

## Troy Meyer, P.E., P.Eng

# Chief Geotechnical Quality Engineer

#### Education

BS, Civil Engineering, University of Colorado, 1993

## Registrations/Certifications

Professional Engineer: Colorado, Nebraska, Wyoming, Arizona, Utah, Alaska, Texas, Idaho, Nevada

Professional Engineer (Canada): Saskatchewan, British Columbia, Yukon Territory

## **Experience Summary**

Mr. Meyer is a Geotechnical Engineer with over 28 years of experience in project management, field investigations, design, and construction oversight for various mining, civil, geotechnical, environmental, landfill, and airport projects. Uniquely balanced professional with diverse and pragmatic engineering abilities and valuable management, leadership, and interpersonal skills. Extensive experience in civil engineering projects, primarily in geotechnical field investigations, feasibility studies, design, and construction oversight for various mining and heavy civil projects worldwide.

## **Project Experience**

## Mining Projects

#### ZIMAPAN TAILINGS STORAGE FACILITY (TSF) No. 9, ZIMAPAN MINE | MEXICO

Completed a tailings storage facility (TSF) independent technical review of TSF No. 9 and provided recommendations to expand the facility. (Tierra Group, 2023)

#### HEAP LEACH FACILITY (HLF) EXPANSION, CAMINO ROJO | MEXICO

Senior Reviewer for a heap leach facility (HLF) expansion design. (Tierra Group, 2023)

## TAILINGS STEWARDSHIP 2023, CADIA, TELFER, RED CHRIS | CANADA AND AUSTRALIA

Conducted a senior-level review of the Global Industry Standard on Tailings Management (GISTM) compliance assessment and the development of the Operations, Maintenance, and Surveillance (OMS) Manual and Emergency Action Plan (EAP) documents. (Tierra Group, 2023)

#### CRIMEA IN-PIT TSF, LA LIBERTAD | NICARAGUA

Senior Reviewer for Crimea in-pit tailings facility and Libertad TSF expansion design. (Tierra Group, 2023)

## NI 43-101 SUPPORT, MANQUIRI SAN BARTOLOME MINE | BOLIVIA

Provided support for the NI 43-101 report tailings facility review. (Tierra Group, 2023)

#### TSF FEASIBILITY STUDY, ELK CREEK | NEBRASKA

Senior Reviewer for a TSF feasibility study. (Tierra Group, 2023)

#### INDEPENDENT ENGINEERING AUDIT, COPLER MINE | TURKEY

Completed TSF and HLF annual audits, providing an independent, qualified opinion on the state of the facilities, risks associated with the facilities, whether facilities are being managed consistently with sound engineering practices; and whether concepts and design criteria are consistent with industry standards, best practices, current theory, methodologies, and experience. (Tierra Group, 2020 to 2023)

## INDEPENDENT ENGINEERING AUDIT, PINTO VALLEY MINE | ARIZONA

Completed a detailed technical audit of the TSF #3 to provide an independent, qualified opinion on the state of the facilities, risks associated with the facilities, whether facilities are being managed consistently with

sound engineering practices, and whether concepts and design criteria are consistent with industry standards, best practices, current theory, methodologies, and experience. In addition, the project included independent liquefaction triggering evaluation. (Tierra Group, 2022).

## POZO AZUL AND EL BOSQUE TSFS, EL MOCHITO MINE | HONDURAS

Senior Reviewer responsible for the closure engineering of the Pozo Azul and El Bosque TSFs, annual inspections of three tailings embankments and storage facilities, and all geotechnical site issues ranging from slope stability to erosion and surface water management. (Tierra Group, 2020 to 2022).

## TSF SUPPORT, EL LIMÓN MINE | NICARAGUA

Senior Reviewer responsible for the design and geotechnical/civil projects associated with the TSFs, including monitoring and inspections. (Tierra Group, 2020 to 2022)

## TSF Raise Design, Sweetwater Mine | Missouri

Senior Reviewer for two raise designs for a 40+-year-old TSF. Liquefaction analyses were performed and incorporated into the upstream raise design. The project entailed completing a challenging hydrology model, designing an existing spillway raise, and preparing an As-Built Report conforming to Missouri Department of Natural Resources (MDNR) requirements. The second design raise (23 feet tall) included a rockfill buttress, a saddle dam, and a new spillway. Provided construction design support, construction quality assurance (CQA) data review, and construction planning. An As-Built report was also completed for the raise. (Tierra Group, 2021 to 2022)

## TAILINGS STEWARDSHIP IMPLEMENTATION, LOS GATOS MINE | MEXICO

Conducted a senior-level review of the GISTM compliance assessment and the development of the OMS Manual and EAP documents. (Tierra Group, 2021)

#### TSF Stage 2 Design, Los Gatos Mine | Mexico

Senior Reviewer for the Stage 2 TSF expansion design and construction. (Tierra Group, 2021 to 2023)

#### TAILINGS STEWARDSHIP DAM SAFETY REVIEW (DSR), ELDER GULCH RAY MINE | ARIZONA

Senior Reviewer for the detailed DSR, including design reports, construction reports, OMS Manual, water balance, annual audit reports, site risk assessment, monitoring reports, EAP, and other relevant information as part of the DSR. (Tierra Group, 2021)

#### TAILINGS STEWARDSHIP ENGINEERING ANALYSIS, EMPIRE STATE MINE | NEW YORK

Performed a geotechnical investigation and analyses senior-level review to provide a baseline characterization of the state and strength of the placed tailings and dam foundation conditions and assist the client in developing a path forward to expand the existing TSF. The project included reviewing existing data, assessing current dam conditions, providing short-term solutions to existing problems, and proposing a scope of work for future development. (Tierra Group, 2021 to 2023).

#### WASTE ROCK DUMP AND WATER MANAGEMENT, SAN ALBINO MINE TSF | NICARAGUA

Project Manager responsible for a dry stack TSF, waste rock dump, and site-wide water management. Developed an innovative drainage system and progressive reclamation design to manage dry stack operations in a tropical climate with high rainfall. Engineering and design activities included geotechnical investigation, geologic mapping, slope stability modeling, runoff analyses, several surface water diversion designs, water balance, and permitting support. Provided construction support, working closely with the owner's team to build the mine under an aggressive design and construction schedule. Assisted the mine owner with tailings handling and stacking design, crucial in the high-rainfall, tropical environment. (Tierra Group, 2020 to 2022)

## La India TSF | Nicaragua

Senior Reviewer for a feasibility-level design for La India. Designed a TSF to accommodate 10 years of tailings production at 2,000 tons per day (tpd) in a fully geomembrane-lined TSF and designed a stormwater attenuation dam to feasibility level. (Tierra Group, 2020 to 2023)

#### EAGLE GOLD HEAP LEACH DESIGN | CANADA

Managed a feasibility design through the final design and construction of an HLF. The project included geotechnical studies, site water management, design of geomembrane and GCL lined heap leach pad and stormwater ponds, design of Leachate Collection and Recovery System (LCRS), design of heap leach



drainage system, stormwater diversion design, closure and reclamation design, and development of capital and operating costs for the HLFs. (Tetra Tech, 2011 to 2014; DOWL, 2014 to 2016; BGC, 2016 to 2019)

## FORT KNOX HLF | ALASKA

Reviewed the final design report completed by others to identify opportunities to improve the Barnes Creek HLF design concerning constructability and cost. Findings and recommendations were summarized in a project memorandum to consider a path forward, and several improvement options were identified for further analysis. (BGC, 2017)

#### TSF DSR, MAX MINE | CANADA

Performed a TSF DSR at the MAX Mine in British Columbia. This was an initial formal DSR for the facility, which has been in Care and Maintenance since 2011. The DSR was completed following the Canadian Dam Association (CDA) Dam Safety Guidelines (CDA, 2007), Guidelines for Annual Dam Safety Inspection Reports (BC, 2013), and Association of Professional Engineers and Geoscientists of BC Professional Practice Guidelines for Legislated DSRs (APEGBC, 2013). The evaluation is also considered compliant with the provisions for dam inspections from the Mining Association of Canada (MAC) Guide to the Management of Tailings Facilities (MAC, 1998). (BGC, 2017)

## STAGE 2 RAISE DESIGN, SIERRA GORDA TSF | CHILE

Performed static and pseudo-static slope stability analysis of tailings dam, analysis of liquefaction potential using standard penetration testing (SPT)-based and cone penetrating testing (CPT)-based liquefaction triggering analysis, and design of stabilization measures. The TSF has experienced significant seepage through and under Dams 3 and 4, saturating and weakening the Caliche material in the dam foundations and the areas downstream. The Stage 2 raise design incorporated additional foundation preparation to excavate and replace soluble salt-rich Caliche with rockfill below dams to provide for the reliable long-term stability of the structures. (BGC, 2017)

## RESOLUTION COPPER ENVIRONMENTAL IMPACT STATEMENT (EIS) | ARIZONA

Third-Party Contractor to the USDA Forest Service for preparation of an Environmental Impact Statement (EIS) for approval of a plan of operations for the Resolution Copper Project and associated land exchange. The Tonto National Forest is preparing the EIS to evaluate and disclose the potential environmental effects from approval of Resolution Copper's General Plan of Operations for operations on National Forest System land associated with a proposed mine, the exchange of land between Resolution Copper and the United States, and amendments to the Tonto National Forest Land and Resource Management Plan. As a member of the Physical Sciences team, provided expertise in geotechnical and tailings disposal issues. (DOWL, 2015 to 2016; BGC, 2016 to 2019; Strata-Geo LLC, 2020)

#### TAILINGS DAM STAGE X RAISE EXPANSION, RED DOG MINE | ALASKA

Performed a detailed technical review of the dam raise expansion for the State of Alaska Large Mines and Dam Safety Program. Reviewed reports, plans, specifications, engineering analyses, and operational performance data. (BGC, 2017)

#### TAILINGS ENGINEERING SERVICES, LUCKY FRIDAY MINE | IDAHO

The project involved geotechnical investigations, engineering design of a downstream raise, the liner system extension, and final construction document preparation. Additional tasks include quality assurance/quality control (QA/QC) oversight and testing during construction and permitting support. Engineer of Record (EoR) for the tailings disposal operations at Lucky Friday. Primary responsibilities include engineering design, permitting, and construction monitoring services for the current tailings dam (Pond 4) and developing OMS and abandonment plans for the tailings facility. Responsible for performing periodic dam and facility inspections. (Tetra Tech, 2012 to 2014; DOWL, 2014 to 2016; BGC, 2016 to 2019)

#### TAILINGS DISPOSAL OPTIONS, CAMECO KINTYRE PROJECT | AUSTRALIA

Design Engineer responsible for evaluating tailings disposal options for disposal of uranium tailings and pre-feasibility design of a geomembrane and geosynthetic clay liner (GCL) lined dry stack tailings management facility for a proposed mine in Western Australia. The project involved evaluating Best Available Technologies (BAT) for tailings and contaminated stormwater containment, liner system design for the dry stack facility and stormwater collection pond, geotechnical studies, stability analyses, and stormwater controls. (Tetra Tech, 2011 to 2012)



## ANGS GAS STORAGE PROJECT | ARIZONA

Design Engineer responsible for geomembrane-lined brine pond design for a salt solution mining project. The design included geotechnical investigations and analyses, dam design, liner (geomembrane and GCL) selection and design, LCRS design, water balance evaluations, and permitting support. (Tetra Tech, 2009 to 2011)

## SITING STUDIES AND FEASIBILITY DESIGN, ROSEMONT COPPER MINE | ARIZONA

Project Manager responsible for managing siting studies and feasibility design for a 60-million ton (Mt) HLF and 500 Mt dry stack TSF and associated containment and process ponds. The project included geotechnical and geologic hazard studies, site water management, geochemical assessment, BADCT analyses, closure and reclamation, alternatives analysis, and developing capital and operating costs. Included detailed alternatives evaluation for siting of facilities using Multiple Accounts Analysis methods with merit scoring for environmental and socio-economic factors, technical components, and project economics. (Vector Colorado, 2006 to 2008; Tetra Tech, 2008 to 2009)

## HLF DESIGN, ROSEMONT COPPER MINE | ARIZONA

Project Manager responsible for managing feasibility and final design for a 60-Mt HLF. The project included geotechnical and geologic hazard studies, site water management, design of geomembrane and GCL lined process and stormwater ponds, design of LCRS, design of heap leach liner and drainage system, geochemical assessment, BADCT analyses for Aquifer Protection Permit, closure and reclamation design, alternatives analysis, and developing capital and operating costs for the HLFs. (Vector Colorado, 2006 to 2008; Tetra Tech, 2008 to 2009)

## TAILINGS FACILITY EXPANSION, GOLD ROAD PROJECT | ARIZONA

Project Manager responsible for evaluating tailings disposal options and related Aquifer Protection Permit applications for siting studies and feasibility design for an underground gold mine. The project involved converting the disposal method from conventional to dry stack and included BADCT analyses, geomembrane-lined pond design, geotechnical studies, stability analyses, and the final facility design. (Tetra Tech, 2008 to 2009)

## SALT STORAGE FACILITY, VALE POTASIO RIO COLORADO PROJECT | ARGENTINA

Performed a high-level gap analysis for a salt storage facility (SSF) for a proposed potash solution mine in Argentina. Specific areas reviewed were geotechnical aspects, seismic hazards, containment design, liner system selection, water management, and material handling. A follow-up study was completed to address concerns related to static and seismic stability of the salt pile and wind uplift potential and mitigation options for the geomembrane liner. Engineering analyses and calculations were performed, and recommendations were developed. (Tetra Tech, 2010)

#### INTREPID POTASH NORTH MINE | NEW MEXICO

Technical Lead responsible for geotechnical evaluations and tailings facility and brine pond design. Feasibility study to evaluate the reopening of an underground mine and construct new surface processing, storage, and product load-out facilities. Work included trade-off studies evaluating options for tailings disposal and reviewing potential environmental and permitting issues associated with reopening the mine. (Tetra Tech, 2009)

## CAMECO KEY LAKE DTMF | CANADA

Project Manager responsible for geotechnical studies and final design of tailings facility remediation. The project involved pit slope stabilization design, construction for uranium tailings storage, and infrastructure relocation design. (Tetra Tech, 2009 to 2014; DOWL, 2014 to 2016; BGC, 2016 to 2019; Strata-Geo, LLC, 2020)

#### MINE WATER CONTROL PLAN, WEST ELK MINE | COLORADO

Project Engineer responsible for re-evaluating the mine water control plan at West Elk Mine. The revision involved an updated SEDCAD analysis of the mine's surface water collection and treatment system based on field inspections of the existing ditches and culverts. (Tetra Tech, 2008)

#### SURFACE WATER CONTROL STRUCTURES DESIGN, COLLUM COAL MINE | COLORADO

Project Engineer responsible for permit-level design of surface water control structures for the proposed expansion of the Collum Mine. The work involved developing a surface water control plan, sizing and



designing control structures, and preparing design documentation to support permitting efforts. (Tetra Tech, 2008)

## MOLYCORP MOUNTAIN PASS BRINE PONDS DESIGN | CALIFORNIA

As Senior Geotechnical Engineer, assisted in designing large lined evaporation ponds and land application systems to treat mine waste and drainage. An enhanced evaporation system was developed to increase the evaporation rate. The project included water balance calculations, geomembrane pond liner and leak detection systems design, and evaluation and design of enhanced evaporation systems. (Harding Lawson,1999)

#### SHOOTARING CANYON MILL | UTAH

Technical Advisor to Uranium One for tailings facility design and permitting. The project focused on expediting permitting and mill start-up while optimizing design and incorporating regulatory guidelines. The tailings facility will consist of 5 million cubic yards of uranium mill tailings within two 40-acre cells. Project deliverables provided by Tetra Tech included a design report, engineer's cost estimate, operations plan, compliance and monitoring plan, construction drawings and specifications, environmental report, and reclamation and decommissioning plan. (Tetra Tech, 2008 to 2009)

## TAILINGS FACILITY SEISMIC EVALUATION, KENNECOTT COPPER | UTAH

Project Manager responsible for seismic stability evaluation of existing tailings facility. The study included reviewing previous studies and recent monitoring data, liquefaction potential analysis, and post-earthquake stability. (Tetra Tech, 2008 to 2009)

## FEASIBILITY DESIGN, CAÑARIACO COPPER PROJECT | PERU

Project Manager responsible for studies to support Preliminary Economic Analysis for a 500M-tonne tailings impoundment, including siting studies and alternatives evaluation for technical, environmental, socioeconomic, and project economics comparison. (Vector Colorado, 2007; Tetra Tech, 2008)

#### TAILINGS FACILITY FINAL DESIGN, PASCUA-LAMA PROJECT | ARGENTINA

Project Manager responsible for directing technical design team for engineering analyses and design of the tailings dam, impoundment and pond geomembrane liner systems, water storage reservoir, and surface water diversions in a region with high seismic activity. Prepared documents for regulator permitting and participated in regulatory meetings in Argentina. (Vector Colorado, 2006)

## TAILINGS FACILITY PRE-FEASIBILITY STUDY, EL DORADO MINE | EL SALVADOR

Technical Manager for a multi-disciplined team. The project involved engineering analyses and design for a rockfill dam and geosynthetic-lined tailings impoundment. (Vector Colorado, 2005)

## POZO AZUL AND EL BOSQUE TSFS, EL MOCHITO MINE | HONDURAS

Technical Manager responsible for the geotechnical investigations and feasibility studies for a new tailings dam. The project included evaluating various tailings disposal methods and geomembrane liner systems and a site selection study for the new dam utilizing risk analysis. Performed final design and developed construction plans and specifications for the chosen alternative (Soledad Tailings Facility). Performed QA/QC during the Phase I dam and impoundment construction. (Vector Colorado, 2004 to 2005)

#### **WEST FORK TAILINGS FACILITY | MISSOURI**

Managed the design of a permanent spillway to accommodate the design peak flow event. The project included an initial engineering evaluation to identify required modifications to the existing spillway and outfall and provide a cost/benefit comparison of alternative spillway locations (i.e., modifying the existing spillway vs. constructing a new spillway at an alternative location) and final design of the selected alternative, including specifications and construction drawings. (SRK, 1998)

#### BARTON MINES TAILINGS IMPOUNDMENTS | NEW YORK

Performed tailings placement, construction sequencing, and geotechnical monitoring and analyses for new and existing tailings impoundments, including two-dimensional pore pressure modeling using finite difference methods and associated static and pseudo-static stability analyses, tailings sampling, and testing plan development and implementation. (SRK, 1995)



## STABILITY ANALYSIS, SAN LUIS PROJECT | COLORADO

Staff Engineer responsible for the detailed stability analysis of various embankment configurations and soil properties, including static and seismic analysis. (SRK, 1995)

#### STABILITY ANALYSIS, KENNECOTT RIDGEWAY PROJECT | SOUTH CAROLINA

Performed stability analysis on existing and reconfigured embankments, estimated settlement in tailings based on cone penetration test data and laboratory consolidation test data using a finite difference settlement model. (SRK, 1998)

## ENGINEERING ANALYSIS AND DESIGN, KENSINGTON PROJECT | ALASKA

Performed detailed engineering analysis and design for a dry tailings facility. Tasks included seepage analysis, settlement and stability analysis, and developing a surface water management plan, technical specifications, QA plan, and operations and monitoring plans. Conducted field exploration plan and laboratory testing program to access foundation conditions and identify possible construction material sources. Assisted in developing permit submittals. (SRK, 1997)

## TAILINGS FACILITY EXPANSION, RAIN MINE | NEVADA

Performed QA/QC testing at the tailings facility expansion and embankment raise, including compaction control and liner placement. (Knight Piesold, 1991)

## **BIG SPRINGS TAILINGS FACILITY EMBANKMENT | NEVADA**

Conducted QA/QC testing for the tailings facility embankment raise and conducted nuclear density/moisture testing for compaction control and in-situ permeability using the air entry permeameter. (Knight Piesold, 1992)

#### BOROO HEAP LEACH FEASIBILITY STUDY AND FINAL DESIGN | MONGOLIA

Managed a multi-disciplinary design team for feasibility studies to construct a new HLF at an existing gold mine in northern Mongolia. Project included the development of the metallurgical basis; design of the geomembrane-lined heap leach pad, ponds, solution delivery pipelines and pumping systems, surface water diversions, carbon column and plant tie-in, and associated facilities; development of capital and operating costs; and design of provision for cold weather protection and operation. (Vector Colorado, 2006 to 2007; Tetra Tech, 2007 to 2008)

#### ESCONDIDA HLF ANALYSES AND DESIGN | CHILE

Performed detailed analysis and design, including dynamic displacement, settlement, liner drainage pipe network system design, seepage analysis, hydrogeologic assessment, and foundation recommendations for plant and crusher facilities. Developed and oversaw the QA field program to construct the leach pad and solution ponds. (SRK, 1995 to 1996)

#### HLF DESIGN, CERRO VERDE MINE | PERU

Assisted with an HLF design to be constructed over an existing waste rock dump. Designed the regrading plan and heap layout, liner system, and drainage pipe network design for the solution collection system. (SRK, 1995)

#### LEACH PAD FACILITY DESIGN AND ANALYSIS, LA COLORADO MINE | MEXICO

As Design Engineer, performed leach pad facility design and analysis, including alternative layout configurations, stability analysis, and surface water hydrology assessment. (SRK, 1996)

#### HEAP LEACH PAD LAYOUT AND DESIGN, ILLINOIS CREEK PROJECT | ALASKA

As Design Engineer, assisted with facility layout and design for the heap leach pad. Conducted field exploration and laboratory testing programs to characterize foundation conditions and identify construction material sources. (SRK, 1997)

#### NORTH AREA LEACH EXPANSION QA/QC TESTING | NEVADA

Engineering Technician responsible for QA/QC testing, including soil testing and compaction control for fill and liner system components. (SRK, 1994)

#### WASTE ROCK DUMP REMEDIATION, GILT EDGE MINE | SOUTH DAKOTA

Assisted in developing a waste rock dump remediation plan. Calculated earthwork volumes for regrading the dump and performed layout work for the water treatment ponds and facilities. (SRK, 1997)



## STABILITY ANALYSIS, THUNDER MOUNTAIN PROJECT | IDAHO

As Senior Geotechnical Engineer, performed stability analysis for waste rock and HLFs, including finite difference modeling for determination of pore pressures in clay foundation for alternate loading scenarios and applying resulting pore pressures to static and pseudo-static stability analysis. (SRK, 1997)

## Closure and Reclamation

## CODY QUARRY RECLAMATION DESIGN | WYOMING

Assisted in developing a reclamation design of an abandoned quarry under the Wyoming Abandoned Mine Lands (AML) Program. The project involved regrading the site and constructing a retaining wall to accommodate a planned amphitheater and park. (Vector Colorado, 2006)

#### SULFUR MINES RECLAMATION | WYOMING

Performed site investigations and developed reclamation recommendations for numerous abandoned underground and above-ground sulfur mines. The work was conducted under the Wyoming AML Program. (Vector Colorado, 2006 to Present)

#### CLOSURE CAP DESIGN, CANNON MINE | WASHINGTON

Assisted in the design of a closure cap on the tailings facility. Performed settlement analysis on tailings material due to cap loads using cone penetration test data. (SRK, 1998)

#### Landfills

#### BFI FOOTHILLS LANDFILL CAP | COLORADO

Construction QA Manager for construction of an alternate evapotranspiration cap permitted to meet Resource Conservation and Recovery Act (RCRA) Subtitle D requirements. (Vector Colorado, 2004)

## FORT CARSON LANDFILL 5 MOTORPOOL CAP DESIGN | COLORADO

Lead Design Engineer for an innovative cap system incorporating an asphaltic concrete surface overlying an aggregate base course, sand drainage layer, composite barrier layer, biaxial geogrid reinforcement, and gas venting system. The cap was designed and permitted to meet RCRA Subtitle C requirements and covered an area of approximately 5 acres. (Harding Lawson, 1999)

#### FORT CARSON LANDFILL EVAPOTRANSPIRATION (ET) CAP | COLORADO

Prepared the design and technical specifications for an ET cap system. The cap covered approximately 12 acres and was permitted to meet RCRA Subtitle C requirements. Prepared design drawings, technical specifications, QA/QC plan, health and safety plan, and long-term monitoring plan. (Harding Lawson, 1999)

#### MUNICIPAL SOLID WASTE MSW LANDFILL EXPANSION, BFI FOUNTAIN | COLORADO

Lead Design Engineer for MSW landfill expansion. Work included designing and permitting liner and leachate collection systems for a 40-acre expansion. Prepared design drawings, technical specifications, construction QA/QC plans, and bid documents. (Harding Lawson, 1999)

## CHANDLER LANDFILL CAP EVALUATION | NEW YORK

Evaluated a cap component alternative to demonstrate a technically equivalent cap alternative to the state-prescribed cap while providing cost savings to the client. Work included designing and permitting the resulting multi-layer cap consisting of a GCL, geocomposite drainage layer, and vegetative soil layer. (Harding Lawson, 1998)

#### COPE ASH LANDFILL SEEPAGE ANALYSIS | SOUTH CAROLINA

Performed a seepage analysis using the U.S. Environmental Protection Agency's HELP model to estimate the percolation of leachate through the landfill. Performed sensitivity analysis using varying combinations of soil conditions. (SRK, 1994)

#### McMeekin Station Ash Landfill Design and Surface Water Management Study | South Carolina

Performed facility design and surface water management study as part of Phase II hydrological site assessment. (SRK, 1995)



#### Civil Geotechnics

## GEOTECHNICAL INVESTIGATION, MARLIN MINE | GUATEMALA

Performed a geotechnical field investigation, a geophysical study, and developed geotechnical design parameters and recommendations for a new plant facility and a tailings dam. (Vector Colorado, 2004)

#### STORAGE HANGAR DESIGN AND CONSTRUCTION, TELLURIDE REGIONAL AIRPORT | COLORADO

Supervised and performed all aspects of the structural, mechanical, electrical, and civil design of the 12,000-square-foot airport hangar, including design, cost estimation, budgeting, bid administration, and construction management. Construction management services included scheduling for work and materials testing services, submittal review, and pay request approval. (William E. Payne & Associates, 2001)

## CORPORATE HANGARS DESIGN AND PERMITTING, CENTENNIAL AIRPORT | COLORADO

Designed and permitted a large corporate hangar and office complex at Centennial Airport. Coordinated a large design team of architectural, mechanical, metal building, plumbing, structural, and electrical disciplines. Performed site civil engineering and utility service design and permitting. Acted as Owners' Representative to provide construction oversight services to ensure the facilities were built according to the specifications and schedule. (William E. Payne & Associates, 2002)

## HANGAR COMPLEX, CENTENNIAL AIRPORT | COLORADO

Managed the design and permitting of Air Park Center, a 47,000-square-foot hangar complex. Coordinated a large design team of architectural, mechanical, metal building, plumbing, structural, and electrical disciplines. Performed site civil engineering and utility service design and permitting. (William E. Payne & Associates, 2000)

## SELF-FUELING STATION, TAC AIR | COLORADO

Managed the design and permitting of a light aircraft self-fueling station for TAC Air. The station was designed for Centennial Airport to meet the Uniform Fire Code and local codes. The system incorporated a card reader and remote fueling island. Developed site civil, structural, mechanical, and electrical plans. (William E. Payne & Associates, 2002)

#### HANGAR/OFFICE COMPLEX DESIGN, CENTENNIAL AIRPORT | COLORADO

Managed the design of 150,000-square-foot hangar space, 6,000-square-foot office space in five buildings, parking lots, an access road, and a taxiway extension for Willowbrook Air. Performed site civil engineering and utility service design and permitting. (William E. Payne & Associates, 2001)

## PHASE III DRAINAGE STUDY, MAYO AVIATION HANGAR | COLORADO

Performed a Phase III drainage study for Mayo Aviation Hangar to support the storm sewer design for a new hangar construction project. (William E. Payne & Associates, 2001)

#### ROCKY MOUNTAIN STRAIGHT FLIGHT HANGAR DESIGN | COLORADO

Managed the design of site utilities for Rocky Mountain Straight Flight Hangar. Performed a sewer and water study to size and design site utilities. Developed plans and profile sheets for permitting and construction. (2000)

#### AIR TRAFFIC CONTROL TOWER ENGINEERING SUPPORT, SUGAR LAND MUNICIPAL AIRPORT | TEXAS

Provided engineering support during designing, permitting, and constructing an 81-foot-high air traffic control tower. The tower was designed to address the specific needs of the Sugar Land Airport. All construction details for the tower, cab, exterior finish, interior layout, stairway, elevator, and basic equipment layout were provided, and an engineer's construction cost estimate was prepared to assist in budgeting and bid review. All aspects of the design and permitting were performed or overseen, including architectural design and structural, mechanical, and electrical engineering. (William E. Payne & Associates, 2001)

#### MARTIN STATE AIRPORT AIR TRAFFIC CONTROL TOWER DESIGN | MARYLAND

Managed 30% of the air traffic control tower design for the Martin State Airport. The proposed 60-foot-high control tower was designed to address the specific needs of the Martin State Airport. Provided preliminary details for the tower, cab, exterior finish, interior layout, stairway, elevator, and basic equipment layout. (William E. Payne & Associates, 2002)



## DRAINAGE STUDY, CENTENNIAL AIRPORT | COLORADO

Managed a large drainage study and design for the East Development Area at Centennial Airport. Managed all aspects of the project, including preparation of a Phase III drainage study, permitting, preparation of bid and construction documents, storm sewer design, outfall design, bid administration and contract preparation, construction oversight, and preparation of record documents. (William E. Payne & Associates, 2001)

## FIELD EXPLORATION AND LABORATORY TESTING, FLORIDA CANYON MINE | NEVADA

Developed and implemented field exploration and laboratory testing programs to access foundation conditions and identify construction material sources. (Harding Lawson, 1998)

#### **Professional Affiliations**

Society for Mining, Metallurgy and Exploration, Member American Society of Civil Engineers, Member

#### **Publications**

Meyer T. Stacking dewatered tailings on a conventional slurry impoundment.

Meyer T, Athanassopoulos C. GCLs in Heap Leach Pads: State of the Art and Practice.

Hudson A, Meyer T, 2008. Challenges in Heap Leach Pad Design: Consideration of Thermal Conditions.

Arnold K, **Meyer T**, Henderson R, 2006. Dry tailings: an alternative to conventional tailings management.

Purdy J, Fuller M, **Meyer T**, Douglas S, Lagos A, 2012. Lining Steep Rock Slopes with a Geomembrane Liner to Facilitate Tailings Facility Expansion.

## **Employment History**

CURRENT EMPLOYER

TIERRA GROUP INTERNATIONAL, LTD.

Chief Geotechnical Quality Engineer

YEARS 2020 to Present

EMPLOYER STRATA-GEO LLC
Position Principal Owner
YEARS 2020 to Present

EMPLOYER BGC

Principal Geotechnical Engineer

**YEARS** 2016 to 2019

EMPLOYER DOWL

Position Senior Geotechnical Engineer

**YEARS** 2014 to 2016

EMPLOYER TETRA TECH
POSITION Office Manager
YEARS 2008 to 2014



EMPLOYER TETRA TECH

Position Senior Geotechnical Engineer

**YEARS** 2007 to 2008

EMPLOYER VECTOR COLORADO, LLC

Position Principal Owner YEARS 2003 to 2007

EMPLOYER OLSSON ASSOCIATES
POSITION Senior Engineer
YEARS 2002 to 2003

EMPLOYER WILLIAM E. PAYNE & ASSOCIATES

POSITION SENIOR ENGINEER
YEARS 2000 to 2002

EMPLOYER HARDING LAWSON
POSITION Senior Engineer
YEARS 1998 to 2000

EMPLOYER STEFFEN ROBERTSON AND KRISTEN (U.S.)
Position Senior Professional - Geotechnical Division

**YEARS** 1997 to 1998

EMPLOYER STEFFEN ROBERTSON AND KIRSTEN (U.S.)

Position Project Engineer
YEARS 1996 to 1997

EMPLOYER STEFFEN ROBERTSON AND KIRSTEN (U.S.)

Position Staff Engineer YEARS 1994 to 1996

EMPLOYER KNIGHT PIÉSOLD

Position Field and Lab Technician

**YEARS** 1990 to 1993

# Language Proficiency

Spanish: Conversational (written)

