



Roy Pyle  
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500 North Court Street  
Martinez, CA 94533

March 24, 2017

**Subject: Engineering Geology and Seismology Review for  
Los Medanos College – Campus Safety Center  
2700 East Leland Road, Pittsburg, CA  
CGS Application No. 01-CGS2710**

Dear Mr. Pyle:

In accordance with your request and transmittal of documents received on January 17, 2017, the California Geological Survey has reviewed the engineering geology and seismology aspects of the consulting report prepared for Los Medanos College in Pittsburg. It is our understanding that this project involves construction of a new campus safety center building. This review was performed in accordance with Title 24, California Code of Regulations, 2016 California Building Code (CBC) and followed CGS Note 48 guidelines. We reviewed the following report:

**Geologic and Seismic Hazards Assessment Report, Proposed Campus Safety Center, Los Medanos College, 2700 East Leland Road, Pittsburg, California:** Kleinfelder, 6700 Koll Center Parkway, Suite 120, Pleasanton, CA 94566; company Project No. 20161832.001A, report dated September 11, 2015, 32 pages, 4 appendices.

**Geotechnical Investigation Report, Campus Safety Center, Los Medanos College, 2700 East Leland Road, Pittsburg, California:** Kleinfelder, 6700 Koll Center Parkway, Suite 120, Pleasanton, CA 94566; company Project No. 20161832.001A, report dated September 8, 2015, 21 pages, 4 appendices.

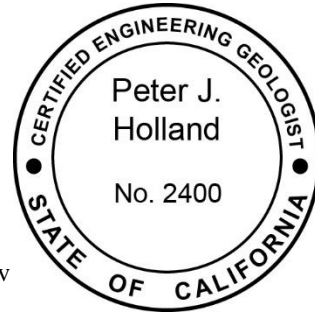
Based on our review, the consultants provide a thorough and well-documented assessment of engineering geology and seismology issues with respect to the proposed improvements. The principal concerns identified by the consultants are the potential for strong ground shaking, expansive soils and radon gas. The consultants recommend design spectral acceleration parameters of  $S_{DS} = 1.109g$  and  $S_{D1} = 0.600g$ , which are considered reasonable. Their evaluation indicates liquefaction, dynamic settlement, and deep-seated slope instability are not design concerns for the project.

In conclusion, *the engineering geology and seismology issues at this site are adequately assessed in the referenced report and no additional information is requested.* If you have any further questions about this review letter, please contact the reviewer at 916-322-9993.

Respectfully submitted,



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Engineering Geologist  
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Concur:



Anne Rosinski  
Senior Engineering Geologist  
PG 7481, CEG 2353



**Enclosures:**

Note 48 Checklist Review Comments

Keyed to: *Note 48 - Checklist for the Review of Engineering Geology and Seismology Reports for California Public Schools, Hospitals, and Essential Services Buildings*

**Copies to:**

Sadek Derrega, *Certified Engineering Geologist*, and Kenneth Sorenson, *Registered Geotechnical Engineer*  
Kleinfelder, 6700 Koll Center Parkway, Suite 120, Pleasanton, CA 94566

Troy Pennington, *Architect*  
LPAS, 2428 Natomas Park Drive, Sacramento, CA 95833

Karen Van Dorn, *Senior Architect*  
Division of State Architect, 1515 Clay Street, Suite 1201, Oakland, CA 94612

## **Note 48 Checklist Review Comments**

In the numbered paragraphs below, this review is keyed to the paragraph numbers of California Geological Survey Note 48 (October, 2013 edition), *Checklist for the Review of Engineering Geology and Seismology Reports for California Public Schools, Hospitals, and Essential Services Buildings*.

### **Project Location**

1. Site Location Map, Street Address, County Name: Adequately addressed.
2. Plot Plan with Exploration Data with Building Footprint: Adequately addressed.
3. Site Coordinates: Adequately addressed. Latitude and Longitude provided in report:  
38.007198°N, 121.859957°W

### **Engineering Geology/Site Characterization**

4. Regional Geology and Regional Fault Maps: Adequately addressed.
5. Geologic Map of Site: Adequately addressed.
6. Subsurface Geology: Adequately addressed. The consultants report the campus is underlain by Pleistocene alluvial fan deposits.
7. Geologic Cross Sections: Adequately addressed.
8. Active Faulting & Coseismic Deformation Across Site: Adequately addressed. The consultants report the site is not located within an Alquist-Priolo Earthquake Fault Zone.
9. Geologic Hazard Zones (Liquefaction & Landslides): Not reported.
10. Geotechnical Testing of Representative Samples: Adequately addressed.
11. Geological Consideration of Grading Plans and Foundation Plans: Adequately addressed.

### **Seismology & Calculation of Earthquake Ground Motion**

12. Evaluation of Historic Seismicity: Adequately addressed. The consultants provide a summary of historical seismicity in the region.
13. Classify the Geologic Subgrade (Site Class): Adequately addressed. The consultants classify the site soil profile as Site Class D, Stiff Soil.
14. General Procedure Seismic Parameters: Adequately addressed. The consultants report the following parameters derived from a map-based analysis:  
 $S_s = 1.663$  and  $S_1 = 0.600$   
 $S_{DS} = 1.109$  and  $S_{D1} = 0.600$
15. Seismic Design Category: Not applicable.  $S_1 < 0.75$

16. Site-Specific Ground Motion Analysis: Not applicable.
17. Deaggregated Seismic Source Parameters: Not applicable.
18. Time-Histories of Earthquake Ground Motion: Not applicable.

### **Liquefaction/Seismic Settlement Analysis**

19. Geologic Setting for Occurrence of Seismically Induced Liquefaction: Adequately addressed. The consultants report “stiff to hard clayey/silty soils” with interbedded medium dense sand lenses and groundwater deeper than 50 feet. They conclude the potential for liquefaction is low. The data presented appear to support this conclusion.
20. Seismic Settlement Calculations: Not applicable.
21. Other Liquefaction Effects: Not applicable.
22. Mitigation Options for Liquefaction: Not applicable.

### **Slope Stability Analysis**

23. Geologic Setting for Occurrence of Landslides: Adequately addressed. The consultants report the site is essentially flat and the potential for landslides is considered nil. This seems reasonable based on the information provided.
24. Determination of Static and Dynamic Strength Parameters: Not applicable.
25. Determination of Pseudo-Static Coefficient (K<sub>eq</sub>): Not applicable.
26. Identify Critical Slip Surfaces for Static and Dynamic Analyses: Not applicable.
27. Dynamic Site Conditions: Not applicable.
28. Mitigation Options/Other Slope Failure: Not applicable.

### **Other Geologic Hazards or Adverse Site Conditions**

29. Expansive Soils: Adequately addressed. The consultants report moderately to highly expansive soils.
30. Corrosive/Reactive Geochemistry of the Geologic Subgrade: Adequately addressed. The consultants report the presence of “corrosive” soil and provide mitigation recommendations.
31. Conditional Geologic Assessment: Selected geologic hazards addressed by the consultant are listed below:
  - E. Radon-222 gas: Adequately addressed. The consultants report the California Department of Public Health database indicates some test results in this zip code are greater than 4 picocuries per liter and advise considerations should be given to consult a radon specialist.

### **Report Documentation**

32. Geology, Seismology, and Geotechnical References: Adequately addressed.
33. Certified Engineering Geologist: Adequately addressed.  
Sadek Derrega, Certified Engineering Geologist #2175

34. Registered Geotechnical Engineer: Adequately addressed.  
Kenneth Sorensen, Registered Geotechnical Engineer #2520