November 11, 2008

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Subject: Geologic Review of Updated RGH Geologic Report In Support of Cornell Wine Factory, 245 Wappo Road, Sonoma County, California, APN 028-260-041.

ABSTRACT

The proposed project consists of a wine factory to be placed on a west facing slope above a deeply incised tributary to Mark West Creek. An active landslide below the residence at this same address, anomalous topographic features on the ground surface, anomalous topographic features apparent on aerial photographs, mapping of landslides by the California Division of Mines and Geology, mapping of debris flows by the United States Geological Survey and a previous investigation of this site by The Geoservices Group all indicate that this may be a geologically unstable, unsafe site.

A geological site investigation by RGH Consultants, Inc. acknowledges the presence of numerous landslides on the site but fails to perform a stability analysis of the proposed building site. This omission renders the RGH finding of project feasibility meaningless, considering the significant evidence of unstable slopes throughout the site vicinity. On a site like this, where landslides exist, even according to RGH, fully investigating all relevant slope stability issues associated with the project is the top priority, above all other geologic, soils and water availability issues.

That this mission has not been accomplished is best and most graphically illustrated by RGH themselves on Plates 5A and 5B in Reference 8, Geologic Cross Sections B-B' and C-C' respectively. No geologic structure at depth is shown on the cross sections and the basal slip surfaces of landslides are shown as rows of question marks. This is a stark acknowledgement that the geologic structure and landslide setting of the site are simply unknown.

RGH Consultants, Inc. characterizes its report as “Preliminary”, as if the fundamental
stability and safety of the site is a minor detail that can be presumed now and dealt with more thoroughly later. That is a totally flawed concept. In the absence of adequate geologic and geotechnical analyses, a decision regarding project feasibility must be based on worst case assumptions.

The method most commonly used to increase the factors of safety against landsliding on unstable slopes to a minimally acceptable level is construction of a buttress fill. A buttress fill is a very large mass of engineered compacted fill embedded into a slope, below the lowest potential failure surface. The size of the buttress is determined by the Geotechnical Engineer, and must be of sufficient size to provide an adequate factor of safety. Once constructed, the buttress fill supports the slope. However, construction of a buttress fill requires making a large, steep, deep excavation into an already unstable slope. This is a very dangerous procedure because any failure of the temporary excavation can cause a massive failure of the upslope area with potential property damage and personal injury and/or loss of life to workers on the project and/or occupants of upslope properties, and environmental damage.

While such massive corrective grading may be theoretically possible, the logistics of such grading on a steep, unstable slope are likely to be truly daunting. Furthermore, this corrective grading would convert what is now a forested natural slope to a fill slope. All of the existing vegetation, topsoil, landslide debris and unstable bedrock would have to be removed in the areas to receive fill. The project proponents have not provided a topographic map of the natural slope and no geotechnical investigation of the natural slope has been completed. Therefore, it is unknown whether a buttress fill is required and, if so, what its dimensions would be and whether it would even fit on the site, given the existing Code requirements for stream setbacks, maximum slope gradients, and drainage terraces on the buttress fill slope face.

To help the reader imagine the size and shape of a buttress fill excavation, the following information is offered. The horizontal base of the buttress excavation, called the “key”, is typically several tens of feet wide and ten or more feet deep. A typical residence would fit easily into this excavation. On the uphill side of the “key”, a temporary, very steep (usually 45 degrees or 100% slope) “backcut” is made to create a very large void to accommodate the mass of the buttress fill to be constructed. The “backcut” usually must be made at this steep gradient, or else the “backcut” would end up removing the entire ascending natural slope, including the intended building site. Failure of this “backcut” during construction of the buttress fill is an ever present danger. Every engineering geologist experienced in hillside grading has observed the sudden and destructive consequences of buttress fill “backcut” failures.

Much more geologic and geotechnical investigation and analysis is needed now to determine the theoretical and logistical geologic feasibility of the project. Without this additional geologic and geotechnical work, opinions concerning the geologic feasibility of the project are meaningless conjecture.
I. INTRODUCTION

In accordance with your request, I have reviewed the updated geologic report (Reference 8) prepared in support of the proposed winery at 245 Wappo Road, in Sonoma County, California. The purpose of the geologic review was to determine whether the stability of the site has been demonstrated and whether the potential impacts of the proposed project have been evaluated in accordance with State laws and standards of care that govern the practice of geology in the State of California.

The scope of the geologic review included the following tasks:

1. Review of published regional geologic and landslide maps and stereo pairs of aerial photographs of the site vicinity (References 1-3).

2. Geologic reconnaissance of the site and examination of earth materials exposed in a deeply incised stream bank at the toe of the slope descending from the site. A photograph of a portion of that stream bank is presented in this review report.

3. Review of previously prepared consultants' reports prepared in support of the project (References 4 and 5).

4. Review of my review of a previous geologic report by RGH in support of the project (Reference 7).

5. Review of the updated geologic report by RGH in support of the project (Reference 8).

6. Review of Kleinfelder's review of the updated geologic report by RGH in support of the project (Reference 9).

7. Preparation of this review report that summarizes my findings.

My qualifications to perform this review consist of the following:


2. Employment in the Engineering Geology Section of the Los Angeles County Department of Public Works from June 1969 through December 1980, with substantial peer review responsibilities.

4. Private practice as an Engineering Geologist from June 2001 through the present.

In the course of my County employment I reviewed thousands of projects like the Cornell wine factory. Subsequently, I have investigated countless sites where slope stability was a critical issue that determined project feasibility.

II. PROJECT DESCRIPTION

The proposed project consists of construction of a wine factory. No details of the proposed grading, building construction nor water well development have been provided for my review. I first reviewed this proposed project in 2005, and issued a report of my findings dated January 31, 2005. Since that time defoliation of the intended wine factory site has been performed and a large landslide in a downslope area below the residence at 245 Wappo Road has occurred.

III. BACKGROUND INFORMATION

Prior to 1970, the standards of care for the practice of geology were the responsibility of local jurisdictions and were very inconsistent. On June 30, 1970 the Geologist Registration Act became effective. From that time forward, professional geologists and various specialties within the profession of geology have been licensed by the State of California.

Other laws, requirements and guidelines have been set forth by the Alquist-Priolo Earthquake Fault Zoning Act of 1972, the California Board for Geologists and Geophysicists, the California Mining and Geology Board, the California Geological Survey (CGS), formerly known as the California Division of Mines and Geology (CDMG), and various professional organizations like the Association of Engineering Geologists (AEG). Local jurisdictions (cities and counties) have no authority to disregard these laws, requirements and guidelines although they may enforce more strict requirements.

IV. THE PEER REVIEW PROCESS

Peer review is a process that compares a scientific work product to the laws, requirements and guidelines which govern the work in question. The reviewer must not have a bias for or against the particular project in question and its consultants. Opinions concerning the adequacy of the work product being reviewed must be based solely on a comparison of the work product to the governing laws, requirements and guidelines (See References 6 and 10).

Although Sonoma County does not generally require peer review before granting permits to projects on sites in unincorporated areas, counties and cities throughout California have required peer review of geologic reports written to guide proposed
construction projects as an essential component of their permitting process since the 1960s.

Having been previously cited for unlicensed practice of geology for failure to properly conduct peer review, PRMD obtained the services of Kleinfelder to review the updated RGH report (Reference 8). Kleinfelder is a geotechnical consulting firm with an office in Santa Rosa, Sonoma County, California.

Because Kleinfelder performs geotechnical consulting in Sonoma County, retaining Kleinfelder to perform this peer review is improper under the guidelines of the California Mining and Geology Board. In General Guidelines For Reviewing Geological Reports dated May 9, 1996 (Reference 10), the California Mining and Geology Board states “A different type of conflict commonly exists in a jurisdiction where the geologic review is performed by a consulting geologist who is also practicing commercially (performing geological investigations) within the same jurisdictional area. Such situations should be avoided, if at all possible”. This potential conflict of interest in itself, as called out in Reference 10, should invalidate the Kleinfelder review. There are also serious omissions in the Kleinfelder review that are explained in the Conclusions section of this report. In the Conclusions section, Kleinfelder’s failure to follow the requirements of the California Geologist and Geophysicist Act and the California Division of Mines and Geology (Now called California Geological Survey) is documented by presenting quotations from the governing regulations. These omissions by Kleinfelder are in addition to the fact that Kleinfelder is in violation of guidelines of the California Mining and Geology Board in performing the review in the first place.

My review of the updated geologic report by RGH in support of the project (Reference 8) consisted solely of determining whether or not the stability of the site has been demonstrated and whether the potential impacts of the proposed project have been evaluated in accordance with State laws and standards of care that govern the practice of geology in the State of California.

V. REGIONAL GEOLOGIC SETTING

According to the geologic map in Reference 1, the site vicinity is traversed by a thrust fault known as the Maacama fault. This geologic map has been prepared at a scale of 1 inch = 1 mile, and is therefore approximate and is not intended nor suitable for site specific application. In the site vicinity, the Maacama fault juxtaposes bedrock of the Sonoma Volcanic Group south of the fault against bedrock of the Franciscan Assemblage north of the fault.

The Landslide Map in Reference 1 shows a large landslide in the natural slope immediately downslope from the proposed wine factory. My site reconnaissance noted topographic features (Lobate masses with a hummocky ground surface), in the
area of the proposed wine factory, that are highly suggestive of landsliding. This is the area shown as a landslide in Reference 1. My examination of stereo pairs of aerial photographs (Reference 3) in the Sonoma County Assessor's office also indicated the presence of this landslide mass. It appears to me that this may be two individual landslides and it appears to me that the landslide(s) may extend farther upslope towards Wappo Road than shown on the Landslide Map in Reference 1. A portion of this landslide immediately below the residence at 245 Wappo Road experienced movement in 2005, and is therefore considered active. My interpretation of this landslide complex is shown on Plate 1 of this report.

In any event, my field observations and aerial photograph interpretation of landsliding are in very close agreement with the landslide interpretation in Reference 1.

Plate 1. APPARENT LANDSLIDE SETTING
Reference 2 indicates that the proposed wine factory is within an area where "Principal predicted debris-flow source areas" are mapped. This map has also been prepared at a small scale (1 inch = 2 miles), and is therefore also approximate and is not intended nor suitable for site specific application.

Examination of these regional geologic, landslide and debris flow hazard maps and stereo pairs of aerial photographs (References 1-3) indicate that the proposed project is in a region characterized by steep slopes, weak bedrock and abundant landslides and debris flows. In fact, as stated above, approximately 2 years ago a landslide was active immediately below the residence at 245 Wappo Road (the same address as the proposed wine factory). The toe of the active landslide is in an unnamed tributary to Mark West Creek and the top of the landslide is close to the residence.

It appears that the active landslide below the house at 245 Wappo Road formed below a septic drain field. Features visible on the ground surface and on aerial photographs indicate that this active landslide may be a reactivation of a portion of a larger landslide that exists in the slope below the house and drain field at the same address as the proposed wine factory.

This active landslide that now threatens the house above and the creek below is a reminder that any change in the moisture conditions in a marginally stable slope can trigger landsliding. Moisture increases can result from installation of drain fields, improper grading and drainage design, defoliation or any combination of these factors.

Plate 2, 245 Wappo Road Residence Landslide, view from above.
Plate 3, 245 Wappo Road Residence Landslide, view from below. Note residence in photo at top of landslide. Plates 1 and 2 courtesy of California Regional Water Quality Control Board, North Coast Region

The disregard for geologic stability of the proposed wine factory site could easily have the same disastrous results there as it did at the 245 Wappo Road residence site.

Debris from this landslide entered a tributary to Mark West Creek and had a very noticeable detrimental effect on water quality in both the tributary and Mark West Creek itself. Furthermore, this active landslide demonstrates the instability of slopes in the site vicinity. Both published geologic and landslide data (Reference 1) and a site investigation by The Geoservices Group (Reference 7) indicate that landslides are present in the immediate vicinity of the proposed wine factory, if not directly within the building footprint. This means that any change in use, including grading and/or building construction has the potential to reactivate existing landslides and/or trigger the formation of new landslides.

It is the task of the consulting Engineering Geologist and Geotechnical Engineer to ensure that this does not happen by fully evaluating the stability characteristics of the proposed grading and construction site. Because the County review of the project has
been inadequate, statewide standards of care, including determination of the factors of safety against gross and surficial instability, have not been required.

VI. OVERVIEW OF SLOPE STABILITY

In the State of California, landslides are generally recognized hazards that receive media coverage on a fairly regular basis. Landslides have the potential to cause property damage, personal injury and loss of life where a structure is on or below the landslide.

An evaluation of the potential for any given slope or slopes to fail is called "Stability analysis". In simple terms, stability analysis is a scientific process in which the natural forces tending to cause slope failure ("Driving forces") are quantified and compared to the natural forces tending to resist slope failure ("Resisting forces") that are also quantified. The result of this comparison is a number that represents the "Factor of safety" against landsliding. A factor of safety less than one represents a slope in which the driving forces exceed the resisting forces and failure is actually occurring. A factor of safety greater than one represents a slope that is in a stable condition. A higher numerical factor of safety represents a greater degree of slope stability. Additional information concerning stability analysis is presented in CDMG Special Publication 117, Guidelines For Evaluating And Mitigating Seismic Hazards in California, Reference 6. This is one of many documents that establishes the standard of care for the practice of geology in California.

Stability analysis, like all other engineering work, recognizes that a margin of safety is required. For that reason, a factor of safety significantly greater than one has been the standard of care in the State of California for decades in siting various structures and in evaluating proposed changes in land use where slope failure has the potential to adversely affect the environment and/or the public health and safety. No factors of safety have been determined for the proposed Cornell wine factory. This requirement exists whether or not local geotechnical practitioners choose to comply with it and whether or not local agency reviewers and building officials choose to enforce it.

If mitigation of geologic instability affecting the proposed project cannot be accomplished for any reason, for example denial of access into off site areas for geologic subsurface investigation and/or corrective grading, costs exceeding budget constraints, environmental issues, etc, the project is not feasible and that fact must be acknowledged.
VII. CONSULTANT REPORTS

RGH Consultants, May 31, 2006 (Updated April 22, 2008)

The purpose of the geologic investigation for preparation of this report was to demonstrate the stability of the site and demonstrate that there will be no adverse impacts on adjoining property, in accordance with State laws and standards of care that govern the practice of geology in the State of California. On a site like this, where landslides exist, even according to RGH, fully investigating all relevant slope stability issues associated with the project is the top priority.

That this mission has not been accomplished is best and most graphically illustrated by RGH themselves on Plates 5A and 5B in Reference 8, Geologic Cross Sections B-B' and C-C' respectively. No geologic structure at depth is shown on the cross sections and the basal slip surfaces of landslides are shown as rows of question marks. This is a stark acknowledgement that the geologic structure and landslide setting of the site are simply unknown.

This lack of information concerning the geologic structure and landslide potential of the site renders the RGH opinions concerning site stability and project feasibility meaningless. The following are examples of critically important but missing information:

Are unfavorably oriented geologic structures and/or landslides present in the slopes that descend from the proposed wine factory to a deeply incised drainage course? An active landslide below the residence at 245 Wappo Road indicates the answer to that question is “yes”.

How will corrective grading, such as buttress fills and/or shear keys, in the descending slope be designed if the geologic structure and actual problems to be mitigated are unknown?

What are the elevations of the bases of future buttress fills and/or shear keys that will be required to provide an appropriate factor of safety against landsliding? A stability analysis will be required to answer this question after questions of geologic structure have been answered and after sampling and laboratory testing of materials in this slope have been completed.

Can the backcuts for these buttress fills and/or shear keys be made without causing the entire ascending slope to fail into the excavation(s) and become another “Moving Mountain”? How will the existing residence and septic system at 245 Wappo Road be affected by the corrective grading, considering the fact that an active landslide already exists at that site? A temporary stability analysis will be required to answer this question after questions of geologic structure
have been answered and after sampling and laboratory testing of materials in this slope have been completed.

In the event that corrective grading is demonstrated to be feasible on paper to provide an appropriate factor of safety against landsliding, how will the grading actually be accomplished on these steep slopes?

What methods will be used to prevent backcut failure?

Where will the excavated material be stockpiled on these steep slopes while buttresses and/or shear keys are constructed?

How will the adjacent creek be protected from failure of stockpiled materials and/or backcut failures during grading?

Will the massive fill slope(s) that result from this corrective grading physically fit on the slope being repaired, given the constraints of maximum allowable slope gradients and Code-required drainage terraces on the slopes? If the required repairs are larger than the slope being repaired, the corrective grading cannot be accomplished.

These are some of the questions that must be answered to demonstrate the geologic feasibility of developing this site. It is completely inappropriate, and unheard of in my professional experience of 39 1/2 years, to suggest that these critically important questions can be answered “later”.

In the absence of an understanding of the geologic structure and landslide setting of the site described above, all other deficiencies of the RGH report (Reference 8) are secondary, although still of vital importance.

This report (Reference 8) lacks other critical data, interpretation and analysis and is, in my professional opinion, inadequate to assess the stability and safety of the proposed wine factory site for the following reasons:

1. The Site Geologic Map

This map is not based on a topographic base map. This violates California Division of Mines and Geology (CDMG) Note 44 that states “All mapping should be done on a base with satisfactory horizontal and vertical control - in general a detailed topographic map”. Without an accurate topographic map at an appropriate scale, it is impossible to prepare accurate cross sections for stability analysis. Where is the "...topographic map" used for the Site Geologic Map according to page 5 of Reference 8?
The trench and boring locations are not shown on the Site Geologic Map.

Geologic data from the trenches and borings are not shown on the Site Geologic Map.

The Site Geologic Map does not include one of the most critical areas for determining the stability of the wine factory site, the toe of the descending slope. This area is described by RGH as "...a deep ravine" on page 14 of Reference 8. This also violates California Division of Mines and Geology (CDMG) Note 44 that states "Each report must be a product of independent geologic mapping of the subject area at an appropriate scale and in sufficient detail to yield a maximum return of pertinent data. In connection with this objective, it may be necessary for the geologist to extend his mapping into adjacent areas" (emphasis added). If the geologic structure in the undercut slope toe is unknown, how can a geologic cross section of this critical area be prepared for stability analysis by the Geotechnical Engineer?

Under no circumstances are geologic problems whose mitigation may be precluded by property boundary, access and/or setback issues considered "minor".

2. Geologic Cross Sections.

According to the Site Geologic Map, there are three geologic cross sections, A-A', B-B' and C-C'. A revised Section A-A' is not included in Reference 8 even though it crosses a large landslide that was not recognized by RGH when section A-A' was presented in the original site report by RGH. Where is the updated section A-A'?

Also, as stated above, no geologic structure at depth is shown on cross sections B-B' and C-C' and the basal slip surfaces of landslides are shown as rows of question marks. Therefore these geologic cross sections would be of no value in performing a stability analysis of the site as required by CDMG Special Publication 117.

3. Trench and boring logs

The trench and boring logs generally describe highly disturbed materials. Whether this pulverized texture is due to landsliding or tectonic forces or both is not explained. Even if the pulverized texture is of tectonic origin, it has probably greatly weakened the affected materials, reducing their factors of safety against gross and surficial landsliding. The omission of a stability analysis is described in a subsequent section of this review report.

Highly disturbed materials are identified in some of the logs as landslide debris and in other logs identically described materials are not identified as landslide debris. The reasons for these different identifications are not discussed. Some of the omissions and contradictions in the trench and boring logs are presented below. This is not
intended as an exhaustive listing, but rather as examples of generally deficient and contradictory data.

**TP-1.** Bedrock is described as “Very thinly bedded” but bedding orientations are not documented in the log nor plotted on the Site Geologic Map. This is a critical omission because bedding planes are potential slip surfaces.

**TP-3.** Bedrock is described as “Foliated” but foliation orientations are not documented in the log nor plotted on the Site Geologic Map. This is a critical omission because foliation planes are potential slip surfaces.

**TP-4.** The log describes a “Discontinuous, undulating, planar feature at 14 feet: N14W / 24NE” What is this “feature”? Foliation? Slip surface? Fault?

**Core boring 1.** Orientations of geologic structure mentioned in the log (e.g. “Shears” at 29.0’) are not measured nor adequately described in the log nor plotted on the Site Geologic Map. Are these “Shears” of tectonic or landslide origin? Are their orientations favorable or adverse for geologic stability? Are their orientations even known?

**Core boring 2.** Orientations of geologic structure mentioned in the log (e.g. “Lenses of shale”) are not measured nor adequately described in the log nor plotted on the Site Geologic Map. This is a critical omission because shale is a thinly bedded sedimentary rock in which the bedding surfaces are potential slip (i.e. landslide) surfaces where oriented towards natural and graded slopes.

**Core boring 5.** The log describes “Closely to extremely closely spaced fractures”, however the orientation(s) and origin(s) of these fractures are not explained. Are these “Fractures” of tectonic or landslide origin? Is there a dominant orientation or is the orientation chaotic?

The log describes “Lenses of sandstone”. The orientation(s) of these lenses are not described. What are the orientations? Are they favorable or adverse for geologic stability?

**Contradictory identifications of similarly logged materials.** The logs of TP-12 through TP-15 describe “Sheared shattered shale” and “sheared shale” with “extremely closely spaced fractures”, “very closely to extremely closely spaced fractures” and identify these materials as landslide debris.

Logs of core borings 2 through 5 describe the same materials as logs of TP-12 through TP-15, however these materials are identified as Franciscan Complex, not landslide debris. **Which is the correct identification, Franciscan Complex or landslide debris?**
4. Stability Analysis.

According to page 3 of Reference 8, the purpose of the investigative work by RGH is to "...evaluate the geologic hazards at the winery site and to comment on the geotechnical feasibility of the project...". Throughout my professional career, that spans approximately 39 1/2 years, "Geotechnical feasibility" has always meant demonstrating that the project site is geologically stable. Geologic stability is quantified by performing a stability analysis.

Demonstrating adequate factors of safety against landsliding (ie stability analysis) is essential in guaranteeing that the site will be safe from geologic hazards and that the proposed grading and change in use will not adversely affect adjoining properties. This standard of professional practice is described in detail in *Guidelines For Evaluating And Mitigating Seismic Hazards In California*, Chapter 5, *Analysis And Mitigation Of Earthquake-Induced Landslide Hazards*, and Chapter 7, *Guidelines For Reviewing Site Investigation Reports*, California Division of Mines and Geology Special Publication 117, adopted March 13, 1997.

Reference 8 does not even come close to meeting this standard because, among other reasons, it contains no demonstration of favorable geologic structure and no stability analysis. In the absence of this essential information, project geotechnical feasibility is simply unknown.

5. Summary of RGH report (Reference 8)

In summary, the RGH report fails to do what reports of this type are supposed to do based upon the statewide standards of care - demonstrate the safety and stability of the site for the intended use. Because the site is surrounded by landslides, if not actually underlain by landslide debris and because the RGH geotechnical investigation (Reference 8) lacks critically important data and analysis, reactivation and/or enlargement of any one of these landslides as a result of project development has the potential to adversely affect the project site. Until sufficient geotechnical investigation, including stability analysis, is performed to assess these hazards and present recommendations for mitigation, if indicated, geotechnical feasibility of the proposed wine factory project has not been demonstrated.

It is fair to say that based on what is known from published regional geologic, landslide and debris flow data and from a prior site investigation by The Geoservices Group, potential geologic hazards affect the site. The potential consequences of geologic instability affecting the proposed project include property damage and environmental damage. It cannot be assumed that all geologic problems can be mitigated, no matter how severe. In order to demonstrate the geologic feasibility of the proposed project, the geotechnical consultant must adequately investigate the project site and all ascending and descending slopes that could affect the proposed project. If adequate
factors of safety against surficial and deep seated landsliding and debris flows within the project site and adjacent ascending slopes cannot be demonstrated, the feasibility of mitigations must then be demonstrated. If mitigation of the geologic hazards is not feasible, the project is not feasible.

VIII. CONCLUSIONS

The RGH report (Reference 8) provided for my review is, in my professional opinion, insufficient to demonstrate that site conditions are favorable for geologic stability or that it is feasible to mitigate the potential geologic hazards affecting the proposed project. In order to protect the public health and safety and the environment, the necessary geologic and geotechnical engineering investigations of this proposed project must be completed prior to any project design and public review. A wealth of information exists to define the scope of these investigations based on the statewide standards of care required by law.

Assumptions and/or deferral until “later” of addressing geologic stability issues is unacceptable and “puts the cart before the horse”.

Some geologic hazards simply cannot be mitigated. Examples are sites where the hazard originates off site and the off site property owner(s) will not allow access for geotechnical investigation nor corrective grading, such as debris basin or buttress fill construction. Another example is mitigations that would entail destruction of habitat or view shed and would be prohibited based upon environmental concerns. The close proximity of a creek and steep slopes are real potential limiting factors. The existence of a miraculous mitigation, to be determined at some future date, cannot be assumed. Furthermore, “Deep pockets” cannot solve all geologic problems. As stated above, under no circumstances are geologic problems whose mitigation may be precluded by property boundary, access and/or setback issues considered “minor”, and if mitigation of the geologic hazards is not feasible, the project is not feasible.

The Kleinfelder review (Reference 9) of the RGH report (Reference 8) fails to invoke the statewide standards of care for the peer review of geologic reports in the State of California. Chapter 7 of Guidelines For Evaluating And Mitigating Seismic Hazards In California California Division of Mines and Geology Special Publication 117, adopted March 13, 1997 (Reference 6) states “A report that is incomplete or poorly written should be not approved. The report should demonstrate (emphasis added) that the project complies with applicable regulations, codes, and ordinances or local functional equivalents, in order to be approved”. “Functional equivalent” means meeting the requirements of the Geologist and Geophysicist Act, the California Mining and Geology Board, the California Board for Geologists and Geophysicists and the California Geological Survey (formerly called the California Division of Mines and Geology).
It appears that, rather than being guided by Reference 6, Kleinfelder is applying "Community" standards in judging the RGH report (Reference 8). This is an inappropriate criterion. In fact, Section 3065 (a) 2 of the Geologist and Geologist Act states:

3065. Professional Standards. To protect and safeguard the health, safety and welfare of the public, every person who holds a registration issued by the board shall comply with all applicable laws, codes, and regulations and shall comply with professional standards in this section. A violation of any of the following professional standards in the practice of geology or geophysics constitutes a ground for disciplinary action:

(a) Competence:
(2) When practicing geology or geophysics, a registrant shall act with competence and reasonable care and shall apply the technical knowledge and skill which is ordinarily applied by registrants in good standing, practicing in this state under similar circumstances and conditions (emphasis added).

"Similar circumstances and conditions" means similar geologic circumstances and conditions, no matter where in the State of California the project is located. Statewide standards apply, not community standards.

It is also important to bear in mind, while considering the information in this review report, that RGH has previously been issued a written warning by the Board for Geologists and Geophysicists regarding work on this site.

I trust that the forgoing information fulfills your requirements at this time. If the project proponents provide geotechnical information in the future, it should be forwarded to this office for review.

The opportunity to be of professional service is sincerely appreciated. If you have any questions, please do not hesitate to call.

Very truly yours,

Raymond Waldbaum
Registered Geologist 3142
Certified Engineering Geologist 923
REFERENCES

1. Geology For Planning In Sonoma County, California Division Of Mines And Geology Special Report 120, 1980.


3. Aerial Photographs

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6. Guidelines For Evaluating And Mitigating Seismic Hazards In California, Chapter 5, Analysis And Mitigation Of Earthquake-Induced Landslide Hazards, and Chapter 7, Guidelines For Reviewing Site Investigation Reports, California Division of Mines and Geology Special Publication 117, adopted March 13, 1997


10. California State Mining And Geology Board General Guidelines For Reviewing Geological Reports.