KCC in 2002 and amended in 2004 for the Phase 1 area (i.e. the 1st 5-year plan). Although officers were content that these schemes remained

appropriate for subsequent phases, they informed Hanson and GAL of the need for formal approval to be secured for schemes for Phases 2 and 3 on several occasions (including as informatives in approving the 2nd and 3rd 5-year plans). The delay in addressing this is regrettable but has not in itself had any bearing on events since the approved schemes have continued to be complied with. GAL now wishes to regularise this position as part of its investment in the quarry and ensure that appropriate schemes of blasting and blast monitoring are in place moving forward.

78. Paragraph 205 of the NPPF states that in considering proposals for mineral extraction, MPAs should (amongst other things) ensure that any unavoidable noise, dust and particle emissions and any blasting vibrations are controlled, mitigated or removed at source, and establish appropriate noise limits for extraction in proximity to noise sensitive properties. Paragraph 015 of the Minerals Planning Practice Guidance (Minerals PPG, part of the NPPG) states that mineral operators should look to agree a programme of work with the MPA which takes into account, as far as is practicable, the potential impacts on the local community and local environment (including wildlife), the proximity to occupied properties, and legitimate operational considerations over the expected duration of operations in order to minimise the impact of development upon properties and the local environment in close proximity to mineral workings. Despite containing no specific policies on blasting, Policy DM11 of the Kent MWLP states that minerals development will be permitted if it can be demonstrated that it is unlikely to generate unacceptable adverse impacts from (amongst other things) vibration.

79. Whilst neither the NPPF nor Minerals PPG contain detailed policy or guidance on blasting, earlier minerals planning guidance[3] specifically referred to the desirability of imposing conditions which provided for: limits on the timing of blasts and on ground vibration received at noise or vibration sensitive properties; monitoring to ensure that the limits are not exceeded; and methods to be employed minimising air overpressure (i.e. the approach adopted at Blaise Farm Quarry). It advocated peak particle velocity (ppv) levels of 12mm/s for any individual blast and 6mm/s in 95% of all blasts and the prior approval of schemes for the monitoring of blasting (including the location of monitoring points and equipment to be used) and the methods to be employed to minimise air overpressure. It should be noted that similar conditions were imposed by the Secretary of State for Communities and Local Government in July 2013 in granting planning permission for the Westerly Extension to Hermitage Quarry (conditions 23 and 24 of Annex A1 to TM/10/2029), albeit that the 12mm/s limit on individual blasts was replaced by a 10mm/s limit and a specific 0.3mm/s limit imposed in so far as it related to Maidstone Hospital. It should also be noted that KCC subsequently approved a scheme of blasting pursuant to condition 24 in October 2013. The effect is that the blasting and blast monitoring at Hermitage Quarry is substantially similar to that undertaken and proposed at Blaise Farm Quarry.

80. Although complaints have been received about the blasting that has been undertaken at the quarry and four individuals have formally submitted objections to the current application (in five responses), it is important to note that no objections have been

[3] Minerals Planning Guidance (MPG) 9: Planning and Compensation Act 1991 – Interim development order permissions (IDOS): conditions (March 1992) and MPG14: Environment Act 1995: review of mineral planning permissions (September 1995).

received from technical consultees. It is also important to note that all of the blast monitoring results submitted to KCC by GAL and all independent blast monitoring that has been undertaken on behalf of KCC has demonstrate that the 6mm/s vibration limit is being complied with. Although not submitted as part of the current application, GAL has provided graphs illustrating the ppv and air overpressure readings resulting from the blast monitoring at Blaise Farm Quarry between 1 March and 11 August 2020. These are included in Appendix 8 along with the information provided for the most recent blast shown on the graph which was provided to KCC pursuant to the planning permission and which is available on the KCC website which also illustrates the locations of the monitoring positions. The graphs clearly show that ground vibration is significantly below the 6mm/s limit and air overpressure below the 120dB design parameter. GAL has also provided a copy of a report R20.10806/2/BG titled "Assessment of Environmental Impact of Blasting at Blaise Farm Quarry, West Malling, Kent" (Vibrock, 2 September 2020) which it commissioned to assist in demonstrating compliance with the planning permission and help explain the true impact of its operations. Again, this does not form part of the current application but is helpful in illustrating and explaining the actual impact of the blasting that takes place. This report is included in Appendix 9.

81. Tonbridge and Malling Borough Council has raised no objection and its Environmental Protection Team is satisfied that the permitted maximum vibration levels are being complied with based on the blast monitoring results provided to KCC by GAL and made available online. It is also satisfied that if the measures in the proposed scheme of blasting are adhered to, the permitted levels should be continued to be complied with. Whilst it notes that there has been an increase in local residents reporting having noticed the effects of blasting (which is perceived to be vibration), it believes the effects that have been experienced are primarily due to air overpressure. However, it should be noted that blast monitoring results have consistently demonstrated that air overpressure has been maintained below 120dB at monitoring locations significantly closer to the blast than any sensitive properties.

82. KCC's Noise and Vibration Consultant was made aware of the complaints and concerns that have been raised by local residents and has examined the proposed scheme of blasting and blast monitoring in that context. It advises that the Schedule of Blasting has been reviewed in line with updated guidance and that the proposed vibration limits are appropriate. It also advises that the applicant's predicted vibration levels for the nearest sensitive receptors are well below the appropriate limits and that the Blast Monitoring Scheme thoroughly sets out the monitoring procedures to be utilised and is fit for purpose.

83. The work undertaken by officers in 2003 and 2004 which was reported to the KCC Regulation Committee Member Panel and KCC Regulation Committee and which led to the publication of "Guidance on blasting at Ragstone Quarries in Kent" (KCC, May 2004) relied heavily on other published guidance available at that time, research into the experiences of other MPAs and discussions with the quarry operator. All available guidance was clear that perceptions about blasting and the belief that damage to property resulted from blasting were not borne out by reality since the vibration necessary to cause damage was significantly greater than that resulting from the

blasting at either Blaise Farm Quarry or Hermitage Quarry. This remains the case today.

84. Based on the above, it is clear that the proposed updated Schedule of Blasting and Blast Monitoring Scheme are acceptable and should be approved, that there is no reason to withhold approval and that seeking to do so is unlikely to be supported on appeal.

85. Officers are of the view that further independent blast monitoring may assist in reassuring the local community that the blast monitoring undertaken by GAL is being done appropriately and that the vibration limits referred to above are being complied with. This will necessitate the appointment of external consultants as KCC does not have the necessary in-house expertise and equipment and as discussions have established that TMBC's Environmental Protection Team is unable to undertake the monitoring on behalf of KCC. It is hoped that KCC's Noise and Vibration Consultant will be able to undertake this monitoring although this has not been agreed at the time of writing this report. If it is unable to do so, it will be necessary to procure alternative arrangements.

86. Whilst it may not be possible to satisfy some local residents that blasting at Blaise Farm Quarry is not responsible for damaging their properties, officers are of the view that there would be merit in reviewing and updating "Guidance on blasting at Ragstone Quarries in Kent" (KCC, May 2004) as a standalone document and that should this include links to the KCC website where the blast monitoring results can be viewed and contact details for GAL to enable individuals to address concerns directly to the Company as necessary. Making the updated document available may assist in explaining the position and providing at least some reassurance to the local community.

87. Although unlikely to be popular with many in the local community (due to the perception that a larger MIC equates to increased vibration), there may also be merit in GAL pursuing its earlier proposals to increase the MIC from 10kg. Using a larger MIC (as previously envisaged and as is the case at Hermitage Quarry) would be likely to reduce the frequency of blasting necessary at Blaise Farm Quarry without giving rise to any significant increase in vibration. Any such application would need to be accompanied by an EIA and be subject to further consultation. Any decision on whether to pursue such an application is a matter for GAL.

Conclusion

88. As noted above, no objections have been received from consultees to the 4th 5-year plan for working, restoration and aftercare, the proposed static replacement processing plant and ancillary mobile plant and equipment, amended internal road layout, replacement weighbridge and weighbridge office, wheel wash, storage and staff welfare facilities or to the updated scheme of blasting and blast monitoring. However, objections have been received from four individuals (in five responses) in respect of the blasting that has been undertaken and to blasting continuing to take place at Blaise Farm Quarry. Complaints have also been received separately from local residents

about blasting at the site and all four local parish councils have relayed their concerns on the subject more generally in support of those complaints.

89. Notwithstanding the objections and concerns that have been raised, I can give no reason to refuse the application as submitted which complies with the development plan, the NPPF and the NPPG. I therefore recommend accordingly. Separate to this application, officers are arranging independent blast monitoring to assist in reassuring the local community that the blast monitoring undertaken by GAL is being done appropriately and that the vibration limits referred to above are being complied with.

Recommendation

90. I RECOMMEND that the application BE APPROVED SUBJECT TO the following conditions and informatives:

Conditions:

1. The details hereby approved shall be implemented as approved unless otherwise agreed beforehand in writing by the County Planning Authority.

   Reason: For the avoidance of doubt and to ensure that the development is carried out in accordance with the approved plans and details.

2. Except for the temporary operations defined in condition 3 (below), noise generated from operations at the site associated with the approved details shall not exceed 55dB$_{LAeq,1hr\ (free\ field)}$ as measured at any noise sensitive property.

   Reason: To ensure minimum disturbance from operations and avoidance of nuisance to the local community.

3. For temporary operations such as soil and overburden stripping, movement, storage and replacement, the noise level at any noise sensitive property shall not exceed 70dB$_{LAeq,1hr\ (free\ field)}$. Temporary operations that exceed the normal day to day criterion shall be limited to a total of eight weeks in any twelve month period at any noise sensitive property.

   Reason: To ensure minimum disturbance from operations and avoidance of nuisance to the local community.

4. Ground vibration as a result of blasting operations shall not exceed:-

   (a) a peak particle velocity of 6mm/s in 95% of all blasts when measured over any period of one month as measured at any vibration sensitive location;
   (b) a peak particle velocity of 12mm/s as measured at any vibration sensitive location; and
   (c) a peak particle velocity of 15mm/s at the remains of the Chapel of St. Blaise.

Reason: To ensure minimum disturbance from operations and avoidance of nuisance to the local community.

5. All buildings, containers or structures outside the quarry void in the vicinity of the existing quarry offices shall be removed when no longer required for the effective working of the quarry.

   Reason: For the avoidance of doubt and to ensure that the development is carried out in accordance with the approved plans and details.

Informatives:

1. You are advised that all conditions attached to planning permission TM/88/1002 remain in force and must be complied with at all times.

2. You are advised that conditions 4, 7 and 8 of planning permission TM/88/1002 require schemes of progressive working, restoration and aftercare to be submitted to and approved by the County Planning Authority at intervals of no more than 5 years.

3. You are advised that no works should be carried out which would in any way affect the current alignment of Footpath MR286 until such time as the Public Path (Diversion) Order has been confirmed and certified and the diverted route is in place.

4. You are advised of the need to comply with the archaeological requirements of condition 23 of planning permission TM/88/1002. In particular, you should ensure that archaeological investigations take place in accordance with a specification agreed with the County Council's archaeological officers.

91. I also RECOMMEND that Members ENDORSE officers reviewing and updating "Guidance on blasting at Ragstone Quarries in Kent" (KCC, May 2004) as a standalone document and that this include links to the KCC website where the blast monitoring results can be viewed and contact details for Gallagher Aggregates Ltd (GAL) to enable individuals to address concerns directly to the Company as necessary.

Case Officer: Jim Wooldridge	Tel. no. 03000 413484

Background Documents: see section heading.

Appendices 1 to 9 of Item C2

Request for approval of details pursuant to conditions 4, 7, 8, 12, 17 and 27 of planning permission TM/88/1002 at Blaise Farm Quarry, Blaise Quarry Road, Kings Hill, West Malling, Kent ME19 4PN – TM/88/1002/RVARA (KCC/TM/0121/2020)

See separate Appendices 1 to 7 which contain the following:

- **Appendix 1:** Report and minutes of the KCC Regulation Committee Member Panel on 7 January 2004.

- **Appendix 2:** Report to the KCC's Regulation Committee on 25 May 2004 (with revised recommendation and draft documents titled "Guidance on Blasting at Ragstone Quarries in Kent" and "Procedure for dealing with complaints relating to blasting at Quarries in Kent").

- **Appendix 3:** "Guidance on blasting at Ragstone Quarries in Kent" (KCC, May 2004).

- **Appendix 4:**
  - Drawing GAL-BQ-20-08 Rev C titled "4th 5 Year Working and Progressive Restoration Scheme: Phases 3f to 4c (2020 - 2025)" (dated 27 May 2020)
  - Drawing GAL-BQ-20-06 Rev F titled "Production Plant Proposal Blaise Quarry" (dated 4 June 2020)
  - Drawing GAL-BQ-20-05 Rev E titled "Production Plant Proposal Blaise Quarry" (dated 4 June 2020)
  - Drawing GAL-BQ-20-01 Rev D titled "Illustration of Replacement Plant Layout" (dated 19 February 2020)
  - Drawing GAL-BQ-20-02 Rev B titled "Foundation Layout Blaise Processing Plant" (dated 26 May 2020)
  - Drawing GAL-BQ-20-07 Rev A titled "Proposed Junction Layout" (dated 28 May 2020)

- **Appendix 5:** Proposed "Schedule of Blasting" (dated June 2020).

- **Appendix 6:** Proposed "Blast Monitoring Scheme" (dated June 2020).

- **Appendix 7:**
  - Drawing GAL-BQ-10-05 Rev C titled "Option 2 Sections Locations Proposed Diversion of Footpath MR286 Ordnance Survey Overlay" (dated 12 February 2020)
  - Drawing GAL-BQ-10-03 Rev D titled "Proposed Diversion of Footpath MR286" (dated 12 February 2020)

- **Appendix 8:** Blaise Farm Quarry GAL Blasting Data (1.3.20 to 11.8.20) and Blast Monitoring Results 11.8.20

- **Appendix 9:** Report R20.10806/2/BG titled "Assessment of Environmental Impact of Blasting at Blaise Farm Quarry, West Malling, Kent" (Vibrock, 2 September 2020)

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Appendix 1:

- **Appendix 1:** Report and minutes of the KCC Regulation Committee Member Panel on 7 January 2004.

KENT COUNTY COUNCIL

REGULATION COMMITTEE

MINUTES of a meeting of the Regulation Committee Member Panel held at Sessions House, County Hall, Maidstone on 7 January 2004.

PRESENT: Mr J Beynon (Chairman), Mr P J Morgan, Mrs P M Stevens and Mr W R Whelan.

ALSO PRESENT: Mrs V J Dagger

OFFICERS: The Principal Planning Officer, Mr J Wooldridge, and the Committee Officer, Mr A Tait.

UNRESTRICTED ITEMS

1. Consideration of complaints relating to blasting at Blaise Farm Quarry, Offham (Hanson Aggregates)
(Item 3 – Report by County Environmental Officer)

(1) Members of the public, including the Clerk to Offham Parish Council, were permitted to ask questions in relation to the Head of Planning Application Units' report.

(2) The Principal Planning Officer tabled the Blast Monitoring Scheme that was referred to in paragraph 10 of the report as being included at Appendix 1, and the letter of 27 November 2003 from Offham Parish Council referred to in paragraph 16 of the report.

(3) Mr P J Morgan moved, seconded by Mrs P M Stevens that the word "will" in paragraph 29 (3)(a) of the report be amended to "may".

Carried Unanimously

(4) RESOLVED that the contents of the report be noted and the following be agreed, and that

(a) the Head of Planning Applications Unit inform Offham Parish Council that:

(i) KCC is unable to give it the assurances or guarantees that it is seeking about potential damage to properties;

(ii) given that the terms of planning permission TM/88/1002 are being complied with and that there does not appear to be any published information to support the view that structural damage may be caused, KCC cannot require Hanson to cease blasting;

(iii) it is for Hanson to decide whether it is prepared to continue blasting and face potential legal claims from residents or others if it is subsequently established that blasting has caused any damage;

(iv) following a recommendation from the Environment Agency that the issue of potential effects of vibration on the integrity of the landfill liner at Offham Landfill Site be investigated, KCC has written to both Hanson

and Waste Recycling Group (WRG) to ask that they investigate the matter;

(v) issues relating to (iv) above, are for WRG to address as part of its ongoing responsibilities under its waste management licence. The waste management licence requires ongoing monitoring of landfill gas which would identify any changes to the current situation. The waste management licence also requires adequate controls to be maintained at the site in order to prevent gas migration, and that these could be altered if necessary; and

(vi) issues relating to blasting at Blaise Farm Quarry should be addressed through the Blaise Farm Quarry Liaison Committee;

(b) the Head of Planning Applications Unit inform West Malling Parish Council, Kings Hill Parish Council and Mereworth Parish Council of his response to Offham Parish Council;

(c) the Head of Planning Applications take a report to the Regulation Committee setting out:-

(i) a formal procedure for dealing with complaints relating to blasting (to include those circumstances in which KCC may arrange independent monitoring and the extent of such monitoring); and

(ii) appropriate information on blasting-related issues that can be provided to the local community (possibly a leaflet explaining the issues);

(d) the Head of Planning Applications:

(i) encourage Hanson to fully investigate the ongoing complaint relating to the office building at Comp Lane, Offham;

(ii) encourage Hanson to investigate further complaints of alleged damage to property where these could reasonably be related to blasting;

(iii) encourage Hanson to be more proactive in communicating with the local community on blasting and related issues; and

(iv) require Hanson to review the current Blast Monitoring Scheme in consultation with KCC and submit a revised scheme for approval; and

(e) the Head of Planning Applications investigate the use of specific limits on air overpressure (e.g. an appropriate dB limit at specified locations) for possible inclusion as part of any future permissions or approvals for blasting.

Mr J Beynon, Mrs P M Stevens,
Mr W R Whelan, Mr P J Morgan
c/o Members' Desk
Sessions House
County Hall

Direct Dial/Ext: (01622) 694342
Fax: (01622) 694383
E-mail address: andrew.tait@kent.gov.uk
Ask for: Andrew Tait
Your Ref:
Our Ref: PAC
Date: 23 December 2003

Dear Member

REGULATION COMMITTEE MEMBER PANEL – CONSIDERATION OF COMPLAINTS RELATING TO BLASTING AT BLAISE FARM QUARRY, OFFHAM

I enclose the agenda papers for the Regulation Committee Member Panel to consider the above complaint.

The meeting will be held in the Darent Room, Sessions House at **10.30am on Wednesday, 7 January 2004.**

Yours sincerely,

Committee Officer

Cc: Mrs V J Dagger
Mrs T Dean
Mrs S V Hohler
Bill Murphy: Strategic Planning
Jim Wooldridge: Strategic Planning
Phil Scrivener

AGENDA

REGULATION COMMITTEE MEMBER PANEL

Wednesday, 7 January 2004 at 10.30 am
Darent Room, Sessions House,
County Hall, Maidstone

Ask for: **Andrew Tait**
Telephone: **(01622) 694342**
Ref: **RCMP**

(Refreshments will be available before the meeting)

UNRESTRICTED ITEMS

(During these items the meeting is likely to be open to the public)

1. Membership: Mr J Beynon (Chairman), Mr P J Morgan, Mrs P M Stevens and Mr W R Whelan
2. Substitutes
3. Consideration of complaints relating to blasting at Blaise Farm Quarry, Offham (Hanson Aggregates)
4. Other Items which the Chairman decides are Urgent

Stuart Ballard
Committee and Member Services Manager
Council Secretariat
Ext 4002
29 December 2003

(Please note that the background documents referred to in the accompanying papers may be inspected by arrangement with the officers responsible for preparing the reports)

REGULATION COMMITTEE MEMBER PANEL
10.30AM, WEDNESDAY, 7 JANUARY 2004

CONSIDERATION OF COMPLAINTS RELATING TO BLASTING AT BLAISE FARM QUARRY, OFFHAM (HANSON AGGREGATES)

Background: Planning Permissions at Blaise Farm Quarry

1. Blaise Farm Quarry (some 116 hectares) is located to the south of the village of Offham and to the west of the A228 and the residential area of Kings Hill. The quarry site is bounded to the east, south and west by woodland. The site is served by a purpose built surfaced access road onto the A228 West Malling roundabout located near Kings Hill. The site offices, weighbridge and parking facilities, etc, relating to the quarry, are located approximately 600 metres from the roundabout and are surrounded by woodland.

2. The main mineral extraction planning permission (TM/88/1002) was granted in January 1994 for the winning and working of some 57 million tonnes of ragstone from four phases over a 62 year period.[1] Of this total, 34 million tonnes would be marketable and the rest (40%) quarry waste. Anticipated production was estimated to be 550,000 tonnes per annum (tpa) generating an average of some 230 HGV movements per day. The permitted hours of operation were 0700 to 1800 on Mondays to Fridays and 0700 to 1300 on Saturdays. Upon completion of ragstone extraction within each phase restoration would be back to agriculture at a lower level using only 'in-situ' materials. The permission provides for blasting. Quarrying commenced in the north east part of the Quarry (phase 1) in 2000 and, with the exception of areas in the south east which are used for storage of topsoil, subsoil, hassock and overburden, and the soil blending area in the centre of the site (see paragraph 3 below), the rest of the site is still in agricultural use.

3. Planning permission TM/01/3039 was granted for the siting of a facility to manufacture and store soils utilising imported compost and in-situ overburden near the centre of the site on 17 January 2002. The duration of the permission is 25 years. This was varied by permission TM/02/1374 on 25 July 2002 which altered the controls on permitted HGV movements for all activities associated with the site as well as specifically for the soil blending operation.

4. The County Council approved a temporary variation to condition 15 of planning permission TM/88/1002 in June 2002 to enable quarrying operations to take place within the phase 1 working area between 0600 and 2100 hours Monday to Friday and 0600 and 1600 hours Saturdays until 31 December 2004 to facilitate a prospective CTRL contract. This contract was subsequently awarded to Hanson Aggregates and operations may currently take place during the extended hours.

5. A planning application (TM/03/1155) has been submitted by Waste Recycling Group plc (WRG) for a 50,000tpa composting facility at the site. It is anticipated that this will be reported to the Planning Applications Committee in early 2004.

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[1] KCC had resolved to grant planning permission for the development at its Planning Sub-Committee on 19 September 1989. The delay in issuing the permission appears to have related to (at least in part) the need to satisfactorily conclude a legal agreement relating to (amongst other things) the revocation of an extraction permission at Offham Quarry, restrictions on Hanson's activities at Furfield Quarry and the proposed access at Blaise Farm Quarry.

6. The Blaise Farm Quarry Liaison Group meets on a regular basis (currently every 6 months) to discuss issues relating to operations at the site. These meetings are held at 1800 hours at Hanson's offices at Whiteladies (Offham) or at the site. The next liaison meeting is scheduled to occur on 22 January 2004.

Blasting

7. Blasting was permitted as part of the proposals and controls imposed under conditions 17 and 18 of permission TM/88/1002. Condition 17 required the prior approval of a Schedule of Blasting to minimise nuisance/danger from ground vibration, air overpressure, noise, fly rock and dust and for this to be implemented as approved. Condition 18 restricted hours of blasting to between 0900 and 0930 Monday to Saturday, 1200 and 1400 Monday to Friday and 1200 and 1300 on Saturday. It also restricted the maximum instantaneous charge (MIC) to 10kg and precluded secondary blasting.

8. Hanson submitted a scheme under the terms of condition 17 on 28 March 2002. This provided a scheme designed to meet the requirements of condition 17 (generally) and specifically to enable a test blast to be carried out. On 30 May 2002 KCC agreed to a test blast to enable the results to be monitored and evaluated in accordance with the scheme. This took place on 27 June 2002. A report containing the results of the test blast and predictions for vibration levels at various sensitive locations around the site, together with a blast monitoring scheme, were submitted on 16 August 2002. Information was provided by Hanson clarifying a number of issues on 19 September 2002. Consultation with TMBC, Offham PC, West Malling PC, Kings Hill PC, Mereworth PC, the Health & Safety Executive and Babtie (noise and vibration) took place at each stage of this process. The Airfield Residents Association and Tonbridge & Malling Housing Association were also notified.

9. KCC approved the Scheme of Blasting on 23 October 2002. This incorporated the above details. The approval sets out the following controls:-

(1) All blasting at Blaise Farm Quarry shall take place in accordance with the approved details.

(2) Ground vibration as a result of blasting operations within the Phase 1 Operations extraction area shall not exceed:-

(a) a peak particle velocity of 6mms^{-1} in 95% of all blasts when measured over any period of one month as measured at any vibration sensitive location;

(b) a peak particle velocity of 12mms^{-1} as measured at any vibration sensitive location; and

(c) a peak particle velocity of 15mms^{-1} at the remains of the Chapel of St. Blaise.

(3) No blasting shall take place outside the Phase 1 Operations extraction area without the prior approval in writing of the Mineral Planning Authority.

(4) In addition to notifying those official bodies identified in Appendix 1 "Shotfiring Rules and Procedures" of the Vibrock Report dated 28 March 2002, the Operator shall also notify the Mineral Planning Authority of its intention to blast.

and the following informatives:-

1. You are reminded that the approved scheme must be implemented as approved and that you should comply with the requirements of condition 18 at all times unless otherwise approved beforehand in writing by the Mineral Planning Authority.

2. You are advised that for the purposes of condition 4 above, you should telephone the offices of the Planning Applications Unit on 01622 221062 (or such other contact as shall be provided by the Mineral Planning Authority) on the day of the proposed blasting to advise of the intended time of blasting.

10. In particular, it should be noted that KCC only approved the Scheme of Blasting for use within the Phase 1 Operations extraction area. At current extraction rates, it is anticipated that Phase 1 will be worked for approximately a further 2 years. A copy of the Blast Monitoring Scheme is included for information at Appendix 1. This sets out the methodology to be adopted, instrumentation, locations and frequency of monitoring and a complaints procedure. Amongst other things, the Blast Monitoring Scheme requires Hanson to undertake vibration monitoring on land in its ownership close to nearest adjacent sensitive locations (e.g. Kentfield House, Ashtree Farm, The Crest and 25 Mosquito Close) for every blast. It must predict vibration for all designated locations and monitor vibration at the residential monitoring location with the highest prediction. The Scheme also provides for the monitoring results to be provided to KCC within 10 days of each month end relating to a one month period. It also provides for 12 monthly reviews of the monitoring procedures if requested by either Hanson or KCC.

11. The first production blast took place on 18 November 2002. A total of 20 blasts have since occurred. With one exception, these have all been undertaken within the above limitations. The only exception was a further test blast on 11 June 2003 which used a MIC of greater than 10kg. This was agreed beforehand by KCC following the receipt of revised predictions from Hanson and consideration of these for KCC by Babtie (noise and vibration). Hanson have indicated that they will seek a formal variation of condition 18 of permission TM/88/1002 to increase the 10kg MIC on the basis that this would lead to more efficient blasting and less vibration. The results of the test blast have been provided by Hanson but no formal application has yet been submitted. The blasts are therefore still limited to the 10kg MIC.

Complaints

12. The first complaint relating to the environmental effects of blasting (vibration) at Blaise Farm Quarry was received on 15 May 2003 from Kent Scientific Services (KSS) at Kings Hill. The complaint was that the KSS building (approximately 700m from the Quarry) was experiencing ground shocks which were believed to be coincidental with blasting and that cracks had appeared inside the building. Vibration monitoring at KSS was undertaken by Hanson on 28 May 2003 which recorded vibration with a ppv of 0.381mm/s (vector sum). Monitoring undertaken by Babtie at the same time in a slightly different location recorded a ppv of 0.30mm/s (vertical). Both measurements were far less than the permitted vibration levels. Babtie prepared a report for KCC that concluded:

"A ppv of 0.30mm/s at 38Hz was recorded in the vertical plane. This figure is less than1% of the cosmetic damage limit prescribed in BS 7385. This provides a strong indication that vibration from the blasting in Blaise Farm poses no significant threat to

the structure. Cracks in the breezeblock internal walls will not have been caused by vibration from blasting."

KSS has subsequently informed Planning Applications Unit that an examination of the building was carried out by Mouchel. Mouchel advised that the building is essentially safe although the cracks are unsightly and some remedial work should be undertaken. It was unable to say whether the cracks were due to or exacerbated by blasting and suggested that some of the cracks were probably due to the absence of the necessary expansion joints in some of the walls. KSS has advised that the insurance will not pay for the cracks as these were not due to subsidence. It is worth noting that the insurance would not pay for repairs to the KSS car park because it was due to subsidence.

13. The second complaint was received via Offham Parish Council (E-mail) on 11 July 2003. This largely related to the specific concerns of a resident of Comp Lane, Offham (approximately 900m from the Quarry), but also reflected general concerns from other residents. The resident reported that the office building (in his garden) had developed a number of large cracks through one plane in two walls and the ceiling. Vibration monitoring at the property was undertaken by Hanson on 31 July 2003 which recorded a ppv of 0.8mm/s. Further complaints resulted in Babtie monitoring a blast on 3 November 2003. This recorded a ppv of 0.67mm/s (vertical). These measurements were well within the permitted limits. Babtie prepared a report that concluded:

"A ppv of 0.67mm/s at 41Hz was recorded in the vertical plane. This figure is less than 2% of the cosmetic damage limit prescribed in BS 7385. This provides a strong indication that vibration from the blasting in Blaise Farm poses no significant threat to the structure. During the blast, vibration was clearly perceptible and exceeded the level of adverse comment, as defined in BS 6472. It is common in such circumstances for those experiencing this magnitude of vibration to associate it with cracks in buildings even though the damage criterion in BS 7385, is not exceeded. Cracks in the walls are a sign of differential movement in the building. Section 3 above indicates that there are many factors that can cause cracking."

In fact, Section 2 of the report contains this information. It quotes BS 7385 which states:

"....Heat, moisture, settlement, occupational loads, prestressing forces, material creep and chemical changes all cause movement in buildings. In an optimised design the build up of stress concentrations in the structural elements should be minimised. If the design does not permit adequate relaxation of these stress concentrations, then cracks will develop....Thus cracks normally exist to varying degrees in buildings not subject to vibration and are not, in themselves, an indication of vibration-induced damage...."

As a result of a request by KCC that the matter be investigated, Hanson are in the process of undertaking survey work on the property to try to establish whether or not the damage has been caused or exacerbated by blasting. The results of this are not yet available. Hanson had initially agreed to prepare a scheme to monitor the cracks, ppv and air overpressure to be installed for a period of time from early 2004 but subsequently rejected this option as the starting point for their investigations.

14. Complaints have also been received from another resident of Comp Lane, Offham (on 14 October 2003 and 26 November 2003) and a resident from St Leonards Street, West Malling, approximately 1.2km from the Quarry (14 October 2003). The Comp Lane resident alleged that a small portion of loose ragstone terrace retaining wall collapsed on 14 October 2003 and that a window was caused to shut (as its stay bar came off the latch) on 26 November 2003. The St Leonards Street resident alleged that the windows shook and the beams vibrated in his part timbered house on 14 October 2003. He also suggested that wider publicity be given about the blasting to local residents. Another Offham resident complained on 16 December 2003.

15. A small number of other residents have also made inquiries about vibration or similar effects associated with blasting at Blaise Farm Quarry but requested no further action on being advised of what the vibration may have related to, the limitations imposed on the planning permission and the monitoring information available (these were not recorded as complaints). These residents included those living between 1.1km (Peppingstraw Close, Offham) and 1.5km (Offham Road, West Malling) from the Quarry.

16. Offham Parish Council has written to KCC (27 November 2003) expressing its very serious concerns about the possible damage to property from the blasting vibrations emanating from Blaise Farm Quarry. As well as local residential properties, it is also concerned about the liner to the landfill at Offham Landfill Site and the potential consequences for the village should this be damaged. The Parish Council states that it has not received adequate assurances from KCC that the blasting vibrations are not causing damage. It has further requested written guarantees that the blasting has and will not structurally affect any property within the village or landfill. The Parish Council does not accept that because the monitored vibrations are well within Government Guidelines means that blasting is completely safe on the basis that the Guidelines may not adequately take local conditions into account. *It has also asked that KCC stop Hanson carrying out any further blasting until it has been fully reassured and written guarantees produced.* It is expecting to receive this at the next Blaise Farm Quarry Liaison Meeting on 22 January 2004.

17. KCC has informed the Environment Agency of Offham Parish Council's concerns about the potential effects of vibration on the integrity of the landfill liner at Offham Landfill Site. The Environment Agency has recommended that the matter be investigated further. KCC has written to both Hanson and WRG and asked that they investigate the matter.

18. The Environment Agency's initial view is that blasting at Blaise Farm Quarry is unlikely to have any impact on the landfill liner used in the Phase 3 area at Offham Landfill Site as its components are relatively flexible. It has, however, suggested that investigations be undertaken to assess potential effects on the older unlined landfill phases (Phases 1 and 2) to establish whether there may be any potential effects on these. It has advised that both the Phase 3 area and the Sheepfield area (which was backfilled with quarry waste) lie between the point of blasting and Phases 1 and 2 and would serve to dampen any vibration effects. The possibility that blasting could adversely affect the landfill site and exacerbate landfill gas migration is capable of being monitored as part of the ongoing waste management licence responsibilities. This requires the ongoing monitoring of landfill gas which would identify any changes to the current situation. It also requires adequate controls to be maintained to prevent gas migration. If the monitoring were to indicate problems, Hanson may need to alter its blasting regime.

19. The issue of potential impact of blasting on landfill lining systems was explored several years ago at a Public Inquiry in South Wales. In that case the Inquiry was for a proposed new landfill site incorporating an artificial side wall liner in a deep limestone quarry. The landfill was proposed to follow on closely behind the active quarry face at which blasting was ongoing. The distance between the closest part of the lined landfill and the quarry was much less than that between Offham Landfill Site and Blaise Farm Quarry. It is understood that the Secretary of State was satisfied that, given the technical evidence, blasting would not prejudice the integrity of the landfill liner.

20. West Malling Parish Council has also expressed concerns about the effects of blasting (E-mail dated 8 December 2003) and has advised that it has received numerous complaints from residents. It has sought advice as to what KCC is doing about the matter and how it can best influence the position.

21. KCC is unable to give Offham Parish Council the assurances or guarantees that it is seeking. Given that the terms of the planning permission are being complied with and there does not appear to be any published information to support the view that structural damage may be caused, KCC cannot require Hanson to cease blasting (without creating a liability for significant compensation). Having made Hanson aware of the above concerns, it must decide whether it is prepared to continue blasting and face potential legal claims from residents or others if it is subsequently established that blasting has caused any damage.

Experiences of blasting at other Quarries in Kent

22. Blasting has been used in the past at several other quarries in Kent, but is now only undertaken at Hermitage Quarry, Barming, by Gallaghers. This is the only other operational ragstone quarry in Kent. Blasting was previously used at the former ragstone quarries at Offham Quarry and Allington Quarry and to break up an ironstone layer in the sand quarry at Aylesford.

23. Complaints about the effects of blasting at Hermitage Quarry have been received from Parish Councils, local residents and others. As at Blaise Farm Quarry, monitoring at Hermitage Quarry has consistently demonstrated that the vibration limits on the relevant planning permissions are being met. This has not stopped complaints nor satisfied all residents that blasting is not adversely affecting properties. It is worth noting that recent planning applications at Hermitage Quarry (including an extension) have given rise to significant concerns being expressed by local residents and demands for additional and more comprehensive monitoring. Although KCC has commissioned Babtie to undertake occasional independent monitoring in the vicinity of Hermitage Quarry, it has resisted recent calls for multiple and ongoing measurements at local properties. This approach has been adopted on the basis that it is unnecessary and since available measurements clearly indicate that the vibration limits are being met. The commissioning of independent monitoring can also have significant resource implications for KCC / Planning Applications Unit.

Experiences of other Mineral Planning Authorities (MPAs)

24. In addition to employing Babtie to undertake vibration monitoring at the KSS building and the office building at Comp Lane, Offham, and act as a check on the monitoring undertaken by Hanson, KCC Planning Applications Unit has also obtained information from a number of MPAs that are required to address blasting at mineral sites.[2] The

[2] 8 of the 15 consulted responded.

main findings were:-

- KCC has a very similar approach to planning controls over blasting as other MPAs (i.e. a vibration limit of 6mm/s ppv for 95% of the time is imposed with a maximum of 12mm/s and related effects such as air overpressure being minimised through an appropriate scheme of blasting). This accords with Government Guidance in MPG14. Some MPAs use slightly different limits.
- A number of MPAs impose specific additional limits on air overpressure. Where used, these are expressed as a 120dB limit at noise sensitive properties (e.g. housing).
- No other MPAs still impose limits on MIC. MIC is left to the operator as part of the blast design process and is effectively controlled by the ppv limit.
- All operators are required to undertake blast monitoring and provide the results to the MPA. Generally, these are accepted as being accurate by MPAs although they cannot be regarded as independent and are not always accepted by the local community.
- All MPAs receive complaints about blasting and these are not always related to the highest recorded ppv.
- Most MPAs undertake (or commission) independent monitoring following complaints until it is established that permitted limits are being met. Some MPAs are able to rely on Environmental Health Units, some undertake the monitoring themselves and others employ consultants.
- If, following appropriate monitoring by the operator and the MPA, it is established that vibration limits are being met, this needs to be communicated to the complainant and local community (at which point this becomes a civil matter between the operator and complainant).
- Effective communication between MPA, operator and the local community is essential.
- Few MPAs have a formal procedure for dealing with blasting complaints (although this would ensure a consistent approach to dealing with complaints).
- Other MPAs did not believe that it was possible for vibration associated with blasting at Blaise Farm Quarry to be causing damage to the KSS building or any property in Offham (due to the vibration measured and distance between the blast and receptors).

25. The findings suggest a number of actions for KCC:-

- The development of a formal procedure (or Code) for dealing with complaints relating to blasting.
- Agreement on those circumstances in which KCC will arrange independent monitoring (and the extent of such monitoring).
- Better communication with the local community on blasting related issues (possibly including the production of an appropriate leaflet explaining the issues).
- Encourage Hanson to be more proactive in communicating with the local community.
- Require Hanson to review the current Blast Monitoring Scheme in consultation with KCC.
- Investigate the use of specific limits on air overpressure (e.g. an appropriate dB limit at specified locations).

Discussions between KCC and Hanson

26. KCC and Hanson have been involved in discussions about blasting and its associated effects throughout the period during which blasting has taken place at Blaise Farm Quarry. The above complaints and findings have provided an additional focus for these discussions. A number of the actions arising from these discussions are also referred to above (e.g. survey at the office building at Comp Lane, Offham).

27. A number of other actions are underway. Hanson is in the process of reviewing the blast monitoring arrangements at the request of KCC in accordance with the approved Blast Monitoring Scheme. This is likely to result in more than one monitoring location being used for each blast. This would be more consistent with the approved scheme at Hermitage Quarry (Gallaghers) and would enable the vibration effects to be assessed in more than one direction at any one time. Any alterations to the existing scheme would need to be approved by KCC. Hanson has also agreed to find appropriate literature on blasting effects that could be shared with the local community to explain its impacts and possible implications.

28. Hanson has also indicated that it will apply to vary condition 18 of planning permission TM/88/1002 to remove the current 10kg MIC. This would be consistent with Hermitage Quarry and operations in other MPA areas. As part of that application, Hanson may also seek to vary the current hours of blasting. It is anticipated that Hanson may seek to extend the Monday to Friday period during which blasting can take place by 1 hour (i.e. from 1200 to 1500 hours) and have no blasting at any other times (i.e. none in the early morning or on Saturdays).

Recommendation

29. That Members note the contents of this report and agree the following:-

(1) The Head of Planning Applications inform Offham Parish Council that:

(a) KCC is unable to give it the assurances or guarantees that it is seeking about potential damage to properties;
(b) Given that the terms of planning permission TM/88/1002 are being complied with and there does not appear to be any published information to support the view that structural damage may be caused, KCC cannot require Hanson to cease blasting;
(c) It is for Hanson to decide whether it is prepared to continue blasting and face potential legal claims from residents or others if it is subsequently established that blasting has caused any damage;
(d) Following a recommendation from the Environment Agency that the issue of potential effects of vibration on the integrity of the landfill liner at Offham Landfill Site be investigated, KCC has written to both Hanson and WRG and asked that they investigate the matter;
(e) Issues relating to (d) above, are for WRG to address as part of its ongoing responsibilities under its waste management licence. The waste management licence requires ongoing monitoring of landfill gas which would identify any changes to the current situation. The waste management licence also requires adequate controls be maintained at the site to prevent gas migration and these could be altered if necessary; and
(f) Issues relating to blasting at Blaise Farm Quarry should be addressed through the Blaise Farm Quarry Liaison Committee.

(2) The Head of Planning Applications inform West Malling Parish Council, Kings Hill Parish Council and Mereworth Parish Council of his response to Offham Parish Council.

(3) The Head of Planning Applications take a report to the Regulation Committee setting out:-

(a) a formal procedure for dealing with complaints relating to blasting (to include those circumstances in which KCC will arrange independent monitoring and the extent of such monitoring); and
(b) appropriate information on blasting related issues that can be provided to the local community (possibly a leaflet explaining the issues).

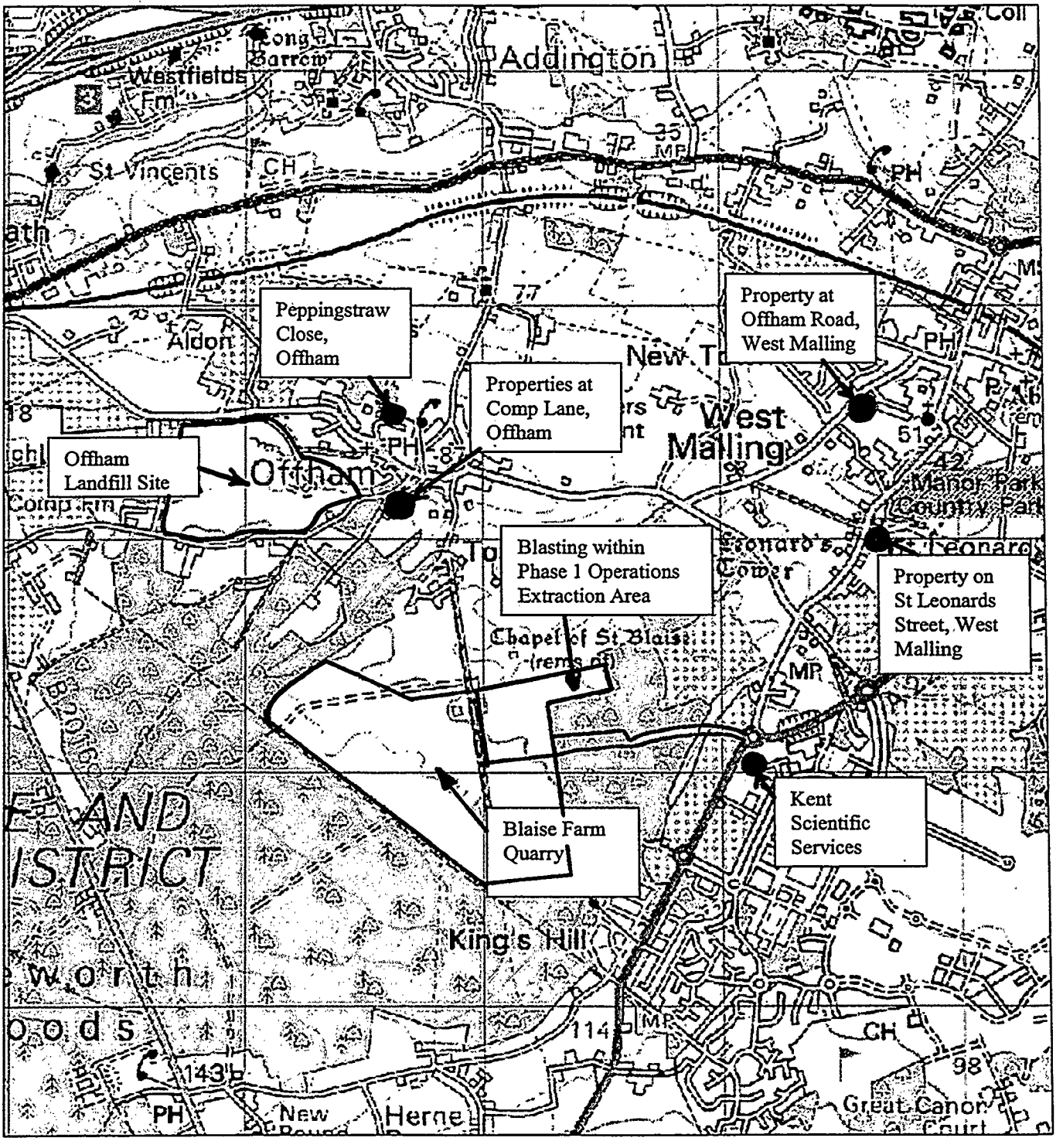
(4) The Head of Planning Applications:

(a) encourage Hanson to fully investigate the ongoing complaint relating to the office building at Comp Lane, Offham;
(b) encourage Hanson to investigate further complaints of alleged damage to property where these could reasonably be related to blasting;
(c) encourage Hanson to be more proactive in communicating with the local community on blasting and related issues; and
(d) require Hanson to review the current Blast Monitoring Scheme in consultation with KCC and submit a revised scheme for approval.

(5) The Head of Planning Applications investigate the use of specific limits on air overpressure (e.g. an appropriate dB limit at specified locations) for possible inclusion as part of any future permissions or approvals for blasting.

Case Officer: Jim Wooldridge	Tel. no. 01622 221060

Location of blasting within Blaise Farm Quarry and properties from which complaints received



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Appendix 2:

- **Appendix 2:** Report to the KCC's Regulation Committee on 25 May 2004 (with revised recommendation and draft documents titled "Guidance on Blasting at Ragstone Quarries in Kent" and "Procedure for dealing with complaints relating to blasting at Quarries in Kent").

Revised Recommendation:

20. That Members note the content of this report and agree that the Head of Planning Applications:-

(1) make the documents titled "Guidance on Blasting at Ragstone Quarries in Kent" and "Procedure for dealing with complaints relating to blasting at Quarries in Kent", attached respectively at Appendices 2 and 3, publicly available in an appropriate format; and

(2) keep all the blasting related issues under review (including air overpressure) and update or supplement the documents as necessary.

(3) undertake independent blast monitoring for Hermitage Quarry without the requirement for the $5mms^{-1}$ trigger to be reached on up to 4 occasions each year until such a time as provision is made for independent blast monitoring as part of any Blast Monitoring Scheme for Hermitage Quarry (Gallaghers), and add a footnote to paragraph 14 of the "Procedure for dealing with complaints relating to blasting at Quarries in Kent" to this effect.

Item 3

Procedure for dealing with complaints relating to blasting and guidance on blasting at ragstone quarries in Kent

A report by Head of Planning Applications to the Regulation Committee on 25 May 2004.

Summary: Update for Members on progress with addressing the Regulation Committee Member Panel resolution dated 7 January 2004 including proposed procedure for dealing with complaints relating to blasting and guidance on blasting at ragstone quarries in Kent.

Recommendation: That Members note the report and agree that Head of Planning Applications make the Procedure and Guidance publicly available, keep all the blasting related issues under review (including air overpressure) and update or supplement the Procedure and Guidance as necessary.

Local Members: Various — Unrestricted

Background:

1. Members will recall that a report on the consideration of complaints relating to blasting at Blaise Farm Quarry, Offham (Hanson Aggregates) was presented to a Regulation Committee Member Panel on 7 January 2004. The Panel resolved that the contents of the report be noted and the following be agree, and that:

   (a) the Head of Planning Applications Unit inform Offham Parish Council that:

   (i) KCC is unable to give it the assurances or guarantees that it is seeking about potential damage to properties;
   (ii) given that the terms of planning permission TM/88/1002 are being complied with and that there does not appear to be any published information to support the view that structural damage may be caused, KCC cannot require Hanson to cease blasting;
   (iii) it is for Hanson to decide whether it is prepared to continue blasting and face potential legal claims from residents or others if it is subsequently established that blasting has caused any damage;
   (iv) following a recommendation from the Environment Agency that the issue of potential effects of vibration on the integrity of the landfill liner at Offham Landfill Site be investigated, KCC has written to both Hanson and Waste Recycling Group (WRG) to ask that they investigate the matter;
   (v) issues relating to (iv) above, are for WRG to address as part of its ongoing responsibilities under its waste management licence. The waste management licence requires ongoing monitoring of landfill gas which would identify any changes to the current situation. The waste management licence also requires adequate controls to be maintained at the site in order to prevent gas migration, and that these could be altered if necessary; and
   (vi) issues relating to blasting at Blaise Farm Quarry should be addressed through the Blaise Farm Quarry Liaison Committee;

(b) the Head of Planning Applications Unit inform West Malling Parish Council, Kings Hill Parish Council and Mereworth Parish Council of his response to Offham Parish Council;

(c) the Head of Planning Applications take a report to the Regulation Committee setting out:-

(i) a formal procedure for dealing with complaints relating to blasting (to include those circumstances in which KCC may arrange independent monitoring and the extent of such monitoring); and
(ii) appropriate information on blasting-related issues that can be provided to the local community (possibly a leaflet explaining the issues);

(d) the Head of Planning Applications:

(i) encourage Hanson to fully investigate the ongoing complaint relating to the office building at Comp Lane, Offham;
(ii) encourage Hanson to investigate further complaints of alleged damage to property where these could reasonably be related to blasting;
(iii) encourage Hanson to be more proactive in communicating with the local community on blasting and related issues; and
(iv) require Hanson to review the current Blast Monitoring Scheme in consultation with KCC and submit a revised scheme for approval; and

(e) the Head of Planning Applications investigate the use of specific limits on air overpressure (e.g. an appropriate dB limit at specified locations) for possible inclusion as part of any future permissions or approvals for blasting.

The Purpose of this Report:

2. This report updates the Regulation Committee on progress with the above issues generally and specifically sets out a proposed Procedure for dealing with complaints and Guidance that could be used to inform the local community.

Resolution Items (a), (b), (d) and (e):

3. The Head of Planning Applications wrote to all four relevant Parish Councils informing them of the outcome of the Regulation Committee Member Panel in accordance with resolution items (a) and (b) and to Hanson in respect of resolution item (d) on 7 January 2004.

4. The main reason for reporting to the Regulation Committee Member Panel on 7 January 2004, rather than awaiting the Regulation Committee meeting on 27 January 2004, was to establish KCC's formal position on the various blasting related issues prior to the next Blaise Farm Quarry Liaison Meeting. The Liaison Meeting was held on 22 January 2004. Members may also be aware that the blasting issue has been reported in the media (including on BBC television). The fact that KCC had a formal position on the various matters proved helpful.

5. Since being informed of the outcome of the Regulation Committee Member Panel, Hanson have continued to investigate the ongoing complaint relating to the office building at Comp Lane, Offham. However, the matter has not yet been resolved to the

satisfaction of the property owner as the investigations have proved inconclusive as to the precise cause of the damage. Hanson have also indicated a willingness to investigate further complaints as and when these may arise and are currently in the process of discussing related issues with a number of people living very near to the quarry. Hanson have also proved more willing to communicate with the local community by agreeing to increase the frequency of the Blaise Farm Quarry Liaison Meetings, by circulating a note on the environmental effects of blasting to its attendees and by inviting the local community to a presentation on blasting at Offham Village Hall and a blast at the quarry.

6. Together with KCC officers, Hanson have reviewed the Blast Monitoring Scheme. This was circulated to Tonbridge and Malling Borough Council, all 4 local Parish Councils and the 3 KCC local members in draft for comment. The revised scheme now includes for additional monitoring to be undertaken by Hanson for each blast (4 locations as opposed to 1), better notification to the local community on the timing of future blasts, the provision of blast monitoring results to all members of the Blaise Farm Quarry Liaison Group (in tabular form) and measures to facilitate independent monitoring by KCC (see paragraph 9 below). Hanson have also agreed to reimburse KCC for independent blast monitoring on up to 4 occasions each year. These measures accord with the aims of resolution items (d)(i)-(iv). A copy of the revised Blast Monitoring Scheme dated April 2004 is attached at Appendix 1 for information.

7. The most recent Blaise Farm Quarry Liaison Meeting was held on 22 April 2004. Hanson circulated schedules of blast monitoring results and complaints. The discussion was better informed and less confrontational than previously and the entire range of quarry related issues was discussed. It was agreed that the next liaison meeting would take place on 16 September 2004.

8. Consideration of the air overpressure levels obtained with the vibration monitoring results undertaken so far at the site, indicates that these have been consistently lower than the 120dB imposed by some other Mineral Planning Authorities (as referred to in paragraph 24 of the 7 January 2004 Regulation Committee Member Panel Report). On this basis, and since Government Guidance indicates that air overpressure should be controlled via blast schemes and blast design rather than by imposing specific limits, it is considered that no further action should be taken in respect of resolution item (e). However, if future blast monitoring results for either Blaise Farm Quarry or Hermitage Quarry suggest that air overpressure levels experienced are unacceptable or should be specifically controlled for some reason, further consideration should be given to this issue.

Resolution Item (c):

9. Notwithstanding the fact that Hanson have circulated a note on the environmental effects of blasting to attendees of the Blaise Farm Quarry Liaison Meeting, a draft Procedure for dealing with complaints relating to blasting and Guidance on blasting related issues were prepared and circulated to those District and Parish Councils and KCC local members affected by blasting at Blaise Farm Quarry and Hermitage Quarry.[1] These were also sent to Hanson, Gallaghers and Babtie for comment.

[1] Tonbridge & Malling BC; Maidstone BC; Offham PC; West Malling PC; Kings Hill PC; Mereworth PC; Ditton PC; Aylesford PC; Barming PC; East Malling & Larkfield PC; & KCC Cllrs Mrs S Hohler; Mrs V Dagger; Mrs T Dean; Mr D Daley; Mr G Rowe; Mrs P Stockell.

Procedure for dealing with complaints relating to blasting and guidance on blasting at ragstone quarries in Kent

10. Written responses have been received from Tonbridge & Malling Borough Council, Maidstone Borough Council, Offham Parish Council, Hanson, Gallaghers, Babtie and Councillor Hohler. A verbal response was received from Councillor Rowe.

11. Rather than present different versions of the same draft documents, this report sets out the proposed revised documents that have been informed by the consultee responses. Documents titled "Guidance on Blasting at Ragstone Quarries in Kent" and "Procedure for dealing with complaints relating to blasting at Quarries in Kent" are attached respectively at Appendices 2 and 3.

Guidance on Blasting at Ragstone Quarries in Kent

12. "Guidance on Blasting at Ragstone Quarries in Kent" (Appendix 2) explains the main issues relating to blasting in Kent, why blasting is undertaken and the main steps taken to control unacceptable side-effects. It is aimed at members of the public and others who may be interested and is not intended to be a technical paper.

Procedure for dealing with complaints relating to blasting at Quarries in Kent

13. "Procedure for dealing with complaints relating to blasting at Quarries in Kent" (Appendix 3) sets out how the County Council will respond to complaints relating to blasting at quarries in Kent, the process for investigating and recording these complaints and the timescales involved. It also provides appropriate contacts for making complaints or seeking further information about blasting. The Procedure needs to be read alongside the Planning Enforcement Protocol.

14. Whilst the majority of the changes suggested by consultees have been accommodated in the proposed Procedure, one particular issue has not. Both Maidstone and Tonbridge and Malling Borough Councils (Environmental Health) have expressed the opinion that the 'trigger' for initiating independent monitoring by KCC beyond that provided for under the terms of the relevant blast monitoring scheme should be lower than the $5mms^{-1}$ proposed in paragraphs 14 and 15 of the Procedure. They have expressed a preference for a $3mms^{-1}$ 'trigger', but indicated that they would accept $4mms^{-1}$.

15. The reason put forward by the Borough Councils for a lower 'trigger' is that they consider that the $5mms^{-1}$ 'trigger' lacks stringency and would only lead to independent monitoring where compliance is in doubt rather than after the point where the objective is reassurance. Maidstone Borough Council has also stated that if vibration is reaching $5mms^{-1}$ there is a reasonable risk that $6mms^{-1}$ is being exceeded (more than 1:20).

16. Notwithstanding the two Borough Council views, KCC's blast consultant (Babtie) has advised that the $5mms^{-1}$ 'trigger' is entirely appropriate for KCC's purposes and provides a further factor of safety. This is on the basis that the $6mms^{-1}$ figure on the planning permission is for 95% of the time and that the permitted absolute maximum vibration is $12mms^{-1}$. Effectively, the 95% figure allows for vibration to exceed $6mms^{-1}$ for 5% of the time (i.e. 1:20). Further, since the $6mms^{-1}$ figure provides a conservative assessment of the 95% confidence level (i.e. if the $6mms^{-1}$ limit is exceeded in less than 1:20 blasts) there is a minimal chance that the $12mms^{-1}$ limit would be breached.

Procedure for dealing with complaints relating to blasting and guidance on blasting at ragstone quarries in Kent

17. Whilst public perceptions and concerns are important issues which need to be taken seriously, KCC as Mineral Planning Authority has set certain limits on the relevant planning permissions at both Blaise Farm and Hermitage Quarries and is responsible for ensuring compliance with these. The existing blast monitoring arrangements for both Quarries already provide a significant amount of data which, together with the proposed arrangements, would provide satisfactory information on compliance. The results of blast monitoring is often shared with Parish Council representatives through the respective Quarry Liaison Groups to provide reassurance to the local communities. It should also be noted that paragraphs 14 and 15 of the Procedure would provide flexibility for further monitoring by KCC irrespective of whatever ground vibration levels are recorded.

18. Irrespective of whatever criteria is used by KCC for its own independent monitoring, it is still open to both Maidstone and Tonbridge and Malling Borough Councils to undertake whatever monitoring or other investigations they consider appropriate under separate (non-planning) legislation if they receive any complaints relating to blasting or if they simply wish to investigate the issue further.

19. I do not propose to alter the 'trigger' for initiating independent monitoring by KCC set out in paragraphs 14 and 15 of the Procedure.

Recommendation:

20. That Members note the content of this report and agree that the Head of Planning Applications:-

    (1) make the documents titled "Guidance on Blasting at Ragstone Quarries in Kent" and "Procedure for dealing with complaints relating to blasting at Quarries in Kent", attached respectively at Appendices 2 and 3, publicly available in an appropriate format; and

    (2) keep all the blasting related issues under review (including air overpressure) and update or supplement the documents as necessary.

Case Officer: Jim Wooldridge	Tel. no. 01622 221060

BLAISE FARM QUARRY, OFFHAM
HANSON AGGREGATES
BLAST MONITORING SCHEME
APRIL 2004

1.0 Methodology to be adopted

1.1 In order to demonstrate compliance with the blast vibration criteria monitoring shall be undertaken close to nearest adjacent sensitive locations which shall include:

Kentfield House
Ashtree Farm
The Crest
No. 25 Mosquito Close
Remains of the Chapel of St Blaise

1.2 Prior to each blast vibration levels will be predicted for all of the designated locations.

1.3 Subject to landowner / occupier permission, monitors will be located at the four monitoring locations with the highest predictions. If permission is not forthcoming for any location, the monitor shall be located at a suitable location as near to the sensitive location as possible.

1.4 The monitoring will be undertaken in accordance with the principles of British Standard 7385: Part 1, 1990.

1.5 The prevailing weather conditions shall be noted at the time of the blast.

1.6 The results to be submitted to the Mineral Planning Authority will comprise a copy of the printout from the monitoring instrumentation which should include at least peak particle velocities in three mutually perpendicular planes together with the date and time. The records should also indicate the monitoring location, weather conditions and blast design details including an accurate plan showing the position of the blast in relation to the monitoring location, total explosive charge weight and maximum instantaneous explosive charge weight.

1.7 The results to be retained on site by Hanson Aggregates will be tabulated together with date, time, monitoring location and blast design details including an accurate plan showing the position of the blast in relation to the monitoring location, total explosive charge weight and maximum instantaneous explosive charge weight.

1.8 The results will be submitted to the Mineral Planning Authority within 24 hours of each blast. Hanson Aggregates will also provide the results of blast monitoring in tabular form with the Agenda for each Blaise Farm Quarry Liaison Meeting to all invitees.

1.9 Hanson Aggregates will notify the Mineral Planning Authority of its intention to blast at least 72 hours before the anticipated time of the blast and confirm the expected time of the blast no less than 4 hours in advance. This information will be sent by E-mail and telephone to the Mineral Planning Authority and will be copied by Hanson Aggregates (E-mail only) to the Mineral Planning Authority's vibration consultant, Tonbridge and Malling Environmental Health and Housing Service and one representative of each relevant Parish Council[1] provided an appropriate E-mail address is provided.

2.0 Instrumentation

2.1 Seismographic instrumentation recording ground vibration in terms of peak particle velocity in three mutually perpendicular planes of measurement and air overpressure in dB (linear) shall be used.

2.2 All instrumentation will have valid certificates of calibration.

3.0 Locations and Frequency of Monitoring

3.1 The monitoring location shall be determined as described in 1.2 and 1.3 above.

3.2 At twelve monthly periods at either the request of the Mineral Planning Authority or Hanson Aggregates the monitoring procedures will be reviewed.

4.0 Complaints Procedure

4.1 Should complaints be made to the quarry management relating to blast vibration, then these shall be immediately investigated and, where necessary, measures to control the effects shall be implemented. The results of the investigations shall be submitted to the Mineral Planning Authority within 72 hours of their completion.

4.2 All such complaints, and any action undertaken as a result of the investigation, shall be recorded in a log held at the quarry office which will be available for inspection by the Mineral Planning Authority. Hanson Aggregates will provide a list of complaints in tabular form with the Agenda for each Blaise Farm Quarry Liaison Meeting to all invitees.

5.0 Independent Monitoring

5.1 Hanson Aggregates shall, on request, pay the reasonable expenses incurred by the Mineral Planning Authority in undertaking independent monitoring at no more than one location on up to 4 occasions each year. The precise location(s) will be determined by the Mineral Planing Authority in consultation with Tonbridge and Malling Borough Council Environmental Health Unit and the relevant Parish Councils. The Mineral Planning Authority will not inform

[1] Offham Parish Council, West Malling Parish Council, Kings Hill Parish Council and Mereworth Parish Council.

Hanson Aggregates in advance of this monitoring, but will provide the results to Hanson Aggregates, Tonbridge and Malling Borough Council Environmental Health Unit and the relevant Parish Council(s). The independent monitoring will include measurements for ground vibration and air overpressure as detailed in paragraph 2.1 above and all equipment used will conform with paragraph 2.2.

GUIDANCE ON BLASTING AT RAGSTONE QUARRIES IN KENT

The Purpose of this Guidance Note

1. This Guidance Note has been prepared to explain the main issues relating to ragstone blasting in Kent to members of the public and others who may be interested.

Background

2. Kent County Council, as the Minerals Planning Authority (MPA), has responsibility for preparing a Minerals Development Framework and dealing with planning applications for mineral development. In some circumstances, mineral working may necessitate blasting. When dealing with applications for mineral working involving blasting the County Council will normally impose conditions that require blasting to be undertaken in a particular way and within specified limits. The County Council is then responsible for ensuring that any planning conditions are adhered to and for taking action to secure compliance should this be necessary and expedient. Where breaches of planning control are identified, the County Council has discretionary power to take enforcement action where this is in the public interest.

3. District / Borough Councils also have a role in the regulation of blasting at quarries. The relevant Environmental Health Department is responsible for ensuring that blasting operations give rise to no statutory nuisance. Although there is no legal definition of a statutory nuisance it is often taken to be something that would be prejudicial to people's health or unreasonably interfere with a person's legitimate use and enjoyment of land. In respect of blasting, it is unlikely that a claim of statutory nuisance could be substantiated where the terms of the relevant planning permission are being met. Kent County Council and the relevant District / Borough Councils work together to minimise any adverse effects of blasting.

4. In the past, blasting has been used at several ragstone quarries in Kent, but is currently only undertaken at Blaise Farm Quarry, Offham (Hanson Aggregates Ltd) and at Hermitage Quarry, Barming (Gallagher Aggregates Ltd). These are the only operational ragstone quarries in Kent. Blasting was previously used at the former ragstone quarries at Offham and Allington. It was also used to break up an ironstone layer in the sand quarry at Aylesford. Blaise Farm Quarry and Hermitage Quarry are both within Tonbridge and Malling, but the latter is close to Maidstone.

Why Blast?

5. Blasting is required to loosen the in-situ rock to facilitate its removal by mechanical excavators and dump trucks before it is crushed and processed prior to sale. Due to the costs involved in blasting, it is only undertaken where geological conditions make alternative extraction techniques either impossible or uneconomic, or where these alternatives would have worse environmental effects.

The Blasting Process

6. The use of explosives in quarries is controlled by The Quarries Regulations 1999. The blasting process requires a number of holes to be drilled behind the quarry face at a calculated distance and interval, as part of the blast design process, to release a particular amount of mineral. The holes are then charged with a predetermined

amount of explosive (charge weight) and a detonator and capped with inert material (stemmed). Each blast is carried out under strict guidelines.

Environmental Effects of Blasting

7. Blasting can have impacts which can be detected beyond the site boundary. These are Ground Vibration; Air Overpressure (i.e. airborne vibration); Noise; Dust and Flyrock. The main effects experienced in Kent are Ground Vibration and Air Overpressure. Due to the naturally fissured nature of ragstone and the smaller amounts of explosive used, the effects of blasting in Kent are generally less than those experienced elsewhere in the Country. All figures quoted in the following sections are sourced from Government Guidance and "The Environmental Effects of Production Blasting from Surface Mineral Workings" (DETR, 1998).

Ground Vibration

8. When blasting occurs, shock waves are generated causing very localised ground distortion and cracking immediately adjacent to the quarry face. Outside this immediate area, stress waves cause the ground to exhibit elastic properties whereby rock particles are returned to their original position as the stress waves pass. Ground vibration is always generated by blasting and will radiate away from the site, attenuating as distance increases. It is in the operator's interest to reduce both ground and airborne vibration from blasting to the minimum possible as this substantially increases the efficiency of the process.

9. Much investigation has been undertaken into the damage potential of blast induced ground vibration, resulting in an adopted method of monitoring. This allows for results to be obtained in terms of the peak particle velocity (ppv), which is measured in mms^{-1} (i.e. millimetres per second). Government Guidance, in the form of Mineral Planning Guidance Notes, recommend a ground vibration limit for hard rock blasting of between $6mms^{-1}$ and $12mms^{-1}$ at the nearest residential property as being acceptable.

10. Ground vibration can be affected by certain blast design parameters:-

- The maximum instantaneous charge (or MIC), which is the amount of explosives fired at the same moment in time.
- The number of individual small explosions within the blast and the time gap between them (known as the delay, in milliseconds).
- The overall dimensions of the blast, which comprises the distance between each hole (the spacing), the distance between the hole and the quarry face (the burden) and the depth of the hole.
- The geology between the blast site and the vibration sensitive location. As this is outside the control of the operator a blast design must be used that takes account of any geological effects. This is achieved by the operator monitoring all blasts and modifying design appropriately.

11. Ground vibration at the nearest vibration sensitive properties associated with blasting at Blaise Farm Quarry and Hermitage Quarry are controlled by planning conditions. With the exception of specific additional restrictions relating to the remains of the Chapel of St. Blaise (for Blaise Farm Quarry) and Maidstone Hospital (for Hermitage Quarry), the permitted vibration limits at vibration sensitive properties are a peak particle velocity of $6mms^{-1}$ in 95% of all blasts when measured over any period of one month and a maximum peak particle velocity of $12mms^{-1}$ at any time.

Property Damage

12. Research work has been undertaken by various independent Authorities around the world into vibration levels that are likely to induce damage in properties, both cosmetic and structural. Cosmetic damage could include hairline cracks or the growth of existing cracks in plaster, drywall surfaces or mortar joints. Structural damage relates to actual damage to the structural elements of buildings. The United States Bureau of Mines has reviewed all relevant research and produced safe blasting vibration criteria for houses. These indicated that:-

- Values in excess of 50mms^{-1} are necessary to produce appreciable structural damage.
- The onset of cosmetic damage can be associated with levels of around 25mms^{-1}.

Independent research in the UK has indicated similar values. The limits adopted in Kent for blasting operations have been set well below these figures to allow a considerable factor of safety.

13. Normal domestic activities also produce vibration within buildings. Table 1 illustrates the vibration associated with domestic activities. Heat, moisture, settlement, occupational loads, pre-stressing forces, material creep and chemical changes all cause movement in buildings. These result in stress concentrations in structural elements. For example, daily changes in temperature and humidity can create stresses equivalent to vibration between 30 and 70mms^{-1}. British Standard BS 7385 "Evaluation and Measurement for Vibration in Buildings. Part 1: Guide for Measurement of Vibrations and Evaluation of Their Effects on Buildings" (1990) and "Part 2: Guide to Damage Levels from Groundborne Vibration" (1993) provide guidance on the effects of vibration on buildings.

Table 1: Vibration levels generated by everyday activities

Activity	Vibration Level
Walking, measured on a wooden floor	1.0 – 2.5 mms^{-1}
Door slam, measured on a wooden floor	2.0 – 5.0 mms^{-1}
Door slam, measured over a doorway	12 – 35 mms^{-1}
Footstamp, measured on wooden floor	5 – 50 mms^{-1}

Human Perception

14. Human perception levels are difficult to define precisely as they vary from person to person. The human body is very sensitive to vibration which can result in concern being expressed about levels well below the threshold of damage. A person will generally become aware of blast induced vibration at levels of around 1.5mms^{-1} and under some circumstances this can be as low as 0.5mms^{-1}, even though such vibration is routinely generated within any property and is entirely safe.

15. British Standard BS 6472: 1992 "Guide to Evaluation of Human Exposure to Vibration in Buildings (1Hz to 80Hz)" provides a guide to the evaluation of human exposure to vibration in buildings. It specifically mentions blasting vibration. It recommends a satisfactory magnitude of 8.5mms^{-1} at a 90% confidence level with an absolute limit of 12.7mms^{-1} for up to three occurrences per day at residential properties. For planning purposes the Government recommends limits lower than these.

Air Overpressure

16. Quarry blasts also generate a series of pressure waves in the air, known as air overpressure. This is similar to a series of gusts of wind condensed into a very short period of time. Air overpressure can make doors and windows rattle and give the impression that the whole house is shaking.

17. The effects of air overpressure are controlled through blast design and health and safety legislation. In accordance with Government Guidance, there are no specific limits imposed on air overpressure in Kent.

18. The maximum pressure in these airborne waves is known as the peak overpressure and is normally measured in decibels (dB). Air overpressure can be affected by meteorological conditions such as wind speed and direction, temperature, cloud cover and humidity. It can induce forces into buildings that can be compared to those generated by the wind. Table 2 compares the level of air overpressure with various strengths of wind.

Table 2: Comparison between wind speed and air overpressure equivalents

Wind Speed	Equivalent air overpressure
Constant wind of $5ms^{-1}$, Beaufort Scale 3, Gentle breeze	120 dB
Constant wind of $8ms^{-1}$, Beaufort Scale 4, Moderate breeze	130 dB
Constant wind of $20ms^{-1}$, Beaufort Scale 8, Gale	140 dB

Note that the decibel scale is logarithmic and that an increase of 10dB sounds twice as loud and exerts approximately 4 times the pressure. 130db is therefore 4 times stronger than 120db and 150db is 17.5 times stronger than 125dB. Wind speed is measured in metres per second (ms^{-1}).

Property Damage

19. Although it is possible that air overpressure could cause structural damage, those produced by routine blasting operations under normal atmospheric conditions are not likely to do so. Many air overpressure measurements undertaken over a wide range of conditions indicate that rarely do air overpressures exceed 125dB, and these levels are only recorded relatively close to the blast. Measurements for Blaise Farm Quarry and Hermitage Quarry are consistent with this.

20. The weakest parts of a structure that will be exposed to air overpressure are its windows; and so these are the most likely to suffer damage. Poorly mounted panes might be forced out of their frames while improperly mounted panes that are pre-stressed will be cracked and broken more easily. Air overpressure values of 150dB could be enough to crack badly mounted windows that are pre-stressed with most cracking at 170dB. Structural damage would not be expected at levels below 180dB.

Human Perception

21. Although structural damage is unlikely, air overpressure does play a most important role in the annoyance aspect of blasting. Relatively low levels can be sufficient to cause the rattling of loose ornaments or windows and hence give the impression of a significant ground vibration shaking the property.

22. Vibration levels as low as 0.5mms^{-1} can cause complaints when accompanied by such secondary noise effects. This is because the average person forms a judgement based largely on his or her perceptions, and is usually unaware of the important distinction between the characteristics of the motion alone and the sound effects that accompany it.

Noise, Dust and Flyrock

23. Environmental effects of noise associated with blasting may arise from the blast itself and from the secondary effects of air overpressure. The former would generally only be noticed infrequently and close to the quarry, whilst the latter could be experienced further away.

24. Environmental effects of dust and flyrock associated with blasting are not experienced outside the quarry. Due to the nature of blasting in Kent and the way the blasts are designed, these effects are generally limited to the area immediately surrounding the blast within the quarry.

Conclusion

25. This Guidance Note has shown why blasting is undertaken at ragstone quarries in Kent and the main steps taken to control unacceptable side-effects.

Complaints about Blasting in Kent

26. If you have any complaints about blasting in Kent please see "Procedure for dealing with complaints relating to blasting at Quarries in Kent" (KCC, 2004).

Procedure for dealing with complaints relating to blasting at Quarries in Kent
Planning Applications Group, Kent County Council

Purpose of the Procedure

1. The aim of this Procedure is to set out how the County Council will respond to complaints relating to blasting at quarries in Kent, the process for investigating and recording these complaints and the timescales involved. Although the procedure needs to be read alongside the Planning Enforcement Protocol, it is recognised that blasting gives rise to specific issues and concerns that may not be readily dealt with in that context.

The Role of the County Council in Minerals Planning and Blasting

2. As the Minerals Planning Authority (MPA), the County Council has responsibility for preparing a Minerals Development Framework (previously a Minerals Local Plan) and dealing with planning applications for mineral development (which may necessitate blasting). When dealing with applications for mineral working involving blasting the MPA will normally impose conditions that require blasting to be undertaken in a particular way and within specified limits. The MPA is then responsible for ensuring that any planning conditions are adhered to and for taking action to secure compliance should this be necessary and expedient. Where breaches of planning control are identified, the Authority has discretionary power to take enforcement action, where this is in the public interest.

3. District / Borough Council Environmental Health Units also have a role in seeking to ensure that blasting does not give rise to statutory nuisance. Although there is no legal definition of a statutory nuisance it is often taken to be something that would be prejudicial to people's health or unreasonably interfere with a person's legitimate use and enjoyment of land. In respect of blasting, it is unlikely that a claim of statutory nuisance could be substantiated where the terms of the relevant planning permission are being met.

Planning Controls over Blasting at Quarries in Kent

4. In the past, blasting has been used at several quarries in Kent, but is currently only undertaken at Blaise Farm Quarry, Offham (Hanson Aggregates Ltd) and at Hermitage Quarry, Barming (Gallagher Aggregates Ltd). These are the only operational ragstone quarries in Kent. Blasting was previously used at the former ragstone quarries at Offham and Allington and to break up an ironstone layer in the sand quarry at Aylesford.

5. The planning controls in place relating to blasting for Blaise Farm Quarry and Hermitage Quarry are slightly different. The consistent elements, which accord with Government Guidance in Minerals Planning Guidance: Environment Act 1995: Review of Mineral Planning Permissions (MPG14, September 1995), can be summarised as follows:-

- Ground vibration as a result of blasting operations shall not exceed a peak particle velocity of 6mms^{-1} in 95% of all blasts when measured over any period of one month as measured at any vibration sensitive location;
- Ground vibration as a result of blasting operations shall not exceed a *(maximum)* peak particle velocity of 12mms^{-1} as measured at any vibration sensitive location;
- Effects such as air overpressure are minimised through appropriate schemes of blasting which have been approved by the MPA;

- The site operator is required to monitor the vibration associated with every blast and provide the results to the MPA on a regular basis;
- The site operator is required to notify the MPA in advance of each blast.

6. Each site also has specific additional restrictions relating to specified vibration sensitive locations (e.g. Maidstone Hospital for Hermitage Quarry and the remains of the Chapel of St. Blaise for Blaise Farm Quarry). Blaise Farm Quarry is also restricted in terms of the maximum instantaneous charge (MIC) that can be used (i.e. the maximum amount of explosive detonated at any one precise time). The MIC limit is currently 10kg. There is no such restriction at Hermitage Quarry. It should be noted that a smaller MIC does not necessarily give rise to less vibration and visa versa.

Procedure for Investigating Blasting Complaints

7. This procedure will be used when dealing with complaints relating to blasting brought to the attention of the County Council.

8. Complaints relating to blasting will be logged onto the Group's complaints system by the individual taking the telephone call or accepting the letter or E-mail. The information should include:-

- the date and time that the complaint was received;
- the nature of the complaint (including the date and time of the alleged incident);
- the name, address and phone number of the complainant.

9. Details of the complaint will passed to either the planning officer responsible for monitoring the site in question or to the Group's Minerals Technical Officer who is responsible for providing detailed advice on blasting and related issues (i.e. the "responsible officer"). The responsible officer will check that the complaints system has the above details and add:-

- subsequent follow up details.

10. The responsible officer will check whether the complaint relates to a date on which blasting actually took place at the relevant site.

11. If the times do not coincide, the complainant will be informed immediately of this fact. The responsible officer will discuss other possible causes for the complaint with the complainant where possible.

12. If the times coincide, the responsible officer will check the relevant site records (normally the relevant vibration monitoring information that is required to be submitted for every blast by the operator on a regular basis) to ensure compliance with the terms of the planning permission. The responsible officer will also discuss the complaint with the site operator to establish whether there may be any causes or unusual circumstances that may have contributed to the complaint.

13. If the monitoring results demonstrate compliance, the complainant will be informed accordingly. Alternatively, if the terms of the permission are not being met, the complainant will be informed of the action that the responsible officer intends to take. Initially, this will always involve discussions between the MPA and the relevant mineral operator designed to ensure future compliance. Ultimately, it could lead to formal action if this were deemed appropriate when considered against the KCC Planning Enforcement Protocol. The complainant will be advised of the outcome of the discussions with the site operator.

14. With the exception of any independent monitoring[1] agreed as part of the relevant Blast Monitoring Scheme for the site, the MPA will normally only consider undertaking independent monitoring when the vibration monitoring information provided by the operator indicates that the vibration levels are only just below those permitted (i.e. within 1mms^{-1} of the relevant permitted level) or if the MPA has specific reason to believe that the results may be inaccurate.

15. Thus, independent monitoring outside that provided for under the terms of any Blast Monitoring Scheme would normally only be undertaken to check results following a complaint when the minerals operator has recorded a peak particle velocity of greater than:-

- 5mms^{-1} for any blast as measured at any vibration sensitive location.[2]

16. Independent monitoring may also be undertaken if the responsible officer has reasonable cause to believe that any other specific limits imposed at the site are being breached.

17. Where independent monitoring is to be initiated, the responsible officer will inform the complainant of this fact and the subsequent results of that monitoring accordingly.

Member Involvement

18. The relevant KCC Local Member(s) will be notified whenever independent monitoring is to be undertaken and will be appraised of the results of the monitoring. If the monitoring indicates that the permitted levels are being breached, the Local Member will be kept informed of any action.

Monitoring

19. Monitoring of vibration associated with blasting is undertaken by the site operator for every blast and the results submitted to the MPA on a regular basis. Independent monitoring may also be provided for under the terms of the Blast Monitoring Scheme.

20. Local Liaison Groups are in place for both Blaise Farm Quarry and Hermitage Quarry. Any unresolved complaints shall be raised at the relevant Liaison Group with the intention of swiftly resolving the issue to the satisfaction of the County Planning Authority.

Contacts

21. Complaints relating to blasting at mineral sites should in the first instance be made to the relevant mineral operator. Both mineral operators encourage this as it enables them to try to address concerns as soon as possible. Alternatively, complaints may be made to Kent County Council (as MPA) or the relevant District / Borough Council Environmental Health Unit (on the grounds of alleged statutory nuisance).

<u>Complaints direct to the relevant mineral operator:</u>

22. Blaise Farm Quarry (Hanson Aggregates Ltd): The Quarry Manager (01732) 529574

23. Hermitage Quarry (Gallagher Aggregates Ltd): The Quarry Manager (01622) 723911

[1] Independent monitoring is that monitoring which may be undertaken by or on behalf of the MPA.

[2] Although 6mms^{-1} is the vibration limit for 95% of blasts measured over any one month and 12mms^{-1} is the overall maximum limit for any blast, the frequency of blasting means that (in reality) 6mms^{-1} is the effective limit.

Complaints to KCC:

24. Complaints about both sites should either be made by telephone as soon as possible after the incident to one of the following numbers:-

    Planning Applications Group Administration Team (01622) 221062;
    Planning Applications Group Minerals Technical Officer (01622) 221064.

    or, in writing addressed to: Bill Murphy (Head of Planning Applications), Strategic Planning, Kent County Council, Invicta House, County Hall, Maidstone, Kent ME14 1XX
    Telephone: (01622) 221057; Fax: (01622) 221072
    E-mail: planning.applications@kent.gov.uk

Complaints to the relevant Environmental Health Unit:

25. Blaise Farm Quarry: Tonbridge & Malling Borough Council Environmental Health and Housing Service (01732) 876184

26. Hermitage Quarry: Either Tonbridge & Malling Borough Council Environmental Health Unit (01732) 844522 or Maidstone Borough Council Environmental Health Unit (01622) 602000 (depending on which District you live in)

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Appendix 3:

- **Appendix 3:** "Guidance on blasting at Ragstone Quarries in Kent" (KCC, May 2004).

GUIDANCE ON BLASTING AT RAGSTONE QUARRIES IN KENT
MAY 2004

The Purpose of this Guidance Note

1. This Guidance Note has been prepared to explain the main issues relating to ragstone blasting in Kent to members of the public and others who may be interested.

Background

2. Kent County Council, as the Minerals Planning Authority (MPA), has responsibility for preparing a Minerals Development Framework and dealing with planning applications for mineral development. In some circumstances, mineral working may necessitate blasting. When dealing with applications for mineral working involving blasting the County Council will normally impose conditions that require blasting to be undertaken in a particular way and within specified limits. The County Council is then responsible for ensuring that any planning conditions are adhered to and for taking action to secure compliance should this be necessary and expedient. Where breaches of planning control are identified, the County Council has discretionary power to take enforcement action where this is in the public interest.

3. District / Borough Councils also have a role in the regulation of blasting at quarries. The relevant Environmental Health Department is responsible for ensuring that blasting operations give rise to no statutory nuisance. Although there is no legal definition of a statutory nuisance it is often taken to be something that would be prejudicial to people's health or unreasonably interfere with a person's legitimate use and enjoyment of land. In respect of blasting, it is unlikely that a claim of statutory nuisance could be substantiated where the terms of the relevant planning permission are being met. Kent County Council and the relevant District / Borough Councils work together to minimise any adverse effects of blasting.

4. In the past, blasting has been used at several ragstone quarries in Kent, but is currently only undertaken at Blaise Farm Quarry, Offham (Hanson Aggregates Ltd) and at Hermitage Quarry, Barming (Gallagher Aggregates Ltd). These are the only operational ragstone quarries in Kent. Blasting was previously used at the former ragstone quarries at Offham and Allington. It was also used to break up an ironstone layer in the sand quarry at Aylesford. Blaise Farm Quarry and Hermitage Quarry are both within Tonbridge and Malling, but the latter is close to Maidstone.

Why Blast?

5. Blasting is required to loosen the in-situ rock to facilitate its removal by mechanical excavators and dump trucks before it is crushed and processed prior to sale. Due to the costs involved in blasting, it is only undertaken where geological conditions make alternative extraction techniques either impossible or uneconomic, or where these alternatives would have worse environmental effects.

The Blasting Process

6. The use of explosives in quarries is controlled by The Quarries Regulations 1999. The blasting process requires a number of holes to be drilled behind the quarry face at a calculated distance and interval, as part of the blast design process, to release a particular amount of mineral. The holes are then charged with a predetermined

amount of explosive (charge weight) and a detonator and capped with inert material (stemmed). Each blast is carried out under strict guidelines.

Environmental Effects of Blasting

7. Blasting can have impacts which can be detected beyond the site boundary. These are Ground Vibration; Air Overpressure (i.e. airborne vibration); Noise; Dust and Flyrock. The main effects experienced in Kent are Ground Vibration and Air Overpressure. Due to the naturally fissured nature of ragstone and the smaller amounts of explosive used, the effects of blasting in Kent are generally less than those experienced elsewhere in the Country. All figures quoted in the following sections are sourced from Government Guidance and "The Environmental Effects of Production Blasting from Surface Mineral Workings" (DETR, 1998).

Ground Vibration

8. When blasting occurs, shock waves are generated causing very localised ground distortion and cracking immediately adjacent to the quarry face. Outside this immediate area, stress waves cause the ground to exhibit elastic properties whereby rock particles are returned to their original position as the stress waves pass. Ground vibration is always generated by blasting and will radiate away from the site, attenuating as distance increases. It is in the operator's interest to reduce both ground and airborne vibration from blasting to the minimum possible as this substantially increases the efficiency of the process.

9. Much investigation has been undertaken into the damage potential of blast induced ground vibration, resulting in an adopted method of monitoring. This allows for results to be obtained in terms of the peak particle velocity (ppv), which is measured in mms^{-1} (i.e. millimetres per second). Government Guidance, in the form of Mineral Planning Guidance Notes, recommend a ground vibration limit for hard rock blasting of between $6mms^{-1}$ and $12mms^{-1}$ at the nearest residential property as being acceptable.

10. Ground vibration can be affected by certain blast design parameters:-

- The maximum instantaneous charge (or MIC), which is the amount of explosives fired at the same moment in time.
- The number of individual small explosions within the blast and the time gap between them (known as the delay, in milliseconds).
- The overall dimensions of the blast, which comprises the distance between each hole (the spacing), the distance between the hole and the quarry face (the burden) and the depth of the hole.
- The geology between the blast site and the vibration sensitive location. As this is outside the control of the operator a blast design must be used that takes account of any geological effects. This is achieved by the operator monitoring all blasts and modifying design appropriately.

11. Ground vibration at the nearest vibration sensitive properties associated with blasting at Blaise Farm Quarry and Hermitage Quarry are controlled by planning conditions. With the exception of specific additional restrictions relating to the remains of the Chapel of St. Blaise (for Blaise Farm Quarry) and Maidstone Hospital (for Hermitage Quarry), the permitted vibration limits at vibration sensitive properties are a peak particle velocity of $6mms^{-1}$ in 95% of all blasts when measured over any period of one month and a maximum peak particle velocity of $12mms^{-1}$ at any time.

Property Damage

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Independent research in the UK has indicated similar values. The limits adopted in Kent for blasting operations have been set well below these figures to allow a considerable factor of safety.

13. Normal domestic activities also produce vibration within buildings. Table 1 illustrates the vibration associated with domestic activities. Heat, moisture, settlement, occupational loads, pre-stressing forces, material creep and chemical changes all cause movement in buildings. These result in stress concentrations in structural elements. For example, daily changes in temperature and humidity can create stresses equivalent to vibration between 30 and 70mms^{-1}. British Standard BS 7385 "Evaluation and Measurement for Vibration in Buildings. Part 1: Guide for Measurement of Vibrations and Evaluation of Their Effects on Buildings" (1990) and "Part 2: Guide to Damage Levels from Groundborne Vibration" (1993) provide guidance on the effects of vibration on buildings.

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Human Perception

14. Human perception levels are difficult to define precisely as they vary from person to person. The human body is very sensitive to vibration which can result in concern being expressed about levels well below the threshold of damage. A person will generally become aware of blast induced vibration at levels of around 1.5mms^{-1} and under some circumstances this can be as low as 0.5mms^{-1}, even though such vibration is routinely generated within any property and is entirely safe.

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Air Overpressure

16. Quarry blasts also generate a series of pressure waves in the air, known as air overpressure. This is similar to a series of gusts of wind condensed into a very short period of time. Air overpressure can make doors and windows rattle and give the impression that the whole house is shaking.

17. The effects of air overpressure are controlled through blast design and health and safety legislation. In accordance with Government Guidance, there are no specific limits imposed on air overpressure in Kent.

18. The maximum pressure in these airborne waves is known as the peak overpressure and is normally measured in decibels (dB). Air overpressure can be affected by meteorological conditions such as wind speed and direction, temperature, cloud cover and humidity. It can induce forces into buildings that can be compared to those generated by the wind. Table 2 compares the level of air overpressure with various strengths of wind.

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Property Damage

19. Although it is possible that air overpressure could cause structural damage, those produced by routine blasting operations under normal atmospheric conditions are not likely to do so. Many air overpressure measurements undertaken over a wide range of conditions indicate that rarely do air overpressures exceed 125dB, and these levels are only recorded relatively close to the blast. Measurements for Blaise Farm Quarry and Hermitage Quarry are consistent with this.

20. The weakest parts of a structure that will be exposed to air overpressure are its windows, and so these are the most likely to suffer damage. Poorly mounted panes might be forced out of their frames while improperly mounted panes that are pre-stressed will be cracked and broken more easily. Air overpressure values of 150dB could be enough to crack badly mounted windows that are pre-stressed with most cracking at 170dB. Structural damage would not be expected at levels below 180dB.

Human Perception

21. Although structural damage is unlikely, air overpressure does play a most important role in the annoyance aspect of blasting. Relatively low levels can be sufficient to cause the rattling of loose ornaments or windows and hence give the impression of a significant ground vibration shaking the property.

22. Vibration levels as low as 0.5mms^{-1} can cause complaints when accompanied by such secondary noise effects. This is because the average person forms a judgement based largely on his or her perceptions, and is usually unaware of the important distinction between the characteristics of the motion alone and the sound effects that accompany it.

Noise, Dust and Flyrock

23. Environmental effects of noise associated with blasting may arise from the blast itself and from the secondary effects of air overpressure. The former would generally only be noticed infrequently and close to the quarry, whilst the latter could be experienced further away.

24. Environmental effects of dust and flyrock associated with blasting are not experienced outside the quarry. Due to the nature of blasting in Kent and the way the blasts are designed, these effects are generally limited to the area immediately surrounding the blast within the quarry.

Conclusion

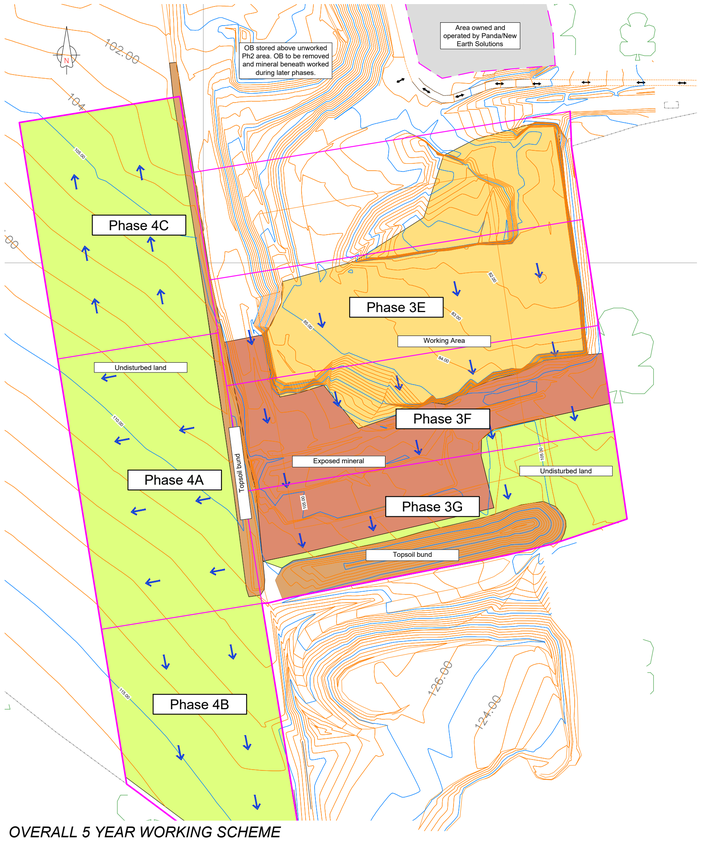
25. This Guidance Note has shown why blasting is undertaken at ragstone quarries in Kent and the main steps taken to control unacceptable side-effects.

Complaints about Blasting in Kent

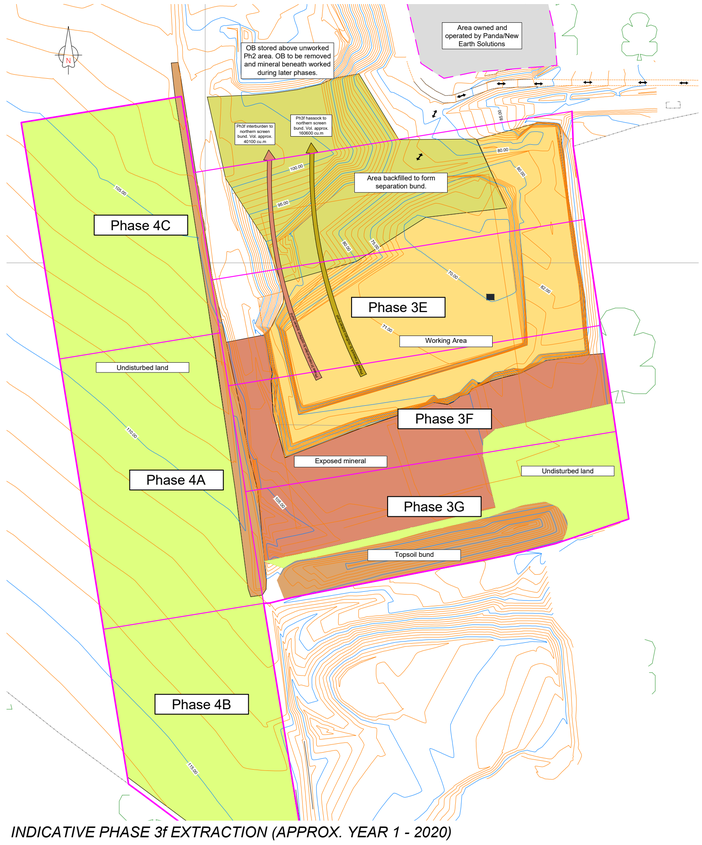
26. If you have any complaints about blasting in Kent please see “Procedure for dealing with complaints relating to blasting at Quarries in Kent” (KCC, May 2004).

Appendix 4:

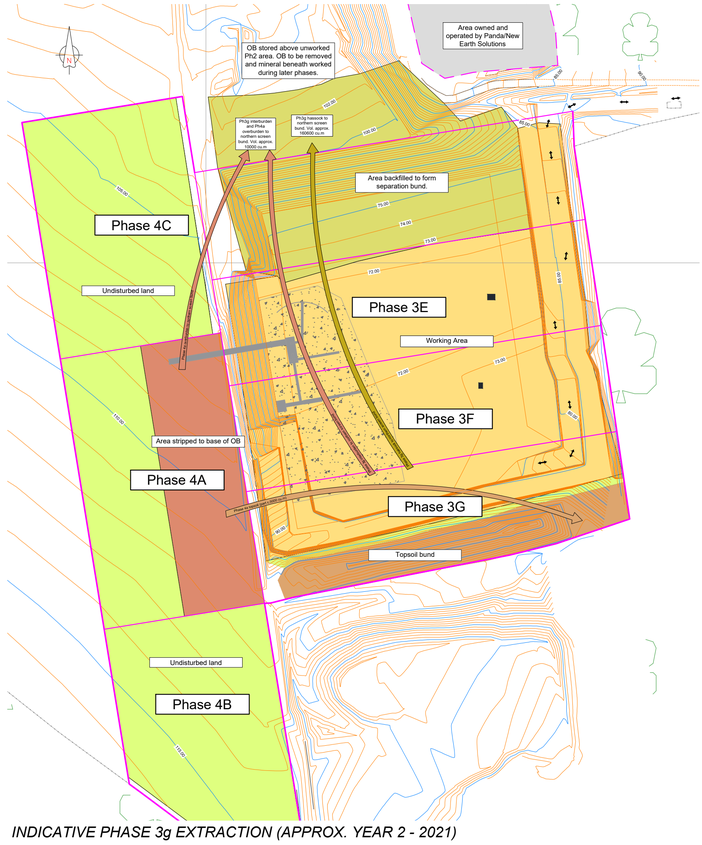
- **Appendix 4:**
  - Drawing GAL-BQ-20-08 Rev C titled "4th 5 Year Working and Progressive Restoration Scheme: Phases 3f to 4c (2020 - 2025)" (dated 27 May 2020)
  - Drawing GAL-BQ-20-06 Rev F titled "Production Plant Proposal Blaise Quarry" (dated 4 June 2020)
  - Drawing GAL-BQ-20-05 Rev E titled "Production Plant Proposal Blaise Quarry" (dated 4 June 2020)
  - Drawing GAL-BQ-20-01 Rev D titled "Illustration of Replacement Plant Layout" (dated 19 February 2020)
  - Drawing GAL-BQ-20-02 Rev B titled "Foundation Layout Blaise Processing Plant" (dated 26 May 2020)
  - Drawing GAL-BQ-20-07 Rev A titled "Proposed Junction Layout" (dated 28 May 2020)



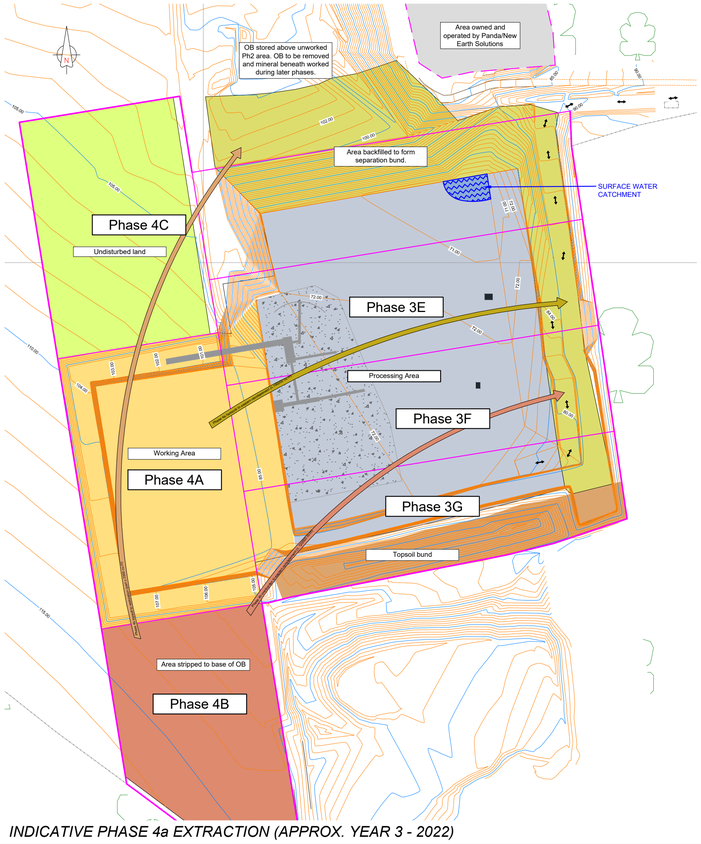
OVERALL 5 YEAR WORKING SCHEME



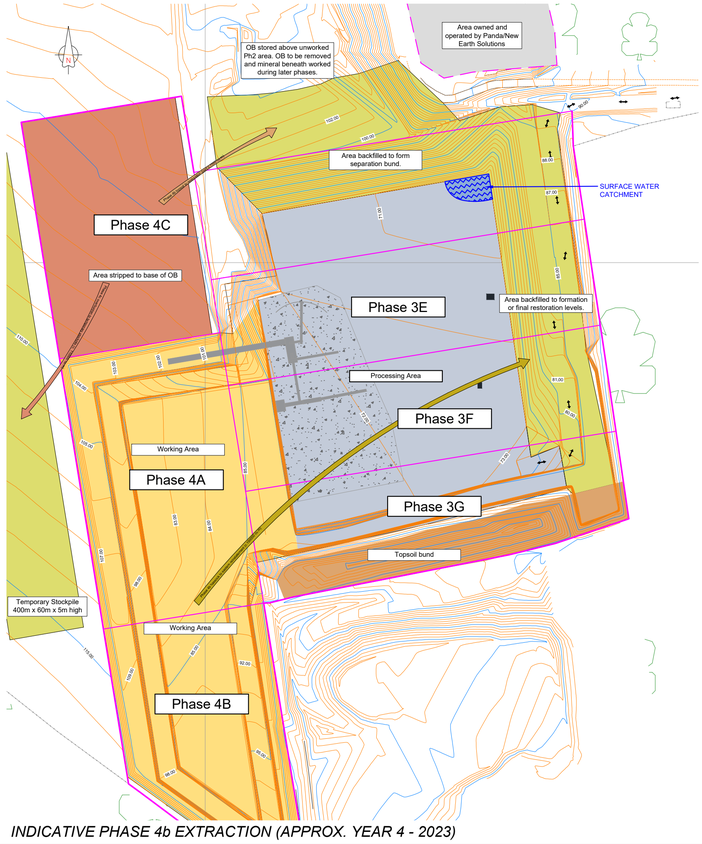
INDICATIVE PHASE 3f EXTRACTION (APPROX. YEAR 1 - 2020)



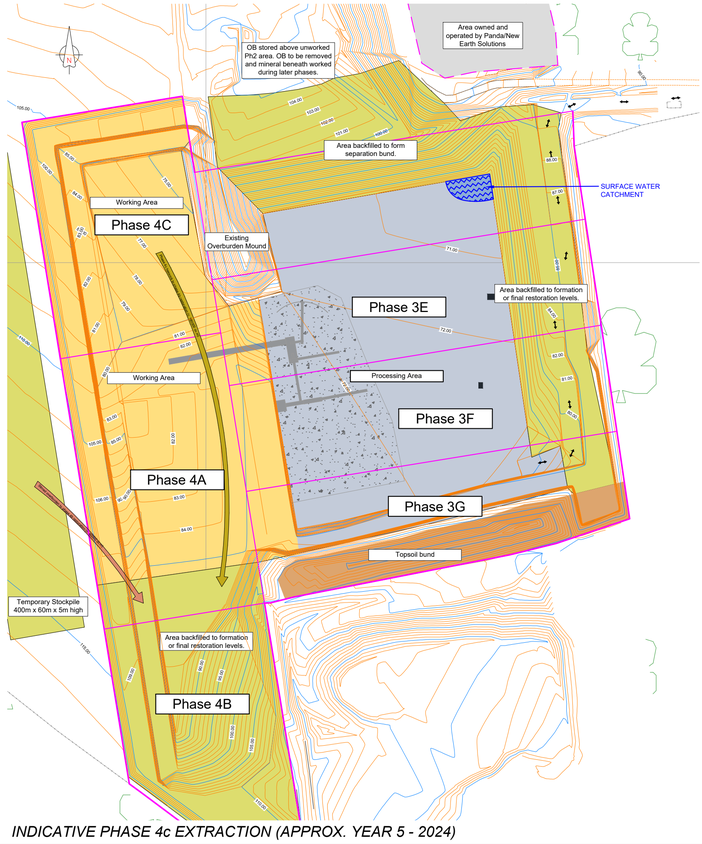
INDICATIVE PHASE 3g EXTRACTION (APPROX. YEAR 2 - 2021)



INDICATIVE PHASE 4a EXTRACTION (APPROX. YEAR 3 - 2022)



INDICATIVE PHASE 4b EXTRACTION (APPROX. YEAR 4 - 2023)



INDICATIVE PHASE 4c EXTRACTION (APPROX. YEAR 5 - 2024)

KEY

- WORKING PHASE AREAS
- AREA OWNED AND OPERATED BY PANDA/NEW EARTH SOLUTIONS
- EXPOSED MINERAL (AREA STRIPPED OF SOIL AND OVERBURDEN)
- CONTOURS (@1m intervals)
- MINERAL EXTRACTION PROGRESSING
- AREA YET TO BE STRIPPED OF SOIL
- AREA BACKCAST WITH HASSOCK AND/OR OVERBURDEN TO FORMATION LEVELS. STRIPPED TOPSOIL PLACE TO FINAL RESTORATION LEVELS IF POSSIBLE
- PROCESSING, STORAGE AND LOADING OF PRODUCT
- MOVEMENT OF TOPSOIL
- MOVEMENT OF OVERBURDEN OR INTERBURDEN
- MOVEMENT OF HASSOCK
- DIRECTION OF WORKING
- ACCESS ROUTE TO BASE OF QUARRY

NOTE:
Topsoil stripped from phase 4a will be stored at the end to the existing southern topsoil bund in phase 3g. Mineral from this area will be released on completion of the remainder of the quarry.

Surplus hassock produced in the extraction and processing of material in phase 4c will be temporarily stockpiled alongside phases 4c and 4a then used to complete the upfilling of phases 4b and 4c to restoration level.

All figures shown are indicative and should be used for this purpose only.

For detailed layout of the proposed new processing plant please refer to the following drawings;

- GAL-BQ-20-01 Illustration of Replacement Plant Layout.
- GAL-BQ-20-02 Foundation Layout Blaise Processing Plant.
- GAL-BQ-20-05 Blaise Production Plant Layout.
- GAL-BQ-20-06 Blaise Production Plant Layout.

Rev	Date	Description	By
C	27.05.2020	Contours corrected	MJW
B	15.05.2020	Processing area added.	MJW
A	14.05.2020	Notes revised, plant added.	MJW

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Title:-

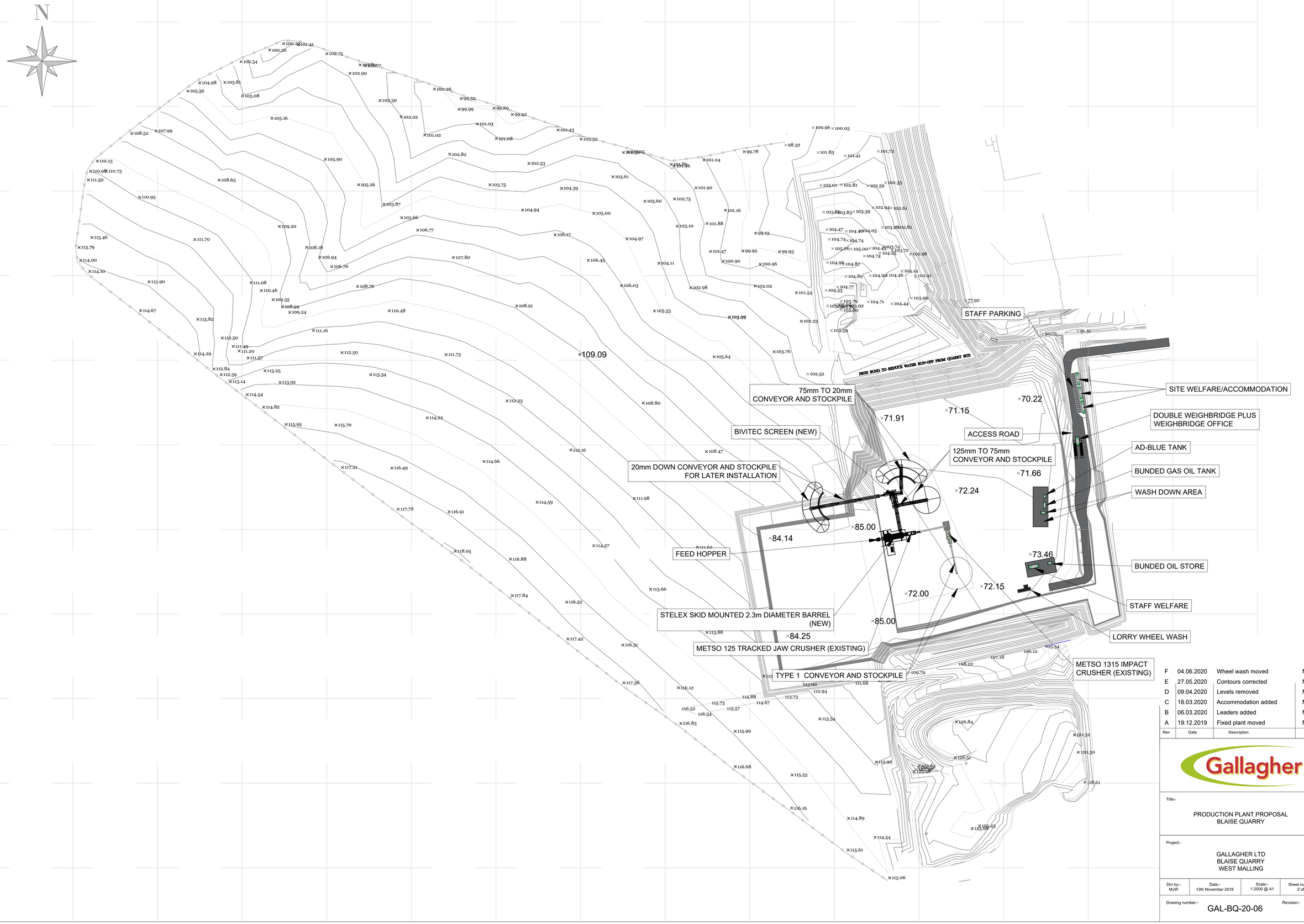
4th 5 YEAR WORKING AND PROGRESSIVE RESTORATION SCHEME:
PHASES 3f to 4c (2020 - 2025)

Project:-

GALLAGHER LTD
BLAISE QUARRY
WEST MALLING

Drn by:-	Date:-	Scale:-	Sheet number:-
MJW	7th May 2020	1:2500 @ A1	1 of 1

Drawing number:- GAL-BQ-20-08 Revision:- C



Rev	Date	Description	By
F	04.06.2020	Wheel wash moved	MJW
E	27.05.2020	Contours corrected	MJW
D	09.04.2020	Levels removed	MJW
C	18.03.2020	Accommodation added	MJW
B	06.03.2020	Leaders added	MJW
A	19.12.2019	Fixed plant moved	MJW

Gallagher

Title:-

PRODUCTION PLANT PROPOSAL
BLAISE QUARRY

Project:-

GALLAGHER LTD
BLAISE QUARRY
WEST MALLING

Drn by:-	Date:-	Scale:-	Sheet number:-
MJW	13th November 2019	1:2000 @ A1	2 of 2

Drawing number:- GAL-BQ-20-06

Revision:- F

Grids are displayed at 100m intervals in both cardinal directions.

SITE WELFARE/ACCOMMODATION

ACCESS ROAD

DOUBLE WEIGHBRIDGE PLUS WEIGHBRIDGE OFFICE

STAFF PARKING

BUNDED OIL STORE

AD-BLUE TANK

BUNDED GAS OIL TANK

WASH DOWN AREA

STAFF WELFARE

LORRY WHEEL WASH

HIGH BUND TO REDUCE WATER RUN-OFF FROM QUARRY SITE

METSO 1315 IMPACT CRUSHER (EXISTING)

125mm TO 75mm CONVEYOR AND STOCKPILE

TYPE 1 CONVEYOR AND STOCKPILE

METSO 125 TRACKED JAW CRUSHER (EXISTING)

STELEX SKID MOUNTED 2.3m DIAMETER BARREL (NEW)

FEED HOPPER

75mm TO 20mm CONVEYOR AND STOCKPILE

BIVITEC SCREEN (NEW)

20mm DOWN CONVEYOR AND STOCKPILE FOR LATER INSTALLATION

Rev	Date	Description	By
E	04.06.2020	Wheel wash moved	MJW
D	27.05.2020	Contours corrected	MJW
C	18.03.2020	Accommodation added	MJW
B	19.02.2020	Plant updated	MJW
A	19.12.2019	Plant relocated	MJW

Gallagher

Title:-

PRODUCTION PLANT PROPOSAL
BLAISE QUARRY

Project:-

GALLAGHER LTD
BLAISE QUARRY
WEST MALLING

Drn by:-	Date:-	Scale:-	Sheet number:-
MJW	13th November 2019	1:500 @ A0	1 of 2

Drawing number:- GAL-BQ-20-05 Revision:- E

Gallagher

ILLUSTRATION OF REPLACEMENT PLANT LAYOUT

BLAISE FARM QUARRY
WEST MALLING

DRN BY: MW DATE: 19th February 2020

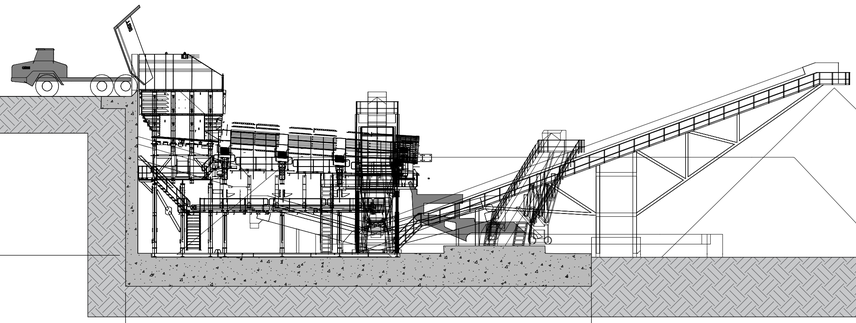
GAL-BQ-20-01 Rev D

EXISTING GROUND LEVEL

85.00m AOD

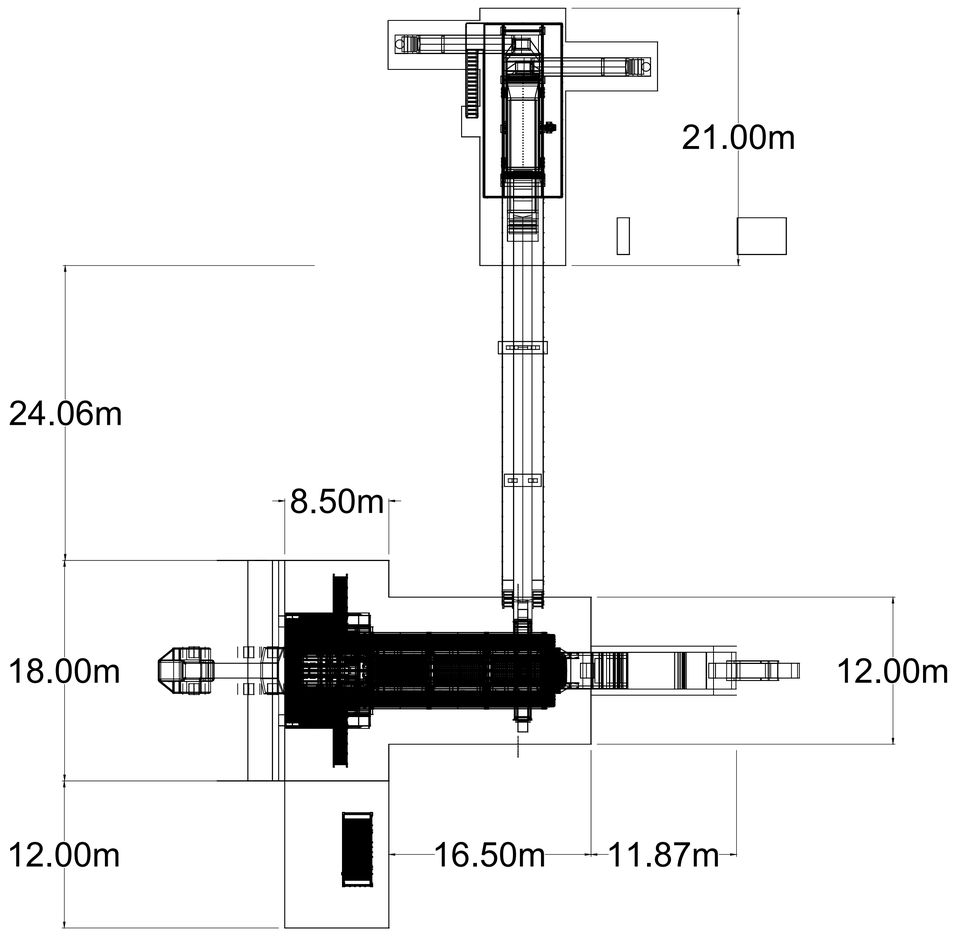
13.00m

72.00m AOD



38.02m

ELEVATION



PLAN

CDM REGULATIONS 2015 RESIDUAL HAZARDS

RESIDUAL HAZARDS IDENTIFIED

CONSTRUCTION

1. NO SIGNIFICANT OTHER HAZARDS BEYOND THOSE KNOWN TO AN EXPERIENCED CONTRACTOR.

FUTURE DEMOLITION

A. NO SIGNIFICANT OTHER HAZARDS BEYOND THOSE KNOWN TO AN EXPERIENCED CONTRACTOR.

THIS REGISTER IS A NON-EXHAUSTIVE LIST OF RESIDUAL HAZARDS RELATING TO THE WORKS SHOWN ON THIS DRAWING THAT HAVE BEEN IDENTIFIED DURING THE DESIGN STAGE.

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A CONTRACTOR WITH THE APPROPRIATE SKILLS, KNOWLEDGE & EXPERIENCE, AND IF THEY ARE AN ORGANISATION, THE ORGANISATIONAL CAPABILITY NECESSARY TO FULFILL THE ROLE.

Rev	Date	Description	By
B	26.05.2020	Labels & dims revised	MJW
A	15.05.2020	Labels removed	MJW

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Title:-

FOUNDATION LAYOUT
BLAISE PROCESSING PLANT

Project:-

BLAISE FARM QUARRY
WEST MALLING

Drn by:-	Date:-	Scale:-	Sheet number:-
MJW	3rd March 2020	1:250 @ A1	1 of 1

Drawing number:- GAL-BQ-20-02 Revision:- B

POSITION OF CURRENT WEIGHBRIDGE

Manhole
CL:=91.472
Depth:=

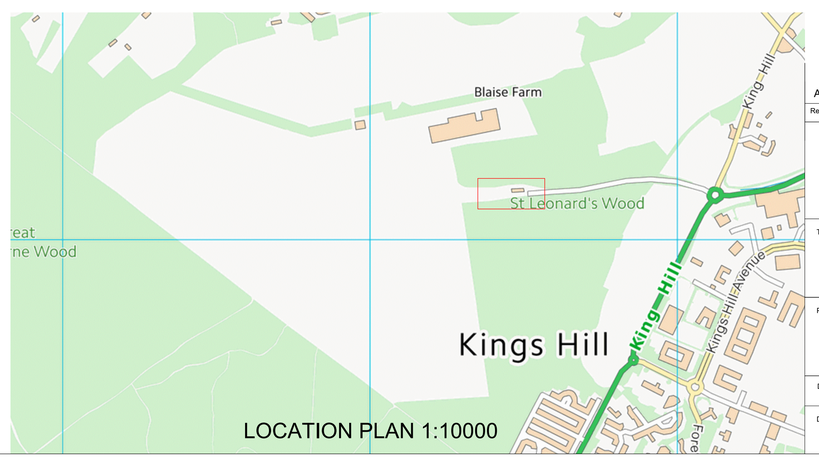
X 91.75

TO PANDA

TO GALLAGHER - BLAISE QUARRY

Manhole
CL:=91.939
Depth:=

GIVE WAY



LOCATION PLAN 1:10000

Rev	Date	Description	By
A	28.05.2020	Signs added	MJW

Gallagher

Title:-

PROPOSED JUNCTION LAYOUT

Project:-

GALLAGHER LTD
BLAISE QUARRY
WEST MALLING

Drn by:-	Date:-	Scale:-	Sheet number:-
MJW	20th March 2020	1:500 @ A1	1 of 1

Drawing number:- GAL-BQ-20-07

Revision:- A

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Appendix 5:

- **Appendix 5:** Proposed “Schedule of Blasting” (dated June 2020).

Compliance with Condition 17
of
Planning Permission TM/88/1002

Schedule of Blasting

Blaise Farm Quarry, Offham, Kings Hill, West Malling, Kent, ME19 4PN

June 2020

Contents

1. INTRODUCTION

1.1 This document follows a review of the "Scheme of Blasting" for Blaise Farm Quarry prepared by Vibrock Limited and approved by Kent County Council (KCC) in 2002[1]. Updates have been made to take account of current legislation, policies, British Standards and good practice guidance. The vibration prediction levels have been revised in relation to the next phase of working and restoration and are set out in Table 1 of this document. The vibration prediction level locations are shown on Drawing GAL-062-BM01.

2. PLANNING CONDITIONS RELATING TO BLASTING

2.1 Blaise Farm Quarry operates under planning permission reference TM/88/1002 dated 28th 1994 (as amended by TM/98/460). Attached to the permission are two conditions relating to blasting.

Condition 17

2.2 Prior to any blasting operations being carried out a schedule of blasting shall be submitted to and approved by the County Planning Authority, the scheme shall include measures for minimising nuisance/danger from ground vibrations, air over-pressure, noise, fly rock and dust; and thereafter implemented as approved unless otherwise approved in writing by the County Planning Authority.

Condition 18

2.3 No blasting shall take place except between the hours of 0900-0930 Monday to Saturday, 1200-1400 Monday to Friday and 12-1300 on Saturday; no explosive charge weight per delay of any one blast in excess of 10kg weight shall be used and there shall be no secondary blasting; unless otherwise approved in writing by the County Planning Authority."

2.4 Details for a 'Scheme of Blasting'[2] to comply with Condition 17 were approved in October 2002 (Application Reference (Ref) TM/88/1002/R17 & R18) together with a 'Blast Monitoring Scheme'. This permission was also subject to conditions which defined ground vibration limits for Phase 1 Operations and notification procedures prior to blasting.

2.5 KCC approved minor amendments to the "Blast Monitoring Scheme" in 2004. These related to the shortening of timeframes within which monitoring results would be made available and any complaints dealt with, as well as the introduction of procedures for independent monitoring.

3. EFFECTS OF BLASTING

3.1 When an explosive detonates within a borehole stress waves are generated causing very localised distortion and cracking. Outside of this immediate vicinity, however, permanent deformation does not occur. Instead. the rapidly decaying stress waves cause the ground to exhibit elastic properties whereby the rock particles are returned to their original position following the passage of the stress waves.

3.2 Such vibration is always generated even by the most designed and executed of blasts and will radiate away from the blast site attenuating as distance increases.With experience and knowledge of the factors which influence ground vibration, such as blast type and design, site geology and

[1] Blaise Farm Quarry - Compliance with Planning Conditions to Permit Blasting for Hanson Aggregates, 28 March 2002
[2] Vibrock Report dated 28 March 2002

receiving structure, the magnitude and significance of these waves can be accurately predicted at any location.

3.3 Vibration is also generated within the atmosphere where the term air overpressure is used to encompass both its audible and sub-audible frequency components. Again, experience and knowledge of blast type and design enables prediction of levels and an assessment of their significance. In this instance, predictions can be made less certain by the fact that air overpressure levels may be significantly influenced by atmospheric conditions. Hence the most effective method of control is its minimisation at source.

3,4 It is important to realise that for any given blast it is very much in the operator's interest to always reduce vibration, both ground and airborne to the minimum possible in that this substantially increases the efficiency and hence economy of lasting operations.

4. SCHEDULE OF BLASTING

Legal Requirements

4.1 Legislation which may apply to quarries in addition to the Quarries Regulations 1999 (2013 version) includes, but may not be limited to:-

a) Explosives Act 1875
b) Control of Explosives Regulations 1991
c) The Manufacture and Storage of Explosives Regulations 2005
d) Packaging of Explosives for Carriage Regulations 1991
e) Carriage of dangerous Goods by Road Regulations 1996
f) Transport of dangerous Goods (Safety Advisor) Regulations 1999
g) FEEM EU Directive 2014/28/EU

4.2 Compliance at all times with the requirements of Quarries Regulations 1999 (2013 version) regulation 25, and specifically: -

a) Regulation 25 (1)(b) - appoint one or more competent individuals as Explosive Supervisor
b) Regulation 25 (1)(c) - ensure that at no time there is more than one person acting as Explosive Supervisor
c) Regulation 25 (2)(b) - produce an adequate written specification for each blast
d) Regulation 25 (2)(c) - give a copy of the above specification to the quarry Manager
e) Regulation 25 (3)(a) - all operations involving explosives are carried out by an authorised competent person
f) Regulation 25 (4)(a) - safety equipment and facilities are provided
g) Regulation 25 (4)(b) - any vehicle used in shotfiring operations is clearly marked
h) Regulation 25 (5) - all shotfiring operations are carried out in accordance with the shotfiring rules and the relevant blasting specification.

Shot Firing Rules

4.3 See Appendix 1 of this document – *Gallagher Aggregates Shot Firing Rules and Procedures*

Miss-Fire Procedure

4.4 See Appendix 1 of this document – *Gallagher Aggregates Shot Firing Rules and Procedures*

Blast Specification

4.5 See Appendix 1 of this document – *Gallagher Aggregates Shot Firing Rules and Procedures*

Good Practice Measures

4.6 The following good practice measures will minimise ground vibrations, air over pressures, noise, flyrock and dust:-

1. Ensure that the blast area is accurately surveyed and recorded according to the Quarries Regulations 1999 (2013 version).
2. Ensure that the correct design relationship exists between burden, spacing and hole diameter.
3. When bench blasting choose the correct burden with due regard to the local geological conditions and the face survey information.
4. Drill accurately in order to maintain the intended blast pattern.
5. Keep sub drilling to the minimum required
6. Ensure there is an adequate dust collection system for each drill rig.
7. Accurately survey and record each completed borehole as required by the Quarries Regulations 1999 (2013 version)
8. Make maximum use of existing free faces
9. If necessary, revise the blast design following an inspection of the survey data and face condition
10. Ensure that the maximum amount of explosive on any one delay interval (the MIC) is optimised by considering reducing the instantaneous charge by in-hole delay techniques, reducing the bench height, reducing the borehole diameter or a combination of these factors.
11. Ensure that the optimum blast ratio is maintained in any changes of blast design
12. Ensure that the detonator delay sequence optimises the internal (dynamic) free faces developed during the detonation sequence, particularly in multiple row blasting and in corners.
13. Where practicable ensure that the direction of detonation is away from the nearest vibration sensitive location.
14. Have a due regard for any local weaknesses in the strata, including back break from any previous shot, clay joints, and fissured ground.
15. If loading explosives through fissured or broken ground, or through cavities of any kind, consider using pre-packaged explosive and/or check the rate of rise if explosive continually during loading.
16. Whenever possible the use of unconfined charges should be avoided, also consider prohibiting surface lines of detonating cord and secondary blasting.
17. All surface detonators and explosive should be adequately covered with suitable material
18. Stemming material should be of sufficient quality and quantity to confine adequately all explosive upon detonation. A course stemming material such as angular chippings should be considered for use. Drill fines should not be used for stemming collars of holes.
19. Consider the effects of top or bottom initiation in the blasting sequence.
20. Misfire procedures should have due regard for under-burdened charges.
21. If air overpressure levels are a problem, give consideration to a reduction in the face area to be blasted.
22. Blast at regular times.
23. Regularly monitor the ground and airborne vibration generated by blasting events so the information can be employed in any necessary modification of future blast designs.
24. Maintain good public relations with those who live and work near to the blasting site.
25. Always attempt to minimise the resulting environmental effects of blasting operations and recognise that the fact that the perception of blasting events occurs at levels of vibration well

below those necessary for the possible onset of the most cosmetic of damage, but nonetheless at levels that can concern neighbours.

26. Be aware that relatively small changes in blast design can produce noticeable differences in environmental emissions and that it is very often in response to changes in these emissions rather than their absolute value that complaints may be made.

5. CONTROL OF VIBRATION LEVELS

Ground Vibration

5.1 The accepted method of predicting peak particle velocity for any given situation is to use a scaling approach utilising separation distances and instantaneous charge weights. This method allows the derivation of the site-specific relationship between ground vibration level and separation distance from a blast.

5.2 A scaled distance value for any location may be calculated as follows:-

Scaled Distance	SD	=	$DW^{-½}$ in $mkg^{-½}$
where	D	=	Separation distance (blast to receiver) in metres
	W	=	Maximum Instantaneous Charge (MIC) in kg i.e. maximum weight of explosive per delay interval in kg

5.3 For each measurement location the maximum peak particle velocity from either the longitudinal, vertical or transverse axis is plotted against its respective scaled distance value on logarithmic graph paper.

5.4 An empirical relationship derived by the USBM relates ground vibration to scaled distance as follows:

	PV	=	a (SD)b
where	PV	=	Maximum Peak Particle Velocity in mms^{-1}
	SD	=	Scaled Distance in $mkg^{-1/2}$
	a, b	=	Dimensionless Site Factors

5.5 The Site factors a and b allow for the influence of local geology upon vibration attenuation as well as geometrical spreading. The values of a and b are derived for a specific site from least squares regression analysis of the logarithmic plot of peak particle velocity against scaled distance which results in the mathematical best fit straight line where:

a: is the peak particle velocity intercept at unity scaled distance; and
b: is the slope of the regression line

5.6 In almost all cases, a certain amount of data scatter will be evident, and as such statistical confidence levels are also calculated and plotted.

5.7 The statistical method adopted in assessing the vibration data is that used by Lucole and Dowding. The data is presented in the form of a graph showing the attenuation of ground vibration with scaled distance and results from log - normal modelling of the velocity distribution at any given scaled distance. The best fit or mean (50%) line as well as the upper 95% confidence level are plotted.

5.8 The process for calculating the best fit line is the least squares analysis method. The upper 95% confidence level is found by multiplying the mean line value by 1.96 times 10 raised to the power

of the standard deviation of the data above the mean line. A log - normal distribution of vibration data will mean that the peak particle velocity at any scaled distance tends to group at lower values.

5.9 From the logarithmic plot of peak particle velocity against scaled distance, for any required vibration level it is possible to relate the maximum instantaneous charge and separation distance as follows:

Maximum Instantaneous Charge (MIC) = $(O/SD)^2$

Where D = Separation distance (blast to receiver) in metres
SD = Scaled Distance in $mkg^{-½}$ corresponding to the vibration level required

5.10 The scaled distance approach assumes that the blast design remains similar between those shots used to determine the scaling relationship between vibration level and separation distance and those which prediction is required. For prediction purposes, the scaling relationship will be most accurate when calculations are derived from similar charge weight and distance values.

5.11 The main factors in blast design that can affect the scaling relationship are the maximum instantaneous charge weight, blast ratio, free face reflection, delay interval, initiation direction and blast geometry associated with burden, spacing, stemming and sub drill.

5.12 Although the instantaneous explosive charge weight has perhaps the greatest effect upon vibration level, it cannot be considered alone and is connected to most aspects of blast design through the parameter of blast ratio.

5.13 The blast ratio is a measure of the amount of work expected per unit of explosive, measured for example in tonnes of rock per kilogramme of explosive detonated (tonnes/kg), and results from virtually all aspects of a blast design i.e. hole diameter, depth, burden, spacing, loading density and initiation technique.

5.14 The scaled distance approach is also strictly valid only for the specific geology in the direction monitored. This is evident when considering the main mechanisms which contribute to ground motion dissipation: -

i. Damping of ground vibrations, causing lower ground vibration frequencies with increasing distance.
ii. Discontinuities causing reflection, refraction and diffraction.
iii. Internal friction causing frequency dependent attenuation, which is greater for coarser grained rocks.
iv. Geometrical spreading.

5.15 In practice similar rates of vibration attenuation may occur in different directions, however, where necessary these factors should be routinely checked by monitoring, especially on sites where geology is known to alter.

Airborne Vibration

5.16 Airborne vibration waves can be considered as sound waves of a higher intensity and will, therefore, be transmitted through the atmosphere in a similar manner. Thus, meteorological conditions such as wind speed, wind direction, temperature, humidity and cloud cover and how these vary with altitude, can affect the level of the air overpressure value experienced at a distance from any blast.

5.17 If a blast is fired in a motionless atmosphere in which the temperature remains constant with altitude then the air overpressure intensity will decrease purely as a function of distance. In fact, each time the distance doubles the air overpressure level will decrease by 6dB, However, such conditions are

very rare and it is more likely that a combination of the factors mentioned above will increase the expected intensity in some areas and decrease it in others.

5.18 Given sufficient meteorological data it is possible to predict these increases or decreases. However, to be of use this data must be both site specific and of relevance to the proposed blasting time. In practice this is not possible because the data is obtained from meteorological stations at some distance from the blast site and necessarily at some time before the blast is to be detonated. The ever-changing British weather therefore causes such data to be rather limited in value and its use clearly counter-productive if it is not relevant to the blast site at the detonation time. In addition, it would not normally be safe practice to leave charged holes standing for an unknown period of time.

5.19 It is because of the variability of British weather that it is standard good practice to control air overpressure at source and hence minimise its magnitude at distance, even under relatively unfavourable conditions.

5.20 Such a procedure is recommended by the government in their National Planning Policy Framework[3] (NPPF) and accompanying Planning Practice Guidance (PPG) which requires any blast vibrations to be controlled, mitigated or removed at source but does not offer any specific guidance, either on assessment methodology or allowable limits. The now archived[4] Minerals Practice Guidance (MPG) 9 and14 did advise that ground vibration limits of between 6mm/s and 10mm/s at a 95% confidence level measured at a sensitive property, with a maximum of 12mm/s were considered acceptable. Up to date British Standards[5] provide relevant guidance which is in line with the vibration criteria within the former MPG 9 and 14.

5.21 Such control is achieved in a well-designed and executed blast in which all explosive material is adequately confined. Thus, particular attention must be given to accurate face profiling and the subsequent drilling and correct placement of explosive within any borehole, having due regard to any localised weaknesses in the strata including overbreak from a previous shot, clay joints and fissured ground.

5.22 Stemming material should be of sufficient quantity and quality to adequately confine the explosives, and care should be taken in deciding upon the optimum detonation technique for the specific site circumstances.

5.23 Although there will always be a significant variation in observed air overpressure levels at a particular site it is possible to predict a range of likely values given sufficient background information and/or experience. In this respect, past recordings may be analysed according to the cube root scaled distance approach to provide a useful indication of future levels.

6. CONTROL OF NOISE, DUST AND FLYROCK

Blast Induced Noise

6.1 Although there will always be a significant variation in observed air overpressure levels at a particular site it is possible to predict a range of likely values given sufficient background information

[3] Ministry of Housing, Communities and Local Government, February 2019
[4] In March 2014
[5] BS ISO 4866: 2010. Mechanical vibration and shock – Vibration of fixed structures – Guidelines for the measurement of vibrations and evaluation of their effects on structures. British Standards Institution.
2. BS 6472-2: 2008. Guide to evaluation of human exposure to vibration in buildings, Part 2: Blast-induced vibration. British Standards Institution.
3. BS 7385: 1993 Evaluation and measurement for vibration in buildings: Part 2. Guide to damage levels from groundborne vibration. British Standards Institution.
4. BS 5228-2: 2009 + A1:2014, Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration.

and/or experience. In this respect, past recordings may be analysed according to the cube root scaled distance approach to provide a useful indication of future levels.

6.2 With the elimination of denoting cord, the characteristic noise of a blast is no longer a sharp crack but rather a dull thump. This is partly due to the detonating sequence and partly due to natural energy dissipation and attenuation.

6.3 Peak levels from blasting are comparable to the sort of levels routinely generated by cars, etc., only in this case the noise would exist for less than a second and occur relatively infrequently. It is because of this very brief duration and its infrequent occurrence that blast noise is rarely measured in terms of dB(A) but rather looked at as part of the air overpressure generated and measured by the more meaningful parameter of dB.

6.4 It is our experience that residents become accustomed to such noise and that since the great majority of blast related complaints concern a fear of property damage, once it is clear that such noise is harmless then complaints are unlikely.

Dust

6.5 Dust from blasting activities can arise from two potential activities, namely the drilling of the boreholes and from their subsequent detonation.

6.6 Drill rigs have potential for the emission of significant quantities of dust if the waste air which is vented to atmosphere is not first filtered. Such dust suppression techniques are commonplace and hence the relatively high potential for dust emissions from this source is rarely if ever realised.

6.7 With regard to the dust caused by detonation, the explosion results in the formation of a rock pile, however dust is usually confined to the blast location and its immediate surroundings.

6.8 Mitigation measures can involve the bagging and removal from the blast zone of the drill returns. An adequate quantity and quality of stemming material is also of importance in order to prevent the explosives' rapidly expanding gases from ejecting such material from the blast holes and acting as a source of dust generation. This latter precaution will also reduce the potential air overpressure and noise generation associated with a blast event.

Flyrock

6.9 The most common causes of flyrock include**:**

a) Insufficient Burden - When there is insufficient burden or stemming on the column of explosive then the potential for flyrock exists, as the energy released from the explosive is likely to be greater than that required to solely fragment the rock mass in its immediate locality resulting in excess energy available to project rock debris beyond the danger zone.

b) Insufficient Training - The Quarries (Explosives) Regulations 1999[6] outline the training that should be given to both shotfirers and management. Since these Regulations came into force there has been a greater awareness of the need for proper training and this has been reflected in a reduction in the number of flyrock incidents. However, shotfirer and management error is still a significant problem and is present in the majority of incidents.

c) Inadequate Specification Factors - The above Regulations also list the factors to be considered when designing blasts and all should be taken into account.

d) Explosives in the Stemming Line - Explosives can be introduced into the stemming line either deliberately in an attempt to break hard top bands or accidentally usually as a result of employing

[6] Second Edition, 2013

bulk loading methods. In both cases any excess of energy from the rapidly expanding explosives' gases may result in debris projection.

e) Hole Deviation - This can be in the form of drilling at the wrong angle in any direction resulting in either reduced toe burden or toe charges in consecutive holes being too close together giving too high a concentration of explosives at one point.

f) Incorrect Delay Sequence - Care must be taken to ensure the correct delay sequence is used. Delay periods must be chosen such that under burdening of subsequent shot holes does not occur.

g) Unforeseen Geological Weakness - This is the most difficult effects to detect and counter and is probably the only cause of flyrock that is not the result of human error.

h) Weathered or Loose Rock in the Stemming Line - Extra care must always be taken when blasting operations take place in these conditions.

i) Cavity - It has to be recognised that in certain rock formations, such as some limestones, cavities may exist and are a potential problem since if inadvertently filled with explosive they can give rise to a local concentration of explosives that is too great with respect to the surrounding rock mass or burden. This can only be countered by careful checking of the explosive column length during loading to ensure the explosive is not filling a cavity. Cavities provide a greater source of danger when using bulk loading explosive systems due to the faster loading rate employed.

j) The likelihood of a flyrock occurrence can be minimised by ensuring blasts are carried out exactly to the design specification. The specification should take account of possible causes of flyrock. Should deviations to the specification occur then management must be informed and be aware of the potential hazard. Training of all personnel is essential to ensure these incidents are minimised.

7. VIBRATION PREDICTION LEVELS

7.1 Table 1 details the predicted vibration levels when blasting during the 4th five-year working and restoration scheme, employing an instantaneous explosive charge weight of 10 kg, again at the nearest possible distance of approach to the locations given.

7.2 The predicted maximum vibration levels given will only occur when using an instantaneous charge weight of 10 kg at the nearest possible distance of approach to the respective locations.

7.3 As such, the vast majority of blasting events will be significantly below the predicted maximum level.

Remains of Church of St Blaise

7.4 Considering the utilisation of instantaneous explosive charge weights of 10kg, blasting operations within Phases 3/4, the worst case predicted vibration levels from blasting operations is 3mm/s^{-1}.

7.5 Such a vibration level will have no effect upon the remains of the Church of St Blaise.

Blaise Farm

7.6 The worst-case vibration level is predicted to be 0.7 mm/s^{-1}. The predicted level is well within the recommended vibration criterion.

Properties to East

7.7 The effect of blasting operations on properties to the east is at the worst case predicted to be 0.2 mm/s^{-1}. It is well within the recommended vibration criterion and is unlikely to result in perception.

Properties to South East

7.8 The effect of blasting operations on properties to the south east are likely to result in a worst-case vibration level of 0.3 mm/s^{-1}. Such operations will be imperceptible. All predicted vibration levels are within 6mm/s^{-1} at a 95% confidence level.

Properties to North East

7.9 The effect of blasting operations on properties to the north east is predicted to generate a worst-case vibration level of 0.2mm/s^{-1}. The predicted level is well within the recommended vibration criterion of 6 mm/s^{-1} at a 95% confidence level.

8. VIBRATION IMPACT PROCEDURES AND MONITORING

8.1 The following procedures will minimise the vibration impact of blasting operations at Blaise Farm Quarry to nearby residents and structures.

Ground Vibration – Inhabited Property

8.2 A vibration limit of 6 mms^{-1} peak particle velocity is in line with successful current practice at numerous similar open pit workings within the United Kingdom. It is also in conformity with the relevant British Standard 6472-1, 2008. No individual blast will exceed 12 mms$^{-1.}$

Air Overpressure

8.3 It is impracticable to set a maximum air overpressure limit, with or without an appropriate percentile of exceedances being allowed because of the significant and unpredictable effect of variable weather conditions.

8.4 This point is clearly recognised by the Government in the NPPF and PPG which recommend that the operator employs methods to minimise air overpressure to the Mineral Planning Authority. They do not recommend an air overpressure limit.

8.5 With a sensible ground vibration limitation, the economics of safe and efficient blasting will automatically ensure that air overpressures are kept to reasonable levels.

8.6 In line with the current best accepted modern practice in the extraction industries safe and practical measures will continue to be adopted that ensure the minimisation of air overpressure generated by blasting at source, considering such factors as initiation technique.

Monitoring and Control

8.7 An updated *Blast Monitoring Scheme*[7] will sit alongside this *Schedule of Blasting*. Monitoring results will indicate whether or not there is compliance with the vibration criteria. The results will also be used to update the regression analysis and thus provide valuable input into the design of future blasts.

8.8 With the necessary control and best practice measures in place and the exercise of reasonable engineering control over quarry blasting, operations will continue to be within the vibration criteria.

[7] June 2020

VIBRATION PREDICTION LOCATIONS

DRAWING REFERENCE: GAL-062-BM01

Gallagher

VIBRATION PREDICTION LOCATIONS

GALLAGHER AGGREGATES LTD
BLAISE FARM QUARRY
WEST MALLING

Drn by:-	Date:-	Scale:-	Sheet number:-
MJW	13th April 2018	1:10000 @ A4	1 of 1

Drawing number:- GAL-062-BM01 Revision:- /

TABLE 1

PREDICTED VIBRATION LEVELS

PHASE 4 OPERATIONS AT BLAISE FARM QUARRY

Considering a maximum instantaneous charge weight of 10 kg utilised in Phase 4 at the nearest distance of approach to the location considered, the predicted vibration levels are as shown in Table 1.

TABLE 1 - PREDICTED VIBRATION LEVELS

Location	**Vibration Level Maximum Peak Particle Velocity (mms·1)**	
	Mean	**Maximum**
1. Remains of Church of St. Blaise	1	3
2. Blaise Farm to North	0.3	0.7
3. Properties to East	0.1	0.2
4. Properties to South East	0.1	0.3
5. Properties to North East	>0.1	0.2

APPENDIX 1

SHOT FIRING RULES AND PROCEDURES

Managers Rules – Rule 11 – Use of Explosives

Aim:

These site-specific explosives rules are made to comply with **Part V of the Quarries Regulations 1999**. (2nd Edition) 2013. The rules will be read in conjunction with the following additional documents:

- QPTC Guidance on Misfires – located in the Health &Safety Document (H&SD)
- IEE Explosive Use, Drilling & Surveying – located in the H&SD
- Site Health & Safety Plan – located in the H&SD
- The Control of Explosives Regulations 1991. (Amendment's 2014)
- The Manufacture and Storage of Explosives Regulations 2014

Operator's Rules - Use of Explosives:

1 Explosives Storage

- Explosives may only be stored in compliance with the relevant explosives store license. They must always be kept in a locked explosives store or under the constant supervision of a suitable person.
- Ammonium nitrate should be stored in well-ventilated conditions at least 25m from other stored explosives and fuel oil, keeping the surrounding area clear of grass, spilled fuel oil and other organic material.
- At all times the explosives store keys must be kept either in the custody of the explosives supervisor, shotfirer or in a safe in the quarry manager's office.
- The explosives supervisor will authorise all movements of explosives to and from the place of use.

2 Custody of Explosives

- Explosives will be issued to authorised persons only, and must remain under the control of that person. A prohibited person under the Control of Explosives Regulations 1991 must not knowingly be appointed for this purpose.
- Detonator containers must have secure locks, be lined with shock-absorbing anti-static material, kept clean and be used only for detonators. Containers should be unlocked only while detonators are being inserted or removed and must be located in a secure place.
- Explosive delivery notes must be checked for quantities delivered against the amount ordered, and that such deliveries are not left unattended.

3 Transport of Explosives

- Transport of explosives to the blast site will be either, directly by road vehicle when delivered, or by vehicles or machines suitably identified, constructed and maintained to

comply with the 1999 Quarries Regulations. These vehicles, easily recognisable from a distance, will display a flashing light and be provided with enough, suitable fire extinguishers.

- Explosives shall be loaded in a safe manner so that they cannot fall out of the vehicle. In addition to explosives only essential shotfiring equipment may be carried on these vehicles.
- Explosives must be transported in the manufacturer's packaging or robust containers, only removing them immediately before use.
- Detonators will be carried in a separate lockable container and will be carried and kept in a position that does not expose it to risk of falling out the vehicle or being run over.
- The loading area on the vehicle must be kept clean and free from grit.
- A duly appointed competent person or a trainee under the close personal supervision of a shotfirer will carry out the transport operation.

4 Shotfiring Equipment

- All spark initiators must have been tested within the last 12 months and a record of that test available on site for at least 4 years.
- Tools used for piercing cartridges or in shotholes must be made of non-sparking material.

5 Explosives Supervisor

- The operator shall appoint one or more explosives supervisors. The appointment will include a written statement summarising his duties and authority. Only one such person can be in charge at any one time. Where there is more than one supervisor there must be good communication and co-ordination between them at hand-over and on maintenance issues.
- The explosives supervisor’s principal responsibility is to take overall charge of the day-to-day work with explosives at the quarry. The appointed person must have sufficient practical and theoretical knowledge and experience for the work he is expected to do.
- The supervisor must be familiar with the shotfiring rules and the site as regards the safe use of explosives.

6 Drill/Blast Method Statement

Drilling

- The shotfirer/explosive supervisor shall instruct the driller on hole location, diameter, depth, inclination and azimuth. These details will be entered on the driller’s report to serve as a reference for the intended drilling geometry to those concerned with it.

- The driller shall carry out the shotfirers/explosive supervisor instructions. He will record on the driller's log any variations from the intended hole locations and the position and extent of any voids, clay backs or zones of poorer quality/soft rock identified during the drilling operation. Where there is a need for a substantial departure from the instructions given the driller must refer the matter to the shotfirer or explosives supervisor.
- Ensure that adequate and effective fall prevention systems are used at all times when working within the 3-metre danger zone of a face edge.
- On completion of drilling, the driller's log will be submitted to the explosives supervisor to allow the blast specification to be produced and subsequent attachment to the blast report record.
- Carry out daily Safety checks on the drill rig and record these on the checklist.

Surveying

- Surveys will be carried out by an experienced operator using optical, laser, or other practical methods to permit burden measurements to be estimated to standards of accuracy required by the Quarries Regulations 1999 and its associated Codes of Practice.
- To enable complete and accurate face surveys to be carried out, the face must be cleared of all loose blasted material in the intended blast area.
- The surveyor will submit the completed survey to the shotfirer or the explosives supervisor.
- Any features within the face (such as broken ground, cavities, slips etc.) must be individually surveyed thus providing additional coverage in these potentially vulnerable areas.
- If the blast has a 'free' end this must also be surveyed.
- All holes must be physically examined by the use of a hand held inclinometer; where the inclinometer has not been used the reason shall be outlined on the specification along with what measures have been employed to survey the hole.

Design

- The specification, prepared by the shotfirer or explosives supervisor for presentation to the explosives supervisor will take into account the prevailing face conditions, experience gained from previous blasts and information from the driller's log. For each hole the specification will include details from the face and hole surveys, profiles, the intended loading patterns, initiation method, detonator position and blast sequence. The burden for each shot hole will determine the amount, type and placement of explosives to be used, so that the blast can be carried out safely.

- Account will have been taken of any constraints due to factors such as ground vibration or air blast over-pressure and the MIC designed accordingly. Blaise is not permitted above 10kg.
- The explosives supervisor's approval of such a specification authorises the theoretical plans for the blast design. The blast site location plan will delineate the danger zone; show sentry positions and location of the shotfiring station.
- Where detonators are used in the hole minimise the risk of misfires by using 2 detonators in each explosive deck. Cover shock-tube surface detonators with 200mm of 10mm chippings and check the integrity of connections immediately before firing, marking as double checked using tape and/or spray paint.
- Information on any special precautions that are required to contain rock within the danger zone must be highlighted after discussion with the quarry manager.
- The plan showing hole locations must be accurate, enabling these positions to be determined precisely in the event of a misfire.
- The design should ensure that faces are left in good condition after firing and take into account any unusual circumstances, which are present or likely to arise.
- A copy of the specification will be given to any person upon whom it imposes duties.

Charging

- Only those who have been explicitly appointed or are authorised in accordance with the rules are allowed to handle explosives in a quarry.
- The shotfirer shall charge the blast according to the blasting specification and in compliance with the explosives rules. If it is not possible to conform to the specification or the danger zone appears to be different from that shown, the operation should be suspended until its author or other designated person amends it. Such changes must be recorded on the blast specification sheet.
- The shotfirer must always be present during the charging operation, never leaving detonators, explosives and charged holes unattended.
- Check the rise of explosives in the holes continually during loading.
- Endeavour to have only one explosives container open at any one time.
- No person shall forcibly remove any detonator lead, safety fuse or other system for initiating shots from a shot hole after the shot hole has been charged and primed.
- The shotfirer will ensure that there is no naked flame within 10 metres of any explosives or detonators.
- Mixing of ANFO must take place at the hole. Hand mixing tools and equipment must be made of wood, plastic or aluminium and contain no ferrous components.
- Surplus explosives must be removed from the blast area before firing, not left unattended and returned to the store as soon as possible.
- Make checks to ensure that no explosives remain in discarded containers.

Firing

- Gallagher Aggregates currently uses a system of Nonel initiation that does not require circuit testing.
- Sentries shall be positioned to control the danger zone, previously identified, and will have full knowledge of the blasting and siren procedure.
- No sentry will leave his post until instructed to do so and must ensure that no person enters or attempts to enter the danger zone prior to the blast taking place.
- The shotfiring system or circuit must be checked to ensure that it has been connected correctly; a second independent check of all surface connectors shall be undertaken before they are covered
- The shotfirer will only fire a shot from a safe location that is determined by the blast supervisor.
- When using a spark initiator to initiate the surface lead line, a small length shall be cut from the end and test fired to establish that both the shock tube exploder and lead line are satisfactory.
- No person shall fire a shot unless (1) he is an explosive supervisor, shotfirer or a trainee shotfirer working under the close personal supervision of a shotfirer and (2) other than by means of a suitable exploder.

7 Shotfiring Rules

Appointments

- All appointments and authorisations must be made in writing.
- A written statement summarising the duties and authority of the appointee will accompany these appointments. Contractors will provide curricula vitae for all staff involved in blasting.
- Training will continue until the necessary competence has been acquired and demonstrated. Trainees may only operate under the close personal supervision of a fully trained and experienced shotfirer.
- The storekeeper's duties will include:
  - The security and safe storage of explosives, including detonators;
  - the custody of keys;
  - keeping records of the issue and receipt of explosives including those deliveries made direct to the blast site;
  - immediately reporting any loss or theft of explosives to a designated person; keeping the store clean and tidy, attending to repairs when needed, providing and maintaining statutory notices;
  - keeping stocks within the maximum permitted quantity;
  - confirming the issue of explosives to properly appointed persons only;

- complying with the explosives supervisor's system of authorisation for the movement of explosives.
- A physical stock check of the explosives store once per week shall be undertaken and recorded in the store record book.

- The manager will appoint explosive supervisors, shotfirers, trainee shotfirers, sentries, and store keepers.

Explosives Supervisor

- The explosives supervisor has a specific duty to check that site conditions are in line with the blast specification before work with explosives.
- It is the explosives supervisor's responsibility to check that the equipment provided is suitable and safe. If he considers it not to be so it should be taken out of use.

Blasting Times

- The normal times for blasting will be between 10.00 a.m. and 3.00 p.m. on Monday to Friday. Only in cases of emergency and with the manager's permission can blasting take place outside these times.
- There must be sufficient visibility to allow the complete blasting operation to be carried out safely. Advice will be sought from the explosives supervisor and site manager should conditions change during charging that would affect visibility.

Danger Zone

- The extent of the danger zone for each shot will be determined by an assessment of the under noted variable factors:
  - prevailing face condition
  - past experience in the behaviour of similar blast patterns and blast ratios
  - knowledge of the local rock formation
  - information revealed during drilling of the shot holes with a generous allowance for possible unforeseen circumstances.

- Close liaison with the Quarry manager, Quarry Supervisor, explosives supervisor and/or the shotfirer will be required to ensure that the danger zone is cleared of all personnel prior to blasting. On the day of the blast, notices are posted relating to firing and everyone must remove themselves to a place of safety some 15 minutes before firing.

- A sketch plan showing the danger zone on the occasion of each and every blast will be included with the blast report. Where the danger zone is fixed, for example in the Westerly Development a generic plan would suffice.

Warning systems

- The following system will be adopted:

1 x 30 second siren blast - 5 minutes prior to blasting.

2 x 15 second siren blasts – immediately prior to blasting.

3 X 5 second siren blasts shall signal the 'All-Clear'

Sentries

- The shotfirer will ensure that sentries are posted at the designated locations marked on the danger zone plan.
- The quarry manager will appoint sentries in writing. The appointment will summarise their duties.

Notification

- Selected residents are notified in relation to blasting activities, dependent upon location and blast measuring equipment is deployed at local residencies from time to time.
- County, Borough and Parish councils are informed of all blasts; these arrangements are dealt with by the blast supervisor.

Post blast Inspection

- The shotfirer will inspect the blast site to check for misfires and the state of the face for overhangs and loose boulders once any vapour has dissipated and there is no movement in the rock pile or face. He will ensure that all precautions are taken during this exercise.
- Only when he has satisfied himself that it is safe should the all clear be sounded and normal working resumed.
- It may be necessary on occasions to inspect the sides and faces of adjacent working areas that may have been affected by the blast.

Unfired Shot Holes

- Where, at the end of a working day as the result of a machine breakdown at the face or other causes, there remain charged and unfired shot holes the manager must ensure

that these holes are not left unattended and he must inform the local police of the situation.

- If the shotfirer is required to leave the charging area he should be sure that:
  - all charging ceases
  - no detonators, explosives or charged holes are left unattended
  - all detonators are locked in their containers to which the shotfirer holds the key

Misfires

- There must always be a competent person available to ensure that any misfire is dealt with safely. This will normally be the explosives supervisor.
- In the event of a misfire the manager shall inform the operator and ensure that the under noted action is taken.

Safeguards

- No person shall enter the danger area until a period of 5 minutes has elapsed since the misfire.
- After the waiting period only the manager, explosives supervisor, shotfirer, trainee shotfirer or a person authorised by the manager shall enter the danger area to determine the cause of and deal with the misfire.

Procedures.

- Where the misfire is total, the traffic and pedestrians block shall remain in effect until the circuit has been examined, the fault corrected, the dangers zone rechecked, the blast detonated, and the all-clear sounded.
- Where the misfire is partial, again the traffic and pedestrian block shall remain in effect. The shotfirer will inform the quarry manager and/or the explosives supervisor of the occurrence and together they will examine the circumstances of the misfire.
- Thereafter the under noted procedures will be carried out under the direct supervision of the manager or the explosives supervisor and/or the shotfirer:
  - by hand, remove any loose explosives that are not in any way caught by loose rock
  - remove by hand, with the necessary personnel and with extreme care, any stones that would allow further safe removal of explosives
  - if necessary, deluge with water under pressure to wash away any non-gelatinous explosives and to render harmless
  - if explosives still remain then cautious machine digging may proceed until the danger is removed or until it can't be reduced further by this means. In this event

the affected area should be isolated and identified by a system of barriers, warning flags and notices until the explosives can be dislodged by blasting relieving holes and the search procedures already outlined carried out again.

Investigation.

- All misfires must be investigated to determine the cause and to enable action to be taken to avoid any recurrence.
- Keep a suitable record of the misfire event by endorsing the relevant blast specification.
- The manager shall inform the HSE of the occurrence by telephone as soon as practicable and confirm on Form 2508. A copy will be kept in the H & S file.

Monitoring.

- The explosives supervisor and manager will use spot checks to confirm that those involved in the operation understand the requirements of the rules and are complying with them.
- Independent audits of the blasting operations will be carried out at intervals not greater than 12 months. The findings of the audits will be the subject of a separate report prepared by the person in charge of the audit.

8 Review

- Following monitoring, the rules shall be periodically examined to ensure (1) that they are practical and workable and (2) if necessary to introduce changes to accommodate altering circumstances.

9 Record Keeping

9.1 Records of appointments of explosives supervisors, shotfirers and trainee shotfirers shall be kept at a suitable place for at least 3 years following the end of each individual's employment at the quarry.

9.2 Blast specifications and reports of misfires shall be kept for at least 3 years from the date on which it was made.

9.3 Retain exploder repair records for 4 years.

9.4 A copy of the written statement of duties of all persons appointed at the quarry under Part V of the Quarries Regulations 1999 shall be kept at a suitable place for at least 12 months after the date on which the appointment ceased to have effect.

Signed: **Site Manager**_____

Date_____

Signed: **Recipient**_____

Date_____

(On signing the recipient acknowledges receipt and understanding of any duties imposed by these rules)

Appendix 6:

- **Appendix 6:** Proposed “Blast Monitoring Scheme” (dated June 2020).

BLAISE FARM QUARRY

OFFHAM, KINGS HILL, WEST MALLING, KENT, ME19 4PN

GALLAGHER AGGREGATES LTD

BLAST MONITORING SCHEME

JUNE 2020

1.0 Methodology to be adopted

1.1 In order to demonstrate compliance with the blast vibration criteria of planning permissions granted for Blaise Farm Quarry development, monitoring shall be undertaken at various stations between the quarry blast site and vibration sensitive locations as shown on Drawing GAL-BQ-20-11[1] attached, which include:

Farm Gate (FG_2)
Offham Access Road (OAR)
Central Site Station1 (CSS_1)
Central Site Station 2 (CSS_2)
Southern Site Station (SSS_1)
Ruins of St Blaise Chapel (BCR)
Site Office (SO)
Eastern Boundary (EB)
Northern Boundary (NB)
Beau Fighter Road (BFR_1)
New Earth Solutions (NES)

1.2 Data gathered will be used to produce a 'regression line' to allow prediction of levels of vibration expected at various distances from any particular blast site, to ensure vibration levels are within the range expected and consistently controlled at below the limits set out in the planning permission.

1.3 Subject to landowner / occupier permission, monitors will be located at four stations which will give the best representation of the intensity of the blast vibration at the closest vibration sensitive location / property to the blast site. If permission is not forthcoming for any location, the monitor will be located at a suitable station as near to the sensitive location as possible. This should preferably be between the blast site and the vibration sensitive location.

1.4 The monitoring will be undertaken in accordance with the principles of British Standard ISO 4866:2010.

1.5 The prevailing weather conditions shall be noted at the time the blast is fired.

1.6 The results to be submitted to the Mineral Planning Authority will comprise a copy of the reading from the monitoring instrument which should include the peak particle velocities in three mutually perpendicular planes together with the date and time. The records should also indicate the monitoring location, weather conditions, and blast design details including an accurate plan showing the position of the blast in relation to the monitoring location, the total explosive charge weight and maximum instantaneous charge weight.

1.7 The results shall be retained on site by Gallagher Aggregates Limited (Ltd) with the date, time, monitoring station location, and blast design details including an accurate plan showing the position of the blast in relation to the monitoring location, total explosive charge weight and maximum instantaneous charge weight.

1.8 The results will be submitted to the Mineral Planning Authority as soon as possible after firing. Gallagher Aggregates Ltd will also provide the results of blast monitoring to liaison meeting attendees as required.

1.9 Gallagher Aggregates Ltd will notify the Mineral Planning Authority of its intention to fire a blast via email on the morning of a blast day, or on the previous day and will confirm the time of firing

[1] Dated 4th June 2020

in this communication. This information will be sent by email and telephone to the Mineral Planning Authority, Tonbridge and Malling Borough Council and one representative of each relevant Parish Council and local residents, if Gallagher Aggregates Ltd are provided with a current email address.

2.0 Instrumentation

2.1 Seismographic instrumentation recording ground vibration in terms of peak particle velocity in three mutually perpendicular planes of measurement and air overpressure in dB (linear) shall be used.

2.2 All instrumentation will have valid certificates of calibration.

3.0 Locations and frequency of Monitoring

3.1 The monitoring location will be determined as described in 1.2 and 1.3 above.

3.2 At twelve monthly intervals, at either the request of the Mineral Planning Authority or Gallagher Aggregates Ltd, the monitoring procedures will be reviewed.

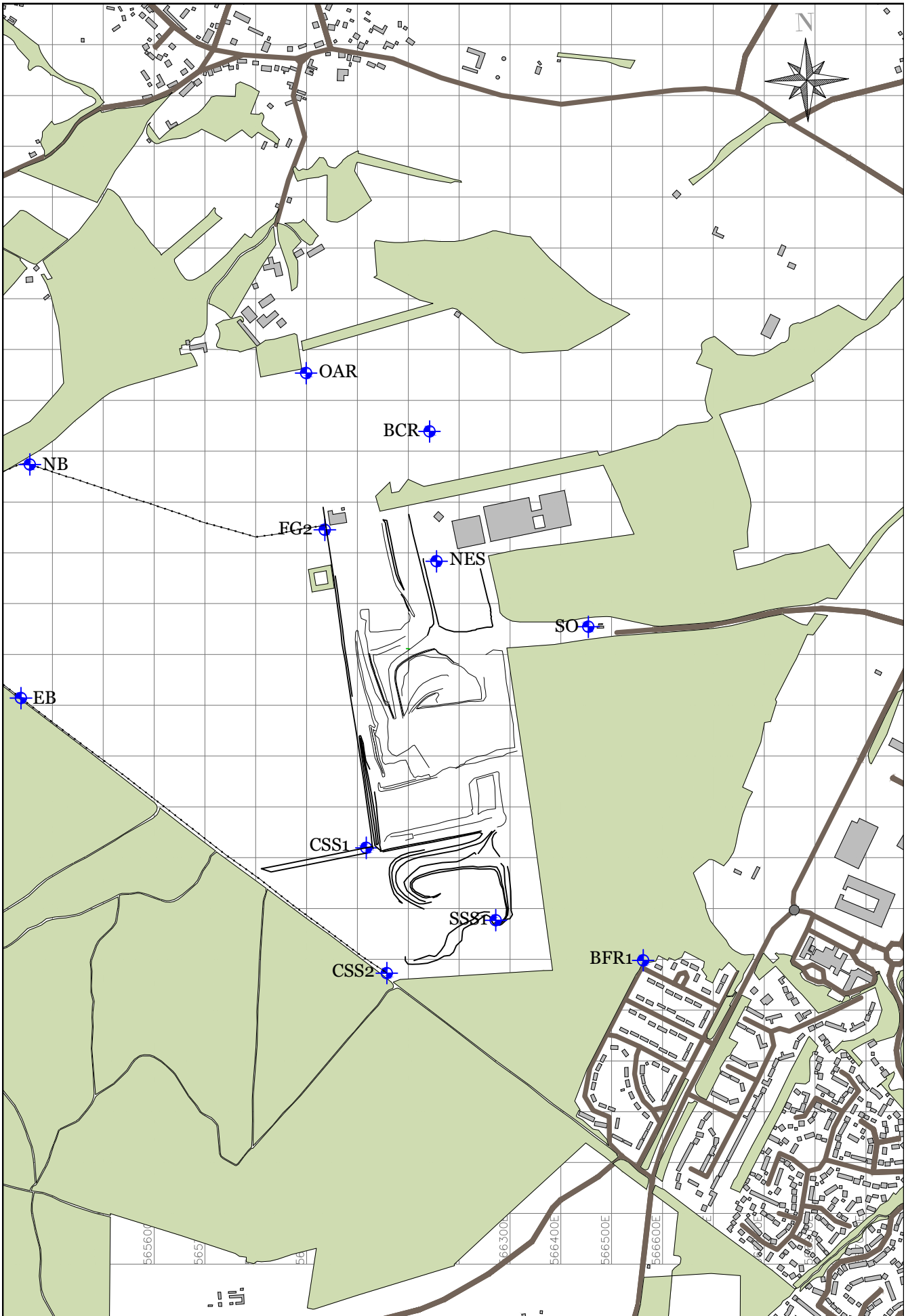
4.0 Complaints Procedure

4.1 Should complaints be made to the quarry management relating to blast vibration, these will be dealt with via the Company complaints procedure with a complaints log form being completed. A complaint will be allocated to a nominated owner who will investigate in a timely fashion and, where necessary, take measures to control the effects to prevent further incident or reason for complaint. The results of the investigation will be submitted to the Mineral Planning Authority within 72 hours of them being completed.

4.2 All such complaints and any action undertaken as a result of the investigation will be recorded in an archive held electronically on quarry office storage devices and will be available for inspection by the Mineral Planning Authority and at liaison committee meetings.

5.0 Independent Monitoring.

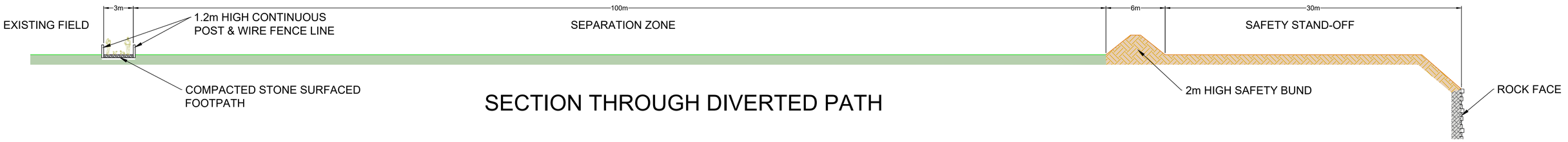
5.1 Gallagher Aggregates Ltd will, on request, pay the reasonable expenses incurred by the Mineral Planning Authority in undertaking independent monitoring at no more than one location on up to four occasions each year. The precise location(s) will be determined by the Mineral Planning Authority in consultation with the Tonbridge and Malling Borough Council Environmental Protection Team and the relevant Parish Council(s). The Mineral Planning Authority will not inform Gallagher Aggregates Ltd in advance of this monitoring, but will provide results to Gallagher Aggregates Ltd, Tonbridge and Malling Borough Council Environmental Protection Team and the relevant Parish Council(s). The independent monitoring will include measurements for ground vibration and air overpressure as detailed in paragraph 2.1 above and all equipment used will conform with paragraph 2.2.



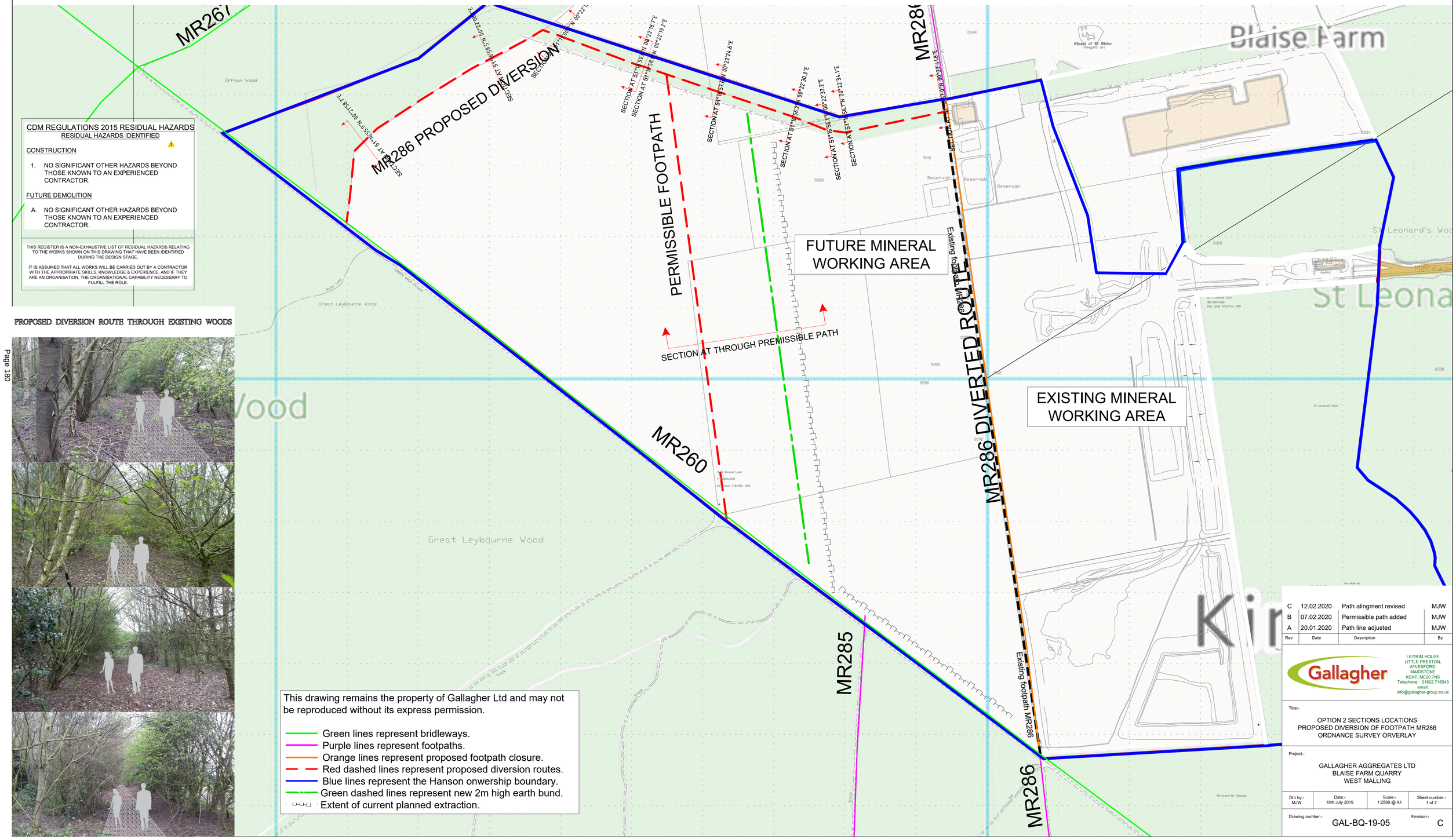
Gallagher	BLAST MONITORING LOCATIONS PHASE 4	GALLAGHER AGGREGATES LTD BLAISE FARM QUARRY WEST MALLING	Drn by:- MJW	Date:- 4th June 2020	Scale:- 1:10000 @ A4	Sheet number:- 1 of 1
			Drawing number:- GAL-BQ-20-11		Revision:- /	

Appendix 7:

- **Appendix 7:**
  - Drawing GAL-BQ-10-05 Rev C titled “Option 2 Sections Locations Proposed Diversion of Footpath MR286 Ordnance Survey Overlay” (dated 12 February 2020)
  - Drawing GAL-BQ-10-03 Rev D titled “Proposed Diversion of Footpath MR286” (dated 12 February 2020)



SECTION THROUGH DIVERTED PATH



CDM REGULATIONS 2015 RESIDUAL HAZARDS

RESIDUAL HAZARDS IDENTIFIED

CONSTRUCTION

1. NO SIGNIFICANT OTHER HAZARDS BEYOND THOSE KNOWN TO AN EXPERIENCED CONTRACTOR.

FUTURE DEMOLITION

A. NO SIGNIFICANT OTHER HAZARDS BEYOND THOSE KNOWN TO AN EXPERIENCED CONTRACTOR.

THIS REGISTER IS A NON-EXHAUSTIVE LIST OF RESIDUAL HAZARDS RELATING TO THE WORKS SHOWN ON THIS DRAWING THAT HAVE BEEN IDENTIFIED DURING THE DESIGN STAGE.

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PROPOSED DIVERSION ROUTE THROUGH EXISTING WOODS

- Green lines represent bridleways.
- Purple lines represent footpaths.
- Orange lines represent proposed footpath closure.
- Red dashed lines represent proposed diversion routes.
- Blue lines represent the Hanson onwership boundary.
- Green dashed lines represent new 2m high earth bund.
- Extent of current planned extraction.

Rev	Date	Description	By
C	12.02.2020	Path alingment revised	MJW
B	07.02.2020	Permissible path added	MJW
A	20.01.2020	Path line adjusted	MJW

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Title:-

OPTION 2 SECTIONS LOCATIONS
PROPOSED DIVERSION OF FOOTPATH MR286
ORDNANCE SURVEY ORVERLAY

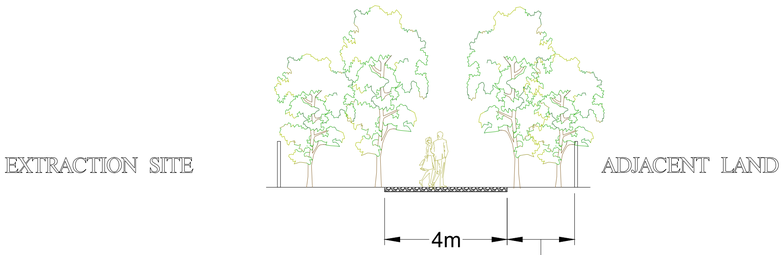
Project:-

GALLAGHER AGGREGATES LTD
BLAISE FARM QUARRY
WEST MALLING

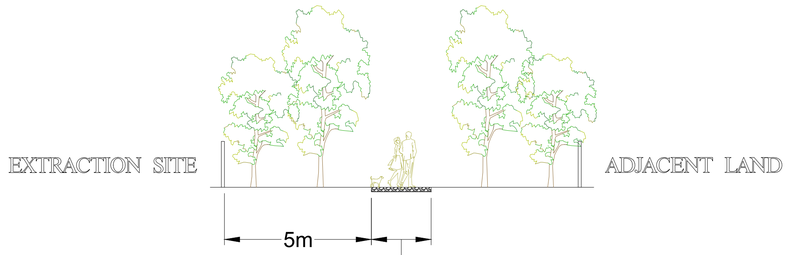
Drn by:-	Date:-	Scale:-	Sheet number:-
MJW	19th July 2019	1:2500 @ A1	1 of 2

Drawing number:- GAL-BQ-19-05

Revision:- C

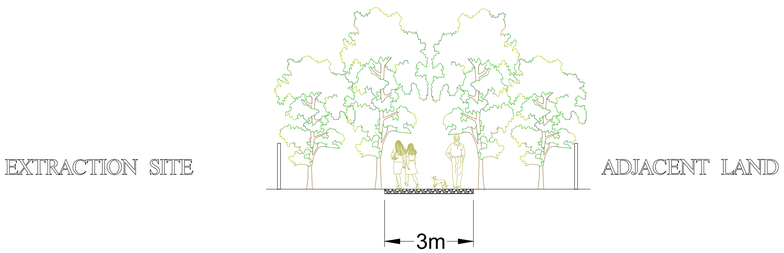


SECTION AT 51°16'57.0"N 00°22'41.8"E



SECTION AT 51°16'57.6"N 00°22'24.6"E

SECTION AT 51°16'59.5"N 00°22'08.1"E

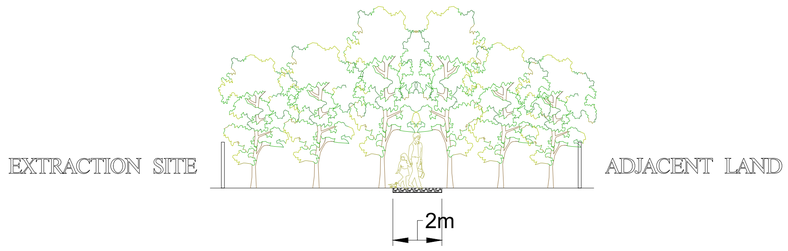


SECTION AT 51°16'56.1"N 00°22'34.1"E

SECTION AT 51°16'58.8"N 00°22'19.2"E

SECTION AT 51°16'55.9"N 00°21'58.7"E

SECTION AT 51°16'56.1"N 00°22'32.2"E



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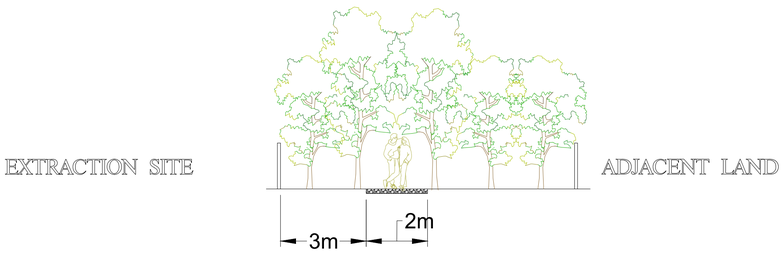

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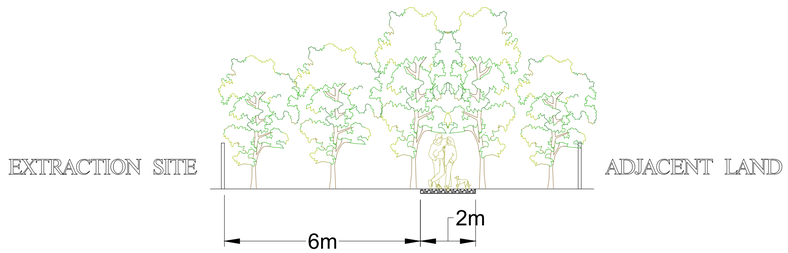

SECTION AT 51°17'00.2"N 00°22'12.9"E

CDM REGULATIONS 2015 RESIDUAL HAZARDS

RESIDUAL HAZARDS IDENTIFIED

CONSTRUCTION

1. NO SIGNIFICANT OTHER HAZARDS BEYOND THOSE KNOWN TO AN EXPERIENCED CONTRACTOR.

FUTURE DEMOLITION

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Section positions are approximate being measured with hand held equipment only.

Rev	Date	Description	By
D	12.02.2020	Path alignment revised	MJW
C	16.10.2019	Coordiantes corrected	MJW
B	13.08.2019	Land titles altered	MJW
A	24.07.2019	Coordinates corrected	MJW

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PROPOSED DIVERSION OF FOOTPATH MR286

Project:-

GALLAGHER AGGREGATES LTD
BLAISE FARM QUARRY
WEST MALLING

Drn by:-	Date:-	Scale:-	Sheet number:-
MJW	19th July 2019	1:2500 @ A1	2 of 2

Drawing number:- GAL-BQ-19-03

Revision:- D

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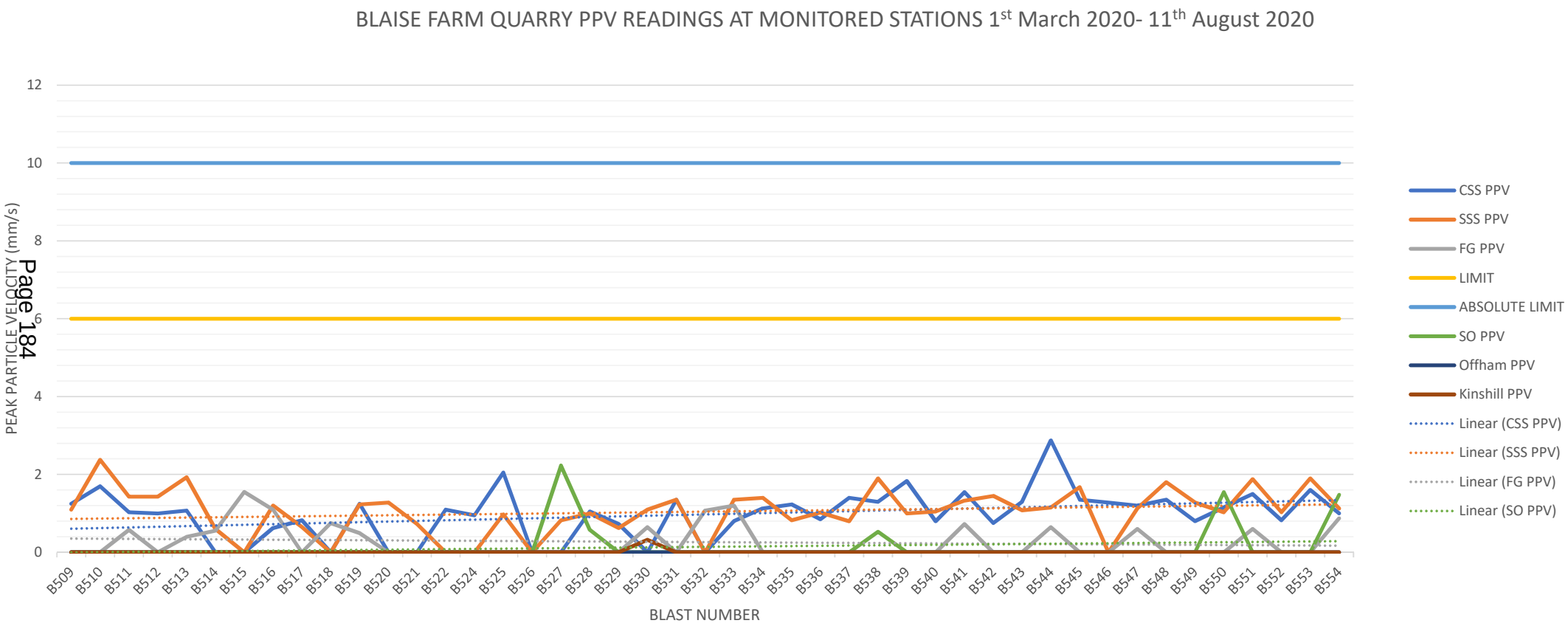
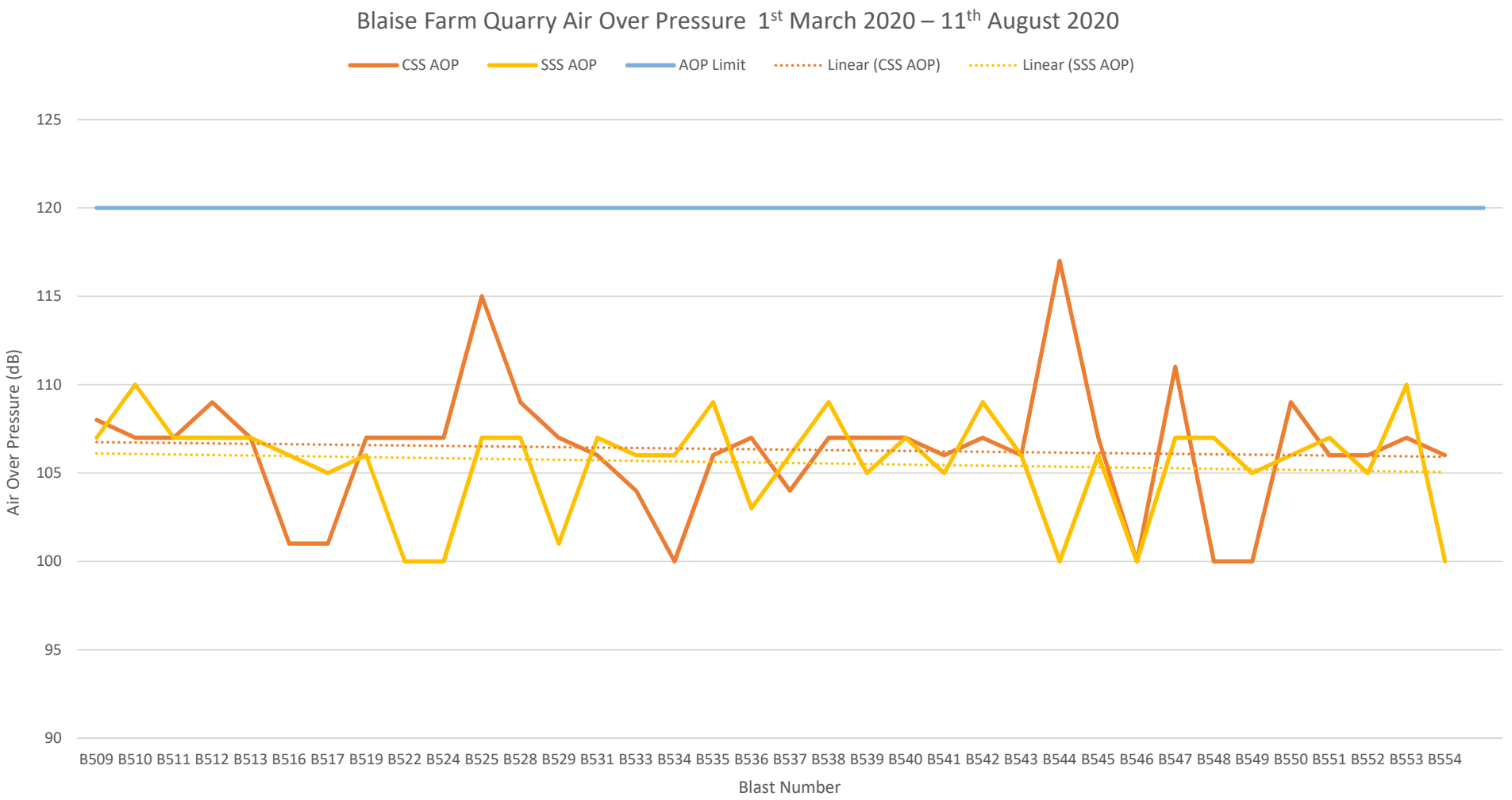
Appendix 8:

- **Appendix 8:** Blaise Farm Quarry GAL Blasting Data (1.3.20 to 11.8.20) and Blast Monitoring Results 11.8.20


BLAISE FARM QUARRY PPV READINGS AT MONITORED STATIONS 1st March 2020- 11th August 2020
PEAK PARTICLE VELOCITY (mm/s)
12
10
8
6
4
2
0
B509 B510 B511 B512 B513 B514 B515 B516 B517 B518 B519 B520 B521 B522 B524 B525 B526 B527 B528 B529 B530 B531 B532 B533 B534 B535 B536 B537 B538 B539 B540 B541 B542 B543 B544 B545 B546 B547 B548 B549 B550 B551 B552 B553 B554
BLAST NUMBER
CSS PPV
SSS PPV
FG PPV
LIMIT
ABSOLUTE LIMIT
SO PPV
Offham PPV
Kinshill PPV
Linear (CSS PPV)
Linear (SSS PPV)
Linear (FG PPV)
Linear (SO PPV)


Blaise Farm Quarry Air Over Pressure 1st March 2020 – 11th August 2020
CSS AOP
SSS AOP
AOP Limit
Linear (CSS AOP)
Linear (SSS AOP)
125
120
115
110
105
100
95
90
Air Over Pressure (dB)
B509 B510 B511 B512 B513 B516 B517 B519 B522 B524 B525 B528 B529 B531 B533 B534 B535 B536 B537 B538 B539 B540 B541 B542 B543 B544 B545 B546 B547 B548 B549 B550 B551 B552 B553 B554
Blast Number

COMPANY: KCC DATE: 15/08/2020

ATTENTION: Jim Wooldridge
SUBJECT: Blast vibration monitoring Blaise Farm
FROM: William Hoare

MESSAGE

Hello Jim

Vibrograph readings for blast number B554 fired 11/08/20 at 1310 hours. The stations monitored were Site Office, Central Site Station, Southern Site Station and Farm gate 2.

The Monitor's that gave a reading today was Central, Farm Gate and Site Station Southern Site Station.

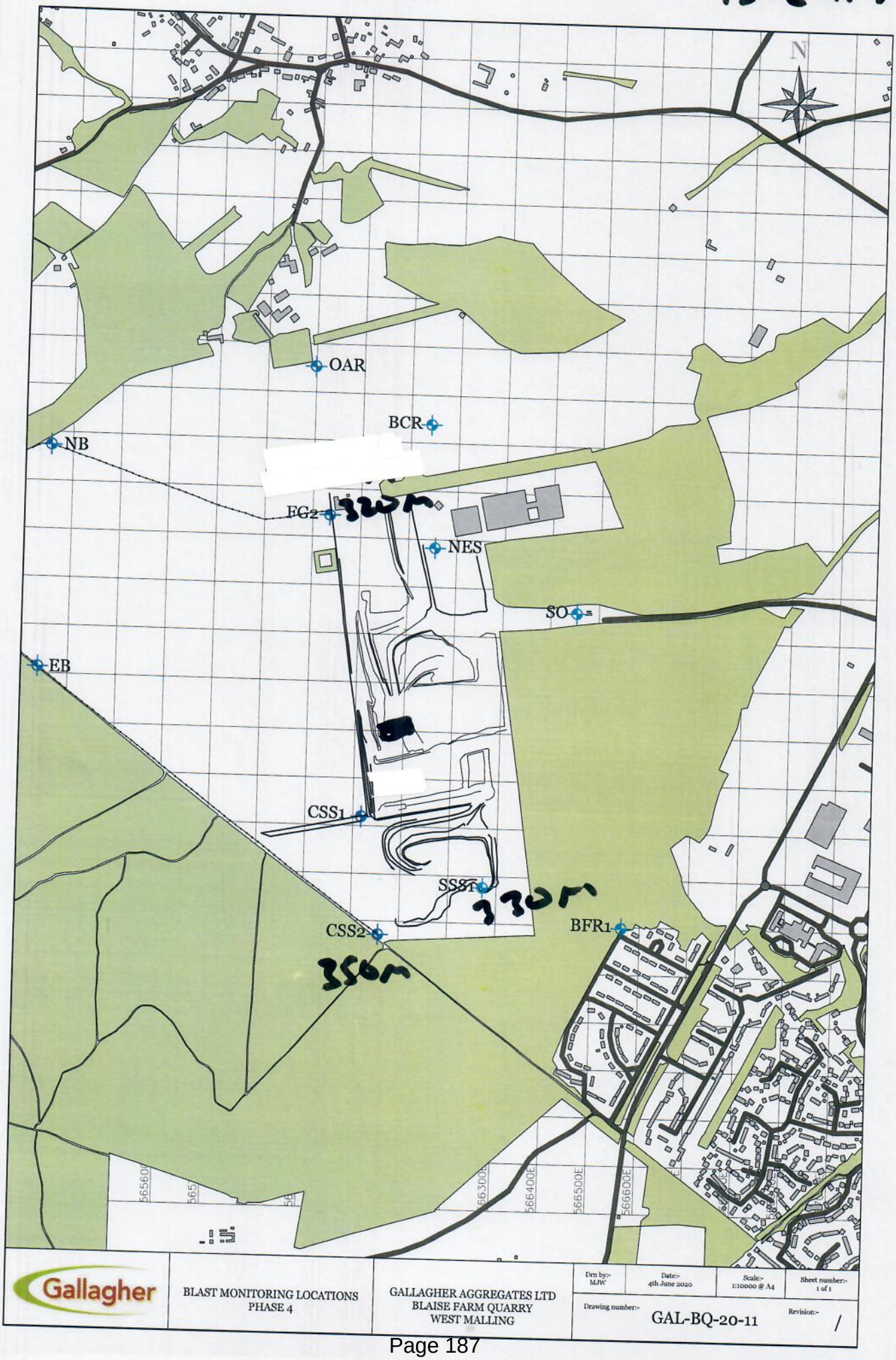
Total explosive weight	1000 Kg
Max. instantaneous charge weight	10kg
Weather conditions	Clear, Sunny, Hot
Next blast day	To be confirmed

Regards,

William Hoare

Leitrim House, Little Preston, Aylesford, Maidstone, Kent ME20 7NS
t 01622 716543 f 01622 882366 e info@gallagher-group.co.uk w www.gallagher-group.co.uk

B554 11-8-20 1312hrs



Gallagher

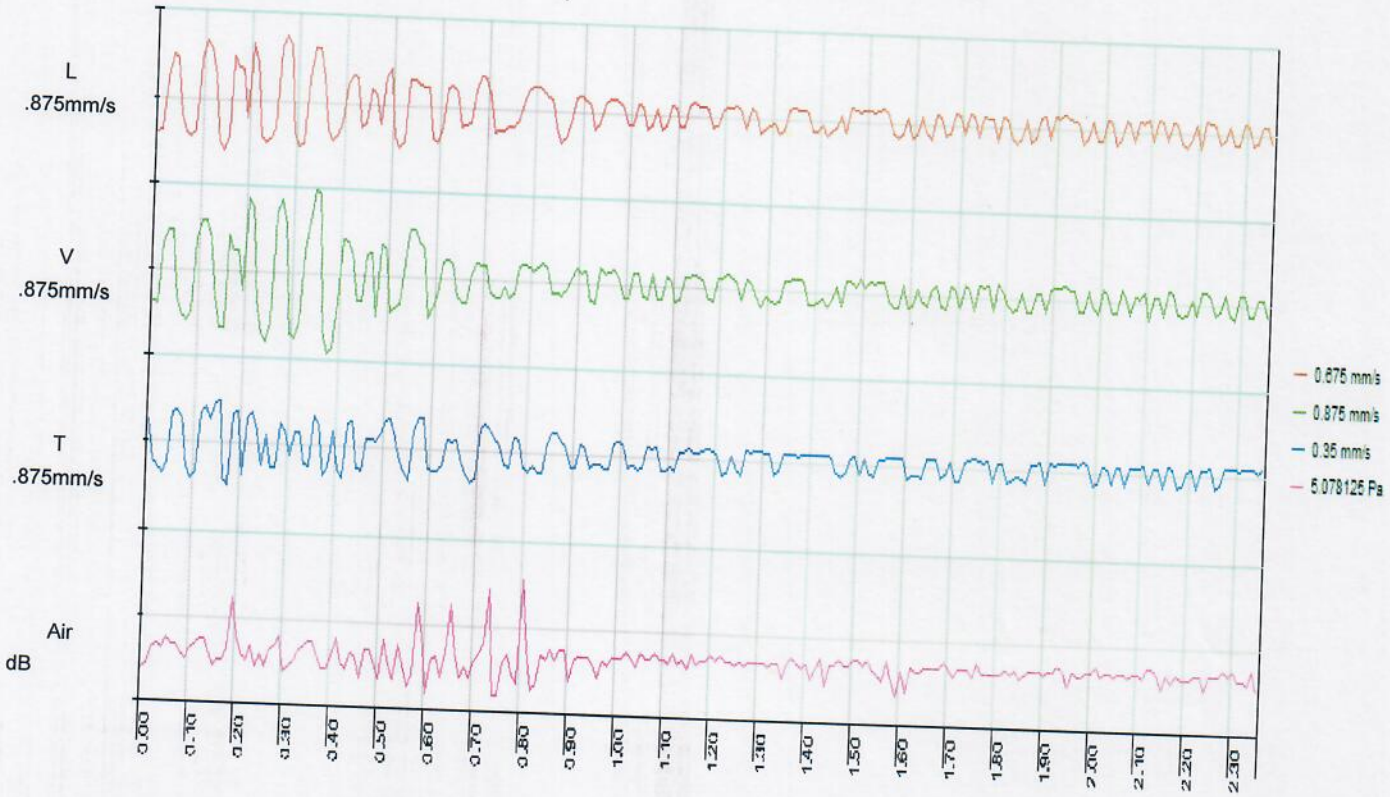
BLAST MONITORING LOCATIONS
PHASE 4

GALLAGHER AGGREGATES LTD
BLAISE FARM QUARRY
WEST MALLING

Drn by:- MJW | Date:- 4th June 2020 | Scale:- 1:10000 @ A4 | Sheet number:- 1 of 1

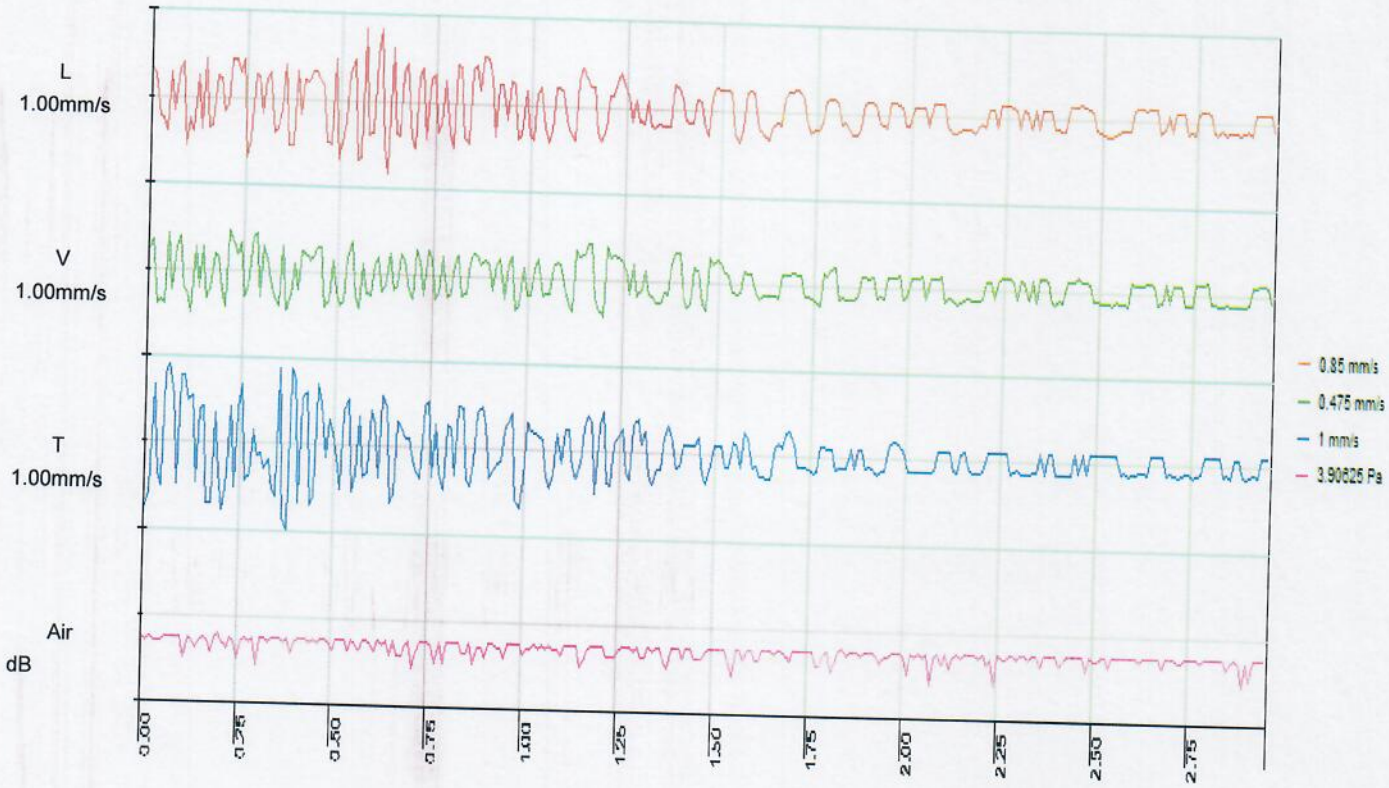
Drawing number:- GAL-BQ-20-11 | Revision:- /

Event 721 11/08/20 13:12:44 Calibrate by: MAY 21 Farm Gate B554



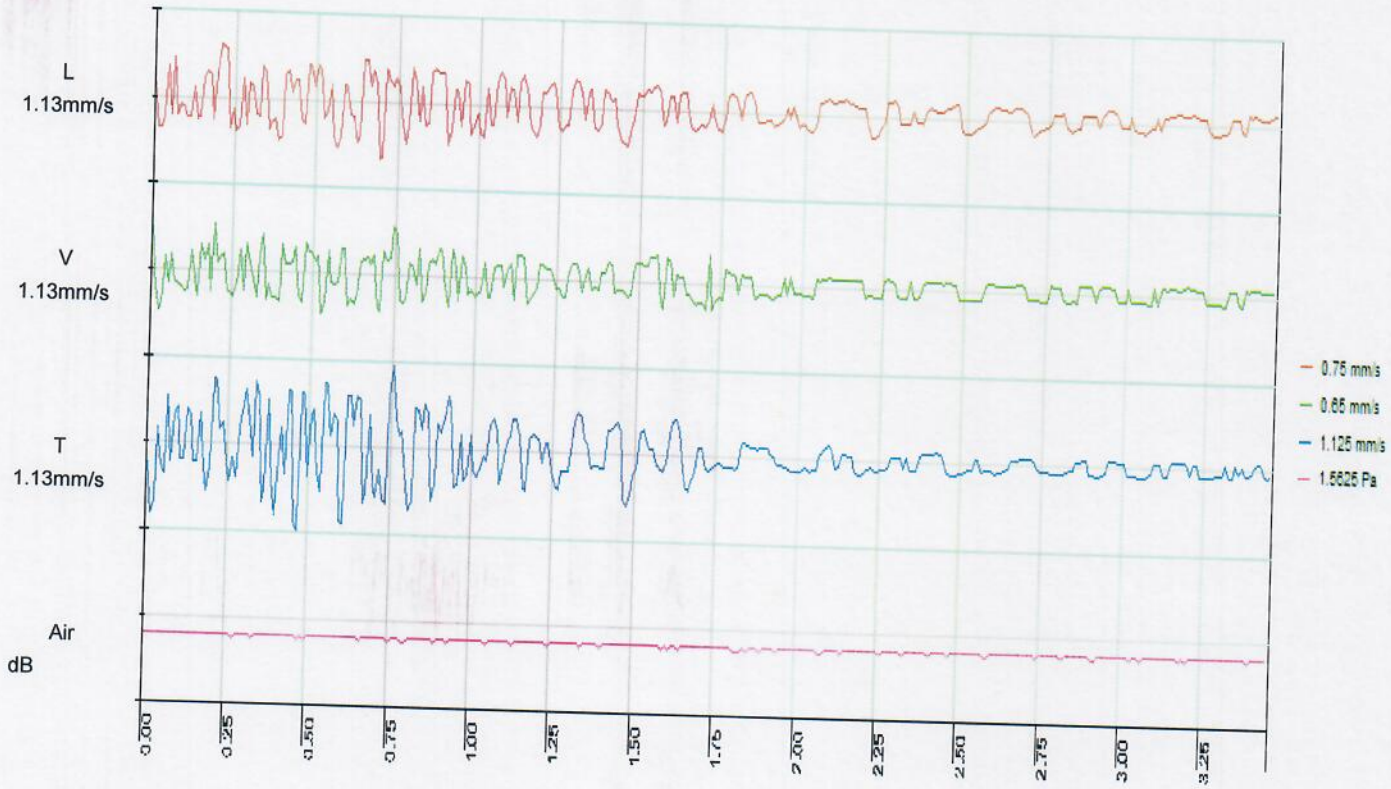
EventNo 721		Plane	
Variable	L	V	T
Bank A			
Max Vel (mm/s)	.675	.875	.350
Frequency (Hz)	16.7	10.9	31.3
Max Acc (g)	.028	.025	.020
Max Disp (mm)	.007	.010	.005
Resultant Max A	.925mm/s		
Air Overpressure	108dB		
Date	11/08/20		
Time	13:12:44		
Voltage	5.35		

Event 576 11/08/20 13:10:47 Calibrate by: MAY 21 Central Site Station B554



EventNo 576		Plane	
Variable	L	V	T
Bank A			
Max Vel (mm/s)	.850	.475	1.00
Frequency (Hz)	35.7		35.7
Max Acc (g)	.035	.030	.030
Max Disp (mm)	.010	.009	.008
Resultant Max A	1.15mm/s		
Air Overpressure	106dB		
Date	11/08/20		
Time	13:10:47		
Voltage	4.37		

Event 113 11/08/20 13:10:06 Calibrate by: JUN 21 Southern Site Station B564

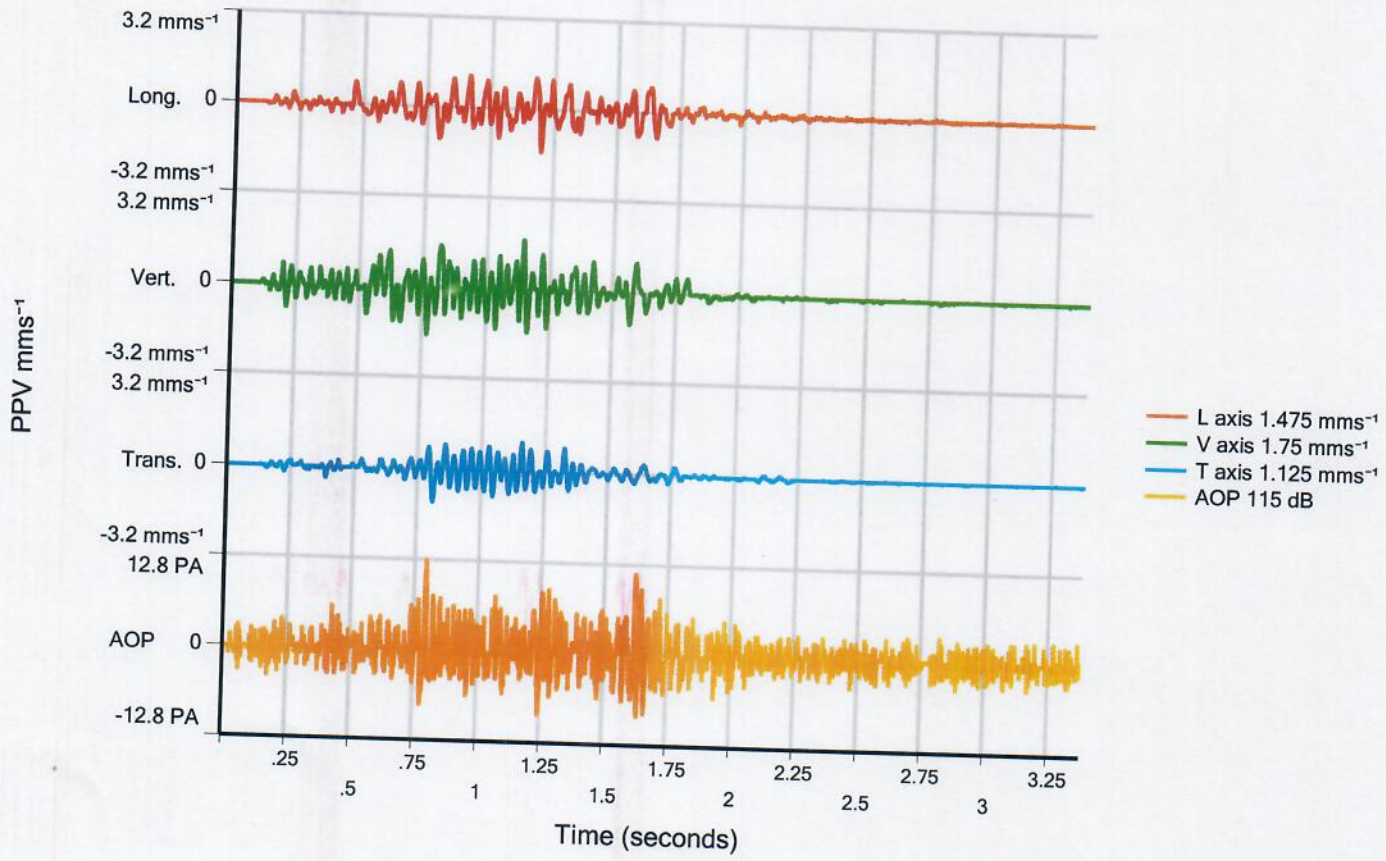


EventNo 113		Plane	
Variable	L	V	T
Bank A			
Max Vel (mm/s)	.750	.650	1.13
Frequency (Hz)	25.0	35.7	19.2
Max Acc (g)	.025	.023	.028
Max Disp (mm)	.014	.009	.020
Resultant Max A	1.18mm/s		
Air Overpressure	100dB		
Date	11/08/20		
Time	13:10:06		
Voltage	5.21		

VIBROCK

V9000 Seismograph Serial Number 2333 Calibrate by: 5/2021

Trigger Waveform Graph Location Site OFFICE



Event Number	733
Serial Number	2333
Event Type	Trigger A
Monitoring Mode	PPV mms⁻¹
Start Date	11/8 /2020
Start Time	13:21:04

Channel A	PPV	Frequency	Acceleration	Displacement
Longitudinal Max	1.475 mms⁻¹	27.8 Hz	0.038 g	0.019 mm
Vertical Max	1.75 mms⁻¹	27.8 Hz	0.068 g	0.025 mm
Transverse Max	1.125 mms⁻¹	25 Hz	0.038 g	0.013 mm

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Appendix 9:

- **Appendix 9:** Report R20.10806/2/BG titled “Assessment of Environmental Impact of Blasting at Blaise Farm Quarry, West Malling, Kent” (Vibrock, 2 September 2020)

Assessment of Environmental Impact of Blasting at Blaise Farm Quarry, West Malling, Kent

GALLAGHER GROUP

R20.10806/2/BG
Date of Report: 02 September 2020

QUALITY MANAGEMENT

Report Title:	Assessment of Environmental Impact of Blasting at Blaise Farm Quarry, West Malling, Kent
Client:	Gallagher Group
Report Number:	R20.10806/2/BG
Issue Date:	02 September 2020

Prepared By:	**Checked By:**
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Consultant	**Director**

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CONTENTS

TABLES

FIGURES

APPENDIX

1.0 INTRODUCTION

1.1 At the request of Gallagher Group, Vibrock Limited were commissioned to undertake a blast induced vibration study to assess the environmental impact of blasting operations at Blaise Farm Quarry, West Malling, Kent.

1.2 This study benefits from site inspections and monitoring of typical production blasts undertaken on 7 July, 13 July, 24 August and 26 August 2020.

2.0 SITE DESCRIPTION

2.1 Blaise Farm Quarry is located some 2.5 kilometres to the south west of the settlement of West Malling.

2.2 The permitted mineral extraction area within which future mineral extraction operations will take place is located to the west and south of the existing quarry void. The closest residential properties lie within the settlement of Offham to the north of the quarry and in the settlement of Kings Hill to the south east of the quarry.

2.3 The optimum blast design may vary from blast to blast and will necessarily be decided by the quarry operator with reference to the site specific conditions and in order to comply with the site vibration criteria.

3.0 EFFECTS OF BLASTING

3.1 When an explosive detonates within a borehole stress waves are generated causing very localised distortion and cracking. Outside of this immediate vicinity, however, permanent deformation does not occur. Instead, the rapidly decaying stress waves cause the ground to exhibit elastic properties whereby the rock particles are returned to their original position following the passage of the stress waves. Such vibration is always generated even by the most well designed and executed of blasts and will radiate away from the blast site attenuating as distance increases.

3.2 With experience and knowledge of the factors which influence ground vibration, such as blast type and design, site geology and receiving structure, the magnitude and significance of these waves can be accurately predicted at any location.

3.3 Vibration is also generated within the atmosphere where the term air overpressure is used to encompass both its audible and sub-audible frequency components. Again, experience and knowledge of blast type and design enables prediction of levels and an assessment of their significance. In this instance, predictions can be made less certain by the fact that air overpressure levels may be significantly influenced by atmospheric conditions. Hence the most effective method of control is its minimisation at source.

3.4 It is important to realise that for any given blast it is very much in the operator's interest to always reduce vibration, both ground and airborne to the minimum possible in that this substantially increases the efficiency and hence economy of blasting operations.

4.0 BLAST VIBRATION TERMINOLOGY

4.1 Ground Vibration

4.1.1 Vibration can be generated within the ground by a dynamic source of sufficient energy. It will be composed of various wave types of differing characteristics and significance collectively known as seismic waves.

4.1.2 These seismic waves will spread radially from the vibration source decaying rapidly as distance increases.

4.1.3 There are four interrelated parameters that may be used in order to define ground vibration magnitude at any location. These are:-

Displacement - the distance that a particle moves before returning to its original position, measured in millimetres (mm).

Velocity - the rate at which particle displacement changes, measured in millimetres per second (mms^{-1}).

Acceleration - the rate at which the particle velocity changes, measured in millimetres per second squared (mms^{-2}) or in terms of the acceleration due to the earth's gravity (g).

Frequency - the number of oscillations per second that a particle undergoes measured in Hertz (Hz).

4.1.4 Much investigation has been undertaken, both practical and theoretical, into the damage potential of blast induced ground vibration. Among the most eminent of such research authorities are the former United States Bureau of Mines (USBM), Langefors and Kihlström, and Edwards and Northwood. All have concluded that the vibration parameter best suited as a damage index is particle velocity.

4.1.5 Studies by the USBM have clearly shown the importance of adopting a monitoring approach that also includes frequency.

4.1.6 Thus the parameters most commonly used in assessing the significance of an impulsive vibration are those of particle velocity and frequency which are related for sinusoidal motion as follows:-

$$PV = 2 \pi f a$$

where PV = particle velocity
π = pi
f = frequency
a = amplitude

4.1.7 It is the maximum value of particle velocity in a vibration event, termed the peak particle velocity, that is of most significance and this will usually be measured in three independent, mutually perpendicular directions at any one location in order to ensure that the true peak value is captured. These directions are longitudinal (or radial), vertical and transverse.

4.1.8 Such maximum of any one plane measurements is the accepted standard worldwide and as recommended by the British Standards Institution and the International Standards Institute amongst others. It is also the basis for all the recognised investigations into satisfactory vibration levels with respect to damage of structures and human perception.

4.1.9 British Standard 7385 states that there is little probability of fatigue damage occurring in residential building structures due to blasting. The increase of the component stress levels due to imposed vibration is relatively nominal and the number of cycles applied at a repeated high level of vibration is relatively low. Non-structural components (such as plaster) should incur dynamic stresses which are typically well below, i.e. only 5% of, component yield and ultimate strengths.

4.1.10 All research and previous work undertaken has indicated that any vibration induced damage will occur immediately if the damage threshold has been exceeded and that there is no evidence of long term effects.

4.2 Airborne Vibration

4.2.1 Whenever an explosive is detonated transient airborne pressure waves are generated.

4.2.2 As these waves pass a given position, the pressure of the air rises very rapidly to a value above the atmospheric or ambient pressure. It then falls more slowly to a value below atmospheric before returning to the ambient value after a series of oscillations. The maximum pressure above atmospheric is known as the peak air overpressure.

4.2.3 These pressure waves will comprise of energy over a wide frequency range. Energy above 20 Hz is perceptible to the human ear as sound, whilst that below 20 Hz is inaudible, however, it can be sensed in the form of concussion. The sound and concussion together is known as air overpressure which is measured in terms of decibels (dB) or pounds per square inch (p.s.i.) over the required frequency range.

4.2.4 The decibel scale expresses the logarithm of the ratio of a level (greater or less) relative to a given base value. In acoustics, this reference value is taken as 20×10^{-6} Pascals, which is accepted as the threshold of human hearing.

4.2.5 Air overpressure (AOP) is therefore defined as:-

$$\text{AOP, dB} = 20 \text{ Log } \frac{\text{(Measured pressure)}}{\text{(Reference pressure)}}$$

4.2.6 Since both high and low frequencies are of importance no frequency weighting network is applied, unlike in the case of noise measurement when an A - weighted filter is employed.

4.2.7 All frequency components, both audible and inaudible, can cause a structure to vibrate in a way which can be confused with the effects of ground vibrations.

4.2.8 The lower, inaudible, frequencies are much less attenuated by distance, buildings and natural barriers. Consequently, air overpressure effects at these frequencies can be significant over greater distances, and more readily excite a response within structures.

4.2.9 Should there be perceptible effects they are commonly due to the air overpressure inducing vibrations of a higher, audible frequency within a property and it is these secondary rattles of windows or crockery that can give rise to comment.

4.2.10 In a blast, airborne pressure waves are produced from five main sources:-

(i) Rock displacement from the face
(ii) Ground induced airborne vibration
(iii) Release of gases through natural fissures
(iv) Release of gases through stemming
(v) Insufficiently confined explosive charges

4.2.11 Meteorological factors over which an operator has no control can influence the intensity of air overpressure levels at any given location. Thus, wind speed and direction, temperature and humidity at various altitudes can have an effect upon air overpressure.

5.0 VIBRATION CRITERIA

5.1 Introduction

5.1.1 When defining damage to residential type structures the following classifications are used:-

Cosmetic or threshold	-	the formation of hairline cracks or the growth of existing cracks in plaster, drywall surfaces or mortar joints.
Minor	-	the formation of large cracks or loosening and falling of plaster on drywall surfaces, or cracks through bricks/concrete blocks.
Major or structural	-	damage to structural elements of a building.

5.1.2 Published damage criteria will not necessarily differentiate between these damage types but rather give levels to preclude cosmetic damage and therefore automatically prevent any more severe damage.

5.2 United States Bureau of Mines

5.2.1 The comprehensive research programme undertaken by the United States Bureau of Mines (USBM) (R.I. 8507, 1980) determined that vibration values well in excess of 50 mms^{-1} are necessary to produce structural damage to residential type structures. The onset of cosmetic damage can be associated with lower vibration levels, especially at very low vibration frequencies, and a limit of 12.7 mms^{-1} is therefore recommended for such relatively unusual vibration. For the type of vibration associated with open pit blasting in this country, the safe vibration levels are seen to be from 19 - 50 mms^{-1}.

5.2.2 A further USBM publication (Bureau of Mines Technology Transfer Seminar, 1987) states that these safe vibration levels are "….for the worst case of structure conditions….", and that they are "….independent of the number of blasting events and their durations", and that no damage has occurred in any of the published data at vibration levels less than 12.7 mms^{-1}.

5.2.3 Any doubt that such low levels of vibration are perfectly safe should be dispelled by considering the strain induced within a residential type property from daily environmental changes and domestic activities. This is confirmed within the 1987 USBM publication which quotes that daily changes in humidity and temperature can readily induce strain of the order that is equivalent to blast induced vibration of from 30 - 75 mms^{-1}. Typical domestic activities will produce strain levels corresponding to vibration of up to 20 mms^{-1} and greater.

5.2.4 It is for this reason that many domestic properties will exhibit cracks that may be wrongly attributed to blasting activities. There are many additional reasons why properties will develop cracks, for example:-

a) Fatigue and ageing of wall coverings;
b) Drying out of plaster finishes;
c) Shrinkage and swelling of wood;
d) Chemical changes in mortar, bricks, plaster and stucco;
e) Structural overloading;
f) Differential foundation settlement - particularly after times of prolonged dry spells.

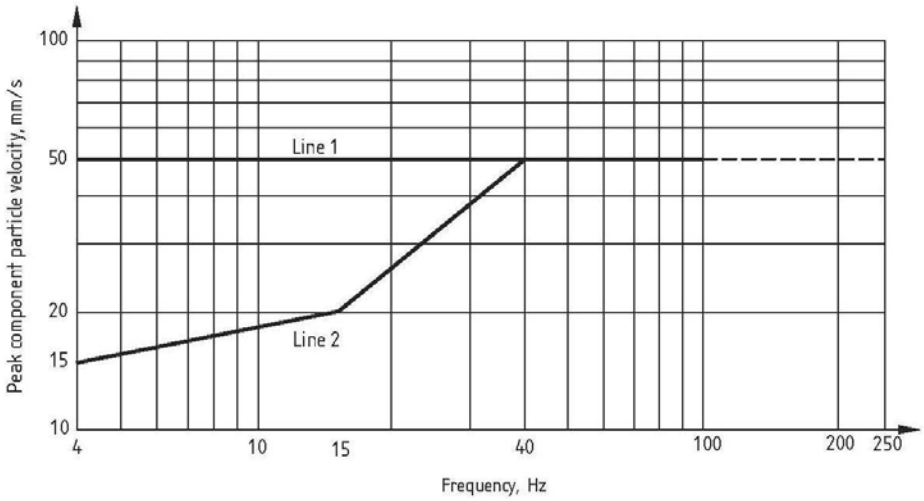
5.3 British Standard 7385-2: 1993 - Evaluation and Measurement for Vibration in Buildings: Guide to Damage Levels from Groundborne Vibration

5.3.1 The British Standards Institution's structural damage committee have investigated impulsive vibration with respect to its damage potential. They contacted some 224 organisations, mainly British, and found no evidence of any damage at levels less than those recommended by the USBM. The investigation culminated in British Standard 7385: Part 2: 1993.

5.3.2 British Standard 7385 gives guide values to prevent cosmetic damage to property. Between 4 Hz and 15 Hz, a guide value of 15 - 20 mms^{-1} is recommended, whilst above 40 Hz the guide value is 50 mms^{-1}. These vibration criteria reconfirm those of the USBM:

Line	Type of Building	Peak component particle velocity in frequency range of predominant pulse	
		4 Hz to 15 Hz	15 Hz and above
1	Reinforced or framed structures	50 mms^{-1} at 4 Hz and above	50 mms^{-1} at 4 Hz and above
	Industrial and heavy commercial buildings		
2	Unreinforced or light framed structures	15 mms^{-1} at 4 Hz increasing to 20 mms^{-1} at 15 Hz	20 mms^{-1} at 15 Hz increasing to 50 mms^{-1} at 40 Hz and above
	Residential or light commercial buildings		

Note 1 – values referred to are at the base of the building
Note 2 – for line 2, at frequencies below 4 Hz, a maximum displacement of 0.6 mm (zero to peak) is not to be exceeded



Transient vibration guide values for cosmetic damage (BS 7385-2: 1993, pg 6)

5.3.3 All research and previous work undertaken has indicated that any vibration induced damage will occur immediately if the damage threshold has been exceeded and that there is no evidence of long term effects.

5.3.4 Whilst cosmetic damage levels range from 15 to 50 mms^{-1}, according to BS 7385: Part 2, "Minor damage is possible at vibration magnitudes which are greater than twice those given for cosmetic damage, and major damage to a building structure may occur at values greater than four times the tabulated values". Hence vibration levels necessary for structural damage within property are accepted to be around 200 mms^{-1} and above.

5.4 BS 5228-2: 2009 + A1: 2014, Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration

5.4.1 Damage threshold criteria for transient vibration within British Standard 5228-2: 2009 + A1: 2014 is guided by the tabulated levels contained within BS 7385-2: 1993.

5.5 Planning Practice Guidance to the National Planning Policy Framework (2014)

5.5.1 In March 2014 the Planning Practice Guidance was issued by the Government as a framework for assessing the environmental impacts of mineral extraction in England.

5.5.2 The guidance document states that the environmental impact of blasting operations should be assessed but does not provide an assessment framework or guidance on relevant planning conditions. The British Standards and other documents detailed within this report however provide relevant guidance which is in line with the vibration criteria detailed within the former Mineral Planning Guidance notes MPG 9 and 14, archived in March 2014.

5.5.3 The former MPG 9 and 14 stated that planning conditions should provide for limits on the timing of blasts and on ground vibrations received at sensitive properties, for monitoring to ensure that the limits are not exceeded and for methods to be employed minimising air overpressure.

5.5.4 Acceptable ground vibration criteria within the former MPG 9 and 14 suggested a range of between 6 to 10 mms^{-1} at a 95% confidence level measured at sensitive property, with no individual blast to exceed 12 mms^{-1}.

5.6 The Environmental Effects of Production Blasting from Surface Mineral Workings, DETR (Vibrock Limited)

5.6.1 These same criteria are also recommended within the 1998 Department of the Environment Transport and The Regions research publication, The Environmental Effects of Production Blasting from Surface Mineral Workings.

5.6.2 This same DETR publication also notes that "It would appear that over the years conditions have become progressively more stringent. No doubt this is as a result of MPAs seeking to reduce the number of complaints and by operators seeking to resolve issues more quickly. However, a reduction in complaints will not necessarily follow".

5.6.3 Indeed, one of the principal findings of the study which led to this publication is "Once the threshold of perception had been crossed the magnitude of vibration seemed to bear little relation to the level of resulting complaint".

5.6.4 An explanation of the necessity to use explosives and the likely effects as perceived by a site's neighbours can allay the concern of a significant proportion of those inhabitants of neighbouring property. It is invariably the case that an operator will consider the perception threshold level prior to the design of each and every blast at a particular site.

5.7 Air Overpressure

5.7.1 Comprehensive investigations into the nature and effects of air overpressure with particular reference to its damage potential have been undertaken by the United States Bureau of Mines (R.I. 8485, 1980).

5.7.2 The weakest parts of most structures that are exposed to air overpressure are windows. Poorly mounted, and hence pre-stressed windows might crack at around 150 dB (0.1 p.s.i.) with most cracking at 170 dB (1.0 p.s.i.). Structural damage can be expected at 180 dB (3.0 p.s.i.).

5.7.3 The recommendations by the United States Bureau of Mines are as follows:-

Instrument Response	Maximum Recommended Level (dB)
0.1 Hz high pass	134
2.0 Hz high pass	133
5.0 or 6.0 Hz high pass	129
C- Slow	105 dB (C)

5.7.4 This set of criteria is based on minimal probability of the most superficial type of damage in residential-type structures, the single best descriptor being recommended as the 2 Hz high pass system (R.I. 8485, 1980).

5.7.5 Satisfactory air overpressure levels are contained within BS 6472-2: 2008, which states the previously discussed research by USBM. According to BS 6472-2: 2008, "air overpressure levels measured at properties near quarries in the United Kingdom are generally around 120 dB(lin), which is 30 dB(lin) below, or only 3% of, the limit for cracking pre-stressed poorly mounted windows". The British Standard further suggests that due to the variable effects of the weather conditions at the time of any blast, the aim should always be to minimise air overpressure at source by giving careful consideration to blast design and implementation.

5.7.6 Guidance contained within the previously mentioned 1998 DETR publication and the former MPG 9 and 14 does not recommend an air overpressure limit.

5.7.7 With a sensible ground vibration limitation the economics of safe and efficient blasting will automatically ensure that air overpressures are kept to reasonable levels.

5.8 Perception Levels

5.8.1 The fact that the human body is very sensitive to vibration can result in subjective concern being expressed at energy levels well below the threshold of damage.

5.8.2 A person will generally become aware of blast induced vibration at levels of around 1.5 mms^{-1}, although under some circumstances this can be as low as 0.5 mms^{-1}. Even though such vibration is routinely generated within any property and is also entirely safe, when it is induced by blasting activities it is not unusual for such a level to give rise to subjective concern. Such concern is also frequently the result of the recent discovery of cracked plaster or brickwork that in fact has either been present for some time or has occurred due to natural processes.

5.8.3 It is our experience that virtually all complaints regarding blasting arise because of the concern over the possibility of damage to owner-occupied properties. Such complaints are largely independent of the vibration level. In fact, once an individual's perception threshold is attained, complaints can result from 3% to 4% of the total number of blasts, irrespective of their magnitude.

5.9 British Standard 6472–2: 2008 - Guide to evaluation of human exposure to vibration in buildings: Part 2: Blast-induced vibration

5.9.1 This document discusses how and where to measure blast-induced vibration and gives maximum satisfactory magnitudes of vibration with respect to human response. Satisfactory magnitudes are given as 6 to 10 mms^{-1} at a 90% confidence level as measured outside of a building on a well-founded hard surface as close to the building as possible.

5.9.2 Maximum satisfactory magnitudes of vibration with respect to human response for up to three blast vibration events per day are detailed within Table 1 of BS 6472-2: 2008:

Place	Time	Satisfactory magnitude[A] (ppv mms^{-1})
Residential	Day [D]	6.0 to 10.0 [C]
	Night [D]	2.0
	Other times [D]	4.5
Offices [B]	Any time	14.0
Workshops [B]	Any time	14.0

A) The satisfactory magnitudes are the same for the working day and the rest day unless otherwise stated;
B) Critical working areas where delicate tasks impose more stringent criteria than human comfort are outside the scope of this standard;
C) With residential properties people exhibit a wide variation of tolerance to vibration. Specific values are dependent upon social and cultural factors, psychological attitudes and the expected degree of intrusion. In practice the lower satisfactory magnitude should be used with the higher magnitude being justified on a case-by-case basis;
D) For the purpose of blasting, daytime is considered to be 08h00 to 18h00 Monday to Friday and 08h00 to 13h00 Saturday. Routine blasting would not normally be considered on Sundays or Public Holidays. Other times cover the period outside of the working day but exclude night-time, which is defined as 23h00 to 07h00.

5.10 Blaise Farm Quarry Planning Criteria Permission Reference TM/88/1002

5.10.1 Ground vibration as a result of blasting operations within the Phase 1 Operations extraction area shall not exceed:

(a) a peak particle velocity of 6 mms^{-1} in 95% of all blasts when measured over any period of one month as measured at any vibration sensitive locations

(b) a peak particle velocity of 12 mms^{-1} as measured at any vibration sensitive location

(c) a peak particle velocity of 15 mms^{-1} at the remains of the Chapel of St Blaise

6.0 PREDICTION AND CONTROL OF VIBRATION LEVELS

6.1 Ground Vibration

6.1.1 The accepted method of predicting peak particle velocity for any given situation is to use a scaling approach utilising separation distances and instantaneous charge weights. This method allows the derivation of the site specific relationship between ground vibration level and separation distance from a blast.

6.1.2 A scaled distance value for any location may be calculated as follows:-

Scaled Distance, SD = $DW^{-½}$ in $mkg^{-½}$

where D = Separation distance (blast to receiver) in metres
W = Maximum Instantaneous Charge (MIC) in kg
i.e. maximum weight of explosive per delay interval in kg

6.1.3 For each measurement location the maximum peak particle velocity from either the longitudinal, vertical or transverse axis is plotted against its respective scaled distance value on logarithmic graph paper.

6.1.4 An empirical relationship derived by the USBM relates ground vibration level to scaled distance as follows:-

$$PV = a\,(SD)^{b}$$

where PV = Maximum Peak Particle Velocity in mms^{-1}
SD = Scaled Distance in $mkg^{-½}$
a,b = Dimensionless Site Factors

6.1.5 The site factors a and b allow for the influence of local geology upon vibration attenuation as well as geometrical spreading. The values of a and b are derived for a specific site from least squares regression analysis of the logarithmic plot of peak particle velocity against scaled distance which results in the mathematical best fit straight line where

a is the peak particle velocity intercept at unity scaled distance
and b is the slope of the regression line

6.1.6 In almost all cases, a certain amount of data scatter will be evident, and as such statistical confidence levels are also calculated and plotted.

6.1.7 The statistical method adopted in assessing the vibration data is that used by Lucole and Dowding. The data is presented in the form of a graph showing the attenuation of ground vibration with scaled distance and results from log - normal modelling of the velocity distribution at any given scaled distance. The best fit or mean (50%) line as well as the upper 95% confidence level are plotted.

6.1.8 The process for calculating the best fit line is the least squares analysis method. The upper 95% confidence level is found by multiplying the mean line value by 1.645 times 10 raised to the power of the standard deviation of the data above the mean line. A log - normal distribution of vibration data will mean that the peak particle velocity at any scaled distance tends to group at lower values.

6.1.9 From the logarithmic plot of peak particle velocity against scaled distance, for any required vibration level it is possible to relate the maximum instantaneous charge and separation distance as follows:-

Maximum Instantaneous Charge (MIC) = $(D/SD)^2$

Where D = Separation distance (blast to receiver) in metres
SD = Scaled Distance in $mkg^{-½}$ corresponding to the vibration level required

6.1.10 The scaled distance approach assumes that blast design remains similar between those shots used to determine the scaling relationship between vibration level and separation distance and those for which prediction is required. For prediction purposes, the scaling relationship will be most accurate when calculations are derived from similar charge weight and distance values.

6.1.11 The main factors in blast design that can affect the scaling relationship are the maximum instantaneous charge weight, blast ratio, free face reflection, delay interval, initiation direction and blast geometry associated with burden, spacing, stemming and subdrill.

6.1.12 Although the instantaneous explosive charge weight has perhaps the greatest effect upon vibration level, it cannot be considered alone, and is connected to most aspects of blast design through the parameter blast ratio.

6.1.13 The blast ratio is a measure of the amount of work expected per unit of explosive, measured for example in tonnes of rock per kilogramme of explosive detonated (tonnes/kg), and results from virtually all aspects of a blast design i.e. hole diameter, depth, burden, spacing, loading density and initiation technique.

6.1.14 The scaled distance approach is also strictly valid only for the specific geology in the direction monitored. This is evident when considering the main mechanisms which contribute to ground motion dissipation:-

(i) Damping of ground vibrations, causing lower ground vibration frequencies with increasing distance.
(ii) Discontinuities causing reflection, refraction and diffraction.
(iii) Internal friction causing frequency dependent attenuation, which is greater for coarser grained rocks.
(iv) Geometrical spreading.

6.1.15 In practice similar rates of vibration attenuation may occur in different directions, however, where necessary these factors should be routinely checked by monitoring, especially on sites where geology is known to alter.

6.1.16 Where it is predicted that the received levels of vibration will exceed the relevant criteria, the operator will have to reduce the maximum instantaneous explosive charge weight. One method of achieving such a reduction is to deck the explosives within the borehole. This technique splits the column of explosives in two, separated by inert material. If blasting is required at closer distances than that where double decking would be a successful strategy, other charge reduction methods would have to be employed. These could be more complex decking strategies or changes to the blast geometry and / or the use of smaller diameter boreholes.

6.2 Airborne Vibration

6.2.1 Airborne vibration waves can be considered as sound waves of a higher intensity and will, therefore, be transmitted through the atmosphere in a similar manner. Thus meteorological conditions such as wind speed, wind direction, temperature, humidity and cloud cover and how these vary with altitude, can affect the level of the air overpressure value experienced at a distance from any blast.

6.2.2 If a blast is fired in a motionless atmosphere in which the temperature remains constant with altitude then the air overpressure intensity will decrease purely as a function of distance. In fact, each time the distance doubles the air overpressure level will decrease by 6dB. However, such conditions are very rare and it is more likely that a combination of the factors mentioned above will increase the expected intensity in some areas and decrease it in others.

6.2.3 Given sufficient meteorological data it is possible to predict these increases or decreases. However, to be of use this data must be both site specific and of relevance to the proposed blasting time. In practice this is not possible because the data is obtained from meteorological stations at some distance from the blast site and necessarily at some time before the blast is to be detonated. The ever changing British weather therefore causes such data to be rather limited in value and its use clearly counter productive if it is not relevant to the blast site at the detonation time. In addition, it would not normally be safe practice to leave charged holes standing for an unknown period of time.

6.2.4 It is because of the variability of British weather that it is standard good practice to control air overpressure at source and hence minimise its magnitude at distance, even under relatively unfavourable conditions.

6.2.5 Such control is achieved in a well designed and executed blast in which all explosive material is adequately confined. Thus particular attention must be given to accurate face profiling and the subsequent drilling and correct placement of explosive within any borehole, having due regard to any localised weaknesses in the strata including overbreak from a previous shot, clay joints and fissured ground.

6.2.6 Stemming material should be of sufficient quantity and quality to adequately confine the explosives, and care should be taken in deciding upon the optimum detonation technique for the specific site circumstances.

6.2.7 Although there will always be a significant variation in observed air overpressure levels at a particular site it is possible to predict a range of likely values given sufficient background information and/or experience. In this respect, past recordings may be analysed according to the cube root scaled distance approach to provide a useful indication of future levels.

7.0 BLAST INDUCED VIBRATION MEASUREMENTS

7.1 Survey Dates

7.1.1 Levels of vibration from production blasts were measured from blasts initiated at 13:15 hours on 7 July, 13 July, 24 August and 26 August 2020. The instrumentation utilised is given in Appendix 1.

7.1.2 The regression line shows that each blast was monitored using instruments which were sited at the following separation distances:-

Date	Separation Distance (Blast to Monitor in metres)
07.07.20	85
07.07.20	152
07.07.20	451
07.07.20	455
07.07.20	512
07.07.20	573
07.07.20	812

Date	Separation Distance (Blast to Monitor in metres)
13.07.20	20
13.07.20	30
13.07.20	40
13.07.20	102
13.07.20	120
13.07.20	154
13.07.20	198
13.07.20	233

Date	Separation Distance (Blast to Monitor in metres)
24.08.20	25
24.08.20	33
24.08.20	42
24.08.20	54
24.08.20	122
24.08.20	168
24.08.20	175
24.08.20	181
24.08.20	187
24.08.20	191
24.08.20	298

Date	Separation Distance (Blast to Monitor in metres)
26.08.20	113
26.08.20	126
26.08.20	133
26.08.20	140
26.08.20	150
26.08.20	187
26.08.20	199
26.08.20	231
26.08.20	256

7.2 Survey Method

7.2.1 The following instrumentation was used for all measurements:-

Manufacturer	Instrument	Type
Vibrock	Digital Seismograph	V901
Vibrock	Digital Seismograph	BRIC

7.2.2 The following set-up parameters were used on the seismographs during vibration measurements:-

Trigger Level: 0.3, 0.5 - 2.5 mms^{-1}
Record Length: 2.5 - 5.0 seconds
Measurement Type: Impulse

7.2.3 For a full description of this instrumentation see Appendix 1.

7.2.4 The instrumentation was located at varying distances from the blast. The data obtained was used to generate a regression curve plot for blasting at Blaise Farm Quarry. The use of the USBM formula to predict vibration levels calls for the maximum peak particle velocity (PPV) to be plotted against scaled distance (SD) in a logarithmic manner. The latter is defined as:-

$$\text{Scaled Distance } (mkg^{-½}) = \frac{\text{blast/receiver separation distance (m)}}{(MIC)^{0.5}}$$

where MIC is the maximum instantaneous charge weight in kg.

8.0 RESULTS

8.1 Details of the blasts monitored are shown in Table 1.

8.2 The results obtained are presented in Tables 2.1 to 2.4.

8.3 Tables 3.1 and 3.2 give the allowable instantaneous explosive charge weights in order to comply with the site vibration criteria.

8.4 Table 4.1 and 4.2 detail the predicted vibration levels from blasting operations within the site boundary.

8.5 A regression line was plotted for the maximum peak particle velocity in the three planes of measurement. The plot includes the 95% confidence limit and is shown in Figure 1.

9.0 DISCUSSION

9.1 The blast design employed during the monitoring is typical of the blast designs to be utilised for future production blasting at Blaise Farm Quarry.

9.2 The data has been processed by the least squares analysis method in order to obtain the regression line, which is the mathematical best fit straight line for the data. An indication of the degree of fit of this straight line is obtained by the correlation coefficient, where -1.0 indicates a perfect fit. In this instance the correlation coefficient is -0.94. The upper 95% confidence level is shown plotted for this data.

9.3 Table 3.1 gives the allowable instantaneous explosive charge weights in order to comply with the site vibration criterion for residential property of 6 mms^{-1} at a 95% confidence level with no blast to exceed 12 mms^{-1} at the given separation distances. A maximum instantaneous charge weight of 10 kg utilised during the monitored blasts could be used 182 metres from the property whilst complying with the site vibration criterion.

9.4 Table 3.2 gives the allowable instantaneous explosive charge weights in order to comply with the site vibration criterion of 15 mms^{-1} at the remains of the Chapel of St Blaise at the given separation distances. A maximum instantaneous charge weight of 10 kg could be used 151 metres from the remains whilst complying with the site vibration criterion.

9.5 The closest residential properties to the boundary of the permitted mineral extraction area are approximately 296 metres to the north of the site and 214 metres to the south east at closest approach.

9.6 Table 4.1 details the predicted vibration levels when blasting within the current mineral extraction area at the quarry utilising instantaneous explosive charge weights of 10 kg.

9.7 Table 4.2 details the worst case predicted vibration levels from blasting operations at the closest approach within the permitted mineral extraction area. The predicted maximum vibration levels given will only occur when using an instantaneous charge weight of 10 kg at the nearest possible distance of approach to the respective locations.

9.8 The locations chosen for the purposes of this report are those which are the closest inhabited residential properties surrounding the permitted mineral extraction area.

Blaise Farm House

9.9 The receptor of Blaise Farm House is located to the north west of current mineral extraction operations. The predicted vibration levels at this receptor from the location of current mineral extraction operations utilising an MIC of 10kg is a most likely 0.97 mms^{-1}, 1.95 mms^{-1} at a 95% confidence level and 3.61 at a 99.9% confidence level.

9.10 Predictions utilising an MIC of 10kg at the closest approach of permitted mineral extraction operations to the considered location would result in a most likely vibration level of 1.23 mms^{-1} at a 50% confidence level, 2.48 mms^{-1} at a 95% confidence level and 4.60 mms^{-1} at a 99.9% confidence level. Vibration of such magnitude complies with the site vibration criterion and is within the relevant criteria with respect to the prevention of cosmetic damage at residential structures and the human perception of vibration.

Beaufighter Road

9.11 The closest residential receptors to the south east of the quarry are located in Kings Hill on Beaufighter Road. The predicted vibration levels from the location of current mineral extraction operations utilising an MIC of 10kg is a most likely 0.72 mms^{-1}, 1.45 mms^{-1} at a 95% confidence level and 2.69 at a 99.9% confidence level.

9.12 Predictions utilising an MIC of 10kg at the closest approach of permitted mineral extraction operations would result in a most likely vibration level of 2.29 mms^{-1}, with 4.62 mms^{-1} at a 95% confidence level and 8.55 mms^{-1} at a 99.9% confidence level. Vibration of such magnitude complies with the site vibration criterion and is within the relevant criteria with respect to the prevention of cosmetic damage at residential structures and the human perception of vibration.

Fre Mell Farm

9.13 The residential receptor of Fre Mell Farm is located to the north west of current mineral extraction operations and to the north of the north western corner of the permitted mineral extraction area. The predicted vibration levels at this receptor from blasting within the current mineral extraction area utilising an MIC of 10kg is a most likely 0.35 mms^{-1}, 0.70 mms^{-1} at a 95% confidence level and 1.30 at a 99.9% confidence level.

9.14 Predictions utilising an MIC of 10kg at the closest approach of permitted mineral extraction operations to the considered location would result in a most likely vibration level of 1.36 mms^{-1}, 2.74 mms^{-1} at a 95% confidence level and 5.08 mms^{-1} at a 99.9% confidence level. Vibration of such magnitude complies with the site vibration criterion and is within the relevant criteria with respect to the prevention of cosmetic damage at residential structures and the human perception of vibration.

10.0 CONCLUSIONS

10.1 A site specific regression line has been derived and interpreted to assess the implications of utilising a MIC of 10kg within the current working area and at closest approach to residential receptors within the permitted mineral extraction area.

10.2 Current and future operations will comply with site planning criteria.

10.3 All vibration will be of a low order of magnitude and would be entirely safe with respect to the possibility of the most cosmetic of plaster cracks as detailed within British Standard 7385-2: 1993.

10.4 Vibration will also be within those levels recommended for blast induced vibration and human perception as being satisfactory within the previously discussed British Standard Guide BS 6472-2: 2008.

10.5 With such low ground vibration levels accompanying air overpressure would also be of a very low and hence safe level, although possibly perceptible on occasions at the closest of properties.

10.6 The programme of blast monitoring should be continued. The results of such monitoring will indicate whether or not there is compliance with the vibration criteria and they can also be used to continually update the regression analysis and thus provide valuable input to the design of future blasts.

11.0 REFERENCES

1. BS ISO 4866: 2010. Mechanical vibration and shock – Vibration of fixed structures – Guidelines for the measurement of vibrations and evaluation of their effects on structures. British Standards Institution.

2. BS 6472-2: 2008. Guide to evaluation of human exposure to vibration in buildings, Part 2: Blast-induced vibration. British Standards Institution.

3. BS 7385: 1993 Evaluation and measurement for vibration in buildings: Part 2. Guide to damage levels from groundborne vibration. British Standards Institution.

4. BS 5228-2: 2009 + A1:2014, Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration.

5. Planning Practice Guidance to the National Planning Policy Framework, 2014, Department for Communities and Local Government.

6. Minerals Planning Guidance Note No. 9, 1992 Planning and Compensation Act 1991: Interim Development Order Permissions (IDOS) - Conditions. Department of the Environment, Welsh Office.

7. Minerals Planning Guidance Note No. 14, 1995 Environment Act 1995: Review of Mineral Planning Permissions. Department of the Environment, Welsh Office.

8. The Environmental Effects of Production Blasting from Surface Mineral Workings, Vibrock Report on behalf of the DETR, 1998.

TABLE 1

BLAST DETAILS AT BLAISE FARM QUARRY

Date:	07 July 2020
Time:	13:15 hours
No of Holes:	50
Diameter:	125 mm
Depth:	4 metres
Burden:	2.5 metres
Spacing:	2.5 metres
Explosive Charge Weight per Hole:	10 kg
Maximum Instantaneous Explosive Charge Weight:	10 kg
Total Explosive Charge Weight:	500 kg
Explosive Type:	ANFO
Initiation:	Non electric system

Date:	13 July 2020
Time:	13:15 hours
No of Holes:	34
Diameter:	125 mm
Depth:	12 metres
Burden:	2.7 metres
Spacing:	2.7 metres
Explosive Charge Weight per Hole:	20 kg
Maximum Instantaneous Explosive Charge Weight:	10 kg
Total Explosive Charge Weight:	680 kg
Explosive Type:	ANFO
Initiation:	Non electric system

TABLE 1 - CONTINUED

BLAST DETAILS AT BLAISE FARM QUARRY

Date:	24 August 2020
Time:	13:15 hours
No of Holes:	29
Diameter:	125 mm
Depth:	15 metres
Burden:	2.7 metres
Spacing:	2.7 metres
Explosive Charge Weight per Hole:	30 kg
Maximum Instantaneous Explosive Charge Weight:	10 kg
Total Explosive Charge Weight:	870 kg
Explosive Type:	ANFO
Initiation:	Non electric system

Date:	26 August 2020
Time:	13:15 hours
No of Holes:	25
Diameter:	125 mm
Depth:	15 metres
Burden:	2.7 metres
Spacing:	2.7 metres
Explosive Charge Weight per Hole:	30 kg
Maximum Instantaneous Explosive Charge Weight:	10 kg
Total Explosive Charge Weight:	750 kg
Explosive Type:	ANFO
Initiation:	Non electric system

TABLE 2.1

RESULTS OBTAINED AT BLAISE FARM QUARRY: 7 July 2020

Separation Distance (Blast to Monitor) (metres)	Measurement Axis	Peak Particle Velocity (mms^{-1})	Air Overpressure (dB)
85	Long Vert Trans	4.70 3.60 4.72	114
152	Long Vert Trans	2.27 1.67 2.10	121
451	Long Vert Trans	<0.5 <0.5 <0.5	-
455	Long Vert Trans	<0.5 <0.5 <0.5	-
512	Long Vert Trans	<0.5 <0.5 <0.5	-
573	Long Vert Trans	<0.5 <0.5 <0.5	-
812	Long Vert Trans	<0.5 <0.5 <0.5	-

TABLE 2.2

RESULTS OBTAINED AT BLAISE FARM QUARRY: 13 July 2020

Separation Distance (Blast to Monitor) (metres)	Measurement Axis	Peak Particle Velocity (mms^{-1})	Air Overpressure (dB)
20	Long Vert Trans	64.8 78.4 127.6	107
30	Long Vert Trans	60.0 97.6 96.0	154
40	Long Vert Trans	19.6 42.0 30.0	141
102	Long Vert Trans	4.35 5.97 4.52	127
120	Long Vert Trans	3.57 6.05 3.52	126
154	Long Vert Trans	1.82 2.97 3.87	118
198	Long Vert Trans	3.85 1.80 2.95	116
233	Long Vert Trans	0.925 1.00 1.10	120

TABLE 2.3

RESULTS OBTAINED AT BLAISE FARM QUARRY: 24 August 2020

Separation Distance (Blast to Monitor) (metres)	Measurement Axis	Peak Particle Velocity (mms^{-1})	Air Overpressure (dB)
25	Long Vert Trans	66.4 38.4 48.8	131
33	Long Vert Trans	26.8 35.6 35.2	132
42	Long Vert Trans	14.8 10.8 14.0	135
54	Long Vert Trans	19.2 11.2 17.6	120
122	Long Vert Trans	2.57 3.35 3.50	105
168	Long Vert Trans	2.80 1.85 2.52	109
175	Long Vert Trans	2.15 1.65 2.27	153
181	Long Vert Trans	2.20 1.47 2.25	111
187	Long Vert Trans	1.95 1.27 2.35	107
191	Long Vert Trans	1.77 1.12 2.27	108
298	Long Vert Trans	1.87 0.975 0.950	107

TABLE 2.4

RESULTS OBTAINED AT BLAISE FARM QUARRY: 26 August 2020

Separation Distance (Blast to Monitor) (metres)	Measurement Axis	Peak Particle Velocity (mms^{-1})	Air Overpressure (dB)
113	Long Vert Trans	11.9 5.52 3.75	132
126	Long Vert Trans	14.4 8.80 14.4	132
133	Long Vert Trans	10.8 8.10 3.15	107
140	Long Vert Trans	5.62 3.40 4.50	126
150	Long Vert Trans	5.80 5.87 4.70	116
187	Long Vert Trans	2.90 2.15 2.22	109
199	Long Vert Trans	1.82 1.95 2.70	109
231	Long Vert Trans	1.72 1.22 1.77	109
256	Long Vert Trans	2.27 1.02 1.67	109

TABLE 3.1

ALLOWABLE MAXIMUM INSTANTANEOUS EXPLOSIVE CHARGE WEIGHTS – INHABITED PROPERTY AT BLAISE FARM QUARRY

The corresponding scaled distance value for a vibration criterion of 6 mms^{-1} at a 95% confidence level with no blast to exceed 12 mms^{-1} is 57.49 $mkg^{-½}$.

This gives rise to the following allowable maximum instantaneous charge weights at the given blast/receiver separation distances:-

Blast/Receiver Separation Distance (metres)	Allowable Maximum Instantaneous Charge Weight, kg to comply with 6 mms^{-1} at 95% confidence level with no blast to exceed 12 mms^{-1}
200	12
250	18
300	27
350	37
400	48
450	61
500	75
550	91
600	108

TABLE 3.2

ALLOWABLE MAXIMUM INSTANTANEOUS EXPLOSIVE CHARGE WEIGHTS – REMAINS OF THE CHAPEL OF ST BLAISE AT BLAISE FARM QUARRY

The corresponding scaled distance value for a vibration criterion of 15 mms^{-1} at a 99.9% confidence level is 47.68 $mkg^{-½}$.

This gives rise to the following allowable maximum instantaneous charge weights at the given blast/receiver separation distances:-

Blast/Receiver Separation Distance (metres)	Allowable Maximum Instantaneous Charge Weight, kg to comply with 15 mms^{-1} at 99.9% confidence level
200	17
250	27
300	39
350	53
400	70

TABLE 4.1

PREDICTED VIBRATION LEVELS AT RESIDENTIAL RECEPTORS PERMITTED MINERAL EXTRACTION AREA AT BLAISE FARM QUARRY

Considering typical maximum instantaneous charge weights utilised within the current working area, the predicted vibration levels are as follows:-

Current Mineral Extraction Working Area

Location	Vibration Level Peak Particle Velocity (mms^{-1})		
	Maximum Instantaneous Explosive Charge Weight 10 kg		
	50% Confidence Level (mean)	95% Confidence Level	99.9% Confidence Level
1	0.97	1.95	3.61
2	0.72	1.45	2.69
3	0.35	0.70	1.30

Locations (see Figure 2)

1. Blaise Farm House
2. Beaufighter Road
3. Fre Mell Farm

* Maximum instantaneous explosive charge weights reduced in order to comply to vibration criteria.

TABLE 4.2

PREDICTED VIBRATION LEVELS AT RESIDENTIAL RECEPTORS PERMITTED MINERAL EXTRACTION AREA AT BLAISE FARM QUARRY

Considering a maximum instantaneous charge weight of 10 kg utilised at the nearest distance of approach to the location considered, the predicted vibration levels are as follows:-

Closest Approach Permitted Mineral Extraction Area

	50% Confidence Level (mean)	95% Confidence Level	99.9% Confidence Level
1	1.23	2.48	4.60
2	2.29	4.62	8.55
3	1.36	2.74	5.08

Locations (see Figure 2)

1. Blaise Farm House
2. Beaufighter Road
3. Fre Mell Farm

* Maximum instantaneous explosive charge weights reduced in order to comply to vibration criteria.

FIGURE 1

REGRESSION ANALYSIS

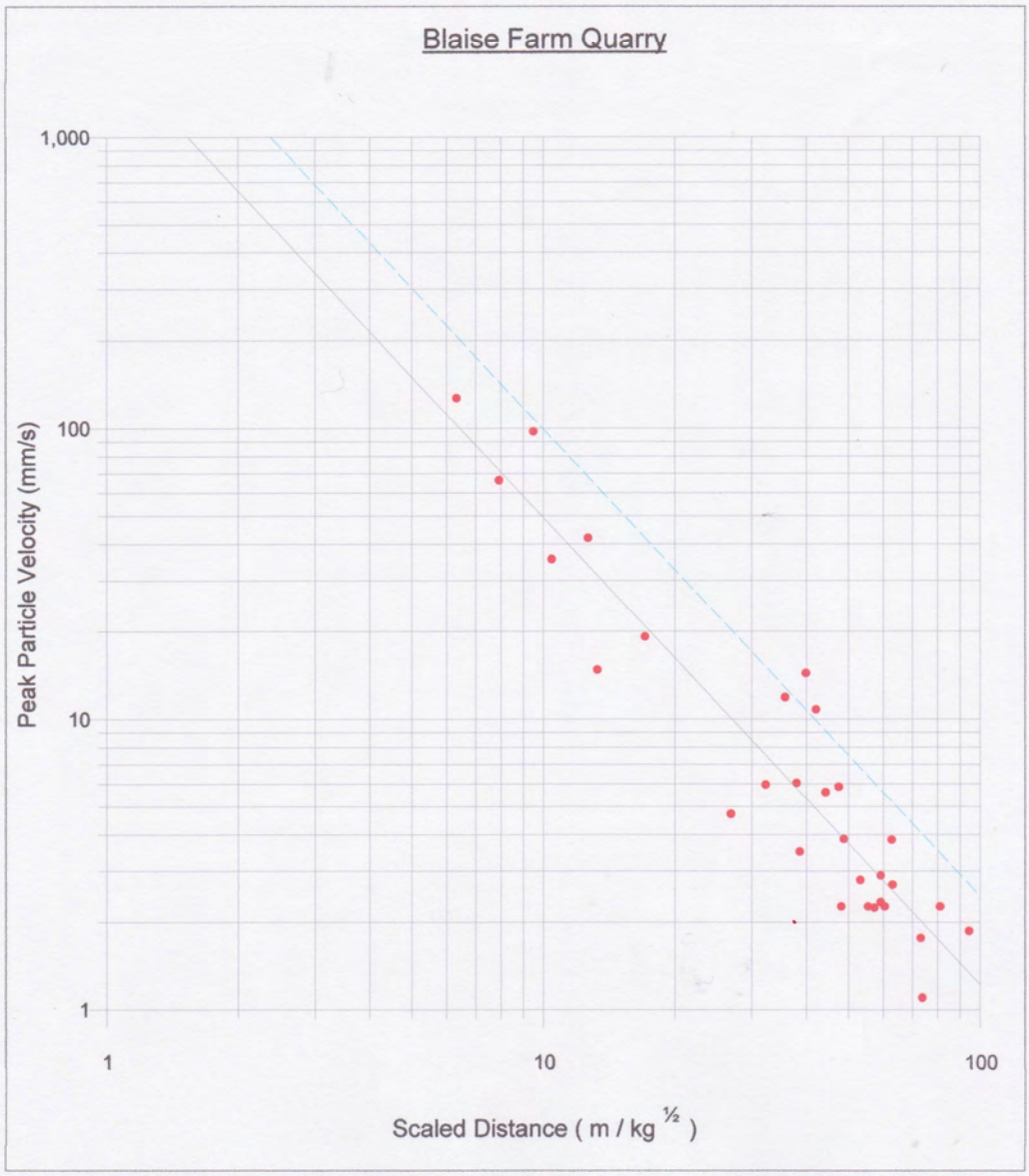

Blaise Farm Quarry
1,000
100
10
1
Peak Particle Velocity (mm/s)
1
10
100
Scaled Distance (m / kg ½)
50.00% Confidence
95.00% Confidence
Graph plotted for all points.
Points included : All points
Points excluded : None
VIBROCK

FIGURE 2

PREDICTION LOCATIONS

1. Blaise Farm House
2. Beaufighter Road
3. Fre Mell Farm

——— Permitted Mineral Extraction Area

APPENDIX 1

The instrumentation used was:-

V901 Digital Seismograph

The V901 Digital Seismograph is a self triggering computerised portable seismograph for use in the monitoring and recording of ground vibration and air overpressure associated with blasting and other operations in which vibration can be of concern, for example piling and demolition.

It can be used for on-the-spot measurements or for unattended operation by means of its internal batteries at up to two locations at any one time.

The V901 records the peak values of seismic vibration in terms of particle velocity, acceleration and displacement in the longitudinal, vertical and transverse axes together with the resultant velocity value, frequency and air overpressure. In addition, each recording includes the date and time at which the vibration event occurred.

A keypad is attached to allow the operator to preset recording parameters in the computer memory for subsequent printout with the seismic data.

The LCD screen can be used to give instant results which, during attended monitoring, allows the cessation of operations prior to vibration criterion exceedance.

The V901 also has facilities that enable triggering and recording in terms of acceleration and displacement values with subsequent storage for around 300 events and provision for downloading to a PC.

BRIC Digital Seismograph

The BRIC Digital Seismograph is a self-triggering computerised portable seismograph for use in the monitoring and recording of ground vibration and air overpressure associated with blasting or any other operations in which vibration is of concern for example piling or demolition. The BRIC is a sealed weatherproof unit designed for operation in hostile conditions. It can be used for on-the-spot measurements or for unattended operation by means of its internal batteries and internal 3 component transducers.

The BRIC records the peak values of seismic vibration in terms of particle velocity in the longitudinal, vertical and transverse axes together with their resultant value and air overpressure. In addition, each recording includes date and time. The BRIC stores up to 300 impulsive events of 2.5 seconds duration in its solid state memory.

Downloading the information from the BRIC to a PC enables comprehensive waveform analysis to be undertaken using menu controlled software.

A keypad is attached to allow the operator to preset values in the computer memory for subsequent printout with the recorded seismic data. The LCD screen gives instant results which, during attended monitoring, allows the cessation of operations prior to vibration criterion exceedance. The operator can preset measurement parameters on site via the keypad on the BRIC, which also allows instant readout on the LCD of previously recorded events.

E1 COUNTY MATTER APPLICATIONS AND DETAILS PURSUANT PERMITTED/APPROVED/REFUSED UNDER DELEGATED POWERS - MEMBERS' INFORMATION

Since the last meeting of the Committee, the following matters have been determined by me under delegated powers:-

Background Documents - The deposited documents.

SW/19/504918	Amendments to surface water and process water arrangements at Ridham Dock Biomass Facility, Iwade, Kent to enable discharge to the River Swale. Mvv Environment Ridham, Lord Nelson Road, Ridham Dock, Iwade, Sittingbourne, Kent ME9 8FQ Decision: Permitted
TM/14/4075/R26B	Details of a Traffic Management Plan pursuant to Condition 26 of planning permission TM/14/4075. Wrotham Quarry, Addington, West Malling, Kent, ME19 5DL Decision: Approved

E2 COUNTY COUNCIL DEVELOPMENT APPLICATIONS AND DETAILS PURSUANT PERMITTED/APPROVED UNDER DELEGATED POWERS MEMBERS' INFORMATION

Since the last meeting of the Committee, the following matters have been determined by me under delegated powers:-

Background Documents – The deposited documents.

DA/18/0094/R18 Details of an Operation & Maintenance Manual for the sustainable water drainage scheme pursuant to Condition 18 of planning permission DA/18/0094.
Wilmington Grammar School For Girls, Parsons Lane, Wilmington, Dartford, DA2 7BB
Decision: Approved

DO/17/1057/R15 Application under s74B T&CP Act 1990 for a change to the construction hours referred to in the approved construction logistics management plan (condition 15) of DO/17/1057 as amended by DO/19/1486 (KCC/DO/0245/2019).
Land On The South East Side of Archers Court Road, Whitfield, Dover, Kent CT16 3HU
Decision: Approved

MA/19/503387/R3 Details of external materials pursuant to Condition 3 of planning permission MA/19/503387.
The Maplesden Noakes School, Buckland Road, Maidstone, Kent ME16 0TJ
Decision: Approved

MA/19/503387/R9,19 Details of Surface Water Drainage (Condition 9) and Revised Landscape Planting (Condition 19) pursuant to planning permission reference MA/19/503387.
The Maplesden Noakes School, Buckland Road, Maidstone, Kent ME16 0TJ
Decision: Approved

MA/19/503387/RVAR Details of a Construction Management Plan (Condition 4), a Construction Environmental Management Plan & Construction Logistics Plan (Condition 5) and details of dust mitigation measures (Condition 6) pursuant to planning permission MA/19/503387.
The Maplesden Noakes School, Buckland Road, Maidstone, Kent ME16 0TJ
Decision: Approved

E3 TOWN AND COUNTRY PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT) REGULATIONS 2017 – SCREENING OPINIONS ADOPTED UNDER DELEGATED POWERS

Background Documents –

- *The deposited documents.*
- *Town and Country Planning (Environmental Impact Assessment) Regulations 2017.*
- *The Government's Online Planning Practice Guidance-Environmental Impact Assessment/Screening Schedule 2 Projects*

(a) Since the last meeting of the Committee the following screening opinions have been adopted under delegated powers that the proposed development does not constitute EIA development and the development proposal does not need to be accompanied by an Environmental Statement:-

KCC/SW/0166/2020	Section 73 application to vary condition 6 of planning permission SW/19/504616 to extend the completion of extraction and restoration by 1 year. Orchard Farm, School Lane, Iwade, Sittingbourne, Kent, ME9 8QH

(b) Since the last meeting of the Committee the following screening opinions have been adopted under delegated powers that the proposed development does constitute EIA development and the development proposal does need to be accompanied by an Environmental Statement:-

None

E4 TOWN AND COUNTRY PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT) REGULATIONS 2017 – SCOPING OPINIONS ADOPTED UNDER DELEGATED POWERS

(b) Since the last meeting of the Committee the following scoping opinions have been adopted under delegated powers.

Background Documents -

- *The deposited documents.*
- *Town and Country Planning (Environmental Impact Assessment) Regulations 2017.*
- *The Government's Online Planning Practice Guidance-Environmental Impact Assessment/Preparing an Environmental Statement*

None

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