



**AUDIT REPORT
ON
ENVIRONMENTAL AND SOCIAL
IMPACT ON RESIDENTS OF
MALAKAND DUE TO CONSTRUCTION
OF INDUSTRIAL UNITS IN
RESIDENTIAL AREA**

AUDIT YEAR 2019-20

AUDITOR GENERAL OF PAKISTAN

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ABBREVIATIONS AND ACRONYMS

| | |
|-----------------|--|
| AC | Assistant Commissioner |
| AQI | Air Quality Index |
| BHU | Basic Health Unit |
| CFC | Chlorofluorocarbon |
| CO | Carbon Monoxide |
| CO ₂ | Carbon Dioxide |
| DAC | Departmental Accounts Committee |
| DC | Deputy Commissioner |
| EMS | Environmental Monitoring System |
| EPA | Environmental Protection Agency |
| GHGs | Greenhouse Gases |
| ISO | International Organization for Standardization |
| KP | Khyber Pakhtunkhwa |
| KPIs | Key Performance Indicators |
| NDIR | Non-Dispersive Infrared |
| NEQS | National Environmental Quality Standards |
| NO | Nitrogen Oxide |
| NO ₂ | Nitrogen Dioxide |
| NOCs | Non Objection Certificates |
| PCSIR | Pakistan Council of Science and Industrial Research |
| PPM | Part Per Million |
| SAI | Supreme Audit Institute |
| SDGs | Sustainable Development Goals |
| SO | Sulphur Oxide |

PREFACE

Articles 169 and 170 of the Constitution of the Islamic Republic of Pakistan, 1973, read with Section-8 & 12 of the Auditor General's (Functions, Powers and Terms and Conditions of Service) Ordinance, 2001 and Section-37(1) of Khyber Pakhtunkhwa Local Government Act, 2013 require that audit of the Federal and the Provincial Government shall be conducted by the Auditor General, who shall determine the extent and nature of such audit.

The Director General Audit, District Governments, Khyber Pakhtunkhwa, conducted Environment audit for the year 2018-2019 during the Audit year 2019-20 on test check basis with a view to report significant findings to the relevant stakeholders. The main body of the audit report includes systemic issues and significant audit findings. The audit observations listed in Annex-1 shall be pursued with the Director General Environmental Protection Agency, Khyber Pakhtunkhwa, at DAC level. In all cases where the Director General does not initiate appropriate action, the audit observations will be brought to the notice of appropriate forum through the next year's Audit Report.

Audit findings indicate the need for adherence to the regularity framework besides instituting and strengthening internal controls to avoid recurrence of similar violations and non-compliance with the prevailing rules and procedures and international best practices. All the observations included in this report were finalized in the light of written replies of the department.

The Audit Report is submitted to the Governor, Khyber Pakhtunkhwa in pursuance of Article 171 of the Constitution of the Islamic Republic of Pakistan, 1973, for laying before the appropriate legislative forum.

Islamabad
Dated:

(Javaid Jehangir)
Auditor General of Pakistan

EXECUTIVE SUMMARY

The Directorate General Audit, District Governments, Khyber Pakhtunkhwa, Peshawar, was mandated by special approval of the office of the Auditor General of Pakistan to conduct the environmental audit titled “Environmental & social impact on residents of Malakand due to construction of industrial units in residential area”. District Malakand comes in the audit jurisdiction of Directorate of District Government Audit Swat. The audit was conducted in accordance with INTOSAI auditing standards as adopted by the Department of the Auditor General of Pakistan.

Protection of the environment is one of the key functions of an efficient and well-functioning state. Absence of laws, rules and regulations for ensuring the protection, safety and sustainability of the environment results in the poor health of the masses especially in an environment which is toxic and hazardous due to large scale industrial activities in the country. The federal as well as the Government of Khyber Pakhtunkhwa spend a huge amount of finances through the Federal and the Provincial Environmental Protection Agencies in order to provide a clear and clean environment to the public.

The mandate of Audit was restricted to examine the role of Environmental Protection Agency in the effective implementation of various initiatives such as the Environmental Protection Act to ensure compliance by various industrial units in terms of keeping the environment safe despite commercial activities which are also essential for the economic growth of the country.

Industrialization is a common factor for development of a nation in the modern world but along with its positive effects on the economy of the country, it has negative impacts on the surrounding environment as well. District Malakand being a tax free zone attracts many industrialists to establish industrial units in the area. The provincial government also established industrial zone in Malakand to facilitate the industrialists and improve the lives of the local community by getting jobs in the industries. However, the industrialists procured land for

establishing the industrial units in the residential area without observing the national as well international best practices to safeguard the environment from pollution. The local community has approached the local administration i.e. the Deputy Commissioner as well as the green courts established for the purpose of addressing cases related to environmental effects caused by the industries, to look into the matter but in vain. The Environmental Protection Agency (EPA) had issued orders against the industrial units under the EPA Act, 2014 but it yielded no change in the behavior of the industrialists. The district administration also failed to implement court orders in the matter.

During the audit it was observed that no proper policy, rules, by-laws and standing operating procedures except Khyber Pakhtunkhwa Environmental Protection Act 2014, for environmental protection were available. The Environmental Protection Agency was required to prepare, in co-ordination with the appropriate Government Agency or local council and in consultation with the concerned Sectoral Advisory Committees where established, environmental policies for the approval of the Council but no environment policy specifically for Malakand Division was provided. The Khyber Pakhtunkhwa Environmental Protection Agency was also required to prepare, revise and establish the Khyber Pakhtunkhwa Environmental Quality Standards with the approval of the Council and establish different standards for discharge or emission from different sources and for different areas under Section 6 of the Khyber Pakhtunkhwa Environmental Protection Act, 2014 but it still adopted National Environmental Quality Standards which may or may not be compatible to this region. In addition to the above, audit observed the following:

1. The EPA and the management of the industries have established environmental objectives and environmental programs for each relevant industry function and level nor any comprehensive framework of policies, practices, procedures, systems and relevant management information to support environmental management is in place.

2. The EPA has no provisions in its rules and laws for the industries to establish environmental management system as per international practices.
3. The environmental responsibilities of the top management of the industries are not clearly defined.
4. No mechanism exists in the industries to monitor and measure the operations that can have a significant impact on the environment i.e. risk assessment, the scale, frequency, severity and sensitivity of the environmental impacts.
5. Legal petitions have been filed by the locals against the operational activities of Ali Steel Mills due to its stark violation of environmental laws. The EPA has also been approached by the locals in the form of application, with copies to Secretary Environment, the Chief Secretary KP, and the Chief Minister KP etc.

CHAPTER-1

1. Introduction and Background

The Kyoto Protocol is an international treaty to reduce greenhouse gas emissions, known to be causing global warming. The Kyoto Protocol was adopted by UN member countries in Kyoto, Japan, on December 11, 1997 and entered into force on February 16, 2005. The main goal of the Kyoto Protocol is to control greenhouse gases (GHGs).

Pakistan is a signatory of the Kyoto Protocol. The government of Pakistan is in the process of taking steps which are required to be taken to protect the environment at local level in order to contribute to global environmental protection measures. One important step of protecting the environment is to limit emissions that contribute to pollution and consequently to global warming. It is under such international protocols that Pakistan Environmental Protection Agency (Pak-EPA) was established under Section (5) of Pakistan Environmental Protection Act,(PEPA) 1997. The basic functions of Pak-EPA are to enforce the PEPA-1997 Act, rules & regulations, carry out Environmental Impact Assessment (EIA) and Initial Environmental Examination (IEE). Pak-EPA is mandated to prepare or revise, and establish the National Environmental Quality Standards (NEQS) with approval of Pakistan Environmental Protection Council (PEPC); take measures to promote research and the development of science and technology which may contribute to the prevention of pollution, protection of the environment, and sustainable development and guidance to the public on environmental protection affairs.

Amendment XVIII (the Eighteenth Amendment) of the Constitution of Pakistan, passed by the National Assembly of Pakistan on April 8, 2010, which, among other changes, mandated the provincial governments' greater autonomy under the constitution. As such Federal Government assumes the responsibility of few important subjects while the Provincial Governments carry out functions and duties of more subjects. The Environment and ecology is one of the subjects

under the control of provincial governments; thereby provinces of Pakistan have independent Environmental Protection Agencies/Departments namely; the Punjab Environment Protection Agency (EPA), Environmental Protection Agency - Khyber Pakhtunkhwa, Sindh Environmental Protection Agency, Baluchistan Environmental Protection Agency, and Pakistan Environmental Protection Agency (Pak EPA) is restricted to Islamabad Capital Territory only.

District Malakand, which falls in the domain of EPA Khyber Pakhtunkhwa, is one of the naturally gifted districts of the Khyber Pakhtunkhwa province in terms of natural beauty and natural resources with a population of around 1 million. Administratively, it has two Tehsils, namely Tehsil Batkhela and Tehsil Dargai. The industrial area at district Malakand was established in 2013.

The environmental issues gained great importance world-wide in recent past and remained the focus of discussions at different forums both at national and international levels. The environmental problems affects the economic and social life of common man, thus the governments try to address them by making appropriate policies and enacting environmental legislation to respond to international institutions and treaties agreed upon as global partners. Although it is not the Auditor General's function to question the policy, however it is his responsibility to investigate the effect of policy and the management measures that lead to policy decisions. In this way the Auditor General can help the Government do a better job. Addressing environmental matters falls squarely within the mandate of any SAI because of the following reasons:

- a) The Government spends significant public resources on managing environmental problems, so the Auditor General needs to hold the government accountable for prudent financial management by reporting the results to the parliament and the Provincial Assembly.
- b) The Governments sign numerous international agreements and the International agencies collaborate with them to control the environmental degradation through technical and financial support. The Auditor General

is mandated to carry out the audit of such expenditures to provide assurance to all stakeholders that the financial statements portray true and fair picture of environmental costs and liabilities.

The purpose of this environmental audit report was therefore to make known the findings of the audit regarding the environmental & social impact on residents of Malakand due to construction of industrial units in residential area. The report was not intended to be comprehensive. In line with audits of this nature, the intention was to provide the reader with a general understanding of the state of environment in Malakand and its impact on the people of Malakand and in particular, to evaluate the establishment and operations of such industries whether they observe the international best practices to safeguard the environment from the hazardous impact of liquid, solid and gaseous emissions and whether they follow the Federal and Provincial laws promulgated from time to time. It also intended to assess the role of Environmental Protection Agency in promulgation of the laws regarding environment.

1.1 Objectives of Environmental Audit

Environmental audit determines how well the environmental management information systems and equipment are performing. It verifies compliance with the relevant national, local or other laws and regulations, which can ensure minimizing human exposure to risks from environmental, health and safety problems, thus increasing employee's awareness and placing environmental information in the public domain. It helps in reduction and prevention of waste of industrial units. Environment audit needs for an industry to achieve compliance standards and establish a report with regulatory bodies for implementation of environment management policies. It also serves the industry as well as self evaluation tool for the process and technology. It helps in pollution control, improves production safety and health conservations of nocturnal resources by ways of ensuring waste prevention and reduction. Environmental Audit report provides performance evaluation of industrial working facilities and its possible

effect on the surrounding. It provides an up to date environmental data to the inspecting authority.

1.2 Scope of Environmental Audit

The scope of this audit was to audit the operational activities of the Environmental Protection Agency for the Steel Industries at District Malakand for the year 2018-2019, with specific focus on the gaseous emissions at the four selected industries i.e. the Steel Mills at Malakand which are considered to be more responsible for environmental pollution as compared to the other industries in the locality. Audit also looked into the health and safety measures adopted at the industries for the safety of the workers as well as that of the environment and the ecosystem of the area.

The audit was conducted by assessing the following:

1. The status of compliance with the current international laws and the rules and regulations prescribed by the Federal as well as the Provincial Government.
2. The status of solid, liquid and gas emissions whether international best practices are followed or otherwise.
3. The state and conditions of the operational activities were assessed against the international and local standards as prescribed.
4. The state and conditions of the workers were assessed in line with the international best practices.
5. The impact of the hazardous gases on the overall environment was assessed.
6. The impact of the operational activities on the local population was assessed.

1.3 Audit Criteria

The audit findings were collected with the help of an audit checklist for the Environmental Audit, some of the key points are the following: (Total of 211 Questions in the checklist are attached as Annex-1).

1. Assessment of Environmental and social risks and impact
2. Assessment of resource efficiency and pollution prevention management
3. Assessment of Community health and safety measures
4. Assessment of workers health and safety measures
5. Assessment of the departmental rules and regulations for such industries.
6. Assessment of impact on Biodiversity conservation and sustainable management.
7. Assessment of opinion of the local population
8. Assessment of stakeholders' engagement and information disclosure.

1.4 Risk Assessment/issues of potential significance

The following are the general as well as specific guiding principles adopted for the audit;

1. Identification and assessment of potential environmental and social impacts of the industrial activities.
2. Identification and assessment of measures for mitigation of potential adverse environmental impacts from the industrial activities.
3. Verifying the level of compliance with environmental and key national regulations.
4. Identification of recommendations for rectification in order to bring about improvement in the industrial practices.
5. Identification of environmental management plan at the industries

1.5 Audit approach and methodology

Audit was conducted while taking into consideration the international and national laws and policies framed for the protection of environment, particularly the Environmental Protection Act of 1997 of the Federal Government, and the EPA Act, 2014 of the Government of Khyber Pakhtunkhwa. The audit visited the four industrial units established in Malakand Division, under registration of the

Environmental Protection Agency. The audit intended to evaluate their operational activities, their internal control structure, their compliance level to the environmental laws and regulations and the possible positive or negative effects of the same on the environment. The audit analyzed the measures taken for minimizing the risk from the industrial process to the lives of human beings, livestock, fish and plants. The employees were interviewed in order to know their awareness about national, international or other environmental laws and regulations and safety measures to be adopted in industrial units. Observations were penned down during the visits and photographs were also made for the purpose of audit evidence. This helped auditors in understanding the systems and procedures of industrial units. Audit also visited Regional Directorate of Environment Protection Agency Swat and held a meeting with the Director Environmental Protection Agency Swat region and had a meaningful discussion about the environmental effects of the industrial units on human beings, livestock and plants in Malakand Division. A checklist prepared by audit consisting of multiple questions regarding environment, which was used during the audit process, and on the basis of which data was gathered by audit for assessment, was discussed with the Director and his staff, over which replies were obtained by audit team during the exit meeting. The term “Environmental and Social Safeguards (or Standards)” is used by development institutions, international treaties and agencies to refer to policies, standards and operational procedures designed to first identify and then try to avoid, mitigate and minimize adverse environmental and social impacts that may arise in the implementation of development projects. The audit has been carried out, according to the given checklist, which touched upon many but the following major areas:

- Assessment and Management of Environmental and Social Risks and Impacts
- Labor and Working Conditions
- Resource Efficiency and Pollution Prevention and Management
- Community Health and Safety
- Land Acquisition, Restrictions on Land Use and Involuntary Resettlement
- Biodiversity Conservation and Sustainable Management
- Indigenous People

- Cultural Heritage
- Stakeholder Engagement and Information Disclosure

1.6 Evidences used

During the course of audit, the audit team visited the 04 Steel Mills at Malakand. The managements of the mills were interacted in respect of the operation of the Mills, safety of the workers and environmental and social impacts on the residents of the surroundings and their precautionary measures adopted for minimizing the environmental negative effects on the lives of workers and residents of the vicinity. The employees of the Mills were also interviewed in order to assess their awareness of the environmental laws, safety measures, and impact of industrialization on the environment which adversely affects the lives of human beings. Interview with Dr. Naeem Khan, Medical Officer at BHU Kharkai, and the Principal Government High School, Kharkai was conducted to find out the social voice of the residents. Interview with Ziaullah Khan Advocate was also conducted, who had been involved as the legal help with the residents of the village. Muhammad Raheem, a social worker and elder of Kharkai was also interviewed. All the interaction with locals and the employees were recorded as audit evidence. The audit also took pictorial evidence of the different operational units of the mills as well as their surroundings depicting various aspects with regard to environment. (Attached at Annex-2) The Khyber Pakhtunkhwa Environmental Protection Act, 2014 was made the benchmark, besides other international and national environmental laws and regulations. A book namely “Environmental profile of Khyber Pakhtunkhwa published by Environmental Protection Agency of Khyber Pakhtunkhwa was also consulted.

1.7 Audit Findings

During the audit it was observed that no proper policy, rules, by-laws and standing operating procedures except Khyber Pakhtunkhwa Environmental Protection Act 2014, for environmental protection were available. According to Section 3 (1) of the EPA Act, 2014, the KP EP Council has to be constituted

which shall consist of the Chief Minister as the Chairperson, the Minister for Environment and other members. The Environmental Protection Agency was required to prepare, in co-ordination with the appropriate Government Agency or local council and in consultation with the concerned Sectoral Advisory Committees where established, environmental policies for the approval of the Council but no environment policy specifically for Malakand Division was provided. Malakand Division has unique terrain and topography totally different from other parts of the county. It has its exclusive environment as compared to the rest of the country; therefore, it may require different standards. The Khyber Pakhtunkhwa Environmental Protection Agency was also required to prepare, revise and establish the Khyber Pakhtunkhwa Environmental Quality Standards with the approval of the Council and establish different standards for discharge or emission from different sources and for different areas under Section 6 of the Khyber Pakhtunkhwa Environmental Protection Act, 2014 but it still adopted National Environmental Quality Standards which may or may not be compatible to this region. In addition to the above, audit observed the following:

1. Neither the EPA nor the management of the industries has established environmental objectives and environmental programs for each relevant industry function and level.
2. The EPA has no provisions in its rules and laws for the industries to establish environmental management system as per international practices.
3. The industries have not developed a comprehensive framework of policies, practices, procedures, systems and relevant management information to support environmental management.
4. The environmental responsibilities of the top management of the industries are not clearly defined.
5. No collaboration with other departments of the region or agencies in relation to environmental management is in place.
6. No mechanism exists in the industries to monitor and measure the operations that can have a significant impact on the environment i.e. risk

assessment, the scale, frequency, severity and sensitivity of the environmental impacts.

7. The management of the industries and EPA has no interaction with the local population to assess the environmental impact of the production process.
8. Legal petitions have been filed by the locals against the operational activities of Ali Steel Mills due to its stark violation of environmental laws. The EPA has also been approached by the locals in the form of application, with copies to Secretary Environment, the Chief Secretary KP, and the Chief Minister KP etc.

CHAPTER-2

AUDIT FINDINGS

2.1 Non achievement of the Sustainable Development Goals set by the United Nation

According to Clause (ix) of the Sub Section 1 of the Section 6 of the Khyber Pakhtunkhwa Environmental Protection Act, 2014, the Environmental Protection Agency shall co-ordinate with other Provinces, Federal Government, National and International Organizations for the implementation of environmental policies, issues concerns and programs as may be prescribed.

The United Nation has set sustainable development goals for improvement of the state of environment for the developing countries in 2015, which should be achieved up to 2030. Pakistan is also one of the signatories. No efforts for achieving the goals have been made till date as no separate programs were initiated in Malakand region under the SDGs.

The management was asked to clarify the position but it was told that such decisions are to be taken by the Director General Environmental Protection Agency and the Apex office may be approached for compliance.

Audit recommends that action in this regards may be taken by the Director General under intimation to audit.

2.2 Non preparation and publishing of Annual Environmental Report

According to Clause (iv) of the Sub Section 1 of the Section 6 of the Khyber Pakhtunkhwa Environmental Protection Act, 2014, the Environmental Protection Agency shall prepare and publish an annual Environmental Report on the state of the environment in the Province.

Information regarding state of environment is an imperative tool for different stakeholders, which helps them in accomplishing their future objectives. For this purpose, Environmental Protection Agency Khyber Pakhtunkhwa was required, under the Act, to publish an Annual Environmental Report on the state of the environment in the region which was not prepared and published for the last many years.

The management was asked for any action regarding the matter, but no positive response was given to audit.

Audit recommends that responsibility for not taking necessary action in the matter may be fixed and future corrective action be initiated under intimation to audit.

2.3 Lack of public environmental awareness campaigns

According to Clause (xxiii) of the Sub Section 1 of the Section 6 of the Khyber Pakhtunkhwa Environmental Protection Act, 2014, the Environmental Protection Agency shall promote public education and awareness of environmental issues through mass media and other means including seminars and workshops.

No proper environmental awareness campaign was in place for education of the common people. Almost all the people residing in the surroundings of the industrial units were aware of the hazards and pollution originating from the industrialization. The common people especially the residents of the surroundings of the industrial units did not know how to safeguard themselves from the hazardous effect of the pollution generated by the industrialization. They did not know the precautionary measures to be taken by them or by the industry to mitigate the environmental hazards.

Audit asked for any evidence of public awareness campaign on part of EPA or the industry but no industry could produce any such evidence for public gatherings, or seminars, or khuli kachehri along with the local administration.

The management also agreed to the fact that such campaigns/programs were essential for safety of the public as well as the environment but no action on part of EPA had been taken so far.

Audit recommends that such programs/campaign may be initiated in future under intimation to audit.

2.4 Non awareness of the management of the industrial units of the environmental laws



According to Clause (xxiii) of the Sub Section 1 of the Section 6 of the Khyber Pakhtunkhwa Environmental Protection Act, 2014, the Environmental Protection Agency shall promote public education and awareness of environmental issues through mass media and other means including seminars and workshops.

The management of the industrial units was observed to be lacking the knowledge of industrial, labor and environmental laws. They were not well versed with their jobs and were unaware of their basic responsibilities to the rights of workers. They did not know the measures to be adopted for the safety of employees during the industrial operation and in the state of emergency. They were unaware of the adverse environmental effect of the industrialization on the human beings, livestock, life below the water, wild life and plants. The EPA has no mechanism to communicate its policies to the management of the industrial units to educate and make bound the management in respect of environmental protection.

The management was asked for any such measures but the reply was in negative and stated that the same is not required under the Act. Audit did not agree with the reply.

Audit recommends that the Director General may perform the duties as mentioned in the Act and arrange such training/awareness programs for the management of the industries as well as for the labor working therein.

2.5 Employees' non awareness of the environmental laws

According to Clause (xxiii) of the Sub Section 1 of the Section 6 of the Khyber Pakhtunkhwa Environmental Protection Act, 2014, the Environmental Protection Agency shall promote public education and awareness of environmental issues through mass media and other means including seminars and workshops.



The workers at Ali Steel Mills in unsafe conditions and naïve mood

While interviewing the employees of the industrial units, it came to the notice of the audit team that they were not in the least aware of rules & regulations, policies and other laws relating to environment. They were unfamiliar even with the name of Environmental Protection Agency. They were unaware of the safety measures to be adopted in the routine business of industrial operation and in the state of emergency.

The EPA did not have any system to communicate its objectives and policies to the employees and management of the industrial units. No employees' awareness programs, seminars, etc. were arranged by the industries, and the EPA did not play its due role in the said case.

Audit asked the management to provide any such letters/notices etc issued by regional office of EPA Swat but no such evidence was shared with audit.

Audit recommends that the Director General EPA should perform the legal and administrative duties and ensure proper communication with the management and the lower staff of the industries for the purpose of ensuring their safety as well as compliance with environmental laws under intimation to audit.

2.6 Non reduction in waste generation of industrial units

According to goal No. 13 of the Sustainable Development Goals, set in 2015 by the United Nations General Assembly and intended to be achieved by the year 2030, substantial reduction will be made in waste generation through prevention, reduction, recycling and reuse of the industrial waste.



Solid waste dumped untreated by Ali Steel Mills



Waste dumped in the middle of the operational activities at Sher Steel Mills

It is the responsibility of the EPA to ensure compliance on part of the industries for substantial reduction in waste generation through prevention, reduction, recycling and reuse of the industrial waste. The industries must use such modern and technologically updated machinery which can ensure the same but no such machinery/equipment or in the least any such activity was observed in the industries to achieve that goal. Thus, the industrial waste is dumped either inside the industries or outside in the open air, untreated and unprotected. The same is flowing into the rivers/water channels resulting in contamination of the clean water which is not only hazardous for the sea creatures but also for the humans who use that water. No steps are being taken to achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.

The management was asked to share with audit any such orders/instructions/notices for ensuring compliance with the rules on part of the industries but no reply was given.

Audit recommends that the Director General EPA should fulfill its responsibility and ensure compliance with the governments rules and regulations regarding the same matter. Orders for solid/liquid/gaseous waste management from Director General EPA may be issued to industries for compliance under intimation to audit.

2.7 No economic impact of industries on the locality

The industry established in the area of Malakand consists of small industrial units, i.e. steel mills, which are supposed to provide employment opportunities to the locals of the area. Audit observed that most of the employees are non locals and a very small number of employees belonged to the locality, so the locals are gaining less benefit from the industries as compared to the cost they are paying in shape of adverse environmental effect of the industries. Moreover, the operational activities offer no financial benefit to the locals in terms of supply of material within the locality, as the products are steel products which are supplied to the out district regions of the province and the country, and local buyers can not benefit from such production.

2.8 No work trainings to the industrial employees

According to Section 8 of Khyber Pakhtunkhwa Factories Act, 2013, every factory shall have an emergency/disaster management plan and all workers shall be adequately trained in the routine to be followed in such case.

According to Clause (xxiii) of the Sub Section 1 of the Section 6 of the Khyber Pakhtunkhwa Environmental Protection Act, 2014, the Environmental Protection Agency shall promote public education and awareness of

environmental issues through mass media and other means including seminars and workshops.

Almost all the industries except Taj Steel Mills have no expertise to deal with environmental issues and to train the industrial employees with designated responsibilities for environmental management and protection especially in matters of personal hygiene, personal safety, response to emergencies, drills and working with external agencies such as fire brigade etc. The effects of such non serious attitude of the management at industries towards the employees are far reaching and dangerous due to the fact that the workers are working in an industrial environment where they are exposed to high temperatures, high electric voltage, and high levels of hazardous toxic gases emissions. Particularly, the raw material, which was full of gas cylinders of CFC and methane etc. which were seen bursting in the furnace of Ali Steel Mills during the combustion process, and which posed a life threat to the workers who work inside the furnace unit.



Workers at Ali Steel Mills working without any safety measures in place near or around the furnace area

Audit asked for any such activities planned or conducted by the Management of EPA to which the management replied that the same is not the mandate of EPA under the Environmental Act. Audit is of the view that the EPA is responsible for ensuring such action to be taken by the industries.

Audit recommends that the Director General EPA may take action for ensuring compliance with the Act and make the industries bound to arrange such activities under intimation to audit.

2.9 Use of hazardous chemicals in raw materials in the industries

According to Clause (xxviii) of the Sub Section 1 of the Section 6 of the Khyber Pakhtunkhwa Environmental Protection Act, 2014, the Environmental Protection Agency shall take or cause to be taken all necessary measures for the protection, conservation, rehabilitation and improvement of the environment, prevention and control of pollution and promotion of sustainable development.

Audit observed while visiting the sight at the industries that chemicals which cause environmental releases are used but the industries do not address the issues of the habitat protection and stewardship in the areas affected by their operations. Most of the industries use local material with hazardous junk and release toxic emissions beyond their prescribed limit except Taj Steel Mills. The industries have no procedure to regularly monitor and measure the significant operations and activities that can have a significant impact on the environment. The industries did not make any reliable assessment of the level of Green house gas emissions/extent of air pollution of the environment attributable to the industry's operations. Audit team observed the following:

1. No efforts for control of emissions were seen on ground. The EPA team, which also visited the industries along with audit team, seemed to defend the management of Ali Steel Mills by claiming that the filters for gaseous emissions were properly working, while the audit team observed that a thick dark sooty emission was flying from the furnace in all directions

without having even a chimney to direct the emissions in the air. The EPA team stated that filter was installed as per instruction of the EPA by Ali Steel mills and Sher Steel Mills but audit team observed that the gaseous emissions were wildly emanating from the fire furnace without any check or control, which made the environment colorful.

2. The management of Ali Steel Mills, Sher Steel Mills and Malakand Steel mills was asked to produce reports duly verified by EPA regarding the acceptable limits of gaseous emissions. No reports were shown to audit.
3. The EPA laboratory was approached for reports, and reports (attached as Annex-3) for the four steel mills were shared with audit which stated that compliance as made by all the steel mills as per the National Quality Assurance Standards, but the contention of audit is that the reports are fabricated and fresh samples be obtained by an independent laboratory to be checked and verified by PCSIR labs for an objective analysis of the emissions of Carbon monoxide, CFC, Arsenic and other toxic substances such Lead, Mercury, Cadmium, Arsenic, Copper, Zinc etc. as mentioned in the given list of NEQS. The reports shared with audit by EPA state only the lab results of 4 items whereas the combustion process results into other toxic gases as mentioned in the NEQS. The EPA report shows very low results for the industries whereas the actual emissions, audit observed, are much higher than the acceptable level keeping in view the raw material used at Ali Steel Mills and Sher Steel Mills.
4. As per SRO 549(I)/2000 of Ministry of Environment Section 6(2) A, The National Environmental Quality Standards state that no Projects with Sulphur dioxide emissions will be recommended whereas Audit observed that release of SO₂ is a possibility keeping in view the raw material and level of heat in the combustion process.
5. Sub Section B of the same standards also state that dilution of gaseous emissions to bring them to the NEQS level is not permissible through excess air mixing blowing before emitting into the environment. The same is happening at Ali Steel Mills, Sher Steel Mills and Malakand Steel Mills which is violation of rules.

6. The EPA staff which accompanied the audit team was unaware of how to gauge air emissions and what instruments were used for measuring gaseous emissions. On asking they replied that the Director General EPA staff visits the industries, collect samples and test the same and no reports/results are shared with regional offices. Audit observed that regional staff was not taken on board during the process which goes against the norms.

Audit recommends that the Director General EPA should ensure regular monitoring of operational activities of the industries including sample testing and their results etc. and also ensure compliance on part of the industries in the said matter under intimation to audit.



CFC cylinder containing gas lying in the raw material to be used

2.10 No system was found for recycling and dumping of solid waste.

According to Section 15(1) of Khyber Pakhtunkhwa Factories Act, 2013, effective arrangements shall be made in every factory for the disposal of wastes and effluents due to the manufacturing process carried on therein.

According to Clause (xx) of the Sub Section 1 of the Section 6 of the Khyber Pakhtunkhwa Environmental Protection Act, 2014, the Environmental Protection Agency shall assist Government Agencies, local councils, local authorities and other persons to implement schemes for the proper disposal of wastes so as to ensure compliance with the Khyber Pakhtunkhwa Environmental Quality Standards.



Industrial waste is untreated at Sher Steel Mills

No system was in place in the industries for recycling and dumping the solid waste generated from industrial operations. During the visit the audit team also observed the following:

1. No adequate procedure for spill prevention and control was in place.
2. No waste management assessment system was seen.
3. The industries had no inventory record of all the waste generated and recycled in the last years.
4. No plan for waste minimization and pollution prevention was in place in the industries.
5. The Regional Directorate of EPA Swat as well as the management of the industries did not have the capacity to assess impacts.

Audit asked the management of EPA Regional office Swat to show any such instructions/notices for compliance on part of the industries but not such evidence was shown.

Audit recommends that the EPA may ensure compliance on part of the industries with the government rules and regulations under intimation to audit.

2.11 Non availability of sufficient facilities to the employees

According to Section 20 to 24 of Khyber Pakhtunkhwa Factories Act, 2013, facilities of lighting, drinking water, spittoons, vaccination, ventilation, latrines and urinals shall be provided to the factory workers.

During audit of the industries, no sufficient facilities inside the industries were observed as provided to the employees working in the industrial units. No proper lighting and flooring etc. in the industrial units existed except Taj Steel Mills, which ensured the safety of the workers by giving the workers helmets for head protection, uniform during operational hours, and the ground was properly floored. Arrangements for providing First Aids medical facilities in case of any mishap were also not found in any industry except Taj Steel Mills. The workers

inside the industries were not satisfied with facilities and working conditions of the industries. Ali Steel had no Masjid, no café, and no resting place for the workers. No helmets, gloves or other safety equipment was given to the workers. On asking the management about the same, the manager replied that protection equipment was in place but the workers don't use them. No single helmet was shown on record/store to audit. The workers reported they had no safety equipment to wear during the working hours.



No facilities of Café, Masjid, Resting place for workers in Ali Steel Mills, Sher Steel Mills and Malakand Steel Mills

Audit asked the management of EPA regional office Swat for any orders/ notices to be complied on part of the industries but the management could not provide any evidence to the effect that such matters are communicated to the management of industries.

Audit recommends that the Director General EPA may ensure compliance on part of the industries with the government rules and regulations as contained in the EPA Act as well as the Companies Ordinance for the safety and welfare of the staff at industries as well as the protection of the environment.

2.12 Establishment of the industrial units in the residential areas

The industrial units in Malakand are not established in the Government notified industrial zone and all the industrial units have been established amid the residential areas which create different types of pollution i.e. Air pollution, water pollution and noise pollution.



The steel Mills in the Background is situated in the heart of the Village Dargai where children can be seen playing in the foreground in the thickly populated village

This can harm the people of the vicinity by suffering from different diseases and other adverse environmental effects. Such health hazards are caused by gaseous and solid waste as well as liquid effluents generated by the industries.



Clouds of dark smoke making a canopy over the village

Following are the audit observations regarding the release of toxic gases by the operational activities of the industries:

1. Arsenic Exposure: Gaseous emissions of the industries are negatively affecting the health of the residents. According to a recent World Health Organization report, arsenic from contaminated water can be quickly and easily absorbed and may adversely affect human health. Air is also an important source of arsenic exposure in areas with industrial activity. The presence of arsenic in airborne particulate matter is considered a risk for certain diseases. Taken together, various potential pathways of arsenic exposure seem to affect humans adversely, and future efforts to reduce

arsenic exposure caused by environmental factors should be made. (Jin-Yong Chung, Seung-Do Yu, Journal of preventive medicine & health).

2. Carbon monoxide exposure: Carbon monoxide is a toxic gas which causes a huge damage to the lungs and bronchital system along with cardiovascular system if it exceeds its acceptable level of emission at the industry level. There is a phenomenon called the CO Alarm. The CO alarm is a time-weighted alarm. The way a time-weighted alarm works is by measuring the buildup of carbon monoxide in a locality. For a person to begin feeling the effects of carbon monoxide poisoning, they are exposed to a carbon monoxide level of 50 parts per million (PPM) for eight hours. An alarm's response time will vary depending on the level of carbon monoxide in the air. For example, an alarm will sound after three and a half hours of continuous exposure at a level of 50 PPM, but after only eight minutes of continuous exposure at a level of 400 PPM. Levels of carbon monoxide exposure range from low to dangerous:

- Low level: 50 PPM and less
- Mid level: Between 51 PPM and 100 PPM
- High level: Greater than 101 PPM
- Dangerous level: Greater than 101 PPM if someone is experiencing symptoms

Carbon Monoxide alarming levels

| Carbon Monoxide Level | Alarm Response Time |
|------------------------------|----------------------------|
| 40 PPM | 10 hours |
| 50 PPM | 8 hours |
| 70 PPM | 1 to 4 hours |
| 150 PPM | 10 to 50 minutes |
| 400 PPM | 4 to 15 minutes |

Symptoms of CO alarm situation:

| | |
|-----------|--|
| 50 PPM | None for healthy adults. According to the Occupational Safety & Health Administration (OSHA), this is the maximum allowable concentration for continuous exposure for healthy adults in any eight-hour period. |
| 200 PPM | Slight headache, fatigue, dizziness, and nausea after two to three hours. |
| 400 PPM | Frontal headaches with one to two hours. Life threatening after three hours. |
| 800 PPM | Dizziness, nausea, and convulsions within 45 minutes. Unconsciousness within two hours. Death within two to three hours. |
| 1,600 PPM | Headache, dizziness and nausea within 20 minutes. Death within one hour. |

3. Nitrogen Oxide: Nitrogen Oxides (mainly NO and NO₂), or NO_x, is the generic term for a group of highly reactive gases, which contain nitrogen and oxygen in various amounts and chemical configurations. Nitrogen oxides form when fuels are burned at high temperatures, as in a combustion process. The primary sources of NO_x are motor vehicles, electric utilities, and other industrial sources. The Steel industries achieve a minimum of 800 degree centigrade and a maximum of 1500 degree centigrade, which causes production of NO and NO₂ in high levels. The most basic way to measure NO_x is “Simple NO_x” with a single sensor. NO (nitric oxide), the primary component of NO_x, is measured directly with a gas sensor. The NO to NO₂ ratio is then assumed based on the type of combustion fuel and process, from which the NO:NO₂ ratio historical data has been gathered. Method for assessing the level of NO is also the Total NO_x method, which is a more accurate and precise way to determine NO_x actual measurements for both NO and NO₂. When both NO and NO₂ are both directly measured with gas sensors, there is no longer an assumed NO:NO₂ ratio. The “Total NO_x” is the sum of the measured NO plus the measured NO₂. There is yet another method to assess the levels of NO and NO₂, which is the “True NO_x” method using a chiller with NO & NO₂ gas sensors is the most efficient and accurate way to measure NO_x with a portable gas analyzer. Common methods for

measuring NO and NO₂ include sensors using electrochemical, non-dispersive infrared (NDIR), and chemiluminescence technologies. E Instruments uses electrochemical gas sensors to measure NO & NO₂ in the E4500, E6000, & E8500 Plus portable emissions analyzers. The E4500 & E6000 hand-held emissions analyzers can provide Simple NO_x and Total NO_x measurements depending on which gas sensor configuration is selected. True NO_x measurements are performed with the E8500 Plus portable emissions analyzer.

The audit team observed that the Environmental Protection Agency has no facility to assess arsenic, CO, CO₂, NO, NO₂ level in the gaseous emissions of the industries. It is unaware of the damage the industries are causing to the local population, which is showing itself in the form of various types of cancers and bronchial diseases. The local doctors are a witness to the fact that the number of patients in the local hospital are increasing day by day, particularly the small children with diseases like cough and allergies are being brought by parents for the diseases caused by such toxic gases.

Audit recommends that well trained staff be deputed by the Director General EPA with proper equipment and level of knowledge to perform their duty in the most effective and efficient manner. Audit also recommends inquiry into the matter as to how such staff was appointed which is incapable to handle the official duty of collection of samples and their testing by the authorized government laboratory. The finding of inquiry may be intimated to audit.

2.13 No safety measures for the nearby residents from adverse environmental effect of industries

According to Clause (vii) of the Sub Section 1 of the Section 4 of the Khyber Pakhtunkhwa Environmental Protection Act, 2014, the Council shall provide guidelines for bio-safety and for the use of genetically modified organisms.

Industrial units in the Malakand are established in the residential area therefore, the residents of the areas are so much exposed to the negative environmental impacts relating to industrialization. As mentioned above, the industrial units were using hazardous substance as raw material and also generating hazardous industrial waste from the operations but no proper arrangements were being made to safely handle the hazardous material and the hazardous waste. No measures were seen adopted by Government to safe guard the biodiversity of the relevant areas. This is injurious to the survival of the biodiversity of the locality which requires safety measures, to be ensured by the industrialists as well as the Government, to mitigate the threats arising from the negative impacts of industrialization on the health of locals. The Air Quality Index (AQI) in Malakand is reaching to higher hazardous levels, where people must be advised to avoid physical activity outdoors.

Prolonged or heavy exposure to hazardous air can result, as already pointed out, in severe health issues including asthma, lung damage, bronchial infections and heart problems and shortened life expectancy – putting at risk people’s rights to life and to health, as well as the right to a healthy environment. Audit observed during the interviews of the residents of the locality that they had protested on several occasions to the local administration, they have approached the EPA and also the Human right Commission but no action has been taken by any agency so far. Some of the glimpses of these protests are as follows while the court cases are attached at Annexure-4.



Residents protesting at Dargai about the effect of industrial Mills on human health of District Dargai, Malakand

Similarly, the issue was highlighted in the local newspapers and some of the shots of news bits are as follows:



Orders of Commissioner Malakand violated and steel mills still kept running in the area



Protest on spread of diseases due to steel mills at Dargai

2.14 Non capability of the industrial units to handle the emergency

According to Section 8 read with Section 9 of Khyber Pakhtunkhwa Factories Act, 2013, every factory shall have an emergency/disaster management plan and all workers shall be adequately trained in the routine to be followed in such case and Government may, make rules prescribing in respect of any factory, or class or description of factories, the means of escape to be provided in case of fire and the nature and amount of firefighting apparatus to be provided and maintained.

During audit it was noted that the industrial units did not have the capability to handle any emergent situation as no emergency response equipments were available inside the industries. The industries did not have any documented plan for dealing with emergencies that may have an environmental significance. The industries did not have the procedures to identify the potential for and response to environmental incidents, accidents and emergency situation.

Audit asked the management of EPA Swat region about the matter to which they replied that it is the authority of the Director General to issue orders in this regard.

Audit recommends that the Director General EPA may issue necessary instructions/orders to the industries for compliance by the industries and audit may be intimated in such matters.

CONCLUSION

Audit concludes with the following findings:

1. Compliance with environmental legislative and standard requirements by EPA was minimum, and so was the case with the industries at District Malakand.
2. The level of conformity with internal environmental policies and practices by EPA and the industries at Malakand was very low.
3. The level of good environmental practices and their implementation at EPA level and the industries level was very low.
4. Minimum levels of Measurement and recognition of all significant environmental costs, benefits analyses was observed by audit both at EPA level as well as on the level of industries. No system was found in place for identification of significant environmental risks and contingencies at EPA as well as Industries level.
5. Level of staff awareness of operational issues relating to environmental performance was very low at EPA as well as industries level.
6. Overall status of environmental protection protocols for assessment/measurement of environmental protection at EPA as well as industries level was unsatisfactory.

RECOMMENDATIONS

The Federal as well as the provincial government, as per constitution is bound to ensure people's rights to life and to health, as well as the right to a healthy environment. Audit suggests the following corrective action and recommendations for environmental performance improvement:

1. The EPA should prepare by-laws as demanded by the EPA Act, and implement those laws in letter and spirit.
2. The EPA should make liaison with the environmental tribunal in processing the court cases for speedy disposal of the same.
3. The EPA should ensure to depute to Directorate of EPA Swat region a highly qualified staff with proper authorization of inspection and training of their staff that can have proper check on the operations of the industries in Malakand region.
4. The EPA should ensure to issue renewal of NOCs of operation to the industries after observing all the codal formalities particularly the laboratory reports generated by the industries through an independent and government approved laboratory such as PCSIR etc.
5. The industries which are damaging the environment such as Ali Steel Mills, Sher Steel Mills and Malakand Steels should be shut down immediately through official orders in liaison with the local administration i.e. the AC and DC Office, until they observe the environmental protocols in letter and spirit.
6. The EPA should make sure that the industries prepare environmental management plans, labor safety plans, occupational health and safety measurements and employees as well as community awareness programs/seminars under the auspices of the EPA.
7. The EPA should, under the law, make the industries bound to observe the mitigation measures for environmental damage caused by liquid, solid and gaseous effluents during the operational activities of the industries.
8. The EPA, in liaison with the Forestry and Agriculture department KP, should launch tree plantation campaign, funded by the stakeholders like

the government departments and the industries at Malakand, so that the damage to the environment may be minimized.

9. The EPA should ensure annual audit to be conducted regularly in order to bring about improvement in its policies and its implementation for the safety of the environment.

ANNEXURES

Annex-1

Checklist



**OFFICE OF THE
DIRECTOR DISTRICT AUDIT, SWAT REGION
DR. JAVED IQBAL COLONY, SHAGAI, SAIDU
SHARIF SWAT**

Telephone No. 0946-924015 Fax No. 0946-722538
No.DA-MKD/Audit Plan/2019-20/ Dated: 25/02/2020

To

The Regional Director,
Environmental Protection Agency,
Saidu Sharif, Swat

Subject: **INFORMATION/COMMENTS REGARDING ENVIRONMENTAL
AUDIT OF THE INDUSTRIES AT MALAKAND FOR THE YEAR 2019-
20**

After the Field Visit of the Audit Team, the Information/comments of your office to the audit observations enclosed herewith related to the four industries namely, Ali Steel Mills Kharkai Dargai, Taj Steel Mills Skhakot, Pak Premier Steel Mills Dargai, Sher Steel Mills Dargai, audited at District Malakand may please be provided on the prescribed format to proceed further with the audit process please.

-sd-

Deputy Director Audit

Annex-2

Environmental audit Check list on account of environmental audit of Four Industries for the year 2019-20 namely, Ali Steel Mills Kharkai Dargai, Taj Steel Mills Skhakot, Pak Premier Steel Mills Dargai, Sher Steel Mills Dargai.

| S.NO | Questions | Yes | No | Not sure | Comments by EPA |
|------|--|-----|----|----------|-----------------|
| 1. | Does the EPA have a documented Environmental policy ? | Yes | | | |
| 2. | Is this policy consistent with international Environmental policy? | Yes | | | |
| 3. | Has top management defined and committed to the policy? | Yes | | | |
| 4. | Are the views of stakeholders taken into account in developing the policy? | | | Not sure | |
| 5. | Is the policy appropriate to the nature and scale of the department and environmental impacts of its activities, products or services? | Yes | | | |
| 6. | Is the environmental policy clear and specific enough to guide the setting of environmental objectives and targets? | Yes | | | |
| 7. | Is the policy sufficiently clear to be capable of being understood by interested parties? | Yes | | | |
| 8. | Does the policy show commitment to continuous improvement in the environment? | Yes | | | |
| 9. | Does it comply with relevant environmental legislation and regulations and other environmental mandates? | Yes | | | |
| 10. | Has the policy been communicated to and understood by employees of all business units? | | No | | |
| 11. | Is the policy reviewed periodically to ensure its continuing relevance, in the light of changing standards, technology, and emerging concerns? | | No | | |
| 12. | Has the EPA clearly established environmental objectives? | Yes | | | |
| 13. | Do their exist by-laws /regulations that reflect the government's | Yes | | | |

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| | environmental policy as enunciated in the EP Act? | | | | |
| 14. | Do they reflect significant environmental impacts associated with the industries' operations? | Yes | | | |
| 15. | Has the EPA established proper systems to translate its objectives into action? | | No | | |
| 16. | Has the EPA developed adequate procedures to accomplish its objectives and are they really efficient and viable? | | No | | |
| 17. | Has the EPA established environmental objectives for each relevant business function and level? | | No | | |
| 18. | Have targets been set by EPA for environmental objectives to be achieved by industries? | | No | | |
| 19. | Are the EPA's objectives and targets reviewed and revised to incorporate changes/updates in the environmental policy? | | No | | |
| 20. | Does the EPA have a system of communicating their environmental objectives and policies to various concerned internal and external stakeholders (like employees, contractors and suppliers etc)? | | No | | |
| 21. | Does the EPA have a proper system to identify, allocate and review human, technical and financial resources to meet its environmental objectives and targets? | | No | | |
| 22. | Does the EPA have any provisions in their rules/laws for the industries to establish environmental Management System as per international practices? | | No | | |
| 23. | Have the industries developed a comprehensive framework of policies, practices, procedures, systems and relevant management information to support environmental management? | | No | | |
| 24. | Have the industries adopted any principles of the Environmental | | No | | |

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|-----|---|--|---------------------------|--|--|
| | Management System? | | | | |
| 25. | Has environmental management system been integrated into the overall business management processes of the industry? | | No | | |
| 26. | Do the existing procedures in the industries fully take into account all environmental aspects at all levels and activities? | | No | | |
| 27. | Are the environmental responsibilities of the Chief Executive and Executive Members of the industry reasonably clearly defined? | | No | | |
| 28. | Do the industries collaborate with other departments or agencies in relation to environmental management? | | No | | |
| 29. | Do the industries communicate specific responsibilities and accountabilities among the employees? | | No | | |
| 30. | Are the environmental responsibilities documented within the industry and are they up-to-date? | | No | | |
| 31. | Have the industries considered/sought/achieved ISO certification? | | No except Taj Steel mills | | |
| 32. | Do the industries have sufficient resources and technical competencies to implement EMS as per ISO requirements? | | No except Taj Steel mills | | |
| 33. | Have the industries assessed the costs and benefits of environmental safety measures? | | No | | |
| 34. | Has the Management of industries prepared any proper plan for identification of major environmental issues? | | No Except Taj Steel mills | | |
| 35. | Has the management of industries conducted any Planning for addressing the future environmental issues? | | No | | |
| 36. | Have the industries established a systematic and documented process describing the methods to identify, | | No | | |

| | | | | | |
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| | monitor and evaluate environmental aspects of its activities, products or services? | | | | |
| 37. | Do the processes in the industries comply with the environmental policy of the government? | | No | | |
| 38. | Do the industries monitor and measure the operations that can have a significant impact on the environment? | | No | | |
| 39. | Do the industries carry a regular environmental risk assessment to evaluate those aspects, which may have a significant impact on the environment in a positive and negative way? | | No | | |
| 40. | Does it consider the scale, frequency, severity and sensitivity of the environmental impacts? | | No | | |
| 41. | Do the industries make efforts to determine the significance of those impacts using a recognized risk management approach? | | No | | |
| 42. | Does management in the industries have interaction with the local population to assess the impact of the production activities? | | No | | |
| 43. | Does the company provide for the audit and review of the process to confirm that planned arrangements are properly implemented and maintained? | | No | | |
| 44. | Does the management have any plans/vision in a documented form for the environmental impact awareness of the nearby public? | | No | | |
| 45. | Have the industries established Key Performance Indicators for the safety and protection of the environment? | | No | | |
| 46. | Are there any key Performance Indicators (KPIs) to demonstrate progress against the set environmental objectives and targets? | | No | | |

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|-----|---|--|----|--|--|
| 47. | Do the industries have the capability to identify and track KPIs and other data, necessary to achieve its environmental objectives and targets? | | No | | |
| 48. | Have these targets or objectives been linked to the organization's corporate or business plans to ensure accountability or follow up? | | No | | |
| 49. | Have the industries developed programs to achieve objectives and targets established for each relevant business function and level? | | No | | |
| 50. | Do these programs respond to company's environmental policy and the risk assessment? | | No | | |
| 51. | Do these programs support or contribute to the authorities or Governments overall environmental programs? | | No | | |
| 52. | Do the programs nominate personnel with specific responsibilities in the environment area? | | No | | |
| 53. | Are the programs monitored to track progress against objectives and targets? | | No | | |
| 54. | Is someone declared responsible for tracking progress towards achieving objectives and targets? | | No | | |
| 55. | Does the program include an environmental review for new activities? | | No | | |
| 56. | Has the program been amended to reflect changes for new activities? | | No | | |
| 57. | Do the industries monitor and revise its environmental management programs? | | No | | |
| 58. | Is there any environmental management strategy in place in a documented form at the industry? | | No | | |
| 59. | Is there an Executive Committee or Board to oversee the environmental monitoring and reporting of the company's activities? | | No | | |
| 60. | Has top management defined the roles, responsibilities and authorities of | | No | | |

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|-----|---|--|---------------------------------|--|--|
| | personnel for environmental management in the context of the company's Environmental Management System (EMS)? | | | | |
| 61. | Do the roles, responsibilities and authorities extend to establishing, implementing, maintaining and reporting on the EMS? | | No | | |
| 62. | Have the roles been documented and communicated to relevant people responsible for environmental management and are the relevant people aware of the roles assigned to them? | | No | | |
| 63. | Has management provided adequate resources to implement and control its EMS? | | No | | |
| 64. | Do the industries integrate an awareness of environmental issues into its culture? | | No | | |
| 65. | Do the industries integrate the principles of sustainable development in decision making process through the appraisal and evaluation of policies, programs, plans and projects? Are there written guidelines on how to conduct operations in a manner that is responsible in accordance with the principles of sustainable development? | | No | | |
| 66. | Are systems of internal control for managing the environment appropriate to the company's corporate plan or business charter? | | No | | |
| 67. | Do they provide timely and useful management information? | | No | | |
| 68. | Do the industries have an effective internal environmental audit function? | | No | | |
| 69. | Do the industries conduct a Training Needs Analysis for environmental management issues? | | No | | |
| 70. | Is there adequate expertise in the industries to deal with the environmental and sustainability issues? | | No Except Taj Steel mills | | |

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| 71. | Do the industries have a systematic and documented process to ensure that personnel who carry out tasks that have a significant impact on the environment are adequately trained and experienced? | | No | | |
| 72. | Do the industries assess the adequacy of resources and training of staff with designated responsibilities for environmental management and/or protection? | | No | | |
| 73. | Are employees' responsibilities for environmental management identified in their accountabilities (e.g. position descriptions, annual performance goals)? | | No | | |
| 74. | Are employees encouraged to take the initiative, submit suggestions for improvement, and to suggest actions or policies to control the industry's environmental impact? | | No | | |
| 75. | Does the training include response to emergencies and drills, and working with external agencies such as fire brigade? | | No | | |
| 76. | Do the industries communicate with key stakeholders in regard to significant environmental aspects and is this process documented? | | No | | |
| 77. | Do the industries try to identify, monitor, evaluate safety measures and ensure the physical safety of the working labor? | | No | | |
| 78. | Does the industry have a process to record and maintain communications between key employees responsible for environmental management? | | No | | |
| 79. | Do the industries have a system to receive, record and respond to communications from interested parties about environmental impacts associated with the company's operations? | | No | | |
| 80. | Do the industries proactively seek the advice of independent community groups (e.g., through newsletters, regular meetings, open | | No | | |

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| | forums, or community oversight committees) regarding possible risks posed by the operations of the company? | | | | |
| 81. | Have the industries established documented procedures to monitor and evaluate the effectiveness and efficiency of communication strategy/methods regarding environmental protection? | | No | | |
| 82. | Have the industries established, and does it maintain, information to describe the core elements of the Environmental Protection and provide direction on where to obtain more information on specific parts of Environmental safety? | | No | | |
| 83. | Does the information describe how the elements interact with each other? | | No | | |
| 84. | Does it describe the key roles, responsibilities, procedures, follow-up actions or response? | | No | | |
| 85. | Have the industries identified operations and activities that are associated with significant environmental aspects of the company's operations? | | No | | |
| 86. | Are these operations and activities carried out under controlled conditions and in accordance with operating criteria to ensure compliance with environmental policy and the achievement of objectives and targets? | | No | | |
| 87. | Do the industries have a formal written policy regarding materials/resource conservation, reduction, re- use and recycling? | | No | | |
| 88. | Have the industries established specific targets for material/resource conservation programs for energy, or waste avoidance, or other emerging issues or activities? | | No | | |
| 89. | Have the industries established specific targets for each conservation strategy? | | No | | |

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| 90. | Do the industries routinely make chemical use that causes environmental releases? | Yes but no reports were provided | | | |
| 91. | Do the industries address issues of habitat protection and stewardship (such as watershed management, wilderness protection, biodiversity, etc.) in areas affected by their operations? | | No | | |
| 92. | Is there any Monitoring & Measurement plan in a documented form at the industries? | | No | | |
| 93. | Have the industries developed and implemented procedures for checking/monitoring the gaseous emissions of the industry? | | No | | |
| 94. | Is there an adequate system to identify areas of non- conformance? | | No | | |
| 95. | Do the industries have procedures to regularly monitor and measure the significant operations and activities that can have a significant impact on the environment? | | No | | |
| 96. | Do the industries have systematic and documented procedures to evaluate compliance with relevant environmental legislation and regulations? | | No | | |
| 97. | Are periodic audits carried out using established programs and procedures? | | No | | |
| 98. | Do the industries have data collection and information management systems adequate to support environmental reporting needs? | | No | | |
| 99. | Is the performance of the industries regularly monitored in relation to the principles of sustainability and best practices? | Yes | | | |
| 100 | Do the industries compare and publicly report the monitoring reports made in Environmental Impact Assessment? | | No | | |
| 101 | Do the industries have auditing programs for workplace health, | | No | | |

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|-----|---|-------------------------------------|---------------------------------|----------|--|
| | safety of the staff? | | | | |
| 102 | Do the industries monitor and document the consumption of natural resources? | | | Not sure | |
| 103 | Do the industries use imported raw material? | | No Except Taj Steel Mills | | |
| 104 | Do the industries use local rear material with hazardous junk? | Yes Except Taj Steel Mills | | | |
| 105 | Do the industries use a separate power supply line from the local population? | Yes | | | |
| 106 | Do the industries have systems to measure the cost and quality of environmental protection services and the use of resources entrusted to the same? | | No | | |
| 107 | Is this done through a managerial cost accounting system or other financial management system that routinely compiles, analyses, and reports on environmental costs? | | No | | |
| 108 | Which environmental costs are so identified (e.g., management costs, resource use, waste disposal, permitting, monitoring, training, auditing, insurance)? | | No except management cost | | |
| 109 | At what level are environmental effects recorded in the industry? | | | Not sure | |
| 110 | Do documented emergency/contingency plans exist for rectifying significant environmental mishaps at the industries? | | No | | |
| 111 | Do the industries have procedures to establish and maintain responsibility and authority for handling investigations of non-conformance and taking corrective and preventative action regarding environmental violations? | | No | | |
| 112 | Has the cost of rectifying specific environmental mishaps/repercussions been | | No | | |

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|-----|--|-----|---|----------|--|
| | estimated in order to prioritize the risk assessment? | | | | |
| 113 | Does the Executive Committee or Board regularly receive key information, such as performance information, major initiatives or investigations of issues affecting the environment? | | No | | |
| 114 | Do the industries provide sufficient facilities to the staff inside the industry? | | No | | |
| 115 | Do they take into account the results of audits undertaken and any changed circumstances for continuous improvement? | | No | | |
| 116 | Are the results of the reviews: documented, reported to, and considered by, the Board and or Chief Executive? | | | Not sure | |
| 117 | Do they take action on the results of the reviews? | | | Not sure | |
| 118 | Do the industries have proper floorings/lighting etc. For the working staff? | | No Except Taj Steel Mills | | |
| 119 | Is the labor inside industry satisfied with working conditions of the industry? | | No As per labor statements | Not sure | |
| 120 | Are views of the working taken into account in decision making? | | No As per statement of the labor | | |
| 121 | Is the labor and other staff hired from the locality to provide employment opportunities to the local population? | | No | | |
| 122 | Do the operations require compliance with environmental, health or safety regulations at either the national or state level? | Yes | | | |
| 123 | Is there documented record of the working staff inside the industries? | | No | | |
| 124 | Is there any documentary record in the industry to identify the legal /regulatory requirements associated with environmental impacts of activities, products or services? | | No Because no record was shown to audit by industry | | |
| 125 | Is the any system in place to | | No | | |

| | | | | | |
|-----|---|-----|----|----------|--|
| | evaluate compliance with the legal and other regulatory requirements? | | | | |
| 126 | How does the company keep track of (changes to) legal and other requirements? | | | Not sure | |
| 127 | Have the industries established and maintained procedures for controlling all key documents? | | | Not sure | |
| 128 | Are the procedures adequate so that the documents can be easily located at relevant locations? | | | Not sure | |
| 129 | Who is authorized to approve alterations to documentation? | | | Not sure | |
| 130 | Are obsolete documents promptly removed from all points of issue? | | | Not sure | |
| 131 | Are obsolete documents retained for legal and other reasons and suitably identified? | | | Not sure | |
| 132 | Is there any transparent and open system of reporting to communicate the company's management responses to the safety of the environment to the public? | | No | | |
| 133 | Is there an appropriate and reliable environmental reporting system which meets requirements of the entity? | | No | | |
| 134 | Do the industries report to regulators? | Yes | | | |
| 135 | Do the industries contribute in any way to National or International environmental safety & sustainability? | | No | | |
| 136 | Does the Environmental Protection Agency produce an annual Environment Report about the industries under its jurisdiction? | | No | | |
| 137 | Does the EPA arrange regular inspections of the industries? | | | Not sure | |
| 138 | Is the inspection report externally verified or validated? | | No | | |
| 139 | Does the EPA report to the Parliament and/or the public on the fulfillment of its environmental responsibility? | | No | | |
| 140 | Is the staff of EPA at the regional | | No | | |

| | | | | | |
|-----|---|---|----|--|--|
| | directorate adequately trained in the technical inspection of industries? | | | | |
| 141 | Is the sector in which the company operates prone to and known for a high level of pollution/ environmental impact? | Yes. | | | |
| 142 | Do the industries fall within the notified industrial zone as per the government 's notifications/orders? | | No | | |
| 143 | Are there clearly specified orders empowering the entity to operate in the specified industry? | | | Not sure | |
| 144 | Has the industries obtained all the necessary approvals or permits for the operations? | | No | | |
| 145 | Are all these approvals properly documented and readily available for inspection? | | | Not sure As the regional EPA directorate is not authorized to have any record | |
| 146 | Does the sector in which the entity operates entail any special environmental risks or require special consideration? | Yes. Melting section & unchecked gaseous emissions of steel industry | | | |
| 147 | Do the industries carry out environmental risk analysis in accordance with specified schedule? | | No | | |
| 148 | Is there a suitable internal control system to ensure that the entity's operations achieve the intended environmental objectives? | | No | | |
| 149 | Does it provide for regular verifications and physical monitoring? | | No | | |
| 150 | Are there any actions taken by the EPA to mitigate/ abate the environmental impacts? | | No | | |
| 151 | Are the actions taken by the | Yes | | | |

| | | | | | |
|-----|--|-------------------------------------|----|----|--|
| | management to mitigate/ abate the environmental impacts adequate? | | | | |
| 152 | Are the mitigative action adequate? | | No | | |
| 153 | Is the industry operating as per the legally allowed operational hours? | | No | | |
| 154 | Was the industry legally required to carry out any EIA prior to starting its operations? | Yes | | | |
| 155 | Was it carried out? | Yes | | | |
| 156 | Did the entity apply for and obtain environmental clearances as required under the relevant laws and regulations? | Yes | | | |
| 157 | Were the conditions subject to which the clearance was granted duly met? | | No | | |
| 158 | Do the industries self assess their environmental impact? | | No | | |
| 159 | Does the regional Directorate of EPA have the capacity to conduct the environmental impact assessment? | | No | | |
| 162 | Is the regional Directorate EPA empowered to instruct the industries on any environmental issues? | | No | | |
| 160 | Do the industries require official approval for emissions to air? | Yes | | | |
| 161 | If yes, have they obtained these approvals (in the form of permits, licenses, consents or authorization)? | NOC | | | |
| 162 | Are these approvals up to date and available for inspection? | Yes | | | |
| 163 | If relevant, are authorized limits and conditions under approval (e.g. monitoring data) being met? | | | No | |
| 164 | Do the industries release toxic emissions beyond their prescribed limits? | Yes Except Taj Steel Mills | | | |
| 165 | Have the industries taken action to measure and quantify the pollution level, emission level etc. during its operations? | | | No | |
| 166 | Has any reliable assessment of the level of Green house gas emissions/extent of air pollution of the environment attributable to the | | | No | |

| | | | | | |
|-----|--|-----|----|----------|--|
| | industry's operations been made? | | | | |
| 167 | Are there any reports available for inspection? | | No | | |
| 168 | Are efforts being made to control such emissions? | | No | | |
| 169 | Has the sanctioning authority reviewed the same and given its approval? | | | Not sure | |
| 170 | Do the industries contribute a huge amount of heat to the environment? | Yes | | | |
| 171 | Do the industries observe the acceptable limits of heat? | | No | | |
| 172 | Does the company require official approval to discharge liquid effluent to ground, surface water (including streams, rivers and lakes) or sewer or drainage systems? | Yes | | | |
| 173 | If yes, have these approvals been obtained? | | | Not sure | |
| 174 | Are these approvals up to date and available for inspection? | | No | | |
| 175 | Are all discharges identified and if required, authorized, licensed or permitted? | | No | | |
| 176 | Is there any system in place in the industries for recycling/dumping of the solid waste in the industries? | | No | | |
| 177 | Are discharge monitoring reports available for past few (say three) years? | | No | | |
| 178 | Is there adequate procedure for spill prevention and control? | | No | | |
| 179 | Is there any Waste management Assessment system in the industries? | | No | | |
| 180 | Do the industries have an inventory of all the waste generated and recycled in last years? | | No | | |
| 181 | Do the industries monitor and document usage, volume and disposal of all such waste? | | No | | |
| 182 | Are the solid wastes finally disposed off to pepper dumping sites? | | No | | |
| 183 | Do the industries have specific programmes to minimize such waste? | | No | | |
| 184 | Do the industries generate hazardous | Yes | | | |

| | | | | | |
|-----|---|-----|---------------------------|--|--|
| | waste? | | | | |
| 185 | Are hazardous waste collected and stored in properly constructed, undamaged, and closed containers? | | No | | |
| 186 | Are containers held on site for the minimum time possible, and less than any legally specified limit? | Yes | | | |
| 187 | Is any hazardous solid waste kept inside the industries? | Yes | | | |
| 188 | Do the industries have a hazardous waste minimization/ pollution prevention plan in place? | | No | | |
| 189 | Is spill clean-up and containment equipment easily available? | | No except Taj Steel Mills | | |
| 190 | Are there any Emergency response equipment available inside the industries? | | No | | |
| 191 | Do the industries have a documented plan for dealing with emergencies that may have an environmental significance? | | No | | |
| 192 | Are emergency actions clearly posted in all areas, with relevant telephone contact numbers? | | No | | |
| 193 | Do the industries have procedures to identify the potential for, and response to, environmental incidents, accidents and emergency situations? | | No | | |
| 194 | Are the site emergency procedures reviewed and exercised regularly? | | No | | |
| 195 | Do the industries have procedures to report on environmental incidents, accidents and emergency situations and implementing corrective actions? | | No | | |
| 196 | Are the procedures communicated to all relevant parties like employees, factory neighbours etc.? | | No | | |
| 197 | Is there a programme to eliminate, or if not possible reduce the use of hazardous substances? | | No except Taj Steel Mills | | |
| 198 | Is there a list of the hazardous | | No | | |

| | | | | | |
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| | substances on site, plus information on handling, disposal etc.? | | | | |
| 199 | Do the industries, routinely or in specific circumstances, track chemical use or some other method as distinct from, or in addition to, tracking environmental releases? | | No | | |
| 200 | Do the industries use such raw material which contains poisonous substances? | Yes | | | |
| 201 | Are there safety measures in place for the nearby population to stay safe from hazardous substances? | | No except Taj Re-rolling and Steel Mill | | |
| 202 | Are there any health related issues widespread in the nearby population? | Yes | | | |
| 203 | Does the population nearby the industries have any complaints about the operations of the industries? | Yes | | | |
| 204 | Are these complaints in the notice of the district administration? | Yes | | | |
| 205 | Did the local administration take any action in this regard? | | No | | |
| 206 | Has the management taken timely remedial actions in the past? | | | Not sure | |
| 207 | Do the industries maintain record of violations and remedial actions? | | No | | |
| 208 | Do the industries required under law or regulations to submit periodical environmental performance reports to the government? | Yes | | | |
| 209 | Do the industries report environmental performance regularly in the annual reports? | | No | | |
| 210 | Is the reporting system of the industries satisfactory? | | No except Taj Steel Mills | | |
| 211 | Are these reports externally verified? | | No | | |

SHER STEEL MILLS DARGAI:

On Spot Stack emission Analysis Result: Stack emission analyzed from the stake of air pollution control system, the average result as follow.

| Parameters | Results (mg/m ³) | NEQS (mg/m ³) | Remarks |
|--------------------|------------------------------|---------------------------|--------------------|
| NO _x | 8 | 400 | Within NEQS Limits |
| SO _x | 4 | 1200 | Within NEQS Limits |
| CO | 16 | 800 | Within NEQS Limits |
| Particulate matter | 60 | 300 | Within NEQS limits |

PAK PREMIER STEEL MILLS DARGAI:

Stack Emission Analysis Result: Stake emission analyzed from the stake of air pollution control system, the average result as follow.

| Parameters | Results (mg/m ³) | NEQS (mg/m ³) | Remarks |
|--------------------|------------------------------|---------------------------|--------------------|
| NO _x | 25 | 400 | Within NEQS Limits |
| SO _x | 150 | 1200 | Within NEQS Limits |
| CO | 142 | 800 | Within NEQS Limits |
| Particulate matter | 105 | 300 | Within NEQS limits |

Malakand steel mills wartheer road DARGAI canal :

Stack Emission Analysis Result: Stake emission analyzed from the stake of air pollution control system, the average result as follow.

| Parameters | Results (mg/m ³) | NEQS (mg/m ³) | Remarks |
|--------------------|------------------------------|---------------------------|--------------------|
| NO _x | 45 | 400 | Within NEQS Limits |
| SO _x | 110 | 1200 | Within NEQS Limits |
| CO | 220 | 800 | Within NEQS Limits |
| Particulate matter | 84 | 300 | Within NEQS limits |

Ali Steel Mills Kharki Area DARGAI Malakand Agency:

Stack Emission Analysis Result: Stake emission analyzed from the stake of air pollution control system, the average result as follow.

| Parameters | Results (mg/m ³) | NEQS (mg/m ³) | Remarks |
|--------------------|------------------------------|---------------------------|--------------------|
| NO _x | 144 | 400 | Within NEQS Limits |
| SO _x | 180 | 1200 | Within NEQS Limits |
| CO | 450 | 800 | Within NEQS Limits |
| Particulate matter | 180 | 300 | Within NEQS limits |

Taj Steel Furnace and re-rolling Mills Sakha Kot Malakand Agency:

Stack Emission Analysis Result

Stack emission analysis could not be performed as the pollution control system does not have a stack

Annex-4

Copy of Court Orders and highlights of the protests posed by the local residents against the operations of the Steel Mills (attached in hard copies)