

VERMONT ENVIRONMENTAL BOARD  
10 V.S.A., Chapter 151

RE: Paul and Dale Percy                    FINDINGS OF FACT, CONCLUSIONS  
     Robert J. Perry, Esq.                    OF LAW AND ORDER  
     Perry & Schmucker                    Land Use Permit Application  
     P.O. Box 2323                            #5L0799-EB  
     So. Burlington, VT 05402

This decision pertains to an appeal filed with the Environmental Board ("the Board") on October 15, 1985, by certain residents of Stowe, Vermont from the September 26, 1985 decision of the District #5 Environmental Commission ("the Commission") issuing Land Use Permit #5L0799 ("the Permit") to Paul and Dale Percy. The Permit authorized the operation of a commercial gravel pit in Stowe.

A prehearing conference was convened in this matter on November 18, and a Prehearing Order was issued November 19. A public hearing was convened by the full Board on November 20, with the following participants:

Applicants Paul and Dale Percy by Robert J. Perry, Esq.  
Agency of Environmental Conservation ("AEC") by Stephen  
B. Sease, Esq.  
Cedric and Barbara Scribner, Lewis Kiesler, Stanley and  
Carolyn Wright, Sam and Gail Kaiser, Anne Langdon, John  
Morton, Ralph Martone, Peggy George, and Arland and  
Irene Parsons ("the Residents") by Robert P. Davison, Jr.,  
Esq.

The hearing was recessed on November 21, and the Board conducted a site visit on that date. The hearing was reconvened on January 21 and January 22, 1986. The proceedings were recessed on the 22nd, pending the filing of proposed findings and conclusions by the parties, a review of the record and **deliberation.**<sup>/1/</sup> Proposed findings were filed by the Applicants, the Residents and AEC on February 10, February 11, and February 24, 1986, respectively.

By Memorandum dated February 25, the Board solicited from the parties additional examples of noise standards adopted at the Federal, state or local-level and asked for comment concerning whether or not the Board should consider any such additional standards. After a review of comment from the parties concerning this request, the Board determined during a deliberative session on March 19, not to accept or consider

---

<sup>/1/</sup>At the time of recess, parties agreed to the submission in writing of direct and cross-examination testimony of engineer John Stewart. However, on February 6, the Residents withdrew their request to present Mr. Stewart's testimony.

standards submitted by the parties in response to the February 25 memorandum. Any such standards have not been introduced into the record of this case and played no role in our decision. The Board determined the record in this appeal to be complete on March 19, and adjourned the hearing on that date. This matter is now ready for decision. The following findings of fact and conclusions of law are based exclusively upon the record developed at the hearing. To the extent that we agreed with and found necessary any findings proposed by the parties, they have been incorporated herein; otherwise said requests to find are hereby denied.

I. ISSUES IN THE APPEAL

Land Use Permit #5L0799 authorizes the opening and operation of a gravel extraction business adjacent to Moss Glen Road in Stowe. The Permit imposed limitations concerning several aspects of the pit, including: hours and days of operation, access improvements, dust control, water quality protection and maintenance of tree buffers. The Permittee does not object to the imposition of these permit conditions but does request that an inconsistency between Conditions 12 and 19 be rectified.

The Residents' notice of appeal raises the following issues under 10 V.S.A. § 6086(a):

Criterion 1/Air Pollution - the Residents are concerned about the impact of dust generated by gravel hauling trucks on air quality. To the extent that noise generated by equipment constitutes "air pollution," the Residents believe noise impacts will cause "undue air pollution."

Criterion 1, 1(B) and 1(E)/Water Pollution - the Residents expressed concerns about the impact of the gravel operation on ground and surface water quality and on area water wells.

Criterion 5/Traffic - concerns were raised about the safety of operating hauling vehicles on Moss Glen Road and at the intersections with Randolph Road and Route 100.

Criteria 8/Aesthetics and 9(E)/Earth Resource Extraction - impacts of the gravel operation (including visual and aural) on the Moss Glen-Falls neighborhood were raised under these Criteria.

Criterion 8(a)/Necessary Wildlife Habitat - a winter habitat for white-tailed deer is at issue under this Criterion.

Criteria 8/Natural Areas and 9(K)/Public Investments - the project's impact on the adjoining Moss Glen Falls Natural Area owned by the State of Vermont was raised by the Residents.

AEC focused its attention on the **deeryard** and the Natural Area. AEC believes that, with the operational conditions imposed by the Commission, the project will not have an undue adverse impact on these two resources.

## II. PROCEDURAL ISSUES

Several preliminary procedural issues were raised by the parties. The Permittee filed a Motion to Dismiss the appeal based upon an alleged failure of the Commission to observe the requirement of 10 V.S.A. § 6086(b) that a final decision be issued within 20 days of adjournment. This Motion was denied by the Board in its Memorandum of Decision dated January 14, 1986, and that decision is hereby incorporated by reference as if fully set forth.

The Residents requested that, in addition to those Criteria concerning which the Commission granted them the right to participate, they be entitled to participate under Criteria 1/Air, 4, 7, 9(C), **9(E)**, 9(K) and 10. The Board's Chairman issued a preliminary ruling pursuant to EBR 16(B) as a part of the November 19 Prehearing Order, granting status under Criteria 1/Air, 9(E) and 9(K) but denying status under the remaining Criteria. By Memorandum dated December 4, the Residents objected only to the Chairman's decision concerning Criterion 10. Again, our Memorandum of Decision dated January 14 addresses Criterion 10 status and that document is incorporated by reference herein.

Finally, during the January 22 hearing, the Residents moved to dismiss the permit application based upon the Applicants' alleged failure to accurately report the actual project construction cost upon which the Board's permit application fee is based. See EBR 11. This Motion to Dismiss was denied for the following reasons. Decisions concerning application completeness are made in the first instance by the Commission's staff, the district coordinator. **EBR 11(D)** provides that such a decision constitutes an "advisory opinion" which may be appealed, pursuant to EBR 3(C) to the Board's Executive Officer or to the Board itself by way of declaratory ruling petition. However, **EBR 11(D)** also provides:

Once a district commission convenes a hearing on the merits of an application, the application is deemed to be complete, and a subsequent appeal may be had only on the merits of the application, not its sufficiency.

No Rule 3 appeal was filed in this case from the Coordinator's determination that the Percy application was complete. Therefore, the Residents are now barred from raising an issue pertaining to application completeness. We note that the

Applicant paid the minimum \$25 fee required by EBR 11(A) and should construction cost exceed \$25,000, the Commission may wish to seek a supplemental fee if it determines that a material misrepresentation was made in the application.

III. FINDINGS OF FACT

1. Paul and Dale Percy propose to open and operate a commercial gravel extraction operation on a 20 acre portion of a larger, 60 acre site adjacent to Moss Glen Road in Stowe, Vermont. The Percy lands are bounded on the south by Moss Glen Road, on the west by lands owned by the Parsons and Scribners, on the north by **Elmore** Mountain Road, and on the east by the Putnam State Forest managed by the Department of Forests, Parks and Recreation within AEC. Exhibit #11.
2. Applicants expect to operate the pit for approximately 15 years. However, extraction would occur in phases with no more than two to three acres being open at any one time; as each phase is completed, stock-piled topsoil would be replaced, and the site would be graded, seeded and mulched. Upon completion of the gravel operation, the site would be returned to agricultural or forestry uses.
3. From April 15 to June 1 and November 1 to December 1 each year, gravel would be removed at a maximum rate of 30 truck loads per day. From June 1 to November 1, 45 loads would be removed each day. An occasional load of material would be removed during winter months. The pit would operate Monday through Friday only and from 7:00 a.m. to 5:00 p.m.
4. A 20' by 20' storage building would be erected at the site. This structure would be used to store safety equipment as required by the Federal Mine Safety Administration.
5. Daily operation will involve the use of two or three 10 wheel hauling trucks with a capacity of 12 cubic yards, and the occasional use of an 18 wheel trailer truck owned by the Applicants. A bucket loader will remain at the site during operating months for use in loading material. A bulldozer will work at the pit from time to time as needed to establish and maintain gravel extraction faces.
6. The 60 acre site was previously used for agricultural purposes. The site is now occupied predominantly by plantation pines. The Applicants would maintain a minimum 50' tree buffer between the operating area and property lines.
7. The Wright, George, Parsons and Kiesler residences all lie between 50' and 100' away from **Moss** Glen Road, the route to be used by gravel hauling vehicles. The original

proposed location for the pit access drive was directly across from the Kiesler residence. As a result of the Commission proceedings, the Applicants now propose to locate the access drive approximately 500' further south-east along Moss Glen Road. Exhibit 31-A.

- a. The following chart identifies the approximate distances from various surrounding features to the proposed "designated central area" ("DCA") of the pit and to the pit's extraction limits ("Ex. Limits"):

<u>Feature</u>	<u>Distance to DCA</u>	<u>Distance to Ex. Limits</u>
Wright residence -----	2,100'	1,700'
George residence -----	1,500'	1,000'
Parsons residence -----	1,100'	700'
Kiesler residence -----	700'	300'
Moss Glen Falls Natural Area		
Boundary -----	450'	50'
Moss Glen Falls Parking Area-----	500'	200'
Moss Glen Falls Base -----	1,400'	850'

See Exhibits #31-A, #36 and #55.

Criterion 1 - Air pollution: Dust

9. Moss Glen Road ("the Road") is a dirt and gravel surfaced Class III town highway. While it is theoretically feasible to travel to the pit from the south on the Road, virtually all trucks will arrive and depart using Route 100, the Randolph Road (a paved town highway) and Moss Glen Road. Trucks serving the pit will travel approximately 2,260' on the Road, assuming the pit access drive is relocated as proposed by the Applicants.
10. In conjunction with a relocation of the Moss Glen Road - Randolph Road intersection (see Finding #40, below), the Applicants will pave the initial 200' of the Road to a point south of the Wright residence. While some dust may be generated as air passes over the back of loaded and unloaded gravel trucks, laying of pavement will virtually eliminate dust as an air quality problem in respect to the initial 200' of the road where the Wright residence is located.
11. During the height of the extraction season, a hauling truck will pass along the Road an average of once every six minutes. Exhibit #3. When the road surface is dry and untreated, the trucks would generate a substantial amount of dust. Exhibit #30-B, 30-D, and 30-E. Dust generated by trucks would impede pedestrian use of the road and residents' enjoyment of property adjacent to the Road.

12. The Applicants propose to apply calcium chloride to the Road on an "as needed" basis. The Town of Stowe uses an average of 350 lbs. of chloride on each mile of its dirt roads each year. However, the application of at least 100 lbs. to the Road every two weeks would be required to adequately control dust in view of the regular truck traffic which would be generated by this project.
13. Because material within the pit is likely to contain some moisture, the process of loading and crushing gravel should generate little dust. Any such dust which is generated should not carry beyond the project site.
14. AEC has issued the Percys a 'Permit to Remove, Crush and Screen Gravel.' Exhibit #5. That permit certifies the project's conformance with the Vermont Air Pollution Control Regulations.
15. If the initial 200' of the Road is paved and if calcium chloride is applied at a rate of no less than 100 lbs. every two weeks during dry periods, we find that any dust generated by the project will not result in undue air pollution and will comply with applicable Water Resources Department air quality regulations.

Criterion 1 - Air Pollution: Noise

16. Acoustical engineers generally measure noise levels in decibels on the "A scale," resulting in a "dBA reading." Because the dBA scale is designed to accommodate an extremely broad range of sound levels, the scale is **logarithmic** in nature, not arithmetic: each 10 point increase on the scale represents a doubling of noise level. For example, a reading of 80 dBA is 16 times as loud as a reading of 40 dBA, not twice as loud.
17. "Instantaneous" noise level readings can be converted, using a predetermined formula, into daily average and yearly average noise levels. Based upon instantaneous daytime readings of 45 dBA and nighttime readings of 30 dBA, the average existing "background" noise level along Moss Glen Road is 41 dBA. Exhibit #24.
18. The 10 yard dump trucks to be used by the Percys produce instantaneous readings of between 90 and 95 dBA at a distance of 50' when trucks are travelling at a speed of 25 to 30 mph. This truck noise would dissipate with distance: the dBA reading will drop by approximately 5 each time the distance from a passing truck is doubled.
19. Assuming that during the June 1 to November 1 season 90 trucks pass along the Road each day during the pit's nine operating hours five days each week, the "daily average

noise level" at any point 50' from the road will be 86 dBA, more than sixteen times as loud as current conditions. During the April 15 to May 31 and November 1 to December 1 periods when 60 trucks would travel on the Road five days each week, the daily average noise level would drop to 84 dBA. The daily average noise level during winter months when the pit did not operate would be the background level of 41 dBA. Exhibit #24.

20. Based upon these daily average noise level estimates, the "yearly average sound level" at any point 50' from the Road would be 83 dBA. This value takes into consideration: operation of the pit five days each week for nine hours each day, closure during the December 1 to April 1 period, the two different withdrawal rates proposed by the Applicants in Exhibit #3, and the fact that noise will increase and then dissipate as each truck approaches and then passes any given measuring point. Exhibit #24.
21. The U.S. Environmental Protection Agency, in a 1974 report entitled "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare With an Adequate Margin of Safety" (see Exhibit #24), concluded that in residential areas with outdoor space, outdoor activities are interfered with when yearly average sound levels of 55 dBA or more are encountered and "hearing loss becomes a consideration" when the yearly average reaches 70 dBA or higher.
22. At a distance of 500' the instantaneous truck noise level will be 75 to 80 dBA, at a distance of 1,000' the noise will be 60-66 dBA. No evidence was submitted concerning noise levels expected from operation of the crusher, loader or bulldozer on the site. No reading was taken at the base of Moss Glen Falls but it is estimated that the natural background noise of the Falls at a distance of 50' is in the 60 to 65 dBA range.
23. Vegetation can act to buffer noise if it is of sufficient height and depth to dissipate sound. While a tree buffer will be preserved surrounding the extraction area, it will not have a significant impact on machinery noise because existing vegetation is tall and does not include much undergrowth beneath the tree canopy. No other natural noise buffer lies between the gravel truck route and area residences or the Moss Glen Falls parking area and pathway.
24. The Applicants presented no direct evidence concerning noise levels to be generated by the project or impacts of noise on the surrounding area.
25. Based upon the above findings, we further find that the project will result in undue air (noise) pollution. The project will result in a 16 fold increase in noise

experienced by Moss Glen Road residents. Residents will be exposed to noise levels which are eight times higher than the level at which EPA indicates that outdoor activities are impaired and more than twice the level at which EPA suggests that hearing loss is a consideration. Further, noise at the Moss Glen Falls parking area, the place where visitors enter the Natural Area (see Finding 163, below), will reach 75 to 80 dBA when trucks are operating within the pit and, until one reaches the base of the Falls itself, trucks will be clearly audible to Natural Area visitors.

Criteria 1, 1(B) and 1(E) - Water Pollution

26. There are three potential water contamination possibilities with regard to the proposed gravel operation:
- a) the fueling and maintenance of vehicles on-site could result in spillage or leakage causing a discharge of hydrocarbons into surface and/or groundwater;
  - b) inadequate erosion control measures could result in the discharge of silt and sediment into surface waters;
  - c) the temporary removal of topsoil and permanent removal of the existing gravel layer could, in theory, increase the discharge of iron, manganese and an increase in bacteria levels.
27. Moss Glen Brook runs in a generally south to north direction across Moss Glen Road from the proposed pit location. The Brook is fed, in part, by a stream referred to as "Moss Glen Brook Tributary" ("the Tributary") which meanders adjacent to the northerly boundary of the pit site. The tributary is at no point more than approximately 100' from the limits of construction and at one point comes as close as 25' to the construction area.
28. The residences in the immediate vicinity are served by private wells (or springs). The Kiesler, Parsons, and Wright springs are located north of the pit area and on the same side of the Road as the project site. The George spring is located across the Road and north of the pit site. Exhibit #36. The Wrights draw water from a 175' deep drilled well. George and Parsons are served by shallow dug wells. Kiesler is served from a shallow spring box. Exhibit #16.

29. Condition #7 of the Permit provides:

The permittee shall not service or perform any maintenance on any equipment on the site nor shall any fuel, oil or other hazardous materials be stored at the site.

This condition was not appealed by the Applicants, nor did they express an intention not to comply with this requirement. Therefore, with the exception of fuel and oil contained within any trucks or loaders operating at the site, no fuel or related products will be present. Therefore, we find that discharge of hydrocarbons into ground or surface water is unlikely to occur.

30. Exhibits #10 and #11 depict erosion control measures to be implemented by the Applicants. The salient features of this erosion plan are:

- a. temporary grass cover over entire site once cleared and grubbed;
- b. installation of a hay bale filter along the uphill (southerly) boundary of the extraction area;
- c. open exposure of no more than three acres at any one time during the course of excavation;
- d. installation of water bars within the pit floor to prevent run-off from the site;
- e. installation of a sediment trap with a hay bale outlet and filter located in the low point of the site in the northwest portion of the pit;
- f. surface water channelization into the sediment trap and then overland by sheetflow through the vegetative buffer area;
- g. immediate seeding and mulching of excavation areas upon replacement of topsoil.

31. We find that these measures are reasonably calculated to prevent the discharge of silt and sediment from the pit into the Tributary. We further find that if installed and maintained in accordance with the plans and schedule proposed by the Applicant (Exhibits #10 and #11), no undue pollution of surface waters will result.

32. The gravel/sand layer of material to be excavated by Percy is underlain with a relatively impervious silt layer which should act as a barrier or filter for any contaminants which leach through the gravel layer. The Applicants will leave an unsaturated layer of this material free from extraction.

33. The groundwater regime below the surface of the pit consists of a divide running down the middle of the pit (southeast to northwest) which splits groundwater flows into north and south gradients. Therefore, only contamination on the north side of this divide has a theoretical potential of reaching the area water sources referred to in Finding #28.
34. Because of their distance from the pit and their elevation in comparison to groundwater levels at the pit, there is very little chance that the Wright and Kiesler water sources would be impacted by the project.
35. The Tributary adjacent to the northerly boundary constitutes a hydrogeologic barrier to the movement of groundwater: if any contaminants were to leach through the unsaturated soil layer on the site into the groundwater, the northerly groundwater flow component will be intercepted by the Tributary. Therefore, any such contaminants would be carried in surface water and would not travel in groundwater toward the Parsons or George water sources.
36. Calcium chloride in the amounts to be applied in relation to dust control on Moss Glen Road (see Finding #12) will have no impact on ground or surface water quality, or on area wells. Furthermore, because the pit constitutes only approximately 1.8% of the surface area within the Tributary's drainage area, any contamination which reaches the Tributary is unlikely to have any measurable impact on water quality.
37. Additional protection is afforded by three conditions contained in the Permit and not appealed by the Applicants: Condition #4 clarifies the Applicants' erosion control obligations; Condition #9 prohibits the installation of sanitary waste disposal systems on the site; and Condition #10 requires the performance of an approved surface water quality monitoring program.
38. We, therefore, find that the project as proposed will not result in undue water pollution, will not breach applicable Water Resources Department Regulations, will not result in the injection of waste materials or any harmful or toxic substances into groundwater or wells, and will maintain the natural condition of the Tributary and Moss Glen Brook without endangering the health, safety or welfare of the public or of adjoining landowners.

Criterion 5 - Traffic

39. As we previously found, Moss Glen Road, a Class III town highway, will be the predominant, if not sole, method of ingress and egress to the pit. The road varies in width

from 15-17' at the Wright residence to 20-22' further to the South.

40. The current intersection of Randolph and Moss Glen Road would present unsafe conditions if used in its current configuration by 90 trucks each day: because Moss Glen meets Randolph Road at an acute angle, truck drivers are not readily able to see traffic approaching the intersection on Randolph Road from the east. However, Condition #13 requires the design and installation of an alternative intersection. See Exhibit #36. While final judgment on the adequacy of any such design would rest with the Commission upon the submission of detailed designs, the creation of a right-angle intersection at a location west of the existing roadbed should correct this visibility problem.
41. The Randolph Road - Route 100 intersection presents no potential safety problems. Loaded trucks headed south on Route 100 have adequate sight distances while resting on the Randolph Road apron. Trucks headed north use 'Tinker's Lane' which also provides adequate sight distances at its intersection with Route 100.
42. Because of turning movements on the route to the pit, trucks are unlikely to reach speeds as high as 35 mph on the Road and usually travel at a rate of 15 mph. When the narrow segment of the Road near the Wright premises is widened in conjunction with the intersection relocation, the Road will be sufficiently wide to allow simultaneous vehicle and pedestrian use.
43. We find that the project will not cause unreasonable congestion or unsafe conditions with respect to the use of Moss Glen Road.

Criterion 8(a) - Necessary Wildlife Habitat

44. The 60 Percy acres involved in the pending Application are a small portion of a 700 acre white-tailed deer winter habitat. Exhibit #45. The Percy site is a high quality winter yard: the existing vegetation is of a type and density which provides good snow protection; portions of the site slope to the south, southwest and west providing good exposure to the sun; and the slope and elevation of the area are suitable for deer wintering.
45. The Percy site is a "necessary wildlife habitat" in that deer concentrate in the area and the site, in conjunction with the surrounding area, is decisive to the winter survival of deer. The 20 acre project site supports between two and five deer annually. It is uncertain whether those deer could be accommodated by the remainder

of the habitat if the 20 acres are removed from the wintering area.

46. Winter-time operation could adversely affect the deer habitat, but few loads will be withdrawn during winter months. The 20 acres within the construction limits will be removed from the habitat during the life of the pit's operation once the site has been cleared and grubbed.
47. The residual 40 acres not within the construction area will be managed by the Applicant in accordance with a forest management plan approved by the Department of Forests, Parks and Recreation. See Permit Condition #15. After completion of the pit and the replacement of stockpiled topsoil, at least half of the site will be reforested with softwoods and the remainder will be returned to agricultural uses.
48. We find that this project will significantly imperil the necessary deer habitat during the 15 year life of the pit and for the additional 40 years required for softwoods to mature. However, we find that the management of the residual 40 acres together with a reforestation of the extraction site constitute all feasible and reasonable means of lessening the diminution and imperilment of the habitat. We would condition an amended permit to assure maintenance of the site in an undisturbed state for a sufficient period after reclamation to allow softwoods to grow to maturity.

Criteria 8 and 9(E) - Aesthetics and Extraction of Earth Resources

49. As we found above (see Finding #47), the alternative use to which the project site will be put (as proposed by the Applicants and approved by the Commission) upon completion of the extraction process is two-fold: reestablishment of a white-tailed deer habitat through softwood reforestation, and agricultural activities. While the Applicant has prepared a "rehabilitation plan" (see Exhibit #11) which discusses the method by which the site will be stabilized during and after the extraction process, the Applicant has not submitted (and, apparently, has not prepared) a "site rehabilitation plan which insures that upon completion of the extraction ... operation the site will be left by the applicant in a condition suited for an approved alternative use or **development.**" /2/

---

/2/ This deficiency could, perhaps, be corrected by the submission and approval of a site rehabilitation plan, which meets the requirements of Criterion 9(E) (ii), prior to the issuance of a permit.

50. The project site lies in the midst of a sparsely settled hollow which is currently undisturbed by any commercial activities. The area is characterized by open meadows and fields, hardwood and softwood forests, scattered residences and farming activities. Moss Glen Brook meanders down the center of this narrow valley and visitors and residents are treated to striking views of the Green Mountains and their foothills.
51. As we have previously found (see Finding #17), this small valley is quiet. The segment of Route 100 one uses to travel to this area is occupied by mixed residential, commercial and agricultural uses which generate moderate noise. However, the Randolph Road experiences little traffic. Moss Glen Road is used by only an occasional vehicle because traffic is generally destined only to the few residences in the area and the Road is not used as a through route.
52. In short, the Moss Glen area is a naturally and aesthetically beautiful valley which is relatively untouched by the hand of man. Improvements which do exist (the Road, homes, fences, out buildings) are visually attractive and are compatible with the rural residential/agricultural feeling of the area. Some of the residences are old homesteads which have been maintained in an historically compatible fashion. While the Glen is relatively close to Stowe Village (2.8 miles) it does not receive the same heavy visitation one sees in town.
53. The Valley is also the location of Moss Glen Falls and the surrounding natural area (see Findings 60-67, below). One's experience in entering this valley (whether or not destined for the Falls) begins on Randolph Road where the noise, pace and occasional visual intrusion of the Route 100 corridor are left behind. This demarcation becomes clearer still when one leaves the paved road and begins down the relatively narrow, dirt Moss Glen Road. Even when riding in a vehicle, the visitor experiences a clear transition into a peaceful, quiet and naturally beautiful corner of Vermont. Exhibit #47.
54. On no dimension is the proposed project compatible with its surroundings. While a tree buffer will be maintained, there may still be occasional glimpses of the extraction area because of the lack of significant undergrowth on the site. The possibility of visual impact is accentuated by the Applicants' plan to clear and grub the entire construction area before beginning any extraction--clearing will not be limited solely to the three-acre area being worked each year.

55. Relatively constant noise will be generated by the project during operating hours: trucks will be entering and leaving; when trucks are not on the road, the bulldozer or loader is likely to be operating; during four weeks of the year, a crusher will be operating on the site. We have previously discussed the impact of noise on the area. See Findings 16 through 25, above.
56. Area aesthetics will be further impaired by the regular appearance of trucks which only occasionally travel through the area today. While trucks are not per se aesthetically offensive from either a visual or aural perspective, within the existing context of Moss Glen and in the numbers proposed in the application, they would be a foreign, startling assault on the valley.
57. The Applicants have taken quite reasonable steps to reduce operational impacts by limiting the days and hours of operation: Permit Condition #19 allows operation only on week days and during the hours of 7:00 a.m. to 5:00 p.m.; no operation is permitted on legal holidays, weekends or during the Memorial Day, Labor Day and Independence Day holiday weeks. However, even with these limitations and assuming no loads are removed during winter months (an issue which is left undecided by Exhibit #3), the pit could be open 145 days each year, or 40% of the time.
58. Our sensibilities are offended by the juxtaposition of this project within the 'Moss Glen Valley context. The proposal is wholly out of context with its surroundings and would constitute a visual and aural assault upon residents and visitors.

This severe inconsistency is most acute with reference to the Moss Glen Falls Natural Area, a sensitive natural feature which would be directly affected visually and aurally by operation of the gravel pit. See Findings 60 through 67, below.

59. For the same reasons, we find that the project would have an unduly harmful impact upon the environment and land uses of the area. Noise levels would be such that hearing loss is a potential long-term risk for those who reside along Moss Glen Road. See Finding #21. Outdoor activities by area residents and Moss Glen Falls visitors would be impeded by noise impacts. In short, residential and recreational land uses currently pursued in this area would be impeded by the project.

Criteria 8 and 9(K) - Natural Areas and Public Investments

60. The project site's southeast and southwest property lines adjoin the Putnam State Forest owned and managed by the State of Vermont. The Commissioner of Forests, Parks and

Recreation, with the Governor's approval, has designated a portion of the State Forest as a State Natural Area pursuant to 10 V.S.A. § 2607. In order to be so designated, an area must fulfill the following definition:

"Natural areas" means limited areas of land which have retained their wilderness character, although not necessarily completely natural and undisturbed, or have rare or vanishing species of plant or animal life or similar features of interest which are worthy of preservation for the use of present and future residents of the state and may include unique ecological, geological, scenic and contemplative recreational areas on state lands.

Moss Glen Falls is one of only 24 designated natural areas in Vermont.

61. The rare feature which predominates within the Moss Glen Falls Natural Area is the Falls itself which, in the State's 1983-1984 "Waterfalls and Gorges Study" was considered of "High Importance" to the State and was characterized as "the most beautiful large woodland falls in the state ... highest undammed cascade in the state . . . and important recreational area." Exhibit #26. The natural area is also the home of a large beaver meadow with multiple dams and lodges. We find that Moss Glen Falls is an irreplaceable natural area.
62. The Falls area was acquired in 1979 through a \$425,000 state appropriation and some privately-donated funds. The area is used for swimming, berry picking, and natural contemplation. While the natural area is not highly publicized, it is identified on the Official State Highway Map and is a site to which Stowe area visitors are directed by the local chamber of commerce. The area receives regular (though not heavy) visitation during the summer and the area is used for cross-country skiing during the winter.
63. The natural area visitor's experience does not begin and end at the base of Moss Glen Falls. Rather, as we previously found, one experiences a transition into a rural, wooded, natural environment even while in a vehicle travelling to the Falls on Moss Glen Road. A **small parking area for Falls visitors lies at the extreme south end of the Road before it swings west across Moss Glen Brook.** Almost immediately after leaving the parking area on foot one encounters the beaver meadow and

over-grown pasture area. The path continues to meander through the meadow and gradually scales a wooded hillside along the east side of the Brook and Falls. After travelling on this path for approximately 1,000 feet one reaches the Falls itself.

64. 850' of the project area boundary abuts the designated natural area. As we previously found, the project construction limits lie 50' from the natural area boundary and 200' from the parking area. The center of the extraction area lies within 450' of the boundary and 500' of the parking area. Further, the initial 600' of the pathway to the Falls runs within 300' to 600' of the extraction limits.
65. As we previously found, noise generated by hauling vehicles (and, in all probability, noise from the dozer, loader and crusher) will be audible until one reaches the very edge of the Falls. Because the Falls is physically protected by a deep rock chasm, noise tends to confine itself to the immediate vicinity and does not readily project long distances to the north.
66. Neither the Falls nor the natural area will be physically disturbed by the pit operation: no run-off onto State lands is anticipated and the Falls will not be physically affected by vibration. However, the experience of those who visit the Falls will be significantly altered during the pit's operating hours because of the visual and noise intrusion of trucks and equipment.
67. We, therefore, find that operation of the pit would have an undue adverse effect on the irreplaceable Moss Glen Falls Natural Area. **We** also find that operation of the pit will materially jeopardize and interfere with the public's use, enjoyment, and access to the Moss Glen Falls Natural Area.

#### CONCLUSIONS OF LAW

##### A. Air Pollution

We conclude that ambient air quality will not be significantly impaired in the Moss Glen area if the mitigative measures discussed in our findings are implemented. The paving and relocation of the initial 200' of Moss Glen Road should virtually eliminate dust impacts on the Wright premises. We have found that a bi-weekly regimen of 100 lbs. of calcium chloride applied to the segment of Moss Glen Road to be used by hauling vehicles should control the generation of dust. We do not believe that operations with the pit area itself will have any measurable impact on air quality beyond the project boundaries.

However, we also conclude that noise generated by hauling vehicles (and, in all probability, excavation equipment and the crusher) will result in undue air (noise) pollution. We found the testimony of Dr. Hundal to be credible and persuasive. During pit operation, hauling vehicles would expose area residents to instantaneous noise levels in the 90 **dba** range and average annual noise levels in the 80 **dba** range. Using the EPA guidelines as a reasonable measure of potential impact, area residents could risk hearing impairment after long-term exposure and, in any event, would be subject to average annual noise levels which are 16 times the current natural conditions in the area.

Noise impacts would also extend to visitors of the Natural Area. We have found that decibel levels at the parking area will reach the 75 to 80 **dba** range. Because the noise generated by the Falls itself does not reach the 60 to 65 **dba** range until one is within 50' of the Falls, vehicle (and probably machinery) noise will be clearly audible to users of the Natural Area, especially along the initial 600' of the access path as one travels through the beaver meadow.

The Applicants introduced no evidence with regard to noise impacts. This issue was fairly raised by the Residents in proceedings below, in their Notice of Appeal and during the prehearing conference. Yet, Dr. Hundal's testimony stands unrebutted. Furthermore, no evidence was introduced by the Applicants concerning noise generated by the crusher, bulldozer and bucket loader. We have only two choices with regard to this issue:

- 1) Determine that Dr. Hundal was not a credible, believable witness, disregard his testimony and conclude that the Applicants have failed to meet their burden of proof concerning the noise issued; or
- 2) Rely upon Dr. Hundal's unrebutted testimony and determine that the project will result in undue air (noise) pollution.

Based upon our findings concerning the impacts on area residents, the impact on users of the Moss Glen Falls Natural Area, and the credibility of Dr. **Hundal's** testimony, we conclude that the project will result in undue air pollution. The permit application must be denied on this basis.

#### B. Water Pollution

The Applicants have met their burden with regard to potential impacts on surface water, groundwater and wells. Condition #7 of the Permit prohibiting the on-site fueling and maintenance of equipment provides adequate assurance that

water pollution will not occur as a result of any discharge of hydrocarbons. Further, the Applicants have prepared an appropriate erosion control plan which should be effective in channeling and filtering any sediment-laden surface water on the site before it sheet-drains into near-by surface waters. Subject to the requirements of Condition #4 requiring proper installation and maintenance of erosion control devices, surface water run-off should not cause any pollution of area waters.

We also conclude that any discharge of contaminants (iron, manganese and bacteria) into groundwater is unlikely to have any measurable impact on area water supplies. We have found that the site is underlain with a relatively impervious silt layer which will serve to filter contaminants which leach through surface soils. Further, we found that the Tributary operates as a hydrogeologic barrier to groundwater moving in a northerly direction. Therefore, any contaminants which reach groundwater beneath the site would surface in the Tributary and would not contaminate area wells and springs.

Finally, Condition #9's prohibition against the installation of: sanitary sewage disposal systems on-site, and Condition #10's surface water monitoring requirement provide additional protection against undue water pollution. We, therefore, conclude that the project will not result in undue water pollution, will not conflict with applicable Water Resources Department Regulations, will not involve the injection of waste materials or any harmful or toxic substances into groundwater or wells, and will not alter the natural condition of the Tributary or Moss Glen Brook, endangering the health, safety or welfare of the public or of adjoining landowners.

### C. Traffic Safety

No issue has been raised with regard to traffic congestion: no party has argued that Route 100, Randolph Road and Moss Glen Road do not have the capacity to handle existing traffic in conjunction with additional traffic to be generated by the project.

The potential impairment of traffic safety raised by the use of the existing Randolph Road-Moss Glen Road intersection by large dump trucks would be resolved by the reconstruction of this intersection: a realignment resulting in a 90° (or nearly 90°) orientation will correct the current lack of visibility. No traffic safety concern is raised in the current access to Route 100; trucks headed south using Randolph Road and trucks headed north using Tinker's Lane have adequate sight distances in both directions.

We do not find the width of Moss Glen Road to be inconsistent with regular truck traffic. With the widening of the road segment near the Wright premises, the Road's 20' to

22' width is adequate to accommodate trucks and pedestrians if due caution is exercised. We, therefore, conclude that, with the reconstruction of the Randolph-Moss Glen intersection, the project will not cause unsafe conditions with respect to use of highways.

D. Necessary Wildlife Habitat

We have found that the Percy property is a portion of a larger white-tailed deer habitat which meets the definition of "necessary wildlife habitat" as defined by 10 V.S.A. § 6001(12). In fact, the habitat is of high quality because of its elevation, orientation and vegetative cover. We also found that, with the immediate removal of vegetation within the construction area, 20 of the 60 Percy acres will be removed from the habitat. We also found that replacement of softwood cover will take up to 40 years after the gravel operation is terminated. Therefore, we conclude that the project will significantly imperil a necessary wildlife habitat during the life of the project.

However, the Percys have agreed to submit their residual 40 acres to a forest management plan approved by the Department of Forests, Parks and Recreation. They have also agreed to replant at least one-half of the project area in 'softwoods after the site has been reclaimed in order to re-establish the deer habitat. With the implementation of these requirements through permit conditions, we conclude that the Applicants will apply all feasible and reasonable means of lessening the imperilment of the deer habitat.

E. Aesthetics and Extraction of Earth Resources

In Re: Quechee Lakes Corporation, Permit #3W0411-EB and #3W0439-EB issued November 4, 1985, we described the protocol which should be applied when Criterion 8 (aesthetics) is at issue. The first step in that analysis is the identification of a proposed project's context and a determination of whether the project will "fit" within that context. We listed a series of questions one should ask in performing this component of the Quechee analysis. Finally, we indicated that, in determining a project's "fit," special attention must be paid to "sensitive features":

. . . Certain types of land forms are especially **sensitive** to change, because these land forms tend to be visible from a wide area or they are seen by large numbers of people. These sensitive areas include ridgelines, steep slopes, shorelines and floodplains. Other features are sensitive because they are aesthetically unique: examples may include historic structures, wetlands and natural areas. In evaluating a project proposed

in a sensitive area, the Board and District Commissions should give special attention in assessing whether the scenic qualities of these sites will be maintained.

Re: Quechee Lakes Corporation, page 19.

We begin our analysis of Criterion 8 impacts in this case by observing that a "sensitive area" lies within the context of the proposed gravel pit: the Moss Glen Falls Natural Area is aesthetically unique because of the unusually high woodland falls and because it has been preserved by the state for the enjoyment of its residents and visitors. The existing context also consists of the rural, sparsely settled, scenically beautiful area which we described in our findings. This area is currently separated from the more active Route 100 corridor.

The proposed project is clearly out of context: it is not compatible with surrounding land uses, and it will introduce foreign visual and audible intrusions. While hours and days of operation have been controlled, these intrusions will exist during 40% of the year. Applying the first prong of the Quechee analysis, we conclude that the project is not compatible with its surroundings and, therefore, will cause an adverse impact on area aesthetics, scenic beauty, and natural beauty.

The Quechee test requires an affirmative answer to three separate questions before a project with an adverse aesthetic impact can be determined not "undue." We conclude that the Percy project results in a negative answer to at least one of these questions: the gravel extraction operation offends the sensibilities of this Board--the project, when viewed as a whole within this rural enclave that is the home of the Moss Glen Falls Natural Area, is offensive because it is wholly out of character with its surroundings and would significantly diminish the scenic qualities of both the Natural Area and the neighborhood. While other less intrusive land uses might be acceptable for the Percy lands, a gravel extraction operation which will generate regular, intrusive noise and will involve as many as 90 vehicle trips each day through the now undisturbed Moss Glen area, must be considered an undue adverse impact on the aesthetics and the scenic and natural beauty of the area.

While not necessary to support our decision, we briefly mention the issue of mitigation. In the Quechee case we concluded that an "adverse" aesthetic impact would be "undue" and, therefore, violative of Criterion 8 if the Applicant had failed to take generally available mitigative steps which a reasonable person would take to improve a project's harmony with its surroundings. There are some cases--and the Percy

application may be one--where, because of the project's imp on a "sensitive feature" and in view of the inherent qualities of that feautre, no degree of mitigation would suffice in neutralizing an adverse aesthetic impact. In the Percy case, despite significant steps by the Applicants to minimize neighborhood impacts, the placement of an inherently intrusive operation in close proximity to the Moss Glen Falls Natural area results in impacts which cannot be rendered acceptable through mitigation efforts.

F. Natural Area and Public Investment

We have found that the project would adjoin the Moss Glen Falls Natural Area which has been designated pursuant to 10 V.S.A. § 2607. The Falls has been characterized as the highest undammed cascade and the most beautiful woodland falls in Vermont. The Moss Glen Falls Natural Area readily qualifies as an "irreplaceable natural area." Further, the State invested \$425,000 in the acquisition of this area, qualifying Moss Glen Falls as a "public investment" cognizable under Criterion 9(K).

We have previously discussed our findings concerning visual and noise impacts which would result from the project. We have found that one's experience of the Natural Area begins in travelling down Moss Glen Road and starts in earnest when one arrives at the Natural Area's parking lot. To be assaulted with vehicle and equipment noise in the range of 80 **dBA** as one meanders up the access path would significantly interfere with the public's use and enjoyment of the Natural Area. One's experience is by no means limited to enjoyment of the Falls itself; enjoyment includes an appreciation of the beaver meadow and Moss Glen Brook before arriving at the Falls. While vehicle noise would abate as one approached the Falls, truck and equipment noise would be an unavoidable component of the Natural Area experience during 40% of the project's 15 years of operation.-

Act 250 clearly charges this Board with the duty of protecting unique and fragile natural areas as assets for the enjoyment of Vermont residents and visitors. Beyond the specific language of 10 V.S.A. § 6086(a) (9), the Vermont Capability and Development Plan (Act No. 85 of 1973, § 7) includes several references to the preservation of unique natural assets. Moss Glen Falls, one of only 24 State owned and protected natural areas, treats the visitor to an array of pleasures which typify Vermont: the access road winds through a quiet, pastoral neighborhood; views of the Green Mountains and their foothills are regularly available: the natural area path **meanders through a visually pleasing, multi-tiered beaver meadow** and also treats the visitor to the pleasures of Moss Glen Brook; and the Falls itself is an indescribably beautiful feature. When presented with a project within this context

which would generate regular, substantial and intrusive visual and aural impacts, our responsibility is to protect the unique natural area.

Faced with the potential of these intrusive impacts on a natural area of recognized high value, we conclude that the project would have an undue adverse effect on the irreplaceable Moss Glen Falls Natural Area. We further conclude that operation of the pit would interfere with and jeopardize the public's use and enjoyment of the Natural Area.

---

V. ORDER

We conclude that the gravel extraction project described in Land Use Permit Application #5L0799 would be detrimental to the public health, safety, and welfare under 10 V.S.A. § 6086(a)(1) air pollution - noise, (8) aesthetics and natural areas, (9) (E) extraction of earth resources, and (9)(K) impact on public investments. Land Use Permit Application #5L0799 is, therefore, denied.

Dated at Montpelier, Vermont this 20th day of March, 1986.

VERMONT ENVIRONMENTAL BOARD



~~Darby Bradley, Chairman~~  
Ferdinand Bongartz  
Lawrence H. Bruce, Jr.  
Elizabeth Courtney  
Jan S. Eastman  
Samuel Lloyd III/3/  
Roger N. Miller

---

/3/ While Member Lloyd joins the majority in denying the permit, he would make affirmative findings with regard to Criteria 8, 9(E) and 9(K) impacts on the Moss Glen Falls Natural Area. He agrees with the majority's findings concerning impacts on the residents of the Moss Glen Falls neighborhood.