
NRG

OUR KEYWORDS FOR A SUSTAINABLE TOMORROW



QUALITY INNOVATION ENVIRONMENT

Solutions

Professional services for hydrocarbon and geothermal: Well Testing, Production and Treatment Systems, Artificial Lift, Multiphase Pumping.

Vision

Enhance energy sources in an ethical, safe and environmentally friendly way.

Mission

Contribute to achieving of our Customer's objectives through the provision of specialized and technologically advanced services, in compliance with the best QHSE standards and requirements.

QHSE

Quality of services, environmental protection, safety of people.



OUR DAILY COMMITMENT **TO A BETTER FUTURE**

The opportunity to do more for the climate, the environment and people

Our sustainability report 2023 in numbers

90%
suppliers from italy area

88%
Permanent Employees

ZERO
Complaints against misconduct, discrimination and racial incidents

16,780 MLN€
Economic value, generated of wich 65% distributed to stackeholders

3
ISO Certification

165,75 TCO2
Scope 1 and 2 emissions

-10%
Total water consumed compared to 2022

81,377 TON
Waste generated, 46% of wich is non-hazardus

ZERO
Occupational incidents recorded

3088
Training hours provided

Our aim is to continue to provide services of excellence towards all our stakeholders, minimizing environmental impact and promoting responsible, ethical and sustainable development towards our people, the planet and the communities in which we operate.

«In recent years, the energy sector has undergone profound transformations, and our Company is fully aware of the role that businesses must play in addressing environmental and social challenges.
This, our first sustainability report, represents a tangible commitment to transparency and social, ethical and environmental responsibility, allowing us to **share with you the actions we have taken and the milestones we have achieved** along our path of sustainable growth,
which is not only a strategic priority for us, but a daily commitment to a better tomorrow.»

Francesco Sini
Chief Executive Officer

PRODUCTIVITY, EFFICIENCY AND **SUSTAINABILITY OF ENERGY RESOURCES**

Upstream Specialists

NRG MED offers production services through the installation and operation of O&G and geothermal Well Testing systems, multiphase pumps and artificial lift with onsite produced nitrogen.
It is made up of a team of highly qualified and experienced professionals who, through advanced digital technologies, design, build and operate the equipment necessary to provide services to its customers.

Passion for a sustainable tomorrow

We wish to increase the value of the planet's energy resources in a proactive, strong, ethical and responsible way.
NRG MED promotes a responsible and sustainable subsurface fluid production activities, from the design of equipment to the provision of services.
All operations are carried out respecting the value of energy sources, protecting the health and safety of our professionals.

Our core values:

- Innovation and sustainable growth
- Respecting the environment and its resources
- Health and safety for all workers





SOLUTIONS
FOR OIL AND GAS PRODUCTION

The main services offered by NRG MED

NRG MED offers assistance for hydrocarbons and geothermal production, combining the traditional Well Testing and Early Production activities with: the supply and operation of Multiphase Pumps, Artificial Lift with Onsite Produced Nitrogen, Engineering and Personnel Training Services.

Oil&Gas Well Testing
Production testing of oil and gas wells

Geothermal Well Testing
Production testing of geothermal wells

Early Production Facilities
Onshore and offshore temporary production installation

Onsite Nitrogen Generation for Artificial lift
Nitrogen generation and recompression systems

Engineering
From process engineering to mechanical design

Multiphase Pumping
Multiphase pump systems for oil and gas production

Training Services
High level training, guaranteed efficiency

OIL & GAS WELL TESTING

WHAT IS THIS?

Production testing of oil and gas wells

Production testing (well testing) is an essential activity in the exploration of hydrocarbon and wells. This term refers to measurements, under controlled conditions, of all parameters relating to the production of oil, gas and water from a well, to provide complete and accurate data on the performance of the reservoir. Their interpretation is used to optimize field development.







ONSHORE & OFFSHORE SERVICES

Clean up and well testing

Clean up is a preliminary operation which has the aim of eliminating, through the flow, all foreign fluids and solids in the well at the end of completion (e.g. the displacement fluid, the completion fluid).



GOALS AND OBJECTIVES:

- Nature and the amount of the fluids produced
- Reservoir pressure and temperature
- Characteristics of the fluids producing formation
- Efficiency of the completion
- Efficiency of the stimulation performed in the well
- Reservoir geometry
- Well drainage radius
- Interference or correlation of producing layers among wells
- Reservoir drive mechanism
- Production capacity and formation damage
- Productivity Index for oil wells
- Open Flow for gas wells



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- Production capacity and formation damage

GEOTHERMAL WELL TESTING

WHAT IS THIS?

Production testing of geothermal wells

Production testing (well testing) is an essential activity in the exploration of geothermal wells. This term refers to separation, measurements, under controlled conditions, of all parameters related to the production of water in liquid and vapour state and any associated gas, to provide complete and accurate data on the performance of the reservoir.
Usually the test is carried out on two adjacent wells, producing from the first and reinjecting the produced water into the second, and vice versa.
Their interpretation is used to optimize field development.







PRODUCTION AND REINJECTION

Clean up and well testing

Clean up is a preliminary operation which has the aim of eliminating, through the flow, all foreign fluids and solids in the well at the end of completion (e.g. the displacement fluid, the completion fluid).
The production test of a geothermal well can be differentiated based on: low, medium or high enthalpy, test flow parameters, reinjection parameters, purpose of the test. Can last from a few days to 1-3 months.

EARLY PRODUCTION FACILITIES

Production testing of oil and gas wells

EPFs allow the production of hydrocarbons from oil & gas wells using temporary equipment, even simultaneously with drilling, work over or other activities on the same site.

These structures offer numerous advantages because they accelerate the return on investment and optimize production starting from a lower capital investment.

Rely on the NRG MED team for the installation of onshore and offshore EPFs as simple modules or integrated with drilling/work over rig







NITROGEN GENERATION AND RECOMPRESSION SYSTEMS



Nitrogen generation techniques

Nitrogen finds application in various industrial sectors, especially in the Oil & Gas sector. Different techniques can be used for the production of nitrogen:

- Pressure Swing Adsorption (PSA): A two-step nitrogen production process that involves adsorption and desorption occurring simultaneously in two generation towers.
- Membrane filtration: nitrogen production process that uses a semi-permeable membrane to achieve the separation of an air flow into its component gases. Nitrogen thus produced is compressed and injected at the bottom hole to lighten the hydrostatic column and allow the flowing.

Turnkey On-Site System

We carry out your Turnkey Project:

- N2 PRODUCTION UP TO 1600 SMC/H
- BOOSTER N2 UP TO 350 BAR
- N2 PURITY UP TO 99.5%
- MEMBRANE OR PSA TECHNOLOGY
- AIR COMPRESSION SECTION
- TANK N2
- COMPRESSED AIR TANK
- PSA DEHYDRATION SECTION
- ELECTRICAL CONTROL CABIN
- BOOSTER SECTION N2





- Onsite nitrogen generator
- Electric driven
- N2 purity: >99%
- N2 flow rate: 800, 1600 Nmc/h and more
- N2 delivery pressure: up to 350 bar

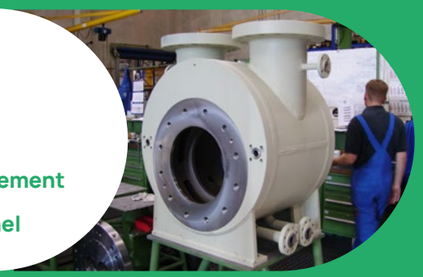
MULTIPHASE PUMPS

Multiphase pumping systems for the production of liquid and gaseous hydrocarbons

Multiphase pumps are used to lower the back pressure generated downstream of the wellheads and facilitate flow. They can be installed both on land and offshore as they are designed to adapt to different parameters and operating fields:

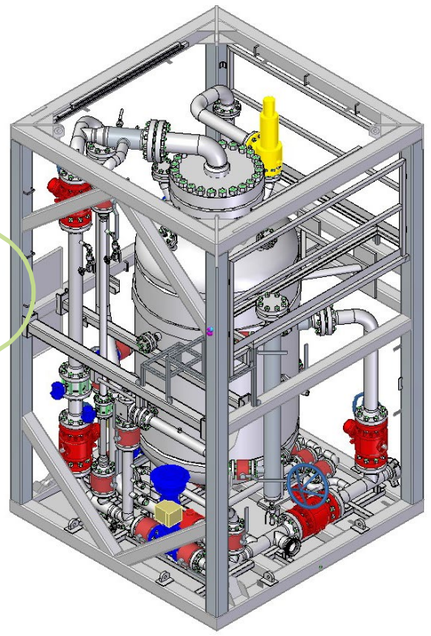
- development of new deposits
- production from depleted deposits
- replacement of separators and traditional production systems
- single well installation
- cluster installation or in flow line relay stations





- Sizing
- Technical assistance
- Supply and installation
- Maintenance and spare part management
- 24/7 Operation with skilled personnel

FROM PROCESS ENGINEERING TO MECHANICAL DESIGN



From process engineering to mechanical design

NRG MED equipments are fully engineered, modelled and sized by the internal engineering department. We rely on the skills of our team of engineers and the most advanced calculation software:

- 2D/3D modeling (SOLID EDGE)
- metallic structures calculation Eurocode EC3, NTC 2018 (TECNOMETAL)
- finite element analysis for non standard components (ANSYS)
- Pressure vessel calculation EN 13445, ASME 8^ div. 1 (PV Elite)
- Piping stress analysis EN 13480, ASME B 31.3 (Bentley Autopipe)



PROFESSIONAL TRAINING SERVICE



NRG MED professional training courses are provided in Italian, English, French and Romanian

- General Training
- Specific Training
- Foreman Training
- Firefighter Training
- Work at Height Training
- Confined Space Training
- H_2S Training
- SO_2 Training
- Seveso Training
- Lifting Operations Training
- Pressurized Equipment Training
- First Aid Training

High level training, guaranteed efficiency

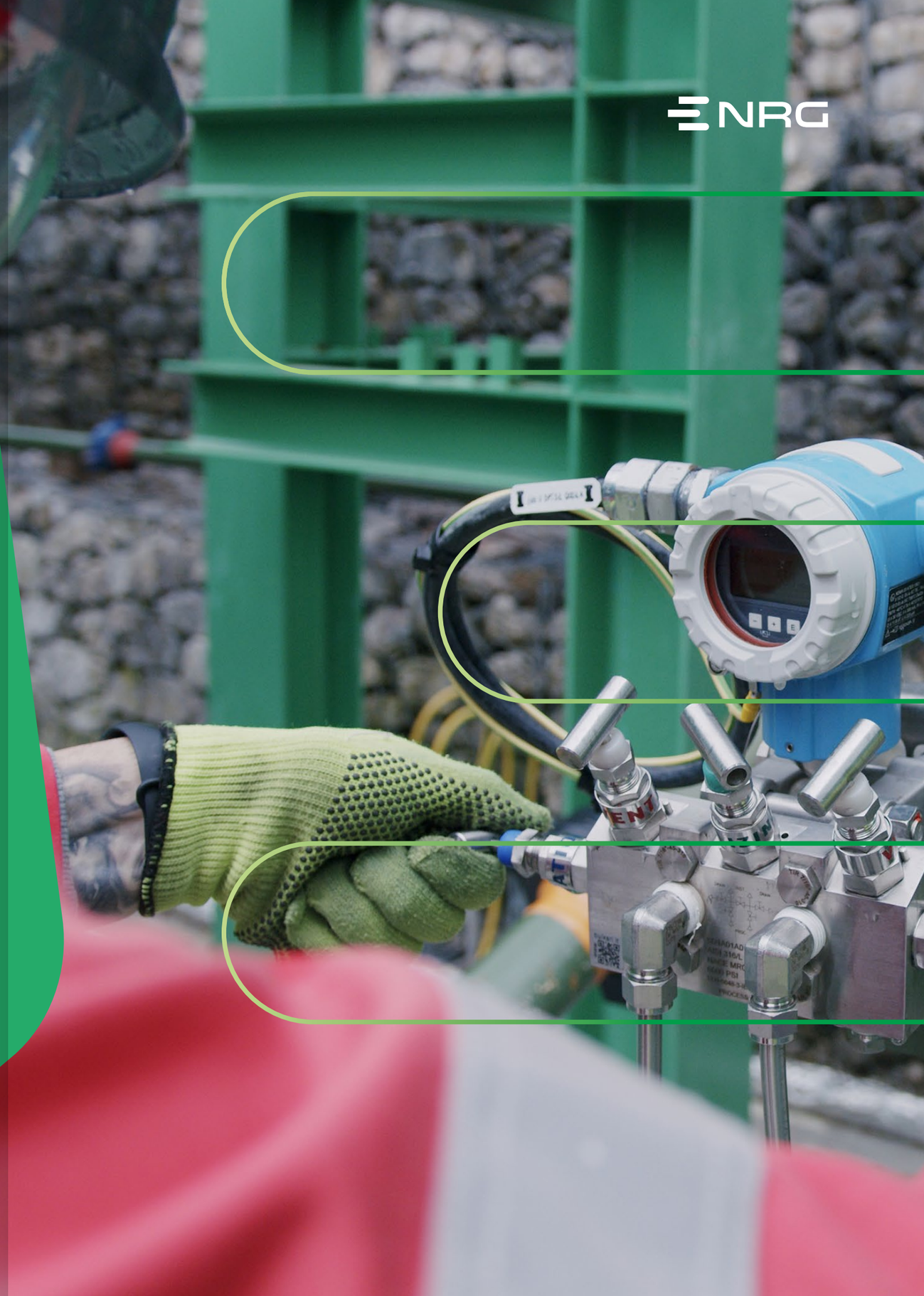
The training service is aimed at both NRG MED employees and external professionals.
An added value for our customers is the ASSIDAL affiliation, which certifies the quality of the training provided.
Furthermore, the training center has dedicated classrooms and a simulator for Confined Spaces and Working at Height.

We offer to our Customers:

- **In-person and Remote**
- **Internal training center**
- **Compliance with current regulations**
- **Calendar flexibility**
- **Certified trainers with decades of O&G experience**
- **Different languages support: Italian, English, French, Romanian**
- **ASSIDAL affiliate**







QHSE

At the heart of our policy: employees, environment and business

NRG MED operates in compliance with QHSE quality standards, ensuring the safety of its employees, respect for environmental sustainability and performance control in every internal and external activity.

At NRG MED, people are considered the most valuable asset, and their well-being is at the core of our company's values. For this reason, the QHSE department is dedicated to implementing actions aimed at ensuring their protection and continuous improvement:

1. Continuous Risk Assessment: Regular analysis of safety, health, and environmental risks, with preventive and corrective measures in place.
2. Employee Training and Involvement: Ongoing training programs and active involvement of employees at all levels to promote QHSE awareness.
3. Health Surveillance and Safety Monitoring: Regular health checks and monitoring of workplace safety to prevent accidents and health issues.
4. Environmental Impact Reduction: Implementing strategies to minimize environmental impact, such as reducing energy consumption and waste production.
5. Continuous Improvement and Compliance: Ongoing audits, performance monitoring, and strict adherence to local and international QHSE regulations, with a focus on continuous improvement.
6. We are convinced that the adoption of an integrated and well-structured system allows the optimal completion of customer activities through the involvement of the entire structure, from top management to base and suppliers.



EQUIPMENT

MACHINERY AND EQUIPMENT FOR OUR SERVICES

WELL CONTROL SYSTEMS

ESD System

The ESD control panel is designed to control hydraulically and/or pneumatically operated valves. Upon receiving the signal it is able to operate the hydraulic side of the SCSSSV – SSV and SDV valves and the pneumatic side of the SSV and SDV valves. Compressed air supply.






Surface Safety Valve

It is hydraulically or pneumatic actuated gate valve installed upstream of the choke manifold. The automatically valve shutdown could be through activation of pneumatic signals in the event of abnormal conditions or through the use of ESD remote shut-in stations.






EQUIPMENT

WELL CONTROL SYSTEMS

Choke manifold

Dual path choke manifold enable the control of the well flow to downstream equipment and allows the operator to change choke beans without interfering on the test objectives. One fixed choke is installed on one side (different sizes calibrated choke bean that allow a more accurate flow control for predetermined flow rates) and one adjustable choke is installed on the other side (allow fixed choke to be changed during operations and enable easily flow control during clean up operations). NRG MED stock includes choke manifold with various ratings and designs.






Data Header

Data Header is used for data collection of well stream fluids production parameter (pressure, temperature), for sampling, for chemical injection and for installation of high and low pressure pilots; it is normally installed upstream of the choke manifold. If requested a second data header can be placed downstream choke manifold, depending on customer requirements.






Piping

All our piping, elbow, tee and x-over are PED certified, they are recovered inside 10' and 20' standard containers and each pipe is equipped with its own reference plate. Rating from 1440 to 15000 psi.






EQUIPMENT

MACHINERY AND EQUIPMENT FOR OUR SERVICES

PRESSURE VESSELS

Two Phase Separator

Two Phase Test Separator provides safe and efficient separation of liquid and gas produced from the reservoir. The separator is equipped with valves and controllers, necessary to regulate pressure and liquid level, and with vortex flow meters for gas phase and Coriolis for liquid phase. It is also equipped with liquid level sight glasses and preset safety relief valves. NRG MED stock includes separators with various ratings and designs both vertical and horizontal.






Three Phase Separator

Three Phase Test Separator provides safe and efficient separation of oil, gas, and water phases produced from the reservoir. The separator is equipped with valves and controllers, necessary to regulate pressure and liquid levels, and with vortex flow meters for gas phase and Coriolis for liquid phase. It is also equipped with liquid level sight glasses and preset safety relief valves. NRG MED stock includes separators with various ratings and designs.






EQUIPMENT

PRESSURE VESSELS

Surge Tank

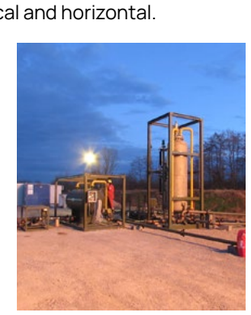
The oil stream coming from the test separator enters the surge tank where the pressure is reduced to decrease gas quantity going to the storage tanks.



Knock Out Drum

This equipment is installed upstream flare on gas lines; it is used to isolate condensate coming with the gas from separators and with the gas recovery from trucks. Condensate in the vessel is evacuated by external pump.
NRG MED stock includes KO Drums with various ratings and designs both vertical and horizontal.



Gauge Tanks

These vertical/cylindrical tanks are made to measure the volume of the liquids coming from the separator. These tanks work alternately and it is possible to drain them by the screw pump installed on board. The screw pump is especially useful in purging operations because it is able to pump also muddy liquids.




EQUIPMENT

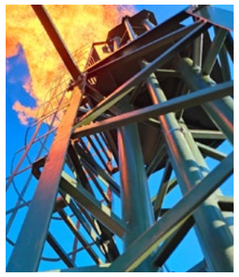
MACHINERY AND EQUIPMENT FOR OUR SERVICES

FLARES AND COMBUSTION SYSTEMS

Conventional Flare

This unit is capable of burning gas coming from two or three different lines, for example from a first stage separator and from the safety valve discharge line. Vertical tubes are composed of multiple sections with different diameters and lengths.





Special Gas Burner

Ability to handle multiple gas streams simultaneously on one unit: for example high pressure flow from first stage separator and low pressure flow from second stage separator.

Low noise emission | No smoke or soot or visible flame | Efficient and optimal dispersion of SO2 | Low temperature at ground level

This apparatus consists of two separate furnaces with multiple nozzles. This arrangement allows to choose the optimum configuration to burn from 4'000 up to 40'000 Sm3/day of gas for each furnace, with temperatures exceeding 900 °C for 2 seconds.






EQUIPMENT

FLARES AND COMBUSTION SYSTEMS

Liquid Seal

This unit is installed upstream of the flare on the low pressure gas line, to avoid backfire inside equipment operating at atmospheric operating pressure (such as tanks, tanker loading systems, etc.) using a water barrier contained in the equipment tank.





Indirect Heater

This equipment is made to warm up fluids coming from the well upstream or downstream the choke manifold. It consists of a coil installed inside a closed vessel containing water or another liquid, heated by a multi-fuel burner. Coils are connected via an intermediate adjustable choke.






EQUIPMENT

MACHINERY AND EQUIPMENT FOR OUR SERVICES

STORAGE AND LOADING

Storage tanks

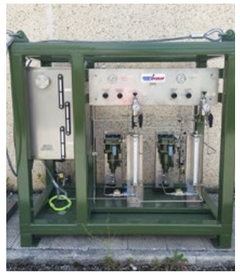
Tanks suitable for the safe storage of liquid hydrocarbons produced by wells. The vessel, thanks to its high thickness, is designed to resist any internal explosions. Available in two different sizes, 46 m3 and 95 m3. Equipped with gas recovery line and inertization line.






Pumps

Used for oil and water transfer or chemical injection during typical well testing operations: centrifugal pumps, gear pumps, metering pumps and multiphase pumps. Available in different sizes and pressure ratings.





EQUIPMENT

STORAGE AND LOADING

Tanker Loading System

Tanker loading system is designed to safely operate during tanker loading operations. Main features are loading of tankers from the bottom, and recovery in a closed system of vapours from the tankers.

Every bottom loading arm has an API 'Dry Break' coupler, which connects to an API adaptor fitted to the road tanker. API couplers conform to API code RP1004 and avoid any hydrocarbon spillage during hose connections.

The compartment vapour vents on the tanker are connected to a manifold pipe and as the compartment is filled, the displaced vapour is directed down through the tanker vapour pipe and into the rack vapour arm. The vapours are then piped away through a KO-Drum, liquid seal with blower, flame arrestor and cold flare.







EQUIPMENT

MACHINERY AND EQUIPMENT FOR OUR SERVICES

GEOTHERMAL EQUIPMENT

Well Control Systems

6" hydraulic SDV valve controlled by ESD control panel, 4 1/16" double-arm choke manifold with bypass and 6" ANSI 600 rigid lines flanged or with hammer unions.





Solid Filter Systems

Two-arm filter units, each with a 6" filter and bypass. For upstream choke manifold installation in producing well or at the suction of the pumping units for injection into the reinjection well.



EQUIPMENT

GEOTHERMAL EQUIPMENT

Separator and measurement systems

Two-phase separator 46 mc 6 bar WP. Flow and pressure managed by a PCV on the gas outlet and by a LCV on the liquid outlet. The liquid phase is measured by a magnetic flow meter and the gaseous phase by Vortex






Cooling and reinjection systems

Cooling system with 2" and 3" nozzles to nebulize the water and optimize the heat exchange in the air. Vertical flare for dilution of the gaseous phase in the atmosphere. Triplex pumps for reinjection of the produced water in the injection well.








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