

Appendix 2
to the Guidelines on the Environmental Management
System in the Joint-Stock Company Kazakhstan
Temir Zholy and its Subsidiaries, approved by the
decision
The Management Board JSC «NC «KTZ»
dated 20 May 2026 (Protocol № 02/19)

Typical Environmental Measures

Air pool protection:

- 1) commissioning, repair and reconstruction of dust and gas cleaning plants designed to capture, neutralize (dispose of) harmful substances generated from technological equipment and aspiration systems;
- 2) installation work related to the rationalization of thermal systems, including the recovery of thermal energy, recirculation of flue gases with discharge into the burner and the use of alternative, environmentally friendly energy sources;
- 3) implementation of measures to prevent and reduce emissions of pollutants from stationary and mobile sources;
- 4) introduction of equipment, installations and devices for neutralizing exhaust gases, suppressing and neutralizing emissions of pollutants and their compounds into the atmosphere from stationary and mobile sources of pollution;
- 5) installation of catalytic converters for cleaning exhaust gases in vehicles using unleaded gasoline as fuel, reducing the toxicity and smokiness of exhaust gases, equipping vehicles operating on diesel fuel with exhaust gas neutralizers, switching vehicles to another type of fuel, etc.;
- 6) introduction and improvement of technical and technological solutions (including the transition to alternative types of fuel, raw materials, materials), allowing to reduce the negative impact on the environment;
- 7) purchase of modern equipment, replacement and reconstruction of the main equipment that ensures effective cleaning, utilization, neutralization, suppression and neutralization of pollutants in gases removed from emission sources, dismantling of outdated boilers with a high concentration of harmful substances in flue gases;
- 8) introduction of technological solutions that ensure optimization of fuel combustion modes (change in the quality of the fuel used, the structure of the fuel balance), reduction of toxic substances (including lead compounds, nitrogen oxides) in emissions of pollutants into the atmosphere, including for mobile sources;
- 9) implementation of measures aimed at reducing greenhouse gas emissions;
- 10) introduction of systems for automatic monitoring of emissions of harmful substances and air quality at the border of the residential sanitary protection zone;
- 11) improving the efficiency of existing dust and gas installations (including their modernization, reconstruction) and equipping them with automatic control instrumentation;
- 12) construction, modernization of stations for monitoring the state of atmospheric air with the expansion of the range of controlled ingredients due to the acquisition of modern equipment and the introduction of a local network for transmitting information to the authorized body in the field of environmental protection and its territorial divisions.

Protection and rational use of water resources:

- 1) organization of measures in the field of industrial safety and construction of treatment devices that ensure improvement of the quality composition of the discharged water, implementation of programs to increase the efficiency of small reserve tanks as part of local treatment facilities (storage tanks, settlers, structures and devices for aeration of water);
- 2) implementation of a set of technological, hydraulic, sanitary and other measures aimed at preventing clogging, pollution and depletion of water resources;
- 3) construction, reconstruction, modernization:
wastewater treatment and post-treatment plants, processing of liquid waste and vat residues;
treatment plants and sewerage systems for linear level units located in the catchment area of water bodies, as well as in the territory having the status of a national park, resort;

water supply systems with closed cycles, including systems of hydraulic ash removal and hydraulic sludge removal, recycling systems for production purposes and water reuse;
installations for treatment of ground and underground waters exposed to technogenic pollution;
domestic and industrial wastewater treatment plants;
treatment facilities with mechanical, biological and physicochemical treatment methods, wastewater post-treatment facilities, wastewater receivers and outlets;
networks for transporting drainage and storm water, domestic, industrial wastewater and hydraulic sludge waste, flotation tailings (sludge collectors, sumps, ash dumps, evaporation ponds);
4) abandonment of abandoned and inactive wells, plugging or switching to a crane controlled mode of self-draining artesian wells;
5) reconstruction of emergency water facilities, reuse of drainage and storm water, domestic and industrial wastewater for technological purposes by building circulating water supply systems and local treatment facilities, implementation of measures to reduce the use of drinking water for technical needs;
6) implementation of systems for automatic monitoring of the quality of consumed and discharged water.

Protection of land resources:

1) inventory and liquidation of ownerless production facilities polluting the environment;
2) reclamation of degraded territories, disturbed and polluted lands as a result of economic and other activities: restoration, reproduction and increase of soil fertility and other useful properties of the land, its timely involvement in economic circulation, removal, preservation and use of the fertile soil layer during work related to land disturbance;
3) protection of land from depletion, degradation and desertification, the negative impact of water and wind erosion, mudflows, flooding, waterlogging, secondary salinization, desiccation and compaction, pollution with production and consumption waste, chemical, biological, radioactive and other harmful substances;
4) construction, reconstruction, modernization of anti-erosion hydraulic structures, creation of protective forest strips, fixation of ravines, terracing of steep slopes;
5) elimination of historical pollution, localization and demercurization of sources of pollution of land resources;
6) in places where animals often go onto the railway track, use reflective tapes, organize joint rounds with the invitation of representatives of forestries and hunting plots.
7) implementation of measures aimed at restoring natural fertility or increasing soil humus.

Flora and fauna protection:

1) landscaping of the territory of administrative-territorial units, an increase in the area of green spaces, plantings on the territory of divisions of the network, regional and linear levels;
2) carrying out work on the protection and reproduction of the forest fund, rehabilitation of the territory after forest fires and reforestation;
3) preservation and restoration of natural ecosystems in the right-of-way of railways, including phased reclamation of disturbed land after construction, repair and modernization of railway infrastructure facilities;
4) restriction and regulation of felling of tree and shrub vegetation in the right-of-way with the obligatory implementation of compensatory planting and restoration measures;
5) introduction of environmentally friendly methods of maintaining the right-of-way (mechanical mowing, selective clearing) in order to minimize the impact on the habitats of wild animals and plant communities;
6) arrangement and maintenance of eco-corridors and crossings for wild animals at the intersection of railway lines with fauna migration routes;
7) measures to prevent the death of animals on railway tracks, including the installation of warning signs, fences and the use of deterrent devices in areas of high risk;
8) compliance with seasonal restrictions during earthworks and travel works (during nesting of birds and breeding of animals) in order to reduce anthropogenic impact.

Production and consumption waste management:

1) introduction of technologies for the collection, transportation, neutralization, use and processing of any types of waste, including ownerless waste;

2) construction, reconstruction of factories, workshops and production facilities, acquisition and operation of installations:

collection, transportation, processing, sorting, disposal and disposal of production and consumption waste;

collection and processing of secondary material resources;

collection, transportation, processing and disposal of liquid industrial waste, polluting water bodies or groundwater;

3) reconstruction, modernization of equipment and technological processes aimed at minimizing the volume of production and consumption waste generation and disposal;

4) measures to eliminate unauthorized (spontaneous) dumps and historical pollution, prevent their further occurrence, timely reclamation of land disturbed as a result of pollution with industrial, solid household and other waste.

Implementation of control systems and best safe technologies:

1) the introduction of environmentally friendly water-saving, soil-protection technologies and reclamation measures when using natural resources, the use of low-waste technologies, the improvement of advanced technical and technological solutions that reduce emissions of pollutants into the environment;

2) introduction of environmentally friendly resource-saving technologies for the treatment and disposal of industrial waste;

3) introduction of progressive, breakthrough and effective technological solutions based on the results of scientific research, the use of modern equipment and modern technologies in production processes, the transition to alternative sources of energy supply, characterized as environmentally friendly (bioethanol and others);

4) application of technologies that have passed state environmental expertise and received positive conclusions.

Research, survey and other developments:

1) conducting environmental studies to determine the background state of the environment, identifying the possible negative impact of industrial activities on ecosystems and developing programs and action plans to reduce environmental pollution;

2) improvement of methods for neutralizing solid household and industrial waste in order to prevent heavy metals and xenobiotics - compounds alien to organisms (industrial pollution, pesticides, household chemicals, medicines) from entering the natural environment.

Environmental education and promotion:

1) creation and development of information systems, opening of sites, dissemination of information in the field of environmental protection to draw public attention to environmental problems;

2) environmental education, the implementation of educational programs and the holding of scientific and practical conferences and seminars on environmental protection, the implementation of joint programs in the field of training;

3) increasing the environmental awareness of railway workers on the issues of biodiversity conservation and respect for wildlife.
