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COMPANY PROFILE

Background & Capabilities

Life Sciences

NOVO PRO
Project Development & Management

1350 Sherbrooke Street West, Suite 600
Montréal, QC H3G 1J1
CANADA

Telephone: **(514) 286-0004**
Fax: **(514) 286-1413**

Email: info@novopro.ca
Web site: <http://www.novopro.ca>



Mission Statement

NOVOPRO is a project-based company specializing in developing, engineering, and managing projects and related technologies as applied to the metallurgical, mining, mineral processing, and chemical industries. NOVOPRO provides complete support and services needed to design and build projects fitting within well-defined quality-budget-schedule constraints. NOVOPRO has assisted international and North American clients to develop their projects from inception through feasibility and into financing, implementation, and start-up.

Project Development

Early phase project development has been identified by NOVOPRO as an area where a gap is existing in capabilities offered in the consulting space, and therefore our goal has been to fill this gap with as much pertinent expertise in this area as possible. NOVOPRO has been involved in assisting clients develop a number of projects from inception and feasibility, to financing, implementation, and start-up. Our experience has been gained through the development of projects up to \$3 billion.

A list of relevant expertise is listed below:

- Conceptual Design
- Feasibility Studies
- Project Engineering
- Program Development
- Due diligence reviews
- Project Financing assistance
- Capital and Operating Cost Estimation
- Preparation of Cash Flow Projections and Financial Models
- Project Risk Reviews, Mitigation and Monte Carlo simulations
- Preparation of 43-101 compliant reports
- Operational inspections and support

In many cases, during project development, many of the activities listed above take place in an integrated client-consultant team.

Project Engineering

NOVOPRO provides engineering services, where applicable, to develop and implement various phases of potash projects, from preliminary studies to detailed engineering and EPCM.

The participation of the NOVOPRO team in numerous projects, both in international and domestic markets, has provided the company with a unique and focused project philosophy, enabling the examination and evaluation of new technological applications, translating into more efficient processing alternatives.

The available multidisciplinary capabilities tailored to projects provide clients with highly applicable services to fulfil all managerial and technical needs of the project. These include the following areas:

- Process design, PFD's, P&IDs, modeling, and simulation capabilities (METSIM and PHREEQc)
- In-house testing capabilities
- Knowledge of potash specific process providers and vendor information
- Mechanical design, including 3D modeling and detailed design
- Piping design
- Plant layouts, including rendered 3D plant models
- Electrical and controls engineering
- Civil and structural design
- Environmental engineering, including ESIA and mitigation measures.



Project Management

One of NOVOPRO's core competences is project management, which in every project, has the most potential to determine the outcome in terms of successful implementation. The lessons learned over the years have provided the managers at NOVOPRO to use sound methodology and diligence in making recommendations for decisions to be made by the client. Providing the correct information at the appropriate time is what is essential for a sound decision to be made, and project management ensures this and therefore drives all other disciplines to produce the tools required for the project to run safely, on time, and on budget.

Considering project management as the key ingredient in developing and implementing projects, NOVOPRO has emphasized this aspect of its capabilities by ensuring that managers and key personnel have the skills and tools required to enable services to be provided efficiently. By developing, managing, and implementing projects from \$5 to \$800 million, NOVOPRO understands the needs of projects and adapts its services and approach to suit the size of the projects, as well as the expectations of the client.

Client/Owner’s Representative

Acting on behalf of the client/owner’s is a part of the services offered by NOVOPRO which would assist the client’s team in dealing with large increases in workloads that inevitably result during project development and implementation stages. In fulfilling this role, NOVOPRO understands the reporting requirements for a sound decision-making process at various stages of the project.

Integrated Team Approach

NOVOPRO works closely with the client and other consultants as one close-knit team, the client’s interests always being regarded as our primary objective. This has been achieved through participation in the owner’s team as a technical and commercial specialist in the field of potash. Having worked closely with and as consultants, we are well aware of all operational aspects of projects such as project control, cash flow forecasting, scheduling, manpower projection, managerial procedures, and other requirements that drive a project as it unfolds. This grants us the required skills when interfacing with clients and assisting them in the decision-making processes.



Project Planning and Control

As part of the project management requirement, project planning tools are well understood and utilized to produce detailed project schedules and manpower forecasts, enabling the planning of resources and budget.

Project cost reporting and control is essential to successful project implementation by tracking past expenditures and forecasting future capital needs to ensure budget and cash flow availability meets requirements of the project and the client.

NOVOPRO can offer complete commercial services, including invoice verification and approval, and the reviewing of technical and commercial contract documents. Weekly and/or monthly financial reports are prepared to provide details concerning commercial project activities taking place and provide the reader with details of activities anticipated in the future.

Procurement and Contract Administration

To support engineering and construction management, NOVOPRO provides procurement and contract administration services to enable complete EPCM services to the clients on a variety of project sizes. This includes the preparation of contracts and RFQ's, technical and commercial evaluations, bids, contract award, administration, as well as expediting.

Other relevant services are inspection, logistical support, progress monitoring and tracking, vendor and contractor evaluations, quality control, and management.



Life Sciences

NOVOPRO personnel have participated in numerous projects in the life sciences sector, including pharmaceutical, radiopharmaceutical, medical devices, and laboratories with involvement in scoping studies, the preparation of basis of design documents, detailed design, construction management, commissioning, process, and facility validation.



This has thus provided Novopro with the following project and area involvement:

Pharmaceutical:

- Solid dosage, compounding, and tableting Non-sterile liquids creams and ointments Granulation, coating, and drying
- Clean rooms to Grade A,B,C, and D
- Sterile filling of large and small volume parenterals Lyophilisation
- Autoclaves and depyrogenation Packaging
- Validation

Radiopharmaceutical:

- Production facilities
- Laboratories
- Radiochemistry areas
- Clean rooms and dispensing areas Isolators and shielding
- Packaging and shipping
- Robotic storage and retrieval bunkers

Additional Areas of Expertise:

- Medical device production facilities Chemistry and micro-biology laboratories Dry rooms up to -50°C dew point

Utilities and Support Areas:

- WFI, RO water generation, and distribution
- Pure steam generation and distribution
- CIP and SIP systems
- Ventilation and air handling systems
- Automation and building controls
- Start-up and commissioning

Specific Capabilities of NOVOPRO

NOVOPRO is able to provide expertise and services in the following areas:

- Project management Pharmaceutical area design
- Radiopharmaceutical production facilities and laboratories Process design and selection of equipment
- Preparation of general arrangement drawings Preparation of personnel and product flow diagrams Preparation of process flow diagrams (PFD's) Preparation of Piping and Instrument Diagrams (P & IDs)
- Clean utilities design including WFI and RO water generation and distribution, clean steam generation and distribution
- Ventilation design and support utilities Laboratory design
- Construction supervision and management
- Contract development, contract administration, procurement and expediting Start-up assistance and commissioning
- Standard Operating Procedures Environmental Testing Programs
- Validation services to ensure compliance with the authorities, Health Canada, FDA, European Union
- Installation Qualification (IQ) Operation Qualification (OQ) Performance Qualification (PQ) Process Validation (PV)

Client Base

NOVOPRO personnel have executed projects and studies for the following companies:

- Draxis Pharma Inc. – Montreal, QC
- Draximage Inc. – Montreal, QC
- Merck Frosst Inc. – Montreal, QC
- Cross Cancer Institute – Edmonton, AB
- Hamilton Health Sciences – Hamilton, ON
- Montreal Neurological Institute – Montreal, QC
- Ultravision – St. Hubert, QC
- Laboratoires Biron - Brossard, QC

Project Resumes – Life Sciences

Project	Client	Phase Involvement
FDG Manufacturing and Radiochemistry Laboratory	Montreal Neurological Institute	<ul style="list-style-type: none"> • Facility GMP Audit & Recommendations • Design and Construction Support • Validation Preparation & Execution • Environmental Monitoring Programs
FDG Manufacturing and Radiochemistry Laboratory	Hamilton Health Sciences	<ul style="list-style-type: none"> • Feasibility Study • Basis of Design
Radiopharmaceutical Laboratory	Cross Cancer Institute	<ul style="list-style-type: none"> • Facility GMP Audit • Relocation Pre-feasibility Study
Radiopharmaceutical Laboratory	Draximage Inc.	<ul style="list-style-type: none"> • Feasibility Study • Design and Construction Supervision • Validation Supervision • Project Management
Contract Pharmaceutical Manufacturer	Draxis Pharma Inc.	<ul style="list-style-type: none"> • Feasibility Study • Design and Construction Supervision • Validation Supervision • Project Management
Contact Lens Manufacturing Facility	Ultravision	<ul style="list-style-type: none"> • Feasibility Study • Design and Construction Supervision • Validation Supervision • Project Management
Blood Testing and Diagnostic Laboratory	Laboratoires Biron	<ul style="list-style-type: none"> • Design and Construction Support • Project Management

Environmental Engineering

Sustainable and sound industrial design must always consider the long-term environmental effect of a facility on its surroundings. The goal of our specialists is to achieve this harmony with elegant solutions that will also yield a competitive commercial operation.

To complement our process expertise, clients can benefit from our know-how in environmental engineering as applied to metallurgical and inorganic chemical plants. Process simulation in combination with laboratory test work is used to optimize processes and reduce solid waste as well as liquid effluents. Process heat recovery is used as an internal means of energy optimization, including integrated cogeneration schemes for maximisation of energy efficiency. Other areas of expertise are capabilities in waste characterization, minimization and management, leading to overall sound waste management strategies.

Environmental audits and risk analyses studies may also be performed. Environmental and social impact assessments and statements (ESIA's) will be essential to the client in identifying risks and potential impacts of a project. ESIA's can be further instrumental in:

- Understanding corporate responsibilities regarding project-related environmental concerns
- Evaluating regulatory compliance of projected process operations
- Assessing the overall environmental viability and sustainability of a project
- Planning mitigation measures and technological alternatives to improve plant performance and acceptability within well-defined environmental parameters
- Anticipating the impact of stated environmental government policies

