

On approval of standard qualification characteristics of positions of managers and specialists of organizations of geology and exploration

Unofficial translation

Order of the Minister for Investment and Development of the Republic of Kazakhstan of August 29, 2018 No. 619. Registered with the Ministry of Justice of the Republic of Kazakhstan on September 22, 2018 No. 17407.

Unofficial translation

In accordance with sub-item 17) of article 16 Of the Labour Code of the Republic of Kazakhstan dated November 23, 2015 **I HEREBY ORDER:**

1. To approve the attached Standards qualification characteristics of positions of managers and specialists of organizations of geology and exploration.

2. The Committee of Geology and Subsoil Use under the Ministry of Investments and Development of the Republic of Kazakhstan shall ensure:

1) state registration of this order with the Ministry of Justice of the Republic of Kazakhstan;

2) within ten calendar days from the date of state registration of this order with the Ministry of Justice of the Republic of Kazakhstan, the direction hereof in Kazakh and Russian languages to the Republican State Enterprise on the Right of Economic Management "Republican Center of Legal Information of the Ministry of Justice of the Republic of Kazakhstan" for official publication and placement in the Reference Control Bank of the Regulatory Legal Acts of the Republic of Kazakhstan;

3) placing this order on the Internet resource of the Ministry of Investments and Development of the Republic of Kazakhstan;

4) within ten working days after the state registration of this order, reporting to the Department of Legal Services of the Ministry of Investments and Development of the Republic of Kazakhstan on performance of activities, stipulated by sub-items 2) 3) and 4) of this item.

3. Control over the execution of this order shall be entrusted to the supervising Vice-Minister of Investments and Development of the Republic of Kazakhstan.

4. This order shall be put into effect upon expiry of ten calendar days after the day of its first official publication.

*Minister of Investments and Development
Of the Republic of Kazakhstan*

Zh. Kassymbek

“AGREED”

Minister of Labour and Social Protection
of the Population of the

Republic of Kazakhstan

_____ M. Abylkassymova

" " _____ 2018

Approved

By the order no.619 of the
Minister of Labour and Social
Protection of the Population of the
Republic of Kazakhstan
dated September 29, 2018

Standards qualification characteristics of positions of managers and specialists of organizations of geology and exploration

Chapter 1. Positions of managers

Paragraph 1. Chief geologist (geophysicist, hydrogeologist) of the organization

Official duties: to supervise geological (geophysical, hydrogeological) activities of the geological organization. To ensure the performance of comprehensive study of geological (geophysical, hydrogeological) structure of the earth interior in the territory of works. To organize implementation of rational methods of prospecting and exploration of subsoil resources applicable to certain conditions, state-of-the-art developments of geological science and best practices into production. To manage the development of main directions of prospective and current plans for development of geological (geophysical, hydrogeological) works, annual and phased geological assignments, plans of completion of geological works and cost recovery thereon. To manage the selection of geological study procedures and to ensure their application. To coordinate scientific research and thematic works, associated with geology, performed in the territory of operations of the geological organization. To develop and to implement activities to increase economic efficiency of all types of geological study. To ensure control over quality and terms for performance of field and in-office works, conducting laboratory and technological studies of subsoil resources, drafting the project estimate documentation, provision of materials for conditions development, feasibility reports, calculation of subsoil resources, reporting on geological (geophysical, hydrogeological) results of studies. To take measures on improvement of labour management at field and in-office works. To supervise the correctness of drafting the reference collections of rock samples, determining the categories of rocks and categories of complexity of exploration areas. To ensure compliance with the requirements to record keeping and storage of geological materials. TO ensure advance training of specialists of geological (geophysical, hydrogeological) profile. To participate in personnel recruiting and appointment. To direct and to coordinate the activities of subdivisions of geological profile. To control over performance by employees of the occupational safety and health rules, industrial sanitation and fire safety. To follow the rules and regulations of labour protection, occupational safety and fire protection. To ensure timely reporting.

Must know: the Constitution Of the Republic of Kazakhstan dated August 30, 1995 (hereinafter referred to as the Constitution), the Labour Code of the Republic of Kazakhstan dated November 23, 2015 (hereinafter referred to as the Labour code), the Code of the Republic of Kazakhstan dated December 27, 2017 "On Subsoil and Subsoil Use" (hereinafter referred to as the Code "On Subsoil and Subsoil Use"), the Law of the Republic of Kazakhstan dated November 18, 2015 "On combating corruption" (hereinafter referred to as the Law "On combating corruption"), the Law of the Republic of Kazakhstan dated July 11, 1997 "On languages in the Republic of Kazakhstan" (hereinafter referred to as the Law "On languages in the Republic of Kazakhstan") and other regulatory legal acts in geological (geophysical, hydrogeological) studies, use and protection of subsoil resources and environment; the level of geological (geophysical, hydrogeological) exploration maturity of work area, condition and prospects for development of mineral resource base of a geological area; prospects for development of mining industry of the area; main requirements specified by the industry to mineral raw material; production engineering, workplace management and business administration; technology of geological exploration (geophysical, hydrogeological) works and requirements to the quality of their performance; economics of mineral raw material and geological exploration activities; procedure for projecting, planning and financing of geological (geophysical, hydrogeological) works; procedure for deposit record keeping and calculation of subsoil resources; procedure for submission and approval of industrial-geological (geophysical, hydrogeological) documentation and reports; types of geology-prospecting equipment and rules for its technical operation; rules for record keeping and storage of documentation and geological materials; advanced domestic and foreign experience in geological (geophysical, hydrogeological) studies, use and protection of subsoil resources and environment and performance of works and research; rules and regulations of occupational safety and health engineering, industrial sanitation and fire protection.

Requirements to qualification: Higher (or post-graduate) geological (geophysical, hydrogeological) education and at least five year work experience at positions of managers and specialists in geology and exploration of subsoil resources.

Paragraph 2. Party Chief (geological, geophysical, hydrogeological)

Official duties: To manage production and business activities of a (geological, geophysical, hydrogeological) party to ensure geological (geophysical, hydrogeological) study of subsoil resources in the territory of works. To organize the planning of activities of the party, performance of geological assignments of high quality and within the established deadlines. To ensure achievement of high efficiency of the performed works, reduction in their production cost and increase of workforce productivity at the expense of maximum use of production capacity, full load and appropriate operation of equipment, implementation of activities on scientific organization of labour, propagation of advanced approaches and

methods of labour. To carry out management of development and drafting project-estimate documentation, geological assignment, item-by-item (staged) plans and schedules for performance of works, selection of directions and methods of study. To ensure organization, performance, and liquidation of works under the field conditions, record keeping of volumes and quality of works performed. To organize work on timely supply of the party with necessary equipment, tools, hardware and other material resources. To participate in processing of primary materials and drafting of the geological (geophysical, hydrogeological) report on research conducted. To ensure compliance with the rules and instructions on record keeping and storage of geological documentation, the Code "On Subsoil and Subsoil Use" and the Environment Code of the Republic of Kazakhstan dated January 9, 2007 (hereinafter referred to as the Environment Code). To take measures on provision of subdivisions with qualified personnel, on its rational use, organizes training and advanced training of the employees. To supervise and to coordinate work on record keeping and drafting the reporting. To control over compliance by the employees of the rules and regulations of occupational safety and health engineering, industrial sanitation and fire protection.

Must know: the Constitution, the Labour code, the Code "On Subsoil and Subsoil Use", the Law "On combating corruption", the Law "On languages in the Republic of Kazakhstan" and other regulatory legal acts in geological (geophysical, hydrogeological) study, use and protection of subsoil resources and environment; organizational and administrative documents and methodical materials, regarding to the geological (geophysical, hydrogeological) activities of a geological organization; technology of geological exploration activities and requirements to the quality of performance thereof; economics of mineral raw materials and geological exploration activities; bases of organization of production, labor and management; procedure for planning, projecting, and financing of geological exploration activities; current regulations on payment for labour and forms of material stimulation and moral encouragement; record keeping and rules for storage of geological materials; advanced domestic and foreign experience of performance of geological exploration (geophysical, hydrogeological) works; rules and regulations of occupational safety and health engineering, industrial sanitation and fire protection.

Requirements to qualification: Higher (or post-graduate) (geological, engineering or engineering-economical) education and at least five years of work experience on speciality in geological organizations.

Paragraph 3. Party (Section) Foreman (geological, geophysical, hydrogeological)

Official duties: To manage the production-business and geological activities of a party (section). To ensure performance of geological (geophysical, hydrogeological) study of subsoil resources in the territory of works. To ensure high-quality performance by the party (section) of the planned assignments within the established deadlines, increase in workforce

productivity, reducing the production costs for a unit of work based on efficient use of equipment and strict compliance with the production technology. To participate in selection of methodology of conduct of operations, development of prospective plans, geological assignment, project-estimate documentation, in drafting acts for acceptance of completed works. To ensure organization, performance and liquidation of works in the field, rational appointment and use of personnel in accordance with their qualification. To ensure complete load and appropriate operation of equipment and devices, record keeping and storage of material assets, as well as compliance with the rules of storage of geological documentation. To establish, in accordance with the approved work plans, the production assignments to crews and certain performers, to control performance thereof. To organize performance of field works, processing of field materials, writing a geological report on researches performed. To ensure correctness and promptness of execution of primary documents on rate-setting and labour payment, on record keeping of volumes and quality of works performed. To take measures on implementation of scientific organization of labour, new machinery, advanced technologies and improvement of labour rate setting. To provide documents for labour payment, depreciation of material assets as well as established reporting and other operative information about activities of the party (section). To perform control over timely provision of the party (section) with necessary equipment, tools, hardware and other material resources. To submit proposals on appointment, transfer and dismissal from work of his subordinates, on material and moral encouragement of the party (section) employees, as well as on the measures of disciplinary actions. To ensure compliance by the employees of production and labour discipline, rules and regulations of occupational safety and health engineering, industrial sanitation and fire protection, legislation on protection of subsoil resources and environment.

Must know: the Constitution, Labour code, Code "On Subsoil and Subsoil Use", Law "On combating corruption", Law "On languages in the Republic of Kazakhstan" and other regulatory legal acts in geological (geophysical, hydrogeological) study, use and protection of subsoil resources; technology of geological exploration activities and requirements to the quality of execution thereof; applicable geological exploration equipment, hardware and rules of their technical operation; fundamentals of economics of mineral raw material and geological exploration activities; production engineering, workplace management and business administration; procedure for planning, projecting and financing of geological exploration activities; advanced domestic and foreign experience of conducting geological researches; current regulations about labour payment, forms of material stimulation and moral encouragement; record keeping and rules for storage of geological materials; rules and regulations of occupational safety and health engineering, industrial sanitation and fire protection.

Requirements to qualification: Higher (or post-graduate) (geological or engineering) education at least three years of work experience on speciality in geological organizations.

Paragraph 4. Drilling Foreman

Official duties: To manage the the work of a well drilling team and to be responsible for its results. To organize and to control meeting the requirements of geological-engineering assignment, process-flow diagram, and plan-schedule of drilling works. To perform preparation of wells for production of geophysical studies, measuring curvatures, hydrogeological unwatering, filling and control measurements. To ensure development of organizational-engineering activities, aimed at increasing of workforce productiveness, improvement of working conditions, liquidation of reasons, causing the occurrence rate of industrial injuries. To take measures on provision with drilling tools, equipment and materials in accordance with the requirements of drilling technology; to ensure efficient use of equipment, rational spending of materials, reduction in production costs of drilling. To keep record of performed scope of works and hours actually worked by the team. To perform at working place most complicated and important works on well drilling, on prevention and liquidation of complications and accidents. To analyze causes of accidents and to take measures on their elimination. To take measures on improvement of industrial management, labour and administration based on implementation of the cutting-edge technical aids: optimal modes of well drilling, mechanization and automatization of labour intensive processes. To organize performance of works on decommissioning of wells, transportation of rock drilling machines and equipment, reclamation of areas after completion of drilling works. To keep the established documentation about work of equipment and drilling tools, record of material assets, to take measures on ensuring their preservation. To organize training and advanced training of qualification of workers and specialists. To conduct production briefing for workers. To ensure compliance with production and occupational discipline, rules and regulations of occupational safety and health engineering, industrial sanitation and fire protection, Law on protection of subsoil resources and environment.

Must know: the Constitution, Labour code, Code "On Subsoil and Subsoil Use", Law "On combating corruption", Law "On languages in the Republic of Kazakhstan" and other regulatory legal acts in geological (geophysical, hydrogeological) study, use and protection of subsoil resources and environment; methods and technology of drilling works; technical specifications of drilling equipment, tools, rules for their operation and repair; reasons for occurrence of geological and technical complications, methods of their prevention and liquidation; requirements to and procedure of development of project production documentation for well drilling; procedure of planning, projecting and financing of drilling works, methods of technical rate-setting; procedure and rules for keeping production and reporting documentation; regulations and prices for drilling works, procedure for their revision; materials, used in drilling and rules for their storage; current regulations about payment for labour and forms of material encouragement; fundamentals of organization of

labour, production and management; rules and regulations of occupational safety and health engineering, industrial sanitation and fire protection.

Requirements to qualification: Higher (postgraduate) (engineering) education without specifying the requirements to work experience, or engineering and vocational (specialized secondary, vocational secondary) education (engineering) and at least three years of work experience in well drilling.

Paragraph 5. Mine overseer

Official duties: To manage the operation of heading and tunnelling teams on heading of underground and open-pit mining. To ensure and to supervise the performance by the heading and tunnelling teams a plan-schedule of mining exploration works, project of heading, technology and cycle schedules, technical and geological requirements to works quality. To manage the production process of excavating. To ensure development of organizational-technical activities aimed at increasing of workforce productiveness, improvement of working conditions, liquidation of reasons, causing the occurrence rate of industrial injuries. To take measures on provision with tools, equipment and materials in accordance with the requirements of mining technology. To participate in development and implementation of activities aimed at increasing the efficiency of mining workings and workforce productivity, implementation of progressive machinery and technologies of workings, protection of subsoil resources and environment, including land reclamation during performance of mining. To keep record of performed scope of works and hours actually worked by the team. To organize the relocation of heading and tunnelling teams to a new site of works, location and closing of workings. To organize and to supervise the performance of repair, technical maintenance, inspection of the equipment and other technical aids. To ensure execution of regulations, instructions, norms, and other regulatory documents in effect in the geological organization. To keep the established documentation about work of equipment and drilling tools, record of material assets, to take measures on ensuring their preservation. To organize training and advanced training of qualification of workers and specialists. To conduct production briefing for workers. To ensure compliance with production and occupational discipline, rules and regulations of occupational safety and health engineering, industrial sanitation and fire protection, the Code "On Subsoil and Subsoil Use" and the Environment Code.

Must know: the Constitution, Labour code, Code "On Subsoil and Subsoil Use", Law "On combating corruption", Law "On languages in the Republic of Kazakhstan" and other regulatory legal acts in geological (geophysical, hydrogeological) study, use and protection of subsoil resources and environment; methods and technology of mine works; mining and geological conditions, purpose and specificity of mining operations; designation and construction of mine workings; organization of production processes and mining technology;

technical and geological requirements for sampling and mining quality; types, technical characteristics and equipment operation rules and tools; causes and conditions for the occurrence of geological complications, technical and technological violations and malfunctions, accidents in mine workings and methods for their prevention and elimination; materials used in mining. Rates of their spending and storage rules; procedure and rules of reference and execution of production documentation and reporting; current wage regulations and forms of material incentives; basics of labor organization, production and management; rules and regulations of occupational safety and health engineering, industrial sanitation and fire protection.

Requirements to qualification: Higher (postgraduate) (engineering) education without specifying the requirements to work experience engineering and vocational (specialized secondary, vocational secondary) education (engineering) and at least three years of work experience in mine excavations.

Chapter 2. Positions of specialists

Paragraph 1. Geologist

Official duties: To perform field work on the collection of factual material on geology and metallogeny of the studied area by various methods. To conduct work on the development of prospective and current production plans, project estimate documentation, geological assignment and its stages, in the organization and liquidation of field work. To analyze, to systematize, and to summarize the data of geological documentation, to draft graphic materials characterizing the geological structure of the study area (charts, maps, sections, plans, diagrams), to draft reports on geological results and other summary documents (feasibility reports, draft design parameters and others). To ensure and to control the compliance with methodical regulations, instructions and requirements on performance of geological exploration activities, to prepare reasoned proposals on their improvement. To perform the geological supervision over technological research of raw material under production conditions. To participate in conducting experimental-methodological and thematic work, in the calculation of mineral reserves, development of new technical means, technology and scientific organization of labour. To make reference rock sample collections, to determine categories of rocks by their technological properties (drillability, hardness, rippability etc.) and categories of job complexity of the operations area. To generalize materials of geological fund on geology of the operations area. To ensure execution and receipt of documents for land use when conducting the geological works. To perform control over compliance with the rules for record keeping and storage of geological materials, the legislation on subsoil and environmental protection. To ensure compliance with the rules and regulations of occupational safety and health engineering, industrial sanitation and fire protection during geological exploration activities.

Must know: the Constitution, Labour code, Code "On Subsoil and Subsoil Use", Law "On combating corruption", Law "On languages in the Republic of Kazakhstan" and other regulatory legal acts in geological (geophysical, hydrogeological) study, use and protection of subsoil resources; state of geological exploration and contemporary views of geology of the operations area (deposit, site), nature of the activities of the geological organization; requirements of the industry to the types of mineral resources under study; economics of the mineral raw materials and geological exploration activities; procedure of projecting, planning, and financing of geological exploration activities; organization of labor, production and management; production technology of geological exploration activities and requirements to the quality of their performance; sampling method and reserves calculation for the studied mineral resources; mineral and rock research methods; rules of record keeping and storage for geological materials; types of used geological equipment, tools, equipment, rules for their technical operation and metrological support; advanced domestic and foreign experience in geological research; geological documentation rules; instructions and rules for the use of technology for processing geological materials; rules and regulations of occupational safety and health engineering, industrial sanitation and fire protection.

Requirements to qualification:

The first category geologist: higher (or post-graduate) (geological) education and at least three years of work experience as the second category geologist;

The second category geologist: higher (or post-graduate) (geological) education and least three years of work experience as a geologist without a category;

A geologist without a category: higher (or post-graduate) (geological) education without specifying requirements to the work experience or engineering and vocational (secondary specialized, secondary vocational) (geological) education and least three years of work experience as the first category technician-geologist.

Paragraph 2. Geophysicist

Official duties: To carry out field work to obtain geophysical data on the geology of the study area, ensuring completeness of use and geological interpretation of all geophysical materials obtained both in the course of the work being carried out and in previous studies. To participate in the development of geological assignments for objects of geophysical work, in the preparation of current and advanced production plans, project estimate documentation, in the implementation of experimental and methodical work, in testing and implementing new geophysical equipment, in organizing and liquidation of field works. To keep field documentation, to systematize and to analyze it, to draft reports on performed geophysical work. To ensure and to supervise the compliance with the requirements to the production of geophysical work. Implements activities on the scientific organization of labor, improving the efficiency of geophysical research, the use of more advanced methods of work and processing

of geophysical data. control the compliance with the rules of record keeping and storage of geophysical materials, standards for geophysical teams productivity. To share work experience. To ensure the improvement of qualification of personnel. To ensure the compliance with the legislation in geological study of subsoil and subsoil use, protection of subsoil resources and environment, rules and regulations of labour protection, occupational safety and fire protection during geophysical works. To manages the work of technician-geophysicists and other performers, engaged at geophysical works.

Must know: the Constitution, Labour code, Code "On Subsoil and Subsoil Use", Law "On combating corruption", Law "On languages in the Republic of Kazakhstan" and other regulatory legal acts in geological study, use and protection of subsoil resources and environment; contemporary data on the geology of the area, its geological and geophysical knowledge; industry requirements for the studied type of mineral raw materials; technology of geophysical work and quality requirements; the equipment used and the rules for its technical operation; record keeping and rules for storage of geophysical materials; mineral economics and geological exploration activities; fundamentals of general and structural geology; types and methods of geological exploration activities, as well as the basic parameters of technology and their production technology; design, planning, financing and organization of geophysical works; advanced domestic and foreign experience in geological research; methods of technical regulation, and economic calculation; rules and regulations of labour protection, occupational safety and fire protection.

Requirements to qualification:

The first category geophysicist: higher (or post-graduate) (geological) education and at least three years of work experience as the second category geophysicist;

The second category geophysicist: higher (or post-graduate) (geological) education and at least three years of work experience as a geophysicist without a category;

A geophysicist without a category: higher (or post-graduate) (geological) education without specifying requirements to the work experience or engineering and vocational (secondary specialized, secondary vocational) (geological) education and least three years of work experience as the first category technician- geophysicist.

Paragraph 3. Hydrogeologist

Official duties: To perform the set of hydrogeological and engineering-technological works in a party or a team under the program and in the scopes specified by project estimate documentation. To conduct field works on collection of actual material as well as to take part in conducting in-office and thematic works. To keep hydrogeological documentation, to process, to analyze and to systematize the results of field works. To ensure preparation of materials for validation of project of works, current, prospective plans, project-estimate documentation, opinions on hydrogeological and engineering-geological issues. To organize

and to perform hydrogeological observations at the network of monitored observation wells, in existing water intakes, when searching for and prospecting groundwater, solitary and cluster pumping of water from wells, sampling water and soil for laboratory research, to process the results. To select hydrogeological well design, to participate in their location and equipping with water-lifting aids. To observe operational wells and water-intakes. To conduct a reconnaissance survey of the planned area of study or its individual sections, the observation of exogenous geological processes. To draft graphic materials characterizing geological, hydrogeological and engineering-geological structure of the studied area on paper and electronic media (diagrams, charts, well sections and the like). To provide the implementation of experimental and methodical work, the introduction of new technology, technology and the scientific organization of labour, the organization and the liquidation of field works. To perform control over compliance with the rules for record keeping and storage of hydrogeological materials, the legislation on subsoil and environmental protection, rules and regulations of occupational safety and health engineering, industrial sanitation and fire protection during hydrogeological works. To conduct work on sharing experience and advanced training of technicians-hydrogeologists and other performers, engaged in hydrogeological and engineering-geological works.

Must know: the Constitution, Labour code, Code "On Subsoil and Subsoil Use", Law "On combating corruption", Law "On languages in the Republic of Kazakhstan" and other regulatory legal acts in geological (geophysical, hydrogeological) study, use and protection of subsoil resources and environment; dislocation of the area of interest and its exploration maturity; the nature of activities of the geological organization; technology and methods of conducting hydrogeological and engineering-geological works; requirements to quality and operating procedures; methods of conducting the calculation of groundwater resources; types of applied geology-prospecting equipment, devices, hardware and the rules for their technical operation; rules for execution of reporting hydrogeological and engineering-geological documentation on paper and electronic media; economics of mineral raw materials and geological exploration activities; projecting, planning, financing and organization of works; advanced domestic and foreign experience in hydrogeological and engineering-geological works; Fundamentals of economics of mineral raw materials and geological exploration; rules and regulations of occupational safety and health engineering, industrial sanitation and fire protection.

Requirements to qualification:

The first category hydrogeologist: higher (or post-graduate) (geological) education and at least three years of work experience as the second category hydrogeologist;

The second category hydrogeologist: higher (or post-graduate) (geological) education and at least two years of work experience as a hydrogeologist without a category;

A hydrogeologist without a category: higher (or post-graduate) (geological) education without specifying requirements to the work experience or engineering and vocational (

secondary specialized, secondary vocational) (geological) education and least three years of work experience as the first category technician- hydrogeologist.

Paragraph 4. Drilling Engineer

Official duties: To develop technology and well drilling modes. To draft process-flow diagrams and operational schedules for drilling wells and to ensure their application during operation. To develop technical documentation and to make adjustments to technology and drilling modes. To work on the development of production and technical parts of project-estimate documentation, prospective and annual production plans, measures to increase the efficiency of drilling operations, reduction of their cost and improvement of workforce productivity. To ensure the organization of works on material supply of drilling crews. To develop measures for the rational use of working time of drilling crews, for the prevention of accidents and complications in the process of drilling. To study, to generalize the advanced domestic and foreign experience in drilling operations and to participate in its dissemination. To participate in experimental work on the development of new technology and technology, rationalization, invention, labour rate setting. To process, to generalize and to analyze data on the operation of equipment and drilling tools. To control over the compliance by teams of technological discipline, equipment operation rules, material consumption rates, rules for occupational safety and health engineering, industrial sanitation and fire protection. To take measures to protect the subsoil and environment. To make schedules for the repair of drilling equipment and to ensure their implementation. To maintain the established record keeping and reporting. To participate in improving the skills of drilling teams workers.

Must know: the Constitution, Labour code, Code "On Subsoil and Subsoil Use", Law "On combating corruption", Law "On languages in the Republic of Kazakhstan" and other regulatory legal acts in geological (geophysical, hydrogeological) study, use and protection of subsoil resources and environment; fundamentals of geology; general information about the geology of the studied operations area; mining and geological conditions of drilling, drilling technology; casing, well testing and riggin-up operations; drilling equipment, tools and rules for their technical operation and tooling; reasons and conditions for the occurrence of technical problems, accidents and complications in the wells, ways to prevent and eliminate them; domestic and foreign experience in the field of engineering and technology of drilling wells; fundamentals of the economics of mineral raw materials and geological exploration and mining, the organization of labour, production and management of technical regulation; procedure for conducting production and reporting documentation; procedure for planning, projecting and financing of drilling operations; rules and regulations of occupational safety and health engineering, industrial sanitation and fire protection.

Requirements to qualification:

The first category drilling engineer: higher (or post-graduate) (geological) education and at least three years of work experience as the second category drilling engineer;

The second category drilling engineer: higher (or post-graduate) (geological) education and at least three years of work experience as a drilling engineer without a category;

A drilling engineer without a category: higher (or post-graduate) (geological) education without specifying requirements to the work experience or engineering and vocational (secondary specialized, secondary vocational) (geological) education and least three years of work experience as the first category technician.

Paragraph 5. Technician-Geologist

Official duties: To perform, under the supervision of a geologist, certain types of works on studying geology of a site (object, deposit). To carry out performance of field trial, thematic works on geology and in-office processing of filed data. To perform measurements and description of the observation objects, selection of rock samples, drill samples, and all types of samples, to register and to send the samples for analysis. To keep primary geological documentation and perform its processing, record keeping and storage. To draft descriptions of the performed works, necessary specifications, diagrams, tables, schedules and other technical documentation. To perform work on execution of plan and reporting documentation, to make necessary amendments and adjustments to the technical documentation. To participate in preparation of operational information about the course of performance of the geological assignment and in-office processing of geological materials. To participate in organization and liquidation of field works, receipt and delivery for storage of necessary devices, tools and field hardware. To study the best practices of performance of geological researches for the purposes of its application in own practical activities. To ensure meeting the requirements to work quality, rules and regulations of occupational safety and health engineering, industrial sanitation and fire protection by workers.

Must know: the Constitution, Labour code, Code "On Subsoil and Subsoil Use", Law "On combating corruption", Law "On languages in the Republic of Kazakhstan" and other regulatory legal acts in geological (geophysical, hydrogeological) study, use and protection of subsoil resources; information about the geology of the studied object (area) of works; requirements to the quality of geological exploration works and geological materials; rules for operation of the applied equipment, hardware, devices; technology of geological exploration activities, methodical and regulatory documents on their conducting; requirements to work quality; rules for selection, record keeping and storage of rock samples and all types of samples; procedure and methods of processing of field materials, as well as of geological documentation; fundamentals of the economics of mineral raw materials and geological

exploration activities, organization of production, labour and management; and rules and regulations of occupational safety and health engineering, industrial sanitation and fire protection.

Requirements to qualification:

The first category technician-geologist: engineering and vocational education (secondary specialized, secondary vocational) on profile and at least two years of work experience as the second category technician-geologist;

The second category technician-geologist: engineering and vocational education (secondary specialized, secondary vocational) on profile and at least two years of work experience as a technician-geologist without a category;

A technician-geologist without a category: engineering and vocational education (secondary specialized, secondary vocational) on profile without requirements to work experience.

Paragraph 6. Technician–Geophysicist

Official duties: To perform, under the supervision of a geophysicist, works on conducting field geophysical research and in-office processing of geophysical materials. To register and to draft the results of registration of the data of geophysical observations, to perform preparation and installation of devices. To ensure record keeping, registration and storage of the results of geophysical observations and accompanying documentation. To perform technical works when processing and interpreting geophysical data, drafting project documentation and reports on results of geophysical research. To participate in organization and liquidation of field works, receipt and delivery for storage of necessary devices, tools and field hardware. To study the best practices of performance of geological researches for the purposes of its application in own practical activities. To ensure meeting the requirements to work quality, rules and regulations of occupational safety and health engineering, industrial sanitation and fire protection. To draft and to provide the established reporting documentation .

Must know: the Constitution, Labour code, Code "On Subsoil and Subsoil Use", Law "On combating corruption", Law "On languages in the Republic of Kazakhstan" and other regulatory legal acts in geological (geophysical, hydrogeological) study, use and protection of subsoil resources; information about the geology of the studied object (area) of works; types of the applicable geophysical equipment, hardware, and rules for their technical operation; theoretical fundamentals of geophysical methods, methodical and regulatory documents on their conducting; rules for record keeping and storage of registration materials; fundamentals of organization of labour, production and management; rules and regulations of occupational safety and health engineering, industrial sanitation and fire protection.

Requirements to qualification:

The first category technician- geophysicist: engineering and vocational education (secondary specialized, secondary vocational) on profile and at least two years of work experience as the second category technician- geophysicist;

The second category technician- geophysicist: engineering and vocational education (secondary specialized, secondary vocational) on profile and at least two years of work experience as a technician- geophysicist without a category;

A technician- geophysicist without a category: engineering and vocational education (secondary specialized, secondary vocational) on profile without requirements to work experience.

Paragraph 7. Technician-Hydrogeologist

Official duties: To perform, under the supervision of a hydrogeologist. Certain works, associated with study of geological, hydrogeological and engineering-geological conditions at the studied objects. To ensure performance of experimental, thematic and in-office works, special hydrogeological and engineering-geological research. To keep primary hydrogeological geological documentation and perform its processing. To perform measurements of water level and special measurements. To perform selection of water and soils samples for laboratory studies, their registration and record keeping. To participate in works on performance of water pumping from wells, hydrogeological observations over the regimen of underground waters. To prepare table and graphic materials to the project and report in paper and electronic media. To perform technical adjustment when drafting project documentation and reports on results of hydrogeological research. To inspect operational wells and water intakes. To perform organization and liquidation of filed works, receipt and delivery for storage of necessary devices, tools and field hardware. To study domestic and international experience of hydrogeological research for the purposes of application thereof in own practical activities. To ensure meeting the requirements of the rules and regulations of occupational safety and health engineering, industrial sanitation and fire protection by workers.

Must know: the Constitution, Labour code, Code "On Subsoil and Subsoil Use", Law "On combating corruption", Law "On languages in the Republic of Kazakhstan" and other regulatory legal acts in geological (geophysical, hydrogeological) study, use and protection of subsoil resources; information about the geology of the studied object (area) of works; methods of selection of water samples; types of hydrogeological equipment and rules for its operation; rules for record keeping and storage of hydrogeological materials; fundamentals of organization of labour, production and management ; rules and regulations of occupational safety and health engineering, industrial sanitation and fire protection.

Requirements to qualification:

The first category technician- hydrogeologist: engineering and vocational education (secondary specialized, secondary vocational) on profile and at least two years of work experience as the second category technician- hydrogeologist;

The second category technician- hydrogeologist: engineering and vocational education (secondary specialized, secondary vocational) on profile and at least two years of work experience as a technician- hydrogeologist without a category;

A technician- hydrogeologist without a category: engineering and vocational education (secondary specialized, secondary vocational) on profile without requirements to work experience.