

\* WADSWORTH - LANDSLIDE @ Δ QUARRY (CONSIDER 11/8/92 150-250 PM)

- caused by blast along western side between mine excavation and Arthur Creek resulting in rock material sliding into the creek. Material has filled ~90% of down creek  
(15' wide in the creek and 60-70' wide down bank)
- creek not really backed up - flowing through rock; slight undercutting of bank (opposite side) as creek flowing around end of fill
- WS and CBS agreed that 100' buffer in this area has been violated by slope failure.
- WS agreed to immediately commence removing material from creek and bank and advised us of their proposed plan of action. WS is also currently evaluating blast records + design to determine cause of the slide.
- CBS advised WS that we would meet with C&G and discuss the proper course of action

- 3:15 pm
- JH, FMN and TD met with C&G and discussed our findings
  - C&G directed JH to draft up a deficiency letter noting the violation of the buffer zone and outlining the corrective actions needed (blast report of blast and conclusions made, plan for removal of slide material from creek + ~~bank~~ bank and time frame for completion and stabilization). C&G agreed that letter must state no ~~more~~ further blasting in the western area as there appears to be no safe way to continue blasting in the area w/out future landslides.
  - JH commenced and will have letter (draft) sent to us for review and comment before sending to WS.

FAX: # 919 571 4718

1/13/92

~~ASAP!!~~

Mum

please fax the attached  
permit to John Holley  
~~ASAP~~ the writing on it to  
write a letter!!  
and then return this to me!

Mark  
TD

Sent  
1-12-92  
JL

# Wake Stone Corporation

---

Quarry Phone Numbers:  
919/266-9266—Knightdale  
919/677-0050—Triangle  
919/775-7349—Moncure  
919/985-4411—Nash County

Locations:  
U.S. 64 East, Raleigh, N.C.  
I-40 at Harrison Ave., Cary, N.C.  
U.S. 1 at Deep River, Moncure, N.C.  
SR 1527 at I-95, Gold Rock, N.C.

Business Office Address:  
P.O. Box 190  
Knightdale, N.C. 27545  
919/266-1100

January 13, 1992

RECEIVED

JAN 13 1992

Mr. Tracy E. Davis, E. I. T.,  
Mining Specialist  
N. C. Dept. EHNR - Land Quality Section  
P. O. Box 27687  
Raleigh, North Carolina 27611-7687

LAND QUALITY SECTION

SUBJECT: Plan For Remedial Action for Triangle Quarry  
Rock Slide of January 7, 1992

Dear Tracy:

Enclosed is our proposed Plan For Remedial Action to clean up the rock slide which occurred at our Triangle Quarry on January 7, 1992. In the Plan we have provided a narrative statement and site plan to indicate how we intend to access the site and remove the slide material from the channel of Crabtree Creek and the slope leading to the creek as we discussed during your site visit on January 8, 1992.

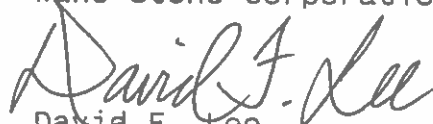
During the clean-up process we will report to you or John Holley on the progress of the operation at whatever interval you request. We will also report to you the completion of the clean-up operation. As we conclude our technical review of the blast data we will submit a report of our findings as to the cause of the slide as well as what we intend to do to insure we do not have a reoccurrence of the problem.

We initiated the preparation of the access road with hand clearing of the roadway immediately after your visit on January 8th. By the end of the day on Saturday January 11th the roadway accessing the slide site was nearing completion including construction of the downslope silt fence and placement of the stone fill for the road surface.

Letter to Mr. Tracy E. Davis  
January 13, 1992  
Page 2

If you have any questions or comments on the Plan For Remedial  
Action please call me at 266-1100.

Sincerely,  
Wake Stone Corporation

  
David F. Lee

DFL/  
Enclosure

cc: Mr. John Holley  
Raleigh Regional Office

RECEIVED

JAN 13 1992

PLAN FOR REMEDIAL ACTION - TRIANGLE QUARRY ROCK SLIDE  
AND QUALITY SECTION

1. Entering from the north through the permanent buffer establish a temporary road to the toe of the slide area.

This can be done with a minimal amount of disturbance to the buffer on the northwest side of the pit. The road will be kept to as narrow a width as possible to accomplish the clean-up task. The road will be established in the following sequence of construction steps:

- a) Existing vegetation will be removed by cutting at ground level with a chain saw. Maximum effort will be made to minimize the number of large trees removed.
- b) A temporary silt fence will be constructed between the roadway and the top of the bank of Crabtree Creek. This will take place concurrently with the hand clearing of the roadway to insure adequate sedimentation and erosion control structures are in place prior to disturbance of the ground surface by heavy equipment (see design specifications on attached sheet).
- c) Upon completion of hand clearing of the roadway and construction of the silt fence, the roadway will be established to the toe of the slide area using stone fill on top of the existing grade. The intent is to provide a roadway suitable to handle the heavy equipment used in the clean-up work, yet be removable once the clean-up task is completed (see Reclamation Plan for impacted slope and roadway).

2. Remove all slide material from the slope and channel of Crabtree Creek.

The first step of the removal process will be to dig out the shot material remaining on the incline ramp (color coded orange on the accompanying site plan). This will lessen the loading on the slide material on the slope to the creek while minimizing the possibility of additional material sliding into the creek channel. Once the shot material remaining on the incline ramp is removed, the slide material on the slope and in the creek channel will be removed using a crane and track-mounted excavator to remove the material and load it into rented articulated off-road haul trucks.

RECEIVED

JAN 13 1992

TRIANGLE QUARRY ROCK SLIDE  
RECLAMATION/REVEGETATION PLAN FOR SLOPE AND ACCESS ROAD <sup>1465 ROAD</sup> <sub>QUALITY SECTION</sub>

Once the slide material is removed from the slope and creek channel, the impacted areas will be reclaimed and restored to as near pre-slide conditions as is feasible. Attempts will be made to replace lost vegetation with like species in addition to providing a grass and small grain cover crop. The reclamation/re-vegetation will proceed in the following sequence of steps:

- a) Upon completion of removal of the slide material the creek bank and slope will be graded and shaped to as near pre-slide lines and grades as is feasible.
- b) Upon final egress from the slide removal site the stone access road will be removed and the roadway graded to as near pre-slide lines and grades as is feasible.
- c) Upon completion of site grading, revegetation will be initiated according to the following revegetation plan.
- d) Once a grass and small grain cover crop is established, an attempt will be made to secure and plant shrub and tree species lost during the slide event and clean-up activities. Emphasis will be placed on securing and planting laurel, holly, oak, beech, and pine seedlings in an effort to establish native vegetation on the affected areas.

Revegetation Plan

Initial revegetation of the affected areas will be with a mixture of fescue and rye grain. Soil amendments will be applied at the time of seeding. Upon completion of the seeding operation, the area will mulched with small grain straw.

Application Rates

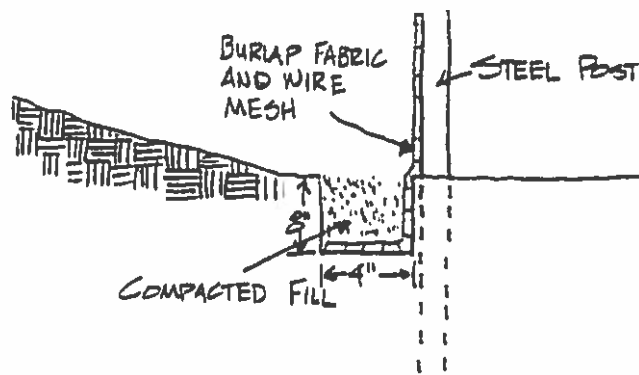
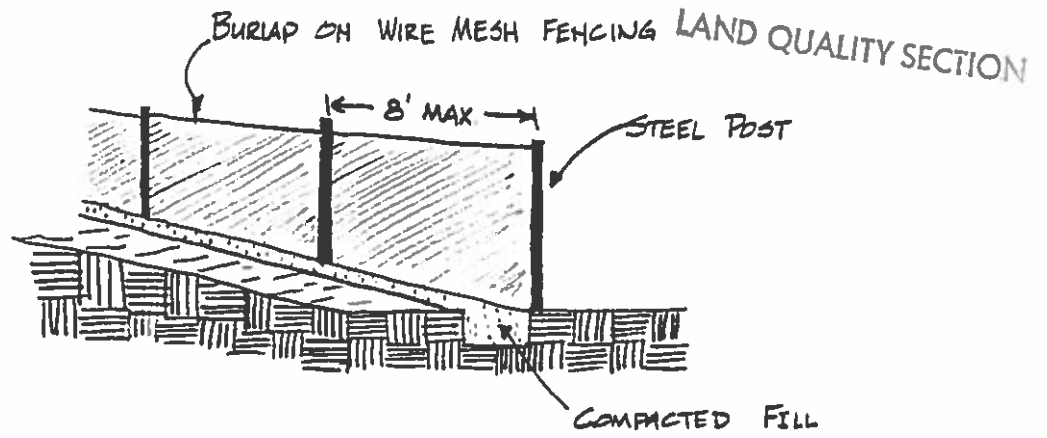
Ky 31 tall fescue at 100 lbs. per acre  
Rye grain (as nurse crop) at 50 lbs. per acre  
Pelletized lime at 2000 lbs. per acre  
10-10-10 fertilizer at 1000 lbs. per acre.  
Small grain straw mulch at approximately 150 bales per acre.

Removal of Silt Fencing

Once the affected areas are stabilized by vegetation, the silt fence installed between the access roadway and the bank of Crabtree Creek will be removed.

RECEIVED

JAN 13 1992



SEDIMENT FENCE  
TYPICAL CONSTRUCTION DETAIL



RECEIVED

JAN 15 1992

State of North Carolina  
Department of Environment, Health, and Natural Resources  
Raleigh Regional Office

James G. Martin, Governor  
William W. Cobey, Jr., Secretary

Edmond John Maguire  
Regional Manager

DIVISION OF LAND RESOURCES

January 13, 1992

NOTICE OF MINE PERMIT DEFICIENCIES

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Wake Stone Corp.  
P.O. Box 190  
Knightdale, NC 27545  
ATTN: Mr. John R. Bratton

RE: Triangle (Cary) Quarry (92-10)  
Wake County

Dear Mr. Bratton:

This is to document our observations during the inspection on January 8, 1992 following your report of the rock slide into Crabtree Creek at the west end of the pit.

As you know, it was determined that deficiencies exist with respect to one or more of the conditions contained in your mining permit. The applicable conditions and our observations are as follows:

(3.B. and E.) The undisturbed buffer along Crabtree Creek in the area affected by the rock slide has not been sufficient to prevent deposition of material in the watercourse. The material extended approximately 90% across the width of the main channel.



Mr. Bratton  
January 13, 1992

2

In order to bring the subject site into compliance, the following corrective actions must be taken:

A plan must be provided for our approval and implemented sufficient to make safe access to the slide area and address removal of the material deposited in the creek and floodway. The plan must incorporate the stone access along the base of the slope and reclamation of the affected areas by vegetation and tree planting as we discussed at the site. Sediment control during installation and removal must also be addressed. Pending our approval of the plan in writing, implementation must begin as soon as possible and must be completed in a timely manner.

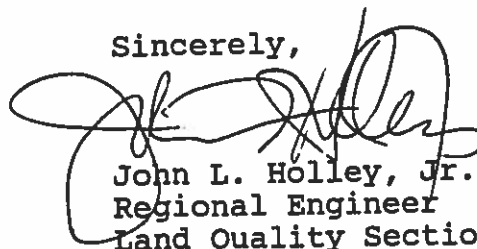
If the deficiencies are not corrected in a timely manner, appropriate enforcement action will be initiated by the issuance of an official Notice of Violation. The deadline for submittal of the required plan is February 1, 1992.

In addition to the previously described corrective actions, further blasting along the western buffer along Crabtree Creek must be suspended until a full report is provided. In that the buffer has proven to be inadequate to contain material lost during such a blasting accident, future blasting along this buffer will not be allowed unless evidence can be provided to demonstrate that modifications to the current blasting program can be implemented sufficient to prevent such accidents.

Thank you for your prompt reporting of the blasting accident and your willingness to correct the deficiencies in a timely manner. Based on the excellent work observed in your northern expansion area and your past efforts at this site I am confident that the rock slide will be corrected as soon as possible.

Please do not hesitate to contact Mr. Tracy Davis or me regarding any questions you might have about this matter.

Sincerely,



John L. Holley, Jr., P.E., CPESC  
Regional Engineer  
Land Quality Section

cc: Tracy Davis  
Tim Donnelly

RECEIVED

# MINE INSPECTION REPORT

JAN 15 1992

(PERMITTED MINE)

1. MINE NAME (CAM) TRIANGLE QUARRY 2. MINING PERMIT # 92-10  
3. OPERATOR WAKE STONE CORP. AND QUALITY SERVICE  
4. COUNTY WAKE  
5. ADDRESS P.O. BOX 190 KNIGHTSPAZE, NC 27545  
6. Person (s) contacted at site JIMMY + TED BRANTON, DAVID LEE  
7. Was mine operating at time of inspection?  Yes  No 8. Pictures?  Yes  No  
9. Date last inspected: 3/27/90 10. Any mining since last inspection?  Yes  No  
11. Is the mine in compliance with the Operating Conditions of the Permit?  Yes  No

If no, explain:  
3. B. E. : THE UNDISTURBED BUFFER ALONG CRABTREE CREEK @ THE WEST END OF THE SITE HAS NOT PROVIDED ADEQUATE PROTECTION IN THAT THE RECENT ROCK SLIDE HAS RESULTED IN MATERIAL DEPOSITED IN CRABTREE CREEK.

12. Is the mine in compliance with the Reclamation Conditions of the Permit?  Yes  No  
If no, explain:

13. Did any of the above deficiencies result in offsite damage?  Yes  No If yes, describe the type and severity of the damage:  
ROCK MATERIAL AND SOME SLIGHT SOIL MATERIALS LOST INTO CRABTREE CREEK BELOW SLOPE AREA. ROCK EXTENDS APPROX. 90% ACROSS CREEK. ROAD IS NOT COMPLETELY BLOCKED.

14. Corrective measures needed and / or taken: A PLAN MUST BE PROVIDED AND IMPLEMENTED FOR ACCESS TO THE SLIDE AREA AND REMOVAL OF MATERIAL DEPOSITED IN THE CREEK AND FLOWWAY. THE PLAN MUST ADDRESS RECLAMATION OF THE SLOPE AND ACCESS. DUE BY 2-1-92.

15. Other recommendations and comments: THANK YOU FOR YOUR PROMPT REPORT OF THIS ACCIDENT TO US & YOUR WILLINGNESS TO COOPERATE. EXPIRATION DATE: 4-1-2001 - SEE WORK IN EXPANSION AREA IS EXCELLENT

16. Is the Annual Reclamation Report +/- map accurate?  Yes  No (Explain)  Not Reviewed

17. Follow-up inspection needed?  Yes  No Proposed date 1/15/92 +

18. No. of additional pages of Inspection Report 0 19. Copy of Report sent to operator 1/13/92 (date)

INSPECTED BY: JOHN HOLLEY/MEL NEVILLS/FRANK DAVIS DATE: 1/18/92  
Phone No: (919) 5744700

**SPEED LETTER**

TO John Holley  
RNO-665

DATE \_\_\_\_\_

FROM [Signature]  
LOS

DATE 1/24/92

SUBJECT Wedge Stone - A Quarry (Blair Dept on North Side), Wake Co.

MESSAGE

The find attached for your  
attention, find and review a copy  
the above referenced report.  
Can let me know of any  
conception you would  
like to consider as soon  
as possible. \* I greatly appreciate  
your time and follow-up regarding  
this situation. Great job!

REPLY

cc: Jim Simon 1/24/92 AD

SIGNED [Signature]

SIGNED \_\_\_\_\_

Wilson Jones • Carbonless • MADE IN U.S.A.  
44-803 Tri-locate • © Wilson Jones, 1989

SENDER: DETACH AND RETAIN YELLOW COPY, SEND WHITE AND PINK COPIES

# Wake Stone Corporation

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Quarry Phone Numbers:  
919/266-9266—Knightdale  
919/677-0050—Triangle  
919/775-7349—Moncure  
919/985-4411—Nash County

Locations:  
U.S. 64 East, Raleigh, N.C.  
I-40 at Harrison Ave., Cary, N.C.  
U.S. 1 at Deep River, Moncure, N.C.  
SR 1527 at I-95, Gold Rock, N.C.

Business Office Address:  
P.O. Box 190  
Knightdale, N.C. 27545  
919/266-1100

January 20, 1992

RECEIVED

JAN 22 1992

Mr. Tracy E. Davis, E. I. T.,  
Mining Specialist  
N. C. Dept. EHNR - Land Quality Sect.  
P. O. Box 27687  
Raleigh, North Carolina 27611-7687

LAND QUALITY SECTION

SUBJECT: Wake Stone Corporation Triangle Quarry  
Summary of January 7, 1992 Blast and Factors Causing Rock  
Slide to Crabtree Creek.

Dear Mr. Davis:

This is a summary of our blast at Triangle Quarry on January 7, 1992 and an explanation for why the rock slide occurred. Also enclosed is a letter to me from Mr. Rufus E. Flinchum who is a technical representative of Explosive Technologies International. Mr. Flinchum's letter reports the findings of his study of the blast data as he was requested by me to do on January 8, 1992.

This blast pattern was typical of several previous shots that had been successfully executed along the same western ridge of our pit. It consisted of fifty holes arranged on an eight feet spacing by eight feet of burden pattern (8'x 8' hole spacing). Refer to the enclosed blast design drawing. The shot had seven rows of holes delayed with non-electric caps wired in a pattern to force the rock to move in a southeast direction.

When the pit foreman designed the shot he saw the necessity to add additional rows of holes to the north end. This is a common occurrence when designing any blast as we not only want to control the shot rock, but we also need to consider what the remaining wall or face will look like for the next shot that will be drilled. In this case, the ridge was narrow so the additional holes were drilled in order to guarantee drill accessibility for the next shot. The extra burden generated by the additional three rows of holes slowed the movement of the stone in the desired direction causing it to impede complete movement to the southeast. When this happened, the force of the blast was directed to the area of least burden, resulting in the blasted material sliding down the slope into Crabtree Creek.

Letter to Mr. Tracy E. Davis

January 18, 1992

Page 2 10

A second variable which contributed to the slide was the hardness of the rock in the shot. Normally, the rock on the east and south sides of this ridge is hard, with the rock on the west being deeply weathered. This weathered rock is soft and will react to the impact from the blast much differently than hard rock. It tends to absorb the energy from the blast and does not move as readily as hard rock. With hard rock there is an opposite situation in that it tends to fracture more readily and is therefore more likely to move in the direction desired. This makes it possible to direct the movement of the shot rock by using time delay caps and wiring patterns tailored to the particular shot.

On the previous shots along the western ridge, we were successful in forcing the hard rock to move in a southeast direction, leaving a high ridge of soft rock along the western side that we would excavate with a hydraulic shovel. As you could see from your inspection on January 8th, there was no weathered rock in the muck pile. Instead, the material was all hard. This hard rock reacted to the force of the blast differently than had the previous shots. This factor, combined with the size of the blast as discussed earlier, lead to the material fracturing more than anticipated and moving to the west down the slope and into Crabtree Creek.

In order to safeguard against future recurrence of this situation I would like to propose the following steps to be taken on each subsequent blast:

- 1) Utilize the expertise of an explosives technician to design and load the next shot on this western ridge,
- 2) Lay out remaining shots on the ridge with a maximum of three rows of holes. The ridge continues to widen to the north so drill accessibility improves and will not be a problem as before,
- 3) Change the angle of the south wall (face) so that it is no longer perpendicular to Crabtree Creek but more open to the quarry pit. This will give us more control in directing the shot to move to the southeast into the roadway and pit opening (see Proposed Blast Design Layout drawing for future shots), and

Letter to Mr. Tracy E. Davis  
January 16, 1992  
Page 3 10

- 4) Continue advancing the western roadway to the north by removing the material in two levels. At present the roadway is twelve feet from reaching the intended final grade with a 27' high face existing at present. Upon attaining final grade a 39' high face will remain. It is our intention to advance the cut horizontally carrying a 19' high face until sufficient distance is gained that a second lift can be advanced to the target elevation. In this fashion we will be carrying a constant 19' high face, and then with a second cut, advance on the intended minus 8% grade, sinking to the intended final elevation. By removing the remaining material in two lifts we will have effectively reduced, by as much as half, the amount of material involved in any single blasting event.

In addition to Mr. Flinchum's letter, I am enclosing a copy of our blasting report and a diagram of the blast layout for the January 7, 1992 blast. The blasting report provides technical data on the explosives and detonation agents used in the blast. If I can provide additional information on the blast or answer any question which may arise in your review of this report, please call me at (919) 266-1100.

Sincerely,  
Theodore D. Bratton



Wake Stone Corporation

TDB/df1

Enclosures

WAKE STONE CORPORATION

P.O. BOX 190

KNIGHTDALE, N. C. 27545

Triangle BLASTING REPORT

Date of Blast 1/7/1992

Time of Day: A.M.; 4:22 P.M.

Weather at Time Blast Fired: Clear XXX; Low Clouds; High Clouds; Raining; Wind Out of NW; Approx. Speed 0-5

Location of Blast in Pit Including Bench Number and location on bench West Side Road

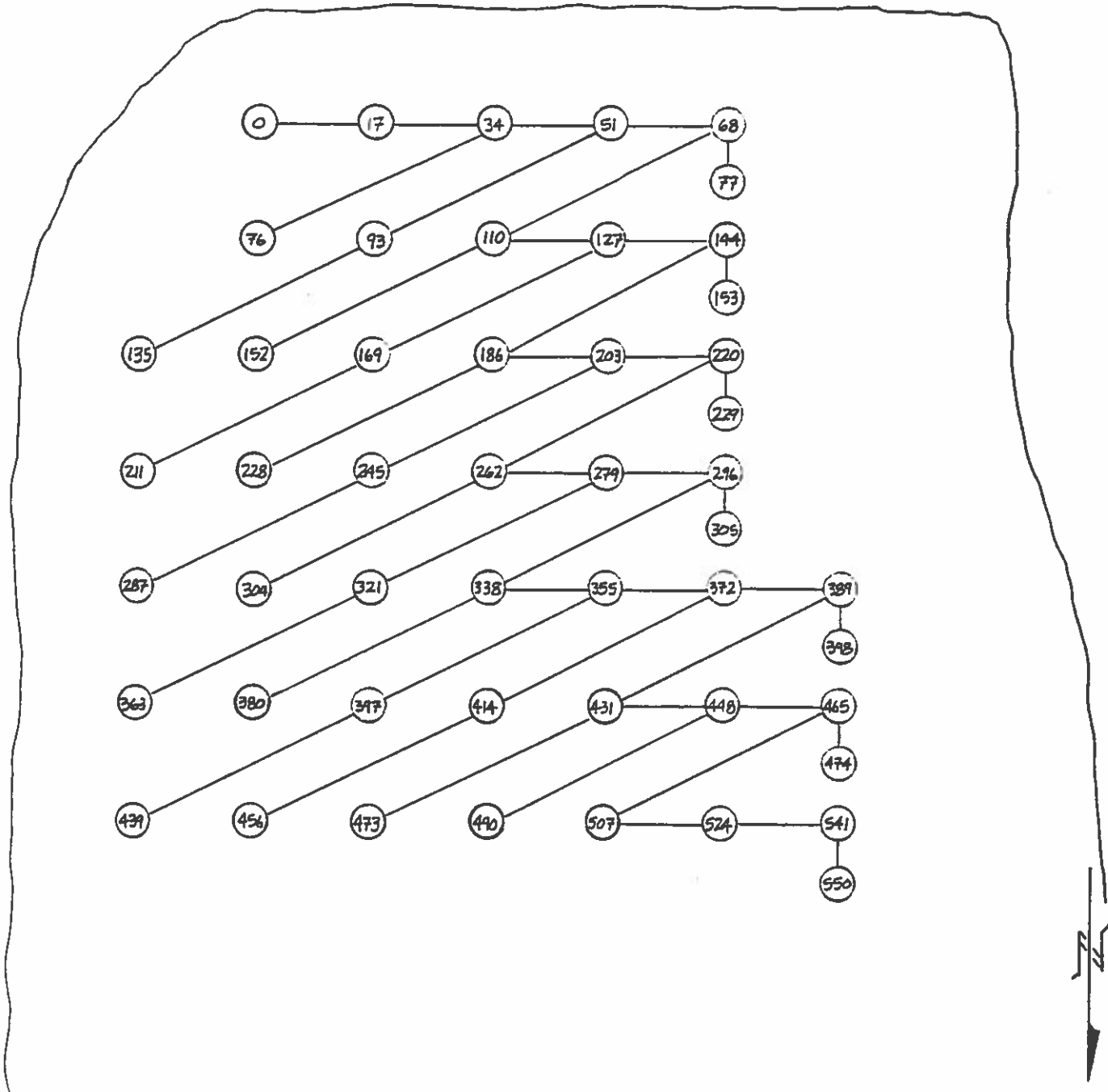
If Seismograph Used advise where machine was set up and who operated it.

TYPE OF BLAST

Table with 5 columns: TYPE OF BLAST, Wall, Leveling, Sinking, Toe. Rows include Vertical, Sloped, Size Holes, Depth Holes, Depth Sub-Drilling, Stemming, Spacing, Number Rows.

ELECTRIC FIRING: Instantaneous Blast; Delay Blast; No. Delay Periods in Blast; Number of Series in Blast; Total Caps Used

- List of explosive cap types and quantities: Number holes primed with Regular EB Caps, No. 1 (MS25) Caps, No. 2 (MS50) Caps, No. 3 (MS75) Caps, No. 4 (MS100) Caps, No. 5 (MS125) Caps, No. 6 (MS150) Caps, No. 7 (MS175) Caps, No. 8 (MS200) Caps, No. 9 (MS250) Caps, No. 10 (MS300) Caps, No. 11 (MS350) Caps, No. 12 (MS400) Caps, No. 13 (MS450) Caps, No. 14 (MS500) Caps. Includes Total Pounds Explosive Used for each.

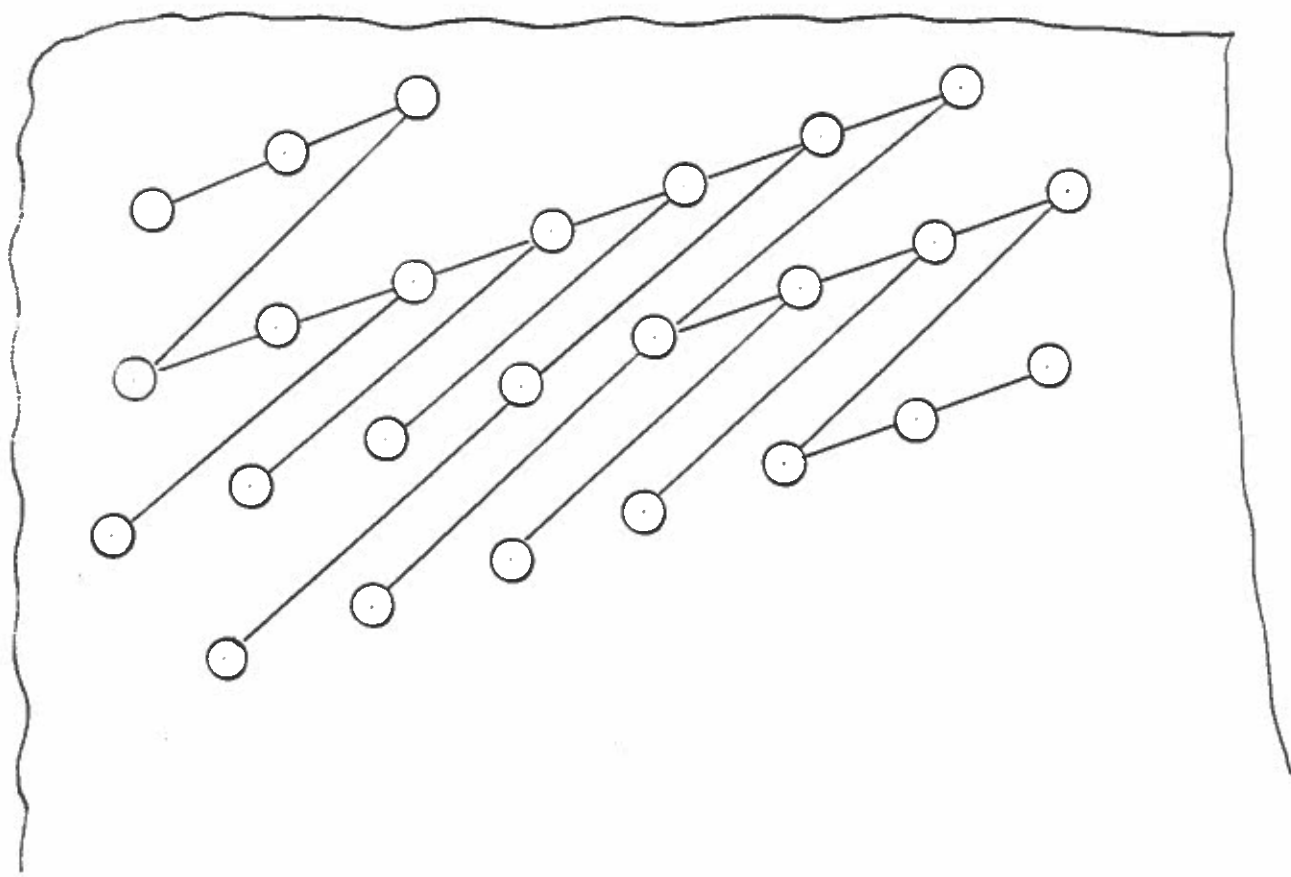


34 — DELAY TIME IN MILLISECONDS.

WAKE STONE CORP. TRIANGLE QUARRY  
WESTERN PIT ROAD RAMP

SHOT DESIGN  
FOR JANUARY 7, 1992 SHOT





WAKE STONE CORP. TRIANGLE QUARRY  
WESTERN PIT ROAD RAMP

PROPOSED BLAST DESIGN LAYOUT  
FOR FUTURE SHOTS



**Blastrite  
Services  
Inc.**

P.O. Box 69  
Van Wyck, SC 29744  
(803) 286-6185

RECEIVED

JAN 22 1992

LAND QUALITY SECTION

January 10, 1992

Mr. Ted Bratton, V.P. Operations  
Wake Stone Corp.  
P.O. Box 190  
Knightdale, N.C. 27545

Dear Ted,

As per your request, I visited your Triangle Quarry to look at the blast data from the shot on 01/07/92. This was a seven row shot which automatically creates a problem, but after discussions with you and the blasting crew it is very understandable why they felt the need to have the shot with this configuration.

The bench that was blasted was only 48 feet at the widest point and the drill crew felt the need to bring the shot back to an area that would be wide enough to ensure good access for the drills on the next blast. This shot did achieve the goal of having good access, but allowed part of the blasted rock to roll into Crabtree Creek, which runs parallel with bench being blasted.

After observing the material that has been blasted and excavated, prior to this blast, it is easy to see the material was quite different in previous shots. Prior shots had material with very little hard rock in them. The bench was composed of weathered rock, dirt, and punky material. This soft material and punky rock accepts the explosive energy quite different than a mass of hard rock.

Very little or no movement will occur when weathered rock is blasted. This would explain why very little movement has been seen on previous blast. This shot, however, was not the normal soft punky material that had been encountered on all previous blasts. Instead it was a seam of very good hard grey granite. If this material had been soft, as expected, by the powderman, movement would have allowed the blasted material to be retained on the

roadway, even with the seven rows of holes. The remainder of the material appears to be the hard grey granite excavated in the blast on 01/07/92.

I believe we will be able to blast and excavate the remaining material in this roadway and maintain the material on the desired bench by reducing the number of rows in the blast. I suggest keeping the blast to a maximum of three rows. This will allow ample time and area for the blasted material to move in the desired direction. I would also turn the open face on a slight angle away from the creek. This would allow more room for the blasted material to go toward the open pit while reducing the chances for the material to slide or roll into Crabtree Creek. If these procedures are followed properly, I believe we can attain the required access you need and maintain the integrity of the important buffer zone.

If I can be of any further assistance, please let me know.

Sincerely,

A handwritten signature in cursive script that reads "RUFUS Flinchum". The word "RUFUS" is in all caps, and "Flinchum" is in a cursive font.

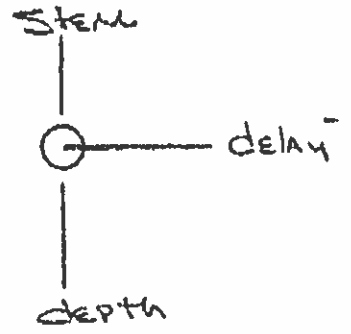
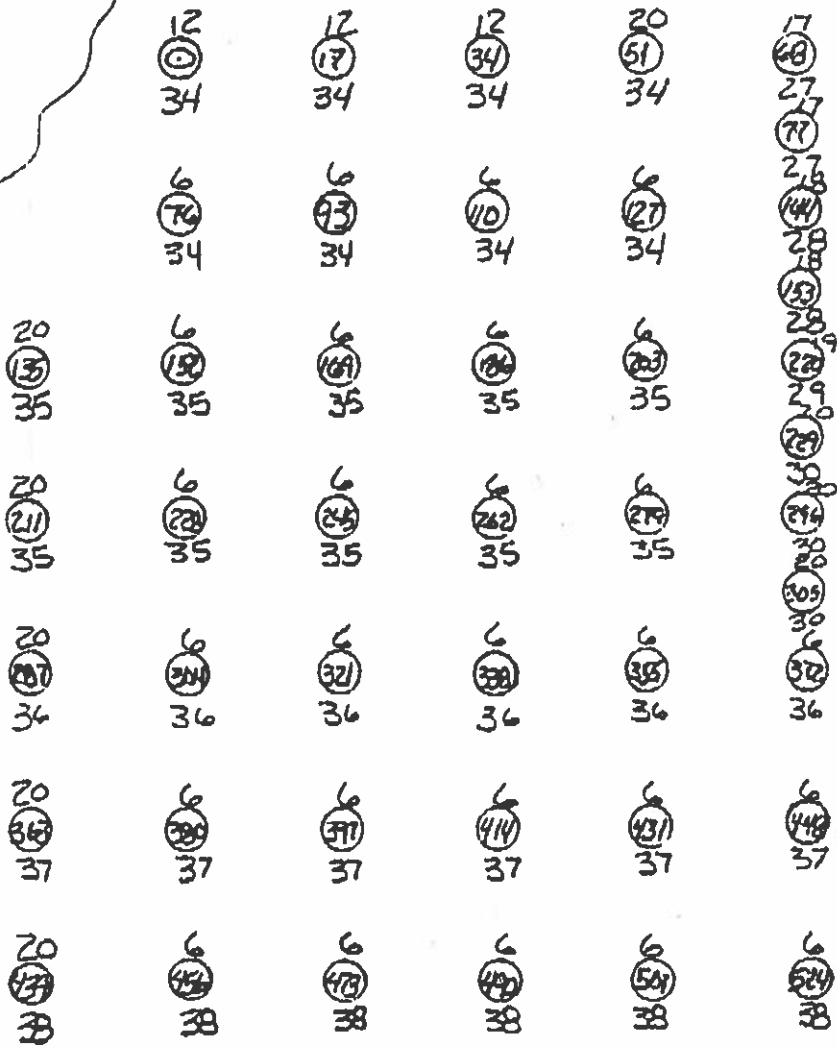
Rufus Flinchum  
Technical Representative  
Explosive Technologies Int.

RF/mm

Enclosures

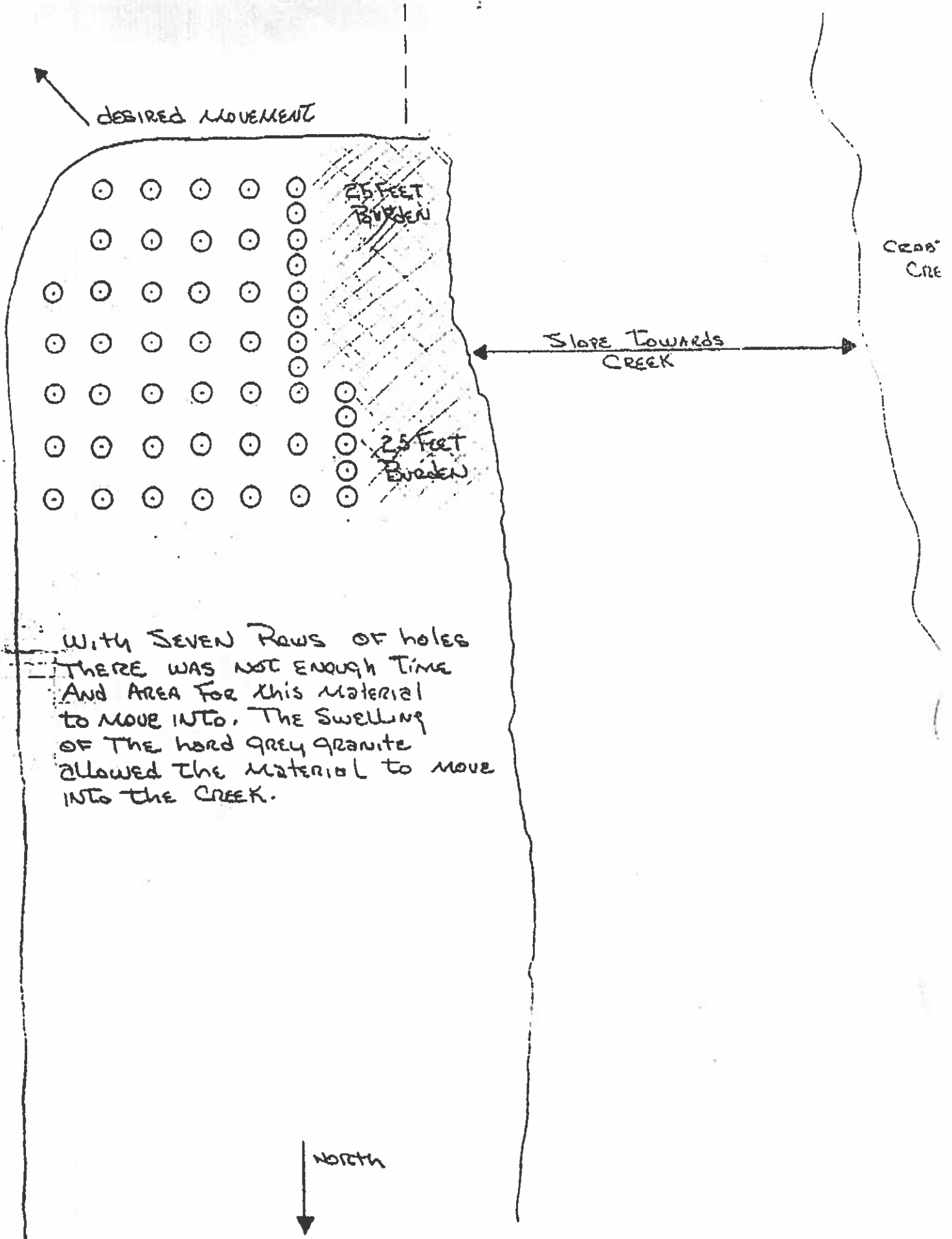
OPEN

OPEN



Shot data:  
 50 holes 4 inch diameter  
 8x8 PATTERN  
 Side OF Shot Toward CREEK  
 had 25 FEET burden

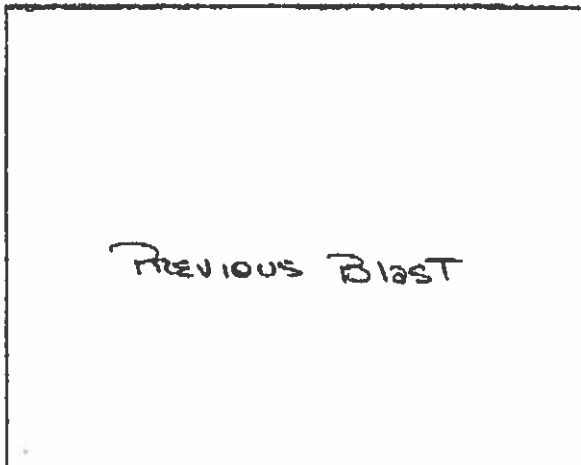




WITH SEVEN ROWS OF HOLES  
 THERE WAS NOT ENOUGH TIME  
 AND AREA FOR THIS MATERIAL  
 TO MOVE INTO. THE SWELLING  
 OF THE HARD GREY GRANITE  
 ALLOWED THE MATERIAL TO MOVE  
 INTO THE CREEK.

NEW RAMP  
TO NEXT bench

Proposal For Future  
Blast:

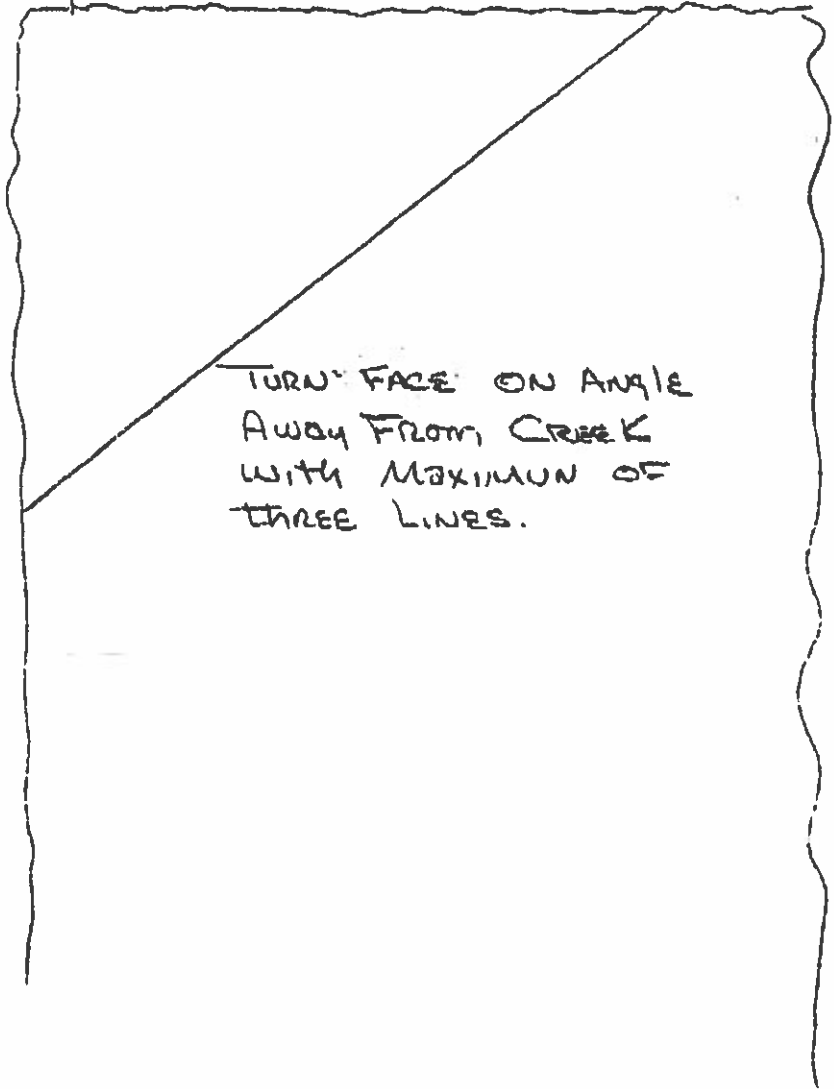


PREVIOUS BLAST



CROFTON  
CREEK

TURN FACE ON ANGLE  
AWAY FROM CREEK  
WITH MAXIMUM OF  
THREE LINES.





RECEIVED

JAN 22 1992

State of North Carolina  
Department of Environment, Health, and Natural Resources  
Raleigh Regional Office

LAND QUALITY SECTION

James G. Martin, Governor  
William W. Cobey, Jr., Secretary

Edmond John Maguire  
Regional Manager

DIVISION OF LAND RESOURCES

January 21, 1992

Wake Stone Corp.  
P.O. Box 190  
Knightdale, NC 27545  
ATTN: Mr. John R. Bratton

RE: Triangle (Cary) Quarry (92-10)  
Wake County

Dear Mr. Bratton:

This is to acknowledge our receipt of the remedial plan submitted by Mr. David Lee on January 13, 1992 and to document my observations during the inspection on January 15, 1992.

Based on my review and field observations, it has been determined that the remedial plan satisfies the applicable requirements of our January 13, 1992 Notice with the following stipulations:

- (1) The silt fence installation below the emergency access road in the natural drainageway must be monitored and replaced with a suitable stone check dam if necessary to prevent soil loss to Crabtree Creek.
- (2) All mulch must be tacked. Crimping will be acceptable for flat areas. Use of netting over the mulch will be acceptable for the slope as discussed with Ted Bratton at the site. This treatment must extend down through the current water elevation along the toe of the slope. Rip-rap will not be required in this area due to the existing rock visible along the creekbank.

Mr. Bratton  
January 21, 1992

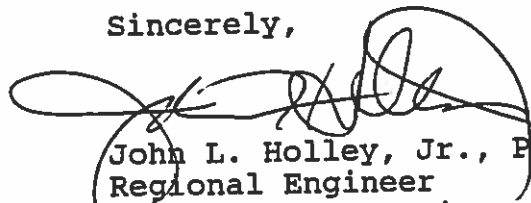
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Implementation of this plan as approved in this letter must continue in a timely manner until completion. Please notify this office when the slope has been seeded and mulched so that we may evaluate your progress.

Please be advised that further blasting along the western buffer along Crabtree Creek must continue to be suspended until a full report is provided to our central office and is reviewed.

Thank you for your continued cooperation. Please do not hesitate to contact Mr. Tracy Davis or me regarding any questions you might have about this matter.

Sincerely,



John L. Holley, Jr., P.E., CPESC  
Regional Engineer  
Land Quality Section

cc: Tracy Davis  
Tim Donnelly



RECEIVED  
JAN 22 1992

# MINE INSPECTION REPORT

(PERMITTED MINE)

LAND QUALITY SECTION

1. MINE NAME (CARY) TRIANGLE QUARRY 2. MINING PERMIT # 2-10  
3. OPERATOR WAKE STONE CORP. 4. COUNTY WAKE  
5. ADDRESS P.O. BOX 190 KNIGHTDALE, NC 27545  
6. Person (s) contacted at site JOHNNY & TED BRATTON  
7. Was mine operating at time of inspection?  Yes  No 8. Pictures?  Yes  No  
9. Date last inspected: 1/8/92 10. Any mining since last inspection?  Yes  No  
11. Is the mine in compliance with the Operating Conditions of the Permit?  Yes  No

If no, explain:  
3. B.E.: THE UNDISTURBED BUFFER ALONG CRABTREE CREEK @ THE WEST END OF THE SITE HAS NOT BEEN COMPLETELY RECLAIMED. WORK IS PROGRESSING WELL HOWEVER, AND ALL MATERIAL HAS NOW BEEN REMOVED FROM THE CHANNEL.

12. Is the mine in compliance with the Reclamation Conditions of the Permit?  Yes  No  
If no, explain:

13. Did any of the above deficiencies result in offsite damage?  Yes  No If yes, describe the type and severity of the damage:  
VERY SLIGHT SOIL LOSS TO CRABTREE CREEK AS A RESULT OF CLEAN-UP WORK. SUCH LOSS IS UNAVOIDABLE AND NOT PROBLEMATIC.

14. Corrective measures needed and / or taken: REMEDIATION PLAN RECEIVED 1-13-92 AND IS BEING CARRIED OUT IN A TIMELY MANNER. CHANNEL BANK AND SLOPE ABOVE HAVE BEEN SATISFACTORILY DRESSED AND WILL SOON BE PREPARED FOR SEEDING. ACCESS ROAD FOR REPAIRS LOOKS GOOD. SILT FENCE BELOW DRAINAGE WITH CROSSED BY ACCESS SHOULD BE MONITORED AND SUPPLEMENTED WITH MULCH W/ NETTING OR STONE PILES. MATING NEEDED ON SLOPE AFTER SEEDING.

16. Is the Annual Reclamation Report +/- map accurate?  Yes  No (Explain)  Not Reviewed

17. Follow-up inspection needed?  Yes  No Proposed date 1/24/92 ±

18. No. of additional pages of Inspection Report 0 19. Copy of Report sent to operator 1/21/92 (date)

INSPECTED BY: JOHN HOLLEY DATE: 1/15/92

Phone No: ( 919 ) 571-4700

White copy to file

Yellow copy to operator

Pink copy to Mining Specialist

N.C. Department of Environment, Health, and Natural Resources  
Division of Land Resources, Land Quality Section

# Telephone Log

Date: 1/22/92

Sheet 1 of 1

Time: \_\_\_\_\_  am  
 pm

Call: Placed  Received   
Returned

1. Project: TRIANGLE QUALITY County: WAKE

2. Conversation with: DAVID LEE Telephone: ( ) 266-1100

3. Affiliation: WAKE STONE

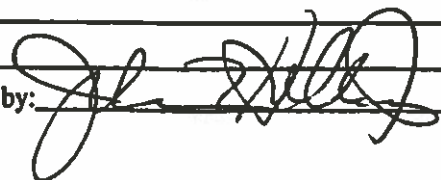
4. Content of conversation: I RET. HIS CALL. HE NOTED  
THAT ALLAS ROAD HAS BEEN REMOVED & ALL AFFECTED  
AREAS HAVE BEEN SEEDED & ARE READY FOR  
INSPECTION. I NOTED THAT WE WILL RE-INSP ASAP.

RECEIVED

JAN 24 1992

LAND QUALITY SECTION

cc: TRACY DAVIS

Filed by: 

**SPEED LETTER®**

TO \_\_\_\_\_ DATE \_\_\_\_\_

John Holley  
RNO-LOS

FROM \_\_\_\_\_ DATE 1/13/92

W. J. Jones  
LOS

SUBJECT Wake Stone Corp. - Quarry (#92-10) Wake County

**MESSAGE**

I have reviewed the January 13, 1992 letter and Plan for Remedial Action and Reclamation/Revegetation plan for the rock slide area submitted by Mr. David Lee of Wake Stone Corp. It appears to me that said plan are acceptable as written. However, before we respond in writing to Wake Stone Corp., I would like to receive and review the blast report study

SIGNED

*W. J. Jones*

**REPLY**

from Wake Stone Corp and discuss with you and Charles Gardner to appropriately address future blasting in this location of the quarry.

Therefore, once I get a copy of the blasting study, I will forward you a copy, then we can review and discuss. Please let me know if you should have any problems with the Remedial Action Plans.   
SIGNED *W. J. Jones*

FOLD FOR NO. 1  
FOLD FOR NO. 2

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# MEMO

JUN 04 1992

DATE: 2-12-92

TO: FILE - TRIANGLE QUARRY (9270) SUBJECT: BRIEF REVIEW  
OF FINISHED SLOPE  
@ BLAST INCIDENT

I VISITED THE SITE AND OBSERVED THE WORK CONTINUING IN THE AREA ALONG CRABTREE CREEK THAT WAS AFFECTED BY THE BLASTING ACCIDENT. THE SLOPE IS IN GOOD CONDITION AND SEVERAL SMALLER SHOTS HAVE BEEN SUCCESSFULLY PULLED IN ACCORDANCE WITH THE APPROVED MODIFICATIONS. WE WILL CONTINUE TO PERIODICALLY MONITOR THIS AREA DURING ROUTINE SITE INSPECTIONS.

From: [Signature]



North Carolina Department of Environment,  
Health, and Natural Resources



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State of North Carolina  
Department of Environment, Health, and Natural Resources  
Division of Land Resources

James G. Martin, Governor  
William W. Cobey, Jr., Secretary

Charles H. Gardner  
Director

February 5, 1992

Mr. John Bratton  
Wake Stone Corporation  
P. O. Box 190  
Knightdale, North Carolina 27545

RE: Triangle Quarry  
Mining Permit No. 92-10  
Wake County

Dear Mr. Bratton:

This office has completed its review of your company's January 20, 1992 report regarding the blast and corresponding rock slide that occurred on January 7, 1992 along the western pit boundary adjacent to Crabtree Creek. This office concurs with the findings of the report and the safeguards that are proposed therein to prevent future incidents from occurring at this site. Therefore, your mining permit has been modified to incorporate the report, in its entirety, and require compliance with the corrective actions proposed. I would like to draw your particular attention to Operating Conditions Nos. 3 and 10 of the enclosed permit.

Please review the modified permit and advise this office should you have any questions concerning this matter. I would like to extend the Department's appreciation to you and your company for the timely and professional manner in which you investigated and rectified this situation at your mine site.

Sincerely,

A handwritten signature in black ink, appearing to read "Tracy E. Davis".

Tracy E. Davis, E.I.T.  
Mining Specialist  
Land Quality Section

TED/se

Enclosures

cc: Mr. John Holley, P.E.