

NAME PHILLIP R. GOETZE

TITLE Hydrogeologist/Environmental Scientist, Glorieta Geoscience Inc.

EXPERIENCE SUMMARY 30 Years Experience encompassing the following areas:

- Site investigation for air, soil and water characterization
- Drilling and remedial action supervision
- Field and geological mapping
- Ground water sampling and fate transport modeling
- Phase I ESA and environmental audits

PROFESSIONAL CERTIFICATIONS Alliance of Hazardous Materials Professionals, Chemical and Hazardous Material Manager No. 11,401
American Association of Petroleum Geologists, Member No. 51,310
American Institute of Professional Geologists; Certified Professional Geologist No. 6657
Asbestos Inspector, State of Louisiana, No. 101309-08
DOE Radiation Worker II Certification
State of Alaska, Licensed Professional Geologist No. 514
State of Arizona, Registered Professional Geologist No. 40,812
State of Nevada, Certified Environmental Manager, No. 2218
State of Texas, Licensed Professional Geologist No. 2278
New Mexico Licensed Contractor No. 253091, GS-29
40Hr and 8Hr Refresher Hazardous Waste Operations and Emergency Response (including Supervisor training)

SELECTED PROJECT EXPERIENCE

Canyons Sediment Investigation Program, Los Alamos National Laboratory, Los Alamos, New Mexico: Field team member/Alternate Field Team Leader/ GGI Safety Manager for mapping and sampling geomorphic surfaces in various canyons to characterize potential contamination content. Possible contaminants include polychlorinated biphenyls (PCB), chromium VI, and radionuclide. Additional support provided waste characterization, and in surveying of cross sections using both Trimble GPS and Total Station.

Environmental Restoration Project and Water Stewardship Program, Los Alamos National Laboratory, Los Alamos, New Mexico: Field team leader and project geologist for the deep well drilling program. Supervised rotary drilling and continuous core sampling and installation of multi-screen monitor wells. Assisted in documentation of standard operating procedures and report composition.

Rio Rancho Groundwater Exploration Program, Rio Rancho, New Mexico: Staff hydrogeologist for oversight of deep-water exploratory project for the City of Rio Rancho. The project is a long-term, multiple well exploratory process to characterize water resources for domestic supply to the city. The most recent drilling event concluded in 2008 with the completion of a 3,000-foot exploratory well that was completed as a 2,028-foot production well.

Monitoring Well Replacement, Former SWMUs, Kirtland Air Force Base, Albuquerque, New Mexico: Supervisory hydrogeologist for oversight of installation of multiple wells (400 ft TD) for monitoring closure of solid waste landfill in Tijeras arroyo. Project included well design, well construction, and water sampling following US Army Corps of Engineers Directives.

AST Closure and Site Investigation, Toadlena Community School, New Mexico: Project manger and project geologist for a multi-stage investigation of extensive aboveground storage tank system and 1.2 mile pipe system on the

campus of an active boarding school. Investigation included two stages of subsurface investigation to assess the most current AST locations and historical locations of the older AST system.

Fort Wingate High School PCB Emergency Response, Ft. Wingate, New Mexico: Project scientist and geologist for investigation and abatement of PCB release from ballasts in classrooms and potential soil contamination related to improper storage of PCB-containing equipment in facility yard.

Federal Facilities Audits, Bureau of Indian Affairs, Navajo Region, Arizona and New Mexico: Project geologist and project scientist for informal, third party audits on behalf of the Bureau of Indian Affairs. These audits were performed to comply with a USEPA Consent Agreement/Consent Order, Docket No. RCRA-09-95-0004. The audits included field reviews of SPCC plans, AHERA inspections, waste management plans, Hazard Communication plans, chemical inventories, PPE maintenance, and investigations of new compliance issues.

Soil Vapor Extraction Reclamation Project, Former Cordova Feed and Tack Remedial Site, San Ysidro, New Mexico: Project manager and project geologist for reclamation project to remove soil and ground-water hydrocarbon contamination of former gas station. System has remediated over 20,000 gallons of equivalent hydrocarbons in four years of operation while protecting ground-water wells adjacent to the site.

AST Closure and Site Investigation, Rocky Ridge Boarding School, Rocky Ridge, Arizona: Project manager and project geologist for shallow well drilling program. Supervised rotary drilling and core sampling of AST locations on campus of school. Obtained no further action status for four former AST locations including one location in proximity of the facility water well in the regional aquifer.

Voluntary Restoration Response, Southwest Indian Polytechnic Institute, Albuquerque, New Mexico: Project manager and project geologist for voluntary response to notice of violation for two-year Native American college adjacent to the Rio Grande River. Response included supervision of hazardous waste disposal from a decommissioned chemistry laboratory, investigation and remediation of hydrocarbon releases, limited Phase I assessment of the current facility, and disposal of asbestos-containing materials.

AST Closure and Site Investigation, Chilchenbito Boarding School, Chilchenbito, Arizona: Project manager and project geologist for shallow investigation of abandoned UST system for boiler system at boarding school. Direct-push sampling of several congested locations did not demonstrate any contamination and closure of site.

Site Investigation and Soil Disposal, CHEU, Farmington, New Mexico: Project manager and project geologist for the disposal of petroleum-contaminated soils at a Bureau of Indian Affairs transportation facility south of Farmington. Second sample program initiated at the request of USEPA to confirm previous determination of soil as hazardous waste based on lead content. Second program results demonstrated no elevated levels of lead permitting disposal as regulated waste at landfarm.

Floatable Sampling Program for Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) MS4 Stormwater Study, Albuquerque: Field team leader and project scientist for study to assess impacts of floatable materials on water quality for compliance with the permit. Results presented at USEPA stormwater conference in San Diego in 2005.

Monitoring and Production Well Installations, Tuba City/Rare Metals UMTRA Site, Tuba City, Arizona: Field technical representative with responsibilities for on-site supervision of data acquisition, design, and quality assurance of installation of multiple groundwater wells at a Department of Energy tailings remediation (UMTRA) site near Tuba City, Arizona. Prepared and supervised pump test and aquifer testing for assessment of shallow aquifer to assist in system operation of the treatment facility.

Minimum Site Assessments and Hydrogeologic Investigations, New Mexico Environment Department, Petroleum Storage Tank Bureau, Various Sites in New Mexico: Field team leader and project geologist for numerous site investigations and monitoring well installation programs throughout New Mexico. Supervised hollow-stem auger, air rotary drilling and continuous core sampling at hydrocarbon-release sites identified by the state program.

EDUCATION

B.S. Geology, New Mexico Institute of Mining and Technology, 1977

PROFESSIONAL DEVELOPMENT/ TRAINING

- National Ground Water Association, 'Natural Attenuation for Remediation of Contaminated Sites', short course
- USEPA Lead-based Paint Risk Assessor training

SELECTED PUBLICATIONS

Goetze, P R, 1981, Regional Geologic Map for the Cache Creek-Bear Thrust Environmental Impact Statement, Teton and Sublette Counties, Wyoming USGS Open-File 81-856; scale 1:48,000.