



SAKNAFTA

P e t r o l e u m S e r v i c e s

Pipeline & Process Services (PPS DIVISION)

Tomorrow's Technologies Today



ABOUT US

SAKNAFTA founded in 2008 as a largest provider of products and services to the Petroleum and Energy industries in Egypt. The company serves its customers with a broad range of products and services through its Well Services, Pipeline & Process Services and tubular ring services divisions. Since then SAKNAFTA pipeline and process division grew from 10 employees to a total of 140 in 2012; where most of its operating personnel have a minimum of eight years experience within international and national service companies.

OUR VISION

To be the preferred service provider in the oil & gas industry, delivering safe, quality, efficient performance to our customers.

OUR MISSION

Is to assure the continuous improvement of standards and operations set by SAKNAFTA to the benefit of the company and most importantly, to meet the customer requirements and expectations. We commit ourselves to total customer care by delivering the best pre-commissioning and commissioning services for Power Plants, Petrochemical, Oil and Gas industries.

GLOBAL PERSONNEL AND EQUIPMENT RESOURCES

SAKNAFTA Service maintains a strong, worldwide engineering base, Employee cross-training, combined with global knowledge management, helps equip each service location with the capabilities required to address your project requirements.

SAKNAFTA has been growing range and number of its Services to achieve an extensive expertise in the Oil & Gas / Chemical Industry fields, and having aligned ourselves in accordance to needs and features demanded by large companies, we are currently providing the following services.

- Pipeline (pre)commissioning & commissioning
- Pipeline chemical cleaning & Pickling
- Pipeline Pigging, dewatering and cleaning
- Tank Cleaning by chemical and mechanical solutions
- Nitrogen services (N2 leak test, N2 purging and N2 supply)
- Helium leak testing services
- Vacuum leak test (VLT)
- Dry compressed air plant supply
- Chemical solutions
- Hot Oil Flushing
- Pumping solutions
- Flange Management
- Consultancy personnel
- Cold Cutting

SAKNAFTA Senior management and staff together have for more than 30 years experience in Pipeline and Process Services.....

Chemical Solutions

In addition to the standard cleaning methods, SAKNAFTA Chemical Solutions offers a broad range of chemical cleaning services for the pipeline and process systems. The chemical cleaning is typically used to remove deposits like scale, corrosion, waxes, paraffin and asphaltene sediments in pipelines or piping System and Process Equipment. The uses of solvents and/or surfactant based cleaning chemicals are more effective than the mechanical cleaning.

Chemical cleaning is widely used for commissioning and de-commissioning of pipelines and process plants, to increase productivity (throughput) and efficiency, to improve inspection results, to maintain the quality of the product.

In pipelines the use of solvents and/or surfactant based cleaning chemicals are more effective than the mechanical cleaning using only pigs.

Typical systems to be chemical cleaned are;

- Suction Lines of Rotating Process Equipment
- Product Pipelines (Oxygen lines)
- Oil & Gas pipelines
- Process Piping
- Process Towers (glycol and Amine)
- Heat Exchangers
- Heat Transfer Lines.

Products:

The majority of the products used by **SAKNAFTA** Chemical Solutions are environmentally friendly and bio degradable; this will minimize the cost for waste disposal. These products provide a cost effective and easy-to-use approach to pipeline and system cleaning.

SAKNAFTA Chemical Solutions is utilizing new chemical cleaning technologies to improve the cleaning operations of oil and gas pipelines.

The new products are highly concentrated blends of biodegradable surfactants and synthetic solvents capable of wetting and removing the most tenacious deposits encountered in oil and gas pipelines.

Strategy:

The fact based monitoring approach can help the user save time and money. It will gain

- Reduced turnaround time, from several hours to even days
- Improved readiness for maintenance work
- Improved safety

- Improved environmental performance

Chemical Cleaning Package



Before Chemical Cleaning



After Chemical Cleaning

High Pressure Water Jetting (Hydro Jetting):

- **SAKNAFTA** offers jetting equipment capable of working at ultrahigh pressures for the removal of inner preservation coatings, paints and accumulated hard scale especially that present in the crude oil tanks (Tank Cleaning).
- High-pressure jetting hoses can be used with both static and rotating nozzles and fluid supplied by either electric- or diesel- driven pumps.
- Hydro jetting can also be used on external surfaces, reducing the need for sand blasting or removing the hard scale.



Before Dragging



After Dragging

Hot Oil Flushing

After a period of careful planning by our experienced staff, SAKNAFTA will render a system clean by applying the optimum pressure, flow delivery, filtration and temperature needed to remove particulate contamination in the most efficient way (particle removal via turbulent flow). This saves time during system commissioning and optimizes system reliability in the long term.

- SAKNAFTA can provide clients with units to clean lube oil, wellhead control and other piping and tubing systems.
- Full range of system cleaning solutions is offered, to meet cleanliness standards ISO4406 and AS4059.
- Pressure delivery can be suited to all pipeline dimensions and configurations
- Flushing units can be used both offshore and onshore



OIL FLUSHING SYSTEM

Pumping Services



SAKNAFTA owns a fleet of pumping equipments, tanks, filters to provide complete pumping System to the client. Our equipments are capable to handle different types of fluids and cover wide range of pressures up to 10,000 PSI with flow rates up to 30,000 BBD.

Pumping services Such As:

- Temporary Water Injection system.
- Hydrocarbon Transfer.
- Disposal injection Services
- Pipeline Flooding services
- Hydro Testing



Pipeline Services



SAKNAFTA Pipeline Services have combined competence with the latest technology available.

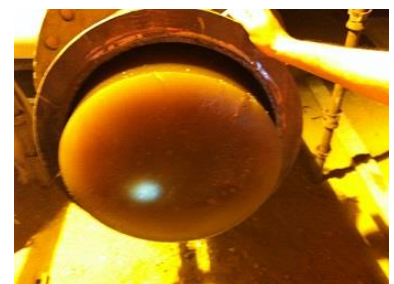
SAKNAFTA Pipeline Services are applied during the whole lifecycle of the pipeline.

Pipelines always involve work to be executed under the most difficult circumstances. Pipelines cross deserts, offshore and domestic areas. It is vital that pipelines are tested upon strength, are leak tight and cleaned and inspected regularly. SAKNAFTA Nitrogen Services have developed a complete pipeline commissioning maintenance and decommissioning package to safeguard safe and smooth pipeline operation during the whole life cycle of this valuable asset.

SAKNAFTA Pipeline Services are executed during; Construction, Commissioning-, Operation-, Maintenance-, Inspection and Abandonment.

SAKNAFTA Pipeline Services:

- Pipeline Cleaning and Gauging
- Pipeline flooding, Hydrostatic testing & dewatering
- Pipeline drying using dry air
- Pipeline drying using nitrogen
- Pipeline product displacement pigging with Nitrogen
- Pipeline mechanical cleaning
- Pipeline chemical cleaning
- Pipe freezing
- Gel pig services

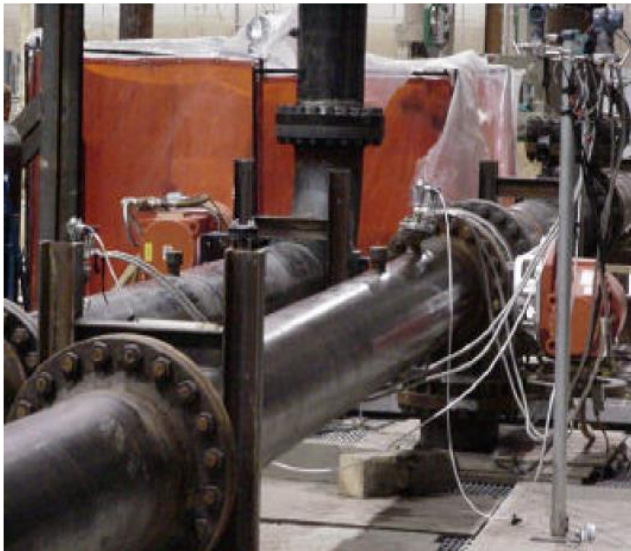


GEL PIG

Air Blowing Services

Air blows are a relatively new technology in the power plant construction industry. The use of air blows must be worked into the schedule early in the preparation process, to ensure proper cleanliness specifications are issued to all vendors supplying portions of the steam generation system. Mill scale must be completely removed and proper welding techniques must be employed during the erection of the piping in preparation of air blows. Mill scale removal utilizing a chemical cleaning is often recommended to ensure that the surfaces are adequately prepared for the air blows. A solid passivation layer on the piping will prevent flash rusting during the air blows.

SAKNAFTA provides the study which reveals the pressure required to achieve proper disturbance factors, pump up times, and blow down times, required exit piping sizes, disturbance factors in all portions of the flow path and the order in which the piping systems should be blown.



Air Drying Services

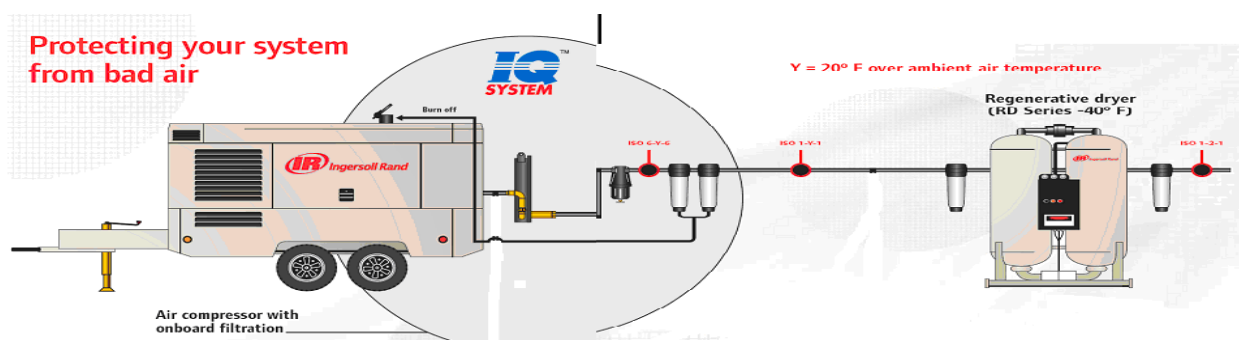
Air drying calls for large quantities of extremely dry, oil free pressurized air. Moist ambient air is initially compressed by oil free compressors and then passed through an air drying unit, where the compressed air is cooled to condense and separate a large fraction of the water vapor present.

This dry air is then passed through desiccant absorber which absorbs all but a few ppm of the remaining moisture; this discharge air has a dew point of approximately -40°C .

The procedure used for air drying is similar to that for nitrogen drying although discharge pressure are limited to approximately 150 - 200 psig.

If a time lag is expected between the drying and final commissioning system can be purged with a pressure blanket of nitrogen in order to inhibit the oxidization of the pipe surface this also allows hydrocarbons to be introduced into an inert atmosphere.

SAKNAFTA provides complete services to dry and purge the pipeline with most advanced well known reliable equipment.



Nitrogen Services



Nitrogen purging and Nitrogen pressure testing are used as the cornerstone services of shutdown, commissioning and start-up of onshore and offshore process plants throughout the world.

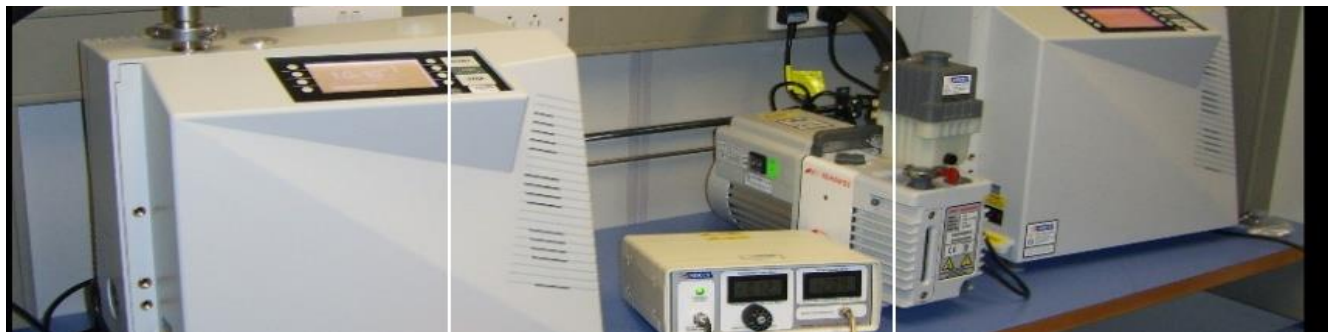
SAKNAFTA nitrogen pumps are rated at 180,000scf/hr and the majority of our LN2 tanks can be stacked. Our pumps are soundproofed to 80dB (A) and built to the highest modern standards, meeting all current legislation. We offer helium leak testing using the latest mass spectrometer and handheld leak detection devices and offer a range of solutions capable of improvement on traditional testing philosophies.

SAKNAFTA delivers nitrogen solutions with quality at the core of every operation.

We can provide the following services:

- Nitrogen Purging
- Nitrogen Pressure Testing
- Leak Detection
- Valve Seat Leakage

Commissioning Leak Test (CLT)



SAKNAFTA Helium Leak Detection....

Uncontrolled emissions, loss of containment, release of hazardous petrochemicals are a direct danger to **Health, Safety and Environment**.

Experience proves that **LEAKS** do occur, mostly during plant start up, after commissioning of new facilities or after the execution of maintenance on existing facilities.

SAKNAFTA Helium Leak Testing Services

- Improves safety by preventing escape of flammable toxic product.
- Eliminates leaks and emissions.
- Simulates operational conditions.
- Reduces the water content of the processing facilities.
- Reduces oxygen levels and provides an inert blanket.
- Prevents loss of production due to unplanned shutdowns.

Typical the systems are pressurized with a mixture of 1% Helium and 99% of Nitrogen. Pressurization takes place in several steps up to normal operating pressure or up to 95% of the relief valve setting. All joints are tested; leaks are reported, blocked in, depressurized, repaired, depressurized and re-tested.

Only if all leaks are repaired and within the Maximum Allowable Leak Rate, systems will be depressurized leaving a 1 bar (g) nitrogen blanked, ready for safe process start up.

Flange Management Services

SAKNAFTA offers globally-available, first-class, on-site hydraulic bolt tightening services. From a simple bolt-up of a single flange connection or nipple up / down to maintenance and major-shutdown site services, we utilize only the best equipment and tools and employ only the most experienced engineers and Technicians available in the industry.

Our Torque Tools cover a full range of sizes from 1/2" to 5" studs and 7/8" to 7-5/8" a/f nuts. Torque capacity is from 20 lb/ft (34 N/m) to 59,400 lb/ft (80,524 N/m) with manual and hydraulic equipment.

All SAKNAFTA Torque Tools are tested and supplied with applicable test or calibration certificates.

SAKNAFTA offer Hydraulic Torque Tools with air driven power packs which can be used within hazardous environments such as off-shore platforms, eliminating the need to shut down.

SAKNAFTA also offers a range of Low-height Ratchet Torque Tools that can be utilized in confined spaces or areas with restricted clearance where a socket and conventional square-drive tool would not fit.



Flange Management Activities

Cold Cutting Services

SAKNAFTA split frame cold cutters are air driven and capable of both cutting and beveling all grades of pipe and casing. Capacity covers a range of sizes between 2" to 32" O.D. and wall thickness up to pipe schedule 160.

In addition to eliminating the need for hazardous flame cutting, the cold cutting method enables operators to meet all potential requirements, both onshore and offshore.

Our cold cutting system produces a lathe-type beveled finish on piping ends without altering metallurgical properties. Cutting equipment quickly splits to mount to casing O.D. and requires minimal radial and axial clearance. The cold cutter can be set up and operational in less than 30 minutes.

SAKNAFTA cutters are portable, lightweight and compact, allowing for easy transport of equipment to any site.

For more information regarding SAKNAFTA's Cold Cutting Equipment and Services for the Petroleum and Gas Industries, please contact us directly.



Cold Cutting Tools

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