CYANIDE PRODUCTION SUMMARY AUDIT REPORT

FOR THE INTERNATIONAL CYANIDE MANAGEMENT CODE

Prepared for:
Joint Stock Company "Korund Zyan"

Prepared by:
Environ Consult CIS

Date:
13 March 2023

PRODUCTION SUMMARY AUDIT REPORT

The International Cyanide Management Code (hereinafter “the Code”, “Code” or “the Cyanide Code”), this document, and other documents or information sources referenced at *www.cyanidecode.org* are believed to be reliable and were prepared in good faith from information reasonably available to the drafters. However, no guarantee is made as to the accuracy or completeness of any of these other documents or information sources. No guarantee is made in connection with the application of the Code, the additional documents available or the referenced materials to prevent hazards, accidents, incidents, or injury to employees and/or members of the public at any specific site where gold or silver is extracted from ore by the cyanidation process. Compliance with this Code is not intended to and does not replace, contravene or otherwise alter the requirements of any specific national, state or local governmental statutes, laws, regulations, ordinances, or other requirements regarding the matters included herein. Compliance with this Code is entirely voluntary and is neither intended nor does it create, establish, or recognize any legally enforceable obligations or rights on the part of its signatories, supporters or any other parties.

Operation General Information

Name of Production Facility:	Korund Zyan, Joint Stock Company
Name of Facility Owner:	Korund Zyan, Joint Stock Company
Name of Facility Operator:	Korund Zyan, Joint Stock Company
Name of Responsible Manager:	Dmitry Bochkov, Technical Director
Address:	1st May street, 6-2
	Dzerzhinsk
State / Province:	Nizhny Novgorod Region
Country:	Russian Federation
Telephone:	+7 (8313) 27 95 19
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Operation Location Detail and Description

Korund Zyan sodium cyanide production with its total area of 5,63Ha is located on the premises of Korund Industrial Park in Dzerzhinsk within a major industrial area predominantly occupied by chemical companies, approximately 3km east of Dzerzhinsk. The Korund Industrial Park Site (hereinafter – “KIPS” or “Korund LLC”) was established in the 1920s during the Soviet era and is currently operating, albeit partially, with several chemical plants active within the area. Thus, the Korund Zyan production facility is fully integrated in the infrastructure of the KIPS, particularly with regard to the general infrastructure and property management such as wastewater treatment, pressurized air supply, steam, water and cooling water supply, emergency response, environmental monitoring and facility security. The area is fenced off and is guarded 24/7 by the armed forces.

JSC "Korund-Zyan" was founded in 2009, as part of the group of companies "Korund", controlled by the Austrian company "Petrochemical Holding GmbH” and since December 2020 by the investment companies “GEM Capital” and “Industry Partners Corporation”. The plant specializes in the production of sodium cyanide for the gold mining industry. The production of alkali cyanides is completed in several steps. Technological process has been designed by “EVO-NIK/Cyplus”, Germany, and is based on the catalytic production of hydrogen cyanide from methane, ammonium and air (Andrussov method). Main raw materials related to Korund Zyan operations include sodium hydroxide solution and methane as natural gas. Simplified process flowsheet for the production of briquetted sodium cyanide is presented on Figure 1 below.

Korund Zyan sodium cyanide operation is designed with a maximum production volume of 80,000 tons of NaCN per year. Stage I with ½ of the total design capacity of 40,000 tons NaCN per year is in operation since 2012 and Stage II with another 40,000 tons was commissioned in 2018 thereby achieving a total production capacity of 80,000 tons per year.

Important changes since the 2018 ICMC 3rd party audit constitute the following (represented in red on Figure 2 below):

- Construction and commissioning of the NaOH discharge point from truck tankers (B80/2, B80/1);
- Construction and commissioning of the B50/1 installation (Freon cooling unit for the return water);
- Construction and commissioning of the medical center;
- Installation of equipment and commissioning of equipment to expand the existing line for the production of solid NaCN;
- Completion of installation works and commissioning of Stage II of production (B40) and a warehouse (A20);
- Railway maintenance shop transfer to Korund Zyan, and

- Increase in the number of employees (from 303 people in 2018 to 482 people in 2023).

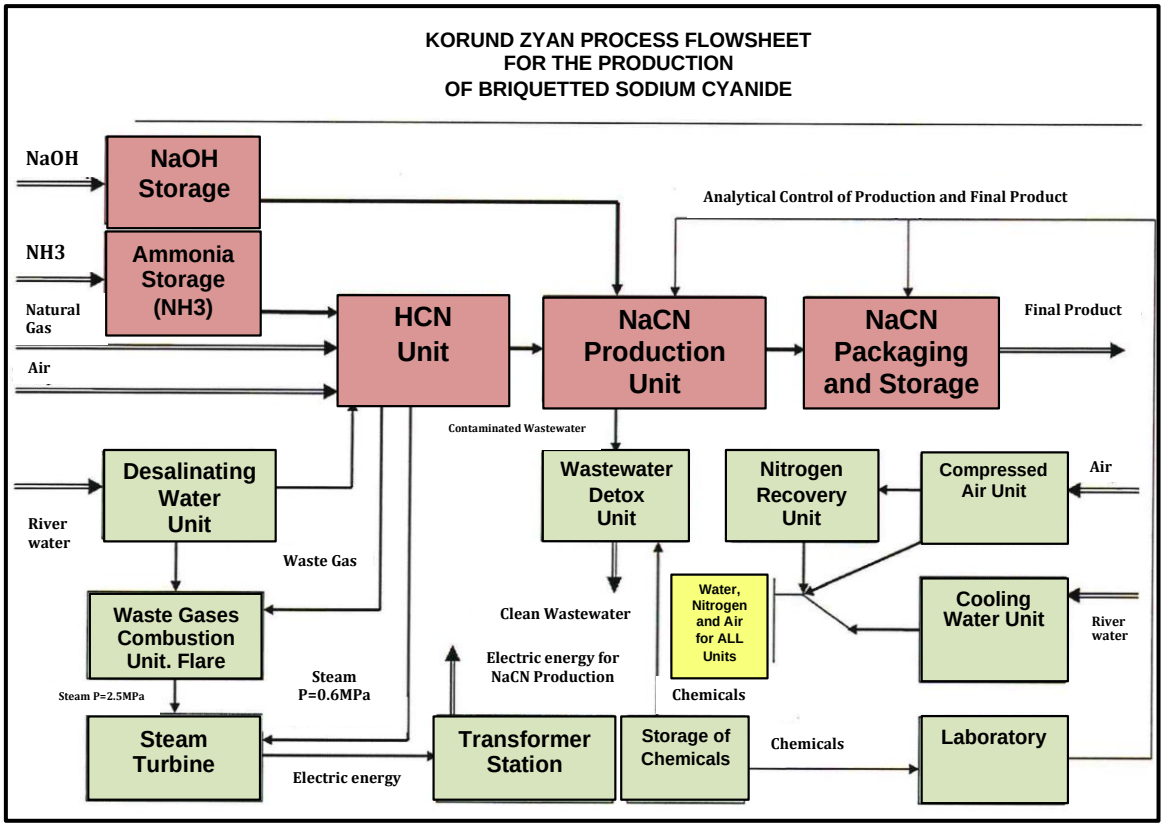

Figure 1: Korund Zyan Process Flowsheet

The present report summarizes the results of the recertification audit assessment according to current ICMI's Production Verification Protocol. The initial certification process was performed in 2014 and recertification audit was carried out in November 2017.

Representative inspection records have been reviewed over the three-year period and beyond, following the previous Code audit. It has been established that the operation maintained continuous compliance over the audit cycle. Korund Zyan operation has not experienced any compliance issues or significant cyanide incidents during the three-year audit cycle.

PRODUCTION SUMMARY AUDIT REPORT

Auditors' Finding

The operation is: ■ in full compliance
in substantial compliance
not in compliance
with the International Cyanide Management Code.

"Korund Zyan operation has not experienced any compliance issues or significant cyanide incidents during the previous three-year audit cycle."

Date(s) of Audit: 7 February 2021 - 8 February 2021
21 February 2023

Auditor Information

Audit Company: Environ Consult CIS LLC
36 Bolshaya Pochtovaya str.
Bld. 1, Business Centre "Santorini-Service"
Moscow 105082
Russia

Lead Auditor: Yuliya Boiko
Dr. Ivan Senchenya (deceased Jan 30, 2023), a qualified technical expert auditor for cyanide production operations. Force Majeure circumstances such as COVID pandemic and the passing away of the auditor, Dr. Ivan Senchenya had delayed the submission of the reports.

Lead Auditor Email: juliaboiko@juliaboiko.com

Names and Signatures of Other Auditors: N/A

Auditor Attestation

I attest that I meet the criteria for knowledge, experience and conflict of interest for a Cyanide Code Certification Audit Lead Auditor, established by the International Cyanide Management Institute and that all members of the audit team meet the applicable criteria established by the International Cyanide Management Institute for Cyanide Code Auditors.

I attest that this Summary Audit Report accurately describes the findings of the certification audit. I further attest that the certification audit was conducted in a professional manner in accordance with the International Cyanide Management Code Cyanide Production Verification Protocol and using standard and accepted practices for health, safety and environmental audits.

Korund Zyan		2023-03-07
Name of Facility	Signature of Lead Auditor	Date

PRODUCTION SUMMARY AUDIT REPORT

Principle 1 | OPERATIONS
Design, construct and operate cyanide production facilities to prevent release of cyanide.

Standard of Practice 1.1
Design and construct cyanide production facilities consistent with sound, accepted engineering practices and quality control/quality assurance procedures.

The operation is:	■ in full compliance with in substantial compliance with not in compliance with	Standard of Practice 1.1

Summarize the basis for this Finding/Deficiencies Identified:

The Korund Zyan facility has been built using sound, accepted engineering practices and quality control processes. Planning, design, construction, erection, operational qualification and start-up took place in 2011 / 2012. Sodium Cyanide is produced in the two production lines commissioned in 2012 and 2018 respectively, with the achieved design capacity of 80,000 tons per annum. Korund Zyan is the facility operator, CyPlus as process license donator and a German engineering contractor with good experience in planning and realization of highly automated industrial chemistry projects.

Important changes since the 2018 ICMC 3rd party audit constitute the following (represented on Figure 2 below in red):

- Construction and commissioning of the NaOH discharge point from truck tankers (B80/2, B80/1) - September 2018;
- Construction and commissioning of the B50/1 installation (Freon cooling unit for the return water) - October 2017;
- Construction and commissioning of the medical center - November 2018;
- Installation of equipment and commissioning of equipment to expand the existing line for the production of solid NaCN - July 2018;
- Completion of installation works and commissioning of Stage II of production (B40) and a warehouse (A20) - September 2018;
- Railway maintenance shop transfer to Korund Zyan – complete in June 2021, and
- Increase in the number of shift employees at the enterprise in connection with the start of installation of equipment under the construction program and commissioning of the second stage of production - April 2018 (from 303 people in 2018 to 482 people in February 2023).

The underlying documents pertaining to the construction and commissioning of Stage II production line are: Technological Process Flowsheet No3, Amendment No1 dated 18.02.2022 and the management orders enabling the commissioning of the facilities. Technological Process Flowsheet has been revised prior to its final approval in the above iteration No3; the revision took place in connection with changes in the legal requirements, namely, the entry into force of Order No.500 dated 12/07/2020 on the approval of FNP "Safety Rules for Chemically Hazardous Production Facilities". All Korund Zyan engineering documentation and approvals for construction are retained in Korund Zyan's archive's library in the administrative office as well as in electronic archive.

Construction and commissioning of Korund Zyan Stage II facilities has been effected following a positive conclusion from the Russian regulatory authorities. Expert conclusion for NaOH discharge point (B80/2, B80/1) and for the freon cooling unit (B50/1) had been obtained prior to the commissioning. No expert conclusions were required for those units already approved by the state authorities (Glavgosexpertiza) in 2011 following the application by Korund Zyan for the approval of construction of the cyanide production facilities with the design capacity of 80.000 tons per year.

#	Description
A10	NH3 Warehouse
A11	NH3 pump station
A12	NH3 receiving station
A13	Office
A14	Reservoir water
A15	Fire extinguishing pump station
A16	Switch room
A20	NaCN Warehouse (product packaging and storage)
A60	NaCN/NaOH warehouse pump station
A80	NaCN Warehouse (product packaging and storage)
A82	NaOH defroster, Stage I
A83	NaOH defroster, Stage II
B20	Transformer substation
B30	Drainage water treatment plant
B31	Chemical reagents storehouse
B32	Drainage water treatment plant pump station
B60	HCN-NaCN production, Stage I
B40	HCN-NaCN production, Stage II
B50	Auxiliary station
B70	Incinerator. Steam turbine
B71	Flare
B72	Garage. Repair shop. Boiler room
B73	Surface water treatment plant
B74	Sewerage pump station
B80	NaCN/NaOH Warehouse
B75	Storage shed
B50/1	Freon cooling unit
B50/2	Transformer substation
B80/1	NaOH discharge pump station
B80/2	NaOH discharge unit
CTS4	Complete transformer substation

Note: **Areas outlined in red substitute the main changes from the previous re-certification audit** as confirmed during the site visit on 21 February 2023

Figure 2: Korund Zyan Site Layout with Existing and Newly Commissioned Facilities

Only major construction projects required an approval by Glavgosexpertiza and that was received by Korund Zyan in 2011. Subsequently, newly commissioned units such as B80/2, B80/1 and B50/1 had been subject to review and approval by the accredited expert councils on industrial safety. Such approvals had been submitted to the local Rostechnadzor (Volzhsko-Okskaya Department) for the registration in the database.

No expert conclusions were required for the railway maintenance shop transfer from Korund LLC to Korund Zyan JSC, as the shop has been operational for decades and its ownership transfer that took place in June 2021 entailed no changes to the facility. The railway maintenance shop carries out its main function which is small repairs of the locomotives. Should significant repairs such as that of an engine be required, these are sent to contractor companies.

All materials used for construction of cyanide production facilities are compatible with applicable reagents used in the production process. Most piping and vessels used to convey and process cyanide solutions are constructed of various grades/standards of stainless steel depending on use and country of origin of the component, with some impellers and other components constructed of carbon steel.

Currently there are two cyanide production lines of similar design with the production capacity of 40.000 tpa each. The lines are equipped with automatic valves located at critical points in the circuit to prevent release of HCN gas and other upsets in the process that could result in releases. The valves are activated by pressure, temperature and/or feed rate deviations. The reactor and the process equipment are equipped with pressure safety valves and membrane safety units. Safety units are installed directly in the pipes of the reactor. Reactors, columns, tanks and vessels are equipped with the instruments controlling the level and temperature. Tanks and vessels are also equipped with control instrument and automatic regulation of the level and temperature and also alarm systems signaling dangerous deviations from the established parameters to warrant explosion prevention. The entire cyanide production process is controlled, supervised

and checked by the DCS Digital Control System that was developed in the project phases of basic and detail design.

The facilities are designed to contain any spills. Spillage or wash water from each floor is directed to wastewater tanks located in concrete containment basins for each line just outside the plant building. All wastewater no longer suitable for return to the process is directed to the local wastewater treatment plant before being sent to the treatment plant that serves the industrial complex. Each floor in the plant and the concrete containment for the wastewater tanks were observed to be competent and well maintained. In November 2020, major repairs of concrete coverings and their protection against cyanide leaks were carried out.

To prevent overfilling, process tanks are fitted with low and high level visual and audial alarms that report to the control room. The alarms are generally set to alarm when solution drops below 20% and to alarm and lock out when solution reaches 80% of the vessel volume. The operation of the alarms is checked each shift and they are regularly maintained by an accredited organization in accordance with the recommendations of the manufacturer. Secondary containment has a factor of at least 112% of the volume of the largest contained tank, which is in line with ICMC's guideline being a factor of 110%.

There have been no changes in the secondary containment provided for cyanide production facilities since the previous ICMC certification audit. All operations and process equipment are enclosed within the plant building containment or are located outside in concrete secondary containment areas equipped with pump sumps, generally protected from the precipitation by a canopy roof and appropriately sized to hold a volume greater than that of the largest tank, any piping draining back to the tank, and design storm event. Construction monitoring and QA/QC has been conducted for the containment structures as part of federal requirements and approved prior to site commissioning.

All solution pipelines with exception of the liquid hydrocyanic acid supply line to the plant and the wastewater lines to the wastewater tank containments and local hypochlorite water treatment plant are located within secondary containment provided by the plant. The hydrocyanic acid supply line is constructed of double welded stainless steel and is equipped with shut-off valves that will flood and flush the pipe with nitrogen if there is a critical change in flowrate, pressure, or temperature outside of normal operating parameters. The pipelines that transfer wastewater from the cyanide production plant to the hypochlorite water treatment plant via the wastewater collection tanks located in the containment basins just west of the plant are also constructed of stainless steel. These pipelines are buried for a short distance between the cyanide production plant and the wastewater secondary containment basin. Between the containment basin and the water treatment plant, the lines are constructed aboveground on a pipeline gantry. The integrity of all pipelines and supporting structures are required to be visually inspected annually and hydrotested at intervals depending on the use of the pipeline as specified by Russian regulation. In compliance with these rules, the hydrocyanic acid pipeline is hydrotested every 3 years and the wastewater lines every 8 years.

Sodium cyanide briquettes produced at the plant are packed into primary (polyethylene bags) and secondary (drums, plywood boxes) packaging. Solid cyanide is stored in roofed and adequately ventilated warehouses that prevent contact with precipitation. Cyanide is stored separately from other chemicals or products in big-bags and drums.

Standard of Practice 1.2

Develop and implement plans and procedures to operate cyanide production facilities in a manner that prevents accidental releases.

The operation is:	■ in full compliance with in substantial compliance with not in compliance with	Standard of Practice 1.2

Summarize the basis for this Finding/Deficiencies Identified:

Korund Zyan develops and implements appropriate management and operating plans and procedures for operating its cyanide production facilities in a safe manner. The facility has a full set of operating procedures that describe standard practices necessary for safe and environmentally sound operations, and also for contingencies during upsets in its activities that may result in emergencies related to cyanide exposure or releases. Operating procedures, parameters and instructions covering normal, operational upsets and emergency response and shutdown are documented, are being updated and kept valid. Procedures are in place for personal protection equipment and instruction for respiratory protection.

Procedures are in place for addressing operational upsets and emergency shutdown. An emergency response plan is also in place to address emergencies including fire, chemical releases and injuries. Operating procedures detail actions to be taken in the event of an upset or an emergency. Alarms and interlocks are in place for critical equipment to shut down the process and alert operators in the event of a potentially serious event. All foreseeable emergency situations are documented in the procedures together with the response actions required.

Procedures are in place to address changes in facility, operating practices, personnel, and product specifications. A procedure is established by law for making structural changes of projects that have previously been approved by Glavgosekspertiza. Proposed facility changes are introduced through a company order in which all service areas subject to changes, including the safety and environmental departments, are directed to discuss the proposed changes and develop a term of reference from which the engineering design is developed. The proposed design is submitted to Glavgosekspertiza for approval and issuance of a construction permit. Changes that have been made to the cyanide production facility with regard to the second technological line have been subject to mandatory review by the state authorities and positive conclusion has been obtained.

Korund Zyan preventive maintenance programs are maintained and updated on an annual basis. It covers all equipment for production, room ventilation, lab equipment, utilities, wastewater treatment plant, safety equipment, calibration, and others. The monthly schedule is updated with the records of maintenance completed. Korund Zyan schedules a plant shutdown annually to permit maintenance of critical equipment.

Preventive maintenance programs include scheduled inspections and servicing of the packaging systems, cranes, forklifts and other equipment used to move, store and load packaged cyanide. All equipment and systems used for product packaging, which are located in the A20/A80 block are serviced in accordance with the approved preventive maintenance program approved by the senior managers. Maintenance of vehicles used for transportation and loading of products is carried on the basis of reaching of the set operating hours under the outsource contract by a specialized organization.

The production process is continually monitored by shift operators in the control room and is accessible on mobile phones to the facility managers. Instrumentation readout is monitored on the control room display console. This instrumentation is inspected and calibrated as per the Company Standard by specialized licencing centres for maintenance and calibration.

Wastewater from the cyanide plant is directed to the wastewater tanks located in a concrete containment basin just outside of the cyanide production plant. All wastewater from the cyanide plant is directed to the wastewater tanks located in a concrete containment basin. The sanitary laboratory regularly checks the effluents, all generated effluents are sent to the wastewater treatment plant. A video surveillance system is installed throughout the enterprise. The schedule of wastewater control is maintained in the sanitary laboratory and is regular. Periodic monitoring of the condition of protective impermeable berms is carried out during the autumn-spring inspection of buildings and structures as well as during administrative and production controls.

Plans and procedures are in place for storing of packaged cyanide (in block A20/A80) and loading/handling of packaged cyanide for delivery to customers. Technological Process Flowsheet provides safety measures for storage and handling of raw materials, semi-finished products and finished products, as well as their transportation.

Korund Zyan has developed special Instruction 05-19P on handling and utilization of cyanide or other dry materials contaminated by cyanide. No solid cyanide waste is generated as it is recycled within the process. Contaminated clothing is washed with dedicated washing machines according to defined washing parameters (temperature, cycle time, washing powder). Non-contaminated by cyanide solids and other materials (unusable tools, sand, gravel, others) are collected in waste drums which are labelled according to the Russian legislation requirements and are transported and disposed off by authorized waste-companies contracted by Korund Zyan. The CN-contaminated waste is treated appropriately in a special reservoir and any decontaminated materials are transferred as waste to contracted companies that have the appropriate license.

In the sodium cyanide warehouse, production facilities are equipped with powder fire extinguishers in sufficient quantities which are checked apropos the set procedures. Aqueous solutions of sodium cyanide are highly toxic, water must not be used as an extinguishing agent. For this, fire extinguishing powders are used. Potential spills must be swept dry and disposed of separately in accordance with the procedures.

The requirements for packaging and labeling comply with UN Recommendations on the Transport of Dangerous Goods and Agreement on International Goods Transport by Rail and international regulation for transportation by road. Transportation of sodium cyanide is carried out in accordance with the Safety Rules for the Transportation of Dangerous Goods by Rail.

Packaging and containers have Certificates of Conformity to the Standards of UN Recommendations on the Transport of Dangerous Goods, International Maritime Dangerous Goods Code (IMDG), the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), and Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). Thus, the produced cyanide is packed in packages which are in full compliance with the international regulations for transportation of dangerous goods. There are additional documents developed by Korund Zyan: Technical conditions TU2151-001-64062211-2011 ‘Sodium Cyanide, Technical’; Safety data sheet for technical sodium cyanide (#64062211-24-66261 dated February 9, 2021), Rules on transportation of dangerous goods, Updated scheme of placement and fastening of cyanide in railway wagons and containers. Korund Zyan is in possession of relevant Material Safety Data Sheets with comprehensive description and of current validity. MSDS used for sodium cyanide is RPB №72311668-21-37887. Product registration numbers are: 4CAS 143-33-9, RTECS VZ7525000, ELINECS 205-599-4, UN Code 1689.

Korund Zyan has established an inspection process of incoming packaging materials such as polymeric (PE) materials or metallic drums. In the same way, the transportation vehicles are fulfilling the legal requirements, respectively. The packaging machines are operated and controlled by SCADA systems that among other controls check the use of the defined / correct packaging material. Cyanide is loaded into the containers with the appropriate signage and shipped off in accordance with the international requirements pertaining to packaging and labeling in either returnable or non-returnable containers.

Relevant procedures, including the procedures for loading and fastening the packaged product as well as the railway containers have been reviewed by the Auditor.

Standard of Practice 1.3

Inspect cyanide production facilities to ensure their integrity and prevent accidental releases.

The operation is:	■ in full compliance with in substantial compliance with not in compliance with	Standard of Practice 1.3

Summarize the basis for this Finding/Deficiencies Identified:

Routine inspections of the structural integrity of tanks holding cyanide solutions, signs of corrosion and leakages are undertaken by operators at the change of each shift as per the operator job instructions and approved charts. The facility runs routine inspections and maintenance programs to ensure the appropriate function of all equipment and technical systems, including monitoring of potential corrosion and leakage. Any concerns are documented in the shift logs. Procedures are in place to conduct routine inspection and maintenance of tanks, valves, and pipelines. Regular expert assessment is also carried out on industrial safety of components of the hazardous industrial facilities in accordance with the engineering maintenance and repair provisions and detailed work instructions. In addition, inspections of industrial building structures are undertaken. The results of these inspections are recorded in technical journals, in the equipment passports and repair logs, in acts (minutes) of inspection of the secondary protective containment, or, in case of significant deficiencies, in regulations or acts that address such deficiencies.

Inspection frequencies are set out in the detailed work instructions for inspection and maintenance of equipment and buildings. The inspection and maintenance frequencies are selected based on the specific equipment passport requirements which follow regulator (Rostekhnadzor) requirements. Routine walkovers are carried out every two hours by the shift manager or technical personnel. Based on observations made during the site visit the facility appeared to be in good condition with the equipment being well maintained indicating that inspection frequencies are sufficient to assure that equipment is functioning within the design parameters.

Principle 2 | WORKER SAFETY
Protect workers' health and safety from exposure to cyanide.

Standard of Practice 2.1

Develop and implement procedures to protect facility personnel from exposure to cyanide.

The operation is:	■ in full compliance with in substantial compliance with not in compliance with	Standard of Practice 1.1

Summarize the basis for this Finding/Deficiencies Identified:

Korund Zyan has designed its operations in such a way as to minimize worker exposure throughout the entire process. From the commissioning of Stage I through to the commissioning and operating of Stage II the Company has developed, maintained and updated its polices and procedures in accordance with the Russian legislation as well as international best practice, such as the ICMI Code. These procedures and

plans cover all stages of operations also apply to product warehousing and loading (block A20/A80). The workplace air is continuously monitored in all buildings, including block A20/A80, using the installed gas analyzers, content of harmful substances in the workplace air is also monitored according to the approved schedule.

During the design of the technological process Korund Zyan has separated the process flowsheet into independent blocks in order to ensure minimal level of explosiveness. Every such block has been assessed for the energy level and subsequently the explosiveness category. The project design included remote control shut-off valves for the emergency shut-off at every block. Emergency shut off and locking time at each block varies between 9 and 12 seconds, which is below the required 120 seconds, which is in line with requirements for explosiveness category II and III.

Automatic HCN gas analysers are installed at the cyanide production and storage facilities where there is a risk of worker exposure to greater that 4.7 ppm cyanide to ensure continuous air monitoring. Alert limits such as HCN at 3.0 ppm for light alert and 5.0 ppm for sound alert are defined for all gas detection monitoring devices in the DCS. Thus, exceedances of the limits will be picked up immediately at the 24/7 operated control room. Monitoring of harmful substances at the workplace air is continuous. Copies of the laboratory results for the air measurements have been reviewed and demonstrate no exceedances of the established limits.

Cyanide production facilities are equipped with CCTV cameras and emergency alarm systems. Dosage of components is automatic. HCN gas detectors are maintained as per the SOP according to which the schedules for equipment and measuring instruments maintenance are developed. Maintenance is conducted annually and in conformance with the recommendations of the manufacturer and as required by their regulatory requirements. All hydrogen cyanide monitoring equipment is tested and calibrated biannually with subsequent Protocols being raised and Attestation Certificate issued for each piece. The results of calibration activities are maintained and available at Korund Zyan with the records retained with no time limit.

To prevent workers from burns, insulation of hot areas of the process equipment and pipelines is available at the working zones. Vapor and hot water pipelines are equipped with pressure and temperature gauges and also shut-off and back-flow valves. Pumps used for pumping of category 2 hazard substances are sealed. All pumps and compressors are equipped with the alarm and control systems over bearings which go off when reaching the set limits.

Operational procedures are also in place to provide instruction on work tasks associated with operating the plant. These include instructions to evaluate and rectify non-routine or abnormal situations, address emergency situations and undertake emergency shutdown. Various measures and actions concerning personal protective equipment (PPE), monitoring devices, technical equipment, interlocks, inspection routines, procedures, instructions, emergency plans, warning signs, medical check-ups were developed and implemented in cooperation with doctors, specialists of technical services (instrumentation, electricians, mechanical service), heads of production sections, labor and safety engineers.

It is a mandatory requirement for all workers and contractors to wear / use personal protective equipment (PPE) in all production buildings and in the working areas during all operational activities (i.e. production, maintenance, emergency situations), including additional gas protection masks in areas, where cyanide dust or hydrogen cyanide gas may occur. The requirement for the respective PPE is defined in the instructions, shown with signs on each entry, inside and outside the buildings and is included into routine employee training.

Korund Zyan solicits and considers worker input in developing and reviewing health and safety procedures. Staff proposals are communicated to the management during the operational meetings in a timely manner. Additionally, an anonymous suggestion mailbox is available for proposals or grievances.

Korund Zyan operates a buddy system primarily during a new employee training and internship period. Under the Russian legislation, such training may reach a total of 60 days and includes a theory, exam and internship throughout 2 shifts as a minimum. Buddy system forms part of the HSE management system and allows for mentoring and job training.

Operators have radios for communication with the control room. There is also a loudspeaker system and cameras located about the plant that are monitored from the control room. Health and safety work instructions specify those tasks where a second person is required to be in attendance.

Korund Zyan has built and commissioned their own medical center counting 10 staff, including paramedics, ambulance driver and a manager. The medical center is located at the site and performs employee medical examinations in addition to other tasks. All employees are subjected to mandatory preliminary and further regular medical examinations to determine their fitness to perform their specified tasks as required by the Russian Federation Labour Code.

All employees are subjected to obligatory preliminary and further regular medical examinations to determine their fitness to perform their specified tasks. Medical examination is a requirement of the Russian Federation Labor Code, as well as the Order of the Ministry of Health and Social Development of the Russian Federation №29n dated 28.01.2021, OHS Instructions and Work Instructions.

Medical examinations include the ability to use a respirator, hearing and vision, and pulmonary function, as indicated by law (№29n) which establishes the frequency and scope of mandatory preliminary and periodical medical examinations of employees based on the type of hazardous factors of production.

Furthermore, a list of factors of the work environment is defined in the list of persons sent for a medical examination. The list is approved by the senior managers and specifies the type of work (class of working condition, factors and periodicity of medical and psychological examinations).

The clothing change policy is unchanged since the previous ICMC certification audit. All employees, contractor representatives and visitors must use PPE, including facility provided coveralls. Coveralls must be removed, vacuum cleaned in a dedicated “undusting” room, and stored in separate lockers at the end of the shift. Onsite laundry facilities are to be used for work clothes. Workers are provided with two sets of coveralls and are required to shower at the end of each shift and launder their coveralls at least every four days.

All hazards associated with the workplace are identified and workers are trained in use of appropriate PPE, including mandatory PPE to be used in the workplace as well as additional PPE required for undertaking specific tasks. The required PPE is displayed on signs posted throughout the plant. As part of personal hygiene requirements, no food, cooking or eating is permitted on the industrial premises except at specific locations or in the dining room. It is a requirement to wash hands before eating, drinking or smoking. Smoking is only permitted in designated smoking rooms.

Hazard warning signs are available throughout the plant to inform workers of various chemicals and other hazards present. Appropriate signage is available on the outside walls of each hazardous facility as well as the doors. Signs are also posted that display the PPE required to be worn in various areas of the plant. All pipes inside the facilities are color coded and labeled to identify the contents and include flow direction arrows.

Standard of Practice 2.2

Develop and implement plans and procedures for rapid and effective response to cyanide exposure.

The operation is: ■ in full compliance with Standard of Practice 2.2

in substantial compliance with
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

Korund Zyan develops and implements plans and procedures for rapid and effective response to cyanide exposures. An Emergency Response Plan ('Plan of Measures for Localization and Liquidation of Accidents in Sodium Cyanide Production Plant of Korund Zyan') has been developed in accordance with the Russian legal requirements, approved by top management and agreed with rescue team of the entire Korund site. The plan describes the response actions to be taken for various emergency scenarios, summary of the most important responsibilities in case of emergency, measures on cooperation with local and regional chemical protection organizations.

Korund Zyan has a written procedure such as Quality Management System document entitled 'Guidance for safe management of cyanides at Korund Zyan plant' detailing the necessary response to inhalation of cyanide gas or skin contact with liquid or gaseous cyanide. This document is based on the requirements of ICMC. The major elements of the procedure are posted at strategic locations, included in the cyanide first aid kits, in an Emergency Response Plan, and included in Standard Operating Procedures, Safety Procedures or other documentation.

Showers and low-pressure eye wash stations are available at each facility of the production cycle, including the laboratory. Powder fire extinguishers are located at strategic locations on each floor of the plant throughout the facility, there are no acidic portable fire extinguishers. Fire extinguishers are checked and recharged in conformance with an established schedule. The scope and frequency of maintenance of fire suppression systems is undertaken in accordance with the recommendations of the equipment manufacturers. Maintenance of these systems is conducted by an organization licensed to carry out activities on installation, maintenance and repair of fire safety equipment for buildings and structures.

In every cyanide production unit, all tanks, vessels, containers, and piping are labeled appropriately to inform workers of various substances contained and of potential hazards present. All piping is color coded and labeled to identify the contents and include flow direction arrows in conformance with site regulations which require all piping and vessels to be labeled and color coded. Flow direction in pipes carrying cyanide solution is indicated to reduce the potential for releases and exposures during maintenance. In the warehouse all containers are clearly labeled and are clearly identified as required. All labeling is functional and indicates a material present.

Korund Zyan has oxygen, resuscitator and other first aid equipment at the facilities. An oxygen supply escape hood is located on each floor of the cyanide production plant. Medical oxygen and resuscitator kits are kept at the Rescue Team Centre and on the rescue team vehicle. Sodium thiosulphate antidote is also available for use by the Rescue Team Centre Doctors. The Rescue Team Centre also has equipment for recharging the oxygen bottles. Operators have radios for communication with the control room. There is also a loudspeaker system and telephones. An emergency dispatch control centre is located at the Rescue Team Centre that is manned 24/7. Korund Zyan inspects its first aid equipment on a regular basis with a sign off in relevant logbooks. All emergency response equipment is replaced on schedule.

Hazard information, appropriate PPE, exposure symptoms and first aid measures are documented in the Health and Safety Manual. Product MSDS sheets are available for distribution to customers in the Russian language. Additional information is available in writing at working places where cyanide handling is carried out and on signage concerning the presence of cyanide and precautions that should be taken. In addition, "Korund Zyan Quality management system" which incorporates ICMI requirements contains Instructions on PPE storage and use No 01-38 dated 10 January 2023. This procedure has been developed in accordance with Russian Governmental Standard GOST 59123-202 and describes the requirements to the quality of PPE, to its management and storage and people responsible.

Korun Zyan has developed a decontamination policy that has been translated into different work instructions of the plant documentation. Thus, all employees, contractor representatives and visitors must use personal protective equipment, including facility provided coveralls. Coveralls must be removed, vacuum cleaned in a dedicated “undusting” room, and stored in separate lockers at the end of each shift. Onsite laundry facilities are used for work clothes. As part of personal hygiene requirements, no food, cooking or eating is permitted on the premises except the dining room. Korund Zyan implements procedures for hand washing or showering for individuals who have been in the areas of the facility with the potential for skin exposure to cyanide.

In addition, “Korund Zyan Quality management system” which incorporates ICMI requirements contains Instructions on PPE storage and use No 01-38 dated 10 January 2023. This procedure has been developed in accordance with Russian Governmental Standard GOST 59123-202 and describes the requirements to the quality of PPE, to its management and storage and people responsible.

Korund Zyan maintains procedures in Russian language with the latter being the official language in the Russian Federation and one spoken among the employees. All employees have access to Safety Data Sheets and/or other information on cyanide first aid in areas where cyanide is used. Hazard information, appropriate PPE, exposure symptoms and first aid measures are documented in the abovementioned Guidance documents and several SOPs. Product MSDS sheets are available for distribution to customers in the Russian language. All other information (process description, operating manual, working instructions, etc.) is also available in Russian language.

Cyanide awareness training, including symptoms of cyanide poisoning and first aid, are a part of all cyanide plant personnel training. Several facility personnel are also trained as first responders. The rescue team comprises a total of 13 emergency response personnel per shift. All doctors and the rescue team are trained in the application of antidotes and use of medical oxygen. The medical centre maintains an ambulance for conveying workers to the local hospital.

The antidote management system and corresponding procedures are in place. Antidotes are changed according to the schedule approved by the OHS department and the Chief Paramedic. Antidotes are stored under temperature conditions per manufacturer’s specifications at the medical unit. Storage conditions are indicated on each antidote pack, storage is organized in the medical unit in a cabinet and a special refrigerator in accordance with the storage conditions of the preparation.

Medical personnel are in possession of the Emergency Response Plan and area aware of actions required in case of an emergency involving cyanide poisoning, among others. In case of any cyanide exposure, treatment will be undertaken by Korund Zyan medical staff in the first instance apropos the established treatment protocol. Should the injuries be too severe to be effectively treated on-site, exposed patients would be transferred to the local hospital. Korund Zyan medical center maintains an ambulance for conveying workers to the local hospital. Distance to the nearest public hospital is approximately 2km or 15 minutes by car (from door to door). Distance from the medical center to the production areas is maximum 5 minutes by foot.

The decision on sending a worker exposed to cyanide to a particular medical facility is made by the ambulance personnel, arriving at the enterprise. Russian Federal Law No. 323, dated 21.11.2011 requires all medical facilities across the country to provide emergency first aid without the need for a special agreement. Taking into account that cyanide plant is located in the middle of a chemical industrial area (Industrial Park), the established hospitals, first-aid- organizations and others are used to be trained in emergency cases caused, among others, by cyanide exposure; these institutions have long been in possession of the necessary equipment and the individual experience to respond to cyanide emergencies and issues.

Reportedly, Korund Zyan has notified a local hospital, BSMP, of the potential need to treat patients for cyanide exposure, and the site is confident that the medical provider has adequate, qualified staff, equipment and expertise to response cyanide exposures. The BSMP hospital is the only hospital in the close proximity capable of providing emergency treatment to heavily poisoned patients. The decision on sending a worker exposed to cyanide to BSMP is made by the ambulance personnel. Russian Federal Law requires all medical facilities across the country to provide emergency first aid without the need for a special agreement.

To date, there has been no cyanide exposure incidents at any of Korund Zyan facilities. Procedures are in place to investigate and evaluate cyanide exposure incidents to determine if the existing programs and procedures are adequate or need to be revised in order to protect workers' health and safety.

As legally required, instruction for Registration, Recording and Investigation of Accidents and Incidents in Korund Zyan is in place to investigate and evaluate incidents, including cyanide exposure incidents, to determine if the facility's programs and procedures to protect worker health and safety and to respond to cyanide exposures are adequate. No cyanide related incidents have occurred since the certification audit, while records are available for other types of incidents demonstrating the procedure is being used. According to Russian requirements, an evaluation of an incident situation must be completed and Emergency Response Plan (ERP) must be reviewed and updated as necessary after each incident.

Operational mock emergency drills are conducted monthly based on a schedule that is developed annually. These drills simulate operational upsets including equipment failures, depressurization and chemical releases. Mock drills are also undertaken by the rescue team to test emergency response to releases and personnel exposure and injury to hazardous chemicals. These drills include participation of third party responders. The drill results are evaluated and analysed and are used to further improve the procedures.

Principle 3 | MONITORING
Ensure that process controls are protective of the environment.

Standard of Practice 3.1
Conduct environmental monitoring to confirm that planned or unplanned releases of cyanide do not result in adverse impacts.

The operation is:	■ in full compliance with in substantial compliance with not in compliance with	Standard of Practice 3.1

Summarize the basis for this Finding/Deficiencies Identified:

Korund Zyan is classified as Hazard Category I with the sanitary-protection zone being 1000m. Distance between the production site and the residential area of Dzerzhinsk is over 2km, nearest residential country-houses of Dachnyi village are 1,6km away. The sanitary-protection zone of the production site does not exceed the zone of Korund LLC which is also 1000m.

Korund Zyan is not a user of water objects and does not carry out any direct discharges of waste waters into water bodies. Therefore, the requirements of industrial monitoring and water bodies protection are not applicable by law. However, to ensure environmentally responsible operations, Korund Zyan carries out monitoring activities within the boundaries of its tenement based on the monitoring plan and the program. Monitoring Plan dated 16 November 2022 is comprehensive and outlines the frequency of water and air monitoring as well as the determinants analysed with the approved maximum permissible limits and detection limits. The monitoring boreholes are located on the Sanitary-protection zone downgradient of the site.

There are no discharges into surface water. The cyanide plant is provided with containment to prevent seepage into groundwater. No cyanide related spills have occurred outside of containment areas since commissioning. Korund Zyan process wastewater is treated at the on-site wastewater treatment plant (WWTP) located near the production plant (approximately 50m) prior to being discharged into the KIP's sewage system. Monitoring and control systems are in place to prevent unplanned spill into the sewage system.

The site has developed a detailed industrial environmental control program that has been approved by the General Director and is updated as required. This document contains detailed information on cyanide emission sources, cyanide discharge points, information on how and where samples should be taken, methodology of analyses, among other aspects. Monitoring is carried out by the accredited laboratories according to the approved schedule. The concentration of free cyanide in wastewater is allowed to be maximum 0.05 mg/l when transferred into the KIP sewer system.

The detoxified process water sewage including the collected surface water is transferred Korund LLC's wastewater collector. The larger KIP site (Korund LLC), albeit not a subject of this audit, does not discharge cyanide-contaminated water into the surface water bodies. The WWTP of the KIP was not a subject of the audit, however, the analytical results of wastewater discharged have been reviewed and demonstrated that the concentration of free cyanide does not exceed 0.005 mg/l. The results have been reviewed for 2022 and 2020, no exceedances have been revealed. The samples for those analyses have been selected at the baseline and the control points which are located 0,6km upstream of the water discharge point and 0,3km downstream of the discharge point, as approved with the "Oksko-Volzhskoye UGMS" regulator and specified in the official letter from Korund LLC from 02 March 2023. However, monitoring of the quality of the surface water and groundwater upgradient and downgradient of the discharge is carried out regularly. No exceedances have been revealed during the time of the operations.

Consequently, the following wastewater streams are generated at the Korund Zyan facility (Figure 3 below):

- Domestic wastewater is transferred to the sewerage collector of Korund LLC through which the water is transferred to the Vodokanal city treatment facility;
- Rain, snowmelt and runoff water is discharged from the sodium cyanide production site into buried tank (B73) and is subsequently sampled for the cyanide content, in case of exceedances it is sent for further decontamination at the water treatment plant;
- Process water, including the return water (after washing of the equipment) is collected on the water treatment plant, the return water is collected by Korund LLC apropos the existing agreement.

Thus, Korund LLC is a contracted water management entity for Korund Zyan where all sewage water from Korund Zyan sodium cyanide production enterprise is discharged into the existing sewage systems owned by "Korund" LLC while all water coming in is provided by the same, namely:

- Contract for the supply of the energy resources dated 01 July 2014 where Korund LLC undertakes to provide filtered water to Korund Zyan and accept domestic waste for treatment;
- Contract 73186-17/KC.130.17 dated 01 February 2017where Korund LLC undertakes to accept all runoff water and decontaminated process water at the amount of 336,1m3/hr and continuously control the quality of water discharged by Korund Zyan into the wastewater pit.

The cyanide concentrations in the wastewater prior to discharge into the KIP's sewer are determined by titration every 5 to 10 minutes at least and displayed in the Korund Zyan control room and also shown directly in the separate wastewater treatment plant control room. The water protection department is also sampling on a daily basis to verify and cross-check the correctness of the automatic titration. The abovementioned measurements show that the free cyanide content prior to the KIP's WWTP is not higher than 1 ppm. The cyanide content leaving the Korund Zyan WWTP thus meets the current wastewater permission requirements. As reported by Korund Zyan management, the downstream Korund Industrial Park Site operated wastewater treatment plant collects this process wastewater and performs a mixing with other treated process wastewaters from other enterprises located within the Korund Industrial Park area. The continuous measurements after final mixing and before discharging to surface water shall be lower than 1

ppm CN-free and 0,5 mg/l WAD CN, as required by the Russian legislation. The concentration of free cyanide in wastewater is allowed to be maximum 0.05mg/l into the KIP's sewer system. The continuous measurements of Korund Zyan water protection department show that the free cyanide content at Korund Zyan's WWTP release point (interface to Korund Industrial Park Site WWTP) is not higher than 1 ppm. Korund Zyan Cyanide Production Site confirmed that KIP's wastewater plant is in full compliance with the Russian legislation on the water management aspects.

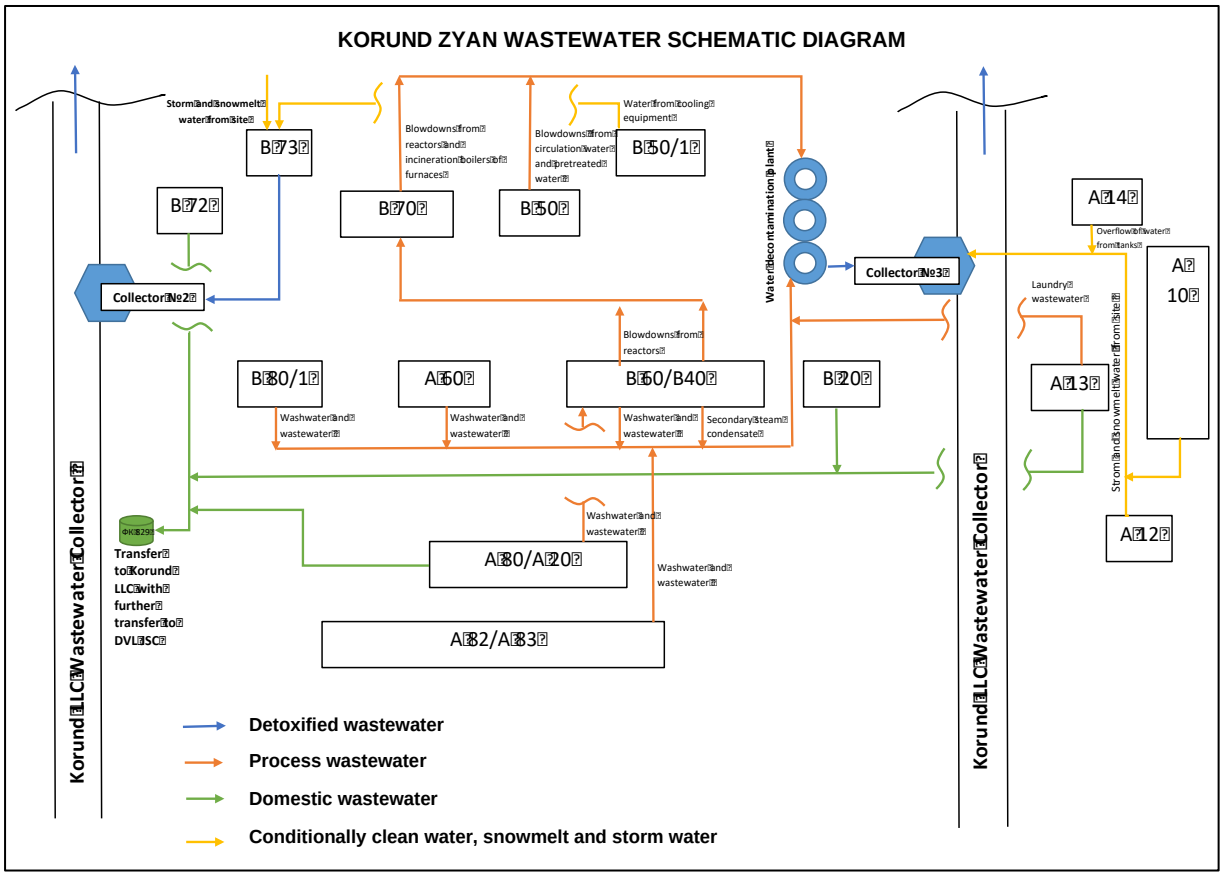

Figure 3: Schematic Diagram of Wastewater Streams at Korund Zyan Process Facilities

Thus, Korund Zyan has a written plan and relevant procedures for its monitoring activities developed and approved by the appropriately qualified persons. No exceedances of the permissible limits have been identified.

There are 3 boreholes on the territory of the Korund Zyan enterprise located on the sanitary-protection zone along the Oka riverbed (Figure 4 below), from which groundwater is taken twice a year in spring and autumn (April, October) in order to determine the concentration of cyanides. The concentration does not exceed the norms established by Russian legislation by Hygienic standards GN 2.2.5.1315-03 (SanPiN 1.2.3685-21 has been in effect since 01.03.2021), as established from the review of the corresponding results for the groundwater monitoring.

Korund Zyan is on the list of objects whose owners are obligated to carry out monitoring of ambient air stipulated by point 3 of Article 23 of Federal Law N96-FZ "On ambient air protection" dated May 4, 19999. To abide by this law, Korund Zyan has developed ambient air monitoring program and conducts air monitoring apropos the approved schedule. To date, no exceedances have been reported.

In order to carry out environmental monitoring on the territory of Korund Zyan, accredited laboratories are deployed on contractual basis. Results of monitoring of atmospheric air in several locations at the Sanitary Protection Zone did not reveal any exceedances.

Total gross amount limit of atmospheric pollutants resulting from Korund Zyan operations is established at 2086,1221 tons per annum. To date, no exceedances have been reported.

Figure 4: Location of Water Groundwater Monitoring Boreholes at Korund Zyan

Korund Zyan has developed measures to reduce emissions of pollutants into the atmospheric air during periods of adverse meteorological conditions, these measures have been approved by the Ministry of Ecology and Natural Resources of the Nizhny Novgorod Region (letter Ex-319-601665/20 dated 12/29/2020).

Also, an agreement was signed with the Upper Volga Hydrometeorology and Environmental Monitoring Federal State Budgetary Institution on providing a forecast of unfavorable meteorological conditions to Korund and indicating their degree of danger. Upon receipt of information about unfavorable meteorological conditions, the company performs procedures to reduce emissions in accordance with the degree of the unfavorable meteorological conditions on the basis of agreed measures.

The monitoring frequency (twice a year) of the groundwater condition is sufficient and is compliant with the Russian law. Air monitoring frequency is also sufficient to identify any changes in a timely manner. The

concentrations of free cyanide ions in all wells within and outside the complex were below the detection limit of 0.005 mg/l; i.e., less than 0.022 mg/l standard established by ICMC for the protection of aquatic life.

Korund Zyan conducts waste management activities related to the accumulation of waste, detoxification, transfer of waste for management, handling and disposal under the agreements concluded with the organizations licenced to undertake collection, transportation, handling, disposal and storage of waste classified as hazards 1-4 category. Korund Zyan does not have waste management and handling units.

Principle 4 | TRAINING
Train workers and emergency response personnel to manage cyanide in a safe and environmentally protective manner.

Standard of Practice 4.1
Train employees to operate the facility in a manner that minimizes the potential for cyanide exposures and releases.

The operation is:	■ in full compliance with in substantial compliance with not in compliance with	Standard of Practice 4.1

Summarize the basis for this Finding/Deficiencies Identified:

Korund Zyan conducts employee training in accordance with the approved training program. All new workers are required to complete specific training on hazard awareness, health effects of cyanide, the symptoms of cyanide exposure, the procedures to follow in the event of exposure and emergency response algorithm. This training includes understanding of hazards associated with cyanide and response to cyanide-related emergencies. Semi-annual refresher training is also conducted as per the regulatory requirement. As legally required, there are several types of trainings for the employees specified by the Company: induction, primary, regular, and targeted.

Induction training is required to be completed before any work is undertaken on-site and is carried out over the period the supervised training. Emergency response actions to alarms and evacuation requirements are provided to all persons entering the site. Detailed safety inductions include specific measures to protect human health and environment from cyanide release and exposure for those personnel that undertake work in and around the cyanide facilities.

Regular training with obligatory refresher training is conducted for the workers once every six months with examination after the training. Regular training is carried out in accordance with the list of obligatory instructions with the records being made in a training log at the workplace. The hazards related to the substances used in production are described and addressed in the Technological Process Flowsheet as well as in a written procedure of Quality Management System's document entitled 'Guidance for safe management of cyanides at Korund Zyan plant' detailing the appropriate response to inhalation of cyanide gas or skin contact with cyanide, which serves as training material for the trainings conducted.

Following completion of training, all workers are required to sit an exam. Those workers who pass the exam are awarded with a certificate. Such certificates differ in a validity term, which is 1 year for professional workers and 3 years for the service personnel. OHS Department Manager has a heightened responsibility in the Company is required to pass additional training on industrial safety which constitutes a 40-hour course.

Korund Zyan trains workers to perform their production tasks with minimum risk to worker health and in a manner that prevents unplanned cyanide releases. The annual training plan is approved at the beginning of each year. The plan includes training elements and specific training materials for each working place.

Training includes the use of appropriate PPE including gas masks and respirators. This training is mandatory and must be repeated according to the approved schedule at least once every six months across al company levels.

All employees at Korund Zyan are trained prior to performing work with cyanide. These include workers in the cyanide production units, cyanide packaging and storage, forklift operators, medical workers and laboratory staff. The operating employees are qualified as skilled chemical workers on the basis of their professional education. They go through professional training, including a supervised on-the-job training for a minimum of the first sixty days of their job.

All personnel, including contractors, governmental inspectors, auditors and other visitors are required to go through training/inductions prior to accessing the industrial area of Korund Zyan.

Refresher training for the employees on normal production tasks involving cyanide is conducted once every six months with examination following the training course to ensure that employees continue to perform their jobs in a safe and environmentally protective manner.

Training elements necessary for each job are documented in plant operating manuals and working instructions. There are written instructions for the creation of new documents, incorporating changes and for the superseding of existing documents. Health and safety procedures are developed and amended, as required, through the incorporation of staff feedback questionnaires.

Training by external organizations is conducted with involvement of professional trainers, such as medical specialists, safety representatives for training on first-aid topics or emergency response activities. Training by internal engineers requires that all engineers have higher education and specific external safety training. They have worked at the plant for a minimum of 3 years and are required as part of Russian Regulation to take refresher training every 5 years through examination by special committee.

Training and mentoring is provided by the engineering personnel of the cyanide production facilities and is certified in compliance with the procedures established at the Company. Training is carried out by an occupational safety specialist who has a higher technical education and external training in the amount of 256 hours under the program "Occupational safety Specialist" in specialized institution, who has passed certification in the Rostechnadzor bodies for industrial safety and electrical safety, as well as having a certificate of an instructor in teaching first aid techniques to victims.

Korund Zyan evaluates the effectiveness of cyanide training by examination, observation and/or through certificates of attestation. Examinations are undertaken on completion of training and annually as part of knowledge assessment refresher training. Job competence is also assessed informally through task observation. All workers must pass the testing before being allowed to work unsupervised, the testing is provided by the certification committee, consisting of engineering personnel of the production and degasification areas, representatives of the OHS Department, Training and Information Centre, and the Department of Production and Operation. Following Russian requirements, the trainings are documented as required: to be traced back personally to each individual, covering the training subjects, trainers, topic, date, duration and kind of verification of understanding and effectiveness.

Interviews with Korund Zyan personnel and reviewed training records have established that workers are trained in responding to cyanide-related hazards prior to undertaking work and that all personnel receive both initial and periodic refresher training as required.

Standard of Practice 4.2

Train employees to respond to cyanide exposures and releases.

The operation is:	■ in full compliance with in substantial compliance with not in compliance with	Standard of Practice 4.2

Summarize the basis for this Finding/Deficiencies Identified:

Korund Zyan is required to train employees to respond to cyanide exposure and releases by law. All personnel working in or around the cyanide production facilities are trained to respond to emergency cyanide release incidents in accordance with planned response measures specified in the on-site emergency plan. In addition, training of employees is carried out in accordance with the special program in the field of civil defense and emergency prevention approved by the EMERCOM and Instruction on “Emergencies and Elimination of Consequences of Natural Disasters”, approved by the order of the site General Director. This training is an integral part of the field of civil defence and protection from emergencies training that is conducted annually at the workplace.

The risks scenarios are practiced via routine mock drills. Mock drills on civil defense and emergency situations are conducted among the personnel of the cyanide production plant at least biannually on the basis of the schedule approved by the company order annually and the Schedule of Drills and Training to Eliminate Possible Accidents at Korund Zyan that are agreed with the Main Department of the Ministry on Emergency Situations of the Russian Federation (EMERCOM) in Dzerzhinsk and are approved by the Order of the General Director.

Those mock drills which do not require EMERCOM’s involvement are conducted on a more regular schedule. Workers are trained on how to respond to cyanide exposure through the induction training process and on-going training. Workers are trained to respond to worker exposure to cyanide and routine drills are used to test and improve their response skills. Drills are conducted regularly, documented and lessons learned are analyzed and taken into account during updates of the training programs.

The drill results are evaluated and analysed and used to further enhance the procedures. All results are archived and controlled. Corrective actions are derived, defined and implemented. Training details are entered into a logbook and include the type of training, trainee name and signature, date of training, and trainer name and signature. A Personal Registration Form is also completed, which is filed in an employee’s personal file.

Principle 5 | EMERGENCY RESPONSE
Protect communities and the environment through the development of emergency response strategies and capabilities.

Standard of Practice 5.1
Prepare detailed emergency response plans for potential cyanide releases.

The operation is:	■ in full compliance with in substantial compliance with not in compliance with	Standard of Practice 5.1

Summarize the basis for this Finding/Deficiencies Identified:

Korund Zyan has developed a thorough Emergency Response Plan (ERP) in accordance with the requirements of the Federal Law "On the industrial safety of hazardous production facilities" dated July 21, 1997 No. 116-FZ, as well as the "Regulations on the development of action plans for the localization and elimination of the consequences of accidents at hazardous production facilities” No. 1437 dated September

15, 2020. According to the Russian regulations, operational alarm and emergency response plan is a mandatory document, where different party involvement is considered and relevant parties are informed.

Latest version of the ERP dated 8 December 2022 is currently in force and addresses potential releases of cyanide that may occur on site and considers all relevant and potential failure scenarios that may otherwise require response.

The ERP regulates, among other topics, the following:

- Summary of the important responsibilities for emergency cases;
- Actions in case of emergency;
- Measures to prevent or minimize the impacts;
- Co-operation with cyanide squad of the greater Korund Industrial Park organization (not in scope of the audit) and the local municipal Dzerzhinsk forces (fire brigade, chemical emergency squad, hospital);
- Required resources such as PPE and emergency liquidation equipment;
- Contact list and call-out procedures

The Korund Group has the capability and capacity to respond to potential emergencies including releases of cyanide on the site. In the event of a major emergency or off-site impact the ERP includes provisions to request assistance from external responders to seek assistance as needed. The ERP identifies credible emergency scenarios for catastrophic release of hydrogen cyanide, releases during loading and dissolution operations, pipe, valve and tank ruptures, overtopping of ponds, tanks and waste treatment facilities. as well as, but not limited to, impacts of power outages, fire and others.

The ERP also provides detailed descriptions of the chemical substances, their qualities, explosiveness potential, possible hazards and characteristics of accidents and injuries for each block (12 blocks in total). Breakdown of the technological process flowsheet into standalone blocks is made according to the principle of possible disconnection of blocks from each other in case of emergency depressurization of one of them.

In case of overtopping of the tanks, the overflows are drained to the designated waste tanks and are further pumped into the decontamination facility (TA 05).

In addition to the ERP, Korund Zyan has developed a procedure, namely “Instruction No 05-15 On Emergency Response Actions of Korund Zyan personnel at the wastewater plant and gas incineration unit” dated 27 December 2022. The procedure describes the actions of both the operations personnel and the emergency services, these actions are similar to the actions indicated in the corresponding sections of the Emergency Response Plan.

Thus, the Instruction No 05-15 lists major emergency scenarios and additional measures for their liquidation, these include fire at the TA-05 wastewater treatment plant, equipment depressurization and tank overflow and others. Measures to be taken in case of overfilling of a container would first of all entail stopping all the flow of the solution, if one of the tanks (105-B01, 02, 03) is overfilled, the spills are directed to the pit of the B30 unit, from where they are pumped out by pump 105-P07 into a free container for further treatment.

The ERP describes resources and means required to localize and eliminate the consequences of accidents and requires compliance with the tasks of emergency response and eliminating the consequences. Organization of interaction of forces and means as well as their composition and order of deployment is provided. It contains a procedure for ensuring constant readiness of resources for the emergency response and elimination of the consequences of accidents. Organization of management, communication and notification in case of an emergency at the facility is established, including description of the system of mutual exchange of information between PGSF "VGSO" rescue team, LLC "Korund" and JSC "Korund Zyan".

The ERP describes resources and means required to localize and eliminate the consequences of accidents and requires compliance with the tasks of emergency response and eliminating the consequences. Organization of management, communication and notification in case of an emergency at the facility is provided, including description of the system of mutual exchange of information between PGSF "VGSO" rescue team, LLC "Korund" and JSC "Korund Zyan".

Priority actions upon receipt of an emergency signal are described in detail. Depending on the nature of the anticipated emergency case this might be: activation of shut-down recipes to control of releases at their source, evacuating site personnel, starting alert chain to involve all relevant internal and external departments and parties; activation of safety interlocking, starting the incineration of the flue gas, filling by inert gases of relevant portions of piping / equipment, planning and performing mitigation activities.

Measures aimed at ensuring safety of the population are available in the ERP. Korund Zyan operations stipulate for active protection measures provided for by the Russian legislation on industrial safety of hazardous production facilities:

- Korund Zyan is located at a sufficient distance from places of compact residence and mass presence of people to minimize the impact on people under the shock wave in the event of an accident with an explosion during the production of sodium cyanide;
- Korund Zyan territory is located the south-east of Dzerzhinsk, on the leeward side for winds prevailing in the area in the directions in relation to residential areas;
- JSC "Korund Zyan" organized production control in compliance with industrial safety requirements during the operation of a hazardous production facility;
- industrial safety management system was organized in accordance with the requirements of Federal Law No. 116-FZ;
- Civil liability of Korund Zyan JSC to third parties is insured in accordance with the law.

The Company has developed a plan for the evacuation of Korund Zyan personnel in natural and man-made emergencies. The Plan defines the procedure for evacuation of personnel in the event of a threat and occurrence of such emergencies. Evacuation of personnel from the accident zone is carried out only by trained and certified rescuers.

The ERP describes specific emergency response actions for different situations, including control of any release at source; evacuation of workers and potentially affected communities; use of first aid measures and antidotes; and containment, assessment, mitigation and future prevention of releases.

Standard of Practice 5.2

Involve site personnel and stakeholders in the planning process.

The operation is:	■ in full compliance with in substantial compliance with not in compliance with	Standard of Practice 5.2

Summarize the basis for this Finding/Deficiencies Identified:

Korund Zyan involves various stakeholders in the planning process. Korund Zyan cyanide production facilities are classified as being Class I Hazard. Because cyanide is classified as a poisonous substance in Russia, cyanide production, storage, transport and handling are strictly regulated by the government, and governmental involvement in emergency planning is legally required. The site has involved its workforce and stakeholders in the emergency response planning process. Employee input takes place through the emergency drills debrief meetings which allows workers participating in the drills to make recommendations for improvements of the ERP. Over the period of certification, the mock drills were found to be regularly carried out according to the approved schedules.

Korund Zyan is engaged in regular consultations and communications with relevant stakeholders to assure that the ERP addresses current conditions and all risks. Inputs to the plan come from different stakeholders, including but not limited to the following:

- Lead persons in charge, e.g. shift leaders;
- State Safety Inspectorate for occupational health and worker safety;
- Neighboring plants within Korund Industrial Park Site;
- Korund Industrial Park Site Management;
- Korund Industrial Park Site gate guards;
- Korund Industrial Park Site Emergency Service and fire brigade;
- State (municipal) fire brigade;
- Hospitals;
- City Administration of Dzerzhinsk;
- State Security Department;
- EMERCOM.

In general, the ERP provides a categorization of each anticipated emergency case in three distinct categories:

- category 1 - emergency case can be handled within Korund Zyan technical and organizational boundaries;
- category 2 - emergency case is effective also out of Korund Zyan's technical and organizational boundaries but still within Korund Industrial Park Site technical and organizational boundaries, and
- category 3 - emergency case affects the community beyond Korund Zyan's and Korund Industrial Park's boundaries.

Depending on the categorization, a respective communication must be performed to all parties involved in emergency response apropos the ERP. Korund Zyan reported that category 2 and 3 incidents never occurred since the beginning of operations.

Korund Zyan has identified external entities having emergency response roles and involved those entities in the cyanide emergency response planning process. Paramilitary Gas Rescue Squad of LLC "Korund" is involved in development of all emergency response plans and measures. Medical center is involved in every case to deliver medical service as required. The Korund Zyan site has a dedicated medical center that has been actively involved in emergency response planning and training. The site has also involved local response agencies such as outside responders and medical facilities in the emergency planning and response process.

Communication activities with interested parties and stakeholders are initiated to ensure that the relevant information and updates concerning the actuality of emergency response plans are addressed.

Standard of Practice 5.3

Designate appropriate personnel and commit necessary equipment and resources for emergency response.

The operation is:	■ in full compliance with in substantial compliance with not in compliance with	Standard of Practice 5.3

Summarize the basis for this Finding/Deficiencies Identified:

The operative part of the ERP on localization and liquidation of emergencies at the cyanide production and degasification area specifies the responsible parties and the emergency response procedures they are to

follow and defines the roles and responsibilities and descriptions of certain functions such as security personnel, fire-brigade, medical service, 24-hours-standby duty service team and the site rescue team. The responsible coordinators and functional leaders are also defined.

The plan designates managers responsible for the liquidation of accidents. Specific members of these teams are named, listed and their contact information is kept up to date. The responsible coordinators and functional leaders are also defined. The ERP describes specific duties and responsibilities of the coordinators and team members depending on the nature of an emergency. In an emergency situation, the response is carried out primarily by the shift personnel, firstly by the remote control operators who monitor the technological process around the clock. Emergency response services include: Paramilitary Gas Rescue Squad of Korund LLC, emergency rescue unit of Korund Zyan, paramedic with the ambulance of the in-situ medical center.

Korund Zyan conducts monthly training sessions to develop practical skills for the interaction of all units in case of a threat and occurrence of emergencies, according to the approved schedule of training sessions. Training sessions are also held in all shifts according to the approved schedules. The ERP training is conducted in the course of emergency drills for every block and scenario for every shift, including all specialized response services being called.

The ERP identifies the emergency response team, defines training needs, includes call-out procedures and 24-hour contact information for the Emergency Response Coordinator and response team members, and specifies their duties. Full list of all internal and external persons and parties relevant during the emergency is available in the ERP. The ERP also lists all emergency response equipment that should be available and includes procedures to inspect emergency response equipment and assure its availability when required. Emergency Response Equipment is routinely inspected and maintained. External support from the licensed contractor is provided for maintenance check of the oxygen and resuscitation equipment. Maintenance results are registered in relevant logbooks.

The ERP also describes the role of outside responders, medical facilities and communities in emergency response procedures. It should be noted that no outside responders are required to provide immediate emergency response measures because all necessary resources and skills to perform emergency response are available within the Korund Zyan and the Korund LLC organizations. However, outside entities are included in the ERP through the Regional Authority which produce the External Emergency Plan for the City of Dzerzhinsk. Korund Zyan assures that the outside entities included in the Plan are aware of their involvement and are involved in mock drills and implementation exercises. Records of several recent mock drills were reviewed and showed that the formal follow up improvements and training are in order.

The ERP has been developed with input from third party organizations, involved in localization and liquidation of emergencies; and with the facility security service, fire brigade and gas rescue squad. A mock drills schedule for facility areas is developed annually and is introduced by the Management Order. The Schedule is distributed among all facility areas and third parties: facility security service, fire brigade, gas rescue squad and medical service. Korund Zyan confirmed that the outside entities included in the ERP are aware of their involvement and are included as necessary in mock drills or implementation exercises. As an evidence of excellence in the teamwork during the emergency training, Korund Zyan has received a Certificate of Attestation granting the right to Korund Zyan to conduct emergency response and rescue activities, valid till 24 December 2024.

Training needs of the organization are defined in the emergency response plan, and formal training of all personnel involved in cyanide production and handling is carried out. Telephone numbers, addresses and contact persons (includes internal contacts and external contacts such as authorities, police, neighbouring companies, public institutions, transport companies, hospitals and medical support, and public media) are listed and kept up to date.

Standard of Practice 5.4

Develop procedures for internal and external emergency notification and reporting.

The operation is:	■ in full compliance with in substantial compliance with not in compliance with	Standard of Practice 5.4

Summarize the basis for this Finding/Deficiencies Identified:

The ERP includes procedures and contact information for notifying management, regulatory agencies, outside response providers and medical facilities of an emergency. If external medical support or follow-up care is required, medical facilities and care are available at hospitals in the town of Dzerzhinsk. The ERP includes procedures and contact information for notifying potentially affected communities of the incident and/or any response measures, and procedures for communication with the media. Local Civil Defense and Emergency Situations Authorities are notified using point-to-point communication. The Production Dispatcher Division operator (personnel work in shifts covering 24-hours) has a list of contacts for immediate notification, which is annually updated.

In addition, if a cyanide emergency constitutes a “significant cyanide incident” that requires notification to the International Cyanide Management Institute, Korund Zyan undertakes to provide such a notification in a timely manner, as instructed in the Management Order dated 29 December 2022.

Standard of Practice 5.5

Incorporate remediation measures and monitoring elements into response plans and account for the additional hazards of using cyanide treatment chemicals.

The operation is:	■ in full compliance with in substantial compliance with not in compliance with	Standard of Practice 5.5

Summarize the basis for this Finding/Deficiencies Identified:

The ERP incorporates appropriate specific remediation measures and application and monitoring requirements associated with the use of cyanide treatment chemicals. The ERP describes emergency spill clean-up measures and personnel actions including removal of contamination; disposal to appropriate approved facilities; use of decontamination chemicals; monitoring requirements/methods, and provision of alternative drinking water where necessary. Korund Zyan plant is designed and constructed in such a way as to be completely separated from any surface water to avoid possible contamination. The only connection to outside facilities is the wastewater buffer tanks, whose content is released into Korund Industrial Park system when the wastewater is analytically qualified and meets the specification for wastewater.

Company procedure, namely Instruction No 05-19P dated 07 March 2023 explicitly prohibits the use of chemicals such as sodium hypochlorite, ferrous sulfate and hydrogen peroxide to treat cyanide that has been released into surface water or near the waterbodies. Company staff understand that the use of chemicals such as hydrogen peroxide, ferrous sulphate or sodium hypochlorite for the removal of cyanide near surface waters is prohibited.

The possibility for cyanides being released into surface water is extremely low due to the provision of secondary containments and a system for collection of cyanide releases into wastewater collection reservoirs with subsequent treatment at the local treatment facilities of cyanide production by neutralisation using hydrogen peroxide in order to reduce the mass fraction of cyanide to < 0.0001% by weight. After the local treatment, wastewater is discharged into the Korund Industrial Park system for additional treatment.

Analytical monitoring is carried out throughout all stages of treatment. Discharge into the treatment facility is permitted only upon allowable laboratory test results from the wastewater samples. The level of cyanide ion concentrations prior to discharge into surface water is evaluated at 0.0049 mg/L and is observed by the larger Korund LLC (not part of this audit).

Processes related to remediation measures are also integrated in the Production Standard Operating Procedures (SOPs) for the specific scenarios defined for the routine production activities and the remediation measures are defined in detail in the operational alarm and emergency response plan.

The ERP addresses the potential need for environmental monitoring to identify the extent and effects of a release and includes sampling methodologies, parameters, and where practical, possible locations. Korund's accredited laboratory is engaged by Korund Zyan as necessary.

To date, no cases of spillages, debris handling, recovery or alike have occurred since the start of operations, as reported by Korund Zyan management.

Standard of Practice 5.6

Periodically evaluate response procedures and capabilities and revise them as needed.

The operation is:	■ in full compliance with in substantial compliance with not in compliance with	Standard of Practice 5.6

Summarize the basis for this Finding/Deficiencies Identified:

The Korund Zyan ERP and emergency response procedures contain provisions for periodical review and evaluation of their adequacy as prescribed by Russian Federation regulation. Korund Zyan ERP is valid for 5 years and is reviewed as necessary. The routine and non-routine process for review of various ER procedures is described in these procedures and associated procedures existing at the site.

Mock emergency drills are conducted periodically to evaluate the operational procedures and response plans and readiness of the rescue team to respond to various emergency scenarios including release of hazardous chemicals, explosion and fire and cyanide exposures at different facilities of Korund Zyan enterprise.

In addition, mock drills are also undertaken by the rescue team to test emergency response to cyanide releases and personnel exposure to hazardous chemicals. The purpose of these drills is to test the effectiveness of response procedures, equipment and first aid capabilities of the responders. Completed drill reports outline the lessons and any pending improvements of the drill response. Additionally, further mock emergency drills are scheduled each year, focusing on specific scenarios of accidents. Drills are repeated across the work teams to cover all shifts.

During the site visit undertaken by the auditor on February 21, 2023, a mock drill was conducted at the HCN-NaCN B40 production unit using a scenario of NaCN pipeline depressurization leading to NaCN solution poisoning of a worker. The emergency brigade consisting of internal and external emergency response and rescue entities demonstrated knowledge of actions required in this particular emergency situation. The team included Korund shift manager, paramedics, fire brigade and EMERCOM rescue team, among others. All team members wore appropriate PPE and had necessary equipment and machinery to liquidate the emergency situation. Loundspeaker and alarm were activated warning everyone present at the Korund Zyan site of imminent danger. The rescue team arrived swiftly and showed decent coordination in their emergency response actions. Upon completion of the drill, the team convened and discussed both the excellence of

certain response actions and the areas for improvement in others. Subsequently, the mock drill records have been released and presented to the auditor for review.

Emergency Response Plan at Korund Zyan is reviewed periodically; current ERP was reviewed and approved by the Company management on December 08, 2022, which has replaced the preceding 2018 version. Average period for the review of the ERP is two to five years.

In addition, Korund Zyan develops and approves annual Emergency Mock Drill Plan, which serves as the guideline for conducting emergency drills as part of the emergency preparedness. Terrorism Prevention Plan dated 28 October 22 is also available and describes preventative measures required to counter terrorists attacks and ensure uninterrupted operations.

Korund Zyan has successfully passed all checks and inspections by the regulator bodies, including FSB. This marks the excellence of Korund Zyan personnel in the emergency preparedness as well as high standards of operation at the facility.

The above requirements have been verified through discussions with the Company personnel, review of the existing procedures, plans and records as well as on-site observations.