

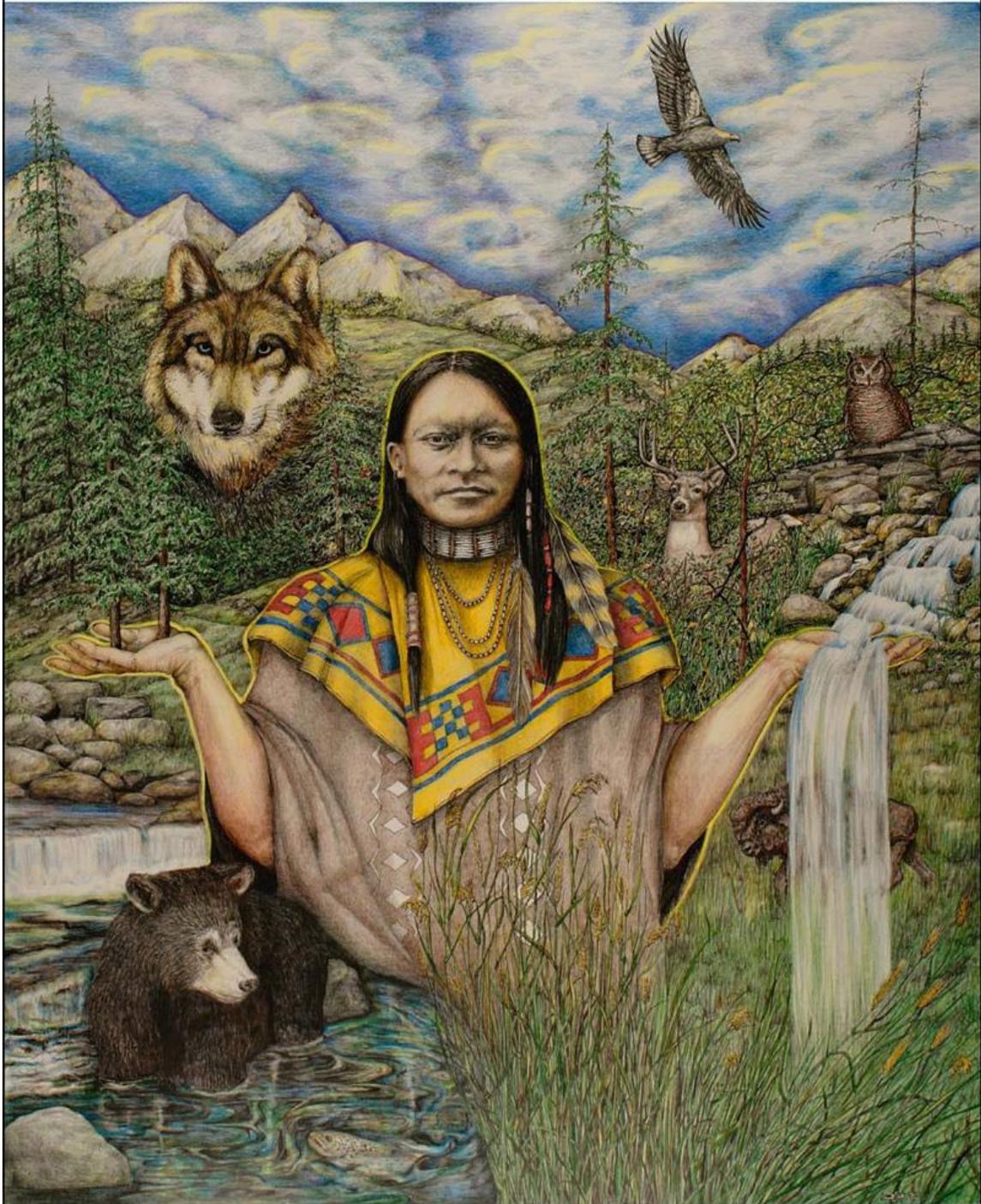


Sitting Bull College
Job Analysis/Labor Market Assessment
July 17, 2008



A joint initiative by the Partnership for Environmental Technology Education (PETE)
and the Advanced Technology Environmental and Energy Center (ATEEC).
Funded by the National Science Foundation (NSF).

A National Collaboration to Strengthen the Advanced
Environmental Technology Education Programs at
Tribal Colleges



NSF DUE Project Number: 0702247
Partnership for Environmental Technology Education (PETE)
584 Main Street
South Portland, ME. 04106

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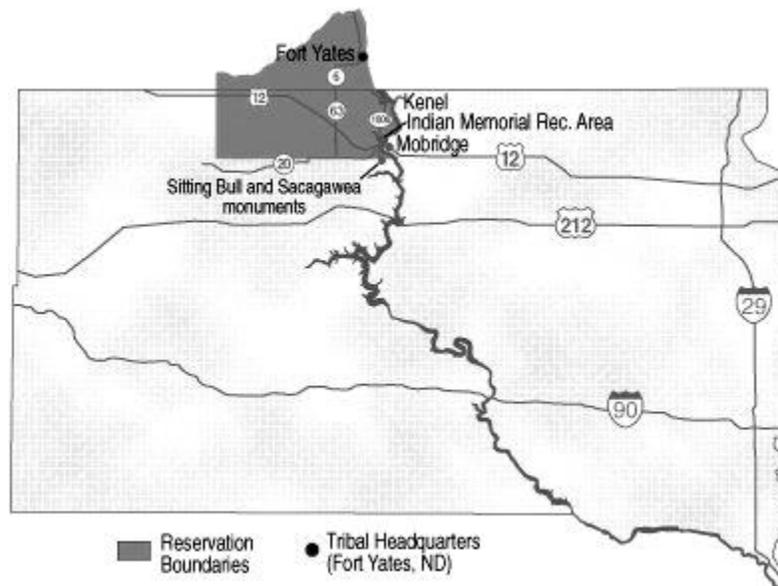
Overview:

On July 17th of 2008, the Advanced Technology Environmental and Energy Center (ATEEC), representing the Partnership for Environmental Technology Education (PETE) Tribal Grant (DUE Project Number: 0702247), visited Sitting Bull College (SBC) located on the Standing Rock Reservation in North Dakota to facilitate a job market assessment workshop in the field of environmental science on the reservation. SBC is one of three Tribal colleges in the nation selected to receive technical assistance through the grant this year.

SBC indicated they would be interested to know if what they are teaching in their environmental science courses would enable students to get jobs on the Standing Rock Reservation or surrounding areas. SBC Division of Agriculture Director Gary Halvorson invited representatives to the workshop who work on the reservation in various areas of environmental and natural resource management. The information gathered in this report will align curriculum being taught at SBC with jobs that are available on the reservation and surrounding areas of North Dakota and South Dakota.

Labor/job market area covered:

Standing Rock Reservation and surrounding areas of North Dakota and South Dakota.



PETE/ATEEC Partnership

ATEEC, a strategic partner with PETE, conducts national labor market research in the fields of environmental science and energy technologies. Their latest 2008 reports on *Defining Environmental Technology* and *Defining Energy Technologies and Services* can be found on ATEEC's Web site at www.ateec.org. In the case of SBC, considering the reservation and the unique needs of this community, it was recognized that a more focused labor market assessment could be utilized to meet their needs more accurately.

ATEEC, with special expertise in the areas of job market research, curriculum development, and facilitation opened the discussion at SBC to find out the following:

- What jobs are available?
- Where are they available?
- When will they be available?
- What skills are needed?

Facilitators:

Ellen Kabat-Lensch and Tim Hunter

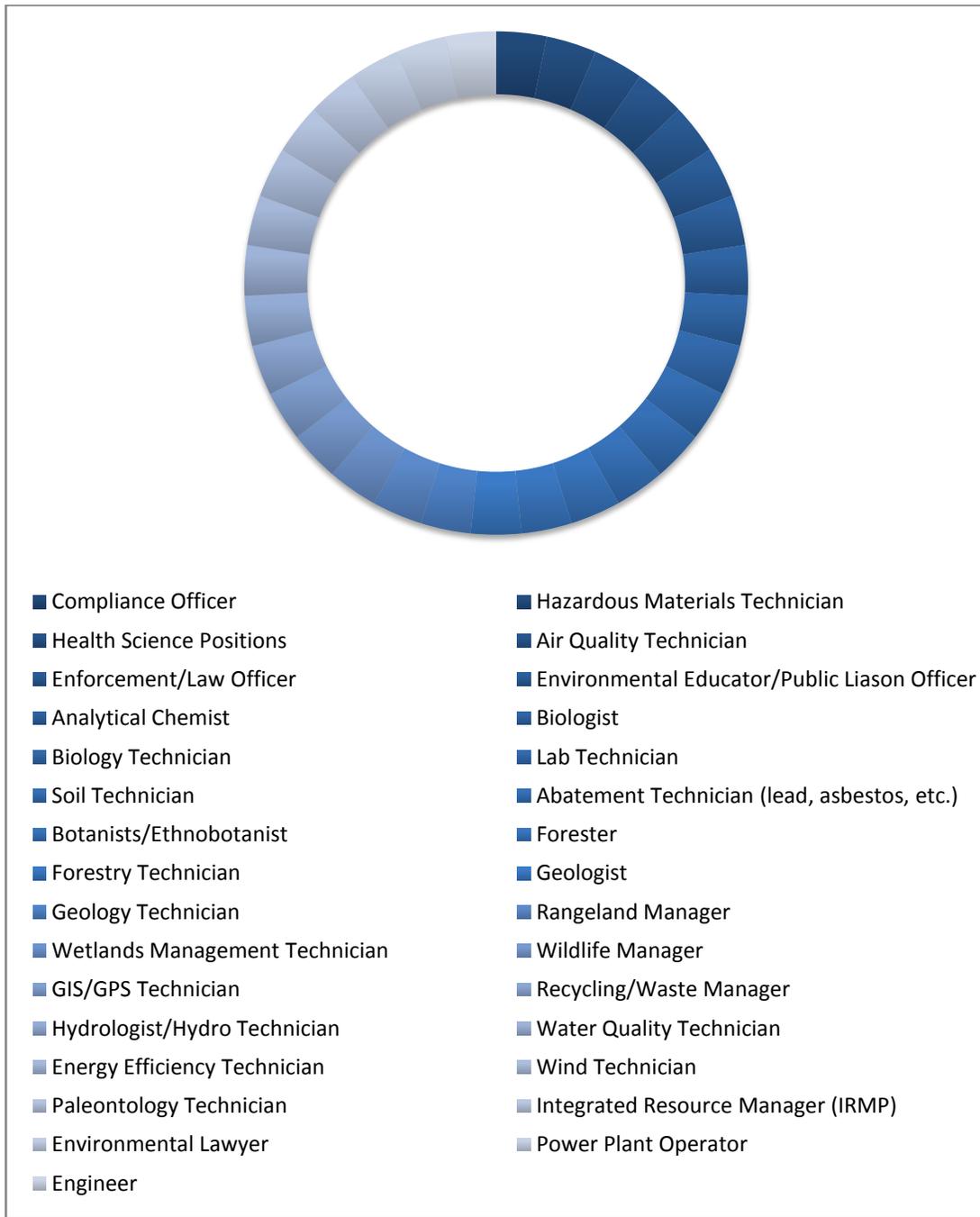
Attendees:

This report reflects the thoughts of the group who were present at SBC. The group represents multiple organizations, interests, and concerns on the reservation.

Byron Olson	Standing Rock Sioux Tribe, Tribal Historic Preservation Officer
Dwight Teske	United States Department of Agriculture, Natural Resources Conservation Service
Dennis Painte	Standing Rock Sioux Tribe, EPA- Lead Program
Sue Isbell	North Dakota State University Extension/Sioux County
Steve Defender	Standing Rock Sioux Tribe, ARMP/IRMP
Leah TakenAlive	Standing Rock Sioux Tribe, Department of Water Resources
Martin Gipp	Standing Rock Sioux Tribe, EPA-106 WQ
Kim GreenWood	United States Fish & Wildlife Service
Jeff Kelly	Standing Rock Sioux Tribe. Game & Fish
Dereck Stonefish	Sitting Bull College, Chemical Analyst
Gary Halvorson	Sitting Bull College, Division of Agriculture Director

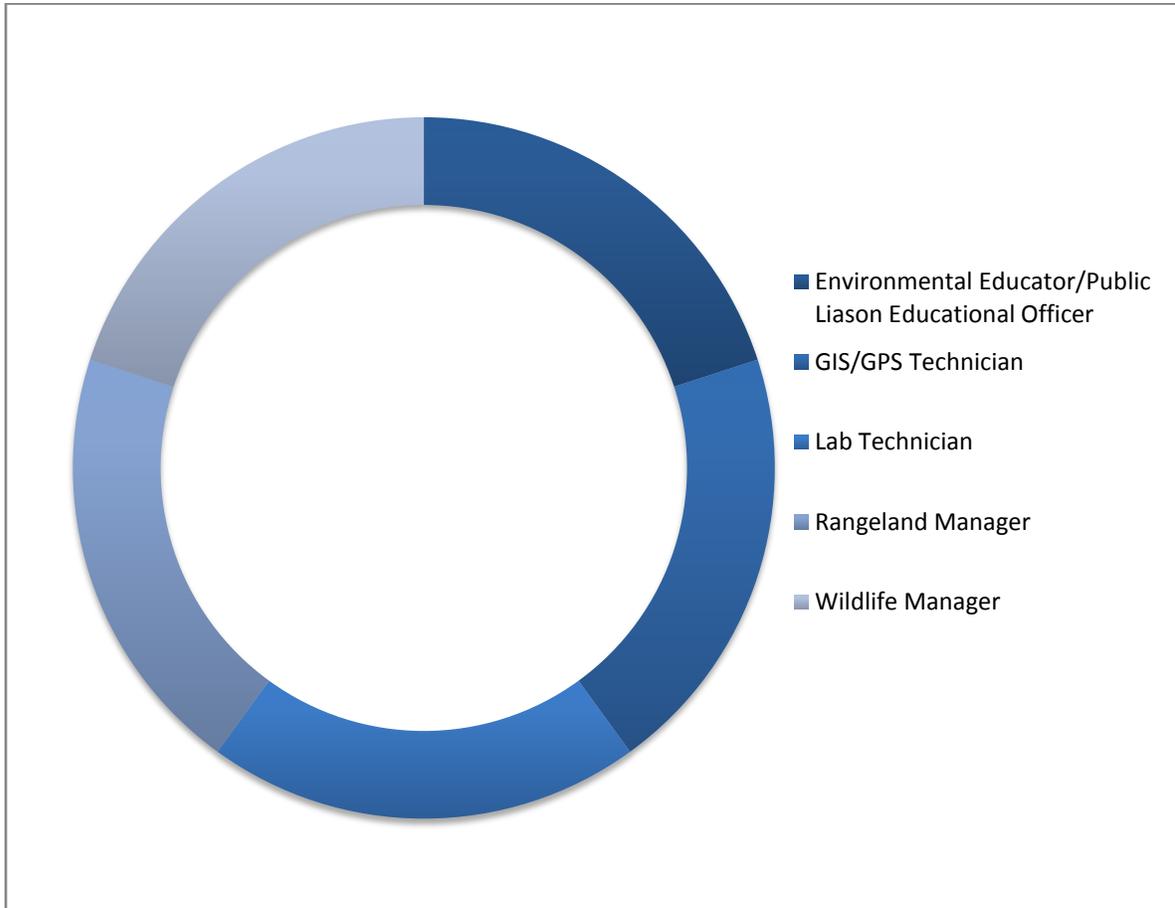
Identified Jobs Needed on the Standing Rock Reservation and Surrounding Areas:

These job titles represent the group consensus on the types of jobs that are needed on the reservation and surrounding areas. *See Appendices for specific job tasks* for these job titles as defined in the *Defining Environmental Technology* and *Defining Energy Technologies and Services* reports from ATEEC.



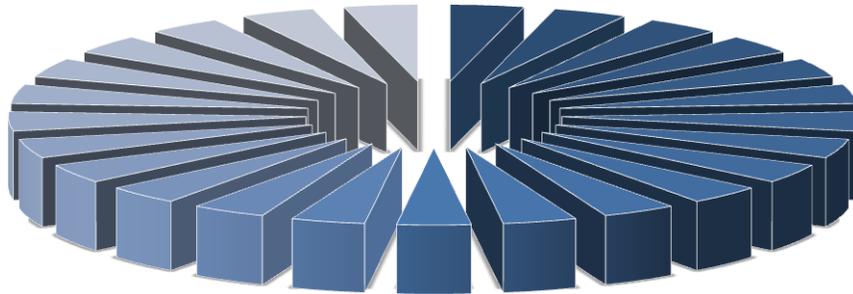
Top Five Jobs

From the list of jobs identified, the group was asked to decide which ones were in need for the most. Below were the top five identified.



Cross-Cutting Skills/Knowledge:

To give SBC more data that they can use to enhance their curriculum and meet the needs of the workforce, the group was asked to identify what skills and knowledge should be common in all of the jobs listed. These skills were recognized by the group to be important in order to be successful on the reservation in reference to the jobs listed.



- Accountability/work ethic (thru summer work, etc.)
- Generalist (good, sound foundational science skills)
- Business/management skills/financial budgeting
- Career awareness/opportunities/vision for younger students
- Chemical training
- Communications skills
- Computer skills (ie. Excel, PowerPoint, Access, etc.)
- Entrepreneurial skills
- Environmental law knowledge - basics (eg., national environmental law)
- GIS/GPS skills (total process of gathering and interpreting)
- Grant management
- Grant research/grant writing skills
- Hands-on/fieldwork skills
- HAZWOPER
- Highlight applicable laws in SBC courses
- Internet research skills
- Knowledge of climatology
- Knowledge of or course in geology
- Networking skills
- OSHA training
- Presentation skills - oral and computer skills (PowerPoint)
- Safety training
- Teamwork skills
- Technical writing skills
- Tribal law/treaty laws/tribal government (Federal, State, Tribal)

Other Considerations for Sitting Bull College from the Group

Throughout the day, it was mentioned several times that youth development, in terms of getting kids involved in science activities, can make a huge difference for SBC and the future of the reservation. Getting students in grades K-8 involved early was a major topic of discussion and consensus with the group. Help is needed and can be accomplished through volunteer work, internships, and other partnerships through the college.

Summary

SBC hosted a job/labor market assessment workshop at their college in Fort Yates on the Standing Rock Reservation. Sitting Bull College's Division of Agriculture Director, Gary Halvorson, invited professionals representing various agencies and interests from the reservation. The day was used to identify technicians and skills needed on the reservation. SBC has indicated they will use this information to ensure their program matches the job market and skills needed to be successful on the reservation after college. The day was facilitated by ATEEC.

Participants identified a list of needed and upcoming jobs, and later chose the top five most needed jobs from the list. The second half of the day was used to identify certain skill sets that students should get from SBC's environmental program, regardless of what particular field they enter into. ATEEC captured the group's thoughts and organized the information into this report.

Recommendations from ATEEC

ATEEC recognizes its role in this case is that of a facilitator to a process that will be used to improve curriculum and student success. In this role, we can offer recommendations; however it is understood that achieving these objectives can be more complex than we realize. With this preface, we have a few recommendations to SBC based unilaterally on what we observed during our visit that day and the experience we possess in curriculum development.

- ATEEC was very impressed with the facilities and opportunities at SBC. The access to various hand-on activities and field exercises was abundant. Continuing these types of services for students will only enable them to be better prepared to enter the workforce.
- Many of the participants were former SBC students who were very excited to be involved in this process. Their commitment and later success demonstrates that SBC has a quality program that students believe in. Offering volunteer opportunities for former students to be involved with current students could help form partnerships with local agencies and continue this process of learning relevant skills to enter the workforce. Volunteer opportunities for former students can also branch out to working with children who come to SBC science workshops and other SBC-hosted events.

Job Functions as Defined by ATEEC

The job titles identified in this report align with many of those as defined by ATEEC in their nationwide 2008 *Defining Environmental Technology* report and *Defining Energy Technologies and Services* report. The job titles identified in this SBC report were put into the categories that are identified in ATEEC's national reports. As a result, ATEEC can offer a listing of general job functions for those particular job titles that are listed below.

These job functions could help SBC identify skills that need to be taught to students who decide to enter these particular fields. The information could also be used to design curriculum activities and/or materials. It should be noted that ATEEC understands many of these job functions may not apply on the Standing Rock Reservation, so it is stressed that these are guidelines for further research and in no manner a definitive list of job functions for each of the job titles listed. SBC may decide to host other forums with employers to identify more specific job functions related to the Standing Rock Reservation.



- Identify and evaluate workplace hazards, including unsafe acts and conditions.
- Implement control of workplace hazards through engineering practices, personal protective equipment, and policy changes.
- Develop and implement written plans (e.g., SOPs, sampling plans, safety and health plans, corrective action plans, lockout/tagout procedures, confined-space entry procedures).
- Conduct workplace air quality testing and monitoring for indoor air pollutants.
- Monitor noise levels in workplace.
- Monitor radiation levels in workplace.

- Assist in worker exposure monitoring (e.g., asbestos, lead, radiation, and toxic substances).
- Develop a working knowledge of industrial hygiene.
- Install, calibrate, operate, troubleshoot, repair, and maintain sampling and monitoring equipment.
- Interpret monitoring data.
- Maintain records and write reports for use internally or by regulatory authorities.
- Follow established quality control procedures.
- Follow chain-of-custody procedures for sample collection and handling.
- Select facility equipment and materials based on regulatory standards and health and safety concerns.
- Select proper personal protective equipment for workplace tasks.
- Maintain and inspect personal protective equipment.
- Conduct respirator fit testing.
- Assist in managing facility's medical monitoring program including maintaining HBV inoculations, spirometry, and audiometric testing.
- Instruct coworkers on environmental, safety, health, and ergonomic issues.
- Conduct and/or participate in safety meetings and on safety committee.
- Coordinate employee first aid/CPR and Automated External Defibrillator (AED) training.
- Serve as a member of facility emergency response team.
- Conduct workplace safety and health audits.
- Develop a working knowledge of facility's ventilation system.
- Determine which process materials and wastes are hazardous and investigate nonhazardous substitutes.
- Manage workplace hazardous materials and wastes, including shipping, receiving, labeling, storage, and disposal.
- Maintain chemical inventory and approve chemicals for use at facility.
- Implement facility's Hazard Communication program.
- Maintain and interpret Material Safety Data Sheets.
- Interact with regulatory authorities and public health and safety officials.
- Maintain facility compliance with safety and health standards.
- Develop a working knowledge of environmental management systems and certification programs.
- Assess and monitor ergonomic conditions in workplace.
- Implement ergonomics solutions in workplace.
- Investigate workplace incidents, accidents, and workers compensation claims.

- Track trend statistics for incidents and accidents.
- Champion and model safety practices through benchmarks.
- Maintain professional and AED certifications.
- Implement continuous process and improvement for health and safety based on new technology and research findings.
- Develop waste minimization plans, calculating return on investment.
- Integrate globally harmonized systems of classification and labeling of chemicals into hazard communication procedures.
- Develop emergency action plans and coordinate stocking of all emergency supplies.
- Maintain compliance with applicable state and federal health/safety regulations.
- Infuse health and safety training within the multicultural workforce.
- Manage biohazardous materials.
- Promote awareness of employee assistance programs for drug and alcohol support.
- Promote awareness of employee off-work injury and the impact to workplace productivity.
- Understand the National Incident Management System (NIMS).
- Ensure products, parts, and components are Restriction of Hazardous Substances (RoHS) compliant.
- Ensure recycled materials are Waste Electrical and Electronic Equipment (WEEE) compliant.
- Maintain OSHA log.
- Ensure regulatory notices (e.g., annual OSHA, worker compensation) are posted.
- File all regulatory reports, permits, and site licenses.
- Coordinate initial and refresher safety training including new employee orientation.
- Oversee (or manage) contractor safety program including confined space program.
- Maintain facility compliance with environmental programs (e.g., designated Underwater Storage Tank operator; Spill Prevention, Control, and Countermeasures (SPCC); stormwater and wastewater permits).
- Perform vulnerability or risk assessments.
- Assist in the development of a continuity of operations plan.
- Assist in the development of a workplace violence plan (may be part of the emergency action plan).

- Submit workers compensation claims.
- Coordinate medical care/treatment for injured workers.
- Facilitate "light-duty" return-to-work programs.
- Interact with workers compensation insurers' loss control and claims representatives.
- Maintain fire systems (e.g., fire extinguishers, alarms, sprinklers) per applicable codes.
- Assist with development of job descriptions with specific physical and chemical hazards for each job, and list potentially unsafe acts, conditions, etc. as previously itemized.



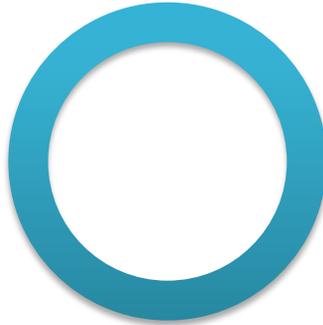
- Collect and analyze indoor and outdoor air samples.
- Install, calibrate, operate, troubleshoot, decontaminate, repair, and maintain air sampling and monitoring equipment.
- Collect and assess meteorological information.
- Label, preserve, and store samples.
- Develop and follow Standard Operating Procedures (SOPs).
- Follow established quality control procedures.
- Follow chain-of-custody procedures for sample collection and handling.
- Select and use proper personal protective equipment and safety procedures.
- Generate, calculate, validate, and interpret air sampling and monitoring data.
- Maintain accurate records of air sampling, monitoring, repair, and calibration of equipment.
- Prepare reports of air sampling and monitoring activities for customers and/or

regulatory agencies.

- Assist in air permit application preparation and compliance reporting.
- Apply appropriate local, state, Tribal, and federal environmental regulations to specific projects.
- Evaluate and monitor health and safety conditions.
- Initiate emergency response actions.
- Calculate air emissions of facility or process.
- Conduct greenhouse gas emissions inventories, calculate carbon footprint, and implement measures to reduce emissions.
- Construct process flow diagrams.
- Input data to modeling programs.
- Conduct facility air emissions inventory.
- Investigate fugitive air emissions.
- Research air pollution prevention alternatives.
- Operate and maintain air pollution control devices.
- Determine efficiency of air pollution control devices.
- Initiate corrective action for operational malfunctions of air monitoring and/or pollution control equipment.
- Maintain inventory of supplies for air monitoring and/or pollution control equipment.
- Properly dispose of wastes generated by air monitoring and/or air pollution control equipment.
- Perform literature searches.
- Assist in recommending/implementing practices to reduce or eliminate air pollutants.
- Train employees in air sampling/monitoring techniques, and health and safety issues.
- Develop and maintain customer/community relationships.
- Maintain professional certifications.
- Interpret indoor air quality assessments, determine possible resulting health impacts, and recommend mitigation options.

Emergency Preparedness and Response

■ Enforcement/Law Officer

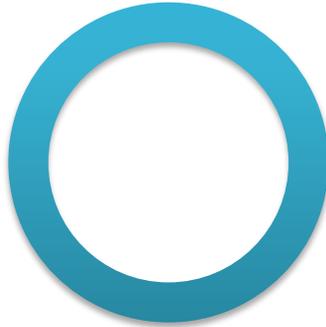


- Respond to hazardous materials incidents and emergencies.
- Assess, contain, control, and clean up hazardous/regulated material spills and releases.
- Evacuate affected areas.
- Assess meteorological conditions.
- Utilize the “buddy system.”
- Select and use proper personal protective equipment.
- Maintain and inspect personal protective equipment.
- Install, calibrate, operate, troubleshoot, maintain, and repair sampling and monitoring equipment.
- Interpret monitoring data.
- Operate heavy equipment and tools.
- Assist in the setup, use, and dismantling of decontamination facility.
- Assist in containerizing materials.
- Dispose of hazardous/regulated material spill wastes.
- Complete hazardous materials incident reports.
- Activate and/or perform assigned duties within the incident command system.
- Interact with regulatory authorities, other emergency response organizations, and the public.
- Recognize chemical and physical properties of hazardous materials.
- Recognize incompatible materials.
- Label, package, and transport hazardous materials.
- Develop and manage spatial and attribute database/map.

- Collect inventory data and track regulated materials.
- Submit reports to off-site personnel and regulatory agencies.
- Apply appropriate local, state, Tribal, and federal environmental regulations to specific projects.
- Conduct facility inspections.
- Assess facility processes for potential vulnerability, and plan corrective measures.
- Develop emergency action plans.
- Train employees on emergency action plan contents and emergency response actions.
- Conduct emergency response drills.
- Serve as a member of an emergency response team.
- Maintain professional certifications.
- Maintain awareness of all hazards and threats (e.g., spills and releases, security breaches, fire, explosions, natural disasters, structural collapse, and workplace violence).
- Develop county all-hazard plans.
- Update existing training programs and materials to include applicable information on bioterrorism, terrorism, pandemic, weapons of mass destruction, personal safety/preparedness, etc.
- Develop interoperability of all agencies to prepare, plan, respond, and recover from all hazards.
- Develop and exercise crisis management, business continuity, and continuity of operations plans.
- Develop programs to address workplace violence threats including processes, procedures, and training.
- Conduct vulnerability analysis for workplace risk or hazards.
- Ensure plans are consistent with National Incident Management Framework.
- Plan for post-traumatic stress disorder assistance and counseling.
- Develop mutual aid agreements with appropriate agencies and vendors as needed to ensure multi-agency coordination.
- Develop and implement mass communication systems with appropriate agencies
- Use geospatial technologies as appropriate for emergency preparedness and response.
- Train/instruct others in the proper use of personal protective equipment.
- Safely store hazardous materials.
- Maintain documentation related to health and safety issues.

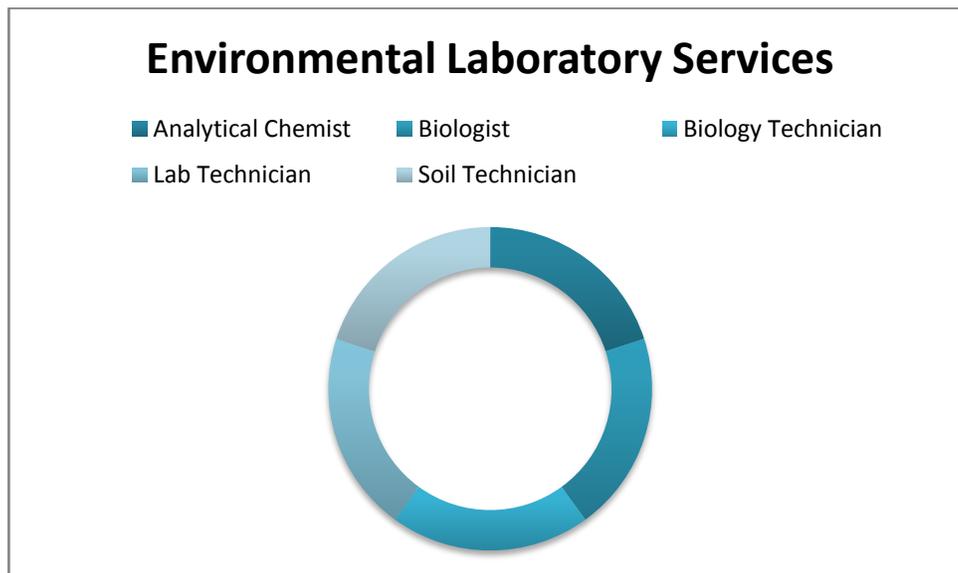
Environmental Information Management Systems

■ Environmental Educator/Public Liason Officer



- Input data to information management system.
- Collect, compile, analyze, and archive environmental data and records.
- Manage laboratory data.
- Implement and review quality assurance/quality control practices and guidelines.
- Document and report best practices.
- Maintain documentation (e.g., employee training, health and safety issues, and job performance).
- Perform basic statistical analysis.
- Develop and maintain inventory tracking systems for environmental equipment and supplies, and regulated/hazardous materials.
- Update and transmit environmental information to customers and/or regulatory agencies.
- Identify most appropriate information management technologies.
- Develop automated information management systems.
- Search Web sites, Internet directories, and literature for relevant environmental information.
- Maintain security and integrity of proprietary and/or public information resources.
- Collect, manage, and integrate spatial and attribute data using geographic information systems (GIS) and global positioning systems (GPS).
- Create and interpret maps.
- Determine appropriate projections and coordinate system.
- Perform imagery geo-referencing.

- Identify and apply basic educational principles to information management.
- Analyze and identify environmental impact.
- Analyze and identify pollution prevention, waste management, and remediation strategies.
- Manage and maintain database.
- Recognize and apply appropriate environmental regulations to information management.
- Apply ISO 140001 requirements to manage environmental systems.



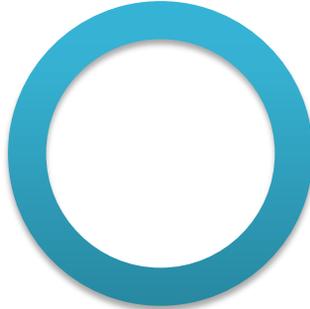
- Collect air, water, wastewater, soil, sludge, or other samples for laboratory analysis.
- Receive laboratory samples and ship sampling containers to customers.
- Instruct customers in proper sampling, preservation, and shipping techniques.
- Label, preserve, store, and prepare samples for analysis.
- Install, calibrate, operate, troubleshoot, repair, and maintain laboratory equipment.
- Maintain maintenance records for laboratory equipment.
- Select and use proper laboratory glassware.
- Measure, weigh, composite, and dilute samples.
- Perform wet chemistry procedures.
- Titrate, extract, and digest samples.
- Prepare laboratory standards and solutions.
- Operate basic laboratory instrumentation (e.g., pH, conductivity, colorimetric, and specific ion meters).

- Operate advanced laboratory instrumentation (e.g., spectrophotometer, gas chromatograph, and high performance liquid chromatography).
- Operate microscope.
- Prepare microbiological media.
- Qualify and quantify organisms or contaminants.
- Wash, decontaminate, or sterilize laboratory equipment.
- Label and dispose of laboratory waste.
- Maintain inventory of laboratory supplies.
- Operate computers and software.
- Generate, calculate, validate, interpret, and record laboratory data.
- Document laboratory procedures and results.
- Develop and follow SOPs.
- Follow established quality control procedures.
- Follow chain-of-custody procedures for sample collection and handling.
- Prepare laboratory reports and compliance paperwork for customers and regulatory agencies.
- Apply local, state, Tribal, and federal environmental regulations to specific projects.
- Testify in court proceedings.
- Develop and comply with chemical hygiene/safety plan.
- Perform literature searches.
- Implement laboratory business plan.
- Develop and maintain customer relationships.
- Train other employees in laboratory procedures and techniques.
- Maintain laboratory technician/analyst certifications.
- Select and use proper personal protective equipment for work environment.
- Identify and implement good laboratory practices.
- Maintain laboratory equipment calibration program.
- Maintain laboratory procedures to current approved standard methods and/or other regulatory approved methods.
- Input data to information management system.
- Collect, compile, analyze, and archive environmental data and records.
- Manage laboratory data.
- Implement and review quality assurance/quality control practices and guidelines.
- Document and report best practices.
- Maintain documentation (e.g., employee training, health and safety issues, and job performance).

- Perform basic statistical analysis.
- Develop and maintain inventory tracking systems for environmental equipment and supplies, and regulated/hazardous materials.
- Update and transmit environmental information to customers and/or regulatory agencies.
- Identify most appropriate information management technologies.
- Develop automated information management systems.
- Search Web sites, Internet directories, and literature for relevant environmental information.
- Maintain security and integrity of proprietary and/or public information resources.
- Collect, manage, and integrate spatial and attribute data using geographic information systems (GIS) and global positioning systems (GPS).
- Create and interpret maps.
- Determine appropriate projections and coordinate system.
- Perform imagery geo-referencing.
- Identify and apply basic educational principles to information management.
- Analyze and identify environmental impact.
- Analyze and identify pollution prevention, waste management, and remediation strategies.
- Manage and maintain database.
- Recognize and apply appropriate environmental regulations to information management.
- Apply ISO 140001 requirements to manage environmental systems.

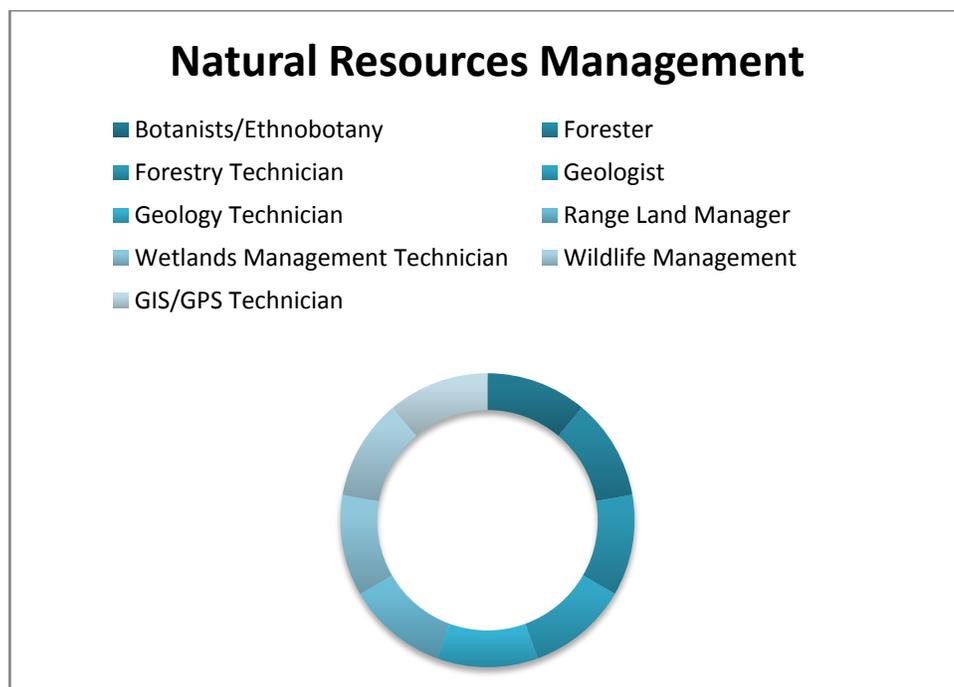
Environmental Site Management

■ Abatement Technician (lead, asbestos, etc.)



- Conduct abatement and remediation activities for soil, ground water, surface water, asbestos, and lead.
- Install, calibrate, operate, troubleshoot, repair, and maintain sampling and remediation equipment.
- Collect and analyze air, water, soil, sludge, asbestos-containing materials, lead paint, and other samples using field or mobile laboratory equipment.
- Label, preserve, store, and ship samples and hazardous materials.
- Assist in constructing site sampling plan; modify as necessary due to site conditions.
- Decontaminate sampling and remediation equipment.
- Handle investigative and remediation wastes properly.
- Restore site to pre-investigative conditions.
- Assess and document site hydrologic and geologic conditions, and human-made features.
- Confirm underground utility locations.
- Drill boreholes for environmental investigation.
- Evaluate and monitor health and safety conditions.
- Assist in preparation of site health and safety plan.
- Select and use proper personal protective equipment.
- Assist in site exposure monitoring.
- Initiate emergency response actions.
- Apply appropriate geospatial technologies (e.g., GIS, GPS, remote sensing).
- Survey property boundaries, features, and sampling locations using GPS or rod and transit.
- Construct and interpret blueprints/maps.
- Record site conditions, sampling protocol, and field notes.
- Photograph site conditions and activities.
- Prepare written reports of site conditions and activities.

- Recognize physical and chemical properties of hazardous materials.
- Recognize incompatible materials.
- Purge underground storage tanks of materials and vapors.
- Remove underground storage tanks using heavy equipment and power tools.
- Apply appropriate local, state, Tribal, and federal environmental regulations to projects.
- Interact with contractors, property owners, site managers, regulatory agencies, and the public.
- Research site history and investigate potential for environmental contamination.
- Support redevelopment/land use activities.
- Collect and apply environmental, economic, and social impact data related to redevelopment.
- Develop and follow SOPs.
- Follow established quality control procedures.
- Follow chain-of-custody procedures for sample collection and handling.
- Train site workers in SOPs, and health and safety issues.
- Maintain professional certifications.
- Maintain chain-of-custody records for all samples.



- Inventory, evaluate, and assist in development of resource management strategies for areas with unique scenic, recreational, historical, cultural,

geological, habitat, species, or other resource values.

- Conserve natural resources.
- Assist in development of plans for the protection, maintenance, rehabilitation, or enhancement of natural resources.
- Assist in operational forestry.
- Assist in forest nursery programs.
- Inventory forest stands.
- Assist in preparation of fire suppression and prescribed burning plans.
- Carry out prescribed burning activities.
- Assist in development of fire management plans.
- Fight forest fires.
- Assist in laying out timber sales (e.g., marking trees to be logged).
- Compile, verify, and analyze timber appraisals.
- Cruise timber (i.e., measure height and circumference of trees).
- Scale (i.e., measure) and cut logs.
- Conduct and interpret surface and ground water inventories, studies, and watershed analyses.
- Examine and interpret water quality and quantity from streams and aquifers.
- Implement plans to improve aquatic habitats.
- Implement farm pond management techniques.
- Sample and identify aquatic organisms.
- Identify and delineate wetlands based on plant/animal species and hydrology.
- Implement wetland restoration and construction activities.
- Operate boats.
- Perform fish population studies using seining, trawling, and electroshock equipment.
- Operate fish hatchery equipment.
- Practice techniques of aquaculture.
- Stock lakes and streams with fish.
- Participate in tag/release and tracking studies for fish and wildlife.
- Identify and participate in the introduction of rare/endangered species to an ecosystem.
- Implement urban wildlife management strategies.
- Rehabilitate injured wildlife for release.
- Trap and relocate wildlife.
- Calculate rates of sediment production.
- Determine soil and bedrock types and characteristics.
- Identify fossil and rock samples.

- Implement soil conservation practices.
- Implement erosion control strategies.
- Create geo-reference imagery.
- Collect, manage, and integrate spatial and attribute data using applicable geospatial technologies.
- Determine appropriate map projections and coordinate systems.
- Use aerial photography.
- Use geological maps and reports.
- Assist in habitat restoration.
- Identify and control noxious weeds.
- Propagate and plant woody and non-woody plant species.
- Handle pesticides and herbicides.
- Perform ecosystem sampling and monitoring.
- Install, calibrate, operate, maintain, troubleshoot, and repair equipment.
- Analyze and interpret sampling and monitoring data.
- Decontaminate sampling and monitoring equipment.
- Label, preserve, store, and ship samples.
- Follow chain-of-custody procedures for sample collection and handling.
- Follow established quality control procedures.
- Perform park maintenance.
- Develop and deliver public information and environmental education programs.
- Participate in the assessment of environmental impact of proposed development projects.
- Apply appropriate local, state, Tribal, and federal environmental regulations to specific projects.
- Enforce local, state, Tribal, and federal natural resource regulations.
- Assist in making recommendations to federal, Tribal, state, local, and private organizations.
- Assist in preparation of environmental documents.
- Select and use proper personal protective equipment.
- Compile field notes, maintain records, and write reports.
- Perform literature searches.
- Develop and follow SOPs.
- Inventory and assess critical natural resources.
- Identify and delineate wetlands based on plant/animal species, hydrology, and soils.
- Identify and control noxious weeds and other invasive species.

- Handle and apply pesticides and herbicides according to established protocols.
- Measure ground water levels and flow direction.

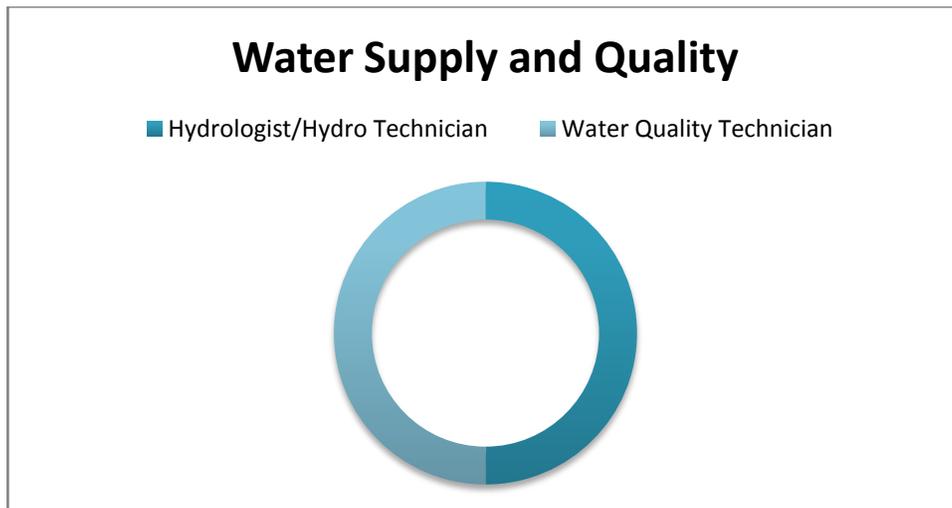


- Identify applicable or potentially applicable environmental permits related to air, water, recycling of materials, and management of waste.
- Promote recycling and re-use of materials from the receiving dock through the shipping center, including the employee lunch rooms and lounges.
- Act as liaison with Local Emergency Preparedness Commission (LEPC) personnel.
- Interact with regulatory authorities and public health and safety officials.
- Work with professional staff to determine life-cycle costs associated with equipment upgrades and process modifications to ensure costs associated with improved safety and health are factored on top of potential energy savings, reduced waste, reduced labor costs, and other potential cost savings.
- Train/inform others on the proper use of personal protective equipment.
- Identify, inventory, characterize, and sort solid and hazardous waste streams.
- Label, package, store, dispose of, and/or recycle facility wastes.
- Collect samples of waste streams, using SOPs.
- Conduct facility audits and evaluate facility processes and materials for waste minimization potential.
- Recommend and implement practices to reduce or eliminate pollutants and

waste from facility processes.

- Conduct cost-benefit analyses.
- Train employees in pollution prevention strategies.
- Train employees in hazardous waste handling and management.
- Assist in development and implementation of environmental management system for facility.
- Coordinate material recycling/waste exchange program.
- Investigate alternative markets and reuse potentials for waste materials.
- Install, calibrate, operate, troubleshoot, repair, and maintain equipment and pollution control devices.
- Operate waste handling equipment including heavy equipment, balers, compactors, grinders, separation and conveyance systems, and incinerators.
- Initiate corrective action to remedy operational malfunctions.
- Collect samples from landfill leachate and/or gas recovery system.
- Label, preserve, store, and ship samples.
- Decontaminate sampling equipment.
- Characterize wastes as hazardous or nonhazardous.
- Prepare shipping manifests.
- Maintain records of waste storage, shipping, and disposal.
- Apply appropriate local, state, Tribal, and federal regulations for transportation of solid and hazardous waste.
- Select and use proper personal protective equipment.
- Develop and follow SOPs.
- Follow established quality control procedures.
- Follow chain-of-custody procedures for sample collection and handling.
- Manage household hazardous waste.
- Educate the public about solid/hazardous waste disposal and recycling options.
- Operate computers and software.
- Perform literature searches.
- Prepare reports.
- Maintain professional certifications.
- Apply appropriate Nuclear Regulatory Commission (NRC) regulations for storage and containment of nuclear waste.
- Recognize safety issues and apply contingency plans associated with nuclear waste.
- Manage source materials suitable for waste-to-energy process.
- Apply ISO 14001 requirements to manage environmental systems.

- Ensure products, parts, and components are RoHS compliant.
- Ensure recycled materials are WEEE compliant.
- Identify local, state, and regional emergency response and reporting requirements.
- Adhere to Department of Transportation regulations as they pertain to packing and transporting hazardous waste.
- Collect recyclable materials.
- Evaluate materials for secondary use in production processes.
- Mass balance scenarios for regulated waste materials to equate or compare volumes purchased with volumes (weights) of product sold and production waste.
- Document compliance with appropriate local, state, Tribal, and federal regulations for regulated and hazardous materials.
- Review plans for process modification with engineering and management personnel to determine impacts, if any, on waste streams.
- Identify applicable environmental permits and SOPs associated with waste management.
- Evaluate industrial waste recycling options periodically.
- Review potential for purchase or sale of materials in local, state, Tribal, and federal recycling markets.



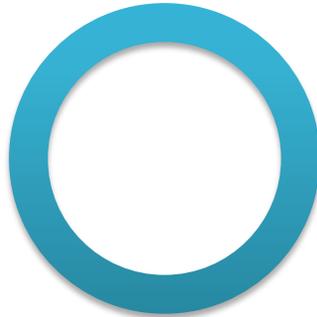
- Collect surface water, ground water, wastewater, process water, and drinking water samples.
- Label, preserve, and store samples.
- Analyze samples for physical, chemical, and biological parameters.

- Interpret sample analysis results.
- Monitor flow rates and tank levels by reading gauges, meters, and charts.
- Recognize and correct system upsets by adjusting process equipment.
- Decontaminate sampling equipment.
- Install, calibrate, operate, troubleshoot, repair, and maintain equipment.
- Operate heavy equipment, power tools, and boats.
- Operate publicly owned treatment works plant equipment.
- Operate industrial wastewater pretreatment equipment.
- Use and maintain remote sensing equipment.
- Operate water filtration, aeration, disinfection, and purification equipment.
- Label and dispose of treatment by-products and wastes.
- Select and use proper PPE.
- Practice proper confined-space entry techniques.
- Handle hazardous chemicals.
- Initiate emergency response actions.
- Maintain chemical and supply inventory.
- Operate computers and software.
- Document site or process conditions, prepare reports, and maintain accurate records.
- Develop and follow SOPs.
- Follow established quality control procedures.
- Follow chain-of-custody procedures for sample collection and handling.
- Apply local, state, Tribal, and federal environmental regulations to specific projects.
- Assess stormwater runoff characteristics.
- Assist in preparation of a site stormwater pollution prevention plan.
- Assist with development of written plans (e.g., sampling plan, health and safety plan, and lockout/tagout plan).
- Investigate erosion problems and assist in implementation of solutions.
- Perform ditch and culvert inspections and repairs.
- Investigate, maintain, and repair water and wastewater collection and distribution systems.
- Measure stream flow characteristics.
- Conduct lake studies.
- Assist in wetlands delineation.
- Assist in determining boundaries of a watershed.
- Assess soil, fill, and bedrock characteristics.
- Assist with environmental drilling and monitoring well installation.

- Measure ground water levels and flow direction.
- Collect, treat, and dispose of contaminated ground water.
- Monitor ground water remediation efforts.
- Apply and incorporate biosolids to land.
- Interact with contractors, site owners, regulatory agencies, and the public.
- Maintain professional certifications.
- Implement a watershed protection plan.
- Implement a watershed public education program.
- Operate, monitor, and maintain well drilling equipment and appropriate logs.
- Develop cooperative agreements with water utilities.
- Operate and maintain well fields.
- Participate and advise water boards and commissions.
- Understand basic biological and chemical principles.
- Troubleshoot operational errors and make corrective decisions.
- Understand rate paying and budgeting principles.
- Analyze data, trends, reports, consumption, and/or test results to determine adequacy of facilities and system performance to include regulatory compliance.
- Comply with state backflow preventer programs to separate drinking water supply from industrial use and re-use supplies.
- Evaluate the use and re-use of graywater in the processes.
- Implement best management practices and strive for zero discharge.
- Consider participating in community monitoring forum to determine the presence of antibiotics, caffeine, and other unregulated substances in the water supplies at and near your facility.
- Monitor the water level/drawdown rates for the various aquifers at or near your facility.
- Hold public informational sessions to advise and participate with citizens and private sectors regarding long-term, high-quality water supplies.
- Apply geospatial technologies.
- Plan and deploy security measures.
- Communicate effectively with contractors, customers, site owners, municipal officials, regulatory agencies, and the public.
- Notify regulatory agencies and public of noncompliance of licensing and permitting violations.

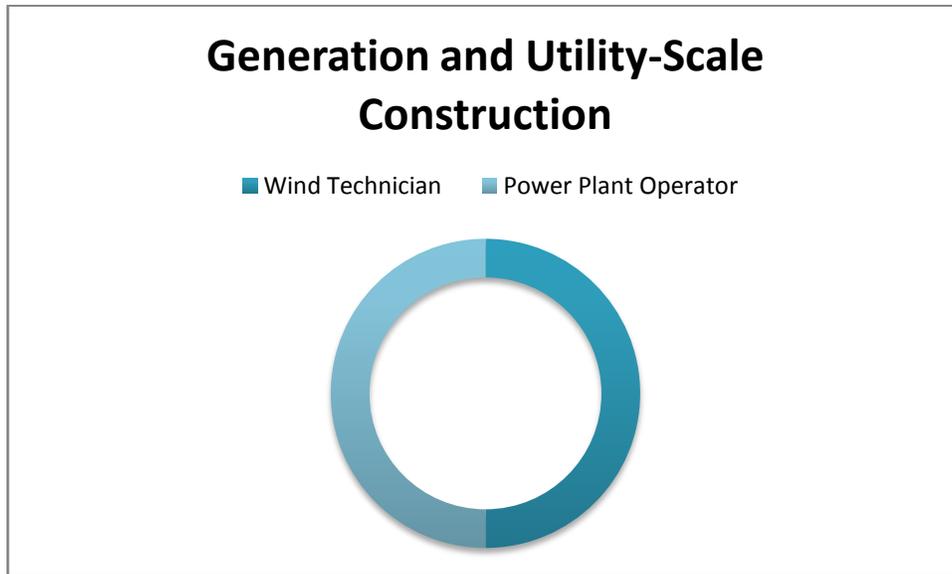
Sustainability

■ Energy Efficiency Technician



- Use Quantitative Risk Assessment (QRA) to plan for sustainable resource management.
- Use Life Cycle Analysis (LCA) techniques to map resource use and product stewardship.
- Apply geospatial technologies to identify risks, create plans, propose solutions, and track progress.
- Apply sustainability metrics (environmental, economic, and social).
- Maintain appropriate certifications.
- Develop and maintain community relationships and partnerships to promote sustainability.
- Promote social equity and environmental justice in conjunction with economic viability/balance.
- Educate public in sustainability principles and practices.
- Keep current with sustainability literature, design, and conferences.
- Apply and utilize cost-benefit analysis to sustainability decisions.
- Understand environmental, economic, and social systems interactions.
- Train employees on sustainability principles and practices.
- Research and advocate the use of sustainable products.
- Apply sustainability principles to urban planning.
- Perform emissions inventories, calculate and evaluate impacts, and communicate results.
- Identify the basics of Leadership in Energy and Environmental Design (LEED) certification criteria.
- Identify the basics of home energy rating systems.
- Identify the basics of permaculture design.

- Apply ISO 140001 requirements to manage environmental systems.
- Ensure products, parts, and components are RoHS compliant.
- Ensure recycled materials are WEEE compliant.
- Assist in development of sustainability policies and plan for facilities, communities, and regions.
- Educate public in sustainability principles and practices.



- Monitor and regulate energy production processes.
- Anticipate and adjust system to meet load and distribution demands.
- Develop and implement preventive maintenance practices and programs.
- Collect and analyze data to maintain proper conditions.
- Optimize operational efficiencies.
- Operate plant equipment and controls, including monitoring and testing equipment.
- Calibrate and operate instruments.
- Identify and practice standard environmental, health, safety, and spill practices and procedures.
- Develop a critical path outage plan.
- Analyze and respond to alarm conditions.
- Test electrical circuits working with 24 to 600 V DC/AC.
- Troubleshoot and repair integrated systems.
- Troubleshoot complicated mechanical and hydraulic problems on turbines.
- Perform all mechanical, hydraulic, and electrical component maintenance, repair, or replacement of parts to correct malfunctions.
- Perform start-up procedures and equipment function tests.
- Perform maintenance on turbine equipment per the commissioning manual.

- Collect turbine data for research and/or analysis.
- Report turbine conditions and complete reports and paperwork as required.
- Provide technical assistance to other technicians.
- Responsible for adherence to OSHA-compliant health and safety programs.
- Coordinate with engineering on technical issues and documentation.
- Prepare wind turbine generators for commercial operation.
- Travel and work overtime as required.
- Evaluate product conditions and quality to verify that systems have been assembled and wired correctly to meet product standards.
- Ensure that less experienced colleagues and subcontractors adhere to all best practices and work instructions, and provide quality workmanship combined with good housekeeping practices.
- Document all work performed using computer-based service reporting procedures.
- Possess a valid driver's license.

Other Job Titles

The following job titles are listed as needed jobs and positions on the Standing Rock Reservation and surrounding regions. General job functions are not available from ATEEC. SBC may decide to host other forums to help start the process of identifying job functions which can later be matched to a curriculum or activity.

- Paleontology Technician
- Integrated Resource Management Program (IRMP) Technician
- Environmental Lawyer/Law Officer
- Engineer

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Project Web site:

www.ateec.org/profdev/tribal