



An Equal Opportunity Employer

H&K GROUP, INC.
A Family of Companies
DIVERSIFIED STRENGTH... FROM THE GROUND UP!
P.O. Box 196
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Skippack, PA 19474

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www.hkgroup.com

September 30, 2024

Township of Union
1445 E. Main Street
Douglassville, PA 19518

Attn: Deborah Olivieri, Township Manager/Secretary/Treasurer

Re: Petition for Zoning Change Amendment
Birdsboro Quarry | H&K Group, Inc.
Response to Resident Blasting Questions
Union Township, Berks County

Dear Ms. Olivieri:

On behalf of H&K Group, Inc., please find the following responses to questions, pertaining to blasting, raised by a Union Township resident on August 27, 2024 and September 3, 2024. At your convenience, please post to the Township website for review by Township residents.

1. What types of explosives do you work with when blasting?

The primary material used is called a blasting agent because it is very insensitive, meaning it is stable. A blasting agent needs a primary explosive charge to initiate. It is a water immiscible emulsion.

2. How do you determine the appropriate type and quantity of explosives for a given project?

Explosives are used to create the initial fragmentation of the geology to allow for excavation and processing. The amount of energy (explosive or blasting agent) required to provide fragmentation must be spatially distributed and limited to prevent excessive crushing to the aggregate (pulverized to dust waste). A balanced energy ratio (pounds/volume) will vary with geologic formation. Like any energy source, explosive energy is expensive. Because of ever increasing costs, the aggregate industry is driven to cut waste and improve energy efficiency, thereby continually monitoring and assessing the amount of explosives utilized.

In addition, the maximum amount of explosive or blasting agent used is regulated by a site specific and a Pennsylvania Department of Environmental Protection (PADEP) approved Blast Plan. Enclosed herewith is a copy of the approved Blast Plan for Birdsboro Materials.

3. How do you ensure proper storage and inventory management of explosive materials? What about in the future as you move closer to our homes?

*Explosives are **not** stored at the Birdsboro Quarry. Explosive materials needed for each blasting event are transported to the site the day of use and any remaining materials are returned to an approved storage facility the same day. Explosive storage and inventory are prescriptively regulated by the Bureau of Alcohol, Firearms and Explosives (ATF), which includes rigorous inspection and oversight.*

4. How does the blasting company protect my property?

See the PADEP "Citizen's Guide to Explosives Regulations in Pennsylvania". Damage caused by blasting vibration is prevented by limiting vibration to levels that extensive research has determined is safe for the most fragile building material (that being historic lath plaster, see NFPA 495 A.11.1).

5. If we suffer property damage from a blast (i.e. art falling off walls and shattering frames, hairline cracks in HISTORIC plaster, cracked drywall, foundation damage, etc), will repairs be covered by H&K?

If property damage from blasting vibration or over pressure is suspected, the property owner should connect with one of the following options:

- 1) Contact Birdsboro Materials at (610) 404-8440
- 2) Visit the "Contact Us" tab on H&K's main website: <https://www.hkgroup.com/contact-us/>
- 3) Contact the H&K Group, Inc. – Public Relations at (610) 222-3508 or via email at PRTeam@HKGroup.com
- 4) Contact the H&K Group, Inc. – Engineering & Environmental Services at (610) 222-3515 or via email at Engineering@HKGroup.com
- 5) Contact H&K Group, Inc. main switchboard at (610) 584-8500
- 6) Contact Union Township at (610) 582-3769
- 7) Contact the PADEP Pottsville District Mining Office at (570) 621-3118

A complaint filed with H&K Group, Inc. will result in an internal review of blasting data and a visit to the property with a resulting determination as to whether blasting was the cause of the alleged damages and, if warranted, a third party, most likely GeoSonics/Vibra Tech, would be hired to perform a damage claim assessment and make their own independent determination.

Should a complaint be filed with the Pottsville District Mining Office, a blasting inspector will visit the property, review blasting data and make a determination as to whether blasting was the cause of the alleged damages.

In any event, any determination that would indicate the alleged damage was the result of blasting activity the operator, Birdsboro Materials, would be responsible for the correction of said damages.

6. Is my home at more risk due to it being historic and being built with different materials than modern homes?

All homes are subjected to natural and environmental forces (i.e. temperature and humidity cycles inside and outside; wet and dry cycles in soil, wind and weather induced strains; manmade activities: door slams, washing machines, children jumping etc.). These ever-present forces will affect all homes, old and new. These strains often exceed those caused by regulated vibration limits.

7. How do you measure ground vibration and air blast? How frequently is this measured? Are these records available to the public for review?

A calibrated and compliant blasting seismograph is used to monitor both ground vibration and air overpressure generated by each blast event. Because these effects decrease with distance from the source, at a minimum, a unit is located to record the worst-case effect at the nearest non-project-controlled residence, for every blast event. Records of blasting events, i.e. the shot report and seismograph report, are maintained on-site for PADEP inspection review. Unless submitted directly to PADEP, these records are not typically readily available for public review. That being said, upon request, said records could be made available to the Township.

8. What are safe vibration standards for blasting near homes? How can I be sure the blast is safe if I can feel it?

Refer to Title 25 PA Code Chapter 77.561 through 77.565 Figure 1 "Levels of Blasting Vibration Using a Combination of Velocity and Frequency". and National Fire Protection Association (NFPA) 495 Figure

Union Township
September 30, 2024

11.1.2.1(b) "Maximum Allowable Particle Velocity vs. Blast Vibration Frequency Graph" "Frequency vs. Velocity Graph". This "Safe Level Criteria" is based on extensive blasting vibration research that determined a safe blasting vibration level for homes constructed with historic lath plaster. This Nationally and Internationally accepted compliance graph is embedded into the blasting seismograph to allow for the plotted vibration data to be compared with the "safe level criteria". It is important to note that the velocity limit is reduced as the frequency lowers. Structure is more sensitive to low frequency vibration and less sensitive to high frequency vibration. Humans are very sensitive to vibration and even more sensitive to high frequency vibration. We can sense any vibration that rises above the ambient vibration level naturally and environmentally present. In most cases humans sense blasting vibration as low as 1/100th of the high frequency "Safe Level". Because of human perception limitations, a blasting seismograph is necessary to reliably evaluate vibration from blasting.

9. How will H&K ensure that blasting does not exceed maximum seismic guidelines?

Ensuring that blasting events do not exceed the maximum seismic guidelines involves adherence to the approved blasting plan and adjusting shot patterns, amount of holes, depth of holes, amounts of explosives used, etc. based upon the location of the planned shot, the bench level it is located on and direction of the shot to name a few variables which can be adjusted.

10. Will each blast be monitored and recorded with a blasting seismograph by an independent third party laboratory? Will this report be available to the public?

Seismographs are deployed and administered by the blaster in charge. Third party consultants, GeoSonics-Vibra-Tech as an example, can be hired to periodically monitor blast events. Upon request, said records could be made available to the Township.

Should you have any questions, please feel free to contact me at 610-222-3515.

Sincerely,

H&K GROUP, INC.



Scott S. Drumbore, P.E.
Division Manager
Engineering & Environmental Services Division

SSD/km
Enclosures

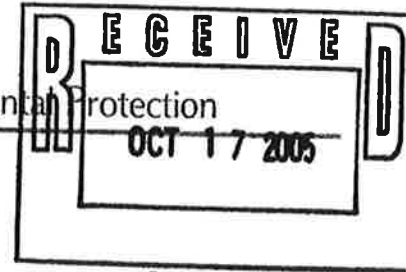
cc: File: B-105M



Pennsylvania Department of Environmental Protection

5 West Laurel Boulevard
Pottsville, PA 17901-2454

October 14, 2005



570-621-3118
FAX #570-621-3110

Pottsville District Office

NOTICE OF PERMIT CORRECTION

Haines & Kibblehouse, Inc.
2052 Lucon Road
PO Box 196
Skipack, PA 19474

Re: Surface Mining Permit No. 06970302C3
Birdsboro Materials Quarry Operation
Robeson and Union Townships, Berks County

Ladies & Gentlemen:

Existing permit #06970302 is hereby corrected per the above-referenced application dated September 28, 2005. The purpose of this correction is to approve the revised Module 16: Blasting Plan.

The enclosed information shall be considered an addendum to the original permit issued on March 4, 1999 and any subsequent revisions or corrections. This information is to be filed with your copy of the original permit and, in case of any conflicts with the original permit, shall take precedence over the original permit information.

Should you have any questions, please contact me.

Sincerely,

Ignacy F. Nasilowski, P.G.
Licensed Professional Geologist
District Mining Operations

Enclosures

cc: Keith A. Laslow
SMCIS, Thomas Flannery
SMCI, Jennifer Neuin
Blasting Inspector, Edward Hensley
Municipalities of Robeson & Union Twps.
County of Berks
File
MS1-Hkib(10.05)

IFN:gk

Company Name Haines & Kibblehouse, Inc.
 Permit # 06970302 C3
 County Berks
 Township Birdsboro Borough and Robeson and Union Townships

Module 16: Blasting Plan

Modules 16.1 through 16.5 will be submitted with the permit application. Modules 16.6 through 16.10 shall be submitted prior to blast plan approval. There shall be no blasting until a blast plan has been approved by the Department.

16.1 Dwellings and Structures

Maximum Peak Particle Velocity determined by 25 Pa. Code Section 211.151(c) Figure 1 unless otherwise specified.

Maximum airblast 2 Hz 133 6 Hz 129 unless otherwise specified.

DEPARTMENT USE ONLY	
Alternative Maximum Allowable Peak Particle Velocity _____	
Alternative Maximum Allowable Airblast _____	

Will blasting occur within 1,000 feet of any public building or school? Yes No

Indicate distance to the nearest dwelling or structure, neither owned nor leased by Permittee, from the area where blasting will occur. 300 feet

If blasting is proposed within 300 feet of an occupied dwelling, provide a notarized written waiver from the owner of the dwelling specifying the distance blasting may occur to the dwelling N/A

16.2 Underground Mines

Attach completed MSHA form where blasting will occur within 500 feet to any point of an active or abandoned underground mine. Describe procedure to prevent any impact on the underground mine.

N/A

16.3 Streams

Indicate distance that blasting will occur to the nearest stream, only if less than 100 feet.

N/A

16.4 Utilities, Pipeline, Storage Facilities

Are any of the following located within 200 feet of the area where blasting will occur. If so, attach a copy of the notification sent to the owner which describes any precautionary measures which will be taken.

Disposal wells	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Gas or oil collection lines	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Petroleum or gas storage	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Water and sewage lines	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Municipal water storage	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Utilities (telephone/electrical overhead)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Fluid transmission pipelines	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Gas or oil wells	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

16.5 Blast Loading Plan**

Number of holes per pattern	maximum	<u>100</u>	Spacing and burden of holes	minimum	<u>5' x 5'</u>
Diameter of holes	maximum	<u>6 1/2"</u>		maximum	<u>16' x 18'</u>
Length of stemming	minimum	<u>4'</u>	Depth of holes	maximum	<u>68' ⁽¹⁾ or ⁽²⁾</u>
Maximum weight of explosives per delay interval of 8Ms or less.			<u>1250 lbs./delay</u>		
Number of holes or decks per delay			<u>1/2 to 6</u>		
Method of blast initiation			Electric <input checked="" type="checkbox"/>	Non-Electric <input checked="" type="checkbox"/>	Electronic <input checked="" type="checkbox"/>

Applicable scaled distance, below which requires seismic monitoring Ds = 90 unless otherwise specified. N/A - All Shots Will Be Monitored.

Notes: (1) 65' Vertical Face Height with 3' Sub-Drill at top level.

(2) Depth of hole could be greater to accommodate angle hole drilling if required.

* These maximum values will be reduced as the distance to non-owned dwelling or structures diminishes so as to comply with the 25 PA Code, Section 211.151(c), Figure 1 "Z" Curve and maximum overpressure requirements.

16.6 Public Notice of Blasting Schedule

Submit the following to the Department prior to the initiation of blasting. No blasting shall be initiated until the blast plan is approved. *N/A - Blasting in Progress.*

- a) Copy of the public notice of the blasting schedule that is published in a newspaper of general circulation in the locality of the area where blasting will occur;
- b) Local governments and public utilities that are located within 1,000 feet of the area where blasting will occur, who received copies of the blasting schedule. (Note: These shall be sent a copy of the blasting schedule.)

16.7 Pre-blasting Survey *N/A - Blasting in Progress.*

Preblast surveys must be offered to all residents or all owners of other structures located within 1000 feet of the blasting area if the operation intends to conduct blasting activities where anticipated vibration levels exceed the levels of vibration in 25 Pa. Code Section 77.562(a)(3)(ii) Figure 1 (Note: The vibration levels in 25 Pa. Code Section 211.151(c) Figure 1 are the same as the levels in 77.562(a)(3)(ii) Figure 1).

Submit to the Department a list of names of persons who request a pre-blasting survey and a dated copy of the notice sent to residents informing them of their right to a pre-blast survey and how they may request such a survey.

Upon completion of pre-blasting surveys, a copy of each report shall be sent to each appropriate person and the Department no later than 30 days following completion of each pre-blasting survey.

16.8 Explosive Storage

Will explosives be stored within the proposed permit area? Yes No

If "yes," provide current magazine storage license number(s).

SL# _____ SL# _____ SL# _____

16.9 Explosive Purchase

Number of permits to purchase explosives. PP# PP-9989

16.10 Special Provisions

Any site specific condition(s) which apply to this blasting area. *No*

Department Use:

DEP Blasting Inspector

Edward Herley 9/26/05

Recommendation -

Approval

Disapproval

Comments: