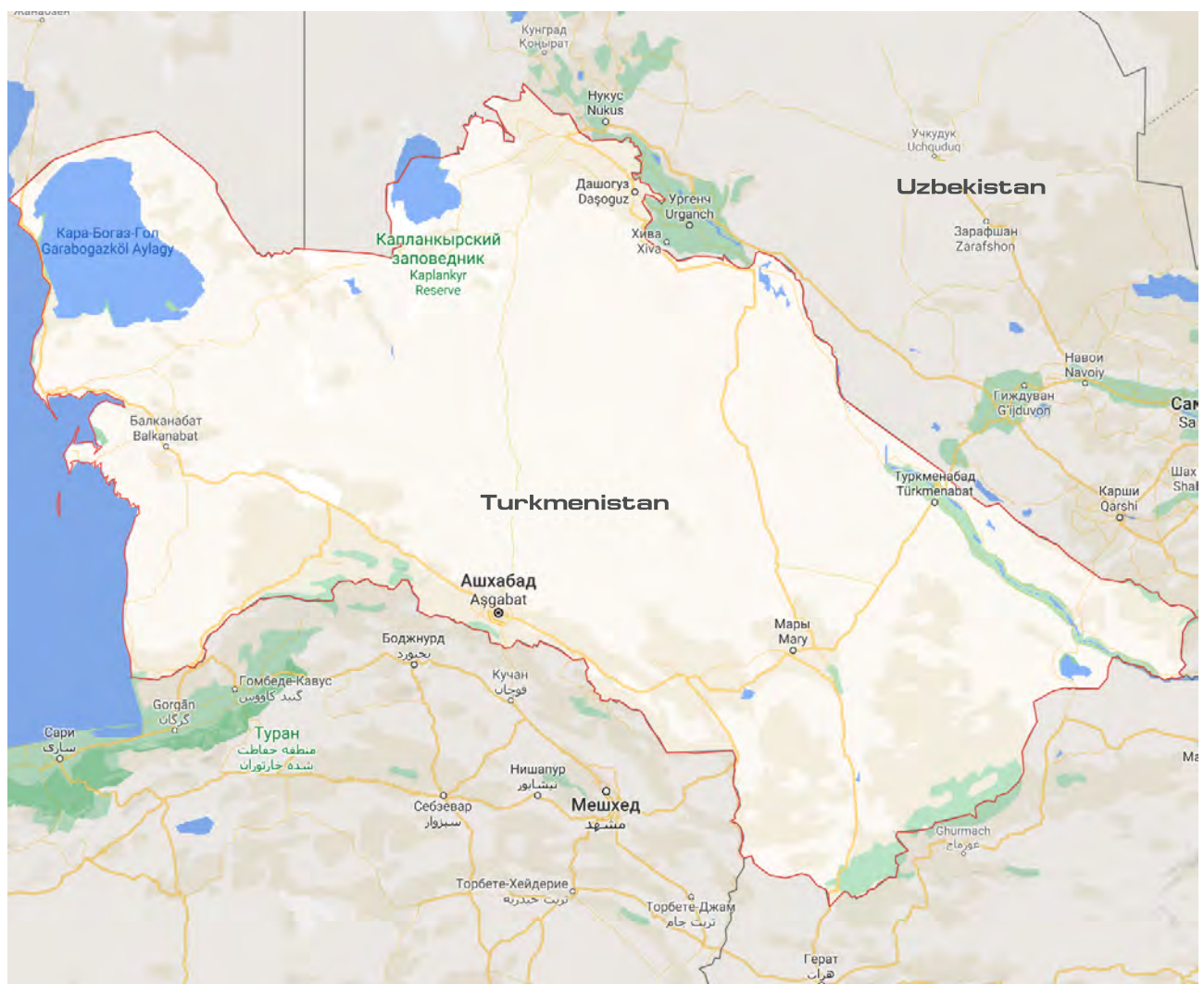


**YUG-NEFTEGAZ**



# 15 YEARS OF SUCCESSFUL OILFIELD OPERATIONS IN TURKMENISTAN



# ABOUT US

Yug-Neftegaz Private Limited (YNG PL) was established and registered in Singapore as the parent structure, which manages and coordinates the activities of the Group of companies providing services in the oil & gas sector on the international markets.

The arrangement of the YNG PL production activities is based on the results of scientific & research studies related to the development and adoption of the proprietary technologies for the application of new efficient EOR methods. The scientific & research studies are conducted under the tutelage of Yu. Balakirov - the Honored master of Sciences and Engineering of Ukraine, Doctor of Engineering, Professor, Academician of the International Higher Education Academy of Sciences, the Academy of Mining Sciences of Ukraine and the Ukrainian Oil & Gas Academy, the I. Gubkin award winner, Honoured Oil Worker of the former USSR and Ukraine.

## THE GROUP'S CORE ACTIVITIES:

- Oil & gas fields exploration and development
- A full range of oil & gas services, equipment, technical solutions and technologies to the oil & gas industry operators:
  - geophysical works and surveys (field seismic works onshore and in transition zones, seismic data processing and interpretation);
  - oil & gas wells drilling;
  - drilling equipment (PDM, jars, bits, etc.) rental;
  - workover and well servicing;
  - oil-, gas-, and gas condensate wells production stimulation;
  - oil & gas infrastructure construction and modernization.



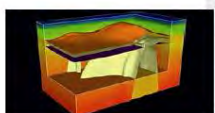
Oil & gas fields exploration and development

Oil & gas wells drilling;  
Drilling equipment rental



Field seismic works  
- onshore;  
- in transition zones

Workover & well servicing;  
oil-, gas-, and gas  
condensate wells  
production stimulation



Seismic data processing,  
and interpretation

Oil & gas infrastructure  
facilities construction &  
modernization



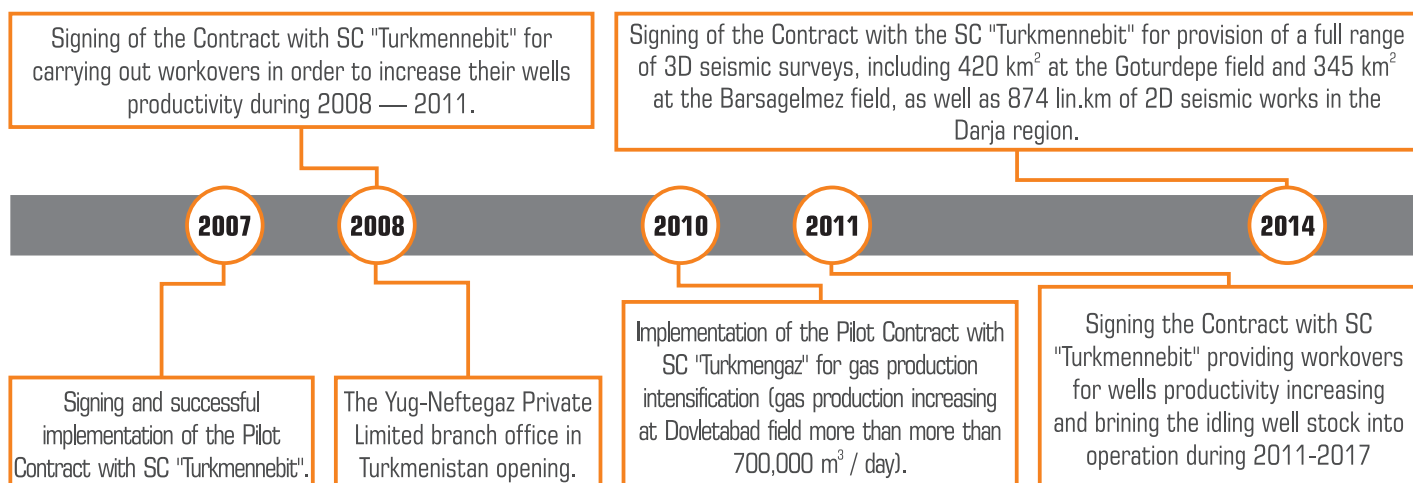
# WHERE



The leading position in the Company's portfolio is held by the projects being implemented for the oil & gas sector of Turkmenistan.

The history of YNG PL work in Turkmenistan dates back to the signing in 2007 and subsequent successful implementation of a Pilot Contract with the State Corporation "Turkmennebit". As a result of this, the Contract No. T5-8-265 dd. 07/01/2008 was signed, providing for well workovers and increase in production rate of the State Corporation "Turkmennebit" wells (2008 to 2011, 138 well operations were carried out, allowing to produce 270,000 tons of incremental oil).

The next stage of the Company's activities in Turkmenistan was the signing and implementation of the Contract No. T5-8-397 dd. 05/07/2011. Under this contract, 2011 to 2018 the workovers aimed at the production rate increase as well as bringing the idling well stock of the State Corporation "Turkmennebit" into operation were carried out.



# WE WORK



On 11/29/2018 YNG PL and the State Corporation "Turkmennebit" signed a Supplementary Agreement to the Contract No. T5-8-397dd. 05/17/2011. The Agreement provides for the renewal of the Contract for 19 years (until 2037) and expands the range of services to be provided by the Company, which, inter alia, includes drilling of 60 vertical, directional, and horizontal wells to the depth of 4,500 — 5,500 m at the North Goturdepe oil field in Turkmenistan. As of 03/01/2021, under the Contract No. T5-8-397, as calculated on a cumulative total, 1786 well operations were performed and more than 2.93 million tons of incremental oil produced.

Geophysical surveys using modern equipment and advanced software for data processing and interpretation is another core business of the Company. The range of geophysical services provided by the Company includes field surveys on shore and in transition zones (those including shallow waters, and wetlands/swampland).

Signing of a Supplementary Agreement to the Contract with SC "Turkmennebit" for the extension of the workover contract for another 5 years (until 2022) expanding the range of services provided by YNG.

06/20/2019 – Commencing of wells drilling at the North Goturdepe field.

As of 03/01/2021, 2.93 million tons Of incremental oil produced; 1786 well operations were performed.

2017

2018

2019

2020

2021

2037

Signing of a Supplementary Agreement to the Basic Contract with SC "Turkmennebit" for the extension the Contract for 19 years (until 2037) expanding the range of services provided by YNG and drilling of 60 wells (4,500m — 5,500m) at the North Goturdepe field.

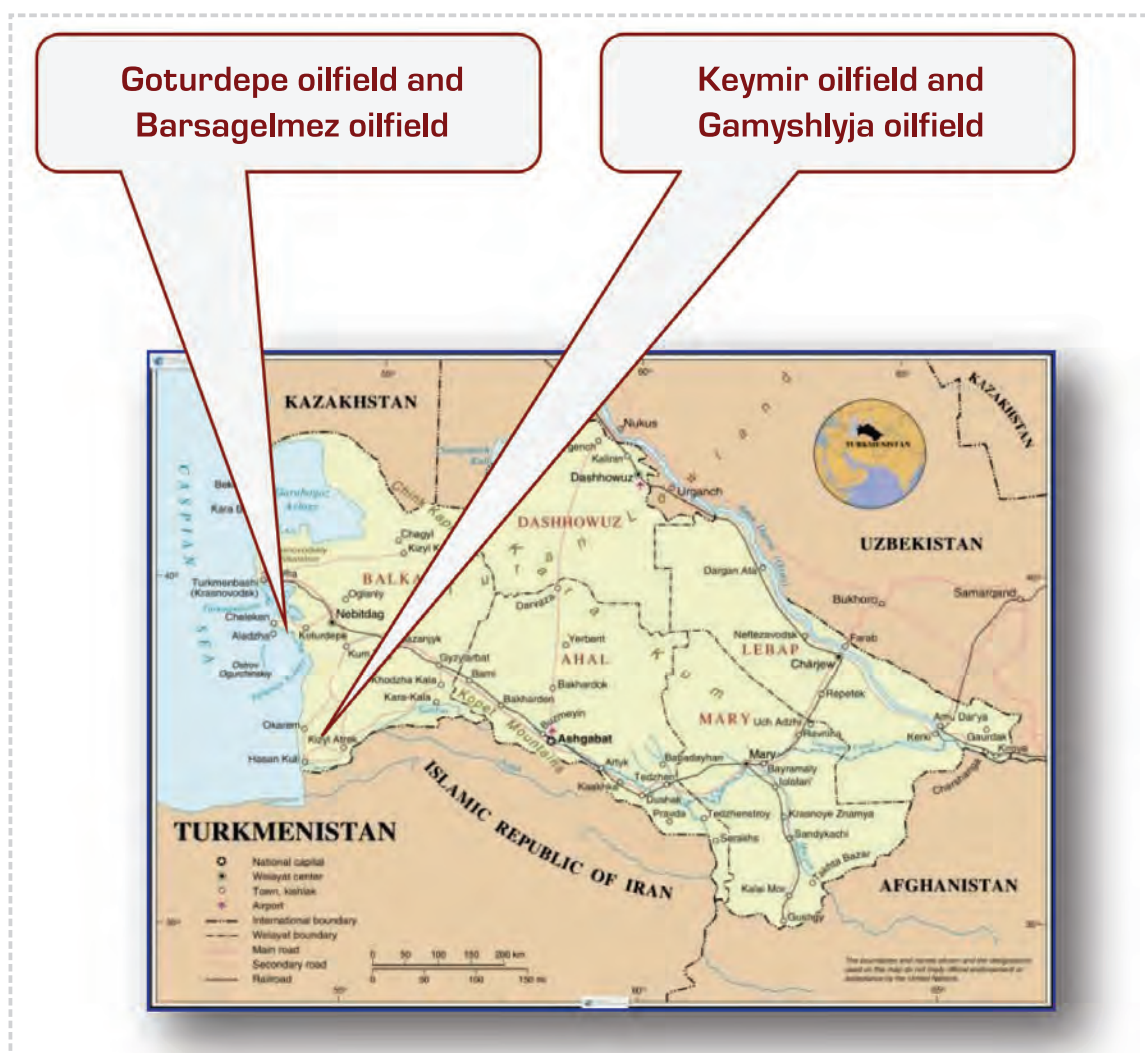
05/01/2020 — won a tender the SC "Turkmengeology" for 2D and 3D seismic surveys in Western Turkmenistan carrying out.

01/01/2021 – completion of drilling of the first 6 (six) oil wells with depth of 5000 m each at the North Goturdepe field. As a result of drilling in all wells an industrial flow of oil was obtained.



In 2019 YNG PL fulfilled the Contract No. TGL-8 dd. 11/07/2014 signed with the State Corporation "Turkmengeologiya". The Contract provided for a full range of geophysical works of 3D survey in the fields of Goturdepe at the total area of 420 km<sup>2</sup> and Barsagelmes – 345 km<sup>2</sup>, likewise 2D survey at the area of the Darja Peninsula with the total length of seismic lines being 874 linear km. In 2020, the Company won a tender for the execution of geophysical works for the State Corporation "Turkmengeologiya" of 3D survey in the East Goturdepe field at the total area of 250 km<sup>2</sup>, as well as 2D survey in the South Burun field with the total length of seismic lines being 245 linear km (another new contract is in the negotiating stage now).

Having got the most advanced high-tech oilfield machinery & equipment required to meet the production challenges, nevertheless we consider our employees to be the most valuable asset. 800+ Turkmen employees are engaged by the Company in Turkmenistan. Their expertise and large practical experience in the oil & gas industry are highly appreciated by the YNG PL management team. The joint rewarding work of foreign and Turkmen experts allows us to achieve the targeted production performance figures, thus developing the oil & gas sector of the Turkmenistan economy.



# WE GUARANTEE THAT OUR WORK IS IN COMPLIANCE WITH INTERNATIONAL QUALITY, HEALTH, OCCUPATIONAL SAFETY, AND ENVIRONMENTAL PROTECTION MANAGEMENT STANDARDS



## FIELD GEOPHYSICAL WORKS

- 200+ employees
- 92 units of machinery & equipment



## DRILLING

- 150+ employees
- Four ZJ-70 drilling rigs (450 t load capacity each)

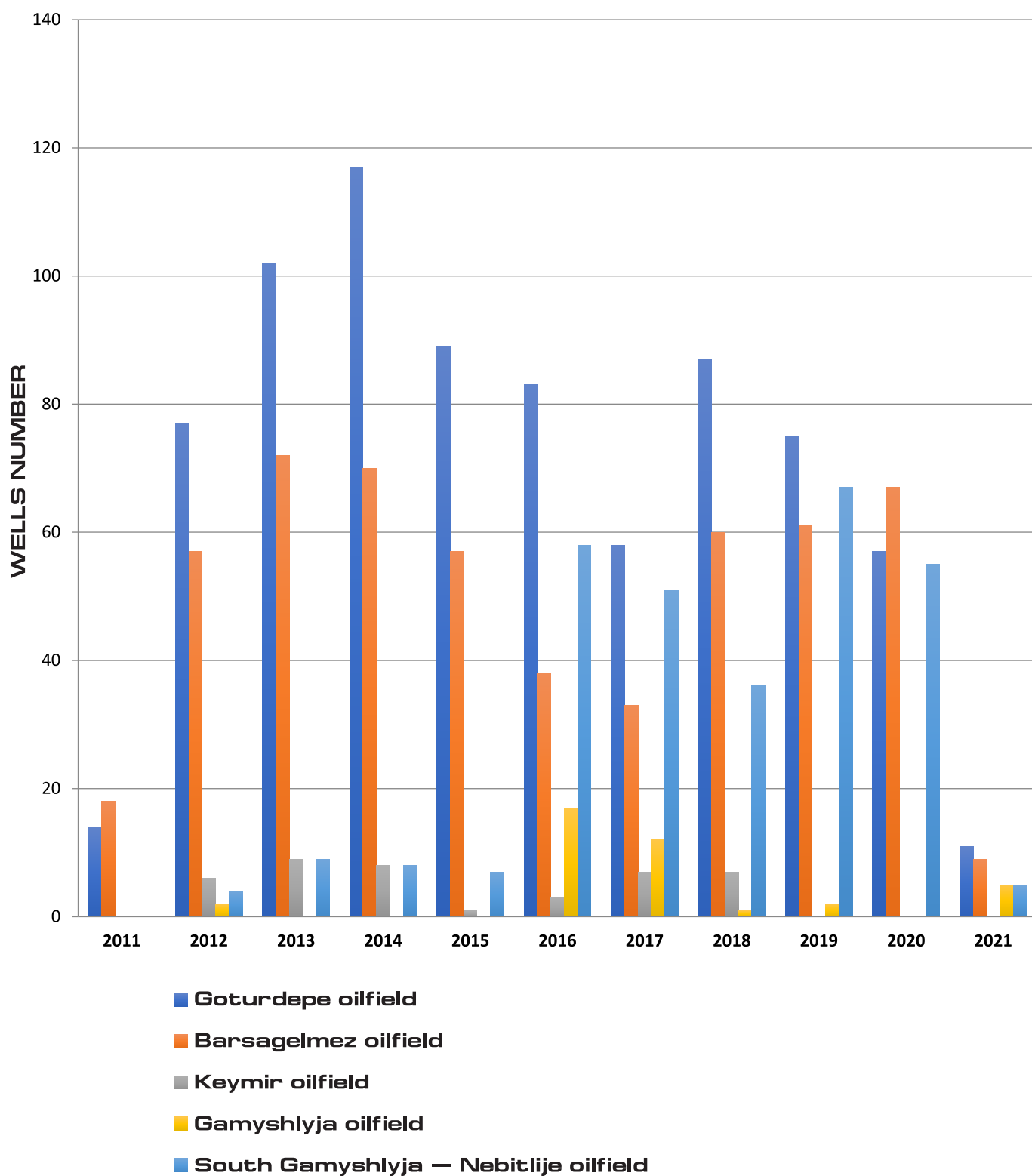


## WORKOVER AND WELL SERVICING

- 650 + employees
- 135+ units of machinery & equipment

# PERFORMANCE RESULTS S DD. 05/17/2011 1 N<sup>o</sup>T5-8-397 C 1786 WELL OPERATIO

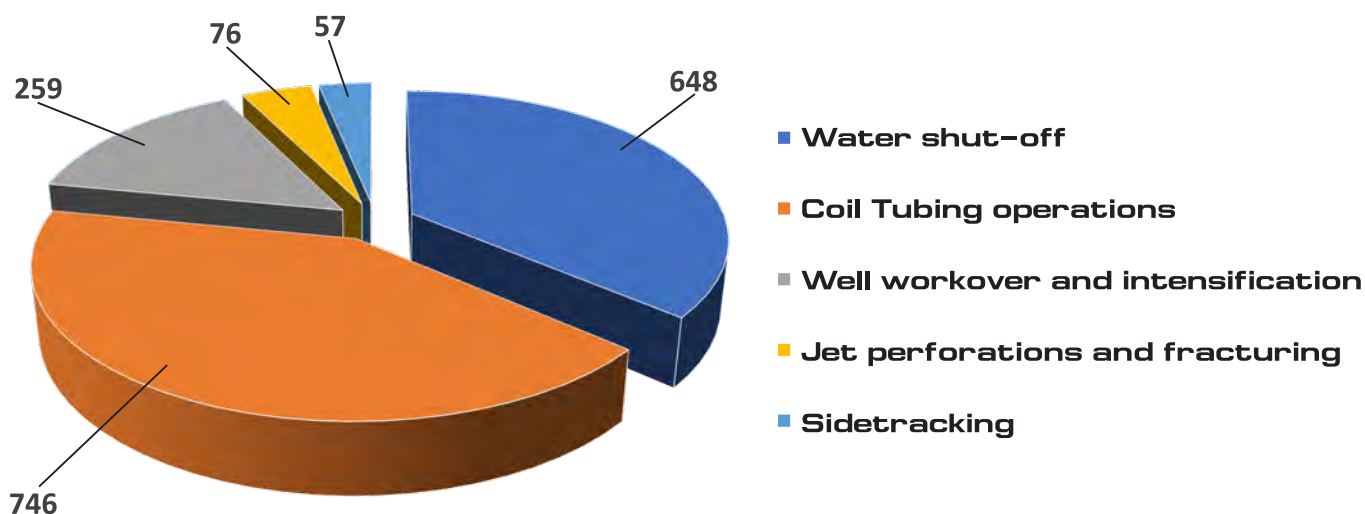
## WORKS BREAKDOWN BY YEAR 2011 — 2021



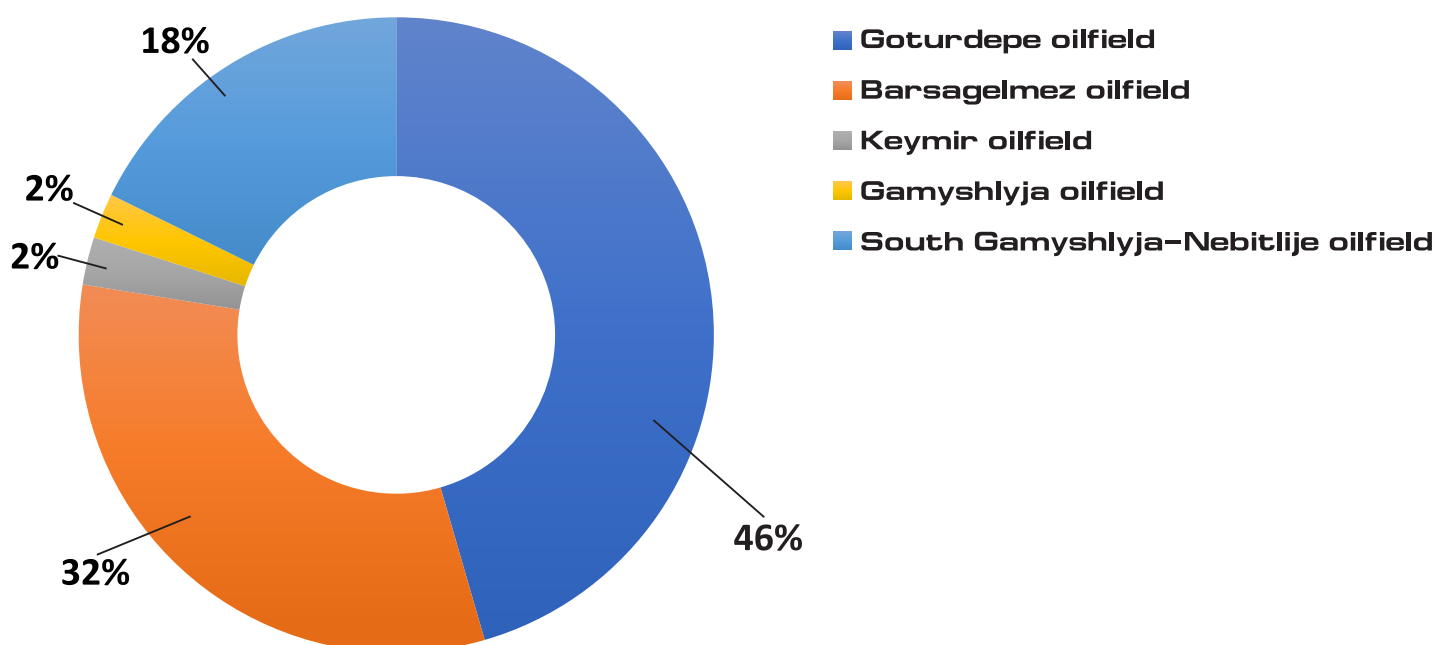


# SUBJECT TO THE CONTRACT ALCULATED ON THE BASIS OF NS AS OF 03/01/2021

## WORKS BREAKDOWN BY TYPES 2011 — 2021



## WORKS BREAKDOWN BY OILFIELDS 2011 — 2021



# GEOPHYSICAL WORKS AND SURVEYS

YNG PL has been conducting geophysical works and surveys in Turkmenistan since 2014. The range of our services includes:

- ▀ Field geophysical works
- ▀ Seismic data processing
- ▀ Seismic and well data interpretation

**200 personnel and 92 units of machinery & equipment involved**

2015 – 2016

YNG PL has successfully completed a full scope of works under the project "3D CDP seismic exploration including the sea/ land transition zones in the area within the North Goturdepe field and shallow waters of the Caspian Sea and the adjacent area, including the Central and Western Goturdepe areas" in the amount of 420 km<sup>2</sup>.

2016 – 2017

YNG PL has performed a set of field works under the project "2D CDP seismic exploration within the prospective areas of the Kelkor trough - Darja and Tekejik in Western Turkmenistan, including transition zones sea/ land" in the amount of 874 lin. km, as well as has completed the processing and interpretation of data and successfully presented the "Goturdepe 3D" report.

2017 – 2019

YNG PL has performed a set of field works under the project "CDP-3D seismic exploration at the Barsa-Helmes oil and gas field in Western Turkmenistan" in the amount of 345 km<sup>2</sup>, and has also completed the processing and interpretation of data and presented the Darja and Tekejik 2D project report and the Barsa-Helmes 3D project report.



● Goturdepe 3D – 420 km<sup>2</sup>

● Darja 2D – 874 lin.km

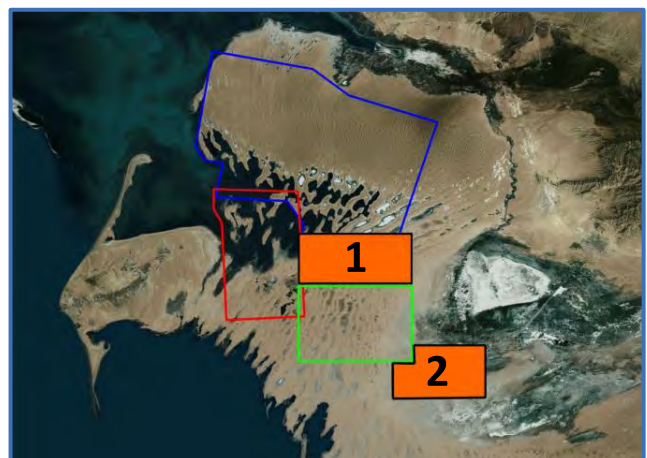
● Barsa-Helmes 3D – 345 km<sup>2</sup>

# GEOPHYSICAL WORKS AND SURVEYS

- ▀ 3D CDPM survey at the East Goturdepe field (refer area N°1 on the map below)
  - ▀ 3D CDPM field works, area: full-time - 250 km<sup>2</sup>
  - ▀ 3D field data processing.
  - ▀ Well logging data acquisition, digitizing, processing, interpretation (900+ wells).
  - ▀ 3D data interpretation and 27 structure maps generated.
  - ▀ Mapping of reservoir zones.
  - ▀ Data analysis, leads and prospects mapping.
  - ▀ Preparation and presentation of final Report.

2021 – 2024

- ▀ 2D CDP survey at the South Burun area (refer area N°2 on the map below)
  - ▀ 2D CDPM field works, full-time - 245 lin.km
  - ▀ 2D field data processing.
  - ▀ Well logging data acquisition, digitizing, processing, interpretation and stratigraphic correlation.
  - ▀ 2D data interpretation and generating structure maps.
  - ▀ Data analysis, leads and prospects mapping.
  - ▀ Preparation and presentation of final Report.





# OUR MACHINERY & EQUIPMENT FOR FIELD WORKS



wireless **SEISMIC**  
Real Time Matters



**RT System 2**



Field works at Goturdepe oilfield





Field works at Goturdepe oilfield



Darja area: Seismic shooting in transition zone by applying pulsed source on a floater towed by dozer (for peat-land operation)





Safety-awareness (HSE) briefing prior to commencement of surveys



Barsagelmez oilfield: Testing and tuning of RTS2 wireless seismic data acquisition system (manufactured by Wireless Seismic (USA))



Goturdepe oilfield: Generating seismic signal by applying updated Nomad 65 NEO vibro-seis sources (manufactured by Sercel (France))



Barsagelmez oilfield: Placing WRUs of RTS2 wireless seismic data acquisition system (manufactured by Wireless Seismic (USA))





3D surveys in transition zones within Northern Goturdepe oilfield and in shallow waters of the Caspian Sea



2D surveys including land and shallow





Operation of pulsed source on a floater driven by outboard motors while shooting in shallow waters (to 3m depth)

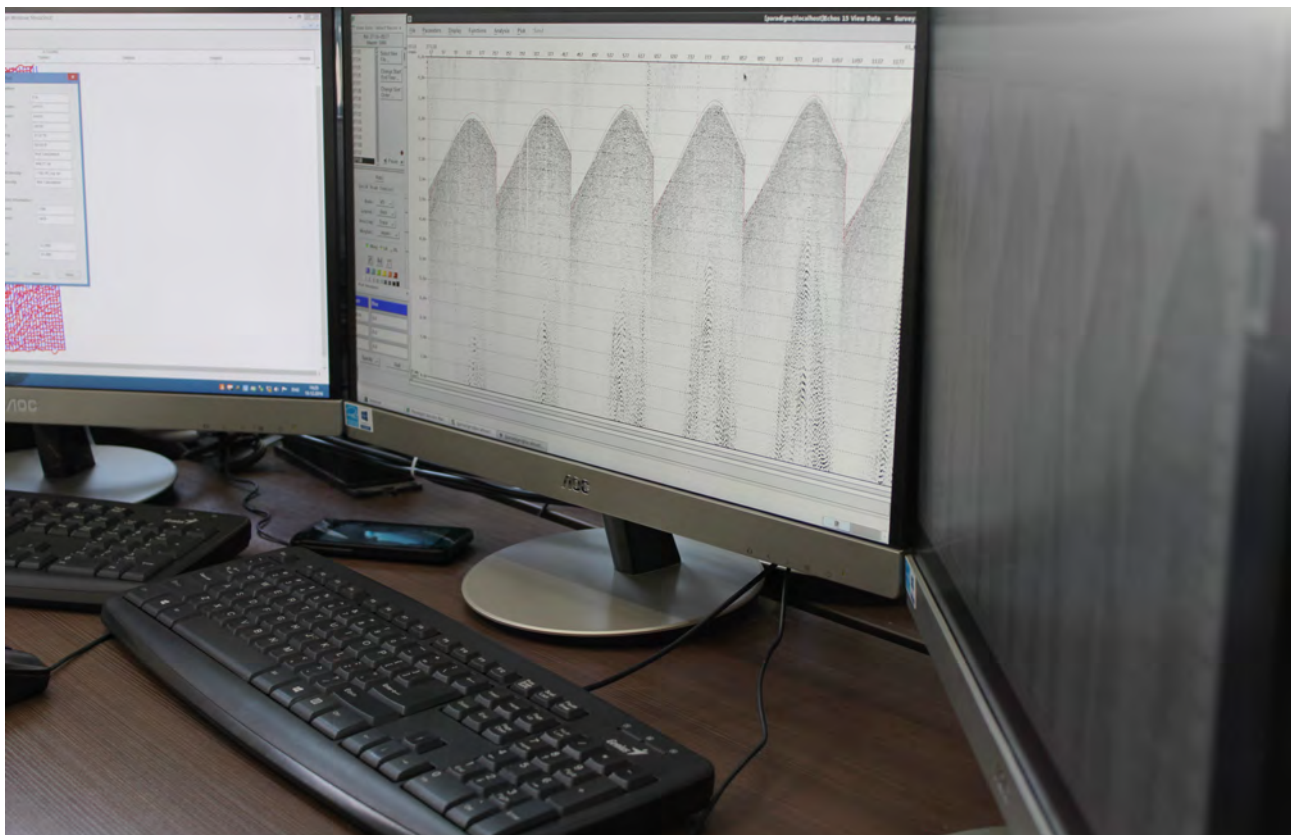


waters of the Caspian Sea within the Darja bay.





Acquisition design by using industry-leading GMG Mesa (USA) software package



Seismic data processing by employing industry-leading Paradigm Echos (USA) system





Planning optimum elaboration of seismic design with the use of high-resolution satellite images



Seismic data QC by applying SeisWin-QC (Russia) specialty software package



# OIL WELL DRILLING

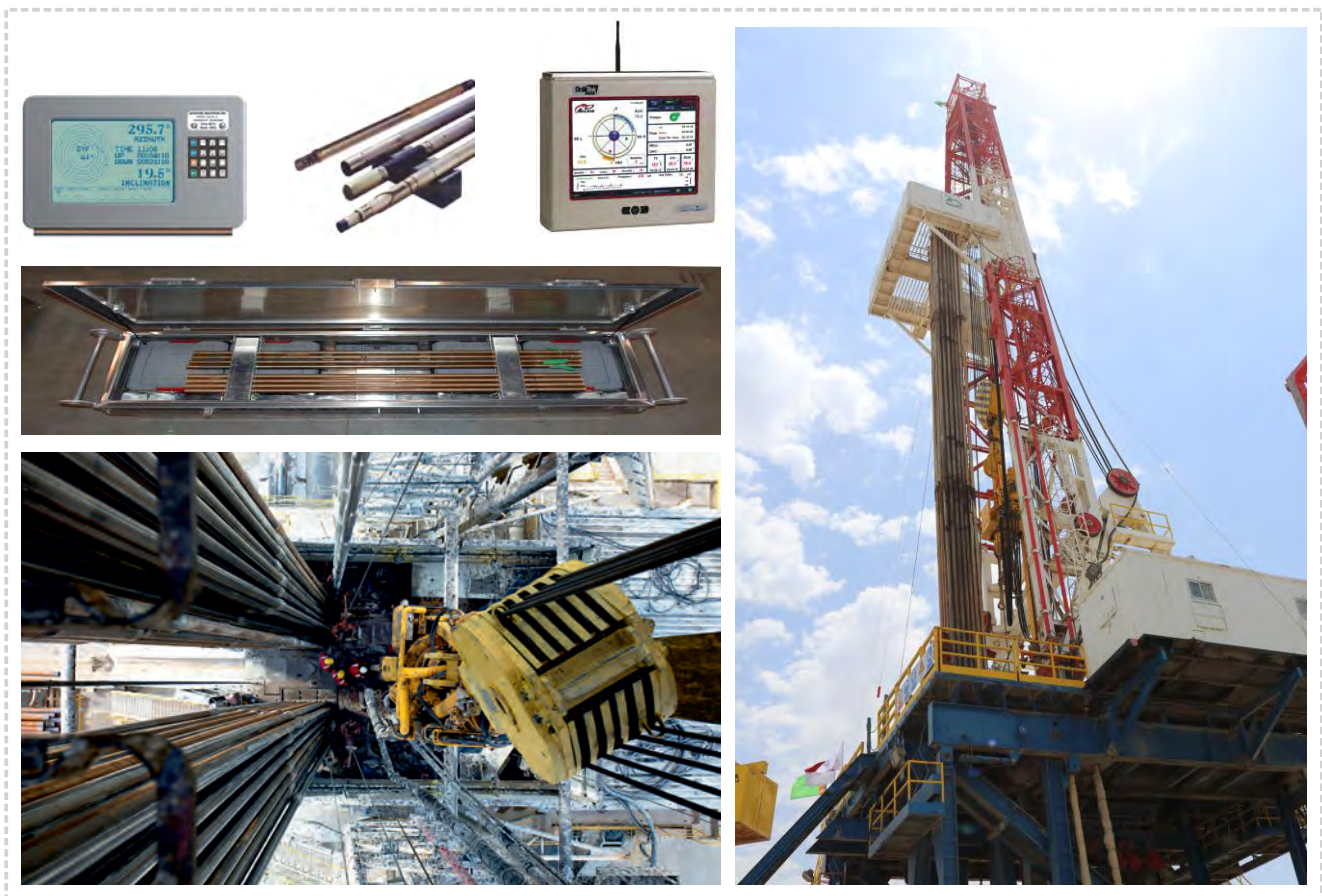
Based on the results of our previous surveys and those of the interpretation of the field data acquired at the Goturdepe oilfield, the Company started drilling 5,000 m deep vertical wells in the Northern Goturdepe oilfield.

As of 03/01/2021, drilling of six 5,000 m deep oil wells has been completed. As a result of drilling, all wells produced a commercial inflow of oil. The Company is currently drilling another four wells.

In the future, it is planned to drill about sixty 4,500 m — 5,000 m deep wells, which will also significantly increase the production of new oil at the field, which has been in operation for 50+ years.

It is scheduled drilling of the following wells:

- vertical wells
- directional wells
- horizontal wells





- 

- wells being drilled



- completed wells



- wells to be drilled in 2021

320



- c wells to be drilled within 2022-2025

- 150+ employees including 100+ locals
- Four ZJ-70 drilling rigs (450 t load capacity each)

- 150+ employees including 100+ locals

Four ZJ-70 drilling rigs (450 t load capacity each)

# DRILLING EQUIPMENT RENTAL

On the territory of Turkmenistan the Company provides engineering services for drilling vertical, directional and horizontal wells. Besides, we also provide our clients with the following rental drilling equipment:

- Downhole motors
- Jars
- Drilling bits
- Tubulars (DP, HWDP, DC, NMDC)
- Stabilizers
- Other drilling equipment



# DRILLING EQUIPMENT SERVICE

In 2020, we built and commissioned a workshop for the repair & maintenance of drilling equipment in Turkmenistan.

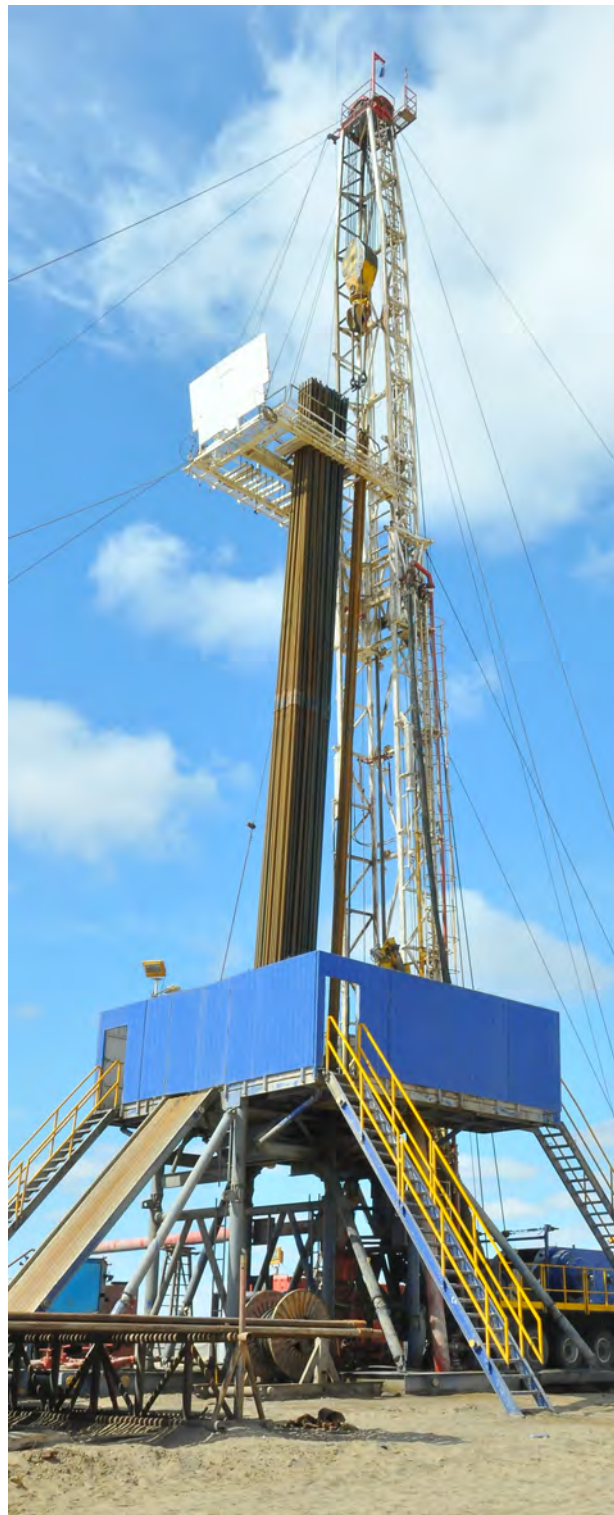
The list of equipment we service for the time being includes:

- ▀ Downhole motors
- ▀ Jars
- ▀ Tubulars (DP, HWDP, DC, NMDC)
- ▀ Stabilizers





# WORKOVER AND OIL WELL STIMULATION



The Company has purchased and imported to Turkmenistan  
135+ units of machinery & equipment.



## KEY MACHINERY & EQUIPMENT

Workover, well servicing and well stimulation services are performed by our 12 crews. They have got the following key machinery and equipment:

- ZJ-40 Mobile rig for sidetracking (225 ton load capacity) - 1 unit;
- ZJ-15 Mobile workover rig (100-ton load capacity) – 2 units;
- workover rigs (60 / 80, 100, and 125 ton load capacity) - 6 units;
- Fleet of coiled tubing units (coiled tubing length – 5,500 m.) - 2 units;
- Hydraulic fracturing fleet (3 x 6,750 HP pumping units, 1 x 12 m<sup>3</sup>/min sand blender; 1 x data van; 1 x manifold block; 6 x 300 m<sup>3</sup> tanks) - 1 fleet;

In addition, a mobile nitrogen unit (membrane type) and other specialty equipment - pumping units (320/400/500/700/1000 MPa), PPU, ADPM, truck cranes (25 to 50 ton carrying capacity), tank trucks and oil tankers, trucks, pipe carriers, etc.



Goturdepe oilfield: Side-tracking by using ZJ-40 mobile drilling rig  
(225 ton load capacity)

## COILED TUBING DOWNHOLE TREATMENT:

- Sand washing;
- Well kill;
- Well completion (delivery);
- Plug back jobs;
- Well down-hole equipment operations;
- Coiled tubing servicing;
- Bottom hole treatment.



Goturdepe oilfield: Frac job by



## BOTTOM HOLE TREATMENT

- ▣ Chemical treatment
- ▣ Hydraulic fracturing
- ▣ Sand jet perforating job

## WORKOVER AND WELL SERVICING

- ▣ Replacement of electric submersible pumps
- ▣ Remedial cementing
- ▣ Tubing replacement
- ▣ Well clean out
- ▣ Well recompletion
- ▣ Production-injection well conversion
- ▣ Well suspension and abandonment
- ▣ Side-tracking and well deepening
- ▣ Casing/liner repair
- ▣ Production casing remedial works
- ▣ Water shut-off/ Water inflow limitation
- ▣ Fishing jobs



employing YNG PL frac fleet



Goturdepe oilfield: Water shut-off jobs by using a workover rig (80 ton load capacity)



Keymir oilfield: Well acidizing by applying MK30T coiled tubing unit





Barsagelmez oilfield: Sand-jet perforating jobs



Goturdepe oilfield: Well workover in abnormal operating conditions by using a workover rig (125 ton load capacity)





Barsagelmez oilfield: Pumper operation while water shut-off jobs



Goturdepe oilfield: CT-conveyed acidizing by employing acid-proof pumper

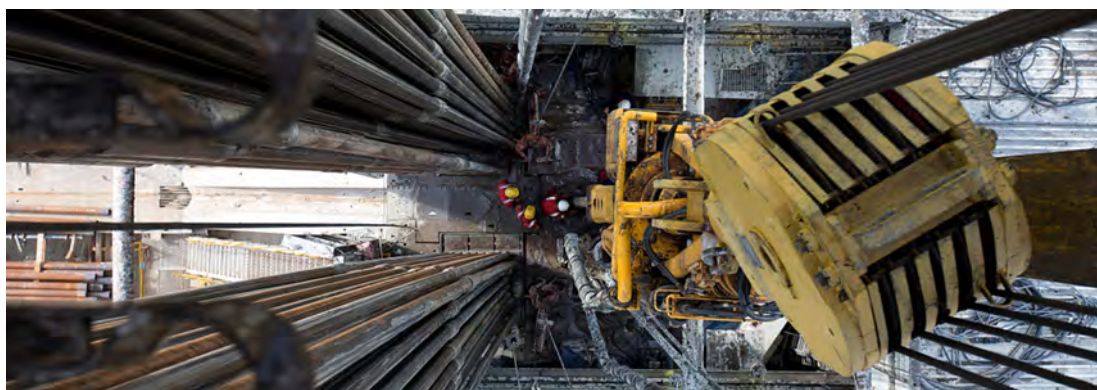




Barsagelmez oilfield: Well workover job in abnormal operating conditions by using ZJ-40 mobile drilling rig (225 ton load capacity)



## DIRECTIONAL SIDE-TRACKING



Barsagelmez oilfield: Telemetry-aided side-tracking



The availability of high-tech tooling and equipment for production assignments is an important criterion for the successful operation of the Company when providing directional drilling services.

Our team of engineers has long-term experience in drilling various types of wells, including build-and-hold wellbores likewise horizontal and multilateral wells.



Telemetry system equipment packages for directional drilling:  
COMPASS (USA) and DrillTek (Canada)

## COMPANY'S OPERATIONS FACILITIES

In order to create the proper conditions for planning, managing and ensuring performance of works and contract terms, the Company has built 2 field operation facilities in the Balkan province of Turkmenistan (at the Goturdepe oilfield and not far from Okarem settlement at the Keymir oilfield). The said facilities have the required production, warehousing, office, educational, cultural, residential and non-residential premises as well as cranes, lifting equipment, automotive vehicles, and equipment fitted with the necessary appliances and tooling.

The proper accommodation, board & lodging conditions have been created for the Company's employees ensuring their daily work, living and leisure time.



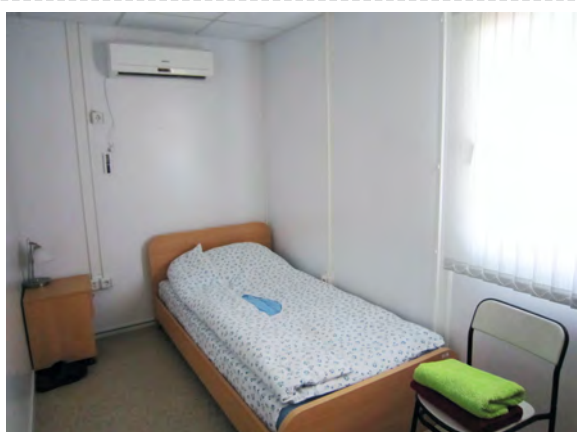
Operation, workshop, and maintenance facilities



## Workshop yard, storage, and supply facilities



## Living conditions





**YUG-NEFTEGAZ**

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