

**Quickly realize the value
of natural gas assets
with factory-built, modular units**

UOP Russell modular systems are designed to have you up and running as much as six months faster and at lower cost than other options, so you can begin processing gas and earning revenue more quickly.



As the demand for natural gas grows globally, UOP, a leader in gas processing technologies, is focused on providing innovative solutions that enable gas producers to monetize their resources. The UOP Russell line of modular gas processing units offers a broad range of cost-effective technologies and modularized solutions that remove contaminants from shale and conventional natural gas and recover high-value natural gas liquids (NGLs).

With a ground-breaking, pre-engineered approach, UOP Russell solutions are often ideal for even the most challenging scenarios including remote locations, short project timelines and unconventional gas production. The unique UOP Russell plant design has enabled the shale gas revolution since its inception, and continued technical advances are making shale gas production faster, easier and more profitable.

And with extensive installations around the world, we have the field experience and technical expertise to produce plants that are designed to be dependable, safe and easy to maintain.

Modular design for fast returns

UOP Russell plants are factory-built using a unique modular design and construction approach that allows for quick construction and superior quality control. Construction may begin even without identifying gas composition requirements or the plant's location. Due to pre-fabricated construction, entire plants can be easily shipped by truck, train, barge or ship.

The plant's modules are transported to prepared worksites, even in remote locations where gas is often discovered. Plant equipment arrives ready to install using simple construction equipment. Modules fit together easily and efficiently, significantly reducing construction time and expense.

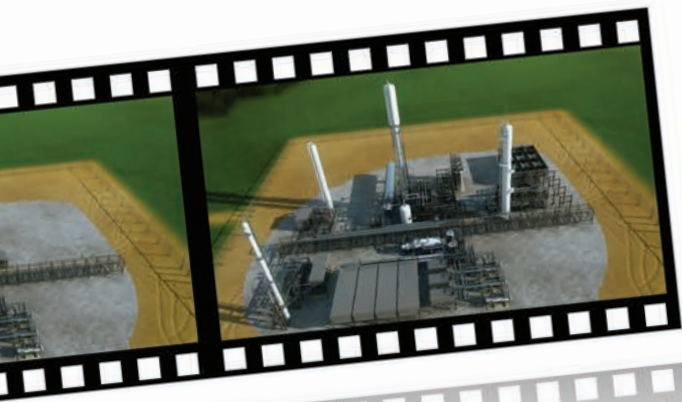
The entire gas processing plant is assembled as much as six months faster and at lower cost than competitive offerings, meaning you can begin processing gas and earning revenue more quickly.

Proven systems at lower costs

The UOP Russell line of gas processing technologies includes dehydration, gas treating and NGL recovery and fractionation. Our dependable solutions allow for predictable project timelines and ongoing operating costs, so your projects stay on time and on budget. Due to the pre-fabricated, uniform design, you can reduce your engineering, installation and training costs.

Dehydration

UOP Russell technology helps prepare natural gas for cryogenic processing by eliminating water from the gas. Industry-leading UOP MOLSIV™ adsorbents are packaged to simultaneously remove water and contaminants from the gas stream, extending service-bed life and reducing operating costs. UOP Russell dehydration solutions also include packaged glycol systems which remove water to prevent potential water condensation and hydrate formation in the pipeline.



Gas Treating

UOP has extensive expertise in gas treatment technologies, including UOP Russell modular amine treating solutions. By putting the gas in contact with amines, contaminants such as carbon dioxide, hydrogen sulfide and others can be removed from the gas to help prepare it for market. You can also recover sulfur by converting H₂S into sulfur or sulfuric acid downstream of the amine unit.

NGL Recovery and Fractionation

UOP Russell cryogenic turbo expander, mechanical refrigeration, JT plants and adsorption systems are designed to help increase the recovery of valuable NGLs, remove heavy hydrocarbons and control dew point. Condensate stabilization and ethylene glycol regeneration systems can be included, if required, for any of the dew-pointing options. In addition, we offer a range of modular fractionators that can further separate propane, butane, iso-butane and natural gasoline products from mixed natural gas streams.

Turnkey Solutions to Simplify Your Projects

UOP Russell solutions include a full suite of service offerings to allow you to optimize field production while minimizing engineering and project management costs. With our cost-effective technology, efficient work processes and easy field installation, we offer higher value and a simpler, more dependable approach compared to custom solutions.

Service offerings include:

- Design
- Engineering
- Equipment procurement
- Fabrication
- Quality control
- Field installation
- Project management

Key Features and Benefits:

- Enhanced NGL recovery
- Quick construction and superior quality control
- Proven, high quality designs
- Reduced time from investment decision to start-up
- Ease and reduced time of installation for faster start-up
- Ease of installation
- Simpler unit operations and lowered operational costs
- Modularized solutions that can be nearly 100% fabricated before gas composition or site identified
- Simplified maintenance and training from common parts
- Reduced engineering costs
- Predictable project timelines and ongoing operational costs
- Savings on total project cost
- Continued support to help ensure smooth operation



Customer Stories

Scenario

A natural gas processing company was concerned that it was unable to service existing customers and capture future opportunities in the Marcellus, a rapidly expanding geographical area. The company did not have enough processing capacity, and the lead time for a custom facility was too long.

UOP Russell solution

With a modular, pre-fabricated design, a Honeywell UOP Russell cryogenic plant could be delivered in half the time of a custom plant.

Results

As a result, the natural gas processing company completed the project on time and within budget. This allowed for the rapid capture of future business opportunities by expanding to multiple trains for processing and fractionation. The customer improved their returns by an estimated \$2-5 million for every additional day that each train of their plant was up and running.

Scenario

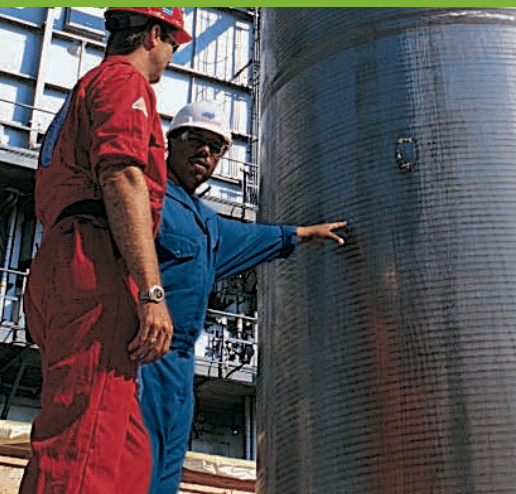
A gas processing company was at risk of not completing a plant on schedule and missing an economic opportunity. They could not justify the cost and delivery schedule of a large Engineering, Procurement and Construction (EPC) contractor.

UOP Russell solution

UOP Russell technology provided a way for the company to complete the project and plan its schedule around a certain fractionation train delivery (e.g. multiple units).

Results

By successfully completing the project with UOP Russell solutions, the company closed a deal to provide feedstock to a major petrochemical company and take advantage of increased ethylene demand in the Gulf Coast. The customer saved an estimated 14 percent of the total installed cost of their plant.



Dedicated Aftermarket Support

UOP has the products, expertise and processes that our customers value for total solutions. From start to finish, our global sales, engineering, service and support staff is there to help ensure your process challenges are met with proven technology. Our extensive service offerings, coupled with our unmatched technical knowledge and experience, can help you focus on your profitability.

Backed by Experience and Customer Commitment

UOP, a Honeywell company, provides processes, technologies and equipment for gas processing, refining and petrochemical industries. With five engineering centers and 11 manufacturing facilities in 16 countries, we are close to our customers wherever they are. Since 1914, UOP has developed more than 70 licensed processes for the industries we serve. With the development of the UOP Russell product line, we also offer modular packaged equipment solutions. We are a world-leading supplier of catalysts and molecular sieve adsorbents and provide a full range of technical services and support.

For more information

To learn more about Honeywell UOP Russell solutions, please contact your UOP representative or visit us online at www.uop.com.

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