



GEOPHYSICAL
COMPANY

ABOUT COMPANY

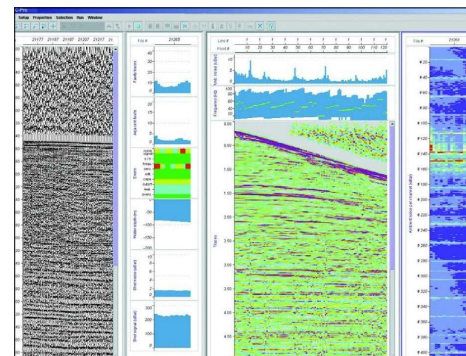


The company «Tat-Arka» was registered in 2001 in the Republic of Kazakhstan and working in the sphere of services provision in the oil and gas industry. From 2001 to the present day, «Tat-Arka» LLP has organized 2 field party for seismic acquisition, and also has 2 auxiliary field party for drilling works and works on the study of the upper part of section.



The company was certified on conformity to requirements of series ST RK ISO 9001 standards - quality management system; ST RK ISO 14001 - environmental management system; ST RK OHSAS 18001 - health and safety management system.

SEISMIC STATION



Our seismic party equipped with Sercel-408UL (2006) and Sercel-428XL (2014) seismic stations, made in France. Seismic station includes field equipment and computerized place for observer.

Sercel 408UL and Sercel-428XL are a standard system of collecting seismic data during the works on the ground and shallow water. They are known as the most energy efficient system on the market.

Each seismic station is equipped with eSQC-Pro control system, allowing to control the quality of each record in real time.

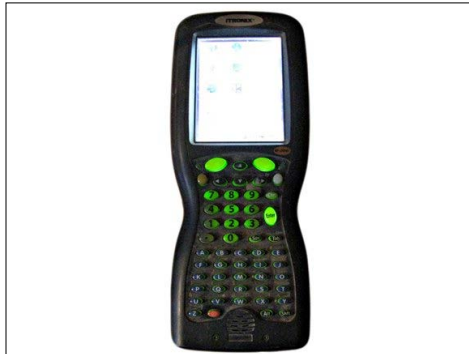
«Tat-Arka» LLP has the opportunity to use the equipment of affiliated companies, so in case if the customer chooses Sercel 428 system or BOX radio telemetric system, we will be able to satisfy their requirements.

FIELD EQUIPMENT



- The field equipment includes:
- Group of geophones EST-20DX (11 200)
 - Link (2850)
 - LAUL
 - LAUX (48)
 - Power cable
 - Interline connection cable

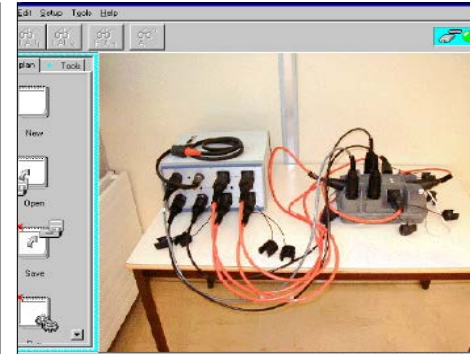
TEST EQUIPMENT



LT 408/428



1832IN MEGGER



TMS408/428



SMT-400

Field crews are equipped with geophysical workshops-laboratories for repairing and testing of field equipment.

All equipment is tested using the following testers:

- Portable geophone tester SMT-400
- TMS408 and TMS428 for LAUL, LAUX and FDU's testing
- LT 408 and LT 428 testers for testing the telemetric cables and links compliance of the input/output characteristics
- 1832IN Megger to measure the insulation resistance, circuit resistance and alternating voltage.

VIBRATION SOURCE



Using of non-explosive seismic sources during the seismic survey works have allowed to reduce the time and material costs on carrying out of works, and thus reduce the cost of geophysical survey works.

At the present time the seismic party have vibration source AHV-IV (Company INPUT/OUTPUT, USA). As a rule, it is used the group of 4 vibration sources with one vibrator in reserve.

Vibration sources equipped with the system of synchronization and quality control, the Pelton company. This is allows to control every influence and simulate various types of the reference signal.

The installed DGPS control positioning system gives the opportunity to monitor the movement of the vibrators in active arrangement, and reduces the number of defective excitation points.

Technical parameters of AHV-IV vibrator:

- Weight **28 ton**
- Peak ground force **30 ton**
- Transport base **Baggy**
- Synchronization system **Pelton Vib Pro**
- Sweep-signal frequency **5-250 Hz.**

STUDY OF UPS



URB-2A-2



**SGD-SEL SEISMIC
STATION**



“WEIGHT DROP” UNIT

To study the upper part of section (UPS) is uses a combination of methods - micro seismic logging (Uphole) and surface observations by refracted waves method (Refraction).

During the works the following equipment is used:

- SGD-SEL seismic station, which allows to make registration up to 48 channels.
- URB-2A-2 exploration drilling unit on the basis of vehicle ZIL-131 is applies for drilling the geophysical wells.
- “Weight drop” unit is applies for excitation of seismic vibrations
- The EST-20DX geophone is used as seismic sensor.

DRILLING CREW



«Tat-Arka» LLP has organized additional party for drilling works conducting. The party is equipped with URB-2A-2 and UBSHM drilling units, drilling units based on GTT, and all-terrain technique for work on difficult terrain.

SURVEY EQUIPMENT



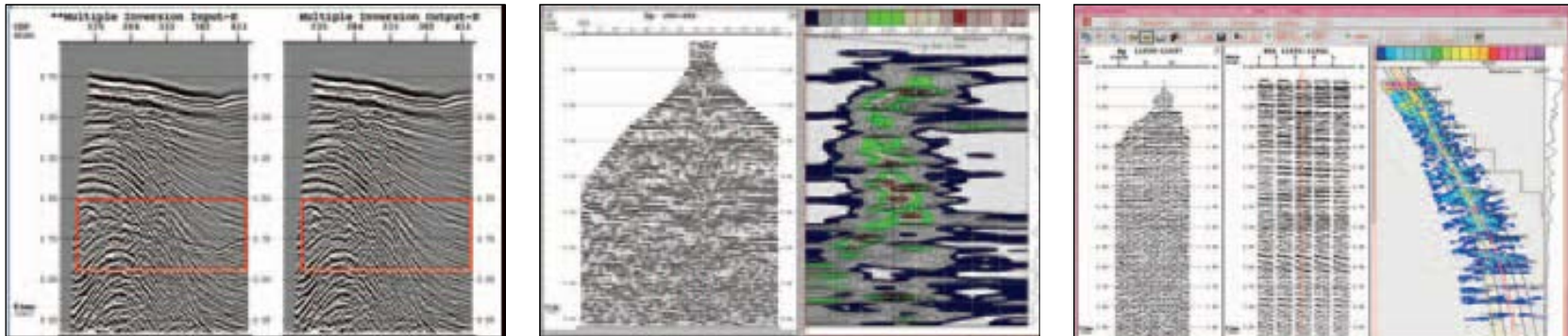
GPS Trimble and Trimble R7 R5 are used to conduct the topographic surveys. All geophysical projects are depend on the accuracy of the binding of observation points on the ground. That is why we use the most advanced technology of geodesy and topography.

GPS receivers TRIMBLE R7 and R5 designed for use in the most difficult conditions.

Main characteristics of Trimble R7,R5:

- flexible settings for the convenience of control receiver;
- increase uptime with its low power consumption;
- Track more satellites;
- durable and high-performance equipment, designed for a long working.
- possibility of operation from -40 to 65 C

FIELD QUALITY CONTROL



For quality control of received data in the field machining center used seismic processing complex FOCUS Paradigm that allows to determine the quality of data in the field.

Processing complex FOCUS is the system of data processing on the basis of workstations, which combines an interactive and batch processing before and after the summation in one unified system functioning in the environment of UNIX and Linux.

For designing the 3D lines network, design of the main parameters of the 3D geometry, calculation of the attributes of bin, the analysis of waste volumes and other statistics, using a dedicated software package of the company GMG MESA.

Development of a design of any complexity is carried out with the direct participation of the client needs and priorities.

BASE CAMP



For accommodation of the personnel, which conduct daily field work, we have a modern field camp «on wheels». The camp has a residential, office and production areas, dining rooms, bath and laundry complex, relax club, telephony, Internet and independent electric power station. During the entire field season our staff live in the comfortable residential premises, equipped with air conditioning and electric radiators. Even in difficult field conditions, we try to create maximum comfort for work and living of our employees and the personnel of the customer.

AUTOMOBILE TRANSPORT



For execution of field operations LLP «Tat-Arka» has cross-country type vehicles.

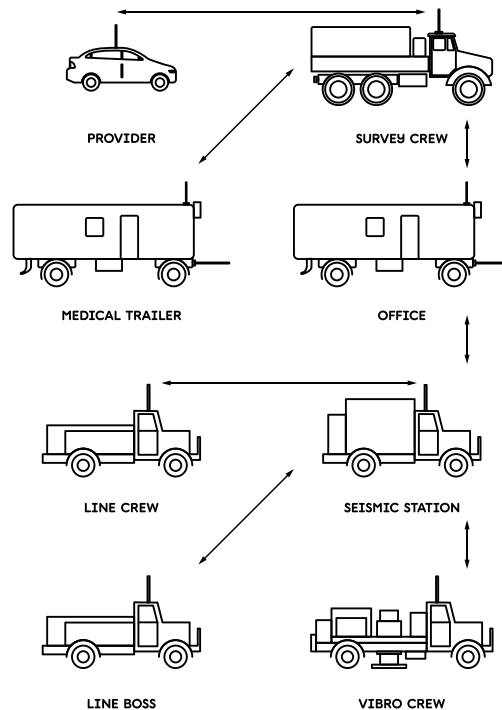
Base camp has a open type garage for vehicles repairing. Garage has more than 50 units of transport, parking places for each vehicle, and also places of embarkation/disembarkation of passengers are clearly marked.

For the Customer's representatives we provide comfortable vehicles Toyota.

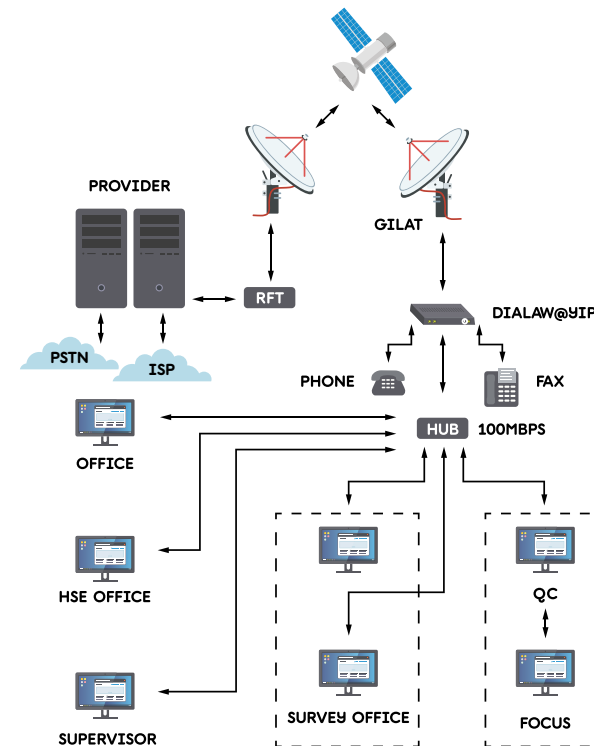
Each vehicle is equipped with a first-aid kit and fire extinguishers in accordance with the requirements of safety. All vehicles are equipped radios to maintain constant communication with the base of the party.

To reduce the risks of all vehicles working in the field party is equipped with monitoring system. Vehicles are equipped with sensors transmitting current position and condition of the car, and set terminal in the field party enables you to view messages from sensors.

COMMUNICATION AND RADIO NETWORK



All key employees, as well as transport, equipped with the radio stations to maintain constant communication with the base camp. Communication is effected via VHF radio MOTOROLA.



Base camp is fully equipped with all communications. There are radio communication, satellite and Fax connection-based systems «KazTransCom» and «Thuraya» and a persistent connection to the Internet.

HEALTH, SAFETY AND ENVIRONMENT



One of the priorities in the implementation of the seismic exploration is the safety of personnel and environmental protection. In this regard, in our company established a Department for health, safety and environment.

The company operates in accordance with the rules of «International Association of Geophysical Contractors (IHPA) and the requirements of the laws of the Republic of Kazakhstan.

During works on the basis of the field party held daily meetings with the heads of departments on production issues and issues of safety. The heads of units before the beginning of works spend five minutes meeting with employees of their departments on issues of safety. Every month in the field party one general party meeting to discuss workplace issues and questions of safety.

FIRST-AID POST



On the basis of the field party organized a first-aid post, first aid and daily inspections of employees. Medical center has all necessary equipment and materials.

The field party has an ambulance to provide the necessary assistance to workers outside the base field party and transportation of staff in the hospital with which the contract is concluded for the period of work, if it is not possible to provide adequate support on the basis of the field party. Ambulance car is also equipped with all the necessary means.

WORK EXPERIENCE

AREA	NAME OF THE CLIENT	DESCRIPTION OF THE SERVICES, YEAR	VOLUME
Ai-Dunmunai field	«Ai-Dunmunai» LLP	3D seismic survey 2003	230 sq. km
Makat East field	«Kazakhoil-Emba» JSC	3D seismic survey 2003	30 sq. km
Novobogatinskoe West field	«NBK» LLP	3D seismic survey 2003	50 sq. km
Maintek field	«FIOC» LLP	3D seismic survey 2003	52 sq. km
Dolinnoe, Aksaz and Emir fields	«Emir Oil» LLP	3D seismic survey 2003	200 sq. km
North Nuraly, North and South Kyzylkiya fields	PetroKazakhstan Kumkol Resources JSC	3D seismic survey 2004	360 sq. km
Koblandy and Bestau fields	«BOLZ» JSC	2D seismic survey 2004	850 line km
Bozoba field	“BMB-Munai” LLP	3D seismic survey 2005	150 sq. km

WORK EXPERIENCE

AREA	NAME OF THE CLIENT	DESCRIPTION OF THE SERVICES, YEAR	VOLUME
Zhubantam field	“EmbaUgNeft” LLP	3D seismic survey 2005	160 sq. km
Karavanchi and North Kumkol fields	PetroKazakhstan Kumkol Resources JSC	3D seismic survey 2005	390 sq. km
Kopa area	«Kazneftehim-KOPA» LLP	3D seismic survey 2005	60 sq. km
SSM 2D within the territory of 1057 D	«Kolzhan» LLP	2D seismic survey 2005-2006	1093 line km
Zhamansu within the territory of 951 D	PetroKazakhstan Ventures	2D seismic survey 2006	361 line km
Doschan field	PetroKazakhstan Kumkol Resources JSC	3D seismic survey 2006	170 sq. km
Oilfield Eastern Kulandy	“MOC “KazMunaiTeniz” JSC	2D seismic survey 2006	250 line km
Zhubantam area	«EMBA SOUTH OIL» LLP	3D seismic survey 2006	300 sq. km
Kozha south area	«Ecogoneftegas» LLP	3D seismic survey 2006	40 sq. km

WORK EXPERIENCE

AREA	NAME OF THE CLIENT	DESCRIPTION OF THE SERVICES, YEAR	VOLUME
Karagan area	«Ecogoneftegas» LLP	3D seismic survey 2006	30 sq. km
Profit area	“Profit” LLP	2D seismic survey 2006	941 line km
Bestu area	“OilTehnoGroup” LLP	3D seismic survey 2006	300 sq. km
Tandy-Kumak-Zhelezniy	“OilTehnoGroup” LLP	2D seismic survey 2006	373 line km
Licensed area of “EPC-Munai” LLP	“EPC-Munai” LLP	2D seismic survey 2007	670 line km
Aksai area	“BOLZ” LLP	2D seismic survey 2007	1221 line km
Koblandy area	“OilTehnoGroup” LLP	3D seismic survey 2007	688 sq. km
Severo-Vostok, Zhelezniy Utektas, Tamdy	“OilTehnoGroup” LLP	2D seismic survey 2007	1557 line km
Chengiz-Telsu area	“MontazhMalikMunai” LLP	2D seismic survey 2007-2008	800 line km

WORK EXPERIENCE

AREA	NAME OF THE CLIENT	DESCRIPTION OF THE SERVICES, YEAR	VOLUME
Eastern Priaralie area	“Nursat Bauyr” LLP	2D seismic survey 2007-2008	600 line km
Egizkara area	“Firm ADA” LLP	2D Seismic survey 2008	300 line km
Licensed area of “EPC-Munai”	“EPC-Munai” LLP	2D seismic survey 2008	444 line km
Area Tortai	AstanaOilCompany LLP	2D and 3D seismic survey 2008	198 sq. km 125 line km
Areas Sarkramabas and Bozoba	MGK LLP	3D seismic survey 2008	150 sq. km
Area Zhubantam	EmbaYugNeft LLP	3D seismic survey 2008	211 sq. km
Area Tamgalytar	Marsel Petroleum LLP	2D seismic survey 2008	451 line km
Area Damba, East Damba, Sorkol	“OilTehnoGroup” LLP	2D seismic survey 2008	848 line km
Licensed area of “KAZPETROL GROUP”	“KAZPETROL GROUP” LLP	3D seismic survey 2009	150 sq. km

WORK EXPERIENCE

AREA	NAME OF THE CLIENT	DESCRIPTION OF THE SERVICES, YEAR	VOLUME
Licensed area of "Amir LTD" LLP	"Amir LTD" LLP	2D seismic survey 2009	365 line km
Area Kainar	"Kumkol Trans Service" LLP	3D seismic survey 2009	111 line km 69 sq. km
Licensed area of "Turan-Barlau"	"Turan-Barlau" LLP	2D seismic survey 2009	23 line km
Areas Toresai and Sholkara	"EPC Munaï" LLP	3D seismic survey 2009	200 sq. km
Area West Zharkamys 1	"Falcon Oil & Gas LTD" LLP	3D seismic survey 2009	648,9 sq. km
Area Oppak-Tamgalinskaya-Zholotken	"Marsel Petroleum" LLP	2D seismic survey 2009	700,4 line km
Area East Aral	"Nursat Bauyr" LLP	2D seismic survey 2010	552,48 line km
Licensed area of "Turan-Barlau" LLP	"Turan-Barlau" LLP	3D seismic survey 2010	59 sq. km
Area Tortai	"Astana Oil Company" LLP	3D seismic survey 2010	100 sq. km

WORK EXPERIENCE

AREA	NAME OF THE CLIENT	DESCRIPTION OF THE SERVICES, YEAR	VOLUME
Area West Zharkamys 1	“Falcon Oil & Gas LTD” LLP	3D seismic survey 2010	1268 sq. km
Contract area of “Nurmunai Petrogaz” LLP, Area	“Kazakhstancaspishelf” JSC	3D seismic survey 2010-2011	2019 line km
Contract area of “Kumkol Trans Service” LLP	“Kumkol Trans Service” LLP	3D seismic survey 2011	350 sq. km
Marsel Block	“Marsel Petroleum” LLP	2D seismic survey 2011	900 line km
Area East Aral	“Nursat Bauyr” LLP	2D seismic survey 2012	1503.2 line km
Licensed area of “Turan-Barlau” LLP	“Turan-Barlau” LLP	2D and 3D seismic survey 2012	50 line km 100 sq. km
Licensed area of “Maksat” LLP	“Maksat” LLP	2D and 3D seismic survey 2012	1800 line km 100 sq. km
Area “West Sorkol”	“Kumkol Trans Service” LLP	2D seismic survey 2012	450 line km
“KAZPETROL GROUP” LLP extension	“KAZPETROL GROUP” LLP	3D seismic survey 2012	292 sq. km

WORK EXPERIENCE

AREA	NAME OF THE CLIENT	DESCRIPTION OF THE SERVICES, YEAR	VOLUME
Licensed area of "Turan-Barlau" LLP	"Turan-Barlau" LLP	3D seismic survey 2013	193,7 sq. km
Licensed area of "EPC Munai" LLP	"EPC Munai" LLP	3D seismic survey 2013	90 sq. km
Marsel Block	"Marsel Petroleum" LLP	2D seismic survey 2013	720 line km
Contract area of "BOLZ" LLP	"BOLZ" LLP	2D seismic survey 2013	32 line km
Contract area of "Kumkol Trans Service" LLP	"Kumkol Trans Service" LLP	2D seismic survey 2013	342,2 line km
Area "East Alibek"	"Samek Development Enterprise" LLP	2D seismic survey 2013	378,4 line km
Ashisai deposit	"KOR" Oil Company" JSC	3D seismic survey 2014	177,02 sq. km
Area "East Alibek"	"Samek Development Enterprise" LLP	3D seismic survey 2014	198,4 sq. km
Beskauga area	"Kumkol Trans Service" LLP	2D seismic survey 2014	300 line km

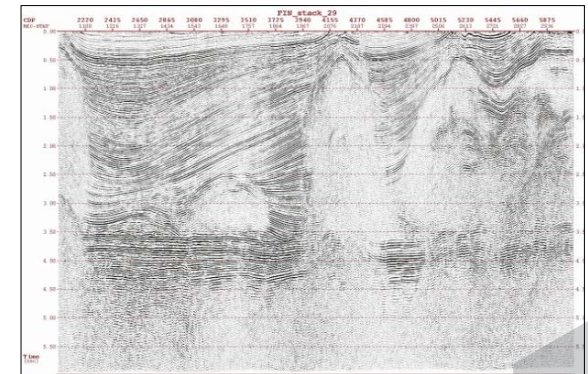
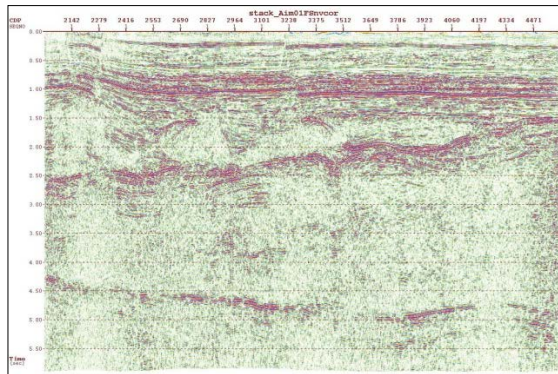
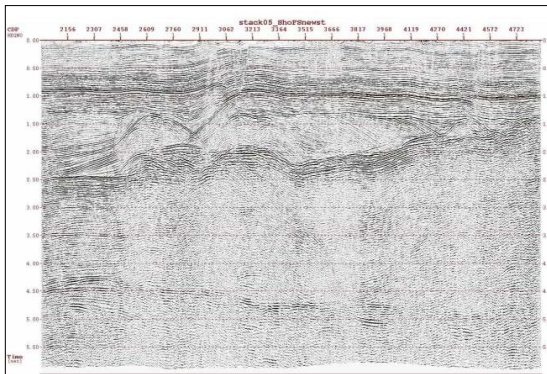
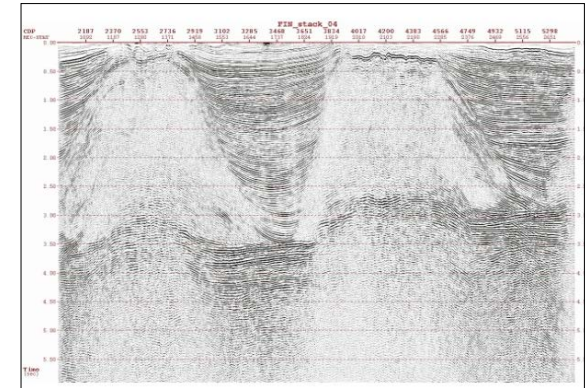
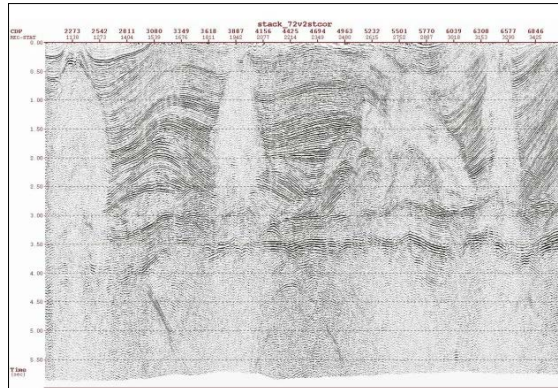
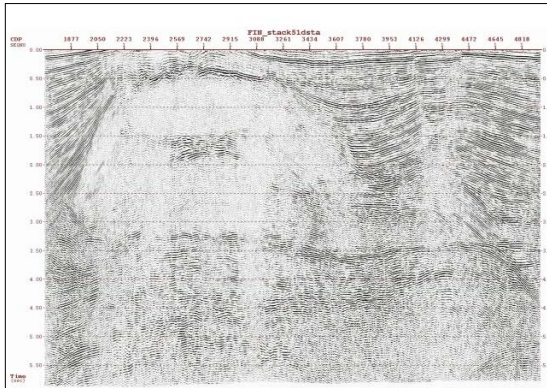
WORK EXPERIENCE

AREA	NAME OF THE CLIENT	DESCRIPTION OF THE SERVICES, YEAR	VOLUME
Dautskaya area	«Profit» LLP	2D-3D seismic survey 2014	45 line km 100 sq. km
Contract area of “Sequa Petroleum” LLP	“Sequa Petroleum” LLP	2D seismic survey 2014	125 line km
Contract area of “Sequa Petroleum” LLP	“Sequa Petroleum” LLP	2D seismic survey 2015	130 line km
Contract area of “SCS-Holding” LLP	«SCS-Holding» LLP	2D seismic survey 2015	270 line km
Bazoi deposit	““KOR” Oil Company” JSC	2D seismic survey 2016	498 sq. km
Contract area of “Kumkol Trans Service” LLP	“Kumkol Trans Service” LLP	3D seismic survey 2017	59 sq. km
North deposit	“Turan-Barlau” LLP	3D seismic survey 2018	173 sq. km
Karabas area	«North Caspian Petroleum» JSC	2D seismic survey 2018	246 line km
Zharkamys East -II area	«North Caspian Petroleum» JSC	3D seismic survey 2018	161 sq. km

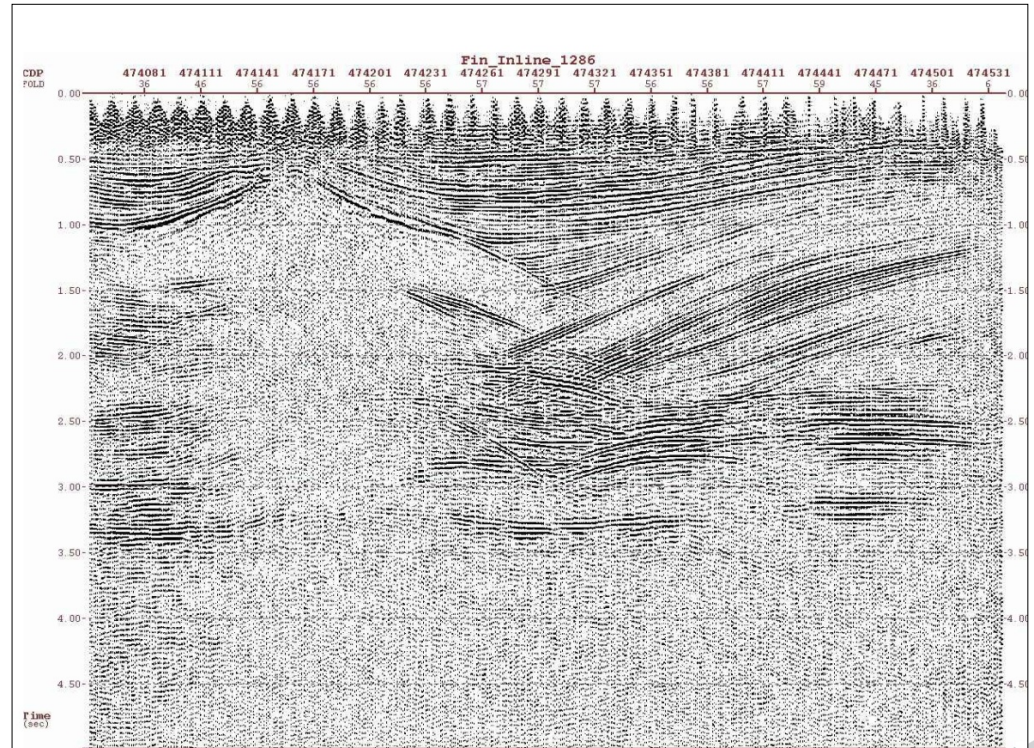
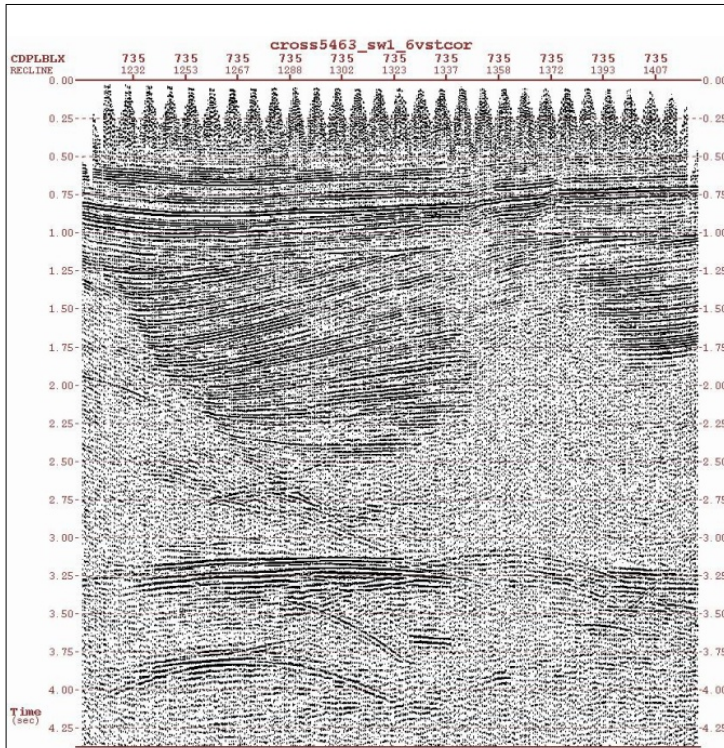
WORK EXPERIENCE

AREA	NAME OF THE CLIENT	DESCRIPTION OF THE SERVICES, YEAR	VOLUME
Bekmurat deposit	LLP «Taraz Investment»	2D seismic survey 2020	191 line km
Barkhannaya - Sultankuduk deposit	LLP «Amangeldy Gas»	3D seismic survey 2019-2021	960 sq. km
Oktyabrskoye fields	LLP «Svetland Oil»	3D seismic survey 2021	10,48 sq. km

EXAMPLES OF THE RECEIVED 2D SEISMIC DATA



EXAMPLES OF THE RECEIVED 3D SEISMIC DATA





GEOPHYSICAL COMPANY

91 str. Sagadat Nurmagambetov, Koktobe microdistrict
050010, Almaty, Republic of Kazakhstan

Tel.: +7-727-261-31-41

Fax: +7-727-261-31-10

E-mail: tat-arka@mail.ru

