Glenn Esler
Scientist

Education and Credentials

B.S., Geography, Portland State University, Portland, Oregon, 2008

A.S., Chemistry, Millersville University, Millersville, Pennsylvania, 1984

Continuing Education and Training

Sustainability Leadership Program Certificate, University of Oregon, Portland, Oregon (2013)

EPA Office of Emergency and Remedial Response, 40-Hour Health and Safety Course (2010)

Certified Laboratory Auditor Training and Credentialing Program, iNARTE (2009)

Naval Sea Systems Command Laboratory Quality and Accreditation Office Sampling and Laboratory Testing E-Learning Training (2009)

Radiometric Data Validation, American Radiochemistry Society (2009)

SDSFIE Web Online Training Course (2005)

Analysts Guide to NELAC Assessment Short Course, Advanced Systems, Inc. (2004)

Basics of Quality Improvement Short Course, University of Delaware (1996)

Environmental Data Quality Short Course, American Chemical Society (1992)

Professional Profile

Mr. Glenn Esler has more than 30 years of experience in the field of environmental chemistry, including 15 years in laboratory quality assurance and data quality management and 5 years as a GC/MS analyst. His technical specialties include design and implementation of laboratory quality management programs, laboratory and field audits, and data interpretation and assessment of compliance with regulatory requirements and project objectives. He has an in-depth working knowledge of EPA environmental analytical methods and EPA Contract Laboratory Program (CLP) national functional guidelines for data review. His experience includes environmental analysis, data verification and validation, preparation of quality assurance documentation, and coordination of subcontracting laboratories. He is also credentialed as a Certified Laboratory Auditor.

Relevant Experience

Quality Assurance and Quality Control

Airplane Manufacturer Superfund Site, Laboratory and Field Audits, Washington—Conducted onsite laboratory and field audits in support of remedial action and treatment systems related to groundwater contamination. Wrote final report that provided an assessment of the laboratory and field sampling team's performance and ability to provide high-quality, defensible data, and areas where improvements are required.

NOAA, Lower Duwamish River (LDR), Washington—Conducted research related to the Natural Resources Damage Assessment program for PAH allocation in LDR sediments. Research was based on PAH footprint maps, tax parcel information, data from EPA and Washington State Department of Ecology files, site histories, and other publicly available reports produced over the last several decades. Also used Google Earth and ESRI's ArcView to aid in allocation to multiple sites along the LDR.

Energy Distribution Company, Indiana—Assisted with work plan preparation, laboratory coordination, and data validation, data review, and data quality assessment on public sewer sediments and stormwater sampling at the site. The site was identified as a

319 SW Washington St.
Suite 1150
Portland, OR 97204

503.943.3617
gesler@integral-corp.com

potential source of PCBs to a public sewer system and river sediments associated with a National Priorities List site.

Railroad Transportation Laboratory Audits, Multiple Sites, United States—Conducted onsite laboratory audits and provided assistance in conjunction with the Laboratory Management Program. The program included establishment of a web site for distributing program information, development of a web-based project management tool to handle laboratory projects, documentation of laboratory procedures in an online and hard copy manual, solicitation and establishment of standardized pricing for laboratory work, and presentation of the program to railroad officials, laboratories, and consultants. Also audited laboratories analyzing NPDES samples on behalf of client; evaluated laboratory reports for completeness, verification of reporting limits, and laboratory standard operating procedures. Wrote final report that provided an assessment of the laboratory's performance and ability to provide high quality, defensible data, and areas where improvements were required.

Cleanup of Base Oil/Water Separators, Air Force Center for Environmental Excellence, Grissom Air Reserve Base, Indiana—Assisted with quality assurance project plan (QAPP) preparation and data quality objectives (DQOs) and performed data validation, data review, and data quality assessment in conjunction with site activities, which included sampling, analyzing, cleaning, collecting, removing, manifesting, and properly disposing of materials for nine oil/water separators in accordance with applicable state regulations.

Selfridge Air National Guard Base, Michigan—Assisted with QAPP preparation and formulation of DQOs for the collection of data to support the evaluation of the corrective action measures, site characterization, and determination of extent of contamination at a Michigan Air National Guard Base.

U.S. Department of the Navy, Naval Facilities Engineering Command Southwest, California—Assisted with the preparation of the pre-design sampling and analysis plan (SAP) and remedial action work plan for the remedial design and remedial action at IR Site 1. Also assisted with laboratory procurement of analytical services and procurement of third-party data validation services.

Groundwater Monitoring Program, Arizona—Assisted in the development of the site-wide quality assurance management plan and the QAPP for an EPA Superfund site. Contaminants of concern were volatile organic compounds (VOCs) and perchlorate. Activities included groundwater program planning and execution, groundwater sampling, quarterly and annual reporting, QA/QC, data validation, and project problem solving. Supported the project quality assurance manager by providing data validation, tracking quality control parameters, and handling laboratory data quality issues.

Partial Database Rebuild for a Sawmill Facility, Montana—Provided technical support for the partial reconstruction of the project database after discrepancies were found during quality

assurance activities. Review third-party data validation reports and updated associated electronic data deliverables as appropriate.

Emergency Response at Bulk Chemical Terminal, New Orleans, Louisiana—Assisted with data analyses and audit of the analytical laboratory charges for samples collected related to the emergency response and cleanup of a chemical spill caused by flooding of a bulk chemical terminal during Hurricane Isaac.

Engineering Evaluation and Cost Analysis for a Former Chemical Manufacturing Facility, Portland, Oregon—Revised project QAPP based on EPA comments on a sediment sampling work plan, which was prepared to collect data for pre-remedial design to address sediments adjacent to the site. Coordinated with analytical laboratories for methods, quality control criteria, standard operating procedures, quality assurance documentation, and costs for additional analyses. Researched and co-authored technical memorandum to EPA on the passive sampling effort to measure the freely dissolved porewater concentrations of DDT and its metabolites, polychlorinated dibenzo-*p*-dioxins and dibenzofurans (PCDD/Fs), and PCBs described in the porewater chemistry section of the work plan.

Laboratory Forensics Investigation, Oregon—Supported the verification of possible reporting anomalies initiated by a respected commercial laboratory. Performed preliminary data review activities, including review of laboratory documentation, quality control data, and selected instrument run data files followed by a more comprehensive review process for instrument run file outputs associated with reported data.

Forensics Investigation Municipal Wastewater Collection and Treatment Facility, Oregon—Supported a third party investigation of possible analysis procedural and data integrity issues associated with a municipal wastewater treatment plant. The project entailed a review of electronic data files, permit requirements, laboratory record books, and laboratory standard operating procedures, laboratory audits, and staff interviews. Included review of laboratory and corporate procedural guidance documents, instrument manuals, laboratory bench books, and discharge monitoring report data submitted in fulfillment of NPDES requirements. The technical evaluation included data verification by tracing records from sample analysis through reporting, evaluation of quality control data for compliance with laboratory control limits, visual evaluations of time series data and trends, and assessment of the impact of possible improper laboratory practices.

Litigation Support

Database Inventory in Support of Litigation, U.S. West Coast—Supported maintenance of database inventory, which included a summary of relevant information such as information types, sample material, geographic area, period of record, and source information for customized databases cataloging large numbers of publicly available data sets.

Biomonitoring Study Conducted in Support of Litigation, Missouri—Evaluated laboratory methodologies and data usability and prepared a report summarizing the data usability results associated with the collection of human serum from more than 500 participants.

Expert Testimony Report, Confidential Client—Performed research on the pervasiveness and persistence of organochlorine pesticide chemicals in environmental media and biota in support of expert testimony report.

Project Chemistry

Railyard Air Monitoring, Various Sites, Montana—Served as project chemist for semiannual air sampling program related to indoor air monitoring at several active railyards throughout Montana. Oversaw data validation effort using various air analytical methods, including EPA TO-15 and MADEP VPH. Reviewed data validation reports and associated electronic data deliverables.

Air National Guard, One Clean Program, Multiple Sites, North/Midwest Region—Served as project chemist and oversaw preparation of the QAPP, data validation, and data management for this accelerated turnaround project, which included field investigation activities to determine the presence of environmental contamination at identified areas of concern at 38 sites at 11 installations in the Air National Guard's North/Midwest Region. Oversaw the following: management of all analytical data using the EQuIS™ data management tool; Level III data validation consistent with the Environmental Restoration Program Air National Guard Investigation Guidance; creation of export templates from the database; generation of data tables for the Site Inspection Report; and the electronic data deliverables for the ESOH-MIS database.

Niblack Mining Corporation, Ketchikan, Alaska—Prepared a QAPP revision in support of routine monitoring of surface water and groundwater quality. Assisted in coordinating project logistics, sending sampling equipment to a remote location in Alaska, and subsequent delivery of samples to the analytical laboratory. Monitored laboratory's progress on sample analyses and reviewed and validated analytical results. Supported preparation of data quality reports summarizing analytical results.

Water Quality Monitoring for a Volcanogenic Massive Sulfide Mine Exploration Project, Alaska—Assisted with QAPP preparation in support of monitoring of surface water and groundwater quality. Assisted in coordinating project logistics, sending sampling equipment to a remote location in Alaska, and subsequent delivery of samples to the analytical laboratory. Monitored laboratories' progress on sample analyses and reviewed and validated analytical results.

Baseline Ecological Risk Assessment (BERA) for a Landfill Superfund Site, New Jersey—As the project's quality assurance chemist, assisted with QAPP preparation for analytical and field activities associated with soil, sediment, surface water, and biota samples to better characterize potential site risks and examine factors that influence metal bioavailability. Chemicals of potential concern included phthalates, PAHs, pesticides, PCBs, PCDD/Fs, metals, and cyanide. Performed laboratory and data validation coordination as well as review of sample receipt variances, laboratory quality control variances, analytical corrective actions, data verification issues (e.g., incomplete records), and data review corrective actions.

RI/FS Waiau Generating Station Honolulu, Hawai'i—Assisted with QAPP preparation for analytical and field activities for multiple sampling phases including onshore source investigation,

sediment transport evaluation, biota sampling, source control investigation, and pipe and tunnel investigation. Coordinated with analytical laboratories and data validation firm. Reviewed data validation reports.

Groundwater Monitoring and Delineation of Impacted Soil at Former Mill Site, Centralia, Washington—Coordinated laboratory analytical proposals and work orders, performed review of laboratory deliverables and tabular data, and assisted with field sampling planning.

Per- and Polyfluoroalkyl Substances, Northeastern U.S.—Serving as project chemist overseeing analyses and validation of per- and polyfluoroalkyl substances (PFAS) in groundwater, drinking water, surface water, soil, sediment, and porewater. Review isomer profiles of PFAS samples.

Kenmore Navigation Channel Sediment Characterization, Kenmore, Washington—Under a subcontract, prepared QAPP and health and safety plan (HASP) for a sediment characterization in 2019 to support maintenance dredging. Assisted with development of SAP and sample collection effort.

Elliott Bay Bioaccumulation Study, Seattle, Washington—Under a subcontract, prepared QAPP and HASP for the collection of surface sediment in 2019 to support a benchmark bioaccumulation study. Assisted with development of SAP and sample collection effort.

Ecological Baseline Pre-Design Investigation, Centredale Manor Restoration Project Superfund Site, Rhode Island—Prepared Uniform Federal Policy QAPP and performed quality assurance chemistry tasks in support of pre-remedial design investigation activities including ecological surveys and sampling stations, sampling equipment and procedures, sample designation, and sample handling. This Superfund site, based in North Providence, has multiple operating units. The site is associated with human health issues and ecological concerns from the presence of dioxins, furans, PCBs, pesticides, herbicides, and VOCs in all environmental media, but particularly in riverine and aquatic environments, associated biota, and floodplain soils.

Detailed Sediment Investigation, San Diego, California—Quality assurance chemistry in support of sediment investigation at two shipyards in San Diego Bay, focusing on the effects of metals, organo-metallic compounds, PAH, PCBs, polychlorinated triphenyls, and petroleum hydrocarbons on aquatic life, aquatic-dependent wildlife, and human health. Managed laboratory and data validation subcontracting.

Data Management and Validation

Deepwater Horizon Oil Spill, Natural Resource Damage Assessment—Worked in conjunction with the natural resource damage assessment team responding to the Deepwater Horizon accident and oil spill in the Gulf of Mexico on behalf of BP Exploration & Production Inc. Provided chemistry support and performed data validation and review of data validation reports associated with the environmental sample collection activities.

Industrial Site Data Validation, Vancouver, Washington—Performed data validation for a project involving the presence of chlorinated solvents at an active manufacturing facility in Vancouver, Washington. Project included groundwater monitoring and nearby residential air sample analyses, which are being used by the Washington State Department of Ecology for human health risk assessment.

Electrical Equipment Repair Facility Site Investigation Data Validation and Data Quality Assessment, Oregon—Performed data validation, data review, and data quality assessment for the site investigation of historical PCB releases at an electrical equipment inspection, service, and repair facility. The site was identified by the Oregon Department of Environmental Quality as a potential source of PCBs detected in the public stormwater system and in Willamette River sediments.

Groundwater Monitoring Program Data Validation, Beaverton, Oregon—Performed validation of groundwater chemistry results generated as part of a RCRA Corrective Action Program. Monitoring required for the project included VOCs and Appendix IX List compounds.

Fort Lewis Thermal Remediation Project Data Review and Validation, Fort Lewis, Washington—Performed chemical data review and validation on project data, including water and air samples for hydrocarbon and VOC analyses, using GC/photoionization detector and GC/MS, for a remediation project at Fort Lewis using electric resistance heating. The project was designed by the U.S. Army Corps of Engineers to be performed using near-real-time data from a mobile laboratory to make decisions about the remediation process using the Triad Approach.

Field Investigation Oversight and Report Preparation for a Coal-Fired Electrical Power Plant, Indiana—Performed data validation for a large environmental investigation of a coal-fired power plant. Data included groundwater, soils, and plant tissues.

Interim Remedial Actions/PCB Soil Removals, Cape Canaveral Air Force Station, Brevard County, Florida—Performed data validation and data assessment for a RCRA interim measures delineation and cleanup effort at Space Launch Complex 40 at Cape Canaveral Air Station, Florida. The project involved delineating TSCA levels in soil to determine PCB concentrations >50 ppm.

Voluntary Property Assessment (VPA) Activities, Former Crosstie Chipping Facility, Alabama—Performed data validation and data assessment for VPA investigation activities. Work included collection of numerous soil, sediment, surface water, groundwater, and macroinvertebrate samples to evaluate the extent of PAH impacts to the site and surrounding areas resulting from former crosstie chipping operations.

Former Truck Manufacturing Facility Remediation Data Validation and Data Quality Assessment, Washington—Performed data validation, data review, and data quality assessment for remediation of a former truck manufacturing facility located adjacent to the Duwamish River. The project work consisted of the collection of stormwater and tidal sediments.

Memphis Air National Guard, Memphis, Tennessee—Performed data quality review and data assessment on VOC data from the risk assessment and remediation of petroleum-impacted soil and groundwater.

White Swan Cleaners/Sun Cleaners Superfund Site, New Jersey—Performed data validation on CLP data, and data quality review and assessment on the data for ongoing collection activities related to a Settlement Agreement with EPA Region 2 to conduct an RI/FS of a regional site that has been contaminated by the dry cleaning solvent PCE. PCE had potentially impacted municipal water supply wells at a popular shoreline resort community.

Former Pharmaceuticals Facility Data Validation, Oregon—Performed data validation on the results related to the release of VOCs on the site. The primary contaminants of concern included trichloroethene, *cis*-1, 2-dichloroethene, and vinyl chloride, which were found at concentrations indicative of dense non-aqueous phase liquid.

Former Industrial Site Water Sampling Data Validation and Data Quality Assessment, New Jersey—Performed data validation, data review, and data quality assessment on the annual drinking water sampling at all homes surrounding a former industrial site, where the chemicals of concern in groundwater include VOCs—primarily 1,1,1-trichloroethane, 1,1-dichloroethylene, and 1,1-dichloroethane.

Groundwater and Surface Water Monitoring, Naval Facilities Engineering Command (NAVFAC), Fort Gordon, Georgia—Performed data validation, data review, and data quality assessment on quarterly groundwater sampling. Quarterly monitoring of groundwater and surface water was performed under a NAVFAC contract in compliance with NPDES for a wastewater treatment facility and land-application system at the Pointes West Army Recreation Area in Columbia County, Georgia.

Site Characterization at Industrial Operation, Seattle, Washington—Performed data validation, data review, and data quality assessment on the soil boring and groundwater sampling at the site. Site activities included site characterization (i.e., field assessment, focused site characterization report, project management) at an industrial operation approximately 2.1 acres in size located in Seattle, Washington. The site was impacted with metals, PCBs, PAHs, TPH, and VOCs.

West Virginia Department of Environmental Protection Brownfield Sites Data Validation and Data Quality Assessment, West Virginia—Performed data validation, data review, and data quality assessment using EPA Region 3 modifications to CLP national functional guidelines associated with Phase I surface soil sampling and follow-up Phase II subsurface soil sampling, groundwater investigations, and surface water and sediment sampling at various brownfield sites throughout West Virginia.

Massachusetts Military Reservation Closure Data Validation, Cape Cod, Massachusetts—Validated data for samples submitted for explosives compounds analysis and perchlorate, which are associated with verification that post-excavation bottom soils and expansion area soils are

below established action levels in order to obtain closure determination for the CS-19 and CS-18 Source Area sites at the Massachusetts Military Reservation in Cape Cod. Soil samples from the expansion areas were collected using the multi-increment sampling approach proposed by Cold Regions Research and Engineering Laboratory.

Susanville Sawmill and Cogeneration Facility, Susanville, California—Performed expedited data validation and associated report writing associated with air, water, soil, and product samples collected during the overall scope of work, which included site investigations and remediation at the proposed treatment cell area and fuel and maintenance area.

Rosiclare Mine Site, Rosiclare, Illinois—Validated data associated with soil, sediment, and groundwater sampling and wrote data validation report for the RI/FS effort to clean up historical fluorspar mine tailings.

Rental Car Maintenance Facility, San Jose, California—Performed expedited data validation and report writing associated with samples collected during the overall scope of work, which included removal and disposal of underground storage tanks, an aboveground storage tank, below-ground hydraulic lifts, and a car wash structure.

Former Ashland Lease Area, Shoreham Facility, Minneapolis, Minnesota—Performed data validation of quarterly groundwater samples analyzed for anions, conventional parameters, and VOCs and report writing for the monitoring program for the four remedial actions currently under way at the site: soil vapor extraction, light nonaqueous phase liquid monitoring and recovery, till bioremediation, and outwash pump and treat.

Smeltertown Superfund Site OU1, Salida, Colorado—Validated data from groundwater samples analyzed for metals and wrote report for the annual groundwater monitoring program.

Chemical Distribution Facility, Santa Ana, California—Validated data resulting from semiannual groundwater samples analyzed for PCE, TCE, chemical degradation products of PCE and TCE, and 1,4-dioxane and wrote data validation report as part of oversight of groundwater monitoring and soil remediation at the site.

Waste Rock Water Quality Assessment Open Pit Gold Mine Expansions, Nevada—Validated data associated with ongoing humidity cell test results of existing waste rock, alluvium, and drill cores of expansion material. Assisted with the quality assurance report associated with the 20-week results of the first round of humidity cell tests.

Former DDT Manufacturing Facility, Portland, Oregon—Validated data associated with stormwater monitoring at a former pesticide manufacturing facility under the jurisdiction of the Oregon Department of Environmental Quality. Also monitored laboratories' progress on sample analyses and reviewed and validated analytical results.

Blackwell Zinc Site, Blackwell, Oklahoma—Validated data associated with mitigation strategies of metals loading to the city's wastewater treatment plant resulting from infiltration of contaminated groundwater to the city's sanitary collection system.

Soil and Groundwater Investigation at Former Allied Engineering Facility, Alameda, California—Validated historical data and recent data associated with assessment and potential remediation of groundwater and sediment at the site.

Slag and Sewage Site, Past Costs and River Sediment Evaluation, Fox Point Park, Wilmington, Delaware—Performed Stage 2B and Stage 3 data validation associated with the sediment RI/FS in the Delaware River.

Hazardous Materials Assessment of Soils at Various Public Schools, Hawaii—Performed laboratory coordination and Stage 2B data validation associated with environmental hazard screening of select school sites for arsenic, lead, and organochlorine pesticides.

Former Wood Treating CERCLA Facility, Columbus, Mississippi—Performed data validation in support of a human health risk assessment, Operable Unit 1 focused feasibility study, and Operable Unit 1 removal action work plan, as well as implementation of the Operable Unit 1 voluntary removal action at a Superfund site.