Petition for the Approval of an Appellation of Origin For the proposed "Warren Hills" Viticultural Region

February 12, 1986

Submitted By:

Daniel Campanelli of Rieglesville, N.J.

Walter and Shelly Hnot, Marble Mountain Vineyards, Harmony, N.J.

Rudolf Marchesi, Alba Vineyard, Finesville, N.J.

Robert and Lauri Matarazzo, Four Sisters Winery, Belvidere, N.J.

Paul and Susan Tamuzza, Tamuzza Vineyards, Hope, N.J.

The following is a petition for the appproval of an Appellation of Origin for the "Warren Hills "Viticultural Region, located in Northwestern New Jersey, submitted by the following:

Daniel Campanelli, Rieglesville N.J.

Walter and Shelly Hnot, Marble Mountain Vineyards, Harmony, N.J.

Rudolf Marchesi, Alba Vineyard, Finesville, N.J.

Robert and Lauri Matarazzo, Four Sisters Winery, Belvidere, N.J.

Paul and Susan Tamuzza, Tamuzza Vineyards, Hope, N.J.

As grape growers and winemakers in this region, we feel that the proposed Viticultural Region has unique geographical and climitological characteristics that distinguish it from the surrounding regions.

This petition is based on extensive research into the climate and soils of the proposed Region as well as historical agricultural significance and our own viticultural experience.

Enclosed are U.S.G.S. maps with colored areas defining the proposed "Warren Hills" Viticultural Region.

## I. Origin of the name 'Warren Hills "

The name "Warren", which is used throughout the area originated from a local resident, Joseph Warren, who became a local Patriot hero after his death at the battle of Bunker Hill. In 1824, when the county of Warren, in which the proposed viticultural region is located, was incorporated, the people of the area thought it appropriate to name the county after this famous local hero.

The name "Warren Hills" is a logical extension of the county name because "Hills" is an accurate discription of the topography of the area. The name "Warren Hills" has been used by many groups in the area e.g. Warren Hills Regional High School, Washington, N.J. and Warren Hills Family Health Center, Washington N.J.

The boundries of the proposed Warren Hills Viticultural Region are based on the physical characteristics of the regional watershed draining to the Delaware River and the resulting climatic conditions. The region is generally triangular in shape with the base of the triangle being the Northern border. The Delaware River constitutes the Western boundary. This is a clear physical and geological boundary as evidenced by the dramatic changes in geography and geological characteristics when crossing the river into Pennsylvania. The Musconetcong River forms the Southeastern boundary of the region. The Musconetcong Valley is the southernmost valley in the "Upland Valley" geological region of Northern New Jersey, constituting a division between two major geological regions. The Northern boundary is formed by the Paulins Kill (a small stream) extending northeasterly from the Delaware River to the county line, dividing Warren and Sussex Counties, which extends in a southeasterly direction to meet the Musconetcong River at a point 5 miles northeast of Hackettstown N.J. and 2.5 miles northwest of the closest shore of Budd Lake.

The proposed Warren Hills Region is characterized by a series of narrow parallel valleys running in a northeast to southwest direction. This topography is distinctly different from the rolling hills of the "Piedmont" region to the south and east, the mountainous highlands to the north and the plateaus above the Delaware River in Pennsylvania. Due to the topography of the Region, climatic conditions are also unique in the area. Typical of many valley regions, in the morning hours, air currents flow downstream to the Delaware River. However, due to the funnelling effect of the mouths of these small valleys at the Delaware, prevailing winds blow up the valleys in a northeastern direction reducing relative humidity and cooling crops in the early evening hours. In addition, due to the orientation of these valleys, there are many sites with a south to southeastern exposure creating many microclimates with warmer than average temperatures, especially in the winter.

The combination of soils and topography of the proposed Warren Hills Region are unique to the area. The soils of the proposed Warren Hills Region were predominantly formed by glacial till, alluvium and material weathered from bedrock. The limestone bedrock is cavernous and "sink holes" dot the landscape. The predominant soil types are Washington and Hazen loams which are deep, fertile, well-drained soils of a fine texture and of a relatively higher PH than the surrounding areas due to the nature of the bedrock.

North and northeast of the proposed Warren Hills Region, northeast of Hackettstown, a glacial advance known as the Wisconsin, left a distinct mass of transportal materials, terminal moraine. The area south-west of this point was not covered by these glacial deposits from the north and has been described by Peter Wacker of Rutgers University as follows: "The limestone valley floor of the Musconetcong south of the terminal moraine is characterized by gently undulating topography and by soils that, even today, are among the most fertile in the Northeastern United States." As previouly mentioned, due to prevailing winds and physical characteristics of the proposed region, the growing season tends to experience warm days and cool nights, as compared to the surrounding areas. The typical growing season for the region averages 175 frost-free days, but is often longer on selected sites. During this period the average number of growing "degree days", based on the U.C. Davis Degree Day Scale for Viticulture is 2,680. The average annual rainfall during this growing season is 24 inches, although in two out of ten years the rainfall is less than 19 inches. The average mid-afternoon relative humidity is 55 percent and the prevailing winds are from the west to the southwest during the growing season. These prevailing winds and the previously mentioned cool air drainage assist in the control of mold and mildew on the vines.

The description below includes the agricultural and viticultural areas within the proposed Warren Hills Viticultural region. This proposed region is of an approximate area of 226 square miles (144,640 acres) and includes 77 acres of vineyards and three licensed wineries; Alba Vineyard, Four Sisters Winery and Tamuzza Vineyards. This verbal description directly corresponds to the following U.S.G.S. 7.5 minute topographic quadrangle maps which we have enclosed:

## Quadrangle # Description

N4030-W7507.5/7.5	Reigelsville PA - NJ	
N4037.5-W7507.5/7.5	Easton PA - NJ	
N4045-W7507.5/7.5	Bangor PA - NJ	
N4037.5-W7500/7.5	Bloomsbury NJ	
40075-G1-TF-024	Belvidere NJ - PA	
40075-H1`-TF-024	Portland PA - NJ	
N40037.5-W7452.5/7.5	High Bridge NJ	
N4045-W7452.5/7.5	Washington NJ	
N4052.5-W7452.5/7.5	Blairstown NJ	
N4045-W7445/7.5	Hackettstown NJ	
N4052.5-W7445/7.5	Tranquility NJ	
N4100-W7452.5/7.5	Flatbrookville NJ - PA	
1942-54-(71PR)	Newton West NJ	

The south east boundary of the region originates at the intersection of the Delaware River and the Musconetcong River and procedes in a northeasterly direction along the center line of the Musconetcong River for a distance of approximately 32 miles through the towns of Bloomsbury, Hampton, Butler Park, Stephansburg, Beattystown, and Hackettstown to a point approximately five miles northeast of Hackettstown and one mile southwest of Waterloo Lakes, where the county line seperating Warren and Sussex counties intersects the Musconetcong River. At this point, the boundary procedes in a northwesterly direction along the Warren and Sussex County line, approximately ten miles to a point where the Paulins Kill intersects the County line. At this point the boundary turns in a south, southwesterly direction and procedes along center line of the Paulins Kill for approximately two miles, at which point the boundary follows the Paulins Kill in a west by southwest diredction, flowing into the Delaware River at the town of Columbia. The boundary at this point intersects the center line of the Delaware River and procedes in a southerly direction following the center line of the Delaware River. This north-western boundary continues along the center line of the Delaware River approximately 24 miles until it reaches the intersection of the center line of the Musconetcong River at Riegelsville NJ - PA, thereby closing the boundaries of the proposed region.

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25 CommerceDr Cranford 276-6363 VALLEY FUEL INC	Vaughn Robt 922 N Boulevard Alpha 454-5635 Vaughn Robt 89 SlaterLa 454-3415	Volk Alan R 2355 BelvidereRd Hrmny 859-2671	Warner F N RedSchoolLa 454-9510
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Valley View Apartments 1044 Ridge 454-3636 Valley View Kennels RD1 Stewartsville - 479-6132	Vayda Stephen 63 SchultzAv 859-5003 Vayda Stephen J 541 GraceAv 454-1694	Volk Robert E Stewartsville 859-1626 Volkert Raymond Jr 25 Wilson 859-6142	WARREN ANIMAL HOSPITAL UniontownRd - 859-0702
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operator for WX-5450	Vegh Wm Harmony	Volume's Up Records & Tape	Warren County Court House 2ndSt Belvidere 475-5361
VanArsdale Walter E 365 Bates 859-5857 VanArsdale Walter E Jr 409 StelkoAv 859-2052	Velekei John 60 Schultzau 950-2424	Voorhees Arthur E StillValley 454-6119	Warren County Democratic Committee
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Van Rilliard Reed 99 Sitgreaves 454-7226	Velesaris Jas K Mrs 61 SchultzAv 454-2069 Venner James 262 Washington Stewrtsvl 454-3146	Voorhees William H StillValley 859-5083 Voyager Travel Roseberry 454-6060	Public Health Nurse 675 CorlissAv 454-1152
Van Buskirk Alan 22 BuckleyHillDr 859-0389 VanBuskirk Clark J 225 LibertyBlvd 454-2248	Ver Frank 306 IstAv Alpha 454-8924 Verenna Sebastian 612 Baltimore 859-3746	W C R V Radio Station StateHwyNo31 Washington 689-1580	151 W Washington Av Washington 689-6000 Warren County Heart Services
VanCamp J 485 KneedlerAv 454-5576 Van Camp Jos 1041 Ridge 454-3476	Veres Geo 123 BelvidereRd 859-2902 Veres John 422 PershingAy ShimrMnr 454-4862	W C R V-Radio Station Request Line StateHwyNo31 Washington 689-2568	CountyRd Oxford 453-3442
Vanderbilt Ronald 137 CenterRd DelHts - 454-6869 VanDoren Mark 610 CorlissAv 859-1616	Veres M 33 Fulton 859-5593 Veres M 33 Fulton 859-1107	W E S T-Radio 14 436 Northampton Easton Pa 454-8611	Warren County Nutrition Program 400 Lincoln 859-2313
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VanEmburg Toot BelviewRd 454-2549 VanEmburg Wm RedSchoolLa 454-6380	Veres \$ 525 FisherAv 454-6095 Vernon Donald J 118 SummitAv 859-4087	1573 ParksideAv Trenton 609 292-5252 W N J T TV Channel 52	Warren County Road Dept SpringtownRd Alpha - 454-4480
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Vannatta James 737 S Main 454-6931 Vannatta Lance StateHwyNo519 454-5834	521 VictoryAv Prksd - 454-4990 Viebrock Norman StateHwyNo57 454-7972	Waldron Becky 162 SummitAv 454-9334 Waldron Becky 162 SummitAv 454-7169	Billing Office Inpatient Billing859-6712
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GoodSpringsRd Stewrtsvl - 454-7452 VanScoten Howard 169 S Main 859-1167	Village Apartments Marshall 454-0004 Villani R A 473 S Main 859-5671	Wall S 553 E CentralAv Alpha 454-0632 Wallbillich Donald 126-A SummitAv 859-4703	Personnel Office
VanScoten Howard 103 McKeen 859-1167 Van Seters Edw 72 Colby 859-6640	Vincent George E 130 Hudson 859-5720 Vincent Robert	Wallbillich Frank 116 Lewis 454-8870	Physical Therapy
Van Syckel I 219 Liggett Rivd 454-0831	Vincent & Sons Upholstery	Wallbillick Michael 3 Front 454-0223 Walls C E 500 Marshall 454-8606 Walls H R 313 Mercer 454-0048	Radiology (X-Ray)
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Varga Jos 210 Morris 859-1871	Viscomi John D Jr 846 WilburAv 454-3874 Viscomi Joseph 240 Mercer 859-5240	Walter's Oil Inc 1000 BushkillDr Easton Pa 215 258-4328	Phillipsburg Office 39 Roseberry 454-8787 WARREN MEDICAL LABORATORIES
Varga Jos 943 SigsbeeAv Alpha 454-8531 Varga Jos G 325 Center 454-7656	Viscomi Nicholas 204 Mercr 454-5290 Viscomi Pete 828 Green 454-7502	Walter's Park Tavern 255 Cntr 454-9068 Walters Richard N Main Stewrtsvl 454-8829	RedSchoolEn 859-3110 Warren Mental Health Clinic
Varga Teresa M 413 RailroadAv 454-2829 Vargar E 465 KneedlerAv 454-3255	Viscomi Peter 942 SigsbeeAv Alpha 454-4707 Viscomi R M 421 S Main 454-6255	Walton George K attorney 17 TrentonAv Frenchtown 996-2821	CityFederalSavingsBuilding 454-4449 Warren OB-GYN Associates PA
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Vargo Frank L 757 S Main 454-4722 Vargo John 400 3rdAv Alpha 454-4117	CountyRd Oxford - 453-2107 Visser F C 341 Warren 454-2354	Wambold Paul 593 GraceAv 454-0728 Wambold Richard J 49 GienAv 859-3097	Warren Pallet Co Inc ReigelsvilleRd WarenGi 995-7172
Vargo Joseph A 901-A 2ndAv Alpha 454-3701 Vargo Julius 157 Lock 454-2369	Vitale Anthony C 3rd NewVil 454-7932 Vitale Bruce StateHwyNo57 Stewrtsvl 454-8162	Wanamaker J C 624 HillcrestBlvd 859-3365	WARREN PAVING CO INC StateHwyNo57 StewrtsvI 859-3333
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Varju L 876 S Boulevard Alpha 454-6335 Varju Margaret Mrs 324 Thos 454-4918	654 WolfAv Easton Pa 215 258-4343 Vivian W R 192 Irwin 859-1214	Ward Josephine 444 James - 454-1338	ASSOCIATES P A BrassCastleRd Washington 689-0777
Varley Jayne 1125 5thAv Alpha 454-5565 Varone Jos 681 ElderAv 859-0525	Vliet F Hughes 310 IndianaAv ShimrMnr 454-6187 Vliet Howard L 1005 BelvidereRd 859-3558	Ward Mary S Mrs 235 S Main 454-7780 Ward Thos P 445 Thomas 454-1590	Washington Medical Associates P A
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Department of the Treasury
Department of Alcohol, Tobacco
and Firearms
Washington, D.C. 20226
Attn: Richard A. Mascolo

Rudolf Marchesi Alba Vineyard R.D. # 1 Box 179 AAA Milford, N.J. 08848

January 27, 1987

Dear Mr. Mascolo:

In your letter of May 15, 1986 you raised five questions regarding our petition to establish the Warren Hills Viticulture Region. In this letter I will attempt to clarify these points in the same order as presented in your aforementioned letter.

(1)Regarding the Delaware River as the Western Boundary:
As stated in our petition, the Warren Hills Region is typified by a series of valleys running northeast to southwest starting at the Musconetcong Valley and continuing in a series of small parallel valleys northward throughout the region until reaching the Paulins Kill.

On the Pennsylvania side of the Delaware River, conditions vary greatly. Across the Delaware River from the southern and central section of our proposed region is the convergence of the Lehigh and Delaware rivers and the resulting Lehigh Valley. The Lehigh Valley, formed by the Lehigh River, is fairly broad – up to 10 miles in width at some points. In contrast, the upland valleys of the Warren Hills Region have been formed by small rivers and streams and are narrow by comparison.

Across the Delaware from the northern section of our region, are high plateaus relative to the Delaware that are predominantly shale and slate forming the foothills of the Blue Mountains, part of the Pocono Mountain chain. Again this contrasts with the upland valleys of our region.

As stated in our petition, the soils of these valleys were predominantly formed from the Dolomitic Limestone which underlies them. While this "Limestone Belt" does continue across the Delaware into portions of the Lehigh Valley, the hills south of the Lehigh Valley are predominantly of a red shale base, while north of the valley, into the Blue Mountain foothills, there is a greater occurance of gray shale and slate. Soils from both these regions vary greatly from our own in texture, mineral content, and ph.

In relation to the Delaware Valley south of the Warren Hills Region, it is important to understand that the Musconetcong Valley forms a boundary between two major, and very different geographic regions in New Jersey; the Upland Valleys of the northwest and the Piedmont.

The Piedmont region consists primarily of the rolling hills of Hunterdon, Somerset and Mercer counties, not very different from conditions in Bucks County, Pennsylvania across the Delaware. Therefore, it is conceivable that in this region, a viticultural region with continuity of geology and geography could be on both sides of the Delaware. As stated, this is not the case north of the Musconetcong Valley.

- (2) Regarding the Southern Boundary, the Musconetcong River: In our previous petition for the "Musconetcong Valley" viticultural region, the southeastern rim of the Musconetcong Valley was used as a boundary. Since that time, it has been our experience that the best vineyard sites are on the south, south eastern and south western facing slopes as is the case in many cool climate viticultural regions, i.e. the German Rhine Valley. In light of this information, the portions of the Musconetcong Valley south of the Musconetcong River become viticulturally insignificant. Therfore, it seemed prudent to change the south boundary to the Musconetcong River, which is a much more easily recognized and defined geographic boundary. The fact that the Musconetcong River is the boundary seperating Hunterdon and Warren counties is, in this case, insignificant.
- (3) Regarding ph of soils in the Warren Hills Region relative to surrounding areas:

The vineyard soils of the Warren Hills Region are formed from Dolomitic Limestone which has a high concentration of calcium and magnesium. This contributes to higher soil ph relative to the soils of the surrounding areas which are formed from shale and other sources. The primary vineyard soils of the Warren Hills region are as follows listed with ph range (see footnote 1).

Hazen Loam 5.6-7.8 Annandale Gravely Loam 5.1-6.5 Washington Loam 5.6-6.3

Typical soils of the areas of Warren county north of the Paulins Kill are as follows (footnote 1).

Bath soils 4.5-6.5 Nassau soils 4.5-5.5 Swartswood soils 3.6-5.5

Typical vineyard soils of the Central Delaware Valley Viticultural Region are Penn Shaley Silt Loam and Klinesville Loam. Penn series soils have been described as "Natural reaction is strongly acid" (footnote 2) and the Klineville series as "Natural reaction ranges from medium acid to strongly acid" (see footnote 3).

(4) Regarding location of terminal moraine relative to the Northeast Boundary:

As one might imagine, glaciers were not very consistent in the way they carried moraine over existing soils. In the case of the Paulins Kill, we have a clearly defined narrow strip of Pope soils formed by glacial till running with the Paulins Kill almost the entire distance from the Delaware River to the Sussex county line and extending only three miles into Sussex county. Likewise, there is a strip of similar soils along the Musconetcong River extending northeast and ending at the Sussex county line. Between these two points, along the Warren/Sussex county lines, for approximately 10 miles the soils vary (footnote 4). However, it is in this approximate location that the average length of the growing season drops below 150 frost free days to the northeast, which is inconsistent with the average growing season length in the Warren Hills region (see attached map "Figure" 3, Average Length of the Growing Season in Days(Base 32F)). The significance of the Pope soils vs. typical vineyard soils of the region is predominantly in the mineral content reflected in ph. Ph of Pope soils ranges from 3.6 -5.5 (footnote 1). Therefore, this 10 mile section of the Warren/Sussex county line, when viewed in light of the geological and climatalogical factors forms a viticulturally appropriate boundary that can be easily defined.

(5) Regarding location of the Piedmont Region relative to the Warren Hills Region:

In our petition we state that our area is "Distinctly different from the rolling hills of the Piedmont region to the south and east". This should read "Is distinctly different from the rolling hills of the Piedmont region to the southeast". The areas of Sussex and Morris counties are different from our region in the increased incidents of glacial till effecting soil makeup and decreased length of growing season (see attached map "Figure 3").

I trust these explanations are sufficient to answer all questions regarding our petition to establish the Warren Hills Viticultural Region. If you are in need of any additional information please feel free to call me at (201)995-7800.

Yours truly,

Rudolf C. Marchesi,

1. <u>Soil Survey of Warren County, New Jersey</u>, U. S. Department of Agriculture, April, 1979.

Table 17, pages 169-172, "Physical and Chemical Properties of Soils".

2. <u>Soil Survey of Hunterdon County, New Jersey</u>, U. S. Department of Agriculture, November, 1974, page 35.

3.<u>Soil Survey of Hunterdon County, New Jersey</u>, U. S. Department of Agriculture, November, 1974, page 24.

4. <u>Soil Survey of Warren County, New Jersey</u>, U. S. Department of Agriculture, April, 1979. General Soil map. <u>Soil Survey of Sussex County, New Jersey</u>, U.S. Department of Agriculture, August, 1975. General Soil map.

Figure 3. Average length of the growing season in days (base 32°)

