Environmental Action Plan for the period 2023 - 2027

Name of the enterprise: UMP JSC

Name of the facility: Ust-Kamenogorsk site of UMP JSC

Measures related to compliance with the standards of permissible emissions and discharges of pollutants

| No. | Compliance measure | Object / source of emission | Indicator (emission standards) | Justification | Current value | Calendar plan to achieve the established indicators | | | | | Due date | Amount of financing, th. tenge |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| end of year 1 (2023) | end of year 2 (2024) | end of year 3 (2025) | end of year 4 (2026) | end of year 5 (2027) |
|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| **1. Atmospheric air protection** | | | | | | | | | | | | |
| 1.1 | Replacement of scrubber СКШН-15 of ventilation system МВГ-2 in building 58 of Tantalum Operations (subpar. 1, par. 1 of Appendix 4 of EC RK) | Tantalum Operations/0044 | Ammonia, hydrofluoride | Reduction of hydrofluoride emissions by 0.298689936 t/year; ammonia by 0.2664 t/year | 3.49525936 t/year | - | - | 2.930169424  t/year | 2.930169424  t/year | 2.930169424  t/year | 2024 | 2024 -  19,616.41  Total –  19,616.41 |
| 1.2 | Replacement of non-woven fabric ФИБАН АК-22 in mist eliminators of ventilation systems: ВС-6, ВС-31, ВГ-29 in building 4,4A of Uranium Operations (subpar. 1, par. 1 of Appendix 4 of EC RK) | Uranium Operations/0037-06, 0083-03,0574-01 | Nitrogen dioxide, nitric acid, nitric oxide, hydrofluoride, inorganic dust below 20% SiO2, acetic acid, tributyl phosphate. | Reduction of pollutant emissions by 0.096 t/year | 2.368 t/year | 2.272 t/year | 2.272 t/year | 2.272 t/year | 2.272 t/year | 2.272 t/year | 2024, 2026 | 2024 –  277.31;  2026 –  291.19  Total: 568.50 |
| 1.3 | Replacement of scrubber СКШН 4000 of ventilation system МВГ- 4 in building 58 Tantalum Operations (subpar. 1, par. 1 of Appendix 4 of EC RK) | Tantalum Operations /0044 | Hydrofluoride | Reduction of hydrofluoride emissions by 0.074672484 t/year | 0.11206484 | - | - | 0.03739236  t/year | 0.03739236  t/year | 0.03739236  t/year | 2024 | 2024 –  10,309.7  Total –  10,309.7 |
| 1.4 | Annual replacement of filters on ventilation systems in Beryllium Operations buildings (subpar. 1, par. 1 of Appendix 4 of EC RK) | Beryllium Operations/213 ventilation system filter units | Beryllium Operations pollutants | Prevention of excess emissions of harmful substances into the atmosphere | 213 pcs. | 213 pcs. | 213 pcs. | 213 pcs. | 213 pcs. | 213 pcs. | 2023-2027 | Annually -23,790.2  Total -  118,951.0 |
| 1.5 | Repair of dust and gas cleaning equipment (subpar. 1, par. 1 of Appendix 4 of EC RK) | Tantalum Operations/ 0044-01 | Hydrofluoride inorganic dust below 20% SiO2 | Reduction of hydrofluoride emissions by 0.1867 t/year; inorganic dust below 20% SiO2 by 0.00802 t/year | 0.5747 t/year | - | 0.37998 t/year | 0.37998 t/year | 0.37998 t/year | 0.37998 t/year | 2024 | 2024 – 130.0  Total – 130.0 |
| 1.6 | Repair of dust and gas cleaning equipment (subpar. 1, par. 1 of Appendix 4 of EC RK) | Tantalum Operations/ 0047-01 | Ammonia,  Hydrochloride,  hydrofluoride | Reduction of ammonia emissions by 0.05 t/year; hydrochloride by 0.01663  t/year, hydrofluoride by 0.00522 t/year | 0.3225 t/year | - | 0.25065 t/year | 0.25065 t/year | 0.25065 t/year | 0.25065 t/year | 2024 | 2024 – 140.0  Total – 140.0 |
| 1.7 | Repair of dust and gas cleaning equipment (subpar. 1, par. 1 of Appendix 4 of EC RK) | Tantalum Operations/ 0342-01 | Ammonia,  hydrofluoride | Reduction of hydrofluoride emissions by 0.03275 t/year; ammonia by 0.2456 t/year | 0.5157 t/year | - | 0.23735 t/year | 0.23735 t/year | 0.23735 t/year | 0.23735 t/year | 2024 | 2024 – 130.0  Total – 130.0 |
| 1.8 | Automation of control and regulation of pH in scrubber systems СКШН-30 of ventilation system ВС-2 of hydrometallurgical department of workshop No.1 of Beryllium Operations (subpar. 3, par. 1 of Appendix 4 of EC RK) | Beryllium Operations/0267-01 | Ammonia | Reduction of ammonia emissions by 1.3062 t/year | 8.935 t/year | 7.6288 t/year | 7.6288 t/year | 7.6288 t/year | 7.6288 t/year | 7.6288 t/year | 2023-2027 | 2023 – 150.0  Total – 150.0 |
| **2. Protection of water objects** | | | | | | | | | | | | |
| 2.1 | Regeneration of shungite filters of ПЛК-1 (subpar. 1, par. 2 of Appendix 4 of EC RK) | Industrial and storm water runoff from the Northern site of UMP JSC | Suspended solids, petroleum products, surfactants, chlorides, sulfates, calcium, magnesium, total iron, ammonium salt, fluoride ion | Reduction of pollutant emissions at ПЛК-1 by 3.924 t/year | 131.168 t/year | 127.244 t/year | 127.244 t/year | 127.244 t/year | 127.244 t/year | 127.244 t/year | 2023-2027 | Annually – 204.30  Total –  1,021.50 |
| 2.2 | Regeneration of shungite filters of ПЛК-2 (subpar. 1, par. 2 of Appendix 4 of EC RK) | Industrial and storm water runoff from the Southern site of UMP JSC | Suspended solids, petroleum products, surfactants, chlorides, sulfates, calcium, magnesium, total iron, ammonium salt, fluoride ion | Reduction of pollutant emissions at ПЛК-2 by 19.98 t/year | 167.860 t/year | 147.880 t/year | 147.880 t/year | 147.880 t/year | 147.880 t/year | 147.880 t/year | 2023-2027 | Annually –  250.0  Total –  1,250.0 |
| 2.3 | Regeneration of shungite filters of ПЛК-3 (subpar. 1, par. 2 of Appendix 4 of EC RK) | Industrial and storm water runoff from Tantalum Operations of UMP JSC | Suspended solids, petroleum products, surfactants, chlorides, sulfates, calcium, magnesium, total iron, ammonium salt, fluoride ion | Reduction of pollutant emissions at ПЛК-3 by 3.08 t/year | 30.158 t/year | 27.078 t/year | 27.078 t/year | 27.078 t/year | 27.078 t/year | 27.078 t/year | 2023-2027 | Annually –  250.0  Total –  1,250.0 |
| 2.4 | Organization of measures to improve the qualitative composition of discharged water (subpar. 1, par. 2 of Appendix 4 of EC RK) | Industrial and storm water runoff from the Northern site of UMP JSC | Chlorides, sulfates, calcium, magnesium | Inventory of sources of pollutants entering wastewater at the outlet ПЛК-1 | Determination of the causes of exceeded pollutant concentrations and development of remedial measures (if any) | Determination of the causes of exceeded pollutant concentrations and development of remedial measures (if any) | - | - | - | - | 2023 | 2023 – 300.0  Total – 300.0 |
| 2.5 | Re-equipment. Water recycling system of UMP JSC. Southern site. Building 10 of Tantalum Operations (subpar. 6, par. 2 of Appendix 4 of EC RK) | Tantalum Operations | Volume of discharged industrial wastewater | Reduction of industrial wastewater discharge to ПЛК 2 by 70,000 m3/year | 1,276,992  m3/year | - | - | 1,206,992 m3/year | 1,206,992 m3/year | 1,206,992 m3/year | 2023-2027 | 2023 –  81,951.6  Total –  81,951.6 |
| 2.6 | Re-equipment. Water recycling system of UMP JSC. Northern site. Building No. 6 of BO (subpar. 6, par. 2 of Appendix 4 of EC RK) | Beryllium Operations | Volume of discharged industrial wastewater. | Reduction of industrial wastewater discharge to ПЛК-1 by 83,346 m3/year | 789,994 m3/year | - | - | 706,648 m3/year | 706,648 m3/year | 706,648 m3/year | 2023 - 2027 | 2023 –  9,666.0  2024 –  69,650.02  Total –  79,316.02 |
| 2.7 | Conversion of nitrogen-hydrogen-oxygen station (NHOS) buildings of Uranium Operations to recycled water supply (subpar. 6, par. 2 of Appendix 4 of EC RK) | Uranium Operations | Volume of discharged industrial wastewater. | Reduction of industrial wastewater discharge to ПЛК-1 by 409,000 m3/year | 789,994 m3/year | - | - | 380,994 m3/year | 380,994 m3/year | 380,994 m3/year | 2023-2027 | 2023 –  6,000.0  2024 –  21,005.0  Total – 27,005.0 |
| 2.8 | Organization of measures to improve the qualitative composition of discharged water (subpar. 1, par. 2 of Appendix 4 of EC RK) | Industrial and storm water runoff from the Southern site of UMP JSC | Chlorides, sulfates, calcium, magnesium | Inventory of sources of chlorides, sulphates, calcium, magnesium entering wastewater at the outlet ПЛК-2 | Determination of the causes of exceeded pollutant concentrations and development of remedial measures | - | Determination of the causes of exceeded pollutant concentrations and development of remedial measures | - | - | - | 2024 | 2024 – 300.0  Total – 300.0 |
| 2.9 | Organization of measures to improve the qualitative composition of discharged water (subpar. 1, par. 2 of Appendix 4 of EC RK) | Industrial and storm water runoff from Tantalum Operations of UMP JSC | Chlorides, sulfates, calcium, magnesium | Inventory of sources of chlorides, sulphates, calcium, magnesium entering wastewater at the outlet ПЛК-3 | Determination of the causes of exceeded pollutant concentrations and development of remedial measures | - | - | Determination of the causes of exceeded pollutant concentrations and development of remedial measures | - | - | 2025 | 2025 – 300.0 Total – 300.0 |
| 2.10 | Complete replacement of ПЛК-3 shungite filters (subpar. 1, par. 2 of Appendix 4 of EC RK) | Industrial and storm water runoff from Tantalum Operations of UMP JSC | Suspended solids, petroleum products, surfactants, chlorides, sulfates, calcium, magnesium, total iron, ammonium salt, fluoride ion | Prevention of excess emissions of harmful substances | - | - | - | - | - | - | 2027 | 2027 –  2,500.0  Total –  2,500.0 |
| **6. Protection of fauna and flora** | | | | | | | | | | | | |
| 6.1 | Landscaping, care and maintenance of the administrative territory and SPZ of UMP JSC (subpar. 6, par. 6 of Appendix 4 of EC RK) | UMP JSC | The area of the landscaped area is 8 ha | Landscaping, care and maintenance of 8 ha territory | 8 ha | 8 ha | 8 ha | 8 ha | 8 ha | 8 ha | 2023-2027 | Annually – 60,000.0  Total –  300,000.0 |
| 6.2 | City landscaping (subpar. 6, par. 6 of Appendix 4 of EC RK) | UMP JSC | 45 - 65 units of tree seedlings | Landscaping of public areas of the city | - | 45 tree seedlings | 45 tree seedlings | 65 tree seedlings | 65 tree seedlings | 65 tree seedlings | 2023-2027 | 2023 – 1,000.0  2024 – 1,000.0  2025 – 2,000.0  2026 – 2,000.0  2027 – 2,000.0  Total – 8,000.0 |
| **7. Waste management** | | | | | | | | | | | | |
| 7.1 | Procurement, installation and commissioning of equipment for shredding, vacuum packing of solid radioactive waste (SRW) 1 unit (Shredder) 1 unit (Vacuum packer) (subpar. 5, par. 7 of Appendix 4) | Uranium Operations | SRW | Possibility to reduce the volume of SRW for disposal by 30-40% | 100% of SRW volume for disposal | 100 % of SRW volume for disposal | 70-60 % of SRW volume for disposal | 70-60 % of SRW volume for disposal | 70-60 % of SRW volume for disposal | 70-60 % of SRW volume for disposal | 2023-2027 | 2023 –  36,575.0  Total –  36,575.0 |
| 7.2 | Recycling of beryllium-containing used bag filters from gas purification from GDU (subpar. 2, par. 7 of Appendix 4 of EC RK) | Beryllium Operations | Used bag filters | Reduction of waste disposal by 210 - 250 kg/year | 0 | 210 kg/year | 250 kg/year | 250 kg/year | 250 kg/year | 250 kg/year | 2023 – 2027 | Annually – 100.0  Total –  500.0 |
| 7.3 | Recycling of beryllium-containing used filter cloths from BO filtration equipment (subpar. 2, par. 7 of Appendix 4 of EC RK) | Beryllium Operations | Used filter cloths | Reduction of waste disposal by 200 - 400 kg/year | 0 | 200 kg/year | 400 kg/year | 400 kg/year | 400 kg/year | 400 kg/year | 2023 – 2027 | Annually – 200.0  Total –  1,000.0 |
| **10. Research, survey and other developments** | | | | | | | | | | | | |
| 10.1 | Studies of the quality of atmospheric air, surface water bodies, groundwater, and soils (subpar. 3, par. 10 of Appendix 4 of EC RK) | Uranium Operations | Monitoring of atmospheric air, groundwater, surface water and soil conditions in the influence zone of UMP JSC site | Requirement of the environmental legislation of the Republic of Kazakhstan | Identification of possible negative impact of industrial activities on environmental objects | Identification of possible negative impact of industrial activities on environmental objects | Identification of possible negative impact of industrial activities on environmental objects | Identification of possible negative impact of industrial activities on environmental objects | Identification of possible negative impact of industrial activities on environmental objects | Identification of possible negative impact of industrial activities on environmental objects | 2023-2027 | Annually – 105,900.0  Total –  529,500.0 |
| 10.2 | Conducting comprehensive environmental and social studies of UMP JSC’s operations (subpar. 3, par. 10 of Appendix 4 of EC RK) | Uranium Operations | Monitoring and analysis of the activities and environmental impact of UMP JSC | Requirement of the environmental legislation of the Republic of Kazakhstan | Determination of the impact of industrial activities on environmental objects | - | Determination of the impact of industrial activities on environmental objects | Determination of the impact of industrial activities on environmental objects | - | - | 2024-2025 | 2023 –  11,200.0  2024 –  13,440.0  Total –  24,640.0 |
|  | **Total** |  |  |  |  | **337,537.1** | **326,692.94** | **192,994.5** | **192,985.69** | **195,194.5** |  | **1,245,404.73** |