

YUZHMOREGEOLOGIYA SSC

Statement of Capability

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Company Introduction

Over 50 years of geosciences and exploration experience

Introduction

YUZHMOREGEOLOGIYA (YMG) State Scientific Centre operates under the jurisdiction of the Federal Agency of Natural Resources of the Ministry of Natural Resources and Ecology.

We are providing a geological and geophysical (G&G) support of the Russia national programs for exploration and development of mineral resources within the national continental shelf, internal seas and the international zones of the World's Oceans.

YMG — is one of the leading Russian oil and gas exploration organizations with more than 55-years of experience. The company carried out various national and international programs in the offshore and transit zone of Black, Caspian, Mediterranean, Aral, Azov, Barents, Kara, Pechora and other Arctic seas.

Principle Activity

YMG offers for national and international offshore market following products and services:

- Exploration studies for oil and gas
- Exploration studies of mineral resources
- Engineering study for offshore Well-site, Pipelines Routing, Industrial objects location
- Integrated G&G survey for the Russia Federation national shelf areas geological and environmental mapping
- Gravity&Magnetic&Electric survey
- Geotechnical and environmental studies
- G&G data processing and interpretation
- G&G Data base support and development
- Experts consultancy and training services

Contacts

**STATE SCIENTIFIC CENTER OF THE RUSSIAN
FEDERATION**

STATE UNITARY GEOLOGICAL ENTERPRISE

Southern Scientific & Production

Association for Marine

Geological Operations

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General Director Dr. Artur P. Pronkin



Located in the city of Gelendzhik of Kuban district, Russia Federation.

Comprises of 9 divisions and laboratories, 3 subsidiaries, design facilities and construction workshops

Possesses four specialized marine vessels and 110 items of research equipment

We employ around 800 experts that provide a broad spectrum of geological- geophysical knowledge in various regions world- wide.

We are able to provide a call-off services offering the Client the best conditions for project implementation and collect an experience of our experts.

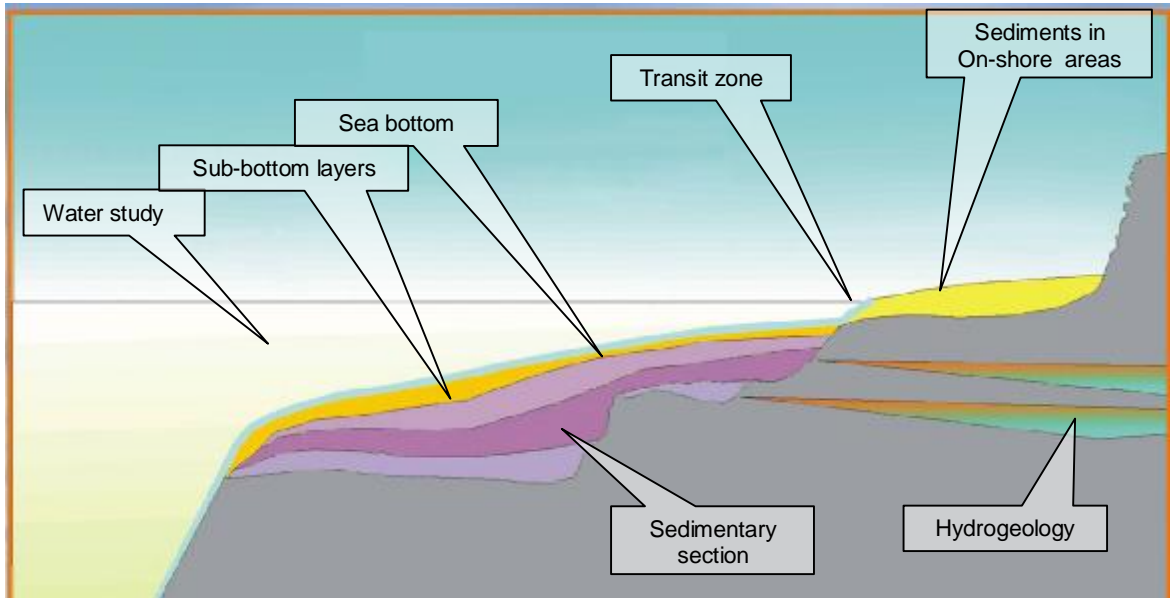
Obtained certification in Safety Management of Maritime Register of Shipping and has 21 licenses for various types of activities

Intellectual property of YMG consists of 42 patents and copyright certificates



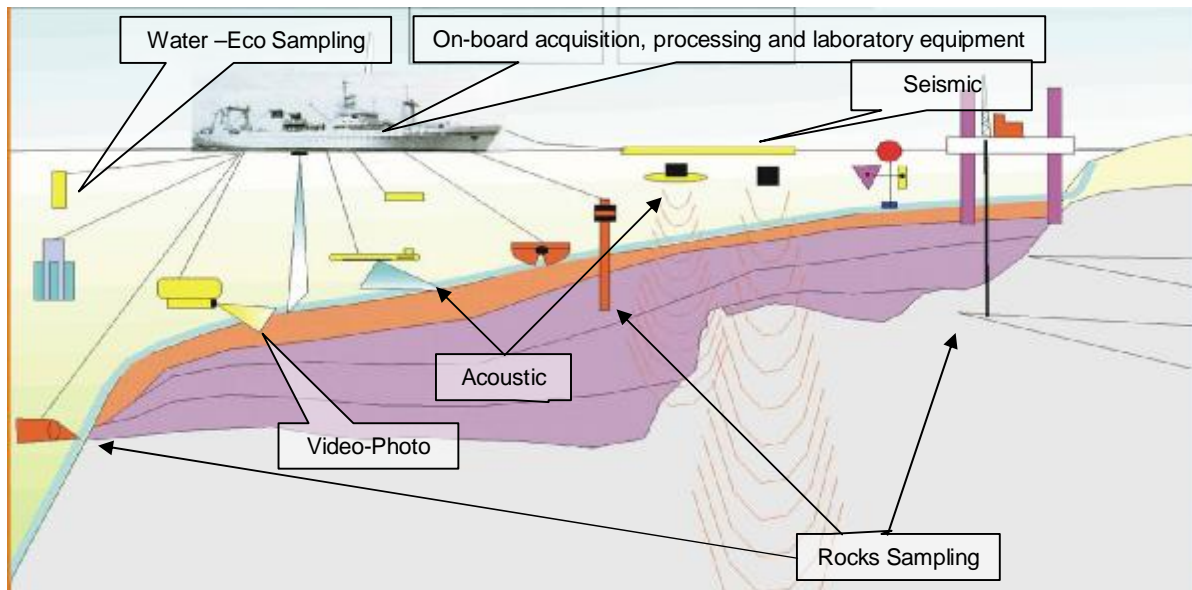
Services

Providing integrated geological & geophysical services for hydrocarbons and minerals exploration in Oceans, Seas and Transit Zones



Technique

Use full scope of geological and geophysical equipment



Core Capabilities by Technical Discipline

Geotechnical and engineering studies in the offshore, shelf and transit zone areas for well site, pipelines and industrial construction.

Geotechnical



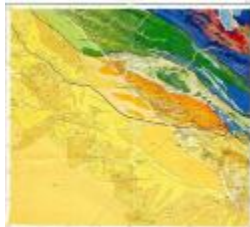
3D Seismic OBC



OBC- OBS seismic survey study for hydrocarbons in offshore, shelf and transit zone environments.

Creation of geological models of mineral and hydrocarbon resources of seas and oceans. Cartographic activity for preparation of the State Geological maps.

Geological



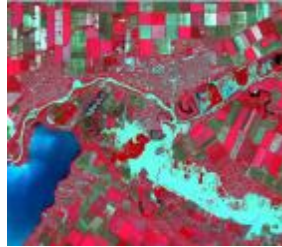
Geochemistry



Geochemical survey and laboratory analysis

Remote sensed satellite images of large exploration areas used for exploration, environmental monitoring of producing fields, assessment of facilities, pipeline corridor planning, emergencies and hazards which can reveal potential risks for sensitive areas.

Satellite Imaging



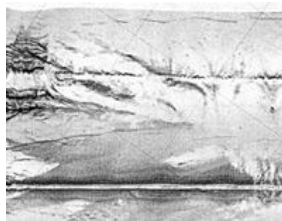
Environmental



Ecological studies and assessment of environmental impact of offshore exploration and mining, QC expertise of the sea environment and the coastal zones.

We utilize most of other aspects of our work in pipe route projects such as bathymetric, side scan sonar, oceanographic and shallow seismic surveys.

Pipeline Route



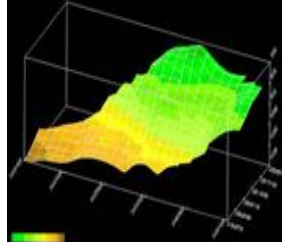
Navigation



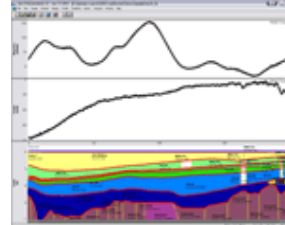
All kind of navigation services for G&G surveys and Engineering projects in inner seas and World ocean

Full range of Seismic, Well-logs and Navigation data processing. Modern professional software of industry leading providers and highly efficient computing equipment

Data Processing



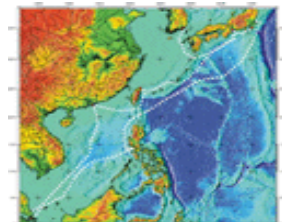
Interpretation



Comprehensive offshore studies: geophysical, geological, geochemical, hydro-biological, litho-dynamic, geodynamic and site surveys, geotechnical and geological drilling, coring and sampling.

Data Base support of exploration activities on the continental shelf of Russia and international waters in the World Ocean

Data Base



Equipment Design



Design and manufacture of on-board G&G acquisition systems for research vessels and techniques for geological and geophysical offshore surveys.



Main Clients

Ministry Of natural Resources of Russian Federation			National Oceanic and Atmospheric Administration (USA)
Ministry of Emergency of Russian Federation			BP
Gazprom JSC			Eni
Lukoil JCS			Total
Rosneft			Alkatel
Yukos			EGS (Asia) Ltd
Rostelecom			KazCaspShelf Ilp
PiterGas CSC			Offshore Survey and Engineering
Sakhalin Investment Comp			Williamson Ass
PetroAlliance			Korea Ocean Research & Development Institute
Kalmneft			CGGE International
Megatron			Interoceanmetal Joint Organization
Moscow Aerogeodesy			Fugro
Kazmunaygas			Kazmunayteniz
Chernomorneftegas			Kubahgazprom
Priazovneft			Povolzhie Oil
Petro Resources Llp			C&C Technologies



Technical Resources

Geophysical and Geochemical survey

Seismic Acquisition OBC -OBS

BOX radio telemetry system manufactured by «Fairfield Industries»



Source vessel

Radio telemetric system **BOX**



AirGun sources

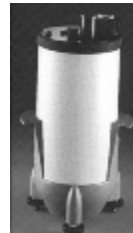
Seismic Recorder



MarshLine Telemetric OBS system for exploration of transition zones

Gravimeters

Grin-2000 Shipboard gravity system



Gravimeter T-200 by Sodin

Magnetometers

300M Sea Spy Marine Magnetics differential magnetometer by Geometrics



Navigation equipment
AgPS-132 DGPS receiver
Starlink Invicta 210 DGPS Receiver
RL-II Trimble 4000
MRX-1000 MTS-1000

Chemical and analytical equipment

X-ray fluorescence analyzer (Karl Zeiss Jena, Germany)



Technical Resources

Engineering Survey

The equipment for the acoustic survey

PEL-D Double-frequency hydrographic survey echo-sounder



Deep-water geo-acoustic systems of MAK series

Odom double-frequency hydrographic system



Side scan sonar SIS-1624 (Teledyne Benthos, USA)

Side scan sonar Katran-D



Profiler Chirp III (Teledyne Benthos, USA)

Remote Operating Vehicles

RT-1000 PLI (Pipeline Inspector) multipurpose ROV



RTM500 Shallow water ROV

RT 6000M Deepwater ROV



Towed Underwater Survey System «Neptune-D»

Sampling, coring and drilling equipment

Ocean-0,25 grab sampler with GFU-6-8 deepwater camera



KADR-1 Self-contained sea-floor coring system

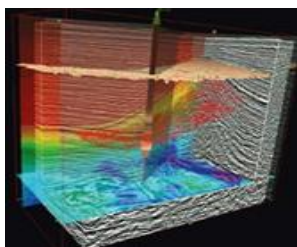


Technical Resources

Powerful Computing Center and National Data Base

G&G Data processing and Interpretation

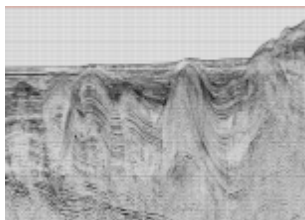
Geocluster supercomputer provides a powerful parallel-processing environment for 2D, 3D, 4D Processing and QC Time and Depth Imaging Multi-Component Processing Reservoir Characterization



Geocluster parallel computing system

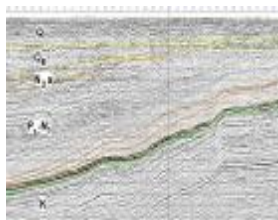
Geocluster software

Focus software for seismic 2D/3D data processing in offshore, shallow water and transit zones of seas, lakes and rivers



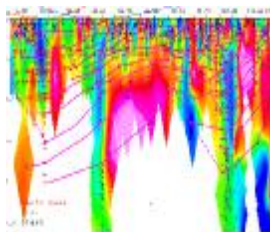
Geocluster software

Detailed survey of upper section for well site, pipelines and other industrial targets construction



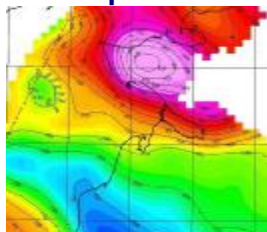
Focus software

Gravity offshore survey data interpretation



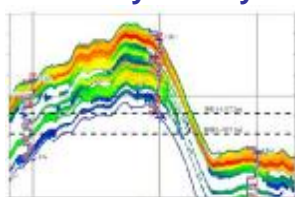
RadExpro software

Magnetic offshore survey data interpretation



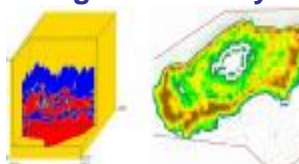
Gravity Survey

Integrated Interpretation of seismic, well-logs and drilling data for hydrocarbons exploration



Magnetic Survey

7 Work Stations



Impress software

Impress software

Satellite images of large exploration areas used for exploration, environmental monitoring of producing fields, assessment of facilities, pipeline corridor planning, emergencies and hazards revealing potential risks for sensitive areas



Environmental Monitoring



Satellite Imaging

Receiver Station



Technical Resources

Fleet

Vessels Fleet

Research vessel –
Gelendzhik



Research vessel
Yuzhmorgeologiya

Seismic vessel Seis-1



Seismic vessel Aquamarine

Seismic vessel Seis-3



Engineering and
geochemistry laboratory

Engineering Module- LITO-4



Engineering vessel ECO-5

Drilling vessel PTS-ECO



Drilling vessel PTS-M

Drilling Module LITO-1



Drilling Module LITO-3

Airbot



Airbot



Human Resources

Managers



Dr. Artur P. Pronkin

General Director of YUZHMOREGEOLOGIYA (YMG) State Scientific Centre (since 1997), Ph.D. Doctor.

General Director of JSC DalMorGeologya (since 1987)

A.P.Pronkin graduated from Sverdlovsk Mining University with Mc. degree in Geophysical Prospecting. He has Doctor Phil. degree in Technical Science from Sverdlovsk Mining University. He published 25 articles and books



Dr. Boris V. Shumskiy

1-st Deputy of General Director, Chief Engineer

B.Shumskiy graduated from St.Petersburg Mining University with Mc. degree in Geophysical Prospecting.

He has Doctor Phil. degree in Geological Science from Krasnodar Polytechnic University.



Prof. Valeriy M. Yubko

Deputy of General Director, Chief Geologist.

V.Yubko graduated from Novocherkassk Polytechnic University with Mc. degree in Geological Prospecting. He has Doctor Phil. degree in Geological Science from Novocherkassk Polytechnic University. Honored Geologist of Russia Federation. He published 115 articles and 5 books.



Dr. Yuriy N. Gubanov

Deputy General Director, Director of Research Institute.

Yu.Gubanov graduated from Taganrog Radiotechnical University with Mc. degree in Technical Science. He has Doctor Phil. degree in Technical Science. Honored Exploration Manager of Russia Federation. He published 37 articles and has 5 patents.

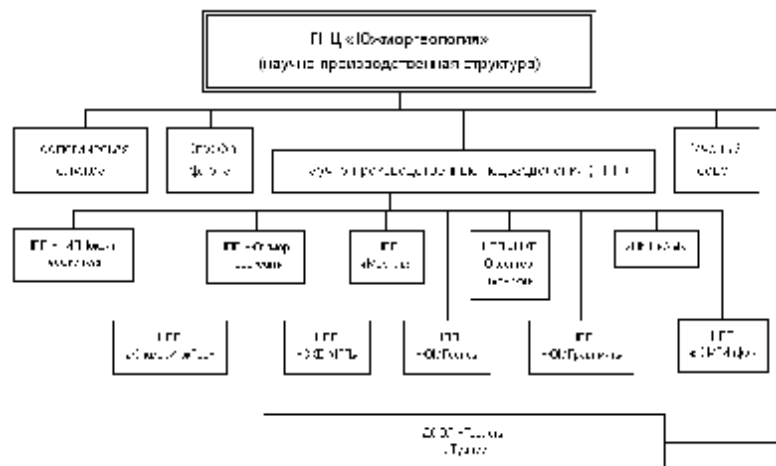
HR Policies

The Human Resources policies account for the market economy principles of our company and is based on the constant improvement of personnel management.

The HR potential of the company is made up of many qualified specialists: geologists, geophysicists, engineers, chemists, designers, and programmers, Among them there are 44 Doctors of Science, 12 of which have Governmental awards.

The specialists of YMG are members of the following domestic and foreign scientific associations: Russian Academy of the Earth Sciences, Moscow Society of the Nature Investigators, The Ukraine Engineering Academy, The Ukraine Academy of Oil and Gas, AAPG, SEG, EAGE, IMMS, PACON and others.

Organization



The total number of the company employees is 1489 persons. The use of modern instruments of control over the internal business-processes together with traditional approaches in the social sphere stimulates the initiative and promotes the creativity of the staff thus helping to reduce professional risks.



Main Seismic Projects

##	Year	Client	Description
1	2001-02	Governmental job	Regional evaluation of oil & gas prospect in north-eastern part of Azov sea (Taganrog gulf)
2	2002	«Rosneft»	Off- onshore seismic in Caspian transitional zone (Dagestan section)
3	2002-04	Governmental job	Oil & gas prospect evaluation of Northern Caspian
4	2003-04	Governmental job	Regional evaluation of oil&gas prospect of Russian sector of Azov sea
5	2003	«PetroAlliance»	CDP 2D Seismic survey in Temryukh-Achtyrsk part of Azov sea
6	2004	Governmental job	G&G study at the north of Gulf of Ob for tie-in of regional lines on the area of Yamal and Gydan peninsulas
7	2004	«PetroAlliance»	CDP 2D seismic survey in waters of Gulf of Temryuk , Azov sea
8	2003-05	OC «Nefteinvest»	CDP 2D seismic at Volga's license block for of oil & gas prospect
9	2004-06	OJSC "Kalmneft"	CDP seismic on Caspian shelf, for evaluation of oil & gaz prospect
10	2004	KCS	CDP 2D seismic works at Tyub-Karagan - Atash
11	2002-04	«Neft Povolzhya»	CDP 2D seismic on river at Kochetkovsky license block
12	2005-06	Governmental job	Exploration of geological structure of joint zone of Caspian depression and Karpinsky ridge
13	2005-06	Governmental job	Exploration of regional geological structure and evaluation of hydrocarbons potential for western shallow water part of sea of Pechora
14	2006	Governmental job	Regional geophysical survey for studying of geological structure and oil and gaz prospect in waters of Baydaratskaya Gulf, Kara sea
15	2006-07	«PetroResources»	Marine CDP 2D prospecting seismic survey on Laganskyi block of northern Caspian sea, Republic of Kalmykia
16	2006-07	«Chernomor-neftegaz-1» LLC	Seismic survey in Azov sea, Yasensky Gulf, license block
17	2006-07	«OC Priazovneft» LLC	OBC TZ 2D seismic survey in Temryuk-Achtarsky license block of «OC Priazovneft» LLC in waters of Azov sea
18	2006	«TNG-group»	OBC CDP 2D seismic survey in waters of Bersutsky block
19	2006	«TNG-group»	OBC CDP 2D seismic survey on Bulgarsky block
20	2006	UGCON	OBC CDP 2D seismic survey, Cambay gulf, India
21	2007	«Chernomor-neftegaz-2» LLC	Integrated geological & geophysical survey in Azov sea, at Zapadno-Eysky license block
22	2007	«Chernomor-neftegaz-3» LLC	OBC- TZ 2D seismic + G&G survey in Azov sea, on Severo-Eysky license block
23	2007	Krasnodarneftegaz	CDP 2D TZ seismic in Temryuk area, Krasnodar region
24	2007	«OC Priazovneft»	OBC TZ CDP 2D TZ seismic survey on Temryuk-Achtarsky license block
25	2007	Krasnodarneftegaz	OBC TZ CDP 2D TZ seismic on Temryuk area, Krasnodar region
26	2007	«Petro Resources»	OBC TZ CDP 2D seismic survey on Lagansky block of northern Caspian sea, Republic of Kalmykia
27	2008	Kubangazprom	OBC TZ 2D seismic on Temryuk area, Krasnodar region
28	2008	Min NRE RF	OBC TZ 2D seismic survey in Pechora sea, Arctic region
29	2008	Min NRE RF	OBC TZ 2D seismic survey in Pechora sea, Arctic region
30	2009	Gazflot JCS	OBC TZ 3D Seismic survey in Pechora sea. Arctic region
31	2009	Min NRE RF	OBC TZ 2D seismic survey of Baydaratskaya Gulf, Kara sea
32	2009	Rosneft	2D CDP Hi-Res seismic survey on 2 blocks in Black sea



Main Geotechnical Projects

	Project	Contractor	Client	Work Scope
1	SeaMeWe3 1997 Cable route survey Djibouti-Mascat in Arabian Sea	Williamson&As s	KDD-SCS, Japan	Multibeam SSS/SBP coring
2	“Blue Stream” 1997/98 Gas pipeline route survey in Black Sea Russia	NeSA / Racal	Gasprom	Multibeam, SSS/SBP, coring sampling, onboard lab analysis
3	BSFOCS 1999 Cable route survey in Black Sea	Racal	Alcatel, France	Multibeam, SSS/SB, single-beam, shallow SSS, magnetometry, coring, sampling
4	EAC, C2C, EAC2 2000/01/02 Cable route survey in Western Pacific East, South China Sea, North Pacific	C&C, USA	KDD-SCS Japan	Multibeam, SSS/SBP, magnetometry, coring
5	FOBN 2002 Philippine Sea	EGS H-K		Multibeam
6	SeaMeWe4 2004 Indian Ocean, Andaman Sea	EGS - H-K	Alcatel Fujitsu	Multibeam
7	TEAMS 2007 Indian Ocean Fujairah – Mombasa	EGS – H-K	TYCO	Multibeam SSS/SBP coring
8	TPE 2007 - Pacific Ocean	EGS – H-K		Multibeam SSC/SBP Coring
9	AAG 2007 CA-Hawaii Guam	EGS – H-K		Multibeam SSC/SBP
10	PPC1 2008 GUAM-SYDNEY Pacific Ocean	EGS – H-K	TYCO	Multibeam SSC/SBP Coring
11	ASN 2008 SYDNEY-W.SAMOA Pacific Ocean	EGS – H-K	TYCO	Multibeam SSC/SBP Coring
12	HONOTUA 2008 W.SAMOA-Hawaii Pacific Ocean	EGS – H-K	TYCO	Multibeam SSC/SBP Coring
13	“Blue Stream” Inspection for Pipe Inspection Onshore & Shore Approaches (Black Sea 2003- 2007)	Deep Ocean Subsea Ltd. (UK)	BSPC	Multibeam, SSS/SBP, ROV inspection (pipe tracker (PT), TV cameras, CP probe
14	Annual monitoring of the pipeline system for the marine oil terminal in Novorossiysk, Black Sea S (2000-06)	Caspian Pipeline Consortium	CPC	Multibeam, SSS/SBP, ROV
15	Recovery of Kursk submarine in the Barents Sea (2000- 2002)	Ministry of Defence RF	Gov. of RF	ROV inspection
16	Recovery of the Armavia Airbus A-320 recorders sunken in the Black Sea (2006)	Ministry of Transportation of RF	Gov. of RF	Innovative ROV inspection/intervention techniques
17	Sakhalin -1. Site survey with detection of UXOs (Sakhalin shelf, 2004)	SEIC	SEIC	High resolution SSS, magnetometer ROV
18	Comprehensive site surveys for construction of new port (Zhelezniy Rog Cape, Azov&Black Sea, 2005-06)	Administrations of the Russian Ports		High resolution SSS, magnetometer ROV
19	State Geological survey of national shelf of Russia Federation in Black sea	Gov.RF	Gov.RF	Hi-Res CDP Seismic, Multibeam SBP, shallow SSS, magnetometry, coring, sampling
20	State Geological survey of national shelf of Russia Federation in Azov sea	Gov.RF	Gov.RF	Hi-Res CDP Seismic, Multibeam SBP, shallow SSS, magnetometry, coring, sampling
21	State Geological survey of national shelf of Russia Federation in Caspian sea	Gov.RF	Gov.RF	Hi-Res CDP Seismic, Multibeam SBP, shallow SSS, magnetometry, coring, sampling
22	Well site geotechnical survey in Laganskaya block in Caspian sea	Petro Resources	Petro Resource	Hi-Res CDP Seismic, Multibeam SBP, shallow SSS, magnetometry, coring, sampling



	Project	Contractor	Client	Work Scope
23	Well site geotechnical survey in Yasenskiy block in Azov sea	ChNG	ChNG	Hi-Res CDP Seismic, Multibeam SBP, shallow SSS, magnetometry, coring, sampling
24	Well site geotechnical survey in Atash block in Kazakhstan sector of Caspian sea	Geo Teniz	Kazmunay Gas	Hi-Res CDP Seismic, Multibeam SBP, shallow SSS, magnetometry, coring, sampling
25	Jack-up rig relocation geotechnical survey in Laganskaya block in Caspian sea	Petro Resources	Petro Resource	Hi-Res CDP Seismic, Multibeam magnetometry
26	Well site geotechnical survey in Zhambay block in Kazakhstan sector of Caspian sea	Petro Resources	Petro Resource	Hi-Res CDP Seismic, Multibeam SBP, shallow SSS, magnetometry, coring, sampling
27	Geotechnical survey for deep-water pipeline route investigation in Black sea	MGE	MGE	Hi-Res CDP Seismic, Multibeam SBP, shallow SSS, magnetometry, coring, sampling
28	Well site geotechnical survey in Gelendzhikskaya structure in Azov sea	Priazovheft	Priazovheft	Hi-Res CDP Seismic, Multibeam SBP, shallow SSS, magnetometry, coring, sampling
29	Geotechnical survey for Taman harbor	SGGP	Port Admin	Shallow drilling, coring
30	Well site geotechnical survey in Rakushechnaya block in Caspian sea	MIG		Hi-Res CDP Seismic, Multibeam SBP, shallow SSS, magnetometry, coring, sampling
31	Geotechnical survey for offshore pipeline route investigation in Black sea	Oceanology Inst.		Drilling, coring
32	Geotechnical survey for terminal construction in Tuapse harbor	SPI	Port Admin	Hi-Res CDP Seismic,
33	Geotechnical survey for pipeline construction in Gelendzik	City Admin	City Admin	sampling
34	Geological survey in Enisey-Hatangaarea in Arctic region	Dept NR of Ministry NRE	Gov.RF	sampling
35	Environmental Impact Assessment on W.Chernomor block in Black sea	Shelf-Yug Iip	ChMNG	Sampling, laboratory analysis
36	Environmental Impact Assessment on Tuapse block in Black sea	Shelf-Yug Iip	ChMNG	Sampling, laboratory analysis
37	Geotechnical survey for Caucasus harbor	SGGP	Port Admin	Shallow drilling, coring
38	Geotechnical survey for pipeline construction in Lazarevskoe area	City Admin	City Admin	Multibeam SBP, shallow SSS, sampling
39	Geological survey of Black sea shelf for raw materials exploration	BMS	BMS	Multibeam SBP, shallow SSS, sampling
40	Geotechnical survey for W.Chernomor block in Black sea	RN-Kazakhstan	RN-Kazakhstan	Hi-Res CDP Seismic, Multibeam SBP, shallow SSS, magnetometry, coring, sampling
41	Well site geotechnical survey in Black sea	RN-Kazakhstan	RN	Hi-Res CDP Seismic, Multibeam SBP, shallow SSS, magnetometry, coring, sampling



HSE Policy

YUZHMOREGEOLOGIYA'S HEALTH AND SAFETY POLICY STATEMENT

Our goal is to live our core values and provide a high quality service without harm to people or the environment.

The success of Yuzhmorgeologiya (YMG) depends on our ability to continually improve the quality of our services and products while protecting people and the environment. We recognize that safety is a long term strategy that requires sustained effort and commitment, and it is therefore a primary function of the YMG HSE Management System to set realistic, achievable, and measurable safety performance targets. Emphasis must be placed on ensuring human health, operational safety, environmental protection, quality enhancement, and community goodwill. This commitment is in the best interests of our customers, our employees and YMGs, and the communities in which we live and work. YMG requires the support and commitment of all members of the workforce in treating safe operating practices as one of the Client's most important assets.

It is our health and safety policy to:

- Protect, and strive for improvement of the health, safety and security and welfare of all employees at all times;
- Protect, and strive for improvement of, the health, safety and security and welfare of those persons other than employees who may from time to time be on Client work sites
- Eliminate Quality non-conformances and HSE incidents;
- Investigate and identify the causes of incidents and hazards to health on all Client worksites and to ensure that practical remedial action is implemented to prevent recurrence.
- Set HSE performance objectives, measure results, assess and continually improve processes, services and product quality, through the use of an effective management system;
- Make such arrangements as may be necessary to ensure the safety and absence of risk to all persons in connection with the handling, storage, transport and use of all articles and substances;
- Minimize our impact on the environment through pollution prevention, reduction of natural resource consumption and emissions, and the reduction and recycling of waste;
- Apply our technical skills to all HSE aspects in the design and engineering of our services and products. Provide and maintain plant, equipment, machinery and systems of work that are safe and without risk to health
- Provide for and support regular safety meetings to be organized at each worksite where employees are encourage to convey their views and concerns on safety matters and to appoint a safety representative. Recognize that the work force is the most valuable source of information
- Communicate openly with our customers and investors and ensure an understanding of our HSE policies, standards, programs and performance. Reward outstanding HSE performance;
- Improve our performance on issues relevant to our customers and investors that are of global concern and on which we can have an impact, and share with them our knowledge of successful HSE programs and initiatives.

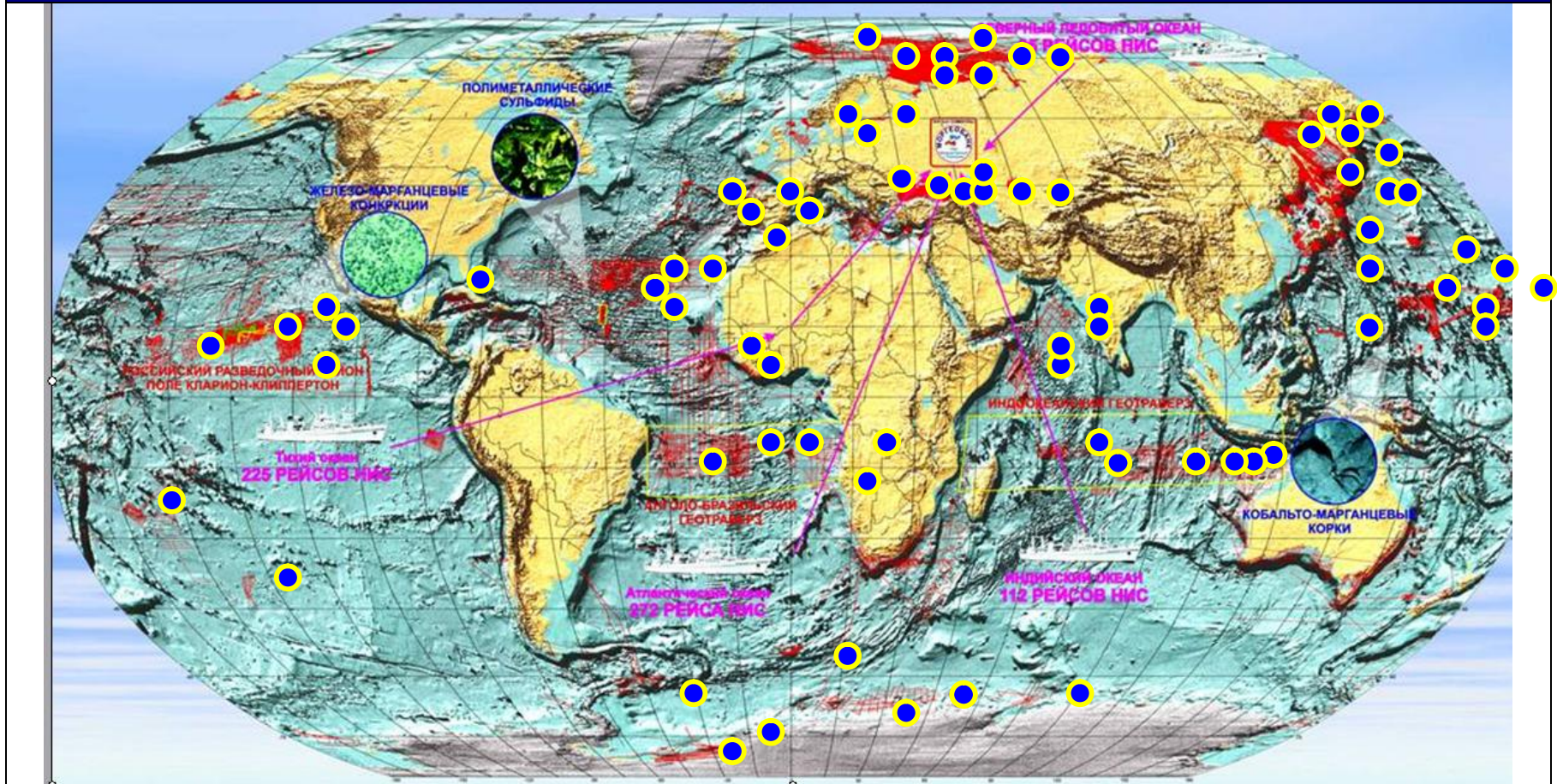
for and on behalf of "Yuzhmorgeologiya"

Arthur P. Pronkin, General Director

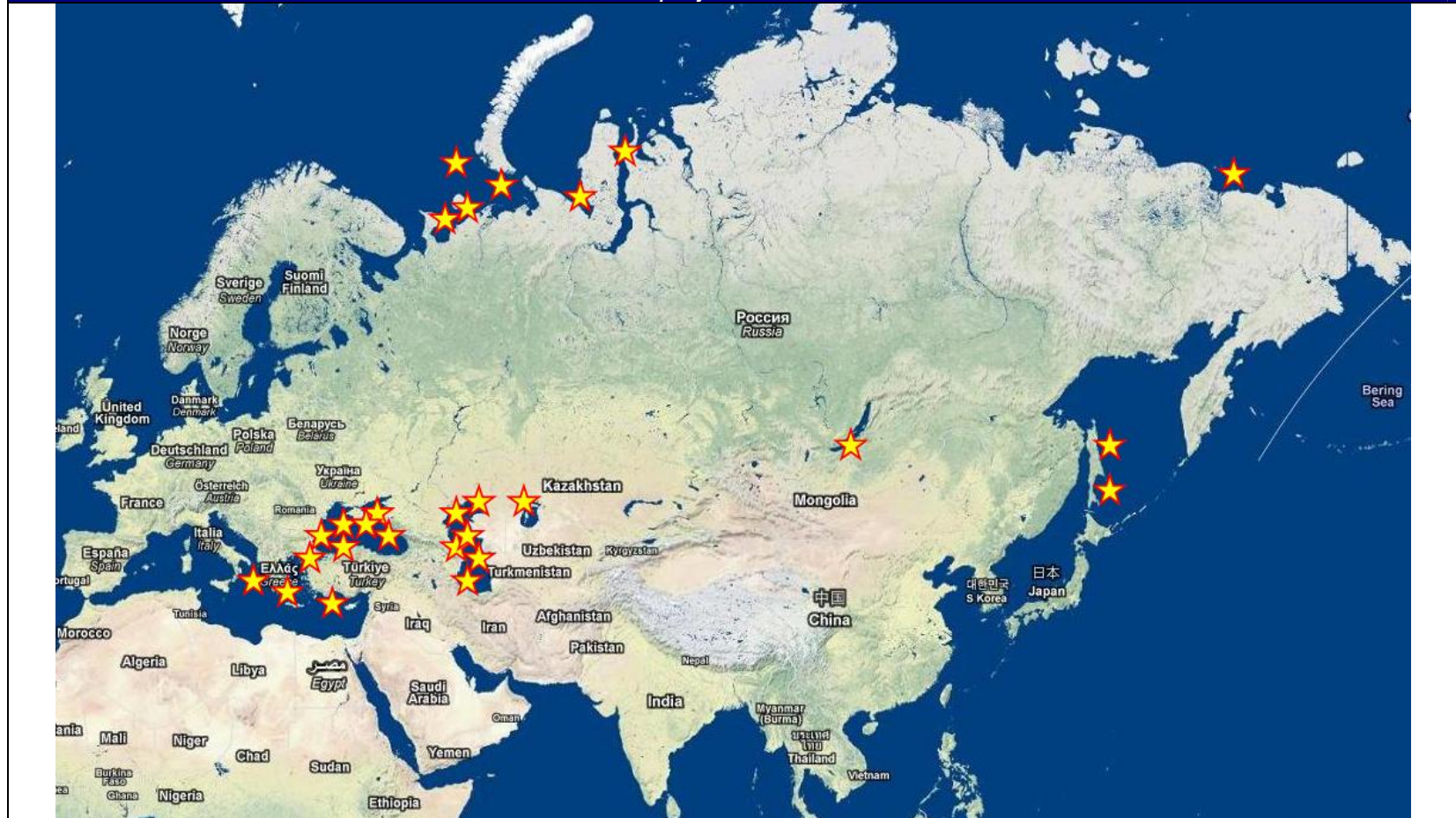


YMG Global Experience

More than 60 years experience of Exploration of Oil & Gas and Minerals in the World Ocean



YMG experience
Seismic Survey in Offshore, Shallow Water and Transit Zone environments
More than 30 projects in Russia and CIS





YUZHMOREGEOLOGYA SSC



**STATE SCIENTIFIC CENTER OF THE
RUSSIAN FEDERATION FEDERAL STATE
UNITARY GEOLOGICAL ENTERPRISE
Southern Scientific & Production**

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