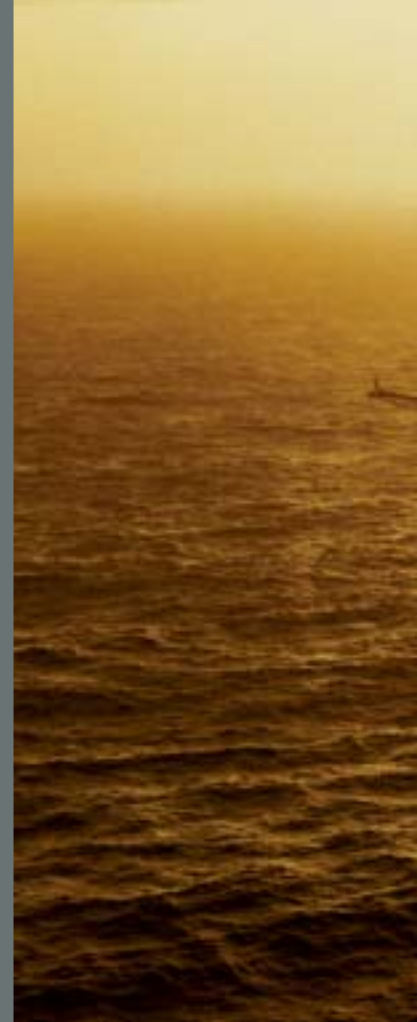




# BENTEC CORPORATE PROFILE





### BENTEC DRILLING AND OILFIELD SYSTEMS:

- Experts in the design and building of drilling rigs
- "Help guide your success" is the target
- "Do it right the first time" is the motto

# A HISTORY OF SUCCESS

Bentec's roots reach back to 1888 when the German drilling contractor Deutag was founded with its own engineering service and repair department.

In 1993 Bentec Drilling & Oilfield Systems was founded and is now an independent business unit of the Abbot Group plc. Due to the unique combination of our operational drilling

expertise and our experience as a renowned manufacturer, we are the leading high-quality manufacturer and API-authorized repair shop for drilling operations.

We are proud to serve the international oil and gas drilling industry. Bentec applications not only work reliably from day one. They are built to last a lifetime.



## KEY BENEFITS

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Thanks to more than a century of manufacturing experience we provide world class engineering and repair facilities. And we are specialists when it comes to project management, OEM inspection, recertification and onsite commissioning anywhere in the world.

7 days a week, 365 days a year.

along with personnel training and staff development efforts ensure that we maintain our manufacturing, repair and service capabilities at the highest level. We have many licenses, authorization permits and official certificates that qualify us to provide API-authorized inspections, modifications, refurbishments, reconditioning and repairs on any kind of equipment.

## STATE - OF - THE - ART

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Manufacturing facilities in Bad Bentheim (Germany) extend over 110,000 sq. meters and include 13,000 sq. meters of fully equipped covered workshops – enough to commission and test rigs for complete turnkey projects.

Our ongoing investment in manufacturing facilities

## Rigs



## Electrical Systems



## Mechanical Systems



## Service

### WHAT WE GUARANTEE:

- Immediate service – all over the world
- Experienced and qualified staff
- Continuous improvement in a challenging environment

### WE ARE WHERE YOU NEED US

At Bentec we provide all you require to complement your local drilling operations on a global basis. To be immediately where you need us we have branch offices in Aberdeen (Scotland), Ashgabat (Republic of Turkmenistan) and Baku (Azerbaijan), in addition to our headquarters in Bad Bentheim (Germany).

### TEAM POWER

Our staff are our greatest asset – for they ensure that Bentec belongs to the best in class in the drilling business. Experienced managers, engineers, technicians and commercial support staff are ready to assist you anywhere you drill in a competent, cost-effective and timesaving manner.

## Support & Consulting



## Projects



## Quality Management



## Engineering

### GUARANTEED QUALITY

Our Quality Assurance and Quality Control systems are constantly reviewed, enhanced and updated with contributions from our corporate Continuous Improvement Program (CPI).

### RELIABLE SERVICE

All our engineers and technicians have special qualifications, compulsory offshore certificates, entrance visas and practical experience from overseas and offshore deployments. You can rest assured that a Bentec service engineer is a knowledgeable expert.

### CONCLUSION

We deliver a customer focused, cost-effective engineering service, providing leadership through innovation and continuous improvement in a commercially challenging environment.

**BENTEC** simply works.



6



▲ High-quality mast structures

▲ Offshore Drilling equipment set

▲ Bentec AE-520, mobile Drilling & Workover Rig

## BENTEC'S VARIOUS AND RELIABLE RIGS:

- Rigs for individual requirements
- High-quality standards
- Cost-effective and durable

# ADVANTAGES

Bentec builds durable and trouble-free drilling and workover rigs for harsh and hostile environments on both land and sea. We specialize in fabricating "fit for purpose" rigs for your individual requirements. Due to innovative technologies, a highly experienced workforce and single-source manufacturing capabilities, our rigs are extremely reliable and user-friendly. Our knowledgeable workforce improves your market opportunities.

## HIGHLY MOBILE RIGS AND WORKOVER RIGS

These trailer-mounted/self-propelled, versatile, small to powerful workover and/or drilling rigs are tailor-made to work at best performance even under harsh conditions. They have proven to be workhorses in the Tundra of Siberia and the deserts of Africa and Asia. Our portfolio covers a range from 50 M.T. up to 200 M.T. capacity (e.g. Bentec AE-310, Bentec AE-520, Bentec BE-1250-200). They are available in electrical or diesel driven design.



▲ Bentec's first step to Turkmenistan



## ONSHORE RIGS

We offer a wide range of cost-effective, high-quality land rigs to satisfy your needs. From light units to those who have a drawworks-capacity of up to 2,000 HP. Our rigs are fit for multi-purpose worldwide drilling applications and are capable of reaching drilling depths of up to 7,000 meters (Bentec 1000 HP, Bentec 1500 HP, Bentec 2000 HP).

## OFFSHORE RIGS

Our high-quality offshore rigs are individually made to meet the users specification. They are tailor-made solutions for a very special requirement. We always develop the offshore rigs in a team of our engineers and technicians together with the clients experts. Esso Jotun, Oseberg Sør, RWE-DEA and Shell NDES are a selection of our major references.



#### BENTEC MECHANICAL SYSTEMS:

- Development of special drilling products
- Mechanical handling systems for safer and quicker performance
- Complete and auxiliary systems for extreme conditions

## ADVANCED TECHNOLOGY FOR DRILLING

Since we are experts in the construction of complete rigs, we also have profound knowledge in the development of a range of specialized mechanical drilling products to enhance and improve drilling operations. Mechanical handling systems are semi-automated designs for safe and timesaving pipe handling procedures. They help to ensure safe working conditions and enhanced drilling operations. Our advanced portfolio includes the retrofitable Pipe Handling Systems to make up stands while drilling.

In order to handle up to 20" casings we developed the Mechanised Catwalk System (MCS). B.O.P. lifting frames and trolleys guarantee a safe and efficient handling of the B.O.P. stack. To improve the ergonomical conditions for the derrickman and to handle the tubulars in a safe manner we offer the Mechanised Derrickman System (MDS), Casing Stabbing Boards (CSB) and Height Adjustable Catwalks (HAC). Especially for use with extended reach wells the Casing Push Tool (CPT) was designed.



▲ For all requirements: Bentec high pressure Manifold



## COMPLETE SUBSYSTEMS AND AUXILIARY SYSTEMS

Our portfolio of complete and auxiliary systems includes various products to improve the drilling process under extreme conditions. Our cylindrical mud treatment systems are specially outfitted for either arctic or desert conditions and our rectangular mud treatment systems are skid-mounted classic solutions. We deliver special Cooling Units for the drawworks and Drill Line Units. Both can be used for offshore and onshore applications. The environmentally-friendly Cutting Re-Injection System (CRI) and our Mud Gas Separators are other examples from our wide range of products.

## MECHATRONICAL SYSTEMS

The Bentec Cutting Flux Measurement (CFM) is a real-time system. It enables the driller to exactly determine and record exactly the amount of cuttings in the hole and to make the right decisions for hole cleaning operations.

The Bentec Feed Off Control System (FOCS) allows to program the weight on bit, the mud pump pressure and the rate of penetration. If the drawworks fails it could be used as an emergency system.



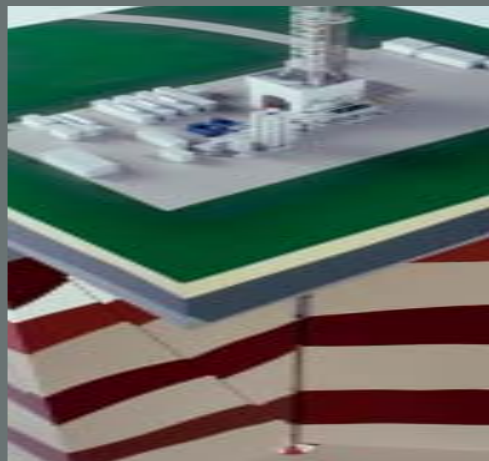
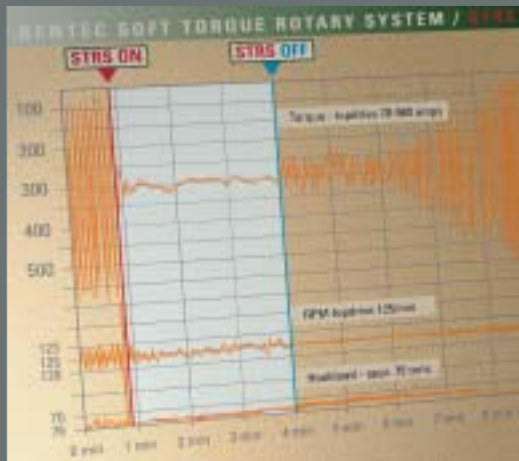
#### BENTEC ELECTRICAL SYSTEMS:

- Manufacturing of proprietary S.C.R plants and Variable Frequency Drive (VFD)
- Soft Torque Rotary System (STRS) for a higher rate of penetration
- Collection of all drilling data and availability at the control console

## EXPERTS FOR DRIVE TECHNOLOGY

From traditional D.C. technology to most-advanced A.C. electrical drive control systems, we manufacture proprietary S.C.R. plants and Variable Frequency Drive (VFD) systems for land and offshore rigs. The complete system, as well as single units, can be customized to meet the requirements of any kind of rig.

Bentec safety systems pay back the investment already with the avoidance of the first incident or accident. The driller can continue to concentrate on the job with the safe assurance of being protected by a Bentec Anti Collision System (ACS). Other developments include the Generator Control System or the 4-Quadrant Drawworks Drive.



- ▲ Bentec infoDRILL - a server-based Drilling Instrumentation System
- ▲ Increased drilling parameters; less maintenance: Bentec Soft Torque Rotary System

- ▲ Bentec Power Control Room (PCR)
- ▲ The Bentec Soft Torque Rotary System: designed to save our customers' money

- ▲ Like an eagle - Bentec Colour Camera System



## SOFT LINE SYSTEMS

The Bentec Soft Torque Rotary System (STRS) is designed to enhance your drilling economies by reducing wear and tear of downhole components. The system increases the rate of penetration by up to 30% depending on the formation. Research results published by Shell show a cost reduction up to 65%. Our Soft Pump System (SPS) controls and synchronises the mud pumps to maintain a continuous high- and low-pulse mud pressure. Our latest development is the Bentec Drawworks Operation System (BDOS). All drawworks related systems are integrated into a drawworks control package with only one remaining interface to the client's system. As a result the standardized BDOS guarantees maximum safety and efficiency.

## DRILLING INSTRUMENTATION SYSTEMS

Drilling Instrumentation is indispensable to have full information on the drilling situation and the drilling rig. The Bentec infoDRILL collects all the drilling data and prepares it for display on the driller's control console. The driller therefore has all information available at his finger tips to optimally control and monitor the drilling process. The Colour Camera System (CCS) makes monitoring of the whole derrick area from the drillers cabin possible. The driller is enabled to watch and monitor areas in the upper derrick.



The basics of Bentec's success: knowledge, expertise and dedicated people who believe in themselves

#### BENTEC SERVICE AND SUPPORT:

- Unique combination of manufacturing company and fully licensed repair shop
- Qualified repairs and service anywhere you drill
- Coordination of large projects – worldwide

## OUR MOST DISTINGUISHING TALENTS

Only Bentec offers you the truly unique combination of an API-qualified manufacturing company plus a fully certified and officially licensed one-stop repair shop. There simply is no other company in our field that has more original OEM licence awards and quality certifications from both ISO 9001 and API Q1 verified by DNV.

Our technical capabilities allow us to address challenges related to your drilling rig operations. From rig refurbishing

projects via tailor-made upgrading tasks to OEM repair, special periodic surveys and general maintenance jobs.

Our service technicians perform qualified repairs and service – in our plant or anywhere you drill – on main mud pumps, drawworks, engines, generators, h.p. piping and h.p. manifolds. We also realign and certify pressure gauges and other drilling instrumentation. All at a highly competitive price.



- ▲ The Bentec workshops have a floor space of over 13,000 m<sup>2</sup>
- ▲ We are on the move wherever you need us

▲ Attested quality for your projects



## ASHGABAT – TURKMENISTAN

In 2000 Bentec registered a representation office in Ashgabat, Turkmenistan to support the operation of the first Western land drilling rig in Turkmenistan. The successful execution of the project showed Bentec that Turkmenistan is an attractive market to launch the reliable Bentec technology.

## BAKU – AZERBAIJAN

Continuous expanding business activities in the Caspian area encouraged us to establish a second representation in Baku, Azerbaijan, in 2000. Bentec Baku is steadily growing, offering its customers the complete Bentec portfolio.

## ABERDEEN – SCOTLAND

Bentec Engineering Offshore office since 1995.

## ALMATY – KAZAKHSTAN

Another representation office was registered in Almaty in the middle of 2003. Meanwhile, this office has been extended by a local workshop in Aktau. Up to now six mobile drilling rigs have been manufactured in cooperation with local companies according to Bentec design.

## MOSCOW – RUSSIA

Bentec Russia in Moscow was established at the end of 2003. This representation means a closer contact to Russian customers regarding further strategic business development in the country.

## BERLIN

Maintaining political relations to important embassies and companies was the main target when establishing the office in the German capital at the end of 2004.



#### BENTEC QUALITY MANAGEMENT:

- Do it right the First Time – Every Time – Everywhere
- Maintaining the highest level in quality, health, safety and environment
- ISO 9001:2000 DNV Certification

## AWARENESS OF QUALITY

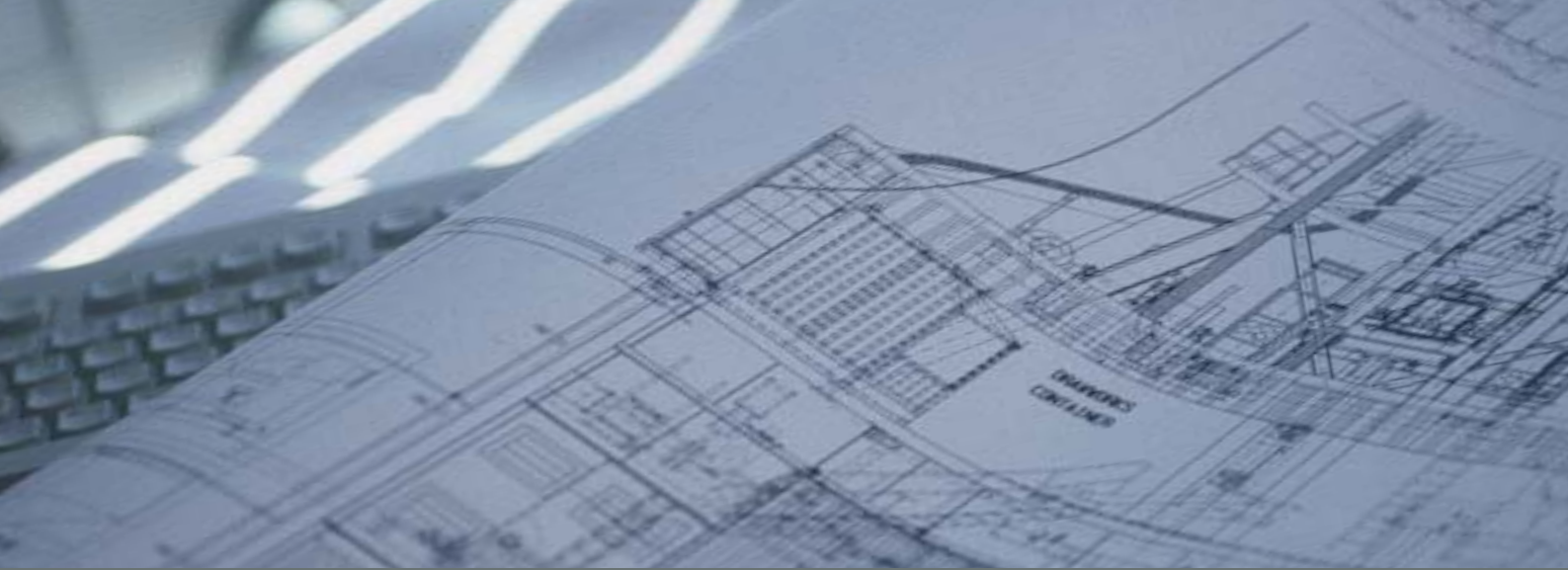
For Bentec maintaining highest quality standards is a catalyst for success. To assure a constant improvement of our design and construction we developed the Bentec Quality Management System.

The Q-HSE System is continuously reviewed to keep pace with new technologies, standards, regulations and codes of practice. The skills of our personnel as well are

included. In strict compliance with all applicable laws, rules and regulations we execute operations. We provide and maintain only safe and efficient equipment.

Every operation is conducted to avoid harming the health of people or the environment.

**We are aware of our duty!**



## CERTIFIED QUALITY

Our products, equipment, systems and components are designed and manufactured under the guidelines of our ISO 9001:2000 DNV-Certified Quality Assurance (QA) and Quality Control (Q.C.) system. And, as our customers expect, they are backed up by a wide range of classifications e.g., A.B.S, BV, DNV, GL, Lloyds etc. The company is SCC\*\*-certified by DNV as well.

## OBJECTIVE QUALITY

We also meet or even exceed a number of industry-recognized quality objectives (such as API Q1 which is similar to ISO 9001:2000) and industry standards such as ANSI, ASME, DIN, EN, VDI, Norsok, etc.

Bentec is officially authorized to use the API monogram for manufacture and repair on drilling & oilfield equipment as specified under API 4F, API 5CT, API 6A, API 7, API 8C, API 16A.

We hold licenses and authorization permits from Hydril, Grand Prideco, Shaffer and Varco for conducting qualified repairs on their OEM preventers (B.O.P.). In addition, we are licensed to perform tubular thread repairs and services in accordance with API, NKK and Vallourec & Mannesmann licences.



▲ T 47, modified by Bentec, one of the most challenging projects in the past

**HIGH TECH FOR HIGH QUALITY:**

- More than a century of experience
- Comprehensive engineering consultancy
- Upgrading of rigs

# HIGH LEVEL SERVICE FOR BEST RESULTS

With Bentec you get more than a century of unrivalled experience in building, refurbishing, maintaining and repairing of drilling rigs and drilling equipment – on- and offshore. Even in upgrading – proved in the T 47 project – our knowledge is excellent. We deliver the turnkey solutions for brownfield and greenfield engineering you require

to work in a highly effective manner. We provide feasibility studies. And we are specialists at Front-End Engineering and Design (FEED). We offer comprehensive engineering consultancy with state-of-the-art technology all over the world.



## RIG UPGRADING SPECIALIST

The most recent evidence of our comprehensive capabilities in terms of upgrading is demonstrated by our timely installation and commissioning of the 3000 HP offshore facility T 47 on an artificial island in the Caspian Sea. The rig was dismantled and moved to our yard in Bad Bentheim. There it was substantially upgraded to enable it to drill throughout the winter months in arctic conditions in the Caspian Sea. Changes included the addition of

self-contained accommodation facilities and a full fire and gas detection plant, PA systems and a comprehensive waste treatment plant. All additional equipment, including a mud processing plant, silos or "ice class" Arktos escape vehicles are housed in heated tents. The T 47 represents the very successful conversion from a land-drilling rig to a state-of-the-art offshore drilling facility.

All performed by Bentec. And all in record time.



ONLY THE BEST FOR SUCCESSFUL CLIENTS – NOW AND IN THE FUTURE:

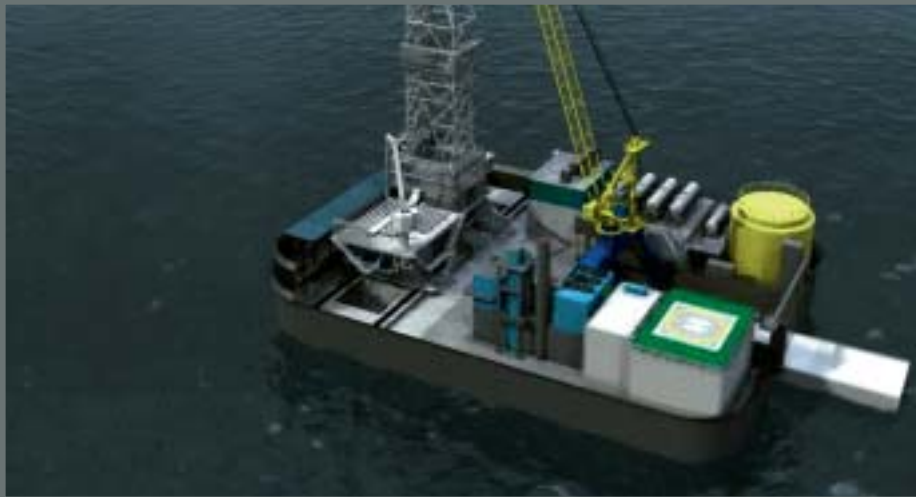
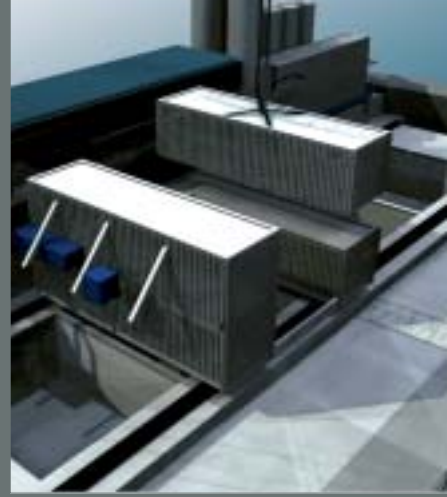
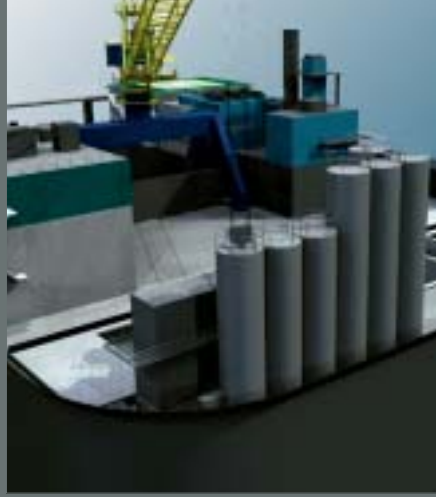
- Service without compromising quality
- Reaching higher efficiency while taking care of the environment
- Extension of the existing local representatives and establishment of new ones

# GET MORE FOR YOUR MONEY

We offer you predictable budgeting, the convenience of single-source responsibility and various forms of financial assistance. Our services are provided without compromising quality, durability or the availability of our oilfield products and systems.

We accept full responsibility for systems integration and interfacing solutions. We deliver a customer focused, cost-effective engineering service, providing leadership through innovation and continuous improvement in a commercially challenging environment.





▲ State of the art solution for any kind of rig

## LEADING INTO THE FUTURE

With our drilling rigs, electrical and mechanical systems and their related services, we have achieved a forefront position in the drilling industry with a special focus on markets in the CIS, Europe/North Sea, Middle East, Northern Africa, Mediterranean Sea and Caspian Sea.

Our objective is to increase the performance of the rigs through a higher efficiency and fewer incidents/accidents while taking care of environmental protection. We foster close relations to drilling contractors to be aware of upcoming demands on the rig. Feedback from the rig site is our basis for proven innovations.

We believe that mechatronical systems, the combination of proven hardware such as drawworks with our electrical drive technology like BDOS will be the future state-of-the-art technique.

Bentec also plans to extend the current network regarding local representative offices to be closer to our clients. The existing subsidiaries will also be extended to maximize our customers satisfaction.

## BENTEC HEADQUARTERS

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API 4F: 4F-0044  
API 5CT: 5CT-0372  
API 6A: 6A-0373  
API 7: 7-0221  
API 8C: 8C-0033  
API 16A: 16A-0073

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