

REPUBLIC OF UZBEKISTAN
MINISTRY OF HIGHER AND SECONDARY SPECIALIZED EDUCATION

MODERNIZING HIGHER EDUCATION PROJECT

Environment Management Framework (EMF)

Tashkent

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ACRONYMS AND ABBREVIATIONS

Bank, WB, IBRD	International Bank for Reconstruction and Development
ISCB	International Science and Commercialization Board
MHSSE	Ministry of Higher and Secondary Specialized Education
SCNP	State Committee for Nature Protection
EIA	Environmental impact assessment
EP	Environment protection
EMF	Environment management framework
EMP	Environmental management plan
RU	Republic of Uzbekistan

Table of contents

Project description	4
Objective of Environment Management Framework (EMF).....	6
World Bank’s social and environmental safeguards applicable to the project	7
Relevant environmental laws and regulations in Uzbekistan	8
Key potential environmental impacts of the project	10
Environmental assessment process	10
Environmental review of applications and responsibilities for the EMF implementation	11
Contracts	12
Capacity building and training.....	12
Public Consultation and Disclosure	12
Annex A: Checklist Environmental Management Plan (EMP)	13
Annex B: International good practices for laboratories	22
Annex C. Individual clauses from key sanitary and technical requirements for design, construction, refurbishment and operation of chemical laboratories	26
Table 1. Maximum permissible concentrations of the airborne main hazardous substances in the working area of chemical laboratories - <i>by the SCNP (GOST</i> <i>12.1.005)</i>	26
Table 2. First aid in case of chemical poisoning.....	38
Annex D. Minutes of the public consultations meeting on the EMF.....	40

Project description

A. Project Components

The proposed project consists of four components: (i) strengthening higher education management; (ii) improving the learning environment in HEIs; (iii) improving the relevance of higher education; and (iv) project management. The summary description of the project components follows below.

Component 1 – Strengthening Higher Education Management

The project will support the enhancement of the managerial capacity of the higher education system in Uzbekistan in the following ways: (i) strengthening the capacity of the MHSSE to manage the sector; (ii) supporting the State Testing Center to develop and implement the system of external quality assurance; and (iii) supporting the Higher Education Institutions to strengthen their systems of internal quality assurance.

Establishing HEMIS. MHSSE currently lacks a streamlined information system. This component would finance improvements in the management capabilities of MHSSE and HEIs, including development of a Higher Education Management Information System (HEMIS) and capacity building for users of the HEMIS at HEIs and MHSSE. The HEMIS will provide better guidance, support, and direction to HEIs. The HEMIS would also improve coordination for policymaking and planning among the many actors that are responsible for the management of higher education, including the Cabinet of Ministers, Ministry of Economy, Ministry of Labor, and others. Development of the HEMIS will involve the acquisition of an appropriate hardware platform and technical assistance in the development of software. Users of the information systems at HEIs and MHSSE will receive comprehensive training to ensure effective use of the HEMIS.

Improving the Quality Assurance System. Existing quality assurance norms in Uzbekistan fall short of international practices, which usually follow a two-stage process: (i) an internal self-evaluation performed by the HEI in question and (ii) an external peer review performed under the guidance of an autonomous and independent agency. In order to help strengthen the QA mechanisms in Uzbekistan, this subcomponent will support: (i) strengthening of HEIs to establish Quality Enhancement Cells (QECs) to take ownership of the self-assessment of the institution and its academic programs; (ii) strengthening of the MHSSE to facilitate support of the HEIs to establish QECs, review self-assessment reports, and review and improve the university ranking system; and (iii) strengthening the STC10 to carry out the function of an independent external quality assurance agency. QECs will be the focal offices for internal quality assurance and help inform campus decision-making by collecting, analyzing and reporting quantitative and qualitative data about their HEIs' students, faculty, staff, curriculum, course offerings, and learning outcomes. Towards this end QECs will use the HEMIS developed under the project, in addition to other sources.

Component 2 – Improving Learning Environment in HEIs

Improving laboratories and associated academic and research systems in priority areas. The project will support the Government in improving laboratories and research systems, to help better prepare higher education graduates to contribute to scientific progress in an effort to increase economic growth.

The proposed subcomponent will support: (i) the establishment and upgrading of modern basic teaching laboratories and advanced scientific research laboratories in Uzbek HEIs in priority areas of the economy; (ii) the development and implementation of a modern curriculum optimizing the use of the equipment provided; and (iii) training of faculty and staff for optimal use of the equipment.

To improve the quality of teaching and academic research in Uzbekistan, the Project funding will support two types of laboratories: (i) basic teaching laboratories and (ii) advanced scientific research laboratories. In order to receive funding, universities will be requested to develop comprehensive proposals that move significantly beyond the development of specialized laboratories and focus on economic development of the country in priority areas. The proposals will include the intended use of the equipment, the development and adoption of modern curriculum supporting the laboratories requested, mechanisms for linkage with industry, and a plan to develop and ensure availability of qualified faculty trained to optimize use of requested facilities.

Establishment of a national e-library for Uzbek HEIs. The project will support the establishment of a national E-library in Uzbekistan to improve the learning and research environments at Uzbekistan's HEIs. All HEIs are envisioned to have digital access to the national e-library through the MHSSE. The following activities are envisioned: (i) review of the need for E-library resources by the local HEIs with focus on students and teachers and current availability of library and E-library resources in the country (including libraries at the HEIs, E-learning network at the MHSSE, and National Library of Uzbekistan) as well as development of the list of digital resources for subscription; (ii) review of current IT network, including ICT capacity in the HEIs' libraries, and develop IT recommendations for establishing E-library network that can be used across the higher education system; (iii) establishment and testing of E-Library network; (iv) subscription to digital/E-library resources; and (v) development and delivery of trainings to librarians, faculty, and students including printing of training materials and brochures with E-library research guidelines, tips and rules for using E-library (e.g. authors' and distribution rights).

Component 3 –Improving the Relevance of Higher Education

Establishing a Competitive Academic Innovation Fund. The project will support the establishment of a Competitive Academic Innovation Fund (AIF) in the MHSSE with the objective of improving the relevance of higher education by encouraging innovative approaches to academic improvement, and strengthening HEI linkages with industry. In other higher education systems, well-designed competitive funds have led to innovative improvements in quality and relevance as well as indirectly promoted a culture of accountability and attitudinal change at the HEI level. The AIF will finance on a pilot basis two rounds of academic improvement grants to HEIs. Each round of grant financing will fund a total of US\$ 2 million worth of grants. Individual grants will be limited to US\$ 200,000 in funding over two years. All public HEIs, and other related institutions¹¹ are eligible to apply for these grants. Each round of grants will be externally assessed on a rolling basis to see that it has been effectively implemented in line with the grant objectives. After two rounds of grants, the AIF mechanism will be jointly evaluated by the World Bank and the GoU. If implementation is deemed successful, the AIF will be extended for up to three additional rounds through co-financing from the GoU. The AIF will finance grant proposals in two main strategic directions: (i) strengthening university-industry linkages and (ii) improving teaching and learning practices within HEIs. To encourage engagement of key stakeholders and promote mechanisms for inclusion and empowerment of female students, the list of review criteria of the AIF applications would include prioritization of faculty and institutions from under-developed areas, citizen engagement and gender impact.

Component 4 – Project Management

The component will support incremental operating costs for the project, including a core team of consultants to coordinate the project, ensure fiduciary compliance, and monitor it. The project would also finance technical experts to support implementation, as needed, and studies/evaluations.

Technical Assistance and Outreach. The project will also support technical assistance activities to build capacity within the MHSSE and project-supported HEIs in areas including but not limited to: promotion of technical education, identification of options for increasing access in higher education, particularly for females, establishment of partnerships with industries and other higher education institutions, technical design of specialized laboratories, and awareness raising regarding the country's laws relating to child and forced labor. To promote higher education for women, especially in technical disciplines, a study to identify cultural, social and financial barriers that hinder higher education for women would be conducted. Based on the recommendations from the study, a strategy for engagement and outreach with young women would be developed and implemented. Global and regional evidence demonstrates that citizen's engagement is a crucial element of improved service delivery, through more informed decision-making that reflects the needs of users, and better monitoring of the performance of service providers. The component will support the development and strengthening of mechanisms for citizen engagement/stakeholder's consultations and beneficiary feedback within the higher education system, to enhance the dialogue between the educational authorities and the students, to improve the quality and relevance of teaching and research programs. Clear mechanisms for incorporating the results of such consultations and feedback mechanisms to directly influence management and policy decisions, would be developed.

Objective of Environment Management Framework (EMF)

This EMF was developed by the Ministry of Higher and Secondary Specialized Education (MHSSE) and its objective is to provide the staff of the MHSSE, local communities, engineers, environment consultants, contractors, and other stakeholders with guidelines to identify the nature and scope of potential environmental impact of the rehabilitation and civil works, to ensure that works at both basic and advance laboratories are carried out in a safe manner, following the guidelines, which are aimed to mitigate negative impacts, if any. Also the EMF shall ensure that environmental issues are incorporated properly in the project design and implementation. Particularly, the EMF shall provide an action plan (i) to identify potential environmental impacts of the proposed civil and rehabilitation works; (ii) to identify a nature of environmental assessment and analysis required to accurately define short- and long-term environmental aspects of the works; (iii) to elaborate preventive and mitigation measures aimed to eliminate and mitigate potential adverse environmental impacts; and (iv) to incorporate an environmental monitoring plan in the process of construction and rehabilitation of the buildings/ and functioning of educational institutions. The EMF exemplifies (appendices A and B) the preparation of a site-specific environmental management plans and monitoring plans. To facilitate the preparation of necessary documents on environmental issues and to ensure project compliance with all relevant rules and regulations the EMF includes a review of Uzbekistan environmental legislation and World Bank's safeguard policies.

World Bank's social and environmental safeguards applicable to the project

The policy calls for environmental screening of the project as a whole. The screening would help determine the type and scope of the environmental assessment process. The project has been screened and assigned a Category B status. Category B projects have potential to cause adverse impacts on human population or environmentally important areas.

Safeguards policies related to applications for refurbishment and modernization of laboratories are described below:

OP/BP 4.01 (Environmental Assessment). Environment assessment should be made and environment management plan (EMP) prepared for civil works classified as category B, proposed for Bank financing.

OP 17.50 (Disclosure policy) is triggered with the reference to the EMF, environment assessment, and EMPs for site-specific works proposed for Bank financing (*see a separate section on consultations and disclosure requirements below*).

The policy requires conducting an environmental assessment of the projects proposed for World Bank financing to ensure that they are environmentally sound and sustainable, and, thus, to make informed decisions. The scope of environmental assessment and the way it is made depend on the type and scope of proposed works, and their potential environmental impact. The process of environmental assessment should take into account the natural environment (water, air, soil); human health and safety; social aspects (involuntary resettlement, preservation of cultural heritage sites), as well as transboundary and global environmental consequences of the project implementation.

The environmental impacts will come from civil works associated with the rehabilitation of the existing buildings, which will host the new laboratories and other research institutions. The environment assessment process would require the project beneficiaries to prepare the EMF, which should establish mechanisms to determine and assess potential environmental and social impacts activities, and to set out mitigation and monitoring measures (including through the establishment of new social institutions). These measures should be taken throughout the implementation of the related civil works in order to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable levels.

OP 4.01 requires the project beneficiaries to prepare a site-specific EMP as a separate stand-alone document; Compliance with this requirement is a condition for Bank's approval of the project. The site-specific EMP should be disclosed to the general public (including local communities) and at the Infoshop of the World Bank.

The activities listed below are typically not eligible for IBRD financing (and, therefore, laboratory activities related to them shall not be financed under the project):

1. Trade in wildlife and wildlife products prohibited by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES);
2. Release of genetically modified organisms (GMO) into natural environment;
3. Manufacturing, distribution and sale of banned pesticides and herbicides;
4. Drift seine netting in the marine environment;
5. Manufacturing, handling, and disposal of radioactive products;
6. Storage, treatment and disposal of hazardous wastes;
7. Manufacturing of equipment and appliances containing CFCs, halons, and other substances regulated under the Montreal Protocol;
8. Manufacturing of electrical equipment containing polychlorinated biphenyls (PCBs) in excess of 0.005 per cent by weight;
9. Manufacturing of asbestos containing products;
10. Nuclear reactors and parts thereof;
11. Tobacco, unmanufactured or manufactured;
12. Tobacco processing machinery, and;
13. Manufacturing of firearms.

* For the purpose of research laboratories, which activity is subject to licensing, the use of small amount of radioactive trace materials will be allowed following the appropriate due diligence.

Relevant environmental laws and regulations in Uzbekistan

There are several laws forming a basis for environment protection. These laws are as follows:

1. Law of RU on nature protection (1992)
2. Law of RU on water and water use (1993)
3. Law of RU on concessions (1995)
4. Law of RU on atmospheric air protection (1997)
5. Law of RU on flora protection and use (1997)
6. Law of RU on forests (1999)
7. Law of RU on environmental expertise (2000)
8. Law of RU on wastes (2002)
9. Law of RU on mineral resources (2002)
10. Law of RU on protected natural areas (2004)
11. Law of RU on ecological monitoring (2013)
12. Law of RU on labour safety (1993)
13. Law of RU on radiation safety (2000 г.)
14. Law of RU on industrial safety of hazardous manufacturing entities (2006)
15. Law of RU on fire safety (2009)
16. Radiation standards (NRB-2006) and key sanitary rules of radiation safety (OSPORB-2006)

Legislation that regulates the construction and rehabilitation of buildings shall be followed, too. Bills of quantities for rehabilitation and construction works shall include guidelines on handling and disposal of asbestos-containing materials. Also, they have to reflect measures to mitigate adverse impacts of civil works, including noise, waste management and safety measures.

Safety measures for delivery, disposal and storage of hazardous and toxic materials such as asbestos substances, varnish-and-paint and asbestos materials, and waste management thereof are reflected in the applicable legislative acts, standards and norms (GOST, SNiP, SN).

- GOST (State Standard) – standards applicable to the construction activity shall be furnished by the State Committee of the Republic of Uzbekistan for Architecture and Construction.
- SNiP (Construction norms and rules) – shall be furnished by the State Committee of the Republic of Uzbekistan for Architecture and Construction.
- SN (Sanitary norms) – shall be furnished by the Ministry of Public Health of the Republic of Uzbekistan.

There are some sanitary norms and rules, methodologies, and state standards that regulate labor safety. These include as follows:

1. Methodology for the evaluation of labour conditions and the certification of workplaces based on labour conditions. №1/5. Tashkent, 1996;
2. Hygienic classification of the labour conditions based on harm and hazard factors in the working environment, difficulty and intensity of working processes. SanPiN № 0141-03. Tashkent, 2003;
3. System of labour safety standards “General sanitary-and-hygienic requirements for air quality in the working area”. GOST 12.1.005-88;
4. Sanitary standards and rules “Daylight and artificial lighting”. KMK 2.01.05-98. Tashkent, 1998;
5. SanPiN № 0120-01 “Sanitary standards of noise exposure limits at workplaces”. Tashkent, 2001;
6. SanPiN № 0122-01 “Sanitary standards of general and local vibrations at workplaces”. Tashkent, 2001;
7. SanPiN № 0117-01 “Sanitary standards of infrasound levels at workplaces”. Tashkent, 2001;
8. Labour Code of the Republic of Uzbekistan. Tashkent, 1996;
9. Collection of standard acts on preferential pension provision and labour protection in the Republic of Uzbekistan. Tashkent, 2000;
10. SanPiN № 0100-00 “Sanitary rules and standards for operating PCs, video monitor terminals, and office equipment”. Tashkent, 2000;
11. SanPiN № 0118-01 “Sanitary rules and standards of permissible levels of RF electromagnetic fields”. Tashkent, 2001;
12. Procedures for free distribution of milk and other equivalent foodstuff among employees directly engaged in jobs in the harmful labour conditions. Tashkent, 2004;
13. Order by the Ministry of Public Health of RU №200 “On improving the medical examination system at and during the employment”. Tashkent, 2012;
14. GOST of the RU 1014:2001. Anthropogenic emergency situations, 2001;
15. GOST of the RU 981:2000. Safety in emergency situations, 2000;
16. GOST of the RU 1017:2001. Sources of anthropogenic emergency situations, 2001.

Key potential environmental impacts of the project

Possible environmental issues may arise during the proposed rehabilitation activities of the building that will host the new laboratory. However, the environmental impacts of the project, if any, will be minor and short-term.

The site-specific environmental screening should assess carefully potential issues as follows:

- Dust, noise and vibration due to the demolition and construction;
- Risk of damage to unknown historical and archaeological sites;
- Damping of construction wastes, and accidental spillage of machine oil and lubricants;
- Risk related to inadequate handling of wastes; and
- Potential requirements, if any, for involuntary resettlement or temporary relocation of a limited number of affected persons during construction activities.

The chemical laboratories have a set of production factors, which, in case of non-compliance with the hygienic requirements, may have adverse effect on the staff. All types of adverse impacts arising during the labor activity are classified as four major groups: physical, chemical, biological, and psychophysiological.

Physical factors – moving machinery and equipment; moving products, workpieces, materials; high noise and vibration; high dust and gas contamination levels in the working area; high or low temperature of equipment surfaces and materials; electromagnetic and ionizing radiation, insufficient lighting, high static electricity, high voltage in the electric circuit, etc.

Chemical factors – substances and compounds in different aggregate states having toxic, irritant, sensitizing, carcinogenic and mutagenic impacts on the human organism and affecting the reproductive function.

Biological factors – pathogenic microorganisms (bacteria, viruses, fungi, protozoa, etc.) and their waste products; and microorganisms (animals and plants).

Psychophysiological factors – are classified as physical and neuro-psychic overloads. Physical overloads are subdivided into static and dynamic ones, and neuro-psychic overloads are subdivided into mental overstrain, overstrain of analyzers, monotony of labor, and emotional overloads.

Environmental assessment process

Preliminary environmental assessment is the first step of the environmental screening as part of processing the HEIs applications for modernization of the laboratories.

Applications for rehabilitation works related to the laboratories and research buildings

For all projects related to the rehabilitation and modernizations of laboratories, EMP checklist will be used (see Annex A). The EMP checklist should be prepared in local language and publically disclosed.

Common mitigation measures associated with the rehabilitation of the laboratories, which should be adhered to, as well as good international laboratory practices are described in Annex B. Some provisions from the main sanitary and technical requirements for the design, construction, retrofitting

and operation of chemical laboratories in the Republic of Uzbekistan (RD 118.0027714.18-92) are presented in Annex C.

Standards and requirements of Uzbekistan's national legislation will be taken into consideration to ensure environmental compliance of the rehabilitation projects. Where Uzbekistan's legislation and standards would deviate substantively from practices and standards as described in the World Bank's Pollution Prevention and Abatement Handbook, the World Bank's provisions and standards will prevail.

Modernization, laboratory rehabilitation or extensions, etc. would be implemented through the MHSSE based on designs adhering to international best practice and standards, and Uzbekistan legislation. The works should be done by local contractors, funded by the project, supervised by the MHSSE and the World Bank.

The MHSSE and the World Bank will review plans for implementation of all works, along with any comments from expert organizations such as the International Materials Science Center.

Responsibility for observance of EMF guidelines lies with the MHSSE. Any consequences of untruthfully stating that no involuntary resettlement, or loss of assets or rights of access to land, or an impact on livelihood are involved, will equally fall fully to the MHSSE. Compliance of the construction activity with the ESMF mitigation measures will be a routine part of construction supervision. The MHSSE will make provision for occasional extraordinary supervision visits focused on compliance with the requirements and safety regulations in the laboratories.

Environmental review of applications and responsibilities for the EMF implementation

STEP 1: The MHSSE alerts the beneficiary (i.e. HEI) of its EMP Checklist preparation requirements (Annex A). When preparing the application for laboratory modernization, the beneficiary will include the EMP Checklist in the general application package. The MHSSE will assist the beneficiary in finalizing the EMP Checklist. It is the responsibility of the beneficiary to fulfill any local and national environmental review requirements (such as EIA and/or other official approval/permits). It will be the responsibility of the beneficiary, i.e. HEI, to obtain the appropriate permits and licenses as required by the national legislation. These requirements are considered separate, but parallel, to those presented herein and satisfying them is the responsibility of the beneficiary.

STEP 2: The MHSSE screens the quality of project materials submitted and the availability of required permits/approvals, and informs the beneficiary of follow-up requirements, as needed (for example on the use of radioactive trace materials).

STEP 3: The MHSSE provides its clearance once the analysis is judged to be satisfactory and proceeds with the disclosure advice (see the previous sections). In case where radioactive trace materials will be used or carcinogenic, teratogenic or mutagenic substances, as well as animal testing conducted, the MHSSE shall, by all means, advise the WB on the quality of the environmental due diligence document.

STEP 4: The Beneficiary takes into account the recommendations provided in the analysis, including associated estimated costs, and incorporates the EMP Checklist in the bidding documents for contractors.

STEP 5: The MHSSE monitors the implementation of the EMF (if necessary) and reports on the EMF implementation in the regular project progress reports and at the request of the WB.

Contracts

Contracts and bill of quantities will include clauses for appropriate disposal of unacceptable construction material and disposal of construction waste. Procurement documents will specify that no environmentally unacceptable materials will be used. Bidding documents will include the rehabilitation of adequate sanitary facilities, including appropriate disposal of wastewater and sewerage. This EMP Checklist should be provided to contractors engaged in civil works under the Project, and should be made an integral part of the civil works contracts.

The site inspector's monitoring report would be a condition for full payment of the contractually agreed remuneration, the same as technical quality criteria or quantity surveys. To assure a degree of leverage on the Contractor's environmental performance an appropriate clause will be introduced in the works contracts, specifying penalties in case of noncompliance with the contractual environmental provisions, e.g. in the form of withholding a certain proportion of the payments, its size depending on the severity of the breach of contract.

Capacity building and training

The MHSSE environmental consultant will ensure that the induction on health and safety in laboratories is conducted for students, lecturers, and laboratory staff. They will also monitor that suppliers of laboratory equipment provide training for the beneficiary in the general principles related to safe operation of the equipment.

Public Consultation and Disclosure

This Environmental Management Framework and site-specific EMP checklists are subject to public disclosure through the website of MHSSE and in hard copy in local and English languages. EMF disclosure is followed by the public consultation meeting that has to be conducted prior to the start of the official project Appraisal mission. List of meeting participants should include but not be limited to laboratory staff and students, HEIs faculty, communities residing close to the laboratories refurbished under the project and NGOs. Meeting proceedings must be recorded in the form of Minutes and attached as Annex D of the current EMF. The EMF shall then be re-disclosed to include the Minutes of the Meeting. Checklist EMPs are also subject to public disclosure and discussion with relevant stakeholders. EMF and EMP Checklists are considered complete only after they reflect the public opinion.

Annex A: Checklist Environmental Management Plan (EMP)

Potential Environmental Impacts

The environmental impacts of the refurbishment activities are expected to be of manageable, temporary and of local impact as they are related to the general construction activities on already known and previously used locations. These impacts most commonly include: a) Dust and noise due to excavation, demolition and construction; b) Management of demolition construction wastes and accidental spillage of machine oil, lubricants, etc., c) Encroachment to a private property; d) damage to historical or cultural property or unknown archaeological sites; e) Traffic disturbance; f) surface or ground water and g) soil pollution or erosion.

CHECKLIST EMP

Checklist EMP is applied for minor rehabilitation or small-scale building construction. It provides “pragmatic good practice” and it is designed to be user friendly and compatible with WB safeguard requirements. The checklist-type format attempts to cover typical mitigation approaches to common civil works contracts with localized impacts.

The checklist has one introduction section and three main parts:

- Introduction or foreword part in which the project is introduced, environmental category defined, and checklist EMP concept explained.
- **Part 1** constitutes a descriptive part (“*site passport*”) that describes the project specifics in terms of physical location, the institutional and legislative aspects, the project description, inclusive of the need for a capacity building program and description of the public consultation process.
- **Part 2** includes the environmental and social screening in a simple Yes/No format followed by mitigation measures for any given activity.
- **Part 3** is a monitoring plan for activities during project construction and implementation. It retains the same format required for standard World Bank EMPs. It is the intention of this checklist that Part 2 and Part 3 be included as bidding documents for contractors.

Application of the EMP-Checklist

The design process for the envisaged civil works in the Modernizing Higher Education Project will be conducted in three phases:

- 1) *General identification and scoping phase*, in which the objects (e.g. HEIs) for rehabilitation, extension and/or construction are selected and an approximate program for the potential work typologies elaborated. At this stage, Part 1, 2 and 3 of the Checklist EMP are filled. Part 2 of the Checklist EMP can be used to select typical activities from a “menu” and relate them to the typical environmental issues and mitigation measures.
- 2) *Detailed design and tendering phase*, including specifications and bills of quantities for individual objects. Checklist EMP is revised according to the detailed design at this stage. As such, the Checklist is presented to the public, prior to the tendering procedure. This phase also includes the tender and award of the works contracts. The whole filled in tabular EMP (Part 1, 2 and 3) should be additionally attached as integral part to the works contract as well as

supervision contract, analogous to all technical and commercial terms, has to be signed by the contract parties.

- 3) *During the works implementation phase* environmental compliance is checked on the respective site by the site certified inspector(s) / supervisor(s), which include the site supervisory engineer or supervisor of the project. The mitigation measures in Part 2 and monitoring plan in Part 3 are the basis to verify the Contractor's or project investor compliance with the required environmental provisions.

MONITORING AND REPORTING

For the monitoring of the safeguards due diligence, the site supervisor works with **Part 3** of the EMP Checklist, *i.e.* with the monitoring plan. Part 3 is developed site specifically and in necessary details, defining clear mitigation measures and monitoring which can be included in the works contracts, which reflect the status of environmental practice on the construction site and which can be observed/measured/ quantified/verified by the inspector during the construction works.

Such mitigation measures include the use of Personal Protective Equipment (PPE) by workers on the site, dust generation and prevention, amount of water used and discharged by site, presence of proper sanitary facilities for workers, waste collection of separate types (mineral waste, wood, metals, plastic, hazardous waste, e.g. asbestos, paint residues, spent engine oil), waste quantities, proper organization of disposal pathways and facilities, or reuse and recycling wherever possible.

Reporting on implementation of practices should be described in the regular report to MHSSE.

PART 1: ORGANIZATIONAL AND ADMINISTRATIVE ASPECTS				
Country	Uzbekistan			
Name of project	Modernizing higher education project			
Scope of the project activity				
Organizational activity Names and contacts	Task team leader	Project management	Local counterpart and/or beneficiary	
Implementation actions Names and contact information	Safeguards compliance monitoring	Local counterpart monitoring	Local inspectorate monitoring	Contractor
DESCRIPTION OF FACILITY / LABORATORY				
Name of HEI				
Laboratory location			Annex 1: Site map [] Yes [] No	
Main types of civil works				
Who is responsible for the laboratory				
Main processes, research conducted in the laboratory				
Hazardous material used in the laboratory operations (acids, alkaline, radioactive substances)				
LEGISLATION				
Specify the national and local legislation that				

regulate the project activity and required work permits	
PUBLIC CONSULTATIONS	
Specify where and when the public consultations took place (students, HEI teaching staff, laboratory assistants, service/maintenance staff, public organizations, etc.)	
STRENGTHENING INSTITUTIONAL CAPACITY	
Is any capacity building activity envisaged?	[] NO or [] YES. If 'yes', capacity building program should be presented in Annex 2.

PART 2: ENVIRONMENTAL /SOCIAL SCREENING

Will the site	Activity	Status	Additional references
activity include/involve any of the following:	A. Building rehabilitation	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Section B below
	B. New construction	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Section B below
	C. Individual wastewater treatment system	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Section C below
	D. Historic building(s) and districts	<input type="checkbox"/> Yes <input type="checkbox"/> No [<input type="checkbox"/> Possible	See Section D below
	E. Acquisition of land ¹	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Section E below
	F. Hazardous or toxic materials ²	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Section F below
	G. Impacts on forests and/or protected areas	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Section G below
	H. Handling / management of medical waste	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Section H below
	I. Traffic and Pedestrian Safety	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Section I below

¹ Land acquisitions includes displacement of people, change of livelihood encroachment on private property this is to land that is purchased/transferred and affects people who are living and/or squatters and/or operate a business (kiosks) on land that is being acquired.

² Toxic / hazardous material includes and is not limited to asbestos, toxic paints, removal of lead paint, etc.

ACTIVITY	PARAMETER	MITIGATION MEASURES CHECKLIST
A. General Conditions	Notification and Worker Safety	<ul style="list-style-type: none"> (a) The local construction and environment inspectorates and communities have been notified of upcoming activities (b) The public has been notified of the works through appropriate notification in the media and/or at publicly accessible sites (including the site of the works) (c) All legally required permits have been acquired for construction and/or rehabilitation (d) All work will be carried out in a safe and disciplined manner designed to minimize impacts on neighboring residents and environment. (e) Workers' PPE will comply with international good practice (always hardhats, as needed masks and safety glasses, harnesses and safety boots) (f) Appropriate signposting of the sites will inform workers of key rules and regulations to follow.
B. General Rehabilitation and /or Construction Activities	Air Quality	<ul style="list-style-type: none"> (a) During interior demolition use debris-chutes above the first floor (b) Keep demolition debris in controlled area and spray with water mist to reduce debris dust (c) Suppress dust during pneumatic drilling/wall destruction by ongoing water spraying and/or installing dust screen enclosures at site (d) Keep surrounding environment (sidewalks, roads) free of debris to minimize dust (e) There will be no open burning of construction / waste material at the site (f) There will be no excessive idling of construction vehicles at sites
	Noise	<ul style="list-style-type: none"> (a) Construction noise will be limited to restricted times agreed to in the permit (b) During operations the engine covers of generators, air compressors and other powered mechanical equipment should be closed, and equipment placed as far away from residential areas as possible
	Water Quality	<ul style="list-style-type: none"> (a) The site will establish appropriate erosion and sediment control measures such as e.g. hay bales and / or silt fences to prevent sediment from moving off site and causing excessive turbidity in nearby streams and rivers.
	Waste management	<ul style="list-style-type: none"> (a) Waste collection and disposal pathways and sites will be identified for all major waste types expected from demolition and construction activities. (b) Mineral construction and demolition wastes will be separated from general refuse, organic, liquid and chemical wastes by on-site sorting and stored in

ACTIVITY	PARAMETER	MITIGATION MEASURES CHECKLIST
		<p>appropriate containers.</p> <p>(c) Construction waste will be collected and disposed properly by licensed collectors</p> <p>(d) The records of waste disposal will be maintained as proof for proper management as designed.</p> <p>(e) Whenever feasible the contractor will reuse and recycle appropriate and viable materials (except asbestos)</p>
<p>C. Individual wastewater treatment system</p>	<p>Water Quality</p>	<p>(a) The approach to handling sanitary wastes and wastewater from building sites (installation or reconstruction) must be approved by the local authorities</p> <p>(b) Before being discharged into receiving waters, effluents from individual wastewater systems must be treated in order to meet the minimal quality criteria set out by national guidelines on effluent quality and wastewater treatment</p> <p>(c) Monitoring of new wastewater systems (before/after) will be carried out</p>
<p>D. Historic building(s)</p>	<p>Cultural Heritage</p>	<p>(a) If the building is a designated historic structure, very close to such a structure, or located in a designated historic district, notify and obtain approval/permits from local authorities and address all construction activities in line with local and national legislation</p> <p>(b) Ensure that provisions are put in place so that artifacts or other possible “chance finds” encountered in excavation or construction are noted, officials contacted, and works activities delayed or modified to account for such finds.</p>
<p>E. Acquisition of land</p>	<p>Land Acquisition Plan/Framework</p>	<p>(a) If expropriation of land was not expected and is required, or if loss of access to income of legal or illegal users of land was not expected but may occur, that the bank task Team Leader is consulted.</p> <p>(b) The approved Land Acquisition Plan/Framework (if required by the project) will be implemented</p>
<p>F. Toxic Materials</p>	<p>Asbestos management</p>	<p>(a) If asbestos is located on the project site, mark clearly as hazardous material</p> <p>(b) When possible the asbestos will be appropriately contained and sealed to minimize exposure</p> <p>(c) The asbestos prior to removal (if removal is necessary) will be treated with a wetting agent to minimize asbestos dust</p> <p>(d) Asbestos will be handled and disposed by skilled & experienced professionals</p> <p>(e) If asbestos material is be stored temporarily, the wastes should be securely enclosed inside closed</p>

ACTIVITY	PARAMETER	MITIGATION MEASURES CHECKLIST
	Toxic / hazardous waste management	<p>containments and marked appropriately</p> <p>(f) The removed asbestos will not be reused</p> <p>(a) Temporarily storage on site of all hazardous or toxic substances will be in safe containers labeled with details of composition, properties and handling information</p> <p>(b) The containers of hazardous substances should be placed in an leak-proof container to prevent spillage and leaching</p> <p>(c) The wastes are transported by specially licensed carriers and disposed in a licensed facility.</p> <p>(d) Paints with toxic ingredients or solvents or lead-based paints will not be used</p>
G. Affects forests and/or protected areas	Protection	<p>(a) All recognized natural habitats and protected areas in the immediate vicinity of the activity will not be damaged or exploited, all staff will be strictly prohibited from hunting, foraging, logging or other damaging activities.</p> <p>(b) For large trees in the vicinity of the activity, mark and cordon off with a fence large trees and protect root system and avoid any damage to the trees</p> <p>(c) Adjacent wetlands and streams will be protected, from construction site run-off, with appropriate erosion and sediment control feature to include by not limited to hay bales, silt fences</p> <p>(d) There will be no unlicensed borrow pits, quarries or waste dumps in adjacent areas, especially not in protected areas.</p>
H. Disposal of medical waste (not applicable)	Infrastructure for medical waste management	<p>(a) In compliance with national regulations the contractor will insure that newly constructed and/or rehabilitated health care facilities include sufficient infrastructure for medical waste handling and disposal; this includes and not limited to:</p> <ul style="list-style-type: none"> ▪ Special facilities for segregated healthcare waste (including soiled instruments “sharps”, and human tissue or fluids) from other waste disposal; and ▪ Appropriate storage facilities for medical waste are in place; and ▪ If the activity includes facility-based treatment, appropriate disposal options are in place and operational

PART 3 : MONITORING PLAN

Phase	What (Will the parameter be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define the frequency / or continuity?)	Why (Is the parameter being monitored?)	Cost (if not included in project budget)	Who (Is responsible for monitoring?)
During activity preparation							
During activity implementation							
During activity supervision							

Annex B: International good practices for laboratories

Mitigation measures

Short-term impact from noise, dust, and vibration during the execution of civil works is inevitable. Noise levels will increase significantly due to movement of construction machinery. This impact will be minimized under the project by (i) specifying in the project contract(s) the responsibility of contractor to undertake appropriate work site mitigation actions as a part of their management of work sites, and (ii) the supervision of compliance of contractor by the Supervision Engineer/PMU. Mitigation measures may include the following actions: use of sprinklers to wash down roads and suppress dust emissions during soil transport; cover vehicles to prevent spills and transport borrow materials during daytime only; reduce noise by using noise absorbing/protecting building materials, provide workers with ear plugs and helmets and generally prevented from prolonged exposure to high noise levels, etc.

Construction related waste - Technical specifications should require the collection and containment of all waste materials with bituminous content in specific landfills. The contractor would be required to conform to local environmental regulations and practice relating to proper waste disposal. The identification of the disposal site to be used and the appropriate quantities for each site are to be included as part of the documentation of the rehabilitated building. All valuable materials (doors, windows, sanitary fixtures, etc) should be carefully dismantled and transported to the storage area assigned for the purpose. Valuable materials should be recycled within the project or sold. Wood waste will be stored separately and arranged to be recycled instead of disposing it. Open burning and illegal dumping will not be permitted. Proper sites for earth/clay and sand disposal will be determined and prior approval from relevant authority for disposal will be obtained. Stockpiling of construction debris on site will be avoided and waste will be disposed of on a regular basis at the authorized government dumping ground.

Groundwater pollution - It is also required to create necessary conditions for safe removal of sewage during the rehabilitation and renovation and observe the ecological and sanitary regulations during the rehabilitation of sanitary and technical equipment, sewage pipes and purifying constructions.

Use of proper construction materials - All materials should have appropriate permissions on quality and safety (appropriateness certificate and sanitary-epidemiologic conclusion). Priority should be given to products meeting standards for recognized international or national symbols. Water-based interior nontoxic, no allergenic paint for drywall or plaster surfaces is preferable to latex or oil-based paints from a respiratory standpoint.

Safety of construction site - Construction sites should be fenced off in order to prevent entry of public, and general safety measures will be imposed. Temporary inconveniences due to construction works should be minimized through planning and coordination with contractors, neighbors and authorities.

Good international Practice

Possible Environmental Issues	Mitigation Measures	Monitoring Strategy and Contingency Measures
1. Air Emissions	<ul style="list-style-type: none">• Lab staff will be provided with information and training on methods to minimize air emissions.• Procurement of equipment which is ODS free (refrigerator, A/C, fire	<ul style="list-style-type: none">• Biannual exposure assessment of air pollutants will be developed.• Periodic verification of control systems will be

	<p>extinguisher, etc.) and proper servicing of ODS containing equipment.</p> <ul style="list-style-type: none"> List of hazardous air pollutant sources and emissions and category will be provided to the laboratory. A list of actual and potential emissions in the lab (fumes foods, stacks vents, etc.) will be prepared. 	<p>undertaken</p> <ul style="list-style-type: none"> Records of emissions will be kept and reviewed periodically by Bank supervision team and any other relevant authorities. Regular inspection and maintenance of ventilation system.
2. Waste Water Discharges	<ul style="list-style-type: none"> A comprehensive listing of sources and location of wastewater discharge will be prepared and maintained. Appropriate operating procedure will be undertaken for minimization of wastewater (such as neutralizing predisposal treatment, etc.) On-site septic tank systems or appropriate waste water treatment system depending on the waste water characteristics will be encouraged for implementation. After proper treatment waste water will be discharged in to existing municipal sewer line. Lab personnel will be trained in minimization and management of wastewater discharges. 	<ul style="list-style-type: none"> Periodic maintenance will be undertaken of the sewer system. Periodic testing of lab procedures will be carried out to ensure compliance with regulatory measures. Regular training will be provided to ensure waste minimization.
3. Hazardous and Radio Active Waste	<ul style="list-style-type: none"> Different types of hazardous waste stream such as unused chemicals, spent solvents, etc. will be identified for appropriate collection, transportation and disposal system. Special segregation and disposal method will be adopted for used lead acid batteries and alkaline batteries Training and awareness program will be imparted to laboratory staff for safe handling of hazardous waste. Waste minimization procedure will be developed and followed. 	<ul style="list-style-type: none"> Biannual assessment will be undertaken for hazardous and radioactive waste. 4 times/year periodic medical surveillance will be conducted for all employees. Records of waste generation and disposal will be kept and reviewed on regular basis by the laboratory.
4. Handling of Hazardous Chemicals	<ul style="list-style-type: none"> Required precautionary measures (such as hand gloves, masks and apron) as per manufacturer 	<ul style="list-style-type: none"> Periodic personal exposure assessment will be undertaken for

	<p>requirements/recommendations for handling different types of chemicals to minimize potential chemical exposure when working with hazardous chemicals.</p> <ul style="list-style-type: none"> • Appropriate labels for all hazardous chemicals, e.g. flammable and combustible material, oxidizing material, poisonous material, for clear identification of risks and precautionary measures to be taken. • Selection use and maintenance matrix for personal protective equipment will be developed for preventing direct contact with corrosives, carcinogens and irritants. • During reconstruction of proper ventilation/exhaust system will be designed to avoid exposure to vapors and fumes of hazardous chemical. • Appropriate radiation protection devices will be procured and used to work with radioactive chemicals. • Suitable spill containment procedure will be developed for different types of hazardous chemicals. • Training on First Aid measures will be organized to all employees. • Training on handling of hazardous chemicals will be provided to the laboratory staff. ‘Train the trainers’ program will be undertaken. 	<p>chemicals.</p> <p>Simultaneously, periodic medical surveillance program will be undertaken for all employees.</p> <ul style="list-style-type: none"> • Periodic visual inspection of all labels, symbols and signs will be designed, followed and recorded by the laboratory. • Compliance with regulatory measure will be undertaken by the Laboratory in charge. • Periodic maintenance and validation schedule will be prepared for checking effectiveness of the engineering control devices mitigation measures. • Records of all incidents/events related to handling of hazardous chemicals will be kept and reviewed periodically by the lab.
<p>5. Storage of Hazardous Chemicals</p>	<ul style="list-style-type: none"> • Procedure for segregation of chemicals will be developed and followed according to chemical classes and compatibility criteria. • Minimum inventory storage procedure of every hazardous chemical will be prepared. • Proper storage criteria for flammable, combustible and volatile chemicals will be 	<ul style="list-style-type: none"> • Periodic inspection criteria and regular visual inspection schedule to be developed and implemented. • Periodic review will be carried out to procure safer alternatives for highly toxic,

	<p>identified. Filled and empty chemical containers will be segregated accordingly.</p> <ul style="list-style-type: none"> • During reconstruction proper ventilation/exhaust system will be designed to avoid exposure to vapors and fumes of hazardous chemical. • Training program will be organized on proper storage and health effect for all employees. 	<p>carcinogenic, reactive or mutagenic material. If available.</p> <ul style="list-style-type: none"> • Periodic checks will be done of the ventilation system by the lab.
6. Disposal of Hazardous Chemicals	<ul style="list-style-type: none"> • Hazardous chemical/waste will be segregated at source and treated appropriately and stored in separate container. • Appropriate waste management system will be defined. • Lab personnel will be trained in proper waste management procedures. 	<ul style="list-style-type: none"> • Periodic monitoring of waste treatment and disposable procedures will be done by the local environmental protection authorities
7. Fire and Explosion	<ul style="list-style-type: none"> • Proper selection and installation of fire fighting equipment in effective locations will need to be implemented. Required new technology (smoke sensors, thermocouple, and fire alarms, as required) will be installed. 	<ul style="list-style-type: none"> • Periodic inspection of fire prevention equipment will be established. • Emergency response plan will be upgraded periodically.
8. Sustainable Practices	<ul style="list-style-type: none"> • Water conservation measures will be taken to reduce water consumption. • Minimum energy utilization measures will be implemented. • Laboratory employees will be education and motivated in energy and water management practices. 	<ul style="list-style-type: none"> • An energy and water inspection will be carried out to identify current equipment use and associated cost by the laboratory in cooperation with the local authorities.

Annex C. Individual clauses from key sanitary and technical requirements for design, construction, refurbishment and operation of chemical laboratories

Methodological guidelines: Guidance document of the State Committee of the Republic of Uzbekistan for Nature Protection RD 118.0027714.18-92

3.2.2 Based on their effect on human organism the chemical substances are divided in four classes:

- First – extremely hazardous;
- Second – highly hazardous;
- Third – moderately hazardous; and
- Fourth – marginally hazardous.

3.2.5 Content of airborne chemical substances in the working area should not exceed maximum permissible concentrations (MPCs) as established by GOST12.1.005. MPCs of the most common chemical substances are presented in Table 1.

Table 1. Maximum permissible concentrations of the airborne main hazardous substances in the working area of chemical laboratories - by the SCNP (GOST 12.1.005)

№	Chemical substance	MPC value (mg/m ³)	Hazard category	Aggregate condition	Specific effect on organism
1	Nitric oxides (translated to NO ₂)	5	II	v	O
2	Aliphatic amines		II	v	
3	Ammonia	20	IV	v	
4	Aniline	0.1	II	v	
5	Benzpyrene	0.00015	I	a	K
6	Benzol	15/5	II	v	K
7	Beryllium and its compounds (translated to Be)	0.001	I	a	K,A
8	Bromine	0.5	II	v	O
9	Butyl acetate	200	IV	v	
10	Vanadium and its compounds: a) vanadium oxide smoke b) vanadium oxide dust	0.1 0.5	I II	a a	
11	3,4-dichloronitrobenzene+	1	II	v	
12	Diethylamine	30	II	v	
13	Iodine	1	II	v	
14	Valerian acid	5	III	v	
15	Butyric acid	10	III	v	
16	Formic acid	1	II	v	
17	Propionic acid	2	IV	v	

18	Sulphuric acid	1	II	a	
19	Acetic acid	5	III	v	
20	Cobalt	0.5	II	a	
21	Manganese oxides (translated to Mn O ₂): a) disintegration aerosol b) condensation aerosol	0.3 0.05	II I	a a	
22	Naphthalene	20	IV	v	
23	Ozone	0.1	II	v	O
24	Polychlorpyrene		II	v+a	A
25	Metallic mercury	0.01/0.005	I	v	
26	Lead and its nonorganic compounds (to lead)	0.01/0.005	I	a	
27	Amorphous selenium	2	III	a	
28	Hydrogen sulfide +	10	II	v	
29	Carbon bisulphide	1	II	v	
30	H-butyl alcohol, secondary and tertiary butyl alcohol	10	III	v+a	
31	Ethyl alcohol	1000	IV	v	
32	Toluene	50	III	v	
33	Tributyl phosphate	0.5	II	v	
34	Carbon tetrachloride	20	II	v	
35	Phenatren	0.8	II	a	
36	Phenol	0.3	II	v	
37	Formaldehyde	0.5	II	v	O, K
38	Furfural	10	III	v	A
39	Chlorine	1	II	v	A
40	Cyclohexane	80	IV	v	
41	Metallic zirconium	6	III	a	F

Legend:

v – vapours/gases;

a – aerosols;

v +a – mixture of vapour and aerosol;

t – requires special eye and skin protection;

O - sharp-directional action substances requiring automated monitoring of their content in the air;

A- substances that may cause allergic diseases in the production areas;

K - carcinogens;

* - aerosols of mainly fibrogenic action.

As to works implemented in the ambient containing carbon monoxide for the duration of up to 1 hour the carbon monoxide MPC can be increased to 50 mg/m³; up to 30 min – to 100 mg/m³; and up to 15 min – to 200 mg/m³. Personnel working in such ambient are allowed to resume the work only after at least a two-hour break following the previous exposure.

4.1.1 Chemical laboratories should be placed in separate and stand-alone buildings, or in the isolated sections of administrative or production buildings. Chemical laboratories in the residential or public buildings are not allowed.

4.1.2 Buildings accommodating the laboratories shall be located in a separate area within a designated sanitary and buffer zone, with due consideration for their geospatial orientation, fresh air supply from unpolluted environment, and location alee to other buildings in the vicinity.

4.1.3 If possible, a site for the chemical laboratory should be selected in the close vicinity of the existing power and water supply infrastructure, sewerage and communication lines.

4.1.4 Where the chemical laboratory is accommodated in the administrative or production buildings, it should be established on the top floor and have a separate entrance and exit.

4.1.6 Building entrance shall have tambours with two or three doors (depending on the local climate conditions) placed consecutively.

4.1.6 Working area of the chemical laboratory should be calculated as a sum of the production, auxiliary, and administrative areas, and make up at least 12 m² per employee. Working area will not include passages, tambours, technical and special facilities.

4.1.7 The height of chemical laboratory (floor to ceiling) shall be at least 3.2 m, with a corridor width of at least 2.0 m (taking into account the operational requirements), and a door aperture of at least 1 x 2.3 m.

4.1.8 Daylight factor in the chemical laboratories shall be at least 1.5 at the level of table surface, and at least 1.0 – 0.75 (daylight and artificial lighting) in the fume hood.

4.1.9 In the laboratory, the minimum horizontal illumination intensity (at a height of 0.8 m from the floor) from one general light source shall be at least 150 lux for incandescent lamps and 300 lux for fluorescent lighting. Where technology requires a more intensive illumination it shall be created using localized lighting.

4.1.10 General light source should be furnished with defused lighting fitting. Localized lighting devices shall all have dazzle protective fittings.

4.1.11 It is tentatively recommended to calculate the specific power of electric lighting in the chemical laboratories at a rate of 38-40 watts per one m² of the working area for incandescent lamps, and 30-33 watts per one m² for fluorescent lamps.

4.1.12 Premises hosting sources of noise must have sound- and vibration insulation of the process, ventilation and other equipment and building structures to ensure permissible level of noise at workplace (GOST 12.1.003).

4.1.13 Chemical laboratories must have utility/service rooms such as warehouse, weighhouse, washhouse, etc., which can be shared by several laboratories, except for washhouse that must be individual for each laboratory.

Warehouse for chemical agents should be equipped in a way that is appropriate to enable separate storage of different types of chemicals.

4.1.14 Chemical laboratories should be connected to hot and cold water supply, local sewage and heating systems.

4.1.15. Premises, which require wet cleaning or are subject to potential liquid spillage, must have floor drains. If the floor drains cannot be connected to the local (on-site) sewerage, these premises must be

furnished with receiving tanks (sinks) with a capacity of up to 50litres and manual removal of liquid waste; or with drainage wells equipped with automatic pumps to remove waste water.

4.1.16 Establishment of the floor drains directly connected to the external sewerage system is not allowed for the warehouses used for storage and dispensing of chemicals and flammable liquids and located outside the main laboratory building. Spillage and floor flush water shall be channeled to the sink with a capacity of 100 – 150 liters. Following its neutralization, the waste from the pits in the chemicals warehouses is discharged to the sewerage by hand pump; whereas waste from the pits in the flammable liquids warehouses is discharged to the drums furnished with drain channels.

Washers and floor drains in the washroom of the warehouse shall be connected directly to the sewerage system.

4.2 Ventilation requirements for chemical laboratories

4.2.1 Facilities or sites dealing with chemical analyses must have the general combined extract and input ventilation and local ventilation to secure the capture and removal of harmful substances, the ‘dilution’ of uncaptured hazards to MPC levels, and to maintain the standardized air temperature and humidity profile in the working area.

4.2.2 Internal air recirculation in the facilities dealing with chemical agents is allowed provided that the airborne concentrations of hazardous substances in the working area lie within permissible range.

Recirculation of the air that comes from other premises is allowed provided that the concentration of harmful substances in it would not exceed 30 per cent of MPC in the working area, and that it contains no pathogenic bacteria, viruses, and fungi, as well as pronounced odour.

4.2.3 Air recirculation is not allowed in the hydrobiological laboratory or other facilities that deal with the analysis of samples containing bacteria, viruses and fungi.

4.2.4 The forced draft ventilation systems should be able to heat and moisten the outside air, and to clean it of dust, as necessary (in dust storms areas or near industrial sites, etc.).

In the hot and dry climate it is recommended to use the indirect evaporative cooling or refrigeration installations, or to install autonomous local air conditioning systems.

4.2.5 Air to premises dealing with harmful substances should be supplied in part, but not less than 90 per cent of a total calculated amount of fresh air, the remainder being channelled to the corridors or ‘clean rooms’ (offices, camera treatment rooms, etc.).

Making special apertures or arrays in fire-separation walls for the purpose of air recirculation or natural air-flow between rooms is not allowed.

4.2.6 Design parameters for outside air are regulated by SNIP 2.04.05-86 – B group of parameters; and for air in working area – by acceptable standards of GOST 12.1.005.

4.2.7 Draft hoods must have closable doors and working openings with rounded edges to prevent vortex formation and additional turbulence of the air flow entering the hood. Also they should be equipped with internal check valve at the top of the hood to remove air from the upper zone of the room at doors closed. The minimum size of the valve is 150 x 150 mm.

Air from the hood shall be removed through the upper zone (4/3 of total air) and the lower zone (1/3 of total air).

4.4.6 The volume of air evacuated from the hood should be measured using the rate of suction in the working aperture. The height of working aperture should not exceed 400 mm at a standard aperture width of 700 mm. An estimated area with one working aperture available is set at 0.4 m, with two or more aperture – 0.6 m. The aperture air flow rate should be set based on the maximum permissible concentrations of substances dealt with:

MPC more than 10 mg/m³ – 0.5 m/s;

MPC from 10 to 0.1 mg/m³ – 0.7 m/s;

MPC less than 0.1 mg/m³ – 1.0 m/s.

4.2.9 The hoods used for analysis of highly toxic substances (hazard category 1- 2) shall have emergency power supply.

4.2.10 Laboratories dealing with the working processes generating dust (crushing and grinding of soil samples) must have airtight shelter with draft ventilation to ensure removal of both larger and fine dust particles.

4.2.11 The workplace for microscope examinations in the hydrobiology laboratory shall be equipped with a local suction unit to remove the fumes of formalin from the preparation slide.

Devices (spectrophotometers, gas chromatographs, etc.) must be equipped with local suction units to prevent organic substance release in the breathing zone of the personnel, as well as to remove ozone from devices generating high UV-radiation.

4.3 Requirements for sanitary and service facilities

4.3.1 Chemical laboratories must include some sanitary and service facilities as specified in CH-245-71: wardrobes for working and home clothes, toilets, washrooms, showers, kitchen and women's hygiene.

4.3.2 Drying room for working clothes should be established for individuals who take samples outdoors. The floor area is calculated as 0.2 m² per user.

4.3.3 Working clothes neutralization facilities (not less than 12 m²) need to be established for the personnel performing works in a dusty environment or exposed to chemical pollution. Such facilities need be adjacent to the dressing rooms and have ventilation to prevent the penetration of dust and gas in the other rooms.

4.3.4 Chemical laboratories dealing with highly toxic substances (hazard category 1 and 2 as specified in GOST 12.1.007) should have a shower room with 1 or 2 shower cubicles.

4.4 Requirements for finishing the chemical laboratories

4.4.1 Finishing in each room of the laboratory shall be performed taking into account the operational conditions in accordance with the work techniques and sanitary requirements, as well as geographical location and geospatial orientation.

4.4.2 In the laboratories of all types, the walls and partitions in the glassware washhouse, weigh house, and electron microscope rooms should be covered with plaster and painted, or coated with acid-resistant or hydrophobic tiles with joints sealed or trowelled. Ceramic tiles, painting or coating with synthetic acid-resistant film is allowed.

4.4.3 Flooring material for the chemical laboratories should be selected based on the their operational conditions: mechanical, thermal and corrosive effects of liquids, as well as dielectric properties, purity level, appearance, colouring, etc.

4.4.4 In the laboratories dealing with chemical, physical, biological and other tests, it is recommended to cover the floor with PVC linoleum having a cloth foundation, relin (rubber linoleum), elastron, as well as seamless mastic, polyvinyl-acetate and polymer-cement materials.

4.4.5 In the laboratories dealing with mercury or its compounds, it is recommended to cover the floor with two-year old alkyd floor covering or elastron.

4.4.6 In the washhouses and centrifugation rooms the floor is recommended to cover with ceramic floor tiles or polyvinyl-acetate mastics, arranging for a slope towards the floor drain inlets.

4.4.7 The ceilings in the chemical laboratories should be joint-sealed and painted; the use of surface-patterned, acoustic tiles from fireproof materials is recommended.

4.5 Requirements for the workflow management and manufacturing equipment

4.5.1 The workflow design and management in the chemical laboratory shall include measures to prevent the releases of chemicals, dust, heat and moisture into the air of working premises, and to exclude, to a maximum possible extent, potential personnel contacts with the toxic substances.

4.5.2 The chemical laboratories should be arranged to have two main zones – laboratory and administrative, which should be isolated from one another where possible, and have a layout based on functional and operational characteristics.

4.5.3 The laboratory zone should consist of separate sites, which are grouped based on the specifics of chemical analysis performed, scope of work, and toxicity of applied and emitted chemicals.

4.5.4 Separate facilities or isolated sites should be established to deal with highly toxic substances, particularly volatile ones.

4.5.5 Technological processes, which employ or produce substances referred to hazard category 1 and 2 (GOST 12.1.007), must be performed in the air- and waterproof, reliable and, where possible, automatically or remotely controlled installations equipped with fittings and connected to the service infrastructure.

4.5.6 Cameral treatment of materials must be performed in specially designated rooms. Doing such works in the analytical premises dealing with the instrumental analysis and toxic substances is not allowed.

4.5.7 The laboratories must be equipped with laboratory tables and desks, universal stands, hoods, washing basins, and variable height chairs.

4.5.8 The dimensions of key laboratory furniture items (tables and hoods) should be conditional on the scope of work. The standard length of work surface per worker should be at least 1.2 - 1.5 m for the hood, and 1.8 to 3.6 m for the laboratory table.

4.5.9 Laboratory equipment and furniture should be placed taking into account ventilation and sanitary-technical services, and convenience considerations. To this end, the following accommodation sequence is recommended:

- hood;
- washing basin;
- laboratory table.

4.5.10 Aisle width between the laboratory tables and equipment must be at least 1.4 m. With the room width of more than 6 m, it is recommended to install the ‘insular’ type laboratory tables and universal stands in the middle of the room for the low-toxic substances analyses and activities not related to the release of hazardous substances in the air.

4.5.11 Free surfaces of the walls should have embedded elements (anchors) located as required to hold devices that need to be fixed at a higher elevation.

5 Sanitary-hygienic requirements for the chemical laboratory operations

5.1 Requirements for the production facilities and workflow

5.1.1 Rooms of the chemical laboratories must be all kept in a proper sanitary and technical condition, clean and tidy.

5.1.2 Rooms of the chemical laboratories should be wet-cleaned on a daily basis, and comprehensively cleaned (washing floors, walls, sanitary and technical devices) on a monthly basis. The rooms should be 'face-lifted' at least once a year.

5.1.3 The production facilities should be properly ventilated during the working hours to ensure sufficient air exchange (at least 30 m³/hour per worker).

5.1.4 The meteorological conditions in the rooms (temperature, humidity, air motion velocity) shall be maintained at the optimal levels: 18-20°C, 60-40%, and 0.2 m/s; and 21-23°C, 60-40%, and 0.3 m/s, during the cold and warm periods, respectively.

5.1.5 The chemical laboratories should have artificial lighting equipment protected from the corrosive/hostile chemical environment, moisture, and dust (GOST 16703 - GOST 17677). For this reason, it is recommended to use the daylight fluorescent lamps with improved light transfer and spectral composition closest to the natural light. Recommended lamp type is PVL-6 (2 lamps, 80 W), which is designed for rooms with chemically active environment; and VOD (2, 3 or 4 lamps of 40 or 80 W) designed for dusty areas with chemically active environment and requiring a special cleaning regime. Lamps and fixtures should be regularly cleaned at least once every 10 - 12 days.

5.1.6 Installation of noise-intensive devices and equipment in the working area would require mitigation measures to be taken to minimize noise to the permissible level, through technical solutions, as well as the use of personal protection equipment, rational organization of labour and rest, reduced time spent in the noisy environment, etc. (GOST 12.1.003).

5.1.7 All available ventilation devices must be always kept in working order or used according to their intended purpose.

5.1.8 Works carried out in hydrobiological laboratories and subject to potential contact with biological objects must be done in full compliance with GOST 12-1.006.

5.1.9 Chemicals should be all delivered to the laboratory in standard hermetic packaging and stored in sealed container to prevent their spraying and spillage. Keeping the bulk solids unpacked is strictly prohibited.

5.2 Monitoring air condition and other factors in the chemical laboratories

5.2.1 Air quality in the working area of the chemical laboratories should be systematically monitored in agreement with the local sanitary and epidemiological station (SES). The frequency of monitoring is determined based on hazard category of airborne substances (12.1.005). A rapid method for measuring the concentrations of harmful airborne substances in the working area of the chemical laboratories, using indicator tubes, should be recommended (GOST 12.1.014).

5.2.2 Samples should be taken from the breathing zone at typical conditions, taking into account main processes, sources of harmful emissions, and technological equipment.

5.2.3 Recording instruments (thermometers, psychrometers) should be installed to monitor meteorological parameters in the production facilities.

5.2.4 Performance of all ventilation units should be verified in agreement with the local SES and other relevant organizations on a regular basis, at least once a year.

Verification procedure covers an overall performance of ventilation units, fan pressure, air-motion velocities in the apertures and inlets of local air suction units, velocity and temperature of supply air, as well as air motion velocity and temperature in the working area and at workplaces.

5.2.5 Artificial lighting at workplaces should be measured in horizontal, vertical and inclined planes using objective light-meter 10-16, annually, before the beginning of the autumn-winter period.

5.2.6 Sound pressure levels should be measured at workplaces in the production facilities of the laboratories where noise-generating equipment is installed.

5.2.7 If measurement results of the airborne chemicals and aerosols, ventilation system performance, noise intensity, and artificial lighting have proved to be incompliant with applicable standards, the mitigation/remedial measures to bring these factors to acceptable values shall be elaborated and implemented.

5.3 Working clothes and personal protection equipment

5.3.1 Chemical laboratory staff must be provided with working clothes: cotton robe protecting from general production pollution (GOST 12.4.131 and GOST 12.4.132), and rubberized apron.

5.3.2 Workers engaged in transportation of, and/or manipulations with chemical agents should be additionally provided with acid- and alkali-resistant clothing (GOST 27652).

5.3.3 To ensure eye, respiratory system and hand protection, the workers must be provided with:

- Protective mask with rubberized screen (as specified by TU 64-1-456);
- Respirator (TU 6-16-2465);
- Safety glasses with sealing and colorless glass to ensure full eye protection from the irritant gases and liquids (GOST 12.4.013)
- Rubber acid-alkali resistant gloves (GOST 100100);
- Acid-resistant gauntlets.

5.3.4 Each chemical laboratory dealing with toxic substances must be provided with industrial filter masks.

5.3.5 Employees working in the areas with high levels of noise or operating the equipment that generates noise should be provided with noise-attenuating devices – earplugs with an attenuation capacity of 7-8 dB at 250-500 Hz and 12 dB at up to 1000 Hz. In case of exposure to the high-frequency noise of up to 110-120 dB, they shall be provided with special headphones, such as TU 400 - 2 # 76-70 and others.

5.4 Medical care and personal preventive measures

5.4.1 Individuals under 18 are not allowed to work in the chemical laboratories.

5.4.2 Employees of the chemical laboratories, who contact with toxic substances and unfavorable production factors must all pass the initial (pre-employment) and further periodic medical examinations.

5.4.3 Individuals who have not passed the initial medical examination are not allowed to work.

5.4.4 The results of periodic medical examinations shall be summarized annually by the medical institutions, which organize (sanitary and epidemiological station) and implement (outpatient clinic) the examinations, in collaboration with the chemical laboratory trade union organization, to eventually issue an act and elaborate preventive measures required.

5.4.5 First-aid kit with a full set of drugs required to provide first aid shall be available in each chemical laboratory

5.4.6 Employees of the chemical laboratories who perform works, which may result in the skin contamination by toxic substances, must be provided with ... soap and protective ointments and pastes in accordance with the established norms.

5.4.7 Any manipulations with chemical agents should be carried out by employees wearing the working clothes and using the personal protective equipment.

5.4.8 Before the lunch break and after work the employees of chemical laboratories shall wash thoroughly their hands and face with warm water and soap. It is recommended to take a shower after work, every day.

5.4.9 It is prohibited to have a meal in the chemical laboratory's working area. In the absence of the dining room or buffet in the organization a separate room should be arranged for the meal.

5.4.10 Working with metallic mercury and its compounds requires a comprehensive oral cavity and tooth care and timely treatment. Before eating and after work it is recommended to rinse the mouth out with light solution of potassium permanganate or potassium chlorate.

5.4.11 Employees of the chemical laboratories, contacting with toxic substances, must be provided with milk ... in accordance with the "medical indication".

6 Sanitary-hygienic requirements for transportation and storage of chemicals

6.1 Any manipulations with chemical agents and corrosive liquids must be carried out in full compliance with the "Safety rules of storage, accounting, and transportation of chemical agents and corrosive liquids".

6.2 Manipulations with pesticides in the chemical laboratories must follow the "Safety instructions for storage, transportation and use of pesticides in agriculture".

6.3 Chemicals, corrosive liquids and pesticides must be stored in the special warehouses that meet sanitary and hygienic standards and safety regulations requirements.

6.4 Chemicals and pesticides should be delivered to the warehouse in containers as indicated in the normative-technical documentation, and be stored in dense, tightly closed containers.

6.5 Warehouse should be kept clean. It should be cleaned as necessary, but not less than once every two weeks. Sufficient stock of degassing agents, bleaching powder, soda ash, etc. shall be available at the warehouse to neutralize the pesticides.

6.6 Warehouses should be aired out on a regular basis.

6.7 Pesticides and other chemicals should be transported in the vehicles suitable for this purpose as specified in the "Rules governing road transportation of mineral fertilizers, pesticides and herbicides".

6.8 The transportation of foodstuff and people along with chemical agents and pesticides is strictly forbidden.

7 Basic fire safety requirements in the chemical laboratories

7.1 Laboratory manager's fire safety responsibilities and duties

7.1.1 It is the responsibility of the laboratory manager to ensure fire safety in the laboratory.

7.1.2 The manager must:

- a) organize learning and implementation of these requirements by all employees;
- b) ensure elaboration and implementation of decisions aimed to reduce the fire and explosion hazards in the laboratory;
- c) assign persons responsible for fire safety at different sites of the laboratory;
- d) organize fire safety briefings and simple trainings;
- e) establish and maintain strict fire protection regime in the laboratory;
- f) inspect periodically the status of fire safety conditions in the laboratory.

7.2 Responsibilities and duties of industrial site and laboratory managers

7.2.1 Managers have to:

- a) be aware of the fire danger of the technological process;
- b) ensure compliance with the established fire regime in the assigned area;
- c) monitor serviceability of the heating and ventilation equipment, electrical installations, and technical equipment, and take immediate steps to eliminate discovered irregularities that could result in a fire;
- d) ensure that upon completion of the workday the workplaces and rooms be cleaned, and the electrical circuits switched off (except for the emergency lighting and the electrical installations that should work round the clock due to the technological process requirements);
- e) ensure proper maintenance and continued operational readiness of the fire extinguishing equipment, communication and alarm systems;
- f) in the case of fire or a dangerous situation originated in an accident/breakdown or for other reasons, immediately call the fire department and simultaneously begin to liquidate the fire using available resources.

7.3 Fire safety responsibilities and duties of employees at workplaces

7.3.1 Responsibility for the compliance with fire safety requirements at workplace lies with the person servicing that particular site.

7.3.2 Each employee of the laboratory, warehouse, etc. must:

- a) know exactly and follow strictly the fire safety rules, and avoid actions that could potentially lead to a fire;
- b) keep the primary fire-extinguishing means assigned to the workplace in good condition.

7.4 Fire regulations and their contents

7.4.1 Fire safety regulations including special measures for specific processes need to be elaborated for the laboratories, warehouses and workplaces. Noncompliance with this requirement may result in a fire:

- a) procedures and rules of storage of the flammable and highly explosive materials;
- b) assigning a smoking area and a place where open fire is allowed;
- c) procedures for cleaning the rooms of burnt materials, and rooms where the working clothes are kept;
- d) extreme readings of the measurement instrumentation (pressure gauges, thermometers, etc.) that may be indicative of potential explosion or fire,
- e) obligations of workers and procedures in case of fire, namely:

- rules of calling the fire brigade;
 - procedures for the process equipment shut-down;
 - procedures for the ventilation and electrical equipment shut-down;
 - fire-extinguishing means application rules;
 - procedures for the evacuation of combustible substances and other material assets;
- f) procedures for the examination of all premises and bringing them to meeting safety requirements.

7.5 Training employees in fire safety rules

7.5.1 Employees should all take training course as follows:

- introductory briefing;
- initial briefing at workplace;
- periodic reviews of understanding the fire safety rules and regulations in a timely manner.

7.5.2 Individuals who have not undergone the fire safety trainings are not allowed to work.

7.6 Basic fire safety requirements for the chemical laboratories

7.6.1 Chemical substances and materials must be stored strictly according to their compatibility feature. Substances, which chemical interaction may cause a fire or explosion, are forbidden to store together.

7.6.2 Laboratory furniture and equipment must be installed in a way that they do not impede the staff evacuation. The minimum width of the aisles between different pieces of equipment should be at least 1 m.

7.6.3 Worktables and fume hoods designed for manipulations with flammable and explosive substances must be in good condition. They have to be covered with fireproof materials, and, – when working with acids, alkalis and other active chemical agents, – with materials resistant thereof, and be equipped with flanges.

7.6.4 Flammable and combustible liquids should be stored only in jars/containers such as specified in the guidelines. Glass jars should be kept in a special metal box with tight lid, the sides and bottom of which are lined with asbestos. A clear inscription indicating the items with general acceptable standards for the storage of flammable and combustible liquids shall be available on the inside of the lid.

7.6.5 A total stock of flammable liquids simultaneously stored/kept in each working area for should not exceed the daily need amount.

7.6.6 Bottles/jars containing more than 50 ml of flammable liquids (FLs) should be stored in the metal boxes for fuel. It is forbidden to store/keep the flammable liquids in plastic containers or thin-walled glassware.

7.6.7 Heating or distilling of more than 0.5 l of flammable liquids at a time is prohibited. The work with flammable liquids in quantities greater than 0.5 l can be done only with the authorized permission of the laboratory director.

7.6.8 It is forbidden to discharge flammable liquids (FLs) and combustible liquids (CLs) into the sewerage. Waste liquid shall be collected in a special hermetically closed container, which at the end of the working day will be displaced from the laboratory for further regeneration or disposal.

7.6.9 The laboratory works associated with the potential release of toxic, flammable and explosive vapors and gases must all be carried out only in the fume hood. If an experiment involves some manipulations with FLs and CLs to be done outside the hood, the relevant guidelines for the workplace need to be prepared.

7.6.10 The fume hood should be furnished with the explosion-proof electric lighting, with its switches being located outside the hood.

7.6.11 The displacement of glassware containing acids, alkalis, and other corrosive substances is allowed only in the special asbestos-lined metal or wooden boxes. The use of wooden boxes, baskets and chips for sulfuric and nitric acids is allowed provided that they have been treated with flame retardants.

7.6.12 Jars containing alkali metals have to be placed in the lidded metal boxes, the walls and bottom of which are lined with asbestos.

7.6.13 It is prohibited to keep alkali metals in the laboratories in amounts exceeding the needs of the working shift.

7.6.14 Cylinders with compressed, liquefied and dissolved gases should be installed in the metal cabinets outside the laboratory building. The metal cabinets should have the airing openings. The laboratories shall be provided with these gases and oxygen in the centralized manner.

7.6.15 Supply-and-exhaust ventilation in all rooms of the laboratory should be switched on not later than 5 minutes before the workday and switched off at the end of work. No works are allowed in the laboratory with defective ventilation system.

7.6.16 The following is not allowed in the laboratory premises:

- block up the hallways and passage, and the access to fire-extinguishing means;
- wash the floor, tables and other laboratory equipment, with gasoline, kerosene, and other flammable liquids;
- clean up the accidental flammable liquid spillage at lit torch and switched-on electric heaters.

7.6.17 The laboratory rooms can be closed at the end of the workday only after all working equipment and devices have been switched off, FLs moved to the designated place, and combustible waste and trash removed.

7.6.18 The laboratory rooms must be furnished with the fire-extinguishing means in accordance with the regulations and taking into account the characteristics of substances manipulated and stored in the laboratory. Additionally, one fire extinguisher should be placed at the entrance to the laboratory and the warehouse. The posters illustrating how to extinguish a fire in these facilities should be placed at the entrance of the laboratory and warehouse.

8 First aid in case of chemical burns and poisoning

8.1 First aid in case of chemical burns

8.1.1 In case of chemical burns, especially those caused by acids or alkalis, the affected area should be immediately flushed with water, and applied a wash: for the burns from acid – 1% sodium carbonate solution shall apply; for the burns from alkali - 2% boric acid solution shall apply. After that the affected person should be referred to a healthcare center.

8.1.2 In case where corrosive substances or solid particles and their aerosols or vapors have contacted with eyes the latter shall be immediately flushed with water and put in 1-2 drops of sodium sulfacyl. After that the affected person should be referred to a healthcare center.

8.2 First aid in case of chemical poisoning

8.2.1 In case of the chemical poisoning it is necessary to render first aid as described in Table 2.

Table 2. First aid in case of chemical poisoning

Item	First aid
Gaseous substances inhaled	
Nitric acid vapours	Absolute rest, oxygen inhalation
Ammonia	Fresh air, rest. In case of the loss of consciousness – artificial respiration
Acetylene vapours	Clean air; inhalation of ammonia; in case of the loss of consciousness – apply artificial respiration; strong sweet tea or coffee; inhalation of oxygen.
Benzol vapours	Fresh air (avoid cooling), rest, oxygen inhalation.
Vapours of hydrofluoric acid	Inhalation of ammonia, clean air, rest.
Sulfurous gas	Rinsing the nose and mouth out using 1-2% solution of baking soda; rest.
Carbone bisulphide	Fresh air; in severe cases – oxygen, artificial respiration.
Chlorine	Rest, even in the case of moderate poisoning; inhalation of oxygen.
Carbon monoxide, acetylene, lighting gas	Fresh air, avoid body cooling; in case of the weak or intermittent breathing – provide oxygen for inhalation; respiratory standstill – CPR in combination with oxygen, rest.
Mercury vapours	Internal use of egg-white, castor oil – 1 spoonful, unytol 0.5 – 1 tablet twice a day.
Phenol vapours	Fresh air, rest.
Zinc oxide vapours	Rest, drinking plenty of milk.
Ozone	Fresh air, rest, warm, in case of the respiratory tract irritation – inhalation with 1-2% soda solution.
Liquid or solid substances orally penetrated	
Alkaloids (except for the sorphine group)	Give 1-2 spoonful of activated carbon or ground carbolene stirred in glassful of water, cause vomiting.
Aldehydes	Drink a glassful of 0.2 ammonia solution, followed by a glassful of milk after several minutes..
Soluble barium sulfates	Cause vomiting. Give a laxative, magnesium sulphate.
Benzol	Cause vomiting, take any laxative, inhale oxygen, artificial respiration, coffee.
Pyrites	Abundant tea or coffee, artificial respiration.
Silver compounds	Take plentiful amount of 10% table salt solution.
Sodium fluoride	Take 2% calcium chloride solution.

In all cases of severe/acute poisoning the affected person, after first aid has been rendered, should be delivered/referred to a health center for professional care.

Annex D. Minutes of the public consultations meeting on the EMF

APPROVED BY

Deputy Minister of Higher and Secondary
Education
of the Republic of Uzbekistan

_____ Mirabbos Inoyatov
_____ 2016

MINUTES

of the public hearing on the Environmental Management Framework (EMF)
for the investment project *Modernizing Higher Education Project in Uzbekistan*

Tashkent

8 February 2016

Venue and time of the hearing:

2 Chimboi St., Tashkent, small conference room at the Ministry of Higher and Secondary Education of the Republic of Uzbekistan

Chaired by:

Mirabbos Inoyatov, Deputy Minister of Higher and Secondary Education of the Republic of Uzbekistan

Participants and attendees:

Representatives of the Ministry of Higher and Secondary Education of the Republic of Uzbekistan

- Abulniyozov K, Head of the Research Department
- Kodirov B, Specialist at the Procurement Department

Project preparation team:

- Nosirzhon Abdurakhimov
- Nazim Alimov

Representatives of universities:

- Urinboi Yuldashev, representative of Tashkent Technical University, EMF developer
- Representatives of other universities (see the List below)

Agenda:

- Presentation and discussion of the EMF for the investment project *Modernizing Higher Education Project in Uzbekistan* with a loan from the World Bank
- Other issues

The discussion included the following:

Project preparation team introduced the participants and informed them that the EMF had been made available at the Ministry's website at <http://edu.uz/ru/news/view/299>. In addition to the EMF, the website published an invitation to, and a notice about, the public hearing. The working group's email address (edu.uzb@gmail.com) was provided for remarks and proposals. Mr Alimov also informed the participants about the objectives of the public hearing of the EMF. He then invited Mr. Urinboi Yuldashev, a representative of Tashkent Technical University and a framework developer, to speak.

Mr. Urinboi presented detailed information about the general provisions of the draft document (prohibited activities and project categories to be financed, roles and responsibilities in implementation arrangements, etc.). He also presented a detailed mechanism for environmental assessment and screening. Mr Urinboi provided environmental protection guidelines on determining the nature and the scope of the expected impact on the environment, safe working practices in study and research laboratories, mitigation plans, preparation of site-specific environmental management plans as wells as monitoring plans.

The representatives of Tashkent Chemical Technology Institution have proposed to specify the list of the project environmental categories the Bank will not agree to finance. Mr Urinboi mentioned that environmental categories that will not be financed by the World Bank are mentioned in the Framework document. In addition, Mr. Urinboi mentioned the respective laws and regulations on environmental protection in Uzbekistan, safety measures relating to the import, export and storage of harmful and toxic materials and the disposal of respective waste as governed by the current statutes, standards, and norms.

Representative of Tashkent Medical Academy has asked about the current health care arrangements and first aid measures in case of chemical burns and poisoning. They also mentioned about the necessity of acquiring proper certification for the new equipment. Mr Urinboi mentioned that the project will ensure that the guidelines on laboratories are strictly followed and that new equipment will have a proper certification.

Mr Urinboi also explained the requirements for environmental assessment, which requires that project beneficiaries prepare a site-specific environmental management plan, describing the mechanisms for the identification and assessment of possible environmental and social impacts of research projects, and providing measures to mitigate and monitor such impacts. He also informed the participants about the

existing safety requirements and chemical substances may affect human body. He specified the ventilation requirements for chemical laboratories, sanitary and hygienic requirements, including for the transportation and storage of chemical substances, and fire safety measures.

The following resolutions were passed on the agenda:

1. To take notice of and fulfil the EMF;
2. To send the electronic version of these minutes to the World Bank;
3. To ensure that the proposals on the EMF sent by the public to edu.uzb@gmail.com are registered and are taken into consideration;
4. To take measures to amend the EMF , if respective proposals are available;
5. To supervise the implementation of the EMF continuously.

Abulniyozov K [signature]
Head of the Research Department
Ministry of Higherer and Secondary Education
of the Republic of Uzbekistan

Kodirov B [signature]
Specialist at the Procurement Department
Ministry of Higherer and Secondary Education
of the Republic of Uzbekistan

**Representatives of the working group
for project preparation:**

Nosirzhon Abdurakhimov [signature]
Nazim Alimov [signature]

Representatives of universities:
Urinboi Yuldashev [signature]
Tashkent Technical University (TTU)
(Framework developer)

Rismukhemedov D. [signature]
TTU

Narziyev Sh. [signature]
TTU

Ibodullayev A. [signature]
Tashkent State Chemical Technology Institute

Yakubov I. [signature]

Uzbekistan National University

Khayitboyev A.
Uzbekistan National University

[signature]

Rakhmonkulov M.
Tashkent State Agriculture University

[signature]

Gulomov A.
Tashkent Institute of Textile and Light Industry

[signature]

Tulanov Sh.
Tashkent Institute of Textile and Light Industry

[signature]

Iriskulov B.
Tashkent Medical Academy

[signature]

Erlapasov N.
Uzbekistan National University

[signature]

«УТВЕРЖДАЮ»
заместитель министра высшего и
среднего специального образования
Республики Узбекистан



М.Иноятов
2016 г.

ПРОТОКОЛ

общественного обсуждения рамочного плана по природоохранным мерам
по инвестиционному проекту «Модернизация системы высшего образования в
Узбекистане» за счет средств займа Всемирного банка.

г.Ташкент

«8» Февраля 2016 г.

Место и время проведения общественного обсуждения:

Г.Ташкент, ул Чимбой-2, малый зал для заседаний в здании
министерства высшего и среднего специального образования Республики
Узбекистан

Председательствовал:

М. Иноятов – заместитель министра высшего и среднего специального
образования Республики Узбекистан;

**Представители министерства высшего и среднего специального
образования Республики Узбекистан:**

- К. Абулнйёзов – начальник управления по научной деятельности;
- Б. Кодиров – главный специалист отдела материального снабжения.

Рабочая группа по подготовке к реализации проекта:

- Носиржон Абдурахимов;
- Назим Алимов.

Представители ВУЗов:

- Оринбай Юлдашев – представитель Ташкентского Государственного
технического университета –разработчик рамочного плана;
- Представители ВУЗов по списку.

Повестка дня:

1. Презентация и обсуждение рамочного плана по природоохранным
мерам, необходимого для реализации Инвестиционного проекта
«Модернизация системы высшего образования в Узбекистане» за счет
средств займа Всемирного банка.
2. Другие вопросы.

В рамках проведенного обсуждения выступили:

Рабочая группа по подготовке к реализации проекта представила
присутствующим и осведомила участвующих об опубликовании рамочного

проекта по природоохранным мерам и о доступности на сайте министерства по следующей ссылке: <http://edu.uz/ru/news/view/299>. На сайте был размещен приглашение и уведомление об общественном слушании и рамочный план по природоохранным мерам. Для поступления предложений был указан электронный адрес рабочей группы http://edu.uzb@gmail.com. Рабочая группа, так же, проинформировала участвующих о целях общественного обсуждения рамочного плана по природоохранным мерам. Далее предоставил слово представителю Ташкентского Государственного технического университета - разработчику рамочного плана О.Юлдашеву.

О.Юлдашев детально ознакомил участвующих общественного обсуждения об основных условиях по проекту документа (запрещенные деятельности и категории проектов, подлежащих финансированию, схемы взаимодействия участников и др). Представил подробный механизм по процедуре оценки состояния окружающей среды, включающий экологическую оценку и экологический скрининг. Ознакомил с инструкциями по вопросам окружающей среды, по определению характера и объема ожидаемого влияния на окружающую среду ведению безопасных работ в учебных и исследовательских лабораториях, а также инструкций по мерам планирования, направленных на смягчение негативного влияния, о подготовке отчетов об условиях окружающей среды на конкретном объекте, снижении негативного влияния на окружающую среду и планов по мониторингу и о содействии по всем необходимым правилам.

Представителем Ташкентского Химико-технологического института было предложено конкретизировать категории экологической безопасности, с которыми банк может не согласиться в реализации. О.Юлдашев выделил отдельное внимание участников обсуждения на категории экологической безопасности, оговоренных в рамочном плане, для которых банк обычно не предоставляет финансирования.

Так же, О.Юлдашев упомянул соответствующие Законы и положения об окружающей среде в Узбекистане, меры безопасности по завозу, вывозу и хранению вредных и токсичных материалов, так же устранение их отходов отражено в действующих законодательных актах, стандартах, и нормах, необходимо разработать технический регламент по каждому лабораторному прибору.

Представителям Ташкентской Медицинской Академии был задан вопрос касающиеся мероприятий первой необходимости при угрозе химического и др. отравлений в лабораторных условиях и о необходимости получения соответствующего сертификата на приобретаемого лабораторного оборудования. О.Юлдашев упомянул, о необходимости требований к условиям по созданию лаборатории и получения соответствующего сертификата на оборудование.


О.Юлдашев так же, объяснил участвующим про проведении экологической оценки, которая требует от бенефициаров проекта подготовки Плана ООС, описывающего механизмы выявления и оценки возможного экологического и социального воздействия исследовательских проектов, а также устанавливающего меры по смягчению последствий такого воздействия и их мониторинга. Так же, осведомил участников о существующей техники безопасности, о степени влияния на организм человека химические вещества, о требованиях к вентиляции химическим лабораториям, о санитарно-гигиенических требованиях, о санитарно-гигиенических требованиях к

транспортировке и хранению химических веществ, о противопожарной инструкции.


По вопросу повестки дня были приняты следующие решения:

1. Принять к сведению и реализацию рамочный план по природоохранным мерам;
2. Направить электронную версию копии настоящего протокола во Всемирный банк.
3. Обеспечить меры по направлению на электронный адрес <http://edu.uzb@gmail.com> и рассмотрение предложений по плану.
4. Принять меры по внесению изменения в план, при наличии предложений.
5. Вести постоянный контроль над реализацией плана.

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