

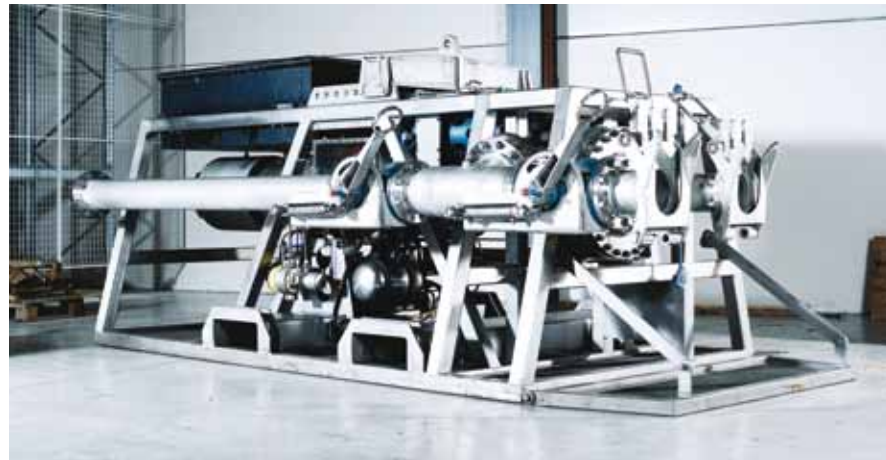
AGR DRILLING SERVICES

DRILLING TECHNOLOGY
WELL SERVICES
EXCAVATION AND TRENCHING



AGR DRILLING SERVICES IS A SPECIALIST SUPPLIER OF EQUIPMENT AND SERVICES FOR DRILLING, WELL OPERATION, UNDERWATER AND TRENCHING AND EXCAVATION TO THE GLOBAL OFFSHORE INDUSTRY.

DRILLING SERVICES



factors may present major challenges, have all contributed to the success of this technology.

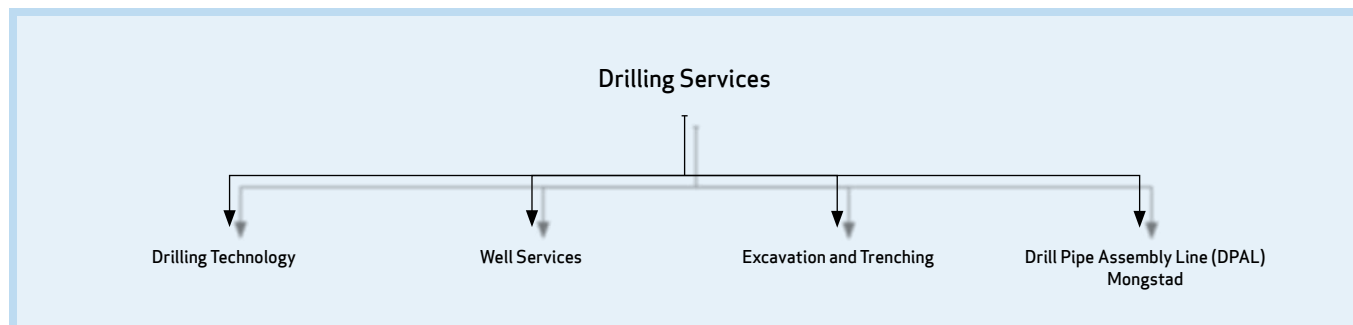
Our innovative well services solutions include our Dynamic Desander for removing sand from production wells and well-intervention operations. We have also pioneered new solutions for the problematic areas of trenching and excavation, which have made us world leaders in the field.



Our drill pipe assembly line at Mongstad offers new 5" and 5 1/2" Drill pipes are manufactured to API specification 7.

As innovators in our field, we constantly challenge the limits of existing technology. Using our years of experience in this most demanding of industries, we add value to our customers' businesses by developing innovative, profitable and environmentally-beneficial solutions. Just one example of this constant search for

new and more effective solutions is our Riserless Mud Recovery System (RMR™). This state-of-the-art technology enables cost-effective drilling of top holes and has fundamentally changed the way the industry works. Reduced drilling time, recycling of drilling fluids and the ability to drill in sensitive areas where geotechnical



DRILLING TECHNOLOGY

AGR DRILLING SERVICES' RISERLESS MUD RECOVERY SYSTEM (RMR™) PROVIDES THE OPPORTUNITY TO CHOOSE AN ENGINEERED DRILLING FLUID FOR YOUR OPERATION. IT PROVIDES BENEFITS OF FEWER HOLE PROBLEMS, REDUCED DRILLING TIME AND COST SAVINGS.



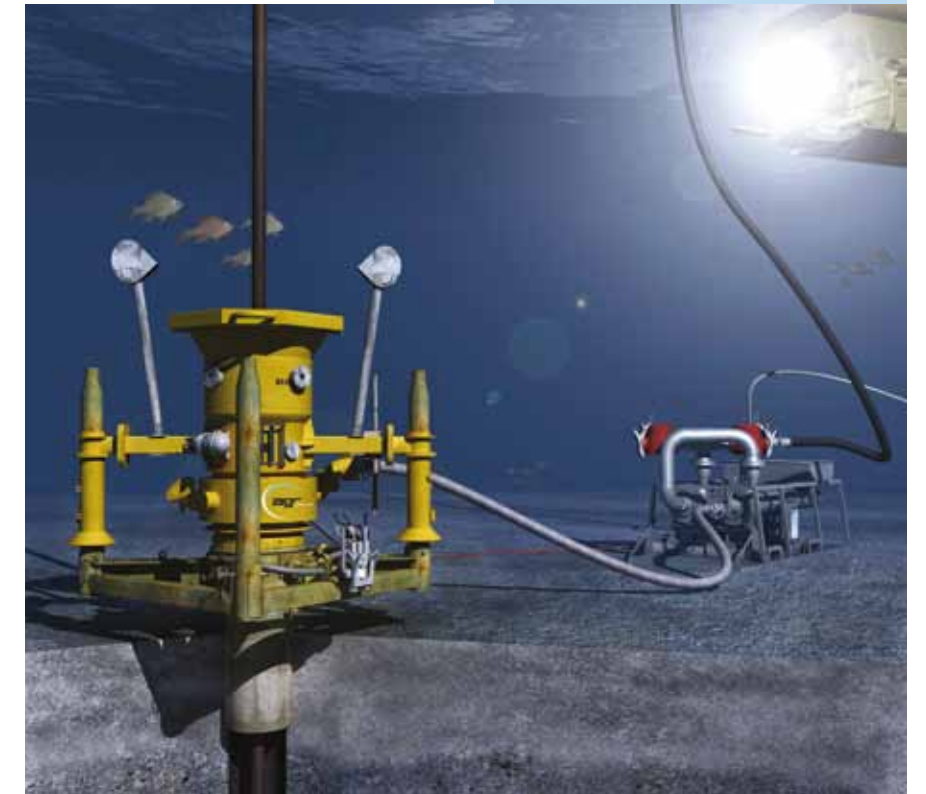
A cost-effective, safe and environmentally sound solution for top hole drilling has long been something of a holy grail for the global offshore industry. Our response to this challenge was typical of AGR Drilling Services approach to problem solving and delivering added value to our customers.

Our Riserless Mud Recovery System (RMR™) innovated a way to re-circulate fluids during top hole drilling, allowing the opportunity to drill in sensitive environments where geotechnical factors are a major issue.

As well as its environmental and cost advantages, RMR is a safer drilling method and has now become the solution of choice for many of our customers around the world.

As part of our on-going R&D philosophy, we are constantly refining this advanced technology to further expand its potential and to increase the economic benefits it offers.

The RMR™ system in operation.



RMR™ TECHNOLOGY BENEFITS AT A GLANCE:

- Circulation and reuse of drilling fluid
- Increased operations predictability and lower overall cost
- Ability to use engineered drilling fluid
- Successful pore/fracture pressure window navigation
- Rapid and accurate kick detection
- Control over pressured shallow gas zones and shallow water flows
- Improved borehole stability
- Reduced number of casing strings
- Limited emission of drilling fluid and cuttings



CUTTING TRANSPORTATION SYSTEM (CTS)

ANOTHER INNOVATION THAT HAS ENHANCED THE PREDICTABILITY AND COST-EFFECTIVENESS OF DRILLING OPERATIONS IS OUR CTS SYSTEM.

CTS has been designed to transport waste materials well away from the drilling area during top hole drilling on semi-submersible rigs, and during clean-up operations on the seabed.

This can have a significant impact on the viability of drilling operations, especially in environmentally sensitive regions.

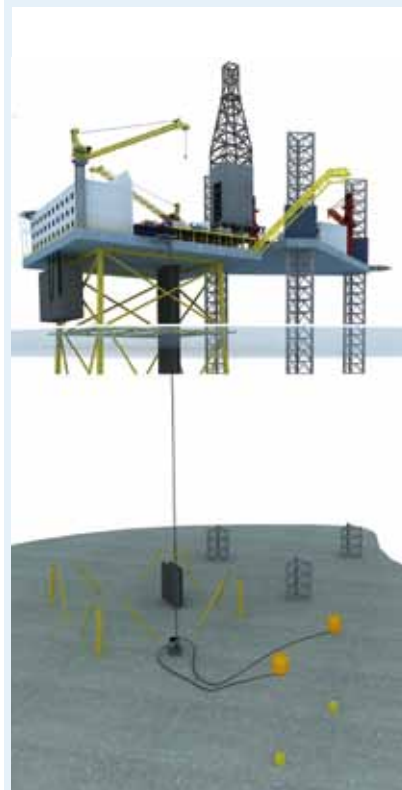
The development of the CTS system was based on more than 10 years of proven technology in drilling waste

management, and perfectly complements our RMR operations. The CTS system can run for long periods of time without maintenance, and is capable of pumping large particles without causing time-consuming and costly blockages in the system.

The CTS system is designed to discharge waste materials more than 1.24 miles (2 km) from the pump, making it ideal for use in areas of environmental sensitivity.

CTS SYSTEM BENEFITS AT A GLANCE:

- Modular design allows ease of installation on most rig types
- Limited deck space for installation
- Cost savings
- No supply vessel
- Can be used in environmentally sensitive areas



DYNAMIC DESANDER

SAND PRODUCTION IS AN INCREASING PROBLEM AS FIELDS AGE, REDUCING PRODUCTIVITY AND INCREASING WEAR ON PLANT AND EQUIPMENT. TO OPTIMISE RECOVERY RATES, IT IS IMPORTANT TO FIND GOOD, COST-EFFECTIVE SOLUTIONS FOR REMOVING SAND FROM THE LIQUID STREAM BEFORE IT REACHES THE PROCESSING FACILITIES.

AGR Drilling Services has answered this need with an innovative solution. Our Dynamic Desander is a highly-efficient tool for reducing solids carryover to downstream equipment. The system constantly monitors accumulated solids and continues to operate at optimum efficiency, regardless of the level of pressure, flow, oil, gas, and particles.

Where other solutions typically calculate sand content based on imprecise theoretical estimates, AGR's Dynamic Desander eliminates this uncertainty by determining sand content based on actual physical extraction of sand and waste from the well.



Well intervention Dynamic Desander

AREAS OF USE:

- Well process applications
- Well intervention applications
- Drilling applications
- Sub-sea applications
- Well testing
- Pigging operation
- Waste treatment

WELL SERVICES

AS A WORLD LEADER IN TECHNOLOGY AND EQUIPMENT FOR COST-EFFECTIVE WELL CLEANING OPERATIONS, WELL MAINTENANCE SERVICES AND TECHNOLOGY ARE ONE OF THE CORE FEATURES OF OUR WELL SERVICES DEPARTMENT.



Junk Trapper



BOP - Wellhead & Riser Cleaning Tool



Magnetic Insert Pup Joints

With our unique and innovative range of services and equipment, we can perform highly complex and customised operations by combining the most efficient and cost saving assemblies for well cleaning and gauging.

For optimum ease of use, AGR Drilling Services clean-up equipment can be individually adapted to each well, and then mounted directly on the drill string. This allows regular rig crew to carry out these operations without risk of damaging valuable plant and equipment.

AGR DRILLING SERVICES SPECIALIST WELLBORE CLEAN-UP TOOLS (BHA) INCLUDE:

- Junk Trapper®
- Tiger Mill™
- Bottom Puller®
- Drift Sub®
- Drill Pipe Pup Joints
- Casing Brushes
- Cement Mills
- Integral Blade String Stabilisers
- Taper Mills
- Magnetic Insert Pup Joints
- Polish Mill®
- Crossovers
- Casing Scrapers
- Free Rotating Circulating Tool (FRCT)
- String Mills
- BOP - Wellhead & Riser Cleaning

Tool

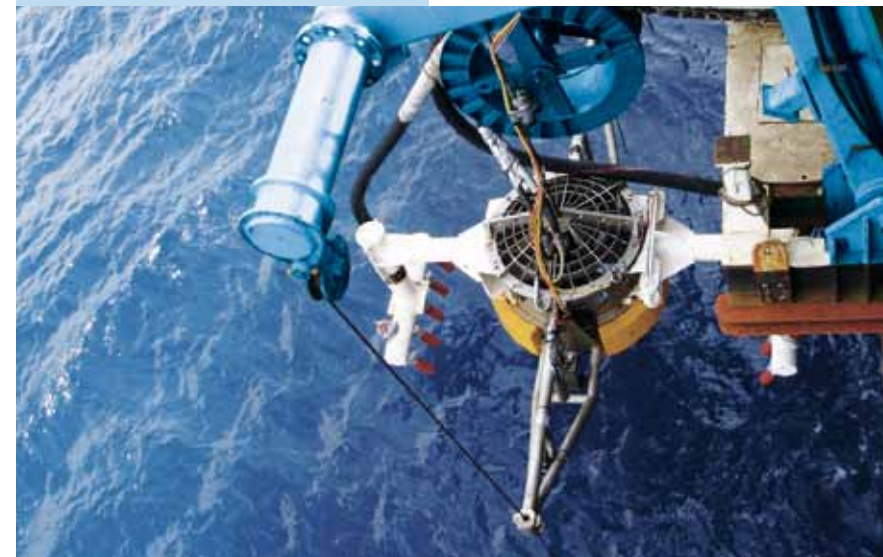
We also offer customers an advanced shaker screen used for the Norwegian Gann 2000-H shaker. Our screens have a working life up to eight times longer than other shaker screens, and are available in 18 different types of mesh.



SUB-SEA TRENCHING AND EXCAVATION

AS A GLOBAL LEADER IN THE DESIGN, MANUFACTURE AND OPERATION OF SEABED EXCAVATION AND TRENCHING SYSTEMS, AGR DRILLING SERVICES OFFERS A COMPREHENSIVE RANGE OF MATERIALS MOVEMENT SOLUTIONS, FROM SHORE-LINE FACILITIES TO FULL OCEAN DEPTHS.

The SeaVator and Multi V-Jet system ready for deployment



We have extensive operational experience in water depths from as little as 6 ft (1.83 m) to as much as 3,000 ft (914 m), in all types of soil and in many different environments, all over the world

Our technology includes a range of excavation solutions that can be used individually or together to deliver low-cost, low-risk seabed intervention. These include:

SEAVATOR MASS FLOW EXCAVATOR:

- Uses the proven mass flow principle to drive a broad column of water towards the seabed, dispersing loose cover and soft clays.

- Because it does not make physical contact with the seabed or the assets you are excavating, SeaVator is the safest way to gain access for inspection, repair or decommissioning.
- SeaVator is powered by simple and reliable hydraulics, and can operate at depths of up to c. 450 ft (137 m); with the addition of our total loss water driven motor, SeaVator can excavate in water depths in excess of 6,000 ft (1829 m).

V-JET HIGH-PRESSURE JETTING SYSTEM:

- For tougher soils and faster trenching, our V-Jet system can be used in tandem with the SeaVator.

- High-pressure water cuts through clays and gets your pipeline to depth quickly and efficiently.
- The system is powered by diesel pumps on the back of the boat or, for deeper water, by electric submersible pumps. These are controlled at the surface by reliable, variable-frequency drives for precise control of power.

JET PUMPS:

- AGR Drilling Services offers a full range of jet pumps, suitable for everything from simple dredging jobs to complex soil removal around buried manifolds and piles.
- AGR Drilling Services pumps come in a range of sizes, powered by diesel pumps or submersible electric motors, with or without sonar, crane or ROV deployed.

CLAYCUTTER X:

- High-pressure jetting for tough soils.
- Cut clays up to 500 kPa/7250 psi shear strength in any water depth.
- Can be deployed with drill string for deep water, or winch and hoses for shallow water.
- Three dedicated 2,750 hp pumps for effortless power delivery.
- Pipeline route preparation made easy.

ABOUT AGR GROUP

AGR Group is a leading provider of essential services and technologies to the international petroleum industry. Our services range from assisting small exploration companies with their first licence applications, through to constructing and managing ambitious drilling programmes for major organisations. In addition, we provide expertise, technology and critical solutions for exploration, development, production and maintenance projects for some of the world's largest oil companies.

We have a worldwide reputation for our innovative, safe, environmentally-friendly and cost-effective solutions to key exploration and production

challenges, and have established a leadership position in a number of key sectors. We focus on growth and earnings performance while pursuing sound and ethical business practices.

We have three operating divisions:

- *Petroleum Services*
- *Drilling Services*
- *Field Operations*

As a European-based group, we have also established two geographical hubs to carry our business forward in these important regions:

- *Asia Pacific*
- *Americas*

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