BOARD OF APPEALS CASE NO. 4778	*	**BEFORE THE**
APPLICANT: Redland Genstar, Inc.	*	**ZONING HEARING EXAMINER**
REQUEST: Special Exception, variances, & modification of Case Nos. 2434, 3179, 3260-A, B, C for existing quarry operation; Calvary Road & Snake Lane, Churchville	*	**OF HARFORD COUNTY**
	*	**Hearing Advertised**
	*	**Aegis: 1/27/99 & 2/3/99**
HEARING DATE: 3/29, 4/12, 4/19, 4/26, 5/10, 5/17, 5/24, 6/14, & 6/21/99	*	**Record: 1/29/99 & 2/5/99**

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ZONING HEARING EXAMINER'S DECISION

The Applicant, Redland Genstar, Inc., a subsidiary of Lafarge Corporation has filed four separate cases seeking various relief under provisions of the Harford County Code. Case No. 4777 requests a modification and consolidation of several earlier zoning cases, namely, Cases 2434, 3179, 3260-A, 3260-B, 3260-C, in an AG District.

Case No. 4778 requests a modification of an accessory use granted in Case 3260-C. Case No. 4779 requests a Special Exception pursuant to Section 267-53(E)(1) to allow mineral extraction and processing; a variance to Section 267-11, 267-41(D)(6) and 267-41(D)(5)(e) to disturb the required 75 foot buffer (25 feet proposed); and a variance pursuant to Sections 267-41(D)(3)(a) and 267-41(D)(5) to mine or excavate in the Natural Resource District (NRD).

Lastly, Case 4780 requests a Special Exception pursuant to Section 267-53(E)(1) to allow construction of a berm in an Agricultural District; a variance pursuant to Sections 267-11, 267-41(D)(6) and 267-41(D)(5)(e) which requires a buffer of at least 75 feet (25 feet proposed) in an AG Agricultural District.

For purposes of judicial economy, all four cases were consolidated in order to present one consistent set of facts and avoid redundant testimony. The Applicant, however requested that each case stand on its own merits for purposes of this decision and recommendation.

The subject property is located on Calvary Road, Churchville, Maryland 21028. The property consists of various parcels and are more particularly identified on Tax Map 50, Grid 2E Parcels 25, 29, 28, 45, 46, 47, 259, 260 and 261. Parcel 25 is also referred to as the "Almond" property; Parcels 259 and 260 are referred to as the "Fannin" property; Parcels 45 and 261 are referred to as the "Cail" property.

Case No. 4778 - Redland Genstar, Inc.

PRIOR ZONING HISTORY

Mining began on portions of the properties, currently owned by Lafarge, as early as the 1920's. The quarry operation was the subject of Board of Appeals Case No. 91 in 1955 under the Interim Zoning Ordinance and included approximately sixty (60) acres which contained the asphalt plant, stockpile areas, secondary and tertiary crushing, sorting operations and the office structure. (See Petitioner's Exhibit 7)

In 1965, the site was owned by Gatch Crushed Stone Company. Gatch applied to the Board of Appeals for approval to expand mining and other operations onto an adjacent property, totaling approximately thirty-one (31) acres. At that time, James Run Road was relocated and a sixty-foot (GO) right of way was deeded to Harford County. The quarrying operation in this area was completed and currently there is a large water filled quarry on parcel 77. (See Petitioner's Exhibit 8).

In 1979, after having purchased the quarry from Gatch, the Flintkote Company in Case No. 2434 applied for Board of Appeals approval to expand mining onto an adjacent parcel, approximately 81.45 acres in size. This case was approved, subject to fourteen conditions addressing issues such as hours of operation, weekend activities, blasting, entrances and berms. (See Petitioner Exhibit 9)

In 1985, Case No. 3179 was filed requesting an amendment of the conditions in Case No. 2434 concerning hours of operation. The Board approved the requested amendments. (See Petitioner's Exhibit 15)

In late 1985, the Flintkote Company filed three requests for Board approval (Case Nos. 3260-A, B & C). These cases requested:

1. **That mining be allowed to expand onto the Mitchell property;**
2. **That Flintkote be allowed to remove the berm area between the existing quarry and the Mitchell property; and**
3. **That Flintkote be allowed partial use of the Almond Property for accessory uses.**

In 1986, these requests were granted and the Hearing Examiner incorporated in his decision the prior conditions from Case Nos. 2434 and 3179. The Board also imposed additional conditions regulating the quarry operation. (See Petitioner's Exhibit 16)

Case No. 4778 - Redland Genstar, Inc.

In 1991, in Case No. 4217, the quarry now under the ownership of Genstar, appealed an Interpretation from the Director of Planning and Zoning regarding the hours of operation. The Court of Special Appeals upheld the decision of the Board of Appeals, which supported the Director's decision. (See Protestant's Exhibit 7)

STATEMENT OF FACTS

1. Mark Carroll – Manager of Aggregates for the Maryland Division of Lafarge Corporation.

Mark Carroll, General Manager of Aggregates for the Maryland Division of the Lafarge Corporation, testified that he is responsible for Lafarge's production sales. His responsibilities include one sand operation and five quarries, including the Lafarge Quarry, situated in Churchville, Maryland. Carroll testified that at the Churchville quarry, there are approximately thirty people who work directly for Lafarge. This number does not include the independent operators and subcontractors, who also work at the quarry. He stated that the Churchville quarry is critical to the operation of the company since it is Lafarge's third largest operation in Maryland. Due to its geographic location, it serves the northeast market, as well as the Eastern Shore of Maryland. He testified that the stone material from this quarry is unique in that it meets the new Super Pave road construction standards established by the State of Maryland. The stone has the specified hardness and abrasiveness required by the State Highway Administration for highway construction.

Carroll testified, that without additional zoning approval, there is approximately eight years of life left in the Churchville quarry operation. If the requested zoning is approved, there would be a total of approximately fifteen to twenty years of quarry life. Based on his years of experience in the mining industry, Carroll testified that aggregate operators need to achieve a minimum of twenty years of reserves. This quantity of reserves is necessary because of the extensive capital investment necessary to maintain a quarry operation.

Carroll explained why Lafarge chose to file four separate zoning applications and have them consolidated for hearing purposes, rather than request zoning approval on a piecemeal basis. He stated that the philosophy of Lafarge is to approach quarry operations in a consolidated manner in conjunction with the community and based on any overall plan, rather than incrementally. He further testified, that in his opinion, Lafarge has made an effort to work with all the regulatory agencies and the community. He stated that approval of the requested zoning will allow the company to utilize the scarce mineral reserves and also balance the needs of the community. Approval will clarify existing conditions and allow for implementation of an overall plan mandating efficient compliance with the regulatory agencies. He further testified that the four zoning applications are intertwined and are integral to one another.

On cross-examination, Carroll stated that of all the quarries operated by Lafarge, the Churchville quarry has the shortest projected life. He stated that in terms of reserves, Lafarge's Texas and Frederick, Maryland quarries have over one hundred years of reserves and the Marriottsville quarry has over thirty years. He further stated that the Medford quarry has over one hundred years and the Chase sand operation has approximately fifteen years.

2. Lewis Murphy - Plant Manager and Expert in Manager and Operations of Crushed Aggregate Quarries.

Lewis Murphy, the Plant Manager for the Churchville quarry, testified that he had been employed by the Lafarge Corporation for over two years and has the responsibility for the day to day operations at the Churchville site. Murphy was qualified as an expert in the field of mining and the operation of crushed aggregate quarries. He testified that there are thirty employees at the Churchville quarry, who are under his direct supervision, and his annual operating budget is Six Million Dollars ($6,000,000.00). Of the thirty employees, twenty-three reside in Harford County. Lafarge's annual payroll is one and one-half million dollars ($1,500,000.00). He further stated that the existing equipment, including the fixed plant and mobile equipment, have an approximate capital value of Twenty Million Dollars ($20,000,000.00).

Murphy testified that the total property owned by Lafarge is approximately three hundred thirty (330) acres. Murphy, by making reference to the aerial photograph (See Petitioner's Exhibit 11), outlined the properties which were the subject of the four Board of Appeals applications.

The primary product generated by the quarry is used in road construction and paving materials. He testified that the aggregate material is used for asphalt, erosion control structures, highways, concrete, drain fields, septic systems, landscaping, driveways and railroad ballast. He stated that there are approximately ten independent truckers that haul from the site and eight of these truckers reside in Harford County. Murphy explained the quarrying operation in detail and stated that there is a truck washing operation at the quarry to reduce dust generation. The water for the truck washing originates from on-site sediment basins and is recirculated.

Murphy, by making reference to Petitioner's Exhibit 17, (Zoning History) and Petitioner's Exhibit 18, (Graphic Illustrating History of prior Board of Appeals case), explained the zoning history. He testified that mining was initiated on the Churchville site back in the 1920's and has been in constant operation to the present time. He summarized the various Board of Appeals cases, which have occurred since the quarrying began approximately seventy-nine years ago. Murphy's testimony is consistent with the history summarized by the Department of Planning and Zoning in their Staff Report (See Petitioner's Exhibit 5, pp. 3-4)

By making reference to Petitioner's Exhibit 20, (Graphic of Almond Tract), Murphy summarized the proposal for the Almond Property, as set forth in Board of Appeals Case No. 4778. The proposed use of the Almond Property is for stockpiling of finished product materials. Currently, thirty of the fifty-three acres of the Almond Property are used for stockpiling and Lafarge seeks to expand the stockpile area by seventeen acres. In conjunction with this expansion, Lafarge intends to construct new berms and extend the existing berms, which will screen the stockpiles from adjacent residential properties. Board approval will allow Lafarge to more efficiently utilize their property.

In reviewing the aerial photograph, Murphy identified a six-acre land area between the eastern boundary of the Almond Property and the adjacent residential subdivision. He testified that this area would remain undisturbed and would retain its existing mature vegetative cover. Since there are existing berms on the Almond tract, Lafarge intends to expand those berms around the outer perimeter of the property, which would include berming the site from MD Route 136 and Snake Lane. The berms would provide a visual screen and a noise barrier from the stockpile activities, occurring inside the berm. The primary communities that would benefit from the screening are the Mystic Court and Pilgrim Road community along with a few scattered residences on Snake Lane and along Calvary Road. He testified that the stockpiles to be placed on the Almond Property would not exceed the height of the berms as viewed from the adjacent subdivision.

Murphy testified that the granting of this accessory use would have a direct impact on the height of the existing stockpiles. By referencing the aerial photograph, Murphy explained that Lafarge is currently restricted in their stockpiling area on the Almond Property. He stated there currently is not sufficient area for an on-site stockpile, so Lafarge stacks material at a higher elevation than is desirable from a community and operations perspective. If additional land were available for stockpiling, the height of the stockpiles could be reduced below the level of the berms. Due to the seasonal nature of the quarry business, it is critical to have sufficient on-site stockpiled material, in order to meet customer demands. Murphy stated that absolutely under no circumstance would any mining take place on the Almond Property. The property is to be used solely, as an accessory use, for stockpiling.

In describing Board of Appeals Case No. 4780 (the Cail Property), Murphy explained that the entire Cail site is approximately two and one-half acres and Lafarge is requesting a variance for .13 acres, which would allow Lafarge to construct a berm on the southern portion of the site. In order to construct said berm, a variance to reduce the Natural Resource District (NRD) buffer from seventy-five feet to twenty-five feet is necessary. The purpose of the berm is to allow Lafarge to straighten out the existing berm on the Mitchell Property, which would allow Lafarge to widen the pit directly south of the Cail property. Murphy testified that Lafarge will not alter any of the existing wetlands on the Cail Property and will leave the balance of the Cail Property in its natural wooded, residential state.

Murphy next explained the three part zoning request outlined in Board of Appeals Case

No. 4779, (the Fannin Property). By making reference to the Graphic of the Cail and Fannin Tracts (See Petitioner's Exhibit 21), he outlined the boundaries of the Fannin Property and explained that a large area of the Fannin Property will be undisturbed and will remain in its existing agricultural state. He further explained that the Fannin Property contains the mineral deposit known as metagabbrot amphibolite, the same deposit currently mined on the adjacent Lafarge property. Lafarge will construct a berm around the perimeter of the proposed quarry, which will range from a height of thirty to seventy feet. Murphy stated that extraction on the Fannin Property would be phased over time and the berm construction would precede ahead of the actual mining. Based on Lafarge's line of sight analysis, the view of the extraction operation from the Mystic Court community would be blocked.

Murphy stated that there are non-tidal wetlands on the Fannin Property, which are necessary to disturb in order to conduct the mining operation. Without the ability to disturb the non-tidal wetlands, a radical change in the configuration of the berm would be necessary, which would critically impair the ability to access the mineral reserves. Murphy testified that any disturbance to the wetlands would be offset by wetland mitigation, which would occur on a two to one basis.

In explaining Board of Appeals Case No. 4777 (Modification of Conditions), Murphy testified that he was responsible for assisting in the preparation of the modification of conditions, as outlined in Board of Appeals Case No. 4777. Murphy reviewed the Text of Consolidation of Conditions (See Petitioner's Exhibit 22, attached hereto as Appendix 1), and explained the rationale for the proposed modifications. He testified that by clarifying the conditions from the prior Board of Appeals cases it will allow for a more efficient operation of the quarry. This will also allow for the County and State enforcement agencies to have a clear set of conditions to enforce upon the quarry operation. It will further allow the community residents to better understand the allowable activities and restrictions imposed, upon the Lafarge property, by the Board of Appeals.

He testified that prior to his employment as Plant Manager, he had been advised that there was some confusion between the County, the neighbors and the quarry operators concerning applicable conditions. Murphy stated that the standardization of the conditions would alleviate much of the concerns that have been expressed previously. He further explained that the proposed conditions had been reviewed by the Churchville Quarry Advisory Council. He stated that the committee was formed in 1992 for the purpose of providing a forum for the community to meet with the quarry operators. Many of the conditions, which are proposed, were prepared with input from the Quarry Advisory Committee. Murphy used as an example, the proposed condition concerning the construction of berms, which states that if there are concerns brought up by the residents about the construction of the berms, their concerns are to be referred to the "Churchville Quarry Advisory Counsel in order to come up with a mutually agreed upon plan for correction of the concern or problem."

In reviewing the proposed blasting condition, (See Page 10 of Petitioner's Exhibit 23), Murphy testified that under the current condition, the window of opportunity for blasting, is limited between the hours of 12:00 p.m. and 1:00 p.m., Monday through Friday. Murphy explained the difficulty in trying to comply with this limitation and stated the limitation raises serious safety issues since the explosives expert should not be pressured with such a narrow time frame within which to blast. Murphy testified that the sole purpose for modification of this particular condition is to allow the explosives expert a sufficient time frame to fire the shot. Under the current restrictive condition, if the shots are all loaded but the one hour window for blasting has expired, the blaster has to delay the shot over night, creating a safety hazard, especially with thunderstorms and lightening in the summertime. Murphy testified that Lafarge is not requesting approval to increase blasting in any one day, nor are they requesting an increase in the frequency of blasting. The request is simply to allow for a widening of the window of opportunity within which to fire a shot.

After Murphy's explanation of the modification to the existing conditions, he explained the nine new conditions (See Petitioner's Exhibit 22, Page 1-2, attached hereto as Appendix 1). He reviewed the Reclamation Plan (See Petitioner's Exhibit 27), which illustrates that once the mining operation is complete, the equipment will be removed, the quarry will fill with water, the site will be regarded and the property will remain open space. The berm surrounding the property would remain in place.

Murphy testified that he had reviewed the Department of Planning and Zoning's Staff Reports, (See Petitioner's Exhibits 5, 6, 7 and 8) and stated that the Department of Planning and Zoning was recommending approval of all four Board of Appeals cases subject to very specific conditions. Murphy testified that he took exception to Planning and Zoning's proposed condition number 20, as set forth on page 17 of the Board of Appeals Staff Report (See Petitioner's Exhibit 7), which requires the establishment of a well monitoring program. Murphy requested that he have an opportunity to testify at a later date with a more detailed response to the condition as proposed by the Planning Department. Murphy was subsequently recalled on May 24, 1999 and testified that Lafarge requested that Planning and Zoning's proposed condition number 20 be modified to read as follows:

> "Lafarge shall develop a well replacement program, which shall be reviewed and approved by the Maryland Department of the Environment as part of the surface mining permit. The well replacement program shall address well problems that may occur within a specified geographic area of the quarry as approved by the Maryland Department of the Environment."
> (See Petitioner's Exhibit 64)

Murphy testified that the revised condition, as proposed, places a large responsibility on Lafarge that they willingly accept. It allows the Maryland Department of the Environment (MDE) to play a major role in the well monitoring program. MDE is the agency with expertise and familiarity with well monitoring programs throughout the State and this proposed condition linked to the surface mining permit allows effective enforcement by MDE.

At the conclusion of his testimony, Murphy testified that, in his opinion, the granting of the requested zoning relief would not have a detrimental impact on the community. He based this conclusion on the fact that Lafarge will construct berms around the areas where mining activity will occur and that such berms will create a visual screen and noise barrier. He also stated that Lafarge has completed extensive landscaping and berm construction around the existing quarry operation and Lafarge has proposed additional landscaping be installed on the berms.

He stated that the history of the quarry operation in Churchville has indicated that Lafarge has made good faith attempts to work with the community and they will continue to do so. In his opinion, the movement of quarrying activity onto the Fannin property is a natural extension of the existing quarry. The mineral deposit is well defined, is an extremely valuable natural resource and is found in a limited geological area of Harford County. From a business perspective, the quarrying has occurred in this geographic area for over seventy years and it is very difficult for an aggregate operator to pick up and move to another area. The mineral deposit dictates a quarry's location. In his opinion, he stated that the four Board of Appeals requests represent a continuation of an existing operation and do not constitute an expansion of the business.

On cross examination, Murphy explained in detail the phasing of the new berms on the Fannin Property. He also testified that the well replacement program would obligate Lafarge to replace any of the wells that are impacted by Lafarge's quarrying operation. Murphy could not state with specificity the geographical area that would fall within the well monitoring program. Murphy testified that it would take approximately three months to develop a written well replacement program, which would be submitted to MDE for approval.

On redirect, he reviewed Petitioner's Exhibit 22 (Text of Consolidation of Conditions) and specifically condition Number 5, where it states that the berms were to be constructed to block the view of the mining operation from existing residents south of Snake Lane and west of Fannin.

3. Irvin Maurer - Manager of Natural Resources for Lafarge and Expert Geologist.

Irvin Maurer, the Manager of Natural Resources for Lafarge, testified as an expert in the field of geology. Maurer is responsible for overseeing environmental issues, geology and mine planning issues for the Lafarge quarries. Maurer testified that he was responsible for the preparation of Petitioner's Exhibit 37 (the Churchville Quarry Geological Map) and Petitioner's Exhibit 38. (description of the geological reserves) . Maurer explained that there are two geological formations under the Lafarge property. The first is the James Run Gneiss, which has been previously mined. The current mine operation and the Fannin Property contain a mineral deposit known as metagabbrot and amphibolite, an ingenuous type of rock. He stated the minerals are a very hard and abrasive material that produce an excellent aggregate material for construction purposes, ready mix concrete or asphalt road construction.

The mineral deposit is unique in that it contains very hard properties, which give it special qualities, unique for the State of Maryland. Maurer stated that of the seventy-five operational quarries in the State of Maryland, only four, including the Churchville quarry, have materials that meet the State Highway Administration strict specifications for high skid resistance.

Maurer explained that the State Highway Administration Super Pave Program will produce safer roads throughout the State. In order to achieve this standard, it is necessary to use only certain materials that can comply with the State of Maryland's rigorous criteria for highway safety. Maurer indicated that this unique mineral deposit is found in the Churchville quarry. Other areas of the state must import this mineral from the eastern part of Maryland or from Pennsylvania or Virginia. Maurer testified that the materials from the Churchville quarry are also used by the Mass Transit Administration as railroad ballast for the construction of the light rail system. He further testified that the aggregate is in high demand for the construction of landfills.

Maurer stated that he had conducted extensive geologic analysis on the existing quarry and Fannin Property and developed projections concerning useful life. He stated that the existing quarry has approximately eight to ten years of useful life. Maurer then testified that on the Fannin Property, there are approximately sixteen and one-half million tons of reserves, which represent approximately eleven years of available material. In his opinion, the existing quarry combined with the Fannin property, would result in a total useful life of fifteen to twenty years.

Maurer testified that, based on his years of experience with quarries, a quarry operation seeks to have as much mineral reserve as possible. Typically, before making a significant capital investment in a quarry, a company would, at a minimum, require at least twenty years of useful life.

4. Theodore E. Scott - Expert in the Fields of Commercial, Industrial and Surface Mining Site Design.

Theodore E. Scott, a principal of Morris & Ritchie Associates (hereinafter MRA), testified as an expert in the field of Commercial, Industrial and Surface Mine Site Design. He stated that MRA has worked on the Churchville quarry site since 1986 and that he has been personally involved with the project since 1990.

He stated that his firm has primary responsibility for the engineering and site planning design for the Lafarge operation. MRA is also responsible for the mining and reclamation plans, permit plans, erosion and sediment control plans, line of sight studies and other engineering infrastructure services for the quarry operation.

By making reference to the Northern Berm Plan (see Petitioner's Exhibit 25). Scott explained the basis for the construction of this berm. He stated that in meetings with the Churchville Quarry Advisory Council, the community had expressed concerns to Lafarge concerning the visual impact of the quarry operation on the community. The community had raised two major issues of concern; the view of the surge pile and the view of the southeastern face of the quarry.

MRA prepared a plan to determine how these two geographic areas could be screened. Scott testified that through the planning process, it became clear that it would be necessary to raise existing berms to better screen the community. By raising the berms, the base of the berm had to be widened and an existing road along the toe of the berm had to be relocated. Scott explained that from an operational standpoint, Lafarge reduced their area available for stockpile by raising the berms and a decision was made to request additional stockpile area on the Almond Property, long with approval to expand berms around the perimeter of the Almond Property. The surge pile berm, as shown on the Northern Berm Plan, involves raising the surge pile berm and extending it around the edges of the Almond Property.

In order to address the concerns of the community concerning the view of the southeastern quarry wall, it was necessary to raise the existing Mitchell berm. The construction of this berm accomplished two objectives. It eliminated the line of sight issue, which concerned the community and dramatically increased the buffer between the quarry and closest residential unit from four hundred fifty (450) feet to eight hundred twenty (820) feet.

Scott testified that based on his attendance at the various Churchville Quarry Advisory Council Meetings and his discussions with residents of the community, they were generally receptive to the construction of the berms. He further stated, that based on the positive community response, a decision was made, at that time by Genstar, to construct the surge pile berm and to raise the Mitchell berm. Scott testified that this work is substantially complete.

Scott testified that numerous meetings were held with the community prior to the submission of these four Board of Appeals cases. Most of the meetings were with the Churchville Quarry Advisory Council, which was the community advisory group established to discuss concerns and issues regarding future development of the Churchville quarry.

Scott explained, Board of Appeals Case Nos. 4779 and 4780, by making reference to the Graphic of the Cail and Fannin tracts (see Petitioner's Exhibit 21). He testified that, as an engineer for the project, he was responsible for determining how the Fannin Property was to be mined in the future. He stated that in his expert opinion, the mining of the Fannin Property was a logical extension of the existing quarry. Scott opined, that given the linear east to west shape of the majority of the Fannin Property, it was necessary to design a pit that is as wide as possible in order to maximize the depth and gain access to the mineral reserves.

He testified that a constraint on the Fannin Property is the existence of non-tidal

wetlands. One area of the non-tidal wetlands has an existing stream, which traverses the property in an east/west direction while the second area has a forested wetland without a perineal stream. The proposed plan requests a reduction of the seventy-five foot buffer to twenty-five feet along the non-tidal wetland supported by the stream. The other request is to mine the non-tidal forested wetland area, which is a less valuable resource than the stream fed non-tidal wetland.

Scott testified that mining of a non-tidal wetland represents a balancing of natural resources. He stated it was necessary to balance the value of the non-tidal wetland against the nonrenewable natural resource, i.e., the mineral deposits beneath the wetland. Through the permitting process, any alteration of the existing non-tidal wetland requires a replacement of a new wetland on a two to one basis. The plan, as proposed, creates a new forested wetland, which will be twice as big as the disturbed area. Scott testified that in his expert opinion, if the variance to disturb the non-tidal wetland on the Fannin Property were not granted, it would have a dramatic impact on the quarry design.

Due to the berm construction, an inability to disturb the non-tidal wetland would reduce the land area available for mineral extraction by forty percent. Scott testified that based on MRA's analysis, the proposed berms would screen the operation of the Fannin Property from the residents south of Snake Lane. He further stated that expansion onto the Fannin Property represents a shifting of the quarry operations eastward away from existing residential uses.

Scott outlined Lafarge's request as set forth in Board of Appeals Case No. 4779 by referencing the Graphic of the Almond Tract (see Petitioner's Exhibit 20). Scott identified the existing berm on the Almond Property and explained that Lafarge proposes to raise the existing berms along Calvary Road, Snake Lane and the eastern border of the Almond Property. Lafarge proposes to utilize additional land area on the Almond Property for stockpiling, the height of which will not exceed the top of the vegetative berms. He further explained that there will not be any extraction activity on the Almond Property.

Scott stated that there had previously been a Board of Appeals approval for a trailer park to be constructed on the Almond Property, which would consist of approximately three hundred five (305) residential units. Scott testified that on page 2 of Petitioner's Exhibit 16, (the 1986 decision in Board of Appeals Case No. 3660 A, B and C), it states "The Applicant has agreed the current applications, if granted, will supersede previous conditional use approval for a mobile home park." Scott stated that Redland/Genstar's acquisition of the Almond Property pleased the community because it forever foreclosed the opportunity for a mobile home park on the site.

Scott explained that currently there is not sufficient land area at the quarry for the storage of stockpile materials. This necessitates the request to expand the existing thirty acre accessory use on the Almond Property by an additional seventeen acres. Currently some of the stock piles are visible from the residential community and this would be remedied by shifting additional stockpiles onto the Almond Property at a height below the level of the vegetative berms. Scott echoed Murphy's testimony by stating there would continue to be an extensive wooded buffer area on the east side of the Almond Property, which would provide an extensive mature visual screening from the adjacent residential community.

Scott reviewed the standards for a Special Exception for mineral extraction and testified he is familiar with Section 267-53(E)(1) of the Harford County Zoning Code. As an expert in mining design, he stated that he had reviewed the various code provisions and in his opinion, the applications as submitted comply with the Code. Scott further testified he is familiar with the Limitation guides and Standards of Section 267-9(I) of the Harford County Zoning Code. Scott reviewed each respective provision and stated that, in his expert opinion, Lafarge's proposals comply. Scott stated that the quarry operation has existed since the 1920's, and Lafarge has worked closely with the local neighborhood in order to develop an overall plan that is sensitive to the community.

Scott testified that, in his opinion, the Applications were consistent with the mineral resource element of the Harford County Master Plan, which states, "Recognize the economic importance of continued mineral resource extraction consistent with State statutes" (see Petitioner's Exhibit 9) . He stated that the site plan, as designed, is sensitive to the environment and achieves a balance between the competing natural resources of non-tidal wetlands and mineral deposits.

Scott stated that the inability to disturb the forested non-tidal wetland on the Fannin Property, would result in an unreasonable hardship, since it would represent a substantial decrease in the amount of mineral deposit that could be mined. Scott concluded his testimony by stating, that in his opinion, the granting of the requested zoning approvals would not have a detrimental impact on the community. He elaborated by stating that the design of the quarry operation has been based on extensive interaction with the community and Lafarge has attempted to respond to the community as issues were raised. Scott stated that the construction and expansion of the berms, the increase in buffer between the quarry and residential properties, and the fact that the proposed quarry extension shifts the operation further away from the residents, leads to his conclusion that approval of the our cases will not have a detrimental impact on the community.

On cross examination, Scott addressed the phasing of the berms and the possibility of dust being created from the quarry operation. Scott stated that dust is commonly associated with quarry and berm construction. He stated in his opinion, the majority of dust emanates from the quarry operation itself and is not a major problem generated from the stockpiling activity. He further indicated that the berm construction is temporary in nature and that once the berms are constructed, the dust problem is usually eliminated since the berm is vegetated.

Scott stated that efforts to control dust would be through the construction of the berms, implementation of the landscaping plans and use of on-site watering trucks.

5. Timothy F. Madden - Expert Landscape Architect and Land Use Planner.

Timothy F. Madden, Director of Land Use Planning and Landscape Architecture with MRA, testified as an expert in landscape architecture and land use planning. He stated that he was responsible for developing the landscape and berming plans for the existing quarry operation as well as the proposed quarry expansion. As part of this work, he prepared the Northern Berm Sections (See Petitioner's Exhibit 39),the photographs (See Petitioners' Exhibit 40) and the Landscape Analysis Report (See Petitioner's Exhibit 11). He testified that he examined the visual resources affected y the existing and proposed quarry operations by focusing primarily on the residential properties situated along Mystic Court. He explained the methodology employed in conducting a visual analysis, which includes line of sight studies, photographs, field visits to the site, and an analysis of existing vegetation. The goal of a visual analysis study is to establish the best method to buffer the adjacent residences from the existing quarry and the proposed quarry area on the Fannin tract.

He testified that a view shed from each property was established and he defined a view shed as the area visually observable from particular locations on a property. In his analysis, he stated that it was assumed the visual impact to be examined was from the second floor of each residential structure. In summary, he stated the line of site analysis is an attempt to examine what an individual would see from their property when looking at the existing quarry and the proposed quarry.

Madden stated that it was determined, based on elevations, that the best way to screen the residential properties from the quarry operation was to construct a berm and vegetate it with appropriate plant material. In order to determine the height of the berm, it was necessary to examine from the various properties, their views of the Lafarge property. Madden explained that the berm has already been constructed and the majority of the berm is vegetated. He proceeded to review his analysis of eighteen different residential properties. He summarized the conclusion of his visual analysis by stating that Lafarge, by utilizing a combination of berms and landscaping can totally screen the quarry operation, including the conveyor within a reasonable time frame. Madden testified that based on his visual analysis he prepared the Surge Berm Landscaping Plan (See Petitioner's Exhibit 26) which illustrates the berm location and plant materials utilized.

Madden testified that he consulted with Lafarge on the proposed conditions, as

referenced in Board of Appeals Case No. 4777 and specifically those conditions related to berms and landscaping. Madden stated, in his expert opinion, the berms could be constructed on the Fannin Property to block any view of the quarry from the residences situated south of Snake Lane. He also testified that, based on his visual analysis, Lafarge could comply with Condition Number 5 (See Petitioner's Exhibit 22), as it relates to the phasing of the Fannin berms and Condition Number 6 (See Petitioner's Exhibit 22) as it relates to the Almond Property berms. He further testified that, based on his visual analysis, Lafarge could comply with Condition Number 9 (See Petitioner's Exhibit 22), which references screening the primary crusher. Madden testified that he is absolutely certain the condition requiring that the adjacent residences view of the quarry be screened (See Petitioner's Exhibit 6) can be achieved by Lafarge.

He stated that MRA prepared the specifications for the landscaping plan, which requires evergreens be planted in two rows on an average of twelve foot by twelve foot staggered patterns. Madden testified that in selecting plant materials, there were several considerations. He selected plants that would screen the view on a year round basis, grow quickly, survive in adverse conditions, and survive in an environment where dust travels.
Evergreens were utilized since they have the ability to capture and hold dust particulates.

In reference to the Almond Property, Madden testified that Lafarge could comply with all of the proposed conditions. He stated that the design of the berm provided a visual screen blocking the view of the stockpiles from the adjacent residences.

In conclusion, Madden testified that granting Lafarge the requested zoning relief would not have a detrimental impact on the community due to the berms, screening and landscaping.

6. James M. Keefer - Expert Environmental Scientist with Expertise in Wetlands.

Keefer testified that he is an employee of Geo-Technology Associates, Inc. (hereinafter "GTA"), which is an environmental and geotechnical consulting firm. He stated that he is a registered landscape architect, a Certified Wetland Delineator, a professional wetland scientist and is certified by the Society of Wetland Scientists. Keefer was admitted as an expert environmental scientist with specialized expertise in the area of wetland delineation, functional assessment and classification.

Keefer testified that he had visited the Fannin and Cail Properties and his firm was retained by Lafarge to conduct an environmental assessment and analysis of both sites. He

stated that he was the primary author of the G.T.A. Environmental Assessment and Analysis (See Petitioner's Exhibit 44) and that he was responsible for preparing the wetland delineation on both the Fannin and Cail Properties. He testified no rare or endangered species are located on either property.

Lafarge is requesting variances to reduce the seventy-five foot buffer to twenty-five feet on both the Cail and Fannin properties and to disturb a limited portion of the non-tidal wetland on the Fannin site. Keefer testified that throughout his analysis he has tried to strike a balance between two natural resources; the wetlands and the mineral resources. Both resources are regulated by MDE; mineral resources by the Division of Mineral Oils and Gas and the wetlands by the Non-Tidal Wetlands and Water Way Division. Lafarge is seeking a balance between the resources by leaving undisturbed a large portion of the Fannin Property, which contains mineral resources and by not disturbing the wetlands located on the northern side of the Fannin Property. Keefer stated that, in his opinion, the proposed application for the variance to the NRD will not have an adverse effect on the resources the NRD is designed to protect. The variance will not create any adverse effect on steep terrain and it will not adversely effect the water quality in streams, rivers or other aquatic resources.

The wetlands proposed to be disturbed on the Fannin tract consist of 1.7 acres and will be mitigated by a two to one ratio, which will result in the creation of 3.4 acres of new wetland area. He further stated that properties downgradient of the Fannin site will not be adversely impacted by environmental hazards, such as erosion, sedimentation or flood waters as a result of the quarry project.

Keefer stated that the variances, in his opinion, are appropriate because the availability of mineral resources in Harford County are limited, either because of their location, from a geological standpoint, or because other land uses, such as homes, roads or shopping centers have forever destroyed the opportunity to mine the deposits. Keefer stated there is a public need for stone products to be produced for a variety of uses, such as roads, driveways, and aggregate for concrete. He testified that after the Department of Planning and Zoning had met with him in the field, reviewed the wetland delineation and walked the property, the Department agreed with his recommendation that the variances, as requested, should be granted. He concluded his testimony by stating that the granting of the variances to the non-tidal wetlands would not be substantially detrimental to the adjacent properties and that the proposal by Lafarge would not have any adverse impact on the community.

On cross examination, Keefer stated that in order to disturb the 1.7 acres non-tidal wetland, it would be necessary to receive a permit from the State of Maryland for an exception to the twenty- five foot buffer requirement. He testified that he did not foresee a problem in securing such a permit.

7. Paul S. Scott - Expert Hydrocreolocrist.

Scott testified he is employed by GTA as a Senior Hydrogeologist with the responsibility for performing ground water resource evaluations and hydrologic studies. He testified that he is a member of the Association of Groundwater Scientists and Engineers, and he was accepted as an expert hydrogeologist with specific expertise in groundwater resource evaluation.

He stated that his company was retained by Lafarge to conduct a hydrologic investigation of the proposed quarry expansion area. He testified that he is the primary author of the report titled “GTA Report of Hydrologic Investigation” (See Petitioner's Exhibit 42) and was also responsible for the preparation of Petitioner's Exhibit 43, which summarizes the hydrologic investigation and the results of his findings.

Scott explained that a hydrologic investigation examines groundwater and surface water movements to determine possible impacts of a quarry expansion on the water resources. The hydrologic investigation analyzes (1) groundwater balance or budget; (2) surface water balance; and (3) aquifer impact and balance. Groundwater balance or budget considers the inflows and outflows to and from the aquifer. Surface water balance considers withdraw from and inflow to the stream system and focuses both on the James Run and the Broad Run, in order to determine whether more water is put into to the system then is withdrawn. Finally, the aquifer impact analysis examines the potential impact of expanded quarry operations on the aquifer in the vicinity of the Churchville quarry.

Scott stated that future groundwater conditions around the expanded quarry could be predicted, based on observed conditions at the existing quarry, since the hydrologic setting of the two areas are similar. Scott testified that it was fortuitous to examine the existing quarry since it provides valuable data as to impacts of the existing operation on water resources.

In conducting the aquifer impact analysis, Scott stated that certain wells surrounding the quarry were utilized. He located these wells by making reference to the blue dots on the "Site Map Showing Groundwater Elevation Contours" (See Petitioner's Exhibit 56-A) . He stated, that he was attempting to ring the site with wells in order to achieve a transect laterally from the existing quarry pit in order to see in cross section what was happening to water levels. Scott stated that the "Quarry Expansion Profile" (See Petitioner's Exhibit 56-B) is most useful in illustrating that the existing quarry does not impact groundwater levels beyond the pit. Draw down occurs significantly at the quarry pit, but as you move away from the pit, the impact of the draw down is minimal. Scott outlined his summary of findings in Petitioner's Exhibit 43-A, where he stated the following conclusions:

1. Inputs and withdraws to and from the aquifer result in a net gain to the groundwater system of approximately sixty thousand gallons (60,000) per day.

2. Inflows and outflows to and from Broad Run and James Run result in a net gain to the stream system of approximately three hundred thousand (300,000) gallons per day.

3. Groundwater levels and wells near the quarry range from seven to thirty-five feet below the ground surface, which is typical for the area and indicates that the quarry operations are not impacting the wells in the area.

4. No fracture zones that might intersect the quarry and surrounding wells were identified in the area of the quarry expansion.

5. The rocks in the vicinity of the Churchville Quarry are of very low permeability, causing the area of influence of the quarry operations to be very small.

6. The hydrogeologic setting of the expansion area is similar to that of existing quarry area, indicating that the impacts of the quarry expansion on water resources and water users in the area will also be negligible.

Scott stated that, in his expert opinion, the granting of the Special Exception on the Cail and Fannin Properties would not have any detrimental impact on the community from a hydrogeologic perspective. Scott also testified that Lafarge needs two permits relating to water usage from the State of Maryland; a Surface Water Permit and a Groundwater Appropriation Permit.

He reviewed the preliminary impact analysis summary concerning surface water usage, which was issued by the Water Resources Administration (See Petitioner's Exhibit 58). This state agency concluded:

> "No adverse impacts to downstream users are known to occur as a result of current withdrawals and none are anticipated to occur as a result of future increases. The increased flows during low flow periods may be beneficial to the downstream fishery."

Scott testified that he had received preliminary comments from the Water Resources Administration concerning the Groundwater Appropriation Permit (See Petitioner's Exhibit 59). Scott testified that the State, in their Preliminary Impact Analysis Summary, set forth the following position:

> "Available literature and on-site observation indicate that the rocks in this area are tight and have few extensive fractures. The water table is depressed about 500 feet from the quarry walls and does not appear to extend beyond the quarry property. Most linear features in the area tend to run northeast to southwest along regional strike. There do not appear to be any fault zones in the immediate vicinity of the quarry. Analysis of the December, 1998, water level measurements showed no evidence of neighboring wells were losing water to the quarry. The proposed quarry expansion is not expected to effect water levels beyond the property line."

Scott concluded his testimony by stating that the State's analysis of the hydrogeologic conditions were consistent with his analysis as a hydrogeologist.

8. Shawn T. Burnette - Expert Traffic Engineer.

Burnette testified that he is employed by the Wilson T. Ballard Company as a Transportation Design Engineer. He stated he is a licensed, Professional Engineer in the states of Maryland, Pennsylvania, Delaware and West Virginia, as well as in the District of Columbia. He was admitted as an expert in the field of traffic engineering. Burnette testified that his company was retained by Lafarge to conduct a transportation analysis of the proposed quarry expansion. He stated he was the principle author of the document entitled "Churchville Quarry Traffic Study, March, 1999" (See Petitioner's Exhibit 45), which evaluates the existing and proposed traffic operations and safety of the roadways in the vicinity of the Churchville quarry.

Burnette outlined the standard methodology in conducting a traffic analysis, which includes consultation with the Department of Planning and Zoning to determine the scope of the study and site visits to examine the existing roadway network, signing, markings, and safety issues. In addition, the traffic engineer secures existing traffic counts and projects future counts based on projected development and proposed land use.

Burnette reviewed in detail his analysis and conclusions, as set forth in the following Petitioner's Exhibits: Exhibit 46 -Traffic Study Area; Exhibit 47 - Summary of Available Traffic Counts; Exhibit 48 - The Morning and Evening 1999 Peak Hour Volumes; Exhibit 49 - The Projected Traffic to the Year 2004; and Exhibit 50 - Level of Service Summary. Burnette testified that the Department of Planning and Zoning and the Department of Public Works, advised him to use five years as the time frame for a comparison of future traffic operations, which was through the year 2004.

Burnette, in making reference to the Level of Service Summary (See Petitioner's Exhibit 50), summarized the results of the traffic analysis. He stated that at the intersection of MD Route 136 and MD Route 543, the A.M. level of service is C; the P.M. level of service is B. In the year 2004, the A.M. and P.M. level of service drops to F. Burnette stated that, at this intersection, even if the quarry did not undertake any expansion, the level of service at MD Route 543 and MD Route 136, in the year 2004 would be at F. This is due to approved development projects, which will generate traffic, and the awkward geometric configuration of the MD Route 136 and MD Route 543 intersection. Burnette stated that the quarry will have no impact on the operation of that intersection in the year 2004. Burnette also testified that south of James Run on MD Route 136, the existing level of service for both A.M. and P.M. is D, and in the year 2004, the level of service will remain at D.

At the quarry entrance, the level of service currently is A, both A.M. and P.M. and in the year 2004, it is expected it will still be A.

North of Snake Lane, along MD Route 136, the level of service, both A.M. and P.M., is currently C. It is projected in the year 2004, that the A.M. service will drop to D and the P.M. service will remain at C.

Burnette, by making reference to The Traffic Study (See Petitioner's Exhibit 45, page 2 and 3), set forth his conclusions. He stated that, in his opinion, the granting of the Special Exception will not significantly alter traffic volumes on MD Fl. 136, nor impact the traffic operation on MD Route 136, from MD Route 543 to MD Route 22.

Burnette explained that normal weekday hours of sales at the quarry are from 7:00 A.M. to 4:00 P.M. All traffic enters and exits the quarry via the quarry entrance, located on MD Route 136, which is approximately 2.2 miles south of MD Route 22. On February 23, 1999, the quarry generated thirty-two vehicle trips in the peak hour. This represented less than four percent of the A.M. peak hour traffic on MD Route 136. On February 26, 1999, the quarry generated ten vehicles trips in the P.M. peak hour. This represented less than one percent of the P.M. peak hour traffic on MD Route 136.

In October, 1999, the projected peak sales month for 1999, the quarry is expected to generate ninety-six vehicle trips in the A.M. peak hour. This represents less than thirteen percent of the A.M. peak traffic on MD Route 136. The projected P.M. peak hour vehicle trips generated by the quarry in October, 1999 is expected to remain the same as the February P.M. peak hour trips, again, representing less than one percent of the traffic on MD Route 136.

Burnette testified that in October of 2004, the projected peak month for sales is expected to generate approximately one hundred fifteen vehicle trips during the A.M. peak hour. This represents less than twelve percent of the projected traffic on MD Route 136. During the P.M. peak hours of October, 2004, the quarry is expected to generate twenty vehicle trips, which represents less than two percent of the projected traffic on MD Route 136.

Burnette further testified that, as part of his traffic analysis, he conducted an accident study for the area along MD Route 136. Burnette stated that his study illustrates that there are not any high accident sections or intersections within the study area. He testified that this conclusion was reaffirmed by his discussions with the State Highway Administration Office of Traffic Safety.

On cross examination, Burnette indicated that the month of October was used for peak projected traffic since historically October is the busiest month for traffic to and from the quarry operation. This information was provided to Burnette by Lafarge and was based on sales records.

9. Christopher Tacks - Expert in the Field of Vibration and Sound Consulting and Blast Seismology.

Tacks testified that he has been employed by Vibrio-Tech, Inc. for over three years. Vibrio-Tech specializes in monitoring ground vibrations and air over pressure resulting from industrial blasting. Tacks was admitted as an expert in the field of vibration and sound consulting and blasting seismology and he testified he was the principal author of the report titled "Vibrio-Tech Seismic Report" dated May 7, 1999. (See Petitioner's Exhibit 60)

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Tacks testified that Vibrio-Tech has been performing work for Lafarge and its predecessors for over ten years. He stated that his report covers a period of over three years, beginning in December of 1996. He also provided background information on blasting. He stated that when a mine detonates explosives, a vast amount of energy is released -- about 90% of the energy goes directly into breaking the rock itself, whereas the other 10% goes into other effects, such as ground vibration and air over pressure.

Tacks defined ground vibration as a complex mixture of actual particle movement of the ground. It is three-dimensional in nature and has been studied extensively by governmental agencies and U.S. corporations. In 1987, the Office of Surface Mines, (OSM), published a recommendation for blasting criteria in which they established a standard very similar to that of the Bureau of Mines. OSM's recommendation is that blasting operations with frequencies ~f 30 Hertz and above should not exceed two inches per second; frequencies of 11 Hertz and below should not exceed .75 inches per second; and for frequencies between 11 Hertz and 40 Hertz, there should be a straight line increasing from .75 inches per second to 2 inches per second. This criteria was adopted by the State of Maryland in 1989.

Next, Tacks defined air over pressure, as the pressure pulse in the air caused by the detonation of explosives. Although there is no national regulatory standard for airblast, the U.S. Bureau of Mines recommended criteria on a sliding decibel scale. Depending on the sensitivity of the instrument used to record airblast, the maximum recommended range is from 129 decibels to 134 decibels. When a less sophisticated five or six-hertz instrument is used, the maximum standard is 129 decibels, whereas when the more sensitive two-hertz instrument is used, a maximum reading of 133 decibels is allowed.

Unlike ground vibration, the State of Maryland does not use the Bureau of Mines' recommendation and, instead, set a 130 decibel limit for airblast measured with a six-hertz instrument. Even though the Maryland standard only requires the use of the less sensitive six-hertz instrument, Vibrio-Tech uses the much more sensitive and accurate two-hertz instruments at all of its sites, including the Churchville quarry.

Tacks testified that at the Churchville quarry, every blast is measured for both ground vibration and air over pressure at two Locations, the Bowers property and the Mitchell property. A third seismograph is routinely placed at other locations. At the Mitchell and Bowers residences, which are on opposite ends of the quarry, these instruments are placed into the ground by quarry employees. After the blast is detonated, the air over pressure and ground vibration data is compiled and this information was used as the basis for Petitioner's Exhibit 60.

Tacks explained his findings by making reference to the "Mitchell and Bowers Ground Vibration Graphs", (See Petitioner's Exhibit 53(a)) and stated that of the 140 readings taken at both the Bowers and Mitchell residences, none exceeded the Maryland standard for ground vibration.

Tacks explained his conclusions concerning air over pressure by making reference to the "Mitchell and Bowers Air Over pressure Graphs". (See Petitioner's Exhibit 53b). He testified that none of the 140 readings at the Mitchell residence exceeded the Maryland standard of 130 decibels. When describing the results at the Bowers residence, Tacks noted that of the 140 blasts, only three of them slightly exceeded the Maryland standard. Tacks explained this deviation was due to utilizing new blasting parameters, which caused higher airblast recordings. The parameters were changed back to the previous parameters and the airblast values dropped back below the Maryland standard.

Tacks further explained that the readings at both the Mitchell and Bowers residence were taken by Vibrio-Tech’s 2-Hertz machine which is more sensitive than required by the Maryland standard. Giving consideration to the fact that a more sensitive instrument was used, these deviations would have been well within compliance under the U.S. Bureau of Mines and OSM standard.

Tacks stated that with a quarry expansion, the Bowers residence will still be the closest residence to the quarry. He testified that assuming that the blast practices do not change, the ground vibration and airblast levels will be less than those currently experienced at the Bowers' residence and therefore will continue to be in compliance with State Regulations. In concluding his testimony, he stated that in his opinion, the granting of a Special Exception allowing the expansion of the quarry would not have a detrimental impact on the community.

On cross-examination, Tacks explained the blast parameters, which caused the three

deviant readings at the Bowers residence.

10. Michael Staiano - Expert in Noise Control and Acoustical Engineering.

Staiano testified he is employed by Staiano Engineering, Inc. and he was accepted as an expert in noise control and acoustical engineering.

In preparation for this hearing, Staiano prepared a sound report (See Petitioner's Exhibit 61) and a graphic sound representation (See Petitioners' Exhibit 62).

Staiano testified that Staiano Engineering had been retained by Lafarge and its predecessors since 1987. Staiano stated he has worked on a number of projects concerning noise emissions from quarrying operations and he has been performing services at the Churchville Quarry since 1996. He stated he was retained by Lafarge to analyze the proposed Special Exceptions as well as to make measurements of the existing noise exposures in the community. These measurements are the basis for his report.

As a preliminary matter, Staiano testified that all of his measurements are in decibels, but they are what is called dBA's which are weighted decibels. This provides an average sound level. Staiano testified that in residential areas the maximum daytime exposure level is 65 dBA and in residential areas at night (10 p.m. to 7 a.m.), the maximum level would be 55 dBA).

Staiano stated that he performed measurements at four locations on two separate days in March, 1999; the Bent property, the Toland property, the Roepke property and the Mitchell property. On March 5, 1999, measurements were taken at the Bent, Roepke and Mitchell properties. The noise sources that were experienced or observed were off-site noise sources as well as those from quarrying operations. Sound from the plant operations were barely audible. There was a bulldozer operating at a stockpile near the berm, which was audible. On the 18th, measurements were made at the Toland and Roepke properties. The processing plant was audible and the winds were actually stronger than what is usually considered acceptable for noise measurements.

The measurements taken at the Bent property on March 5 registered plant sounds between 39 and 47 dBA and bulldozer sounds between 45 and 48 dBA. At the Mitchell residence, measurements made on the 5th of March registered operating noises between 41 and; 7 dBA. Measurements were taken on the Roepke property on both March 5 and March 18. On March 5, the plant noise was registered at 46 to 49 dBA, with the bulldozer operations on the stockpile at 50 to 63 dBA. The March 18th measurements registered processing sounds at 52 to 62 dBA. Finally, sound levels at the Toland residence on March 18 registered processing plant noises of 49 to 58 dBA.

Staiano concluded that none of the measurements taken on either day exceeded the 65 dBA limit of the Maryland Code of Regulations. He further compared these measurements to prior measurements taken at the Churchville Quarry in 1994. These prior measurements were taken by another firm at similar locations. The result of this comparison indicated that generally the 1999 results were 3 to 6 dBA quieter than those measured in 1994.

Staiano next testified that he prepared predictions of sound levels based on the Special Exception and variance requests. He stated that he used a mathematical computational procedure that represents the operation. He used previously measured sound level data similar to that sound expected to be generated at the quarry site. It was then projected mathematically how that sound would dissipate due to distance, shielding due to berms, and other factors. Staiano testified he calculated how much sound from each of those sources would be experienced at each receptor location.

Staiano then referenced "Site Sound Level Predictions Source and Receptor Locations" (See Petitioner's Exhibit 62) in identifying each of the nine receptors (R-l through R-9) surrounding the quarry. At these locations, contributions of up to 17 noise sources were considered. These noise sources included wheel loaders, haul trucks, both off road and highway haul trucks, blast hole drills in the pit, high capacity loaders, six fixed processing plant components (P1 through P6), and various crushers.

Staiano testified that he has used this mathematical model previously and that he has tested the accuracy of the model against actual results. He stated that on average, the computations result in sound levels that are three decibels higher than what is actually measured. The computations of the nine locations are described in detail in Table 5 attached to his report and are summarized on page 22 of Petitioner's Exhibit 61 in Table 6. These graphic representations show that the sound levels at the nine locations range from 54 to 60 decibels, which is well within the limit of 65 dBA set forth in the Maryland Code.

Staiano then read Condition F(7) from Petitioner's Exhibit 23-8. The proposed Condition states:

> "Noise Levels -- Average noise levels will meet Federal, State, and County regulations, which is currently 65 dBA measured at the Redland Genstar, Inc. property line, except for grading, blasting, and the shipping of finished product. Noise levels will be monitored on a periodic basis with differing atmospheric conditions. Redland Genstar. Inc. will continue to make reasonable efforts to achieve an average noise legal of 55 dBA at the Redland Genstar, Inc. property line. In addition, Redland Genstar, Inc. will continue to minimize the ~ impact of night operations on the community.

Staiano stated that, based on his predictions, it is feasible for Lafarge to continue compliance within the 65 dBA limit. In terms of an effort to achieve an average noise level of 55 dBA, Staiano's maximum noise level predictions were adjusted to reflect average noise levels. Based on other sites that Staiano has evaluated, he found that for similar types of operations that the average tends to be about four decibels below the maximum. Staiano's predictions show maximum levels of 54 to 60, which suggests that the expected averages would range from 50 to 56 dBA. Staiano then concluded that, generally, the 55 dBA will be met.

When asked whether from his perspective as an expert noise engineer, the granting of the Special Exceptions requested by Lafarge would have a detrimental impact on the community, he responded that the Maryland State sound criteria are to protect the health, welfare and property of the citizens of the State of Maryland. Since those criteria are projected to be met with a margin of safety, he testified that there would be no detrimental effects.

On cross-examination, Staiano was questioned concerning the measurements taken on March 5 and March 18. Staiano explained in more detail how the noise sources used in the mathematical model were chosen. Staiano stated that although he could not state that the selected noises are exact or identical matches to the actual quarry noises, he explained that they are representative.

11. Bernard A. Page, Jr. - Expert Real Estate Appraiser.

Bernard A. Page, Jr., testified on behalf of Lafarge as an expert real estate appraiser. He stated he was retained by Lafarge in order to determine if the granting of the requested zoning relief would impact property values for those residences adjacent ;o the quarry.

Page identified his Appraisal Analysis (See Petitioner's Exhibit 63) and testified that the quarry operation has been situated in the Carsins Run area since the early 1920's and the subdivision south of Snake Lane adjacent to the quarry has been constructed since that time. Page stated he examined the sales and resales of residential properties in the immediate vicinity of the quarry, and also sales that are outside the quarry's zone of influence. He calculated the rates of appreciation experienced by various properties.

Page stated that he reviewed sales in the general area occurring between the ten year period of January 1, 1988 and January 1, 1998. Page stated that he found twenty-one sales of residential property in the neighborhood that had actually sold and resold within this time frame. Based on this data base he calculated the rate of appreciation based on the number of years between the sales. (See Petitioner's Exhibit 63, page 5).

Page stated that his analysis concluded that the residential properties, which are located adjacent to the quarry, had the same average rate of appreciation as those residential properties found within the extended neighborhood. He testified that the quarry did not have any adverse effect on the appreciation rate of those properties, which were situated adjacent to the quarry.

Page further explained that he examined whether or not the quarry operation had an effect on the marketability of the residential properties. For a comparison, he reviewed the properties located directly opposite the Arundel Quarry, on MD Route 155 and found that the developer has been successfully marketing townhouses, single family homes and condominiums in the last several years. He further explained that the rate of sales at that location is above the typical rate of sales in the whole market area. Page concluded that the mere existence of a quarry does not appear to impact the marketability of homes in the immediate area.

Page stated that, in preparation of his report, he had an opportunity to review the various consulting reports prepared by the experts. Based on his examination of these documents and his knowledge of the Lafarge Board of Appeals Applications, Page concluded that the expansion of the quarry operation onto the Fannin property, would not have an adverse effect on the appreciation or the marketability of the homes situated adjacent to the quarry.

On cross examination, Page stated that he had visited the adjacent residential subdivision and had observed the berms, which surround a large portion of the existing quarry operation. He stated he did not contact the owners of the properties referenced in his analysis. He also stated that the homes would be under the influence of the quarry operations, since the quarry is an existing land use. However, he stated his study focused on whether a quarry expansion would negatively impact property values. In his opinion, the appreciation of the homes and the marketability would not be adversely affected due to an extension of an existing operation. Upon further questioning, he stated that some of the sale prices of properties, within the study area, were in the upper range or at least the upper seventy-five percent range of homes that were selling throughout the general community. (i.e. between One Hundred Sixty Thousand and One Hundred Seventy Thousand Dollars.)

12. Denis Canavan - Expert Land Use Planner.

Canavan, testified as an expert in the field of land use planning. He stated that he is a professional planner and a consultant employed full-time by the Maryland National Capital Park and Planning Commission in Montgomery County.

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Canavan testified that he was retained by the Lafarge Corporation and had reviewed the experts' reports, attended a majority of the hearings, and for those hearing where he was not present, he had reviewed the transcripts. He stated that he was familiar with the Harford County 1996 Master Plan and Master Land Use Element Plan (See Petitioner's Exhibit 9). He reviewed objective 2, which states, "Reduce conflicts between mineral extraction areas and surrounding land uses." The Harford County Zoning Code allows mineral extraction as a Special Exception, which allows the imposition of conditions in order to reduce any potential adverse impacts to surrounding property owners.

Canavan testified that he had reviewed the four Board of Appeals Zoning Applications and was familiar with Section 267-9(I), Limitations, Guides and Standards, of the Harford County Code, as well as the code provisions of the NRD. He further stated that he had reviewed the four Staff Reports prepared by the Department of Planning and Zoning.

Canavan defined the community, within which the quarry is situated, as primarily agricultural with scattered single family homes and small subdivisions. He stated that the majority of the area is zoned agricultural and that prior testimony indicated quarry operations in this community date back too the 1920's.

In reference to Board of Appeals Case No. 4777, (Consolidation of Conditions), Canavan testified, that in his opinion, the consolidation of conditions is an excellent idea, since all prior conditions are clarified, which will allow for more efficient enforcement. Canavan stated that the conditions were noteworthy in terms of mitigating any potential adverse impacts on the community.

In reference to Board of Appeals Case No. 4778 (the Almond Property), Canavan stated that the expansion of the existing accessory use on the Almond Property would not have a detrimental impact on the community. This is due to the construction height of the proposed berm, and the proposed vegetation, which will reduce potential impacts on the adjacent residential subdivision. Canavan further stated that all stockpiling activity is internal to the existing operation and does not require any additional vehicular access onto Snake Lane or MD Route 136.

Case No. 4778 - Redland Genstar, Inc.

In reference to Board of Appeals Case No. 4780, (the Cail Tract), Canavan testified that he had reviewed the application and Planning and Zoning Staff Report and was familiar with the proposed request. He stated he agrees with the Department of Planning and Zoning's conclusion, that the Applicant meets the Special Exceptions criteria for mineral extraction, as set forth in the Harford County Zoning Code and that Lafarge has demonstrated compliance with the Limitations, Guides and Standards Section of the Harford County Zoning Code.

Canavan testified that the variance request for the Cail Property is to reduce the NRD buffer from seventy-five feet to twenty-five feet. He stated that, in his opinion, granting the reduction of the buffer from seventy-five feet to twenty-five feet would not have an adverse impact on the immediate neighbors to the north and northwest. He further clarified that the sole reason for the variance is to allow for construction of the landscaped berm, which will provide protection to the adjacent residential properties. He testified that a denial of the variance to the NRD would result in practical difficulty and an unreasonable hardship, since the creation of the berm is necessary to mitigate noise and visibility of the quarry from the property owners situated to the northwest of the Fannin tract. Furthermore, the denial of the variance would impede the ability to extract mineral resources located on the Fannin tract.

Canavan testified that he was familiar with Board of Appeals Case No. 4779, the Special Exception and variance requests for the Fannin Property. He indicated that he had reviewed the Department of Planning and Zoning Staff Report and, in his opinion, he agrees with the position of the Department of Planning and Zoning that he Applicant can comply with the Special Exceptions criteria for mineral extraction, as set forth in Section 267-53(E) (1). Canavan also opined that the Applicant could comply with Section 267-9(I), the Limitations, Guides and Standards Section of the Harford County Zoning Code.

Canavan stated he was familiar with the two variance requests from the NRD. He testified that the granting of the variances would allow for the construction of the screening berm along the south and southeast. Since the proposed wetland disturbance would provide new wetlands on a two to one basis, the Applicant is providing a greater amount of wetland than what is being disturbed.

Canavan stated that if the variance on the Fannin Tract were denied, it would result in a practical difficulty and unreasonable hardship to the Applicant. Without the variances, it would be impossible to secure access to a large portion of the Fannin mineral deposits and the ability to construct the berms would be jeopardized. Canavan stated that he agrees with the analysis of the NRD variance request as set forth by the Department of Planning and Zoning on pages 12, 13 and 14 of their Staff Report (See Petitioner's Exhibit 7)

Canavan quoted from the Staff Report, where it states:

> "The proposed mining activity is an expansion of an existing quarry operation, rather than the establishment of a new facility. While the regulations have been established to avoid disturbance of the non-tidal wetlands, the need for stone products for a variety of commercial and domestic uses warrant a consideration of this variance for expansion of an existing quarry operation."

13. Thomas Luther Adams, Jr. - Citizen

Adams testified that he lives across MD Route 136 from the Calvary Church at 1408 Calvary Church Road and supports Lafarge's zoning requests. He stated that he owns approximately 250 acres, is 65 years old and has lived at this location since he was five or six years old. Adams testified that the quarry is a good neighbor and that the operators do a good job. He stated that he does not even know it's there. He concluded that the quarry operators are very accommodating to neighbors and that with the growth in the area, the quarry is needed.

On cross-examination, Adams testified that the only noise he ever hears is when there is an east wind and the trucks' back-up beepers go off.

14. Harry J. Brady, Sr. - Citizen

Brady testified that he lives at 1207 Mystic Court in Churchville. He also owns two additional pieces of property at the end of Pilgrim Drive, which are adjacent to the quarry. Brady has lived in this area for 25 years. Brady testified that since Lafarge purchased the Fannin property, they should be able to mine it. He stated that their overall quarry operation has been outstanding. Brady further testified that in the last three or :our years, berms have been constructed and landscaping has been planted. Brady stated that wild life is returning and he supports Lafarge's zoning request.

Case No. 4778 - Redland Genstar, Inc.

15. Anthony McClune. Chief of the Current Planning Division for the Department of Planning and Zoning

McClune testified that the Department of Planning and Zoning prepared a separate staff report for each of the four Board of Appeals cases.

a. Case No. 4777 - - Consolidation of Conditions

McClune testified that the Department agrees that the conditions in Cases 2434, 3179, and 3260-A, B & C should be consolidated. He stated that from an enforcement perspective, it is awkward to constantly review each case to determine the applicability of the various conditions to specific parcels. McClune reviewed all the recommendations that the Department of Planning and Zoning made in the Staff Report to Case 4777. (See Petitioner's Exhibit 5, pages 14-19)

After reciting the conditions verbatim, McClune testified that except perhaps for the hours of operation, the new conditions do not grant the applicant any additional rights not previously existing. He concluded by reiterating that the Department of Planning and Zoning supports the Consolidation of Conditions.

b. Case No. 4778 - - The Almond Property

McClune testified that this case requests a modification of an existing accessory use that was previously approved in Case 3260(c). The prior case permitted the establishment of stockpiles, berms and storage to include loading and unloading of equipment, and conveyors necessary for the conveyance of finished materials. The present request seeks to utilize an additional seventeen acres on the Almond tract for stockpiling.

McClune stated that the Department recommends approval of the request subject to nine conditions. Condition No. 1 is:

> **"All conditions of Case 3260 relating to the Almond property shall be met unless modified by this approval. Should the consolidation of conditions proposed for Board approval in Case 4777 be approved, those revised conditions shall supersede the conditions of Case 3260 and the conditions set forth in this case." (Petitioners Exhibit 6, page 4)**

The remaining eight conditions are basically a reiteration of the conditions set forth in Case 4777, that are applicable to the Almond property.

c. Case No. 4779 -- The Fannin Property

McClune testified that this case requests permission to conduct mining on the Fannin property and also to disturb the NRD. The Department of Planning and Zoning recommends approval, subject to twenty-six conditions.

Condition No. 1 states that all permits required by the State of Maryland for the uses shall be obtained by Redland Genstar, Inc.

Condition No. 2 states that the Special Exception on the Fannin property shall be bound by the areas defined on a Special Exception Site Plan. Also, as per the Special Exception Plan, mining will not proceed past the wetlands toward Snake Lane to the north.

Condition No. 3 states that the construction of the berms on the Fannin property shall progress in such a manner that the view of operations on the Fannin property from existing residences south of Snake Lane and west of the Fannin property will be blocked. This condition does not apply to grading operations.

Condition No. 4 states that if Case 4777 is approved, which is the Consolidation of Conditions, that specific conditions 5 through 22 recommended for Case 4779 would be superseded by those conditions.

On cross-examination by People's Counsel, McClune was asked whether or not the Board of Appeals has the authority to require that a bond be posted by the Applicant to guarantee the performance of the conditions. McClune responded that as far as he knew, the Board could set forth any conditions it liked. People's Counsel asked whether the Department had a position as to whether the Board should impose a bond requirement to ensure compliance by the Applicant with the conditions ultimately imposed by the Board. The Department believes the more appropriate agency to deal with bonding issues is MDE and therefore the Department does not recommend a bond be posted.

d. Case No. 4780 --The Cail Property

McClune testified that the request in this case is to construct a berm on the Cail property which necessitates a disturbance to the NRD. The Department of Planning and Zoning recommends approval, subject to twelve conditions. McClune outlined the conditions set forth in the Staff Report. (See Petitioner's Exhibit 8, pages 11-13). A very important condition states that if the Board approves the Consolidation of Conditions in Case 4777, that it shall supersede Conditions 4 through 11 of this approval.

16. M. Virginia Roepke - Protestant

Roepke was the first witness called by People's Counsel in the Protestant's case. She testified that she lives at 1205 Mystic Court, Churchville, Maryland, and that she has lived at that location since June of 1969. Roepke provided a detailed history of her experiences with the quarry over the past thirty years. Roepke testified that dust and noise emanating from the quarry are her greatest concerns. She further testified that she is against all four of the zoning cases currently pending before the Hearing Examiner. As a general basis for this position, she maintains that over the years she has not been able to trust the various quarry owners and representatives.

She testified in great detail concerning the Almond property and stated that around 1970 the property owner received a Zoning Certificate to locate 304 trailers on 56 acres of land which is now known as the Almond property. She testified how the entire Churchville community was in opposition to this trailer park. She stated that the community tried everything to stop this trailer park but was unsuccessful. Finally, she stated that the community turned to Genstar and requested that they purchase the property to prevent the construction of the trailer park. Ms. Roepke described this as a choice between the lesser of two evils. She testified that after discussions with Genstar, they agreed to purchase the property around 1985 or 1986.

Ms. Roepke then testified that there had been a written agreement reached between Genstar and the Calvary Citizens Association in which Genstar agreed to build a berm across the middle of the Almond property and leave the upper portion between the berm and Snake Lane zoned Agricultural/Rural Residential with an understanding that six or so homes would be built on the upper portion of the Almond property. Ms. Roepke was unable to produce any written agreement.

At the next hearing on June 21, 1999, People's Counsel proffered that the agreement which Roepke was referring to was, in fact, a letter dated December 11, 1984 from Genstar to the Calvary Citizens Association do Duane Roepke. This letter, which was not a formal written agreement, was admitted as Protestant's Exhibit 9.

On cross-examination, Roepke admitted that in 1969 when she purchased her property, there was an existing quarry in operation behind the Methodist church located at the corner of James Run Road and MD Route 136. When questioned in more detail concerning why Roepke does not trust Lafarge, she indicated that, in fact, she does not know them and that she is basically judging them based on her record with the prior quarry owners. It was also clarified on cross-examination that although Lafarge owns the property all the way up to Snake Lane that approval of the Fannin request would prohibit any extractive activity north of the wetlands and the stream.

17. Dennis Reeves, Ted Jenkins. Steve Schweitzer, Anthony Cirincione, John M. Hughes, Sandra Bent, James D. Toland - Protestants

In addition to Roepke, the above listed citizens were called to testify in the Protestant's case on June 14, 1999 and June 21, 1999. Although the majority of the above-named citizens lived within the subdivision known as Chatham, at least one citizen resided across MD Route 136 from the quarry entrance and at least one resident lived across Snake Lane from the Almond property. The overriding concerns expressed by the majority of the above-listed Protestants focused on the Almond property. Some concerns were raised concerning the dust generated from the building of berms, the daily operation of the quarry, the noise generated from blasting, crushing, machine operation and backup beepers on vehicles.

To a lesser extent, the above citizens expressed concerns about views of the quarry equipment and the quarry pit from their properties, the hours of operation, including night shipping, the effect of quarrying on their wells, and the effect of the expansion of the quarry on their property values. Finally, some Protestants echoed Roepke's statement that they did not trust the prior owners of the quarry and were leery of what would happen if the four cases were approved.

APPLICABLE LAW

1. Case No. 4777 - Consolidation of Conditions.

The Zoning Code does not set forth specific requirements to be considered in granting a request for a Consolidation of Conditions.

CONCLUSION:

Case 4778 requests a modification of an accessory use approval already granted in Case 3260-C which allowed the prior owner in interest, Flintkote Co., to establish as accessory uses stockpiles, berms, storage to include loading and unloading of equipment, conveyors necessary for the conveyance of finished materials, exit road, employee parking, scale house and related activities. The Applicant seeks to conduct these uses on the 17 acre tract known as the Almond property.

In conjunction with this request, Lafarge intends to construct berms and extend and elevate existing berms around the northeast and west boundaries so as to completely screen this area from the view of adjacent property owners. A large, undisturbed, vegetated area will remain which will also act as a natural buffer. Lafarge justifies the request by stating that it needs additional room to store materials. At present they are limited in space and need to store higher than they wish, often resulting in the top of the operation being visible from adjacent properties. According to the witnesses for Lafarge, relocation of these uses to the proposed Almond tract will allow lower storage and result in less impact to adjacent residential uses.

Case No. 4778 - Redland Genstar, Inc.

Witnesses for Lafarge are not seeking permission to mine on this tract, only store materials and conduct the activities already permitted by Case 3260-C. The Hearing Examiner, based on the testimony of the Applicant's witnesses agrees that relocation of these activities to the Almond tract will not result in additional adverse impacts to the neighboring properties and may alleviate some existing issues.

The Hearing Examiner, therefore, recommends approval of the Applicant's request subject to the following conditions:

1. **All conditions of Case 3260 relating to the Almond property shall be met unless modified by this approval. Should the consolidation of conditions proposed for Board approval in Case 4777 be approved, those revised conditions shall supersede the conditions of Case 3260 and the conditions set forth in this case.**

2. **All permits required by the State of Maryland and Harford County for the uses herein be obtained by Redland Genstar, Inc.**

3. **Accessory uses on the Almond tract conform to the following hours of operation for loading and shipping: Monday through Saturday - unrestricted; Sunday -permitted only during such hours as are necessary to satisfy the requirements of a federal, state, county or municipal contract.**

   Loading and Shipping shall be defined to include removal of the product from the stockpiles, loading of the product into trucks, weighing the trucks as they leave the site, and the transportation of the product to its ultimate destination.

4. **Grading shall be defined to include sediment control measures, clearing and grubbing, stripping and removal of overburden, shaping the land, and disposal of overburden. Grading shall be restricted to the following hours: Monday through Friday - 7:00 a.m. to 6:00 p.m.; Saturday - 7:00 a.m. to 1:00 p.m.; Sunday - none.**

5. **Berms on the Almond tract shall be constructed and landscaped before the stockpiling of finished material begins.**

6. **Stockpiling on the Almond tract be conducted in the following manner:**

   a. **Equipment used to stockpile finished materials on the Almond property will be equipped with muffler systems.**

   b. **Redland Genstar, Inc., will construct berms in such a manner that the equipment and stockpile will not be visible above the top of the berm when viewed from the adjacent residential subdivision.**

c. Along Calvary Road, Redland Genstar, Inc., will construct berms and vegetative screening in such a manner that the equipment and stockpiles will not be visible above the top of the vegetative screening.

7. No ingress/egress to this site shall be provided from Snake Lane for off-road production equipment or aggregate and blacktop sales and related equipment. Access will be limited to accommodating emergency vehicles as defined in the Vehicle Code of the State of Maryland, in effect at the time of any emergency. Further, access is limited to the occasional passage of vehicles belonging to Genstar Company, its employees, or subcontractors for the purpose of inspection or maintenance of its property.

8. Construction of berms and accessory uses on the Almond tract shall not encroach into the Natural Resource District for James Run.

9. Redland Genstar shall submit to the Department of Planning and Zoning annually a Certificate of Compliance. The certification shall be in the form of an annual report, submitted July 1 of each year, and shall be signed by the chief executive officer and the plant operator/manager of the company. This certification shall state whether the mining operation is in compliance with all of the conditions in the Board's decision and shall include all information necessary to determine compliance with the conditions of the Board approval.

Date JANUARY 18, 2000

William F. Casey
Zoning Hearing Examiner