



IDENTIFICATION

Department	Position Title	
Industry, Tourism and Investment	Senior Energy Geologist	
Position Number	Community	Division/Region
63-14374	Yellowknife	NWT Geological Survey/HQ

PURPOSE OF THE POSITION

The Senior Energy Geologist increases the capacity for Northwest Territories (NWT) energy geoscience research at the Northwest Territories Geological Survey (NTGS). Reporting to the Manager, Energy Geosciences, the incumbent generates and leads scientific studies that increase knowledge of the NWT's energy resources and encourages commercial investigation of these resources, resulting in potential economic benefits to the NWT.

SCOPE

Located in Yellowknife, the NTGS is a Division of the Department of Industry, Tourism and Investment. The NTGS provides expertise on the mineral and petroleum resources of the NWT. It also carries out mineral and energy potential studies, and renewable as well as non-renewable resource assessments in support of land use planning, land claim processes, and conservation initiatives. The NTGS also compiles, manages and makes available a variety of geoscientific data, and provides public education and outreach services.

The Senior Energy Geologist is a key position in the NTGS Energy Geosciences Group, which operates in the following areas:

- Geoscientific research to assess renewable and non-renewable energy potential of the NWT;
- Provision of data, general information and advice on energy geoscience to clients, including residents of the NWT, industry, and other government agencies; and
- Promotion of NWT energy resources through geoscience.

The incumbent works with NTGS colleagues, staff in other government geoscience agencies, department regional offices, petroleum and other energy industry workers,

Indigenous Organizations , NWT communities, and/or university researchers on specific energy-related projects.

The Senior Energy Geologist is an experienced and highly capable field researcher who provides scientific leadership of NTGS energy research initiatives both in and out of the field.

The incumbent is expected to generate highly technical, professional geological reports and compilations stemming from this work and to attract other research partners who contribute to NTGS research objectives. Communication of scientific results and other energy related information is done with the primary objectives of better understanding NWT energy resources, aiding in their future commercial investigation, and contributing to strategies governing their responsible development.

RESPONSIBILITIES

1. The Senior Energy Geologist develops, leads, and participates in original geoscience research projects in energy-prospective areas of the NWT by:

- Planning new projects in consultation with the Manager, Energy Geosciences. Projects will vary from regional scale, multi-disciplinary studies to small thematic projects carried out independently. The incumbent leads through collaborations with other staff and research partners as appropriate, or plays a key role in interacting with agencies that propose research projects to the NTGS.
- Planning and leading field research and mapping programs that effectively address NTGS scientific and other objectives.
- Assembling all relevant surface and subsurface data including (but not limited to) seismic profiles, well logs, core and drill cuttings, bedrock and subsurface maps, cross-sections, field and analytical reports by government, industry and/or academic researchers, to serve as a framework for interpreting new field and/or analytical data.
- Investigating and applying for research funding.
- Managing project budgets and logistics.
- Delivering or contributing to multiple projects that may run concurrently.
- Supervising NTGS staff, summer students, contractors, research partners, and volunteers assisting in project work.
- Collaborating with universities to facilitate, and in some instances oversee, the field component of post-doctoral, graduate and undergraduate research.

2. The Senior Energy Geologist contributes to maintaining NTGS energy-related data holdings, improving client access to these holdings, and generating new data compilations and interpretations by:

- Conducting 'data mining' projects that address both client and research needs.
- Monitoring the release and acquiring new public information from the Canadian Energy Regulator (CER) and/or the NWT's Office of the Regulator of Oil and Gas Operations (OROGO) and interpreting results where applicable.
- Obtaining and supervising contractors.

- Monitoring energy-related pages on the NTGS website, suggesting updates and changes as required, and liaising with NTGS staff to ensure energy-related data download services are maintained.
 - Responding to client requests for assistance in accessing and understanding energy-related data.
3. **The Senior Energy Geologist prepares reports, figures, maps, and cross-sections that detail the project work undertaken and ensures the results are available to clients in a timely manner by:**
 - Authoring and preparing reports, figures, maps and cross-sections to meet project goals and deadlines. These products are of high technical quality and suitable for the NTGS publication process and/or scientific journals.
 - Assembling results of work for oral or poster presentations at the Yellowknife Geoscience Forum, the Canadian Society of Petroleum Geologists annual convention, the Arctic Energy and Emerging Technologies Conference, and other scientific meetings, industry conferences, and project workshops, and Indigenous and community organization meetings as requested.
 - Revising this information to be suitable for presentation to communities, Indigenous Organizations, school groups, and the public.
 - Keeping in regular contact with colleagues at the NTGS, other government agencies, universities, and the energy industry to obtain feedback, maintain healthy communications, discuss new technologies and best practices, and learn about new research initiatives.
 4. **The Senior Energy Geologist provides information, data, and advice on a regular basis to NTGS staff, senior managers, the department, energy industry professionals, Indigenous and community residents, and other government agencies on project areas and energy-related activities and concepts.**
 5. **The Senior Energy Geologist contributes to energy related policy and regulatory initiatives and to regulatory decisions that assist in the management of NWT energy resources.**
 6. **The Senior Energy Geologist assists in producing informative promotional materials and describing NTGS initiatives and the energy resources of the NWT at public events.**
 7. **The Senior Energy Geologist performs peer-review of manuscripts by other NTGS colleagues and other colleagues outside the NTGS for both internal NTGS and external publications (e.g. GSC Reports, Journal Articles, conference abstracts). The incumbent may perform confidential peer-reviews of relevant scientific journal articles for scientific journals if requested by the journal's editorial board.**
 8. **The incumbent will be required to undertake duty travel for field work, conferences, working with data and samples held in collections in southern Canada,**

and to meet with research colleagues. For field-based research projects, the incumbent is responsible for:

- Organizing, undertaking, and reporting on field research programs, most often as the project leader.
- Scientific, financial, and logistical management of field programs that are typically located in remote fly-in locations.
- Working with NTGS colleagues and external partners to ensure efficiencies of field- and office- based activities, e.g., coordinating field logistics with others.
- Obtaining project support services such as preparing contribution agreements for research partners.
- Human resource management of field crews, including summer student hiring.
- Safe conduct of all field operations.
- Leading or participating in pre- and post-fieldwork research activities.
- Fostering ongoing healthy and productive partnerships with external research partners.
- As required, participate in collaborative field research activities organized by other groups, e.g. universities, Geological Survey of Canada, and other NTGS researchers.

WORKING CONDITIONS

Physical Demands

Normal office environment for most of the year, with up to eight weeks of fieldwork during summer months.

Fieldwork is physically taxing; the incumbent will be hiking over rough terrain with a backpack, often carrying rock samples (up to 50 pounds) for 8 hours a day. Fieldwork related logistics (sleeping arrangements in tents, travel arrangements in small aircraft and helicopters, loading and unloading vehicles, preparing meals, etc.) can be physically demanding.

Environmental Conditions

Normal office environment for most of the year, with up to eight weeks of fieldwork during summer months.

While in the field, the incumbent can be exposed to: rapidly changing weather and to conditions such as cold (hypothermia), intense sun (burn), wind, rain; helicopters, airplanes, ATV's, road vehicles (physical injury, hearing loss, gas/ fumes); insects and insect bites; dangerous, unforeseen, uncontrolled field situations such as vehicular accidents, attack by wild animals, falls and other accidents while on traverse (broken bones, cuts, etc.). The incumbent will be exposed to these environment conditions every day while in the field.

Sensory Demands

Normal office environment outside of the field season.

Fieldwork requires a state of heightened alertness to ensure a safe working environment for the team, and the incumbent is subject to impacts associated with long hours of field work (e.g. fatigue). The incumbent will likely be exposed to these environmental conditions every day in the field.

Mental Demands

Multiple concurrent and conflicting tasks, leading to conflicting work priorities and time pressures. While in the field, the incumbent is subject to substantial disruption of family life due for field work in distant locations. The incumbent is also responsible for the continuous management of scientific and logistical activities and safe work practices while in the field, including the prediction and mitigation of potentially hazardous situations and managing personality conflicts amongst field staff. The incumbent will be exposed to these demands every day up to three weeks per year.

The incumbent is also required to present research or work plans to scientific peers, collaborators, community groups, etc. and attend research meetings in Southern Canada two to four times per year.

KNOWLEDGE, SKILLS AND ABILITIES

- Knowledge of the geological principles as they relate to energy related geological disciplines, including but not limited to: sedimentary basin analysis, stratigraphy, sedimentology, tectonics, fluid movement in the subsurface, and basic geochemical principles.
- Knowledge of the techniques used in well log analysis; petroleum play development; bedrock and subsurface mapping; analyses of samples in outcrop, core and drill cuttings; and stratigraphic correlation. Familiarity with the principles of seismic interpretation is an asset.
- Knowledge of the petroleum geology, Phanerozoic stratigraphy, and the oil and gas industry of the NWT.
- Knowledge of the legal and ethical obligations of the geological profession.
- Knowledge of government financial and human resource policies and best practices.
- Project management, organizational and logistical skills to effectively manage and participate in both independent and collaborative research projects.
- Analytical skills to assess existing scientific and industry data and incorporate it in new research endeavors.
- Skills in scientific writing, critical peer review and editing of scientific reports and interpretations.
- Supervisory skills to manage staff, contractors, summer students, and research partners.
- Field research skills including techniques in measured section work, navigation (using GPS, topographic and/or bedrock map images, air photos), outcrop description and documentation, and sample collection.
- Presentation skills in order to transfer new knowledge and its implications to both scientific peers and laypersons.

- Basic techniques of wilderness survival, first aid, aircraft safety, water craft and land vehicle operation, and firearms operation in order to ensure the safety and well-being of field crews and successful execution of field activities in remote areas.
- Ability to use petroleum industry-specific software for manipulating geophysical well log and outcrop data (e.g. GeoScout). Experience in using the Internet for research purposes, presentation software (e.g. Microsoft PowerPoint), spreadsheets (e.g. Microsoft Excel), graphic design (e.g. CorelDRAW, Illustrator), word processing (e.g. Microsoft Word), and desktop Geographic Information Systems software (e.g. ESRI ArcMap).
- Ability to lead and manage all aspects of complex field and other research programs, often in remote locations.
- Ability to conceptualize, design and undertake surface and subsurface geological studies aimed at solving geological questions related to energy geosciences.
- Ability to produce scientific reports of high technical quality suitable for publishing in peer-reviewed international geological journals and through the NTGS publication process.
- Ability to present geological information in a competent and effective manner in visual, oral and written formats to a variety of audiences.
- Ability to work effectively on an independent basis or in a team environment with other professionals.
- Ability to complete complex projects on time and on budget, often while performing other duties.

Typically, the above qualifications would be attained by:

These knowledge, skills and abilities may typically be obtained with a Ph.D. degree in Geology, with a focus on petroleum geology and/or a sedimentary sub-discipline, and a minimum of three years work experience in the petroleum industry, academia or a government geoscience agency in a petroleum-related capacity. A demonstrated track record of research publications is an eligibility requirement for this position.

The incumbent must be eligible for registration in the NWT and Nunavut Association of Professional Engineers and Geoscientists (NAPEG) as a Professional Geoscientist.

ADDITIONAL REQUIREMENTS

Position Security (check one)

- No criminal records check required
- Position of Trust – criminal records check required
- Highly sensitive position – requires verification of identity and a criminal records check

French language (check one if applicable)

- French required (must identify required level below)
 Level required for this Designated Position is:
 ORAL EXPRESSION AND COMPREHENSION

Basic (B) Intermediate (I) Advanced (A)
READING COMPREHENSION:

Basic (B) Intermediate (I) Advanced (A)

WRITING SKILLS:

Basic (B) Intermediate (I) Advanced (A)

French preferred

Indigenous language: Select language

Required

Preferred