

Powered by a Vision, Centered on Ethics, Established on the Bedrock of Engineering Expertise



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OUR VISION

We are driven by a shared vision to develop into a Process consultancy and EPCM Company that meets world standards while striving to raise the bar in the Canadian Oil and Gas arena.

OUR MISSION

- To utilise our skilled personnel to facilitate the development of modern, state-of-the-art and advanced facilities.
- To provide personalised engineering services for Petroleum Refining, SAGD, Heavy Oil, Gas Processing and Pipeline projects.
- To maintain a consistent focus on Quality, Ethics, Safety and Environmental requirements.
- To incorporate a work ethic that envisages a holistic objective of betterment, inclusive of both the company and the nation.
- To provide client-specific services emphasising completing the project within the approved budgeted cost and schedule and meeting regulatory pre-requisites.

CORE VALUES

Responsibility: Demonstrate social commitment by protecting the environment from greenhouse gas emissions and supporting Canada's climate change policy

Fairness: Exhibit fairness at the workplace, providing equal opportunity to all workers irrespective of gender, nationality, and country of origin

Diligence: Show dedication, sincerity, honesty, and authenticity at work

Risk Taking: Identify, analyse, rate, validate and implement new ideas that benefit the organisation.

Adaptable: Adapt to the changing economic and post-pandemic situation

It is the utmost responsibility of all company staff and contractors to respect, implement and practice the company's core values.

WHO WE ARE

Petros Process Solutions is an engineering consulting company based in Calgary, Canada. Our experience includes engineering and procurement services for Well tie-ins, fuel gas conditioning units, sour flare systems, gas processing facilities, choke plants, Inlet separator design, gas compressors, petroleum Refining, hydrocracker, heavy oil processing and pipeline projects.

We provide a broad spectrum of engineering services, from project planning, troubleshooting, and preparing basic technical proposals and cost estimates to detailed engineering, procurement and construction management services.

We understand the volatility of the oil and gas market and, therefore, adopt an innovative methodology of standardising and modularising our design into skid packages which can be built anywhere and transported to the site. This approach significantly reduces the overall project completion cycle, minimises the site works in northern Alberta, which is prohibitively expensive, prunes the capital expenditure turnaround of the project in a shorter period and abets the client to reap the benefit of his investment by early cash inflow and faster payback.

We have experience and expertise in all branches of engineering, which are imperative to accomplish detailed engineering for any critical oil and gas project. As needed, we also pool resources from our international associate, an EPCM company with rich experience executing oil and gas projects worldwide. This provides flexibility to handle small to large projects with the same workforce and at a competitive rate.

Petros Process Solutions is committed to providing personalised services to all our clients, emphasising

completing the project within the AFE-approved cost and meeting client-specific quality and regulatory requirements.

WHAT WE DO

We value our clients' interests and ensure that their requirements are entirely and consistently met through our concerted efforts to find optimal solutions. Exceptional technical prowess and an exemplary work ethic bolstered by impeccable safety standards are our distinctive hallmarks in providing services to our clients. We can undertake various projects from the initial stages of concepts and proposals, ensuring their seamless execution and deliverability and obtaining mutually advantageous benefits.

We are a team of experienced engineers, drafters, designers and technologists in the field of oil and gas industries. We value our clients' interests and ensure that their requirements are entirely and consistently met through our concerted efforts to find optimal solutions. We undertake projects from the initial stages of conceptual study, ensuring their seamless execution and deliverability and obtaining mutually advantageous benefits.

Our experiences and capabilities include the design, engineering and execution of the following:

- Well Tie-ins
- Fuel Gas Conditioning
- Inlet Separator
- Gas Compression
- Gas Dehydration
- Choke Plant
- Gas Processing
- Amine Sweetening
- H₂S Treater
- Heavy Oil Processing
- Sour Flare Gas System
- Vapour Recovery Unit
- Metering Package
- Product Storage
- Pumping Station
- Pipeline
- Carbon Capture

OUR TEAM

We are a multi-disciplined team of professional engineers specialising in Canadian and international Oil and Gas projects. All leads have 15 to 25 years of relevant experience in their respective discipline, excellent academic records, good communication skills and professional degrees. In a broad sense, we have adequate skills and technical acumen to provide the best engineering support in the field of process, project, mechanical, electrical, Instrumentation and control, automation, piping, stress analysis and civil and structural.

Each discipline is headed by an experienced professional engineer who can mentor, guide and supervise the team. Our

core competency is adherence to well-established systems and procedures, codes and practices, sound engineering principles, safety standards, ethics and local regulatory requirements, which is essential for developing the most feasible project, ensuring the highest and long-lasting return on investment for the client.

As needed, we also pool resources from our international associate, an EPCM company with rich experience executing oil & Gas projects worldwide. This provides flexibility to handle small to large projects with the same workforce and at a competitive rate.

PROJECTS

The list of the project which was completed in the past and is in progress:

- Sour Flare Gas System
- Fuel Gas Conditioning Facility
- Inlet Separator, Inlet Compression and Gas Dehydration
- JT Plant
- Stress Engineering Services
- Line Heaters

ENGINEERING AND DESIGN SERVICES

We provide the engineering and procurement services for all five phases of the project management, including conceptual and FEED studies, detailed engineering, construction management support, PSV audit, depressurisation, design revalidation, MOU projects, process engineering support for the operating facility, pre-commissioning and commissioning assistance, operating manual preparation, as-built drawing preparation, 3D modelling, seismic and stress revalidation, troubleshooting, methane and carbon dioxide emissions reduction, and energy audit. Our dedicated teams in the following disciplines have the required experience and expertise to execute MOC, small, medium and major projects.

- Project Management
- Project Engineering
- Process Engineering
- Project Controls
- Mechanical Engineering
- Instrumentation and Controls
- Electrical Engineering
- Automation
- Design and Drafting
- Piping Engineering
- Stress Analysis
- Pipeline Engineering
- Civil and Structural Engineering
- Document Control

PROJECT ENGINEERING

The project engineering team work closely with the project management, client, and discipline engineers and executes the project. The following are the main activities that project

engineering and project controls conduct during the various phases of the project.

- Design Basis Memorandum
- Approval for Expenditure (AFE)
- Project Execution Plan (PEP)
- Project Schedules and planning
- Cost estimates
- Discipline-specific deliverables
- Construction work packages
- Construction support
- Technical documentation support for regulatory approval
- Project Closeout

PROCESS ENGINEERING

Process engineering is the cornerstone of our company. They support the project team from the initial stages of the project up to commissioning and start-up. Some of the major process activities include the following:

- Process Modelling
- PFD and H&MB
- P&IDs
- Equipment Sizing
- Control Valves Sizing
- PSV Study
- Depressurization and blowdown Study
- Control Narrative
- Cause and Effect Diagram
- HAZOP and PHA Study
- Piping Hydraulics
- Flare System Design
- Storage System
- Detailed Engineering
- Winterization / Freeze Protection
- Operating Instructions

MECHANICAL ENGINEERING

The mechanical engineering team works closely with the projects, process, and piping and provides the following services:

- Selection and sizing of:
 - Rotating equipment
 - Static equipment
 - Package equipment
- Equipment List
- Material selection
- Material Selection Drawing
- Line List
- Tie-in List
- PSV List
- Pipe stress analysis
- Piping engineering
- Surge analysis
- Mechanical data sheets
- Bill-of-Material
- RFQ and Technical bid evaluation
- Procurement support
- Vendor drawing review
- Vendor coordination
- Ensuring design code and regulatory compliance

- ABSA Registration

DESIGN AND DRAFTING

The CAD team work with the process and mechanical engineering team and accomplishes the following drafting and piping design activities:

- Plot plan
- PFDs and P&IDs
- 3D modelling
- Piping Isometrics
- Heat tracing Diagrams
- As-built

INSTRUMENTATION AND CONTROLS

The instrumentation and controls team works with the project, process, and procurement and performs the following activities:

- Control valve and PSV selection
- Instruments datasheet
- Instrument List
- Shutdown key
- Instruments loop diagrams
- Input /Output Count
- Shutdown logic diagram
- Bill-of-Material
- RFQ and Technical bid evaluation

ELECTRICAL AND INSTRUMENT ENGINEERING

The electrical engineering team work with project, process and I&C and executes the following activities:

- Detailed power estimate and distribution strategies
- Schedule preparation for required electrical equipment
- Estimation of energy consumption and devising viable strategies to conserve power
- Technical assessment of existing installations
- Preparing drawings and specifications for field instruments, control panels, junction box layouts, area classification and 3D modelling
- General installation and mounting drawings
- Preparation of cable schedules, cable tray diagrams, wiring diagrams, earthing layout diagrams etc.
- Plot plan layout for instrument/ JB location
- DCS/PLC engineering
- Control room layout

PIPELINE ENGINEERING

Pipelines are a high capital cost element but the most economical and safe mode of transferring gaseous and liquid products across long and short distances. The design and engineering team work with the project, client, land surveyor, and pipeline construction contractor and performs the following activities:

- Pipeline Simulation
- Flow assurance study
- Alignment Drawing
- Crossing Design
- Bill-of-Material

- HDD Boring
- Geotech Study
- AC Mitigation Study
- Mechanical and stability design
- 3D stress and span analysis
- Procurement Support
- Material selection
- Construction Binder

CIVIL AND STRUCTURAL ENGINEERING

The civil and structural engineering team provides the following services:

- Soil Report
- Pile foundation design
- Construction planning
- Foundation & structural support for machinery and equipment
- Structural design and analysis
- RCC / Steel stacks
- Structural design for skid-mounted modular packages

TECHNICAL SUPPORT

We also provide general technical support for ongoing projects and operating facilities, including the following:

- Performance review of process units and equipment.
- Process engineering support to the operating facilities.
- Onsite and remote performance monitoring support.
- Coordination with Process licensor.
- Developing unit-specific commissioning and start-up procedures.
- Support for carrying out performance guarantee tests.
- Reduction of hydrocarbon loss for profit improvement.
- Flare gas recovery.
- Optimization of chemical and catalyst consumption.
- Optimization of energy consumption.
- Preparing technical documents.
- Preparation and routine updating of operating manuals.

OIL SANDS

We believe the cooperative teamwork between the client, engineering consultant, vendor and construction contractor and the created synergy is vital for the project's success. We have adequate resources and expertise to design and engineer Steam Assisted Gravity Drainage (SAGD) and Thermal Assisted Gravity Drainage (TAGD) well pads and flow lines, including group separator (with test separators and metering skid), Electric Submersible Pump (ESP) selection, multi-phase pump selection, flow lines, and steam generation and distribution. We provide re-engineering services to re-use the Modularized Skid Mounted Packages for new services, including the associated earthwork, power and infrastructure facilities.

HEAVY OIL

We have expertise in the design engineering of grass root and brownfield heavy oil processing facilities, including emulsion receipt, Free Water Knock-out (FWKO), Gas boot, Treater, condensate blending/recovery, water treatment and disposal, Vapour recovery, utilities, storage tanks and bullets, pumping station, truck-in and truck-out facilities, custody meters and flare system. We modularise the entire facility into skid-mounted packages to optimise the construction cost and reduce the project schedule.

We have expertise in reengineering the exiting oil batteries to accommodate variations in the emulsion viscosity and specific gravity, increase in the H₂S content, Gas-to Oil ratio and produced water quantity which generally restricts operation. We provide a cost-effective solution by minimising significant modification, replacing the internals based on state-of-art technology, and reusing redundant equipment with minimum or nil plant shutdown and at minimum additional capital cost.

GAS PROCESSING

We have expertise in natural gas processing, including inlet separation, sour condensate stabilisation, inlet compression, amine treatment (CO₂ and H₂S removal), propane and mixed refrigeration plant, glycol and mole-sieve dehydration, dew point control, mercury removal, LPG and condensate production, storage tanks and bullets, custody transfer and metering, pipeline transfer, acid gas compression and transfer, vapour recovery, hydrate control, truck-out facility and, HP, LP and Acid Gas flare systems design.

Pipelines

We have the expertise in designing and engineering gathering and trunk lines, flow lines and steam and water lines, including 2-phase pipelines, pig traps, drip barrels, slug catchers, HIPPS, PSVs & ESD, SCADA, leak detection, booster pumps and emergency vents or flare system. Besides, we also carry out simulation studies, flow assurance studies, surge analysis and development of pipeline routing drawings. Our engineering team has a profound knowledge of all phases of aboveground and underground pipeline system design as per CSA-Z662, including material selection, route selection, stress analysis, crossings, pipeline support and anchor design and pipeline safety control system.

“Technology and Engineering Expertise Collaborate / Harmonize Across the Drawing Board to Create Sustainable / Environment-Cognizant Solutions for Our Client.”



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