TAGRAS

TNG-Group

The Earth
responds to us...

TAGRAS

GEOPHYSICAL STUDIES AND SEISMIC SURVEYS
TNG-GROUP

PRODUCTION, RENTAL AND REPAIR OF DOWNHOLE EQUIPMENT
SYSTEM–SERVICE

WELLWORK, CONSTRUCTION AND REPAIR WORK FOR HYDRAULIC FRACTURING FORMATION AND EOR
TAGRAS—RS

MACHINE BUILDING AND SERVICES FOR OILFIELD AND DRILLING EQUIPMENT
TMC GROUP

TAGRAS
oilfield services company

PASSENGER AND FREIGHT TRANSPORT AND LOGISTICS, SPECIAL PURPOSE TECHNOLOGICAL TRANSPORT
TAGRAS-TRANSSERVICE

CONSTRUCTION AND REPAIR IN INDUSTRIAL ENGINEERING AND ENERGY SECTOR
TAGRAS-ENERGOSERVICE

COMPLEX IT SERVICE, 1C SOFTWARE CUSTOMIZING, MULTIFUNCTIONAL SERVICE CENTER
TAGRAS-BS

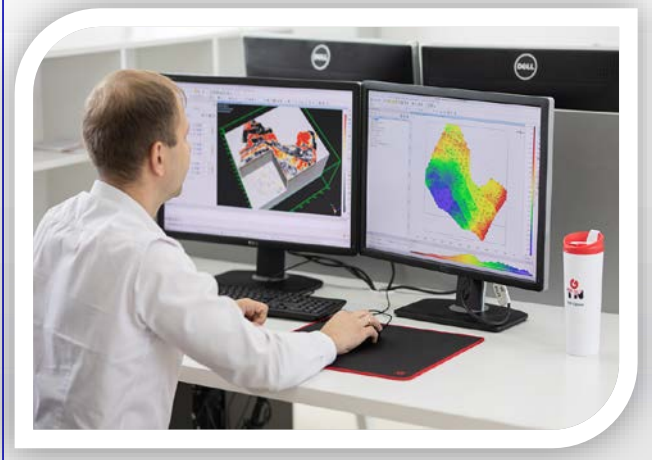
VEHICLE ROAD CONSTRUCTION AND MAINTENANCE
TATNEFTEDOR

About the Company

Geologic Exploration

2D, 3D, 4D field seismic acquisition;
2D, 3D transit zone operations;
2D, 3D offshore seismic;
VSP / Offset VSP;
Non-seismic methods

Geology



Seismic data processing;
Data interpretation;
Geological and geophysical data analysis;
Data re-interpretation;
Geologic modeling

Well Logging

Open-hole operations;
Cased-hole operations;
MWD/LWD;
Perforation;
Well Flow Test;
Mud Logging

Equipment Manufacture

Manufacturing of equipment (downhole and surface tools, drilling tools, accommodation trailers, specialized equipment);
Technical maintenance;
Delivery Service

Company personnel is 8,100 highly-qualified employees.

TNG-Group's Quality, Health, Safety and Environmental Policy

Company conforms to Quality, Health, Safety and Environment standards, such as ISO 9001:2015, ISO 14001:2015, ISO 45001:2018.

Safety, responsibility and self consistency are the main criteria TNG-Group bases it activities on.

CERT International

CERTIFICATE

IAF SNAS Reg. No. 494/Q-065 Reg. No. 494/R-122 Reg. No. 494/H-123

CERT INTERNATIONAL s.r.o. certification body basing on the results of the audit conducted in accordance with certification procedures confirms that the integrated management system of:

«TNG-Group» LLC

house 21, Voroshilova street, Bugulma city,
423236, Republic of Tatarstan, Russian Federation

ТНГ-Групп

within the scope:

Provision of services in the field of geology, exploration and field geophysics

meets the requirements of the following standards:

ISO 9001:2015, ISO 14001:2015, ISO 45001:2018

Certificate №:	IMS-1164/A
Order №:	3088/01
Valid from:	05.09.2023
Valid till:	04.09.2026

(subject to annual surveillance audits)

Head of the Certification Body

05.09.2023

Status of the certificate can be acquired from request to the Certification body CERT INTERNATIONAL s.r.o. ID 47173211, Radlinského 66, 831 02 Bratislava-Nové Mesto, Slovakia, tel.: +421233064975, www.certgroup.org, www.certi.sk, info@certi.sk

TNG-Group's Quality, Health, Safety and Environmental Policy

Mission: We, as a group of professionals, by preserving and increasing natural resources, will find the best solutions for subsurface users in Russia and abroad by providing a set of geophysical services with competitive prices conforming to world's technological standards.

Strategic purposes:

- To achieve leading position on the world's geophysical and oilfield market and to provide services which conform to existing and potential requirements of clients;
- To pursue "Goal – Zero" in terms of fatal accidents during work;
- To minimize negative environmental impact during work.

Strategic purposes are achieved by accomplishment of the following tasks:

- Expansion of the geography and scope of provided services;
- Introduction of new methods and technologies;
- Focus on client and other persons of interest;
- Continuous improvement and growth of Integrated Management System.
- Creation of safe working conditions;
- Implementation of activities to minimize risk of emergencies and accidents during work and to prevent environmental damage;
- Efficient use of natural resources at all stages of production works.

In order to achieve these goals, TNG-Group's management by demonstrating leadership and commitment pertinent to Quality, Health, Safety and Environment Management System, undertakes the following obligations:

- To ensure Company's activities conform to applicable international, federal and regional legislation, as well as other Quality, Health, Safety and Environment requirements, including valid ISO 9001, ISO 14001 and ISO 45001 standards;
- To take measures aiming at prevention of work-related injuries, professional illnesses, emergencies, incidents and fire;
- To take measures aiming at efficient use of natural resources;
- To allocate all kinds of resources required to implement this Policy;
- To communicate this Policy to all Company employees and ensure its understanding and maintenance.

TNG-Group management appeals to all employees to support the activities to achieve these goals and to implement abovementioned tasks.

General Director — Yan Sharipov
07 July 2021

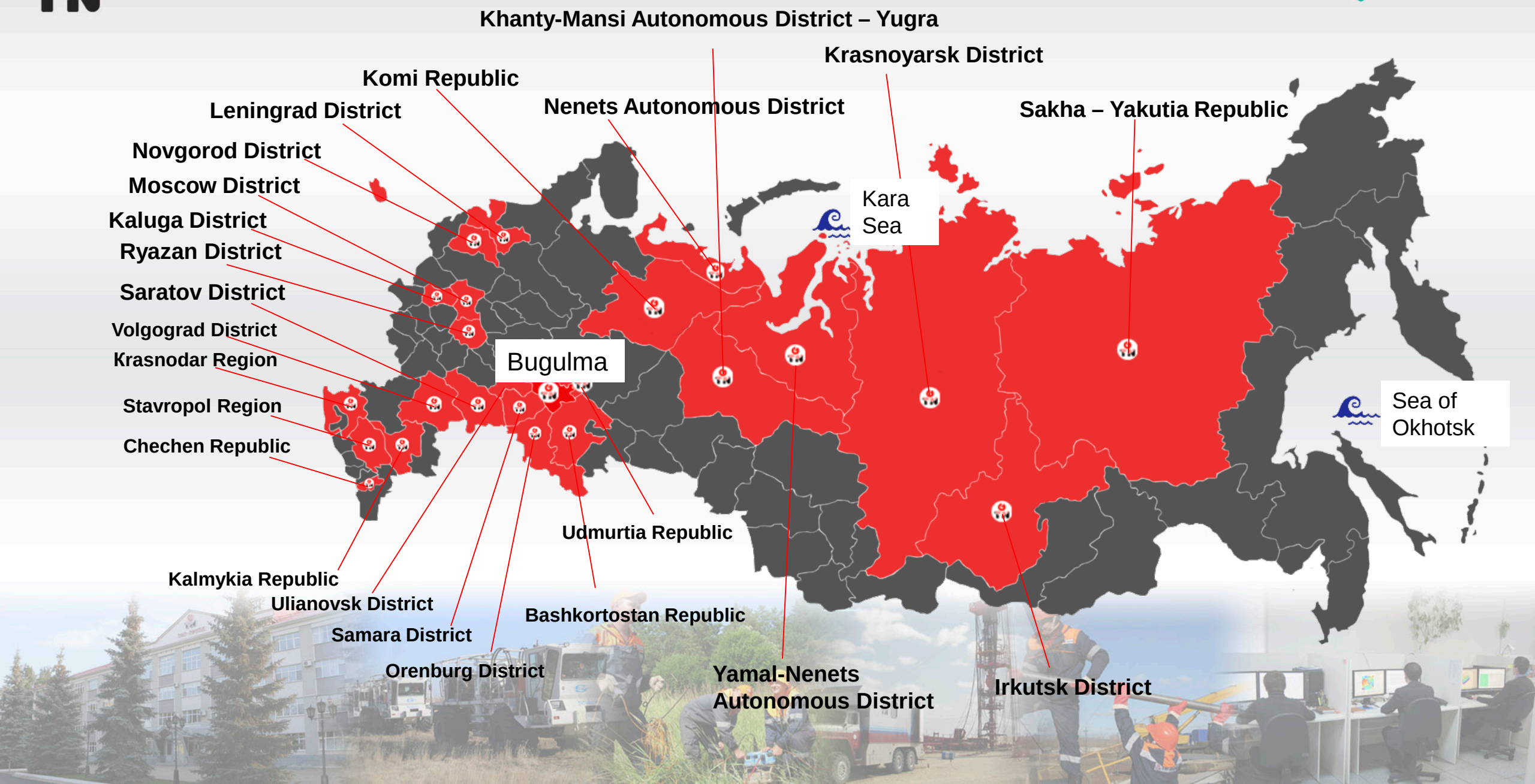
GEOGRAPHY OF WORKS IN THE WORLD

Exploration in different parts of the world

– KAZAKHSTAN
– UZBEKISTAN
– CHINA
– INDIA
– BELORUSSIA
– TURKEY
– SYRIA
– IRAQ

– JORDAN
– MOROCCO
– ALGERIA
– TUNISIA
– LIBYA
– EGYPT
– GABON
– ANGOLA

GEOGRAPHY OF WORKS IN RUSSIA



TNG-Group

PARTNERS

Tagras

TNG-Group maintains partnerships with major oil and gas companies

TATNEFT

GAZPROM

Rosneft

GAZPROM NEFT

NOVATEK

RITEK

LUKOIL OIL COMPANY

IPC

RussNeft

IRKUTSK OIL COMPANY

ओएनजीसी ONGC

TOTAL COMMITTED TO BETTER ENERGY

Sonangol PRODUZIR PARA TRANSFORMAR

eni

ऑयल इंडिया लिमिटेड Oil India Limited

UZBEKNEFTEGAZ

EXPLORATION GEOPHYSICS

Field Seismic Works

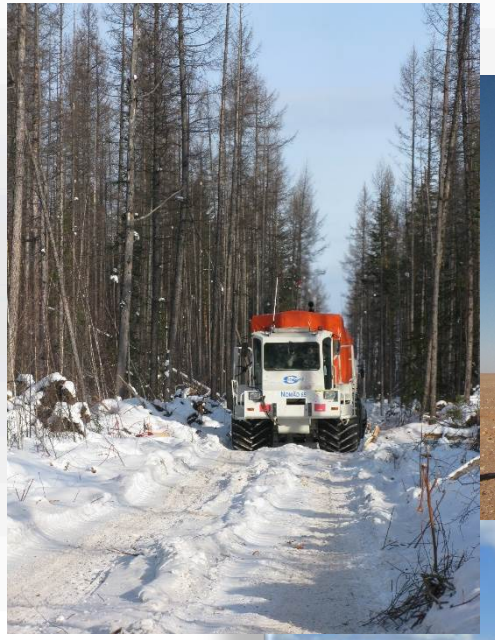
TNG-Group has up-to-date seismic telemetry complexes. Both explosive and non-explosive seismic sources are used for the surveys.

23 seismic crews perform:

- 2D Seismic operations;
- 3D Seismic operations;
- 4D Seismic operations;

Main stages of works:

-Design and obtaining permits; -Mobilization to work area;
-Surveying; -Drilling and hole charging;
-Field equipment lay-out; -Seismic data recording;
-Quality control of acquired data;
-Land restoration and demobilization.



Scope of work in 2022: 869 line km of 2D survey
9 100 sq. km of 3D survey.

9 month of 2023: 1 328 line km of 2D survey
4 211 sq. km of 3D survey

EXPLORATION GEOPHYSICS
Field seismic acquisition
AVAILABLE EQUIPMENT

250 000
Seismic channels
Including **10,700** wireless systems
(Wireless Seismic RT Sys2, Unite);

Telemetry systems

Sercel 508XT – **7 pcs**
Sercel 428XL – **19 pcs**
Wireless Seismic RT Sys2 – **2 pcs**

Seismic vibrators

NOMAD-65 – **95 pcs**
AHV-IV – **12 pcs**
PLS-362 – **20 pcs**
X-Vib – **5 pcs**

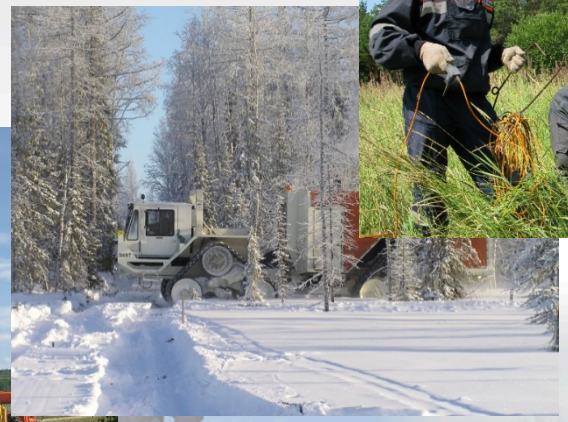
Drilling rigs

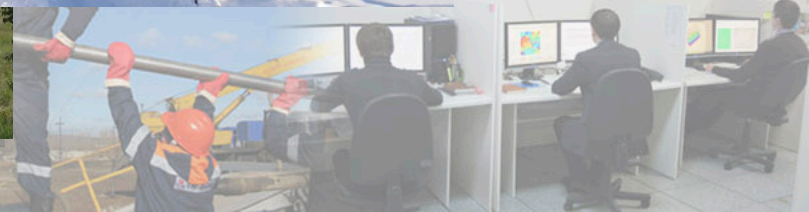
350 units

Survey equipment

(Trimble R7, R9, R10; EFT-S1)

205 units





EXPLORATION GEOPHYSICS

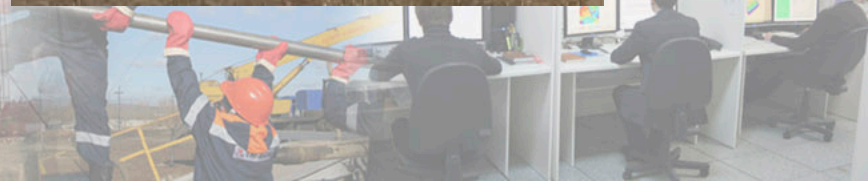
Field Seismic Acquisition

Wireless Systems

TNG-Group is equipped by Wireless Seismic RT Sys2. It includes seismic wireless sensors with autonomous power, data acquisition modules, built-in GPS, WiFi, clock and memory.

Key Advantages

- Seismic acquisition in complicated surface terrain
- No extra cable required
- Real-time quality control and seismic data transmission
- May be used in urban environment



EXPLORATION GEOPHYSICS
VERTICAL SEISMIC PROFILING

5 VSP crews conduct the following operations:

- Seismic well surveys by VSP, Offset VSP and Walkaway VSP methods;
- Seismic well surveys to study rock fracturing.

Available Equipment

- PKS-5M logging trucks – 5 pcs;
- Geochain X HP Avalon Sciences Ltd. 24-level borehole system – 2 sets;
- SK6(T)-823 multi-component check-shot borehole equipment – 7 sets;
- Seismic sources: explosive, non-explosive, air sources and vibration sources;
- URB-2A2D drilling rigs;
- Survey equipment.

EXPLORATION GEOPHYSICS

Non-seismic field acquisition methods

- Gravity prospecting;
- Electrical prospecting;
- Magnetic prospecting;
- Geochemical survey;
- Aero-space survey;
- Underground gas storage monitoring;
- Processing and interpretation of non-seismic data.

AVAILABLE EQUIPMENT

Gravity Meters: Scintrex CG-5 – 11 pcs; Scintrex CG-6 – 13 pcs.
A-10 Absolute Gravimeter – 1 pcs.
Survey equipment: GPS Trimble R7,R9S, R10 GNSS Radio – 50 pcs.
Electroprospecting generators: 100 kW – 2 pcs.
Magnetometers: MMPOS-1, Geometrix G-856 AX – 8 pcs.
Chromatographic equipment: “Crystallux-4000M",
“Crystal-5000", Chromatomass-spectrometer "Thermo scientific DSQ II",
Thermal desorber "Perichrom PR 1350“
Field geochemical lab on KamAZ-43118 truck.

EXPLORATION GEOPHYSICS

Offshore and transit zone seismic operations

1 Seismic Crew for transit zone operations;
1 Seismic Crew for offshore operations

TARGETS

- 2D and 3D surveys:
  - With streamers using Partners' vessels;
  - In transit zones entering the shore to ensure seamless acquisition;
- Engineering geology;
- Survey design and planning;
- Data finalization to be forwarded to State Archives;
- Seismic data processing.

AVAILABLE EQUIPMENT

- RIB small boats – 4 pcs;
- Sercel 508TZ 2C data acquisition system – 1 pcs;
- GH-203 dual sensors – 4500 pcs;
- EIVA NaviPac Pro integrated navigation system, server configuration – 11 licenses;
- HEMISPHERE V104V GPS smart antennas – 11 pcs;
- VIPER SC-100 radio telemetry modems to provide communication between objects – 10 pcs;
- GARMIN GPSMAP 585 PLUS multi-functional map plotters – 7 pcs;
- Dual acoustic positioning station «PIKET»;
- V-SAT Sailor 900 satellite communication unit and Iridium OpenPort system, as well as FAU200 telephone unit – 1 set.

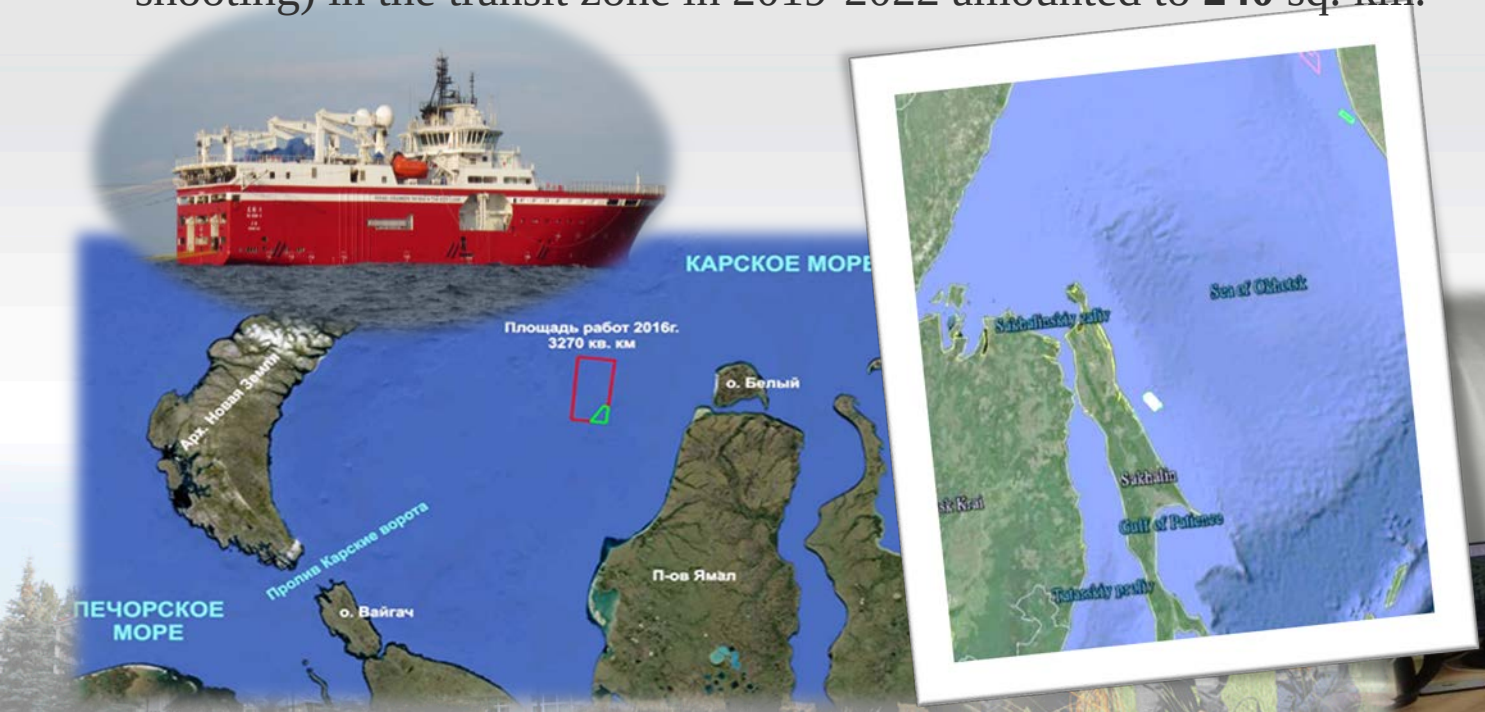
EXPLORATION GEOPHYSICS
Offshore and transit seismic acquisition

The portfolio of executed projects includes successfully completed CDP-3D offshore projects by vessels with towed streamers (4 – 12 pcs) in Okhotsk and Kara seas.

In 2019, TNG-Group expanded the range of services it provides by starting to perform **seismic exploration in transit zones entering the shore.**

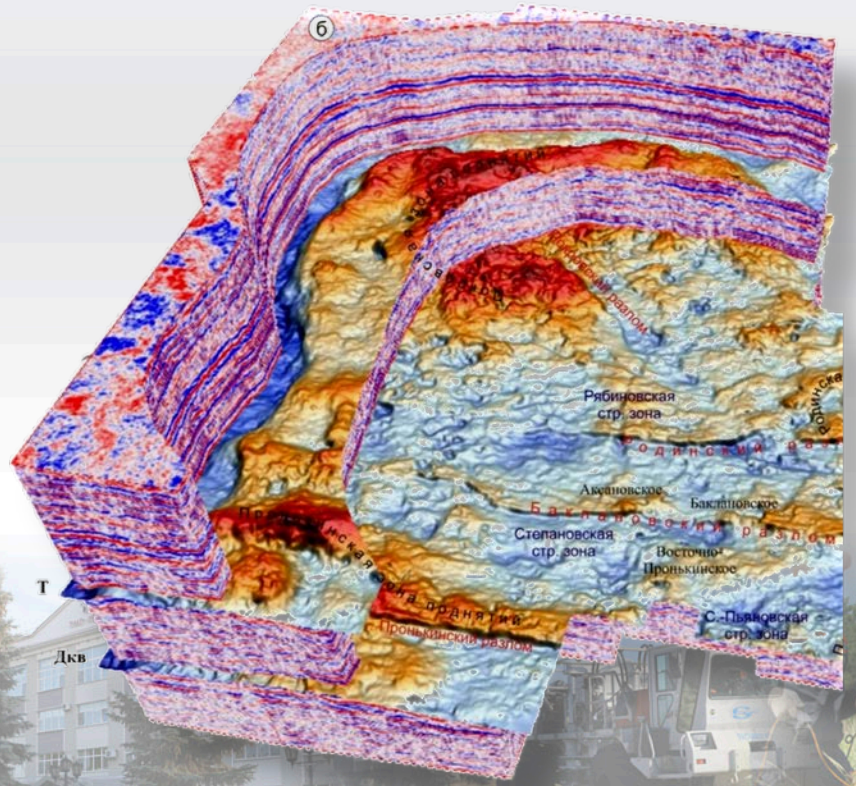
The volume of **successfully** completed high-density seismic surveys (with full overlap of the onshore part and ensuring "seamless" shooting) in the transit zone in 2019-2022 amounted to **240** sq. km.

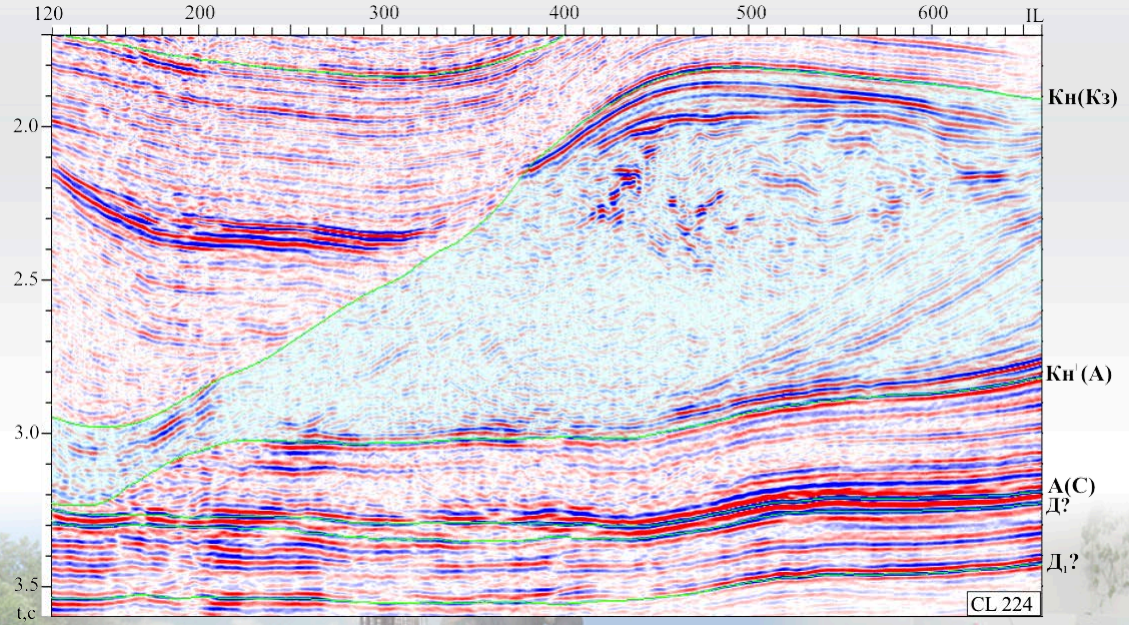
In 2015, TNG-Group along with Partners, successfully completed a survey **in the scope of 2 200 sq. km** on three blocks in the Sea of Okhotsk, and **in 2016 in the scope of 3 270 sq. km** in the Kara Sea.



GEOLOGY

- Field operations supervision;
- Seismic data processing and interpretation (2D,3D, 3D/3C, 4D);
- Integrated geological and geophysical data analysis;
- Development of unique interpretation methods;
- Generation of geological and hydrodynamic fields models;
- Vintage Well Logging data re-interpretation and Data Bank creation.





GEOLOGY

GeoInform Center

14 Interpretation Teams

3 Processing Centers:

-GeoInform Center in Russia

AVAILABLE EQUIPMENT

3600 CPU nodes may be used to process seismic data.

More than **200 workplaces**, merged into a single network with server and clusters provide access to most complex processing and interpretation procedures applying the following software products:

-Omega	*-Paradigm (ES360, Geodepth, Echos, Stratimagic)*
-Geo Quest	*-DV-Discovery*
-Kingdom	*-Tesseral 2D/3D*
-Eclipse	*-GINTEL*
-GEOCLUSTER 3D/3C	*-3C-INTERACT*
-Flatirons	*- PRIME*
- PETREL	*-Hampson Russell*

Computing system: Lenovo NeXtScale System

Server system: IBM Pure Flex

Cluster system: IBM BladeCenter

Servers: IBM x3850X5, IBM x3650m3

Disk data storage systems: IBM Storwize V7000, IBM Storwize V5030 and IBM DS3512

Workstations: Dell T7600, Dell T3600 and others on Intel Xeon, Intel Core i7 processors

Disk space: more than **1200 Tb.**

Scope of work completed by TNG-Group in 2022:

Processing and Interpretation: 11 420 line km and 7 188 sq. km.

WELL LOGGING

TNG-Group offers an entire range of well logging and perforation operations in open and cased hole, as well as mud logging:

- Up-to-date technologies of logging while drilling, operation and repair;
- Geo-steering provision of well drilling, MWD, LWD;
- Monitoring hydrocarbon fields exploration and development;
- Application of integrated geophysical technologies for well stimulation;
- Shooting operations, perforation;
- Well flow survey;
- Well testing and completion along with establishment of formation's hydrodynamic parameters;
- Mud logging;
- Creation and support of geological models.

Available Equipment

- **153** logging crews;
- **80** well flow test crews;
- **20** geosteering crews (MWD, LWD);
- **54** mud logging crews.

WELL LOGGING

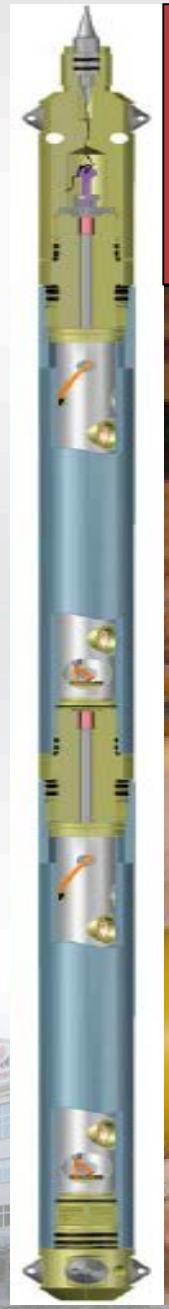
Geophysical surveys and perforation

TNG-Group is equipped with up-to-date geophysical complexes.
Both self-contained tools as well as wireline survey tools are used for the operations.

AVAILABLE EQUIPMENT:

Open hole well logging equipment – 250 sets;
High-tech equipment – 15 sets;
Cased hole well logging equipment – 300 sets;
Perforation equipment – 150 sets;
PKS-5M, PKS-7M logging stations, etc. – 210 pcs;
LPS-7 perforation laboratories – 30 pcs.

Perforation systems used in TNG-Group



- **Wireline-conveyed**
  - **Hollow carrier perforators**
    - **Expendable**
      - KPO 50, KPO 64, KPO 73, KPO 89, KPO 102, KPO 114
    - **Retrievable**
      - KPM 105
  - **Capsule perforators**
    - **Expendable**
      - PMR43-PP, PMR54-PP, PSK 52
- **Tubing-conveyed**
  - **Expendable capsule perforators**
    - KPO 64, KPO 73, KPO 89, KPO 102, KPO 114

WELL LOGGING
Mud Logging Division

- Technological surveys
- Geological provision
- Mud log

54 **Mud Logging crews**

AVAILABLE EQUIPMENT

Computerized Mud Logging units
GEOTEST-5 (50 pcs), GEOTEK (6 pcs).

Recorded Mud Logging Parameters

Parameter
Downhole depth
Bit depth
Drilling speed
Mechanical running speed
Detailed mechanical logging
Mechanical drilling time
Mechanical drilling time using this bit
Duration of time when bit worked downhole
Drill cuttings lag time
Drillstring length
Length of drillstring's section
Bit and well diameter
Drillpipes outside diameter
Amount of drilling mud in receiver tanks
Level of drilling mud in receiver tanks
Drillpipes internal diameter
Level of drilling mud in trip tanks
Pump pistol strokes
Drilling mud flow rate, in
Drilling mud flow rate, out
Differential flow rate
Drilling mud pressure in injection line
Annulus pressure
Downhole pressure
Mud flushing full cycle
Drilling mud travel from downhole to wellhead (lag time)
Drilling mud travel from wellhead to downhole
Lost circulation and kick
Mud density, in
Mud density, out

Parameter
Mud conductivity, in
Mud conductivity, out
Mud temperature, in
Mud temperature, out
Mud differential temperature
Weight on hook
Bit load
Rotor torque
Rotor torque or tongs
Rotor speed
Mud equivalent density
Total gas (0 – 100%)
H2S in gas-air line
H2S in environment
D-exponent
Sigma-log
Rock pressure
Hydraulic fracturing pressure
Hydrodynamic pressure
Pore pressure
Pixler diagram (gas relations method)
Hydraulic data

WELL LOGGING

Geo-steering provision of well drilling, MWD, LWD

TNG-Group provides geological services for support of drilling horizontal wells and sidetracks.

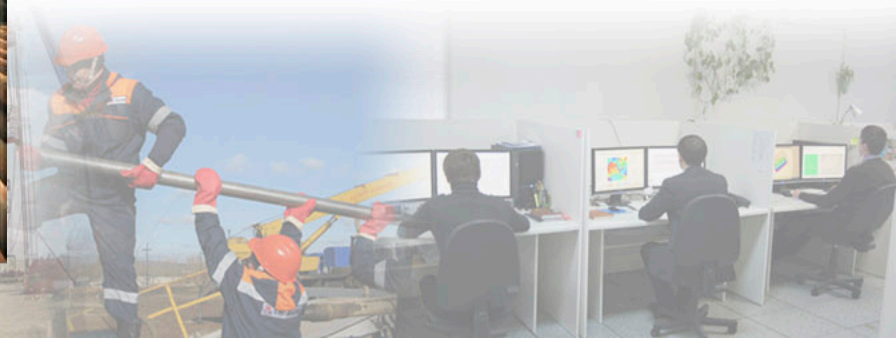
20 crews

40 Sets of equipment (dimensions 3”,4”,6”)

Tensor MWD (General Electric Energy)
ZTS-42 EM (VNIIGIS Company)
APS Technology
ABTS-120-4 («Bitas Co.»)
Korvet («GEO» Group of companies)

ONLINE MONITORING

- 24/7 OPERATIONAL CONTROL AND REAL-TIME FIELD SUPPORT
- FULL ACCESS TO RECORDING COMPUTER IN THE PRODUCTION CREW
- DESIGN AND ADJUSTMENT OF WELL PATH, COMPUTATIONS AND MODELING
- ROUND-THE-CLOCK INTERACTION WITH CLIENT
- FREE ACCESS TO MONITORING WITHOUT INSTALLING SPECIALIZED SOFTWARE



WELL LOGGING

Well Flow Test Survey

80 **Well Flow Test Crews**

AVAILABLE EQUIPMENT

Well Flow Test Units – 80 pcs.

Purposes:

- Formation pressure measurements.
- Current downhole pressure measurements.
- Buffer pressure measurements.
- Pressure build-up curve.
- Pressure drawdown curve.
- Indicator diagram.
- Well flow rate dividing into phases and computing gas factor.
- Gas dynamic surveys.
- Depth sampling.
- Fluid level and pressure in annular space.
- Dynamometry of sucker-rod pumps, etc.

WELL LOGGING

Research & Development Division

Research & Development Division was established with purpose of ensuring technological advances in petroleum geophysics and introducing automated control systems in TNG-Group. Field of activities:

- Research and development, testing and construction activities, methodical and analytical works in geology, geophysics, geochemistry and geoecology;
- Development of equipment and machinery intended for geological and geophysical operations;
- Petrophysical provision of G&G data interpretation;
- Development, elaboration and introduction of various computer technologies;
- Development and introduction of metrological means and facilities for geophysical works.

In-house manufacture of equipment and specialized machinery

TNG-Group has organized manufacture of its own equipment and machinery at its **TNG-Universal** division.

Services:

- Manufacture of equipment (downhole and surface tools, drilling instruments, accommodation trailers, specialized vehicles, etc.).
- Technical maintenance
- Delivery

We provide:

- Development of equipment in accordance with requirements
- Manufacture in full compliance with Technical Specifications
- Delivery, warranty and post-warranty maintenance

THANK YOU!

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