

# RENE A. PEREZ, P.G.,CHG

Hydrogeologist

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## VITAE

### EDUCATION

M.S. (2009), Geology, California State University, Fullerton

*Hydrostratigraphy of the Alto Deep Well: Implications for Sustainable Groundwater Recharge Into the Distal Victorville Fan Sediments, Southwestern Mojave Desert, California.*

B.S. (2002), Geology, California State University, Fullerton

*Genesis of the Quaternary Terraces of the Eastern Sierra El Mayor, Northern Baja California, Mexico*

Minor in Chemistry (2002), California State University, Fullerton

### PROFESSIONAL SUMMARY

Mr. Rene Perez oversees and leads our data management and data visualization section. Mr. Perez has over fifteen years of experience specializing in geologic, groundwater, contaminate transport, hydrometeorologic, aerial photo interpretation and hydrogeologic investigations/modeling including three-dimensional visualization of complex data. These efforts are used in our consulting and litigation services to better serve the clients understanding of the nature of a problem and the methods of solving the problems. Our use of technology for communication and information is critical to providing clear and meaningful evaluations of data. Mr. Perez is also a licensed geologist with a Master's Degree in geology this enables him to create logical links of databases and to pull from them the essential elements into visualization and model independently and interactively with the client and other key team members. He has also been involved in natural hazard assessment and mapping for cities and counties. Mr. Perez has experience in remote sensing and is a certified Unmanned Aerial Vehicle (UAV) Pilot which he employs to obtain high resolution low altitude aerial and thermal infrared photography. The aerial photography is used to produce accurate high resolution topographic maps and 3D photorealistic models. The models offer away for Mr. Perez to help clients visualize complex sites and/or changes in topography due to landslides or flooding.

### CERTIFICATIONS

California Professional Geologist (**PG-8184**)

California Certified Hydrogeologist (**CHG-997**)

US Department of Transportation FAA Remote Pilot Certificate (**3908785**)

### PROFESSIONAL PROFILE

**2013 – Present**, Senior Consultant/Geologist to *Hromadka & Associates*.

**2010 – 2013**, Consultant/Geologist to *Hromadka & Associates*.

**2009 – 2014**, Consultant/Project Geologist to *Environmental Enigneering & Contracting*.

**1998 - 2005 and 2010 to Present**, Geology and GIS Consulting, Riverside, California for *Applied Geokinetics, Inc., Advance Earth Sciences, Cato Geosciences, Carlin Environmental, Chang Consultants, Evergreen Arborist Consultants, and Summit Environmental Contractors*.

**2003 - 2008**, Consultant/Geologist with *Hromadka & Associates*.

**2002 - 2006**, Research Assistant/Project Manager with the *Department of Geological Sciences, California State University, Fullerton, California*

**1999 - 2006**, Staff Consultant / GIS Specialist with *Earth Consultants International*.

## **SELECTED CONSULTING, RESEARCH, AND EMPLOYMENT EXPERIENCE**

**2013 - Present, Senior Consultant/Geologist to Hromadka & Associates; 2010 to Present, Geology and GIS Consulting, Riverside, California for Applied Geokinetics, Inc., Advance Earth Sciences, Cato Geosciences, Carlin Environmental, Chang Consultants, Earth Forensics, Inc., Evergreen Arborist Consultants, and Summit Environmental Contractors.**

GIS computer and physical modeling, expert report/deposition review and writing along with project management and field-site inspections for the company. Projects include contamination transport, groundwater, sediment transport, hydrometeorologic and hydrologic studies in relation to landslide/mudslides and flooding.

### **2016**

- Los Angeles, CA. Litigation Support. Analysis of Hydrogeologic conditions, VOC contamination.
- Santa Barbara, CA. Litigation Support. Analysis of Hydrogeologic conditions, sewer and utility transport of VOC contamination.

### **2015**

- Norwalk, CA. Monitoring of Remediation Site with UAV. Developed 3D Photorealistic Models and Excavation/Stockpile Volumes.
- Orange County, CA. Litigation Support. Groundwater Contamination.
- Malibu, CA. Litigation Support. Groundwater issues associated with landslide.
- Los Angeles, County, CA. Litigation Support. Analysis of well abandonment Issues.

### **2014**

- Missouri River, IA, NE, SD, ND, KS and MO. Litigation Support. Flood Assessment of Flooding along the Lower Missouri River for the 2007, 2008, 2010, 2011, 2013, and 2014 Floods. Aerial Photo Review, Sedimentation Analysis, and Flood Mapping.
- Carson, CA. Litigation Support, Analysis of Hydrogeologic site conditions, preparation 3D model of Low Permeability Zone.
- La Quinta, CA. Litigation Support, RADAR analysis
- Los Angeles, County, CA. Analysis of regional hydrogeology issues.
- Rancho Palos Verdes, CA. Analysis of historical aerial photos to develop landslide movement rates.
- Pacoima, CA. Litigation Support. Analysis of Hydrogeology of potential PRPs sites.
- Thornton, CO. Preparation of 3D model showing grading testing for residential tract.
- Loma Linda, CA. Hydrometeorologic Analysis of December 2010 storm event.
- Malibu, CA. Preparation of 3D model of Low Permeability Zone below downtown Malibu.

### **2013**

- Highland, CA. Litigation Support, Mapping of hundreds of surficial slope failures
- El Centro, CA. Flood assessment due to 2012 storm event at Kuhn Hay.
- Missouri River, IA, NE, and MI. Flood Assessment of Damage to BNSF railroad from the 2011 Floods.
- Orange County, CA. Litigation Support South Basin groundwater contamination.
- Malibu, CA. 3-D model of hydrogeology and visualization of causation factors of landslide
- Escondido, CA. Hydrometeorologic Analysis of December 2010 storm event.

## 2012

- Catalina Island, CA. Site assessment of soil contamination at a former Manufactured Gas Plant (MGP). Analysis of Aerial photographs and historical photographs in order to identify former site activities and use.
- Yuma, AZ. (DOJ) Hydrometeorological Investigation of levee failure at JV Farms, Arizona
- Nashville, TN. Flood Assessment of flooded sites along Cumberland River as a result of the May 2010 flood.
- Kentucky. Flood Assessment of flooded sites as a result of the May 2010 flood.
- Ohio. Flood Assessment of flooded sites as a result of the May 2010 flood.
- Mississippi River, TN and MS. Assessment of flooded sites as a result of the 2011 floods.
- Upland, CA. Historical Aerial Photo Analysis and analysis of detention basin volumes at the Colonies development.
- Torrance, CA. Analysis of groundwater seepage in a commercial complex.
- Duncan, OK. Analysis of fate and transport of contaminants of concern, geology and hydrogeology.
- North Central TX. Evaluated possible causation of potable water well failures.
- San Francisco, CA. Evaluation of contaminated soils for CalTrans.
- Fennville, MI. Analysis of fate and transport of contaminants of concern, geology and hydrogeology.
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## 2011

- Pomona, CA. Analysis of hydrogeology, contaminant sources (perchlorate), and historical fertilizer use.
- Oakland, CA. Hydrometeorological investigation of McKillop Landslide. Analysis of the historic progression of landslide activity.
- San Diego, CA. Assessment of flood storage upstream of Mexico Hwy at three canyons that flow into the Tijuana Estuary. Analysis of Sediment Transport down gradient of culverts.
- Saugus, CA. Hydrometeorological Investigation of Landslides/debris blow.
- Sacramento, CA. Investigation of VOC groundwater contamination in vicinity of former Industrial Dry Cleaner.
- Santa Ana, CA. Analysis of potential contaminated sources and remediation.
- Baldwin Park, CA. Soil and groundwater sampling for CalTrans freeway expansion in association with FlatIron Corp. Includes both environmental and geotechnical sampling.
- Malibu, CA. Evaluation groundwater conditions of a landslide area in association with geotechnical mitigation. Included overseeing groundwater monitoring, drilling of monitoring wells and meteorological assessment.
- Laguna Beach, CA. Hired to photo-document cave collapse.
- Baldwin Park, CA. Hired to evaluate the soil contamination of several stockpiles in association with FlatIron Corp. road construction.
- San Jose, CA. Aid in development of construction proposal for FlatIron Corp, analysis of contaminated soils.
- Riverside County, CA. Review of ADL reports for SEMA Construction Corp.
- Fullerton, CA. Analysis of contamination source and remedial alternatives conducted at former aerospace site.

## 2010

- Carson, CA. Aerial photo analysis of historic oil tank farm, analysis of location of historic tank features, and soil contamination investigation.

- Merced, CA. Analysis of Chromium VI contamination in residential neighborhood emanation from form wood treatment plant.
- Champaign, IL. Review and analysis of Manufactured Gas Plant (MGP) soil and groundwater contamination and remediation. Historical research of MGP plant's waste practices.
- Oakland, CA. Investigation of unidentified contaminants at industrial building that was refurbished into residential lofts.
- Big Bear, CA. Evaluation of Hydrometeorological condition that caused a landslide/debris flow in residential neighborhood.
- Chicago, IL. Hydrometeorological investigation of flooding throughout Chicago, Illinois.
- Menifee, CA. Preparation of Hazard Maps for the Safety Element of the General Plan.
- Rancho Palos Verdes, CA. Third Party Review of Geology and Hydrology of Proposed Landslide Mitigation of National Golf Club

#### **2005**

- Anaheim Hills, CA. Soil water transport and ET studies for several hundred residences. Water balance studies.
- Irvine, CA. Sediment transport in San Diego Creek in 2-mile reach using flexible block lining.
- Yorba Linda, CA. Analysis of sediment transport from large grading project and nursery debris production at school site.
- Yorba Linda, CA. Analysis of sediment transport from large grading project in downstream residential flooding.
- Castaic Lake, CA. Soil water transport and hydrologic balance analysis of residential tract.

#### **2004**

- San Bernardino County, CA. Water Quality holding time criteria development, 85-percentile of average storm analysis.
- Santa Clarita, CA. Groundwater and soil water analysis in Los Angeles, California.
- Fullerton, CA. Physical model of storm drain flow into retention basin.
- San Jacinto Mountain, CA. Geologic Feasibility Assessment for the Proposed National Underground Science Laboratory in San Jacinto Mountain.

#### **2003**

- Torrance, CA. Sediment transport in Compton Creek downstream of Montrose Plant. Transport analysis of sediment in major/minor events.
- San Clemente, CA. Analysis of landslide development.
- Henderson, NV. Analysis of soil water excess, Highland Glen, Henderson, Nevada. Perchlorate sampling and analysis.

#### **2001**

- San Elijo Lagoon Conservancy; Sediment Quality and Depositional Environment of San Elijo Lagoon.
- Los Angeles Regional Water Quality Control Board; The Santa Clara River Watershed; GPS and Observational Report on the Santa Clara River.

#### **2000**

- Los Angeles Regional Water Quality Control Board. The San Gabriel River Watershed; GPS and Observational Report on the San Gabriel River from the Whittier Narrows region to Seal Beach.

#### **1999**

- Norco, CA. Methane sampling in residential homes built above a historic dairy farm.

**2003 - 2009, Project Geologist / GIS Manager with *Hromadka & Associates*.**

GIS computer and physical modeling, expert report/deposition review and writing along with managing multiple cases and field-site inspections for the company. Projects include contamination transport, groundwater, sediment transport, hydrometeorologic and hydrologic studies in relation to landslide/mudslides and flooding.

## **2009**

- La Jolla, CA. Hydrometeorological effects on the Mtn. Soledad Landslide and analysis of maintenance and ruptures of city water system.
- Dana Point, CA. Hydrometeorological effects on landslide and analysis of effects of leaky water main.
- Pahrump, NV. Investigation of expansive soils, fissures, groundwater withdrawal/recharge, and possible septic system issues in relation to damaged foundation/homes.
- Victorville, CA. Investigation of a damaged BNSF bridge crossing due to August 2003 storm.
- La Jolla, CA. Investigation of the Soledad Mountain Landslide. Analysis of high pressure leaking water main, rainfall plus irrigation.
- Newbury Park, CA. Investigation of wetlands due to discharge of remediated groundwater into Caltrans culvert.
- La Jolla, CA. Landslides in La Jolla, California. Water line breaks, dry weather (Colony Hills).
- Oceanside, CA. Soil-water budget, hydrometeorological analysis of landslides in Oceanside, California.
- San Juan Capistrano, CA. Hydrometeorological Investigation of landslide in San Juan Capistrano, California (Washington Holdings).
- Chicago, IL. Investigation of flooding throughout Chicago area. Hydrometeorological analysis of storm and previous flooding events.
- Kauai, HI. Ka Loko Dam failure. Hydrometeorological analysis of storm event.
- San Francisco, CA. Investigation of flooding at numerous sites due to large intense storm that overwhelmed combined storm-sewer system. Hydrometeorological Investigation and historical topographic analysis of flooding sites.
- Mission Viejo, CA. Flooding at Saddleback College, California.
- Rancho Palos Verdes, CA. Hydrometeorological investigation of flooding.
- Mission Viejo, CA. Hydrometeorological Investigation and Groundwater of settlement issues at a residential home.

## **2008**

- Pomona, CA. Hydrometeorological effects on landslides.
- La Conchita CA. Hydrometeorological effects on La Conchita landslide.
- Rialto, CA. Groundwater perchlorate and VOC contamination.
- Lake Elsinore, CA. Investigation of automobile accident adjacent to land grading near Lake Elsinore.
- Rancho Palos Verdes, CA. Water budget analysis for Landslide.
- Malibu, CA. Hydrogeological investigation of 2005 landslide.
- Rancho Cucamonga, CA. 2008 Sinkhole near storm drain CMP.
- Topanga, CA. Hydrometeorological Investigation of Landslide in a residential area.
- El Cajon, CA. Hydrometeorological Investigation of Landslide and groundwater.
- Cleveland, OH. Investigation of Flooding in Cleveland, Ohio. Drainage/sump system issues.
- Oceanside, CA. Analysis of floods in Oceanside, California for 2004 season.
- Fontana, CA. Hydrometeorological Investigation of Flooding at San Sevaine Channel.

## **2007**

- Glendale, CA. Hydrometeorological effects on landslide.
- Victorville, CA. Hydrometeorological Investigation for August 2003 Flooding at AFG plant. Analysis of historical aerials and topographic maps.
- San Diego, CA. Sediment and PCB contamination transport in pipelines draining to Convair Lagoon in San Diego Bay. Tidal influence. Back wave/run-up effects.
- Yorba Linda, CA. Hydrometeorological Investigation and analysis of drainage diversions due to grading at newly constructed residential development in relation to mudflows at Mabel Paine Elementary School. Constructed 3D physical models of grading changes.

#### **2006**

- Sheep Creek, CA. Reservoir construction and maintenance history, sedimentation and hydrometeorological investigation of earthen dam failure.
- San Diego, CA. Sediment transport of PCBs, VOCs, in Switzer Creek, California.
- San Juan Capistrano, CA. Sediment transport analysis of natural watercourse.
- Anaheim Hills, CA. High groundwater. Preferential pathways. TDS. ET analysis, (Alden Shea).
- Ventura, CA. Evaluation of new water reservoir and leakage (SSC Construction).
- San Diego, CA. Continuous simulation of sediment transport in canyon area of Alta La Jolla Road.
- San Diego, CA. Analysis of water content and tree failure leading to death.
- Beverly Hills, CA. Analyses of possible storm drain pipe leakage and elevated groundwater.
- Henderson, NV. Analysis of perched groundwater in Highland Glen area. Water quality analysis.
- San Francisco, CA. Severe rainfall analysis in four events, flooding, analysis of combined storm-sewer system.

#### **2002 - 2006, Research Assistant/Project Manager with *Department of Geological Sciences, California State University, Fullerton, California***

Project Manager for Mojave Water Agency Research Grant, managed fieldwork and data input activities and performed scientific research. Projects include groundwater flow and recharge studies, water quality surveys, stream gaging, surveying groundwater monitoring wells, and well boring log database.

#### **2004-2006**

- Evaluation and Mapping – Mojave Desert Region (Alto, Este, Oeste and Centro Hydrologic Sub-areas). GPS surveyed, down-hole video-camera, and down-hole geophysics of Agencies key wells throughout the basin. Conducted stream gage measurements during dam releases.

#### **2003**

- Water Resource Research within the Mojave Desert. Part of this project is to develop a GIS/Database inventory of all wells, groundwater elevations and hydrogeochemistry of each basin within the boundaries of MWA. Specific portions of the grant have been set aside to collect and analyze data from a 2,500 foot deep multiport monitoring well in the vicinity of Oro Grande Wash. Installed Differential GPS Survey base station.

#### **2002**

- Groundwater Investigations to look at potential recharge areas throughout the Southern Mojave Desert Area. Establishment of digital well log inventory and bibliographic search of all documents pertaining to MWA water agency. CSUF was also in charged with developing a key well program for Lucerne Valley based on groundwater basin recharge.

#### **1999 – 2006, Staff Geologist and GIS Analyst with *Earth Consultants International, Inc.***

Projects include GIS hazard mapping, FEMA HAZUS earthquake scenario, fault trenching and fault mapping.

**2003**

- Hemet, CA. Fault trenching at residential development.

**2002**

- San Bernardino, CA. San Bernardino Valley Community College fault trenching.

**2001**

- Honduras, Central America. Fault hazard assessment for a Proposed LNG Terminal Facility.
- Tejon Ranch, CA. Geologic Hazard Mapping and Mitigation Plan. Fault trenching, Percolation testing, and GIS mapping of faults.
- El Paso Pipeline Seismic Hazard Evaluation and Mitigation Plan, Liquefaction-Induced Lateral Spreading and Landsliding along the California Section of the El Paso Pipeline between the California-Arizona border and Wheeler Ridge.

**2000**

- Los Angeles, CA. Playa Vista Corporation – Groundwater and Methane Migration Investigation on Playa Vista Property.

**1999**

- Brea, CA. Feasibility investigation to review mitigation options for active crude oil seeps (tar) and methane generation.

**1999-2006**

Safety Element of the General Plan for the following cities and counties in California.

- County of Riverside
- City of Ontario
- City of Fontana
- City of Newport Beach
- City of Torrance
- City of Pasadena
- City of Glendale
- City of Rancho Cucamonga
- City of Torrance
- City of Desert Hot Springs
- City of Palm Springs
- City of La Quinta
- City of Palm Desert
- City of Beaumont
- City of Banning
- Cathedral City
- City of Rancho Mirage
- City of Brea
- City of Rancho Santa Margarita
- City of Moorpark

**TEACHING EXPERIENCE**

**2002 – 2003**

- GEOL 101L. Graduate Student Instructor responsible for Geology Lab Class California State University, Fullerton Department of Geological Sciences.

**SHORT COURSES**

**2016**

- NGWA. geoDRONEology: drones for geoscience mapping. April 24.
- SAGEEP. geoDRONEology: Integrating Drones into the Geoscientific and Engineering Workflow. March 20.

**2001**

- GIS Course for Professors. California State University, Fullerton Department of Geological Sciences

**AWARDS, HONORS, SPECIAL QUALIFICATIONS**

- 1998-1999 American Geological Institute Minority Participation Program Scholarship.
- 1999-2000 American Geological Institute Minority Participation Program Scholarship.
- 2000-2001 American Geological Institute Minority Participation Program Scholarship.
- 1999-2000 ARCO Foundation/Hispanic Scholarship
- 2000-2001 ARCO Foundation/Hispanic Scholarship
- 1999 Southern California United Food & Commercial Works Unions and Food Employers Scholarship.
- 2001 Outstanding Service Award. California State University Fullerton, Department of Geological Sciences.

## **PROFESSIONAL PUBLICATIONS, ABSTRACTS, PRESENTATIONS and POSTERS**

### **Peer-Reviewed Publications (Published, Accepted, Submitted)**

1. Espinosa, B., Hromadka II, T.V., and **Perez, R., 2015**. Comparison of Radar Data Versus Rainfall Data. MethodsX.
2. Hromadka II, T.V., Phillips, M., Rao, P., Espinosa, B., **Perez, R.**, and Barton, M., **2013**. What Rainfall Return Frequency? Atmospheric and Climate Sciences, Volume 3, p. 385-396.
3. Armstrong, P.A., **Perez, R.A.**, Owen, L., A., and Finkel, R.C., **2010**. Timing and Controls on Late Quaternary Landscape development along the eastern Sierra El Mayor Range Front in Northern Baja California, Mexico, Quaternary International, Volume 114:3, p. 415-430.

### **Abstracts, Presentations and Posters**

1. **Perez, R.**, Laton, W.R., Hugh, C., and Cruikshank, M., **2016**. UAV Imagery and Mapping; What Are the Capabilities and Limitations? Environmental and Engineering Geophysical Society SAGEEP 2016.
2. **Perez, R.**, **2016**. Low Altitude Photography utilizing UAVS Geological and Hydrologic Applications. South Coast Geological Society.
3. **Perez, R.** **2016**. Application and Use of Unmanned Aerial Vehicles (UAV) in Geologic and Engineering Endeavors. Inland Geological Society.
4. **Perez, R.** **2016**. Photogrammetry with UAVs. California State University Fullerton Geological Sciences Department
5. **Perez, R.**, Foster, J., and Laton, W.R., **2005**. *The Redefining of a Groundwater Basin, Alto Sub Basin, Southwestern Mojave Desert, California*. NGWA 2005 Groundwater Summit. (abstract/poster)
6. **Perez, R.**, Foster, J., and Laton, W.R., **2004**. *Just how deep is it?; Alto Deep Well and its impacts to Alto Groundwater Sub-Basin Geology*. Groundwater Resources Association of California Annual Meeting. (abstract/poster)
7. Armstrong, P., Owen, L. A., Shinnfield, A., Finkel, R., and **Perez, R. A.**, **2003**. Terrace Age and Development on the Eastern Sierra El Mayor, Northern Baja. Combined Influence of Tectonics, Sea Level Change, and River Incision (abs). Abstracts with Programs, Geological Society of America, Cordilleran Section, 2003 Annual Meeting, p. 20.
8. **Perez, R. A.** and Armstrong, P., **2003**. Geomorphology of Terraces Developed on the Eastern Flank of the Sierra El Mayor, Northern Baja California, Mexico (abs). Abstracts with Programs, Geological Society of America, Cordilleran Section, 2003 Annual Meeting, p. 16. (abstract/poster)
9. Laton, W.R., **Perez, R.**, and Figueroa, O., **2000**. *Natural Hazard Mapping – A GIS Approach*. CSUF Geology Department.

### **Guidebooks, Full Paper Proceedings and Articles**

1. Laton, W.R., **Perez, R.**, and Bausch, D., **2000**. *New Hazard Maps for Riverside County, California*. San Diego Association of Geologists annual field trip guidebook.

### **Public Reports**

1. Hromadka II, T.V., **Perez, R. A.**, and Laton, W.R., **2006**, Hydrologic Data Report, Storm of October 17-21, 2004, County of Orange, California, Hydrology Division
2. Hromadka II, T.V., and **Perez, R. A.**, **2006**, Hydrologic Data Report, Storm of January 7-12, 2005, County of Orange, California, Hydrology Division

### **AFFILIATIONS**

- Association for Unmanned Vehicle Systems International (AUVSI)
- Groundwater Resources Association of California (GRA)
- National Ground Water Association (NGWA)