ANDREW EILERS

Education

B.S. Geological Engineering, Colorado School of Mines, 2012

Professional Licenses

Engineer in Training (CO); Geologist in Training (WY)

Professional Experience

Mr. Eilers has nearly a decade of experience preparing and reviewing facility permit drawings, design drawings, and as-built drawings using AutoCAD Civil 3D for new municipal landfill cells, oilfield waste landfill cells, and various oilfield wastewater ponds. He is also experienced at conducting CQA on numerous landfill and pond construction projects and managing CQA field technicians during construction of landfill cells and wastewater evaporation ponds. His experience includes preparing daily reports, performing field density and moisture testing with a nuclear gauge, collecting and detailing samples taken, equipment on-site, and construction progress accompanied by photo logs identifying different stages of construction. He also conducts soil and water sampling, performs explosive gas monitoring, analyzes groundwater data trends, and prepares SPCC plans. Additional experience includes conducting Vegetation Surveys upon gas-pipeline ROW for native vegetation, and performing BMP Inspections both from the ground and from an aerial perspective.

Example project experience includes:

Solid Waste

Wyoming DEQ Landfill Remediation Investigation – Sheridan Landfill. Transcribed 27 field boring logs into formatted boring logs and 20 well logs. Reduced slug test data from 14 slug tests, used AQTESOLV program to solve for hydraulic conductivity values for each slug test, and analyzed hydraulic conductivity solutions to determine the most comparable solution for the data. Added survey points for new well locations to potentiometric contour map and used water level measurements to potentiometric surface contours for the land surrounding Sheridan Landfill. Completed geological cross sections of the water bearing zone for a large portion of the site. Purged and sampled groundwater from wells downgradient of suspected sources. Prepared geologic and groundwater sections of the Natures and Extent Study Report.

Summit County Resource Allocation Park Upslope Groundwater Investigation. Drilled 19 boreholes upgradient of active landfill, installed five temporary wells, and created boring logs/well logs. Conducted slug testing on temporary wells and utilized results in AQTESOLV to solve for hydraulic conductivity, derive flow rates, and calculate a detention pond volume.

Summit County Resource Allocation Park Ground Water Monitoring Events (2014-2020). For semiannual events, coordinated with two labs and Geotech to receive sample bottles and field equipment. Performed explosive gas monitoring on five gas wells and inside two buildings. Taken groundwater elevation measurements on 20 monitoring wells. Bailed 3 well volumes of groundwater (to develop conditions for sampling), and bailed groundwater for samples at 12 monitoring wells or conducted well purging and sampling following low-flow minimal-drawdown protocols at 12 monitoring wells. Recorded pH, temperature, conductivity, ORP, and turbidity to monitor well



development and for sample conditions. Developed a current potentiometric surface contour map. Analyzed laboratory results with Sanitas groundwater software for outliers, elevated values, increasing trends, and other significant indicators. Prepared Semi-Annual Detection Groundwater Monitoring Report including sections on site background, monitoring well network description, groundwater sampling activity summary, an evaluation of analytical results, the details of the statistical analysis, the conclusions, and recommendations on the site and its future. Performed these activities on a semi-annual basis since May 2014.

Summit County Resource Allocation Park Design and Bid Documents. Assisted with and reviewed designs of Fill Area IV Phase 4 and 5 and Temporary Sump VII in Fill Area VII. Prepared Technical Specifications and CQA Plan to accompany Request for Bid. Assisted with and reviewed bid quantities, revisions to design drawings, and Addendums to Request for Bid.

Buffalo Ridge Landfill Phase 8 Design and CQA Management. Prepared design drawings for Phase 8, managed CQA technician, reviewed soil lab results and daily reports, prepared CQA Report for submittal to state. CQA Report accepted without comments from CDPHE.

DADS Phase 9 CQA Plan and CQA Management: Prepared CQA Plan for construction of landfill cells at DADS. Reviewed design drawings for Phase 9. Managed CQA technician, reviewed lab reports daily reports, prepared as-built drawings, and prepared CQA Report.

DADS Asbestos Module 3 Monofill 4 Construction CQA: Performed density testing on fill placement and density/moisture testing on Cohesive Soil Liner while observing 6-inch clay lift placement following weathered shale conditioning. Collected samples during ongoing construction for material properties, moisture verification, and in-place permeability. Observed protective cover placement over Cohesive Soil Liner. Recorded density/moisture testing and daily reports on a daily basis. Prepared CQA Report, Photo Log, and Soil Summary Table for submittal to state agencies.

Front Range Cell 10 Construction CQA: Utilized Troxler nuclear gauge to test density and moisture of the Compacted Clay Liner while monitoring 6-inch clay lift placements on cell floor and slope. Recorded liner material arrival, panel placement layout, geomembrane seam welding, repairs, and vacuum testing; collected destructive samples, monitored geocomposite installation on the cell floor, monitored geotextile installation on the cell slope, monitored and recorded all tie-in activities and patching. Monitored haul road and cover soil placement across cell floor and up the slope.

Fountain Cell K Construction CQA: Performed density and moisture gauge testing on Compacted Clay Liner while observing 6-inch clay lift placements following shale processing activities. Recorded synthetic liner placement activities including geomembrane and goecomposite panel placement, trial welds, seam welding (fusion and extrusion), air tests, vacuum tests, repairs, and welding along the tie-ins. Destructive samples were also taken for laboratory confirmation. Observed cover soil placement over cell slope and floor.

North Weld Landfill Gas Collection Network CQA: Monitored installation of over 2,000 feet of HDPE piping with 6 inches of sand bedding, 6 inches of cover sand, detection wire, and warning tape. Performed 1 hour long, 5psi pressure tests on each completed section of piping in-place. Monitored gas vent to gas well conversion and remote wellhead installation between header and lateral piping. Observed condensate trap installation, drain rock placement, bentonite layer hydration and distribution, and matchup of piping system.

South Canyon Landfill Groundwater Monitoring: Performed analysis on 30+ constituents from 7 wells spread up-gradient and down-gradient of Solid Waste Storage activities. Ran Mann-Kendall analysis

on all constituents and additional analysis including Shewhart-CUSUM control charts and Non-Parametric Prediction Intervals on upward trending data sets. Organized lab results, field notes, and analysis of Groundwater chemical changes into Report Appendices.

Southside Landfill Cell L CQA Management: Managed CQA technician, reviewed soil lab results and daily reports and liner records, lead weekly progress meetings, prepared CQA Report for submittal to state. CQA Report accepted without comments from CDPHE.

Bondad Landfill Phase 11W Design and CQA Management: Prepared design drawings for Phase 11W including a new sump and facilitating leachate flow from the existing sump into the new/modern sump; reconfigured design into two phases at client's request in short order. Managed CQA technician, reviewed soil lab results and daily reports and liner records, completed final CQA oversight and provided needed solutions as historic phase conditions were exposed for tie-in during construction; prepared CQA Report for submittal to state. CQA Report accepted without comments from CDPHE.

Sedalia Landfill Cell 5 CQA: Monitored placement and grading of Leachate Drainage Layer. Two lines of gravel wrapped in geotextile fabric were laid running to a collection pond, and surrounded by a 1' sand layer. Samples were taken from various locations including the stockpile, for Permeability tests.

Soil and Water Sampling

88th RSC Safe Drinking Water Act – Army Corps of Engineers: Coordinated with labs to receive sample bottles, ship coolers after sampling, and perform analysis for Federal Drinking Water Standards. Coordinated with 88th RSC facilities' managers to schedule access to buildings and perform sampling from indoor water sources. Compared laboratory analysis to federal standards, summarized results, and prepared draft report.

Phase II Burton Rd Metering Station: Analyzed and characterized three sets of soil cores at three locations for petroleum hydrocarbons with a PID meter. Installed three temporary monitoring wells to 20 feet depth. Sampled groundwater for possible petroleum hydrocarbon contaminants under EPA low flow protocol. Measured groundwater levels down-well to determine groundwater flow direction on site.

Phase II Realty Income Corporation: Recorded field log of four direct-push borings completed within an automotive shop. Collected soil samples from zones of concern for TPH analysis.

Oil and Gas

Black Tea Oil SPCC Plan: Compiled an all-encompassing SPCC Plan for 20 sites from the individual plans, owned by Black Tea Oil and conducted site visits recording site conditions and accuracy of individual SPCC Plans compared to tanks and secondary containment present on-site.

Bluegrass Groundwater Monitoring, Well Installation, and Borings: Coordinated drilling of fourteen boreholes, installation of permanent groundwater monitoring wells at each drilled location, and well development. Sampled soil on a regular basis during drilling, developed well logs, and composed a Monitoring Well Completion Report. Perform groundwater sampling on quarterly basis from fourteen monitoring wells in the network using bailers for purging and sampling. Update groundwater elevation surface contour map on a quarterly basis in comparison to relative low lying facility elevations. Drilled and logged 7 boreholes in proposed expansion area to determine soil thickness and estimate groundwater elevations.

Bluegrass Water Wright Facility Phase 1, Pond 2, Pond 3, Pond 4, Pond 5, Pond 6, and Pond 7 CQA: Managed CQA personnel during construction of Pond 5, Pond 6, and Pond 7 berms and liner installation. Revised designs for Pond 5 and Pond 6, designed Pond 7 and Pond 8, prepared permit applications for Pond 5, Pond 6, Pond 7, and Pond 8 (three separate packages), and prepared CQA Reports for Pond 4 and Pond 5. Observed compacted clay placement to design grade for a disposal facility of oilfield wastewater, including a truck receiving pad, a tank farm pad, a settlement pond, and the berms on four 9 acre evaporative ponds (Pond 1, Pond 2, Pond 3, and Pond 4). Monitored quality of clay soil compaction for each 6-inch lift for upwards of 15 feet of lift to design grade. Used a Troxler nuclear gauge to test density and moisture against requirements throughout. Recorded liner material inventory, semi-daily trial welds, panel placement, seaming, air pressure and vacuum testing, destructive sample collecting and testing for a settlement pond and an evaporative pond with four geosynthetic layers including GCL, 40-mil HDPE, geotextile, and 60-mil HDPE. Additionally monitored leak detection trench and sump construction including trenching, pipe assembly, pipe installation, and pea gravel placement, as well as trench backfilling with compaction over pipe and in anchor trenches.

Bluegrass Water Facilities Annual Report: Compiled annual reports to state agency for two Waste Water Disposal Facilities summarizing and providing documentation for construction, groundwater or air monitoring activities, spills, financial assurance/closure costs from the past year and including anticipated activities during the coming year.

Bluegrass Southern Cross Liner Repair CQA: Identified leak locations provided by a leak survey in two oilfield produced water ponds as well as any visually observed. Directed cleaning crew activities, recorded trial welds, repair location and details, vacuum testing of all repairs, marked destructive samples for testing, and took extensive photographs to document types of leaks found and conditions around the leaks.

Bluegrass Southern Cross Sampling: Sampled surface water from four evaporation ponds and collected three sludge samples from the bottom of the settlement pond.

Milestone Orla Oilfield Waste Landfill Permit, Design, and Bid Documents: Assisted with revisions to Facility Permit application in response to single RAD letter. Prepared design drawings for initial phase of facility construction including two landfill cells, a waste material drying pad, two stormwater ponds, stormwater ditches, perimeter roads and facility access roads. Prepared cell construction/waste fill progression drawings. Prepared attachments to Request for Bid documents for client including technical specifications, CQA Plan, bid quantities table, responses to questions and Request for Bid Addendums.

Milestone Upton 349 Oilfield Waste Landfill Permit Amendment: Assisted with preparing amendment to Facility Permit. Prepared design drawings for construction, updated stormwater pond design and layout of the stormwater ditches. Prepared attachments to Request for Bid documents for client including technical specifications, bid quantities table, responses to questions and Request for Bid Addendums.

WaterBridge Commercial Fluid Recycling Facilities Permit and Design: Designed or reviewed designs for four Commercial Fluid Recycling Facilities composed of two recycled water ponds with typical capacities of 500,000 oil barrels. Generated Permit Application Drawings, assisted or generated with most aspects of Permit Application preparation including Permit Application text, closure costs, H-11 forms for pits, technical specifications, and RAD letter amendments/responses.

XRI Fountain Quail: Designed one Commercial Fluid Recycling Facility with two recycled water ponds. Generated Permit Application Drawings, assisted or generated with most aspects of Permit Application preparation including Permit Application text, closure costs, H-11 forms for pits, technical specifications, and RAD letter amendments/responses.

Other

Field Team Support, Monthly Stormwater Inspections–Overland Pass Pipeline: Assisted with helicopter and ground inspections focused on determining effectiveness and compliance of best management practices. Performed vegetation surveys to assess vegetative cover re-establishment within the right-of-way subject to the General Permit and the Stormwater Management Plan. Prepared reports consisting of inspection logs, photo logs, and CAD maps.

Senior Designs: Performed work on various projects in a professional environment, interpreting historic well logs, gathering new field data, suggesting additional boring and monitoring well sites, and utilizing 2D or 3D modeling software. Professional investigations were recreated through performing research, studying the site in person, choosing sites for observations wells, monitoring over an extended period, and projecting the movement of existing contaminants. Projects concluded with professional reports and presentations.

Stratigraphy & Soil Mechanics: Became familiar with common industrial drilling and sampling methods. Performed various tests on soil samples in laboratory for further analysis

Field Session: Created detailed surficial maps with aerial photos and a week of observations, interpreted geologic history, described all distinguished, and plotted cross sections to better understand the Rocky Mountains geologic setting.