



Midstream oil & gas

Capability statement

The midstream sector: processing, transportation, and storage of oil and gas

Hydrocarbons, both oil and gas, continue to be found and produced in new and existing areas all over the world, making its processing, transportation, and storage a crucial stage in the overall value chain. This also means more pipelines, storage, and associated infrastructure are required.

To be successful, the industry needs to work together to drive efficiency and minimize environmental and social impacts, while always maintaining the highest levels of safety. We can help!

Our approach

Navigating the inherent complexities within the midstream oil and gas space requires big picture thinking and a willingness to critically assess all parts of the transportation

chain in an integrated fashion. As your partner, we work with you to minimize risks and increase stakeholder value through efficient project planning, analysis, and execution. With health, safety, operability, and environmental performance always top of mind, we can help you implement new, or update existing site infrastructure in a safe and robust manner.

Leveraging our core expertise, we provide a well-thought-out plan that incorporates all aspects of your project—from concept through to operation.



Key offering

Hydrocarbon pipelines

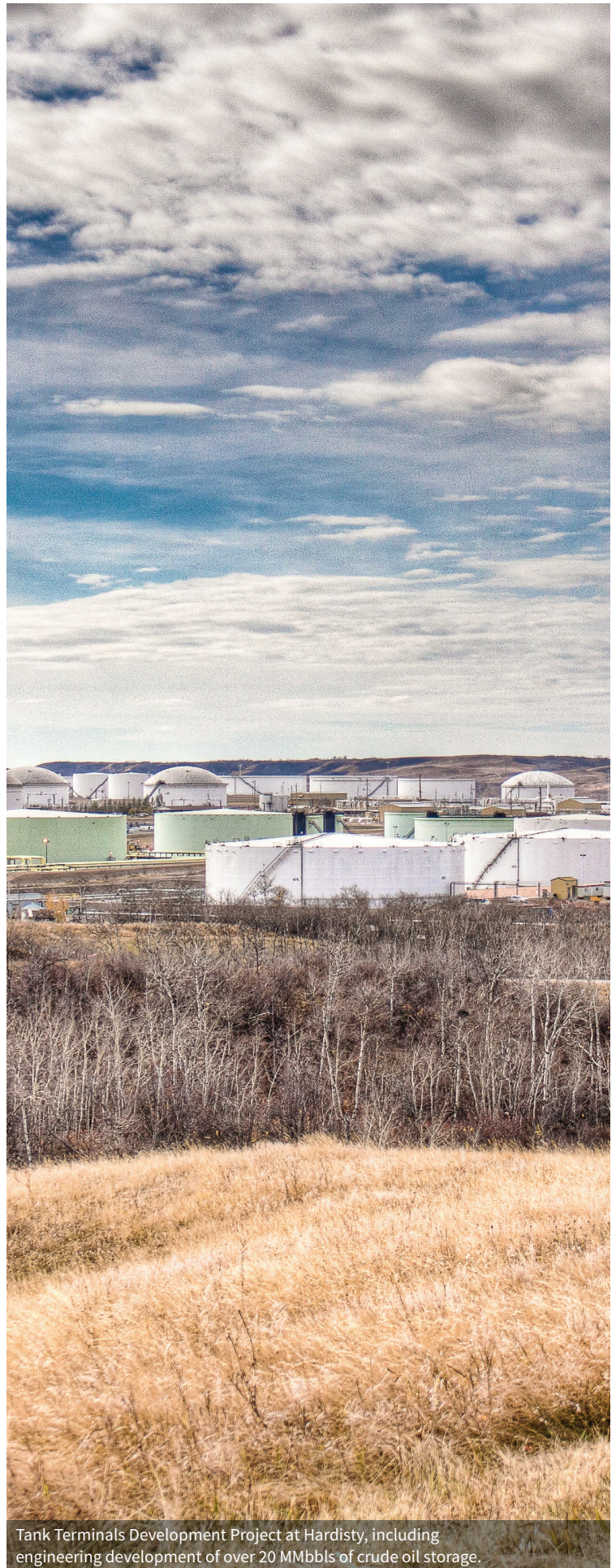
Pipeline networks are quintessential for the safe transportation and distribution of hydrocarbons. Pipelines call for sophisticated designs that enable an uninterrupted supply of liquids and gases safely transported and in a way that's environmentally sensitive. Our expertise is comprehensive in all aspects of pipeline systems and the associated infrastructure —well tie-ins, compressor and pump stations, field devices, metering and valve stations, lease automatic custody transfer (LACT) units, pipeline stress analysis, horizontal directional drilling, as well as trenched and trenchless technologies. Let us help you minimize the risk of working in extreme environments and remote locations, increase stakeholder value, obtain necessary regulatory approvals, and maintain pipeline integrity.

Receipt, storage, and distribution

Tank storage terminals are a key piece of infrastructure in the transportation of hydrocarbons. These facilities receive and store crude oil, provide connectivity to multiple markets, and ensure product batch quality. Storage terminals also provide opportunities to capitalize on commodity price variations. We specialize in large crude storage terminals with tank sizes ranging up to 500,000 barrels and have designed over 15 million barrels of storage currently in service. Our in-house talent executes all ancillary facilities including the incoming and outgoing interconnections, piping and metering manifolds, containment areas, and hydraulic and pumping designs. By applying our expertise in terminal design, we can provide layouts that help reduce the overall cost of storage for a terminal. Our teams can assist with terminal master planning for future development so that the facilities easily accommodate any expansion projects.

Gas and oil processing

After exploration, gas and oil processing facilities prepare products for transportation and sale. Every stream is unique due to reservoir-dependent fluid properties, so different processing techniques need to be applied. These techniques could include solids removal, dehydration, acid gas and sulfur removal, and fractionation. We have the process design knowledge to optimize your operation wherever the location or stream composition. Our oil processing expertise includes battery design to handle the separation, treating, storing, and metering of oil production.



Tank Terminals Development Project at Hardisty, including engineering development of over 20 MMbbls of crude oil storage.

Marine terminals

To gain the highest value and return, you may need to need to move your product to far-reaching distances. The world's ports are the heart of a dynamic, interdependent oil and gas logistics network. They are the backbone of global trade. But aging infrastructure, lack of investment, and more stringent regulations can challenge this critical link in the supply chain. To effectively move your products, you need a partner with a thorough understanding of the business drivers; effective integration of the planning, design, construction, and operation phases; and a comprehensive, innovative, and cost-effective approach to problem-solving. From new export terminal construction to upgrades and expansions, we have the background and know-how to make your marine terminal project a success.

Rail transport and dispatch

In certain regions, lack of pipeline-takeaway capacity and other transportation flexibility requirements have been pushing producers to ship their crude oil and other products by rail. Rail terminals play an important role in the oil and gas transportation network. Efficient loading and offloading facilities support the seamless transfer of

products between rail and other forms of transportation. Our team of in-house multidisciplinary engineers and architectural experts can help you design and construct a new terminal or transload facility from the ground up, or successfully execute work in an operating environment. Let us help you improve your terminal's overall operability and efficiency and maximize output of your entire supply chain.

Fuel handling

Fuel terminals and handling facilities play a critical role in the vehicle transportation network, bridging the gap between production and consumption. From receiving the fuels, blending them with products such as biodiesel, ethanol, and fatty acid methyl ester (FAME), storing them, and finally dispatching them through different transportation channels, our experts will help you overcome your logistical challenges. Our experience spans fueling system offloading/loading, filtration, and precise metering—for a wide range of fuels. Beyond that, we design systems for secondary containment, fire suppression and safety, additive injection and blending, leak detection, and fuel dispensing. Our experts have the know-how to help you plan, analyze, design, and build your fuel terminals and handling facilities.



Local presence, global resources



Value-added services

Our consulting engineering services range from design to operations, covering everything in between. We take it a step further, adding value to your operation with a range of integrated, specialized services.

- Asset management
- Civil/structural, secondary containment, site drainage
- Complex stress analysis
- Conceptual design
- Control systems upgrades and automation
- Corrosion mitigation
- Debottlenecking and improvement projects
- Digital transformation
- Electrical services (VFDs, e-houses, substation design, etc.)
- Energy optimization
- Environmental studies
- Fire safety systems
- Flow assurance for gas and liquid pipelines
- Geotechnical (soil mechanics and foundation engineering)
- Horizontal directional drilling (HDD) design
- Large and small-diameter tunnels/buried infrastructure
- Laser scanning and real-world integration
- Marine infrastructure design
- Micro-tunneling and other trenchless crossings
- Operational readiness
- Operational support
- Pipeline and distribution network design
- Preliminary and detailed engineering
- Process and asset optimization
- Process system modeling
- Procurement
- Project management
- RAM studies
- Rotating equipment
- Routing and constructability
- Safety integrity level (SIL) assessment
- Site deployment and secondments
- Specialized engineering analysis and design (SEAD)
- Subsurface utility engineering and investigation
- Sustaining capital
- Tank design and inspection
- Terminal master planning
- Transient analysis

Selected project experience

North Montney Mainline Project

TC Energy (formerly TransCanada)

A 300-kilometer-long, natural-gas line was constructed in the Peace River Regional District of British Columbia, Canada. We provided front-end engineering design (FEED) through to execution services for the project, including routing and workspace reviews, stress analysis, geohazard engineering, five major HDD/trenchless crossings, regulatory and engineering support during construction, and post-construction services. Our experts achieved significant project execution and cost benefits for TC Energy.

Liege Lateral Loop No.2 Thornbury

TC Energy

A 36-kilometer-long NPS 30 high pressure natural gas line constructed in the Wood Buffalo Region of Alberta, Canada. We provided FEED through to execution support services for the project including supporting routing and workspace reviews, pipeline mechanical stress analysis and mainline stress analysis, geotechnical and geohazard engineering, trenchless crossing engineering for two major HDD crossings, detailed engineering, regulatory and engineering support during construction, as well as post-construction services.

Pipeline Facilities

Husky Energy

This greenfield facility accepts 100,000 barrels per day of hot blended crude, and includes 300,000 barrels of tank storage, blending, crude cooling, pumps, and interconnecting piping to ship blended crude to various tie-in locations within existing sites. We completed FEED, detailed engineering, and construction support to develop this new plot area.



Pembina Pipeline Horizon Pipeline Capacity Expansion Project

Newfoundland Transshipment Terminal Upgrades

Hebron

NLT's major marine transshipping terminal, with three-million-barrel storage capacity, is undergoing another expansion—this time to handle the high viscosity crude oil expected to be produced by Hebron. Having been involved with the facility since startups in the late 90s, we led the design and construction support of the terminal expansion and since then have provided engineering services such as multidisciplinary design, feasibility studies, and operational support.

Portimex Petroleum Terminal

Portimex

Engineering, design, and project management for conceptual through FEED phases of engineering for a greenfield petroleum terminal in Tuxpan, Mexico. The terminal has a capacity of 350,000 barrels for the receipt, storage, and distribution of gasoline and diesel products including blending provisions for additives of MTBE and ethanol. Scope included mechanical engineering and design of the tank farm, truck loading, and surface facilities. Hatch also provided interface engineering for the civil, structural, electrical, and instrumentation designs, and performed the fire safety review and HAZOP as part of PHA for the terminal.

Halifax Marine Terminal

Irving Oil

Engineering and construction support for construction of the Halifax Harbour Terminal. The construction consisted of the modification of existing dike around the lower tank farm, new marine dock, and new product transfer lines installed from the ship manifold connection to the existing storage tanks, upgrade of the existing storage tanks, dike re-grading for proper water control, and spill containment, installation of new product lines from the upper tank farm to the dock, and construction of a six lane multi-product truck loading rack with multiple additive injection, and construction of new site buildings.



Gibson Energy Top of the Hill Buildout Project design for four distinct expansion phases

Tioga Marine Terminal Inspection and FEED study

Confidential client

Development of an overall program and execution plan and provide the site assessment, design engineering, and environmental permitting services for the development of a liquid butane (LPG) marine export facility at the existing Tioga Marine Terminal. The facility was designed for a storage capacity of 175,000 barrels and throughput of 25,000 barrels per day, which would be delivered by rail and stored on site in mounded storage tanks prior to being loaded onto handy-size vessels.

PennEast Pipeline

PennEast Pipeline

PennEast proposed a 183-kilometer-long interstate natural gas pipeline project from Pennsylvania to New Jersey. The project provides gas markets in eastern and southeastern Pennsylvania, and New Jersey with the natural gas that is produced in the Marcellus shale play in Pennsylvania. Hatch was engaged to perform a project controls including estimating, scheduling, cost control, change management, progress measurement, earned value and risk analysis, as well as contracts formation and management.

Multi-Phase Terminal Expansion

Gibson Energy

FEED, detailed engineering, and construction support for a multi-phase terminal project located in central Alberta. The first phase of this project included the construction of three crude storage tanks—two 300,000-barrel tanks and one 500,000-barrel tank—as well as associated earthworks, piping, electrical, instrumentation, and pipe rack connection to an adjacent terminal. The subsequent phases included the completion of additional storage tanks to expand to 4.6 million barrels of storage.

Horizon Pipeline Capacity Expansion

Pembina Pipeline

FEED, detailed engineering, and construction support for facility modifications across six stations and terminals to expand the current pipeline flow capacity. Although the modifications varied from site to site, the scopes included adding/replacing pumps and motors, adding new Coriolis meters, and providing new electrical services buildings with VFDs, MV Switchgear, UPS, and MCC. New PLC processors and I/O were provided for all sites. The project also included a new pumping facility where only pig traps existed.

Gas Plant Expansion

SemCAMS Midstream

Provided detailed engineering for the balance of plant as well as interface management between the various stakeholders, while ensuring the successful completion of the plant. We performed the final process engineering, mechanical engineering, civil engineering, and project management required to enable construction of the facility in time for the in-service date.



TC Energy Liege Lateral Loop No.2 Thornbury Project



About Hatch

Whatever our clients envision, our engineers can design and build. With over six decades of business and technical experience in the mining, energy, and infrastructure sectors, we know your business and understand that your challenges are changing rapidly.

We respond quickly with solutions that are smarter, more efficient, and innovative. We draw upon our 9,000 staff with experience in over 150 countries to challenge the status quo and create positive change for our clients, our employees, and the communities we serve.

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