

**Job Class Profile: Agricultural Laboratory Chemist****Pay Level: CG-31 Point Band: 690-703**

Factor	Knowledge	Interpersonal Skills	Physical Effort	Concentration	Complexity	Accountability & Decision Making	Impact	Development and Leadership	Environmental Working Conditions	Total Points
Rating	5	4	3	6	4	3	3	2	5	
Points	233	67	19	29	120	65	62	43	54	692

**JOB SUMMARY**

The Agricultural Laboratory Chemist performs analytical chemistry work in a soil, plant and feed, agricultural diagnostic service laboratory.

**Key and Periodic Activities**

- Provides and reviews all laboratory analysis reports and maintains and updates client records by converting laboratory data into farm and soil fertility information using computerized programs.
- Performs chemical and physical analysis on all sample types utilizing established methodologies and laboratory instrumentation.
- Develops, implements and maintains a Quality Control/Quality Assurance Program (QC/QA).
- Consults with other staff and clients to discuss test results and provide interpretative guidance.
- Researches and implements new analytical procedures and techniques including the integration of new instrumentation.
- Performs preventative maintenance on laboratory instrumentation and practices laboratory cleanliness to prevent sample and equipment contamination.
- Interacts with the general public and agriculture producers by receiving and registering samples, providing recommendations for efficient use of fertilizers and organic soil amendments and responding to general inquiries.
- Orders laboratory supplies, ensures invoices are paid, maintains financial records and arranges deposits.
- Supervises and trains new laboratory personnel, including seasonal and casual, in analytical procedures, equipment operation and general safety.
- Prepares and updates policy and procedure manuals.
- Updates and initiates changes to computerized soils program.

## SKILL

Knowledge
<p><b>General and Specific Knowledge:</b></p> <ul style="list-style-type: none"> <li>— Knowledge of analytical chemistry.</li> <li>— Knowledge of laboratory procedures and equipment.</li> <li>— Knowledge of the safe operation of laboratory equipment and Workplace Hazards Management Information System (WHMIS) as it relates the safe use of chemicals.</li> <li>— Knowledge of nutrient prescriptions for soil and feed.</li> </ul> <p><b>Formal Education and/or Certification(s):</b></p> <ul style="list-style-type: none"> <li>— Minimum: Undergraduate Degree in Chemistry. Training in software use: spreadsheet, database specialized courses in Nutrient Management.</li> </ul> <p><b>Years of Experience:</b></p> <ul style="list-style-type: none"> <li>— Minimum: 3 – 4 years</li> </ul> <p><b>Competencies:</b></p> <ul style="list-style-type: none"> <li>— Analytical and assessment skills.</li> <li>— Research skills.</li> <li>— Proficient use of related computer software databases.</li> </ul>
Interpersonal Skills
<ul style="list-style-type: none"> <li>— A range of interpersonal skills are used to listen and ask questions and provide routine information. Communicating complex information to others and provide expert advice is also required. Communication is required to promote the laboratory service, gain the cooperation of others to solve problems and deal to with angry or upset people.</li> <li>— Most significant contacts are other employees in the laboratory to work co-operatively and share work assignments, clients/customers/general public such as farming community, agrifoods staff and other departments and agencies to communicate analytical results and provide interpretation and professional advisors to discuss results and recommendations.</li> </ul>

## EFFORT

Physical Effort
<ul style="list-style-type: none"> <li>— Work demands do not result in considerable fatigue requiring periods of rest.</li> <li>— Occasionally lifts or moves objects, 10-25 lbs. and 25 – 50 lbs., and work in cramped or awkward positions.</li> <li>— Sitting is required on a regular basis with occasional standing and/or walking.</li> <li>— The use of fine finger/precision work is regularly required with the occasional use of hand tools and equipment that require accurate control and steadiness in grinding and sieving samples.</li> </ul>
Concentration
<ul style="list-style-type: none"> <li>— <b>Visual</b> concentration or alertness is required when weighing and measuring samples, entering data in a spreadsheet, ensuring accuracy of instrument readings, calibrating instruments and observing chemical reactions.</li> </ul>

- Activities such as data entry, weighing and sieving samples and sample digestions can be repetitious and require **alertness**.
- Higher than normal levels of attentiveness/alertness is required for the health and safety of others due to handling toxic and/or highly corrosive acids and working around equipment.
- **Eye/hand coordination** is required for weighing and sieving samples, entering data into the computer and performing maintenance.
- **Time pressures and deadlines** and **lack of control over work pace** are experienced occasionally. There is a short (7-10 days) turn-around time on sample analysis and many procedures have specific timed steps. There are daily **interruptions** from phone inquiries, customers dropping off samples and equipment malfunction.
- **Exact results and precision** are required in everyday procedures such as weighing, pipetting and calibrating instruments. Results have to be of the highest degree of precision and accuracy as they are used in providing advice and nutrient recommendations to clients and in reports prepared by specialists. Quality controls are checked regularly.

### Complexity

- Work typically involves tasks and activities that are quite different and require a broad range of skills and diversity of knowledge.
- Tasks are occasionally repetitive/well defined or different but related.
- Work is performed with defined and standard work processes, have obvious or limited solutions and/or can be addressed by following procedures or guidelines.
- Occasionally there are tasks for which a limited number of guidelines or procedures exist, some of which must be defined and practical solutions found and require definition and analysis and development of complex solutions.
- The most typical problem is with procedure when identified by the failure of Quality Assurance/Quality Control protocols and must be solved before the project can be completed.
- Tasks are highly technical. Ideas for solutions are occasionally provided in a team setting of laboratory staff. Manuals, guidelines procedures and advisors are available for reference.

## RESPONSIBILITY

### Accountability and Decision-Making

- Work tasks are highly monitored or controlled. While some tasks and activities are carried out independently, the results of the work are checked using rigorous QA/QC procedures.
- Decisions can be made on ordering consumable laboratory supplies, modifying soil reports in regards to fertilizer recommendations, initiating instrumentation maintenance and repair and making minor alterations to laboratory methodologies.
- Independent judgement is used to make decisions in assessing the validity of results; review and approve all reports before releasing to clients; and set priorities on work.
- Manager's approval is required for larger capital expenditures and fee schedule changes.

### Impact

- Impacts generally are felt with the immediate work area, within the department, outside the organization and on clients and customers such as the farmers and the general public using the service.

- The results directly impact equipment, processes and systems, information, finance, material resources, health and safety and corporate image. The quality of work affects corporate image. Background information is used for health and safety studies.
- When an error occurs the incorrect information could have a significant impact as it is used by farmers and could result in crop failure or reduced milk production.
- The consequences of a mistake or error can have some impact only in the immediate workplace as all work undergoes a high degree of QA/QC procedures to eliminate mistakes.
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#### **Development and Leadership of Others**

- Not responsible for the supervision of staff.
- Training is provided to both temporarily assigned staff and seasonal students in laboratory methodologies and procedures.

### **WORKING CONDITIONS**

#### **Environmental Working Conditions**

- Safety equipment such as laboratory coats, safety glasses, dust masks and gloves are worn where necessary and special precautions are required when working with hazardous chemicals (sulphuric acid, acetone), animal manure and composted materials, dust and toxic fumes, and around equipment such as grinders.
- The likelihood of injury or illness is limited.
- Regularly exposed to dust and filth, hazardous chemicals and odours.
- Occasionally there is exposure to noise, toxic fumes, limited ventilation, bodily fluids and waste, and potentially infectious disease.